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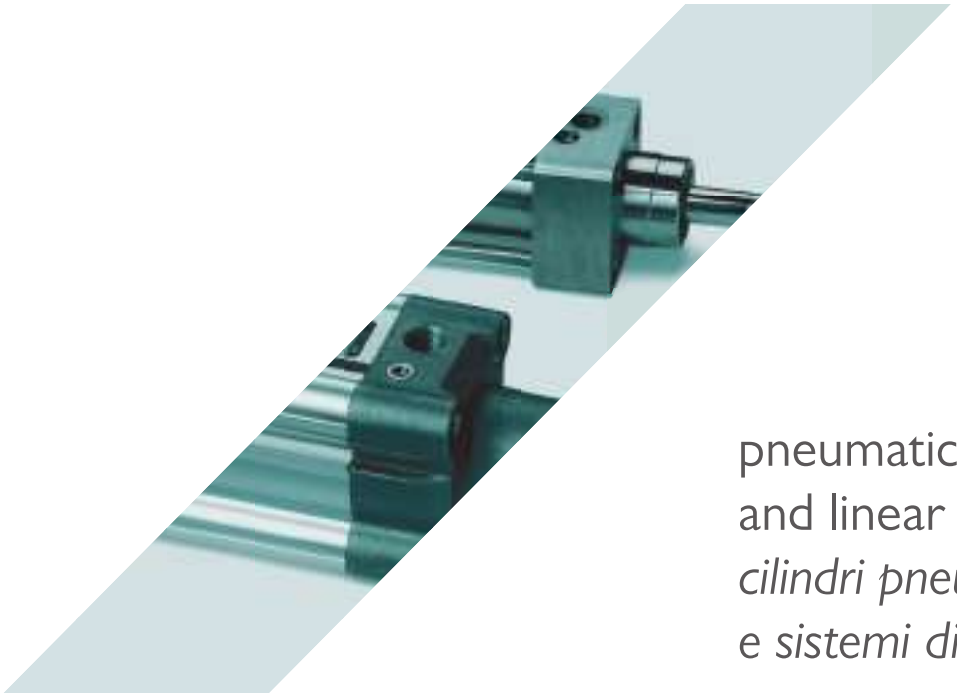
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In case of electric arc welding, please strongly insulate or remove cylinders.

In caso di saldatura ad arco nelle vicinanze, rimuovere il cilindro.

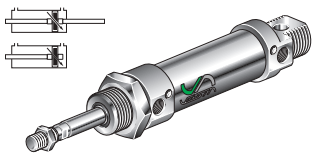
pneumatic cylinders, actuators
and linear control units
cilindri pneumatici, attuatori
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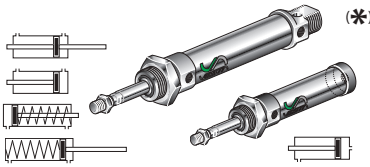
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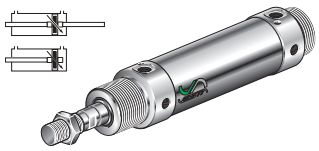
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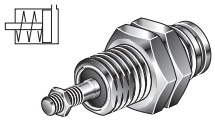
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MAGNETIC PISTON, SCREW END CAPS, (CUSHIONED FOR ACMT)
CILINDRO MAGNETICO, ISPEZIONABILE, (AMMORTIZZATORI PNEUMATICI REGOLABILI PER ACMT)



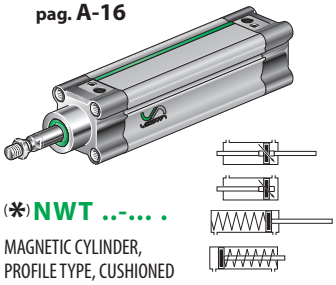
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PNEUMATIC CYLINDER ISO 15552 / *CILINDRI PNEUMATICI ISO 15552*

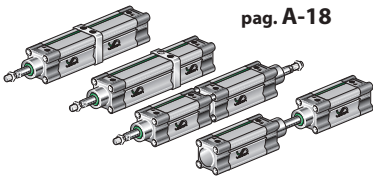
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(✻) **NWT ..-... .**

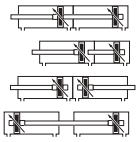
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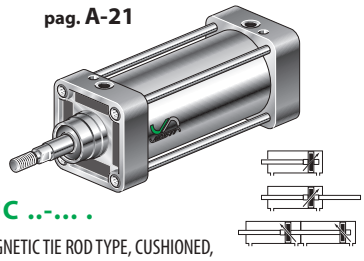


NWT ...TN2..
NWT ...BS...
NWT ...CNP...
NWT ...CNF...

SPECIAL VERSIONS CYLINDER,
CILINDRI VERSIONE SPECIALE



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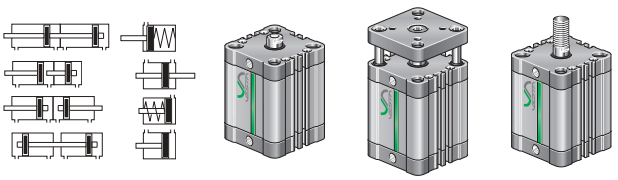


XJC ..-... .

MAGNETIC TIE ROD TYPE, CUSHIONED, TANDEM.
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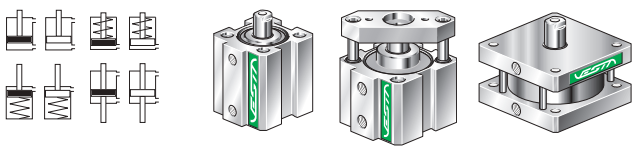
COMPACT PNEUMATIC CYLINDER / *CILINDRI PNEUMATICI COMPATTI*



(✻) **NSK.. . .. ...** (**ISO 21287** - **UNITOP**)

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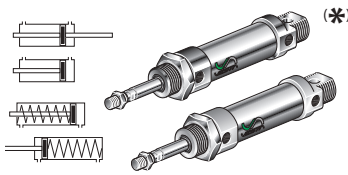


SH.. . .. ...

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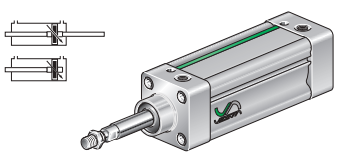
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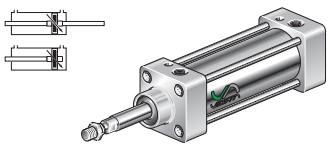
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CILINDRO ***ISO 6432*** *INOX, MAGNETICO, ISPEZIONABILE, CON SMORZATORI D'URTO*



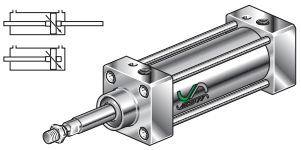
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ISO 15552 *MAGNETICO, TESTATE IN RESINA ACETALICA, CAMICIA PROFILO PULITO*



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ISO 15552 *MAGNETICO, TESTATE IN RESINA ACETALICA, CON CAMICIA E TIRANTI INOX*



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AIR CONSUMPTION FOR PNEUMATIC CYLINDERS / *CONSUMO D' ARIA DEI CILINDRI PNEUMATICI*

Air consumption in NL/ min of a double acting pneumatic cylinder must be calculated as follows:
Il consumo d'aria in NL/ min di un cilindro pneumatico a doppio effetto é calcolato in base alla seguente formula:

$$Q = \frac{\text{Ø}^2\ \pi\ PCN}{2}$$

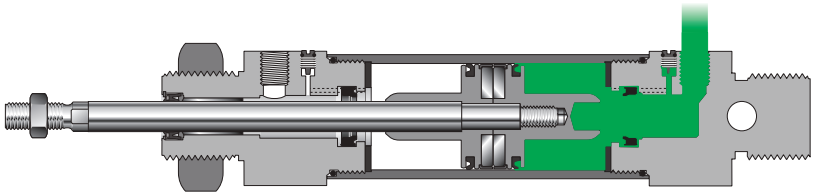
(For simple acting cylinders Q = Q/2
Per il cilindro a semplice effetto tale valore é circa dimezzato)

Q = Air consumption in NL / min / *Consumo d'aria in NL /min*
Ø = Bore of cylinder in decimeter / *Alesaggio del cilindro in decimetri (Dm)*
P = Absolute working pressure (relative pressure +1) in Kg/cm^2
Pressione assoluta di lavoro (pressione effettiva di lavoro +1) in Kg/cm^2
C = Stroke of cylinder in decimeter / *Corsa del cilindro in decimetri (Dm)*
N = Number of cycles per minute / *Numero di cicli per minuto*

THEORETICAL THRUSTS / *FORZE TEORICHE SVILUPPATE*

Bore *Alesaggio*	**Available area** **Area** *superficie utile*		**Thrusts (N) at pression (Bar)** *Forze sviluppate (N) alla pressione (Bar)*									
		mm^2	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
10	thrust / *spinta*	78	7,8	15,6	23	31	39	47	54	62	70	78
	draught / *tiro*	66	6,5	13,2	19	26	33	40	48	53	59	66
12	thrust / *spinta*	113	11	23	34	45	56	68	79	90	102	113
	draught / *tiro*	85	8,5	17	25	34	42	51	59	68	76	85
16	thrust / *spinta*	201	20	40	60	80	100	121	141	161	181	201
	draught / *tiro*	173	17	35	52	69	86	104	121	138	156	173
20	thrust / *spinta*	314	31	63	94	126	157	188	220	251	283	314
	draught / *tiro*	264	26	53	79	106	132	158	185	211	238	264
25	thrust / *spinta*	491	49	98	147	196	245	295	344	393	442	491
	draught / *tiro*	412	41	82	124	165	206	247	288	330	371	412
32	thrust / *spinta*	804	80	161	241	322	402	482	563	643	724	804
	draught / *tiro*	691	69	138	207	276	345	414	484	553	622	691
40	thrust / *spinta*	1256	125	251	376	502	628	754	879	1005	1130	1256
	draught / *tiro*	1056	105	211	316	422	528	633	739	844	950	1055
50	thrust / *spinta*	1962	196	393	588	785	981	1178	1373	1570	1765	1963
	draught / *tiro*	1649	165	330	494	660	824	990	1154	1320	1484	1650
63	thrust / *spinta*	3116	311	623	934	1246	1558	1869	2181	2493	2804	3116
	draught / *tiro*	2802	280	560	840	1120	1401	1680	1961	2240	2521	2800
80	thrust / *spinta*	5024	502	1005	1507	2010	2512	3014	3516	4019	4521	5024
	draught / *tiro*	4533	453	907	1360	1814	2266	2722	3173	3629	4079	4536
100	thrust / *spinta*	7850	785	1570	2355	3140	3925	4710	5495	6280	7065	7850
	draught / *tiro*	7143	714	1429	2143	2857	3571	4286	5000	5715	6428	7143
125	thrust / *spinta*	12266	1226	2453	3679	4906	6133	7359	8586	9812	11039	14719
	draught / *tiro*	11599	1160	2319	3479	4639	5799	6959	8119	9279	10439	11559
160	thrust / *spinta*	20096	2009	4019	6028	8038	10048	12057	14067	16076	18086	20096
	draught / *tiro*	18840	1884	3768	5652	7536	9420	11304	13188	15072	16956	18840
200	thrust / *spinta*	31400	3140	6280	9420	12560	15700	18840	21980	25120	28260	31400
	draught / *tiro*	30144	3014	6028	9043	12057	15072	18086	21100	24115	27129	30144

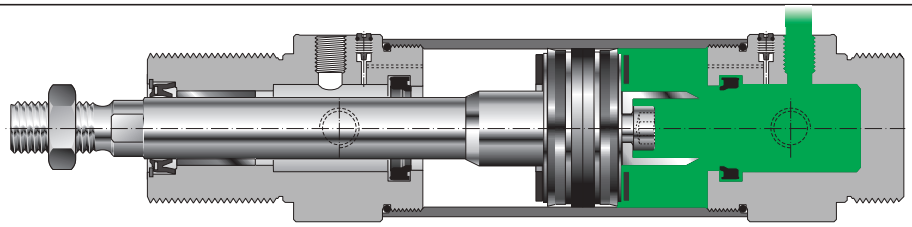
CYLINDERS ACM- AND DVM- TECHNICAL FEATURES / *CARATTERISTICHE TECNICHE ACM- E DVM-*



ISO 6432

Ø16; 20; 25 — **ACM..**

Ø12; 16; 20; 25 — **DVM..**



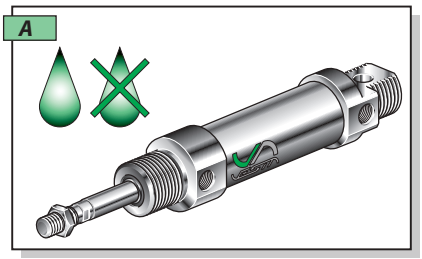
Ø32; 40; 50 — **ACMT..**

Ø32; 40; 50 — **DVMT..**

The cushioned double acting Vesta **ACM**(**T**) cylinders with magnetic pistons and adjustable cushioning are available in the following bore sizes: 16, 20, 25, 32, 40 and 50 in a wide range of standard strokes. The Vesta cylinder type **DVM**(**T**) is available in diameters of 12, 16, 20, 25, 32, 40 and 50, with mechanical buffers at both ends, and magnetic piston. **ACM**(**T**) and **DVM**(**T**) series are built with screw heads. Stroke tollerance follows ISO 6432 standard.

*I cilindri Vesta serie **ACM**(**T**) a doppio effetto ammortizzati e con pistone magnetico sono disponibili negli alesaggi 16, 20, 25, 32, 40 e 50 mm, in una vasta gamma di corse standard; mentre i cilindri serie **DVM**(**T**) con smorzatori meccanici d' urto, magnetici, sono disponibili negli alesaggi 12, 16, 20, 25, 32, 40 e 50 mm. Le particolari caratteristiche costruttive, le soluzioni tecniche adottate ed i materiali impiegati, garantiscono una lunga durata ed un ottimo funzionamento del cilindro. La costruzione è del tipo "teste avvitate", quindi cilindri ispezionabili con possibilità di manutenzione. I cilindri serie **ACM**(**T**) e **DVM**(**T**) sono predisposti per il montaggio di sensori magnetici. Le tolleranze sulle corse dei cilindri sono conformi alla normativa ISO 6432.*

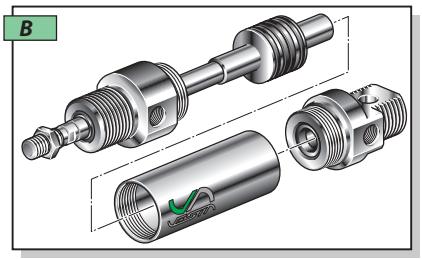
A



Lubrication not required.

Possibilità di funzionamento continuo privo di lubrificazione.

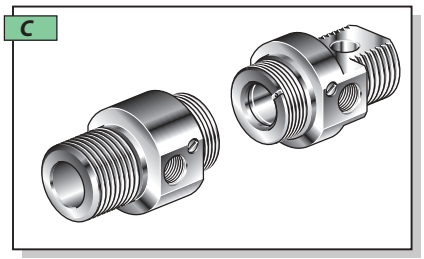
B



"Screw head" construction allows immediate check up of cylinders.

Le teste filettate consentono di ispezionare agevolmente il cilindro.

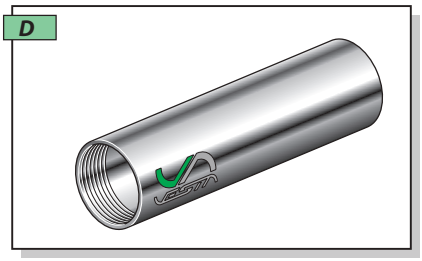
C



Caps in a light alloy of anodized aluminium.

Le teste sono in lega leggera di alluminio anodizzate.

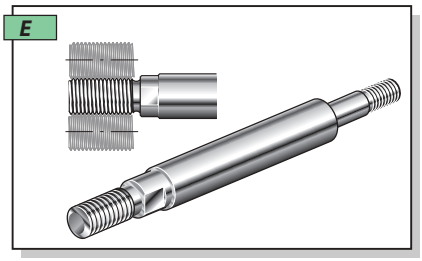
D



Tubes in anodized aluminium.

Le camicie sono in alluminio anodizzato.

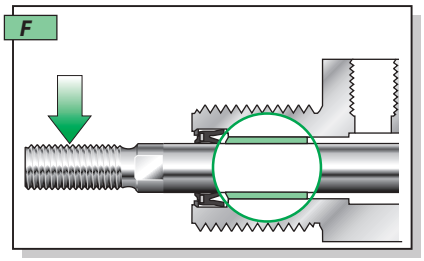
E



Piston rods in rolled stainless steel X5CrNi 1810 (X20Cr 13 for Ø32,40,50).

Steli in acciaio INOX X5CrNi 1810 rullato (X20Cr 13 per Ø32,40,50 mm).

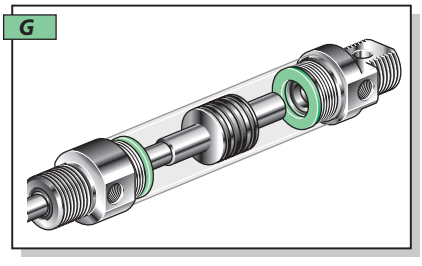
F



Self lubricating bearing in a copper-steel alloy, with teflon covering.

Boccole autolubrificanti in acciaio ramato con deposito in Teflon.

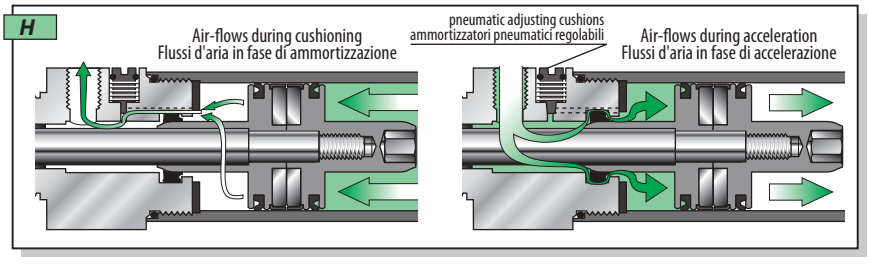
G



Mechanical buffers at both ends for **DVM** and **DVMT** series.

*Smorzatori d'urto meccanici per **DVM** e **DVMT**.*

H



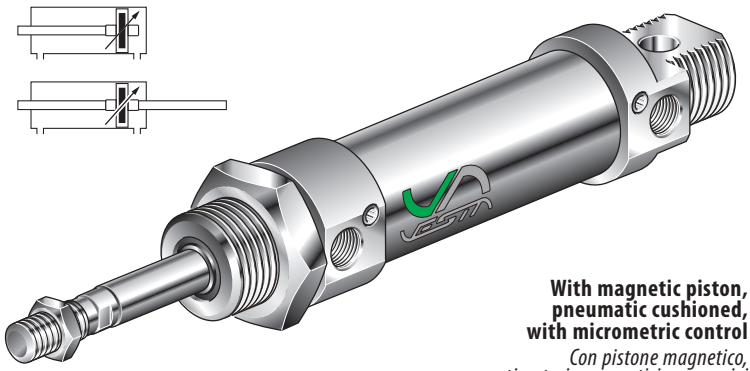
Very efficient and progressive adjustable cushioning for **ACM** and **ACMT** series.

*Ammortizzatori pneumatici progressivi ed efficienti per la serie **ACM** ed **ACMT**.*

SERIE **ACM**

CUSHIONED PNEUMATIC CYLINDERS STANDARD ISO 6432
CILINDRI PNEUMATICI AMMORTIZZATI ISO 6432

ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***



With magnetic piston, pneumatic cushioned, with micrometric control
Con pistone magnetico, ammortizzatori pneumatici progressivi con regolazione micrometrica

With magnetic piston / *Con pistone magnetico*

ACM □□/□□□ □ □□

Bore
Alesaggio
(mm):
Ø16 ..... **16**
Ø20 ..... **20**
Ø25 ..... **25**

Stroke
Corsa
(mm):

VS Viton rod seal
Guarnizione dello stelo in Viton

VV Viton all seal
Tutte le guarnizione in Viton

P Through rod cylinder
Cilindro stelo passante

Standard stroke / *Corse Standard*

Bore *Alesaggio*	10	25	50	80	100	125	160	200	250	300	350	400	450	500
16	•	•	•	•	•	•	•	•	•	•				
20	•	•	•	•	•	•	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Effective cushion length
Lunghezza utile ammortizzatore

Bore *Alesaggio*	Length *Lunghezza*
16	24
20	27
25	30

ISO 6432 cylinder fixing see:
Fissaggi per cilindri ISO 6432 vedi:
..... **Pag. A-10 ÷ A-11.**

Features of reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-11, A-19.**

TECHNICAL FEATURES

End caps ..... Anodized aluminium.
Piston rod ..... Rolled burnished stainless steel X5CrNi 1810.
Barrel ..... Anodized aluminium.
Seals ..... NBR rubber.
Cushioning ..... Pneumatic adjusting cushions.

Environment temperature range ..... -10 °C ÷ +80 °C.
Temperature range of medium ..... 0 °C ÷ +40 °C.
Lubrication ..... Not required.
Medium ..... Filtered air.
Max operating pressure ..... 10 bar.

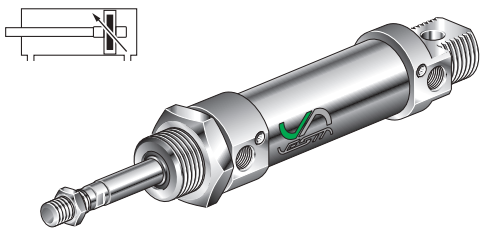
CARATTERISTICHE TECNICHE

Testate ..... Alluminio anodizzato.
Stelo ..... Acciaio inox X5CrNi 1810 rullato.
Camicia ..... Alluminio anodizzato.
Guarnizioni ..... Tutte in NBR.
Ammortizzatori ..... Pneumatici regolabili.

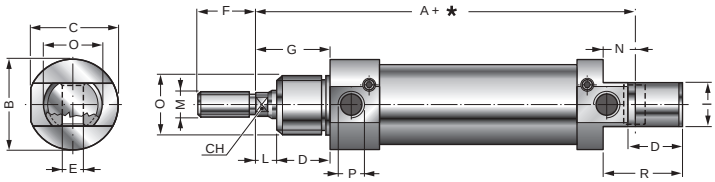
Temperatura ambiente ..... -10 °C ÷ +80 °C.
Temperatura fluido ..... 0 °C ÷ +40 °C.
Lubrificazione ..... Non necessaria.
Fluido ..... Aria filtrata.
Pressione max d'esercizio ..... 10 bar.

ACM .. /...

SINGLE ROD
CILINDRO BASE STELO SEMPLICE



*** = Stroke / *Corsa***

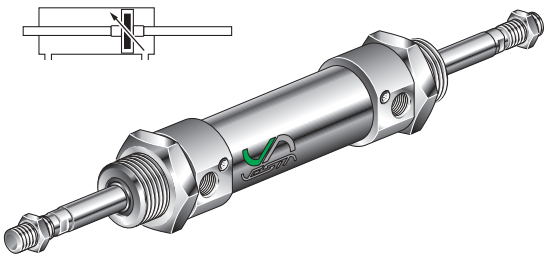


Bore *Alesaggio*	A	ØB	C	CH	D	ØE H9	F	G	I	L	ØM	N	ØO	ØP	R	Code *Codice*
16	82	22	21,2	5	15	6	16	22	12	7	M6x1	9	M16x1,5	M5	22	**ACM 16/...**
20	95	28	26,2	7	19	8	20	24	16	5	M8x1,25	12	M22x1,5	G1/8	30	**ACM 20/...**
25	104	34	32,5	8	20	8	22	28	16	8	M10x1,25	12	M22x1,5	G1/8	30	**ACM 25/...**

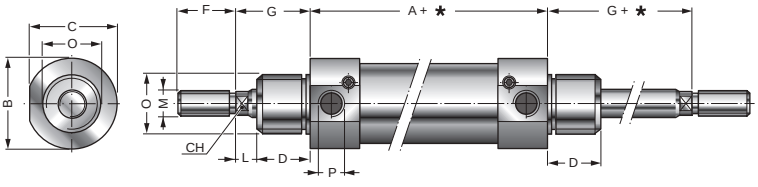
ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***

ACM .. /... P

THROUGH ROD
STELO PASSANTE



*** = Stroke / *Corsa***



Bore *Alesaggio*	A	ØB	C	CH	D	F	G	L	ØM	ØO	ØP	Code *Codice*
16	56	22	21,2	5	15	16	22	7	M6x1	M16x1,5	M5	**ACM 16/... P**
20	68	28	26,2	7	19	20	24	5	M8x1,25	M22x1,5	G1/8	**ACM 20/... P**
25	69	34	32,5	8	20	22	28	8	M10x1,25	M22x1,5	G1/8	**ACM 25/... P**

ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***

PNEUMATIC CYLINDERS WITH MAGNETIC PISTON STANDARD ISO 6432
CILINDRI PNEUMATICI CON PISTONE MAGNETICO ISO 6432

SERIE **DVM**

ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***

With magnetic piston / *Con pistone magnetico*

DVM □□/□□□ □ □□

Bore
Alesaggio
(mm):

Ø12 ..... **12**
Ø16 ..... **16**
Ø20 ..... **20**
Ø25 ..... **25**

Stroke
Corsa
(mm):

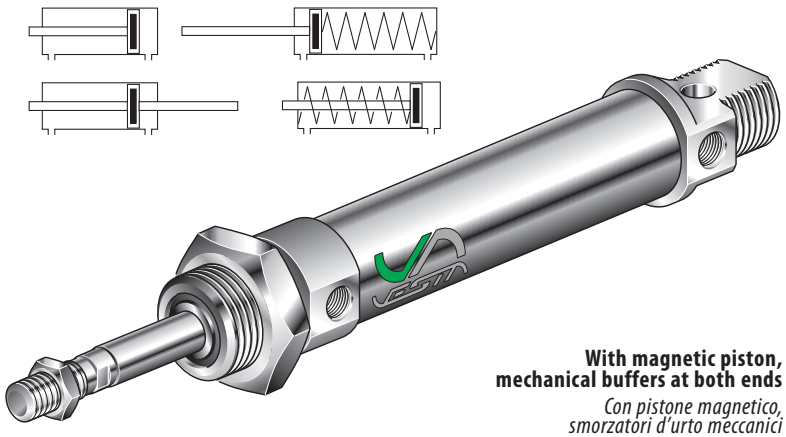
VS Viton rod seal
Guarnizione dello stelo in Viton

VV Viton all seal
Tutte le guarnizione in Viton

P Through rod cylinder
Cilindro stelo passante

SEA Simple acting front spring
Cilindro semplice effetto molla anteriore

SEP Simple acting rear spring
Cilindro semplice effetto molla posteriore



With magnetic piston, mechanical buffers at both ends
Con pistone magnetico, smorzatori d'urto meccanici

ISO 6432 cylinder fixing see:
Fissaggi per cilindri ISO 6432 vedi: .... **Pag. A-10 ÷ A-11.**

Features of reed switches see:
Caratteristiche finecorsa magnetici: ..... **Pag. A-11, A-19.**

Standard stroke / *Corse Standard*

Bore Alesaggio	10	25	50	80	100	125	160	200	250	300	350	400	450	500
12	•	•	•	•	•	•	•							
16	•	•	•	•	•	•	•	•	•	•				
20	•	•	•	•	•	•	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•	•	•	•	•	•	•

TECHNICAL FEATURES

End caps	Anodized aluminium.
Piston rod	Rolled burnished stainless steel X5CrNi 1810.
Barrel	Anodized aluminium.
Seals	NBR rubber.
Cushioning	Mechanical buffers.
Environment temperature range	-10 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	10 bar.

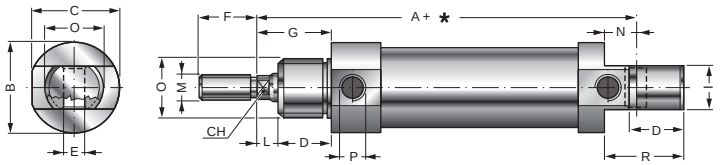
CARATTERISTICHE TECNICHE

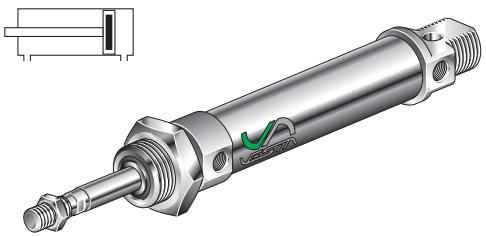
Testate	*Alluminio anodizzato.*
Stelo	*Acciaio inox X5CrNi 1810 rullato.*
Camicia	*Alluminio anodizzato.*
Guarnizioni	*Tutte in NBR.*
Ammortizzatori	*Meccanici in poliuretano.*
Temperatura ambiente	*-10 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

✱ = Stroke / *Corsa*

SINGLE ROD
CILINDRO BASE STELO SEMPLICE

DVM .. /...





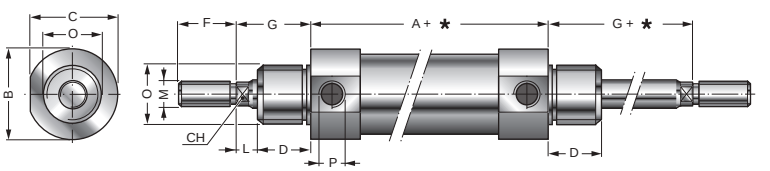
Bore *Alesaggio*	A	ØB	C	CH	D	ØE^{H9}	F	G	I	L	ØM	N	ØO	ØP	R	*Code Codice*
12	75	18	17,2	5	15	6	16	22	12	7	M6x1	9	M16x1,5	M5	22	DVM 12/...
16	82	22	21,2	5	15	6	16	22	12	7	M6x1	9	M16x1,5	M5	22	DVM 16/...
20	95	28	26,2	7	19	8	20	24	16	5	M8x1,25	12	M22x1,5	G1/8	30	DVM 20/...
25	104	32	32,5	8	20	8	22	28	16	8	M10x1,25	12	M22x1,5	G1/8	30	DVM 25/...

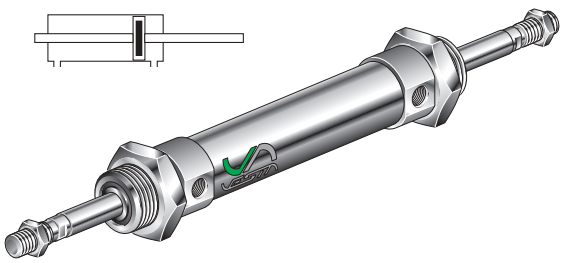
ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***

✱ = Stroke / *Corsa*

THROUGH ROD
STELO PASSANTE

DVM .. /... P





Bore *Alesaggio*	A	ØB	C	CH	D	F	G	L	ØM	ØO	ØP	*Code Codice*
12	49,5	18	17,2	5	15	16	22	7	M6x1	M16x1,5	M5	DVM 12/... P
16	56	22	21,2	5	15	16	22	7	M6x1	M16x1,5	M5	DVM 16/... P
20	68	28	26,2	7	19	20	24	5	M8x1,25	M22x1,5	G1/8	DVM 20/... P
25	69	32	32,5	8	20	22	28	8	M10x1,25	M22x1,5	G1/8	DVM 25/... P

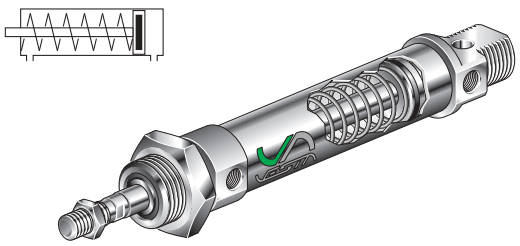
ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***

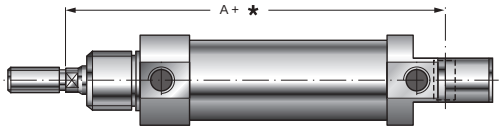
DVM .. /... SEA

SIMPLE ACTING FRONT SPRING
SEMPLICE EFFETTO MOLLA ANTERIORE

For overall dimensions see DVM single rod
Dimensioni di ingombro vedi DVM base stelo semplice

✱ = **Stroke** / ***Corsa***





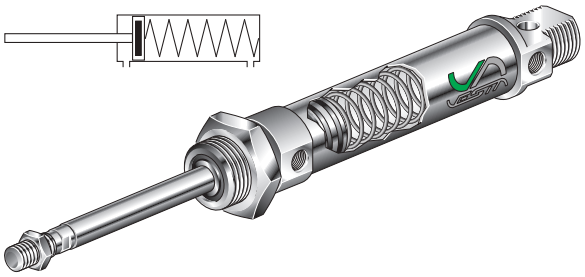
Bore *Alesaggio*	A	*Code* *Codice*
12	75	**DVM 12/... SEA**
16	82	**DVM 16/... SEA**
20	95	**DVM 20/... SEA**
25	104	**DVM 25/... SEA**

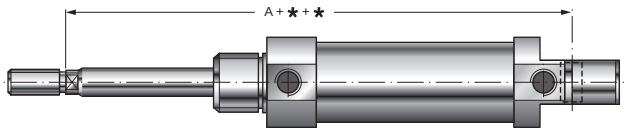
DVM .. /... SEP

SIMPLE ACTING REAR SPRING
SEMPLICE EFFETTO MOLLA POSTERIORE

For overall dimensions see DVM standard
Dimensioni di ingombro vedi DVM standard

✱ = **Stroke** / ***Corsa***



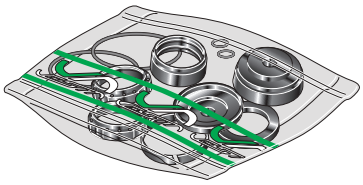


Bore *Alesaggio*	A	*Code* *Codice*
12	75	**DVM 12/... SEP**
16	82	**DVM 16/... SEP**
20	95	**DVM 20/... SEP**
25	104	**DVM 25/... SEP**

Strokes *Corse (mm)*	Spring force - *Forza molla* (daN) Ø12 mm Min.	Ø12 mm Max.	Ø16 mm Min.	Ø16 mm Max.	Ø20 mm Min.	Ø20 mm Max.	Ø25 mm Min.	Ø25 mm Max.	..SEA	..SEP
10	2,1	2,4	2,2	2,5	2,3	2,6	2,3	2,6	•	•
25	1,6	2,4	1,6	2,5	1,7	2,6	1,7	2,6	•	•
50	0,35	2,4	0,5	2,5	1	2,6	1	2,6	•	•

..... - SG

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO



Seals kit code = **Cylinder code** + **Bore** + **Versions** + **- SG**:
(The kit includes all seals).

Codice del kit = ***Codice del cilindro*** + ***Alesaggio*** + ***Versioni*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **DVM 16 VS - SG**

AXIAL REAR INLET AIR CYLINDERS
CILINDRI PNEUMATICI CON ALIMENTAZIONE POSTERIORE IN ASSE

SERIE **DRM**

With magnetic piston / *Con pistone magnetico*

DRM □□/□□□ □ □□

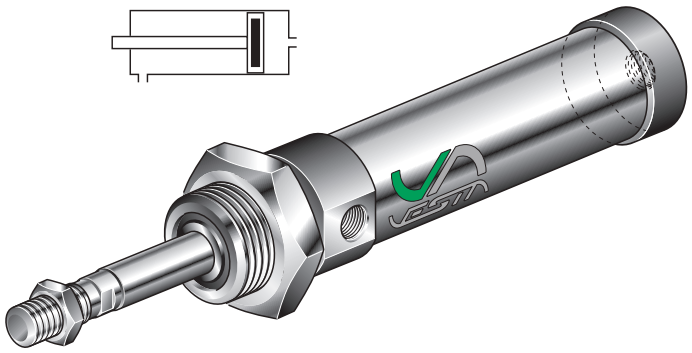
Bore
Alesaggio (mm):
Ø12 ..... **12**
Ø16 ..... **16**
Ø20 ..... **20**
Ø25 ..... **25**

Stroke
Corsa
(mm):

VS Viton rod seal
Guarnizione dello stelo in Viton

VV All viton seals
Tutte le guarnizione in Viton

SEA Simple acting front spring
Cilindro semplice effetto molla anteriore



With magnetic piston, mechanical buffers at both ends.
Con pistone magnetico, smorzatori d'urto meccanici.

Cylinder fixing see:
Fissaggi per cilindri vedi: ..... **Pag. A-10, A-11.**

Features of reed switches see:
Caratteristiche finecorsa magnetici: ..... **Pag. A-11, A-19.**

Standard stroke / *Corse Standard*

Bore Alesaggio	10	25	50	80	100	125	160	200	250	300	350	400	450	500
12	•	•	•	•	•	•	•							
16	•	•	•	•	•	•	•	•	•	•				
20	•	•	•	•	•	•	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•	•	•	•	•	•	•

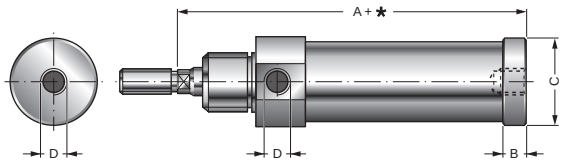
TECHNICAL FEATURES

End caps	Anodized aluminium.
Piston rod	Rolled burnished stainless steel X5CrNi 1810.
Barrel	Anodized aluminium.
Seals	NBR rubber.
Cushioning	Mechanical buffers.
Environment temperature range	-10 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	10 bar.

CARATTERISTICHE TECNICHE

Testate	*Alluminio anodizzato.*
Stelo	*Acciaio inox X5CrNi 1810 rullato.*
Camicia	*Alluminio anodizzato.*
Guarnizioni	*Tutte in NBR.*
Ammortizzatori	*Meccanici in poliuretano.*
Temperatura ambiente	*-10 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

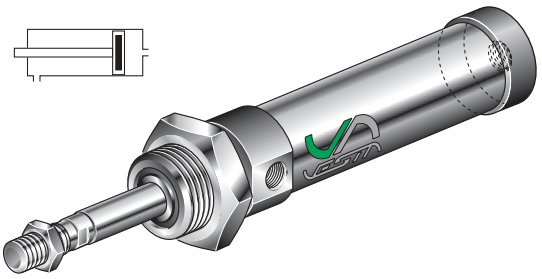
✱ = Stroke / *Corsa*



For other dimensions please see **DVM** standard cylinder
Per altre dimensioni vedere cilindri **DVM** *standard*

Bore *Alesaggio*	A	B	ØC	D	*Code Codice*
12	69	6,5	18	M5	**DRM 12/...**
16	74	6,5	22	M5	**DRM 16/...**
20	85	8,5	28	G1/8	**DRM 20/...**
25	90	8,5	34	G1/8	**DRM 25/...**

BASIC CYLINDER
CILINDRO BASE
DRM .. /...

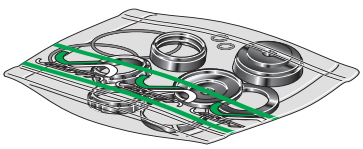


SEALS KIT
KIT GUARNIZIONI DI RICAMBIO
..... - SG

Seals kit code = **Cylinder code** + **Bore** + **Versions** + **- SG**:
(The kit includes all seals).

Codice del kit = ***Codice del cilindro*** + ***Alesaggio*** + ***Versioni*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **DRM 16 VV - SG**



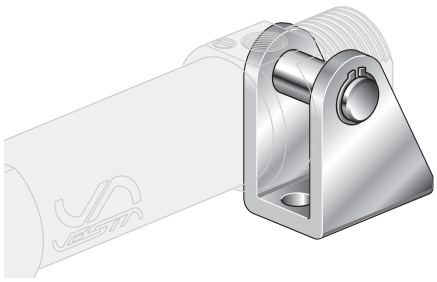
FIXING ACCESSORIES / *ACCESSORI DI FISSAGGIO PER CILINDRI ISO 6432*

Fixing accessories in steel grant a correct mounting for all usage of the Vesta cylinders. (Note: the fixing screws are not included in the supply of the fittings)

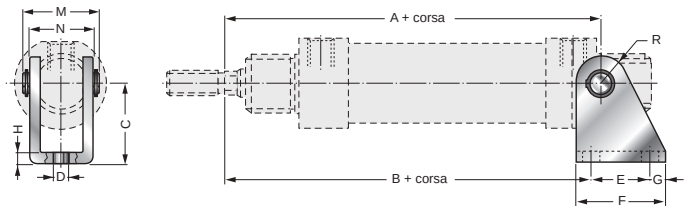
Gli accessori di fissaggio garantiscono montaggi stabili e resistenti alle sollecitazioni. Sono realizzati in acciaio per soddisfare ogni possibile tipo di impiego. (Nota: le viti di fissaggio non sono comprese nella fornitura degli accessori.)

AS/..

REAR HINGE HORIZONTAL MOUNTING
MONTAGGIO A CONTROCERNIERA



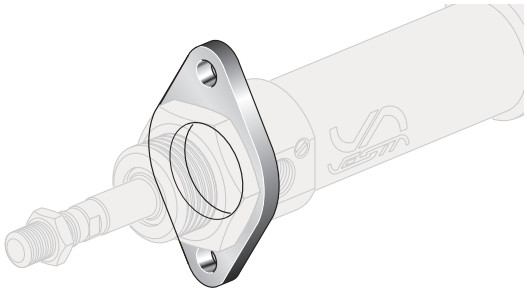
✻ = Stroke / *Corsa*

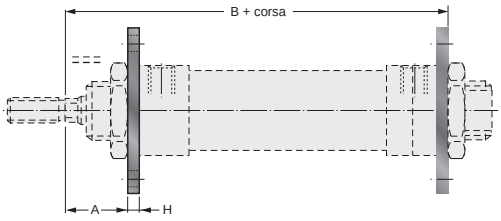


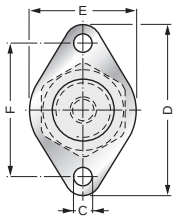
Bore *Alesaggio*	A	B	C	ØD	E	F	G	H	M	N	R	Code *Codice*
12	75	73	27	5,5	15	25	5	3	23	18	7	AS/12
16	82	80	27	5,5	15	25	5	3	23	18	7	AS/16
20	95	91	30	6,6	20	32	6	4	30	24	10	AS/20
25	104	100	30	6,6	20	32	6	4	30	24	10	AS/25

FL/..

FLANGE MOUNTING
MONTAGGIO A FLANGIA





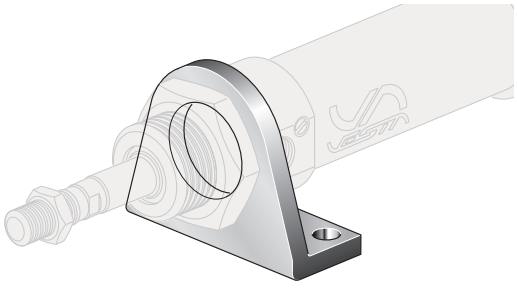


Bore *Alesaggio*	A	B	ØC	D	E	F	H	Code *Codice*
12	18	77	5,5	52	30	40	4	FL/12
16	18	84	5,5	52	30	40	4	FL/16
20	19	99	6,6	66	40	50	5	FL/20
25	23	107	6,6	66	40	50	5	FL/25

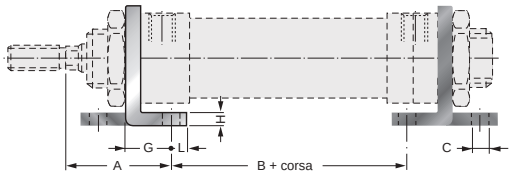
✻ = Stroke / *Corsa*

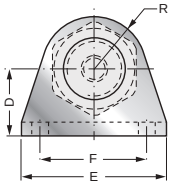
P/..

FOOT MOUNTING
MONTAGGIO A PIEDINI



✻ = Stroke / *Corsa*

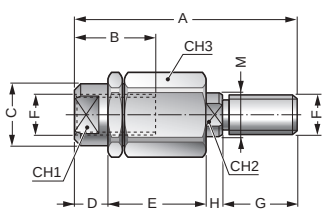


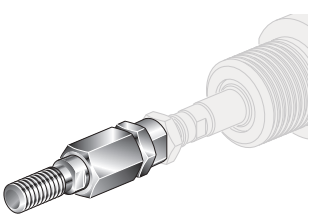


Bore *Alesaggio*	A	B	ØC	D	E	F	G	H	L	R	Code *Codice*
12	32	31	5,5	20	42	32	14	4	7	13	P/12
16	32	38	5,5	20	42	32	14	4	7	13	P/16
20	36	46	6,6	25	54	40	17	5	7	20	P/20
25	40	50	6,6	25	54	40	17	5	7	20	P/25

SAS/..

FLOATING JOINT TYPE "S"
SNODO AUTOALLINEANTE

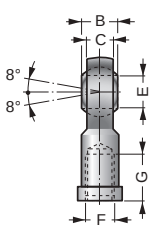


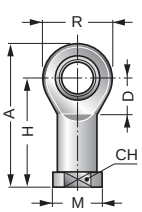


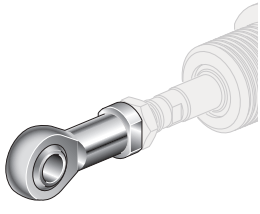
Bore *Alesaggio*	A	B	ØC	CH1	CH2	CH3	D	E	ØF	G	H	ØM	Code *Codice*
12	35	10	8,5	7	5	13	4	17,5	M6x1	10	3,5	6	SAS/12
16	35	10	8,5	7	5	13	4	17,5	M6x1	10	3,5	6	SAS/16
20	57	20	12,5	11	7	17	4,5	28,5	M8x1,25	20	4	8	SAS/20
25	71	20	22	19	12	30	11	35	M10x1,25	20	5	14	SAS/25

SNS/..

ROD EYE MOUNTING
SNODO SFERICO

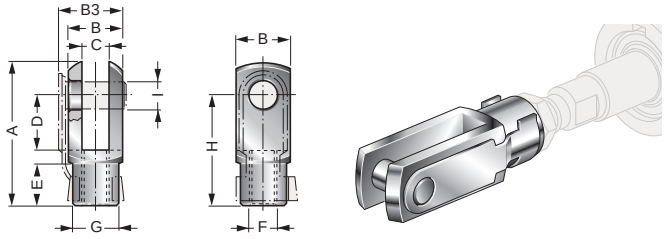






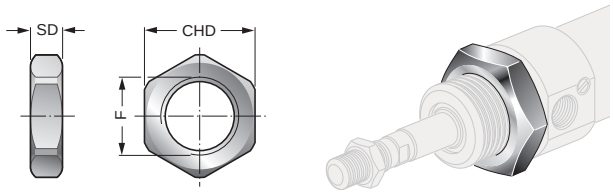
Bore *Alesaggio*	A	B	C	CH	D	ØE^{H7}	ØF	G	H	ØM	R	Code *Codice*
12	40	9	6,8	11	10	6	M6x1	12	30	13	10	SNS/12
16	40	9	6,8	11	10	6	M6x1	12	30	13	10	SNS/16
20	48	12	9	13	12	8	M8x1,25	16	36	16	12	SNS/20
25	57	14	10,5	17	15	10	M10x1,25	20	43	19	14	SNS/25

CLEVIS (ROD) MOUNTING *FORCELLA STELO* — FS/..x..



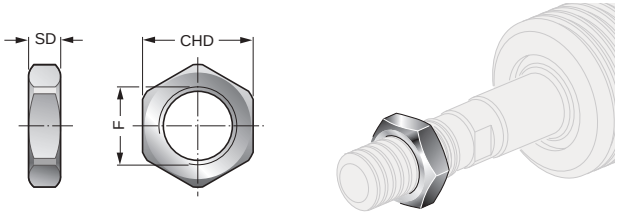
Bore *Alesaggio*	A	B	B3	C[B12]	D	E	ØF	ØG	H	Ø[H9]	Code *Codice*
12	31	12	16	6	12	9	M6x1	10	24	6	FS/6x1
16	31	12	16	6	12	9	M6x1	10	24	6	FS/6x1
20	42	16	22	8	16	12	M8x1,25	14	32	8	FS/8x1,25
25	52	20	26	10	20	15	M10x1,25	18	40	10	FS/10x1,25

CAP NUT *DADO TESTATA* — DM../..



Bore *Alesaggio*	CHD	SD	ØF	Code *Codice*
12	24	8	M16x1,5	DM12/16
16	24	8	M16x1,5	DM12/16
20	32	10	M22x1,5	DM20/25
25	32	10	M22x1,5	DM20/25

ROD NUT *DADO STELO* — DS../..



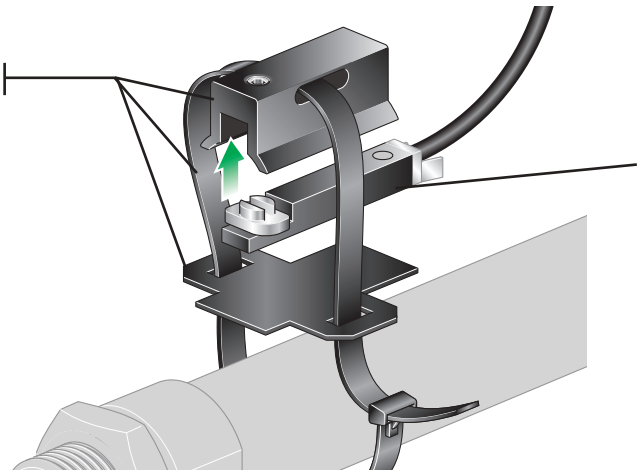
Bore *Alesaggio*	CHD	SD	ØF	Code *Codice*
12	10	4	M6x1	DS12/16
16	10	4	M6x1	DS12/16
20	13	5	M8x1,25	DS/20
25	17	6	M10x1,25	DS/25

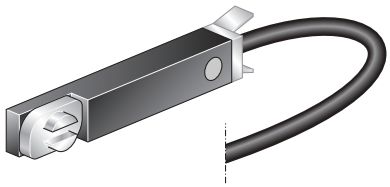
MAGNETIC SWITCHES FOR ISO 6432 CYLINDER / *FINECORSA MAGNETICI PER CILINDRI ISO 6432*

FFS 0 1 VN

Bore *Alesaggio* (mm):

Ø12 ... **12**
Ø16 ... **16**
Ø20 ... **20**
Ø25 ... **25**



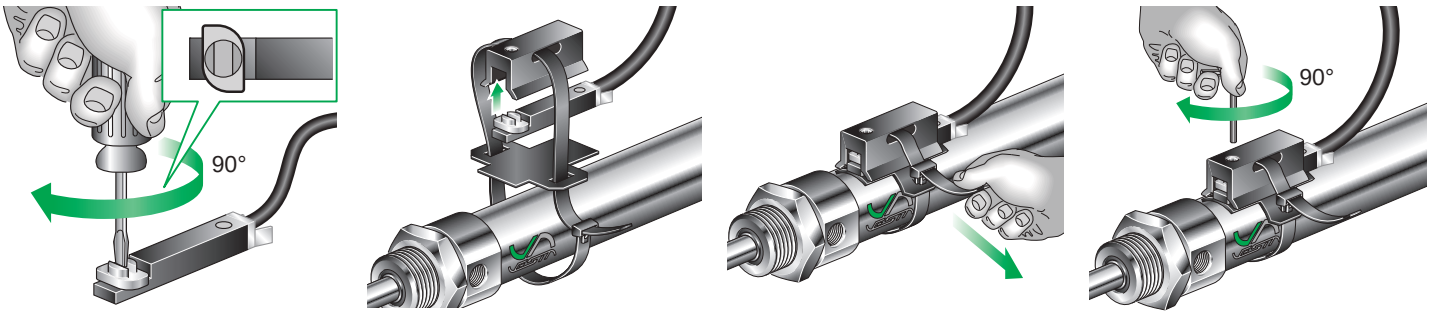


For magnetic switches features see:
Caratteristiche finecorsa magnetici vedi:

VNCR2, VNPR2, VNCE3, VNPE3.

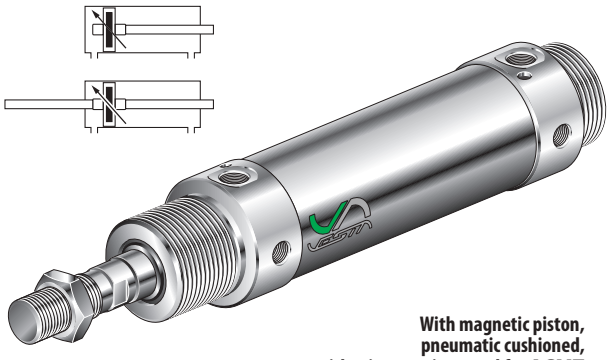
Pag. A-19

MAGNETIC SWITCH POSITIONING / *POSIZIONAMENTO DEI FINECORSA MAGNETICI*



SERIE **ACMT - DVMT**

ROUND MAGNETIC PNEUMATIC CYLINDERS
CILINDRI PNEUMATICI TONDI CON PISTONE MAGNETICO



With magnetic piston, pneumatic cushioned, with micrometric control for ACMT or mechanical buffers for DVMT

*Con pistone magnetico, ammortizzatori pneumatici regolabili per la serie **ACMT** oppure con smorzatori d'urto per la versione **DVMT***

With magnetic piston / *Con pistone magnetico*

□□**MT** □□/□□□ □ □□

AC Pneumatic cushioned
Ammortizzatori pneumatici

DV Mechanical buffers
Smorzatori d'urto meccanici

Stroke
Corsa
(mm):

VS Viton rod seal
Guarnizione dello stelo in Viton

VV Viton all seal
Tutte le guarnizione in Viton

Bore
Alesaggio (mm):
Ø32 ..... **32**
Ø40 ..... **40**
Ø50 ..... **50**

P Through rod cylinder
Cilindro stelo passante

Upon request available with piston rod **ISO 15552** threaded.
A richiesta fornibile con stelo filettato **ISO 15552**.

Standard stroke / *Corse Standard*

Bore / Alesaggio	25	50	80	100	125	160	200	250	300	400	500
32	•	•	•	•	•	•	•	•	•		
40	•	•	•	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•	•	•	•

Effective cushion length
Lunghezza utile ammortizzatore

Bore / *Alesaggio*	Length / *Lunghezza*
32	24
40	27
50	30

Cylinder fixing see:
Fissaggi per cilindri vedi: ..... **Pag. A-13.**

Features of reed switches see:
Caratteristiche finecorsa magnetici: ..... **Pag. A-13, A-19.**

TECHNICAL FEATURES

End caps	Anodized aluminium.
Piston rod	Rolled burnished stainless steel X20 Cr13.
Barrel	Anodized aluminium.
Seals	Poliurethan rubber.
Cushioning	Pneumatic with micrometric control.
Environment temperature range	-10 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	10 bar.

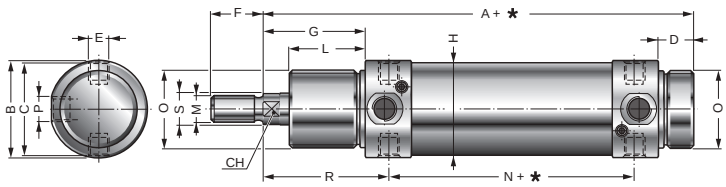
Testate	*Alluminio anodizzato.*
Stelo	*Acciaio inox X20 Cr13 rullato.*
Camicia	*Alluminio anodizzato.*
Guarnizioni	*Tutte in Poliuretano.*
Ammortizzatori	*Pneumatici con regolazione micrometrica.*
Temperatura ambiente	*-10 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

ACMT .. /...

SINGLE ROD
CILINDRO BASE STELO SEMPLICE



✱ = Stroke / *Corsa*



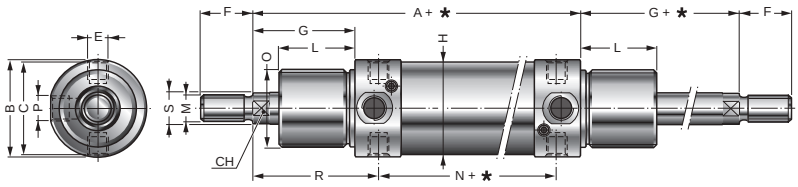
Bore / *Alesaggio*	A	ØB	C	CH	D	ØE	F	G	H	L	ØM	N	ØO	ØP	R	ØS	Code / *Codice*
32	148	38	36,8	10	14	M8x1	20	38	36	30	M10	78	M30x1,5	G1/8	47	12	**ACMT 32/...**
40	174	46	44,8	13	16	M10x1	24	45	45	35	M12	89	M38x1,5	G1/4	57	16	**ACMT 40/...**
50	188	58	55,8	17	18	M12x1,5	32	50	55	38	M16	96	M45x1,5	G1/4	62	20	**ACMT 50/...**

ACMT .. /... P

THROUGH ROD
STELO PASSANTE



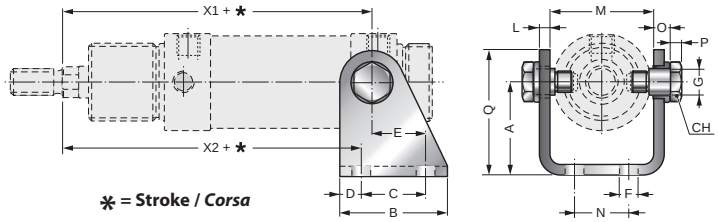
✱ = Stroke / *Corsa*



Bore	A	ØB	C	CH	ØE	F	G	H	L	ØM	N	ØO	ØP	R	ØS	Code
32	134	38	36,8	10	M8x1	20	38	36	30	M10	78	M30x1,5	G1/8	47	12	**ACMT 32/...P**
40	158	46	44,8	13	M10x1	24	45	45	35	M12	89	M38x1,5	G1/4	57	16	**ACMT 40/...P**
50	170	58	55,8	17	M12x1,5	32	50	55	38	M16	96	M45x1,5	G1/4	62	20	**ACMT 50/...P**

FIXING ACCESSORIES FOR ACMT AND DVMT / *ACCESSORI DI FISSAGGIO PER ACMT E DVMT*

Note: the fixing screws are not included in the supply of the fittings */ le viti di fissaggio non sono comprese nella fornitura degli accessori.*

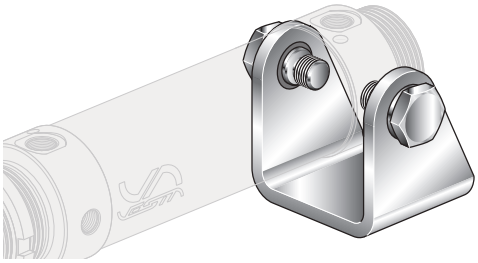


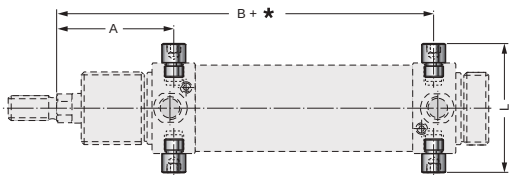
✱ = Stroke / *Corsa*

Bore *Alesaggio*	X1	X2	A	B	C	CH	D	E	ØF	ØG	L	M	N	O	P	Q	Code *Codice*
32	125	121	35	40	24	13	8	20	7	10	4	38,1	20	6	4	47	AS/32
40	146	143	40	50	30	17	10	27	9	12	5	46,1	28	7	5	53	AS/40
50	158	154	45	54	34	19	10	30	9	14	6	57,1	36	8,5	6	59	AS/50

REAR HINGE HORIZONTAL MOUNTING
MONTAGGIO A CONTROCERNIERA

AS/..



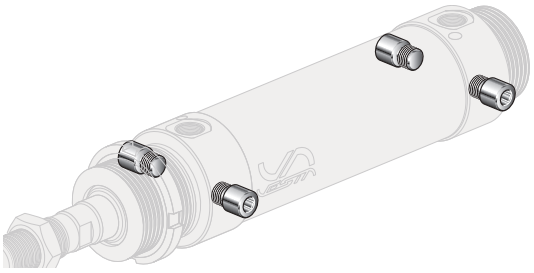


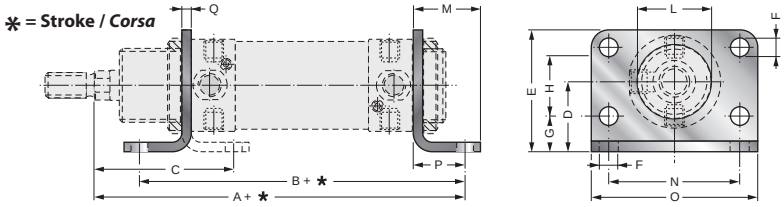
Bore *Alesaggio*	A	B	CH	ØD	H	H1	L	M	Code *Codice*
32	47	125	5	10	8	14	51	M8x1	CBF/32
40	57	146	6	12	9,5	16,5	61	M10x1	CBF/40
50	62	158	6	14	11	20	75	M12x1,5	CBF/50

✱ = Stroke / *Corsa*

PIVOT FOR FLOATING HINGE MOUNTING
PERNI PER MONTAGGIO A CERNIERA OSCILLANTE

CBF/..

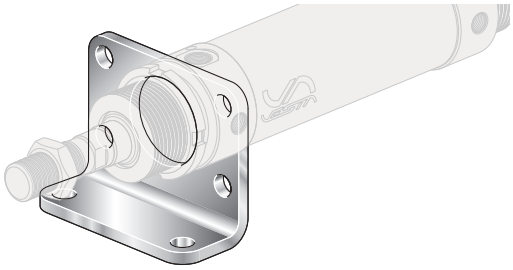




Bore *Alesaggio*	A	B	C	D	E	F	G	H	L	M	N	O	P	Q	Code *Codice*
32	148	124	48	28	49	7	14	28	30	21	52	66	14	4	P/32
40	178	153	60	33	58	9	18	30	38	30	60	80	20	5	P/40
50	190	160	64	40	70	9	20	40	45	30	70	90	20	6	P/50

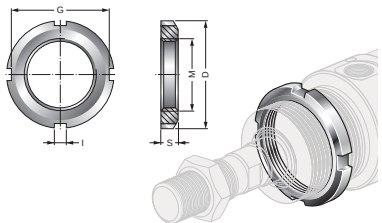
FOOT MOUNTING
MONTAGGIO A PIEDINI

P/..



RING NUT FOR FIXING
GHIERA DI FISSAGGIO

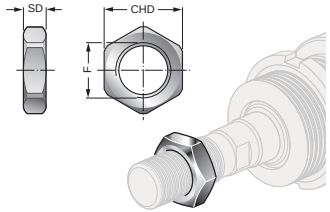
GM/..



Bore *Alesaggio*	ØD	G	I	M	S	Code *Codice*
32	45	40	5	M30x1,5	7	GM/32
40	50	46	5	M38x1,5	8	GM/40
50	58	52	6	M45x1,5	9	GM/50

ROD NUT
DADO STELO

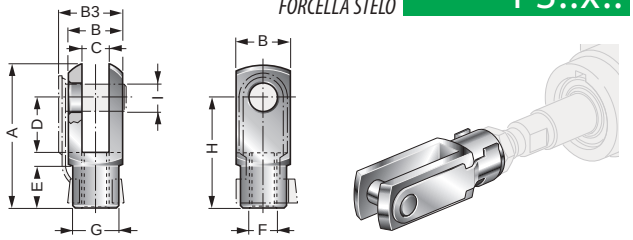
DST/..



Bore *Alesaggio*	CHD	F	SD	Code *Codice*
32	17	M10x1,5	6	DST/32
40	19	M12x1,75	7	DST/40
50	24	M16x2	8	DST/50

CLEVIS (ROD) MOUNTING
FORCELLA STELO

FS..x..



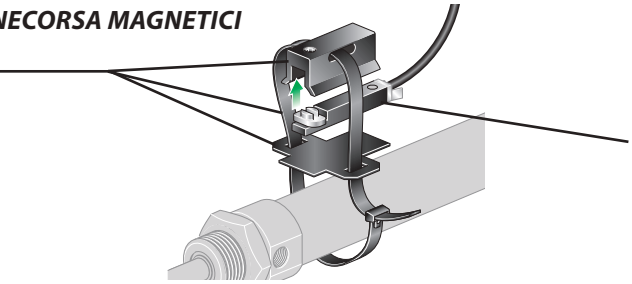
Bore *Alesaggio*	A	B	B3	C^{B12}	D	E	ØF	ØG	H	$ØI^{H9}$	Code *Codice*
32	52	20	26	10	20	15	M10 x 1,5	18	40	10	FS/10x1,5
40	62	24	32	12	24	18	M12 x 1,75	20	48	12	FS/12x1,75
50	83	32	40	16	32	24	M16 x 2	26	64	16	FS/16x2

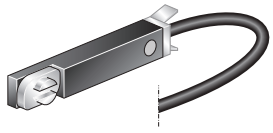
MAGNETIC SWITCHES / *FINECORSA MAGNETICI*

FFS 0 2 VN

Bore
Alesaggio (mm):

Ø32 ... **32**
Ø40 ... **40**
Ø50 ... **50**

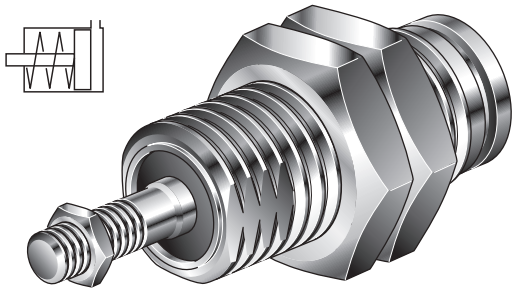




For magnetic switches features see:
Caratteristiche finecorsa magnetici vedi:
VNCR2, VNPR2, VNCE3, VNPE3.
General catalogue ..... Pag. A-19

SERIE CZ

CARTRIDGE CYLINDERS
CILINDRI A CARTUCCIA



Minicylinder single acting front spring.
Microcilindro semplice effetto molla anteriore

CZ □□/□□ □

Bore
Alesaggio
(mm):

Ø6 ..... **6**
Ø10 ..... **10**
Ø16 ..... **16**

Stroke / *Corsa*
(mm):

5, 10, 15

T Threaded piston rod (standard)
Stelo filettato (standard)

S Not threaded piston rod
Stelo non filettato

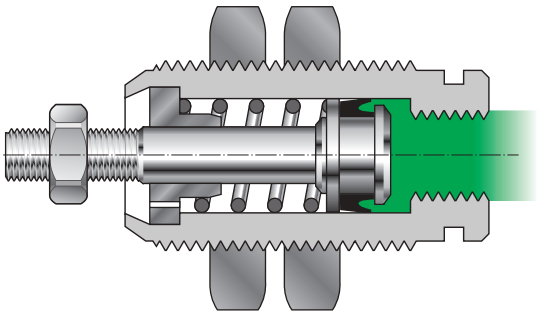
Weight / *Pesi (g)*

Bore *Alesaggio*	5	10	15
6	10	12,8	15
10	27	32	36
16	70	78	87

Thrusts / *Forze sviluppate* (N)

Bore *Alesaggio*	Thrust / *Spinta* (6 Bar)	Spring forces / *Carico molla* Stroke 0 *Stelo dentro*	Spring forces / *Carico molla* End stroke *Stelo esteso*
6	12	1,2	3,8
10	35	2,7	7,3
16	102	3,3	6,6

OPERATING INSTRUCTION / *PRECAUZIONI PER L'USO*



Series **CZ** cylinders don't need maintenance or lubrication.
Avoid high piston rod loads to enable a long cylinder life.
Cylinder supplied without O-Ring.

Seals kit is not available for **CZ** series

*I cilindri serie **CZ** non necessitano di manutenzione e lubrificazione,*
E' consigliabile evitare carichi radiali eccessivi sullo stelo.
Il cilindro è fornito senza O-Ring.

*Per la serie **CZ** non sono disponibili guarnizioni di ricambio*

TECHNICAL FEATURES

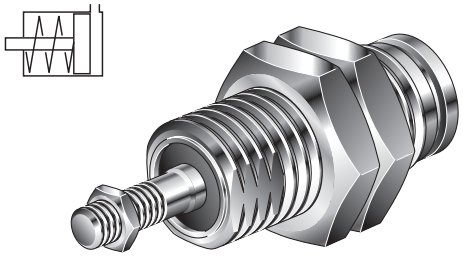
Piston rod	Stainless steel X10 Cr Ni S 18-09.
Bush	Nickel plated brass.
Spring	Steel.
Body	Nickel plated brass.
Seals	NBR rubber.
Nuts	Zinc coated steel.
Environment temperature range	-20 ÷ +80 °C.
Temperature range of medium	0 ÷ +40 °C.
Lubrication	Not required.
Medium	filtered air.
Operating pressure range	2 ÷ 7 bar.

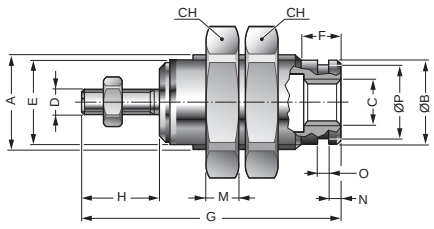
CARATTERISTICHE TECNICHE

Stelo	*Acciaio inox X10 Cr Ni S 18-09.*
Boccola	*Ottone nichelato.*
Molla	*Acciaio.*
Corpo	*Ottone nichelato.*
Guarnizioni	*In NBR.*
Bussola e dado	*Acciaio zincato.*
Temperatura ambiente	*-20 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione di esercizio	*2 ÷ 7 bar.*

CZ .. /...

BASIC CYLINDER
CILINDRO BASE





Bore Alesaggio	A	B	C	D	E	F	G 5	G 10	G 15	H	M	CH	N	O	P	Code *Codice*
6	M10X1	8,5	M5	M3	9	5	27,5	34,5	41,5	8	3	14	1,5	1,2	7,3	CZ 06/..
10	M15X1,5	12	M5	M4	14	7	33,5	40	47	10,5	4	19	1,5	1,7	9,8	CZ 10/..
16	M22X1,5	19	M5	M5	20	6	40	45	50	13	5	27	2	1,7	16,8	CZ 16/..

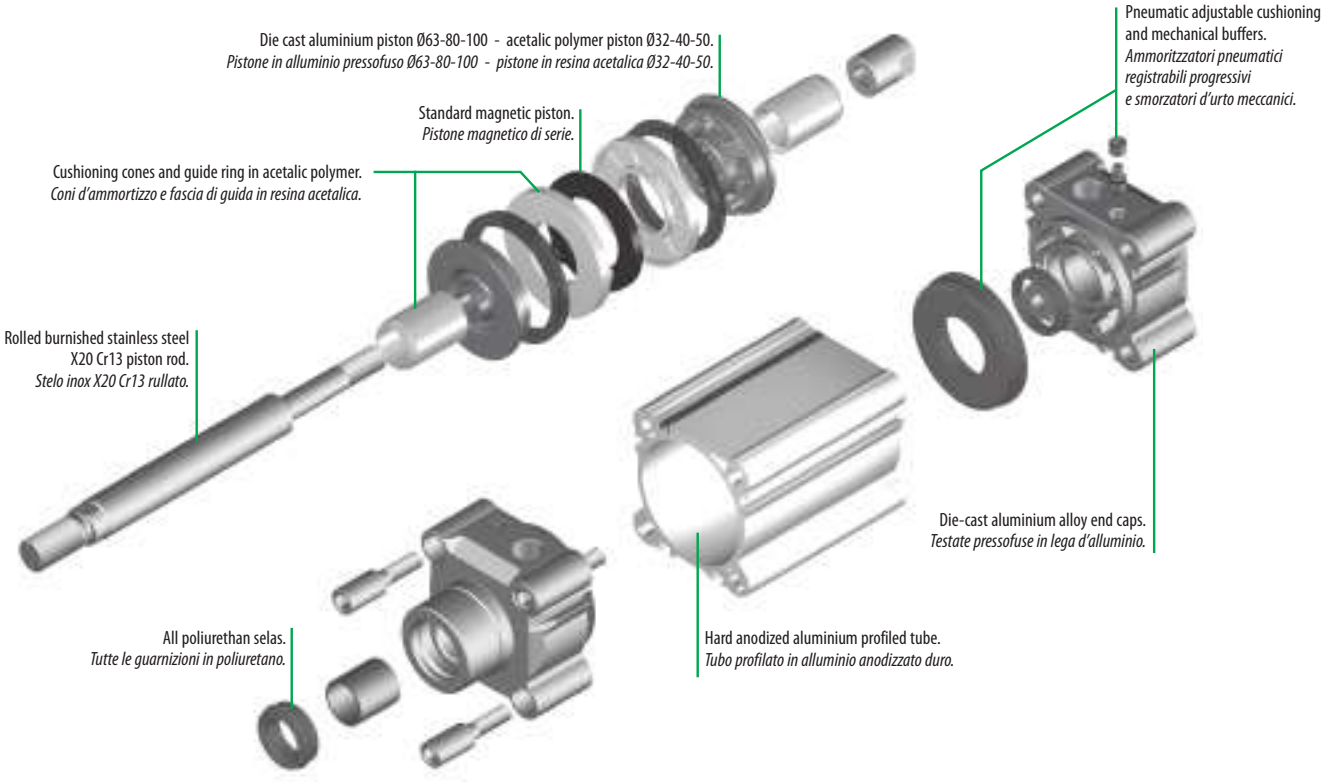
PNEUMATIC CYLINDERS STANDARD VDMA - ISO 15552
CILINDRI PNEUMATICI VDMA - ISO 15552 SERIE NWT

NWT is a new range of ISO 15552 cylinders with new design and new technology in production process, to satisfy needs of high quality performances and more competitiveness. Vesta has developed **NWT** project by using new materials for parts and new ways of producing those parts as well as new assembling and testing methods. As results, **NWT** cylinders are solid, high performing, very reliable and much competitive.

***NWT** è la nuova gamma di cilindri ISO 15552 caratterizzati da un nuovo design e dall'utilizzo di nuove tecnologie produttive. Vesta soddisfa in questo modo l'esigenza di alta qualità del prodotto con sempre maggiore competitività. Per questa nuova serie Vesta ha studiato nuovi componenti progettati ed ingegnerizzati utilizzando nuovi materiali e nuovi metodi di produzione. Lo scopo raggiunto è quello di unire la nota robustezza ed affidabilità dei cilindri Vesta a prestazioni e criteri di competitività ancora più spinti.*



Nwt cylinders series



TECHNICAL FEATURES

Heads	Die-cast aluminium alloy.
Piston rod	Rolled burnished stainless steel X20 Cr13.
Barrel	Anodized profiled aluminium tube.
Seals	Poliurethan.
Cushioning	Pneumatic adjusting cushions.
Buffers	Mechanical.

Environment temperature range	-10 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	10 bar.

CARATTERISTICHE TECNICHE

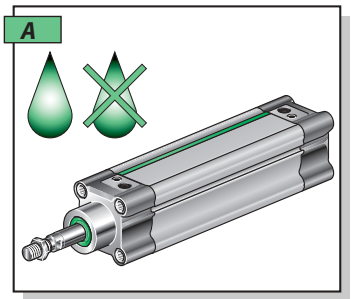
Testate	*Pressofuse in lega di alluminio.*
Stelo	*Acciaio inox X20 Cr13 rullato.*
Camicia	*Tubo profilato ed anodizzato in alluminio.*
Guarnizioni	*Tutte in poliuretano.*
Ammortizzatori	*Pneumatici progressivi regolabili.*
Smorzatori d'urto	*Meccanici.*

Temperatura ambiente	*-10 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

SERIE **NWT**

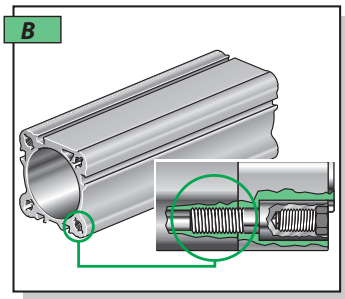
PNEUMATIC CYLINDERS STANDARD VDMA - ISO 15552
CILINDRI PNEUMATICI VDMA - ISO 15552

A



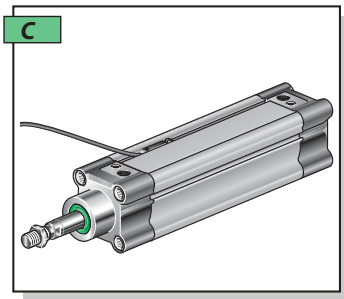
Lubrication not required.
Possibilità di funzionamento continuo privo di lubrificazione.

B



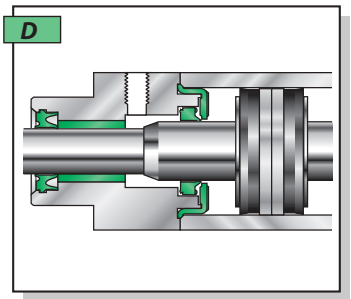
Vesta clean profile tube in anodized aluminium, threaded.
I profili delle camicie sono in lega di alluminio, anodizzate e filettate.

C



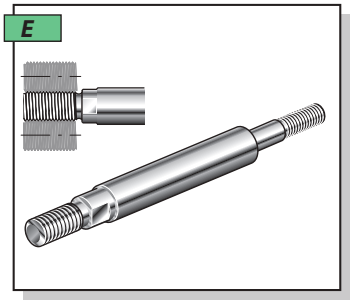
Flush mounted magnetic switches, suitable for easy insertion on any of the cylinder faces
Finecorsa magnetici a scomparsa con inserimento radiale direttamente da ogni lato

D



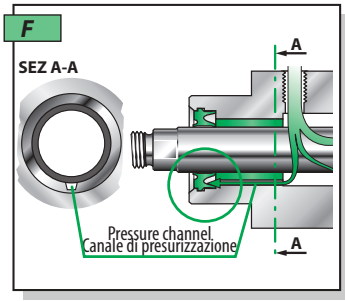
Guided magnetic piston.
Pistone magnetico guidato.

E



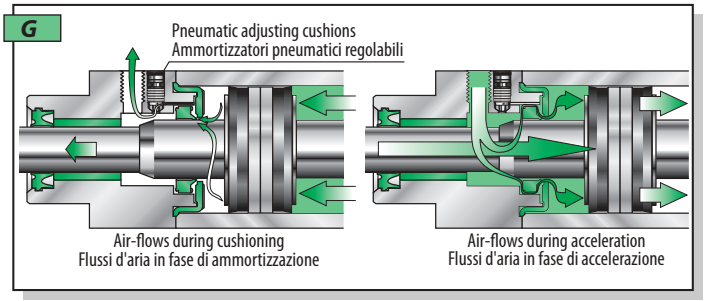
Piston rods in rolled stainless steel X20 Cr 13
Steli in acciaio INOX X20 Cr 13 rullato

F



Quick presurisation of piston rod seal, even after long unusage.
Pressurizzazione rapida della guarnizione dello stelo dopo lunga inattività.

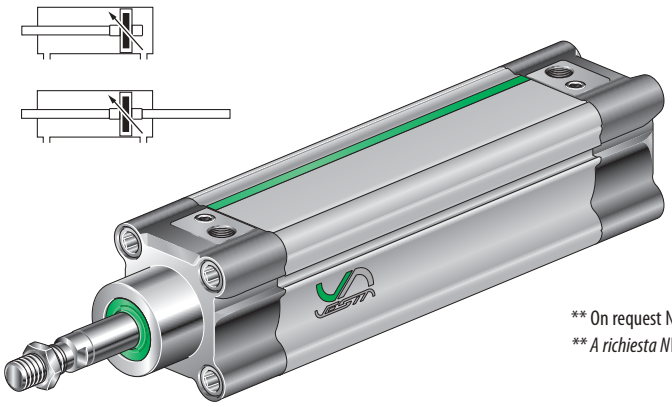
G



Very efficient and progressive adjustable cushioning with mechanical buffers.
Ammortizzatori pneumatici progressivi ed efficienti con smorzatori d'urto di fine corsa.

CYLINDERS ISO 15552 TECHNICAL FEATURES / *CARATTERISTICHE TECNICHE CILINDRI ISO 15552*

ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***



Cushioned cylinder, profile aluminium tube.
Ammortizzato, con camicia profilata di alluminio.

ISO 15552 cylinder fixing see:
Fissaggi per cilindri ISO 15552 vedi:
..... **Pag. A-22 ÷ A-26**

Features of reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-19**

With magnetic piston / *Con pistone magnetico*

NWT □□/□□□ □ □□

Bore / *Alesaggio* (mm):
Ø32 ..... **32**
Ø40 ..... **40**
Ø50 ..... **50**
Ø63 ..... **63**
Ø80 ..... **80**
Ø100 ... **100**
Ø125 ... **125****

Stroke *Corsa* (mm):

** On request NWT Ø125 is available with piston rod = Ø32 mm
** *A richiesta NWT Ø125 è disponibile con stelo = Ø32mm*

Through rod cylinder *Cilindro stelo passante* **P**
Simple acting front spring *Semplice effetto molla anteriore* **SEA**
Simple acting rear spring *Semplice effetto molla posteriore* **SEP**

VS Viton rod seal
Guarnizione dello stelo in Viton

VV Viton all seal
Tutte le guarnizione in Viton

KS Cromium plated steel piston-rod
Stelo in acciaio cromato

SS Stainless Steel X5 Cr Ni 18-10 piston-rod
Stelo in Acciaio Inox X5 Cr Ni 18-10

KSS Cromium plated Stainless Steel X5 Cr Ni 18-10 piston-rod
Stelo in Acciaio Inox X5 Cr Ni 18-10 cromato

LFC Low friction cushioned
Basso attrito, ammortizzato

LF Low friction non-cushioned
Basso attrito, non ammortizzato

H =mm Extended Piston-rod (mm.= lenght)
Stelo prolungato (lunghezza in mm.)

NBX Assembling screws, nuts and piston rod in stainless steel
Viti, dadi e stelo in acciaio Inox

R32 Piston rod Ø 32 (only NWT 125)
Stelo Ø 32 (solo NWT 125)

Standard stroke / *Corse Standard*

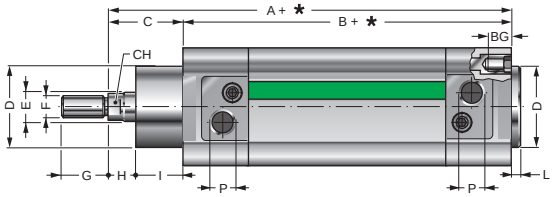
Bore *Alesaggio*	25	50	80	100	125	160	200	250	300	350	400	450	500	600	700	800	900	1000
32	•	•	•	•	•	•	•	•	•	•	•	•	•					
40	•	•	•	•	•	•	•	•	•	•	•	•	•					
50	•	•	•	•	•	•	•	•	•	•	•	•	•					
63	•	•	•	•	•	•	•	•	•	•	•	•	•					
80	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
125	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Effective cushion length
Lunghezza utili ammortizzatore

Bore *Alesaggio*	Length *Lunghezza*
32	24
40	27
50	30
63	30
80	36
100	38
125	38

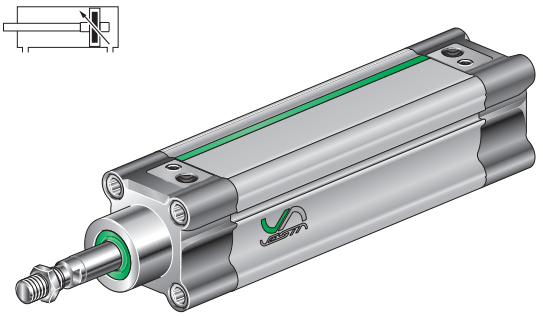
SINGLE ROD / *CILINDRO BASE STELO SEMPLICE* — NWT .. /...

✱ = Stroke / *Corsa*



Bore *Alesaggio*	A	B	C	ØD	ØE	ØF	G	H	I	L	M	N	ØO	ØP	BG	CH	Code *Codice*
32	120	94	26	30	12	M10x1,25	20	8	18	4	45	32,5	M6	G1/8	16	10	NWT 32/...
40	135	105	30	35	16	M12x1,25	24	8,5	21,5	4	54	38	M6	G1/4	16	13	NWT 40/...
50	143	106	37	40	20	M16x1,5	32	9	28	4	64	46,5	M8	G1/4	16	17	NWT 50/...
63	158	121	37	45	20	M16x1,5	32	8,5	28,5	4	75	56,5	M8	G3/8	16	17	NWT 63/...
80	174	128	46	45	25	M20x1,5	40	11,5	34,5	4	93	72	M10	G3/8	18	21	NWT 80/...
100	189	138	51	55	25	M20x1,5	40	13	38	4	110	89	M10	G1/2	18	21	NWT 100/...
125	225	160	65	60	30**	M27x2*	54*	30	35	5	142	110	M12	G1/2	22	27	NWT 125/...

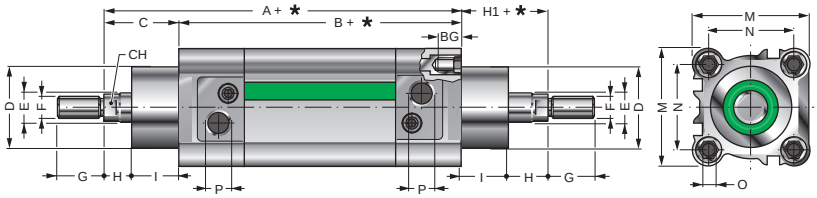
*** = on request / *a richiesta F=M24x2, G=48***
**** = on request piston rod / *a richiesta stelo ØE = 32 mm***



ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***

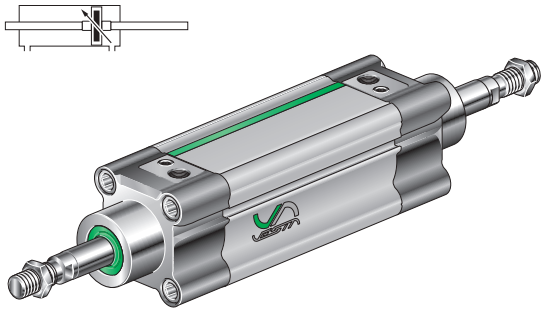
THROUGH ROD / *STELO PASSANTE* — NWT .. /... P

✱ = Stroke / *Corsa*



Bore *Alesaggio*	A	B	C	ØD	ØE	ØF	G	H	H1	I	M	N	ØO	ØP	BG	CH	Code *Codice*
32	120	94	26	30	12	M10x1,25	20	8	26	18	45	32,5	M6	G1/8	16	10	NWT 32/... P
40	135	105	30	35	16	M12x1,25	24	8,5	30	21,5	54	38	M6	G1/4	16	13	NWT 40/... P
50	143	106	37	40	20	M16x1,5	32	9	37	28	64	46,5	M8	G1/4	16	17	NWT 50/... P
63	158	121	37	45	20	M16x1,5	32	8,5	37	28,5	75	56,5	M8	G3/8	16	17	NWT 63/... P
80	174	128	46	45	25	M20x1,5	40	11,5	46	34,5	93	72	M10	G3/8	18	21	NWT 80/... P
100	189	138	51	55	25	M20x1,5	40	13	51	38	110	89	M10	G1/2	18	21	NWT 100/... P
125	225	160	65	60	30**	M27x2*	54*	30	65	35	142	110	M12	G1/2	22	27	NWT 125/... P

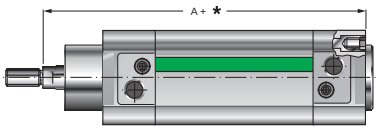
*** = on request / *a richiesta F=M24x2, G=48***
**** = on request piston rod / *a richiesta stelo ØE = 32 mm***



ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***

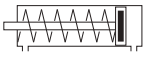
SIMPLE ACTING FRONT SPRING / *SEMPLICE EFFETTO MOLLA ANTERIORE* — NWT .. /... SEA

For overall dimensions see NWT standard
Dimensioni di ingombro vedi NWT standard



Bore *Alesaggio*	A	Code *Codice*
32	120	NWT32/... SEA
40	135	NWT40/... SEA
50	143	NWT50/... SEA
63	158	NWT63/... SEA
80	174	NWT80/... SEA
100	189	NWT100/... SEA

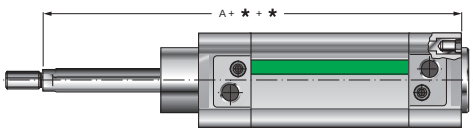
✱ = Stroke / *Corsa*



Strokes *Corse (mm)*	Spring force - *Forza molla* (N) Ø32 mm Min.	Ø32 mm Max.	Ø40 mm Min.	Ø40 mm Max.	Ø50 mm Min.	Ø50 mm Max.	Ø63 mm Min.	Ø63 mm Max.	Ø80 mm Min.	Ø80 mm Max.	Ø100 mm Min.	Ø100 mm Max.	..SEA	..SEP
10	50	54	72	82	110	123	110	123	166	180	166	180	•	•
20	44	54	62	82	98	123	98	123	152	180	152	180	•	•
30	40	54	52	82	86	123	86	123	137	180	137	180	•	•
40	35	54	42	82	73	123	73	123	123	180	123	180	•	•
50	30	54	32	82	60	123	60	123	110	180	110	180	•	•

SIMPLE ACTING REAR SPRING / *SEMPLICE EFFETTO MOLLA POSTERIORE* — NWT .. /... SEP

For overall dimensions see NWT standard
Dimensioni di ingombro vedi NWT standard



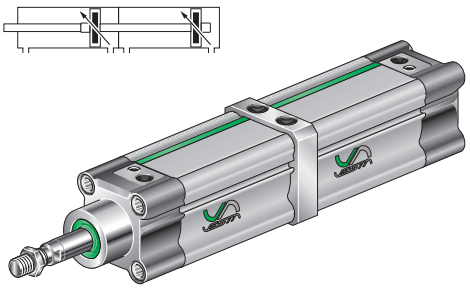
Bore *Alesaggio*	A	Code *Codice*
32	120	NWT32/... SEP
40	135	NWT40/... SEP
50	143	NWT50/... SEP
63	158	NWT63/... SEP
80	174	NWT80/... SEP
100	189	NWT100/... SEP

✱ = Stroke / *Corsa*



NWT ... TN2 ...

MULTI-THRUST TANDEM
TANDEM MULTISPINTA

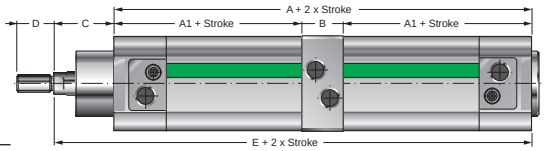


NWT □□ / □□□ TN2 □ □□ **VS** Viton rod seal / *Guarnizione dello stelo in Viton*
VV Viton all seals / *Tutte le guarnizioni in Viton*

Stroke
Corsa (mm):

Bore /
Alesaggio
(mm):
Ø32 .... **32** Ø80 .... **80**
Ø40 .... **40** Ø100 ...**100**
Ø50 .... **50** Ø125 ...**125**
Ø63 .... **63**

P Through rod cylinder / *Cilindro stelo passante*



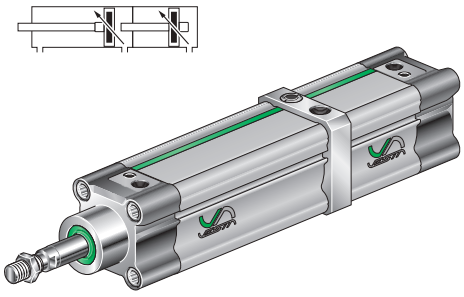
Bore *Alesaggio*	A	A1	B	C	D	E	Code *Codice*
32	156	68	20	26	20	182	NWT 32/... TN...
40	175	73,5	28	30	24	205	NWT 40/... TN...
50	171	76,5	18	37	32	208	NWT 50/... TN...
63	191	85	21	37	32	228	NWT 63/... TN...
80	205	91,5	22	46	40	251	NWT 80/... TN...
100	224	98,5	27	51	40	275	NWT 100/... TN...
125	265	115	35	65	54*	330	NWT 125/... TN...

For other dimensions please see **NWT** standard cylinder
Per altre dimensioni vedere cilindri **NWT** *standard*

*** = on request / *su richiesta D=48***

NWT ... BS ...

MULTI-POSITION
MULTIPOSIZIONE

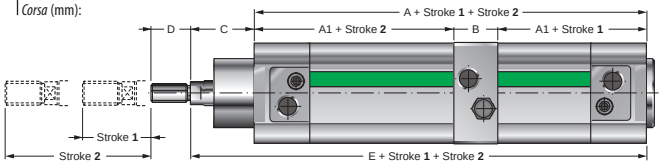


Available on request over 3 position cylinders
A richiesta cilindri da 3 a più posizioni

NWT □□ / □□□ - □□□ BS □□ **VS** Viton rod seal / *Guarnizione dello stelo in Viton*
VV Viton all seals / *Tutte le guarnizioni in Viton*

Bore / *Alesaggio*
(mm):
1° Stroke *Corsa* (mm):
2° Stroke /*Corsa* (mm):

Ø32 .... **32**
Ø40 .... **40**
Ø50 .... **50**
Ø63 .... **63**
Ø80 .... **80**
Ø100 ...**100**
Ø125 ...**125**



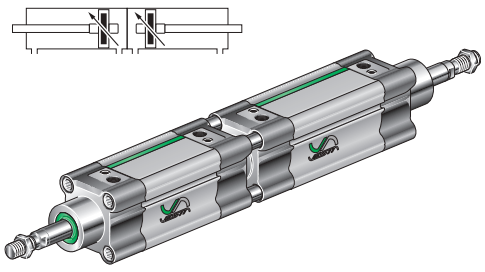
Bore *Alesaggio*	A	A1	B	C	D	E	Code *Codice*
32	156	68	20	26	20	182	NWT 32/... BS...
40	175	73,5	28	30	24	205	NWT 40/... BS...
50	171	76,5	18	37	32	208	NWT 50/... BS...
63	191	85	21	37	32	228	NWT 63/... BS...
80	205	91,5	22	46	40	251	NWT 80/... BS...
100	224	98,5	27	51	40	275	NWT 100/... BS...
125	265	115	35	65	54*	330	NWT 125/... BS...

For other dimensions please see **NWT** standard cylinder
Per altre dimensioni vedere cilindri **NWT** *standard*

*** = on request / *su richiesta D=48***

NWT ... CNP ...

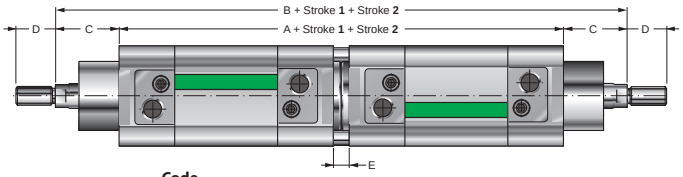
REAR OPPOSED
CONTRAPPOSTI POSTERIORI



NWT □□ / □□□ - □□□ CNP □□ **VS** Viton rod seal / *Guarnizione dello stelo in Viton*
VV Viton all seals / *Tutte le guarnizioni in Viton*

Bore / *Alesaggio*
(mm):
1° Stroke *Corsa* (mm):
2° Stroke /*Corsa* (mm):

Ø32 .... **32**
Ø40 .... **40**
Ø50 .... **50**
Ø63 .... **63**
Ø80 .... **80**
Ø100 ...**100**
Ø125 ...**125**



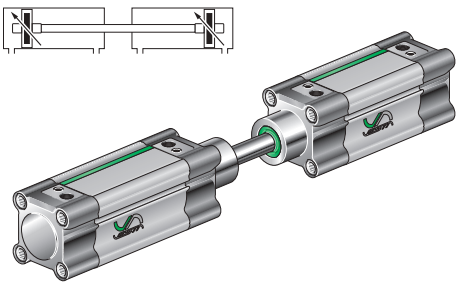
Bore *Alesaggio*	A	B	C	D	E	Code *Codice*
32	196	248	26	20	8	NWT 32/... CNP...
40	218	278	30	24	8	NWT 40/... CNP...
50	220	294	37	32	8	NWT 50/... CNP...
63	250	324	37	32	8	NWT 63/... CNP...
80	264	356	46	40	8	NWT 80/... CNP...
100	284	386	51	40	8	NWT 100/... CNP...
125	330	460	65	54*	10	NWT 125/... CNP...

For other dimensions please see **NWT** standard cylinder
Per altre dimensioni vedere cilindri **NWT** *standard*

*** = on request / *su richiesta D=48***

NWT ... CNF ... F

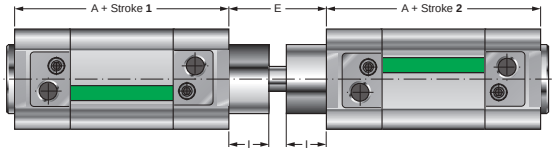
FRONT OPPOSED
CONTRAPPOSTI ANTERIORI



NWT □□ / □□□ - □□□ CNF □□ **VS** Viton rod seal / *Guarnizione dello stelo in Viton*
VV Viton all seals / *Tutte le guarnizioni in Viton*

Bore / *Alesaggio*
(mm):
1° Stroke *Corsa* (mm):
2° Stroke /*Corsa* (mm):

Ø32 .... **32**
Ø40 .... **40**
Ø50 .... **50**
Ø63 .... **63**
Ø80 .... **80**
Ø100 ...**100**
Ø125 ...**125**

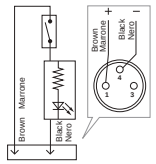


Bore *Alesaggio*	A	E	I	Code *Codice*
32	94	48	18	NWT 32/... CNF...
40	105	54	21,5	NWT 40/... CNF...
50	106	69	28	NWT 50/... CNF...
63	121	69	28,5	NWT 63/... CNF...
80	128	86	34,5	NWT 80/... CNF...
100	138	91	38	NWT 100/... CNF...
125	160	100	35	NWT 125/... CNF...

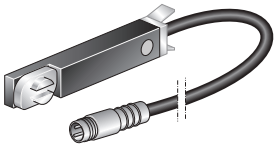
For other dimensions please see **NWT** standard cylinder
Per altre dimensioni vedere cilindri **NWT** *standard*

MAGNETIC SWITCHES FOR NWT CYLINDERS / *FINECORSA MAGNETICI PER CILINDRI NWT*

circuit / *circuito*

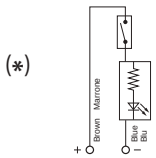


WITH CONNECTOR
CON CONNETTORE
VNCR2
REED



Cable standard lenght / *Lunghezza cavo standard:* 300 mm

circuit / *circuito*

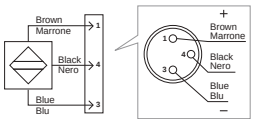


(*) WITH DIRECT CABLE
CON CAVO DIRETTO
VNPR2
REED

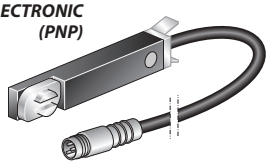


Cable standard lenght / *Lunghezza cavo standard:* 3000 mm

circuit / *circuito*

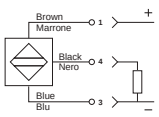


WITH CONNECTOR 3 POLES
CON CONNETTORE 3 POLI
VNCE3
ELECTRONIC (PNP)

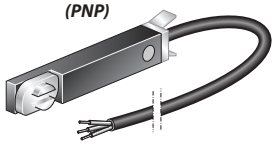


Cable standard lenght / *Lunghezza cavo standard:* 300 mm

circuit / *circuito*



WITH DIRECT CABLE 3 POLES
CON CAVO DIRETTO 3 POLI
VNPE3
ELECTRONIC (PNP)

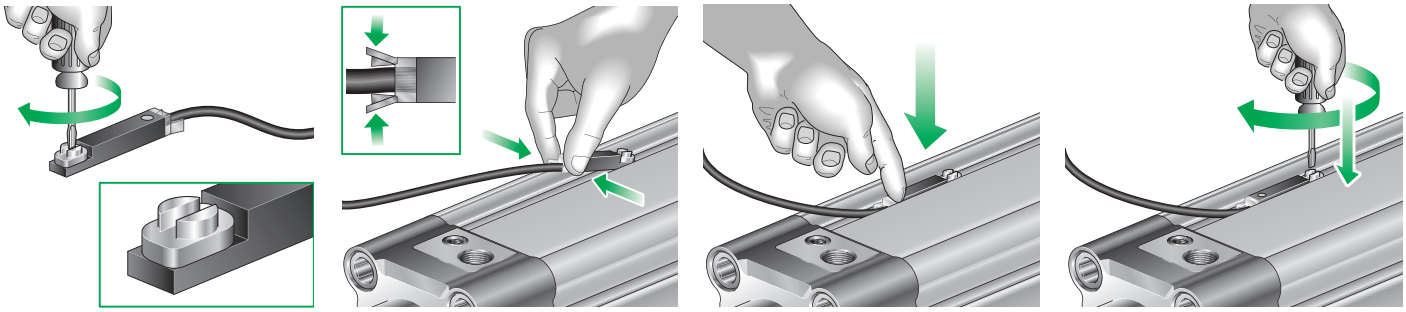


Cable standard lenght / *Lunghezza cavo standard:* 3000 mm

(*) Available on request **VNPR2** for series connection of switches, order code **VNPR3**.
A richiesta é fornibile il sensore **VNPR2** *adatto al collegamento in serie di più sensori, con codice* **VNPR3**.

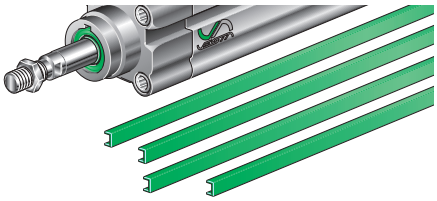
Code *Codice*	Voltage range *Tensione max*	Switching current *Corrente a 25 °C*	Switching capacity *Potenza Induttiva*	Degree of protection *Grado di protezione*	Working temperature *Temperatura di lavoro*	ON time *Tempo di inserzione*	OFF time *Tempo di disinserzione*	Electric life *Vita elettrica*	Contact resistance *Resistenza di contatto*	Contact function *Contatto*
	V	mA	VA		°C	-	-	impulsi	Ω	
VNCR2	3-48 AC-DC	100	6	IP67	-20 ÷ +85	0,5 msec	0,1 msec	10^7	0,1	
VNPR2	3-48 AC-DC	100	6	IP67	-20 ÷ +85	0,5 msec	0,1 msec	10^7	0,1	
VNCE3	6-30 DC	200	4	IP67	-20 ÷ +85	0,8 µsec	0,3 µsec	10^9	-	
VNPE3	6-30 DC	200	4	IP67	-20 ÷ +85	0,8 µsec	0,3 µsec	10^9	-	

MAGNETIC SWITCH POSITIONING / *POSIZIONAMENTO DEI FINECORSA MAGNETICI*



SPARE PARTS FOR NWT CYLINDERS / *RICAMBI PER CILINDRI NWT*

PLASTIC SLOT COVER
BANDELLA DI COPERTURA CAVA
NWT-PCC



EXTENSION FOR MAGNETIC SWITCH CABLE
PROLUNGA CAVO SENSORE MAGNETICO
VSC-P3 030

3 poles, for reed or electronic switch
3 fili, per sensore reed od elettronico

Standard lenght / *Lunghezza standard*

3000 mm

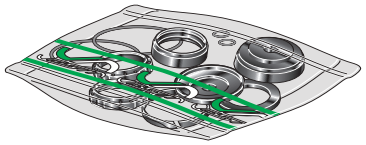


Seals kit code = **Cylinder code** + **Bore** + **Versions** + **- SG**:
(The kit includes all seals).

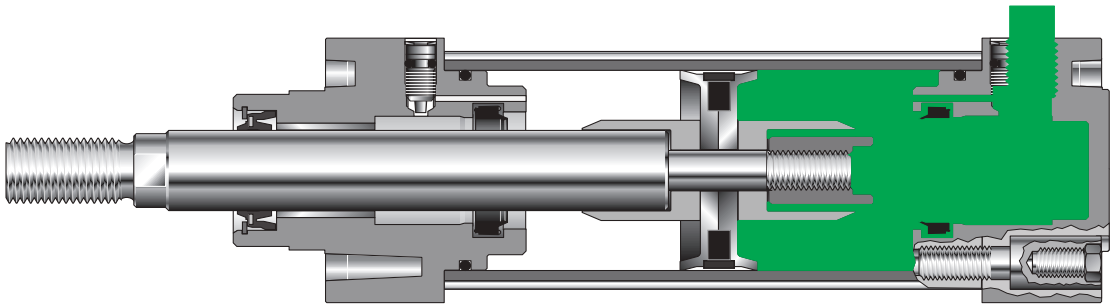
Codice del kit = ***Codice del cilindro*** + ***Alesaggio*** + ***Versioni*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **NWT 63 P VS - SG**

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO
..... - SG



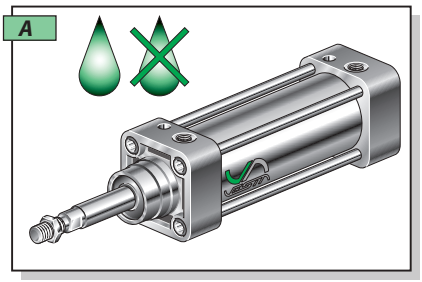
CYLINDERS ISO 15552 TECHNICAL FEATURES / *CARATTERISTICHE TECNICHE CILINDRI ISO 15552*



VESTA cylinders tie rods version **XJC** series are available from 160 to 200 mm bores.
The cylinders are built in accordance with ISO-VDMA standards and are available in double acting version with magnetic piston in a wide range of standard strokes.
Stroke tollerance follows ISO 15552 standard.

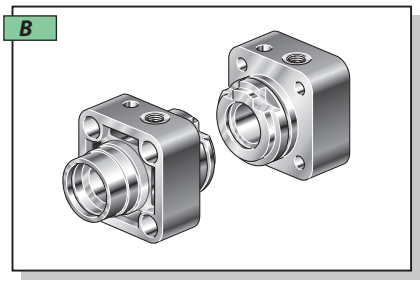
*I cilindri serie **XJC** a tiranti sono fornibili negli alesaggi dal 160 al 200.*
Questi cilindri sono costruiti secondo le norme ISO-VDMA e sono disponibili nella versione a doppio effetto con pistone magnetico, in una vasta gamma di corse standard. Le tolleranze sulle corse dei cilindri sono conformi alla normativa ISO 15552.

A



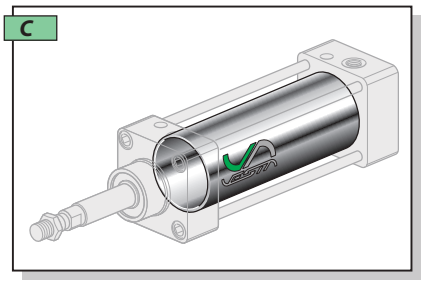
Lubrication not required.
Possibilità di funzionamento continuo privo di lubrificazione.

B



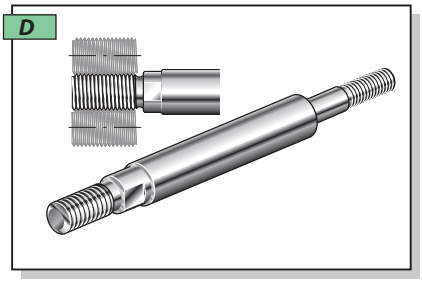
Caps in a light aluminium alloy.
Le testate sono in lega leggera di alluminio.

C



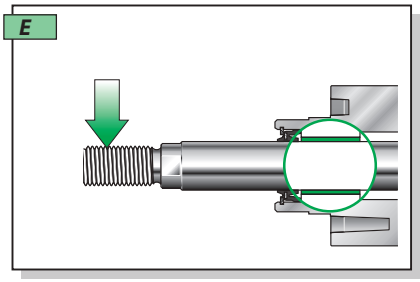
Barrel in anodized aluminium tube.
Le camicie sono in lega di alluminio anodizzate.

D



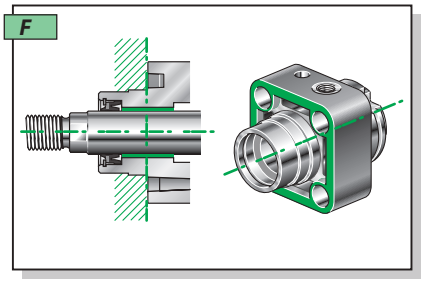
Piston rods in chromium-plated steel.
Steli in acciaio cromato.

E



Self lubricating bearing in a copper-steel alloy, with teflon covering.
Boccole autolubrificanti in acciaio ramato con deposito in Teflon.

F



Machined to get centering and surface finishing.
Piani di riferimento e centraggi sono ottenuti con lavorazione meccanica.

TECHNICAL FEATURES

End caps	Aluminium alloy.
Piston rod	Chromium-plated steel, on request stainless steel X5CrNi 1810.
Tie rods	Stainless steel.
Barrel	Anodized aluminium tube.
Seals	NBR rubber.

Cushioning	Pneumatic adjusting cushions.
Environment temperature range	-10 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	filtered air.
Max operating pressure	10 bar.

CARATTERISTICHE TECNICHE

Testate	*Lega di alluminio.*
Stelo	*Acciaio cromato, a richiesta acciaio inox X5CrNi 1810.*
Tiranti	*Acciaio inox.*
Camicia	*Tubo di alluminio.*
Guarnizioni	*Tutte in NBR.*

Ammortizzatori	*Pneumatici regolabili progressivi.*
Temperatura ambiente	*-10 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

PNEUMATIC CYLINDERS, STANDARD VDMA - ISO 15552
CILINDRI PNEUMATICI, VDMA - ISO 15552

SERIE **XJC**

With magnetic piston / *Con pistone magnetico*

XJC □□□ / □□□ □ □□

Bore / *Alesaggio* (mm):
Ø160 ..... **160**
Ø200 ..... **200**
Ø250 ..... **250**
Ø320 ..... **320**

Stroke
Corsa (mm):

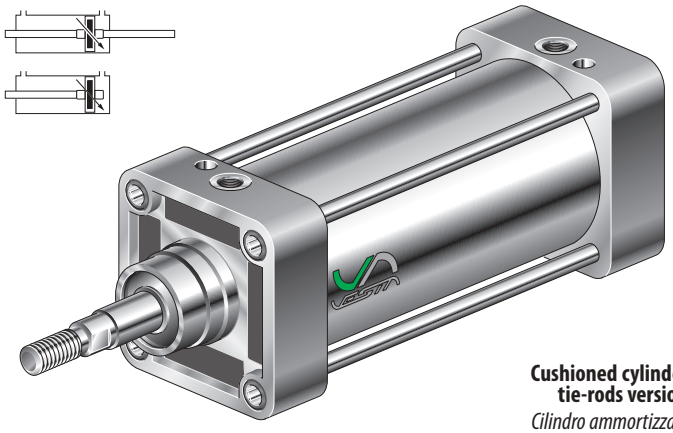
Through rod cylinder **P**
Cilindro stelo passante

VS Viton rod seal
Guarnizione dello stelo in Viton

VV Viton all seal
Tutte le guarnizioni in Viton

TN2 Multi-thrust tandem (Ø160 - Ø200)
Tandem multispinta (Ø160 - Ø200)

SS Stainless Steel X5 Cr Ni 18-10 piston-rod
Stelo in Acciaio Inox X5 Cr Ni 18-10



Cushioned cylinder, tie-rods version.
Cilindro ammortizzato, esecuzione a tiranti.

ISO 15552 cylinder fixing see:
Fissaggi per cilindri ISO 15552 vedi:
..... **Pag. A-22 ÷ A-26**

Features of reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-26**

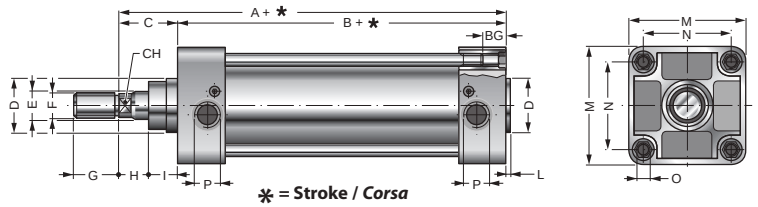
Effective cushion length
Lunghezza utile ammortizzatore

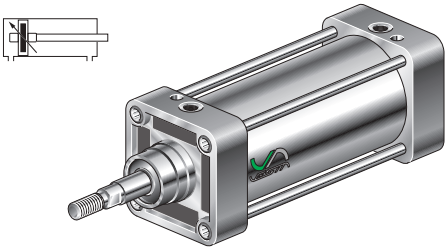
Bore *Alesaggio*	Length *Lunghezza*
160	45
200	45
250	45
320	45

Standard stroke / *Corse Standard*

Bore *Alesaggio*	25	50	80	100	125	160	200	250	300	350	400	450	500	600	700	800	900	1000
160	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
200	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
250		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
320		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

SINGLE ROD
CILINDRO BASE STELO SEMPLICE
XJC ... /...

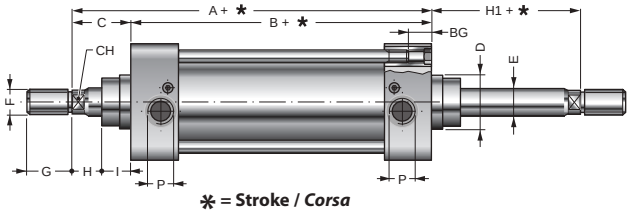


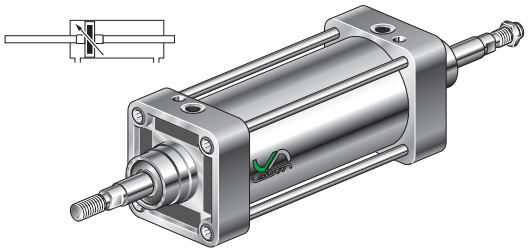


Bore *Alesaggio*	A	B	C	ØD	ØE	ØF	G	H	I	L	M	N	ØO	ØP	BG	CH	Code *Codice*
160	260	180	80	65	40	M36x2	72	35	45	5	180	140	M16	G3/4	22	36	**XJC 160/...**
200	275	180	95	75	40	M36x2	72	50	45	5	220	175	M16	G3/4	22	36	**XJC 200/...**
250	305	200	105	90	50	M42x2	84	30	75	8	270	220	M20	G1	30	46	**XJC 250/...**
320	340	220	120	110	63	M48x2	96	30	90	10	345	270	M24	G1	30	55	**XJC 320/...**

* On request / *a richiesta* : F = M24x2, e G = 48.

THROUGH ROD
STELO PASSANTE
XJC ... /... P

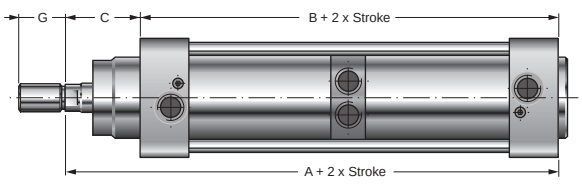


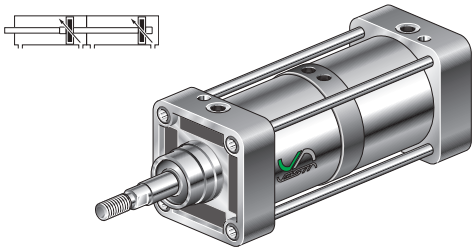


Bore *Alesaggio*	A	B	C	ØD	ØE	ØF	G	H	H1	I	M	N	ØO	ØP	BG	CH	Code *Codice*
160	260	180	80	65	40	M36x2	72	35	80	45	180	140	M16	G3/4	22	36	**XJC 160/... P**
200	275	180	95	75	40	M36x2	72	50	95	45	220	175	M16	G3/4	22	36	**XJC 200/... P**
250	305	200	105	90	50	M42x2	84	30	105	75	270	220	M20	G1	30	46	**XJC 250/... P**
320	340	220	120	110	63	M48x2	96	30	120	90	345	270	M24	G1	30	55	**XJC 320/... P**

* On request / *a richiesta* : F = M24x2, e G = 48.

MULTI-THRUST TANDEM
TANDEM MULTISPINTA
XJC ... TN2 ...





Bore *Alesaggio*	A	B	C	G	Code *Codice*
160	356	276	80	72	**XJC 160/... TN...**
200	395	300	95	72	**XJC 200/... TN...**
250	305	200	105	84	**XJC 250/... TN...**
320	340	220	120	96	**XJC 320/... TN...**

For other dimensions please see **XJC** standard cylinder
Per altre dimensioni vedere cilindri **XJC** *standard*

FIXING ACCESSORIES / *ACCESSORI DI FISSAGGIO PER CILINDRI ISO 15552*

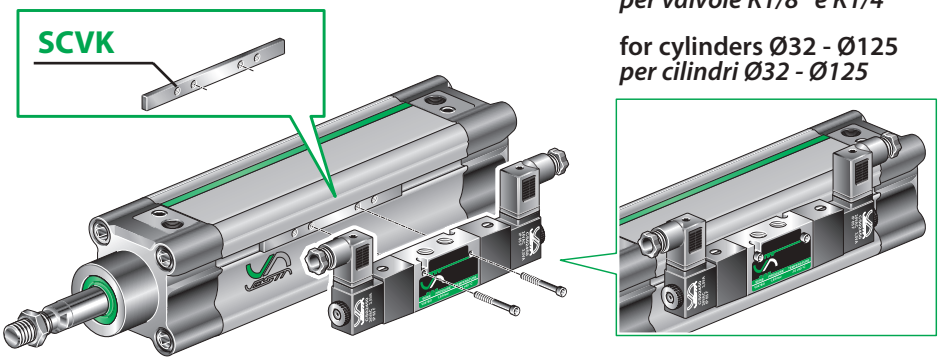
Note: the fixing screws are not included in the supply of the fitting / *le viti di fissaggio non sono comprese nella fornitura dell'accessorio.*

SCVK

BRACKET FOR ASSEMBLING CYLINDER-VALVE
FISSAGGIO VALVOLA AL CILINDRO

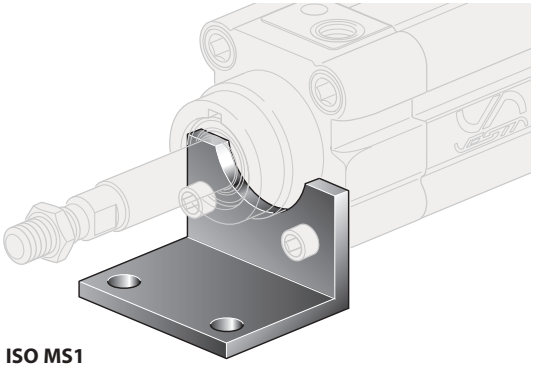
for valves K1/8" and K1/4"
per valvole K1/8" e K1/4"

for cylinders Ø32 - Ø125
per cilindri Ø32 - Ø125

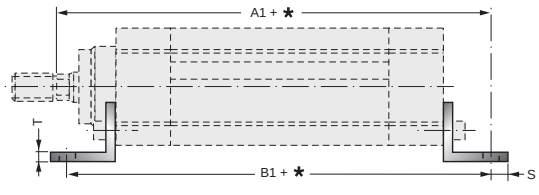


XP/..

FOOT MOUNTING
MONTAGGIO A PIEDINI



REF. **ISO MS1**



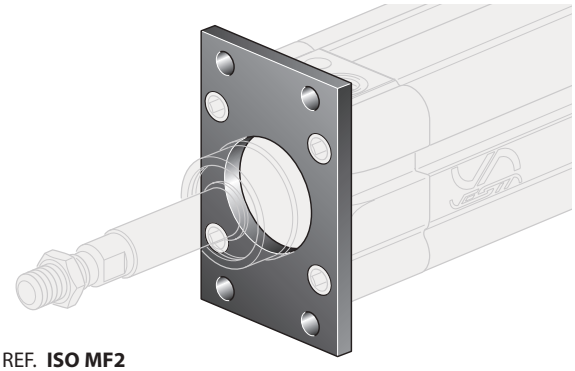
Bore *Alesaggio*	A1	B1	M	ØQ	R	S	T	U	Code *Codice*
32	144	142	45	7	32	11	4	32	XP/32
40	163	161	52	9	36	15	4	36	XP/40
50	175	170	65	9	45	15	5	45	XP/50
63	190	185	75	9	50	15	5	50	XP/63
80	215	210	95	12	63	20	6	63	XP/80
100	230	220	115	14	71	25	6	75	XP/100
125	270	250	140	16	90	15	8	90	XP/125
160	320	300	180	18	115	20	9	115	XP/160
200	345	320	220	22	135	50	12	135	XP/200

✱ = Stroke / *Corsa*

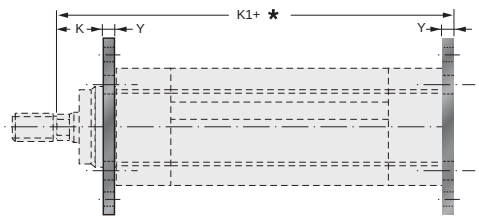
Cilinders fixing for Ø 250 and Ø 320 on request
Fissaggi per cilindri Ø 250 e Ø320 a richiesta

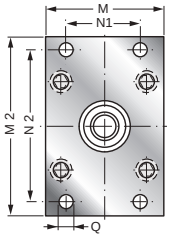
XFL/..

FLANGE MOUNTING
MONTAGGIO A FLANGIA



REF. **ISO MF2**





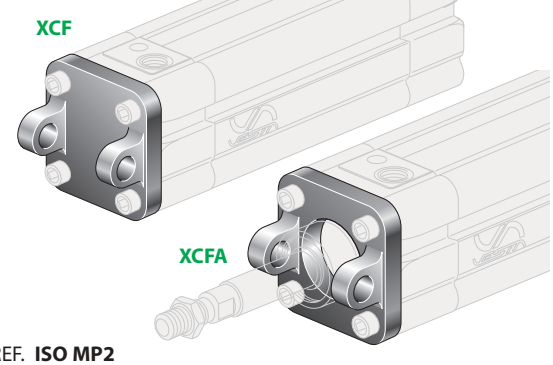
Bore *Alesaggio*	K	K1	M	M2	N1	N2	ØQ	Y	Code *Codice*
32	16	130	45	80	32	64	7	10	XFL/32
40	20	145	52	90	36	72	9	10	XFL/40
50	25	155	65	110	45	90	9	12	XFL/50
63	25	170	75	120	50	100	9	12	XFL/63
80	30	190	95	150	63	126	12	16	XFL/80
100	35	205	115	170	75	150	14	16	XFL/100
125	45	245	140	205	90	180	16	20	XFL/125
160	60	280	180	260	115	230	18	20	XFL/160
200	70	300	220	300	135	270	22	25	XFL/200

✱ = Stroke / *Corsa*

Cilinders fixing for Ø 250 and Ø 320 on request
Fissaggi per cilindri Ø 250 e Ø320 a richiesta

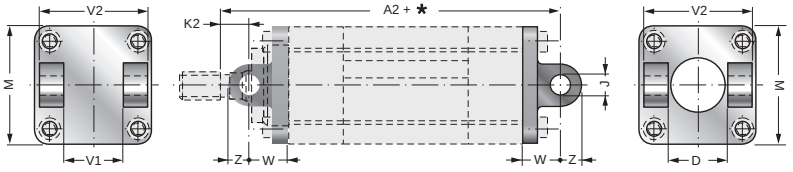
XCF . /..

FRONT AND REAR CLEVIS (FEMALE) MOUNTING
MONTAGGIO CERNIERA FEMMINA ANT. E POST.



REF. **ISO MP2**

XCF



✱ = Stroke / *Corsa*

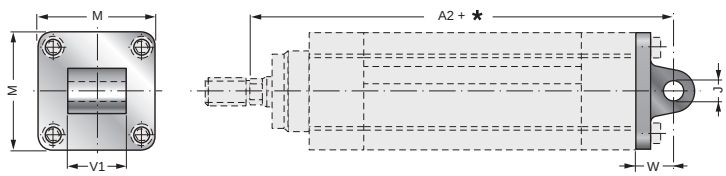
XCFA

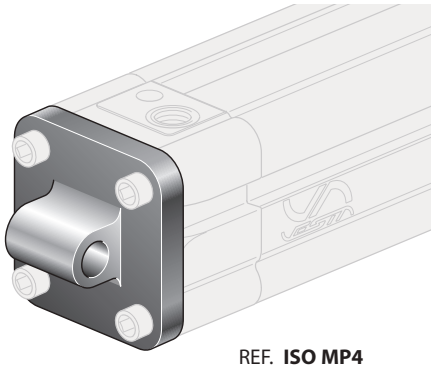
Bore *Alesaggio*	A2	ØJ^{H9}	K2	M	V1	V2	D	W	Z	Code front *Cod. ant.*	Code rear *Cod. post.*
32	142	10	4	45	26	45	30	22	11	XCFA/32	XCF/32
40	160	12	5	52	28	52	35	25	13	XCFA/40	XCF/40
50	170	12	10	65	32	60	40	27	13	XCFA/50	XCF/50
63	190	16	5	75	40	70	45	32	17	XCFA/63	XCF/63
80	210	16	10	95	50	90	45	36	17	XCFA/80	XCF/80
100	230	20	10	115	60	110	55	41	21	XCFA/100	XCF/100
125	275	25	15	140	70	130	-	50	26	XCFA/125	XCF/125
160	315	30	25	180	90	170	-	55	31	XCFA/160	XCF/160
200	335	30	35	220	90	170	-	60	31	XCFA/200	XCF/200

Cilinders fixing for Ø 250 and Ø 320 on request
Fissaggi per cilindri Ø 250 e Ø320 a richiesta

FIXING ACCESSORIES / *ACCESSORI DI FISSAGGIO PER CILINDRI ISO 15552*

CLEVIS (MALE) MOUNTING *MONTAGGIO A CONTROCERNIERA MASCHIO* — XCM/..





✱ = Stroke / *Corsa*

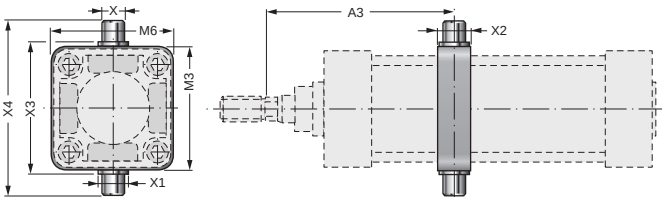
Cilinders fixing for Ø 250 and Ø 320 on request

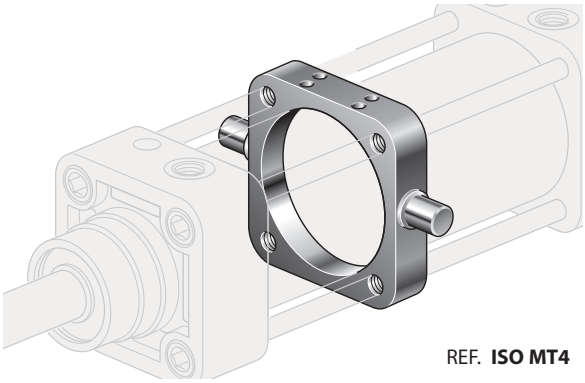
Fissaggi per cilindri Ø 250 e Ø320 a richiesta

Bore *Alesaggio*	A2	ØJ^{H7}	M	V1	W	Code *Codice*
32	142	10	45	26	22	XCM/32
40	160	12	55	28	25	XCM/40
50	170	12	65	32	27	XCM/50
63	190	16	75	40	32	XCM/63
80	210	16	95	50	36	XCM/80
100	230	20	115	60	41	XCM/100
125	275	25	140	70	50	XCM/125
160	315	30	180	90	55	XCM/160
200	335	30	220	90	60	XCM/200

REF. **ISO MP4**

ADJUSTABLE TIE ROD TRUNNION MOUNTING *CERNIERA INTERMEDIA REGISTRABILE PER TIRANTI* — XCIR/..





Available not adjustable trunnion **XCI ...** series for tie rods cylinders.
Specify dimension **A3** when trunnion is supplied assembled.

E' disponibile anche la cerniera intermedia fissa **XCI ...** *per la versione a tiranti, bisogna quindi specificare la quota* **A3** *per la fornitura premontata sul cilindro richiesto.*

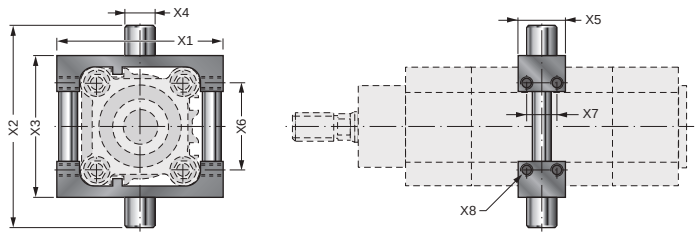
Cilinders fixing for Ø 250 and Ø 320 on request

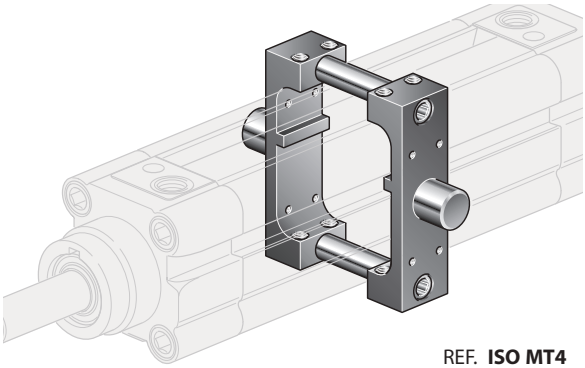
Fissaggi per cilindri Ø 250 e Ø320 a richiesta

Bore *Alesaggio*	A3 min.	A3 max.	M3	M6	ØX^{e9}	ØX1	X2	X3	X4	Code *Codice*
160	153	187+(✱)	190	190	32	45	40	200	264	XCIR/160
200	173	197+(✱)	240	240	32	45	40	250	314	XCIR/200

REF. **ISO MT4**

NWT ADJUSTABLE TRUNNION MOUNTING *CERNIERA INTERMEDIA REGISTRABILE PER **NWT*** — NWCIR/..



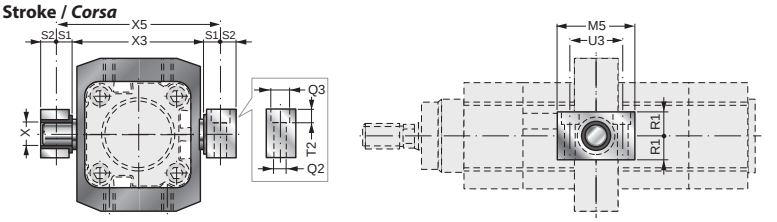


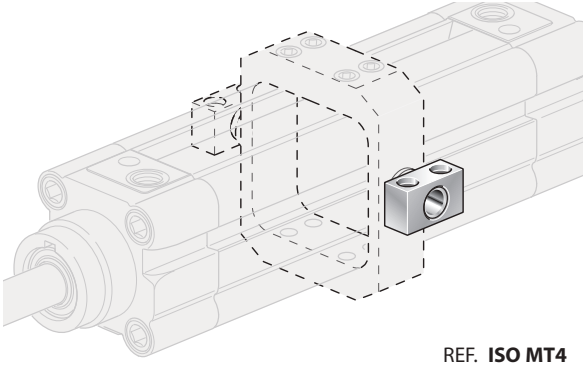
Bore *Alesaggio*	X1	X2	X3	ØX4^{e9}	X5	X6	X7	X8	Code *Codice*
32	64	80	50	12	20	32,5	12,4	M5	NWCIR/32
40	72	95	63	16	20	38	12,6	M5	NWCIR/40
50	88	107	75	16	25	46,6	16,2	M6	NWCIR/50
63	100	130	90	20	25	56,6	16,2	M6	NWCIR/63
80	120	150	110	20	25	72	16,2	M6	NWCIR/80
100	140	182	132	25	30	89	18	M8	NWCIR/100
125	166	210	160	25	40	110	26,8	M10	NWCIR/125

REF. **ISO MT4**

TRUNNION BEARING *SUPPORTI PER CERNIERA INTERMEDIA* — SU-CI/..

✱ = Stroke / *Corsa*





Bore *Alesaggio*	M5	ØQ2	ØQ3	R1	S1	S2	T2	U3	ØX	X3	X5	Code *Codice*
32	46	6,6	11	15	10,5	10,5	7	32	12	50	71	SU-CI/32
40	55	9	15	18	12	9	9	36	16	63	87	SU-CI/40
50	55	9	15	18	12	9	9	36	16	75	101	SU-CI/50
63	65	11	18	20	13	13,5	11	42	20	90	116	SU-CI/63
80	65	11	18	20	13	13,5	11	42	20	110	138	SU-CI/80
100	75	13	20	25	16	15,5	13	50	25	132	165	SU-CI/100
125	75	13	20	25	16	15,5	13	50	25	160	192	SU-CI/125
160	92	18	26	30	22,5	19,5	17	60	32	200	245	SU-CI/160
200	92	17	26	30	22,5	19,5	17	60	32	250	295	SU-CI/200

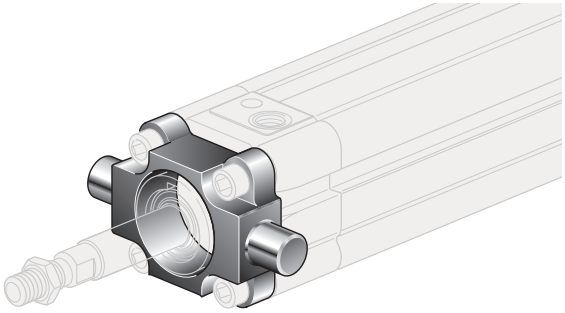
REF. **ISO MT4**

FIXING ACCESSORIES / *ACCESSORI DI FISSAGGIO PER CILINDRI ISO 15552*

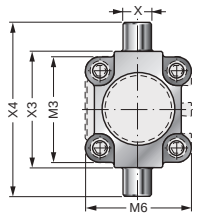
Note: the fixing screws are not included in the supply of the fittings / *le viti di fissaggio non sono comprese nella fornitura degli accessori.*

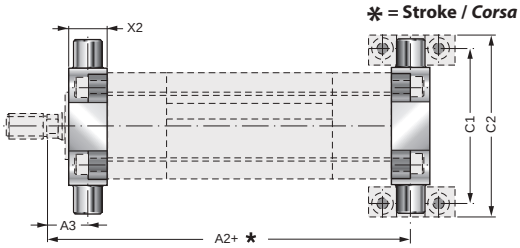
XCBF/..

FLOATING FRONT HINGE MOUNTING
MONTAGGIO CERNIERA OSCILLANTE ANTERIORE



REF. **ISO MT4**



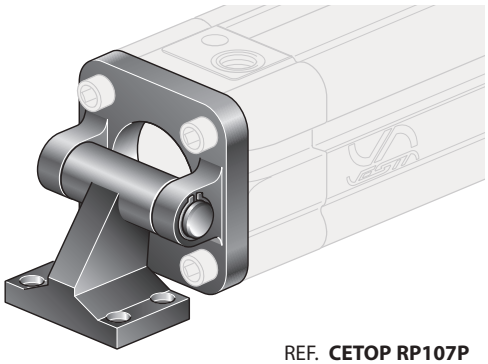


✱ = Stroke / *Corsa*

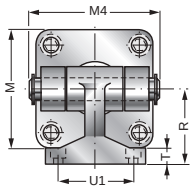
Bore *Alesaggio*	A2	A3	C1	C2	M3	M6	ØX^{e9}	X2	X3	X4	Code *Codice*
32	128	18	71	86	45	45	12	15	50	74	XCBF/32
40	145	20	87	105	54	54	16	20	63	95	XCBF/40
50	155	25	99	117	64	64	16	20	75	107	XCBF/50
63	170	25	16	136	75	75	20	25	90	130	XCBF/63
80	188	32	36	156	93	93	20	25	110	150	XCBF/80
100	208	36	64	189	110	110	25	30	132	182	XCBF/100

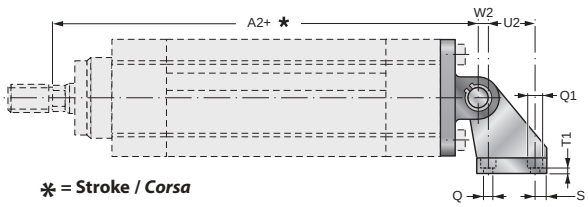
XAS/..

REAR HINGE HORIZONTAL MOUNTING
MONTAGGIO A CONTROCERNIERA ORIZZONTALE



REF. **CETOP RP107P**





✱ = Stroke / *Corsa*

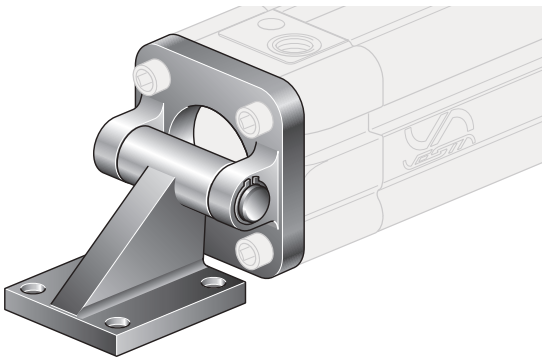
Bore *Alesaggio*	A2	M	M4	ØQ	ØQ1	R	S	T	T1	U1	U2	W2	Code *Codice*
32	142	45	54	7	11	32	6,5	8	6,5	38	18	3	XAS/32
40	160	52	63	7	11	36	6,5	10	8,5	41	22	2	XAS/40
50	170	65	71	9	15	45	7,5	12	10,5	50	30	3	XAS/50
63	190	75	81	9	15	50	7,5	14	12,5	52	35	2	XAS/63
80	210	95	101	11	18	63	10	14	11,5	66	40	7	XAS/80
100	230	115	123	11	18	71	10	17	14,5	76	50	5	XAS/100
125	275	140	141	14	20	90	15	20	17	94	60	10	XAS/125
160	315	180	182	14	20	115	19	25	21	118	88	9	XAS/160
200	335	220	182	18	26	135	20	30	26	122	90	15	XAS/200

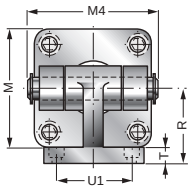
Cilinders fixing for Ø 250 and Ø 320 on request

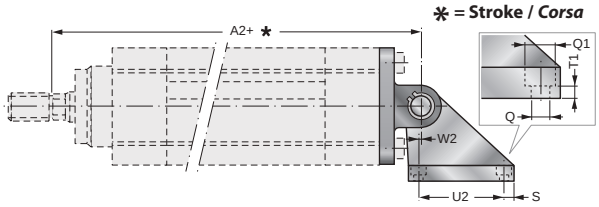
Fissaggi per cilindri Ø 250 e Ø320 a richiesta

XASV/..

REAR HINGE HORIZONTAL MOUNTING
MONTAGGIO A CONTROCERNIERA ORIZZONTALE





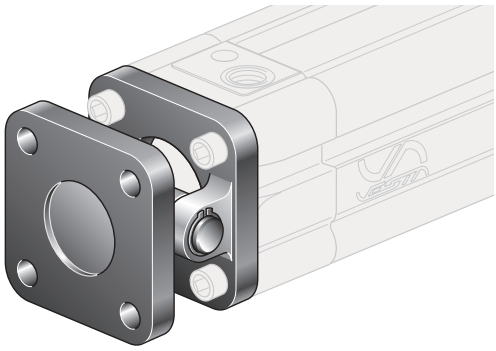


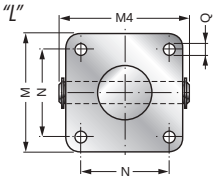
✱ = Stroke / *Corsa*

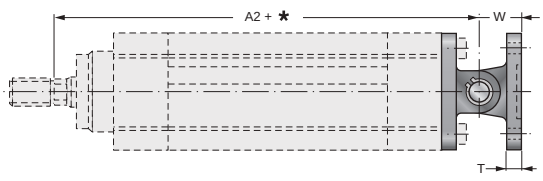
Bore *Alesaggio*	A2	M	M4	ØQ	ØQ1	R	S	T	T1	U1	U2	W2	Code *Codice*
32	142	45	54	7	11	32	8	10	5	32,5	32,5	0	XASV/32
40	160	52	63	7	11	36	8,5	10	5	38	38	0	XASV/40
50	170	65	71	9	15	45	10	12	5	46,5	46,5	0	XASV/50
63	190	75	81	9	15	50	10	12	5	56,5	56,5	0	XASV/63
80	210	95	101	11	18	63	12,5	16	6	72	72	0	XASV/80
100	230	115	123	11	18	73	13	16	6	89	89	0	XASV/100
125	275	140	141	14	-	90	16,5	16	-	50	70	-40	XASV/125
160	315	180	182	18	-	140	22	20	-	63	110	-50	XASV/160
200	335	220	182	18	-	140	22	20	-	63	110	-50	XASV/200

XANL/..

REAR HINGE VERTICAL MOUNTING "L" SERIES
MONTAGGIO A CONTROCERNIERA VERTICALE SERIE "L"







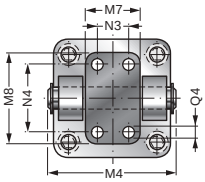
✱ = Stroke / *Corsa*

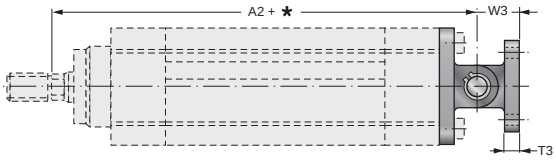
Bore *Alesaggio*	A2	M	M4	N	ØQ	T	W	Code *Codice*
32	142	45	54	32,5	7	10	22	XANL/32
40	160	52	63	38	7	10	25	XANL/40
50	170	65	71	46,5	9	12	27	XANL/50
63	190	75	81	56,5	9	12	32	XANL/63
80	210	95	101	72	11	16	36	XANL/80
100	230	115	123	89	11	16	41	XANL/100
125	275	140	141	110	14	20	50	XANL/125
160	315	180	182	140	18	20	55	XANL/160
200	335	220	182	175	18	25	60	XANL/200

FIXING ACCESSORIES / *ACCESSORI DI FISSAGGIO PER CILINDRI ISO 15552*

REAR HINGE VERTICAL MOUNTING "N" SERIES — XANN/..

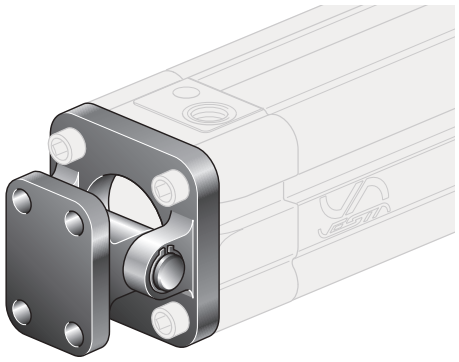
MONTAGGIO A CONTROCERNIERA VERTICALE SERIE "N"





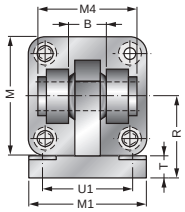
✱ = Stroke / *Corsa*

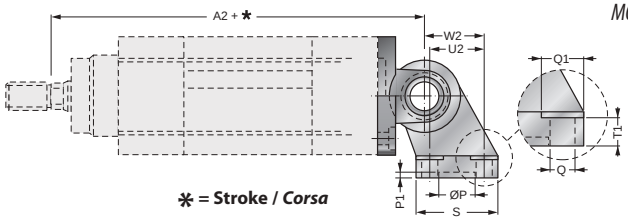
Bore *Alesaggio*	A2	M4	M7	M8	N3	N4	ØQ4	T3	W3	Code *Codice*
32	142	54	25	40	-	28	7	8	18	XANN/32
40	160	63	28	52	16	38	9	10	26	XANN/40
50	170	71	32	52	16	38	9	10	26	XANN/50
63	190	81	40	75	25	54	11	12	34	XANN/63
80	210	101	50	75	25	54	11	12	34	XANN/80
100	230	123	60	115	32	90	14	16	41	XANN/100
125	275	141	70	115	32	90	14	16	41	XANN/125
160	315	182	90	180	43	150	18	20	55	XANN/160
200	335	182	90	180	43	150	18	20	55	XANN/200



REAR HINGE MOUNTING WITH NARROW ROD EYE — XAS-SN/..

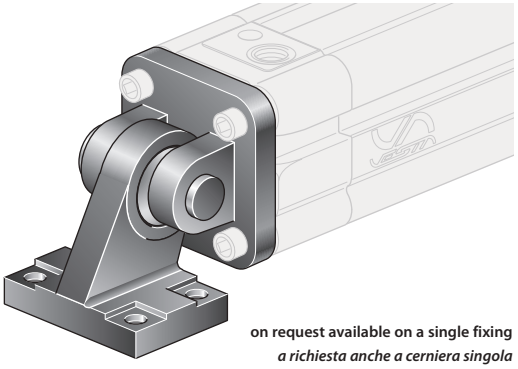
MONTAGGIO A CONTROCERNIERA SNODATA STRETTA





✱ = Stroke / *Corsa*

Bore *Alesaggio*	A2	B	M	M1	M4	ØP	P1	ØQ	ØQ1	R	S	T	T1	U1	U2	W2	Code *Codice*
32	142	14	45	51	41	20	3	6,6	11	32	31	10	8,5	38	18	21	XAS-SN/32
40	160	16	52	54	48	20	3	6,6	11	36	35	10	8,5	41	22	24	XAS-SN/40
50	170	21	65	65	54	20	3	9	15	45	45	12	10,5	50	30	33	XAS-SN/50
63	190	21	75	67	60	20	3	9	15	50	50	12	10,5	52	35	37	XAS-SN/63
80	210	25	95	86	75	20	3	11	18	63	60	14	11,5	66	40	47	XAS-SN/80
100	230	25	115	96	85	20	3	11	18	71	70	15	12,5	76	50	55	XAS-SN/100
125	275	37	140	124	110	20	3	13,5	20	90	90	20	17	94	60	70	XAS-SN/125

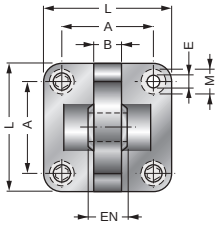


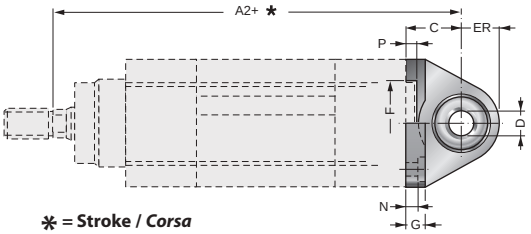
on request available on a single fixing

a richiesta anche a cerniera singola

CLEVIS (MALE) WITH ROD EYE — XCM-SN-AC/..

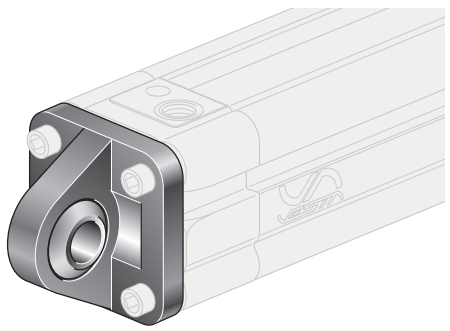
CERNIERA MASCHIO CON SNODO





✱ = Stroke / *Corsa*

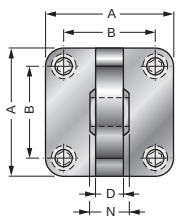
Bore *Alesaggio*	A2	A	B	C	ØD	EN	ER	F	G	E	L	M	N	P	Code *Codice*
32	142	32,5	10,5	22	10	14	15	30	10	6,6	45	10,5	5,5	5	XCM-SN-AC/32
40	160	38	12	25	12	16	18	35	10	6,6	55	11	5,5	5	XCM-SN-AC/40
50	170	46,5	15	27	16	21	20	40	10	9	65	15	6,5	5	XCM-SN-AC/50
63	190	56,5	15	32	16	21	23	45	12	9	75	15	6,5	5	XCM-SN-AC/63
80	210	72	18	36	20	25	27	45	14	11	95	18	10	5	XCM-SN-AC/80
100	230	89	18	41	20	25	30	55	16	11	115	18	10	5	XCM-SN-AC/100
125	275	110	25	50	30	37	40	60	20	13,5	140	20	10	7	XCM-SN-AC/125



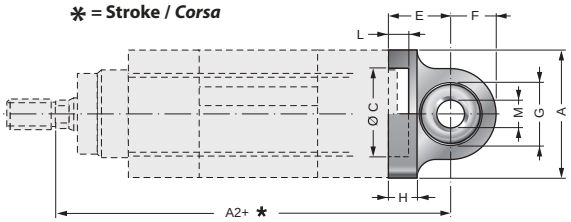
STEEL / *ACCIAIO*

CLEVIS (MALE) WITH ROD EYE — XCM-SN-AL/..

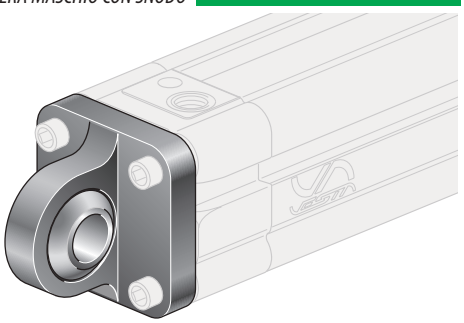
CERNIERA MASCHIO CON SNODO



✱ = Stroke / *Corsa*



Bore *Alesaggio*	A2	A	B	C	D	E	F	H	L	ØM	N	Code *Codice*
32	142	45	32,5	30	10,5	22	16	9	5	10	14	XCM-SN-AL/32
40	160	52	38	35	12	25	19	9	5	12	16	XCM-SN-AL/40
50	170	65	46,5	40	15	27	21	11	5	16	21	XCM-SN-AL/50
63	190	75	56,5	45	15	32	24	11	5	16	21	XCM-SN-AL/63
80	210	95	72	45	18	36	28,5	14	5	20	25	XCM-SN-AL/80
100	230	115	89	55	18	41	30	14	5	20	25	XCM-SN-AL/100
125	275	140	110	60	25	50	40	20	7	30	37	XCM-SN-AL/125
160	315	180	140	65	28	55	45	20	7	35	43	XCM-SN-AL/160
200	335	220	185	70	28	60	48	25	7	35	43	XCM-SN-AL/200

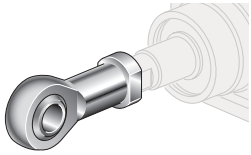


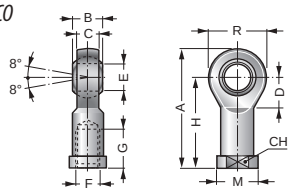
ALUMINIUM ALLOY / *LEGA DI ALLUMINIO*

Cilinders fixing for Ø 250 - Ø 320 on request - *Fissaggi per cilindri da Ø 250 a Ø320 a richiesta*

SNS/..

ROD EYE MOUNTING
SNODO SFERICO

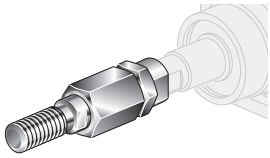


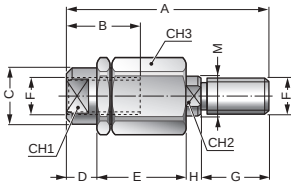


Bore *Alesaggio*	A	B	C	CH	D	ØE^{H7}	ØF	G	H	ØM	R	Code / *Codice*
32	57	14	10,5	17	15	10	M10x1,25	20	43	19	28	SNS/32
40	66	16	12	19	17	12	M12x1,25	22	50	22	32	SNS/40
50	85	21	15	22	23	16	M16x1,5	28	64	27	42	SNS/50-63
63	85	21	15	22	23	16	M16x1,5	28	64	27	42	SNS/50-63
80	102	25	18	30	27	20	M20x1,5	33	77	34	50	SNS/80-100
100	102	25	18	30	27	20	M20x1,5	33	77	34	50	SNS/80-100
125	145	37	25	41	36	30	M27x2	51	110	50	70	SNS/125
160	165	43	28	50	41	35	M36x2	56	125	58	80	SNS/160-200
200	165	43	28	50	41	35	M36x2	56	125	58	80	SNS/160-200

SAS/..

FLOATING JOINT TYPE "S"
SNODO AUTOALLINEANTE

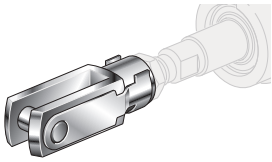


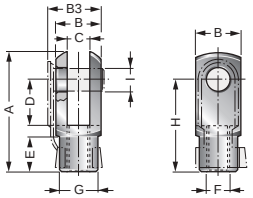


Bore *Alesaggio*	A	B	ØC	CH1	CH2	CH3	D	E	ØF	G	H	ØM	Code / *Codice*
32	71	20	22	19	12	30	11	35	M10x1,25	20	5	14	SAS/32
40	75	20	22	19	12	30	11	35	M12x1,25	24	5	14	SAS/40
50	103	32	32	30	20	41	9	54	M16x1,5	32	8	22	SAS/50-63
63	103	32	32	30	20	41	9	54	M16x1,5	32	8	22	SAS/50-63
80	119	40	32	30	20	41	17	54	M20x1,5	40	8	22	SAS/80-100
100	119	40	32	30	20	41	17	54	M20x1,5	40	8	22	SAS/80-100
125	-	-	-	-	-	-	-	-	-	-	-	-	-
160	-	-	-	-	-	-	-	-	-	-	-	-	-
200	-	-	-	-	-	-	-	-	-	-	-	-	-

FS..x..

CLEVIS (ROD) MOUNTING
FORCELLA STELO

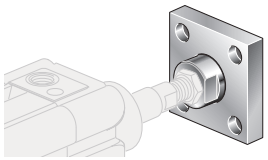


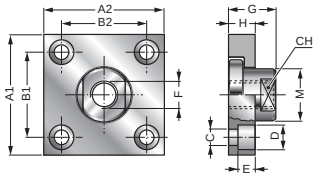


Bore *Alesaggio*	A	B	B3	C^{B12}	D	E	ØF	ØG	H	ØI^{H9}	Code / *Codice*
32	52	20	26	10	20	15	M10x1,25	18	40	10	FS/10x1,25
40	62	24	32	12	24	18	M12x1,25	20	48	12	FS/12x1,25
50	83	32	40	16	32	24	M16x1,5	26	64	16	FS/16x1,5
63	83	32	40	16	32	24	M16x1,5	26	64	16	FS/16x1,5
80	105	40	48	20	40	30	M20x1,5	34	80	20	FS/20x1,5
100	105	40	48	20	40	30	M20x1,5	34	80	20	FS/20x1,5
125	148	55	-	30	54	38	M27x2	48	110	30	FS/27x2
160	188	70	-	35	72	40	M36x2	60	144	35	FS/36x2
200	188	70	-	35	72	40	M36x2	60	144	35	FS/36x2

SAF/..

FLOATING JOINT TYPE "F"
FLANGIA AUTOALLINEANTE

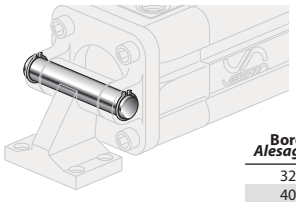


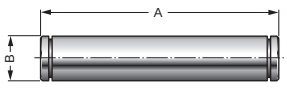


Bore *Alesaggio*	A1	A2	B1	B2	ØC	ØD	E	ØF	G	H	M	CH	Code / *Codice*
32	60	37	36	23	6,6	11	7	M10x1,25	24	15	20	17	SAF32
40	60	56	42	38	9	15	9	M12x1,25	30	20	25	19	SAF40
50	80	80	58	58	11	18	11	M16x1,5	32	20	30	24	SAF50-63
63	80	80	58	58	11	18	11	M16x1,5	32	20	30	24	SAF50-63
80	90	90	65	65	14	20	13	M20x1,5	35	20	40	36	SAF80-100
100	90	90	65	65	14	20	13	M20x1,5	35	20	40	36	SAF80-100
125	90	90	65	65	14	20	13	M27x2	35	20	40	36	SAF125
160	125	125	90	90	18	26	17	M36x2	55	30	60	50	SAF160
200	125	125	90	90	18	26	17	M36x2	55	30	60	50	SAF200

USC/..

CLEVIS PIN
PERNO CERNIERA

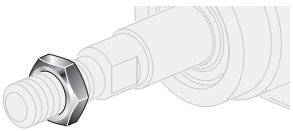


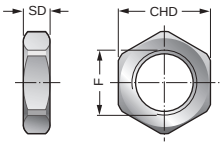


Bore *Alesaggio*	A	ØB^{f7}	Code *Codice*
32	54	10	USC/32
40	63	12	USC/40
50	71	12	USC/50
63	81	16	USC/63
80	101	16	USC/80
100	123	20	USC/100
125	141	25	USC/125
160	182	30	USC/160
200	182	30	USC/200

DM..x..

ROD NUT
DADO STELO





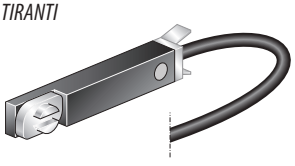
Bore *Alesaggio*	CHD	SD	F	Code *Codice*
32	17	6	M10x1,25	DM10x1,25
40	19	7	M12x1,25	DM12x1,25
50	24	8	M16x1,5	DM16x1,5
63	24	8	M16x1,5	DM16x1,5
80	30	9	M20x1,5	DM20x1,5
100	30	9	M20x1,5	DM20x1,5
125	41	12	M27x2	DM27x2
160	55	18	M36x2	DM36x2
200	55	18	M36x2	DM36x2

FIXING, MAGNETIC SWITCHES AND SEALS KIT FOR XJC CYLINDER / *ACCESSORI E RICAMBI PER CILINDRI XJC*

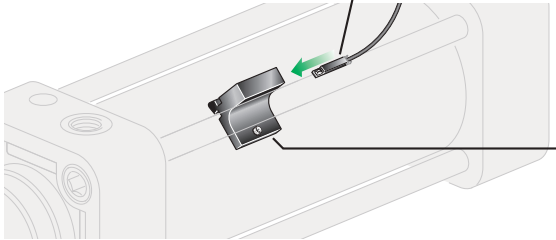
FJS ... VN

FIXING FOR TIE RODS MOUNTING
SUPPORTO PER MONTAGGIO SU TIRANTI

For tie rods cylinder
Per cilindri a tiranti



For magnetic switches features see:
Caratteristiche finecorsa magnetici vedi:
VNCR2, VNPR2, VNCE3, VNPE3.
Pag. A-19

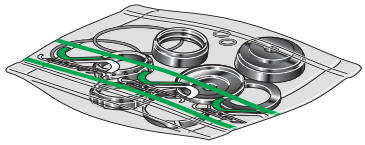


FJS ... VN

Bore *Alesaggio* (mm):
Ø 160 ... **160** Ø 200 ... **200**

..... - SG

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO



Seals kit code:
Cylinder code + **Bore** + **Versions** + **- SG**
(The kit includes all seals).

Codice del kit:
Codice del cilindro + ***Alesaggio*** + ***Versioni*** + **- SG**
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **XJC 160 P VS - SG**

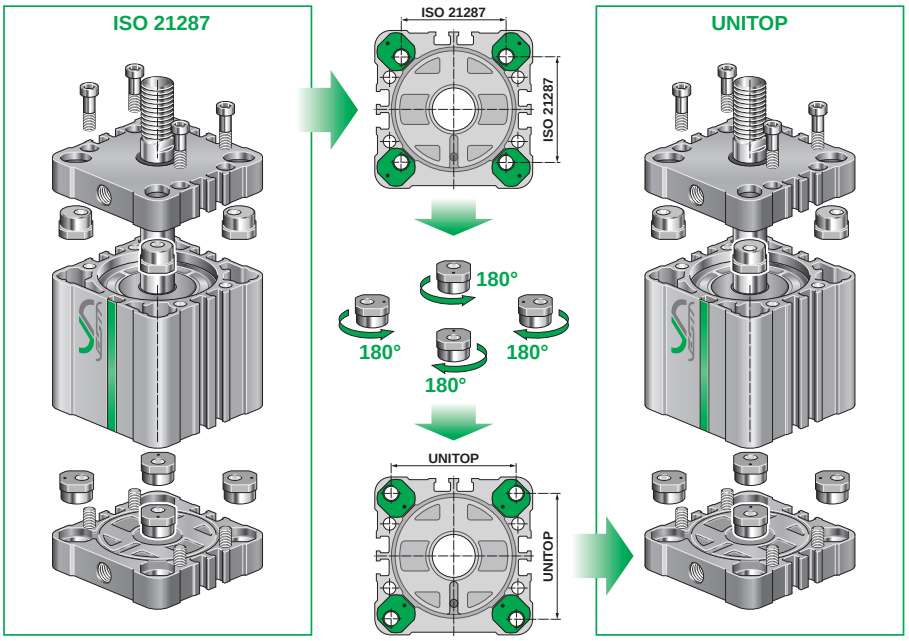
ISO 21287 - UNITOP COMPACT CYLINDERS SERIES
CILINDRI PNEUMATICI COMPATTI ISO 21287 - UNITOP

SERIE **NSK**

PATENTED
BREVETTATO

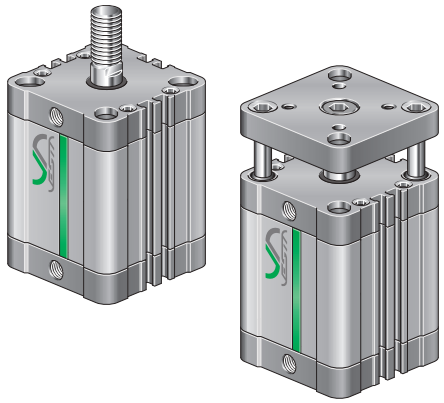
NSK series is a completely new range of Vesta compact cylinders. It has been worked out in one set of common basic components for a final assembly to ISO 21287 standard as well as UNITOP standard, which is covered by patent..
An extremely construction simplicity, new design and advanced technology make the compact series NSK highly competitive, able to meet even the hardest request of performance and reliability and give it a wide duty flexibility.
What also greatly significant is the advantage of a drastic reduction in construction elements, though saving the need of offering 2 standard version of product.

*Nuova gamma di cilindri compatti **NSK**, che con un unico set di componenti base è studiata per l'assemblaggio finale in versione standard ISO 21287 oppure in standard UNITOP (soluzione protetta da brevetto).*
L'estrema semplicità costruttiva, il nuovo design e la innovativa tecnologia di produzione, rendono la serie compatta NSK molto competitiva ed in grado di soddisfare le più esigenti richieste di prestazioni ed affidabilità, unite a grande flessibilità nel servizio.
Di particolare evidenza il vantaggio ottenuto con la drastica riduzione di elementi costruttivi, salvaguardando l'esigenza di offrire due versioni standard di prodotto.



TECHNICAL FEATURES NSK CYLINDERS / *CARATTERISTICHE TECNICHE CILINDRI NSK*

ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***



NSK □-□□-□□□-□-□-□□

ISO 21287 **I**
UNITOP **U**

Stroke / *Corsa* (mm):

Bore / *Alesaggio* (mm):
Ø16 ..... **16**
Ø20 ..... **20**
Ø25 ..... **25**
Ø32 ..... **32**
Ø40 ..... **40**
Ø50 ..... **50**
Ø63 ..... **63**
Ø80 ..... **80**
Ø100 ... **100**

Male thread **M**
Filetto maschio

Female thread **F**
Filetto femmina

VS High Temperature (-25 / +120 °C) Polyurethan rod seal
Guarnizione dello stelo in Poliuretano per alte Temperature (-25/+120°C)

VV High Temperature (-25 / +120 °C) Polyurethan all seal
Tutte le guarnizione in Poliuretano per alte Temperature (-25/+120°C)

SEA Single acting front spring
Semplice effetto molla anteriore

SEP Single acting rear spring
Semplice effetto molla posteriore

P Through rod cylinder
Cilindro stelo passante

AR Non rotating
Cilindro antirotazione

Characteristic magnetic switches see **GENERAL CATALOGUE - Pag. A-19; A-33.**
Caratteristiche finecorsa magnetico vedi ***CATALOGO GENERALE - Pag. A-19*****; A-33.**

TECHNICAL FEATURES

Head	Die-cast aluminium alloy.
Piston rod	Ø16 ÷ 25 stainless steel X5CrNi1810, Ø32 ÷ 100 stainless steel X20Cr13.
Barrel	Anodized profiled aluminium tube.
Seals	Polyurethan.
Cushioning	Mechanical buffers.

Ambient temperature range	-20 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +30 °C.
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	10 bar.

CARATTERISTICHE TECNICHE

Testate	*Pressofusione in lega di alluminio.*
Stelo	*Ø16 ÷ 25 acciaio inox X5CrNi1810, Ø32 ÷ 100 acciaio inox X20Cr13.*
Camicia	*Tubo profilato ed anodizzato d' alluminio.*
Guarnizioni	*In poliuretano.*
Ammortizzatori	*Smorzatore meccanici d' urto.*

Temperatura ambiente	*-20 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +30 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata*
Pressione max d'esercizio	*10 bar.*

NSK . - ..

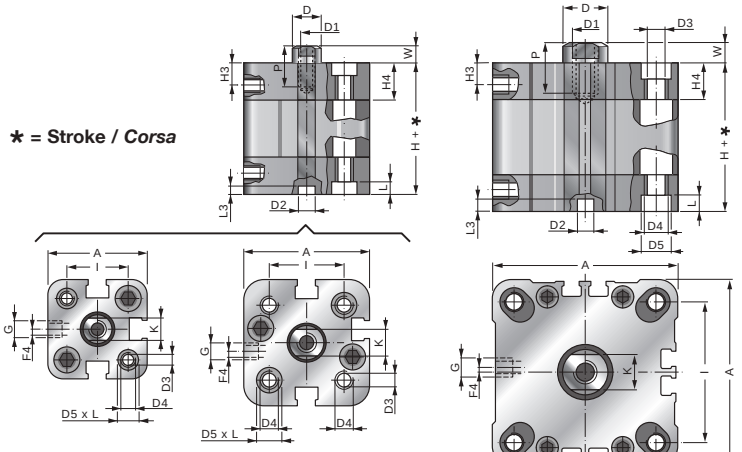
DOUBLE ACTING MAGNETIC CYLINDER
CILINDRO A DOPPIO EFFETTO MAGNETICO





ATEX versions see
Versioni **ATEX** *vedi .. P.* ***A-109***

*** = Stroke / *Corsa***



Ø 16 mm **Ø 20; 25 mm** **Ø 32; 40; 50; 63; 80; 100 mm**

STANDARD ISO 21287

Ø	A	ØD	ØD2	ØD3	ØD4	ØD5	G	H3	H4	I	K	L	L3	W	F4	H	Code / *Codice*
16	29,2	8	6	3,3	M4	6	M5	7	12,8	18	6	3,5	2,2	4,5	0	37 (±0,5)	**NSKI 16-...**
20	37	10	6	4,2	M5	7,5	M5	7	12,3	22	8	4,2	2,5	6	4	37 (±0,5)	**NSKI 20-...**
25	41	10	6	4,2	M5	7,5	M5	7,5	13,5	26	8	4,2	2,5	6	3	39 (±0,5)	**NSKI 25-...**
32	49,2	12	6	5,2	M6	9	G1/8	7,5	15	32,5	10	4,5	2	7	0	44 (±0,5)	**NSKI 32-...**
40	57,2	12	6	5,2	M6	9	G1/8	7,5	15	38	10	4,2	2	7	0	45 (±0,7)	**NSKI 40-...**
50	67	16	8	6,7	M8	10,5	G1/8	7,5	14,6	46,5	13	4,7	2,5	8	0	45 (±0,7)	**NSKI 50-...**
63	80	16	8	6,7	M8	10,5	G1/8	8	15,5	56,5	13	5,2	2,5	8	0	49 (±0,8)	**NSKI 63-...**
80	102,6*	20	8	8,5	M10	13,5	G1/8	9	17	72	17	5,2	2,5	10	0	54 (±0,8)	**NSKI 80-...**
100	124*	25	8	8,5	M10	13,5	G1/4*	10	20	89	22	5,2	3	10	0	67 (±1,0)	**NSKI 100-...**

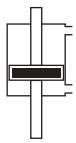
STANDARD UNITOP

Ø	A	ØD	ØD2	ØD3	ØD4	ØD5	G	H3	H4	I	K	L	L3	W	F4	H	Code / *Codice*
16	29,2	8	6	3,3	M4	6	M5	7	12,8	18	6	3,5	2,2	4,5	0	38 (±0,5	**NSKT 16-...**
20	37	10	6	4,2	M5	7,5	M5	7	12,3	22	8	4,2	2,5	4,5	4	38 (±0,5)	**NSKT 20-...**
25	41	10	6	4,2	M5	7,5	M5	7,5	13,5	26	8	4,2	2,5	5,5	3	39,5 (±0,5)	**NSKT 25-...**
32	49,2	12	6	5,2	M6	9	G1/8	7,5	15	32	10	4,5	2	6	0	44,5 (±0,5)	**NSKT 32-...**
40	57,2	12	6	5,2	M6	9	G1/8	7,5	15	42	10	4,2	2	6,5	0	45,5 (±0,7)	**NSKT 40-...**
50	67	16	8	6,7	M8	10,5	G1/8	7,5	14,6	50	13	4,7	2,5	7,5	0	45,5 (±0,7)	**NSKT 50-...**
63	80	16	8	8,5	M10	13,5	G1/8	8	15,5	62	13	5,2	2,5	7,5	0	50 (±0,8)	**NSKT 63-...**
80	102,6	20	8	8,5	M10	13,5	G1/8	9	17	82	17	5,2	2,5	8	0	56 (±0,8)	**NSKT 80-...**
100	124	25	8	8,5	M10	13,5	G1/4	10	20	103	22	5,2	3	10	0	66,5 (±1,0)	**NSKT 100-...**

Ø	Thrust force *Forza di spinta* P= 6 bar	Traction force *Forza di tiro* P= 6 bar	Pressure range *Campo di press.* bar
16	121 N	91 N	1,6 - 10
20	188 N	142 N	1,5 - 10
25	295 N	248 N	1,2 - 10
32	482 N	415 N	1,1 - 10
40	754 N	687 N	0,9 - 10
50	1178 N	1058 N	0,8 - 10
63	1869 N	1750 N	0,7 - 10
80	3014 N	2829 N	0,6 - 10
100	4710 N	4420 N	0,5 - 10

NSK . - .. P

DOUBLE ACTING MAGNETIC THROUGH ROD CYLINDER
CILINDRO MAGNETICO A DOPPIO EFFETTO STELO PASSANTE

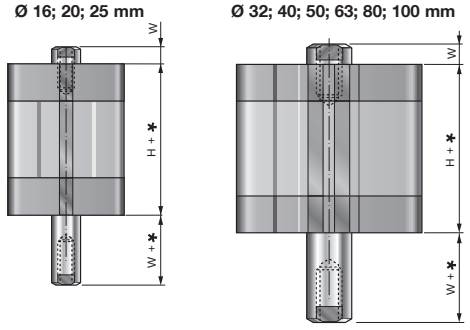




ATEX versions see
Versioni **ATEX** *vedi .. P.* ***A-109***

*** = Stroke / *Corsa***

Ø 16; 20; 25 mm **Ø 32; 40; 50; 63; 80; 100 mm**



STANDARD ISO 21287

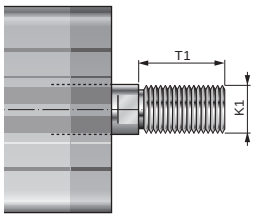
Ø	W	H	Code - *Codice*
16	4,5	37 (±0,5)	**NSKI 16/... P**
20	6	37 (±0,5)	**NSKI 20/... P**
25	6	39 (±0,5)	**NSKI 25/... P**
32	7	44 (±0,5)	**NSKI 32/... P**
40	7	45 (±0,7)	**NSKI 40/... P**
50	8	45 (±0,7)	**NSKI 50/... P**
63	8	49 (±0,8)	**NSKI 63/... P**
80	10	54 (±0,8)	**NSKI 80/... P**
100	10	67 (±1,0)	**NSKI 100/... P**

STANDARD UNITOP

Ø	W	H	Code - *Codice*
16	4,5	38 (±0,5)	**NSKT 16/... P**
20	4,5	38 (±0,5)	**NSKT 20/... P**
25	5,5	39,5 (±0,5)	**NSKT 25/... P**
32	6	44,5 (±0,5)	**NSKT 32/... P**
40	6,5	45,5 (±0,7)	**NSKT 40/... P**
50	7,5	45,5 (±0,7)	**NSKT 50/... P**
63	7,5	50 (±0,8)	**NSKT 63/... P**
80	8	56 (±0,8)	**NSKT 80/... P**
100	10	66,5 (±1,0)	**NSKT 100/... P**

NSK . - .... M

THREADED MALE PISTON ROD VERSION
VERSIONE STELO FILETTATO MASCHIO



STANDARD ISO 21287

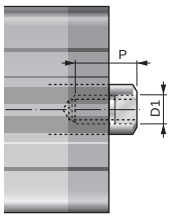
Ø	K1	T1
16	M8x1,25	20
20	M8x1,25	16
25	M8x1,25	16
32	M10x1,25	19
40	M10x1,25	19
50	M12x1,25	22
63	M12x1,25	22
80	M16x1,5	28
100	M16x1,5	28

STANDARD UNITOP

Ø	K1	T1
16	M8x1,25	20
20	M10x1,25	22
25	M10x1,25	22
32	M10x1,25	22
40	M10x1,25	22
50	M12x1,25	24
63	M12x1,25	24
80	M16x1,5	32
100	M20x1,5	40

NSK . - .... F

THREADED FEMALE PISTON ROD VERSION
VERSIONE STELO FILETTATO FEMMINA



STANDARD ISO 21287

Ø	ØD1	P
16	M4	8
20	M6	10
25	M6	10
32	M8	12
40	M8	12
50	M10	16
63	M10	16
80	M12	20
100	M12	20

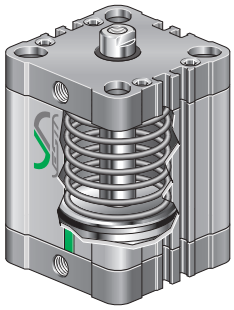
STANDARD UNITOP

Ø	ØD1	P
16	M4	8
20	M6	10
25	M6	10
32	M8	12
40	M8	12
50	M8	12
63	M8	14
80	M10	15
100	M12	20

NSK . - .. SEA

SIMPLE ACTING FRONT SPRING
SEMPLICE EFFETTO MOLLA ANTERIORE



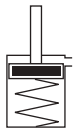


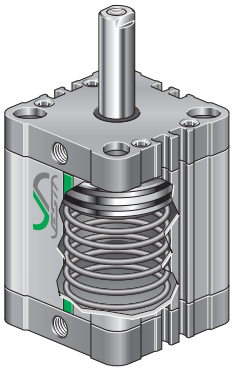
SPRING FORCE (N) STROKE 0 - 25 mm
FORZE MOLLA* (N) *CORSA 0 - 25 mm

Ø	F spring max (stroke 0 mm) *F molla max* (corsa 0 mm)	F spring min (stroke 25 mm) *F molla min* (corsa 25 mm)	H ISO 21287	H UNITOP
16	21	12	37 (±0,5)	38 (±0,5)
20	39	22	37 (±0,5)	38 (±0,5)
25	45	28	39 (±0,5)	39,5 (±0,5)
32	45	28	44 (±0,5)	44,5 (±0,5)
40	61	39	45 (±0,7)	45,5 (±0,7)
50	90	58	45 (±0,7)	45,5 (±0,7)
63	95	62	49 (±0,8)	50 (±0,8)
80	115	150	54 (±0,8)	56 (±0,8)
100	125	160	67 (±1,0)	66,5 (±1,0)

NSK . - .. SEP

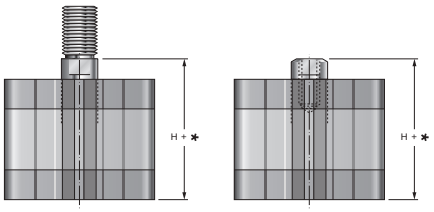
SIMPLE ACTING REAR SPRING
SEMPLICE EFFETTO MOLLA POSTERIORE

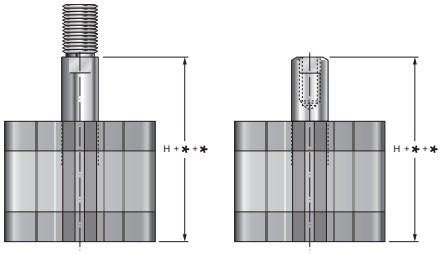




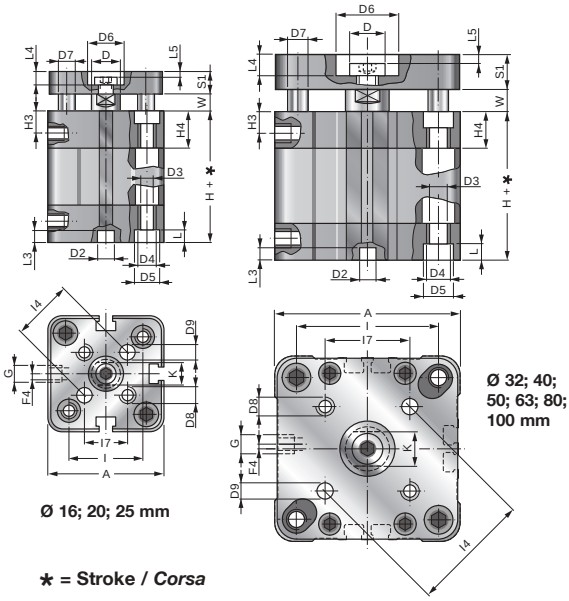
SPRING FORCE (N) STROKE 26 - 50 mm
FORZE MOLLA* (N) *CORSA 26 - 50 mm

Ø	F spring max (stroke 26 mm) *F molla max* (corsa 26 mm)	F spring min (stroke 50 mm) *F molla min* (corsa 50 mm)	H ISO 21287	H UNITOP
16	21	12	47 (±0,5)	48 (±0,5)
20	39	22	47 (±0,5)	48 (±0,5)
25	45	28	59 (±0,5)	59,5 (±0,5)
32	45	28	64 (±0,5)	64,5 (±0,5)
40	61	39	65 (±0,7)	65,5 (±0,7)
50	90	58	65 (±0,7)	65,5 (±0,7)
63	95	62	69 (±0,8)	70 (±0,8)
80	115	150	84 (±0,8)	86 (±0,8)
100	125	160	97 (±1,0)	96,5 (±1,0)





✱ = Stroke / *Corsa*



Ø 16; 20; 25 mm

Ø 32; 40; 50; 63; 80; 100 mm

✱ = Stroke / *Corsa*

NSK . - .. AR

DOUBLE ACTING MAGNETIC CYLINDER NON ROTATING
CILINDRO MAGNETICO A DOPPIO EFFETTO ANTIROTATIVO



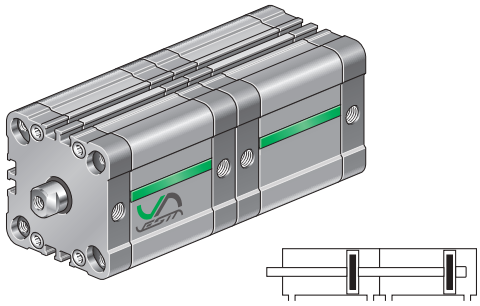


	Ø	A	ØD	ØD2	ØD3	ØD4	ØD5	G	H3	H4	I	K	L	L3	W	F4	S1	W	H	Code / *Codice*
STANDARD ISO 21287	**16**	29,2	8	6	3,3	M4	6	M5	7	12,8	18	6	3,5	2,2	4,5	0	6	4,5	37 (±0,5)	**NSKI 16-... AR**
	20	37	10	6	4,2	M5	7,5	M5	7	12,3	22	8	4,2	2,5	6	4	8	4,5	37 (±0,5)	**NSKI 20-... AR**
	25	41	10	6	4,2	M5	7,5	M5	7,5	13,5	26	8	4,2	2,5	6	3	8	5,5	39 (±0,5)	**NSKI 25-... AR**
	32	49,2	12	6	5,2	M6	9	G1/8	7,5	15	32,5	10	4,5	2	7	0	10	6	44 (±0,5)	**NSKI 32-... AR**
	40	57,2	12	6	5,2	M6	9	G1/8	7,5	15	38	10	4,2	2	7	0	10	6,5	45 (±0,7)	**NSKI 40-... AR**
	50	67	16	8	6,7	M8	10,5	G1/8	7,5	14,6	46,5	13	4,7	2,5	8	0	12	7,5	45 (±0,7)	**NSKI 50-... AR**
	63	80	16	8	6,7	M8	10,5	G1/8	8	15,5	56,5	13	5,2	2,5	8	0	12	7,5	49 (±0,8)	**NSKI 63-... AR**
	80	102,6*	20	8	8,5	M10	13,5	G1/8	9	17	72	17	5,2	2,5	10	0	14	8	54 (±0,8)	**NSKI 80-... AR**
	100	124*	25	8	8,5	M10	13,5	G1/4*	10	20	89	22	5,2	3	10	0	14	10	67 (±1,0)	**NSKI 100-... AR**

	Ø	A	ØD	ØD2	ØD3	ØD4	ØD5	G	H3	H4	I	K	L	L3	W	F4	S1	W	H	Code / *Codice*
STANDARD UNITOP	**16**	29,2	8	6	3,3	M4	6	M5	7	12,8	18	6	3,5	2,2	4,5	0	6	4,5	38 (±0,5	**NSKT 16-... AR**
	20	37	10	6	4,2	M5	7,5	M5	7	12,3	22	8	4,2	2,5	4,5	4	8	4,5	38 (±0,5)	**NSKT 20-... AR**
	25	41	10	6	4,2	M5	7,5	M5	7,5	13,5	26	8	4,2	2,5	5,5	3	8	5,5	39,5 (±0,5)	**NSKT 25-... AR**
	32	49,2	12	6	5,2	M6	9	G1/8	7,5	15	32	10	4,5	2	6	0	10	6	44,5 (±0,5)	**NSKT 32-... AR**
	40	57,2	12	6	5,2	M6	9	G1/8	7,5	15	42	10	4,2	2	6,5	0	10	6,5	45,5 (±0,7)	**NSKT 40-... AR**
	50	67	16	8	6,7	M8	10,5	G1/8	7,5	14,6	50	13	4,7	2,5	7,5	0	12	7,5	45,5 (±0,7)	**NSKT 50-... AR**
	63	80	16	8	8,5	M10	13,5	G1/8	8	15,5	62	13	5,2	2,5	7,5	0	12	7,5	50 (±0,8)	**NSKT 63-... AR**
	80	102,6	20	8	8,5	M10	13,5	G1/8	9	17	82	17	5,2	2,5	8	0	14	8	56 (±0,8)	**NSKT 80-... AR**
	100	124	25	8	8,5	M10	13,5	G1/4	10	20	103	22	5,2	3	10	0	14	10	66,5 (±1,0)	**NSKT 100-... AR**

NSK ... TN2 ...

MULTI-THRUST TANDEM
TANDEM MULTISPINTA



NSK□ □□/ □□□ TN2 □ □

ISO 21287 I
UNITOP U

Stroke *Corsa* (mm):

Bore / *Alesaggio* (mm):

Ø32 .... **32** Ø63 .... **63**
Ø40 .... **40** Ø80 .... **80**
Ø50 .... **50** Ø100 ...**100**

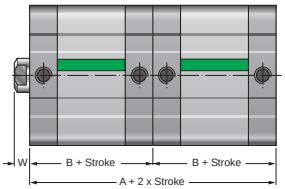
M Threaded male piston rod
Cilindro stelo filettato maschio

F Threaded female piston rod
Cilindro stelo filettato femmina

P Through rod cylinder
Cilindro stelo passante

Ø	A	B	ISO 21287 Code - *Codice*	UNITOP Code - *Codice*
32	88,4	44,2	**NSKI 32/... TN...**	**NSKT 32/... TN...**
40	90,4	44,2	**NSKI 40/... TN...**	**NSKT 40/... TN...**
50	90,4	44,2	**NSKI 50/... TN...**	**NSKT 50/... TN...**
63	99	49,5	**NSKI 63/... TN...**	**NSKT 63/... TN...**
80	110	55	**NSKI 80/... TN...**	**NSKT 80/... TN...**
100	133,4	66,7	**NSKI 100/... TN...**	**NSKT 100/... TN...**

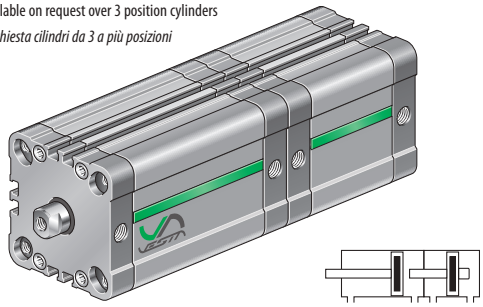
For other dimensions please see **NSK** standard cylinder
*Per altre dimensioni vedere cilindri **NSK** standard*



NSK ... BS ...

MULTI-POSITION
MULTIPOSIZIONE

Available on request over 3 position cylinders
A richiesta cilindri da 3 a più posizioni



NSK□ □□/ □□□ - □□□ BS□

ISO 21287 I
UNITOP U

1° Stroke *Corsa* (mm):
2° Stroke *Corsa* (mm):

Bore / *Alesaggio* (mm):

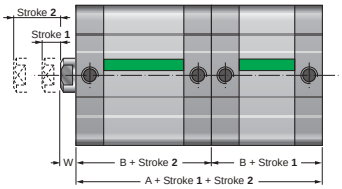
Ø32 .... **32** Ø63 .... **63**
Ø40 .... **40** Ø80 .... **80**
Ø50 .... **50** Ø100 ...**100**

M Threaded male piston rod
Cilindro stelo filettato maschio

F Threaded female piston rod
Cilindro stelo filettato femmina

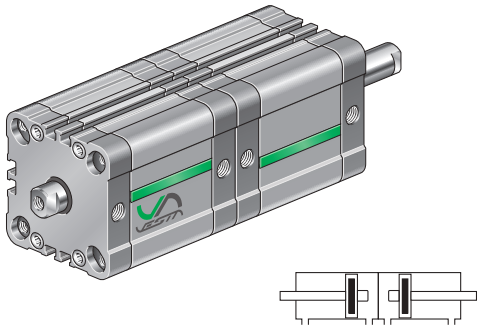
Ø	A	B	ISO 21287 Code - *Codice*	UNITOP Code - *Codice*
32	88,4	44,2	**NSKI 32/... BS...**	**NSKT 32/... BS...**
40	90,4	44,2	**NSKI 40/... BS...**	**NSKT 40/... BS...**
50	90,4	44,2	**NSKI 50/... BS...**	**NSKT 50/... BS...**
63	99	49,5	**NSKI 63/... BS...**	**NSKT 63/... BS...**
80	110	55	**NSKI 80/... BS...**	**NSKT 80/... BS...**
100	133,4	66,7	**NSKI 100/... BS...**	**NSKT 100/... BS...**

For other dimensions please see **NSK** standard cylinder
*Per altre dimensioni vedere cilindri **NSK** standard*



NSK ... CNP ...

REAR OPPOSED
CONTRAPPOSTI POSTERIORI



NSK□ □□/ □□□ - □□□ CNP□

ISO 21287 I
UNITOP U

1° Stroke *Corsa* (mm):
2° Stroke *Corsa* (mm):

Bore / *Alesaggio* (mm):

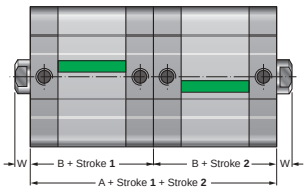
Ø16 .... **16** Ø32 .... **32** Ø63 .... **63**
Ø20 .... **20** Ø40 .... **40** Ø80 .... **80**
Ø25 .... **25** Ø50 .... **50** Ø100 ...**100**

M Threaded male piston rod
Cilindro stelo filettato maschio

F Threaded female piston rod
Cilindro stelo filettato femmina

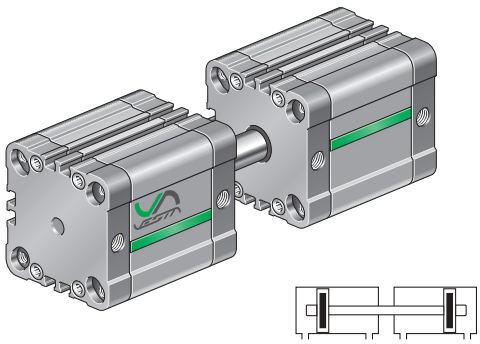
Ø	A	B	ISO 21287 Code - *Codice*	UNITOP Code - *Codice*
16	76	38	**NSKI 16/... CNP...**	**NSKT 16/... CNP...**
20	76	38	**NSKI 20/... CNP...**	**NSKT 20/... CNP...**
25	79	39,5	**NSKI 25/... CNP...**	**NSKT 25/... CNP...**
32	88,4	44,2	**NSKI 32/... CNP...**	**NSKT 32/... CNP...**
40	90,4	45,2	**NSKI 40/... CNP...**	**NSKT 40/... CNP...**
50	90,4	45,2	**NSKI 50/... CNP...**	**NSKT 50/... CNP...**
63	99	49,5	**NSKI 63/... CNP...**	**NSKT 63/... CNP...**
80	110	55	**NSKI 80/... CNP...**	**NSKT 80/... CNP...**
100	133,4	66,7	**NSKI 100/... CNP...**	**NSKT 100/... CNP...**

For other dimensions please see **NSK** standard cylinder
*Per altre dimensioni vedere cilindri **NSK** standard*



NSK ... CNF ...

FRONT OPPOSED
CONTRAPPOSTI ANTERIORI



NSK□ □□/ □□□ - □□□ CNF

ISO 21287 I
UNITOP U

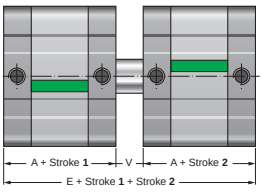
1° Stroke *Corsa* (mm):
2° Stroke *Corsa* (mm):

Bore / *Alesaggio* (mm):

Ø16 .... **16** Ø32 .... **32** Ø63 .... **63**
Ø20 .... **20** Ø40 .... **40** Ø80 .... **80**
Ø25 .... **25** Ø50 .... **50** Ø100 ...**100**

Ø	E	A	V	ISO 21287 Code - *Codice*	UNITOP Code - *Codice*
16	85	38	9	**NSKI 16/... CNF...**	**NSKT 16/... CNF...**
20	85	38	9	**NSKI 20/... CNF...**	**NSKT 20/... CNF...**
25	90	39,5	11	**NSKI 25/... CNF...**	**NSKT 25/... CNF...**
32	100,4	44,2	12	**NSKI 32/... CNF...**	**NSKT 32/... CNF...**
40	103,4	45,2	13	**NSKI 40/... CNF...**	**NSKT 40/... CNF...**
50	104,4	45,2	15	**NSKI 50/... CNF...**	**NSKT 50/... CNF...**
63	114	49,5	15	**NSKI 63/... CNF...**	**NSKT 63/... CNF...**
80	126	55	16	**NSKI 80/... CNF...**	**NSKT 80/... CNF...**
100	153,4	66,7	20	**NSKI 100/... CNF...**	**NSKT 100/... CNF...**

For other dimensions please see **NSK** standard cylinder
*Per altre dimensioni vedere cilindri **NSK** standard*



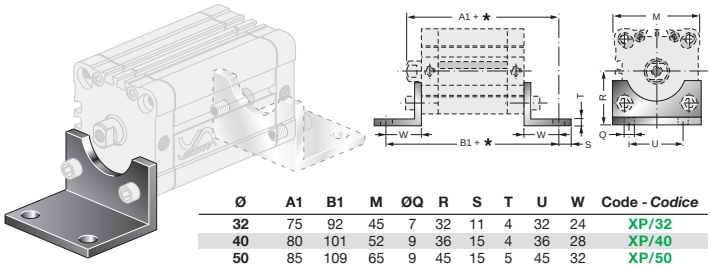
FIXING ACCESSORIES FOR **ISO 21287** CYLINDERS / *ACCESSORI DI FISSAGGIO PER CILINDRI **ISO 21287***

Note: the fixing screws are not included in the supply of the fittings / *le viti di fissaggio non sono comprese nella fornitura degli accessori.*

XP/ ..

FOOT MOUNTING
MONTAGGIO A PIEDINI

★ = Stroke / *Corsa*



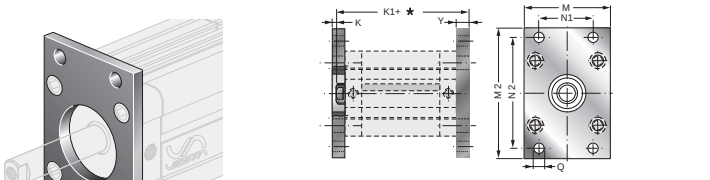
REF. **ISO 15552**

Ø	A1	B1	M	ØQ	R	S	T	U	W	Code - *Codice*
32	75	92	45	7	32	11	4	32	24	XP/32
40	80	101	52	9	36	15	4	36	28	XP/40
50	85	109	65	9	45	15	5	45	32	XP/50
63	89	113	75	9	50	15	5	50	32	XP/63
80	105	136	95	12	63	20	6	63	41	XP/80
100	118	149	115	14	71	25	6	75	41	XP/100

XFL/ ..

FLANGE MOUNTING
MONTAGGIO A FLANGIA

★ = Stroke / *Corsa*



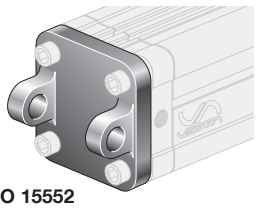
REF. **ISO 15552**

Ø	K	K1	M	M2	N1	N2	ØQ	Y	Code - *Codice*
32	3	61	45	80	32	64	7	10	XFL/32
40	3	62	52	90	36	72	9	10	XFL/40
50	4	65	65	110	45	90	9	12	XFL/50
63	4	69	75	120	50	100	9	12	XFL/63
80	6	80	95	150	63	126	12	16	XFL/80
100	6	93	115	170	75	150	14	16	XFL/100

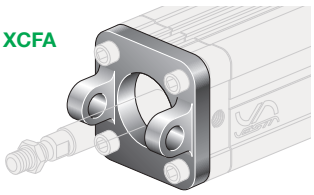
XCF/ ..

FRONT AND REAR CLEVIS (FEMALE) MOUNTING
MONTAGGIO CERNIERA FEMMINA ANT. E POST.

XCF



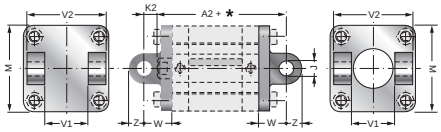
XCFA



REF. **ISO 15552**

★ = Stroke / *Corsa*

XCF



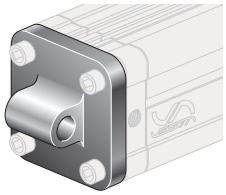
XCFA

Ø	A2	ØJ^{H9}	K2	M	V1	V2	W	Z	Front code - *Cod. ant.*	Rear code - *Cod. post.*
32	73	10	15	45	26	45	22	11	XCFA/32	XCF/32
40	77	12	18	52	28	52	25	13	XCFA/40	XCF/40
50	80	12	19	65	32	60	27	13	XCFA/50	XCF/50
63	89	16	24	75	40	70	32	17	XCFA/63	XCF/63
80	100	16	26	95	50	90	36	17	XCFA/80	XCF/80
100	118	20	31	115	60	110	41	21	XCFA/100	XCF/100

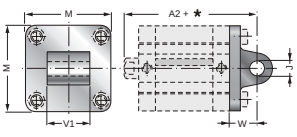
XCM/ ..

CLEVIS (MALE) MOUNTING
MONTAGGIO A CONTROCERNIERA MASCHIO

★ = Stroke / *Corsa*



REF. **ISO 15552**



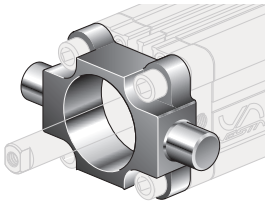
Ø	A2	ØJ^{H7}	M	V1	W	Code - *Codice*
32	73	10	47	26	22	XCM/32
40	77	12	54	28	25	XCM/40
50	80	12	66	32	27	XCM/50
63	89	16	78	40	32	XCM/63
80	100	16	98	50	36	XCM/80
100	118	20	115	60	41	XCM/100

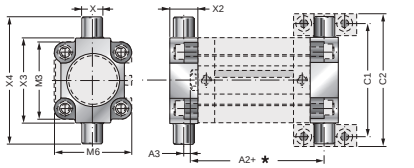
XCBF/ ..

FLOATING FRONT HINGE MOUNTING
MONTAGGIO CERNIERA OSCILLANTE ANTERIORE

REF. **ISO 15552**

★ = Stroke / *Corsa*





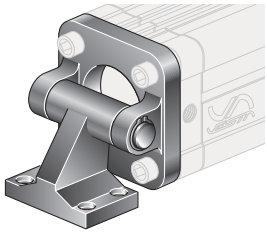
Ø	A2	A3	C1	C2	M3	M6	ØX^{e9}	X2	X3	X4	Code - *Codice*
32	58,5	0,5	71	86	45	45	12	15	50	74	XCBF/32
40	62	3	87	105	54	54	16	20	63	95	XCBF/40
50	63	2	99	117	64	64	16	20	75	107	XCBF/50
63	69,5	4,5	16	136	75	75	20	25	90	130	XCBF/63
80	76,5	2,5	36	156	93	93	20	25	110	150	XCBF/80
100	92	5	64	189	110	110	25	30	132	182	XCBF/100

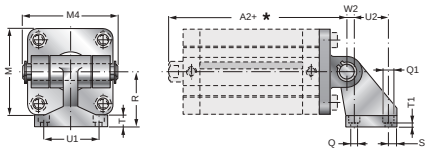
XAS/ ..

REAR HINGE HORIZONTAL MOUNTING
MONTAGGIO A CONTROCERNIERA ORIZZONTALE

REF. **CETOP RP107P**

★ = Stroke / *Corsa*



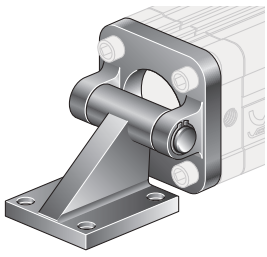


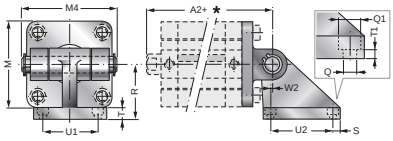
Ø	A2	M	M4	ØQ	ØQ1	R	S	T	T1	U1	U2	W2	Code - *Codice*
32	73	45	54	7	11	32	6,5	8	6,5	38	18	3	XAS/32
40	77	52	63	7	11	36	6,5	10	8,5	41	22	2	XAS/40
50	80	65	71	9	15	45	7,5	12	10,5	50	30	3	XAS/50
63	89	75	81	9	15	50	7,5	14	12,5	52	35	2	XAS/63
80	100	95	101	11	18	63	10	14	11,5	66	40	7	XAS/80
100	118	115	123	11	18	71	10	17	14,5	76	50	5	XAS/100

XASV/ ..

REAR HINGE HORIZONTAL MOUNTING
MONTAGGIO A CONTROCERNIERA ORIZZONTALE

★ = Stroke / *Corsa*



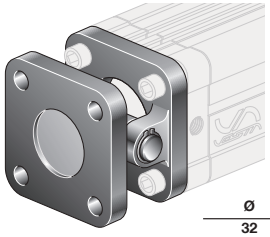


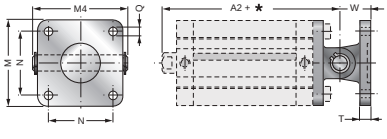
Ø	A2	M	M4	ØQ	ØQ1	R	S	T	T1	U1	U2	W2	Code - *Codice*
32	73	45	54	7	11	32	8	10	5	32,5	32,5	0	XASV/32
40	77	52	63	7	11	36	8,5	10	5	38	38	0	XASV/40
50	80	65	71	9	15	45	10	12	5	46,5	46,5	0	XASV/50
63	89	75	81	9	15	50	10	12	5	56,5	56,5	0	XASV/63
80	100	95	101	11	18	63	12,5	14	6	72	72	0	XASV/80
100	118	115	123	11	18	73	13	16	6	89	89	0	XASV/100

XANL/ ..

REAR HINGE VERTICAL MOUNTING "L" SERIES
MONTAGGIO A CONTROCERNIERA VERTICALE SERIE "L"

★ = Stroke / *Corsa*





Ø	A2	M	M4	N	ØQ	T	W	Code - *Codice*
32	73	45	54	32,5	7	10	22	XANL/32
40	77	52	63	38	7	10	25	XANL/40
50	80	65	71	46,5	9	12	27	XANL/50
63	89	75	81	56,5	9	12	32	XANL/63
80	100	95	101	72	11	16	36	XANL/80
100	118	115	123	89	11	16	41	XANL/100

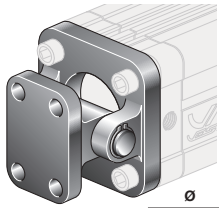
FIXING ACCESSORIES FOR **ISO 21287** CYLINDERS / *ACCESSORI DI FISSAGGIO PER CILINDRI* ***ISO 21287***

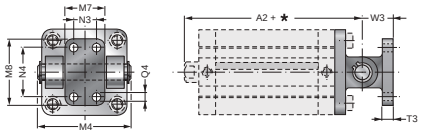
Note: the fixing screws are not included in the supply of the fittings / *le viti di fissaggio non sono comprese nella fornitura degli accessori.*

XANN/ ..

REAR HINGE VERTICAL MOUNTING "N" SERIES
MONTAGGIO A CONTROCERNIERA VERTICALE SERIE "N"

★ = Stroke / *Corsa*



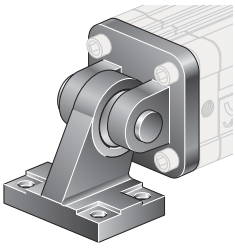


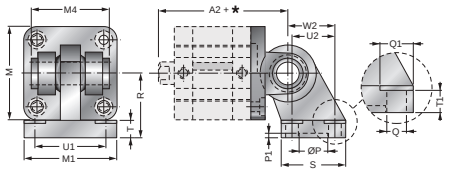
Ø	A2	M4	M7	M8	N3	N4	ØQ4	T3	W3	Code - *Codice*
32	73	54	25	40	-	28	7	8	18	**XANN/32**
40	77	63	28	52	16	38	9	10	26	**XANN/40**
50	80	71	32	52	16	38	9	10	26	**XANN/50**
63	89	81	40	75	25	54	11	12	34	**XANN/63**
80	100	101	50	75	25	54	11	12	34	**XANN/80**
100	118	123	60	115	32	90	14	16	41	**XANN/100**

XAS-SN/ ..

REAR HINGE MOUNTING WITH NARROW ROD EYE
MONTAGGIO A CONTROCERNIERA SNODATA STRETTA

★ = Stroke / *Corsa*



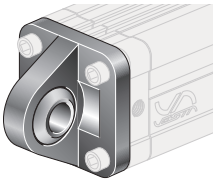


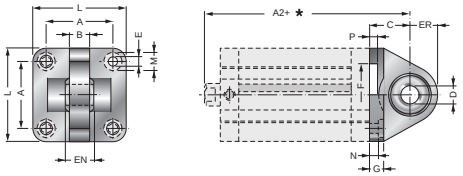
Ø	A2	M	M1	M4	ØP	P1	ØQ	ØQ1	R	S	T	T1	U1	U2	W2	Code - *Codice*
32	73	45	51	41	20	3	6,6	11	32	31	10	8,5	38	18	21	**XAS-SN/32**
40	77	52	54	48	20	3	6,6	11	36	35	10	8,5	41	22	24	**XAS-SN/40**
50	80	65	65	54	20	3	9	15	45	45	12	10,5	50	30	33	**XAS-SN/50**
63	89	75	67	60	20	3	9	15	50	50	12	10,5	52	35	37	**XAS-SN/63**
80	100	95	86	75	20	3	11	18	63	60	14	11,5	66	40	47	**XAS-SN/80**
100	118	115	96	85	20	3	11	18	71	70	15	12,5	76	50	55	**XAS-SN/100**

XCM-SN-AC/ ..

CLEVIS (MALE) WITH ROD EYE
CERNIERA MASCHIO CON SNODO

★ = Stroke / *Corsa*





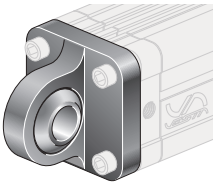
STEEL / *ACCIAIO*

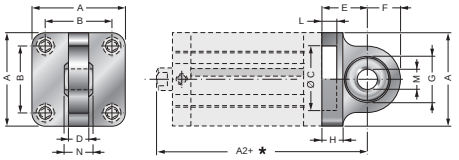
Ø	A2	A	B	C	ØD	EN	ER	F	G	E	L	M	N	P	Code - *Codice*
32	73	32,5	10,5	22	10	14	15	30	10	6,6	45	10,5	5,5	5	**XCM-SN-AC/32**
40	77	38	12	25	12	16	18	35	10	6,6	55	11	5,5	5	**XCM-SN-AC/40**
50	80	46,5	15	27	16	21	20	40	10	9	65	15	6,5	5	**XCM-SN-AC/50**
63	89	56,5	15	32	16	21	23	45	12	9	75	15	6,5	5	**XCM-SN-AC/63**
80	100	72	18	36	20	25	27	45	14	11	95	18	10	5	**XCM-SN-AC/80**
100	118	89	18	41	20	25	30	55	16	11	115	18	10	5	**XCM-SN-AC/100**

XCM-SN-AL/ ..

CLEVIS (MALE) WITH ROD EYE
CERNIERA MASCHIO CON SNODO

★ = Stroke / *Corsa*





ALUMINIUM ALLOY / *LEGA DI ALLUMINIO*

Ø	A2	A	B	C	D	E	F	H	L	ØM	N	Code - *Codice*
32	73	45	32,5	30	10,5	22	16	9	5	10	14	**XCM-SN-AL/32**
40	77	52	38	35	12	25	19	9	5	12	16	**XCM-SN-AL/40**
50	80	65	46,5	40	15	27	21	11	5	16	21	**XCM-SN-AL/50**
63	89	75	56,5	45	15	32	24	11	5	16	21	**XCM-SN-AL/63**
80	100	95	72	45	18	36	28,5	14	5	20	25	**XCM-SN-AL/80**
100	118	115	89	55	18	41	30	14	5	20	25	**XCM-SN-AL/100**

PISTON-ROD FIXING ACCESSORIES FOR **ISO 21287** CYLINDERS ..... **SEE PAGE A-26**
ACCESSORI DI FISSAGGIO ALLO STELO *PER CILINDRI* ***ISO 21287*** ..... ***VEDI PAGINA A-26***

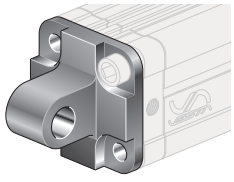
FIXING ACCESSORIES FOR **UNITOP** CYLINDERS / *ACCESSORI DI FISSAGGIO PER CILINDRI* ***UNITOP***

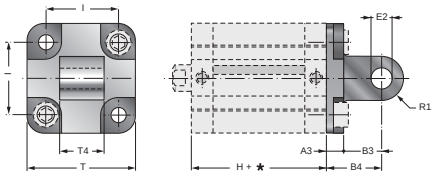
Note: the fixing screws are not included in the supply of the fittings / *le viti di fissaggio non sono comprese nella fornitura degli accessori.*

SKCM/ ..

MALE CLEVIS MOUNTING
MONTAGGIO A CERNIERA MASCHIO

★ = Stroke / *Corsa*





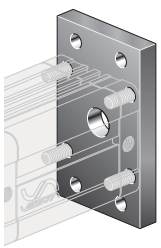
H = See previous pages
Vedi pagine precedenti

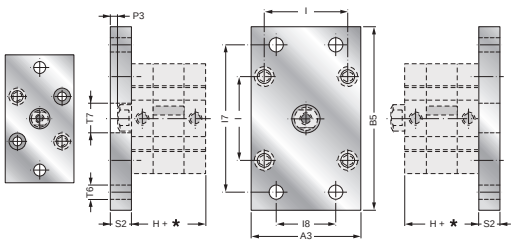
Ø	A3	B3	B4	E2	H	I	R1	T	T4	Code - *Codice*
16	6	10	16	6	38	18	6	27	12	**SKCM/16**
20	6	14	20	8	38	22	8	34	16	**SKCM/20**
25	6	14	20	8	39,5	26	8	38	16	**SKCM/25**

SKFL/ ..

FLANGE MOUNTING
MONTAGGIO A FLANGIA

★ = Stroke / *Corsa*





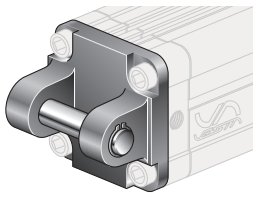
H = See previous pages
Vedi pagine precedenti

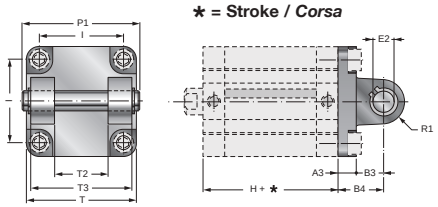
Ø	A3	B5	H	I	I7	I8	P3	S2	T6	T7	Code - *Codice*
16	29	55	38	18	43	-	5,5	10	5,5	10	**SKFL/16**
20	36	70	38	22	55	-	5,5	10	6,5	12	**SKFL/20**
25	40	76	39,5	26	60	-	4,5	10	6,5	12	**SKFL/25**
32	50	80	44,5	32	65	32	4	10	7	14	**SKFL/32**
40	60	102	45,5	42	82	36	3,5	10	9	14	**SKFL/40**
50	68	110	45,5	50	90	45	4,5	12	9	18	**SKFL/50**
63	87	130	50	62	110	50	7,5	15	9	18	**SKFL/63**
80	107	160	56	82	135	63	7	15	12	23	**SKFL/80**
100	128	190	66,5	103	163	75	5	15	14	28	**SKFL/100**

SKCF/ ..

FEMALE CLEVIS MOUNTING
MONTAGGIO A CERNIERA FEMMINA

★ = Stroke / *Corsa*





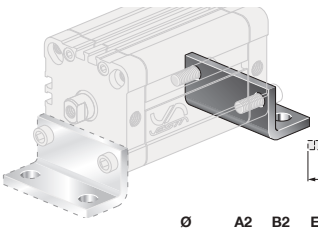
H = See previous pages
Vedi pagine precedenti

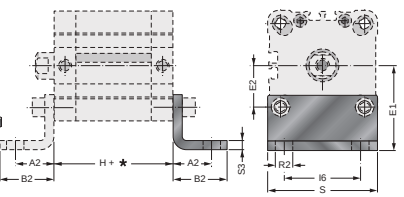
Ø	A3	B3	B4	E2	H	I	P1	R1	T	T2	T3	Code - *Codice*
32	9	13	22	10	44,5	32	53	10	48	26	45	**SKCF/32**
40	9	16	25	12	45,5	42	60	12,5	58	28	52	**SKCF/40**
50	11	16	27	12	45,5	50	68	12,5	66	32	60	**SKCF/50**
63	11	21	32	16	50	62	78	15	83	40	70	**SKCF/63**
80	13	23	36	16	56	82	98	15	102	50	90	**SKCF/80**
100	15	26	41	20	66,5	103	118	20	123	60	110	**SKCF/100**

SKP/ ..

FOOT MOUNTING
MONTAGGIO A PIEDINI

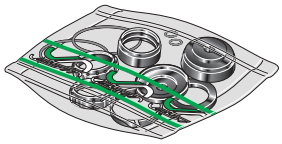
★ = Stroke / *Corsa*





H = See previous pages
Vedi pagine precedenti

Ø	A2	B2	E1	E2	H	I6	R2	S	S3	Code - *Codice*
16	13	17,5	22	9	38	18	5,5	30	3	**SKP/16**
20	16	22	27	11	38	22	6,5	36	4	**SKP/20**
25	16	22	30	13	39,5	26	6,5	40	4	**SKP/25**
32	18	26	32	16	44,5	32	6,5	50	5	**SKP/32**
40	20	28	42,5	21	45,5	42	9	60	5	**SKP/40**
50	24	32	47	25	45,5	50	9	68	6	**SKP/50**
63	27	39	59,5	31	50	62	11	84	6	**SKP/63**
80	30	42	65,5	41	56	82	11	102	8	**SKP/80**
100	33	45	78	51,5	66,5	103	13,5	123	8	**SKP/100**

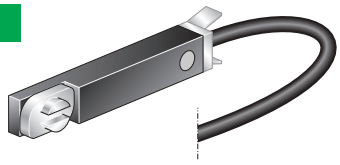


SEALS KIT - *KIT GUARNIZIONI DI RICAMBIO* **..... - SG**

Seals kit code = **Cylinder code** + **Bore** + **Versions** + **- SG**: (The kit includes all seals).
Codice del kit = ***Codice del cilindro*** + ***Alesaggio*** + ***Versioni*** + **- SG**: *(Il kit comprende tutte le guarnizioni necessarie).*
Example / *Esempio:* **NSK 40 CNP - SG**

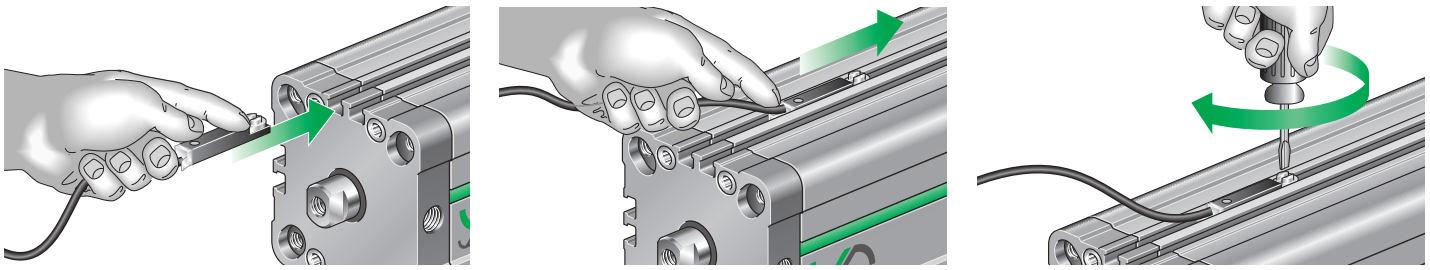
MAGNETIC SWITCHES FOR NSK CYLINDERS / *FINECORSA MAGNETICI PER CILINDRI NSK*

VNCR2 **VNPR2** **VNCE3** **VNPE3**



Characteristic magnetic switches see **GENERAL CATALOGUE - Pag. A-19; A-33.**
Caratteristiche finecorsa magnetico vedi ***CATALOGO GENERALE - Pag. A-19;*** **A-33.**

MAGNETIC SWITCH POSITIONING / *POSIZIONAMENTO DEI FINECORSA MAGNETICI*



SHORT STROKE CYLINDERS / *CILINDRI A CORSA BREVE* — SERIE SH

SH□-□□-□□□-□ □□

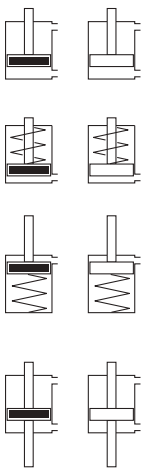
- **D** Double acting / *Cilindro doppio effetto*
- **S** Single acting / *Cilindro semplice effetto*
- **DM** Double effect magnetic / *Doppio effetto magnetico*
- **SM** Simple effect magnetic / *Semplice effetto magnetico*

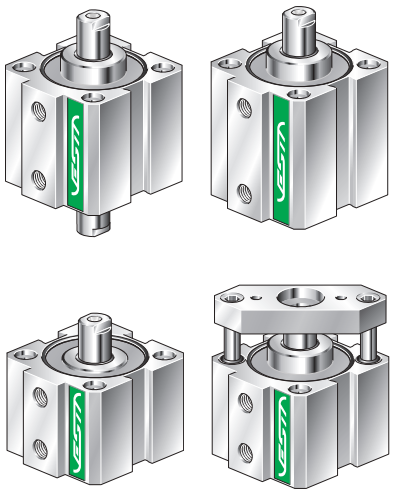
Stroke / *Corsa* (mm):

- **VS** Viton rod seal / *Guarnizione dello stelo in Viton*
- **VV** Viton all seal / *Tutte le guarnizione in Viton*
- **P** Through rod cylinder / *Cilindro stelo passante*
- **AR** Non rotating / *Cilindro antirotazione*

Bore / *Alesaggio* (mm):

Ø12	**12**	Ø63	**63**
Ø16	**16**	Ø80	**80**
Ø20	**20**	Ø100 ...	**100**
Ø25	**25**	Ø125 ...	**125**
Ø32	**32**	Ø160 ...	**160**
Ø40	**40**	Ø200 ...	**200**
Ø50	**50**		





Features of reed switches see:
Caratteristiche finecorsa magnetici: ..... **Pag. A-38**

TECHNICAL FEATURES

Piston rod	Stainless steel X10 Cr Ni S 18-09.
Barrel	Anodized profiled aluminium tube.
Seals	NBR rubber and polyurethan.
Cushioning	Mechanical buffers.

Ambient temperature range	-20 °C ÷ +60 °C.
Temperature range of medium	0 °C ÷ +30 °C.
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	10 bar.

CARATTERISTICHE TECNICHE

Stelo	*Acciaio inox X10 Cr Ni S 18-09.*
Camicia	*Tubo profilato ed anodizzato d' alluminio.*
Guarnizioni	*NBR e poliuretano.*
Ammortizzatori	*Smorzatore meccanici d' urto.*

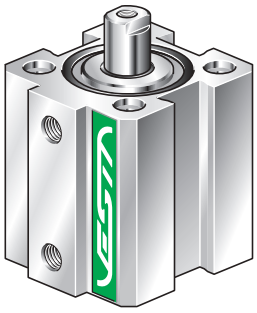
Temperatura ambiente	*-20 °C ÷ +60 °C.*
Temperatura fluido	*0 °C ÷ +30 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

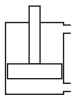
SHORT STROKE WITHOUT MAGNET Ø12 ÷ 100 / *CORSA BREVE NON MAGNETICI Ø12 ÷ 100*

SHD .. -...

Without magnet / *Non magnetico*

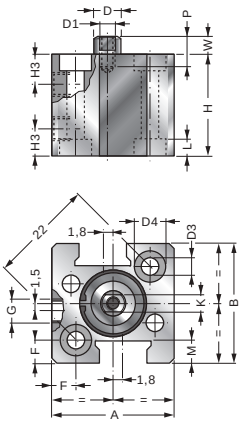
DOUBLE ACTING SINGLE ROD
CILINDRO BASE DOPPIO EFFETTO



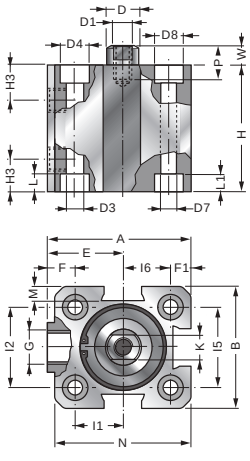


✱ = Stroke / *Corsa*

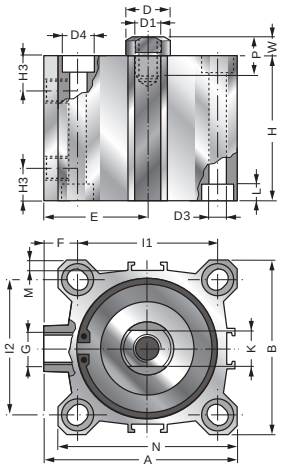
Ø 12



Ø 16; 20; 25



Ø 32; 40; 50; 63; 80; 100.

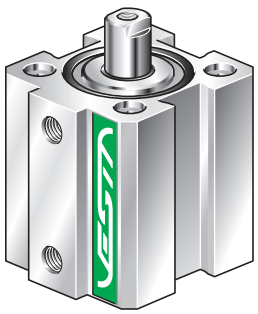


Ø	A	B	ØD	D1	ØD3	ØD4	ØD7	ØD8	E	F	F1	G	H3	I1	I2	I5	I6	K	L	L1	M	N	P	W	Code Codice	H Stroke / *Corsa* (mm): 5	10	15	20	25	30	40	50	60	80	100
12	25	25	6	M3	3,7	5,6	-	-	-	4,7	-	M5	5,5	-	-	-	-	5	3,5	-	4,7	-	6	3,5	SHD 12	22	27	32	37	42	47	57	-	-	-	-
16	34	30	8	M4	4,7	7,5	3,7	5,6	19	7	5	M5	8	12	18	20	10	6	4,6	3,5	4	32	8	4,5	SHD 16	32	37	42	47	52	58	68	78	-	-	-
20	40	36	10	M5	5,8	9	5,8	9	22	7	5,2	M5	8	15	20	25,5	12,7	8	5,7	5,7	5,7	38,5	10	5	SHD 20	32	37	42	47	52	58	68	78	-	-	-
25	44,5	40	10	M5	5,8	9	5,8	9	24,5	9	6	G1/8	10,5	15,5	26	28	14	8	5,7	5,7	4,5	42	10	5,5	SHD 25	33,5	38,5	43,5	48,5	53,5	58,5	69,5	79,5	-	-	-
32	51	46	12	M6	5,8	9	-	-	27	9	-	G1/8	11,5	36	32	-	-	10	5,7	-	4	48	12	6	SHD 32	34,5	39,5	44,5	49,5	54,5	59,5	69,5	79,5	89,5	109,5	129,5
40	58	55	12	M6	5,8	9	-	-	30,5	9,5	-	G1/8	11	42	42	-	-	10	5,7	-	4	55	12	6	SHD 40	34,5	39,5	44,5	49,5	54,5	59,5	69,5	79,5	89,5	109,5	129,5
50	70	65	16	M8	6,8	11	-	-	37,5	12,5	-	G1/8	11,5	50	50	-	-	13	6,8	-	4	65	12	7,5	SHD 50	-	44,5	49,5	54,5	59,5	64,5	74,5	84,5	94,5	114,5	134,5
63	86	80	16	M8	9	14	-	-	46	15	-	G1/8	11	62	62	-	-	13	8,8	-	5	80	14	7	SHD 63	-	47	52	57	62	67	77	87	97	117	137
80	105	100	20	M10	9	14	-	-	55	14	-	G1/4	14	82	82	-	-	17	9	-	6	100	15	8	SHD 80	-	56	61	66	71	76	86	96	106	126	146
100	131	124	25	M12	11	17,2	-	-	69	17,5	-	G1/4	16	103	103	-	-	22	11	-	7,5	124	20	10	SHD 100	-	66	71	76	81	86	96	106	116	136	156

SHS .. -...

Without magnet / *Non magnetico*

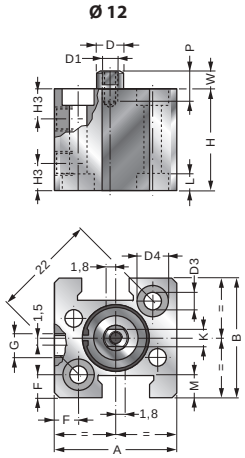
CYLINDER SINGLE ACTING FRONT SPRING
CILINDRO SEMPLICE EFFETTO MOLLA ANTERIORE



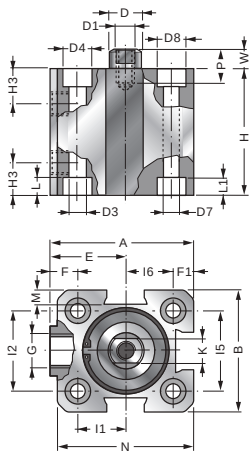


✱ = Stroke / *Corsa*

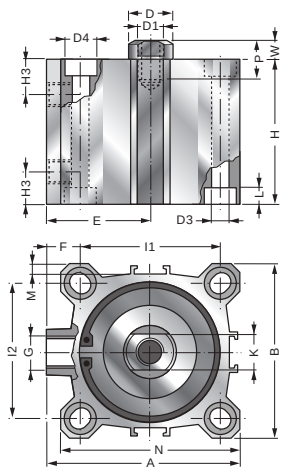
Ø 12



Ø 16; 20; 25



Ø 32; 40; 50; 63; 80; 100.



Ø	A	B	ØD	D1	ØD3	ØD4	ØD7	ØD8	E	F	F1	G	H3	I1	I2	I5	I6	K	L	L1	M	N	P	W	Code Codice	H Stroke / *Corsa* (mm): 5	10	15	20	25	30	40	50
12	25	25	6	M3	3,7	5,6	-	-	-	4,7	-	M5	5,5	-	-	-	-	5	3,5	-	4,7	-	6	3,5	SHS 12	22	27	-	-	-	-	-	-
16	34	30	8	M4	4,7	7,5	3,7	5,6	19	7	5	M5	8	12	18	20	10	6	4,6	3,5	4	32	8	4,5	SHS 16	32	37	42	47	52	-	-	-
20	40	36	10	M5	5,8	9	5,8	9	22	7	5,2	M5	8	15	20	25,5	12,7	8	5,7	5,7	5,7	38,5	10	5	SHS 20	32	37	42	47	52	-	-	-
25	44,5	40	10	M5	5,8	9	5,8	9	24,5	9	6	G1/8	10,5	15,5	26	28	14	8	5,7	5,7	4,5	42	10	5,5	SHS 25	33,5	38,5	43,5	48,5	53,5	-	-	-
32	51	46	12	M6	5,8	9	-	-	27	9	-	G1/8	11,5	36	32	-	-	10	5,7	-	4	48	12	6	SHS 32	34,5	39,5	44,5	49,5	54,5	59,5	79,5	89,5
40	58	55	12	M6	5,8	9	-	-	30,5	9,5	-	G1/8	11	42	42	-	-	10	5,7	-	4	55	12	6	SHS 40	34,5	39,5	44,5	49,5	54,5	59,5	79,5	89,5
50	70	65	16	M8	6,8	11	-	-	37,5	12,5	-	G1/8	11,5	50	50	-	-	13	6,8	-	4	65	12	7,5	SHS 50	-	44,5	49,5	54,5	59,5	64,5	84,5	94,5
63	86	80	16	M8	9	14	-	-	46	15	-	G1/8	11	62	62	-	-	13	8,8	-	5	80	14	7	SHS 63	-	47	52	57	62	67	87	97
80	105	100	20	M10	9	14	-	-	55	14	-	G1/4	14	82	82	-	-	17	9	-	6	100	15	8	SHS 80	-	56	61	66	71	76	96	106
100	131	124	25	M12	11	17,2	-	-	69	17,5	-	G1/4	16	103	103	-	-	22	11	-	7,5	124	20	10	SHS 100	-	66	71	76	81	86	106	116

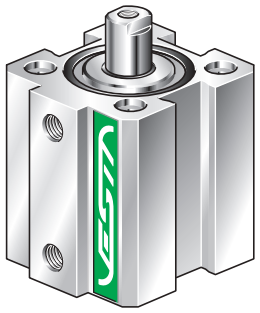
SHORT STROKE WITH MAGNET Ø12 ÷ 100 / *CORSA BREVE MAGNETICI Ø12 ÷ 100*

SHDM .. -...

With magnet / *Magnetico*

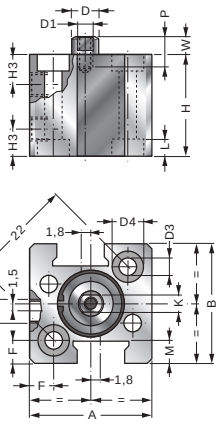
DOUBLE ACTING SINGLE ROD
CILINDRO BASE DOPPIO EFFETTO



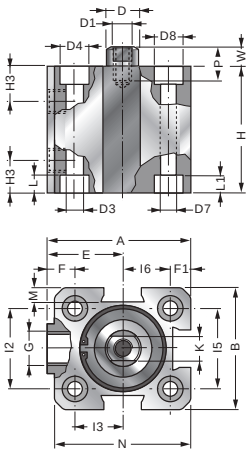


✱ = Stroke / *Corsa*

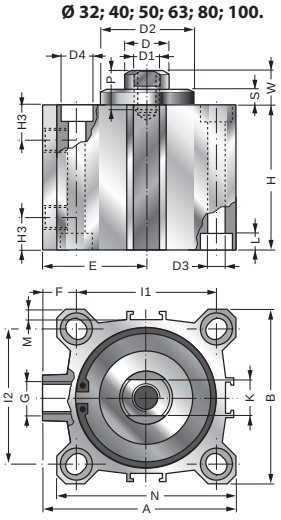
Ø 12



Ø 16; 20; 25



Ø 32; 40; 50; 63; 80; 100.



Bore *Alesaggio*	A	B	ØD	D1	ØD2	ØD3	ØD4	ØD7	ØD8	E	F	F1	G	H3	I1	I2	I3	I5	I6	K	L	L1	M	N	P	S	W	Code / *Codice*
12	25	25	6	M3	-	3,7	5,6	-	-	-	4,7	-	M5	5,5	-	-	-	-	-	5	3,5	-	4,7	-	6	-	3,5	SHDM 12 - ...
16	34	30	8	M4	-	4,7	7,5	3,7	5,6	19	7	5	M5	8	-	18	12	20	10	6	4,6	3,5	4	32	8	-	4,5	SHDM 16 - ...
20	40	36	10	M5	-	5,8	9	5,8	9	22	7	5,2	M5	8	-	20	15	25,5	12,7	8	5,7	5,7	5,7	38,5	10	-	4,5	SHDM 20 - ...
25	44,5	40	10	M5	-	5,8	9	5,8	9	24,5	9	6	G1/8	10,5	-	26	15,5	28	14	8	5,7	5,7	4,5	42	10	-	5,5	SHDM 25 - ...
32	51	46	12	M6	24,5	5,8	9	-	-	27	9	-	G1/8	11,5	36	32	-	-	-	10	5,7	-	4	48	12	5	11	SHDM 32 - ...
40	58	55	12	M6	28	5,8	9	-	-	30,5	9,5	-	G1/8	11	42	42	-	-	-	10	5,7	-	4	55	12	6	12,5	SHDM 40 - ...
50	70	65	16	M8	34	6,8	11	-	-	37,5	12,5	-	G1/8	11,5	50	50	-	-	-	13	6,8	-	4	65	12	6	13,5	SHDM 50 - ...
63	86	80	16	M8	38,5	9	14	-	-	46	15	-	G1/8	11	62	62	-	-	-	13	8,8	-	5	80	14	8	15	SHDM 63 - ...
80	105	100	20	M10	44	9	14	-	-	55	14	-	G1/4	14	82	82	-	-	-	17	9	-	6	100	15	10	18	SHDM 80 - ...
100	131	124	25	M12	56	11	17,2	-	-	69	17,5	-	G1/4	16	103	103	-	-	-	22	11	-	7,5	124	20	10,5	20,5	SHDM 100 - ...

H

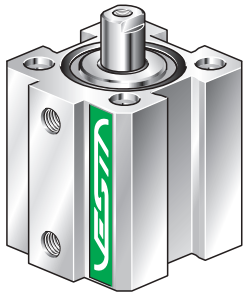
Bore *Alesaggio*	Stroke / *Corsa* (mm): 5	10	15	20	25	30	40	50	60	80	100	125	160	200	250
12	32	37	42	47	52	57	-	-	-	-	-	-	-	-	-
16	37	42	47	52	63	68	78	88	98	118	138	-	-	-	-
20	37	42	47	52	63	68	78	88	98	118	138	163	-	-	-
25	43,5	48,5	53,5	58,5	64,5	69,5	79,5	89,5	99,5	119,5	139,5	164,5	-	-	-
32	44,5	49,5	54,5	59,5	64,5	69,5	79,5	89,5	99,5	119,5	139,5	164,5	199,5	-	-
40	44,5	49,5	54,5	59,5	64,5	69,5	79,5	89,5	99,5	119,5	139,5	164,5	199,5	-	-
50	-	49,5	54,5	59,5	64,5	69,5	79,5	89,5	99,5	119,5	139,5	164,5	199,5	239,5	-
63	-	52	57	62	67	72	82	92	102	122	142	167	202	242	-
80	-	56	61	66	71	76	86	96	106	126	146	171	206	246	296
100	-	66	71	76	81	86	96	106	116	136	156	181	216	256	306

SHSM .. -...

With magnet / *Magnetico*

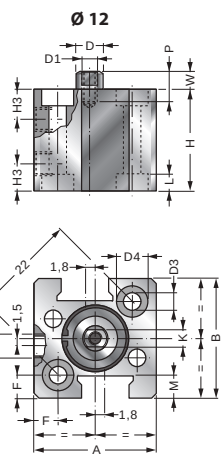
CYLINDER SINGLE ACTING FRONT SPRING
CILINDRO SEMPLICE EFFETTO MOLLA ANTERIORE



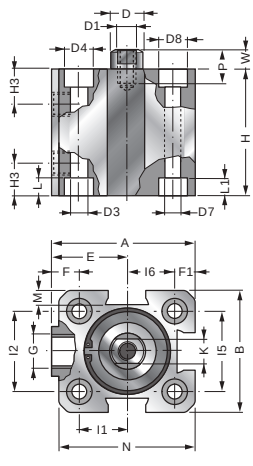


✱ = Stroke / *Corsa*

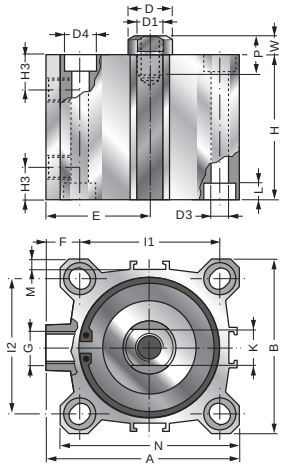
Ø 12



Ø 16; 20; 25



Ø 32; 40; 50; 63; 80; 100.



Ø	A	B	ØD	D1	ØD3	ØD4	ØD7	ØD8	E	F	F1	G	H3	I1	I2	I5	I6	K	L	L1	M	N	P	W	Code Codice
12	25	25	6	M3	3,7	5,6	-	-	-	4,7	-	M5	5,5	-	-	-	-	5	3,5	-	4,7	-	6	3,5	SHSM 12
16	34	30	8	M4	4,7	7,5	3,7	5,6	19	7	5	M5	8	12	18	20	10	6	4,6	3,5	4	32	8	4,5	SHSM 16
20	40	36	10	M5	5,8	9	5,8	9	22	7	5,2	M5	8	15	20	25,5	12,7	8	5,7	5,7	5,7	38,5	10	4,5	SHSM 20
25	44,5	40	10	M5	5,8	9	5,8	9	24,5	9	6	G1/8	10,5	15,5	26	28	14	8	5,7	5,7	4,5	42	10	5,5	SHSM 25
32	51	46	12	M6	5,8	9	-	-	27	9	-	G1/8	11,5	36	32	-	-	10	5,7	-	4	48	12	5,5	SHSM 32
40	58	55	12	M6	5,8	9	-	-	30,5	9,5	-	G1/8	11	42	42	-	-	10	5,7	-	4	55	12	6,5	SHSM 40
50	70	65	16	M8	6,8	11	-	-	37,5	12,5	-	G1/8	11,5	50	50	-	-	13	6,8	-	4	65	12	7,5	SHSM 50
63	86	80	16	M8	9	14	-	-	46	15	-	G1/8	11	62	62	-	-	13	8,8	-	5	80	14	6,5	SHSM 63
80	105	100	20	M10	9	14	-	-	55	14	-	G1/4	14	82	82	-	-	17	9	-	6	100	15	8	SHSM 80
100	131	124	25	M12	11	17,2	-	-	69	17,5	-	G1/4	16	103	103	-	-	22	11	-	7,5	124	20	10	SHSM 100

H

Stroke / *Corsa* (mm): 4	5	10	15	20	25	30	40	50
-	32	37	-	-	-	-	-	-
-	37	42	47	52	63	-	-	-
-	37	42	47	52	63	-	-	-
-	43,5	48,5	53,5	58,5	64,5	-	-	-
-	44,5	49,5	54,5	59,5	64,5	69,5	89,5	99,5
-	44,5	49,5	54,5	59,5	64,5	69,5	89,5	99,5
-	-	49,5	54,5	59,5	64,5	69,5	89,5	99,5
-	-	52	57	62	67	72	92	102
-	-	56	61	66	71	76	96	106
-	-	66	71	76	81	86	106	116

SHORT STROKE SPECIAL VERSION / *CORSA BREVE ESECUZIONI SPECIALI*

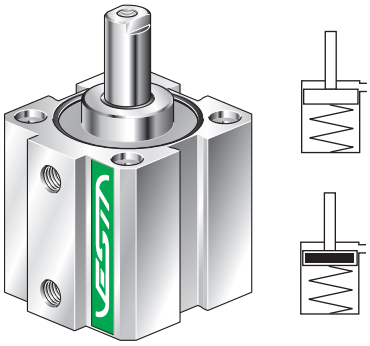
SHS .. -... SEP

Without magnet / *Non magnetico*

SHSM .. -... SEP

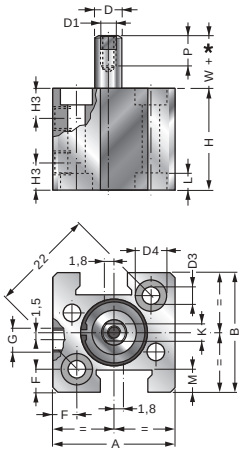
With magnet / *Magnetico*

SIMPLE ACTING REAR SPRING
SEMPLICE EFFETTO MOLLA POSTERIORE

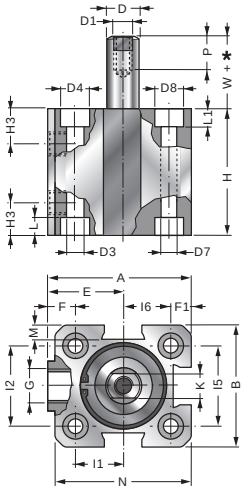


✻ = Stroke / *Corsa*

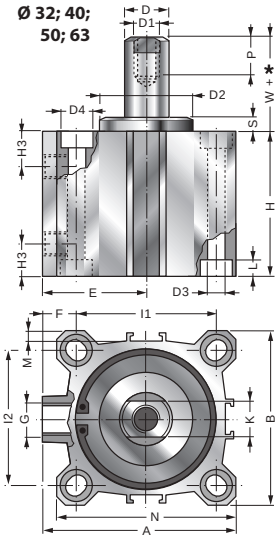
Ø 12



Ø 16; 20; 25



Ø 32; 40; 50; 63



A	B	ØD	D1	D2	ØD3	ØD4	ØD7	ØD8	E	F	F1	G	H3	I1	I2	I5	I6	K	L	L1	M	N	P	S	W	Code Codice	H Stroke / *Corsa* (mm): 5	10	15	20	25	30	40	50
25	25	6	M3	-	3,7	5,6	-	-	-	4,7	-	M5	5,5	-	-	-	-	5	3,5	-	4,7	-	6	-	3,5	SHS 12 .. SEP	22	27	-	-	-	-	-	-
25	25	6	M3	-	3,7	5,6	-	-	-	4,7	-	M5	5,5	-	-	-	-	5	3,5	-	4,7	-	6	-	3,5	SHSM 12 .. SEP	32	37	-	-	-	-	-	-
34	30	8	M4	-	4,7	7,5	3,7	5,6	19	7	5	M5	8	12	18	20	10	6	4,6	3,5	4	32	8	-	4,5	SHS(M) 16 .. SEP	37	42	47	-	-	-	-	-
40	36	10	M5	-	5,8	9	5,8	9	22	7	5,2	M5	8	15	20	25,5	12,7	8	5,7	5,7	5,7	38,5	10	-	4,5	SHS(M) 20 .. SEP	37	42	47	63	68	-	-	-
44,5	40	10	M5	-	5,8	9	5,8	9	24,5	9	6	G1/8	10,5	15,5	26	28	14	8	5,7	5,7	4,5	42	10	-	5,5	SHS(M) 25 .. SEP	43,5	48,5	53,5	64,5	69,5	-	-	-
51	46	12	M6	24,5	5,8	9	-	-	27	9	-	G1/8	11,5	36	32	-	-	10	5,7	-	4	48	12	5	11	SHS(M) 32 .. SEP	44,5	49,5	54,5	64,5	69,5	79,5	-	119,5
58	55	12	M6	28	5,8	9	-	-	30,5	9,5	-	G1/8	11	42	42	-	-	10	5,7	-	4	55	12	6	12,5	SHS(M) 40 .. SEP	-	49,5	54,5	59,5	64,5	69,5	-	-
70	65	16	M8	34	6,8	11	-	-	37,5	12,5	-	G1/8	11,5	50	50	-	-	13	6,8	-	4	65	12	6	13,5	SHS(M) 50 .. SEP	-	49,5	54,5	59,5	64,5	69,5	-	-
86	80	16	M8	38,5	9	14	-	-	46	15	-	G1/8	11	62	62	-	-	13	8,8	-	5	80	14	8	15	SHS(M) 63 .. SEP	-	52	57	62	67	72	-	-

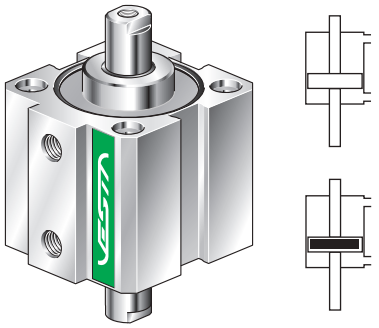
SHD .. -... P

Without magnet / *Non magnetico*

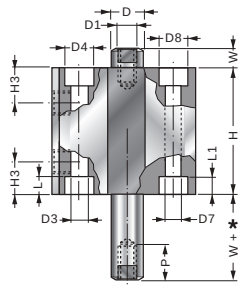
SHDM .. -... P

With magnet / *Magnetico*

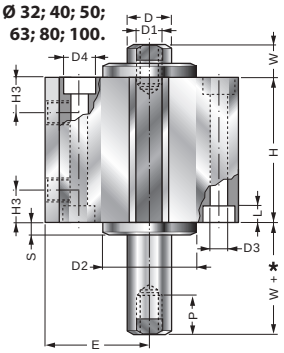
THROUGH ROD CYLINDER
CILINDRO STELO PASSANTE



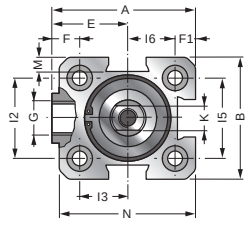
✻ = Stroke / *Corsa*

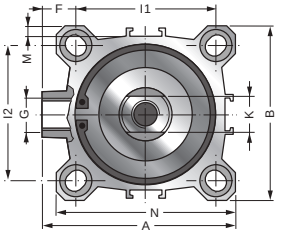


Ø 32; 40; 50; 63; 80; 100.



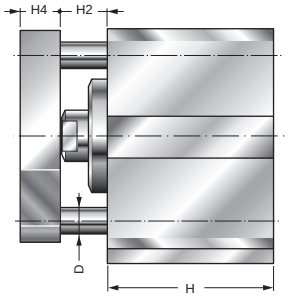
Ø 16; 20; 25

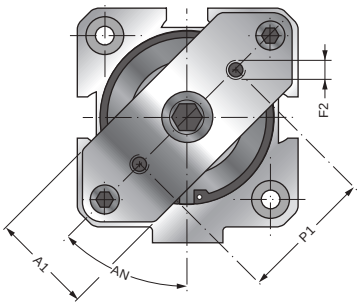




Bore *Alesaggio*	H Stroke / *Corsa* (mm): 5	10	15	20	25	30	40	50	60	80	100	125	160	200	250
16	37	42	47	52	63	68	78	88	98	118	138	-	-	-	-
20	37	42	47	52	63	68	78	88	98	118	138	163	-	-	-
25	43,5	48,5	53,5	58,5	64,5	69,5	79,5	89,5	99,5	119,5	139,5	164,5	-	-	-
32	44,5	49,5	54,5	59,5	64,5	69,5	79,5	89,5	99,5	119,5	139,5	164,5	199,5	-	-
40	44,5	49,5	54,5	59,5	64,5	69,5	79,5	89,5	99,5	119,5	139,5	164,5	199,5	-	-
50	-	49,5	54,5	59,5	64,5	69,5	79,5	89,5	99,5	119,5	139,5	164,5	199,5	239,5	-
63	-	52	57	62	67	72	82	92	102	122	142	167	202	242	-
80	-	56	61	66	71	76	86	96	106	126	146	171	206	246	296
100	-	66	71	76	81	86	96	106	116	136	156	181	216	256	306

Bore *Alesaggio*	A	B	ØD	D1	ØD2	ØD3	ØD4	ØD7	ØD8	E	F	F1	G	H3	I1	I2	I3	I5	I6	K	L	L1	M	N	P	S	W	Code / *Codice*
16	34	30	8	M4	-	4,7	7,5	3,7	5,6	19	7	5	M5	8	-	18	12	20	10	6	4,6	3,5	4	32	8	-	4,5	SHD(M) 16 - ... P
20	40	36	10	M5	-	5,8	9	5,8	9	22	7	5,2	M5	8	-	20	15	25,5	12,7	8	5,7	5,7	5,7	38,5	10	-	4,5	SHD(M)20 - ... P
25	44,5	40	10	M5	-	5,8	9	5,8	9	24,5	9	6	G1/8	10,5	-	26	15,5	28	14	8	5,7	5,7	4,5	42	10	-	5,5	SHD(M) 25 - ... P
32	51	46	12	M6	24,5	5,8	9	-	-	27	9	-	G1/8	11,5	36	32	-	-	-	10	5,7	-	4	48	12	5	11	SHD(M) 32 - ... P
40	58	55	12	M6	28	5,8	9	-	-	30,5	9,5	-	G1/8	11	42	42	-	-	-	10	5,7	-	4	55	12	6	12,5	SHD(M) 40 - ... P
50	70	65	16	M8	34	6,8	11	-	-	37,5	12,5	-	G1/8	11,5	50	50	-	-	-	13	6,8	-	4	65	12	6	13,5	SHD(M) 50 - ... P
63	86	80	16	M8	38,5	9	14	-	-	46	15	-	G1/8	11	62	62	-	-	-	13	8,8	-	5	80	14	8	15	SHD(M) 63 - ... P
80	105	100	20	M10	44	9	14	-	-	55	14	-	G1/4	14	82	82	-	-	-	17	9	-	6	100	15	10	18	SHD(M) 80 - ... P
100	131	124	25	M12	56	11	17,2	-	-	69	17,5	-	G1/4	16	103	103	-	-	-	22	11	-	7,5	124	20	10,5	20,5	SHD(M) 100 - ... P





SHD .. -... AR

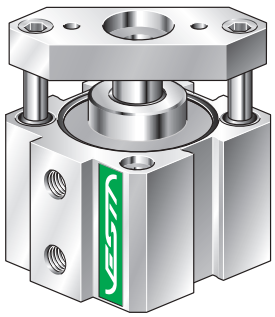
Without magnet / *Non magnetico*

SHDM .. -... AR

With magnet / *Magnetico*

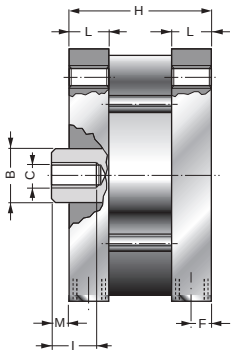
NON ROTATING / *CILINDRO ANTIROTAZIONE*

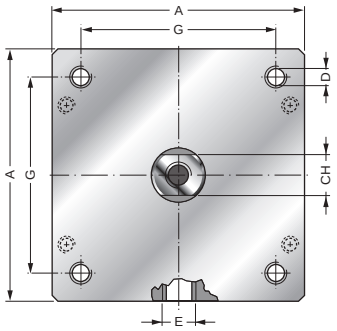




Bore *Alesaggio*	AN	A1	F2	H2	H4	P1	ØD	Code *Codice*	H Stroke / *Corsa* (mm): 5	10	15	20	25	30	40	50	60	80	100	125	160
20	45°	15	M4	4,5	8	20	5	SHD(M) 20.. AR	37	42	47	52	63	68	78	88	98	118	138	-	-
25	45°	15	M4	5,5	8	22	5	SHD(M) 25.. AR	43,5	48,5	53,5	58,5	64,5	69,5	79,5	89,5	99,5	119,5	139,5	-	-
32	41,5°	20	M5	11	10	28	5	SHD(M) 32.. AR	44,5	49,5	54,5	59,5	64,5	69,5	79,5	89,5	99,5	119,5	139,5	-	-
40	45°	20	M5	12,5	10	33	5	SHD(M) 40.. AR	44,5	49,5	54,5	59,5	64,5	69,5	79,5	89,5	99,5	119,5	139,5	-	-
50	45°	30	M6	13,5	12	42	6	SHD(M) 50.. AR	-	49,5	54,5	59,5	64,5	69,5	79,5	89,5	99,5	119,5	139,5	164,5	-
63	45°	30	M6	15	12	50	8	SHD(M) 63.. AR	-	52	57	62	67	72	82	92	102	122	142	167	202
80	45°	50	M8	18	14	65	8	SHD(M) 80.. AR	-	56	61	66	71	76	86	96	106	126	146	171	206
100	45°	50	M10	20,5	14	80	10	SHD(M) 100.. AR	-	66	71	76	81	86	96	106	116	136	156	181	216

Cylinders series **SHD(M)_AR** comes from **SHD(M)_** standard: technical and dimensional features remains exactly the same.
I cilindri antirotazione serie **SHD(M)_AR** *sono derivati dalle serie* **SHD(M)_** *standard e ne conservano quindi caratteristiche tecniche e dimensioni di ingombro.*





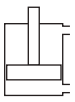
DOUBLE ACTING CYLINDER Ø 125; 160; 200.
CILINDRO DOPPIO EFFETTO Ø 125; 160; 200.

SHD .. -...

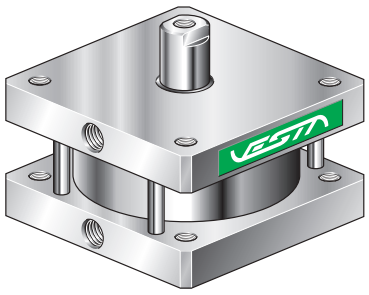
Without magnet / *Non magnetico*

SHDM .. -...

With magnet / *Magnetico*

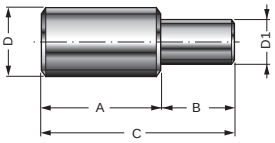






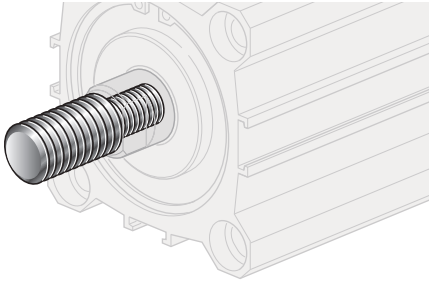
Bore *Alesaggio*	A	ØB	ØC	ØD	E	F	G	CH	I	L	M	Code *Codice*	H Stroke / *Corsa* (mm): 25	50	75	100	125	160	200
125	140	30	M14	M12	G1/4	10	110	28	25	22	10	SHD(M) 125 ...	103	128	153	178	203	238	278
160	180	40	M20	M16	G3/8	12	140	36	30	26	12	SHD(M) 160 ...	112	137	162	187	212	247	287
200	220	40	M20	M16	G3/8	12	175	36	30	26	12	SHD(M) 200 ...	112	137	162	187	212	247	287

FIXING ACCESSORIES FOR SH CYLINDERS / *ACCESSORI DI FISSAGGIO PER CILINDRI SH*



NIPPLES TO ISO STANDARD FOR **SH**
NIPPLO CON FILETTO A NORME ISO PER **SH**

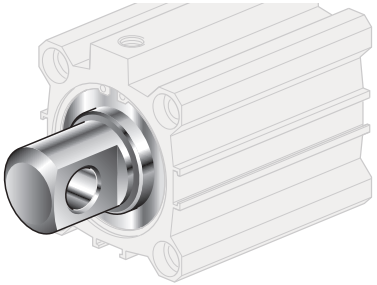
SHNP/..



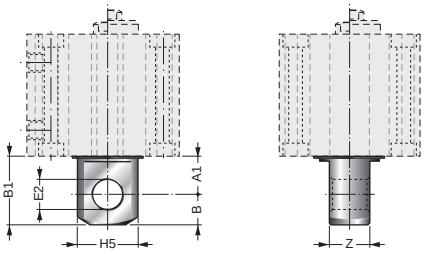
Bore *Alesaggio*	ØD	ØD1	A	B	C	Code *Codice*
12	M6x1	M3	16	6,5	22,5	SHNP/12
16	M6x1	M4	15	8	23	SHNP/16
20	M8x1,25	M5	20	10	30	SHNP/20
25	M8x1,25	M5	20	10	30	SHNP/25
32	M10x1,25	M6	22	12	34	SHNP/32
40	M10x1,25	M6	22	12	34	SHNP/40
50	M12x1,25	M8	24	14	38	SHNP/50
63	M12x1,25	M8	24	14	38	SHNP/63
80	M16x1,5	M10	32	15	47	SHNP/80
100	M20x1,5	M12	40	20	60	SHNP/100

SHCM/..

CLEVIS MALE MOUNTING FOR **SH**
*MONTAGGIO A CERNIERA MASCHIO PER **SH***



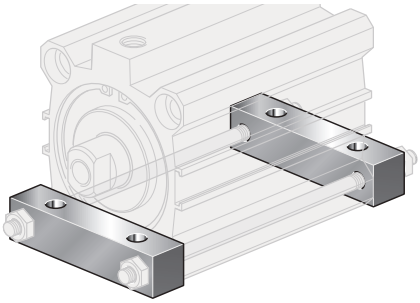
Bore *Alesaggio*	A1	B	ØE2^{H8}	ØH5	Z	B1	Code *Codice*
16	8	6	6	12	7	14	SHCM/16
20	10	8	8	16	9	18	SHCM/20
25	10	8	8	16	9	18	SHCM/25
32	13	10	10	20	14	23	SHCM/32
40	15	12	12	24	16	27	SHCM/40
50	15	12	12	24	17	27	SHCM/50
63	19	16	16	32	22	35	SHCM/63
80	19	16	16	32	22	35	SHCM/80
100	23	20	20	40	26	43	SHCM/100

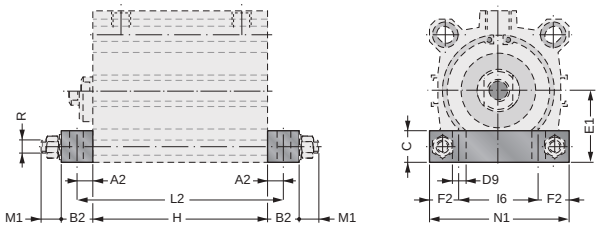


H = See previous pages
Vedi pagine precedenti

SHP/..

FOOT MOUNTING FOR **SH**
*MONTAGGIO A PIEDINI PER **SH***





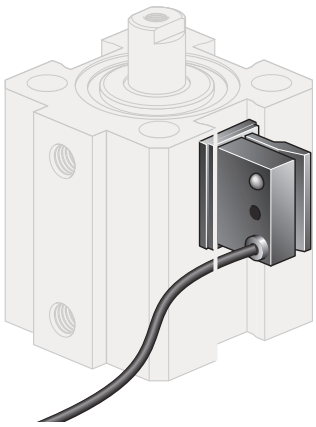
Bore *Alesaggio*	A2	B2	C	ØD9	E1	F2	I6	L2	M1	N1	ØR	Code *Codice*
16	5	10	10	3,5	17	5	30	H+10	2,4	40	M3	SHP/16
20	5	10	10	5,5	18	5	40	H+10	4	50	M5	SHP/20
25	6	12	12	5,5	20	7,5	45	H+12	4	60	M5	SHP/25
32	6	12	12	5,5	24	5	50	H+12	4	60	M5	SHP/32
40	6	12	12	5,5	27,5	5	60	H+12	4	70	M5	SHP/40
50	7,5	15	15	6,5	32,5	5	70	H+15	5	80	M6	SHP/50
63	7,5	15	15	8,5	40	7,5	85	H+15	6,5	100	M8	SHP/63
80	10	20	20	8,5	50	20	60	H+20	6,5	100	M8	SHP/80
100	10	20	20	10,5	62	22	80	H+20	8	124	M10	SHP/100

H = See previous pages
Vedi pagine precedenti

REED SWITCHES FOR SH_ CYLINDERS / *FINECORSA PER CILINDRI SH_*

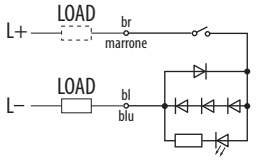
FTV 306 V

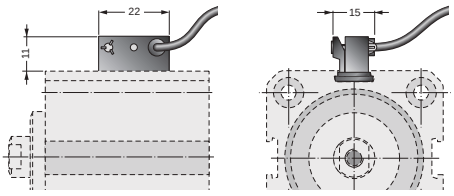
REED SWITCHES
FINECORSA MAGNETICO



Cable
***Cavo* L=3m**

FTV 306 V circuit - *Circuito FTV 306 V*





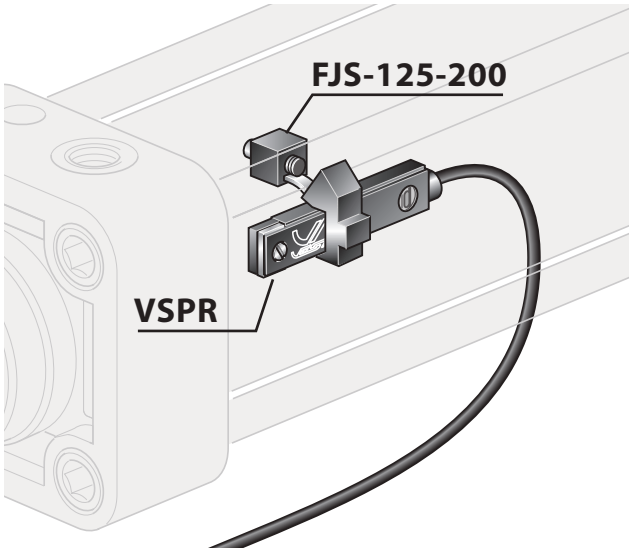
Circuit code *Codice Circuito*	Voltage range *Tensione V*	Switching current *Corrente mA*	Switching capacity *Potenza VA/W*	Degree of protection *Protezione*	Working temperature *Temperatura °C*	Contact function *Contatto*
FTV 306 V	10-250 AC-DC	300	10/10	IP65	-25 ÷ +75	

FJS-125-200

FIXING FOR TIE RODS MOUNTING
SUPPORTO PER MONTAGGIO SU TIRANTI

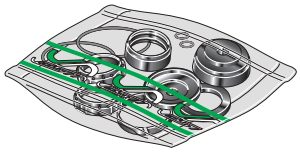
VSPR

REED SWITCHES
FINECORSA MAGNETICO



..... - SG

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO



Seals kit code = **Cylinder code** + **Bore** + **Versions** + **- SG**: (The kit includes all seals).

Codice del kit = ***Codice del cilindro*** + ***Alesaggio*** + ***Versioni*** + **- SG**: *(Il kit comprende tutte le guarnizioni necessarie).*

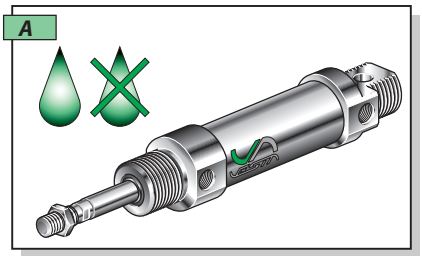
Example / *Esempio:* **SHDM 32 P - SG**

TECHNICAL FEATURES FOR CYLINDERS USED IN HARSH ENVIRONMENTS
CARATTERISTICHE TECNICHE CILINDRI ANTICORROSIONE

Anticorrosive Vesta cylinders, **DSM**, **DSA**, **XPN**, **XJS** and **XJSS** are suitable for use in aggressive environment, such as the food or the chemical industries.
DSM e **XJSS** series are available also with fluoro rubber seals (VITON), for high temperature. All cylinders follows ISO 6432 and ISO VDMA 15552 standards (also for stroke tollerance).
For further information on the resistance of materials to aggressive agents, please contact our technical sales department.

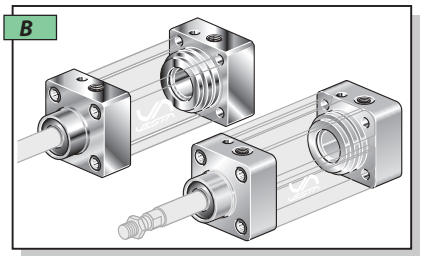
*I cilindri anticorrosione Vesta serie **DSM, DSA, XPN, XJS** e **XJSS** sono progettati per l'impiego in ambienti aggressivi, quali l'industria alimentare o chimica. I modelli **DSM** e **XJSS** (completamente in acciaio inox) sono fornibili con tutte le guarnizioni in VITON. Tutti i cilindri anticorrosione rispettano gli standard ISO 6432 e ISO VDMA 15552 (incluse le tolleranze sulle corse dei cilindri).*
Per informazioni sul grado di resistenza in ambienti specifici contattare il nostro ufficio tecnico-commerciale.

A



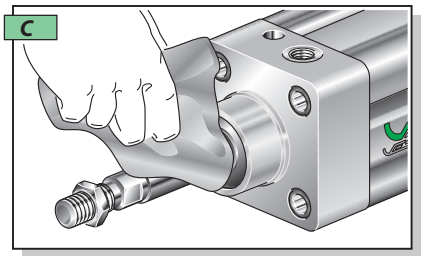
Lubrication not required.
Possibilità di funzionamento continuo privo di lubrificazione.

B



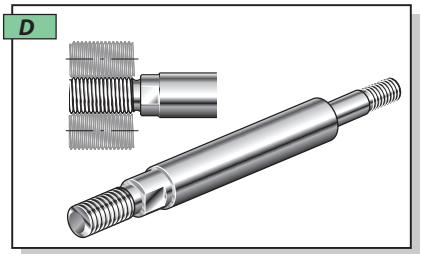
X5 Cr Ni 1810 stainless steel caps for DSM and XJSS, acetalic polymer for XJS e XPN.
Teste inox X5 Cr Ni 1810 per DSM e XJSS, resina acetalica per XJS e XPN.

C



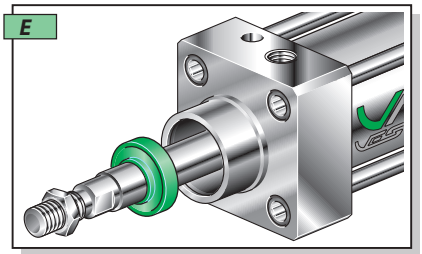
Caps easy to clean, due to their shape.
Le teste sono facilmente pulibili perché non scaricate esternamente.

D



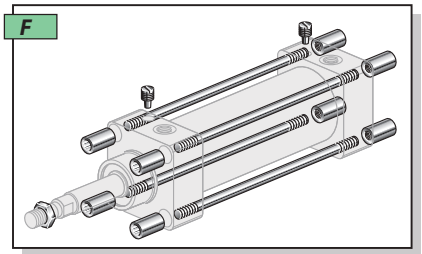
Piston rods in rolled stainless steel
X5 Cr Ni 18-10.
Steli in acciaio INOX X5 Cr Ni 18-10 rullato.

E



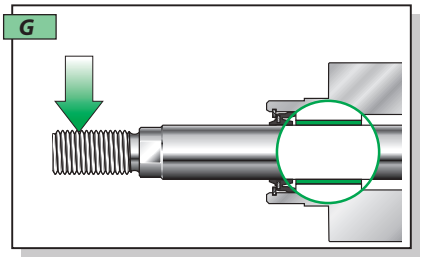
Poliurethan piston rod seal.
Guarnizione dello stelo realizzata in poliuretano.

F



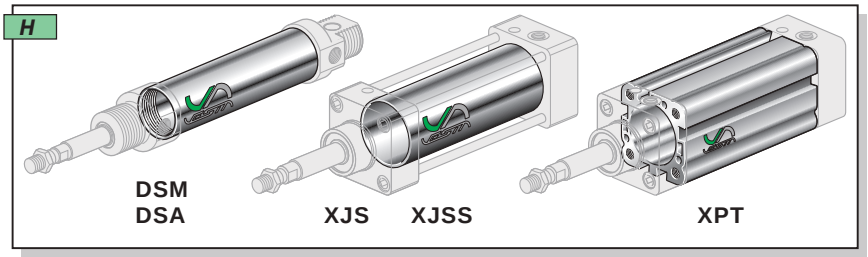
All external parts are in
X10 Cr Ni S 18-09.
I particolari a contatto con gli agenti esterni sono in acciaio inox X10 Cr Ni S 18-09.

G



Self lubricating bearing in a copper-steel alloy, with teflon covering.
Boccole autolubrificanti in acciaio ramato con deposito in Teflon.

H

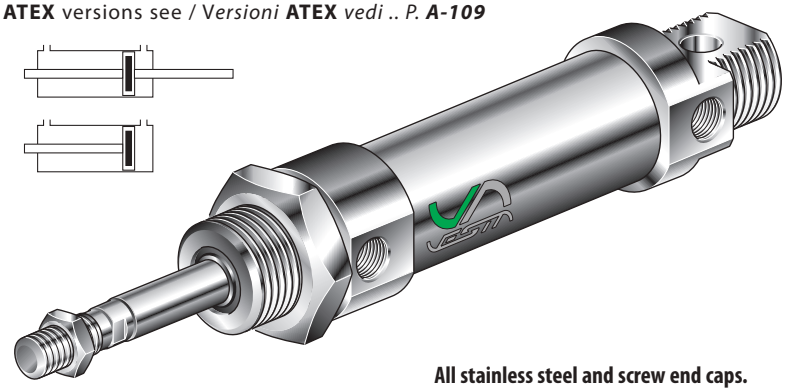


X5 Cr Ni 18-10 stainless steel tube for DSM, XJS and XJSS series.
For XPN series, anodized aluminium.
Camicie realizzate in acciaio inox X5 Cr Ni 18-10 per le versioni DSM, XJS eXJSS.
La versione XPN é ricavata da profilato di alluminio anodizzato.

SERIE DSM

PNEUMATIC CYLINDERS ISO 6432 FOR HARSH AGGRESSIVE ENVIRONMENT
CILINDRI INOX ISO 6432 PER AMBIENTI PARTICOLARMENTE AGGRESSIVI

ATEX versions see / *Versioni* **ATEX** *vedi ..* P. ***A-109***



All stainless steel and screw end caps.

Completamente in acciaio inox con teste avvitate.

With magnetic piston / *Con pistone magnetico*

DSM □□-□□□ □ □□

Bore
Alesaggio
(mm):

Ø12 ..... **12**
Ø16 ..... **16**
Ø20 ..... **20**
Ø25 ..... **25**

Stroke / *Corsa*
(mm):

VV Viton all seal
Tutte le guarnizione in Viton

P Through rod cylinder
Cilindro stelo passante

SEA Single acting front spring
Semplice effetto molla anteriore

SEP Single acting rear spring
Semplice effetto molla posteriore

Standard stroke / *Corse Standard*

Bore Alesaggio	10	25	50	80	100	125	160	200	250	300	350	400	450	500
12	•	•	•	•	•	•	•							
16	•	•	•	•	•	•	•	•	•	•				
20	•	•	•	•	•	•	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•	•	•	•	•	•	•

DSM cylinder fixing see:
Fissaggi per cilindri DSM vedi: ..... **Pag. A-10 ÷ A-11; A-43.**

Features of reed switches see:
Caratteristiche finecorsa magnetici: ..... **Pag. A-19, A-42**

TECHNICAL FEATURES

End caps	Stainless steel X5 Cr Ni 1810.
Piston rod	Stainless steel X5 Cr Ni 1810.
Barrel	Stainless steel X5 Cr Ni 1810 tube.
Seals	Rod seal in VITON, other seals in NBR.
Cushioning	Mechanical in polyurethan.
Nuts	Stainless steel X10 Cr Ni S 18-09.

Environment temperature range	-10 ÷ +70 °C.
Temperature range of medium	0 ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	10 bar.

CARATTERISTICHE TECNICHE

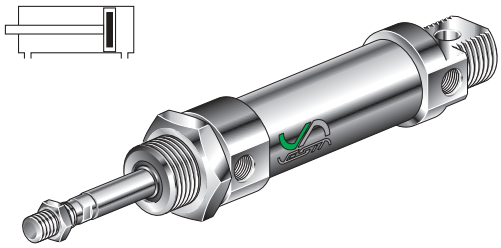
Testate	*Acciaio inox X5 Cr Ni 1810.*
Stelo	*Acciaio inox X5 Cr Ni 1810.*
Camicia	*Tubo in acciaio inox X5 Cr Ni 1810.*
Guarnizioni	*Dello stelo in VITON, altre in NBR.*
Ammortizzatori	*Meccanici in poliuretano.*
Bussola e dado	*Acciaio inox X10 Cr Ni S 18-09.*

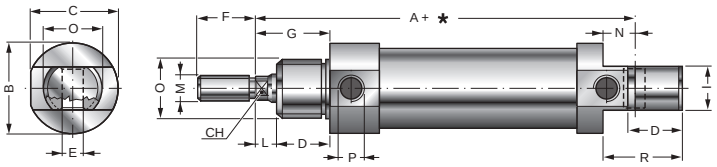
Temperatura ambiente	*-10 °C ÷ +70 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

DSM .. /...

SINGLE ROD
CILINDRO BASE STELO SEMPLICE

*** = Stroke / *Corsa***



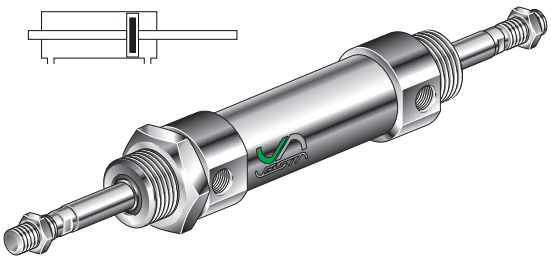


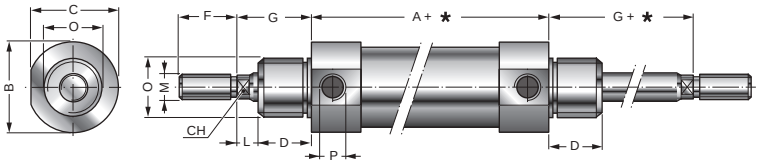
Bore Alesaggio	A	ØB	C	CH	D	ØE H9	F	G	I	L	ØM	N	ØO	ØP	R	Code Codice
12	75	18	17,2	5	15	6	16	22	12	7	M6x1	9	M16x1,5	M5	22	DSM 12/...
16	82	20	19	5	15	6	16	22	12	7	M6x1	9	M16x1,5	M5	22	DSM 16/...
20	95	25	26,2	7	19	8	20	24	16	5	M8x1,25	12	M22x1,5	G1/8	30	DSM 20/...
25	104	30	28,3	8	20	8	22	28	16	8	M10x1,25	12	M22x1,5	G1/8	30	DSM 25/...

DSM .. /... P

THROUGH ROD
STELO PASSANTE

*** = Stroke / *Corsa***





Bore Alesaggio	A	ØB	C	CH	D	F	G	L	ØM	ØO	ØP	Code Codice
12	49,5	18	17,2	5	15	16	22	7	M6x1	M16x1,5	M5	DSM 12/... P
16	56	20	19	5	15	16	22	7	M6x1	M16x1,5	M5	DSM 16/... P
20	68	28	26,2	7	19	20	24	5	M8x1,25	M22x1,5	G1/8	DSM 20/... P
25	69	30	28,3	8	20	22	28	8	M10x1,25	M22x1,5	G1/8	DSM 25/... P

CYLINDERS ISO 6432 FOR AGGRESSIVE ENVIRONMENTS
CILINDRI ISO 6432 PER AMBIENTI AGGRESSIVI

SERIE **DSA**

With magnetic piston / *Con pistone magnetico*

DSA □□-□□□ □

Bore
Alesaggio (mm):
Ø12 ..... **12**
Ø16 ..... **16**
Ø20 ..... **20**
Ø25 ..... **25**

Stroke / *Corsa* (mm):

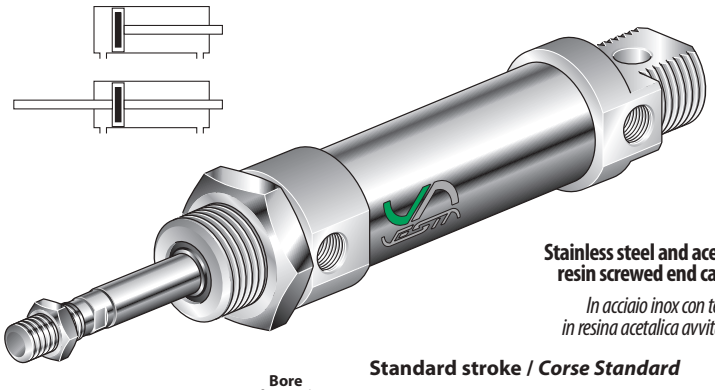
P Through rod cylinder
Cilindro stelo passante

SEA Single acting front spring
Semplice effetto molla anteriore

SEP Single acting rear spring
Semplice effetto molla posteriore

DSA cylinder fixing see:
Fissaggi per cilindri DSA vedi: ..... **Pag. A-10 ÷ A-11; A-43.**

Features of reed switches see:
Caratteristiche finecorsa magnetici: ..... **Pag. A-19, A-42**



Stainless steel and acetal resin screwed end caps.
In acciaio inox con teste in resina acetalica avvitate.

Standard stroke / *Corse Standard*

Bore / Alesaggio	10	25	50	80	100	125	160	200	250
12	•	•	•	•	•				
16	•	•	•	•	•	•	•	•	
20	•	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•	•

TECHNICAL FEATURES

End caps	Acetal resin.
Piston rod	Stainless steel X5 Cr Ni 1810.
Barrel	Stainless steel X5 Cr Ni 1810 tube.
Seals	Rod seal in Poliurethan, other seals in NBR.
Cushioning	Mechanical in polyurethan.
Nuts	Stainless steel X10 Cr Ni S 18-09.

Environment temperature range	-10 ÷ +70 °C.
Temperature range of medium	0 ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	10 bar.

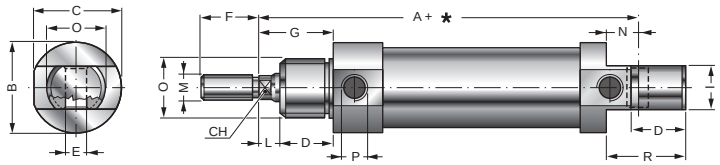
CARATTERISTICHE TECNICHE

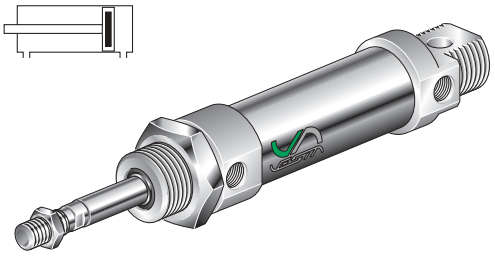
Testate	*Resina acetalica.*
Stelo	*Acciaio inox X5 Cr Ni 1810.*
Camicia	*Tubo in acciaio inox X5 Cr Ni 1810.*
Guarnizioni	*Dello stelo in Poliuretano, altre in NBR.*
Ammortizzatori	*Meccanici in poliuretano.*
Dadi	*Acciaio inox X10 Cr Ni S 18-09.*

Temperatura ambiente	*-10 °C ÷ +70 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

✱ = **Stroke / *Corsa***

SINGLE ROD
CILINDRO BASE STELO SEMPLICE
DSA .. /...

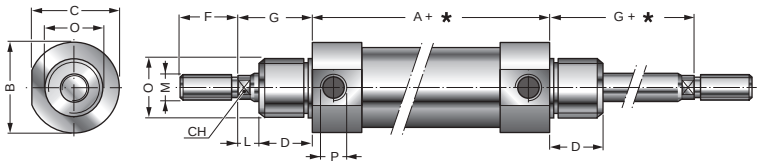


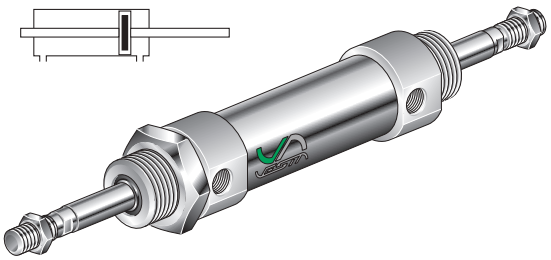


Bore / Alesaggio	A	ØB	C	CH	D	ØE H9	F	G	I	L	ØM	N	ØO	ØP	R	Code / *Codice*
12	75	18	17,2	5	15	6	16	22	12	7	M6x1	9	M16x1,5	M5	22	DSA 12/...
16	82	20	19	5	15	6	16	22	12	7	M6x1	9	M16x1,5	M5	22	DSA 16/...
20	95	25	23,5	7	19	8	20	24	16	5	M8x1,25	12	M22x1,5	G1/8	30	DSA 20/...
25	104	30	28,3	8	20	8	22	28	16	8	M10x1,25	12	M22x1,5	G1/8	30	DSA 25/...

✱ = **Stroke / *Corsa***

THROUGH ROD
STELO PASSANTE
DSA .. /... P





Bore / Alesaggio	A	ØB	C	CH	D	F	G	L	ØM	ØO	ØP	Code / *Codice*
12	49,5	18	17,2	5	15	16	22	7	M6x1	M16x1,5	M5	DSA 12/... P
16	56	20	19	5	15	16	22	7	M6x1	M16x1,5	M5	DSA 16/... P
20	68	25	23,5	7	19	20	24	5	M8x1,25	M22x1,5	G1/8	DSA 20/... P
25	69	30	28,3	8	20	22	28	8	M10x1,25	M22x1,5	G1/8	DSA 25/... P

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO
..... - SG

Seals kit code = **Cylinder code** + **Bore** + **Versions** + **- SG**: (The kit includes all seals).
Codice del kit = ***Codice del cilindro*** + ***Alesaggio*** + ***Versioni*** + **- SG**: *(Il kit comprende tutte le guarnizioni necessarie).*
Example / *Esempio:* **DSA 16 P - SG**

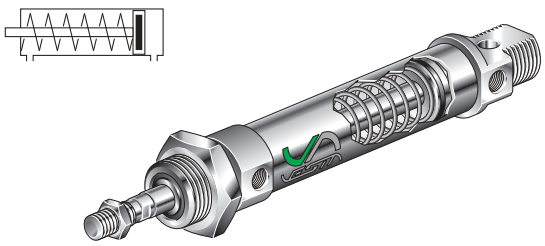


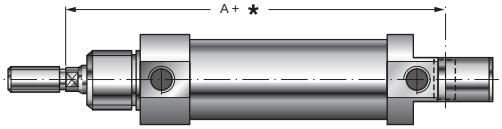
DS . .. /... SEA

SIMPLE ACTING FRONT SPRING
SEMPLICE EFFETTO MOLLA ANTERIORE

For overall dimensions see DSM or DSA single rod
Dimensioni di ingombro vedi DSM o DSA base stelo semplice

✱ = **Stroke** / ***Corsa***





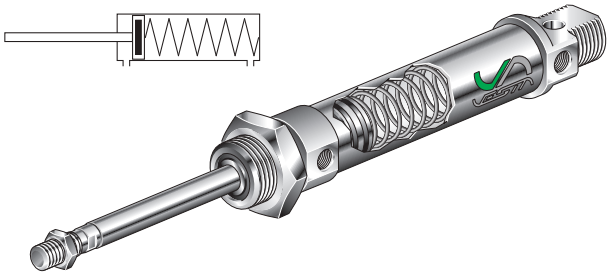
Bore *Alesaggio*	A	Code *Codice*	Code *Codice*
12	75	DSM 12/... SEA	DSA 12/... SEA
16	82	DSM 16/... SEA	DSA 16/... SEA
20	95	DSM 20/... SEA	DSA 20/... SEA
25	104	DSM 25/... SEA	DSA 25/... SEA

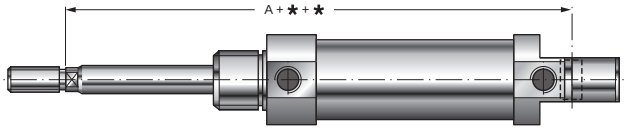
DS . .. /... SEP

SIMPLE ACTING REAR SPRING
SEMPLICE EFFETTO MOLLA POSTERIORE

For overall dimensions see DSM or DSA single rod
Dimensioni di ingombro vedi DSM o DSA base stelo semplice

✱ = **Stroke** / ***Corsa***





Bore *Alesaggio*	A	Code *Codice*	Code *Codice*
12	75	DSM 12/... SEP	DSA 12/... SEP
16	82	DSM 16/... SEP	DSA 16/... SEP
20	95	DSM 20/... SEP	DSA 20/... SEP
25	104	DSM 25/... SEP	DSA 25/... SEP

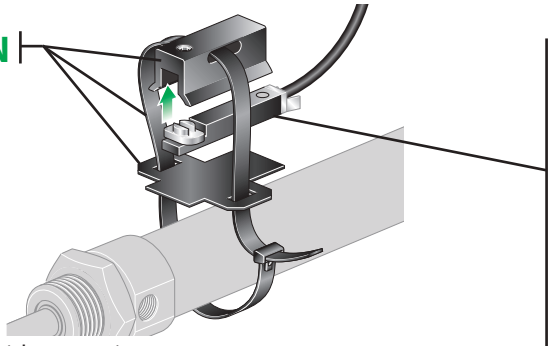
Strokes *Corse* (mm)	Spring force - *Forza molla* (daN) Ø12 mm Min.	Ø12 mm Max.	Ø16 mm Min.	Ø16 mm Max.	Ø20 mm Min.	Ø20 mm Max.	Ø25 mm Min.	Ø25 mm Max.	..SEA	..SEP
10	2,1	2,4	2,2	2,5	2,3	2,6	2,3	2,6	•	•
25	1,6	2,4	1,6	2,5	1,7	2,6	1,7	2,6	•	•
50	0,35	2,4	0,5	2,5	1	2,6	1	2,6	•	•

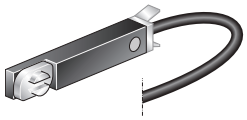
MAGNETIC SWITCHES FOR ISO 6432 CYLINDER / *FINECORSA MAGNETICI PER CILINDRI ISO 6432*

FFS 0 1 VN

Bore
Alesaggio
(mm):

Ø12 ... **12**
Ø16 ... **16**
Ø20 ... **20**
Ø25 ... **25**





For magnetic switches details see:
Caratteristiche finecorsa magnetici vedi:

VNCR2, VNPR2, VNCE3, VNPE3.

Pag. A-19

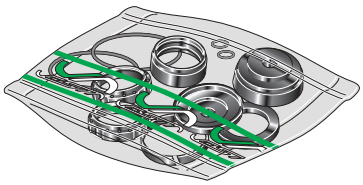
For further information on the resistance of material to aggressive agents, please contact our technical sales department.

Per informazioni sul grado di resistenza dei finecorsa magnetici in ambienti specifici contattare il nostro ufficio tecnico-commerciale.

Instruction for mounting see:
Per le istruzioni di montaggio vedi: **Pag. A-11**

..... - SG

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO



Seals kit code = **Cylinder code** + **Bore** + **Versions** + **- SG**:
(The kit includes all seals).

Codice del kit = ***Codice del cilindro*** + ***Alesaggio*** + ***Versioni*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **DSM 16 - SG**

STAINLESS STEEL FIXING / *ACCESSORI DI FISSAGGIO INOX PER CILINDRI ANTICORROSIONE*

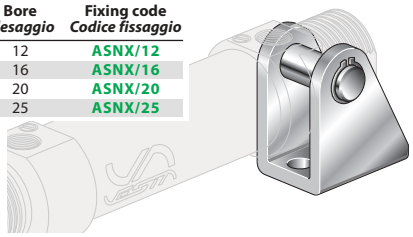
ISO 6432 FOR / *PER* DSM - DSA Ø12 ÷ Ø25

Vesta fixing accessories shown here are manifactured in X5 Cr Ni 18-10 stainless steel .
Dimensions correspond to ISO 6432 standard (see pages A-10 and A-11).

I fissaggi Vesta a fianco illustrati sono realizzati in acciaio inox X5 Cr Ni 18-10 per poter resistere all'ambiente di destinazione del cilindro anticorrosione e comunque mantengono le dimensioni di ingombro dei corrispondenti fissaggi ISO 6432 descritti a pagina A-10 e A-11 del presente catalogo.

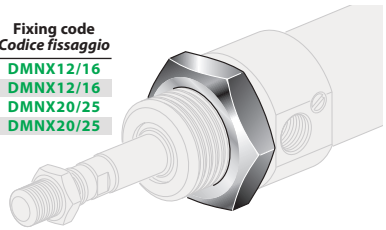
REAR HINGE HORIZONTAL MOUNTING
MONTAGGIO A CONTROCERNIERA
ASNX/..

Bore *Alesaggio*	Fixing code *Codice fissaggio*
12	ASNX/12
16	ASNX/16
20	ASNX/20
25	ASNX/25



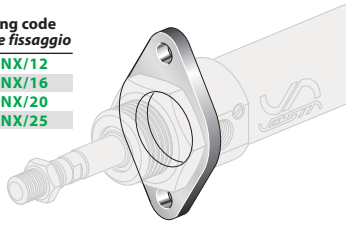
END-CAP NUT
DADO TESTATA
DMNX ../..

Bore *Alesaggio*	Fixing code *Codice fissaggio*
12	DMNX12/16
16	DMNX12/16
20	DMNX20/25
25	DMNX20/25



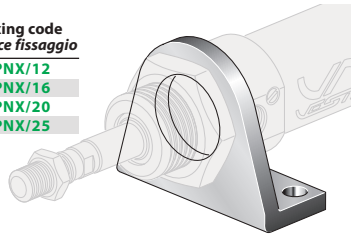
FLANGE MOUNTING
MONTAGGIO A FLANGIA
FLNX/..

Bore *Alesaggio*	Fixing code *Codice fissaggio*
12	FLNX/12
16	FLNX/16
20	FLNX/20
25	FLNX/25



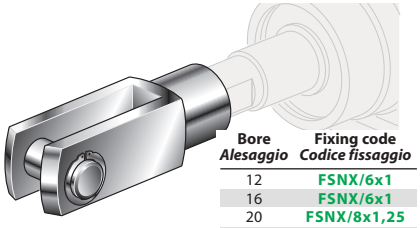
FOOT MOUNTING
MONTAGGIO A PIEDINI
PNX/..

Bore *Alesaggio*	Fixing code *Codice fissaggio*
12	PNX/12
16	PNX/16
20	PNX/20
25	PNX/25



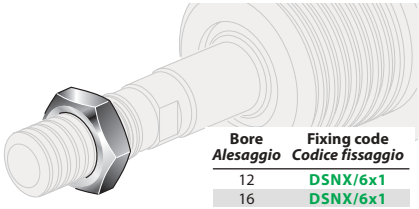
ISO 15552 & ISO 6432 FOR / *PER* DSM; DSA; XPN; XJS; XJSS Ø12 ÷ Ø100

CLEVIS (ROD) MOUNTING
FORCELLA STELO
FSNX/..



Bore *Alesaggio*	Fixing code *Codice fissaggio*
12	FSNX/6x1
16	FSNX/6x1
20	FSNX/8x1,25
25	FSNX/10x1,25
32	FSNX/10x1,25
40	FSNX/12x1,25
50	FSNX/16x1,5
63	FSNX/16x1,5
80	FSNX/20x1,5
100	FSNX/20x1,5

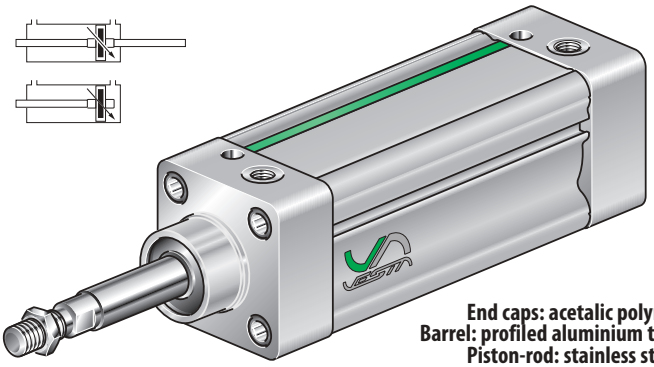
ROD NUT
DADO STELO
DSNX/..



Bore *Alesaggio*	Fixing code *Codice fissaggio*
12	DSNX/6x1
16	DSNX/6x1
20	DSNX/8x1,25
25	DSNX/10x1,25
32	DSNX/10x1,25
40	DSNX/12x1,25
50	DSNX/16x1,5
63	DSNX/16x1,5
80	DSNX/20x1,5
100	DSNX/20x1,5

SERIE XPN

FOR AGGRESSIVE ENVIRONMENT CONDITIONS, VDMA - ISO 15552
CILINDRI PER AMBIENTI AGGRESSIVI , VDMA - ISO 15552



End caps: acetalic polymer
Barrel: profiled aluminium tube
Piston-rod: stainless steel.
Testate: resina acetalica
Camicia: profilato di alluminio
Stelo: acciaio inox

With magnetic piston / *Con pistone magnetico*

XPN □□/ □□□ □

Bore / *Alesaggio* (mm):
Ø32 ..... **32**
Ø40 ..... **40**
Ø50 ..... **50**
Ø63 ..... **63**
Ø80 ..... **80**
Ø100 ... **100**

Stroke / *Corsa* (mm):

P Through rod cylinder
Cilindro stelo passante

Standard stroke / *Corse Standard*

Bore *Alesaggio*	25	50	80	100	125	160	200	250	300	350	400	450	500	600	700	800	900	1000
32	•	•	•	•	•	•	•	•	•	•	•	•	•					
40	•	•	•	•	•	•	•	•	•	•	•	•	•					
50	•	•	•	•	•	•	•	•	•	•	•	•	•					
63	•	•	•	•	•	•	•	•	•	•	•	•	•					
80	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Effective cushion length
Lunghezza utile ammortizzatore

Bore *Alesaggio*	Length *Lunghezza*
32	24
40	27
50	30
63	30
80	36
100	38

XPN cylinder fixing see:
Fissaggi per cilindri XPN vedi:
..... **Pag. A-43; A-47 ÷ A-48.**

Features of reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-19.**

TECHNICAL FEATURES

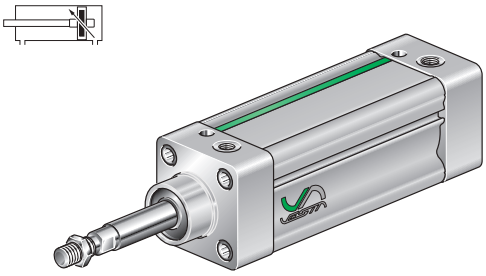
End caps	Acetalic polymer (Zellamid 900).
Piston rod	Stainless steel X5 Cr Ni 18-10.
Barrel	Extruded profiled and anodized aluminium tube.
Seals	Rod seal in poliurethan, other seals in NBR.
Cushoning	Pneumatic adjusting cushions.
Environment temperature range	-10 °C ÷ +70 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure range	10 bar.

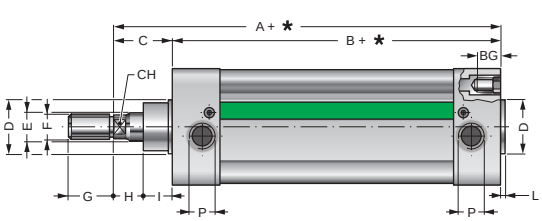
CARATTERISTICHE TECNICHE

Testate	*Resina acetalica (Zellamid 900).*
Stelo	*Acciaio inox X5 Cr Ni 18-10.*
Camicia	*Tubo profilato ed anodizzato d' alluminio.*
Guarnizioni	*Dello stelo in poliuretano, altre in NBR.*
Ammortizzatori	*Di notevole efficacia, con regolazione micrometrica.*
Temperatura ambiente	*-10 °C ÷ +70 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

XPN .. /...

SINGLE ROD
CILINDRO BASE STELO SEMPLICE



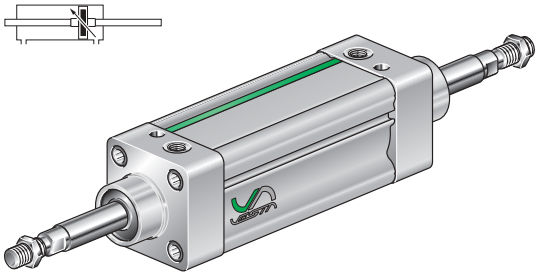


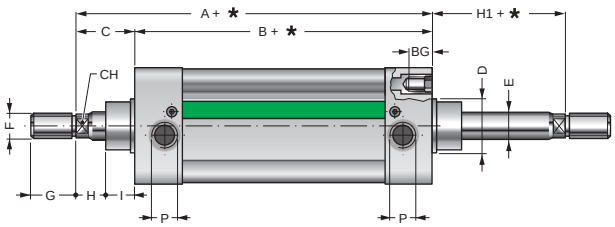
✱ = Stroke / *Corsa*

Bore *Alesaggio*	A	B	C	D	E	F	G	H	I	L	M	N	O	P	BG	CH	Code *Codice*
32	120	94	26	30	12	M10x1,25	20	7	19	4	47	32,5	M6	G1/8	15	10	XPN 32/...
40	135	105	30	35	16	M12x1,25	24	8	22	4	54	38	M6	G1/4	15	13	XPN 40/...
50	143	106	37	40	20	M16x1,5	32	11	26	2	66	46,5	M8	G1/4	15	17	XPN 50/...
63	158	121	37	45	20	M16x1,5	32	13	24	4	78	56,5	M8	G3/8	15	17	XPN 63/...
80	174	128	46	45	25	M20x1,5	40	20	26	2	98	72	M10	G3/8	18	21	XPN 80/...
100	189	138	51	55	25	M20x1,5	40	25	26	2	115	89	M10	G1/2	18	25	XPN 100/...

XPN .. /... P

THROUGH ROD
STELO PASSANTE





✱ = Stroke / *Corsa*

Bore *Alesaggio*	A	B	C	D	E	F	G	H	H1	I	M	N	O	P	BG	CH	Code *Codice*
32	120	94	26	30	12	M10x1,25	20	7	26	19	47	32,5	M6	G1/8	15	10	XPN 32/... P
40	135	105	30	35	16	M12x1,25	24	8	30	22	54	38	M6	G1/4	15	13	XPN 40/... P
50	143	106	37	40	20	M16x1,5	32	11	37	26	66	46,5	M8	G1/4	15	17	XPN 50/... P
63	158	121	37	45	20	M16x1,5	32	13	37	24	78	56,5	M8	G3/8	15	17	XPN 63/... P
80	174	128	46	45	25	M20x1,5	40	20	46	26	98	72	M10	G3/8	18	21	XPN 80/... P
100	189	138	51	55	25	M20x1,5	40	25	51	26	115	89	M10	G1/2	18	25	XPN 100/... P

FOR USE IN DUSTY AND AGRESSIVE ENVIRONMENT, VDMA - ISO 15552
CILINDRI PER AMBIENTI AGGRESSIVI , VDMA - ISO 15552

SERIE **XJS**

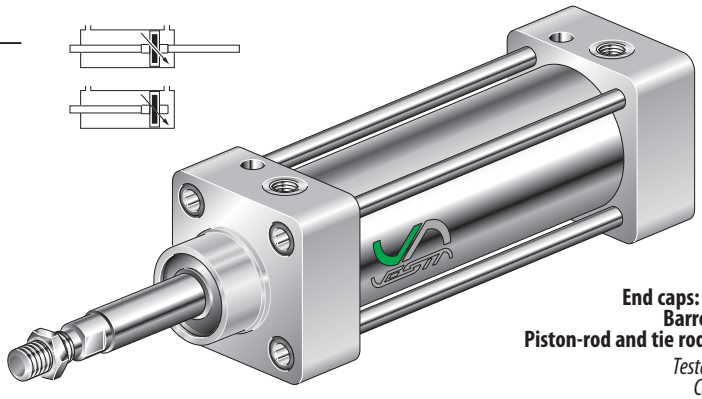
With magnetic piston / *Con pistone magnetico*

XJS □□/□□□□

Bore / *Alesaggio* (mm):
Ø32 ..... **32**
Ø40 ..... **40**
Ø50 ..... **50**
Ø63 ..... **63**
Ø80 ..... **80**
Ø100 ..... **100**

Stroke / *Corsa* (mm):

P
Through rod cylinder
Cilindro stelo passante



End caps: acetalic polymer
Barrel: stainless steel
Piston-rod and tie rods: stainless steel
Testate: resina acetalica
Camicia: acciaio inox
Stelo e tiranti: acciaio inox

XJS cylinder fixing see:
Fissaggi per cilindri XJS vedi:
..... **Pag. A-43; A-47 ÷ A-48.**

Features of reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-19; A-48.**

Effective cushion length
Lunghezza utile ammortizzatore

Bore *Alesaggio*	Length *Lunghezza*
32	24
40	27
50	30
63	30
80	36
100	38

Standard stroke / *Corse Standard*

Bore *Alesaggio*	25	50	80	100	125	160	200	250	300	350	400	450	500	600
32	•	•	•	•	•	•	•	•	•	•	•	•	•	•
40	•	•	•	•	•	•	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•	•	•	•	•	•	•
63	•	•	•	•	•	•	•	•	•	•	•	•	•	•
80	•	•	•	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•	•	•	•

TECHNICAL FEATURES

End caps	Acetalic polymer (Zellamid 900).
Piston rod	Stainless steel X5 Cr Ni 18-10.
Tie rods	Stainless steel X10 Cr Ni S 18-09.
Barrel	Stainless steel X5 Cr Ni 18-10 tube.
Seals	Rod seal in polyuretanic material, other seals in NBR.
Cushioning	Pneumatic adjusting cushioning with screw in X10 Cr Ni S 18-09.

Environment temperature range	-10 °C ÷ +70 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	10 bar.
Nuts	Stainless steel X10 Cr Ni S 18-09.

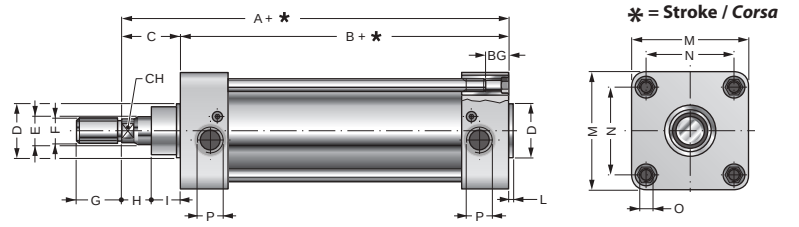
CARATTERISTICHE TECNICHE

Testate	*Resina acetalica (Zellamid 900).*
Stelo	*Acciaio inox X5 Cr Ni 18-10*
Tiranti	*Acciaio inox X10 Cr Ni S 18-09.*
Camicia	*Tubo in acciaio inox X5 Cr Ni 18-10.*
Guarnizioni	*Dello stelo in poliuretano, altre in NBR.*
Ammortizzatori	*Regolazione pneumatica con viti regolabile in X10 Cr Ni S 18-09.*

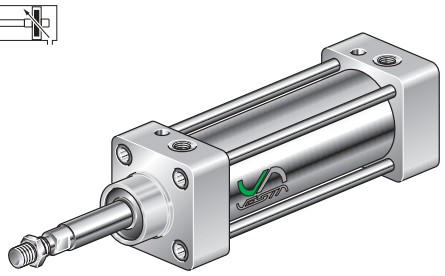
Temperatura ambiente	*-10 °C ÷ +70 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*
Bussola e dado	*Acciaio inox X10 Cr Ni S 18-09.*

SINGLE ROD
CILINDRO BASE STELO SEMPLICE

XJS .. /...

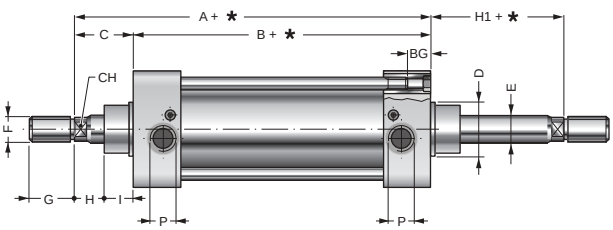


Bore *Alesaggio*	A	B	C	D	E	F	G	H	I	L	M	N	O	P	BG	CH	Code *Codice*
32	120	94	26	30	12	M10x1,25	20	7	19	4	47	32,5	M6	G1/8	15	10	XJS 32/...
40	135	105	30	35	16	M12x1,25	24	8	22	4	54	38	M6	G1/4	15	13	XJS 40/...
50	143	106	37	40	20	M16x1,5	32	11	26	2	66	46,5	M8	G1/4	15	17	XJS 50/...
63	158	121	37	45	20	M16x1,5	32	13	24	4	78	56,5	M8	G3/8	15	17	XJS 63/...
80	174	128	46	45	25	M20x1,5	40	20	26	2	98	72	M10	G3/8	18	21	XJS 80/...
100	189	138	51	55	25	M20x1,5	40	25	26	2	110	89	M10	G1/2	18	25	XJS 100/...

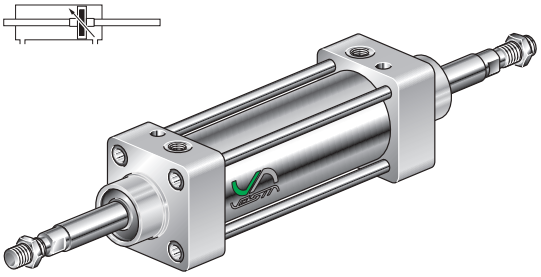


THROUGH ROD
STELO PASSANTE

XJS .. /... P



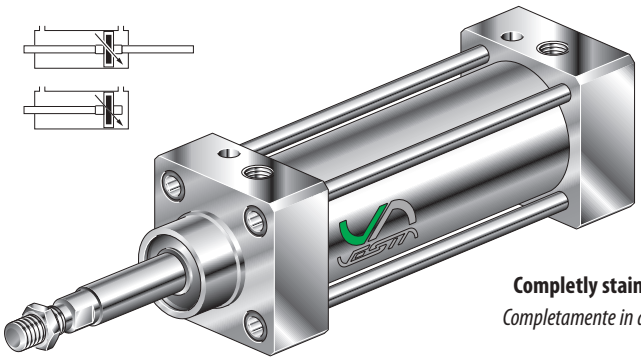
Bore *Alesaggio*	A	B	C	D	E	F	G	H	H1	I	M	N	O	P	BG	CH	Code *Codice*
32	120	94	26	30	12	M10x1,25	20	7	26	19	47	32,5	M6	G1/8	15	10	XJS 32/... P
40	135	105	30	35	16	M12x1,25	24	8	30	22	54	38	M6	G1/4	15	13	XJS 40/... P
50	143	106	37	40	20	M16x1,5	32	11	37	26	66	46,5	M8	G1/4	15	17	XJS 50/... P
63	158	121	37	45	20	M16x1,5	32	13	37	24	78	56,5	M8	G3/8	15	17	XJS 63/... P
80	174	128	46	45	25	M20x1,5	40	20	46	26	98	72	M10	G3/8	18	21	XJS 80/... P
100	189	138	51	55	25	M20x1,5	40	25	51	26	110	89	M10	G1/2	18	25	XJS 100/... P



SERIE XJSS

FOR HARSH ENVIRONMENT CONDITIONS, VDMA - ISO 15552
PER AMBIENTI PARTICOLARMENTE AGGRESSIVI, VDMA - ISO 15552

ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***



Completly stainless steel,
Completamente in acciaio inox,

With magnetic piston / *Con pistone magnetico*

XJSS □□/□□□□□□

Bore / *Alesaggio* (mm):
Ø32 ..... **32**
Ø40 ..... **40**
Ø50 ..... **50**
Ø63 ..... **63**
Ø80 ..... **80**
Ø100 ..... **100**

P Through rod cylinder
Cilindro stelo passante

VV Viton all seal
Tutte le guarnizione in Viton

Stroke / *Corsa* (mm):

Standard stroke / *Corse Standard*

Bore / Alesaggio	25	50	80	100	125	160	200	250	300	350	400	450	500	600
32	•	•	•	•	•	•	•	•	•	•	•	•	•	•
40	•	•	•	•	•	•	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•	•	•	•	•	•	•
63	•	•	•	•	•	•	•	•	•	•	•	•	•	•
80	•	•	•	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Effective cushion length
Lunghezza utile ammortizzatore

Bore / Alesaggio	Length / Lunghezza
32	24
40	27
50	30
63	30
80	36
100	38

XJSS cylinder fixing see:
Fissaggi per cilindri XJSS vedi:
..... **Pag. A-43; A-47 ÷ A-48.**

Features of reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-19; A-48.**

TECHNICAL FEATURES

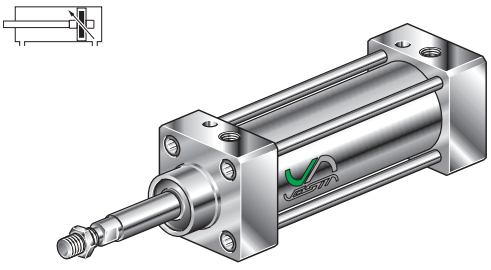
End caps	Stainless steel X5 Cr Ni 18-10.
Piston rod	Stainless steel X5 Cr Ni 18-10.
Tie rods	Stainless steel X10 Cr Ni S 18-09.
Barrel	Stainless steel X5 Cr Ni 18-10 tube.
Seals	Rod seal in VITON, other seals in Polyurethan.
Cushioning	Pneumatic adjusting with screws in X10 Cr Ni S 18-09.
Environment temperature range	-10 ÷ +70 °C.
Temperature range of medium	0 ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	10 bar.
Nuts	Stainless steel X10 Cr Ni S 18-09.

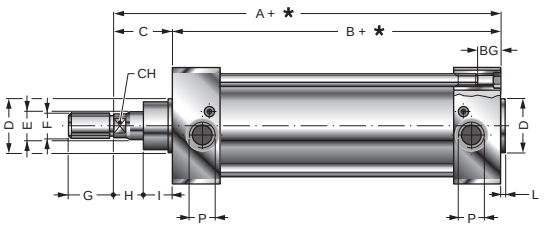
CARATTERISTICHE TECNICHE

Testate	*Acciaio inox X5 Cr Ni 18-10.*
Stelo	*Acciaio inox X5 Cr Ni 18-10.*
Tiranti	*Acciaio inox X10 Cr Ni S 18-09.*
Camicia	*Tubo in acciaio inox X5 Cr Ni 18-10.*
Guarnizioni	*Dello stelo in VITON, altre in Poliuretano.*
Ammortizzatori	*Pneumatici regolabili con viti in X10 Cr Ni S 18-09.*
Temperatura ambiente	*-10 °C ÷ +70 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*
Bussola e dado	*Acciaio inox X10 Cr Ni S 18-09.*

XJSS .. /...

SINGLE ROD
CILINDRO BASE STELO SEMPLICE



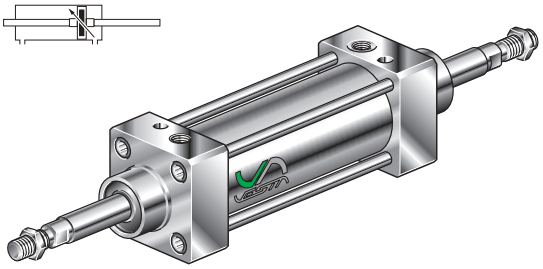


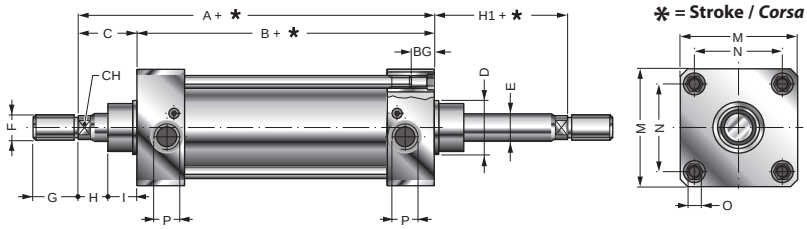
Bore / Alesaggio	A	B	C	D	E	F	G	H	I	L	M	N	O	P	BG	CH	Code / Codice
32	120	94	26	30	12	M10x1,25	20	7	19	4	47	32,5	M6	G1/8	15	10	XJSS 32/...
40	135	105	30	35	16	M12x1,25	24	8	22	4	54	38	M6	G1/4	15	13	XJSS 40/...
50	143	106	37	40	20	M16x1,5	32	11	26	2	66	46,5	M8	G1/4	15	17	XJSS 50/...
63	158	121	37	45	20	M16x1,5	32	13	24	4	78	56,5	M8	G3/8	15	17	XJSS 63/...
80	174	128	46	45	25	M20x1,5	40	20	26	2	100	72	M10	G3/8	18	21	XJSS 80/...
100	189	138	51	55	25	M20x1,5	40	25	26	2	110	89	M10	G1/2	18	25	XJSS 100/...

ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***

XJSS .. /... P

THROUGH ROD
STELO PASSANTE





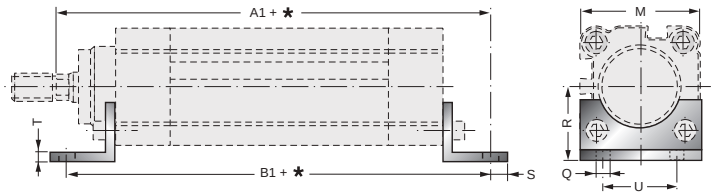
Bore / Alesaggio	A	B	C	D	E	F	G	H	H1	I	M	N	O	P	BG	CH	Code / Codice
32	120	94	26	30	12	M10x1,25	20	7	26	19	47	32,5	M6	G1/8	15	10	XJSS 32/...P
40	135	105	30	35	16	M12x1,25	24	8	30	22	54	38	M6	G1/4	15	13	XJSS 40/...P
50	143	106	37	40	20	M16x1,5	32	11	37	26	66	46,5	M8	G1/4	15	17	XJSS 50/...P
63	158	121	37	45	20	M16x1,5	32	13	37	24	78	56,5	M8	G3/8	15	17	XJSS 63/...P
80	174	128	46	45	25	M20x1,5	40	20	46	26	100	72	M10	G3/8	18	21	XJSS 80/...P
100	189	138	51	55	25	M20x1,5	40	25	51	26	110	89	M10	G1/2	18	25	XJSS 100/...P

ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***

STAINLESS STEEL FIXING / *ACCESSORI DI FISSAGGIO INOX PER CILINDRI ANTICORROSIONE*

Note: the fixing screws are not included in the supply of the fitting */ le viti di fissaggio non sono comprese nella fornitura dell'accessorio.*

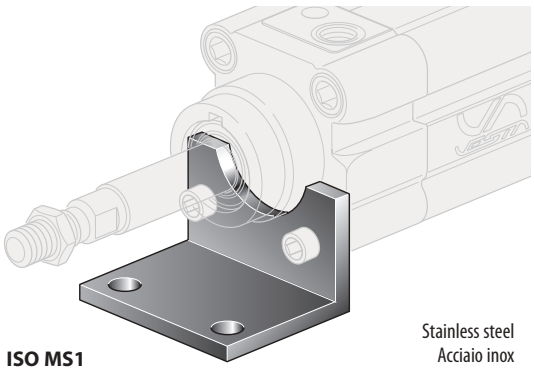
✱ = Stroke / *Corsa*



Bore *Alesaggio*	A1	B1	M	ØQ	R	S	T	U	Code *Codice*
32	144	142	47	7	32	11	4	32	XPNX/32
40	163	161	54	9	36	15	4	36	XPNX/40
50	175	170	66	9	45	15	5	45	XPNX/50
63	190	185	78	9	50	15	5	50	XPNX/63
80	215	210	98	12	63	20	6	63	XPNX/80
100	230	220	115	14	71	25	6	75	XPNX/100

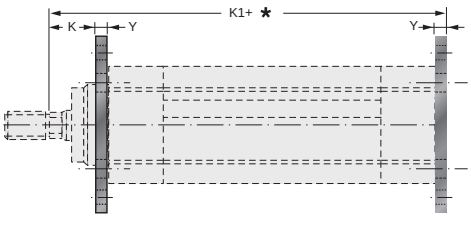
FOOT MOUNTING
MONTAGGIO A PIEDINI

XPNX/..



REF. **ISO MS1**

Stainless steel
Acciaio inox

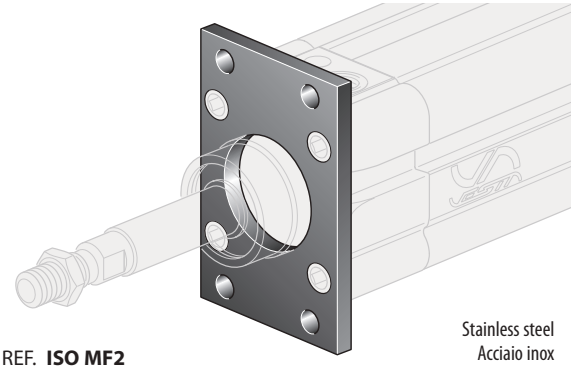


✱ = Stroke / *Corsa*

Bore *Alesaggio*	K	K1	M	M2	N1	N2	ØQ	Y	Code *Codice*
32	16	130	45	80	32	64	7	10	XFLNX/32
40	20	145	52	90	36	72	9	10	XFLNX/40
50	25	155	65	110	45	90	9	12	XFLNX/50
63	25	170	75	120	50	100	9	12	XFLNX/63
80	30	190	95	150	63	126	12	16	XFLNX/80
100	35	205	115	170	75	150	14	16	XFLNX/100

FLANGE MOUNTING
MONTAGGIO A FLANGIA

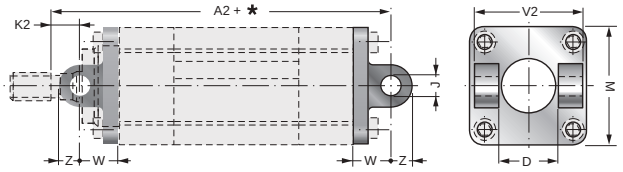
XFLNX/..



REF. **ISO MF2**

Stainless steel
Acciaio inox

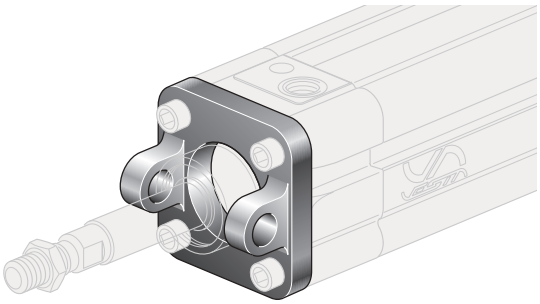
✱ = Stroke / *Corsa*



Bore *Alesaggio*	A2	ØJ H9	K2	M	V1	V2	W	Z	Code front *Cod. ant.*	Code rear *Cod. post.*
32	142	10	4	47	26	45	22	11	XCFANX/32	XCFNX/32
40	160	12	5	54	28	52	25	13	XCFANX/40	XCFNX/40
50	170	12	10	66	32	60	27	13	XCFANX/50	XCFNX/50
63	190	16	5	78	40	70	32	17	XCFANX/63	XCFNX/63
80	210	16	10	98	50	90	36	17	XCFANX/80	XCFNX/80
100	230	20	10	115	60	110	41	21	XCFANX/100	XCFNX/100

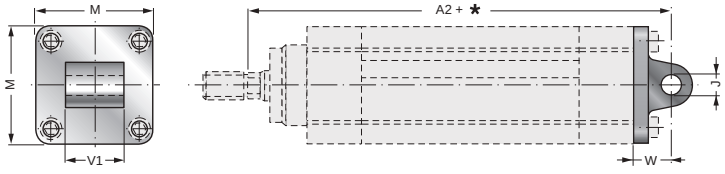
CLEVIS (FEMALE) MOUNTING
MONTAGGIO CERNIERA FEMMINA

XCFNX/..



REF. **ISO MP2**

Stainless steel
Acciaio inox

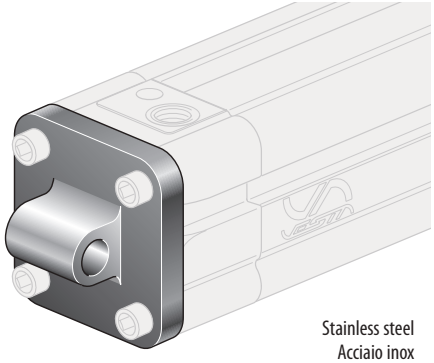


✱ = Stroke / *Corsa*

Bore *Alesaggio*	A2	ØJ H7	M	V1	W	Code *Codice*
32	142	10	45	26	22	XCMNX/32
40	160	12	55	28	25	XCMNX/40
50	170	12	65	32	27	XCMNX/50
63	190	16	75	40	32	XCMNX/63
80	210	16	95	50	36	XCMNX/80
100	230	20	115	60	41	XCMNX/100

CLEVIS (MALE) MOUNTING
MONTAGGIO A CONTROCERNIERA MASCHIO

XCMNX/..



REF. **ISO MP4**

Stainless steel
Acciaio inox

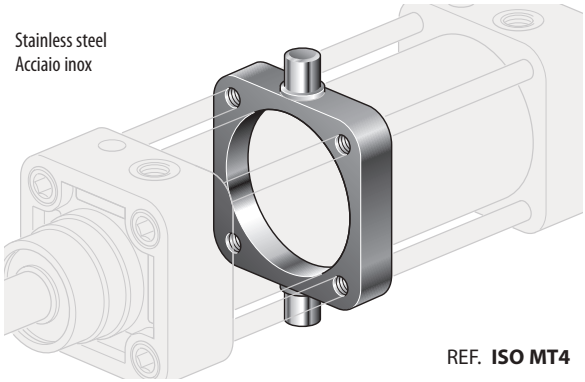
STAINLESS STEEL FIXING / *ACCESSORI DI FISSAGGIO INOX PER CILINDRI ANTICORROSIONE*

XCINX/..

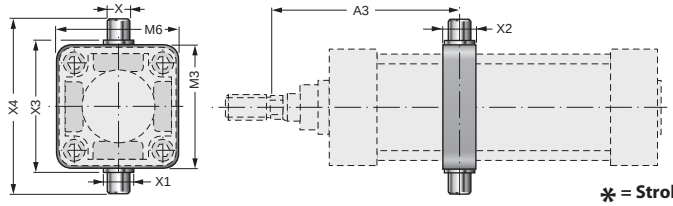
TIE ROD TRUNNION MOUNTING
CERNIERA INTERMEDIA PER TIRANTI

Specify dimension **A3** when trunnion is supplied assembled.
In caso di ordine specificare la quota **A3** per la fornitura premontata sul cilindro richiesto.

Stainless steel
Acciaio inox



REF. **ISO MT4**



✱ = Stroke / *Corsa*

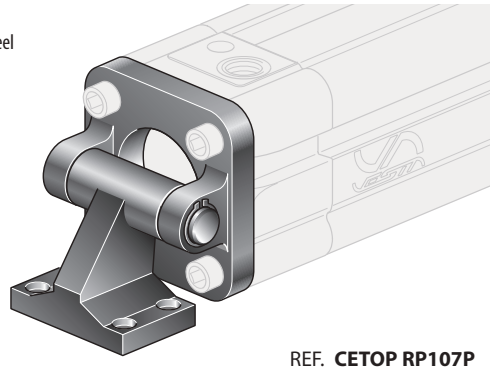
Bore *Alesaggio*	A3 min.	A3 max.	M3	M6	ØX^{e9}	ØX1	X2	X3	X4	Code *Codice*
32	63	83+(✱)	46	46	12	16	15	50	74	XCINX/32
40	69	96+(✱)	59	59	16	20	20	63	95	XCINX/40
50	78	102+(✱)	69	69	16	20	20	73	105	XCINX/50
63	83	112+(✱)	84	84	20	25	25	90	130	XCINX/63
80	97	123+(✱)	102	102	20	25	25	110	150	XCINX/80
100	105	135+(✱)	125	125	25	30	30	132	182	XCINX/100

XASNX/..

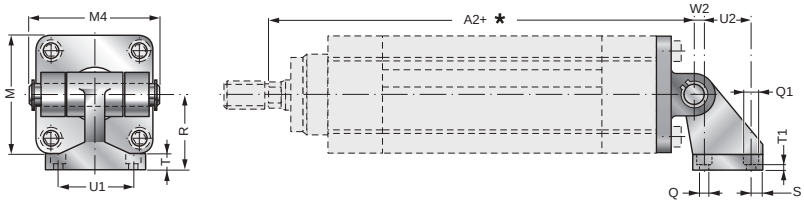
REAR HINGE HORIZONTAL MOUNTING
MONTAGGIO A CONTROCERNIERA ORIZZONTALE

✱ = Stroke / *Corsa*

Stainless steel
Acciaio inox

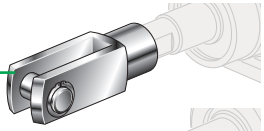


REF. **CETOP RP107P**



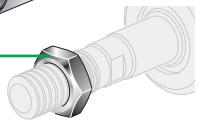
Bore *Alesaggio*	A2	M	M4	ØQ	ØQ1	R	S	T	T1	U1	U2	W2	Code *Codice*
32	142	47	54	6,6	11	32	6,5	8	6,5	36	18	3	XASNX/32
40	160	54	63	6,6	11	36	6,5	10	8,5	41	22	2	XASNX/40
50	170	66	71	9	15	45	7,5	12	10,5	50	30	3	XASNX/50
63	190	78	81	9	15	50	7,5	12	12,5	52	35	2	XASNX/63
80	210	98	101	11	18	63	10	14	11,5	66	40	7	XASNX/80
100	230	115	123	11	18	71	10	15	14,5	76	50	5	XASNX/100

Pag. A-43



FSNX/..

CLEVIS (ROD) MOUNTING
FORCELLA STELO



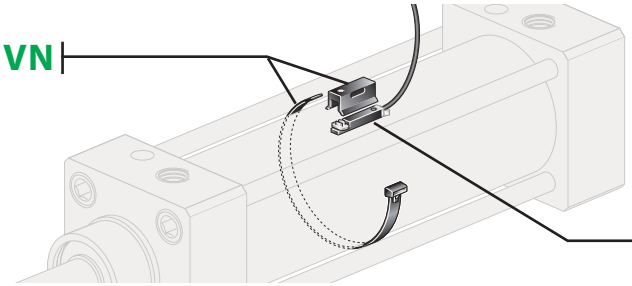
DSNX/..

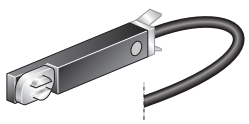
ROD NUT
DADO STELO

MAGNETIC SWITCHES FOR XJS and XJSS CYLINDER / *FINECORSA MAGNETICI PER CILINDRI XJS ed XJSS*

FFS□□ VN

Bore *Alesaggio* (mm):
Ø32; Ø40; Ø50 ... **02**
Ø63; Ø80; Ø100 ... **03**





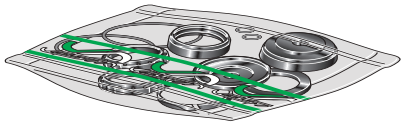
For magnetic switches features see:
Caratteristiche finecorsa magnetici vedi:
VNCR2, VNPR2, VNCE3, VNPE3.
Pag. A-19

For further information on the resistance of materials to aggressive agents, please contact our technical sales department.
Per informazioni sul grado di resistenza dei finecorsa magnetici in ambienti specifici contattare il nostro ufficio tecnico-commerciale.

MAGNETIC SWITCHES FOR XPN see Pag. A-19 / *FINECORSA MAGNETICI PER CILINDRI XPN vedi Pag. A-19*

..... - SG

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO



Seals kit code = **Cylinder code** + **Bore** + **Versions** + **- SG**:
(The kit includes all seals).

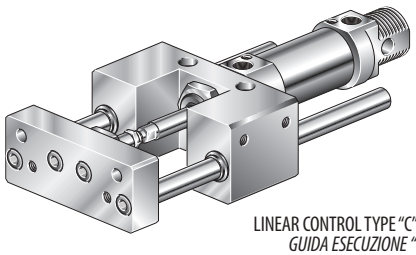
Codice del kit = ***Codice del cilindro*** + ***Alesaggio*** + ***Versioni*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **XJSS 50 P VV - SG**

INDEX / *INDICE*

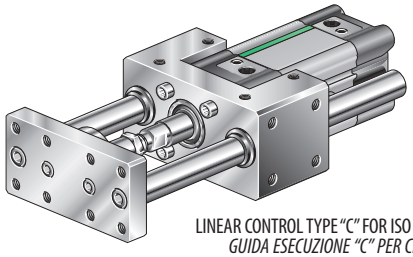
LINEAR CONTROL UNITS AND FIXING MOUNTINGS GLC - GLH SERIES Ø 20 ÷ 100 mm
UNITA' DI GUIDA E FISSAGGI SERIE GLC - GLH - ALESAGGI Ø 20 ÷ 100 mm

pag. **A-52**



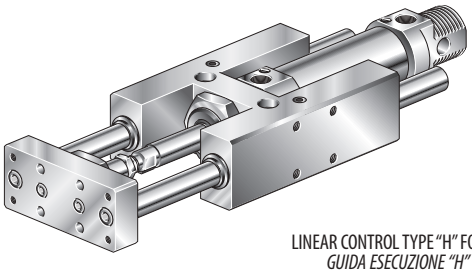
GLC .. . ...
LINEAR CONTROL TYPE "C" FOR ISO 6432 CYLINDER
GUIDA ESECUZIONE "C" PER CILINDRI ISO 6432

pag. **A-53**



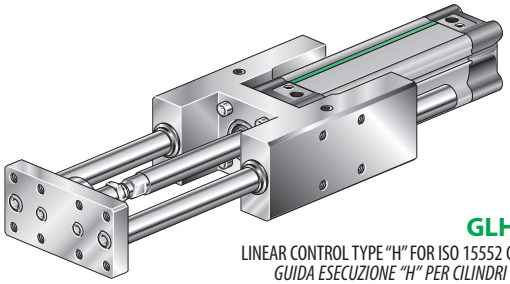
GLC .. . ...
LINEAR CONTROL TYPE "C" FOR ISO 15552 CYLINDERS
GUIDA ESECUZIONE "C" PER CILINDRI ISO 15552

pag. **A-54**



GLH .. . ...
LINEAR CONTROL TYPE "H" FOR ISO 6432 CYLINDER
GUIDA ESECUZIONE "H" PER CILINDRI ISO 6432

pag. **A-55**

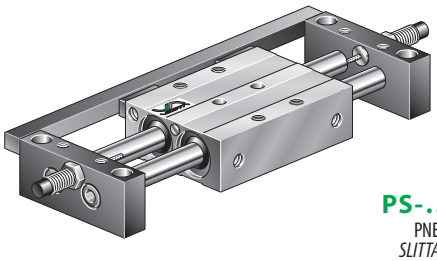


GLH .. . ...
LINEAR CONTROL TYPE "H" FOR ISO 15552 CYLINDERS
GUIDA ESECUZIONE "H" PER CILINDRI ISO 15552

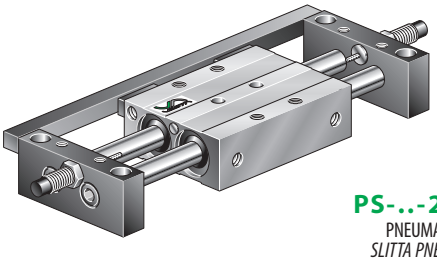
FIXING / *ACCESSORI DI FISSAGGIO* pag. **A-52 ÷ A-56**

PNEUMATIC SLIDES PS SERIE - BORE Ø 16 AND 25 mm
SLITTE PNEUMATICHE SERIE PS - ALESAGGI Ø 16 E 25 mm

pag. **A-60**



PS-..-16-...-..
PNEUMATIC SLIDE Ø16
SLITTA PNEUMATICA Ø16

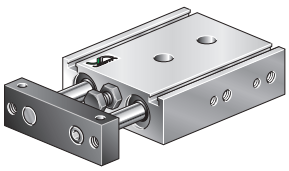


PS-..-25-...-..
PNEUMATIC SLIDE Ø25
SLITTA PNEUMATICA Ø25

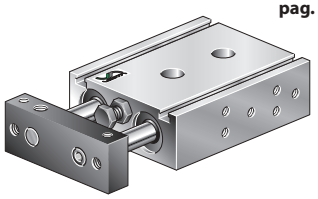
MAGNETIC SWITCHES AND ACCESSORIES FOR PNEUMATIC SLIDES / *FINECORSA MAGNETICI ED ACCESSORI PER SLITTE PNEUMATICHE* pag. **A-62**

DUAL ROD CYLINDERS HPSK SERIE - BORE Ø 16 ÷ 32 mm
SEMISLITTE PNEUMATICHE SERIE HPSK - ALESAGGI Ø 16 ÷ 32 mm

pag. **A-63**

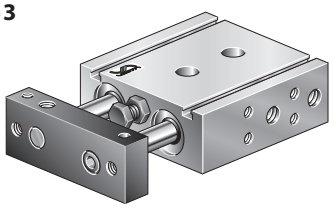


HPSK-..-16-...-..
DUAL ROD CYLINDER Ø16
SEMISLITTA PNEUMATICA Ø16

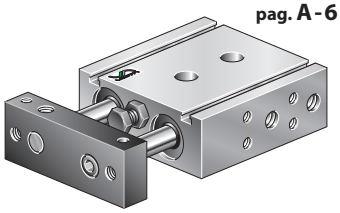


HPSK-..-20-...-..
DUAL ROD CYLINDER Ø20
SEMISLITTA PNEUMATICA Ø20

pag. **A-65**



HPSK-..-25-...-..
DUAL ROD CYLINDER Ø25
SEMISLITTA PNEUMATICA Ø25

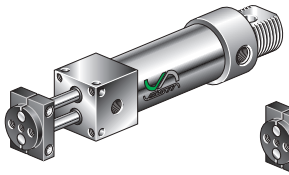


HPSK-..-32-...-..
DUAL ROD CYLINDER Ø32
SEMISLITTA PNEUMATICA Ø32

MAGNETIC SWITCHES AND ACCESSORIES FOR DUAL ROD CYLINDERS / *FINECORSA MAGNETICI ED ACCESSORI PER SEMISLITTE PNEUMATICHE* pag. **A-66; A-19.**

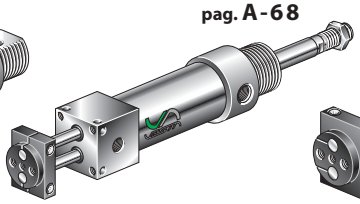
INDEX / *INDICE*

ANTIROTATION CYLINDERS AX SERIES / *CILINDRI ANTIROTAZIONE SERIE AX*

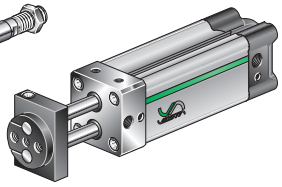


AR2-25-...
TWIN PISTON RODS
BASIC CYLINDER Ø25
CILINDRO BASE STELI GEMELLATI Ø25

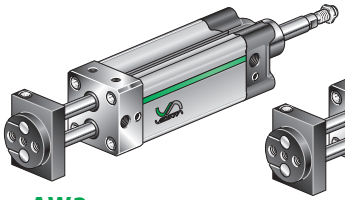
pag. **A-68**



AR3-25-...
TWIN PISTON RODS CYLINDER + THROUGH PISTON ROD Ø25
CILINDRO STELI GEMELLATI + STELO PASSANTE OPPOSTO Ø25

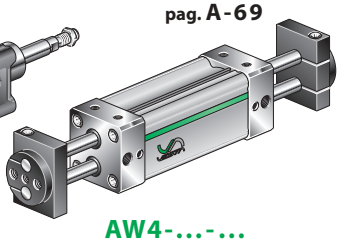


AW2-...-...
TWIN PISTON RODS
BASIC CYLINDER Ø32÷100
CILINDRO BASE STELI GEMELLATI Ø32÷100

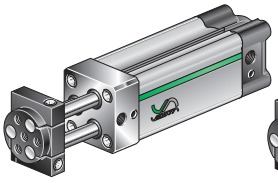


AW3-...-...
TWIN PISTON RODS CYLINDER + THROUGH PISTON ROD Ø32÷100
CILINDRO STELI GEMELLATI + STELO PASSANTE OPPOSTO Ø32÷100

pag. **A-69**

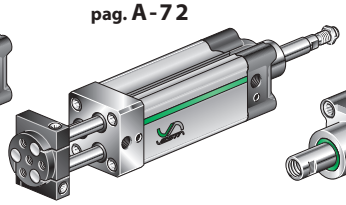


AW4-...-...
Ø32÷100 CYLINDER THROUGH TWIN PISTON RODS
CILINDRO Ø32÷100 CON STELI GEMELLATI PASSANTI

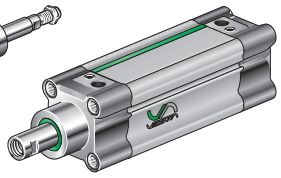


AW6-..-...
TRIPLE PISTON RODS
BASIC CYLINDER Ø32÷63
CILINDRO BASE CON 3 STELI Ø32÷63

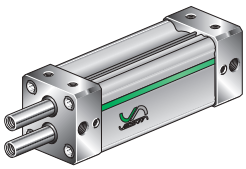
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AW8-..-...
TRIPLE PISTON RODS + THROUGH PISTON ROD Ø32÷63
CILINDRO CON 3 STELI + STELO PASSANTE OPPOSTO Ø32÷63

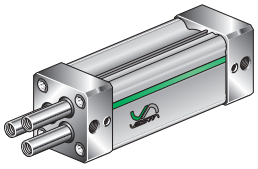


AW1-..-...
SINGLE HOLED TELESCOPIC PISTON ROD CYLINDER Ø32, 40 AND 50.
CILINDRO STELO CAVO ALESAGGI Ø32, 40 E 50.

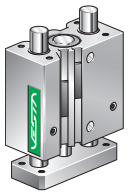


AW5-..-...
TWIN HOLED TELESCOPIC PISTON ROD CYLINDER Ø40, 50 AND 63.
CILINDRO CON 2 STELI GEMELLATI CAVI, ALESAGGI Ø40, 50 E 63.

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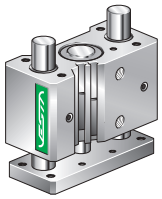


AW7-..-...
TRIPLE HOLED PISTON RODS CYLINDER Ø40, 50 AND 63.
CILINDRO CON 3 STELI GEMELLATI CAVI, ALESAGGI Ø40, 50 E 63.



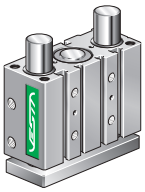
HCG ..-... ..
COMPACT GUIDE
PNEUMATIC CYLINDER Ø16÷25
CILINDRI PNEUMATICI COMPATTI GUIDATI Ø16÷25

pag. **A-76**



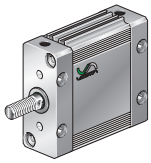
HCG ..-... ..
COMPACT GUIDE
PNEUMATIC CYLINDER Ø32÷100
CILINDRI PNEUMATICI COMPATTI GUIDATI Ø32÷100

pag. **A-78**

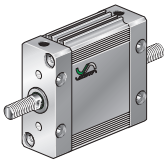


HNG ..-... ..
PROFILE COMPACT GUIDE
PNEUMATIC CYLINDER Ø16÷63
CILINDRI PNEUMATICI COMPATTI GUIDATI A PROFILO Ø16÷63

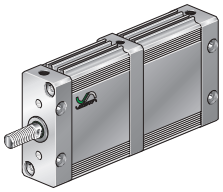
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NCV .. ...
FLAT CYLINDERS Ø63
CILINDRI PIATTI Ø63



NCV .. ... P
THROUGH ROD FLAT CYLINDERS Ø63
CILINDRI PIATTI STELO PASSANTE Ø63



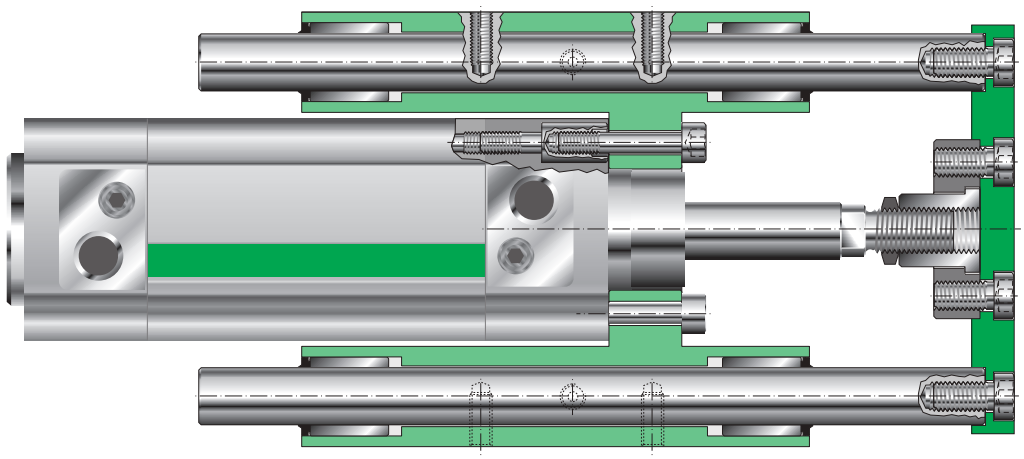
NCV TN2
MULTI THRUST TANDEM FLAT CYLINDERS Ø63
CILINDRI PIATTI TANDEM MULTISPINTA Ø63

pag. **A-68 ÷ A-77** MAGNETIC SWITCHES AND ACCESSORIES FOR ANTIROTATION CYLINDER / *FINECORSA MAGNETICI ED ACCESSORI PER CILINDRI ANTIROTAZIONE*

TECHNICAL FEATURES / *CARATTERISTICHE COSTRUTTIVE*

The linear control units **GLC** and **GLH** series can be assembled to cylinders in compliance with ISO 6432 and ISO 15552 standards.
Anti-rotation is guaranteed by two steel guide stems, whose movement is supported by four brass bushes in **GLC ...** and **GLH ... BS** series, and by four ball bushings in the **GLH ... BB** series.
The piston rod is connected to the front flange by a floating joint. The use of high quality materials and precision manufacturing techniques gives the units excellent performance with high resistance to side loads.
Versatility of mounting is assurred by either mounting directly to the unit, or by the use of standard accessories (mountings).
All the linear control units GLH-BS and BB series are supplied with scraper seals and grease box.
The unit is supplied already lubricated.

*Le unità di guida serie **GLC** e **GLH** sono assemblabili a cilindri rispondenti alla norma ISO 6432-15552.*
*L' antirotazione è garantita da due steli guida in acciaio il cui movimento è supportato da quattro bronzine a strisciamento nella serie **GLC ...** e **GLH ... BS**, oppure da quattro cuscinetti con ricircolo di sfere nella serie **GLH ... BB**.*
Lo stelo del cilindro è collegato alla flangia frontale con un giunto di compensazione assiale e radiale.
L' impiego di materiali di alta qualità e la precisione delle lavorazioni consentono all'unità di guida una ottima resistenza ai carichi laterali con elevate prestazioni.
La versatilità d' impiego è stata realizzata mediante tre possibili superfici di fissaggio e di piastre per il fissaggio orizzontale o verticale.
Tutte le unità di guida, oltre ad essere fornite già prelubrificate, sono corredate di rischiapolvere ed ingrassatori.



PRECAUTIONS BEFORE USE / *RACCOMANDAZIONI PER L'INSTALLAZIONE*

- Avoid impacts and abrasion of slide rods.
- Avoid impacts and scratching of the slide body and plate surfaces in order not to effect the flatness of the slide.
- Ensure that the surface upon which the slide is mounted is perfectly flat or else the correct functioning of the slide can be endangered by uneven wear of the bearings or seals.
- To lubricate use greasers located on the top of the unit.

- *Evitare urti ed abrasioni degli steli.*
- *Evitare urti e graffiature alle superfici del corpo e della piastra per non compromettere la planarità della guida.*
- *Verificare che la superficie alla quale viene fissata la guida sia perfettamente piana; in caso contrario si comprometterebbe il buon funzionmento della stessa con anomale usure dei cuscinetti e delle guarnizioni.*
- *Usare gli appositi ingrassatori per la lubrificazione.*

SERIE GLC

LINEAR CONTROL UNITS FOR ISO CYLINDER Ø20 ÷ 100 AND FIXING
UNITA' DI GUIDA PER CILINDRI ISO Ø20 ÷ 100 E FISSAGGI

GLC □□.□□□

Bore/*Alesaggio* (*mm*):
Ø20 ..... **20**
Ø25 ..... **25**

Stroke / *Corsa* (*mm*):

Bore / *Alesaggio*	Standard stroke / *Corse Standard*							
	25	50	80	100	125	160	200	250
20	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•

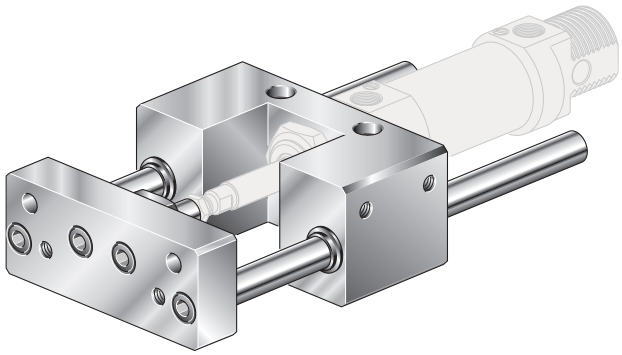
Weight (**Kg**) of guide units
Peso (***Kg***) *delle unità di guida*

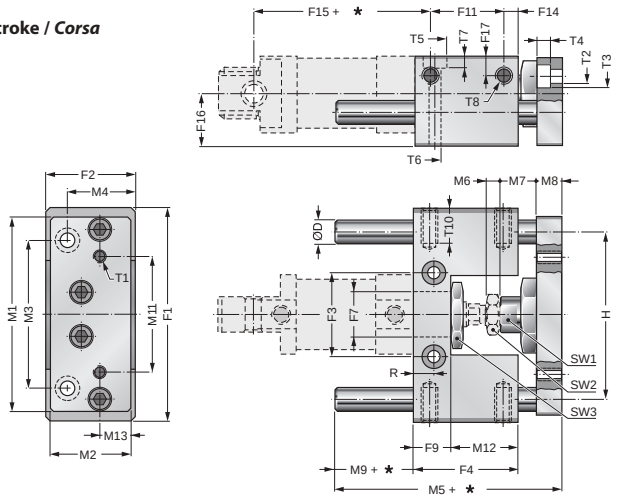
Stroke / *Corsa*	Ø 20	Ø25
25	0,700	0,690
50	0,740	0,730
80	0,760	0,750
100	0,780	0,770
160	0,850	0,840
200	0,900	0,890
250	0,970	0,960

GLC .. . ...

LINEAR CONTROL UNITS TYPE " C "
UNITA' DI GUIDA ESECUZIONE " C "

✱ = Stroke / *Corsa*





Standard coupling for **ISO 6432** cylinder (Ø20 ÷ Ø25)
Accoppiamento standard per cilindri ***ISO 6432*** *(Ø20 ÷ Ø25)*

Bore / *Alesaggio*	ØD	F1	F2	F3	F4	ØF7	F9	F11	F14	F15	F16	F17	H	M1	M2	M3	M4	M5	M6
20	10	100	40	46,5	48	22	17	32	8	71	24	10	74	90	38	70	30	77	4
25	10	100	40	46,5	48	22	17	32	8	76	24	10	74	90	38	70	30	77	6

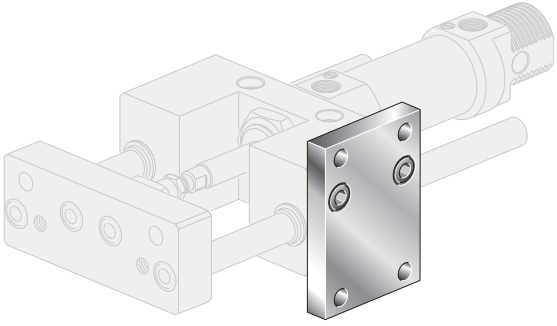
Bore / *Alesaggio*	M7	M8	M9	M11	M12	M13	R	ØT1	ØT2	ØT3	T4	ØT5	T6	T7	ØT8	T10	SW1	SW2	SW3
20	22	12	12	55	31	14	8,5	M6	6,5	10,5	7	14	9	9	M8	16	13	13	17
25	22	12	6	55	31	14	8,5	M6	6,5	10,5	7	14	9	9	M8	16	13	17	17

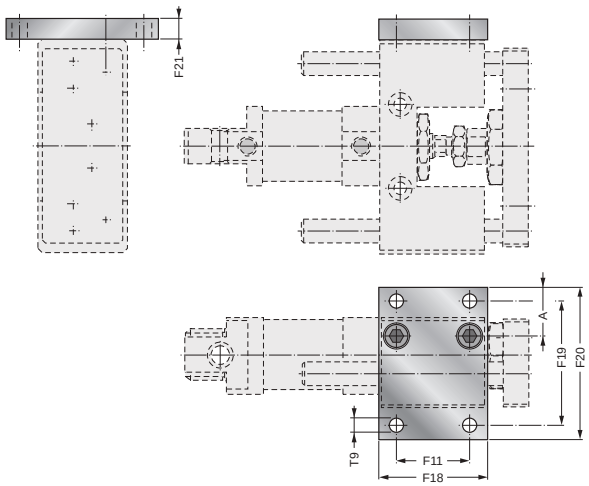
- Ø20 e Ø25 mm standard coupling; Ø12 e 16 see page A-56
- All the linear control units are supplied with scraper seals
- All the guide stems are in rectified stainless steel
- For maximum allowable load see page A-57.

- *Accoppiamento standard per cilindri Ø20 e Ø25 mm; Ø12 e 16 vedi pag. A-56*
- *Le unità di guida sono corredate di raschiapolvere*
- *Gli steli guida sono in acciaio inox rettificato*
- *Dati sul massimo carico utile ammesso vedi pagina A-57.*

GLC 2025P

FIXING PLATE
PIASTRA DI FISSAGGIO





Bore / *Alesaggio*	A	F11	F18	F19	F20	F21	ØT9	Code / *Codice*	Kg
20/25	25	32	50	56	70	10	7	**GLC 2025P**	0,260

- Building material: galvanized steel
- 2 fixing screws are included with supply

- *Materiale: acciaio zincato*
- *La fornitura comprende le 2 viti di fissaggio*

Bore / Alesaggio	Standard stroke / *Corse Standard*											Weight (**Kg**) for "0" stroke unit *Peso (**Kg**) per unità di guida corsa "0" mm*	Supplementar weight (**Kg**) each 100 mm stroke *Supplemento di peso (**Kg**) per ogni 100 mm di corsa*
	25	50	80	100	125	160	200	250	300	400	500		
32	•	•	•	•	•	•	•	•				0,660	0,122
40	•	•	•	•	•	•	•	•	•	•	•	0,960	0,176
50	•	•	•	•	•	•	•	•	•	•	•	1,400	0,176
63	•	•	•	•	•	•	•	•	•	•	•	1,700	0,176
80	•	•	•	•	•	•	•	•	•	•	•	3,500	0,312
100	•	•	•	•	•	•	•	•	•	•	•	4,700	0,312

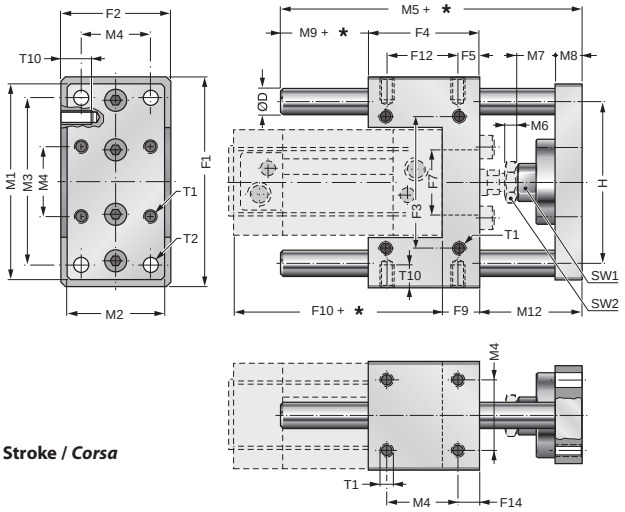
GLC □□.□□□

Bore / *Alesaggio* (mm):
Ø32 ..... **32**
Ø40 ..... **40**
Ø50 ..... **50**
Ø63 ..... **63**
Ø80 ..... **80**
Ø100 ... **100**

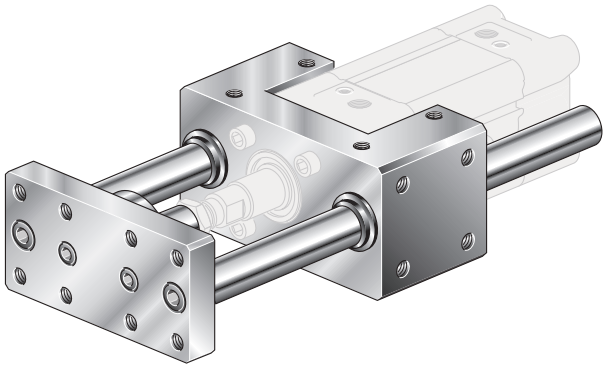
Stroke / *Corsa (mm):*

LINEAR CONTROL UNITS TYPE " C "
UNITA' DI GUIDA ESECUZIONE " C "

GLC .. . ...



✱ = Stroke / *Corsa*



Standard coupling for **ISO 15552** cylinder (Ø32 ÷ Ø100)
*Accoppiamento standard per cilindri **ISO 15552** (Ø32 ÷ Ø100)*

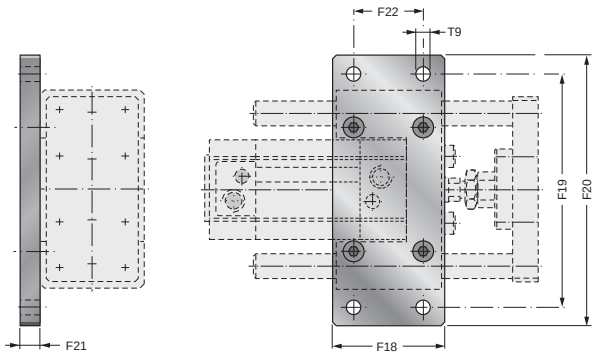
Bore / *Alesaggio*	ØD	F1	F2	F3	F4	ØF7	F9	F10	F12	F5	F14	H	M1	M2	M3	M4	M5	M6	M7	M8	M9	M12	ØT1	ØT2	T10	SW1	SW2
32	10	100	48	58	48	30	17	94	32,5	7,8	7,8	74	90	45	78	32,5	106	6	17	12	13	45	M6	6,5	12	15	17
40	12	106	56	64	58	35	21	105	38	10	10	80	100	50	84	38	117	7	22	12	6	53	M6	6,5	12	15	19
50	12	125	66	80	59	40	25	106	46,5	6,3	6,3	96	120	60	100	46,5	129	8	26	15	6	64	M8	8,5	16	22	24
63	12	132	76	95	76	45	25	121	56,5	9,8	9,8	104	125	70	105	56,5	146	8	26	15	6	64	M8	8,5	16	22	24
80	16	165	98	130	90	45	34	128	50	20	9	130	155	90	130	72	170	9	33	16	8	72	M10	11	18	27	30
100	16	185	118	150	110	55	39	138	70	20	10,5	150	175	110	150	89	190	9	33	16	8	72	M10	11	18	27	30

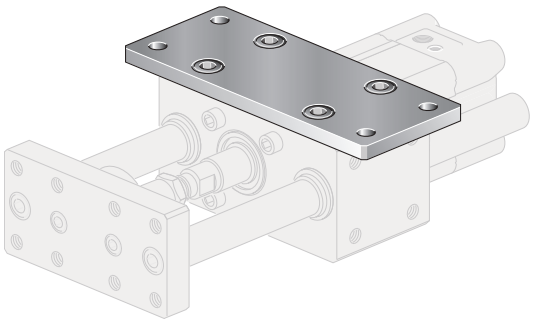
- Ø32; 40; 50; 63; 80 and Ø100 mm; Ø20 e 25 see page A-56.
- All the linear control units are supplied with scraper seals.
- All the guide stems are in rectified steel
- For maximum allowable load see page A-57.

- *Diametro cilindri Ø32; 40; 50; 63; 80 e Ø100 mm; Ø20 e 25 vedi pag. A-56.*
- *Le unità di guida sono corredate di raschiapolvere.*
- *Gli steli guida sono in acciaio inox rettificato*
- *Dati sul massimo carico utile ammesso vedi pagina A-57.*

FIXING PLATE
PIASTRA DI FISSAGGIO

GLC ... P





Bore / *Alesaggio*	F18	F19	F20	F21	F22	ØT9	Code / *Codice*	Kg
32	50	116	130	10	32,5	6,5	**GLC32P**	0,500
40	55	126	142	10	38	8,5	**GLC40P**	0,600
50	70	150	170	12	46,5	8,5	**GLC50P**	1,100
63	80	156	176	12	56,5	8,5	**GLC63P**	1,300
80	100	195	220	15	80	12	**GLC80P**	2,550
100	120	217	245	15	95	14	**GLC100P**	3,390

- Building material: galvanized steel
- 4 fixing screws are included with supply

- *Materiale: acciaio zincato*
- *La fornitura comprende le 4 viti di fissaggio*

SERIE **GLH**

LINEAR CONTROL UNITS FOR ISO CYLINDER Ø20 ÷ 100 AND FIXING
UNITA' DI GUIDA PER CILINDRI ISO Ø20 ÷ 100 E FISSAGGI

GLH □□.□□□ □□

Bore
Alesaggio (mm):
Ø20 ..... **20**
Ø25 ..... **25**

Stroke / *Corse (mm):*

BS with brass bearing
con bronzine a strisciamento

BB with ball bushing
con cuscinetti a ricircolo di sfere

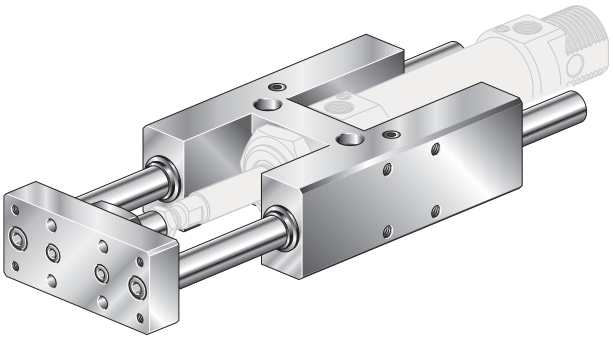
Bore / Alesaggio	Standard stroke / *Corse Standard*							
	25	50	80	100	125	160	200	250
20	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•

Weight (**Kg**) of guide units Ø20 and Ø25
*Peso (**Kg**) delle unità di guida Ø20 e Ø25*

Stroke / *Corsa*	Weight (**Kg**) "**BS**" serie — *Peso (**Kg**) serie "**BS**"*	Weight (**Kg**) "**BB**" serie — *Peso (**Kg**) serie "**BB**"*
25	0,815	0,800
50	0,846	0,830
80	0,882	0,870
100	0,907	0,890
160	0,980	0,965
200	1,030	1,015
250	1,090	1,075

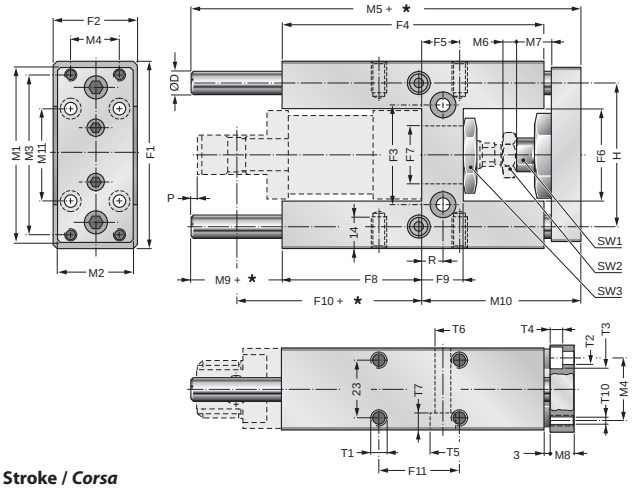
GLH .. . ...

LINEAR CONTROL UNITS TYPE " H "
UNITA' DI GUIDA ESECUZIONE " H "



SERIES /*SERIE* "BS-BB"

Standard coupling for **ISO 6432** cylinder (Ø20 ÷ Ø25)
*Accoppiamento standard per cilindri **ISO 6432** (Ø20 ÷ Ø25)*



*** = Stroke / *Corsa***

Bore / *Alesaggio*	ØD	H	R	P	F1	F2	F3	F4	F5	F6	ØF7	F8	F9	F10	F11	M1	M2	M3	M4
20	10	58	8,5	6	79	34	38	108	15	37	22	58	17	71	32,5	76	32	68	20
25	10	58	8,5	1	79	34	38	108	15	37	22	58	17	76	32,5	76	32	68	20

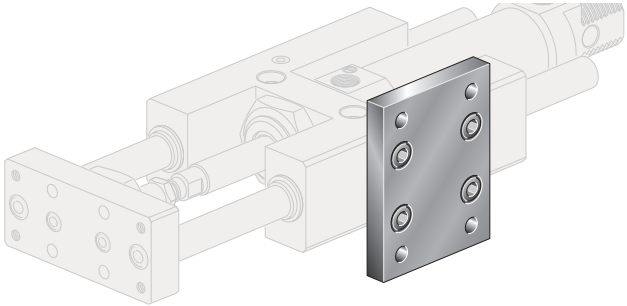
Bore / *Alesaggio*	M5	M6	M7	M8	M9	M10	M11	ØT1	ØT2	ØT3	T4	ØT5	ØT6	T7	ØT10	SW1	SW2	SW3
20	160	5	22	12	37	65	40	M6	5,5	9	5,5	10,5	6,5	7	M5	13	13	27
25	160	6	17	12	37	65	40	M6	5,5	9	5,5	10,5	6,5	7	M5	13	17	27

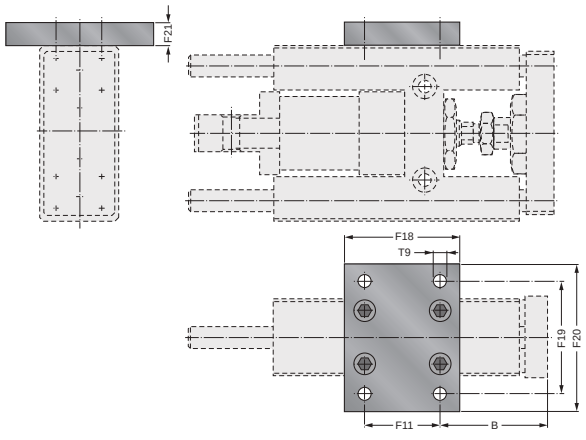
- Ø20 e Ø25 mm standard coupling; Ø12 e 16 see page A-56.
- All the linear control units are supplied with scraper seals.
- The **BS** series mounting brass bearing, and guide stems are in chromium-plated and rectified steel; **BB** series mounting ball bushing and guide stems are in hardened chromium-plated and rectified steel.
- For maximum allowable load see pages A-57 ÷ A-58.

- *Accoppiamento standard per cilindri Ø20 e Ø25 mm; Ø12 e 16 vedi pag. A-56.*
- *Le unità di guida sono corredate di raschiapolvere.*
- *La serie **BS** monta bronzine a strisciamento con gli steli guida in acciaio cromato e rettificato; mentre la serie **BB** monta cuscinetti a ricircolo di sfere con steli guida in acciaio temprato cromato e rettificato.*
- *Dati sul carico max. ammesso vedi pagine A-57 ÷ A-58.*

GLH 2025P

FIXING PLATE
PIASTRA DI FISSAGGIO





Bore / *Alesaggio*	B	F11	F18	F19	F20	F21	ØT9	Code / *Codice*	Kg
20/25	50	32,5	50	50	64	10	6,5	**GLH 2025P**	0,270

- Building material: galvanized steel
- 4 fixing screws are included with supply

- *Materiale: acciaio zincato*
- *La fornitura comprende le 4 viti di fissaggio*

Bore / Alesaggio	Standard stroke / *Corse Standard* 25	50	80	100	125	160	200	250	300	400	500	Weight (**Kg**) for "0" stroke unit *Peso (**Kg**) per unità di guida corsa "0" mm*	Supplementar weight (**Kg**) each 100 mm stroke *Supplemento di peso (**Kg**) per ogni 100 mm di corsa*
32	•	•	•	•	•	•	•	•				1,300	0,176
40	•	•	•	•	•	•	•	•	•	•	•	2,300	0,312
50	•	•	•	•	•	•	•	•	•	•	•	3,600	0,490
63	•	•	•	•	•	•	•	•	•	•	•	4,500	0,490
80	•	•	•	•	•	•	•	•	•	•	•	8,700	0,765
100	•	•	•	•	•	•	•	•	•	•	•	11,000	0,765

GLH □□.□□□ □□

Bore / *Alesaggio (mm)*:
Ø32 ..... **32**
Ø40 ..... **40**
Ø50 ..... **50**
Ø63 ..... **63**
Ø80 ..... **80**
Ø100 .... **100**

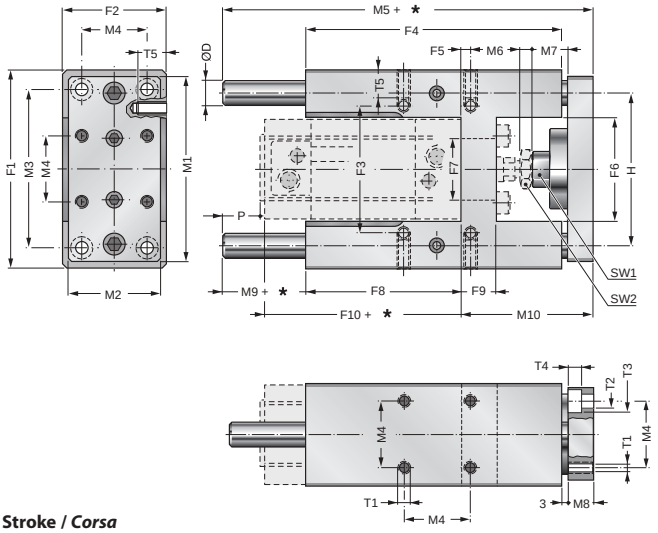
Stroke / *Corse (mm)*:

BS with brass bearing
con bronzine a strisciamento

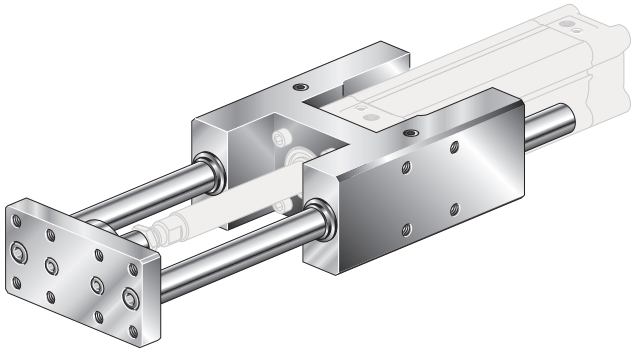
BB with ball bushing
con cuscinetti a ricircolo di sfere

LINEAR CONTROL UNITS TYPE " H "
UNITA' DI GUIDA ESECUZIONE " H "

GLH .. . .



✻ = Stroke / *Corsa*



SERIES /*SERIE* "BS-BB"

Standard coupling for **ISO 15552** cylinder (Ø32 ÷ Ø100)
*Accoppiamento standard per cilindri **ISO 15552** (Ø32 ÷ Ø100)*

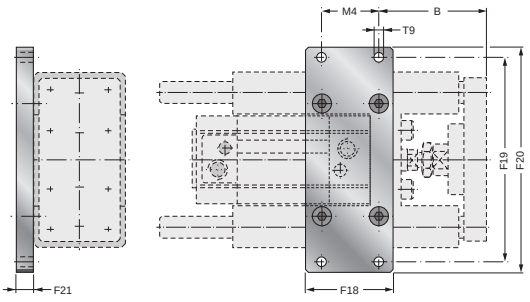
Bore / *Alesaggio*	D	F1	F2	F3	F4	F5	F6	ØF7	F8	F9	F10	H	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	P	ØT1	ØT2	ØT3	T4	T5	SW1	SW2
32	12	97	50	61	125	4,3	50,2	30	76	17	94	74	90	45	78	32,5	177	6	17	12	37	64	15	M6	6,5	10,5	6,5	14	13	17
40	16	115	58	69	140	11	58,2	35	81	21	105	87	110	54	84	38	192	7	22	12	37	74	9	M6	6,5	10,5	6,5	14	15	19
50	20	137	70	85	150	18,8	70,2	40	79	26	106	104	130	63	100	46,5	205	8	26	15	37	89	8	M8	8,5	13,5	9	16	22	24
63	20	152	85	100	182	15,3	85,2	45	111	26	121	119	145	80	105	56,5	237	8	26	15	37	88	23	M8	8,5	13,5	9	16	22	24
80	25	189	105	130	215	21	105,4	45	128	34	128	148	180	100	130	72	280	9	32	20	42	110	40	M10	11	18	11	20	27	30
100	25	213	130	150	220	24,5	130,4	55	128	39	138	173	200	120	150	89	280	9	32	20	37	115	25	M10	11	18	11	20	27	30

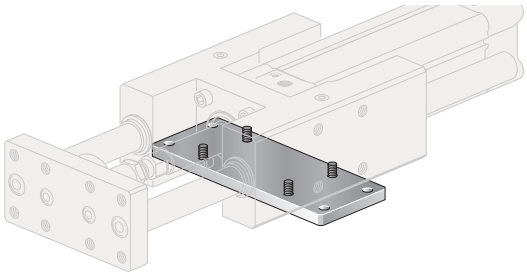
- Ø32; 40; 50; 63; 80 and Ø100 mm; Ø20 e 25 see page A-56.
- All the linear control units are supplied with scraper seals.
- The **BS** series mounting brass bearing, and guide stems are in chromium-plated and rectified steel; **BB** series mounting ball bushing and guide stems are in hardened chromium-plated and rectified steel.
- For maximum allowable load see pages A-57 ÷ A-58.

- *Diametro cilindri Ø32; 40; 50; 63; 80 e Ø100 mm; Ø20 e 25 vedi pag. A-56.*
- *Le unità di guida sono corredate di raschiapolvere.*
- *La serie **BS** monta bronzine a strisciamento con gli steli guida in acciaio cromato e rettificato; mentre la serie **BB** monta cuscinetti a ricircolo di sfere con steli guida in acciaio temprato cromato e rettificato.*
- *Dati sul carico max. ammesso vedi pagine A-57 ÷ A-58.*

FIXING PLATE
PIASTRA DI FISSAGGIO

GLH ... P





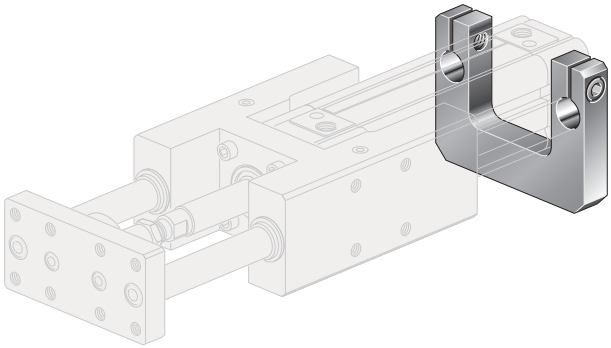
Bore / *Alesaggio*	B	M4	F18	F19	F20	F21	ØT9	Code / *Codice*	Kg
32	59,7	32,5	50	116	130	10	6,5	**GLH32P**	0,500
40	63	38	55	140	160	10	9	**GLH40P**	0,700
50	70,2	46,5	70	160	180	12	9	**GLH50P**	1,200
63	73,7	56,5	80	175	195	12	9	**GLH63P**	1,480
80	89	72	100	218	242	15	12	**GLH80P**	2,850
100	90,5	89	120	245	272	15	14	**GLH100P**	3,900

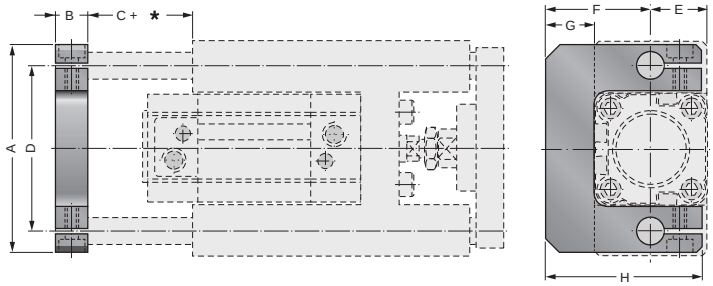
- Building material: galvanized steel
- 4 fixing screws are included with supply

- *Materiale: acciaio zincato*
- *La fornitura comprende le 4 viti di fissaggio*

RFGLH ..

REAR FLANGE COUPLING GUIDE STEMS
FLANGIA POSTERIORE DI COLLEGAMENTO STELI GUIDA





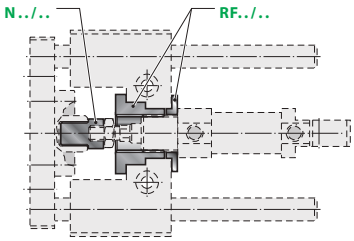
✻ = Stroke / *Corsa*

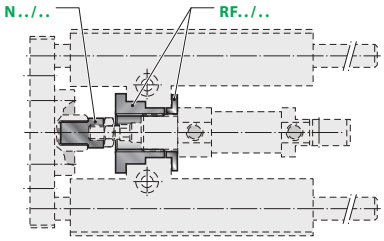
- Building material: aluminium alloy
- 2 clamps screws are included in the supply

- *Materiale: lega di alluminio*
- *La fornitura comprende le 2 viti di bloccaggio*

Bore *Alesaggio*	A	B	C	D	E	F	G	H	Code *Codice*	Kg
20 / 25	78	12	22	58	16,5	37,5	13,5	54	RFGLH20/25	0,110
32	95	15	22	74	25	47	22	70	RFGLH32	0,170
40	113	20	17	87	29	54	25	80	RFGLH40	0,310
50	134	20	17	104	35	67,5	32,5	100	RFGLH50	0,460
63	149	20	17	119	42,5	80,5	38	120	RFGLH63	0,600
80	185	25	12	148	52,5	101,5	49	150	RFGLH80	1,150
100	209	25	12	173	65	116	51	165	RFGLH100	1,350

COMBINATION OF ASSEMBLING / *COMBINAZIONI DI ASSEMBLAGGIO*



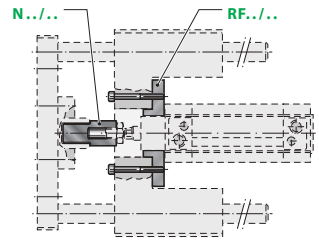


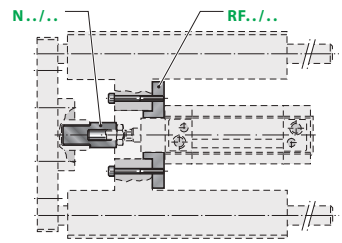
Adaption set to assemble **ISO 6432** cylinders
(with threaded flange mounting) on **GLC** and **GLH** linear control units series.

*Adattatori per l'assemblaggio dei cilindri **ISO 6432***
*(con fissaggio a flangia filettata) su guide **GLC** e **GLH***

Linear control units - size *Guide laterali taglia*	Adaption set *Set di adattamento*			
	Ø12	Ø16	Ø20	Ø25
GLH20/25	RF25/12 N12/25	RF25/16 N16/25	○	○
GLH32			RF32/20 N20/32	RF32/25 N25/32
GLC20/25	RF25/12 NC12/25	RF25/16 NC16/25	○	○
GLC32			RF32/20 NC20/32	RF32/25 NC25/32

○ Standard coupling / *Accoppiamento standard*





Adaption set to assemble **ISO 15552** and **ISO 6432** cylinders
(with 4 screw fixing) on **GLC** and **GLH** linear control units series.

*Adattatori per l'assemblaggio dei cilindri **ISO 15552** e **ISO 6432**.*
*(con fissaggio a 4 viti filettate) su guide **GLC** e **GLH***

Linear control units - size *Guide laterali taglia*	Adaption set *Set di adattamento*							
	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
GLH32	RF32/20 N20/32	RF32/25 N25/32	○					
GLC-GLH40	RF40/20 N20/40	RF40/25 N25/40	●	○				
GLC-GLH50			RF50/32 N32/50	●	○			
GLC-GLH63			RF63/32 N32/63	RF63/40 N40/63	●	○		
GLC-GLH80				RF80/40 N40/80	RF80/50 N50/80	●	○	
GLC-GLH100					RF100/50 N50/100	RF100/63 N63/100	●	○

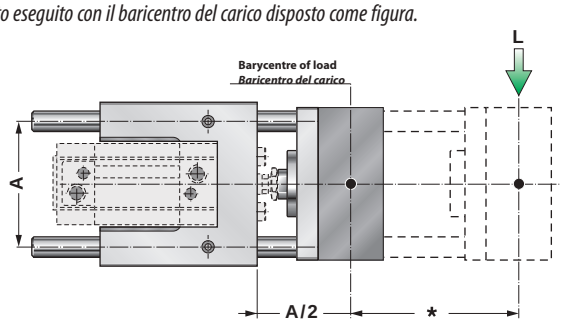
● Available on demand (with modification linear control units) / *Fornibile a richiesta (con modifica su guida laterale)*
○ Standard coupling / *Accoppiamento standard*

INFLECTION GRAPHICS AND MAXIMUM ALLOWABLE LOAD
DIAGRAMMI DI INFLESSIONE E MASSIMO CARICO UTILE

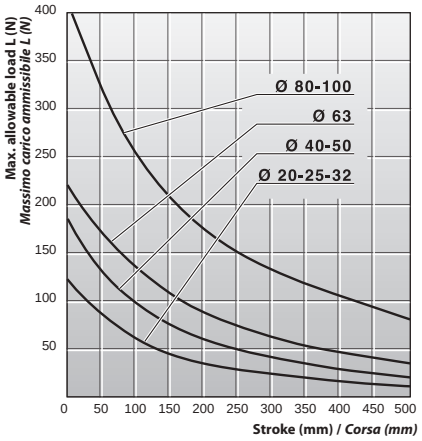
Ø20÷100 GLC

Maximum allowable load (N), with the longitudinal axes of the unit horizontal placed.
The graphic on the right has been executed with the load placed as figure.

Massimo carico utile *(N) con asse longitudinale dell'unità di guida disposto orizzontalmente.*
Il grafico a destra é stato eseguito con il baricentro del carico disposto come figura.



✻ = Stroke / *Corsa*

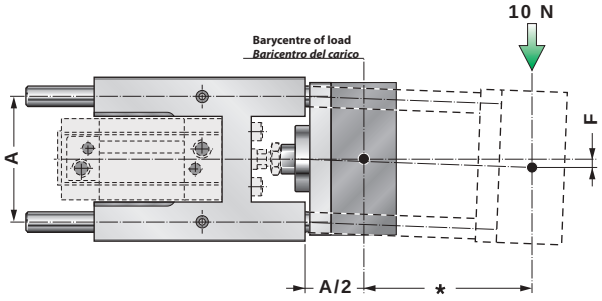


MAX. ALLOWABLE LOAD "N" (Ø20÷100 GLC)
MASSIMO CARICO UTILE "N" (Ø20÷100 GLC)

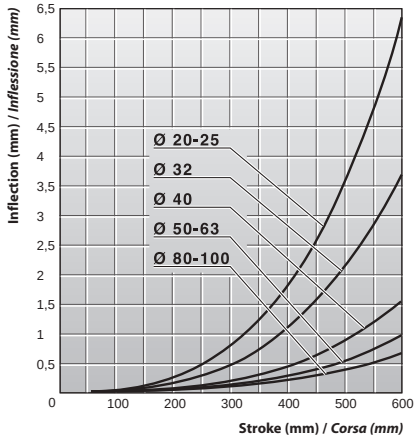
Ø20÷100 GLH BB-BS

Inflection of guide stems is due to their weight summed to the load of 10 N related to the stroke. The **BS** series mounting brass bearing, and guide stems are in chromium-plated and rectified steel; **BB** series mounting ball bushing and guide stems are in hardened chromium-plated and rectified steel. The graphic on the right has been executed with the load placed as figure.

Inflessione degli steli *dovuta al peso proprio sommato ad un carico di 10 N in relazione alla corsa. La serie* ***BS*** *monta bronzine a strisciamento con gli steli guida in acciaio cromato e rettificato; mentre la serie* ***BB*** *monta cuscinetti a ricircolo di sfere con steli guida in acciaio temprato cromato e rettificato. Il grafico a destra é stato eseguito con il baricentro del carico disposto come figura.*



✻ = Stroke / *Corsa*

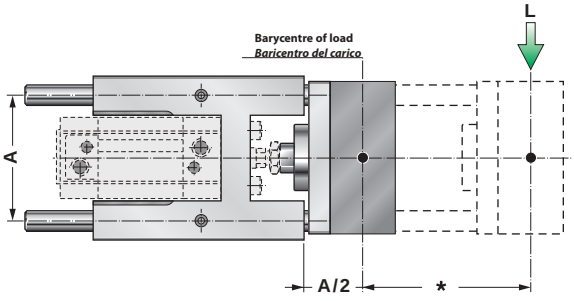


INFLECTION OF GUIDE STEMS (Ø20÷100 GLH BS E BB)
INFLESSIONE DEGLI STELI (Ø20÷100 GLH BS E BB)

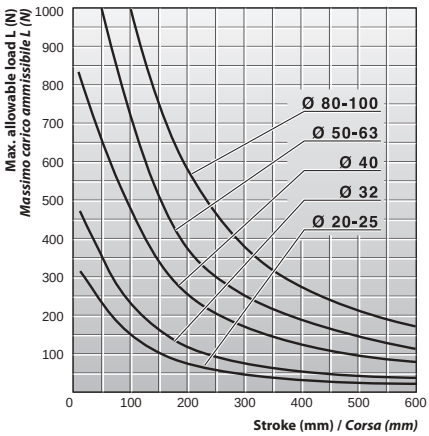
Ø20÷100 GLH BS

Maximum allowable load (N), with the longitudinal axes of the unit horizontal placed. **BS series** mounting brass bearing and guide stems in chromium-plated and rectified steel.
The graphic on the right has been executed with the load placed as figure.

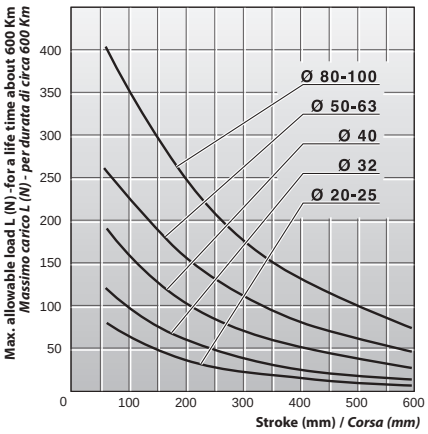
Massimo carico utile *(N) con asse longitudinale dell'unità di guida disposto orizzontalmente. La* ***serie BS*** *monta bronzine a strisciamento e steli guida in acciaio cromato rettificato.*
Il grafico a destra é stato eseguito con il baricentro del carico disposto come figura.



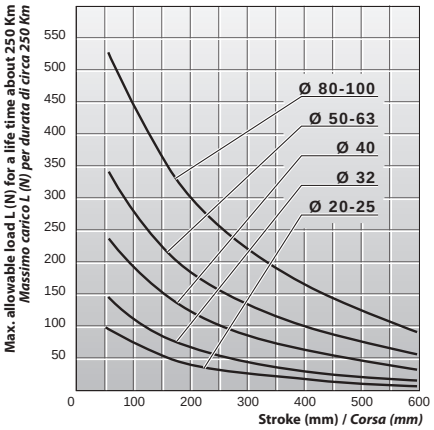
✻ = Stroke / *Corsa*



MAX. ALLOWABLE LOAD (Ø20÷100 GLC)
MASSIMO CARICO UTILE (Ø20÷100 GLH BS)



MAX. ALLOWABLE LOAD FOR A LIFE-TIME OF 600 Km
CARICO MASSIMO PER DURATA DI CIRCA 600 Km

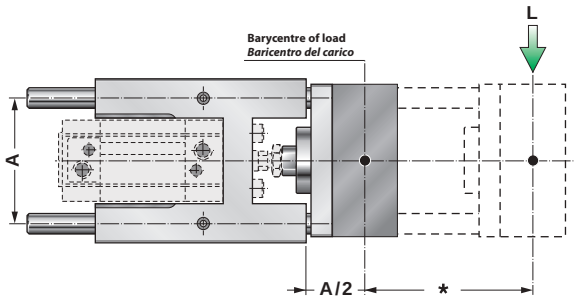


MAX. ALLOWABLE LOAD FOR A LIFE-TIME OF 250 Km
CARICO MASSIMO PER DURATA DI CIRCA 250 Km

20÷100 GLH BB

Maximum allowable load (N), with the longitudinal axes of the unit horizontal placed. **BB series** mounting brass bearing and guide stems in hardened chromium-plated and rectified steel. The graphic on the right has been executed with the load placed as figure.

Massimo carico utile *(N) con asse longitudinale dell'unità di guida disposto orizzontalmente. La* ***serie BB*** *monta bronzine a strisciamento e steli guida in acciaio temprato cromato e rettificato. Il grafico a destra é stato eseguito con il baricentro del carico disposto come figura.*



✻ = Stroke / *Corsa*

Reduction of allowable load with short stroke.
For stroke <60 mm multiply the allowable load per"K".

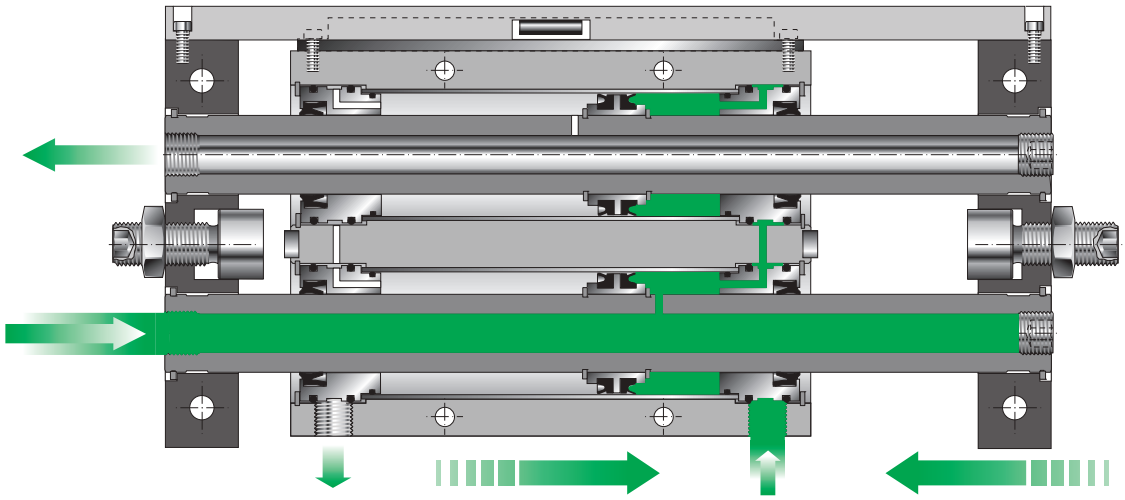
Riduzione del carico utile con corsa breve.
Per corse <60 mm moltiplicare il carico ammesso per "K".

Stroke *Corsa*	K
50	0,9
40	0,8
30	0,7
20	0,6

TECHNICAL FEATURES / *CARATTERISTICHE COSTRUTTIVE*

VESTA manufactures a complete range of slide and twin rod pneumatic cylinders.
With the series **PS** and **HPSK**, VESTA offer many varieties of mounting option in order to provide maximum flexibility of application. Excellent performance and high reliability are made possible by the use of first class materials, careful product development and precise production control. All units are suitable for magnetic switching use.
Very low friction is achieved by incorporating self-lubricating bearings between each linear moving element.

*Le slitte e semislitte VESTA serie **PS** e **HPSK** vengono concepite per soddisfare le esigenze di automazione legate in termini di precisione, robustezza, flessibilità a spostamenti di corsa limitata. Diverse le possibilità di fissaggio a seconda della serie e del modello, diverso l'equipaggiamento a seconda dell' impiego richiesto. Una proggettazione particolarmente attenta alle esigenze dell' utilizzatore finale e la scelta di materiali di ottima qualità rappresentano, secondo la filosofia costruttiva VESTA, il punto di partenza per la realizzazione di ciascun prodotto.*
L' accurata lavorazione dei particolari e lo stretto controllo garantiscono per ogni prodotto prestazioni di assoluto rilievo in termini di affidabilità e durata.
Il perfetto scorrimento delle parti mobili è consentito nel tempo dall' uso di bronzine a basso attrito e con alta precisione.
Tutti i modelli sono predisposti per l' utilizzo di sensori magnetici per il rilevamento della posizione.



PRECAUTIONS BEFORE USE / *RACCOMANDAZIONI PER L'INSTALLAZIONE*

- Avoid impacts and abrasion of piston rods.
- Avoid impacts and scratching of the slide body and plate surfaces in order not to effect the flatness of the slide.
- Ensure that the surface upon which the pneumatic slide or twin rod cylinder and is mounted is perfectly flat or else the correct functioning of the unit can be endangered by uneven wear of the bearings or seals.
- Lubrication is not necessary; but if it provided, use only ISO VG 32 oil. Do not use engine oil or spindle oil.
- Before each pneumatic connection, clean tubes and fittings carefully.

- *Evitare urti ed abrasioni degli steli.*
- *Evitare urti e graffiature alle superfici del corpo e della piastra per non compromettere la planarità della slitta o semislitta pneumatica.*
- *Verificare che la superficie alla quale viene fissata la semislitta sia perfettamente piana; in caso contrario si comprometterebbe il buon funzionamento della stessa con anomale usure dei cuscinetti e delle guarnizioni.*
- *La lubrificazione non è necessaria, ma se prevista usare olio ISO VG 32. Non usare olio per motori o per mandrini.*
- *Prima di ogni collegamento pneumatico pulire accuratamente tubi e raccordi.*

SERIE **PS**

PNEUMATIC SLIDES Ø16 AND Ø25
SLITTE PNEUMATICHE Ø16 E Ø25

PS-□□-□□-□□□-□□

Mounting versions / *Tipi di montaggio:*
- **BM** body mounting / *corpo fisso*
- **PM** plate mounting / *piastre fisse*

Bore / *Alesaggio* (mm):
- Ø16 ..... **16**
- Ø25 ..... **25**

Stroke / *Corse standard* (mm):
25, 50, 75 100, 125, 150, 175, 200.

Stopper type / *Arresti di fine corsa*:
- **A** basic type: N° 2 stopper bolt / *tipo base: con N° 2 arresti meccanici*
- **B** with N° 1 shock absorber and N° 1 stopper bolt / *con N° 1 deceleratore e N° 1 arresto meccanico*
- **C** with N° 2 shock absorbers / *con N° 2 deceleratori*

Magnetic switches / *Finecorsa magnetici*:
- **D** basic type: none magnetic switches / *tipo base: senza finecorsa magnetici*

TECHNICAL FEATURES

Environment temperature range	0 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Bearings	High precision bearings.
Shock absorber	Auto compensating.
Port size	Ø16 ÷ 20; M5 x 0,8; Ø25 ÷ 32; G1/8.
Stroke adjustement with stopper bolt	+0,9 ÷ -4 mm (one side).
Stroke adjustement with shock absorber	+0,6 ÷ -10 mm (one side).
Total over stroke	+ 1,2 mm.
Speed range with stopper bolt	30 ÷ 100 mm/s.
Speed range with shock absorber	30 ÷ 300 mm/s.
Max. load	3 Kg.
Non-rotation accuracy at stroke 0 mm	± 0,02°.
Operating pressure range	2 ÷ 9 bar.

CARATTERISTICHE TECNICHE

Temperatura ambiente	*0 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Cuscinetti	*Bronzine ad alta precisione.*
Deceleratori	*Autocompensanti.*
Attacchi per l' alimentazione	*Ø16 ÷ 20; M5 x 0,8; Ø25 ÷ 32; G1/8.*
Regolazione corsa con fermi meccanici	*+0,9 ÷ -4 mm (per lato).*
Regolazione corsa con deceleratori	*+0,6 ÷ -10 mm (per lato).*
Oltrecorsa totale	*+ 1,2 mm.*
Velocità con fermi meccanici	*30 ÷ 100 mm/s.*
Velocità con deceleratori	*30 ÷ 300 mm/s.*
Carico massimo	*3 Kg.*
Precisione antirotazione ad inizio corsa	*± 0,02°.*
Pressione d'esercizio	*2 ÷ 9 bar.*

THEORETICAL THRUSTS
FORZE TEORICHE SVILUPPATE

Bore *Alesaggio*	Theoretical output force (Kg) *Forze (Kg) teoriche di spinta* — Operating pressure (bar) *Pressione d'esercizio (bar)*							
	2	3	4	5	6	7	8	9
16	4,9	7,35	9,8	12,2	14,7	17,1	19,6	22
25	11,6	17,4	23,2	29	34,8	40,6	46,4	52,2

SHOCK ABSORBER
DECELERATORI

Shock absorber code *Codice deceleratori*	DEC 16	DEC 25
Bore slide *Alesaggio slitta*	16 mm	25 mm
Max. energy absorbed *Max. energia assorbita*	0,1 Kgm	0,4 Kgm
Max. frequence *Max. frequenza*	1 Hz	1,2 Hz

WEIGHT WITH STOPPER BOLT
PESO CON FERMI MECCANICI

Bore *Alesaggio*	Weight (Kg) with stopper bolt without switch *Peso (Kg) con fermi meccanici senza finecorsa* — stroke / *corsa*							
	25	50	75	100	125	150	175	200
16	0,440	0,540	0,640	0,740	0,840	0,940	1,040	1,140
25	1,210	1,440	1,670	1,900	2,130	2,360	2,590	2,820

PISTON RODS DEFLECTION PS SERIES / *FLESSIONE DEGLI STELI SERIE PS*

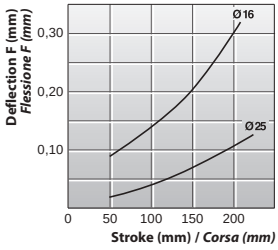
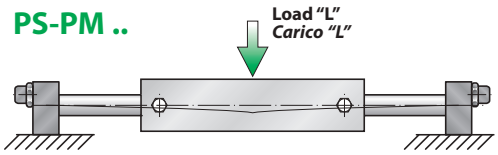


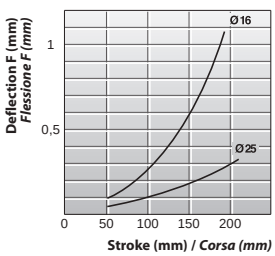
Plate mounting
Deflection (mm) of piston rods. Test data with concentrated load as figure.

A piastre fisse
Flessione (mm) degli steli. Dati ricavati con il carico posizionato come in figura.

Bore *Alesaggio*	Load (Kg) *Carico (Kg)*
16	2
25	5

PS-PM ..



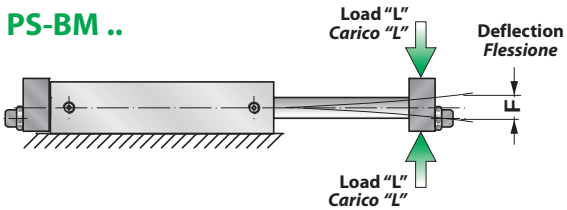


Body mounting
Deflection (mm) of piston rods. Test data with concentrated load as figure.

A corpo fisso
Flessione (mm) degli steli. Dati ricavati con il carico posizionato come in figura.

Bore *Alesaggio*	Load (Kg) *Carico (Kg)*
16	0,5
25	1,2

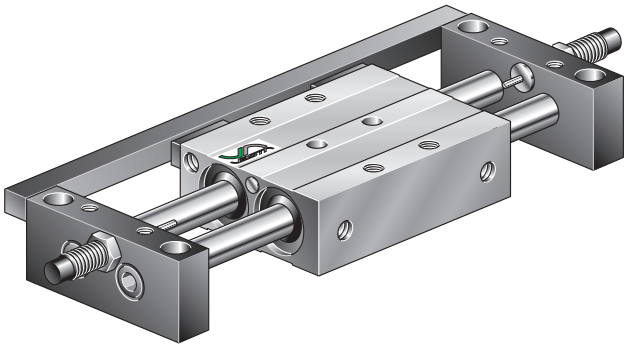
PS-BM ..

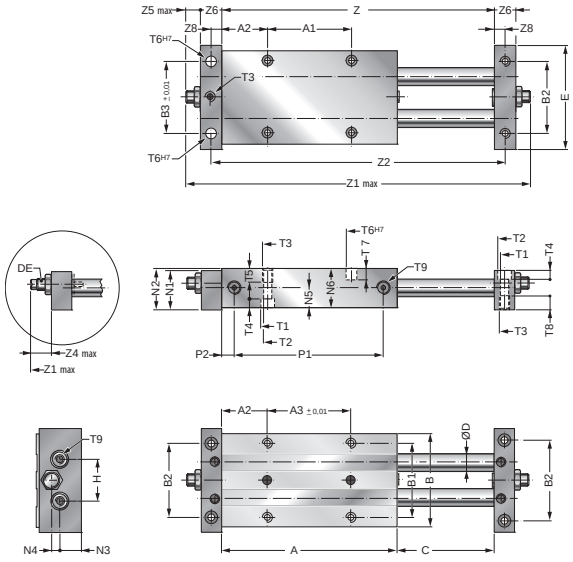


PNEUMATIC SLIDES PS SERIES / *SLITTE PNEUMATICHE SERIE PS*

LINEAR CONTROL UNITS Ø16
UNITA' DI GUIDA Ø16

PS-..-16-...-..





Stroke *Corsa*	A	A1	A2	A3	C	P1	Z	Z1 Stopper bolt *Fermo mecc.*	Z1 Shock absorber *Deceleratore*	Z2
25	69	20	24,5	20	27	50	96	132	156	106
50	94	45	24,5	45	52	75	146	182	206	156
75	119	65	27	65	77	100	196	232	256	206
100	144	90	27	90	102	125	246	282	306	256
125	169	90	39,5	90	127	150	296	332	356	306
150	194	90	52	90	152	175	346	382	406	356
175	219	90	64,5	90	177	200	396	432	456	406
200	244	90	77	90	202	225	446	482	506	456

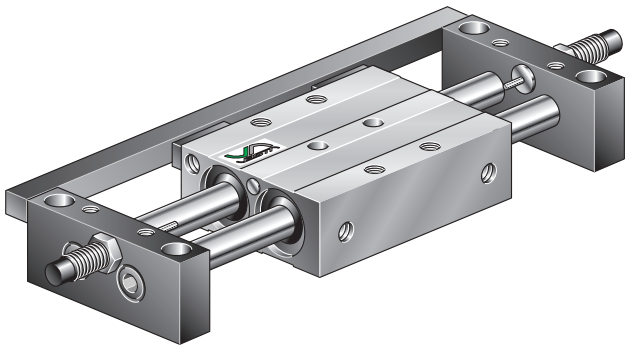
Bore *Alesaggio*	B	B1	B2	B3	ØD	E	H	N1	N2	N3	N4	N5	N6	P2	ØT1	ØT2	ØT3	T4	T5	ØT6	T7	T8	ØT9	Z4	Z5	Z6	Z8
16	50	41	40	40	10	55	19,5	21	22	11,5	4,5	10,5	21	9,5	4,2	7,2	M5	4	6	5	4,5	9	M5	20	8	10	5

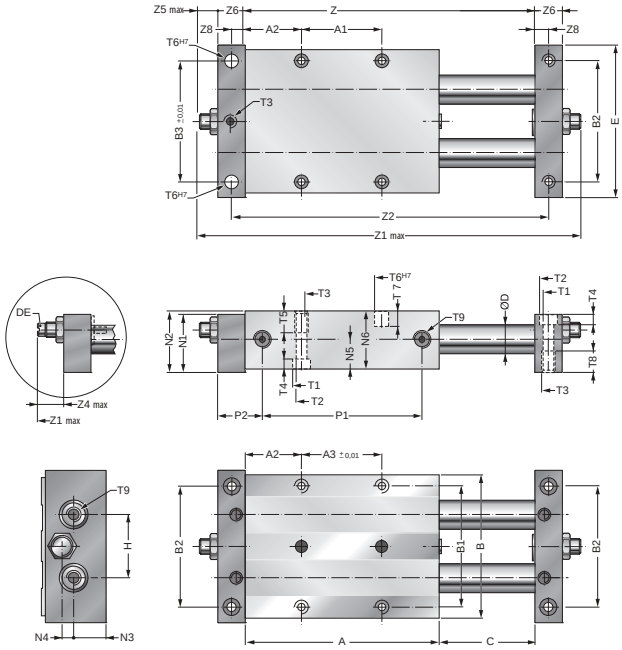
- The standard stroke can be adjusted with stopper bolt or with shock absorber
- Magnetic switches indicate the position
- Shock absorber auto compensating

- *Regolazione corsa con fermo meccanico anche con deceleratore*
- *Finecorsa magnetici per rilevamento posizione*
- *Deceleratori autocompensanti*

LINEAR CONTROL UNITS Ø25
UNITA' DI GUIDA Ø25

PS-..-25-...-..





Stroke *Corsa*	A	A1	A2	A3	C	P1	Z	Z1 Stopper bolt *Fermo mecc.*	Z1 Shock absorber *Deceleratore*	Z2
25	82	25	28,5	25	27	63	109	165	189	125
50	107	45	31	45	52	88	159	215	239	175
75	132	65	33,5	65	77	113	209	265	289	225
100	157	90	33,5	90	102	138	259	315	339	275
125	182	90	46	90	127	163	309	365	389	325
150	207	90	58,5	90	152	188	359	415	439	375
175	232	90	71	90	177	213	409	465	489	425
200	257	90	83,5	90	202	238	459	515	539	475

Bore *Alesaggio*	B	B1	B2	B3	ØD	E	H	N1	N2	N3	N4	N5	N6	P2	ØT1	ØT2	ØT3	T4	T5	ØT6	T7	T8	ØT9	Z4	Z5	Z6	Z8
25	79	67	67	67	16	84	35	32	34	18	5	16	32	9,5	5,2	8,7	M6	5,5	12	6	8	12	G1/8	25	13	15	8

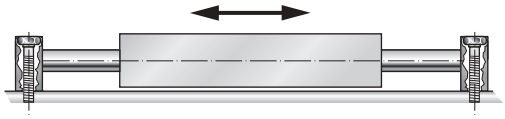
- The standard stroke can be adjusted with stopper bolt or with shock absorber
- Magnetic switches indicate the position
- Shock absorber auto compensating

- *Regolazione corsa con fermo meccanico anche con deceleratore*
- *Finecorsa magnetici per rilevamento posizione*
- *Deceleratori autocompensanti*

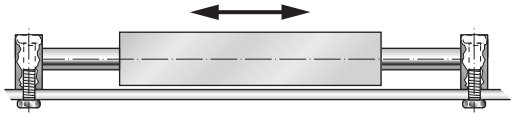
MOUNTING TYPE AND FIXING POSSIBILITY / *TIPI DI MONTAGGI E POSSIBILITA' DI FISSAGGIO*

PS-PM ..

PNEUMATIC SLIDE AT PLATE MOUNTING
SLITTA PNEUMATICA A PIASTRE FISSE



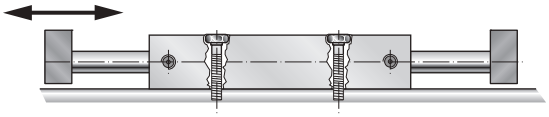
Mounting from upper face
Fissaggio con viti dall'alto



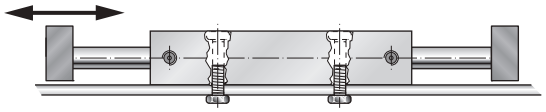
Mounting from lower face
Fissaggio con viti da sotto

PS-BM ..

PNEUMATIC SLIDE AT BODY MOUNTING
SLITTA PNEUMATICA A CORPO FISSO

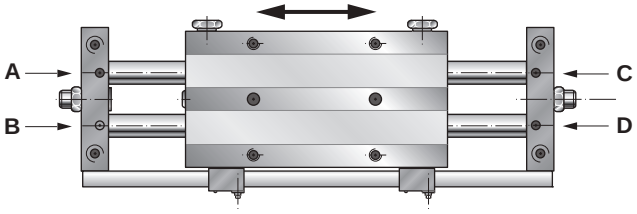


Mounting from upper face
Fissaggio con viti dall'alto

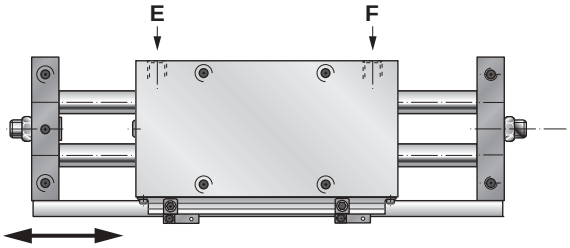


Mounting from lower face
Fissaggio con viti da sotto

WORKING DIRECTION AND PORTS / *DIREZIONE DI MOVIMENTO E CONNESSIONI*



Port *Ingresso*	A	B	C	D
Plate working direction *Direzione di lavoro delle piastre*	**Right** *destra*	**Left** *sinistra*	**Right** *destra*	**Left** *sinistra*

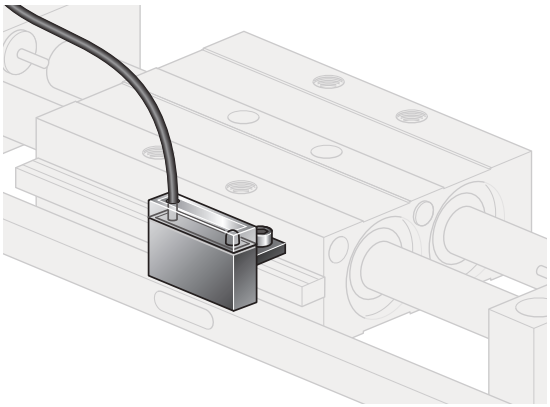


Port *Ingresso*	E	F
Plate working direction *Direzione di lavoro delle piastre*	**Right** *destra*	**Left** *sinistra*

MAGNETIC SWITCHES POSITIONING / *POSIZIONAMENTO DEI FINECORSA*

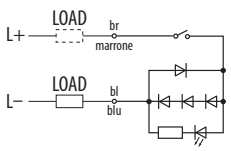
FIV 306 V

MAGNETIC SWITCH
FINECORSA MAGNETICO



Bore *Alesaggio*	R	R1	R2	R3	R4	R5	R6	R7	R8
16	22	8	39	21	1	5	40	8	1,5
25	22	8	53	33	11	5	54	10	2,5

FIV circuit
Circuito FIV



Body mounting:
Corpo fisso:

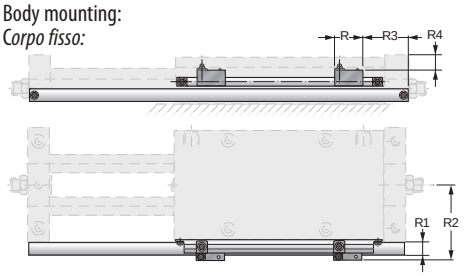
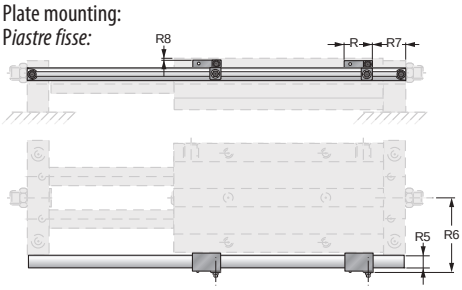


Plate mounting:
Piastre fisse:

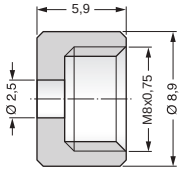


Code *Codice*	Voltage range *Tensione Corrente* V	Switching current *Potenza* mA	Switching capacity VA/W	Degree of protection *Temperatura Protezione*	Working temperature °C	Contact function *Contatto*
FIV 306 V	10-220 (AC-DC)	200	15/10	IP67	-25 ÷ +75°C	

GH-DEC 16

PROTECTION FOR PNEUMATIC SLIDE Ø 16
GHIERA DI PROTEZIONE PER ALESAGGIO Ø 16





DUAL ROD CYLINDERS Ø16 ÷ Ø32
SEMISLITTE PNEUMATICHE Ø16 ÷ Ø32

SERIE **HPSK**

HPSK-□□-□□-□□□

Series / *Serie*:

BS **Brass bearing** and guide stems in chromium-plated steel
Bronzine a strisciamento *e steli guida in acciaio cromato*

BB **Ball bushing** and guide stems in hardened chromium-plated and rectified steel.
Cuscinetti a ricircolo di sfere *e steli guida in acciaio temprato cromato e rettificato.*

bore / *Alesaggio* (mm):

Ø16 ..... **16**
Ø20 ..... **20**
Ø25 ..... **25**
Ø32 ..... **32**

Stroke / *Corsa* (mm):

10, 20, 30, 40, 50, 75, 100.

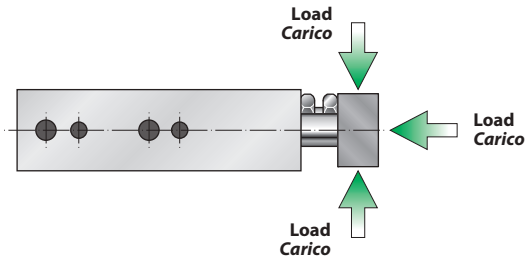
TECHNICAL FEATURES

Environment temperature range	0 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Operating pressure range	2 ÷ 8 bar.
Magnetic switches	Reed type.
Bearings	Slide bearing or ball bushing.
Piston speed	30 ÷ 300 mm/s.
Port size	Ø16 ÷ 20 M5 x 0,8.
	Ø25 ÷ 32 G1/8.
Stroke adjustment	0 ÷ -5 mm.
Cushion	Mechanical buffer.

CARATTERISTICHE TECNICHE

Temperatura ambiente	*0 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione d'esercizio	*2 ÷ 8 bar.*
Finecorsa Magnetici	*Tipo reed.*
Cuscinetti	*A strisciamento o a ricircolo di sfere.*
Velocità di attuazione	*30 ÷ 300 mm/s.*
Attacchi per l' alimentazione	*Ø16 ÷ 20 M5 x 0,8.*
	Ø25 ÷ 32 G1/8.
Regolazione della corsa	*0 ÷ -5 mm.*
Ammortizzatore	*Smorzatore d'urto meccanico.*

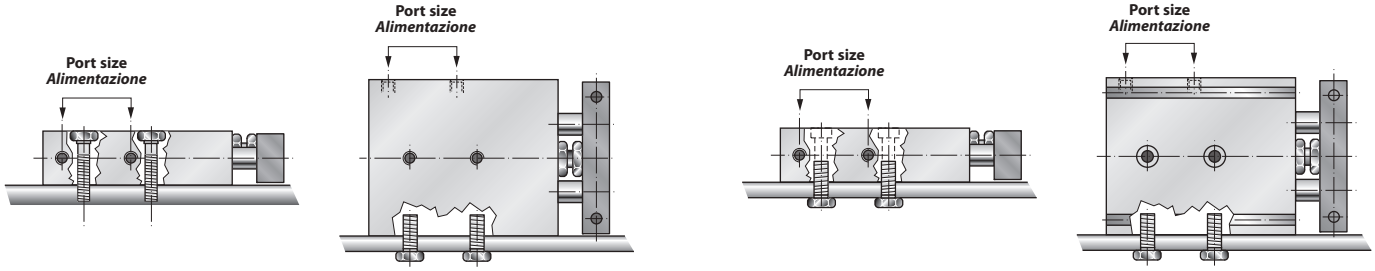
WORKING LOAD / *APPLICAZIONI DEL CARICO*



THEORETICAL THRUSTS / *FORZE TEORICHE SVILUPPATE*

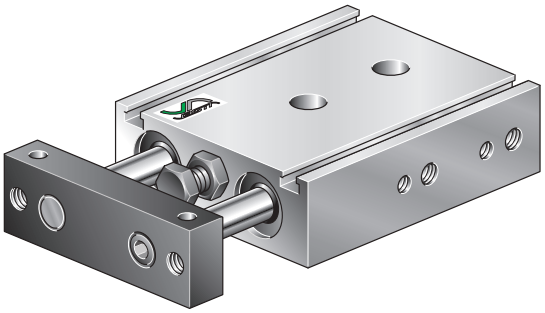
Bore *Alesaggio* (Ø mm)		Theoretical output force (kgf) at pression (Bar) *Forze teoriche di spinta alla pressione (Bar)*						
		2	3	4	5	6	7	8
16	in	6	9	12	15	18	21	24
	out	8	12	16	20	24	28	32
20	in	9,4	14	19	23,6	28	33	37,7
	out	12,6	19	25	31,4	37,7	44	50
25	in	15	22,7	30	38	45,5	53	60,5
	out	19,6	29,5	39	49	59	68,7	78,6
32	in	24	36	48	60	72	84,4	96,5
	out	32	48	64	80,4	96,5	113	129

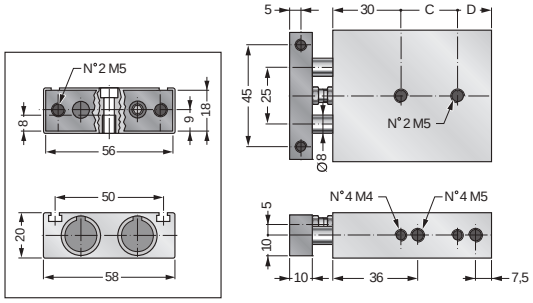
MOUNTING EXAMPLES HPSK SERIE / *ESEMPI DI MONTAGGIO SERIE HPSK*

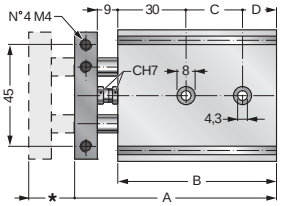


HPSK-..-16-..-...

DUAL ROD CYLINDER Ø16
SEMISLITTA PNEUMATICA Ø16

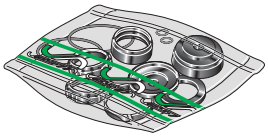






Stroke *Corsa (mm)*	A	B	C	D
10	89	70	25	15
20	99	80	25	25
30	109	90	35	25
40	119	100	35	35
50	129	110	35	45
75	154	135	35	70

✻ = Stroke / *Corsa*

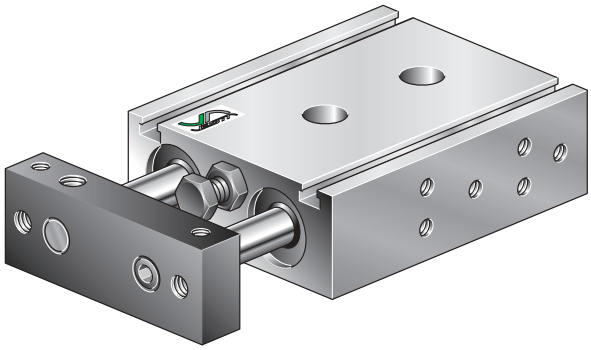


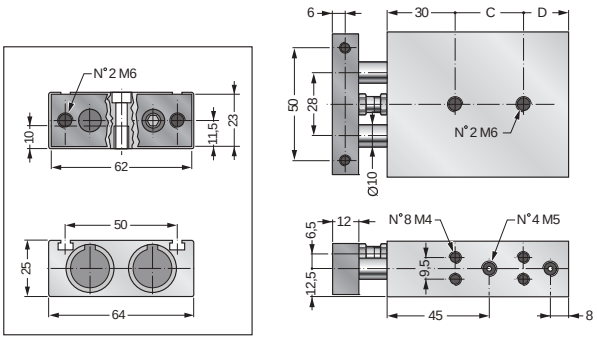
Seals kit for dual rod cylinder HPSK Ø16 serie
Kit guarnizioni semislitte pneumatiche serie HPS K Ø16

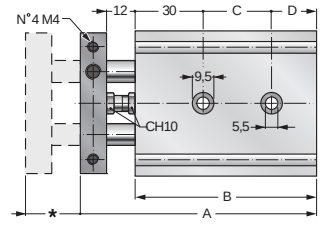
Bore *Alesaggio*	Seals kit code *Codice guarnizioni*
16	**HPSK16SG**

HPSK-..-20-..-...

DUAL ROD CYLINDER Ø20
SEMISLITTA PNEUMATICA Ø20

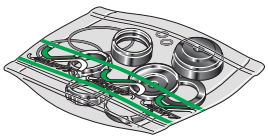






Stroke *Corsa (mm)*	A	B	C	D
10	104	80	30	20
20	114	90	30	30
30	124	100	40	30
40	134	110	40	40
50	144	120	40	50
75	169	145	60	55
100	194	170	60	80

✻ = Stroke / *Corsa*

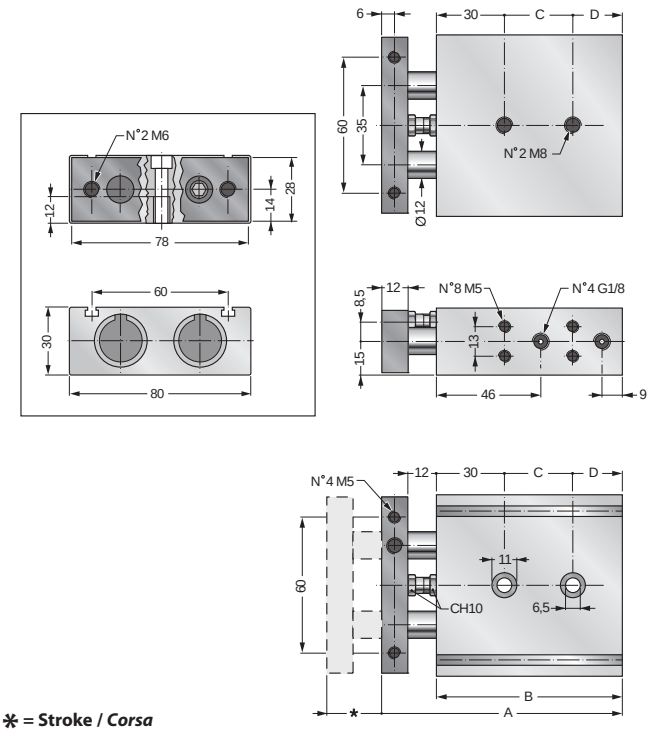


Seals kit for dual rod cylinder HPSK Ø20 serie
Kit guarnizioni semislitte pneumatiche serie HPS K Ø20

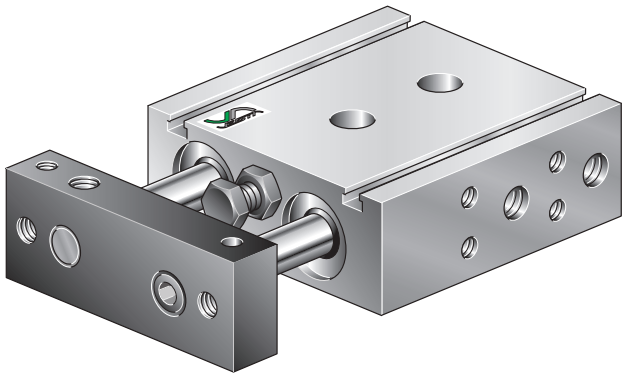
Bore *Alesaggio*	Seals kit code *Codice guarnizioni*
20	**HPSK20SG**

DUAL ROD CYLINDER Ø25
SEMISLITTA PNEUMATICA Ø25

HPSK-..-25-..-...



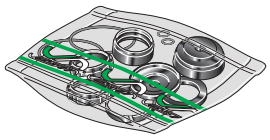
✻ = Stroke / *Corsa*



Stroke *Corsa (mm)*	A	B	C	D
10	106	82	30	22
20	116	92	30	32
30	126	102	40	32
40	136	112	40	42
50	146	122	40	52
75	171	147	60	57
100	196	172	60	82

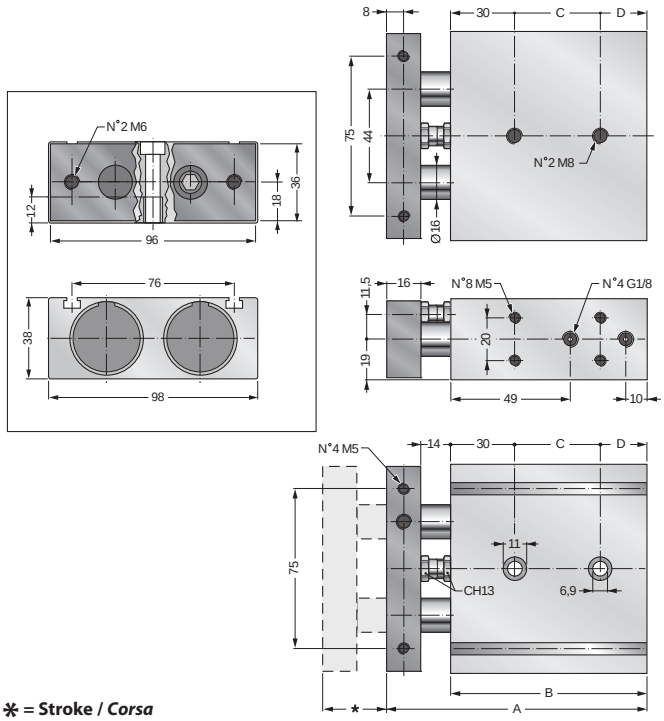
Seals kit for dual rod cylinder HPSK Ø25 serie
Kit guarnizioni semislitte pneumatiche serie HPSK Ø25

Bore *Alesaggio*	Seals kit code *Codice guarnizioni*
25	**HPSK25SG**

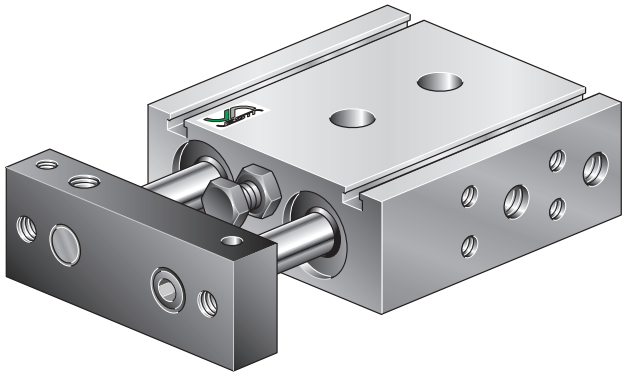


DUAL ROD CYLINDER Ø32
SEMISLITTA PNEUMATICA Ø32

HPSK-..-32-..-..



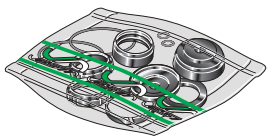
✻ = Stroke / *Corsa*



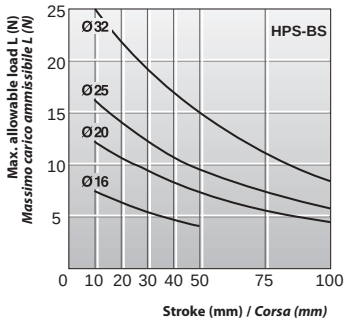
Stroke *Corsa (mm)*	A	B	C	D
10	122	92	40	22
20	132	102	40	32
30	142	112	50	32
40	152	122	50	42
50	162	132	50	52
75	187	157	70	57
100	212	182	70	82

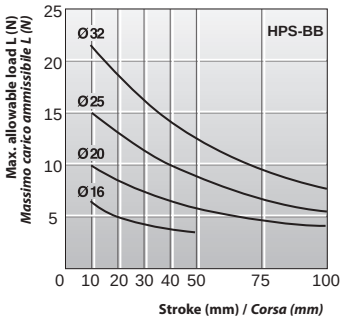
Seals kit for dual rod cylinder HPSK Ø32 serie
Kit guarnizioni semislitte pneumatiche serie HPS K Ø32

Bore *Alesaggio*	Seals kit code *Codice guarnizioni*
32	**HPSK32SG**



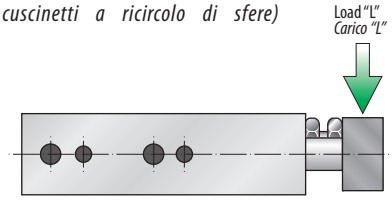
MAXIMUM ALLOWABLE LOAD HPSK SERIE / *CARICO MASSIMO AMMISSIBILE SERIE HPSK*





Graphics of maximum allowable load for dual rod cylinder **"BS"** serie (with rod bearing brass) and **BB** serie (with ball bushing)

Diagrammi del carico massimo ammissibile per semislitte pneumatiche della ***serie BS*** *(con bronzine a strisciamento) e della* ***serie BB*** *(con cuscinetti a ricircolo di sfere)*



PISTON RODS DEFLECTION / *FLESSIONE DEGLI STELI*

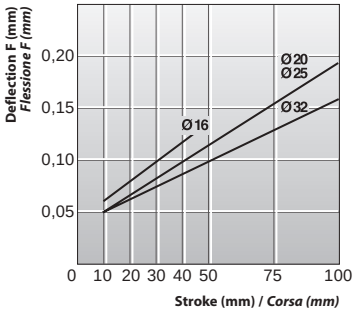


fig. 1

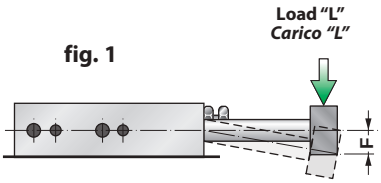
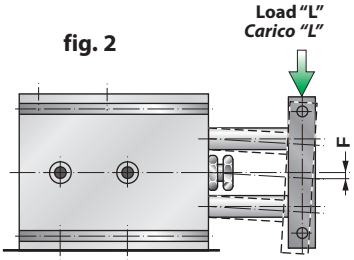


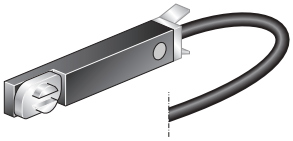
fig. 2



The graph shows the standard value of piston rod deflection (F) with a load of 10 N.
The piston rods deflection value in the case shown in fig. 2 is 30% less than value shown in the graph refered to fig.1

Il grafico riporta i valori standard della flessione (F) degli steli nella condizione di carico per L=10 N.
I valori della flessione degli steli nella condizione di carico della fig.2 sono inferiori del 30% rispetto ai valori di carico della fig.1 da cui é ricavato il grafico.

MAGNETIC SWITCHES FOR HPSK CYLINDERS / *FINECORSA MAGNETICI PER CILINDRI HPSK*

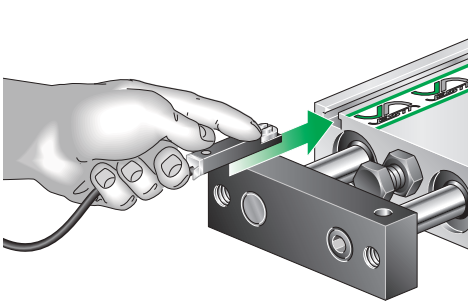


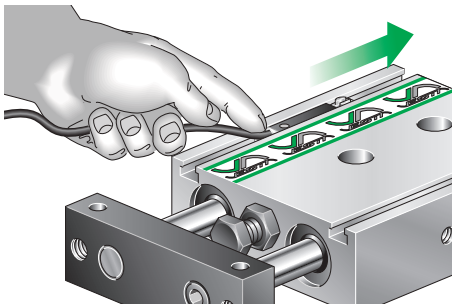
For magnetic switches features see:
Caratteristiche finecorsa magnetici vedi:

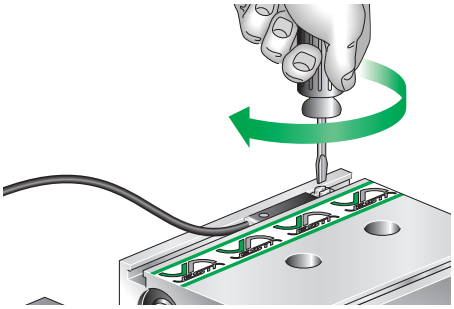
VNCR2, VNPR2,
VNCE3, VNPE3.

Pag. A-19

MAGNETIC SWITCH POSITIONING / *POSIZIONAMENTO DEI FINECORSA MAGNETICI*







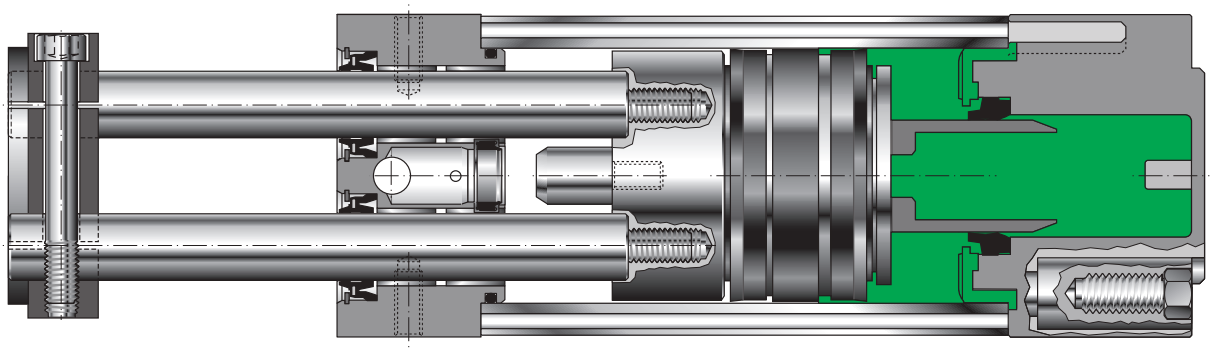
ANTI-ROTATION CYLINDERS
CILINDRI ANTIROTAZIONE

SERIE **AW ..**

TECHNICAL FEATURES / *CARATTERISTICHE COSTRUTTIVE*

VESTA pneumatic cylinders series **AW** are available with twin or triple piston rods. They feature reliability, high resistance to side movement and are manufactured to meet the needs of modern flexible automation.
The materials of construction have been carefully selected to ensure high performance.
All piston rods are guided on self-lubricated bearings, giving low friction and a high load capacity.
Magnetic pistons allow the use of magnetic switches on all models.
Fully adjustable cushioning is featured on each cylinder with micrometric control. Lubrication is not required.
Telescopic piston rods with hollow bores enable the user to transport air or vacuum signals through the length of the piston rod.

*Gli attuatori pneumatici appartenenti alla serie **AW** a due e tre steli, nascono per garantire prestazioni e durata notevoli del cilindro anche in presenza di carichi sullo stelo che ne determinano un momento torcente o flettente, incrementando in maniera considerevole la resistenza a tali sollecitazioni.*
La scelta di materiali di prima qualità, l'accuratezza nelle lavorazioni e il controllo del prodotto finito garantiscono una perfetta funzionalità dello stesso.
Gli steli sono guidati su boccole autolubrificanti a lunga durata, basso coefficiente d' attrito ed elevata capacità di carico; il pistone è guidato e magnetico di serie, onde consentire su tutti i modelli l'uso di finecorsa.
*Ogni cilindro può essere utilizzato anche con aria non lubrificata ed è dotato di ammortizzatori pneumatici con regolazione micrometrica. All'interno della serie **AW** spiccano particolarmente i cilindri a steli cavi che, oltre a garantire la non rotazione dello stelo, consentono l'utilizzo di aria o vuoto attraverso gli steli stessi (vedi gli esempi di pagina A-75).*



PRECAUTIONS BEFORE USE / *RACCOMANDAZIONI PER L'INSTALLAZIONE*

- Avoid impacts and abrasion of piston rods, or else the correct functioning of the anti-rotation cylinder can be endangered by uneven wear of the bearings or seals.
- Lubrication is not necessary, but if it provided, use only ISO VG 32 oil. Do not use engine oil or spindle oil.
- Before each pneumatic connection, clean tubes and fittings carefully.

- *Evitare urti ed abrasioni degli steli, in caso contrario si comprometterebbe il buon funzionamento della stessa con anomale usure dei cuscinetti e delle guarnizioni.*
- *La lubrificazione non è necessaria, ma se prevista usare olio ISO VG 32. Non usare olio per motori o per mandrini.*
- *Prima di ogni collegamento pneumatico pulire accuratamente tubi e raccordi.*

SERIE **AR2 - AR3**

TWIN PISTON RODS PNEUMATIC CYLINDERS Ø25
CILINDRI ANTIROTAZIONE A STELI GEMELLATI Ø25

AR □ - 25 - □□□

2 basic cylinder (twin piston rods)
cilindro base (steli gemellati)

3 cylinder with twin piston rods and through piston rod
cilindro steli gemellati con stelo trapassante

Stroke / *Corsa* (mm):

Bore / Alesaggio	Standard stroke / *Corse Standard*							
	25	50	80	100	125	160	200	250
25	•	•	•	•	•	•	•	•

TECHNICAL FEATURES

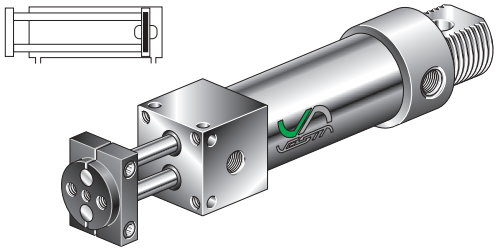
Heads	Aluminium alloy.
Piston rods	Stainless steel X5CrNi 1810.
Barrel	Anodized aluminium.
Seals	NBR rubber.
Cushioning	Mechanical.
Environment temperature range	-10 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	filtered air.
Max operating pressure	10 bar.

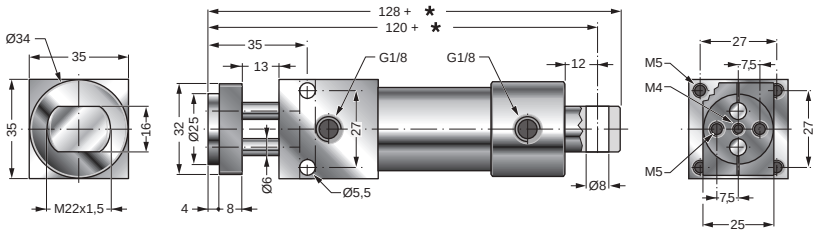
CARATTERISTICHE TECNICHE

Testate	*Lega di alluminio.*
Steli	*Acciaio inox* X5CrNi 1810.
Camicia	*Alluminio anodizzato.*
Guarnizioni	*Tutte in NBR con profili antiusura e prelubrificate.*
Ammortizzatori	*Meccanici.*
Temperatura ambiente	*-10 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

AR2-25-...

TWIN PISTON RODS BASIC CYLINDER; Ø25
CILINDRO BASE STELI GEMELLATI; Ø25

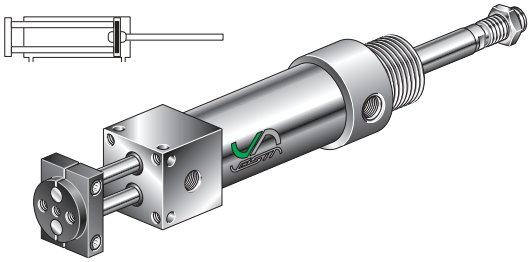


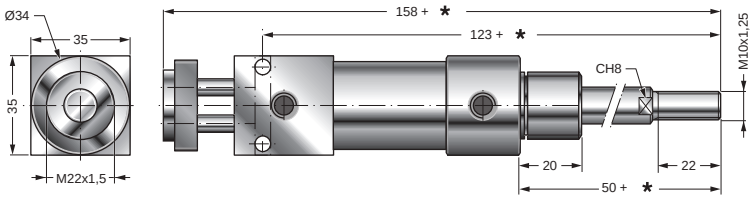


✱ = Stroke / *Corsa*

AR3-25-...

TWIN PISTON RODS+THROUGH PISTON ROD; Ø25
CILINDRO STELI GEMELLATI E PASSANTE; Ø25

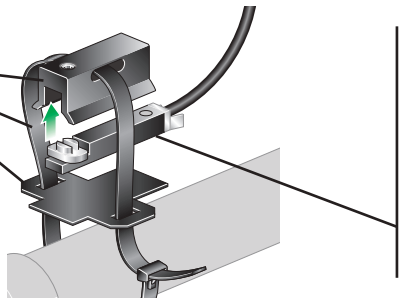


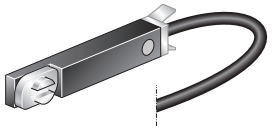


✱ = Stroke / *Corsa*

MAGNETIC SWITCHES FOR Ø 25 mm CYLINDER / *FINECORSA MAGNETICI PER CILINDRI Ø 25 mm*

FFS 01 VN





For magnetic switches features see:
Caratteristiche finecorsa magnetici vedi:
VNCR2, VNPR2, VNCE3, VNPE3. Pag. A-19

Instruction for mounting see:
Per le istruzioni di montaggio vedi: **Pag. A-11**

TWIN PISTON RODS PNEUMATIC CYLINDERS
CILINDRI ANTIROTAZIONE A STELI GEMELLATI

SERIE **AW2 - AW3 - AW4**

2 basic cylinder (twin piston rods)
cilindro base steli gemellati

3 cylinder with twin piston rods and through piston rod
cilindro steli gemellati con stelo trapassante

4 cylinder with twin piston rods and two through piston rods
cilindro steli gemellati con due steli trapassanti

AW □-□□□-□□□

Stroke / *Corsa* (mm):

Bore / *Alesaggio (mm)*:

Ø32 ..... **32**; Ø63 ..... **63**;
Ø40 ..... **40**; Ø80 ..... **80**;
Ø50 ..... **50**; Ø100 ..... **100**.

Standard stroke / *Corse Standard*

Bore / Alesaggio	25	50	80	100	125	160	200	250	300	350	400	450	500
32	•	•	•	•	•	•	•	•	•	•	•	•	•
40	•	•	•	•	•	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•	•	•	•	•	•
63	•	•	•	•	•	•	•	•	•	•	•	•	•
80	•	•	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•	•	•

Features of reed switches see:
Caratteristiche finecorsa magnetici: ..... **Pag. A-19.**

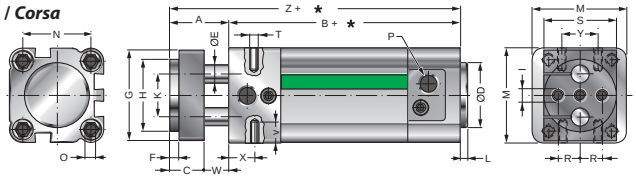
TECHNICAL FEATURES

Heads	Aluminium alloy.
Piston rods	Stainless steel X20 Cr 13.
Barrel	Extruded profiled aluminium tube.
Seals	NBR rubber and polyurethan.
Cushioning	Pneumatic adjusting cushions.
Environment temperature range	-10 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	filtered air.
Max operating pressure	10 bar.

CARATTERISTICHE TECNICHE

Testate	*Lega di alluminio.*
Steli	*Acciaio inox X20 Cr 13.*
Camicia	*Tubo profilato ed anodizzato d' alluminio.*
Guarnizioni	*In NBR e poliuretano.*
Ammortizzatori	*Pneumatici regolabili progressivi.*
Temperatura ambiente	*-10 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

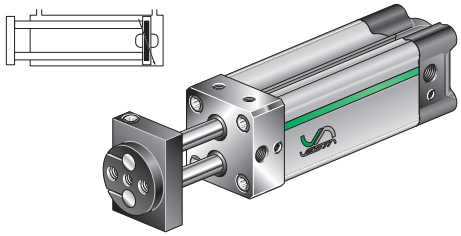
✱ = Stroke / *Corsa*

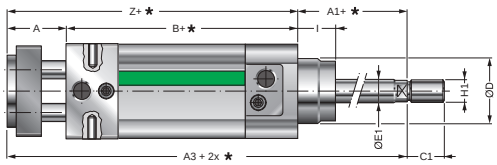


Bore / *Alesaggio*	A	B	C	ØD	ØE	F	G	ØH	ØI	L	M	N	ØO	ØP	R	S	ØT	V	W	X	Y	Z	K
32	26	102	15	30	8	4	40	32	M6	4	45	32,5	M6	G1/8	9,5	32	M5	10	11	15	16	128	18
40	30	112	15	35	10	4	45	40	M8	4	55	38	M6	G1/4	11,5	40	M6	10	15	17,5	21	142	21
50	34	117	18	40	12	5	55	50	M8	4	65	46,5	M8	G1/4	15	50	M8	12	16	16	24	151	26
63	36	124	22	45	16	5	70	63	M10	4	80	56,5	M8	G3/8	19	63	M8	12	14	18	33	160	35
80	38	136	22	45	20	5	95	80	M12	4	100	72	M10	G3/8	25	80	M10	18	16	19	40	174	46
100	38	143	22	55	20	5	115	100	M12	4	115	89	M10	G1/2	35	100	M10	18	16	19	58	181	70

TWIN PISTON RODS BASIC CYLINDER
CILINDRO BASE STELI GEMELLATI

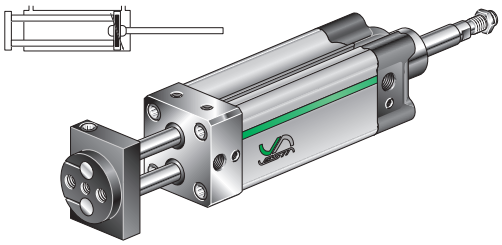
AW2-...-...





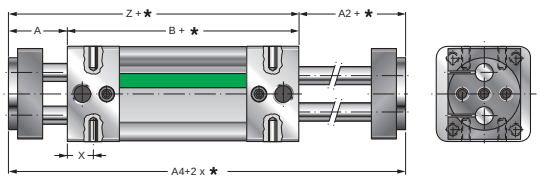
TWIN PISTON RODS CYLINDER+THROUGH PISTON ROD
CILINDRO STELI GEMELLATI+STELO TRAPASSANTE

AW3-...-...



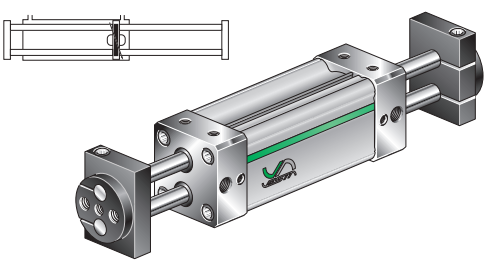
✱ = Stroke / *Corsa*

Bore / *Alesaggio*	A	A1	A3	B	C1	CH	ØD	ØE1	I	ØH1
32	26	26	154	102	20	10	30	12	18	M10x1,25
40	30	30	172	112	24	13	35	16	21,5	M12x1,25
50	34	37	188	117	32	17	40	20	28	M16x1,5
63	36	37	197	124	32	17	45	20	28,5	M16x1,5
80	38	46	220	136	40	21	45	25	34,5	M20x1,5
100	38	51	232	143	40	25	55	30	38	M20x1,5



CYLINDER THROUGTH TWIN PISTON RODS
CILINDRO STELI GEMELLATI PASSANTI

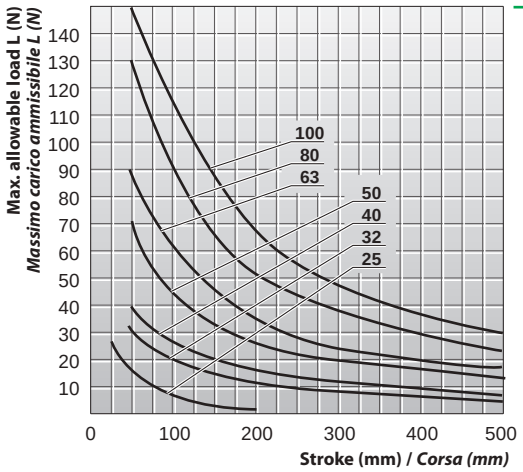
AW4-...-...

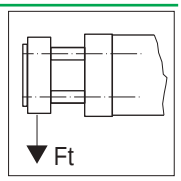


✱ = Stroke / *Corsa*

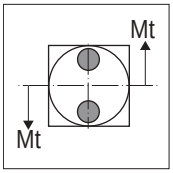
Bore / *Alesaggio*	A	A2	A4	B	X	Z
32	26	26	154	102	15	128
40	30	30	172	112	17,5	142
50	34	34	185	117	16	151
63	36	36	196	125	18	160
80	38	38	212	136	19	174
100	38	38	219	143	19	181

TRANSVERSE FORCE GRAPH AND TORQUE GRAPH AW2 SERIES
DIAGRAMMI DI FLESSIONE E MOMENTO TORCENTE SERIE AW2

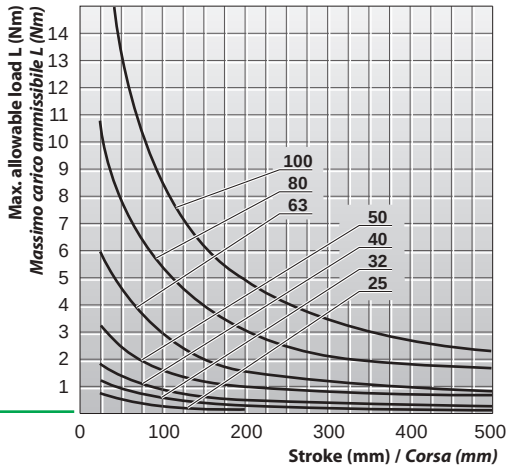




Transverse force
Flessione

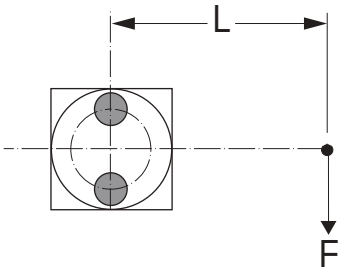


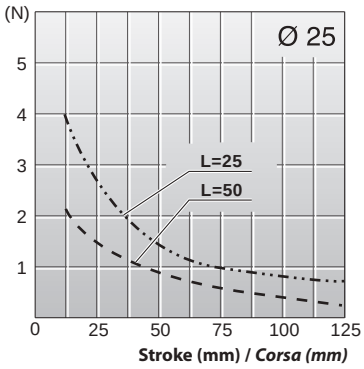
Torque moment
Momento torcente

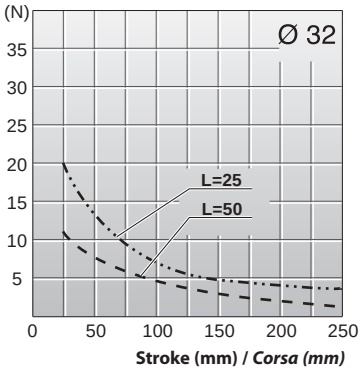


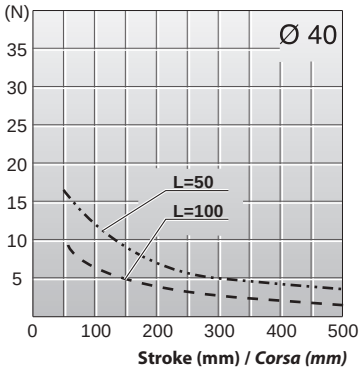
BENDINGS MOMENTS GRAPH AW2 SERIES
DIAGRAMMI DI FLESSOTORSIONE SERIE AW2

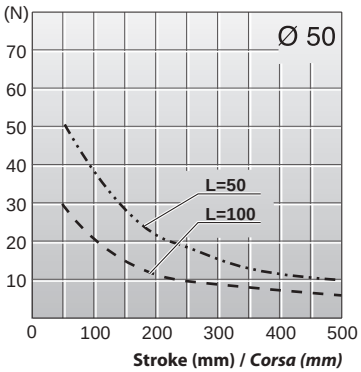
Maximum allowable load F (N)
Massimo carico F (N)

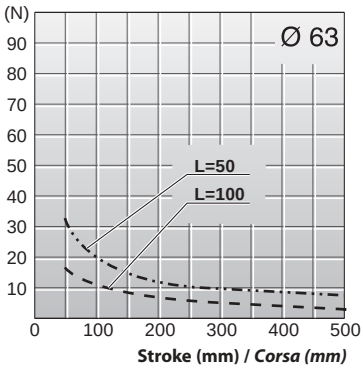


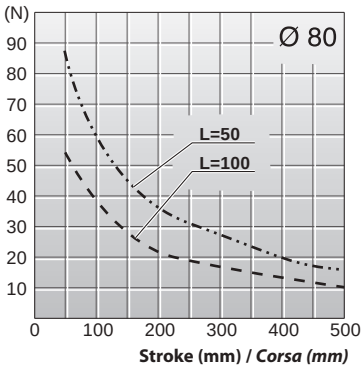


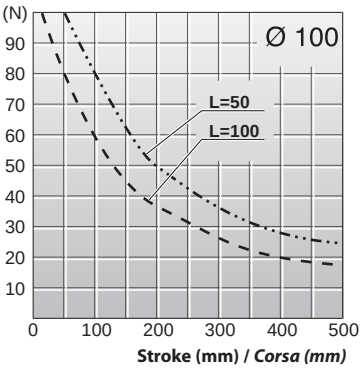












FIXING ACCESSORIES FOR AW2, AW3 AND AW4 CYLINDER / *ACCESSORI DI FISSAGGIO PER CILINDRI AW2, AW3 E AW4*

For fixing accessories on double piston roded units, please contact our technical sales department.
The accessories can be mounted on the profiled tube or on the end-caps using standard fixings, see pp. **A-22** ÷ **A-26**.

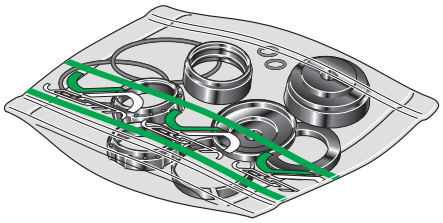
Per i fissaggi da applicare alla testata a doppio stelo si prega di consultare il nostro ufficio tecnico-commerciale.
I fissaggi che possono essere montati sulla camicia o sulla testata posteriore sono fissaggi standard specificati a pp. ***A-22*** ÷ ***A-26***.

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO ..... - SG

Seals kit code = **Antirotation cylinder code** + **Bore** + **- SG**:
(The kit includes all seals).

Codice del kit = ***Codice del cilindro antirotazione*** + ***Alesaggio*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **AW3 50 - SG**



SERIE **AW6 - AW8**

TRIPLE PISTON RODS PNEUMATIC ANTIROTATION CYLINDERS
CILINDRI ANTIROTAZIONE PNEUMATICI A TRIPLO STELO

AW □-□□□-□□□

- Stroke / *Corsa* (mm):
- Bore / *Alesaggio (mm)*:
  - Ø32 ..... **32**;
  - Ø40 ..... **40**;
  - Ø50 ..... **50**;
  - Ø63 ..... **63**.
- **6** triple piston rods antirotation cylinder
  cilindro base antirotazione a 3 steli
- **8** triple piston rods cylinder with through piston rod
  cilindro antirotazione a 3 steli con stelo trapassante

Features of reed switches see:
Caratteristiche finecorsa magnetici: ..... **Pag. A-19.**

Bore / Alesaggio	Standard stroke / *Corse Standard*										
	25	50	100	160	200	250	300	350	400	450	500
32	•	•	•	•	•	•	•	•	•	•	•
40	•	•	•	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•	•	•	•
63	•	•	•	•	•	•	•	•	•	•	•

TECHNICAL FEATURES

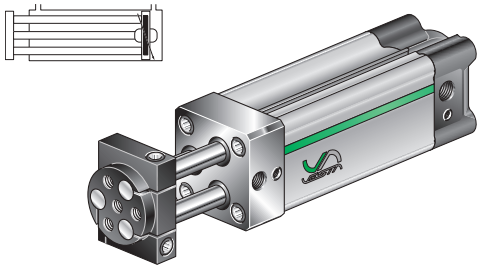
End caps	Aluminium alloy.
Piston rods	Stainless steel X20 Cr 13.
Barrel	Extruded profiled aluminium tube.
Seals	NBR rubber and polyurethan.
Cushioning	Micrometric control.
Environment temperature range	-10 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	filtered air.
Max operating pressure	10 bar.

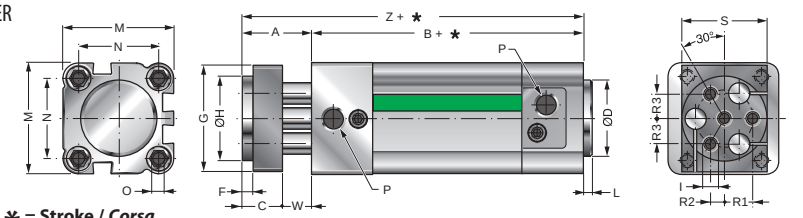
CARATTERISTICHE TECNICHE

Testate	*Lega di alluminio.*
Steli	*Acciaio inox* X20 Cr 13.
Camicia	*Tubo profilato ed anodizzato d' alluminio.*
Guarnizioni	*In NBR e poliuretano.*
Ammortizzatori	*Con regolazione micrometrica.*
Temperatura ambiente	*-10 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

AW6-..-...

TRIPLE PISTON RODS BASIC CYLINDER
CILINDRO BASE CON 3 STELI



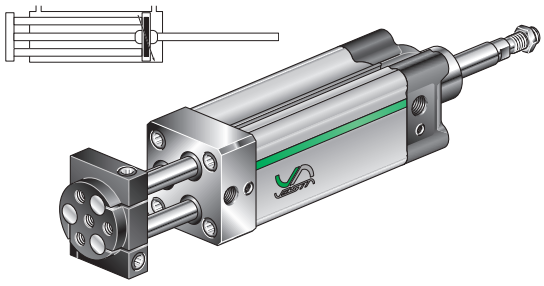


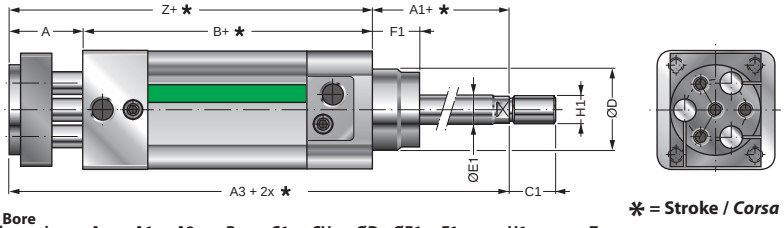
✱ = Stroke / *Corsa*

Bore / *Alesaggio*	A	B	C	ØD	F	G	ØH	ØI	L	M	N	ØO	ØP	R1	R2	R3	S	W	Z	Stems diameter / *Diametro steli*
32	26	102	15	30	4	40	32	M6	4	45	32,5	M6	G1/8	10	5	8,7	40	11	128	8
40	30	112	15	35	4	45	40	M8	4	55	38	M6	G1/4	12,5	6,3	9,3	40	15	142	12
50	34	117	18	40	5	55	50	M8	4	65	46,5	M8	G1/4	15,5	7,8	13,4	50	16	151	12
63	36	124	22	45	5	70	63	M10	4	80	56,5	M8	G3/8	19	9,5	15,2	63	14	160	16

AW8-..-...

TRIPLE PISTON RODS + THROUGH PISTON ROD
CILINDRO CON 3 STELI E STELO TRAPASSANTE





✱ = Stroke / *Corsa*

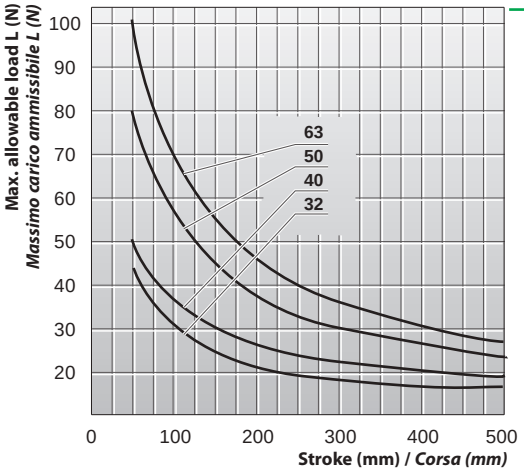
Bore / *Alesaggio*	A	A1	A3	B	C1	CH	ØD	ØE1	F1	H1	Z
32	26	26	154	102	20	10	30	12	18	M10x1,25	128
40	30	30	172	112	24	13	35	16	21,5	M12x1,25	142
50	34	37	194	117	32	17	40	20	28	M16x1,5	151
63	36	37	197	124	32	17	45	20	28,5	M16x1,5	160

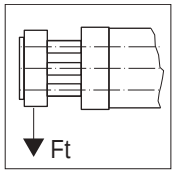
FIXING ACCESSORIES FOR AW6 AND AW8 CYLINDER / *ACCESSORI DI FISSAGGIO PER CILINDRI AW6 E AW8*

For fixing accessories mounting on triple piston rods end-cap, please contact our technical sales department.
The accessories can be mounting on profiled tube or rear end-cap used standard fixing, see pp. **A-22** ÷ **A-26**.

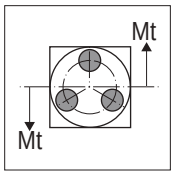
Per i fissaggi da applicare alla testata a triplo stelo si prega di consultare il nostro ufficio tecnico-commerciale.
I fissaggi che possono essere montati sulla camicia o sulla testata posteriore sono fissaggi standard specificati a pp. ***A-22*** ÷ ***A-26***.

TRANSVERSE FORCE AND TORQUE GRAPHS AW6 AND AW8 SERIES CYLINDERS
DIAGRAMMI FLESSIONE E MOMENTO TORCENTE CILINDRI SERIE AW6 E AW8

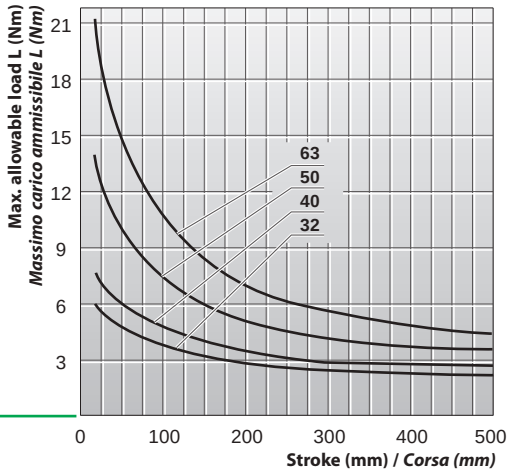




Transverse force
Flessione



Torque moment
Momento torcente



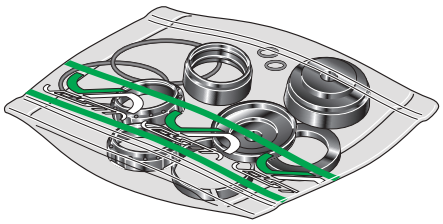
SEALS KIT
KIT GUARNIZIONI DI RICAMBIO

..... - SG

Seals kit code = **Antirotation cylinder code** + **Bore** + **- SG**:
(The kit includes all seals).

Codice del kit = ***Codice del cilindro antirotazione*** + ***Alesaggio*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **AW8 50 - SG**



SERIE AW1 - AW5 - AW7

HOLED TELESCOPIC PISTON RODS CYLINDERS
CILINDRI A STELI CAVI

AW □-□□-□□□

1 cylinder with holed telescopic piston rod
cilindro con stelo cavo passante interno

5 twin holed telescopic piston rods cylinder
cilindro antirotazione con 2 steli gemellati cavi

7 triple holed telescopic piston rods cylinder
cilindro antirotazione con 3 steli cavi

Bore / *Alesaggio* (mm):
Ø32 ..... **32**;
Ø40 ..... **40**;
Ø50 ..... **50**;
Ø63 ..... **63**.

Stroke / *Corsa* (mm):

Features of reed switches see:
Caratteristiche finecorsa magnetici: ..... **Pag. A-19.**

TECHNICAL FEATURES

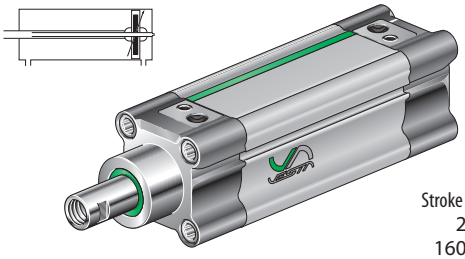
End caps	Aluminium alloy.
Piston rod	Chromium-plated and rectifield steel.
Barrel	Extruded profiled aluminium tube.
Seals	NBR rubber and polyurethan.
Cushioning	Micrometric control.
Environment temperature range	-10 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	filtered air.
Max operating pressure	10 bar.

CARATTERISTICHE TECNICHE

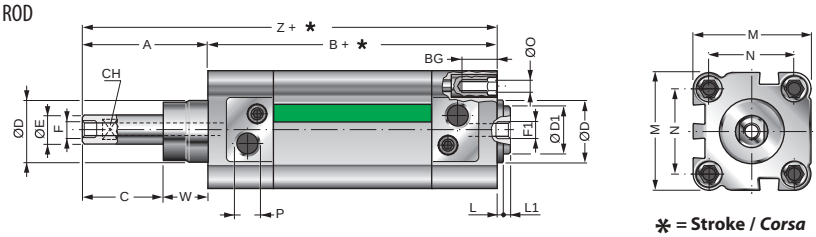
Testate	*Lega di alluminio.*
Stelo	*Acciaio cromato rettificato.*
Camicia	*Tubo profilato ed anodizzato d' alluminio.*
Guarnizioni	*In NBR e poliuretano.*
Ammortizzatori	*Con regolazione micrometrica.*
Temperatura ambiente	*-10 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

AW1-..-...

SINGLE HOLED TELESCOPIC PISTON ROD
CILINDRO STELO CAVO TELESCOPICO



Stroke / *Corsa* (mm):
25, 50, 100,
160, 200, 300.

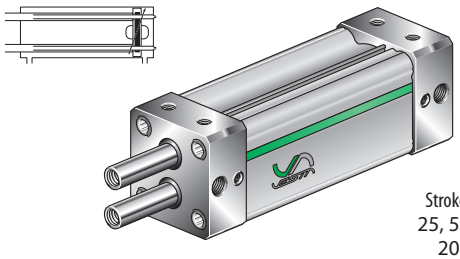


✱ = Stroke / *Corsa*

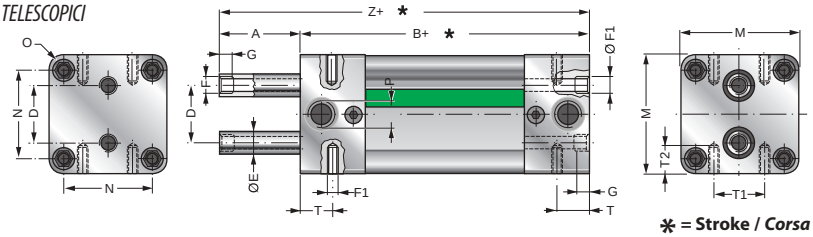
Bore *Alesaggio*	A	B	BG	C	CH	ØD	ØD1	ØE	ØF	ØF1	L	L1	M	N	ØO	ØP	W	Z
32	37	94	15	19 11	30	24	12	G1/8	G1/8	4	4	45	32,5	M6	G1/8	18	131	
40	40	105	15	18,5	14	35	35	16	G1/4	G1/8	4	5	54	38	M6	G1/4	21,5	145
50	41	106	15	13	18	40	40	20	G3/8	G1/8	4	5	64	46,5	M8	G1/4	28	147

AW5-..-...

TWIN HOLED TELESCOPIC PISTON RODS CYLINDER
CILINDRO A 2 STELI GEMELLATI CAVI TELESCOPICI



Stroke / *Corsa* (mm):
25, 50, 100, 160,
200, 250, 300.

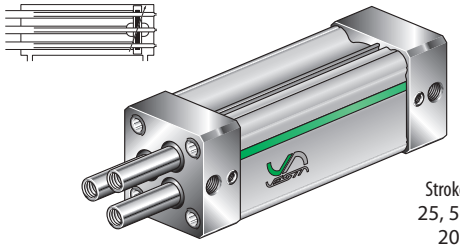


✱ = Stroke / *Corsa*

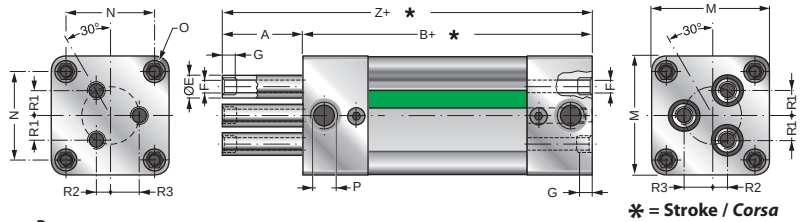
Bore *Alesaggio*	A	B	D	ØE	ØF1	ØF	G	M	N	ØO	ØP	T	T1	T2	Z
40	40	125	21	12	G1/8	M6	8	55	38	M6	G1/4	17	21	10	165
50	40	136	28	16	G1/4	M8	11	65	46,5	M8	G1/4	18	24	12	176
63	40	133	35	16	G1/4	M8	11	80	56,5	M8	G3/8	18	33	14	173

AW7-..-...

TRIPLE HOLED TELESCOPIC PISTON RODS CYLINDER
CILINDRO A 3 STELI GEMELLATI CAVI TELESCOPICI



Stroke / *Corsa* (mm):
25, 50, 100, 160,
200, 250, 300.



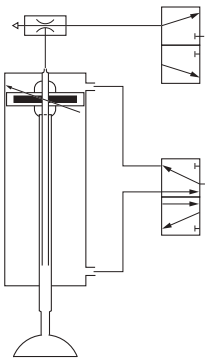
✱ = Stroke / *Corsa*

Bore *Alesaggio*	A	B	ØE	ØF	G	M	N	ØO	ØP	R1	R2	R3	Z
40	40	125	12	G1/8	8	55	38	M6	G1/4	9,3	5,4	10,8	165
50	40	135	12	G1/8	8	65	46,5	M8	G1/4	13,4	7,75	15,5	175
63	40	133	16	G1/4	11	80	56,5	M8	G3/8	15,2	8,75	17,5	173

EXAMPLE OF EMPLOYMENT HOLED CYLINDERS AW1, AW5, AW7 AND GRIPPERS SERIES MH
ESEMPIO DI IMPIEGO DEI CILINDRI CAVI SERIE AW1, AW5, AW7 E MANI DI PRESA SERIE MH

EXAMPLE OF EMPLOYMENT
ESEMPIO DI IMPIEGO

AW1... + ...

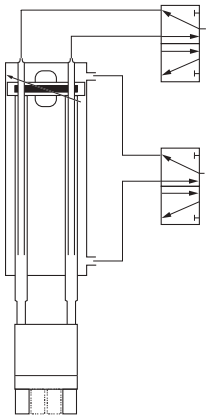


Valve to operate vacuum generator
Valvola di alimentazione generatore per vuoto

Valve to operate double acting cylinder
Valvola di comando cilindro doppio effetto

EXAMPLE OF EMPLOYMENT
ESEMPIO DI IMPIEGO

AW5... + MH...

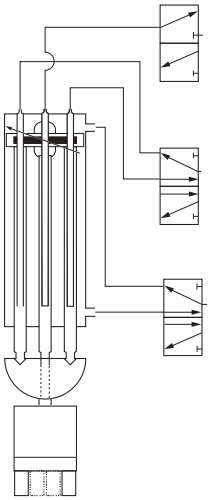


Valve to operate double acting gripper
Valvola di comando mano di presa a doppio effetto

Valve to operate double acting cylinder
Valvola di comando cilindro doppio effetto

EXAMPLE OF EMPLOYMENT
ESEMPIO DI IMPIEGO

AW7... + MH...



Valve to operate single acting gripper
Valvola di comando mano di presa a semplice effetto

Valve to operate double acting gripper rotary unit
Valvola di comando cilindro rotante doppio effetto

Valve to operate double acting cylinder
Valvola di comando cilindro doppio effetto

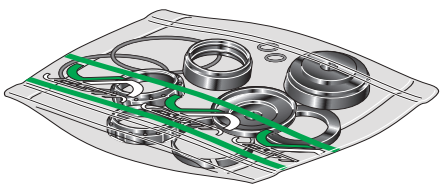
For further information about special application, please contact our technical sales office
Per altre applicazioni delle mani di presa o assembaggi di componenti speciali contattare il nostro ufficio tecnico commerciale

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO **..... - SG**

Seals kit code = **Holed piston rods cylinder code** + **Bore** + **- SG**:
(The kit includes all seals).

Codice del kit = ***Codice del cilindro steli cavi*** + ***Alesaggio*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **AW7 50 - SG**



SERIE HCG

COMPACT GUIDE PNEUMATIC CYLINDERS
CILINDRI PNEUMATICI COMPATTI GUIDATI

- Compact magnetic guided cylinder are available with C45 chromium plated steel rods in the BS version (bronze bushes) or with hardened chromium plated steel rods in the BB version (ball bearing).
- Cylinder bodies are machined in a one-piece anodized aluminium block, suitable for use with foldaway magnetic switches.
- Use of HCG cylinder is particulary recommended where large forces need to be generated in a confined space.

- *I cilindri magnetici compatti guidati vengono forniti con aste guida in acciaio C45 rettificato e cromato, nella versione con boccole guida a strisciamento (serie HCG-BS), e con aste guida in acciaio temprato rettificato e cromato nella versione con cuscinetti a ricircolo di sfere (serie HCG-BB).*
- *I cilindri sono costruiti con corpo unico, molto robusto e preciso, in lega di alluminio anodizzato e predisposti per alloggiamento di sensori magnetici a scomparsa.*
- *Particolarmente adatti ad essere montati dove le esigenze di spazio ed i carichi sono impegnativi.*

HCG □□.□□□ □□

Bore / *Alesaggio (mm)*:
- Ø16 ..... **16**
- Ø20 ..... **20**
- Ø25 ..... **25**
- Ø32 ..... **32**
- Ø40 ..... **40**
- Ø50 ..... **50**
- Ø63 ..... **63**
- Ø80 ..... **80**
- Ø100 .... **100**

Stroke / *Corsa (mm)*:

BS with brass bearing
con bronzine a strisciamento

BB with ball bushing
con cuscinetti a ricircolo di sfere

TECHNICAL FEATURES

Cylinder body	Anodized aluminium.
Seals	Rod seal in NBR rubber.
Guiding stems	C45 chromium plated steel for BS series, C45 chromium plated hardened steel for BB series.
Environment temperature range	-10 ÷ +70 °C
Temperature range of medium	0 ÷ +40 °C
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	10 bar.

CARATTERISTICHE TECNICHE

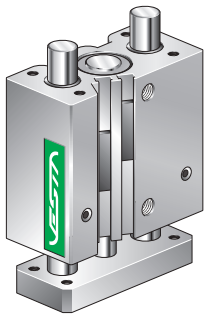
Corpo cilindro	*Alluminio anodizzato.*
Guarnizioni	*Dello stelo in NBR.*
Aste di guida	*Acciaio C45 cromato per la serie BS, Acciaio C45 cromato e temprato per la serie BB.*
Temperatura ambiente	*-10 °C ÷ +70 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

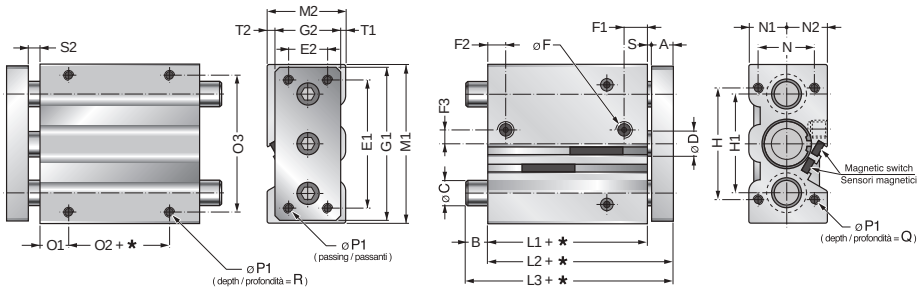
HCG .. ..

COMPACT GUIDE PNEUMATIC CYLINDERS
CILINDRI PNEUMATICI COMPATTI GUIDATI

B 0+50	corsa/*stroke* 75,100	L3 0+50	corsa/*stroke* 75,100
0	26,5	45	-
0	27,5	49	76,5
0	30	49,5	79,5

Ø 16÷25





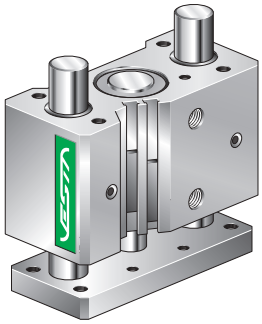
✱ = Stroke / *Corsa*

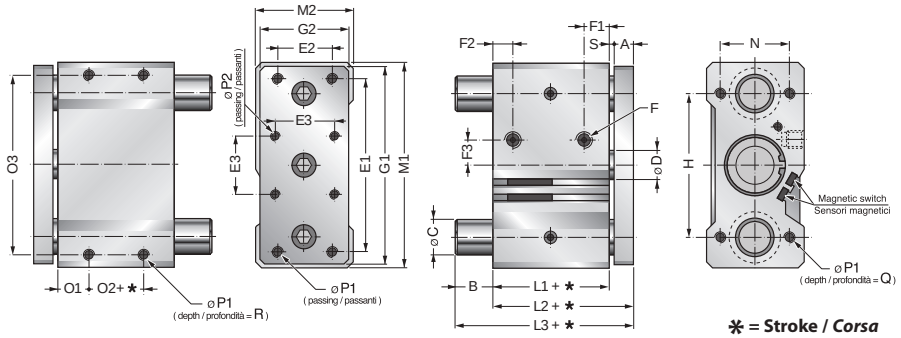
Ø	A	C	D	E1	E2	F	F1	F2	F3	G1	G2	H	H1	L1	L2	M1	M2	N	N1	N2	O1	O2	O3	P1	Q	R	S	T1	T2
16	9	10	8	52	16	M5	11	8	5,5	62	25	42	40	33	44	64	33	22	15	18	13	7	54	M5	13	8	2	2,5	5,5
20	9	12	10	60	18	1/8	10,5	8,5	7	72	30	52	46	37	48	74	36	26	17	19	13	10	64	M5	13	8	2	2	5
25	9	16	10	70	26	1/8	11,5	9	8	86	38	62	56	37,5	48,5	88	42	32	21	21	14	10	76	M6	15	9	2	2	2

HCG .. ..

COMPACT GUIDE PNEUMATIC CYLINDERS
CILINDRI PNEUMATICI COMPATTI GUIDATI

Ø 32÷100

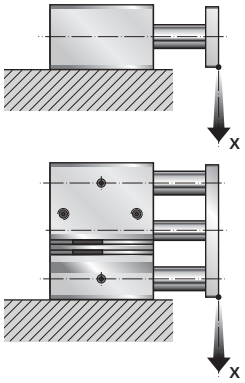




✱ = Stroke / *Corsa*

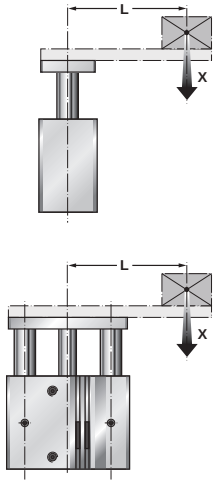
Ø	A	øD	E1	E2	E3	F	F1	F2	F3	G1	G2	H	L1	L2	M1	M2	N	O1	O2	O3	P1	P2	Q	R	S	L3	ØC	B
32	10	12	96	30	-	1/8	12,5	9	15	112	48	80	37,5	49,5	114	51	38	16	5	100	M8	-	20	11	2	73,5	20	24
40	10	12	106	30	-	1/8	14	10	21	122	48	90	44	56	124	51	38	17	10	110	M8	-	20	11	2	73,5	20	17,5
50	12	16	120	40	-	1/4	14	11	27	138	56	100	44	58	140	59	44	17	10	124	M10	-	25	12,5	2	83	25	25
63	12	20	130	50	56,5	1/4	16,5	13,5	33	148	69	110	49	63	150	72	44	19	10	132	M10	M8	25	15	2	83	25	20
80	16	25	160	60	72	3/8	19	15,5	37	185	88	140	56,5	74,5	188	92	56	21	15	166	M12	M10	30	18	2	93	28	18,5
100	16	30	190	80	89	3/8	23	19	40	221	108	170	66	84	224	112	62	25	15	200	M14	M10	35	21	2	105	36	21

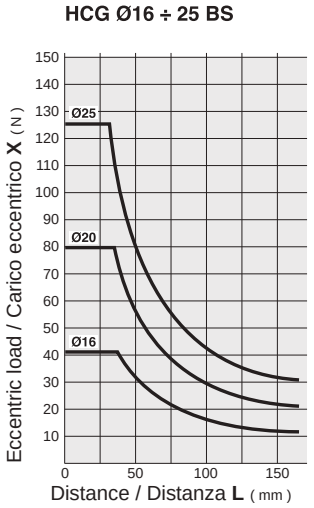
MAX. LATERAL LOAD FOR CYLINDER HCG SERIES [N] / *CARICO LATERALE MASSIMO PER CILINDRI SERIE HCG*

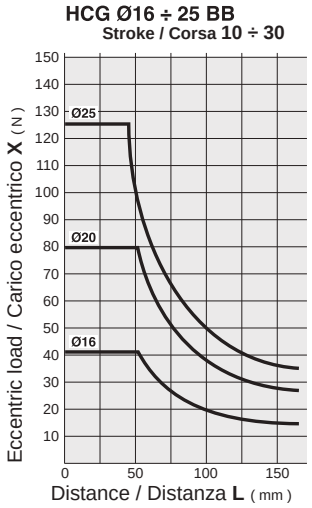


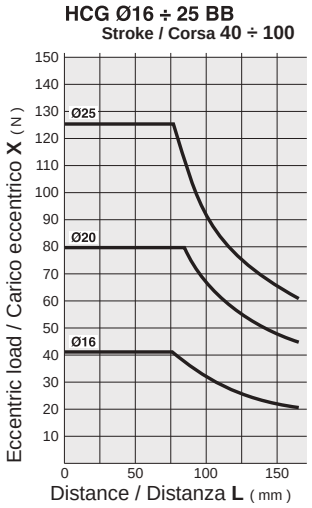
Ø	Modello/Type	10	20	25	30	40	50	75	100
16	**HCG 16/... BS**	35	29	-	26	23	20	-	-
	HCG 16/... BB	29	31	-	27	38	34	-	-
20	**HCG 20/... BS**	-	52	-	45	39	35	58	50
	HCG 20/... BB	-	56	-	48	79	70	54	45
25	**HCG 25/... BS**	-	71	-	61	54	48	78	66
	HCG 25/... BB	-	72	-	62	78	73	60	52
32	**HCG 32/... BS**	-	-	197	-	-	168	138	109
	HCG 32/... BB	-	-	88	-	-	60	276	217
40	**HCG 40/... BS**	-	-	197	-	-	168	138	109
	HCG 40/... BB	-	-	89	-	-	60	276	217
50	**HCG 50/... BS**	-	-	295	-	-	256	216	177
	HCG 50/... BB	-	-	138	-	-	89	393	314
63	**HCG 63/... BS**	-	-	295	-	-	256	216	177
	HCG 63/... BB	-	-	138	-	-	89	393	314
80	**HCG 80/... BS**	-	-	354	-	-	305	256	207
	HCG 80/... BB	-	-	236	-	-	158	864	687
100	**HCG 100/... BS**	-	-	540	-	-	471	412	344
	HCG 100/... BB	-	-	471	-	-	314	1371	1071

LIFTING APPLICATION FOR CYLINDER HCG SERIES / *UTILIZZO CON FUNZIONI DI SOLLEVAMENTO PER CILINDRI HCG*







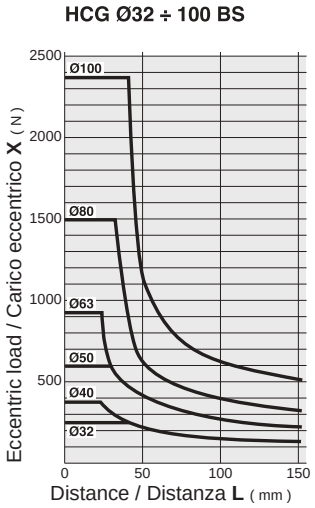


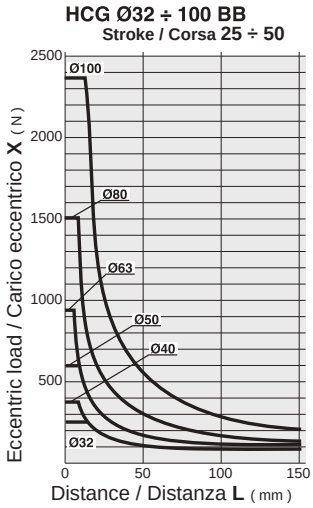
Pressure test 5 bar
Pressione di prova 5 bar

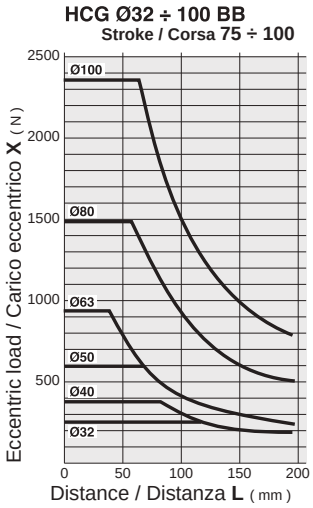
When choosing the cylinder diameter, total loading (**F**) dont be over the theorical thrust force.

*Selezionare il diametro del cilindro in modo che il carico (**F**) non superi la forza di spinta teorica.*

Bore *Alesaggio*	Theorical thrust *Forza teorica*
Ø 16	Load / Forza (**F**) < 40% **X**
Ø 20 ÷ 25	Load / Forza (**F**) < 50% **X**
Ø 32 ÷ 100	Load / Forza (**F**) < 60% **X**

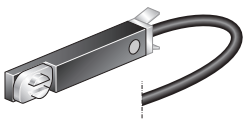






MAGNETIC SWITCHES FOR HCG CYLINDER / *FINECORSA MAGNETICI PER CILINDRI HCG*

For magnetic switches features see:
Caratteristiche finecorsa magnetici vedi:
VNCR2, VNPR2, VNCE3, VNPE3. Pag. A-19



SERIE **HNG**

PROFILE COMPACT GUIDE PNEUMATIC CYLINDERS
CILINDRI PNEUMATICI COMPATTI GUIDATI A PROFILO

HNG □□.□□□ □□

Bore / *Alesaggio (mm)*:
Ø16 ..... **16**
Ø20 ..... **20**
Ø25 ..... **25**
Ø32 ..... **32**
Ø40 ..... **40**
Ø50 ..... **50**
Ø63 ..... **63**

Stroke / *Corsa (mm)*:

BS with brass bearing
con bronzine a strisciamento
BB with ball bushing
con cuscinetti a ricircolo di sfere

Standard stroke / *Corse Standard*

Bore / Alesaggio	10	20	25	30	40	50	75	100	125	150	175	200
16	•	•		•	•	•	•	•				
20		•		•	•	•	•	•	•	•	•	•
25		•	•	•	•	•	•	•	•	•	•	•
32			•			•	•	•	•	•	•	•
40			•			•	•	•	•	•	•	•
50			•			•	•	•	•	•	•	•
63			•			•	•	•	•	•	•	•

- The new compact magnetic cylinder **HNG** series is made for demanding applications with guiding system in chromium plate steel on brass bushes bearing or hardened steel with ball bushing bearing. They offer a high resistance event if non axial loads are applied while a good sliding is assured (see tables feature). **HNG** series is very versatile in fixing system, as it is made to offer many ways to fit directly to the machine.

- *La nuova serie **HNG** di cilindri magnetici compatti guidati è concepita per impieghi gravosi, con aste di guida in acciaio cromato guidate su bronzine autolubrificanti o con aste di guida in acciaio temprato guidate su boccole a ricircolazione di sfere. Offrono grande resistenza anche a sforzi non assiali, mantenendo adeguata scorrevolezza. Offrono inoltre grande versatilità di fissaggio per accoppiamento diretto su macchina in quanto provvisti di forature di fissaggio su vari lati.*

TECHNICAL FEATURES

Cylinder body	Anodized aluminium.
Seals	Poliurethan
Piston rod	C40 chromium plated
Guiding stems	C45 chromium plated steel for BS series C45 chromium plated hardened steel for BB series

Environment temperature range	-20 ÷ +80 °C
Temperature range of medium	0 ÷ +40 °C
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	10 bar.

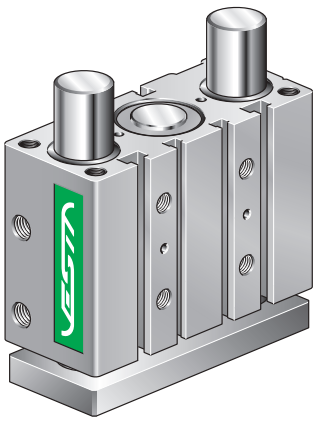
CARATTERISTICHE TECNICHE

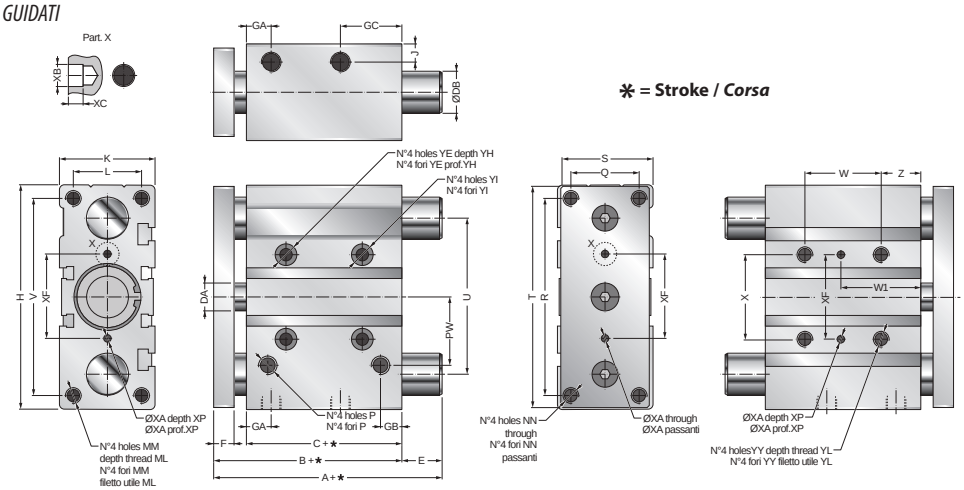
Corpo cilindro	*Alluminio anodizzato.*
Guarnizioni	*Tutte in poliuretano*
Stelo	*Acciaio C40 cromato*
Aste di guida	*Acciaio C45 cromato per serie BS* *Acciaio C45 cromato e temprato per serie BB*

Temperatura ambiente	*-20 °C ÷ +80 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*10 bar.*

HNG .. ..

COMPACT GUIDE PNEUMATIC CYLINDERS
CILINDRI PNEUMATICI COMPATTI GUIDATI





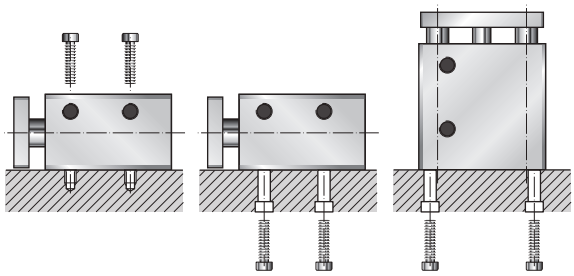
✱ = Stroke / *Corsa*

Ø	B	C	DA	F	GA	GB	GC	H	J	K	L	MM	ML	NN	P	PW	Q	R	S	T	U	V	X	YY	YL	YE	YH	YI	Z	XF	XA	XP	XB	XC
16	46	33	8	8	11	8	18	64	5	30	22	M5	12	M5	M5	19	16	54	25	62	46	56	24	M5	10	8	4,5	4,3	5	24	3	6	3,5	3
20	53	37	10	10	10,5	8,5	24,5	83	6,5	36	24	M5	13	M5	G1/8	25	18	70	30	81	54	72	28	M6	12	9,5	5,5	5,6	17	28	3	6	3,5	3
25	53,5	37,5	10	10	11,5	9	25	93	7,5	42	30	M6	15	M6	G1/8	28,5	26	78	38	91	64	82	34	M6	12	9,5	5,5	5,6	17	34	4	6	4,5	3
32	59,5	37,5	12	12	12,5	9	30,5	112	9	48	34	M8	20	M8	G1/8	34	30	96	44	110	78	98	42	M8	16	11	7,5	6,6	21	42	4	6	4,5	3
40	66	44	12	12	14	10	31	120	9	54	40	M8	20	M8	G1/8	38	30	104	44	118	86	106	50	M8	16	11	7,5	6,6	22	50	4	6	4,5	3
50	72	44	16	16	14	11	35	148	9,5	64	46	M10	22	M10	G1/4	47	40	130	60	146	110	130	66	M10	20	14	9	8,6	22	66	5	8	6	4
63	77	49	16	16	16,5	13,5	35	162	11	78	58	M10	22	M10	G1/4	55	50	130	70	158	124	142	80	M10	20	14	9	8,6	24	80	5	8	6	4

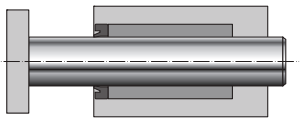
		Sintered bronze *Bussole sinterizzate*				Ball bushing *Manicotti a ricircolo di sfere*						Dimensions W - W1 *Dimensioni W - W1*					
		A		E			A		E			W			W1		
Ø	DB	Stroke/*Corsa*		Stroke/*Corsa*		DB	Stroke/*Corsa*		Stroke/*Corsa*			Stroke/*Corsa*			Stroke/*Corsa*		
16	10	46 10÷50	64,5 75÷100	0 10÷50	18,5 75÷100	8	46 10÷30	66 40÷100	0 10÷30	20 40÷100		24 10÷30	44 40÷100		17 10÷30	27 40÷100	
20	12	53 20÷50	84,5 75÷200	0 20÷50	31,5 75÷200	12	53 20÷30	85,5 40÷200	0 20÷30	32,5 40÷200		24 20÷30	44 40÷100	120 125÷200	29 20÷30	39 40÷100	77 125÷200
25	16	53,5 20÷50	85 75÷200	0 20÷50	31,5 75÷200	12	53,5 20÷30	86 40÷200	0 20÷30	32,5 40÷200		24 20÷30	44 40÷100	120 125÷200	29 20÷30	39 40÷100	77 125÷200
32	20	97 25÷50	107 75÷200	37,5 25÷50	47,5 75÷200	20	97 25÷50	107 75÷200	37,5 25÷50	47,5 75÷200		24 25	48 50÷100	124 125÷200	33 25	45 50÷100	83 125÷200
40	20	97 25÷50	107 75÷200	31 25÷50	41 75÷200	20	97 25÷50	107 75÷200	31 25÷50	41 75÷200		24 25	48 50÷100	124 125÷200	34 25	46 50÷100	84 125÷200
50	25	106,5 25÷50	118 75÷200	34,5 25÷50	46 75÷200	25	106,5 25	114 50	118 75÷200	34,5 25	42 50	46 75÷200	24 25	48 50÷100	124 125÷200	36 25	48 50÷100	86 125÷200
63	25	106,5 25÷50	118 75÷200	29,5 25÷50	41 75÷200	25	106,5 25	114 50	118 75÷200	29,5 25	37 50	41 75÷200	28 25	52 50÷100	128 125÷200	38 25	50 50÷100	88 125÷200

WORKING PRINCIPLE FOR HNG / *PRINCIPIO DI FUNZIONAMENTO PER HNG*

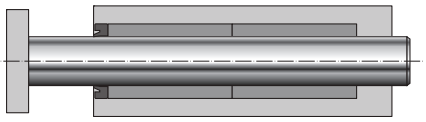
System of assembly / *Sistema di montaggio*

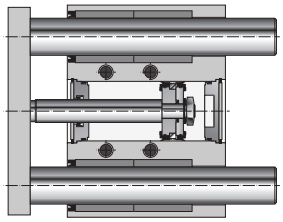


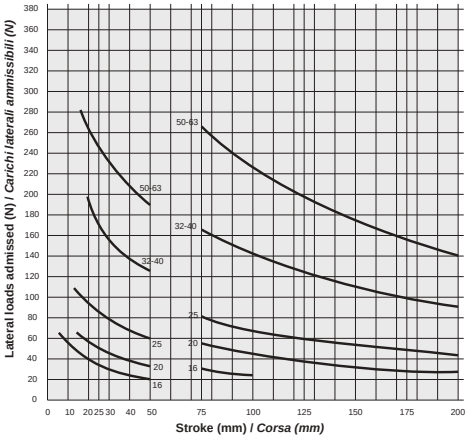
Strokes ≤ 50mm / *Corsa ≤ 50mm*



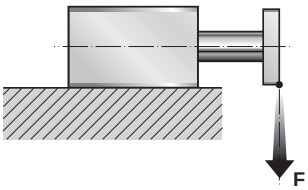
Strokes > 50mm / *Corsa > 50mm*





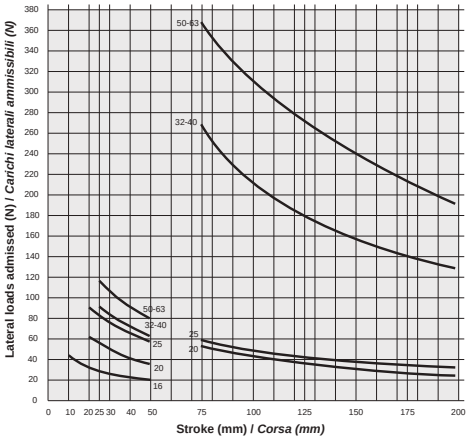


LATERAL LOADS ADMISSED WITH SELF-LUBRICATING SINTERED BRONZE
CARICHI LATERALI AMMISSIBILI CON BUSSOLE AUTOLUBRIFICANTI

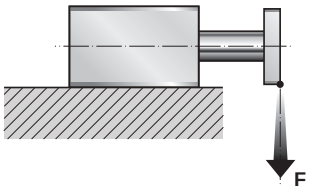


Load / *Carico (N)*

Ø	Strokes / *Corsa*											
	10	20	25	30	40	50	75	100	125	150	175	200
16	56	40		30	25	21	30	24				
20		57		46	38	33	55	45	38	33,5	30	27
25		93		78	68	60	81	67	60	54	48	43
32			170			125	166	142	124	110	99	90
40			170			125	166	142	124	110	99	90
50			250			190	265	227	197	177	156	141
63			250			190	265	227	197	177	156	141



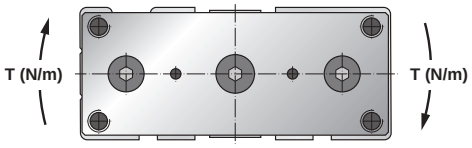
LATERAL LOADS ADMISSED WITH RECIRCULATING BALL BUSHING
CARICHI LATERALI AMMISSIBILI CON MANICOTTI A RICIRCOLO DI SFERE



Load / *Carico (N)*

Ø	Strokes / *Corsa*											
	10	20	25	30	40	50	75	100	125	150	175	200
16	44	34		27	23	21						
20		62		50	42	36	53	42	36	31	27	25
25		94		79	68	60	59	50	43	39	35	33
32			84			58	270	213	180	159	142	130
40			92			64	270	213	180	159	142	130
50			117			81	370	312	275	243	216	193
63			117			81	370	312	275	243	216	193

TORQUES - *MOMENTO TORCENTE*



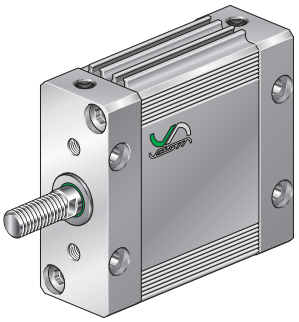
Torque / *Momento (Nm)*

Ø	With self-lubricating sintered bronze / *Con bussole autolubrificanti* — Strokes / *Corsa*											
	10	20	25	30	40	50	75	100	125	150	175	200
16	0,65	0,51		0,42	0,36	0,32						
20		0,99		0,84	0,71	0,64	0,97	0,78	0,63	0,54	0,48	0,43
25		1,98		1,67	1,45	1,28	1,73	1,43	1,31	1,18	1,05	0,94
32			4,10			3,19	3,97	3,36	2,46	2,20	2,00	1,84
40			4,51			3,51	4,38	3,70	2,46	2,20	2,00	1,84
50			6,60			5,19	6,68	5,72	4,68	4,25	3,88	3,50
63			6,60			5,19	6,68	5,72	4,68	4,25	3,88	3,50

Ø	With recirculating ball bushing / *Con manicotti a ricircolo di sfere* — Strokes / *Corsa*											
	10	20	25	30	40	50	75	100	125	150	175	200
16	0,83	0,65		0,52	0,44	0,40						
20		1,20		0,96	0,81	0,69	1,02	0,93	0,82	0,71	0,64	0,58
25		2,00		1,69	1,45	1,28	1,26	1,09	0,98	0,87	0,79	0,70
32			2,04			1,41	6,58	5,19	4,49	3,87	3,58	3,17
40			2,47			1,72	7,25	5,72	4,49	3,87	3,58	3,17
50			3,22			2,22	10,17	8,58	7,75	6,86	5,99	5,30
63			3,22			2,22	10,17	8,58	7,75	6,86	5,99	5,30

SERIE NCV 63

FLAT CYLINDERS
CILINDRI PIATTI



NCV 63 □□□ □ □

Stroke
Corsa
(mm)

With magnetic piston
Con pistone magnetico

Features of reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-19.**

VS High temperature (-25°C / + 120 °C)
HT Polyurethan rod seals
Guarnizione dello stelo in Poliuretano per alte temperature (-25 °C / + 120 °C)

P Through rod cylinder
Cilindro stelo passante

TN2 Multi Thrust tandem cylinder
Cilindro Tandem multispinta

AR No rotating cylinder
Cilindro Antirotazione

Vesta introduces new flat NCV-63 series cylinder to meet applications when both thrust and reduced dimensions are needed.
High quality components, high precision machining and treatments grant reliability and high performances together with long lasting life of cylinders.
Compact and robust, it is most used in welding plants, packaging machines and linear motion applications.

Vesta presenta il nuovo cilindro serie NCV-63 piatto a sezione ovale per soddisfare applicazioni dove la necessità di forza si unisce ad esigenze di ingombri ridotti o di antirotazione.
Di costruzione robusta e compatta, garantisce lunga durata e prestazioni elevate, grazie a lavorazioni di precisione ad alla scelta di componenti di grande qualità ed affidabilità.
Trova grande impiego nei sistemi ed impianti di saldatura a punti, di movimentazione lineare e in macchine ed attrezzature settore packaging.

TECHNICAL FEATURES

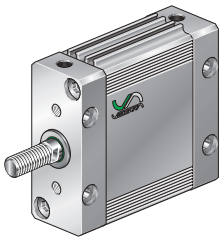
Piston rod	Stainless steel
Seals	Polyurethane piston rod, NBR piston seals
Lubrication	Not required.
Medium	Filtered air.
Cushioning	Mechanical buffers at end of strokes.

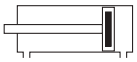
CARATTERISTICHE TECNICHE

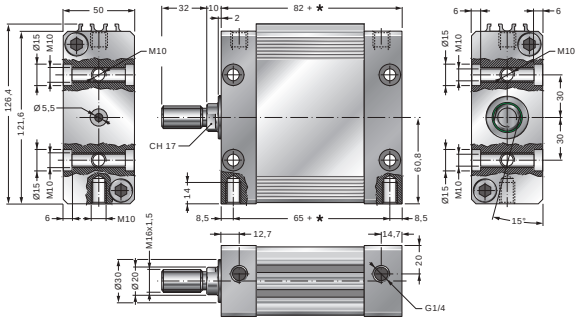
Stelo	*Acciaio inox*
Guarnizioni	*Stelo in Poliuretano, pistone in NBR*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Ammortizzatori	*Smorzatori d'urto di fine corsa.*

NCV 63

FLAT CYLINDERS
CILINDRI PIATTI

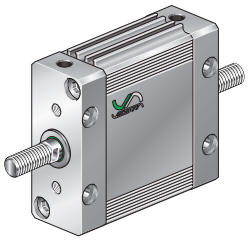


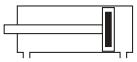


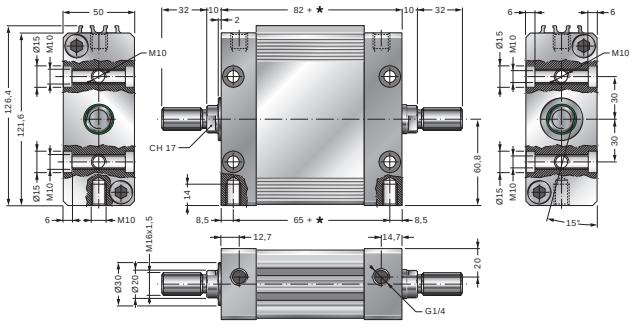


NCV 63 P

THROUGH ROD FLAT CYLINDERS
CILINDRI PIATTI STELO PASSANTE

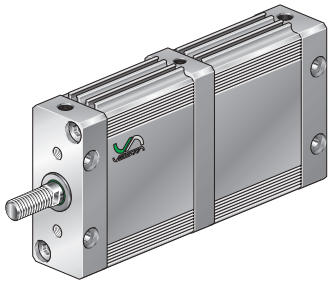


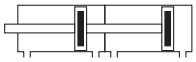


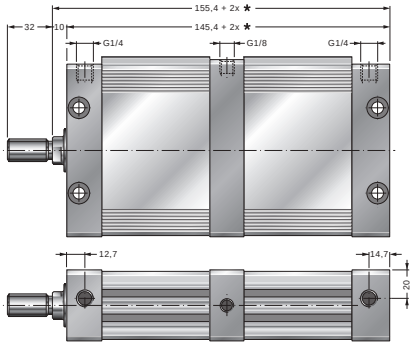


NCV 63 TN2

MULTI THRUST TANDEM FLAT CYLINDERS
CILINDRI PIATTI TANDEM MULTISPINTA



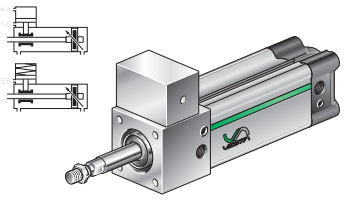




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PISTON ROD BRAKING DEVICE / *DISPOSITIVO DI BLOCCAGGIO DELLO STELO*

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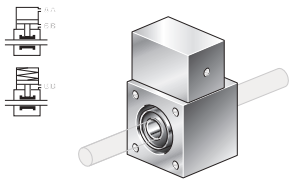


RW. ..-...

PNEUMATIC CYLINDER WITH PISTON-ROD BRAKE DEVICE, SINGLE OR DOUBLE ACTING

CILINDRO PNEUMATICO CON DISPOSITIVO DI BLOCCAGGIO DELLO STELO, A SEMPLICE E DOPPIO EFFETTO

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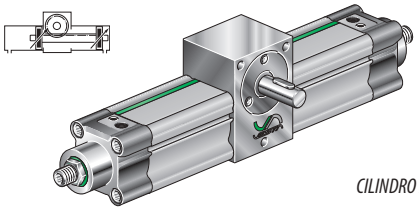
DC. ..

BRAKING DEVICE
SINGLE ACTING OR DOUBLE ACTING

DISPOSITIVO DI BLOCCAGGIO
A SEMPLICE O DOPPIO EFFETTO

ROTARY CYLINDERS / *CILINDRI ROTANTI*

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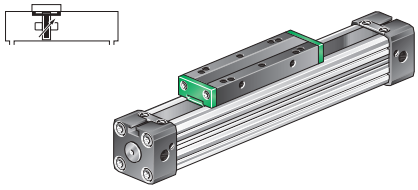


CRW ..-... . . . .

ROTARY CYLINDER **UNI 6604-69**
*CILINDRO AD ALBERO ROTANTE **UNI 6604-69***

RODLESS CYLINDERS / *CILINDRI SENZA STELO*

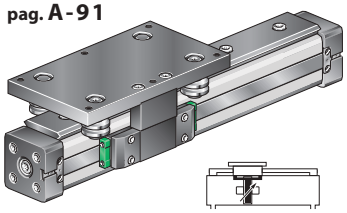
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RLF../.... .

RODLESS PNEUMATIC CYLINDERS
CILINDRI PNEUMATICI SENZA STELO

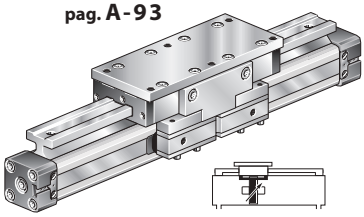
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RLFR../.... .

RODLESS CYL. WITH DUAL "VEE" EDGE SLIDE SYSTEM
CILINDRI SENZA STELO CON GUIDA PRISMATICA E CUSCINETTI A RULLO DOPPIA "V"

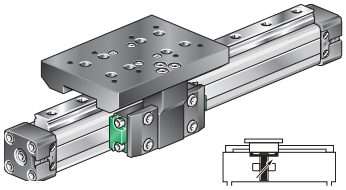
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RLFG../.... .

RODLESS CYLINDERS WITH GLIDING CARRIAGE
CILINDRI SENZA STELO CON CARRO GUIDATO

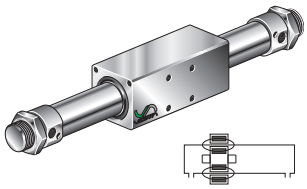
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RLFH.. ./.... .

RODLESS CYLINDERS WITH BALL BEARING GUIDES
CILINDRI SENZA STELO CON CARRO GUIDATO A RICIRCOLO DI SFERE

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TM ..-... . .

RODLESS CYLINDER
CILINDRO SENZA STELO

FIXING AND MAGNETIC SWITCHES FOR RODLESS CYLINDERS / *ACCESSORI DI FISSAGGIO E FINECORSA MAGNETICI PER CILINDRI SENZA STELO* pag. **A-89, A-90, A-97, A-99**

ELECTRICAL ACTUATED CYLINDERS / *ATTUATORI ELETTRICI*

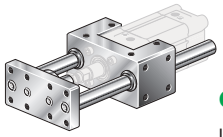
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ESNW../...-...-.-. ..

ELECTRICAL ACTUATED CYLINDERS
ATTUATORI ELETTRICI

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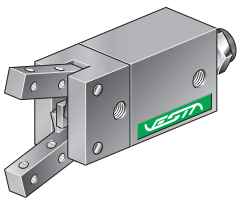
GL.E .. / ... ..

LINEAR CONTROL UNITS FOR ELECTRICAL CYLINDERS
UNITA' DI GUIDA PER ATTUATORI ELETTRICI

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PNEUMATIC GRIPPERS / *MANI DI PRESA PNEUMATICHE*

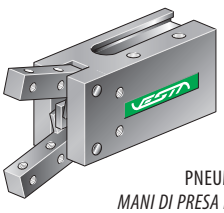
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MH .. ..

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PNEUMATIC GRIPPERS
MANI DI PRESA PNEUMATICHE

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PNEUMATIC GRIPPERS. MAGNETIC VERSION
MANI DI PRESA PNEUMATICHE, VERSIONI MAGNETICHE

MAGNETIC SWITCHES FOR **MHM** GRIPPERS / *FINECORSA MAGNETICI PER MANI DI PRESA **MHM*** pag. **A-108**

WORKING PRINCIPLE FOR RWD - RWS / *PRINCIPIO DI FUNZIONAMENTO PER RWD - RWS*

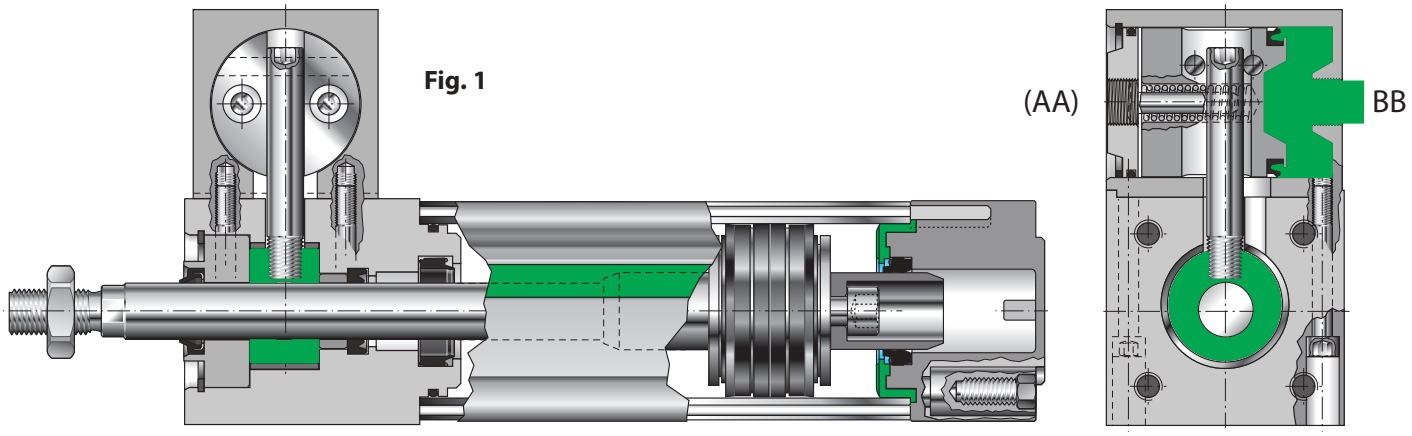


Fig. 1

With the Double Acting brake unit, type **RWD**, the brake is applied by supplying air to port AA. To release the brake, air must be removed from port AA and applied to port BB. The clamping force of this unit is directly proportioned to the supply pressure at port AA.
With the Single Acting brake unit, type **RWS** (see **fig. 1**), the brake is normally applied to the piston-rod with a campling force as shown in the table (see page A-82). To release the brake, air is supplied to port BB.
In both DA & SA versions the brake may be applied at any point of the cylinder stroke, in every direction of the piston rod.

*Il bloccaggio dello stelo, nel cilindro **RWD** con dispositivo a doppio effetto, avviene inviando aria compressa all'ingresso AA in modo continuativo. Lo sbloccaggio si effettua mediante l'invio di un impulso d'aria all'ingresso BB. La forza di bloccaggio sarà direttamente proporzionale alla pressione di ingresso in AA.*
*Nei cilindri con dispositivo di bloccaggio a semplice effetto **RWS** (vedi **fig. 1**), lo stelo in assenza d'aria è bloccato con una forza costante come indicato nella tabella esplicativa (vedi pagina A-82). Lo sbloccaggio si effettua mediante invio continuativo di aria compressa all'orifizio BB.*
Il bloccaggio dello stelo, in tutte le versioni, può avvenire in qualsiasi punto della corsa ed in entrambe le direzioni.

EXAMPLE FOR RWD - RWS CONNECTION / *ESEMPIO DI COLLEGAMENTO PER RWD - RWS*

This system realizes the best conditions for the exploitation of RWD - RWS cylinders operating features: **speedy stop, stopping accuracy, starts without jerks.** Making use of the two valves 5/2 (**4**-**5**) besides taking advantages of "closed centres in pressure" system, we have the possibility to allow the inlet pressure of the rear port to be lower, to compensate for the piston-rod.

*Con questo sistema si realizzano le migliori condizioni per lo sfruttamento delle caratteristiche dei cilindri RWD - RWS: **velocità di intervento**, **precisione nell'arresto, partenze senza scatti**. L'impiego di due valvole monostabili (**4** e **5**) oltre ad ottenere i vantaggi del sistema "centri chiusi in pressione", offre la possibilità di alimentare la camera posteriore del cilindro da bloccare ad una pressione inferiore per compensare la differenza di sezione di spinta dovuta allo stelo.*

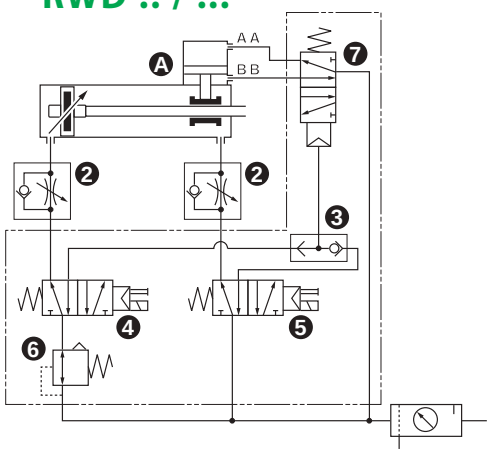
A Double acting braking device
B Simple acting braking device
2 Flow regulators
3 Shuttle valve
4 5/2 solenoid valve
5 5/2 solenoid valve
6 Pressure regulator
7 5/2 pneumatic valve

Components can be supplied assembled on base.

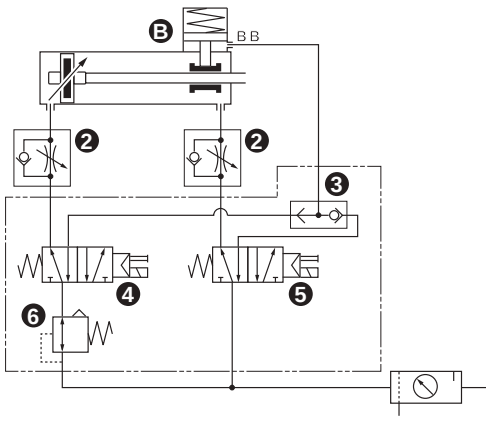
A *Dispositivo di bloccaggio doppio effetto*
B *Dispositivo di bloccaggio semplice effetto*
2 *Regolatori di flusso*
3 *Valvola selettrice*
4 *Elettrovalvola 5/2*
5 *Elettrovalvola 5/2*
6 *Riduttore di pressione*
7 *Valvola pneumatica monostabile*

I componenti possono essere forniti assemblati su base.

RWD .. / ...

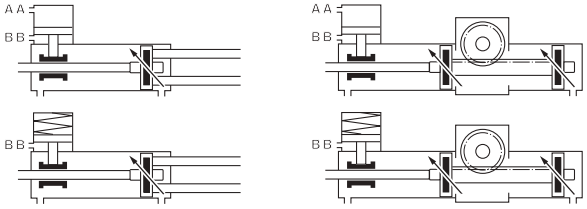


RWS .. / ...



For other connections please contact our technical-sales office. / *Per altri sistemi di collegamento interpellare il nostro ufficio tecnico.*

- Special production: on request, the piston-rod brake device, can be jointed to twin rod cylinder with double piston-rod "AW series" and to torque actuator "CRW series".
- *Esecuzioni particolari: a richiesta il gruppo dispositivo di bloccaggio può essere applicato, all'origine, ai cilindri antirotazione a steli gemellati Vesta serie AW passanti ed ai cilindri rotanti Vesta serie CRW.*



PNEUMATIC CYLINDER WITH PISTON - ROD BRAKE
CILINDRO CON BLOCCAGGIO DELLO STELO

SERIE **RW**

With magnetic piston / *Con pistone magnetico*

RW □ □□ / □□□

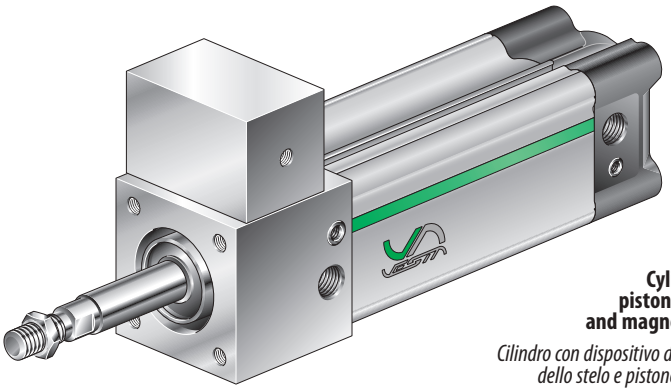
D Double acting brake
Freno doppio effetto

S Single acting brake
Freno semplice effetto

Stroke / *Corsa* (mm)

Bore / *Alesaggio* (mm):

Ø32 ..... **32** Ø63 ..... **63**
Ø40 ..... **40** Ø80 ..... **80**
Ø50 ..... **50** Ø100 ....**100**



Cylinder with piston-rod brake and magnetic piston

Cilindro con dispositivo di bloccaggio dello stelo e pistone magnetico

RW cylinder fixing see:
Fissaggi per cilindri RW vedi:
..... **Pag. A-22 ÷ A-26.**

Features of reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-19.**

Effective cushion length
Lunghezza utile ammortizzatore

Bore *Alesaggio*	Length *Lunghezza*
32	24
40	27
50	30
63	30
80	36
100	38

Standard stroke / *Corse Standard*

Bore Alesaggio	25	50	80	100	125	160	200	250	300	350	400	450	500
32	•	•	•	•	•	•	•	•	•	•	•	•	•
40	•	•	•	•	•	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•	•	•	•	•	•
63	•	•	•	•	•	•	•	•	•	•	•	•	•
80	•	•	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•	•	•

TECHNICAL FEATURES

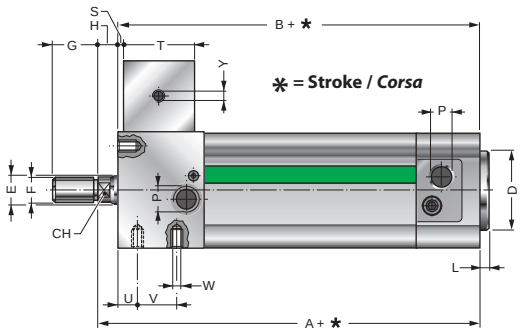
End caps	Aluminium alloy.
Piston rod	chromium-plated steel.
Tie rods	Stainless steel X10CrNiS 1809.
Barrel	Anodized aluminium tube.
Seals	NBR rubber.
Cushioning	Pneumatic adjusting cushions.

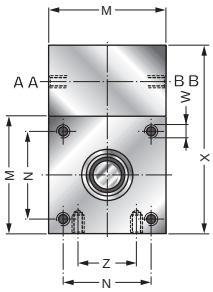
Ambient temperature range	-10 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Operating pressure range	2 ÷ 10 bar.
Max locking pressure (AA)	7 bar.

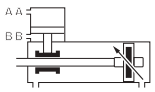
CARATTERISTICHE TECNICHE

Testate	*Lega di alluminio.*
Stelo	*Acciaio cromato rettificato.*
Tiranti	*Acciaio inox X10CrNiS 1809.*
Camicia	*Alluminio anodizzato duro.*
Guarnizioni	*Tutte in NBR.*
Ammortizzatori	*Pneumatici regolabili progressivi.*

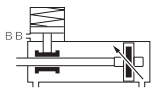
Temperatura ambiente	*-10 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione d'esercizio	*2 ÷ 10 bar.*
Max pressione bloccaggio (AA)	*7 bar.*



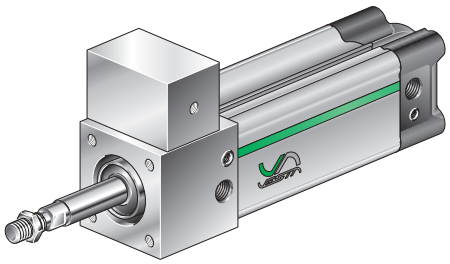




DOUBLE ACTING BRAKE
BLOCCO DOPPIO EFFETTO
RWD .. /...



SINGLE ACTING BRAKE
BLOCCO SEMPLICE EFFETTO
RWS .. /...

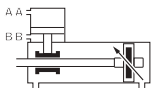


Bore *Alesaggio*	A	B	CH	D	E	F	G	H	L	M	N	P	S	T	U	V	W	X	Y	Z	Code *Codice*
32	120	113	10	30	12	M10x1,25	20	7	4	50	32,5	G1/8	2	40	19	25	M6	89	G1/8	20	**RW. 32/...**
40	135	127	13	35	16	M12x1,25	24	8	4	55	38	G1/4	2	45	16	35	M6	99	G1/8	26	**RW. 40/...**
50	144	133	17	40	20	M16x1,5	32	11	4	65	46,5	G1/4	4	45	20	35	M8	109	G1/8	30	**RW. 50/...**
63	158	145	17	45	20	M16x1,5	32	13	4	80	56,5	G3/8	2	50	20	35	M8	129	G1/8	40	**RW. 63/...**
80	194	178	21	45	25	M20x1,5	40	16	4	100	72	G3/8	8	60	28	48	M10	159	G1/8	50	**RW. 80/...**
100	214	193	26	55	30	M20x1,5	40	21	4	115	89	G1/2	8	65	30	55	M10	179	G1/8	65	**RW. 100/...**

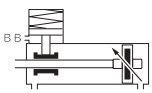
Speed *Velocità*	Stopping tolerances *Tolleranze di arresto* RWD	RWS
50 mm/s	+/- 0,3 mm	+/- 0,8 mm
100 mm/s	+/- 0,5 mm	+/- 1,2 mm
150 mm/s	+/- 1,3 mm	+/- 2,2 mm

Code *Codice*	Static force applicable on the piston-rod / *Forza statica assiale* 2	3	4	5	6	7	Bar (**AA**)
RWD 32/...	60	90	120	150	180	210	daN
RWD 40/...	80	130	180	230	280	330	daN
RWD 50/...	90	150	210	270	330	390	daN
RWD 63/...	145	220	290	360	440	510	daN
RWD 80/...	220	350	500	650	800	950	daN
RWD 100/...	350	525	700	880	1050	1230	daN

Minimum pressure unclamping:
Pressione minima di sbloccaggio: *.... 2 bar (BB)*



Code *Codice*	Static force applicable on the piston-rod *Forza statica assiale*
RWS 32/...	90 daN
RWS 40/...	150 daN
RWS 50/...	180 daN
RWS 63/...	260 daN
RWS 80/...	380 daN
RWS 100/...	500 daN

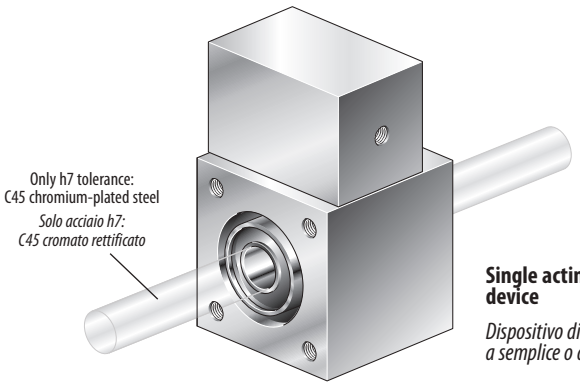


Minimum pressure unclamping:
Pressione minima di sbloccaggio: *.... 4 bar (BB)*

Static force (Kg.) is applicable on the piston-rod in abounding state of oiling. The force in case of normal or lack of oiling rises of 10%.
Forza statica (Kg.) applicabile sullo stelo in condizioni di lubrificazione abbondante. Dati che nel caso di lubrificazione normale o assente aumentano del 10%.

SERIE DC

BRAKING DEVICE
DISPOSITIVO DI BLOCCAGGIO



Single acting or double acting braking device

Dispositivo di bloccaggio a semplice o doppio effetto

DC□ □□

D Double acting
Doppio effetto

S Single acting
Semplice effetto

Shaft / *Albero* (mm):

Ø12 ..... **12**
Ø16 ..... **16**
Ø20 ..... **20**
Ø25 ..... **25**
Ø30 ..... **30**

Note: NOT usable as end-caps for **RW** cylinder
Nota: NON utilizzabile come testata per il cilindro ***RW***

TECHNICAL FEATURES

Material ..... Aluminium alloy.
Seals ..... NBR rubber.
Ambient temperature range ..... -10 °C ÷ +80 °C.

Temperature range of medium ..... 0 °C ÷ +40 °C.
Lubrication ..... Not required.
Medium ..... Filtered air.
Operating pressure range ..... 2 ÷ 10 bar.

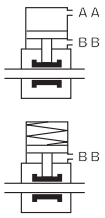
CARATTERISTICHE TECNICHE

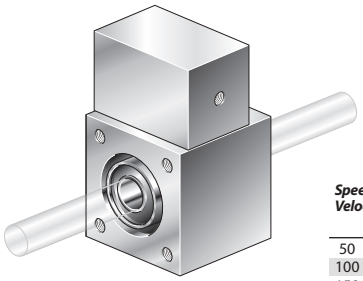
Materiale ..... Lega di alluminio.
Guarnizioni ..... Tutte in NBR con profili antiusura e prelubrificate.
Temperatura ambiente ..... -10 °C ÷ +80 °C.

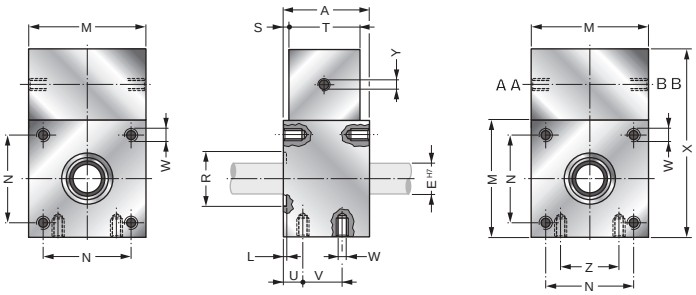
Temperatura fluido ..... 0 °C ÷ +40 °C.
Lubrificazione ..... Non necessaria.
Fluido ..... Aria filtrata.
Pressione d'esercizio ..... 2 ÷ 10 bar.

DCD .. DOUBLE ACTING BRAKE
BLOCCO DOPPIO EFFETTO

DCS .. SINGLE ACTING BRAKE
BLOCCO SEMPLICE EFFETTO







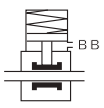
Speed *Velocità*	Stopping tolerances *Tolleranze di arresto*	
	DCD	DCS
50 mm/s	+/- 0,3 mm	+/- 0,8 mm
100 mm/s	+/- 0,5 mm	+/- 1,2 mm
150 mm/s	+/- 1,3 mm	+/- 2,2 mm

Piston-rod "E" *Stelo "E"*	A	L	M	N	R	S	T	U	V	W	X	Y	Z	Code *Codice*
12	50,5	2	50	32,5	32	2	40	19	25	M6	89	G1/8	20	DC. 12
16	57,5	2	55	38	38	2	45	16	35	M6	99	G1/8	26	DC. 16
20	62,5	2	65	46,5	42	4	45	20	35	M8	109	G1/8	30	DC. 20
25	91	2	100	72	58	8	60	28	48	M10	159	G1/8	50	DC. 25
30	99	2	115	89	63	8	65	30	55	M10	179	G1/8	65	DC. 30

Code *Codice*	Static force applicable on the piston-rod / *Forza statica assiale*						
	2	3	4	5	6	7	Bar (**AA**)
DCD 12	60	90	120	150	180	210	daN
DCD 16	80	130	180	230	280	330	daN
DCD 20	90	150	210	270	330	390	daN
DCD 25	220	350	500	650	800	950	daN
DCD 30	350	525	700	880	1050	1230	daN



Code *Codice*	Static force applicable on the piston-rod *Forza statica assiale*
DCS 12	90 daN
DCS 16	150 daN
DCS 20	180 daN
DCS 25	380 daN
DCS 30	500 daN

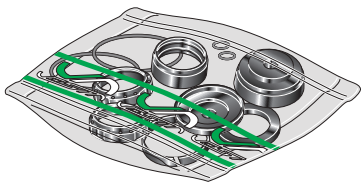


Minimum pressure unclamping:
Pressione minima di sbloccaggio: *.... 2 bar (BB)*

Minimum pressure unclamping:
Pressione minima di sbloccaggio: *.... 3,5 bar (BB)*

Static force (Kg.) is applicable on the piston-rod which as been well lubricated. The force in the case of a normally or unlubricated unit will increase by 10%.
Forza statica (Kg.) applicabile sullo stelo in condizioni di lubrificazione abbondante. Dati che nel caso di lubrificazione normale o assente aumentano del 10%.

..... - SG *SEALS KIT*
KIT GUARNIZIONI DI RICAMBIO



Seals kit code for RW cylinders =
Cylinder code + **Bore** + **- SG**:
(The kit includes all seals).

Codice del kit per cilindri RW =
Codice del cilindro + ***Alesaggio*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **RWD 50 - SG**

Seals kit code for DC device =
Device code + **Shaft bore** + **- SG**:
(The kit includes all seals).

Codice del kit per dispositivi DC =
Codice del dispositivo + ***Alesaggio albero*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **DCS 20 - SG**

WORKING PRINCIPLE FOR CRW CYLINDER / *PRINCIPIO DI FUNZIONAMENTO DEI CILINDRI CRW*

The new **CRW** cylinder series is a rotary actuator, which converts linear piston motion in to angular drive by means of a rack and pinion arrangement. The supply pressure to the cylinder determines the output torque. Male and female pinions are available in the CRW range of cylinders, as well as standard forms of rotation i.e. 90, 180 and 360 degrees, specials may also be manufactured according to customer requirements.
Cylinder bore sizes range from 25 to 100 mm diameters.
The heart to the **CRW** cylinder consists of a toothed pinion fitted on to a shaft and supported by ball bearings, coupled to a square section rack which, intern is supported and guided by a plastic plate. The latter allows recovery of any slack that forms between the rack and pinion via a spring-adjusted system. In order for the piston to move in a perfectly linear direction, an articulated coupling is fitted to the rack. The piston is manufactured in aluminium with poliurethane seals and PTFE guide ring. Cylinders without rotation regulation, an error of + - 1 degree should be allowed for.
The slack recovery system completely nullifies slack, and thus guarantees repeatibility of rotation.

*Il cilindro della nuova serie **CRW** è un cilindro ad albero rotante in grado di convertire il moto lineare del pistone in un moto angolare attraverso un accoppiamento cremagliera-pignone sfruttando: la coppia torcente variabile in funzione della pressione di utilizzo, il tipo di accoppiamento albero maschio o femmina, il numero di alesaggi offerti che vanno dal Ø 25 al 100, le rotazioni che, oltre agli standard 90°, 180°e 360°, sono personalizzabili a seconda della richiesta del cliente.*
*Il cuore del cilindro **CRW** è costituito da un pignone dentato montato su di un albero e sostenuto da cuscinetti a sfere, accoppiato ad una cremagliera a sezione quadra a sua volta sostenuta e guidata da un piattino in materiale plastico che tramite un sistema di regolazione a molle consente di recuperare il gioco che si crea tra i denti. La linearità del movimento del pistone nella camicia in tubo profilato di alluminio anodizzato è garantita da un accoppiamento snodato con la cremagliera, il pistone inoltre è in alluminio con guarnizioni di tenuta in poliuretano, fascia di guida in PTFE ed anello magnetico. Per i cilindri senza regolazione di rotazione si deve tenere conto di un'errore pari a ±1°, mentre grazie al sistema di recupero del gioco questo viene totalmente annullato e quindi si garantisce la ripetibilità della rotazione.*

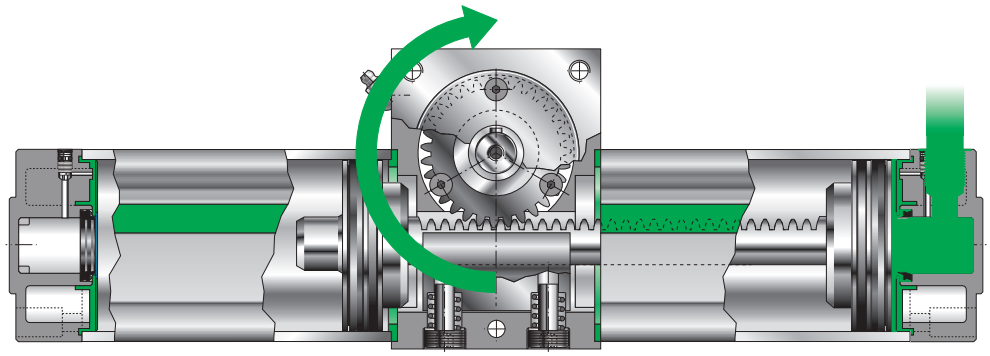


Fig. 2

ROTARY ACTUATORS UNI 6604 - 69
CILINDRI AD ALBERO ROTANTE UNI 6604 - 69

SERIE **CRW**

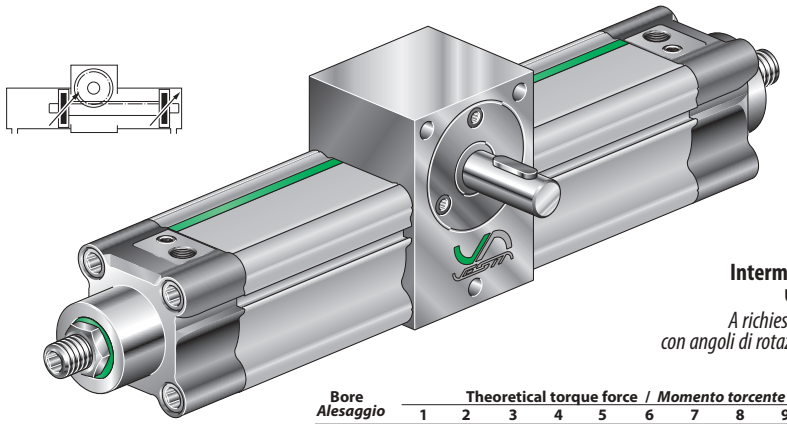
CRW □□ □□□ □ □

Bore / *Alesaggio* (mm):
Ø25 .... **25**
Ø32 .... **32**
Ø40 .... **40**
Ø50 .... **50**
Ø63 .... **63**
Ø80 .... **80**
Ø100 ... **100**

Rotation angles / *Angolo di rotazione*
90; **180**; **360**.

0 Male pinion / *Albero maschio*
1 Female pinion / *Albero femmina*

0 Basic / *Base*
1 With final angular adjustment / *Regolazione rotazione finale*



Intermediate angles upon request.
A richiesta sono fornibili con angoli di rotazione intermedi.

Bore / *Alesaggio*	Theoretical torque force / *Momento torcente teorico*										
	1	2	3	4	5	6	7	8	9	10	Bar
25	0,07	0,14	0,21	0,28	0,35	0,42	0,49	0,56	0,63	0,70	Kgm
32	0,12	0,24	0,36	0,48	0,60	0,72	0,84	0,96	1,08	1,20	Kgm
40	0,23	0,46	0,69	0,92	1,15	1,38	1,61	1,84	2,07	2,30	Kgm
50	0,44	0,88	1,32	1,76	2,20	2,64	3,08	3,48	3,92	4,36	Kgm
63	0,80	1,60	2,40	3,20	4,00	4,80	5,60	6,40	7,20	8,00	Kgm
80	1,75	3,50	5,25	7,00	8,75	10,5	12,2	14,0	15,7	17,5	Kgm
100	3,23	6,46	9,69	12,9	16,1	19,3	22,6	25,8	29,0	32,3	Kgm

CRW cylinder fixing see / *Fissaggi per cilindri CRW vedi:* ..... **Pag. A-22 ÷ A-26**
Features of reed switches see / *Caratteristiche finecorsa magnetici:* ..... **Pag. A-19**

TECHNICAL FEATURES

End caps	Aluminium alloy.
Body	Aluminium alloy.
Shaft	C45 steel.
Shaft guide	Acetalic polymer.
Piston	Aluminium with polyurethane seals, magnet and guide ring.
Barrel	Anodized profiled aluminium tube.
Seals	Polyurethane rubber.

Cushioning	Pneumatic adjusting cushions.
Ambient temperature range	-10 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Max operating pressure	1 ÷ 10 bar.

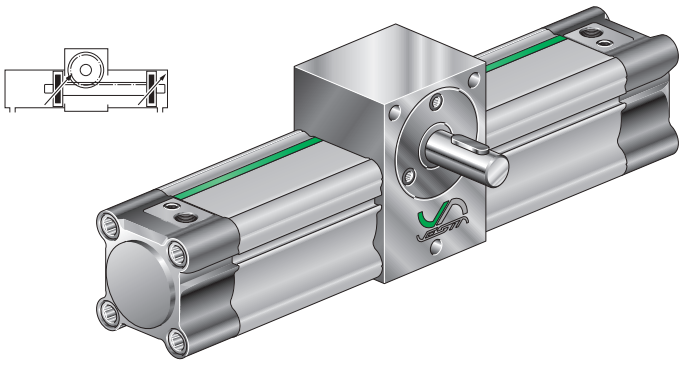
CARATTERISTICHE TECNICHE

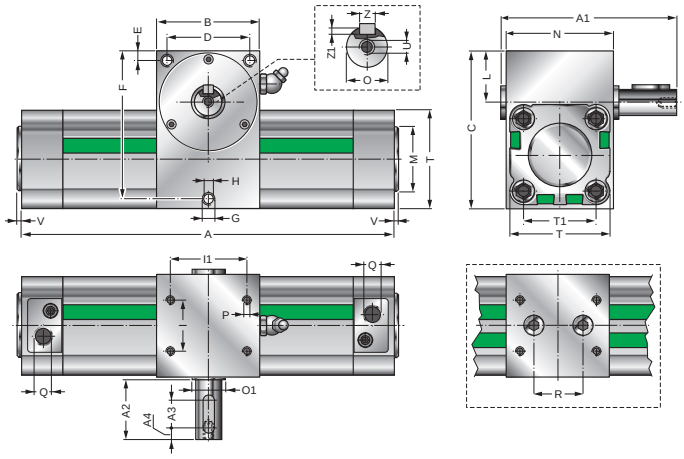
Testate	*Lega di alluminio.*
Corpo centrale	*Lega di alluminio.*
Albero	*Acciaio C45.*
Pattino di guida	*Resina acetalica.*
Pistone	*In alluminio con guarnizioni in poliuretano, magnete e fascia di guida.*
Camicia	*Tubo anodizzato d' alluminio.*
Guarnizioni	*Tutte in poliuretano.*

Ammortizzatori	*Pneumatici regolabili progressivi.*
Temperatura ambiente	*-10 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*1 ÷ 10 bar.*

CRW .. ... 0..

MALE PINION CYLINDER
CILINDRO ROTANTE ALBERO MASCHIO

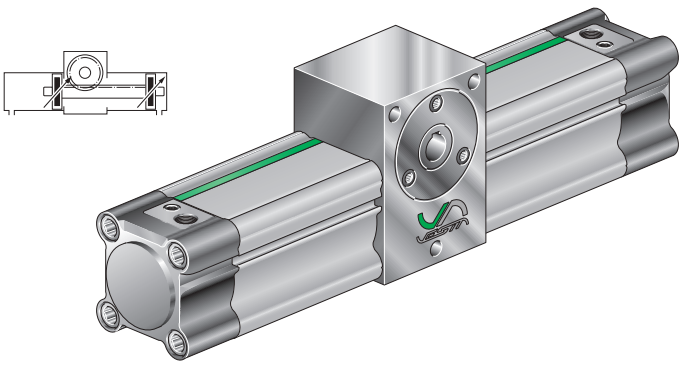


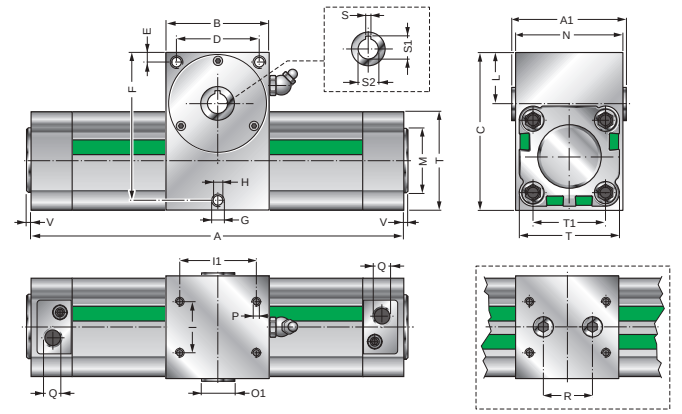


Bore *Alesaggio*	A 90°	A 180°	A 360°	A1	A2	A3	A4	B	C	D	E	F	G	H	I	I1	L	ØM	N	O	O1	P	Q	R	T	T1	U	V	Z	Z1	Code *Codice*
25	157	198	280	67	25	15	7	43	62	34	5	54,5	---	M6X8	25	16	22	---	40	Ø10	Ø12	M5X6	G1/8	20	40	26	M4X9	---	3	2	CRW 25 ... 0..
32	208	256	350	82	33	15	8	54	74	44	5	69	Ø5,2	M6X12	18	33	27	30	47	Ø14	Ø17	M6X10	G1/8	25	45	32,5	M5X12	4	5	3	CRW 32 ... 0..
40	237	294	407	91	33	15	8	60	84	46	7	77	Ø6,5	M8X15	22	40	30	35	56	Ø15	Ø17	M6X12	G1/4	25	54	38	M5X15	4	5	3	CRW 40 ... 0..
50	263	329	461	110	40	24	8	75	102	58	9	93	Ø6,5	M8X15	25	50	39	40	68	Ø18	Ø25	M8X12	G1/4	30	64	46,5	M6X15	4	6	3,5	CRW 50 ... 0..
63	307	389	552	124	44	29	8	85	116	69	8	108	Ø8,5	M10X15	35	60	43	45	78	Ø20	Ø30	M8X12	G3/8	40	75	56,5	M6X15	4	6	3,5	CRW 63 ... 0..
80	364	474	694	148	48	32	9	110	149	90	10	140	Ø10,5	M12X20	50	80	54	45	98	Ø25	Ø35	M10X15	G3/8	50	93	72	M8X15	4	8	4	CRW 80 ... 0..
100	403	532	792	177	60	40	10	120	172	96	12	160	Ø10,5	M12X20	60	80	60	55	115	Ø35	Ø50	M10X15	G1/2	60	110	89	M10X15	4	10	5	CRW 100 ... 0..

CRW .. ... 1..

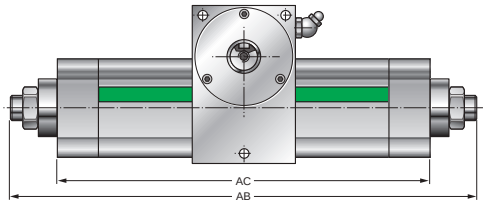
FEMALE PINION CYLINDER
CILINDRO ROTANTE ALBERO FEMMINA





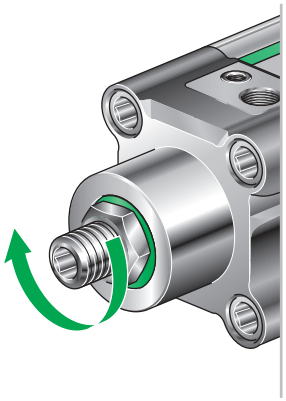
Bore *Alesaggio*	A 90°	A 180°	A 360°	A1	B	C	D	E	F	G	H	I	I1	L	ØM	N	O1	P	Q	R	T	T1	V	S	S1	S2	Code *Codice*
25	157	198	280	42	43	62	34	5	54,5	---	M6X8	25	16	22	---	40	Ø12	M5X6	G1/8	20	40	26	---	3	9,4	8	CRW 25 ... 1..
32	208	256	350	49	54	74	44	5	69	Ø5,2	M6X12	18	33	27	30	47	Ø17	M6X10	G1/8	25	45	32,5	4	3	9,4	8	CRW 32 ... 1..
40	237	294	407	58	60	84	46	7	77	Ø6,5	M8X15	22	40	30	35	56	Ø17	M6X12	G1/4	25	54	38	4	3	11	10	CRW 40 ... 1..
50	263	329	461	70	75	102	58	9	93	Ø6,5	M8X15	25	50	39	40	68	Ø18	M8X12	G1/4	30	64	46,5	4	5	16	14	CRW 50 ... 1..
63	307	389	552	80	85	116	69	8	108	Ø8,5	M10X15	35	60	43	45	78	Ø20	M8X12	G3/8	40	75	56,5	4	6	23	20	CRW 63 ... 1..
80	364	474	694	100	110	149	90	10	140	Ø10,5	M12X20	60	80	54	45	98	Ø35	M10X15	G3/8	50	93	72	4	6	23	20	CRW 80 ... 1..
100	403	532	792	117	120	172	96	12	160	Ø10,5	M12X20	60	80	60	55	115	Ø50	M10X15	G1/2	60	110	89	4	8	28	25	CRW 100 ... 1..

FINAL ANGULAR ADJUSTMENT ROTATION / *REGOLAZIONE ROTAZIONE FINALE*



Bore *Alesaggio*	AC 90°	AC 180°	AC 360°	AB 90° max.	AB 90° min.	AB 180° max.	AB 180° min.	AB 360° max.	AB 360° min.	CH
25	163	202	284	203	197	244	238	322	317	4*
32	212	260	354	258	250	306	298	400	392	10
40	243	300	413	293	286	350	343	462	456	10
50	269	335	467	319	310	385	377	517	509	10
63	315	397	560	367	357	443	433	612	602	10
80	374	484	704	436	423	546	533	766	753	13
100	415	544	804	481	465	610	594	870	854	13

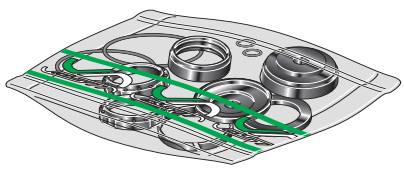
∗ Inside exagon / *Esagono incassato*



Final angular adjustment: -8°; +5° /
Regolazione rotazione finale da -8° a +5°

..... - SG

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO



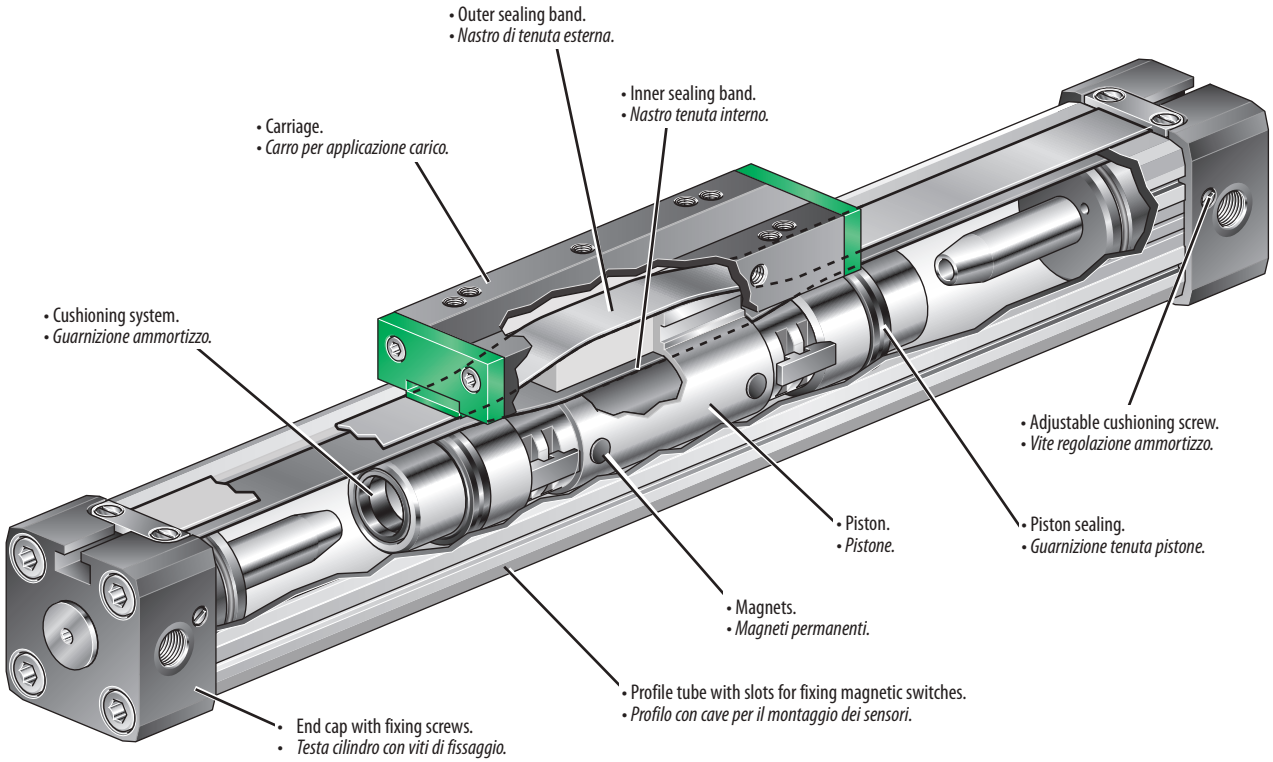
Seals kit code for CRW cylinders =
Rotary cylinder code + **Bore** + **- SG**:
(The kit includes all seals).

Codice del kit per cilindri CRW =
Codice cilindro rotante + ***Alesaggio*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **CRW 63 - SG**

RODLESS, CUSHIONED, MAGNETIC CYLINDER
CILINDRI PNEUMATICI SENZA STELO, AMMORTIZZATI, MAGNETICI

SERIE **RLF**



DESCRIPTION OF FUNCTION AND DESIGN / *PRINCIPIO DI FUNZIONAMENTO*

Vesta Automation rodless cylinders RLF series are made of a special tube with a slot along the full length. The inside piston assembly is connected directly with the outside carriage through the slot of the tube.
A flexible stainless steel ground inner band runs along the slot passing through the piston assembly, thus enabling the sealing of the tube.
In addition there is an outer stainless steel band passing through the carriage and covering the slot in order to keep out dust and dirt. The two bands keep position by magnetic strips in the tube (pay attention to steel chips: they can be attracted by magnetic strips damaging cylinders).
The mechanically strong connection, the use of low friction materials and the complete range of available guiding systems allow a wide range of loads and moments of inertia to be applied to these cylinders granting fast and competitive solutions to many linear motion applications.

I cilindri senza stelo Vesta Automation serie RLF nascono dall'esigenza di riduzione dell'ingombro assiale di cilindri nel caso di corse particolarmente lunghe. Sono costituiti da un profilo estruso con una cava aperta superiore in tutta la sua lunghezza. Questa apertura consente il collegamento meccanico tra pistone e il carro superiore dove si effettua l'applicazione del carico esterno. Questa cava viene chiusa inferiormente da una sottile lamina di acciaio indurito che passa attraverso il pistone e che garantisce la tenuta metallica dell'aria. Superiormente la feritoia viene chiusa da un'altra lamina dello stesso materiale che impedisce a corpi estranei di penetrare nel cilindro. I due nastri di chiusura aderiscono alla cava superiore del profilo estruso grazie alla presenza di 2 fasce magnetiche annegate nel profilo stesso (nota: prestare attenzione a trucioli o limature ferromagnetiche che possono essere attratte dal campo magnetico). Il passaggio del pistone divarica le due lamine per consentire il passaggio del collegamento meccanico tra carro superiore e pistone stesso, e le richiude a passaggio avvenuto.
Le guarnizioni del pistone sono posizionate rispettivamente prima della divaricazione delle lamine e dopo il loro riposizionamento in tenuta, pertanto le due camere d'aria del pistone risultano sempre in tenuta. Il pistone è fornito di magnete permanente per l'utilizzo di sensori magnetici di fine corsa da montarsi sulle apposite cave del profilo. Il cilindro è dotato di ammortizzatori pneumatici regolabili di finecorsa.

ADVANTAGES / *VANTAGGI*

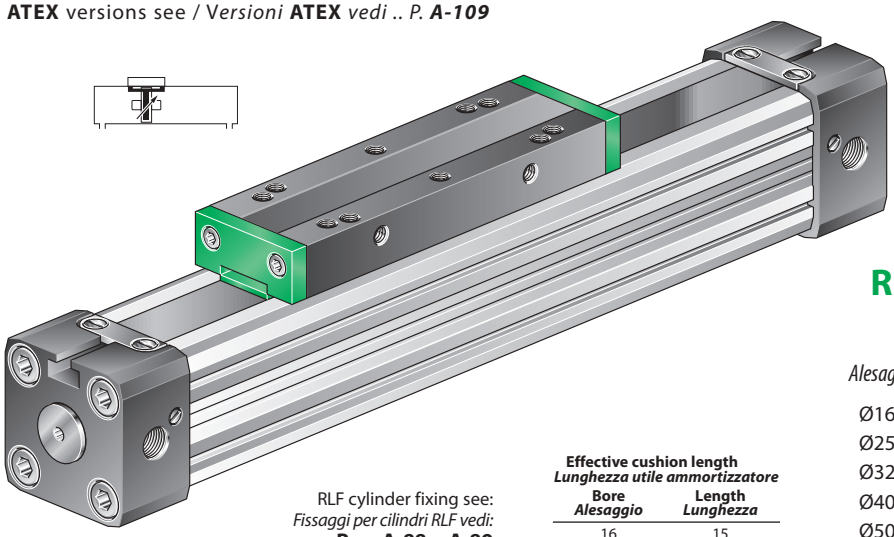
- Equal forces on both ends of the piston.
- Force connection direct, torque safe.
- 50% space savings.
- Long strokes up to > 5700mm.
- End caps with 3 air connections and adjustable cushioning.
- Guided versions are available for heavy duty use.

- *Cilindro con forze uguali in tiro ed in spinta.*
- *Connessione meccanica rigida e a basso attrito di scorrimento tra pistone e carro.*
- *Ingombro assiale molto ridotto, specialmente su corse lunghe.*
- *Corsa massima di 5700mm.*
- *Testate con 3 ingressi dell' aria e ammortizzi regolabili.*
- *Disponibili versioni guidate per applicazioni gravose.*

SERIE **RLF**

RODLESS PNEUMATIC CYLINDERS
CILINDRI PNEUMATICI SENZA STELO

ATEX versions see / *Versioni* **ATEX** *vedi .. P.* ***A-109***



RLF cylinder fixing see:
Fissaggi per cilindri RLF vedi:
..... **Pag. A-88 ÷ A-89**

Features of reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-97**

Effective cushion length
Lunghezza utile ammortizzatore

Bore *Alesaggio*	Length *Lunghezza*
16	15
25	21
32	26
40	32
50	32
63	40

With magnetic piston / *Con pistone magnetico*

RLF □□ / □□□□ □

Bore
Alesaggio (mm):
Ø16 ..... **16**
Ø25 ..... **25**
Ø32 ..... **32**
Ø40 ..... **40**
Ø50 ..... **50**
Ø63 ..... **63**

Stroke
Corsa (mm):

O Standard
Standard
V Viton seals (v≥ 1m/s)
Guarnizioni in Viton (v≥ 1m/s)
X Stainless steel screws
Viti inox
VX Viton + Stainless steel screws
Viton + viti inox

Stroke *Corsa* (mm): { Ø25÷Ø63 = 100÷5700mm ; Ø16 = 100÷3300mm

TECHNICAL FEATURES

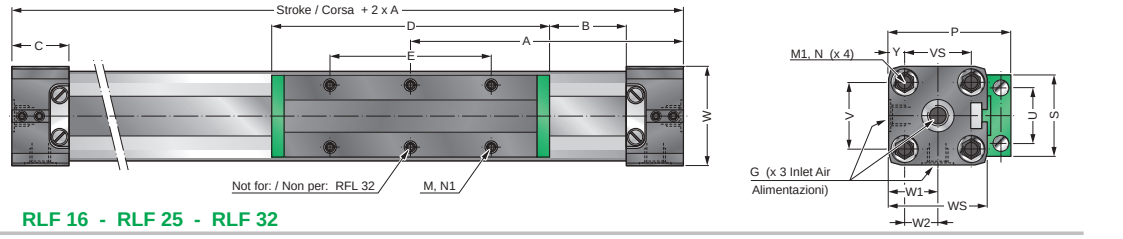
End caps	Anodised aluminium.
Barrel	Anodised aluminium.
Seals	NBR standard (for v ≤ 1 m/s).
Carriage	Anodised aluminium.
Sealing bands	Stainless steel.

Cushioning	Pneumatic adjusting cushions.
Ambient temperature range	-15 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Pressure range	0,5 ÷ 8 bar.

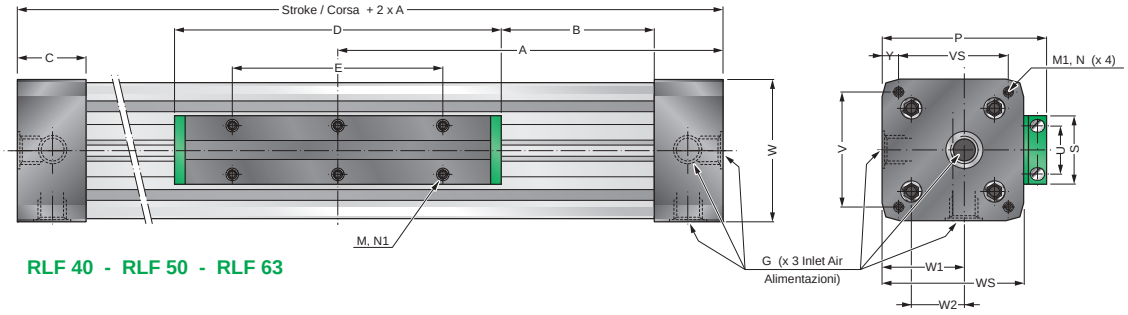
CARATTERISTICHE TECNICHE

Testate	*Alluminio anodizzato.*
Camicia	*Alluminio anodizzato.*
Guarnizioni	*NBR standard (per v≤ 1 m/s).*
Carro	*Alluminio anodizzato.*
Lamine di tenuta	*Acciaio inossidabile.*

Ammortizzatori	*Pneumatici progressivi regolabili.*
Temperatura ambiente	*-15 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione d'esercizio	*0,5 ÷ 8 bar.*



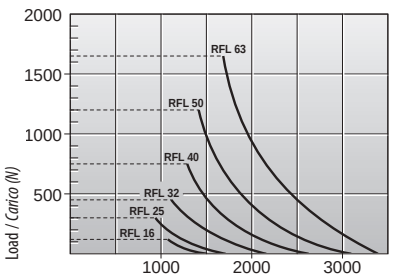
RLF 16 - RLF 25 - RLF 32



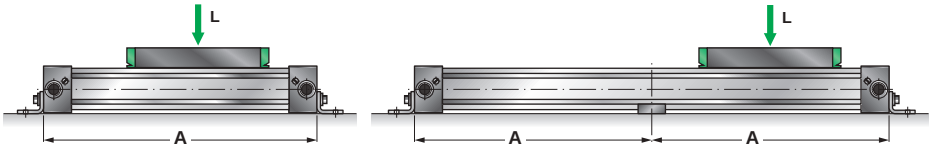
RLF 40 - RLF 50 - RLF 63

Bore *Alesaggio*	A	B	C	D	E	G	M	M1	N	N1	P	S	U	V	VS	W	WS	W1	W2	Y	Code *Codice*
16	65	15,5	15	69	36	M5	M3	M4	7	7	36,5	22	16,5	18	18	27	27	13,5	17,1	4,5	**RLF 16/.... ..**
25	100	21,5	23	111	65	G1/8	M5	M5	12	8	52,5	33	25	27	27	40	40	20	25,8	6,5	**RLF 25/.... ..**
32	125	21	27	152	90	G1/4	M6	M6	14	7,5	66,5	36	27	36	40	52	56	30	39	8	**RLF 32/.... ..**
40	150	44	30	152	90	G1/4	M6	M6	17	10	80	36,4	27	54	54	72	69	36	48,8	9	**RLF 40/.... ..**
50	175	42	33	201	110	G1/4	M6	M6	15	10	89	56	27	70	70	80	80	44,5	44,5	5	**RLF 50/.... ..**
63	215	48,5	50	233	155	G3/8	M8	M8	17	14	123	50	36	78	78	106	106	62,5	48,8	14,5	**RLF 63/.... ..**

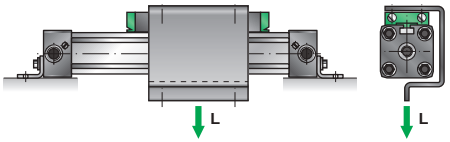
TRANSVERSE FORCE GRAPH RLF SERIES / *DIAGRAMMI DI FLESSIONE SERIE RLF*



Distances "**A**" of munting with deflection 1 mm.
*Distanza "**A**" fra i supporti con inflessione 1 mm.*



Length should not exceed value "**A**" / *Non superare mai i valori "**A**"*



For down application of load please contact our technical department

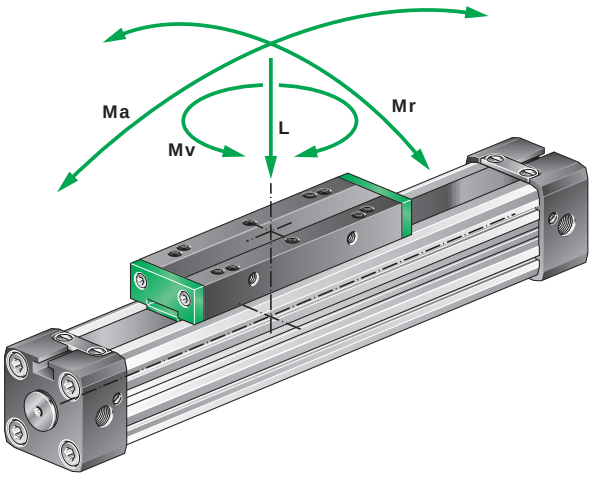
Per l'applicazione del carico sotto il cilindro si prega di contattare il nostro ufficio tecnico

FORCES AND TORQUE / *FORZE E MOMENTI TORCENTI*

The figures above are max. values based on light shock free duty and speed of 0,45 m/s.
Max. pressure 6 bar. An exceeding of the values in dynamic operations, even for short moments, has to be avoided.
Attention: Resulting forces could lead to extreme exceedings of the values.
In case of undefinable situations the above max. values have to be reduced by 20%.

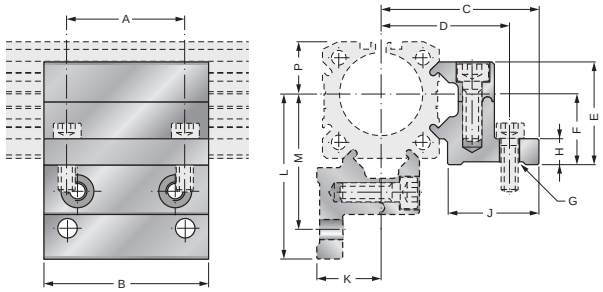
Valori di carico massimi singolarmente applicati con V 0,45 m/s e pressione max = 6 bar
In condizioni dinamiche, anche per brevi istanti, non superare mai i carichi indicati.
In condizioni di carico non esattamente definite o calcolabili ridurre i valori indicati del 20%.
Inadatto a sopportare combinazioni di più carichi applicati contemporaneamente.

Cylinder *Cilindro* Ø	Thrust force (N) *Forza di spinta (N)* (6 bar)	Max allowed load(N) *Carico max(N)* L	Max allowed bending moments(Nm) *Momento flettente max(Nm)* M_a axial	Max allowed torque(Nm) *Torsione max(Nm)* M_r radial	M_v central
16	110	120	4	0,45	0,5
25	250	300	15	1,5	3
32	420	450	30	3	4,5
40	640	750	60	6	8
50	1000	1200	115	10	15
63	1550	1650	200	12	24

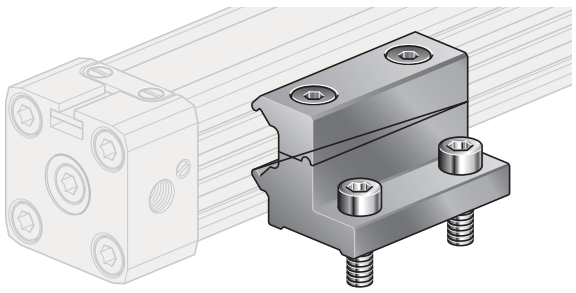


FIXING ACCESSORIES / *ACCESSORI DI FISSAGGIO*

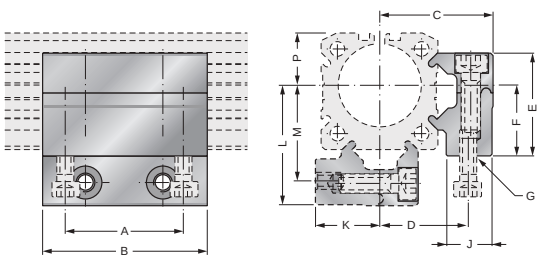
MID SUPPORT
SUPPORTO INTERMEDIO
RLMW- ..



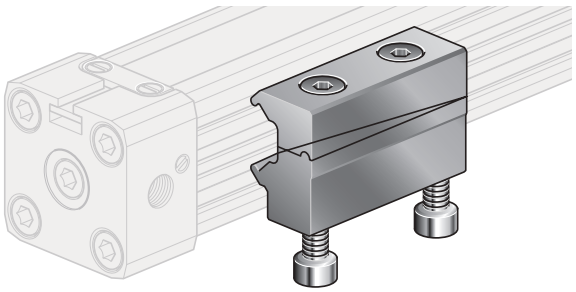
Bore *Alesaggio*	A	B	C	D	E	F	G	H	J	K	L	M	P	Code *Codice*
25	36	50	47,5	40	31,3	22	Ø5,5	10	26	20	49,5	42	16	RLMW- 25
32	36	50	54,6	46	39	30	Ø6,5	10	28,5	27,6	61	52,5	21,5	RLMW- 32



MID SUPPORT
SUPPORTO INTERMEDIO
RLMG- ..

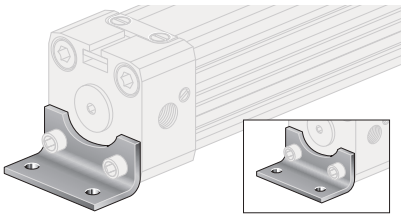


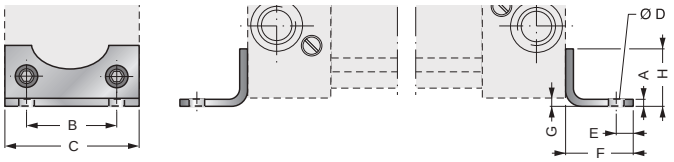
Bore *Alesaggio*	A	B	C	D	E	F	G	J	K	L	M	P	Code *Codice*
25	36	50	34,5	27	31,3	22	M5	14	20	36,5	29	16	RLMG- 25
32	36	50	40,6	33	39	30	M6	14	27,6	47	39,5	21,5	RLMG- 32



RLP- ..

FOOT MOUNTING
MONTAGGIO A PIEDINI

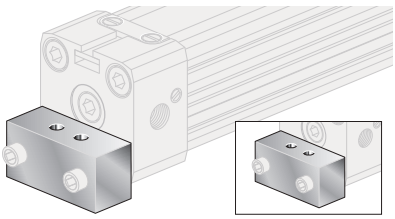


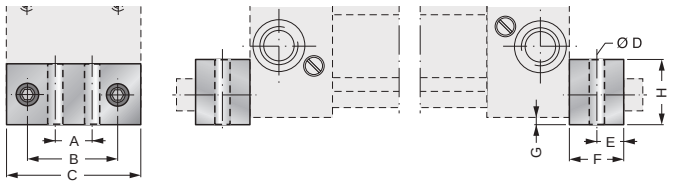


Bore *Alesaggio*	A	B	C	ØD	E	F	G	H	Code *Codice*
16	1,6	18	26	3,6	4,0	14	1,5	12,5	**RLP- 16**
25	2,5	27	40	5,5	6,0	22	2	18	**RLP- 25**

RLQ- ..

SQUARE FOOT MOUNTING
MONTAGGIO A PIEDINI QUADRI

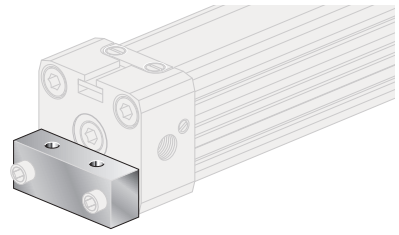


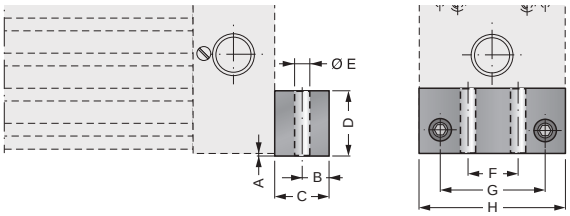


Bore *Alesaggio*	A	B	C	ØD	E	F	G	H	Code *Codice*
32	20	36	51	6,6	6,0	24	4	20	**RLQ- 32**
40	30	54	71	9,0	11,5	24	2	20	**RLQ- 40**

RLQ- ..

SQUARE FOOT MOUNTING
MONTAGGIO A PIEDINI QUADRI

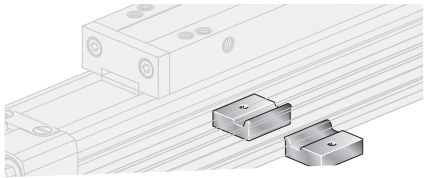


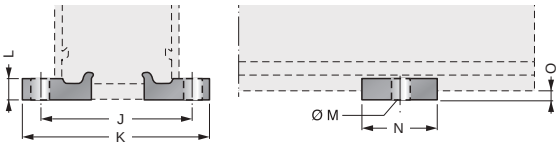


Bore *Alesaggio*	A	B	C	D	ØE	F	G	H	Code *Codice*
50	2,0	12,5	25	25	9	40	70	84,5	**RLQ- 50**
63	2,5	15	30	40	11	48	78	105	**RLQ- 63**

RLMI- ..

MID SUPPORTS
SUPPORTI INTERMEDI

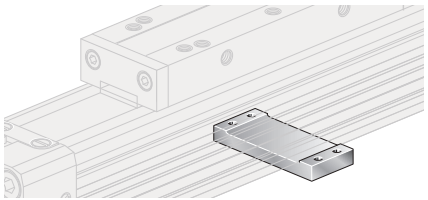


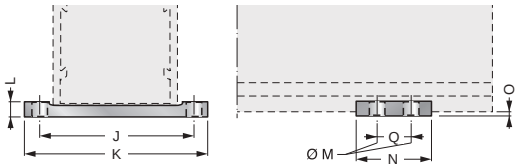


Bore *Alesaggio*	J	K	L	ØM	N	O	Code *Codice*
16	36	40	6	3,5	12	3	**RLMI- 16**
25	48	60	6	5,5	20	4	**RLMI- 25**

RLMU- ..

MID SUPPORT
SUPPORTO INTERMEDIO



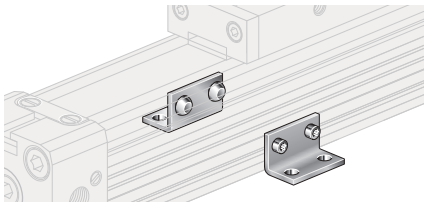


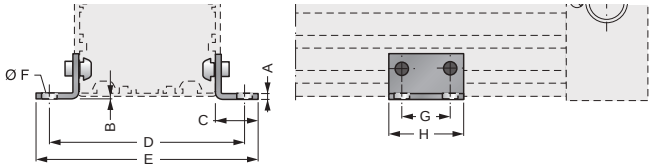
Bore *Alesaggio*	J	K	L	ØM	N	O	Q	Code *Codice*
32	61	73	10	6,5	55	6	40	**RLMU- 32**
40	70	85	10	6,5	60	7,2	45	**RLMU- 40**

(*) On request / *Su richiesta*

RLML- ..

MID SUPPORTS
SUPPORTI INTERMEDI





Bore *Alesaggio*	A	B	C	D	E	ØF	G	H	Code *Codice*
50	5	3,5	35	118	146	6,6	30	45	**RLML- 50**
63	5	4	35	147	172	6,6	30	45	**RLML- 63**

(*) On request / *Su richiesta*

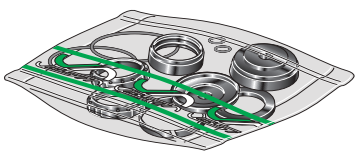
RL.. - SG

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO

Seals kit code = **RL** + **Bore** + **- SG**: (The kit includes all seals).

Codice del kit = ***RL*** + ***Alesaggio*** + **- SG**: *(Il kit comprende tutte le guarnizioni necessarie).*

Example / *Esempio:* **RL 32 V - SG**



RODLESS CYLINDERS WITH DUAL "VEE" EDGE SLIDE SYSTEM
CILINDRI SENZA STELO CON GUIDA PRISMATICA E CUSCINETTI A RULLO DOPPIA "V"

SERIE **RLFR**

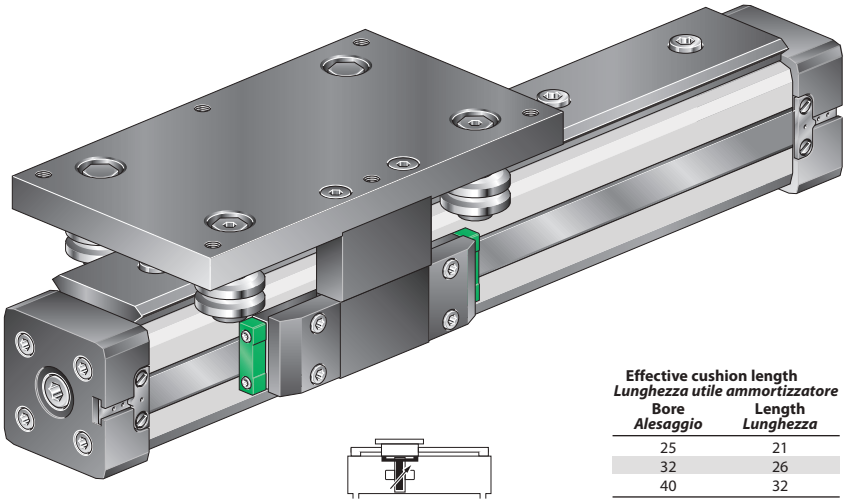
With magnetic piston / *Con pistone magnetico*

RLFR □□ / □□□□ □

Bore
Alesaggio (mm):
Ø25 ..... **25**
Ø32 ..... **32**
Ø40 ..... **40**

Stroke
Corsa (mm):

O Standard
Standard
V Viton seals (v≥ 1m/s)
Guarnizioni in Viton (v≥ 1m/s)



Effective cushion length
Lunghezza utile ammortizzatore

Bore *Alesaggio*	Length *Lunghezza*
25	21
32	26
40	32

Features of reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-97**

RLFH cylinder fixing see:
Fissaggi per cilindri RLFH vedi:
..... **Pag. A-88 ÷ A-89**

ADVANTAGES / *VANTAGGI*

An extremely robust linear system with hard wearing vee running surfaces. It ensures a high level of guidance over the entire stroke and allows the cylinder to accept high direct bending moments and loads. Expecially developed for linear motion in machine tools and robotics, it is sealed to prevent dirt ingress.

Questa guida lineare estremamente robusta è stata studiata appositamente per il suo utilizzo nelle macchine utensili e nell'industria robotica.
La grande capacità di carico e precisione sono garantite da un sistema di guida costituito da una guida prismatica in acciaio sulla quale scorrono rulli a cuscinetti a "V".

- High loading characteristics
- Quiet and smooth running
- Robust bearing housing
- Hardened and grinded guiderail
- Low friction bearing
- Easy interchangeability

- *Alte capacità di carico*
- *Scorrimento regolare e silenzioso*
- *Robusto alloggiamento di guida*
- *Rotaia di guida temprata e indurita*
- *Guida a basso coefficente d'attrito di scorrimento*
- *Facile intercambiabilità degli elementi di guida*

TECHNICAL FEATURES

End caps	Anodised aluminium.
Barrel	Anodised aluminium.
Seals	NBR standard (for v ≤ 1 m/s).
Carriage	Anodised aluminium.
Sealing bands	Stainless steel.
Cushioning	Pneumatic adjusting cushions

Ambient temperature range	-15 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Pressure range	0,5 ÷ 8 bar.

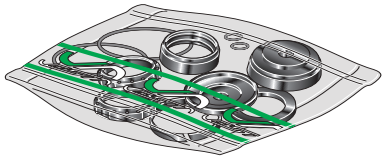
CARATTERISTICHE TECNICHE

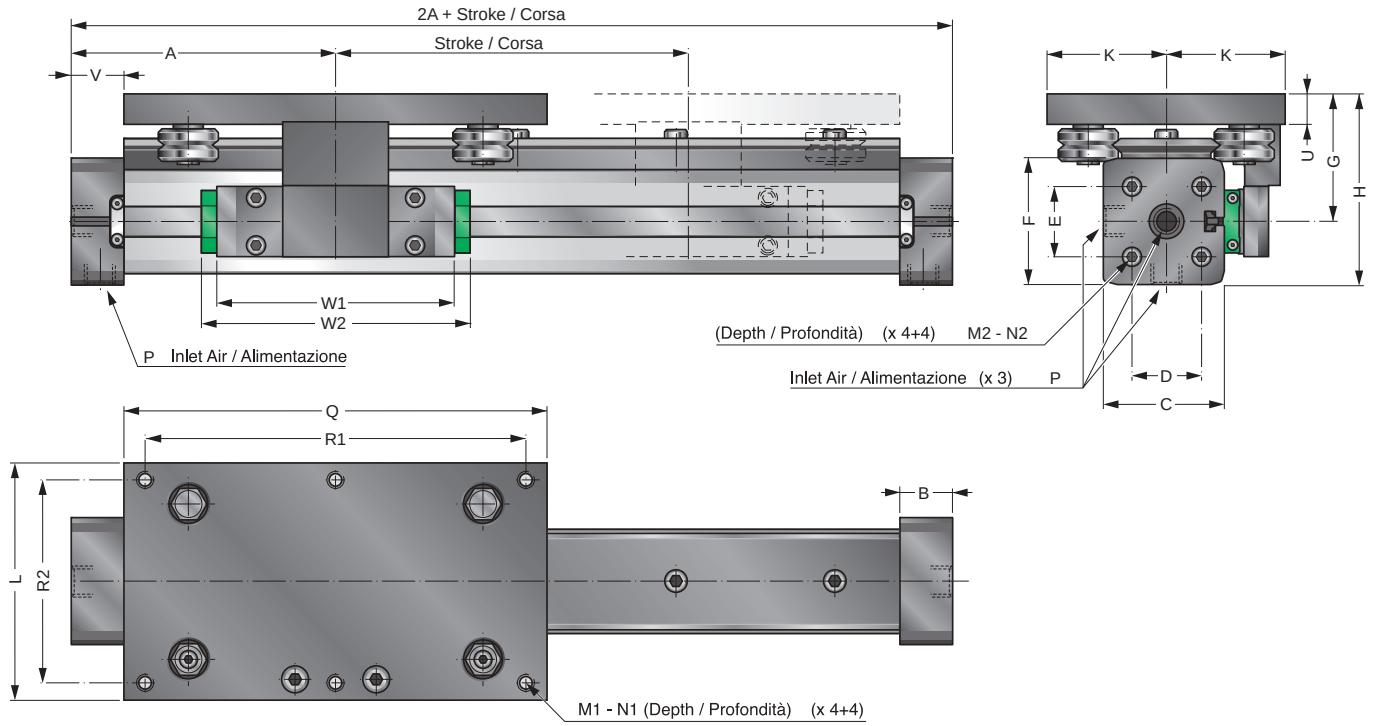
Testate	*Alluminio anodizzato.*
Camicia	*Alluminio anodizzato.*
Guarnizioni	*NBR standard (per v≤ 1 m/s).*
Carro	*Alluminio anodizzato.*
Lamine di tenuta	*Acciaio inossidabile.*
Ammortizzatori	*Pneumatici progressivi regolabili.*

Temperatura ambiente	*-15 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione d'esercizio	*0,5 ÷ 8 bar.*

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO **RL.. - SG**

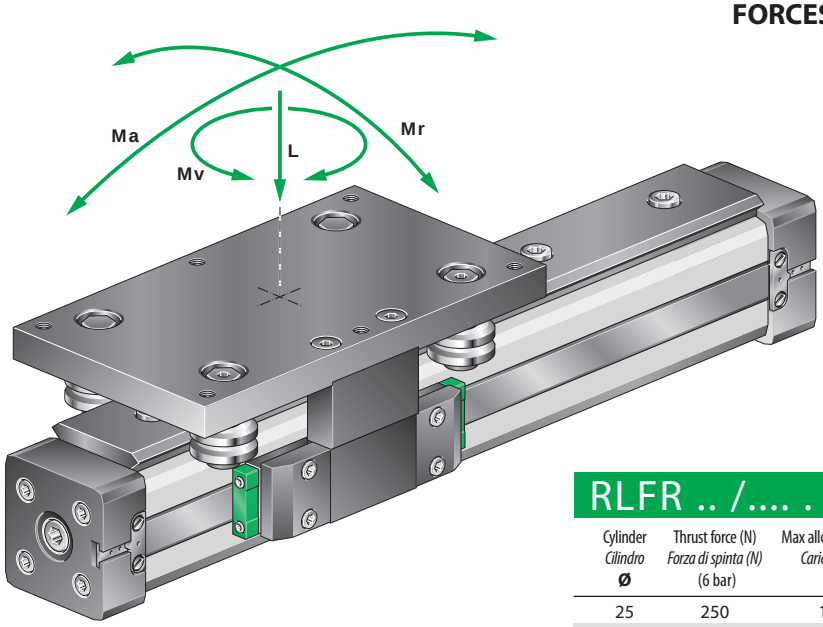
Seals kit code = **RL** + **Bore** + **- SG**: (The kit includes all seals).
Codice del kit = ***RL*** + ***Alesaggio*** + **- SG**: *(Il kit comprende tutte le guarnizioni necessarie).*
Example / *Esempio:* **RL 32 V - SG**





Bore *Alesaggio*	A	B	C	D	E	F	G	H	K	L	M1	M2	N1	N2	P	Q	R1	R2	U	V	W1	W2	Code *Codice*
25	100	23	40	27	27	40	53,5	73,5	40	80	M6	M5	11,5	11	G1/8	135	120	65	11,5	32,5	102	112	RLFR 25/...
32	125	27	56	40	36	52	64	90	58	116	M8	M6	14,5	15	G1/4	180	160	96	14,5	35	135	152	RLFR 32/...
40	150	30	69	54	54	72	72,5	108,5	67,5	135	M8	M6	16,5	15	G1/4	240	216	115	17,5	30	135	152	RLFR 40/...

FORCES AND TORQUE / *FORZE E MOMENTI TORCENTI*



Combined loads:
The combined force and torque moments can be calculated using the following formula:

Carichi combinati:
Le sollecitazioni combinate di forze e momenti torcenti sono calcolabili con la seguente formula:

$$\frac{M_a}{M_{a\,max}} + \frac{M_r}{M_{r\,max}} + \frac{M_v}{M_{v\,max}} + \frac{L}{L_{max}} \leq 1$$

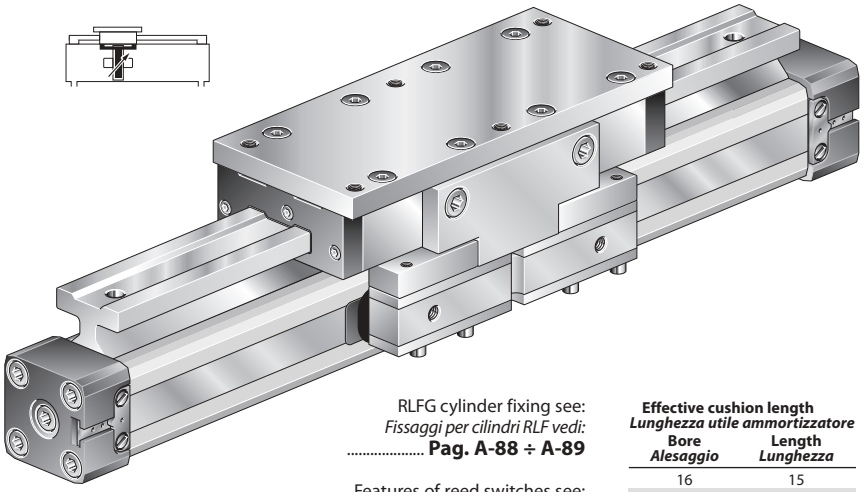
RLFR .. /.... . RODLESS CYLINDER WITH DUAL "VEE" EDGE SLIDE SYSTEM
CILINDRO SENZA STELO CON GUIDA PRISMATICA E CUSCINETTI A RULLO DOPPIA "V"

Cylinder *Cilindro* Ø	Thrust force (N) *Forza di spinta (N)* (6 bar)	Max allowed load(N) *Carico max(N)* L	Max allowed bending moments(Nm) *Momento flettente max(Nm)* M_a axial	M_r radial	Max allowed torque(Nm) *Torsione max(Nm)* M_v central
25	250	1400	50	14	50
32	420	3100	165	65	165
40	640	3100	250	90	250

The above mentioned moments (M_a max ...) are related to the guide rail centre. *I momenti (M_a max ...) sono calcolati rispetto all'asse della guida.*

RODLESS CYLINDERS WITH GLIDING CARRIAGE
CILINDRI SENZA STELO CON CARRO GUIDATO

SERIE **RLFG**



RLFG cylinder fixing see:
Fissaggi per cilindri RLF vedi:
..... **Pag. A-88 ÷ A-89**

Features of reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-97**

Effective cushion length
Lunghezza utile ammortizzatore

Bore *Alesaggio*	Length *Lunghezza*
16	15
25	21
32	26
40	32

With magnetic piston / *Con pistone magnetico*

RLFG □□ / □□□□ □

Bore
Alesaggio (mm):
Ø16 ..... **16**
Ø25 ..... **25**
Ø32 ..... **32**
Ø40 ..... **40**

Stroke
Corsa (mm):

O Standard
Standard
V Viton seals (v≥ 1m/s)
Guarnizioni in Viton (v≥ 1m/s)

ADVANTAGES / *VANTAGGI*

This particular strong linear guiding system was specially developed for medium heavy applications in linear motions.
Questo sistema di scorrimento ottenuto con pattino di guida in tecnopolimero su rotaia in alluminio indurito è realizzato per applicazioni di carichi esterni sul carro cilindro

- High resistance to wear.
- Tolerance adjustable.
- High resistance to corrosion.
- Quiet running.
- Ability to take high loads & moments in all directions.
- Ability to take shock loadings and vibrations against blows and vibrations.
- High resistance to dirt & moisture.
- Low weight
- Interchangeable gliding elements.

- *Alta resistenza all' usura.*
- *Tolleranza regolabile.*
- *Alta resistenza alla corrosione.*
- *Scorrimento silenzioso e a basso attrito.*
- *Capacità di sopportare carichi e momenti in tutte le direzioni.*
- *Capacità di sopportare carichi impulsivi e vibrazioni.*
- *Alta resistenza in ambienti sporchi e umidi.*
- *Basso peso.*
- *Intercambiabilità degli elementi striscianti.*

TECHNICAL FEATURES

End caps	Anodised aluminium.
Barrel	Anodised aluminium.
Seals	NBR standard (for v ≤ 1 m/s).
Carriage	Anodised aluminium.
Sealing bands	Stainless steel.
Cushioning	Pneumatic adjusting cushions.

Ambient temperature range	-15 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Pressure range	0,5 ÷ 8 bar.

CARATTERISTICHE TECNICHE

Testate	*Alluminio anodizzato.*
Camicia	*Alluminio anodizzato.*
Guarnizioni	*NBR standard (per v≤ 1 m/s).*
Carro	*Alluminio anodizzato.*
Lamine di tenuta	*Acciaio inossidabile.*
Ammortizzatori	*Pneumatici progressivi regolabili.*

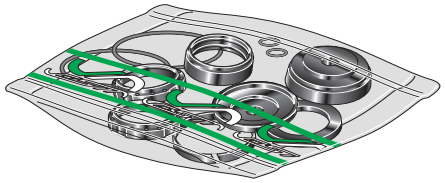
Temperatura ambiente	*-15 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione d'esercizio	*0,5 ÷ 8 bar.*

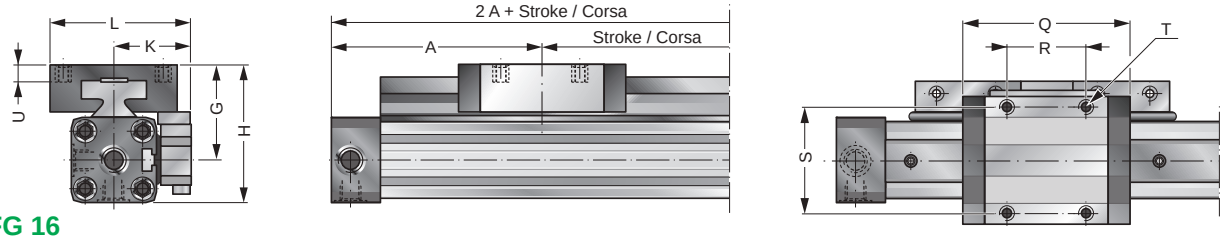
SEALS KIT
KIT GUARNIZIONI DI RICAMBIO **RL.. - SG**

Seals kit code = **RL** + **Bore** + **- SG**:
(The kit includes all seals).

*Codice del kit = **RL** + **Alesaggio** + **- SG**:*
(Il kit comprende tutte le guarnizioni necessarie).

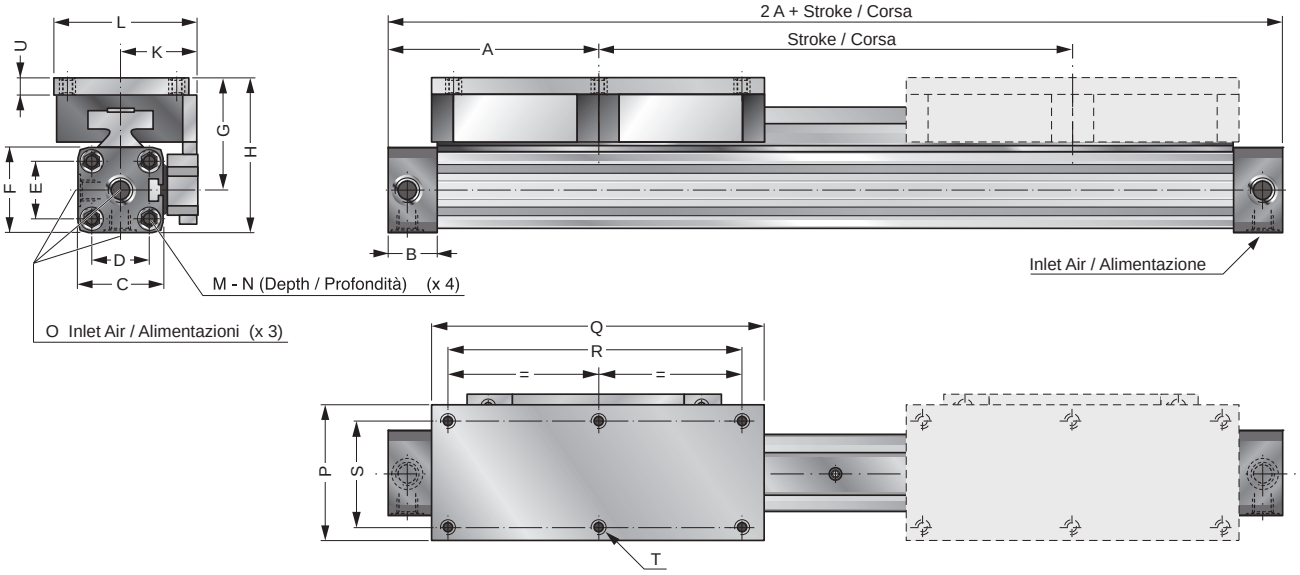
Example / *Esempio:* **RL 32 V - SG**





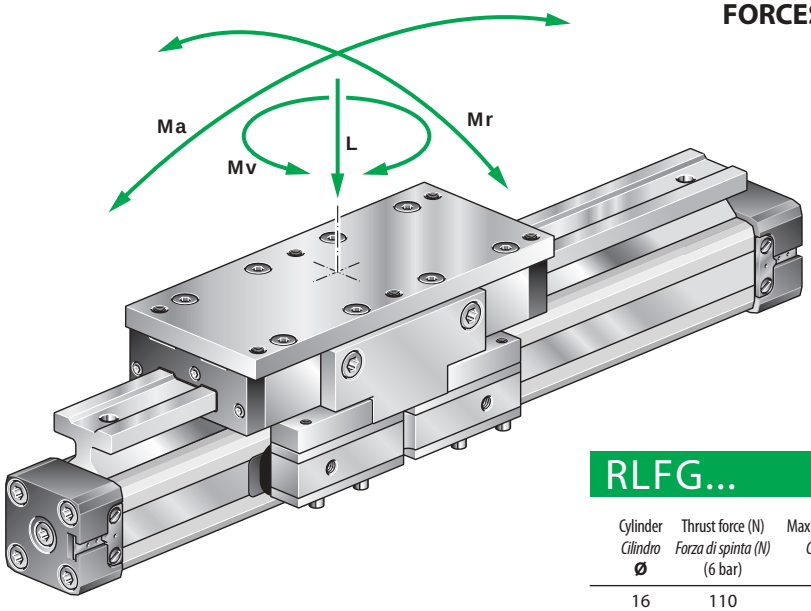
RLFG 16

RLFG 25 - RLFG 32 - RLFG 40



Bore *Alesaggio*	A	B	C	D	E	F	G	H	K	L	M	N	O	P	Q	R	S	T	U	Code *Codice*
16	65	15	27	18	18	27	44	57,5	27,5	51	M3	7	M5	47	68	30	38	M5	8	RLFG.16/...
25	100	23	40	27	27	40	56,5	76,5	38	71	M5	11	G1/8	66	162	148	53	M6	8	RLFG.25/...
32	125	27	52	36	40	52	62,5	88,5	52,5	84	M6	14	G1/4	66	162	148	53	M6	8	RLFG.32/...
40	150	30	69	54	54	72	66,9	102,8	61	96	M6	23	G1/4	70	162	148	53	M6	8	RLFG.40/...

FORCES AND TORQUE / *FORZE E MOMENTI TORCENTI*



Combined loads:
The combined force and torque moments can be calculated using the following formula:

Carichi combinati:
Le sollecitazioni combinate di forze e momenti torcenti sono calcolabili con la seguente formula:

$$\frac{M_a}{M_{a\,max}} + \frac{M_r}{M_{r\,max}} + \frac{M_v}{M_{v\,max}} + \frac{L}{L_{max}} \leq 1$$

RLFG...

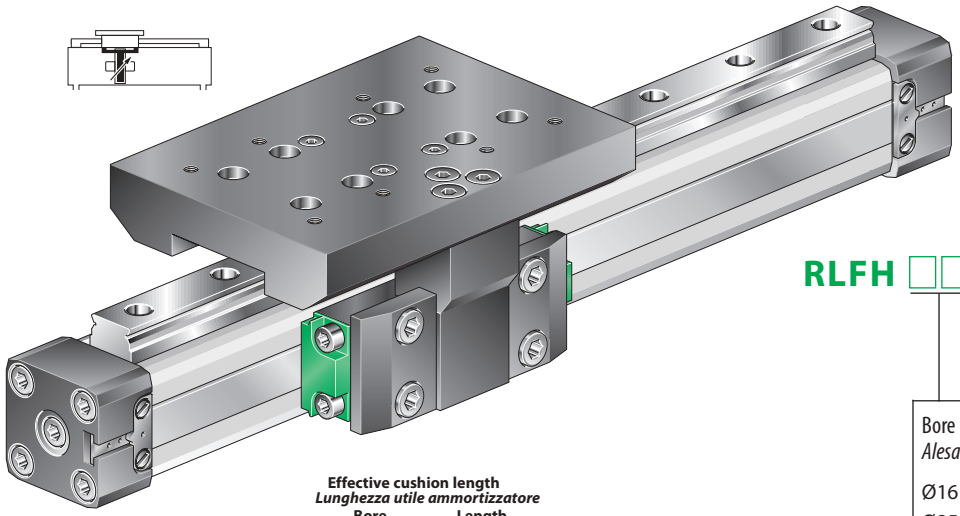
SLIDING PARTS WITH WAGON GUIDE
CARRO CON PATTINI GUIDA IN TECNOPOLIMERO

Cylinder *Cilindro* Ø	Thrust force (N) *Forza di spinta (N)* (6 bar)	Max allowed load(N) *Carico max(N)* L	Max allowed bending moments(Nm) *Momento flettente max(Nm)* M_a axial	M_r radial	Max allowed torque(Nm) *Torsione max(Nm)* M_v central
16	110	350	6	4	6
25	250	1000	40	14	40
32	420	2000	68	24	68
40	640	2800	103	37	103

The above mentioned moments (M_a max ...) are related to the plane surface.
I momenti (M_a max ...) sono calcolati rispetto al piano della flangia.

RODLESS CYLINDERS WITH BALL BEARING GUIDES
CILINDRI SENZA STELO CON CARRO GUIDATO A RICIRCOLO DI SFERE

SERIE **RLFH**



With magnetic piston / *Con pistone magnetico*

RLFH □□ / □□□□ □□

Bore
Alesaggio (mm):
Ø16 ..... **16**
Ø25 ..... **25**
Ø32 ..... **32**
Ø40 ..... **40**

Stroke
Corsa (mm):

O Standard
Standard
V Viton seals (v≥ 1m/s)
Guarnizioni in Viton (v≥ 1m/s)

1 Sliding system with one wagon guide
Carro con 1 pattino guida
2 Sliding system with two wagons guide
Carro con 2 pattini guida

Effective cushion length
Lunghezza utile ammortizzatore

Bore *Alesaggio*	Length *Lunghezza*
16	15
25	21
32	26
40	32

Characteristic reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-97**

RLFH cylinder fixing see:
Fissaggi per cilindri RLFH vedi:
..... **Pag. A-88 ÷ A-89**

ADVANTAGES / *VANTAGGI*

A strong ball bearing system ensures a high level of guidance over the entire stroke and allows the cylinder to accept high direct bending moments and loads. Expecially developed for linear motion in machine tools and robotics.

Questa guida lineare estremamente robusta è stata studiata appositamente per il suo utilizzo nelle macchine utensili e nell'industria robotica, grazie alla sua grande capacità di carico esterno (forze e movimenti) ed alla grande precisione di guida.

- High loading characteristics
- Quiet and smooth running
- Robust bearing housing
- Easy access to grease nipple
- Hardened and grinded guiderail
- Low friction bearing
- Easy interchangeability

- *Alte capacità di carico*
- *Scorrimento regolare e silenzioso*
- *Robusto alloggiamento di guida*
- *Facile accesso agli ingrassatori*
- *Rotaia di guida temprata e indurita*
- *Guida a basso coefficente d'attrito di scorrimento*
- *Facile intercambiabilità degli elementi di guida*

TECHNICAL FEATURES

End caps	Anodised aluminium.
Barrel	Anodised aluminium.
Seals	NBR standard (for v ≤ 1 m/s).
Carriage	Anodised aluminium.
Sealing bands	Stainless steel.
Cushioning	Pneumatic adjusting cushions.

Ambient temperature range	-15 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	Filtered air.
Pressure range	0,5 ÷ 8 bar.

CARATTERISTICHE TECNICHE

Testate	*Alluminio anodizzato.*
Camicia	*Alluminio anodizzato.*
Guarnizioni	*NBR standard (per v≤ 1 m/s).*
Carro	*Alluminio anodizzato.*
Lamine di tenuta	*Acciaio inossidabile.*
Ammortizzatori	*Pneumatici progressivi regolabili.*

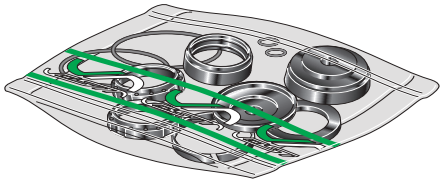
Temperatura ambiente	*-15 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione d'esercizio	*0,5 ÷ 8 bar.*

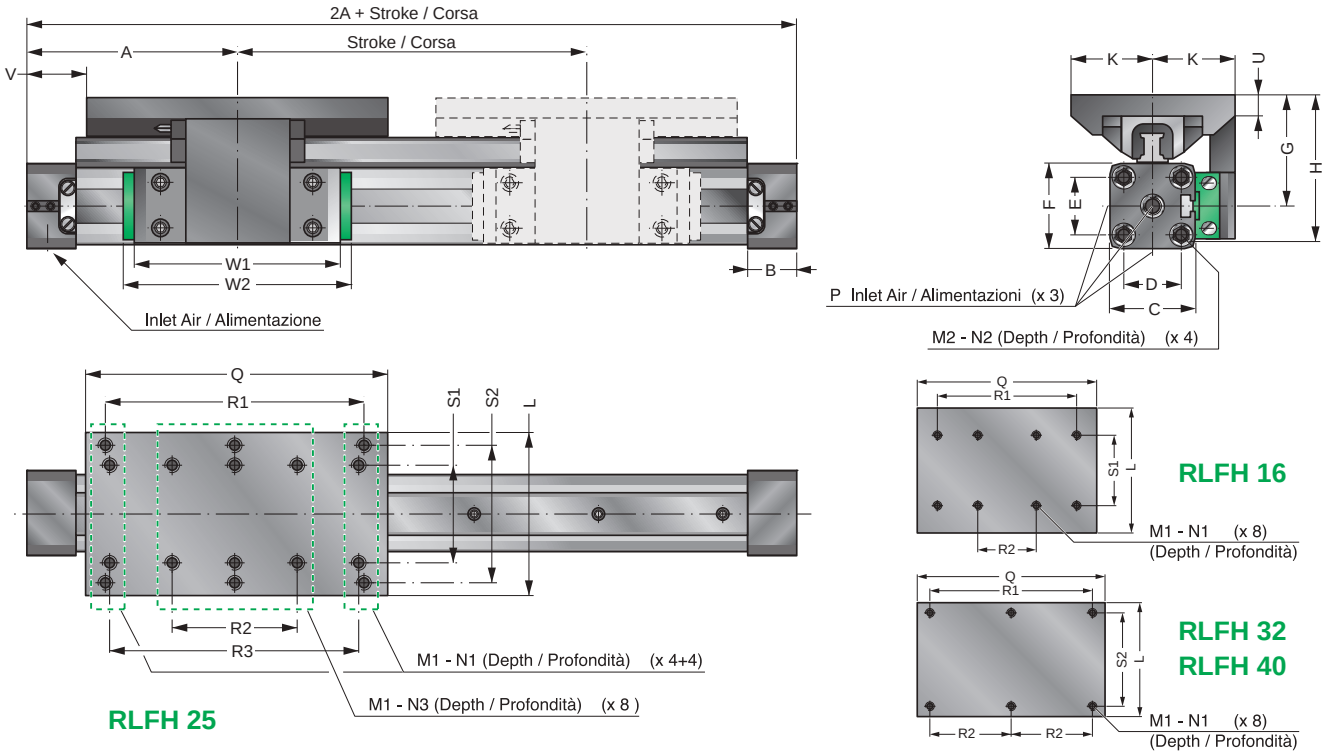
SEALS KIT
KIT GUARNIZIONI DI RICAMBIO **RL.. - SG**

Seals kit code = **RL** + **Bore** + **- SG**:
(The kit includes all seals).

*Codice del kit = **RL** + **Alesaggio** + **- SG**:*
(Il kit comprende tutte le guarnizioni necessarie).

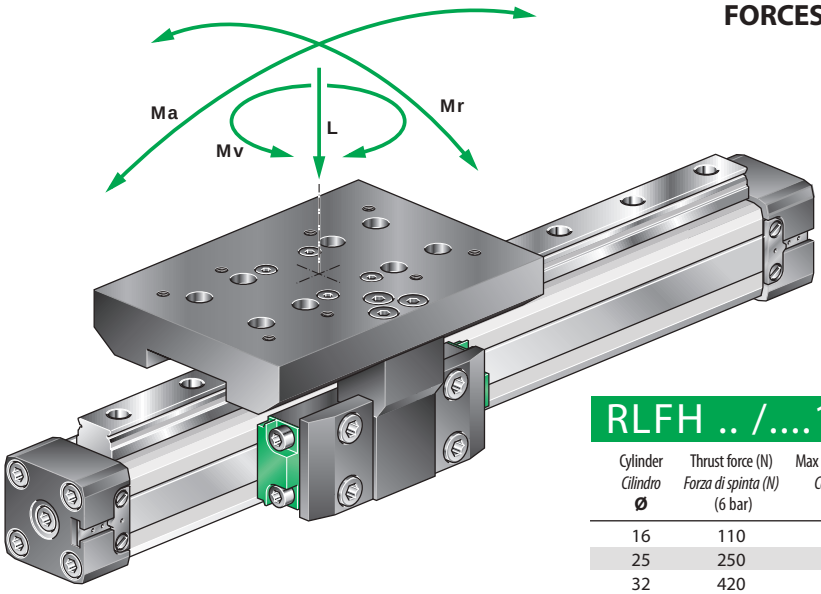
Example / *Esempio:* **RL 32 V - SG**





Bore *Alesaggio*	A	B	C	D	E	F	G	H	K	L	M1	M2	N1	N2	N3	P	Q	R1	R2	R3	S1	S2	U	V	W1	W2	Code *Codice*
16	65	15	27	18	18	27	35	48,5	31,5	63,0	M4	M3	10	7	-	M5	90	70	30	-	36	-	10	28,5	60	69	RLFH 16/...
25	100	23	40	27	27	40	53	73	40	80	M6	M5	12	11	10	G1/8	145	125	60	120	50	64	11	27,5	102	112	RLFH 25/...
32	125	27	56	40	36	52	64	90	57,5	115	M8	M6	13	15	-	G1/4	190	164	82	-	-	96	10	30	135	152	RLFH 32/...
40	150	30	69	54	54	72	69,2	105,1	57,5	115	M8	M6	18	15	-	G1/4	190	164	82	-	-	96	10	55	135	152	RLFH 40/...

FORCES AND TORQUE / *FORZE E MOMENTI TORCENTI*



Combined loads:
The combined force and torque moments can be calculated using the following formula:

Carichi combinati:
Le sollecitazioni combinate di forze e momenti torcenti sono calcolabili con la seguente formula:

$$\frac{M_a}{M_{a\,max}} + \frac{M_r}{M_{r\,max}} + \frac{M_v}{M_{v\,max}} + \frac{L}{L_{max}} \leq 1$$

RLFH .. /....1.

SLIDING SYSTEM WITH **ONE** WAGON GUIDE
*CARRO CON **1** PATTINO GUIDA*

Cylinder *Cilindro* Ø	Thrust force (N) *Forza di spinta (N)* (6 bar)	Max allowed load(N) *Carico max(N)* L	Max allowed bending moments(Nm) *Momento flettente max(Nm)* M_a axial	M_r radial	Max allowed torque(Nm) *Torsione max(Nm)* M_v central
16	110	500	4	6	11
25	250	1500	40	14	40
32	420	2950	61	30	62
40	640	3960	115	52	70

The above mentioned moments (M_a max ...) are related to the guide rail centre.

I momenti (M_a max ...) sono calcolati rispetto all'asse della guida.

RLFH .. /....2.

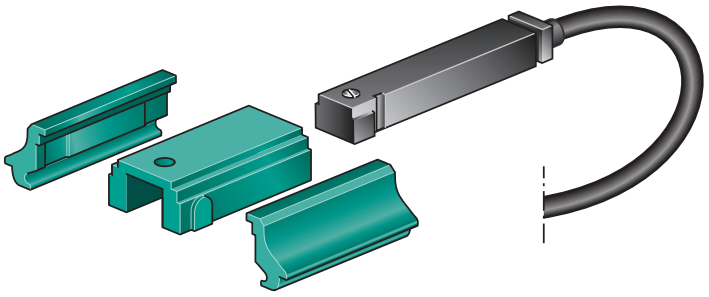
SLIDING SYSTEM WITH **TWO** WAGONS GUIDE
*CARRO CON **2** PATTINI GUIDA*

Cylinder *Cilindro* Ø	Thrust force (N) *Forza di spinta (N)* (6 bar)	Max allowed load(N) *Carico max(N)* L	Max allowed bending moments(Nm) *Momento flettente max(Nm)* M_a axial	M_r radial	Max allowed torque(Nm) *Torsione max(Nm)* M_v central
16	110	500	8	10	18
25	250	1550	85	20	80
32	420	3020	85	45	90
40	640	4030	130	65	100

MAGNETIC SWITCHES FOR RL.. CYLINDERS / *FINECORSA MAGNETICI PER CILINDRI RL..*

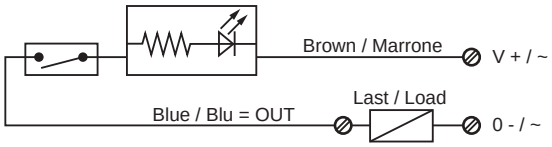
REED SWITCH
SENSORE REED

ZRS 11



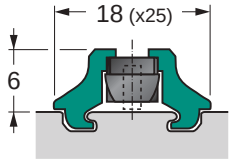
Cable standard lenght / *Lunghezza cavo standard:* 5000 mm

circuit / *Circuito*

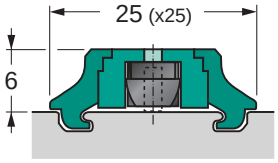


Code *Codice*	Voltage range *Tensione max*	Switching current *Corrente a 25 °C*	Switching power (resistive) *Potenza Induttiva*	Degree of protection *Grado di protezione*	Working temperature *Temperatura di lavoro*	Switch Hysteresis *Isteresi di inserzione*	ON / OFF time *Tempo di inserzione /disin.*	Electric life *Vita elettrica*		Contact function *Contatto*
	V	-	-		°C	mm	-	impulse	-	
ZRS 11	5-130 AC-DC	200 mA	6W	IP67	-15 ÷ +60	3 mm	1 - 0,3 msec	1 x 10^7	-	

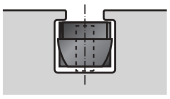
MAGNETIC SWITCH BRACKET FOR RODLESS CYLINDER / *FISSAGGIO PER SENSORE MAGNETICO SU CILINDRI SENZA STELO*



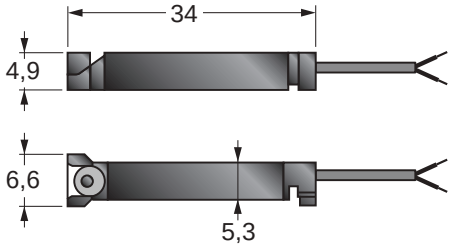
Ø 16 mm



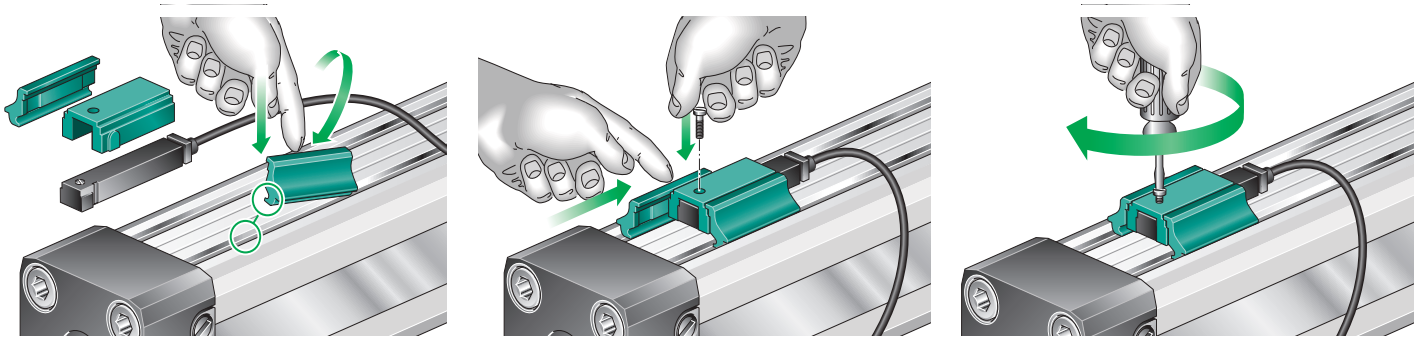
Ø 25; **32**; **40** mm



Ø 50; **63** mm

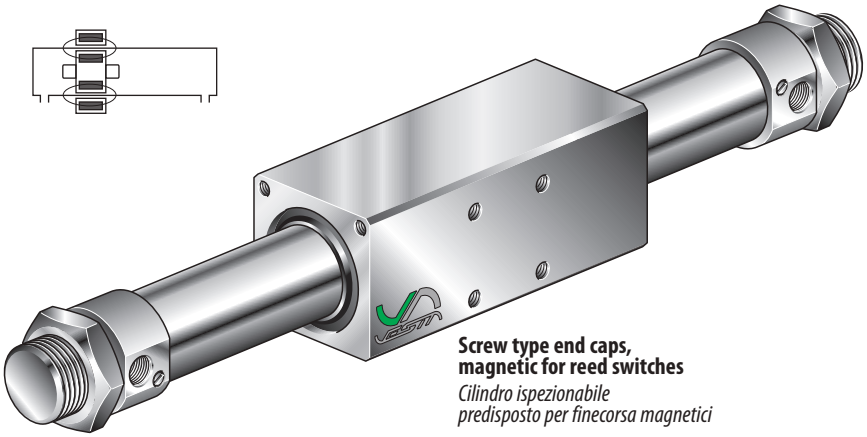


MAGNETIC SWITCH POSITIONING / *POSIZIONAMENTO DEI FINECORSA MAGNETICI*



SERIE **TM**

RODLESS MAGNETIC COUPLING CYLINDER
CILINDRO SENZA STELO A TRASCINAMENTO MAGNETICO



Screw type end caps, magnetic for reed switches
Cilindro ispezionabile predisposto per finecorsa magnetici

TM □□ / □□□

Bore / *Alesaggio* (mm):
Ø12 ..... **12**
Ø20 ..... **20**

Stroke / *Corsa* (mm):

Standard stroke / *Corse Standard*

Bore / Alesaggio	25	50	80	100	125	160	200	250	300	350	400	450	500
12	•	•	•	•	•	•	•	•	•	•	•	•	•
20	•	•	•	•	•	•	•	•	•	•	•	•	•

WORKING PRINCIPLE / *PRINCIPIO DI FUNZIONAMENTO*

Vesta rodless series "TM" cylinder is a pneumatic linear drive unit with magnetic coupling. Its dimensions are smaller than ISO 6432 Standard cylinder and it has pneumatic cushioning for Ø 20, mechanical cushioning for Ø 12. Available upon request fixing accessories and reed switches.

Il cilindro Vesta serie "TM" è un'unità in cui il collegamento tra pistone e cursore è realizzato per mezzo di un campo magnetico di elevata intensità. E' privo di stelo e quindi, è di dimensioni molto contenute. E' fornito di serie con ammortizzo pneumatico per il Ø 20 e meccanico per il Ø 12, ed è predisposto per l'uso di sensori magnetici; a richiesta sono fornibili gli accessori e i sensori magnetici per il rilevamento della posizione del cursore.

TECHNICAL FEATURES

Seals	Polyurethane for extended durability.
Cushioning	Pneumatic e mechanical for Ø20, mechanical for Ø12.
Barrel	Stainless steel X5 Cr Ni 18-10.
Stroke	Ø12: < 1000 mm. Ø20: < 2500 mm.
Magnetic force	Ø12: 100 N. Ø20: 270 N.

Ambient temperature range	-10 °C ÷ +80 °C.
Temperature range of medium	0 °C ÷ +40 °C.
Lubrication	Not required.
Medium	filtered air.
Max operating pressure	7 bar.

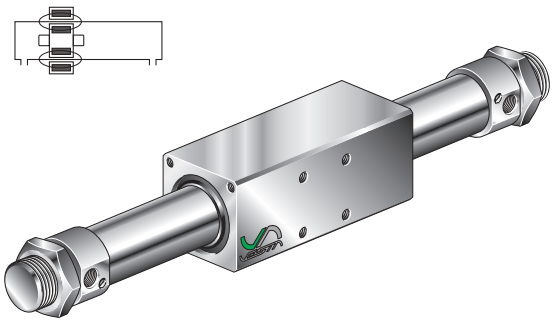
CARATTERISTICHE TECNICHE

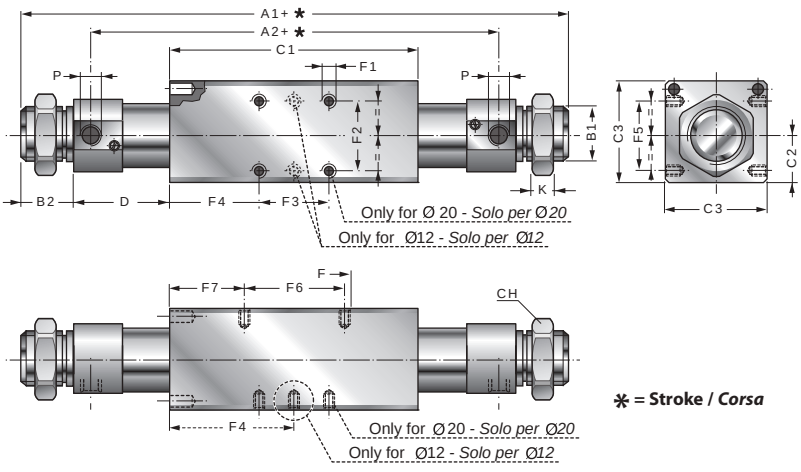
Guarnizioni	*Poliuretano.*
Ammortizzatori	*Pneumatico e meccanico per Ø20, meccanico per Ø12.*
Camicia	*Acciaio inox X5 Cr Ni 18-10.*
Corse	*Ø12: fino a 1000 mm.* *Ø20: fino a 2500 mm.*
Forza magnetica	*Ø12: 100 N.* *Ø20: 270 N.*

Temperatura ambiente	*-10 °C ÷ +80 °C.*
Temperatura fluido	*0 °C ÷ +40 °C.*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Pressione max d'esercizio	*7 bar.*

TM .. /...

RODLESS CYLINDER
CILINDRO BASE SENZA STELO



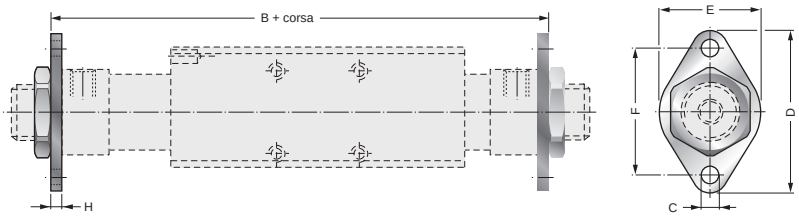


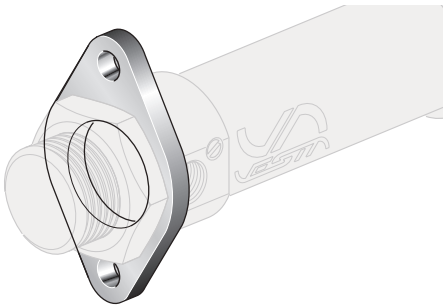
✱ = **Stroke / *Corsa***

Bore / *Alesaggio*	A1	A2	B1	B2	C1	C2	C3	D	F	F1	F2	F3	F4	F5	F6	F7	K	CH	P	Code / *Codice*
12	156	115	M16x1,5	15	86	15	35	20	M3	M5	22	0	43	16	30	28	8	24	M5	**TM 12**
20	214	162	M22x1,5	18	110	20	45	34	M5	M5	32	32	39	30	43	33,5	10	30	G1/8	**TM 20**

FLANGE MOUNTING
MONTAGGIO A FLANGIA

FL/..

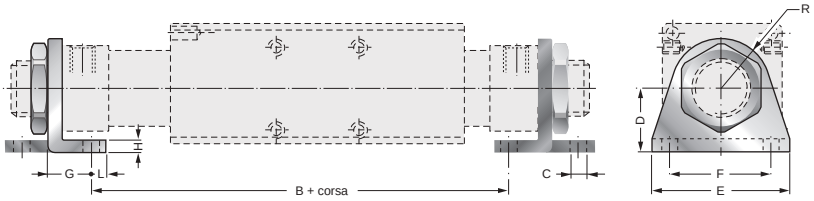


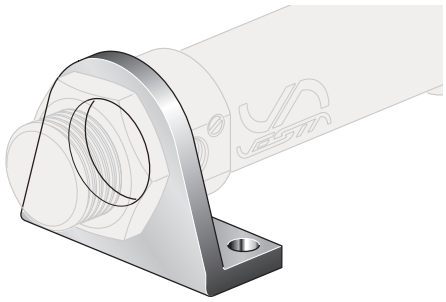


Bore *Alesaggio*	B	ØC	D	E	F	H	Code *Codice*
12	134	5,5	52	30	40	4	FL/12
20	188	6,6	66	40	50	5	FL/20

FOOT MOUNTING
MONTAGGIO A PIEDINI

P/..





Bore *Alesaggio*	B	ØC	D	E	F	G	H	L	R	Code *Codice*
12	106	5,5	20	42	32	14	4	7	13	P/12
20	154	6,6	25	54	40	17	5	7	20	P/20

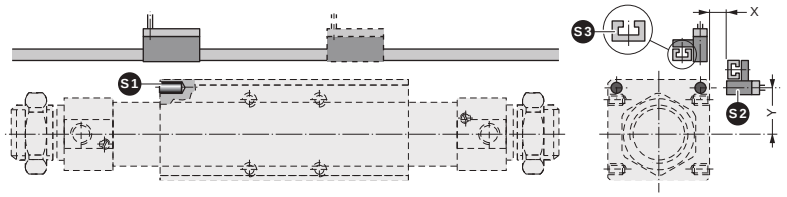
MAGNETIC SWITCHES / *FINECORSA MAGNETICI PER CILINDRI SERIE TM*

REED SWITCH
FINECORSA MAGNETICO

FIV 306 V

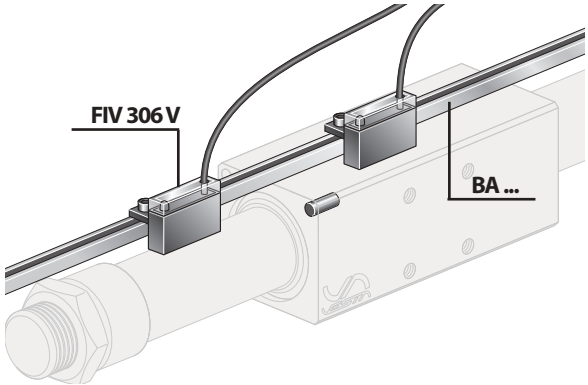
FIXING FOR REED SWITCH
SUPPORTO PER FINECORSA MAGNETICI

BA ...

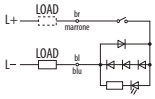


S1 Magnet for reed switch / *Magnete per finecosa*
S2 Reed switch / *Finecosa magnetico*
S3 Aluminium rail for reed switch mounting
Profilo di alluminio per montaggio finecosa

Bore *Alesaggio*	X	Y
12	7	16,5
20	7	25



Circuit
Circuito



Band code *Codice barra*	Circuit code *Codice circuito*	Voltage *Tensione* V	Switching current *Corrente* mA	Switching capacity *Potenza* VA/W	Protection *Protezione*	Working temperature *Temperatura* °C	Contact *Contatto*
BA...	FIV 306V	10-220 AC-DC	200	10/10	IP65	-25 ÷ +75	

Fixing dimensions **BA...** = cylinder stroke + A1 *(except different customer request)*
Dimensioni supporto **BA...** = *corsa cilindro + A1 (salvo diversa specifica del cliente)*

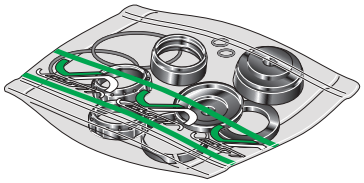
SEALS KIT
KIT GUARNIZIONI DI RICAMBIO

..... - SG

Seals kit code = **Rodless cylinder code** + **Bore** + **- SG**:
(The kit includes all seals).

Codice del kit = ***Codice del cilindro senza stelo*** + ***Alesaggio*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **TM 20 - SG**



TECHNICAL FEATURES ESNW CYLINDERS / *CARATTERISTICHE TECNICHE CILINDRI ESNW*

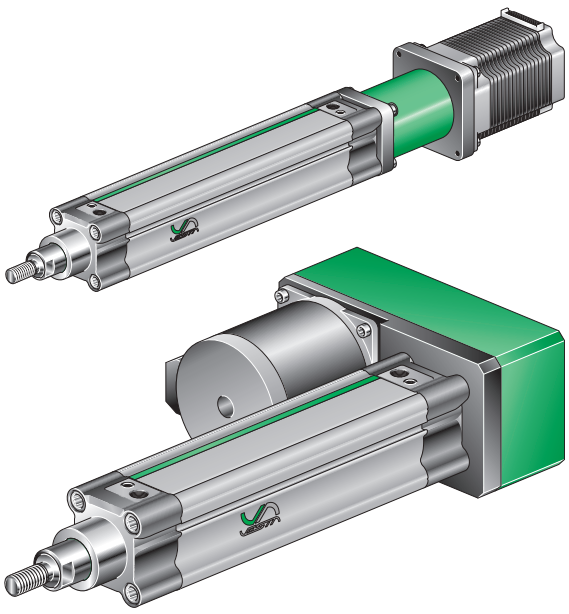
In some applications the evolution of automation means very precise and controlled linear motions.
The **ESNW** actuators are developed for applications requiring linear movements and positioning to a high degree of accuracy, repeatability and speed variations in synchronised system. They are made with a ball screw, which is rotated by an electric motor, and a ball nut driving the external piston rod of the ISO 15552 cylinder.
The **ESNW** actuators are available in two versions: the **ESNW - L** with direct co axial transmission and the **ESNW - G** with driving gear transmission.
The available bore sizes for both the L and G versions are 32 and 50 mm in diameter. The pitch on the ball screw can be either 5 or 12,7 mm.
They are made with the body of the ISO 15552 NWT series cylinder, therefore most of the standard ISO fixing accessories can be used.
The 32-diameter version needs to prevent rotation of the piston rod by additional external system like the GLC or GLH, or alternatively a strong locking piston rod to the linear moving part of the machine. The 50-diameter version however has an internal guiding anti-rotational system for the piston rod and should stronger anti-rotational forces be required, the use of GLCE or GLHE guides may be used.
The 32- diameter version is supplied standard, with a flange to suite a size 23 stepping motor and the 50-diameter version is supplied with a flange to suite a size 34 stepping motor. Upon request the ESNW actuators are available with flange to suite other types of electrical motors.
Upon request the ESNW actuators are equipped and supplied with step motors: MP2331300 AP08-1,6 Nm for Ø32, MP3438430 AX08-4,6 Nm or MP3451640 AX08-7,6 Nm for Ø50.
The full range of ESNW cylinders are very suitable for vertical axis, assembling systems, testing systems, palletising and driving systems.

L'evoluzione dei sistemi di automazione richiede spesso movimenti precisi e controllati. Gli attuatori ESNW sono stati studiati con lo scopo di soddisfare l'esigenza di posizionamenti multipli, ripetitivi e di precisione, realizzando sistemi di automazione sincronizzati con possibilità di cambiare i parametri di movimento senza modifiche meccaniche.
*La serie di attuatori **ESNW** impiega viti a ricircolo di sfere che movimentano lo stelo di un cilindro ISO 15552. Il corpo dell'attuatore è infatti costituito da testate e camicia dei cilindri ISO 15552 serie NWT che permettono facile intercambiabilità con i cilindri stessi e l'utilizzo della maggior parte dei sistemi di fissaggio ISO. La serie **ESNW** è disponibile nelle versioni con diametro Ø32 e Ø50 entrambe con possibilità di montare motori accoppiati in linea nella serie **ESNW -L** o rinviati in parallelo nella serie **ESNW -G**. Ogni versione è fornibile con vite a passo 5 mm per impostazioni di rampe di accelerazione brevi con carichi e forze elevati o con vite a passo 12,7 mm per velocità maggiori con ottimi rendimenti dinamici (ideali per movimenti orizzontali veloci).*
Il Ø32 necessita di accoppiamento antirotazione ottenibile mediante solido fissaggio dello stelo all'organo in movimento o con il montaggio di sistemi antirotazione tipo GLCE o GLHE, mentre il Ø50 monta un sistema antirotazione interno e non necessita quindi di sistemi di guida antirotazione per lo stelo; tuttavia il loro impiego garantisce ulteriore rigidità all'attuatore. Il Ø32 è fornito nella versione standard con flangia per accoppiamento con motori passo passo taglia 23 mentre il Ø50 viene fornito con flangia per motore passo passo taglia 34. Sono fornibili a richiesta flangiature per motori di tipo diverso. Sempre su richiesta gli attuatori possono essere forniti completi di motore passo passo già montato e testato: per il Ø32: MP2331300 AP08-1,6 Nm, per il Ø50: MP3438430 AX08-4,6 Nm o MP3451640 AX08-7,6 Nm.
- Ogni modello e versione della serie ESNW è fornibile in una vasta gamma di corse che ne permettono l'impiego in modo versatile ed ideale per asservimenti di impianti automatici, assi verticali ed orizzontali, sistemi di pallettizzazione, di montaggio e collaudo.

DYNAMIC FEATURES / *CARATTERISTICHE DINAMICHE*

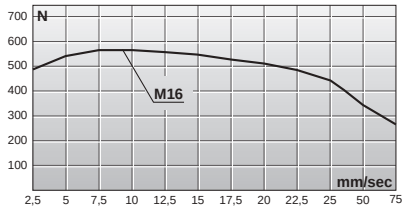
The pitch on the ball screw can be either 5 or 12,7 mm.

Ogni versione è fornibile con vite a passo 5 mm o 12,7 mm.



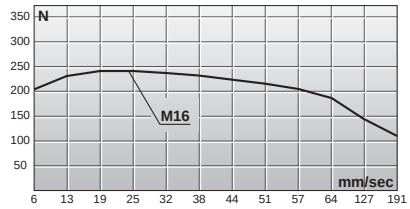
Ø 32 p = **5** mm

Max dynamic load on the screw *Max carico dinamico della vite*	3435 N
Max static load on the screw *Max carico statico della vite*	1920 N
Max thrust / *Max forza di spinta generata*	**M16** = 570 N
Max speed *Max velocità di traslazione*	75 mm/sec.
Max torque allowed *Coppia max. applicabile*	2 Nm



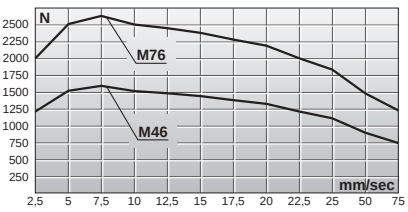
Ø 32 p = **12,7** mm

Max dynamic load on the screw *Max carico dinamico della vite*	3435 N
Max static load on the screw *Max carico statico della vite*	1920 N
Max thrust / *Max forza di spinta generata*	**M16** = 220 N
Max speed *Max velocità di traslazione*	190 mm/sec.
Max torque allowed *Coppia max. applicabile*	2 Nm



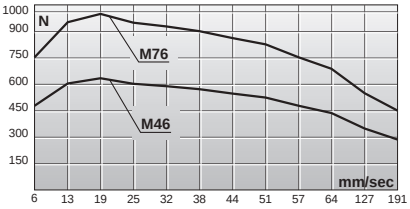
Ø 50 p = **5** mm

Max dynamic load on the screw *Max carico dinamico della vite*	4690 N
Max static load on the screw *Max carico statico della vite*	2380 N
Max thrust / *Max forza di spinta generata*	**M46** = 1600 N **M76** = 2600 N
Max speed *Max velocità di traslazione*	75 mm/sec.
Max torque allowed *Coppia max. applicabile*	7,5 Nm



Ø 50 p = **12,7** mm

Max dynamic load on the screw *Max carico dinamico della vite*	4690 N
Max static load on the screw *Max carico statico della vite*	2380 N
Max thrust / *Max forza di spinta generata*	**M46** = 640 N **M76** = 1000 N
Max speed *Max velocità di traslazione*	190 mm/sec.
Max torque allowed *Coppia max. applicabile*	7,5 Nm



ELECTRICAL ACTUATED CYLINDERS
ATTUATORI ELETTRICI

SERIE **ESNW**

With magnetic piston / *Con pistone magnetico*

ESNW □□/□□□-□□□-□- Upon request *A richiesta* **□ □□**

Bore *Alesaggio* (mm):
Ø32 ..... **32**
Ø50 ..... **50**

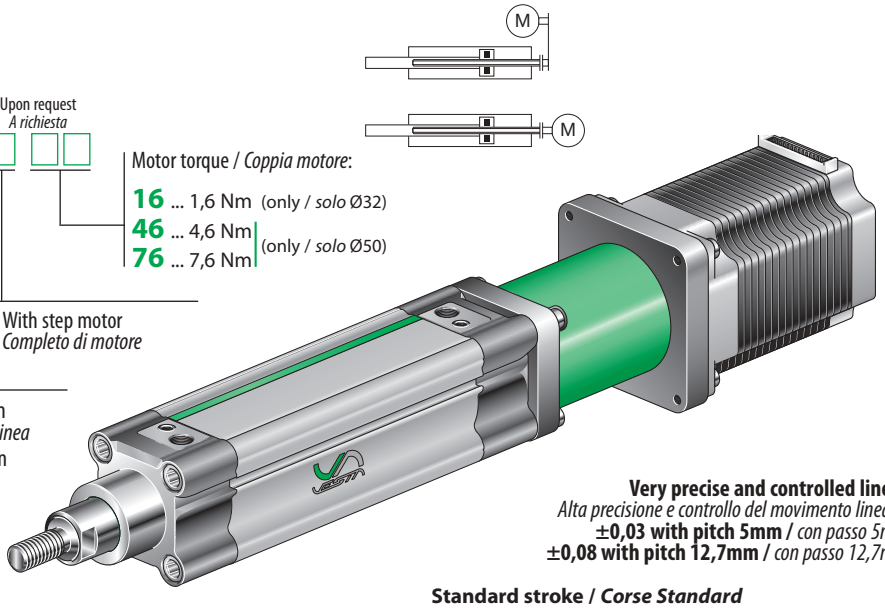
Stroke / *Corsa* (mm):

Pitch ball screw *Passo vite:*
050 ... 5 mm
127 ... 12,7 mm

L Linear direct trasmission *Trasmissione diretta, in linea*
G Gear parallel trasmission *Rinviato parallelo*

M With step motor *Completo di motore*

Motor torque / *Coppia motore*:
16 ... 1,6 Nm (only / *solo* Ø32)
46 ... 4,6 Nm (only / *solo* Ø50)
76 ... 7,6 Nm



Very precise and controlled linear
Alta precisione e controllo del movimento lineare.
±0,03 with pitch 5mm / *con passo 5mm*
±0,08 with pitch 12,7mm / *con passo 12,7mm*

ESNW cylinder fixing see:
Fissaggi per cilindri ESNW vedi:
..... **Pag. A-22 ÷ A-25**

Features of reed switches see:
Caratteristiche finecorsa magnetici:
..... **Pag. A-19**

Standard stroke / *Corse Standard*

Alesaggio	50	100	150	200	250	300	350	400	450	500	550	600
32	•	•	•	•	•	•	•	•				
50	•	•	•	•	•	•	•	•	•	•	•	•

For others strokes please contact our technical sales department
Per corse superiori contattare l'Ufficio Tecnico

TECHNICAL FEATURES

Heads	Die-cast aluminium alloy, painted.
Piston rod	Chromium-plated steel.
Barrel	Anodized profiled aluminium tube.
Seals	Poliurethan.
Ambient temperature range	-10 °C ÷ +80 °C.
Lubrication	Not required.

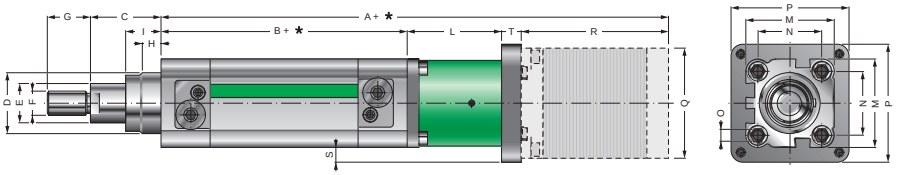
CARATTERISTICHE TECNICHE

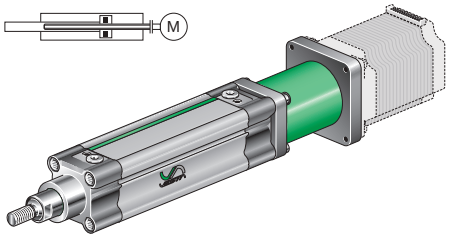
Testate	*Pressofuse in lega di alluminio e verniciate.*
Stelo	*Acciaio cromato.*
Camicia	*Tubo profilato ed anodizzato in alluminio.*
Guarnizioni	*Tutte in poliuretano.*
Temperatura ambiente	*-10 °C ÷ +80 °C.*
Lubrificazione	*Non necessaria.*

✱ = Stroke / *Corsa*

LINEAR DIRECT TRASMISSION
TRASMISSIONE DIRETTA, IN LINEA

ESNW ... L



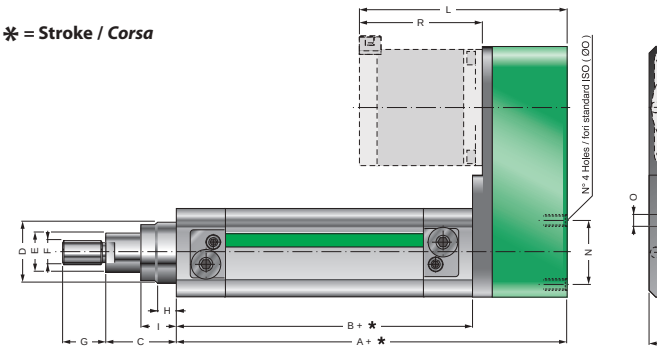


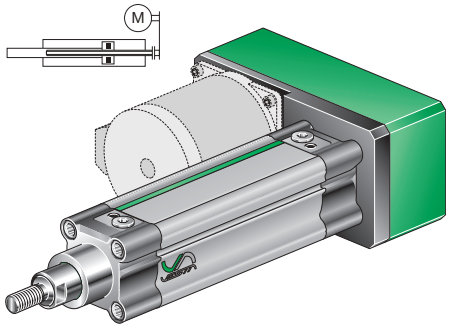
Bore *Alesaggio*	A	B	C	ØD	ØE	ØF	G	H	I	L	M	N	ØO	P	Q	R	S	T	Code *Codice*
32 (M16)	279,5	137	26,5	30	20	M10x1,25	22	10	18	48	45	32,5	M6	60	57,2	78,5	7,5	10	ESNW 32/... L M16
50 (M46)	303	149	38	40	25	M16x1,5	32	12,1	28	48	64	46,5	M8	86	86	94	11	12	ESNW 50/... L M46
50 (M76)	341	149	38	40	25	M16x1,5	32	12,1	28	48	64	46,5	M8	86	86	132	11	12	ESNW 50/... L M76

✱ = Stroke / *Corsa*

GEAR PARALLEL TRASMISSION
RINVIATO PARALLELO

ESNW ... G





Bore *Alesaggio*	A	B	C	ØD	ØE	ØF	G	H	I	L	M	N	ØO	P	Q	R	Code *Codice*
32 (M16)	185	137	26,5	30	20	M10x1,25	22	10	18	117	45	32,5	M6	60	110	78,5	ESNW 32/... G M16
50 (M46)	214	149	38	40	25	M16x1,5	32	12,1	28	147	64	46,5	M8	90	170	94	ESNW 50/... G M46
50 (M76)	214	149	38	40	25	M16x1,5	32	12,1	28	185	64	46,5	M8	90	175	132	ESNW 50/... G M76

SERIE **GLCE ; GLHE**

LINEAR CONTROL UNITS FOR ELECTRICAL CYLINDER
UNITA' DI GUIDA PER ATTUATORI ELETTRICI

TECHNICAL FEATURES / *CARATTERISTICHE COSTRUTTIVE*

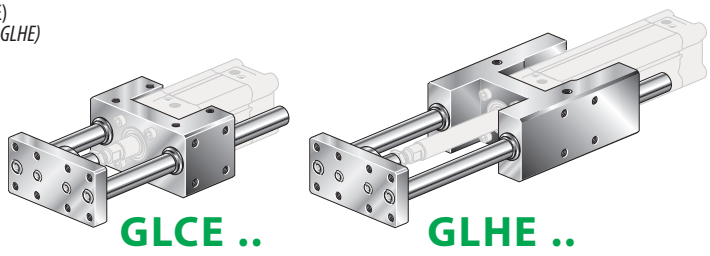
The linear control units **GLCE** and **GLHE** series can be assembled to cylinders in compliance with ISO 6432 and ISO 15552 standards. Anti-rotation is guaranteed by two steel guide stems, whose movement is supported by four brass bushes in **GLCE ...** and **GLHE ... BS** series, and by four ball bushings in the **GLHE ... BB** series. The piston rod is connected to the front flange by a rigid joint to prevent its rotations.
Versatility of mounting is assurred by either mounting directly to the unit, or by the use of standard accessories (mountings).
All the linear control units GLHE-BS and BB series are supplied with scraper seals and grease box. The unit is supplied already lubricated.

*Le unità di guida serie **GLCE** e **GLHE** sono assemblabili a cilindri rispondenti alla norma ISO 6432-15552.*
*L'antirotazione è garantita da due steli guida in acciaio il cui movimento è supportato da quattro bronzine a strisciamento nella serie **GLCE ...** e **GLHE ... BS**, oppure da quattro cuscinetti con ricircolo di sfere nella serie **GLHE ... BB**.*
Lo stelo del cilindro è collegato alla flangia frontale con un giunto rigido che ne garantisce l'antirotazione.
La versatilità d' impiego è stata realizzata mediante tre possibili superfici di fissaggio e di piastre per il fissaggio orizzontale o verticale.
Tutte le unità di guida, oltre ad essere fornite già prelubrificate, sono corredate di rischiapolvere ed ingrassatori.

GL □ E □□ □□□ □□

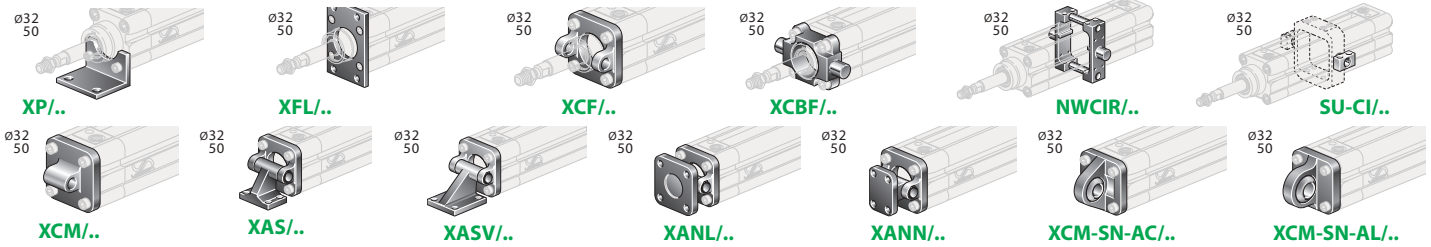
- **C** Linear control units type "C" / *Unità di guida esecuzione "C"*
- **H** Linear control units type "H" / *Unità di guida esecuzione "H"*
- **E** With rigid joint for electrical actuators / *Con giunto rigido per attuatore elettrico*
- Bore / *Alesaggio* (mm): Ø32 ..... **32**, Ø50 ..... **50**
- Stroke / *Corsa (mm):*
- **BS** with brass bearing (only GLHE) / *con bronzine a strisciamento (solo GLHE)*
- **BB** with ball bushing (only GLHE) / *con cuscinetti a ricircolo di sfere (solo GLHE)*

Fixing, materials and dimensions of GLCE and GLHE linear control units see:
Per dimensioni, materiali e fissaggi delle serie GLCE e GLHE vedi:
..... **Pag. A-52 ÷ A-55**

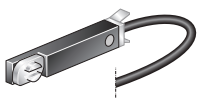


ACCESSORIES / *ACCESSORI*

Note: the fixing screws are not included with the supply of mountings
le viti di fissaggio non sono comprese nella fornitura dell'accessorio.
For dimensions fixing see: / *Per le dimensioni dei fissaggi vedi* ..... **A-22 ÷ A-25.**



MAGNETIC SWITCHES FOR ESNWCYLINDERS / *FINECORSA MAGNETICI PER CILINDRI ESNW*

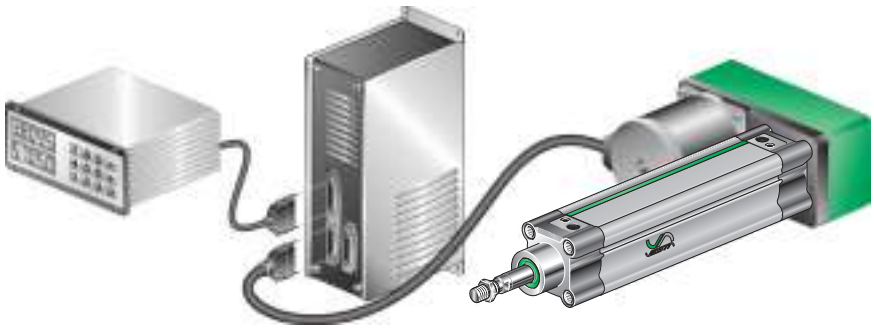


For magnetic switches features see:
Caratteristiche finecorsa magnetici vedi:
VNCR2, VNPR2, VNCE3, VNPE3.
Pag. A-19

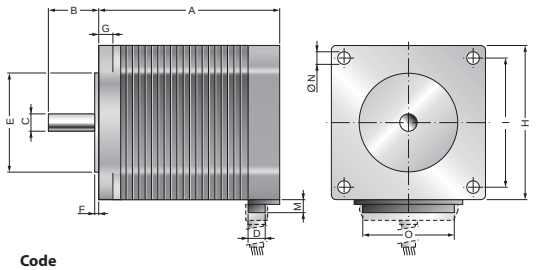
For further information on the resistance of materials to aggressive agents, please contact our technical sales department.
Per informazioni sul grado di resistenza dei finecorsa magnetici in ambienti specifici contattare il nostro ufficio tecnico-commerciale.

AZIONAMENTI E CONTROLLI

A richiesta sono fornibili azionamenti e controlli per motori a passo forniti con i cilindri elettrici



HYBRID STEPPING MOTORS FOR ESNW CYLINDERS / *MOTORI ELETTRICI PER CILINDRI ESNW*



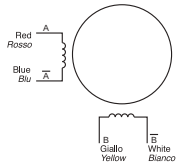
Code *Codice*	A	B	C	D	E	F	G	H	I	M	ØN	O
MP 2331-M16	78,5	21	6,3	7	38,1	1,6	4,8	56,4	47,1	5,5	5	32,2

STEPPER MOTOR
MOTORE PASSO-PASSO

MP 2331-M16

For size Ø32 / *Per taglia Ø32*

Circuit / *Circuito*



Bipolar connection / *Connessione bipolare:*

Phase/*Fase*	
A1	Red/*Rosso*
A2	Blue/*Blu*
B1	Yellow/*Giallo*
B2	White/*Bianco*

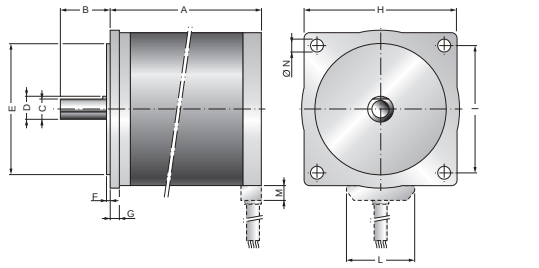
GENERAL AND ELECTRICAL SPECIFICATIONS

Step angle	1,8 ± 5%
Number of Phase	2
Insulation resistance	100 MΩ Min (500V DC)
Insulation class	Class B
Holding Torque	16 Kg•cm
Rated Voltage	5,0 V
Rated Current	1,8 A
Resistance per Phase	2,75 Ω
Inductance per Phase	10,8 mH

CARATTERISTICHE GENERALI ED ELETTRICHE

Angolo Passo	1,8 ± 5%
Numero di Fasi	2
Isolamento	100 MΩ Min (500V DC)
Classe di isolamento	Class B
Coppia	16 Kg•cm
Voltaggio	5,0 V
Corrente	1,8 A
Resistenza per Fase	2,75 Ω
Induttanza per Fase	10,8 mH

Cable standard lenght / *Lunghezza cavo standard:* 300 mm

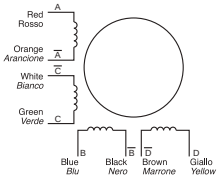


Code *Codice*	A	B	C	D	E	F	G	H	I	L	M	ØN
MP 3438-M46	94	30,2	8,5	9,5	73	1,6	4,8	82,5	69,6	37	16	5,5

STEPPER MOTOR
MOTORE PASSO-PASSO

MP 3438-M46

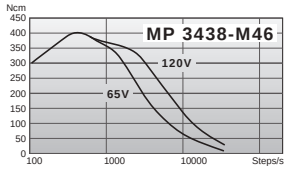
For size Ø50 / *Per taglia Ø50*



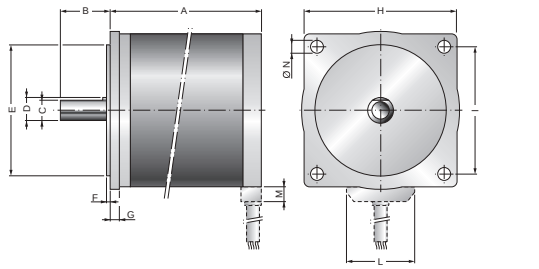
Circuit / *Circuito*

Bipolar parallel connection / *Connessione bipolare parallela:*

Phase/*Fase*	
A1	Red/*Rosso* + White/*Bianco*
A2	Orange/*Arancione* + Green/*Verde*
B1	Blue/*Blu* + Brown/*Marrone*
B2	Black/*Nero* + Yellow/*Giallo*



WIRING DIAGRAM - *DIAGRAMMA ELETTRICO*

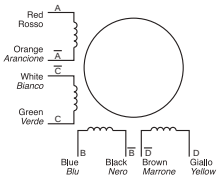


Code *Codice*	A	B	C	D	E	F	G	H	I	L	M	ØN
MP 3451-M76	132	30,2	8,5	9,5	73	1,6	4,8	82,5	69,6	37	16	5,5

STEPPER MOTOR
MOTORE PASSO-PASSO

MP 3451-M76

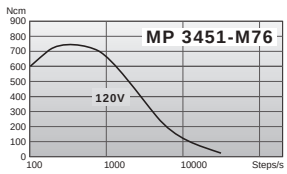
For size Ø50 / *Per taglia Ø50*



Circuit / *Circuito*

Bipolar parallel connection / *Connessione bipolare parallela:*

Phase/*Fase*	
A1	Red/*Rosso* + White/*Bianco*
A2	Orange/*Arancione* + Green/*Verde*
B1	Blue/*Blu* + Brown/*Marrone*
B2	Black/*Nero* + Yellow/*Giallo*



WIRING DIAGRAM - *DIAGRAMMA ELETTRICO*

GENERAL AND ELECTRICAL SPECIFICATIONS

	MP 3438-M46	MP 3451-M76
Step angle	1,8 ± 5%	1,8 ± 5%
Number of Phase	4	4
Insulation resistance	100 MΩ Min (500V DC)	100 MΩ Min (500V DC)
Insulation class	Class B	Class B
Weight	2,6 Kg	4,5 Kg
Rotator inertia	1200 g•cm	-

	MP 3438-M46	MP 3451-M76
Rated Voltage	2,76 V	5,64 V
Rated Current	4,6 A	6 A
Resistance per Phase	0,6 Ω ± 10%	0,94 Ω ± 10%
Inductance per Phase	2,7 mH ± 20%	4,5 mH ± 20%
Holding Torque	40 Kg•cm	75 Kg•cm
Detent torque	0,8 Kg•cm	0,8 Kg•cm

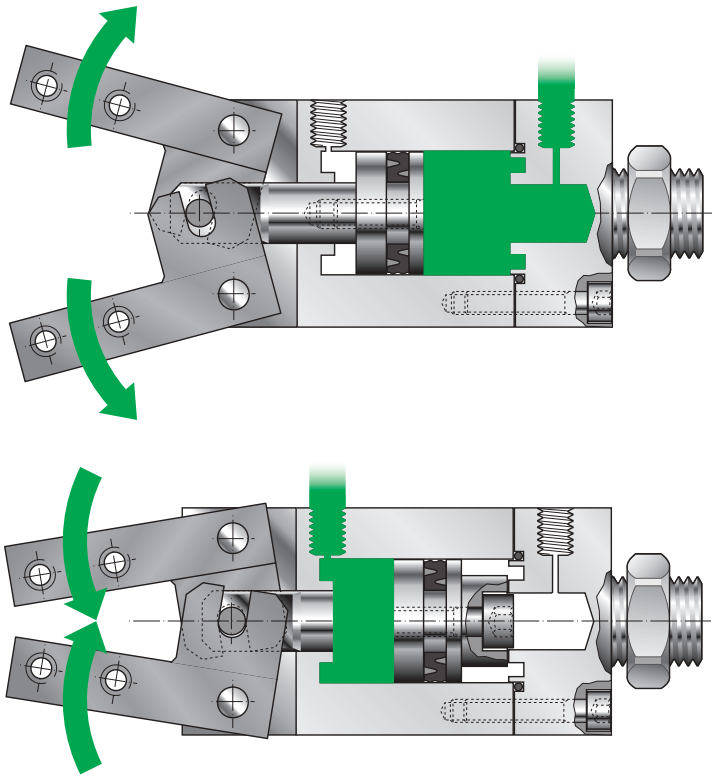
CARATTERISTICHE GENERALI ED ELETTRICHE

	MP 3438-M46	MP 3451-M76
Angolo Passo	1,8 ± 5%	1,8 ± 5%
Numero di Fasi	4	4
Isolamento	100 MΩ Min (500V DC)	100 MΩ Min (500V DC)
Classe di isolamento	Classe B	Classe B
Peso	2,6 Kg	4,5 Kg
Inerzia Rotore	1200 g•cm	-

	MP 3438-M46	MP 3451-M76
Voltaggio	2,76 V	5,64 V
Corrente	4,6 A	6 A
Resistenza per Fase	0,6 Ω ± 10%	0,94 Ω ± 10%
Induttanza per Fase	2,7 mH ± 20%	4,5 mH ± 20%
Coppia	40 Kg•cm	75 Kg•cm
Detent torque	0,8 Kg•cm	0,8 Kg•cm

SERIE **MH - MHM**

PNEUMATIC GRIPPERS SERIES
MANI DI PRESA A COMANDO PNEUMATICO SERIE



Series **MH** pneumatic grippers, simple and double effect, are avaiable in bores 16-20-32-50, magnetic from diameter 20 (**MHM**).
Also available a through rods version.
Gripping force from 4 Kg. to 60 Kg. at 6 bar.

*Le unità di presa Vesta serie **MH** a semplice e doppio effetto sono prodotte nei 4 alesaggi 16-20-32-50, magnetiche a partire dal diametro 20 (**MHM**).*
La forza di bloccaggio va da 4 a 60 Kg. a 6 bar.
E' disponibile anche una versione a stelo posteriore uscente.

GRIPPERS CODE SERIE MH / *CODICE DI IDENTIFICAZIONE DELLE MANI DI PRESA SERIE MH*

MH □ - □□ - □□

Base / *Base*

M Magnetic
Predisposto per interruttori magnetici

Bore
Alesaggio (mm):
Ø16 ..... **16**
Ø20 ..... **20**
Ø32 ..... **32**
Ø50 ..... **50**

SE Simple effect *Semplice effetto* — - □□
DE Double effect *Doppio effetto* — - □

NA Normally open *Normalmente aperta*
NC Normally closed *Normalmente chiusa*

0 Base *Base*
1 Back through rod *Stelo posteriore uscente*

For Ø16 no version M (Magnetic); for Ø50 no versions SE NA (Simple effect normally open) and SE NC (Double effect normally closed).
Per Ø16 la versione M (Magnetico) non è prevista; per Ø50 le versioni SE NA ed SE NC non sono previste.

TECHNICAL FEATURES

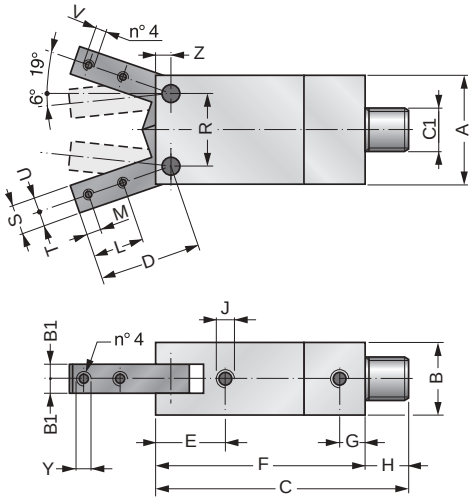
Body	Aluminium alloy.
Seals	Pre-lubricated lip seals.
Lubrification	Not required.
Medium	Filtered air.
Fingers and trunnions	Carbonium steel
Environment temperature range	-20 °C ÷ +80 °C
Bore	Ø16 ÷ Ø50
Max operating pressure	10 bar

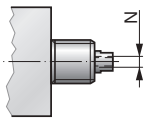
CARATTERISTICHE TECNICHE

Corpo	*Lega di alluminio.*
Guarnizioni	*Con profilo del labbro antiusura prelubrificato con grasso tipo "Long-Time".*
Lubrificazione	*Non necessaria.*
Fluido	*Aria filtrata.*
Dita di presa e perni	*Acciaio al carbonio*
Temperatura ambiente	*-20 °C ÷ +80 °C*
Alesaggi	*Ø16÷ Ø50*
Pressione max d'esercizio	*10 bar*

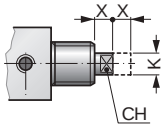
GRIPPER Ø16
UNITA' DI PRESA Ø16

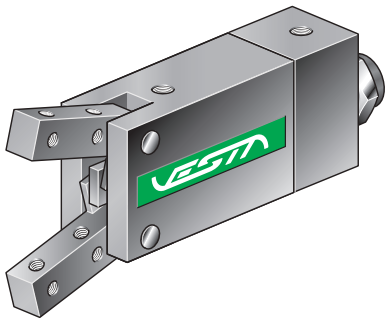
MH 16 .. ..





Through rod version
Versione stelo passante





A	B	B1	C	ØC1	CH	D	E	F	G	H	ØJ	ØK	L	M	ØN	R	S	T	U	ØV	X	ØY	Z
30	20	3,95	68,7	M12x1,25	5	28	21,2	56,7	7	12	M5x0,8	6	14	4	M3x0,5 (8mm)	20	8	4,5	3,5	M3x0,5	5	M4x0,7	6,2

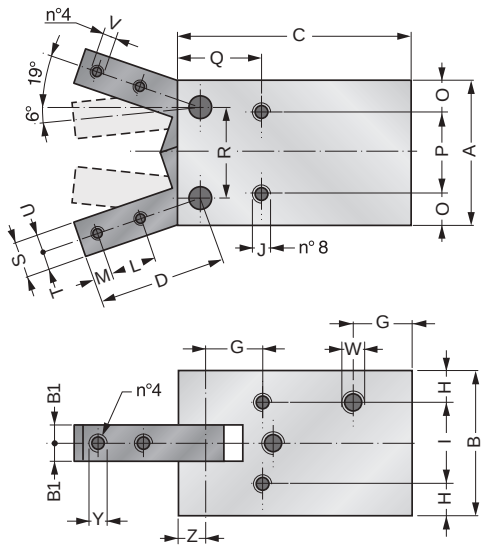
Weigth / *Peso* : 125 g

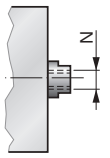
6 bar gripping force at 15 mm. from fingers fulcrum:
Forze di bloccaggio a 6 bar a 15 mm di distanza dal fulcro delle dita:

MH 16 DE	**6,5** Kg opening / *in apertura*	**5,5** Kg closing / *in chiusura*
MH 16 SE NC	**5,2** Kg opening / *in apertura*	
MH 16 SE NA	**4** Kg closing / *in chiusura*	

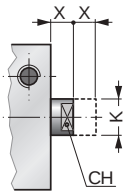
GRIPPER Ø20
UNITA' DI PRESA Ø20

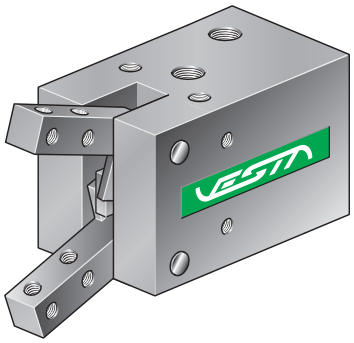
MH 20 .. ..





Through rod version
Versione stelo passante





A	B	B1	C	CH	D	G	H	I	ØJ	ØK	L	M	ØN	O	P	Q	R	S	T	U	ØV	X	ØY	Z	W
32	32	3,95	53,5	6	28	13,5	7	18	M4x0,7	8	10	4	M4x0,7 (8mm)	7	18	19,7	20	8	4,5	3,5	M3x0,5	5	M4x0,7	6,2	M5x0,8

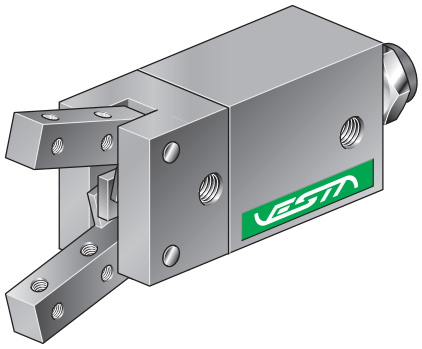
Weigth / *Peso* : 175 g

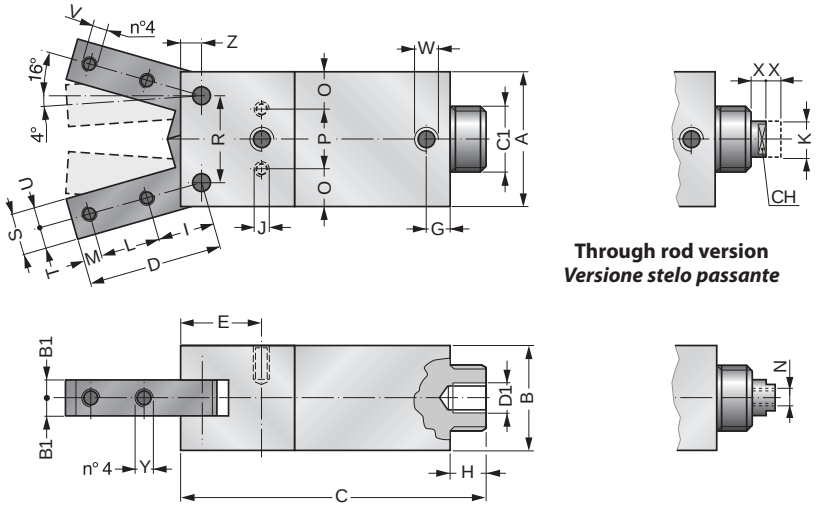
6 bar gripping force at 15 mm. from fingers fulcrum:
Forze di bloccaggio a 6 bar a 15 mm di distanza dal fulcro delle dita:

MH 20 DE	**12** Kg opening / *in apertura*	**10** Kg closing / *in chiusura*
MH 20 SE NC	**8,5** Kg opening / *in apertura*	
MH 20 SE NA	**7,5** Kg closing / *in chiusura*	

MH 32 .. ..

GRIPPER Ø32
UNITA' DI PRESA Ø32





Through rod version
Versione stelo passante

A	B	B1	C	ØC1	CH	D	ØD1	E	G	H	ØJ	ØK	I	L	M	ØN	O	P	R	S	T	U	ØV	ØW	X	ØY	Z
45	35	5,95	105,2	M22x1,5	10	45	M10x1,25	30,2	8	12	M5x0,8	12	19	20	6	M5x0,8 (10mm)	12,5	20	28	14	8	6	M5x0,8	G1/8"	5	M6x1	10,2

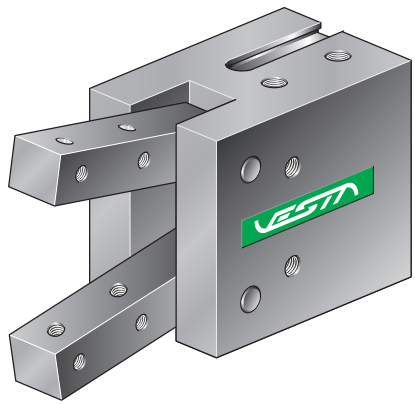
Weigth / *Peso* : 490 g

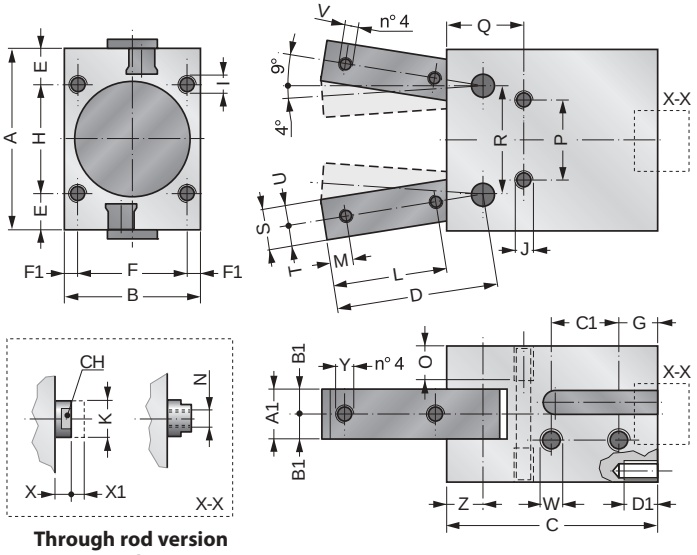
6 bar gripping force at 15 mm. from fingers fulcrum:
Forze di bloccaggio a 6 bar a 15 mm di distanza dal fulcro delle dita:

MH 32 DE	**24** Kg	opening / *in apertura*	**22** Kg	closing / *in chiusura*
MH 32 SE NC	**19,5** Kg	opening / *in apertura*		
MH 32 SE NA	**16,5** Kg	closing / *in chiusura*		

MH 50 .. ..

GRIPPER Ø50
UNITA' DI PRESA Ø50





Through rod version
Versione stelo passante

A	A1	B	B1	C	C1	CH	D	D1	E	F	F1	G	H	ØI	ØJ	ØK	L	M	ØN	O	P	Q	R	S	T	U	ØV	ØW	X	X1	ØY	Z
80	22	60	11	100	24	18	71	15	16	48	6	21	48	M8x1,25	M8x1,25	20	40	10	M6x1	15	35	39	48	18	10	8	M6x1	G1/8"	5	6	M8x1,25	18

Weigth / *Peso* : 1680 g

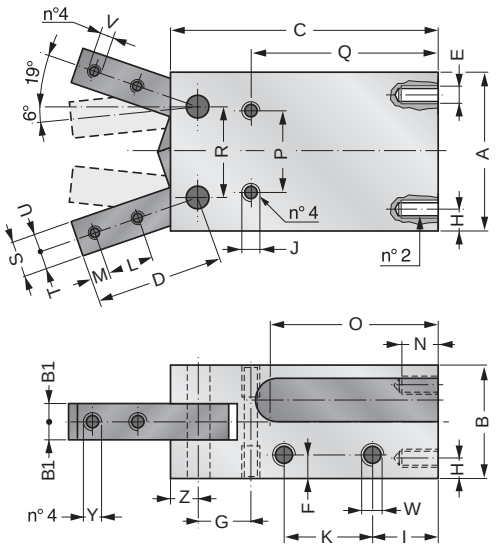
6 bar gripping force at 30 mm. from fingers fulcrum:
Forze di bloccaggio a 6 bar a 30 mm di distanza dal fulcro delle dita:

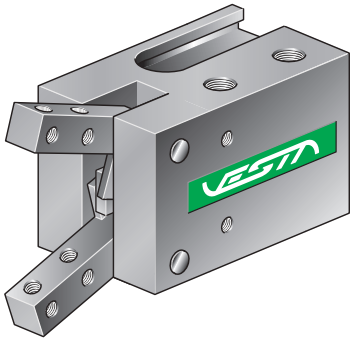
MH 50 DE	**60** Kg	opening / *in apertura*	**52** Kg	closing / *in chiusura*

Double acting version only / *Disponibile solo in versione doppio effetto*

MAGNETIC GRIPPER Ø20
UNITA' MAGNETICA Ø20

MHM 20 .. ..





A	B	B1	C	D	E	F	G	H	I	ØJ	K	L	M	N	O	P	Q	R	S	T	U	ØV	ØY	Z	W
35	25	3,95	59	28	M4x 0,7	5,2	11,5	4	14,5	M4x0,7	19,5	10	4	8	37	18	41,3	20	8	4,5	3,5	M3x0,5	M4x0,7	6,2	M5x0,8

Weigth / *Peso* : 175 g

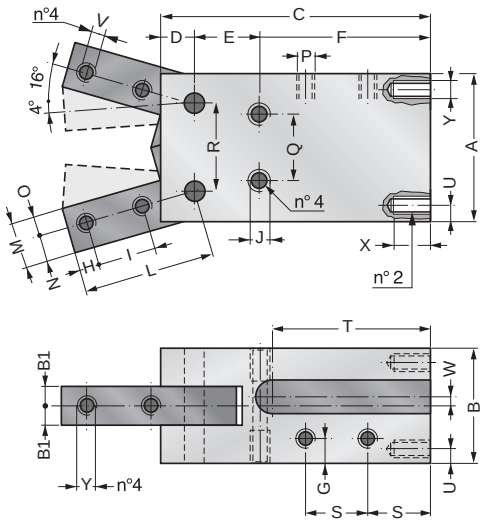
6 bar gripping force at 15 mm. from fingers fulcrum:

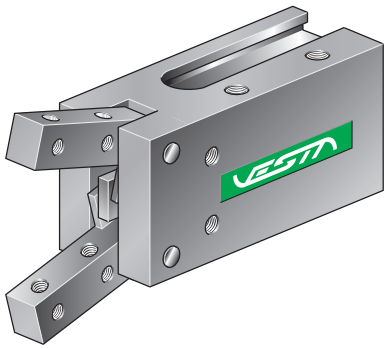
Forze di bloccaggio a 6 bar a 15 mm di distanza dal fulcro delle dita:

MHM 20 DE	**12** Kg opening / *in apertura*	**10** Kg closing / *in chiusura*
MHM 20 SE NC	**8,5** Kg opening / *in apertura*	
MHM 20 SE NA	**7,5** Kg closing / *in chiusura*	

MAGNETIC GRIPPER Ø32
UNITA' MAGNETICA Ø32

MHM 32 .. ..





A	B	B1	C	D	E	F	G	H	I	ØJ	L	M	N	O	P	Q	R	S	T	U	ØV	W	X	ØY
45	35	5,95	82	10,2	20	51,8	7	6	20	M6x1 (10mm)	45	14	8	6	M5x0,8	20	28	19	48	5	M5x0,8	2	11	M6x1

Weigth / *Peso* : 490 g

6 bar gripping force at 15 mm. from fingers fulcrum:

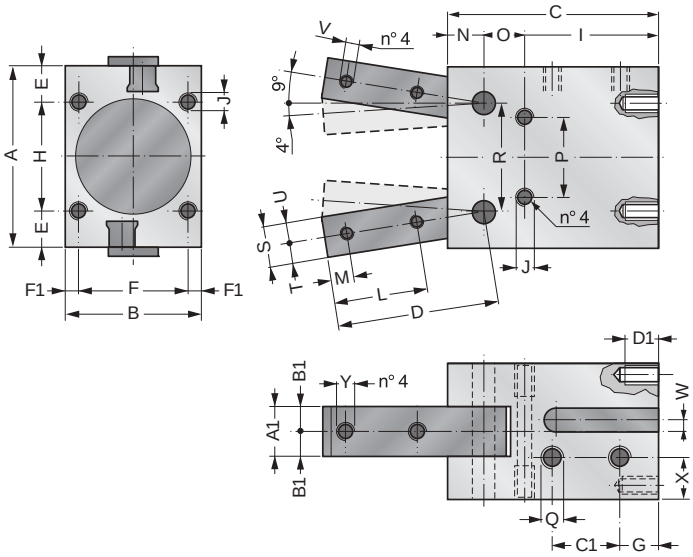
Forze di bloccaggio a 6 bar a 15 mm di distanza dal fulcro delle dita:

MHM 32 DE	**24** Kg opening / *in apertura*	**22** Kg closing / *in chiusura*
MHM 32 SE NC	**19,5** Kg opening / *in apertura*	
MHM 32 SE NA	**16,5** Kg closing / *in chiusura*	

MHM 50 .. ..

MAGNETIC GRIPPER Ø50
UNITA' MAGNETICA Ø50





A	A1	B	B1	C	C1	D	D1	E	F	F1	G	H	I	ØJ	L	M	N	O	P	Q	R	S	T	U	ØV	W	X	ØY
80	22	60	11	100	24	71	15	16	48	6	21	48	61	M8x1,25	40	10	18	21	35	G1/8"	48	18	10	8	M6x1	4	17	M8x1,25

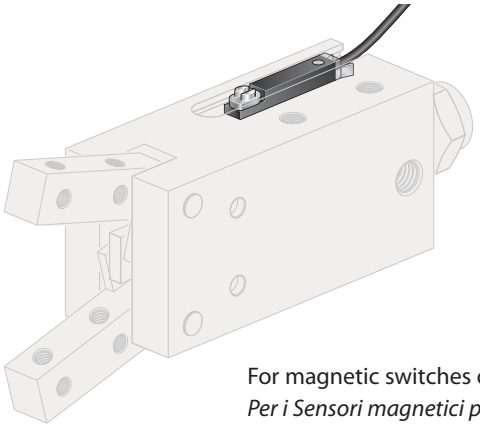
Weigth / *Peso* : 1680 g

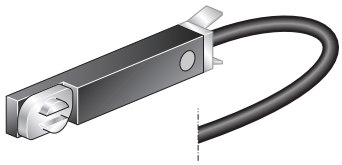
6 bar gripping force at 30 mm. from fingers fulcrum:

Forze di bloccaggio a 6 bar a 30 mm di distanza dal fulcro delle dita:

MHM 50 DE	**60** Kg opening / *in apertura*	**52** Kg closing / *in chiusura*
MHM 50 SE NC	**49** Kg opening / *in apertura*	
MHM 50 SE NA	**46** Kg closing / *in chiusura*	

MAGNETIC SWITCHES FOR MHM .. GRIPPERS / *FINECORSA PER MANI DI PRESA SERIE MHM ..*





For magnetic switches features see: - *Caratteristiche finecorsa magnetici vedi:*

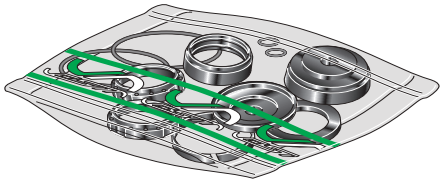
VNCR2, VNPR2, VNCE3, VNPE3.

Pag. A-19

For magnetic switches of Ø 50 mm please contact our technical department.
Per i Sensori magnetici per mani di presa Ø 50 mm si prega di contattare il nostro ufficio tecnico.

..... - SG

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO



Seals kit code = **Gripper code** + **Bore** + **- SG**:
(The kit includes all seals).

Codice del kit = ***Codice della mano di presa*** + ***Alesaggio*** + **- SG**:
(Il kit comprende tutte le guarnizioni necessarie).

Example / *Esempio:* **MHM 32 - SG**

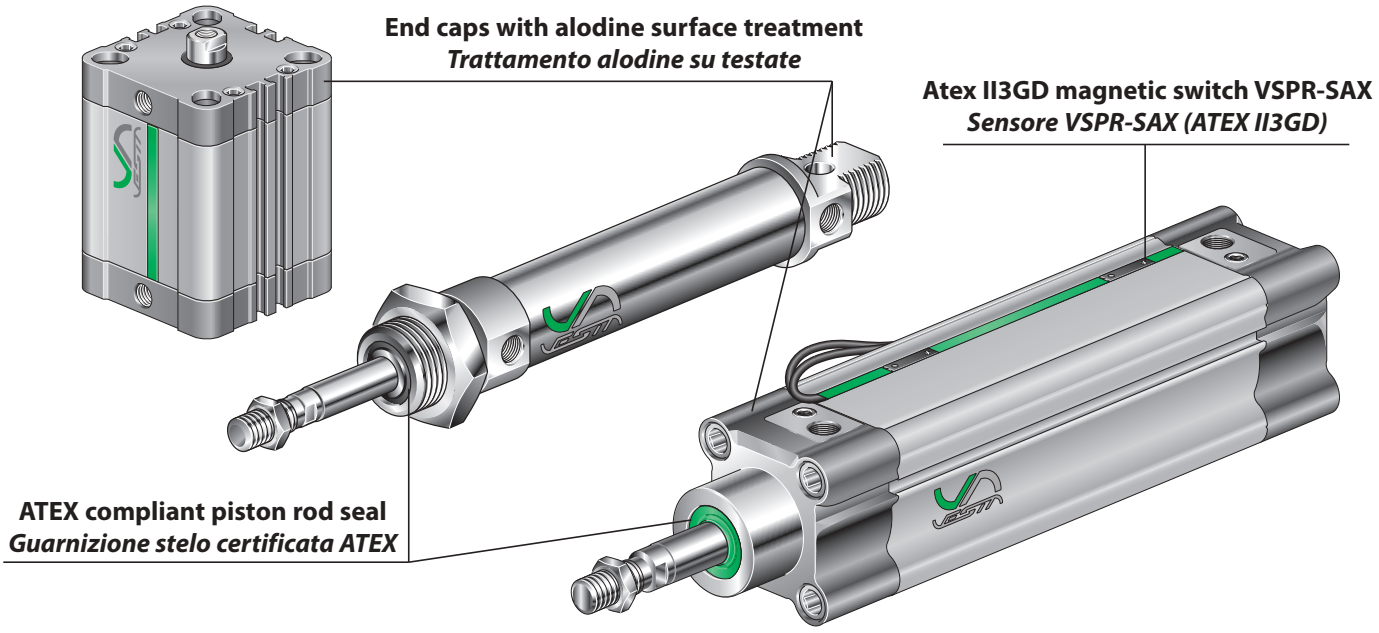
ATEX CYLINDERS RANGE
GAMMA CILINDRI ATEX

SERIE **ATEX**

TECHNICAL FEATURES / *CARATTERISTICHE COSTRUTTIVE*

Vesta ATEX cylinders satisfy all directives94/9/EC to avoid mechanical risks of ignition in explosive atmosphere (category II3GD). Design, materials and technical solutions are made to prevent mechanical sparks, electrostatic charges, heating of surfaces due to friction, etc. All these solutions make Vesta ATEX cylinders in "constructional safety". They grant the earthing of all their parts, due to alodine surface treatment of end caps. This treatment grants protection to products, while allows electrical conduction. All the parts are Atex compliant and cylinders have overcome Atex impact tests and protection degree IP65 tests.

I cilindri ATEX VESTA rispettano tutti i requisiti di sicurezza previsti dalla direttiva 94/9/CE per evitare il rischio meccanico di accensione di atmosfere potenzialmente esplosive di categoria II3GD.
Questo risultato si è ottenuto con la scelta progettuale di materiali e di soluzioni tecniche atti a prevenire scintillii, accumuli di cariche elettrostatiche, surriscaldamenti locali per attrito o sfregamento, ecc; pertanto la protezione viene garantita attraverso la sicurezza costruttiva.
I cilindri Atex Vesta consentono la messa a terra di tutte le loro parti, grazie al trattamento alodine sulle testate che permette la conduzione elettrica e la protezione dagli agenti esterni. Tutta la componentistica utilizzata soddisfa i requisiti Atex. I cilindri hanno superato i test d'impatto previsti dalla direttiva, nonché il test del grado di protezione IP 65.



- Atex category II3GD
- IP65 protection degree
- Polyuretan seals (XNWT, XSK, XXJSS), polyuretan and NBR (XDVM; XACM; XDSM).
- End caps with alodine surface treatment
- Stainless steel piston rod
- Medium T: 0°<Tfluido<25°C
- Enviroment T: -5°<Tamb<50°C
- Medium: filtered air (quality 5 ISO 8573-1)
- Lubrication not required
- For technical features of atex cylinders please see the corrispondent non atex cylinder
- For use instructions please see **www.vesta.it**
- For 94/9/EC atex directive please see pag B-113

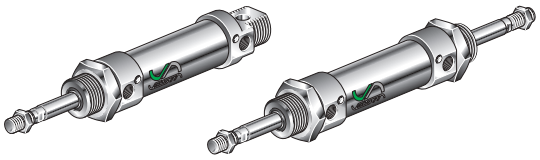
TECHNICAL FEATURES - *CARATTERISTICHE TECNICHE*

- *Classificazione atex II3GD*
- *Protezione IP65*
- *Guarnizioni poliuterano (XNWT, XSK, XXJSS), poliuiretano e NBR (XDVM; XACM; XDSM)*
- *Testate con trattamento alodine*
- *Steli in acciaio inox*
- *T fluido: 0°<Tfluido<25°C*
- *T ambiente: -5°<Tamb<50°C*
- *Fluido: aria filtrata (qualità 5 secondo ISO 8573-1)*
- *Lubrificazione non necessaria*
- *Per caratteristiche pneumatiche vedere codici corrispondenti senza la "X"*
- *Per manuale di uso e manutenzione consultare il sito **www.vesta it***
- *Per informazioni su direttiva 94/9/CE atex vedere pag B-113*

ATEX SERIE

ATEX CYLINDERS RANGE
GAMMA CILINDRI ATEX

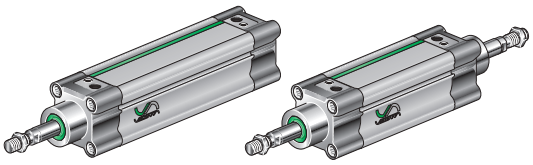
Pag. A-06 A-07



XACM .. /... *SINGLE ROD* / CILINDRO BASE STELO SEMPLICE
XACM .. /... P *THROUGH ROD* / STELO PASSANTE
XDVM .. /... *SINGLE ROD* / CILINDRO BASE STELO SEMPLICE
XDVM .. /... P *THROUGH ROD* / STELO PASSANTE

ISO 6432 II 3GD c T5 T 165 °C -5 < Ta < 50 °C

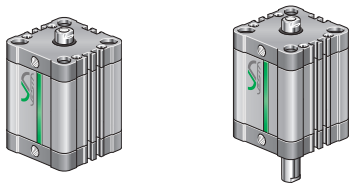
Pag. A-16



XNWT .. /... *SINGLE ROD* / CILINDRO BASE STELO SEMPLICE
XNWT .. /... P *THROUGH ROD* / STELO PASSANTE

ISO 15552 II 3GD c T5 T 160 °C -5 < Ta < 50°C

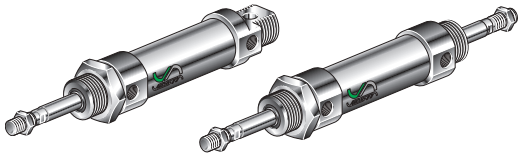
Pag. A-29



XNSK .. /... *SINGLE ROD* / CILINDRO BASE STELO SEMPLICE
XNSK .. /... P *THROUGH ROD* / STELO PASSANTE

UNITOP II 3GD c T5 T 165 °C -5 < Ta < 50°C

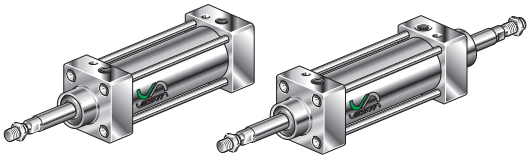
Pag. A-40



XDSM .. /... *SINGLE ROD* / CILINDRO BASE STELO SEMPLICE
XDSM .. /... P *THROUGH ROD* / STELO PASSANTE

ISO 6432 II 3GD c T5 T 165 °C -5 < Ta < 50 °C

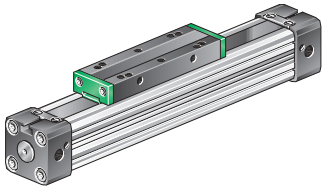
Pag. A-46



XXJSS .. /... *SINGLE ROD* / CILINDRO BASE STELO SEMPLICE
XXJSS .. /... P *THROUGH ROD* / STELO PASSANTE

ISO 15552 II 3GD c T4 T 170 °C -5 < Ta < 50 °C

Pag. A-88



XRLF .. /... *RODLESS PNEUMATIC CYLINDER* / CILINDRI PNEUMATICI SENZA STELO

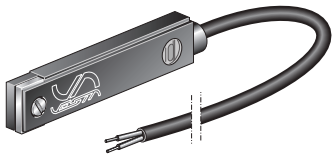
II 2G c T4 T -10 °C < Ta < + 60 °C

MAGNETIC SWITCHES FOR ATEX CYLINDERS / *FINECORSA MAGNETICI PER CILINDRI ATEX*

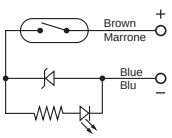
VSPR-SAX

WITH DIRECT CABLE
CON CAVO DIRETTO

II 3GD EEx n IIC T6 IP67 T 100 °C -20 < Ta < 70°C

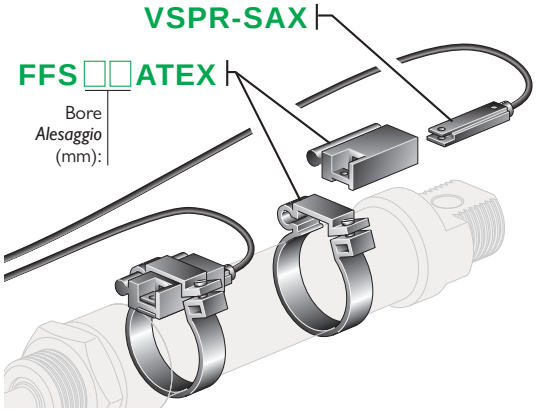


circuit / *Circuito*



Max ammitted current	*Corrente max ammessa*	0,1 A
Switching power	*Potenza induttiva*	3 W
Nominal voltage DC/AC	*Tensione nominale DC/AC*	24 V
Visual signal Led	*Led di segnalazione*	Si / Yes
Potential drop	*Caduta di tensione*	3 V
Electrical nominal life	*Vita elettrica nominale*	10 E 6
Mechanical nominal life	*Vita meccanica nominale*	10 E 9
Repeatability const. temp.	*Ripetibilità a temp. costante*	0,1 mm
Max working temperature	*Temp. max di funzionamento*	70 °C
Protection class	*Grado di protezione*	IP 67

ATEX roud cylinders fixing / *Staffa per cilindri tondi ATEX*



valves, solenoid valves
and manifolds
valvole, elettrovalvole
e connessioni multipolari



MULTIPOLE CONNECTION SYSTEM
SISTEMA DI CONNESSIONE MULTIPOLARE

SERIE **4HF**

The **4HF modular system** for solenoid valves with integrated electrical connections is easy to assemble, easy to expand or modify, thus saving time, space and connecting methods.
Designed in compact modules of two valves individually combined in their functions.
For an odd number of valves, it is necessary to use the single valve module positioned before the rear end plate.
The **4HF system** is available in two preassembled electrical configurations: 25 pin Sub-D for a max of 22 solenoids and 37 pin Sub-D for a max of 32 solenoids, suitable for 24 V. DC. and 24 V. AC. with led and varistor protection.

*Il **sistema Vesta 4HF** per il collegamento in isole modulari di elettrovalvole con tecnologia di connessione elettrica integrata, permette soluzioni personalizzate facili da assemblare con espansioni e modifiche veloci e flessibili da realizzare.*
Il sistema molto compatto consente notevole risparmio di spazio pur garantendo portate molto elevate e permette di ridurre in modo considerevole i tempi di assemblaggio.
E' composto di moduli a due posizioni valvola espandibili fino ad un massimo di 8 moduli e quindi un massimo di 16 posizioni di valvole, ognuna delle quali definita e personalizzata nella sua funzione.
E' previsto inoltre, per numero di valvole dispari, un modulo a singolo posto valvola da montare solo come ultima posizione.
*Il **sistema 4HF** è fornibile nelle due versioni di connessione:*
- sub D25, per un massimo di 22 solenoidi collegati;
- sub D37, per un massimo di 32 solenoidi collegati.
Unitamente al voltaggio standard 24V.DC., sono disponibili connessioni e solenoidi in versione 24V.AC. ed entrambe le soluzioni hanno circuito di protezione con led a varistore.



TECHNICAL FEATURES

Standard voltages	24 V. DC. - 24V. AC.
Protection class	IP65
Nominal flow	850 Nl/min.
Power consumption	1 Watt (DC) - 3 VA (AC).
Lubrication	Not required.
Working pressure supply	-0,9 ÷ 10 bar
Pilot pressure supply	2,5 ÷ 8 bar
Connections	Sub-D 25 for 22 solenoid connections Sub-D 37 for 32 solenoid connections
Coil signal	Led + varistor protection.
Working ports	Bottom and side G1/8", or push-in fittings Ø8 on side.
Manual override	Push and with detent.
4HF valve functions	5/2 - 5/3 - 3/2 NO - 3/2 NC.

Average response and frequence (pilot pressure = 6 bar):

Average actioning response	16ms (1 solenoid valve) 12ms (2 solenoids valve)
Average disactioning response	22ms (1 solenoid valve)
Nominal max frequence	22Hz (1 solenoid valve) 35Hz (2 solenoids valve)

CARATTERISTICHE TECNICHE

Tensioni standard	*24 V DC - 24V AC*
Grado di protezione	*IP65*
Portata nominale	*850 Nl/min.*
Potenza assorbita	*1 Watt (DC) - 3 VA (AC).*
Lubrificazione	*Not required.*
Pressione di lavoro	*-0,9 ÷ 10 bar*
Pressione di pilotaggio	*2,5 ÷ 8 bar*
Connessioni	*Sub-D 25 per 22 solenoidi* *Sub-D 37 per 32 solenoidi*
Segnale solenoide	*Circuito di protezione con led a varistore.*
Utilizzi	*Sul fondo e laterali G1/8" o laterali tubo Ø8.*
Comando manuale	*Premere e ruotare per bloccaggio*
Tipo valvola 4HF	*5/2 - 5/3 - 3/2 NO - 3/2 NC.*

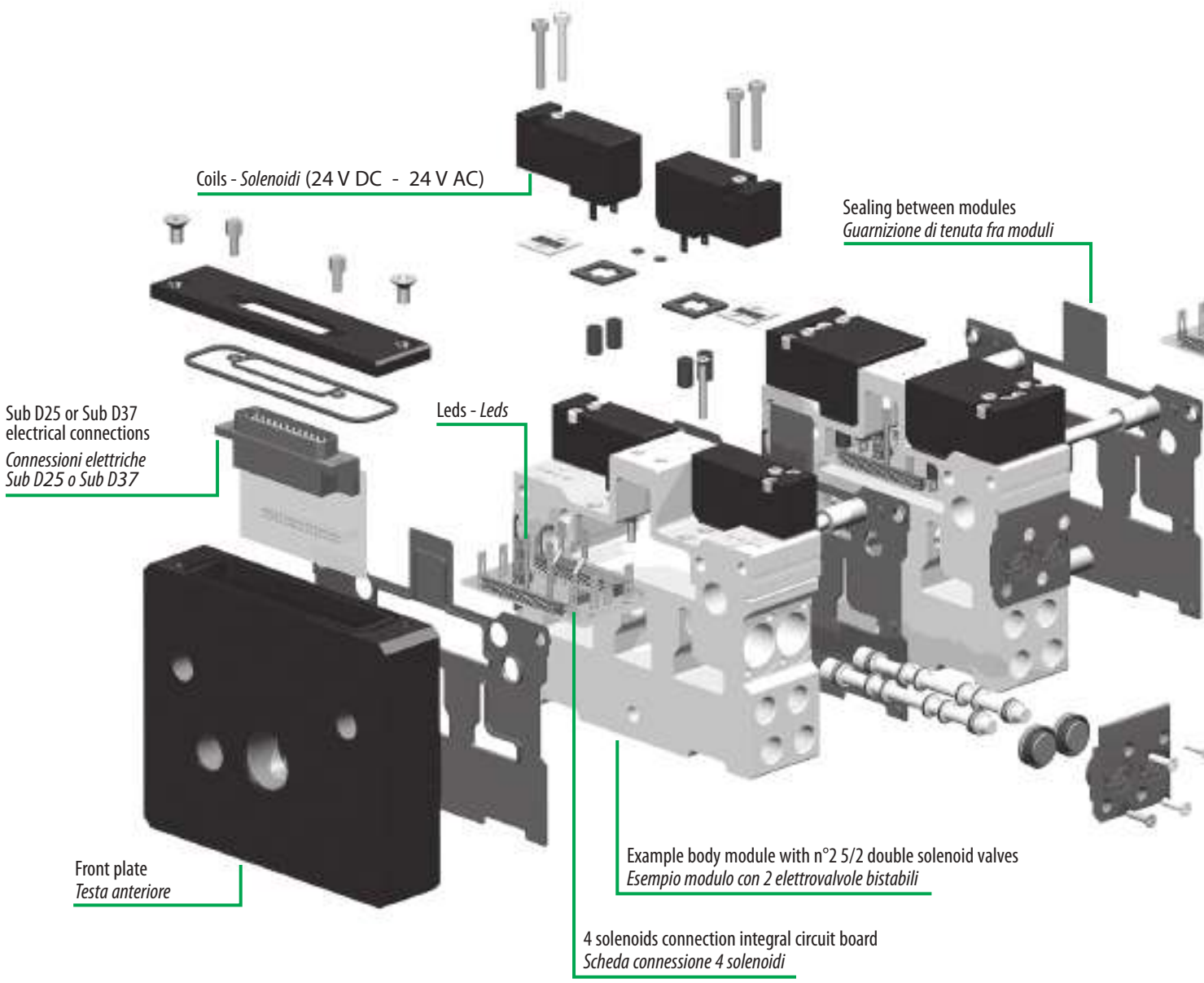
Tempi di risposta e frequenze (con pressione di alimentazione dei pilotaggi = 6 bar):

Tempo di inserzione	*16ms (valvole 1 solenoide)* *12ms (valvole 2 solenoidi)*
Tempo di disinserzione	*22ms (valvole 1 solenoide)*
Frequenza massima	*22Hz (valvole 1 solenoide)* *35Hz (valvole 2 solenoidi)*

4HF MODULAR SYSTEM TECHNICAL FEATURES / *CARATTERISTICHE TECNICHE SISTEMA MODULARE 4HF*

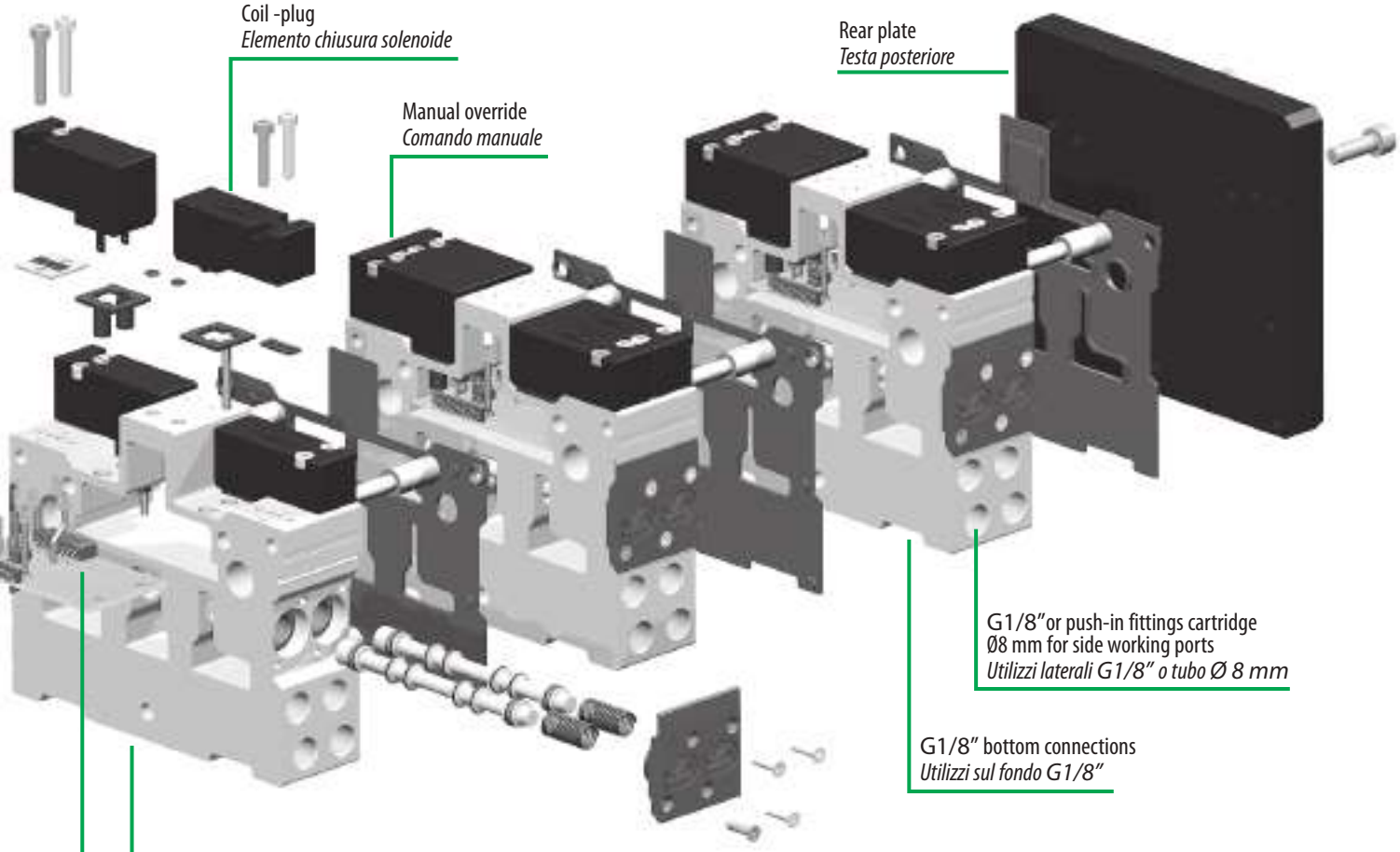
The **4HF Multipole system** assembly is a solid and sealed link of valve modules with integral circuit board, connecting solenoids (24v DC/AC) receiving signals from a central position (See pages B-09...). Each module comprises of a dual body offering two 5/2 or two 5/3 or four 3/2 valve combinations. For an odd number of valves it is available a single valve module, to use only as last rear position of manifold.
The **4HF system** offers individual functionality in combination to provide flexibility and reliability in a tested and proven system.

*La composizione del **sistema 4HF** é ottenuta mediante accostamento in tenuta di moduli dotati ognuno di scheda a circuito stampato, con led e varistore di protezione, per il collegamento e la trasmissione dei segnali ai solenoidi secondo posizioni Sub D (rif. pagine B09).*
Ogni modulo é costituito da n°2 posti valvola 5/2 o 5/3 o di max n° 4 posti valvola 3/2, ciascuna delle quali si può definire nella sua funzione individuale e combinare con ognuna delle altre, in modo flessibile e rapido per l'ottenimento di isole personalizzate e flessibili, seguendo schemi di pagg. B-08. Per numero di posizione valvole dispari é disponibile il modulo singolo da montare solo come ultima posizione.



MULTIPOLE CONNECTION SYSTEM
SISTEMA DI CONNESSIONE MULTIPOLARE

SERIE **4HF**



BUILDING FEATURES / *CARATTERISTICHE COSTRUTTIVE*

A



Manual override push and with detent.

Comando manuale: premere e ruotare per bloccaggio.

B



Working ports: bottom and side 1/8" ported or push-in fittings Ø8.

Utilizzi: sul fondo e laterali 1/8" o laterali tubo Ø8.

C



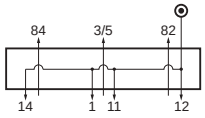
Sub-D 25 for 22 solenoid connections.
Sub-D 37 for 32 solenoid connections.

Sub-D 25 per 22 solenoidi.
Sub-D 37 per 32 solenoidi.

EXAMPLES COMBINATION MODULES / *ESEMPI DI CONFIGURAZIONE MODULI*

4HF..CS-..-...

FRONT PLATE
TESTATA ANTERIORE

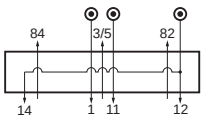




Front plate common supply
Testata anteriore ingressi in comune

4HF..SS-..-...

FRONT PLATE
TESTATA ANTERIORE

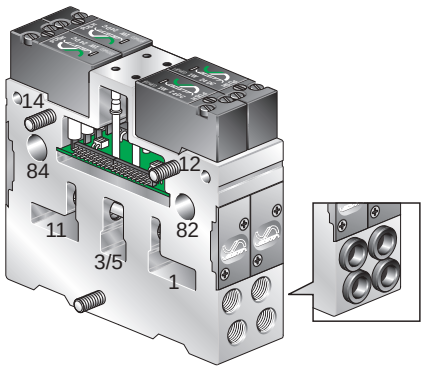




Front plate with three separate supplies
Testata anteriore ingressi separati

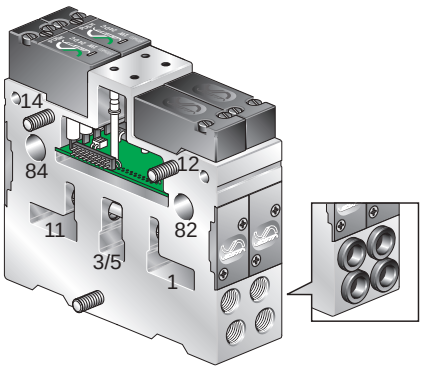
- □□ -

DOUBLE SOLENOID VALVES COMBINATION MODULE
CONFIGURAZIONE MODULO VALVOLE A DOPPIO SOLENOIDE



- □□ -

SINGLE SOLENOID VALVES COMBINATION MODULE
CONFIGURAZIONE MODULO VALVOLE A SINGOLO SOLENOIDE



-X□-

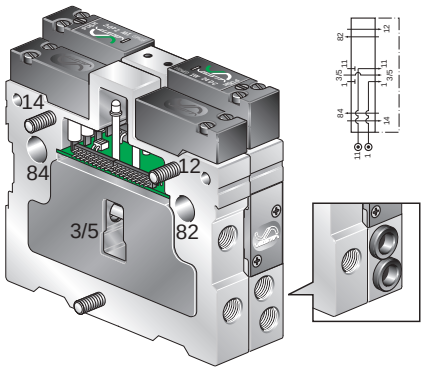
FRONT INTERMEDIATE PRESSURE SEPARATOR WITH SINGLE VALVE MODULE
ELEMENTO SEPARAZIONE PRESSIONI DISPARI

-□Y-

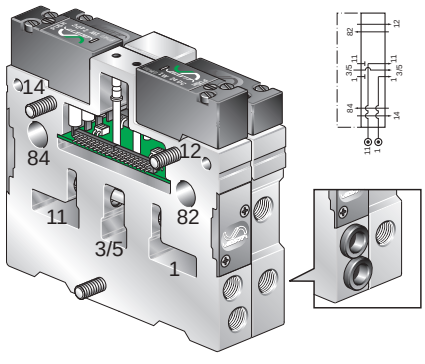
FRONT INTERMEDIATE PRESSURE SEPARATOR WITH SINGLE VALVE MODULE
ELEMENTO SEPARAZIONE PRESSIONI PARI

-□-

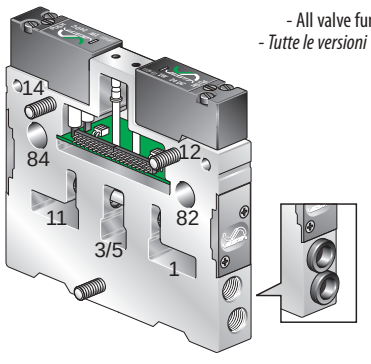
SINGLE VALVE MODULE
POSTO VALVOLA SINGOLO



With intermediate air supplies
Con alimentazioni supplementari



With intermediate air supplies
Con alimentazioni supplementari

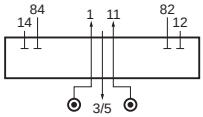


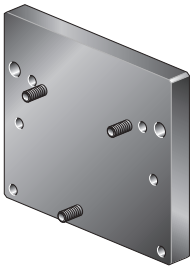
- All valve functions
- *Tutte le versioni valvola*

Only rear last position on manifold
Solo come ultimo posto dispari

4HF....-..-P..

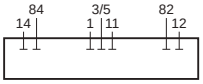
REAR BLIND PLATE
TESTATA POSTERIORE





4HF....-..-S..

REAR PLATE
TESTATA POSTERIORE

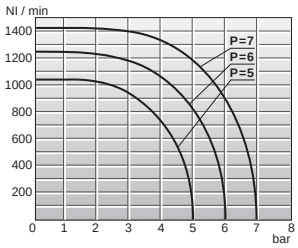




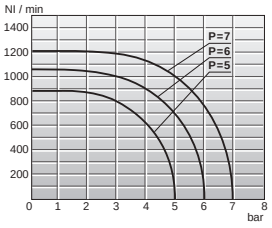
Supplementar exhaust and supplies
Testata posteriore con scarico ed alimentazione supplementari

AIR FLOW DIAGRAM / *DIAGRAMMA DELLE PORTATE*

AIR FLOW DIAGRAM / *DIAGRAMMA DELLE PORTATE*



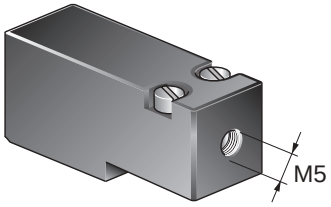
ONLY 5/3 VALVE MID POSITION CLOSED
SOLO VALVOLA 5/3 CENTRI CHIUSI



PNEUMATIC PILOT / *FONDELLO PNEUMATICO*

PNEUMATIC PILOT INTERFACE
CONNESSIONE PER L'AZIONAMENTO PNEUMATICO

PPHF



TECHNICAL FEATURES

Standard tensions	24 V DC; 24 V AC (50/60 Hz)
Duty cicle	100% ED
Power at 20°C	1 Watt DC; 3 VA AC
Operating temperature range	-30 °C ÷ +50 °C
Insulation	Class F
Materials	Glass reinforced Polyamide 6.6

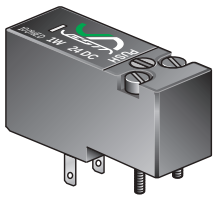
CARATTERISTICHE TECNICHE

Tensioni standard	24 V DC; 24 V AC (50/60 Hz)
Funzionamento	*100% ED*
Potenza assorbita a 20 C°	*1 Watt in DC; 3 VA in AC*
Limiti di temperatura ambiente	*-30 °C ÷ +50 °C*
Bobina	*Bobina completa classe F*
Materiali	*Poliammide 6.6 caricata vetro*

SOLENOID OPERATORS / *ELETTROPILOTI*

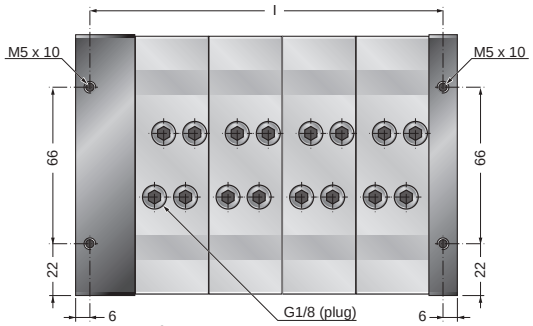
SOLENOID OPERATORS
ELETTROPILOTI

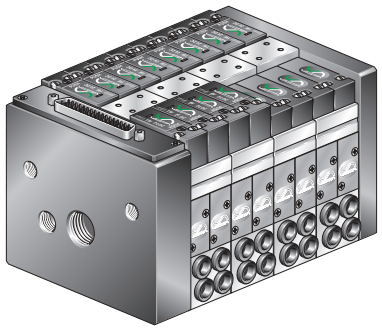
CHF24 . C

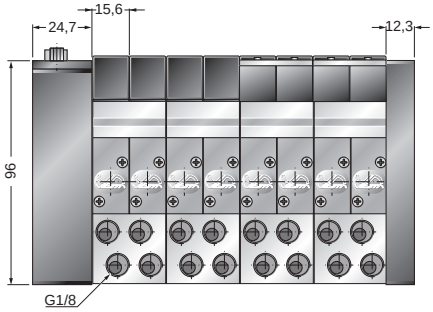


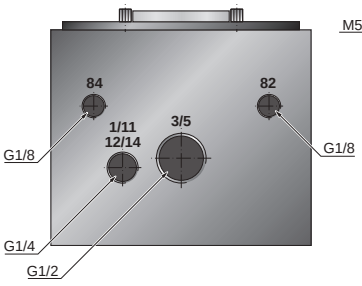
Code ordination	**Voltage**
Codice ordinazione	***Tensione***
CHF24DC	24 V DC
CHF24AC	24 V 50/60Hz AC

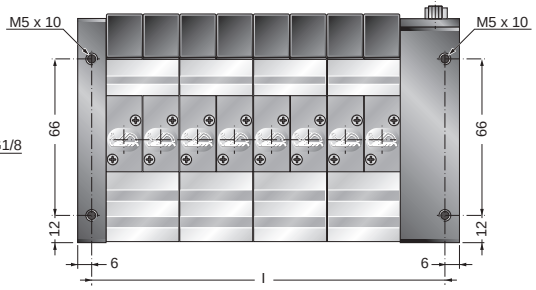
OVERALL DIMENSIONS / *DIMENSIONI DI INGOMBRO*

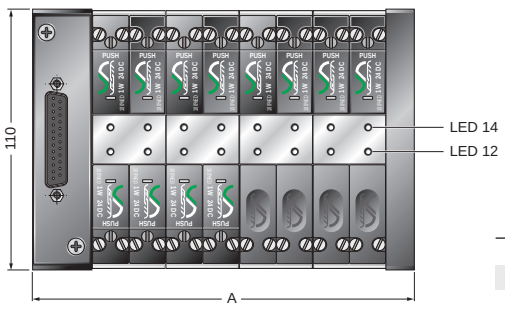












Number valve stations / *Numero posti valvola*

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A	68	84,5	99,4	115,5	130,5	147	162	178	193	209	224	240,5	255,5	271,5	286,5
I	56	72,5	87,5	103,5	118,5	135	150	166	181	197	212	228,5	243,5	259,5	274,5

4HF MODULAR SYSTEM IDENTIFICATION CODE / *CODICE DI IDENTIFICAZIONE SISTEMA MODULARE 4HF*

Max 16 valve stations / *Max16 posti valvola*

4HF □□ □□ - □□ - □□ - □□ - □□ - □ - □ □ □

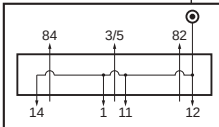
25 25 pin SUB-D connection
Connessione Sub-D 25

37 37 pin SUB-D connection
Connessione Sub-D 37

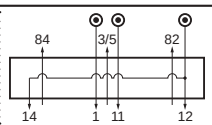
T Thread G1/8" working ports / *Utilizzi filettati G1/8"*
R Push-in fittings (lateral) Ø8 / *Cartucce Ø8 laterali*

0 Solenoid operators / *Solenoidi:* 24 V DC
5 Solenoid operators / *Solenoidi:* 24 V AC

Only last rear station for odd number of valves
Solo come singolo posto valvola finale



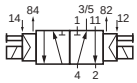
CS Front plate common supply
Testata anteriore ingressi in comune



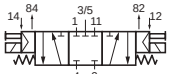
SS Front plate with three separate supplies
Testata anteriore ingressi separati

MANIFOLD VALVE FUNCTIONS PRIORITY FROM FRONT TO REAR
SEQUENZA DI MONTAGGIO FUNZIONI VALVOLE DALLA TESTATA ANTERIORE

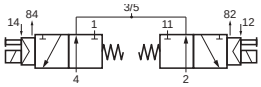
VALVE STATIONS / POSTI VALVOLA



B 5/2 ways double solenoid valve
Valvola 5/2 bistabile doppio solenoide

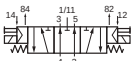


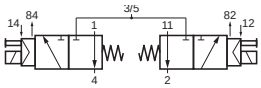
C 5/3 ways valve mid position closed
Valvola 5/3 centri chiusi



D n°2 3/2 ways valves normally closed
n°2 valvole 3/2 normalmente chiuse

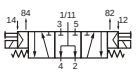
5/3 equivalent / *5/3 equivalente*

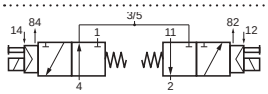




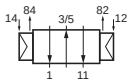
E n°2 3/2 ways valves normally open
n°2 valvole 3/2 normalmente aperte

5/3 equivalent / *5/3 equivalente*

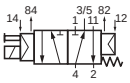




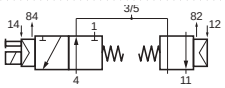
F n°2 3/2 ways valves: 1 normally open and 1 normally closed
n°2 valvole 3/2; 1 normalmente aperta e 1 normalmente chiusa



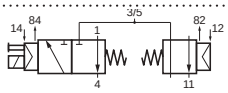
W Free place for double solenoid valve
Posto vuoto bistabile



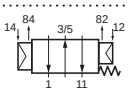
M 5/2 ways single solenoid valve
5/2 monostabile singolo solenoide



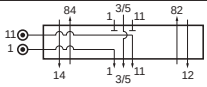
G n°1 3/2 ways single solenoid valve normally closed
n°1 valvola 3/2 normalmente chiusa



H n°1 3/2 ways single solenoid valve normally open
n°1 valvola 3/2 normalmente aperta

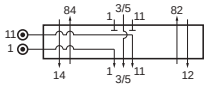


V Free place for single solenoid valve
Posto vuoto monostabile



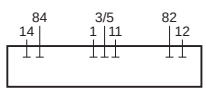
X Intermediate blind separator with supplementary supplies (front side)
Elemento separazione pressioni con ingressi supplementari (dispari)

Example / *Esempio*
- X □ -

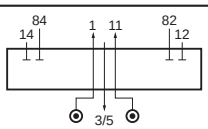


Y Intermediate blind separator with supplementary supplies (rear side)
Elemento separazione pressioni con ingressi supplementari (pari)

Example / *Esempio*
- □ Y -



P Blind rear plate
Testata posteriore cieca



S Rear plate with supplementar exhaust and air supplies
Testata posteriore scarico ed alimentazione supplementari

CODE EXAMPLE / *ESEMPIO DI ORDINAZIONE*

Number 9 valve stations / *Numero 9 posti valvola*

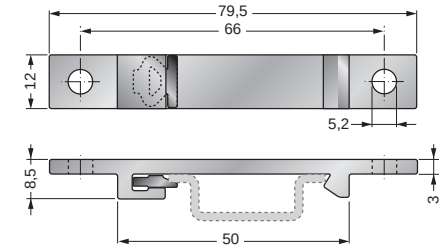
4HF 25 CS - BB - BC - XM - MM - M - P0T

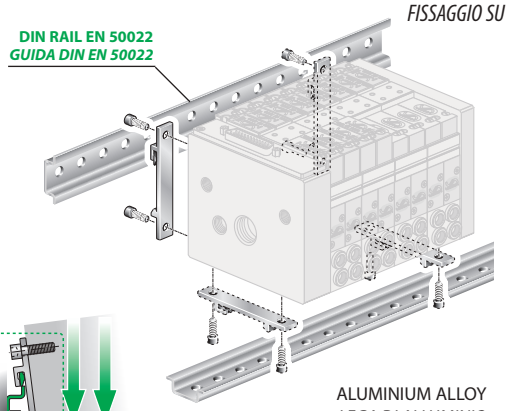
- 25 pin SUB-D connection / *Connessione Sub-D 25*
- Front plate common supply / *Testata anteriore ingressi in comune*
- 5/2 ways double solenoid valve / *Valvola 5/2 bistabile doppio solenoide*
- 5/3 ways valve mid position closed / *Valvola 5/3 centri chiusi*
- Front intermediate pressure separator / *Elemento separazione pressioni con ingressi supplementari (dispari)*
- 5/2 ways single solenoid valve / *5/2 monostabile singolo solenoide*
- 5/2 ways single solenoid valve (single valve module) / *5/2 monostabile singolo solenoide (singolo posto valvola)*
- Blind rear plate / *Testata posteriore cieca*
- Solenoid operators / *Solenoidi:* 24 V DC
- Thread G1/8" working ports / *Utilizzi filettati G1/8"*

FIXING ACCESSORIES / *ACCESSORI DI FISSAGGIO*

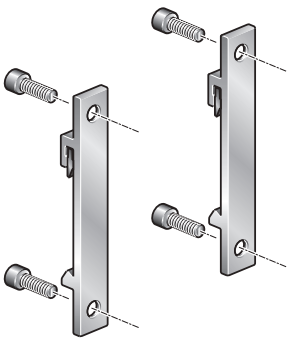
Note: the fixing screws (N°2 M5x10) are included in the supply of the fittings. The brackets are supplied in couple
le viti di fissaggio (N°2 M5x10) *sono comprese nella fornitura degli accessori. Le staffe vengono fornite in coppia.*

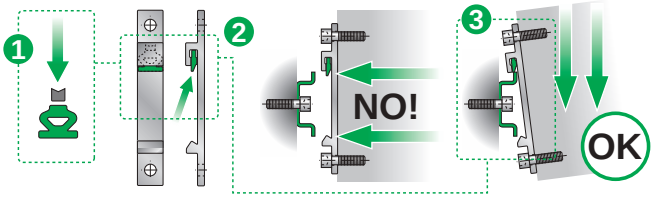
BRACKETS FOR FIXING ON DIN RAIL / *FISSAGGIO SU GUIDA DIN* — **BRHF**



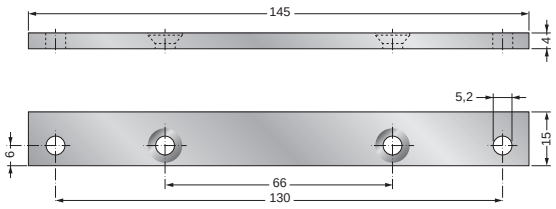


ALUMINIUM ALLOY
LEGA DI ALLUMINIO

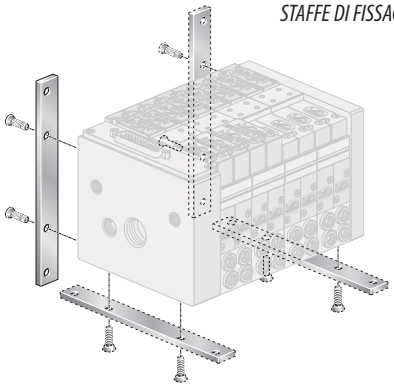


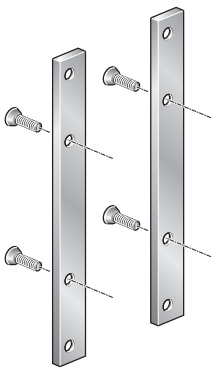


FIXING FOR WALL MOUNTING / *STAFFE DI FISSAGGIO A PARETE* — **FLHF**

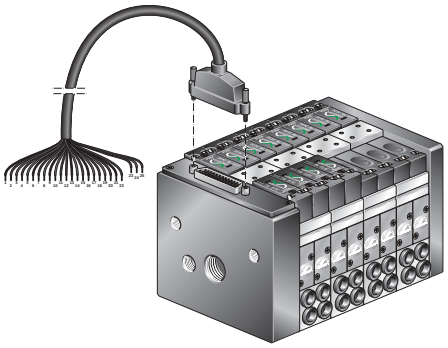


ALUMINIUM ALLOY / *LEGA DI ALLUMINIO*





ELECTRICAL CONNECTIONS / *CONNESSIONI ELETTRICHE*



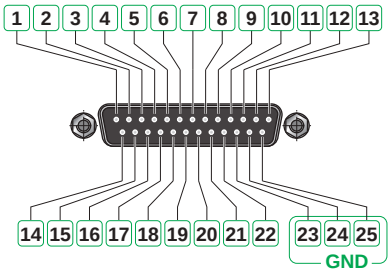
Cable has color coated wires connecting solenoid valves in according to their phisycal position on the manifold.
With a single system you can operate up to 32 solenoids for SUB D 37 or 22 solenoids
for SUB D 25 in any valves configuration.
Pin SUB D sequence number and wires colour are specified in the connection package.

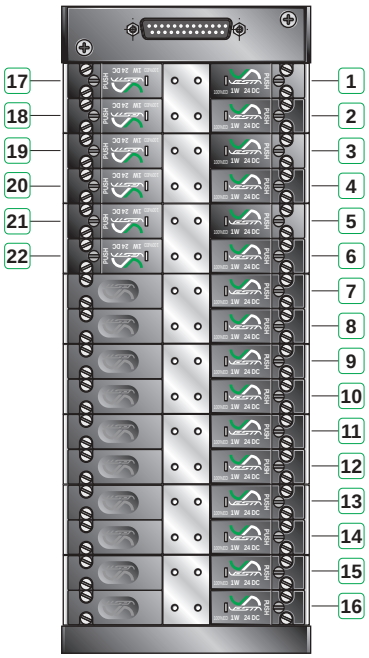
La corrispondenza tra colore del conduttore e elettrovalvola segue la posizione di montaggio fisico della valvola.
Nella configurazione SUB D 37 si possono comandare fino ad un massimo di 32 solenoidi, o un massimo di 22 nella configurazione SUB D 25, in qualsiasi combinazione di valvole adottata.
La corrispondenza tra N° di sequenza dei PIN del SUB-D e colore dei cavi é specificata nel foglio allegato alla confezione del cavo.

SUB D 25

Reference position coils for **Sub D25** connections (max 22 coils).

*Riferimento di posizione solenoidi per collegamenti a connessione **Sub D25** (max 22 solenoidi).*

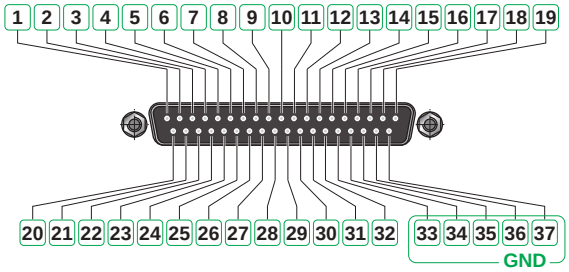


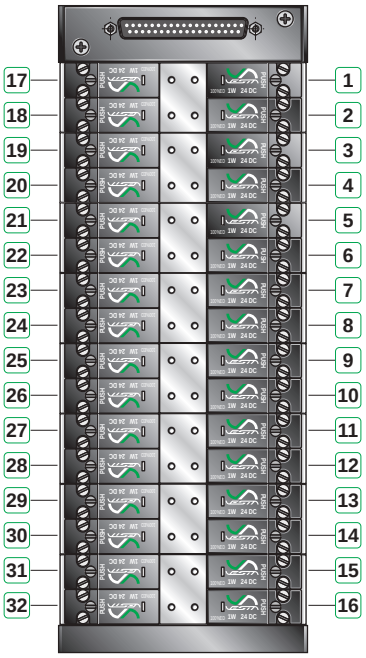


SUB D 37

Reference position coils for **Sub D37** connections (max 32 coils).

*Riferimento di posizione solenoidi per collegamenti a connessione **Sub D37** (max 32 solenoidi).*





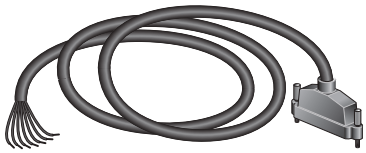
- FRONT -

- REAR -

WPC-..-...

CONNECTION CABLE FOR SUB D
CAVO DI CONNESSIONE SUB D

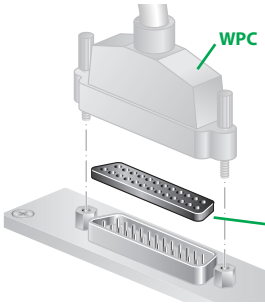
WPC-25- □□□ For / per SUB D 25
WPC-37- □□□ For / per SUB D 37



Standard lenght
Lunghezza standard
025 - 2500 mm
050 - 5000 mm

SSPC-..

CONNECTION SEAL
GUARNIZIONE PER CONNETTORE

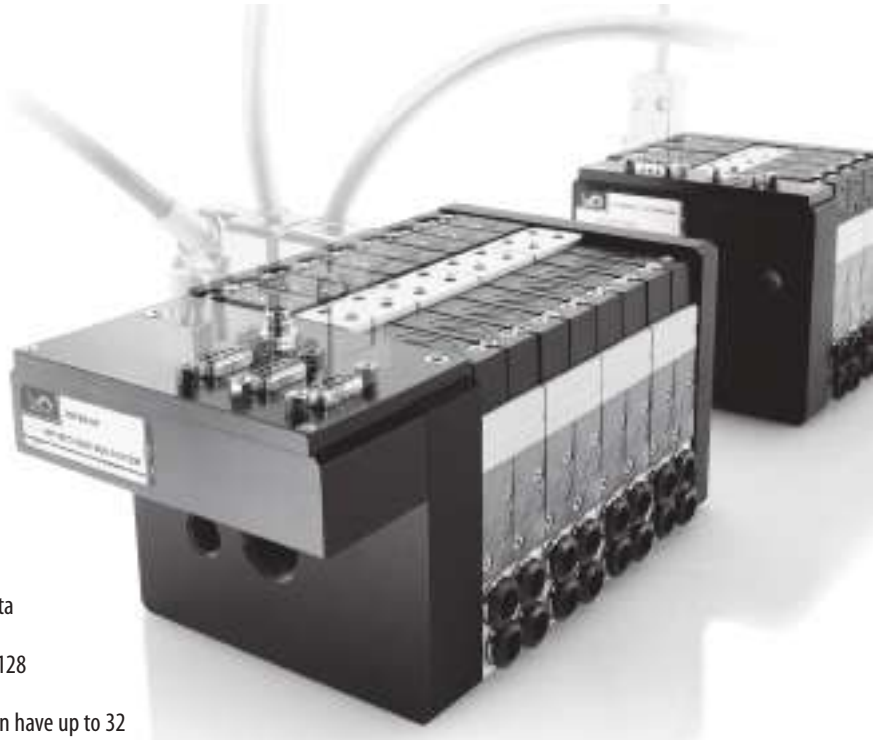


WPC connection seal
for granting IP 65 protection

Guarnizione per garantire
la protezione IP 65
*nella connessione del cavo **WPC***

SSPC-25 For / per **WPC-25**
SSPC-37 For / per **WPC-37**

4hf NETLOGIC



• The 4hf NETLOGIC filed bus slave node is an integrated system that allows to run and operate a complete set of digital process data in both directions: from/to master to/from field.
• The slave node is made by a bus processor able to manage up to 128 digital outputs (solenoids) and up to 128 digital inputs (switches).
• The bus processor is integrated in the initial slave island which can have up to 32 solenoids and 6 further expansion islands with max 16 solenoids each. It's also available an 8 connections output box to operate remote digital outputs with a power up to 10W each.
• Digital inputs can be connected by input collector boxes with 8 connectors each.
• All the above makes the 4hf NETLOGIC a very flexible, capable and compact solution for easy installation and excellent performances.

• Il nodo VESTA input/output 4hf-NETOLOGIC realizza uno slave da inserire in una rete fieldbus. Nella sua massima potenzialità è composto da un'isola 4HF iniziale con un processore integrato, da max 6 isole 4HF di espansione, da max 16 ciabatte di raccolta segnali digitali dal campo ed eventuali ciabatte di output per segnali digitali di comando remoti nel campo.
• La soluzione intergrata è molto compatta e flessibile, consente il massimo sfruttamento delle potenzialità dello slave grazie alle batterie di espansione alle ciabatte di input e output.

Expansion strenght (output and input) - *Espandibilità massima (output e input)*

OUTPUT	Max 128 (up to 128 included remote outputs) *Max 128 (Bobine 4hf digitali 24V DC 1 WATT, comprese altre uscite digitali 10W 24V DC con ciabatte di output).*
INPUT	128 (digital 24V dc) - *128 (digitali 24V DC)*

• IP65 (M12 version - *in versione M12*)
• Environment temperature range -10 ÷ +50°C / *Temperatura ambiente -10 ÷ +50°C*
• Bus specific diagnostic leds / *Led di diagnostica di comunicazione specifici del bus*
• Single node electrical supply 24V DC on initial 4hf island / *Unica alimentazione 24V DC su isola 4hf iniziale*

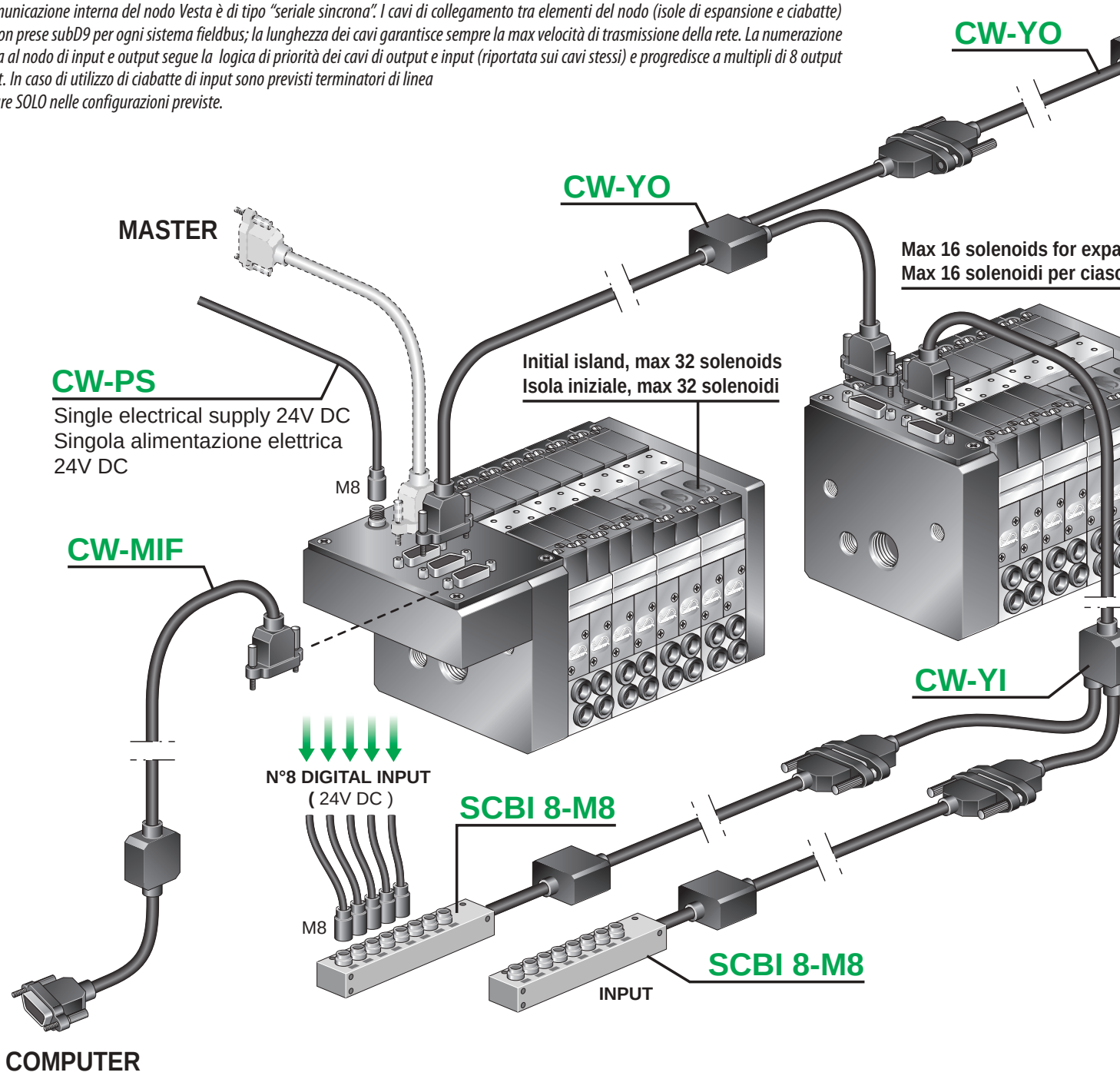
Transmission Protocols - *Protocolli bus*	***PROFIbus***	***DeviceNet***	***Ethernet***	***CANopen***
Baud Rate - *Velocità di trasmissione*	9600bit/s-12Mbit/s	125-500kbit/s	10-100Mbit/s	10kbit/s-1Mbit/s
Suplly Voltage - *Tensione alimentazione*	24V DC (DC±10%)	24V DC (DC±10%)	24V DC (DC±10%)	24V DC
Max current allowed - *Max assorbimento*	3A = max 68 coils contemporary supplied 3A = max n°68 solenoidi contemporaneamente attivati			

(*) Gds file to install and operating instructions are available on www.vesta.it
Per file GSD di installazione e per istruzioni operative consultare il sito www.vesta.it
(**) Dimensions and function of station valves are shown in 4hf system
Per dimensioni e funzioni delle valvole vedere 4hf standard.

4HF NETLOGIC VESTA FIELDBUS SYSTEM

The communication system in 4hf netlogic is running by a shift register. All digital process data are received and sent bit by bit as information signals up to 8 bits and when they exceed 8 bits the bus controller starts with a new byte. All the connections inside the node are made by SUBD9 plugs and length of cables grants the faster baud rate. In some case of network configurations final plugs must be fitted to input port or expansion port.

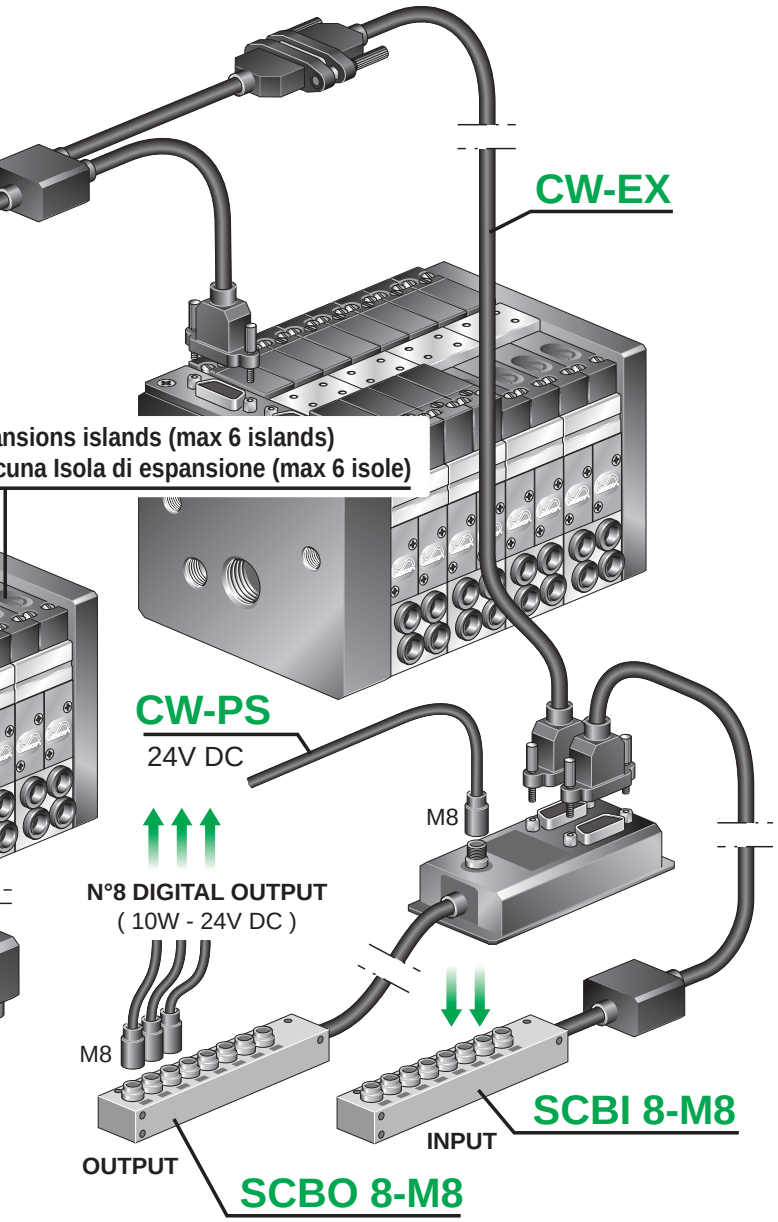
La Comunicazione interna del nodo Vesta è di tipo "seriale sincrona". I cavi di collegamento tra elementi del nodo (isole di espansione e ciabatte) sono con prese subD9 per ogni sistema fieldbus; la lunghezza dei cavi garantisce sempre la max velocità di trasmissione della rete. La numerazione interna al nodo di input e output segue la logica di priorità dei cavi di output e input (riportata sui cavi stessi) e progredisce a multipli di 8 output e input. In caso di utilizzo di ciabatte di input sono previsti terminatori di linea da usare SOLO nelle configurazioni previste.



NODE ADDRESSING AND DIAGNOSTIC

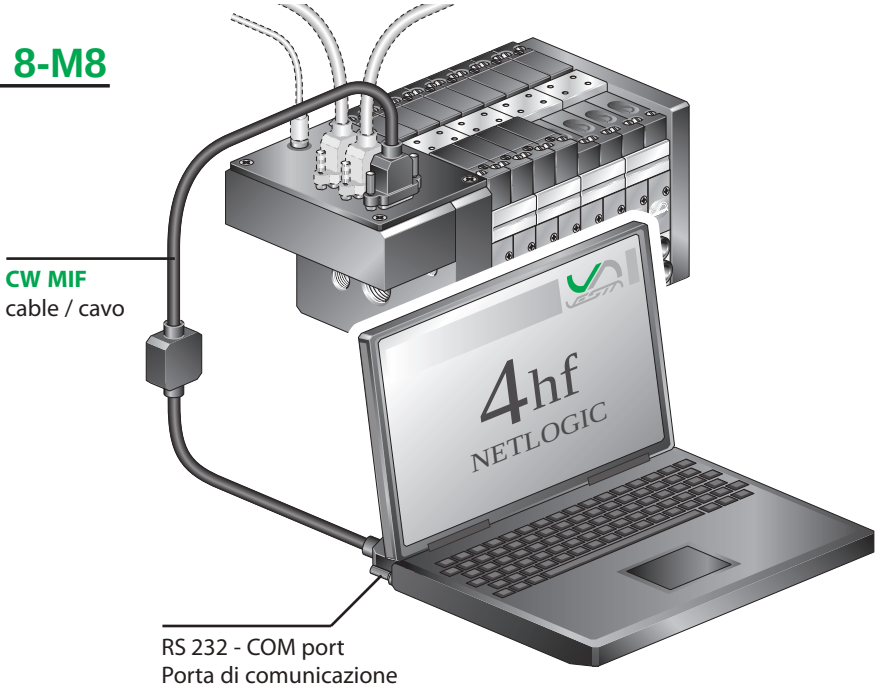
On the initial island with bus processor the input port works also as MIF port and it allows the addressing of node, through the appropriate MIF cable in connection with COM port of a PC. That is made with "hyper terminal" Windows program (or correspondent software for other operative systems), available also for a diagnostic of state of node: number of inputs and outputs connected, control of baud rate, check out state of connections.

4hf NETLOGIC



The 4hf netlogic system recognises automatically the I/O digital process data and stores them byte by byte (8 bits). this way avoids wrong addresses of I/O.
The bus controller sets automatically baud rate to the same of fieldbus network Profibus, Devicenet or Ethernet. For Canopen the baud rate must be set.

L'occupazione automatica di output e input fatta dal processore 4hf netlogic a multipli di 8bit (con riconoscimento automatico) facilita la programmazione e impedisce l'appropriazione indebita di input ed output della rete fieldbus. La configurazione del nodo slave Vesta è perciò automatica dal punto di vista logico.
Il processore slave adegua in automatico la velocità trasmissione del nodo (baud rate), in funzione della velocità della rete Profibus, Devicenet e Ethernet in cui il nodo Vesta è inserito (per Canopen il baud rate è invece un parametro da configurare).



INDIRIZZAMENTO E DIAGNOSTICA
Sulla testata dell'isola iniziale del nodo (con processore) la presa subD9 di ingresso dei segnali dal campo è anche una porta MIF (Monitor Intreface), che consente l'indirizzamento del nodo collegandosi alla porta seriale COM di un PC con l'apposito cavo MIF di programmazione. Il cavo MIF consente la diagnostica del nodo (verifica hardware del nodo, ossia verifica n° output e n° input collegati; verifica della velocità di trasmissione con il PLC; verifica dello stato di ciascun output e input, cioè controllo passo-passo del ciclo macchina; verifica e scrittura dell'indirizzo dello slave). La diagnostica e l'indirizzamento del nodo vengono fatte da PC con l'applicazione Windows "Hyper Terminal" (o software analogo per altri sistemi operativi).

4HF NETLOGIC IDENTIFICATION CODE / *CODICE DI IDENTIFICAZIONE*

Max 32 Solenoids / *Max 32 solenoidi*

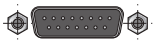
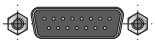
4HF NL □□□ □□ - □□ - □□ - □□ - □□ - □ - □ □

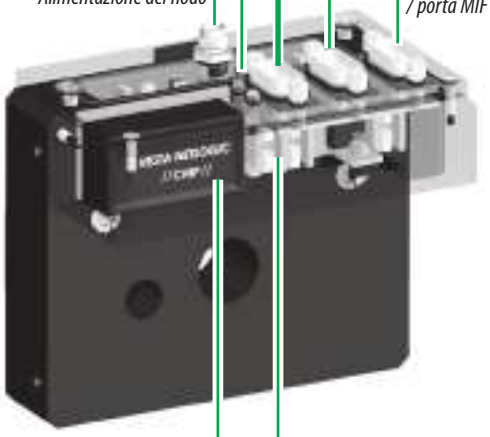
For valves code and configurations available see P. B-08 / B-09

Tabella codici valvole e configurazioni disponibili vedere pagina B-08 / B-09

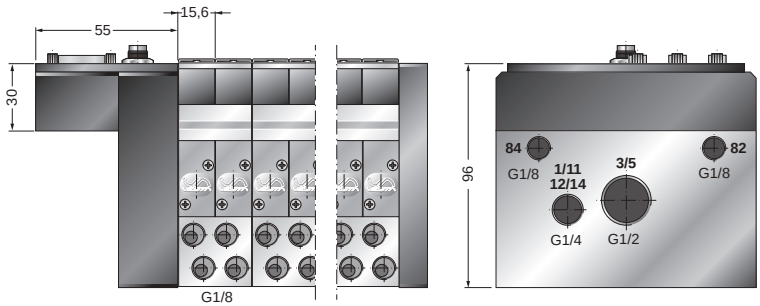
- **T** Thread G1/8" working ports / *Utilizzi filettati G1/8"*
- **R** Push-in fittings (lateral) Ø8 / *Cartucce Ø8 laterali*
- **P** Blind rear plate / *Testata posteriore cieca*
- **S** Rear plate with supplementar exhaust and air supplies / *Testata posteriore scarico ed alimentazione supplementari*
- **CS** Front plate common supply / *Testata anteriore ingressi in comune*
- **SS** Front plate with three separate supplies / *Testata anteriore ingressi separati*

Master input
Ingresso dal master

	**PROFIBUS:** **DB9 (IP 54)**	**4HF NL PFD -....**
	**ETHERNET:** **DB9 (IP 54)**	**4HF NL ETH -....**
	**PROFIBUS:** **M12 (IP 65)**	**4HF NL PFM -....**
	**CANOPEN:** **M12 (IP 65)**	**4HF NL CNO -....**
	**DEVICENET:** **M12 (IP 65)**	**4HF NL DNM -....**



OVERALL DIMENSIONS / *DIMENSIONI DI INGOMBRO*

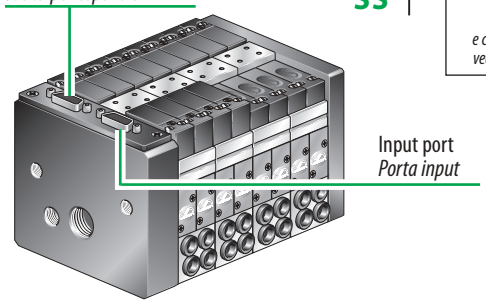


4HF NL EX

EXPANSION ISLAND
ISOLA DI ESPANSIONE MODULARE

4HF NL EX - □□ - □□ - □□ - □ - □

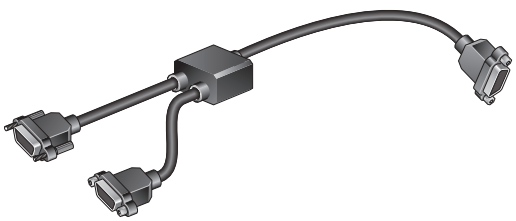
- **CS** **SS**
- For valves code and configurations available see P. B-08 / B-09 — *Tabella codici valvole e configurazioni disponibili vedere pagina B-08 / B-09*
- **P** **S**
- **T** **R**



MAX 16 SOLENOIDS
16 SOLENOIDI MAX

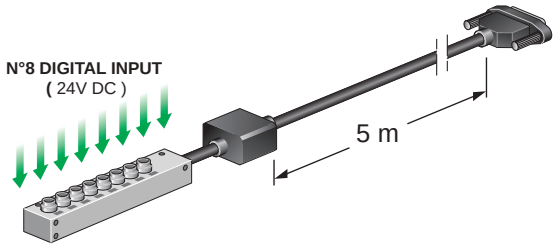
CW-MIF

PROGRAMMING CABLE
CAVO DI COLLEGAMENTO PER PROGRAMMAZIONE



INPUT COLLECTOR BOX
BOX RACCOLTA INPUT

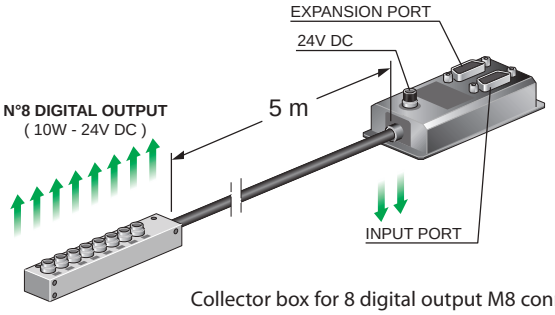
SCBI 8-M8



Collector box for 8 digital input M8 connection
Box raccolta 8 input digitali con connessioni M8

OUTPUT COLLECTOR BOX
BOX DISTRIBUZIONE OUTPUT

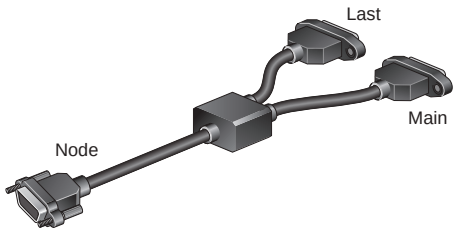
SCBO 8-M8



Collector box for 8 digital output M8 connection
Box distribuzione 8 output digitali con connessioni M8

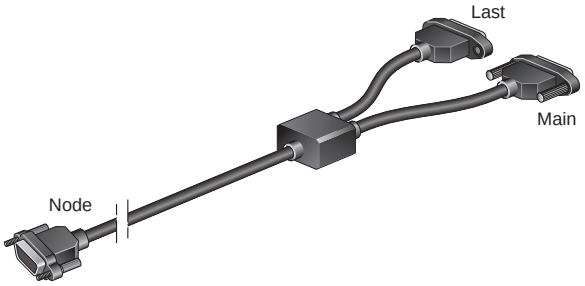
INPUT "Y" CABLE
CAVO AD "Y" PER INPUT

CW-YI



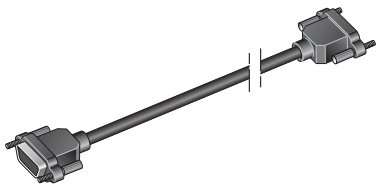
EXPANSION "Y" CABLE
CAVO AD "Y" DI ESPANSIONE

CW-YO



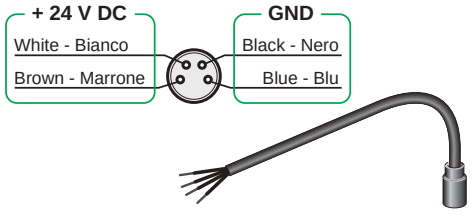
CABLE FOR SINGLE OR LAST EXPANSION
CAVO PER SINGOLA O ULTIMA ESPANSIONE

CW-EX



POWER SUPPLY CABLE M8
CAVO DI ALIMENTAZIONE M8

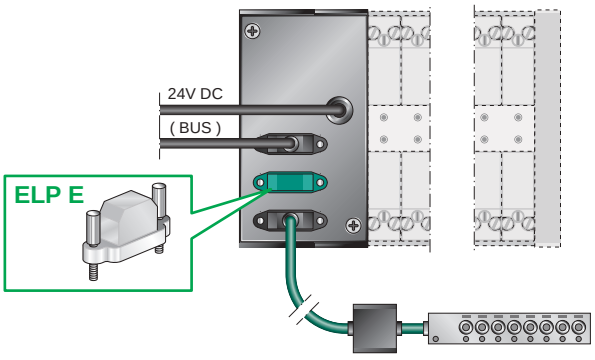
CW-PS



END LINE PLUG FOR EXPANSION PORT
TERMINATORE DI LINEA PER PORTA DI ESPANSIONE

ELP E

Example / Esempio:

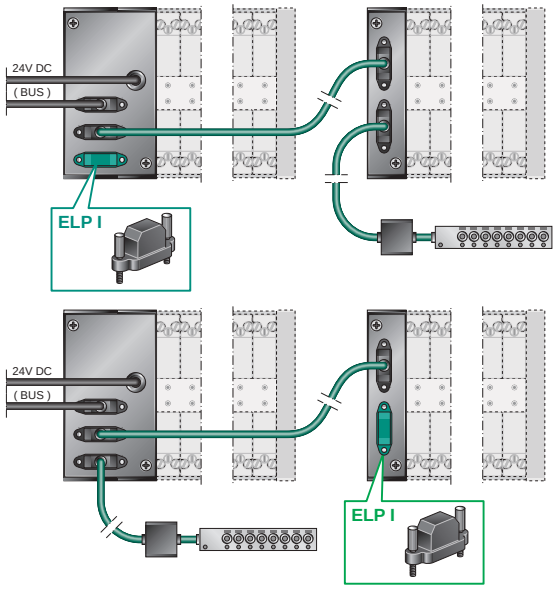


For ELP E connection please see operating instructions available on www.vesta.it
Per connessione dei terminatori vedere istruzioni operative disponibili su www.vesta.it

END LINE PLUG FOR INPUT PORT
TERMINATORE DI LINEA PER PORTA INPUT

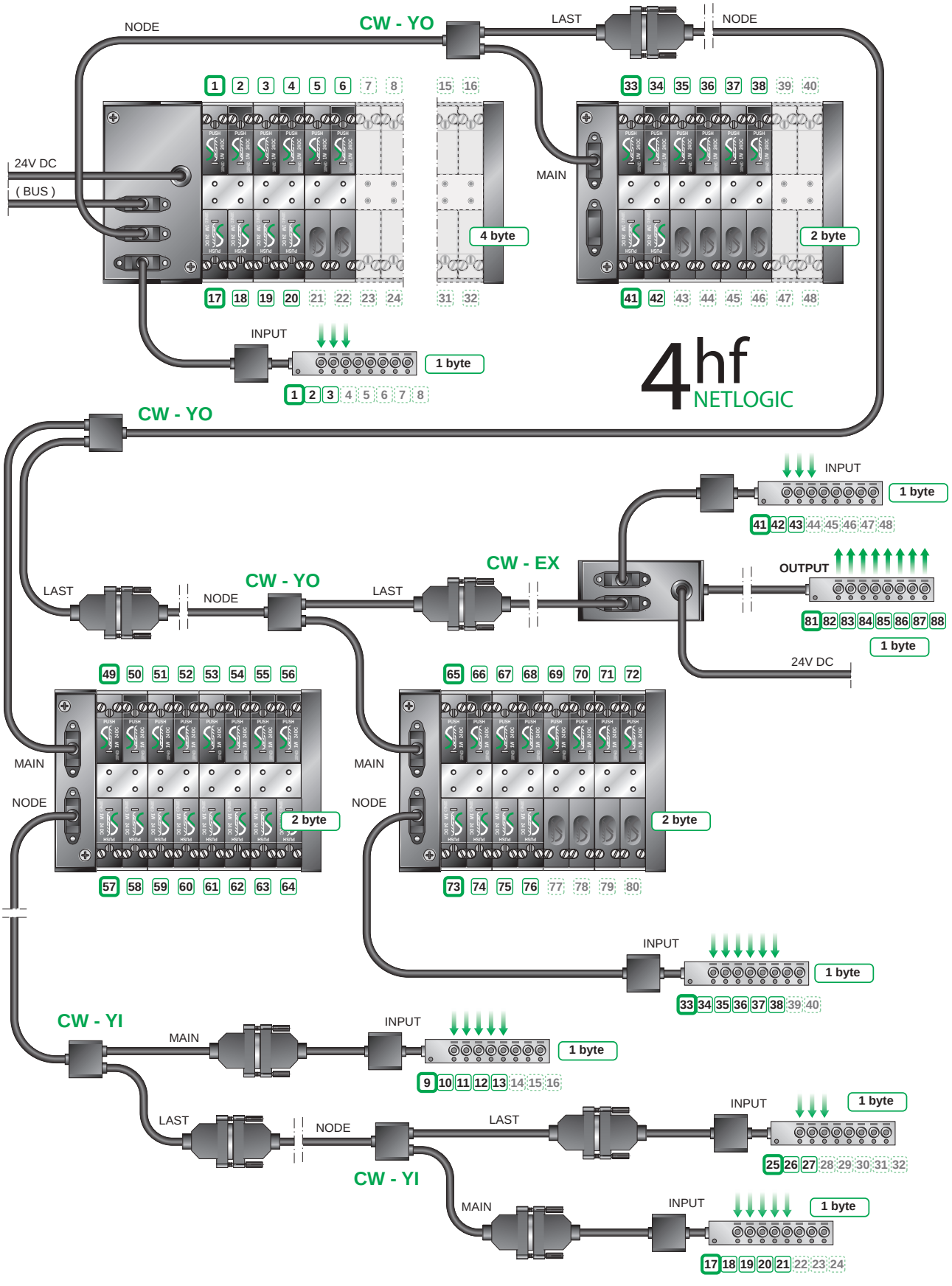
ELP I

Example / Esempio:



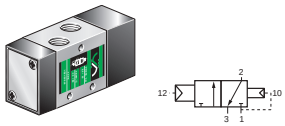
For ELP I connection please see operating instructions available on www.vesta.it
Per connessione dei terminatori vedere istruzioni operative disponibili su www.vesta.it

EXAMPLE OF CONNECTIONS / *ESEMPIO DI CONNESSIONE*

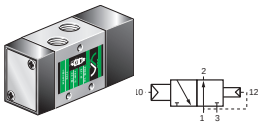


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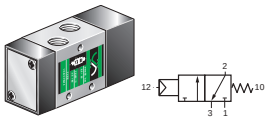
VALVES AND SOLENOID VALVES / *VALVOLE ED ELETTROVALVOLE* G1/8



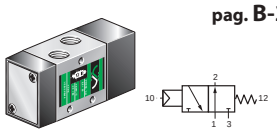
V32V1P618
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - MOLLA PNEUMATICA



V32V1P918
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - MOLLA PNEUMATICA

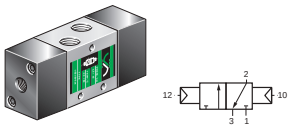


V32V1P6M8
SINGLE PNEUMATIC PILOT - SPRING RETURN
COMANDO PNEUMATICO - MOLLA MECCANICA

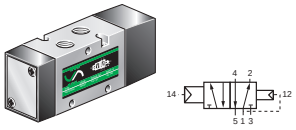


V32V1P9M8
SINGLE PNEUMATIC PILOT - SPRING RETURN
COMANDO PNEUMATICO - MOLLA MECCANICA

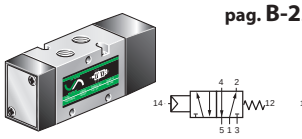
pag. **B-24**



V32V2P018
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

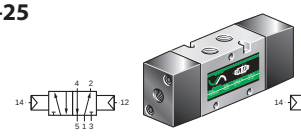


V52V1P018
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - MOLLA PNEUMATICA



V52V1PM18
SINGLE PNEUMATIC PILOT - SPRING RETURN
COMANDO PNEUMATICO - MOLLA MECCANICA

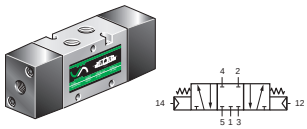
pag. **B-25**



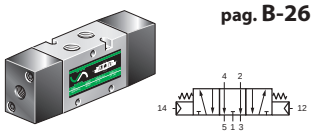
V52V2P018
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

V52V2PD18
..... WITH DIFFERENTIAL
..... *CON DIFFERENZIALE*

pag. **B-26**

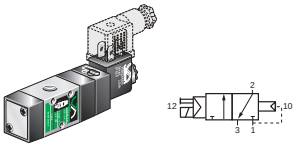


V53V2P618
DOUBLE PNEUMATIC PILOT - CENTER POSITION CLOSED
DOPPIO COMANDO PNEUMATICO - CENTRI CHIUSI

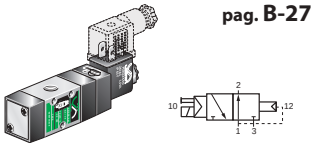


V53V2P918
DOUBLE PNEUMATIC PILOT - CENTER POSITION OPEN
DOPPIO COMANDO PNEUMATICO - CENTRI APERTI

pag. **B-26**

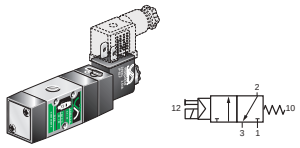


E32W1S618 - .....
SINGLE SOLENOID VALVE - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - MOLLA PNEUMATICA

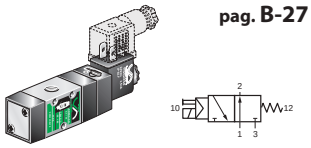


E32W1S918 - .....
SINGLE SOLENOID VALVE - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - MOLLA PNEUMATICA

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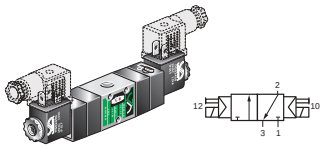


E32W1S6M8 - .....
SINGLE SOLENOID VALVE - SPRING RETURN
COMANDO ELETTROPNEUMATICO - MOLLA MECCANICA

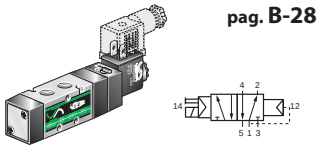


E32W1S9M8 - .....
SINGLE SOLENOID VALVE - SPRING RETURN
COMANDO ELETTROPNEUMATICO - MOLLA MECCANICA

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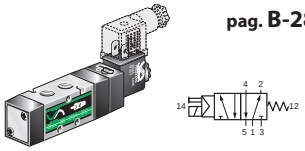


E32W2S018 - .....
DOUBLE SOLENOID VALVE
DOPPIO COMANDO ELETTROPNEUMATICO

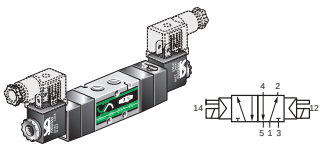


E52W1S018 - .....
SINGLE SOLENOID VALVE - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - MOLLA PNEUMATICA

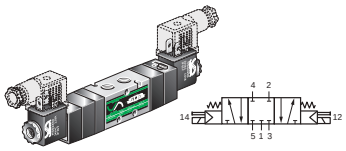
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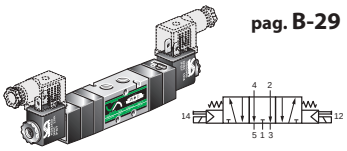
E52W1SM18 - .....
SINGLE SOLENOID VALVE - SPRING RETURN
COMANDO ELETTROPNEUMATICO - MOLLA MECCANICA



E52W2S018 - .....
DOUBLE SOLENOID VALVE
DOPPIO COMANDO ELETTROPNEUMATICO



E53W2S618 - .....
DOUBLE SOLENOID VALVE - CENTER POSITION CLOSED
DOPPIO COMANDO ELETTROPNEUMATICO - CENTRI CHIUSI



E53W2S918 - .....
DOUBLE SOLENOID VALVE - CENTER POSITION OPEN
DOPPIO COMANDO ELETTROPNEUMATICO - CENTRI APERTI

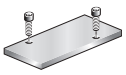
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COMPONENTS FOR ASSEMBLING AND SPARE PARTS / *COMPONENTI PER L'ASSEMBLAGGIO E RICAMBI* G1/8

ME .18



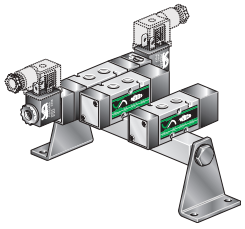
PCH 018



KM 018



pag. **B-30**



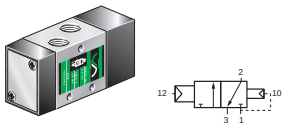
RTCOV .18
SBCOV .18
SACOV .18

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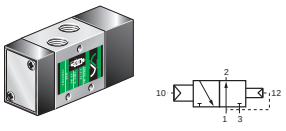
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(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

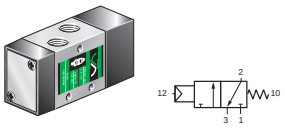
G1/4 VALVES AND SOLENOID VALVES / *VALVOLE ED ELETTROVALVOLE*



V32V1P614
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - MOLLA PNEUMATICA

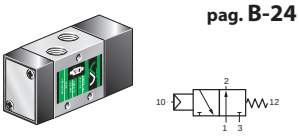


V32V1P914
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - MOLLA PNEUMATICA

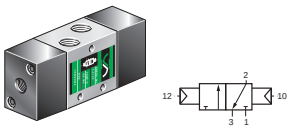


(*) **V32V1P6M4**
SINGLE PNEUMATIC PILOT - SPRING RETURN
COMANDO PNEUMATICO - MOLLA MECCANICA

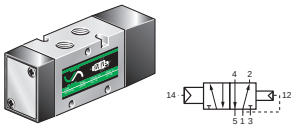
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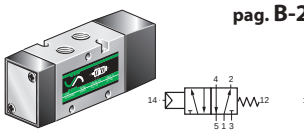
(*) **V32V1P9M4**
SINGLE PNEUMATIC PILOT - SPRING RETURN
COMANDO PNEUMATICO - MOLLA MECCANICA



(*) **V32V2P014**
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

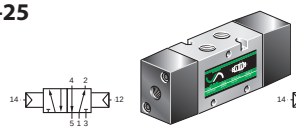


V52V1P014
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - MOLLA PNEUMATICA



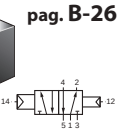
(*) **V52V1PM14**
SINGLE PNEUMATIC PILOT - SPRING RETURN
COMANDO PNEUMATICO - MOLLA MECCANICA

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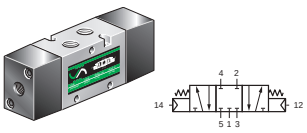


(*) **V52V2P014**
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

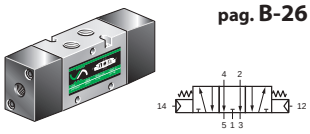
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V52V2PD14
..... WITH DIFFERENTIAL
..... *CON DIFFERENZIALE*

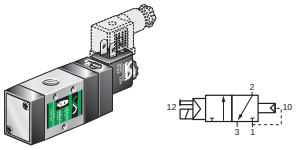


(*) **V53V2P614**
DOUBLE PNEUMATIC PILOT - CENTER POSITION CLOSED
DOPPIO COMANDO PNEUMATICO - CENTRI CHIUSI

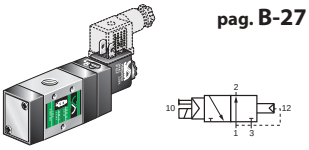


(*) **V53V2P914**
DOUBLE PNEUMATIC PILOT - CENTER POSITION OPEN
DOPPIO COMANDO PNEUMATICO - CENTRI APERTI

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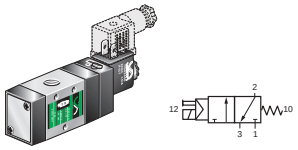


E32W1S614 - .....
SINGLE SOLENOID VALVE - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - MOLLA PNEUMATICA

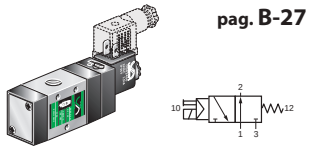


E32W1S914 - .....
SINGLE SOLENOID VALVE - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - MOLLA PNEUMATICA

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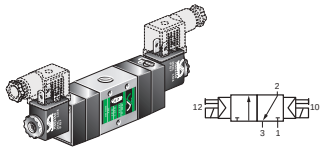


(*) **E32W1S6M4 - .....**
SINGLE SOLENOID VALVE - SPRING RETURN
COMANDO ELETTROPNEUMATICO - MOLLA MECCANICA

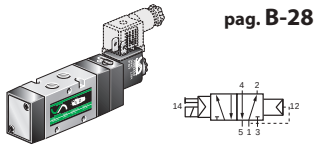


(*) **E32W1S9M4 - .....**
SINGLE SOLENOID VALVE - SPRING RETURN
COMANDO ELETTROPNEUMATICO - MOLLA MECCANICA

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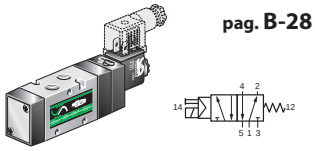


(*) **E32W2S014 - .....**
DOUBLE SOLENOID VALVE
DOPPIO COMANDO ELETTROPNEUMATICO

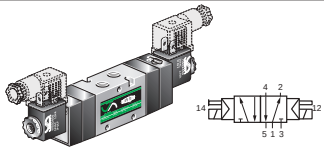


E52W1S014 - .....
SINGLE SOLENOID VALVE - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - MOLLA PNEUMATICA

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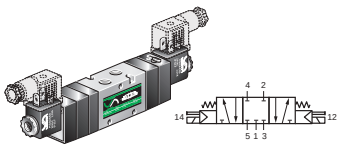


(*) **E52W1SM14 - .....**
SINGLE SOLENOID VALVE - SPRING RETURN
COMANDO ELETTROPNEUMATICO - MOLLA MECCANICA

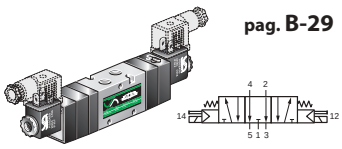


(*) **E52W2S014 - .....**
DOUBLE SOLENOID VALVE
DOPPIO COMANDO ELETTROPNEUMATICO

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(*) **E53W2S614 - .....**
DOUBLE SOLENOID VALVE - CENTER POSITION CLOSED
DOPPIO COMANDO ELETTROPNEUMATICO - CENTRI CHIUSI



(*) **E53W2S914 - .....**
DOUBLE SOLENOID VALVE - CENTER POSITION OPEN
DOPPIO COMANDO ELETTROPNEUMATICO - CENTRI APERTI

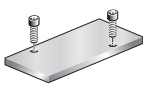
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G1/4 COMPONENTS FOR ASSEMBLING AND SPARE PARTS / *COMPONENTI PER L'ASSEMBLAGGIO E RICAMBI*

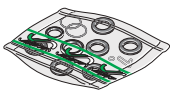
(*) **ME .14**



PCH 014



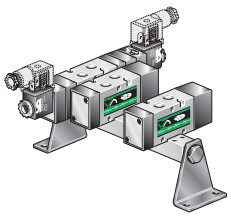
SET1 1/4 SG
SET2 1/4 SG



KM 014



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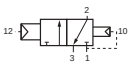
pag. **B-33**

RTCOV .14
SBCOV .14
SACOV .14

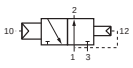
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(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

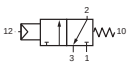
VALVES AND SOLENOID VALVES / *VALVOLE ED ELETTROVALVOLE* G1/2

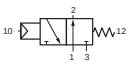
V32V1P612
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - MOLLA PNEUMATICA

V32V1P912
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - MOLLA PNEUMATICA

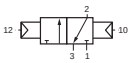



(*) **V32V1P6M2**
SINGLE PNEUMATIC PILOT - SPRING RETURN
COMANDO PNEUMATICO - MOLLA MECCANICA

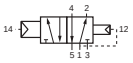



(*) **V32V1P9M2**
SINGLE PNEUMATIC PILOT - SPRING RETURN
COMANDO PNEUMATICO - MOLLA MECCANICA

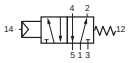
pag. **B-24**

(*) **V32V2P012**
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

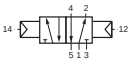



V52V1P012
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - MOLLA PNEUMATICA

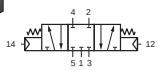
(*) **V52V1PM12**
SINGLE PNEUMATIC PILOT - SPRING RETURN
COMANDO PNEUMATICO - MOLLA MECCANICA

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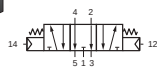



(*) **V52V2P012**
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

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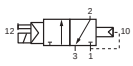



(*) **V53V2P612**
DOUBLE PNEUMATIC PILOT - CENTER POSITION CLOSED
DOPPIO COMANDO PNEUMATICO - CENTRI CHIUSI

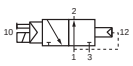



(*) **V53V2P912**
DOUBLE PNEUMATIC PILOT - CENTER POSITION OPEN
DOPPIO COMANDO PNEUMATICO - CENTRI APERTI

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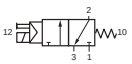



E32W1S612 - . . . . .
SINGLE SOLENOID VALVE - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - MOLLA PNEUMATICA

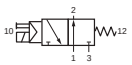



E32W1S912 - . . . . .
SINGLE SOLENOID VALVE - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - MOLLA PNEUMATICA

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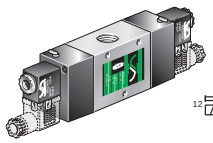
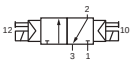



(*) **E32W1S6M2 - . . . . .**
SINGLE SOLENOID VALVE - SPRING RETURN
COMANDO ELETTROPNEUMATICO - MOLLA MECCANICA

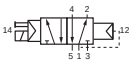



(*) **E32W1S9M2 - . . . . .**
SINGLE SOLENOID VALVE - SPRING RETURN
COMANDO ELETTROPNEUMATICO - MOLLA MECCANICA

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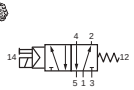



(*) **E32W2S012 - . . . . .**
DOUBLE SOLENOID VALVE
DOPPIO COMANDO ELETTROPNEUMATICO

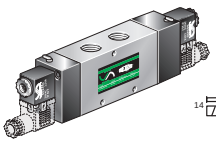
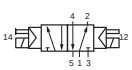



E52W1S012 - . . . . .
SINGLE SOLENOID VALVE - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - MOLLA PNEUMATICA

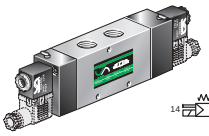
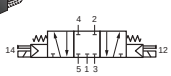
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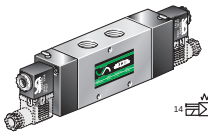
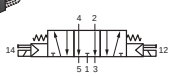
(*) **E52W1SM12 - . . . . .**
SINGLE SOLENOID VALVE - SPRING RETURN
COMANDO ELETTROPNEUMATICO - MOLLA MECCANICA

(*) **E52W2S012 - . . . . .**
DOUBLE SOLENOID VALVE
DOPPIO COMANDO ELETTROPNEUMATICO

(*) **E53W2S612 - . . . . .**
DOUBLE SOLENOID VALVE - CENTER POSITION CLOSED
DOPPIO COMANDO ELETTROPNEUMATICO - CENTRI CHIUSI

(*) **E53W2S912 - . . . . .**
DOUBLE SOLENOID VALVE - CENTER POSITION OPEN
DOPPIO COMANDO ELETTROPNEUMATICO - CENTRI APERTI

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(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

DIRECT ACTING SOLENOID VALVES AND SPARE PARTS / *ELETTROVALVOLE A COMANDO DIRETTO E RICAMBI*

(*) **BE 1 -..... NC**
BE 1 -..... NO
(Coil: 5W) - *(Solenoide: 5W)*

DIRECT ACTING SOLENOID VALVE
ELETTROVALVOLA A COMANDO DIRETTO

(*) **BE . -..... NC**
BE . -..... NO
(Coil: 5W) - *(Solenoide: 5W)*

DIRECT ACTING SOLENOID VALVES - MANIFOLD
ELETTROVALVOLE A COMANDO DIRETTO IN BATTERIA

pag. **B-34**

(*) **BE 1M -..... NC**
BE 1M -..... NO
(Coil: 5W) - *(Solenoide: 5W)*

DIRECT ACTING SOLENOID VALVE WITH MANUAL CONTROL
ELETTROVALVOLA A COMANDO DIRETTO CON CONTROLLO MANUALE

(*) **BE . M -..... NC**
BE . M -..... NO
(Coil: 5W) - *(Solenoide: 5W)*

DIRECT ACTING SOLENOID VALVES WITH MANUAL CONTROL - MANIFOLDS
ELETTROVALVOLE A COMANDO DIRETTO CON CONTROLLO MANUALE IN BATTERIA

pag. **B-35**

PL-BE

KM-BE

GE 1

GE

MBE-.4-....

DIRECT ACTING SOLENOID VALVES 3/2 TUBE Ø4mm - MANIFOLD
ELETTROVALVOLE A COMANDO DIRETTO 3/2 TUBO Ø4mm IN BATTERIA

pag. **B-35**

MBE-.8NC-.-....

MBE-.8NO-.-....

DIRECT ACTING SOLENOID VALVES 3/2 G1/8 - MANIFOLD
ELETTROVALVOLE A COMANDO DIRETTO 3/2 G1/8 IN BATTERIA

MS .....

CEP-1 .. ..

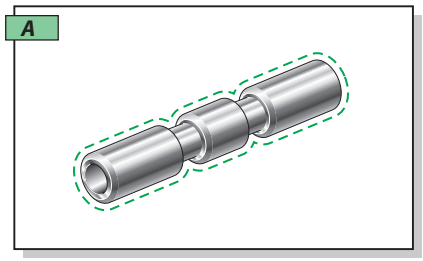
SET1 1/2 SG
SET2 1/2 SG

pag. **B-36**

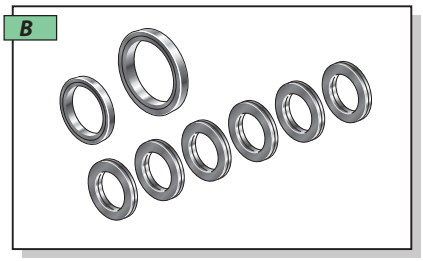
BUILDING FEATURES / *CARATTERISTICHE COSTRUTTIVE*

VESTA valves and solenoid valves with connections **G1/8**,**G1/4** and **G1/2** are available in the 3/2, 5/2 and 5/3 versions, with different forms of actuation (i.e. solenoid / pilot etc).
The choice of high quality materials and the technical solution adopted allows to the valves to reach a good performance even in harsh environmental conditions.
The spool, made by a light alloy aluminium, nickel trated by Niploy Process (see fig. **A**) to give its surface a smooth finisch and a better resistace to aggressive agent.
Its particular shape allows high nominal flow rates (see fig. **D**), and the combination with self lubricating lip ruber seals (see fig. **B**), reduce internal friction (see fig. **C**) and provides the valve with a long lasting durable life spar.
Valves and Solenoid valves with connections **G1/8**; **G1/4** and **G1/2** can operate continuosly without lubrication (see fig. **E**) and are sealed against working environment.

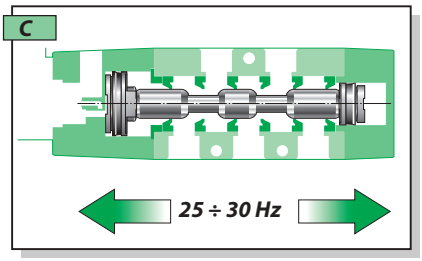
*Le valvole ed elettrovalvole VESTA con connessioni **G1/8**; **G1/4** e **G1/2** sono disponibili nelle versioni 3/2, 5/2 e 5/3 con più sistemi di attuazione e riposizionamento.*
Le soluzioni tecniche adottate ed i materiali impiegati hanno permesso di realizzare un prodotto che presenta elevate prestazioni funzionali anche in condizioni di impiego particolarmente gravose.
*La spola, costruita in lega leggera e progettata per consentire elevate portate nominali (**D**),viene trattata superficialmente al nickel (Niploy Process) (**A**) onde acquisire una durezza maggiore ed una più elevata resistenza agli agenti aggressivi.*
*La combinazione tra la spola e le guarnizioni in elastomero nitrilico con profilo del labbro antiusura (**B**), permette, accanto ad una riduzione degli attriti, un' alta velocità di scambio e cicli di lavoro elevati (**C**), garantendo una maggiore durata della meccanica interna.*
*Tutti i modelli di valvole con connessioni **G1/8**; **G1/4** e **G1/2** possono essere utilizzati anche in assenza di lubrificazione (**E**).*
*L'ermeticità di funzionamento verso l'ambiente di lavoro ne fa inoltre un prodotto adatto all'impiego in settori cosiddetti "difficili" (**F**).*
Nelle pagine che seguono tutte le caratteristiche funzionali di ciascuna valvola sono convalidate dal Dipartimento di Meccanica del Politecnico di Torino.



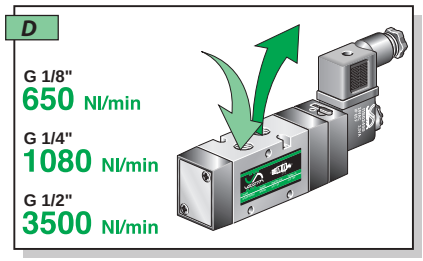
Light alloy spool with Niploy Process trated surface.
Spola in lega leggera con trattamento superficiale Niploy Process.



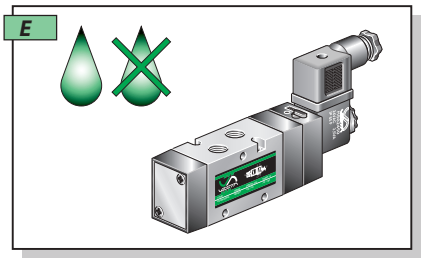
Self lubricating lip rubber seals.
Guarnizioni in elastomero nitrilico con profilo del labbro antiusura.



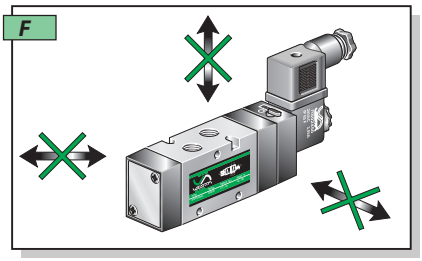
High working frequency.
Alta velocità di scambio per cicli di lavoro elevati.



High nominal air flow.
Alta portata nominale.



Possibility of operating continuosly without lubrication.
Possibilità di funzionamento continuo privo di lubrificazione.



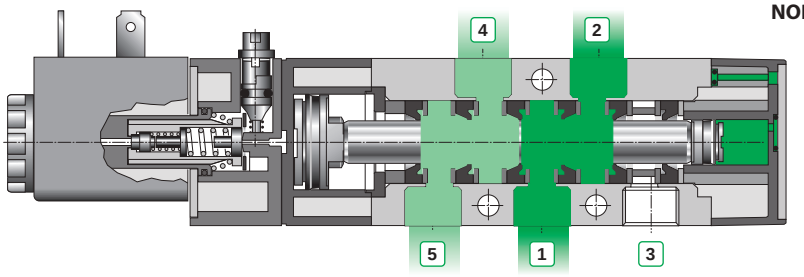
Protected against working environment (no spring return versions).
Protezione di funzionamento verso l'ambiente di lavoro (non nelle versioni con ritorno a molla).

WORKING PRINCIPLE / *PRINCIPIO DI FUNZIONAMENTO*

In the example here below, when the 5/2 valve **E52W1S018 - 02450** stands in the normal position, ports **4** - **5** and **1**- **2** are connected and the position is kept thanks to the pressure assured to the smallest piston (right side of the valve). When the valve is actuated, the same pressure is fed to the biggest piston. It's bigger surface create a force which allows to the spool to move and therefore to connect ports **4** - **1** and **2** - **3**.
In the mechanical spring version, the valve is kept in the normal position by a mechanical spring.
In the bistable versions, the position of the valve remains in its last switched state.

Il principio di funzionamento del distributore 5/2 (nell'esempio la valvola a comando elettropneumatico e riposizionamento a molla pneumatica ***E52W1S018 - 02450*** *) consiste nel mantenere costantemente in pressione il pistone di riposizionamento (fig.* ***1*** *), utilizzando la fonte d'aria compressa presente nel condotto di alimentazione* ***1****, collegando le vie* ***1- 2*** *e* ***4 - 5****.*
L'eccitazione del solenoide mette in comunicazione il condotto in pressione ***1*** *con la camera dove é alloggiato il pistone di comando.*
Quest'ultimo, avendo un'area di spinta maggiore del pistone di riposizionamento, sposta la spola in modo tale da collegare i canali ***1- 4*** *e* ***2- 3*** *(fig.* ***2*** *).*
Diseccitando il solenoide si ripristina la posizione iniziale.
Nei sistemi bistabili (doppio comando elettropneumatico o doppio comando pneumatico) in assenza di segnale rimangono i collegamenti dell'ultimo azionamento.

NORMAL POSITION - ***POSIZIONE A RIPOSO***



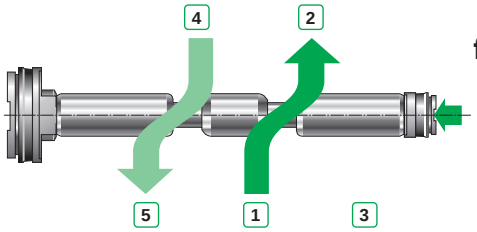
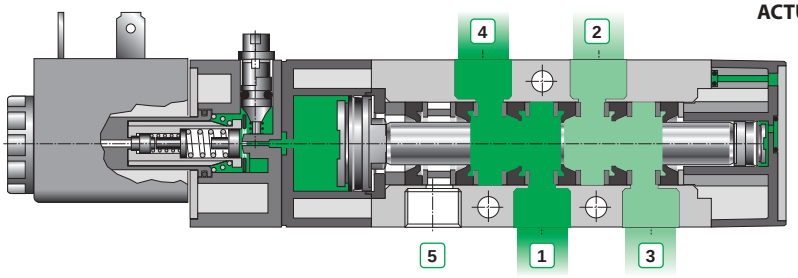


fig. 1

ACTUATED POSITION - ***POSIZIONE DI LAVORO***



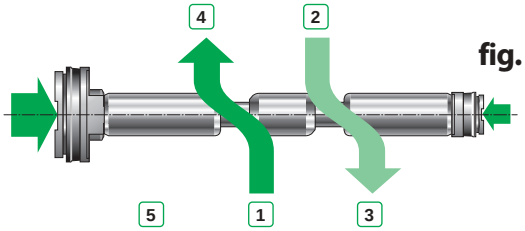
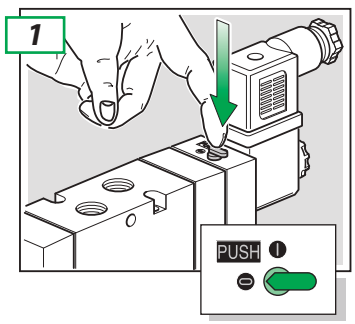


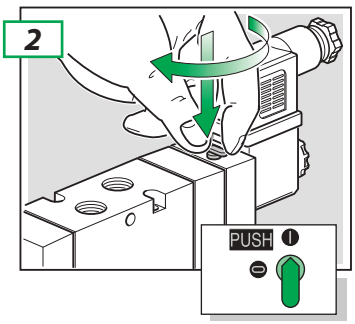
fig. 2

MANUAL OVERRIDING / *AZIONAMENTO COMANDO MANUALE*



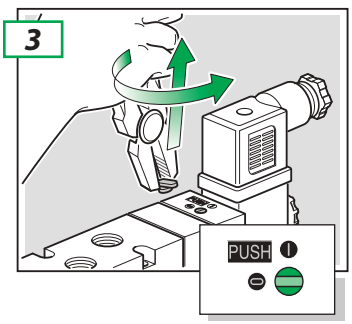
Push to actuated valve without locking. ***Relise the button to get back to normal position.***

Per azionare la valvola, durante la fase di collaudo con pressione in linea senza collegamento elettrico, premere la leva del comando manuale. ***Rilasciare per ripristinare la condizione di riposo.***



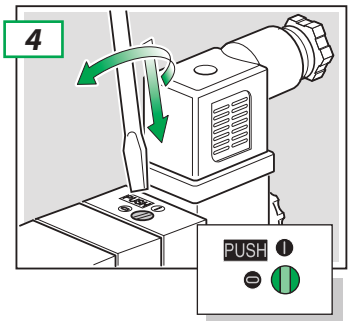
To active the valve permanently push the M/O (manual override) and rotate clockwise 90°. ***To return to normal position, push the M/O again and turn 90° anticlockwise.***

Per azionare la valvola in modo permanente premere la leva del comando manuale e ruotare in senso orario sino alla posizione 1. ***Ruotare in senso antiorario per ripristinare la condizione di riposo.***



Should the M/O no longer be required, then turn the M/O anticlockwise until it breaks off.

Terminato il collaudo ruotare in senso antiorario la leva sino alla rottura.



Should the M/O be required after breaking off, then a screwdriver may be used.

Per interventi successivi sul comando manuale usare un adeguato cacciavite ed operare come al punto ***1*** *o* ***2****.*

SERIE **G1/8, G1/4, G1/2**

VALVES AND SOLENOID VALVES "E" SERIES
VALVOLE ED ELETTROVALVOLE SERIE "E"

COMMON FEATURES VALVES G1/8 SERIES / *CARATTERISTICHE COMUNI VALVOLE SERIE G1/8*

G1/8

Port connections	**G1/8**
Pilot connections	G1/8
Flow section	Ø 6 mm
Environment temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Lubrication	Not required
Medium	Filtered air
Reference temperature	+20 °C
Reference pressure	6 bar

3/2 VALVES AND SOLENOID VALVES

Fixing	n°3 holes Ø 4,25 manifold system see p. 30.
Nominal air flow	650 Nl/min
Fluid conductance "C"	2,7 Nl/s bar
Critical pressure ratio "b"	0,203

5/2 VALVES AND SOLENOID VALVES

Fixing	n°3 holes Ø 4,25 manifold system pp. 30 ÷ 32.
Nominal air flow	650 Nl/min
Fluid conductance "C"	2,7 Nl/s bar
Critical pressure ratio "b"	0,203

5/3 VALVES AND SOLENOID VALVES

Fixing	n°3 holes Ø 4,25 manifold system pp. 30 ÷ 32.
Nominal air flow	530 Nl/min
Fluid conductance "C"	2,17 Nl/s bar
Critical pressure ratio "b"	0,236

Connessioni di lavoro	***G1/8***
Connessioni operatori	*G1/8*
Diametro nominale	*Ø 6 mm*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Lubrificazione	*Non necessaria*
Fluido	*Aria filtrata*
Temperatura nominale	*+20 °C*
Pressione nominale	*6 bar*

VALVOLE ED ELETTROVALVOLE 3/2

Fissaggio	*n°3 fori laterali Ø 4,25 su collettore vedi p. 32*
Portata nominale	*650 Nl/min*
Valore conduttanza "C"	*2,7 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,203*

VALVOLE ED ELETTROVALVOLE 5/2

Fissaggio	*n°3 fori laterali Ø 4,25 su base vedi pp. 30 ÷ 31 su collettore vedi p. 32*
Portata nominale	*650 Nl/min*
Valore conduttanza "C"	*2,7 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,203*

VALVOLE ED ELETTROVALVOLE 5/3

Fissaggio	*n°3 fori laterali Ø 4,25 su base vedi pp. 30 ÷ 31 su collettore vedi p. 32*
Portata nominale	*530 Nl/min*
Valore conduttanza "C"	*2,17 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,236*

VALVES AND SOLENOID VALVES G1/4 SERIES / *VALVOLE ED ELETTROVALVOLE SERIE G1/4*

G1/4

Port connections	**G1/4**
Pilot connections	G1/8
Flow section	Ø 8 mm
Environment temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Lubrication	Not required
Medium	Filtered air
Reference temperature	+20 °C
Reference pressure	6 bar

3/2 VALVES AND SOLENOID VALVES

Fixing	n°3 holes Ø 4,25 manifold system see p. 33.
Nominal air flow	1080 Nl/min
Fluid conductance "C"	4,34 Nl/s bar
Critical pressure ratio "b"	0,212

5/2 VALVES AND SOLENOID VALVES

Fixing	n°3 holes Ø 4,25 manifold system pp. 30 ÷ 31, 33.
Nominal air flow	1080 Nl/min
Fluid conductance "C"	4,34 Nl/s bar
Critical pressure ratio "b"	0,212

5/3 VALVES AND SOLENOID VALVES

Fixing	n°3 holes Ø 4,25 manifold system pp. 30 ÷ 31, 33.
Nominal air flow	800 Nl/min
Fluid conductance "C"	3,22 Nl/s bar
Critical pressure ratio "b"	0,265

Connessioni di lavoro	***G1/4***
Connessioni operatori	*G 1/8*
Diametro nominale	*Ø 8 mm*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Lubrificazione	*Non necessaria*
Fluido	*Aria filtrata*
Temperatura nominale	*+20 °C*
Pressione nominale	*6 bar*

VALVOLE ED ELETTROVALVOLE 3/2

Fissaggio	*n°3 fori laterali Ø 4,25 su collettore vedi p. 33*
Portata nominale	*1080 Nl/min*
Valore conduttanza "C"	*4,34 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,212*

VALVOLE ED ELETTROVALVOLE 5/2

Fissaggio	*n°3 fori laterali Ø 4,25 su base vedi pp. 30 ÷ 31 su collettore vedi p. 33*
Portata nominale	*1080 Nl/min*
Valore conduttanza "C"	*4,34 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,212*

VALVOLE ED ELETTROVALVOLE 5/3

Fissaggio	*n°3 fori laterali Ø 4,25 su base vedi pp. 24 ÷ 25 su collettore vedi p. 33*
Portata nominale	*800 Nl/min*
Valore conduttanza "C"	*3,22 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,265*

VALVES AND SOLENOID VALVES G1/2 SERIES / *VALVOLE ED ELETTROVALVOLE SERIE G1/2*

G1/2

Port connections	**G1/2**
Pilot connections	G1/8
Flow section	Ø 15 mm
Environment temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Lubrication	Not required
Medium	Filtered air
Reference temperature	+20 °C
Reference pressure	6 bar

3/2 VALVES AND SOLENOID VALVES

Fixing	n°3 holes Ø 5,5
Nominal air flow	3500 Nl/min
Fluid conductance "C"	12,88 Nl/s bar
Critical pressure ratio "b"	0,393

5/2 VALVES AND SOLENOID VALVES

Fixing	n°3 holes Ø 5,5
Nominal air flow	3500 Nl/min
Fluid conductance "C"	12,88 Nl/s bar
Critical pressure ratio "b"	0,396

5/3 VALVES AND SOLENOID VALVES

Fixing	n°3 holes Ø 5,5
Nominal air flow	3000 Nl/min
Fluid conductance "C"	10,76 Nl/s bar
Critical pressure ratio "b"	0,42

Connessioni di lavoro	***G1/2***
Connessioni operatori	*G 1/8*
Diametro nominale	*Ø 15 mm*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Lubrificazione	*Non necessaria*
Fluido	*Aria filtrata*
Temperatura nominale	*+20 °C*
Pressione nominale	*6 bar*

VALVOLE ED ELETTROVALVOLE 3/2

Fissaggio	*n°3 fori laterali Ø 5,5*
Portata nominale	*3500 Nl/min*
Valore conduttanza "C"	*12,88 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,393*

VALVOLE ED ELETTROVALVOLE 5/2

Fissaggio	*n°3 fori laterali Ø 5,5*
Portata nominale	*3500 Nl/min*
Valore conduttanza "C"	*12,88 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,396*

VALVOLE ED ELETTROVALVOLE 5/3

Fissaggio	*n°3 fori laterali Ø 5,5*
Portata nominale	*3000 Nl/min*
Valore conduttanza "C"	*3,22 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,265*

PNEUMATIC VALVES FEATURES / CARATTERISTICHE *VALVOLE PNEUMATICHE*

Size *Taglia*	Code *Codice*	Nominal pilot pressure (bar) *Pressione di pilotaggio nominale (bar)*	Nominal max frequence (Hz) *Frequenza max nominale (Hz)*	Operating pressure range (bar) *Pressione di esercizio (bar)*
G 1/8"	V32V1P618	4,5 bar (10 bar)	31 Hz	2,2 ÷ 10 bar
	V32V1P918	4,5 bar (10 bar)	31 Hz	2,2 ÷ 10 bar
	V32V1P6M8	2,7 bar	13 Hz	1,5 ÷ 10 bar
	V32V1P9M8	2,7 bar	13 Hz	1,5 ÷ 10 bar
	V32V2P018	1,3 bar	43 Hz	1,2 ÷ 10 bar
	V52V1P018	4,5 bar (10 bar)	30 Hz	2,5 ÷ 10 bar
	V52V1PM18	2,7 bar	13 Hz	1,5 ÷ 10 bar
	V52V2P018	1,3 bar	42 Hz	1,5 ÷ 10 bar
	V52V2PD18	1,3 bar	42 Hz	1,5 ÷ 10 bar
	V53V2P618	3,2 bar	9 Hz	1,5 ÷ 10 bar
	V53V2P918	3,2 bar	9 Hz	1,5 ÷ 10 bar
G 1/4"	V32V1P614	4 bar (10 bar)	22 Hz	2,2 ÷ 10 bar
	V32V1P914	4 bar (10 bar)	22 Hz	2,2 ÷ 10 bar
	V32V1P6M4	2,85 bar	11 Hz	1,5 ÷ 10 bar
	V32V1P9M4	2,85 bar	11 Hz	1,5 ÷ 10 bar
	V32V2P014	1,3 bar	31 Hz	1,2 ÷ 10 bar
	V52V1P014	4 bar (10 bar)	21 Hz	2,5 ÷ 10 bar
	V52V1PM14	2,85 bar	10 Hz	1,5 ÷ 10 bar
	V52V2P014	1,3 bar	30 Hz	1,5 ÷ 10 bar
	V52V2PD14	1,3 bar	30 Hz	1,5 ÷ 10 bar
	V53V2P614	3,6 bar	8 Hz	1,5 ÷ 10 bar
	V53V2P914	3,6 bar	8 Hz	1,5 ÷ 10 bar
G 1/2"	V32V1P612	4 bar (10 bar)	12 Hz	2,2 ÷ 10 bar
	V32V1P912	4 bar (10 bar)	12 Hz	2,2 ÷ 10 bar
	V32V1P6M2	2,85 bar	8 Hz	1,5 ÷ 10 bar
	V32V1P9M2	2,85 bar	8 Hz	1,5 ÷ 10 bar
	V32V2P012	1,3 bar	14 Hz	1,2 ÷ 10 bar
	V52V1P012	4 bar (10 bar)	12 Hz	2,5 ÷ 10 bar
	V52V1PM12	2,85 bar	7 Hz	1,5 ÷ 10 bar
	V52V2P012	1,3 bar	13 Hz	1,5 ÷ 10 bar
	V53V2P612	3,2 bar	6 Hz	1,5 ÷ 10 bar
	V53V2P912	3,2 bar	6 Hz	1,5 ÷ 10 bar

SOLENOID VALVES FEATURES / CARATTERISTICHE *ELETTROVALVOLE*

Size *Taglia*	Code *Codice*	Average actioning response (ms) *Tempo medio di risposta in eccitazione (ms)*		Average disactioning response (ms) *Tempo medio di risposta in diseccitazione (ms)*		Nominal max frequence (Hz) *Frequenza max nominale (Hz)*		Operating pressure range (bar) *Pressione di esercizio (bar)*
		AC	DC	AC	DC	AC	DC	
G 1/8"	E32W1S618	17 ms	19 ms	20 ms	24 ms	29 Hz	18 Hz	2,2 ÷ 10 bar
	E32W1S918	17 ms	19 ms	20 ms	24 ms	29 Hz	18 Hz	2,2 ÷ 10 bar
	E32W1S6M8	17 ms	19 ms	21 ms	34 ms	13 Hz	13 Hz	3,2 ÷ 10 bar
	E32W1S9M8	17 ms	19 ms	21 ms	34 ms	13 Hz	13 Hz	3,2 ÷ 10 bar
	E32W2S018	10 ms	12 ms	10 ms	12 ms	31 Hz	23 Hz	1,2 ÷ 10 bar
	E52W1S018	10 ms	17 ms	20 ms	24 ms	29 Hz	17 Hz	2,5 ÷ 10 bar
	E52W1SM18	17 ms	19 ms	21 ms	34 ms	13 Hz	13 Hz	3,2 ÷ 10 bar
	E52W2S018	10,5 ms	12,5 ms	10,5 ms	12,5 ms	31 Hz	22 Hz	1,5 ÷ 10 bar
	E53W2S618	16 ms	19 ms	16 ms	19 ms	9 Hz	9 Hz	3 ÷ 10 bar
	E53W2S918	16 ms	19 ms	16 ms	19 ms	9 Hz	9 Hz	3 ÷ 10 bar
G 1/4"	E32W1S614	18 ms	21 ms	33 ms	44 ms	17 Hz	14 Hz	2,2 ÷ 10 bar
	E32W1S914	18 ms	21 ms	33 ms	44 ms	17 Hz	14 Hz	2,2 ÷ 10 bar
	E32W1S6M4	19 ms	21 ms	35 ms	46 ms	11 Hz	11 Hz	2,5 ÷ 10 bar
	E32W1S9M4	19 ms	21 ms	35 ms	46 ms	11 Hz	11 Hz	2,5 ÷ 10 bar
	E32W2S014	11 ms	14 ms	11 ms	14 ms	27 Hz	22 Hz	1,2 ÷ 10 bar
	E52W1S014	18 ms	21 ms	33 ms	44 ms	16 Hz	13 Hz	2,5 ÷ 10 bar
	E52W1SM14	19 ms	21 ms	35 ms	46 ms	11 Hz	11 Hz	2,5 ÷ 10 bar
	E52W2S014	11 ms	14 ms	11 ms	14 ms	27 Hz	21 Hz	1,5 ÷ 10 bar
	E53W2S614	17 ms	20 ms	17 ms	20 ms	8 Hz	8 Hz	3 ÷ 10 bar
	E53W2S914	17 ms	20 ms	17 ms	20 ms	8 Hz	8 Hz	3 ÷ 10 bar
G 1/2"	E32W1S612	43 ms	45 ms	55 ms	55 ms	13 Hz	12 Hz	2,2 ÷ 10 bar
	E32W1S912	43 ms	45 ms	55 ms	55 ms	13 Hz	12 Hz	2,2 ÷ 10 bar
	E32W1S6M2	47 ms	49 ms	60 ms	60 ms	8 Hz	8 Hz	2,5 ÷ 10 bar
	E32W1S9M2	47 ms	49 ms	60 ms	60 ms	8 Hz	8 Hz	2,5 ÷ 10 bar
	E32W2S012	22 ms	26 ms	22 ms	26 ms	16 Hz	15 Hz	1,2 ÷ 10 bar
	E52W1S012	47 ms	49 ms	58 ms	58 ms	11 Hz	10 Hz	2,5 ÷ 10 bar
	E52W1SM12	47 ms	49 ms	60 ms	60 ms	8 Hz	8 Hz	2,5 ÷ 10 bar
	E52W2S012	24 ms	28 ms	24 ms	28 ms	14 Hz	13 Hz	1,5 ÷ 10 bar
	E53W2S612	49 ms	49 ms	60 ms	60 ms	6 Hz	6 Hz	3 ÷ 10 bar
	E53W2S912	49 ms	49 ms	60 ms	60 ms	6 Hz	6 Hz	3 ÷ 10 bar

For electrical features solenoid pilot see pp. B-35 and B-37.
Caratteristiche elettriche elettrovalvole per solenoide vedi pp. B-35 e B-37.

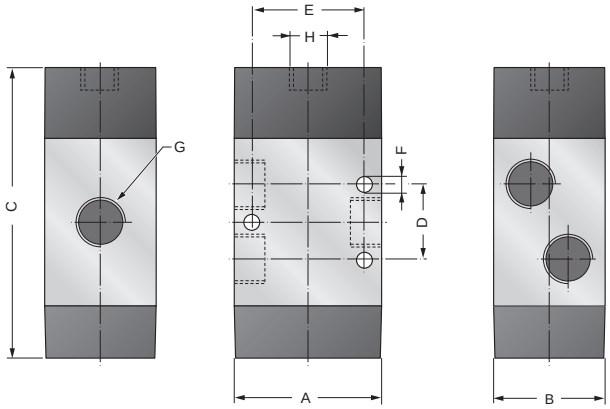
V32V1P . 1.



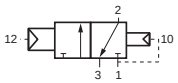
VALVE / *VALVOLA* 3/2

SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN

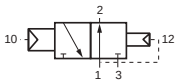
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA PNEUMATICA



SIMBOLS / *SIMBOLI*

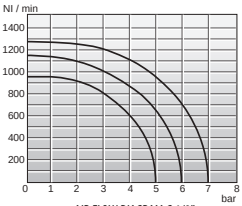


V32V1P61.



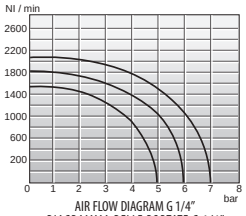
V32V1P91.

DIAGRAMS / *DIAGRAMMI*



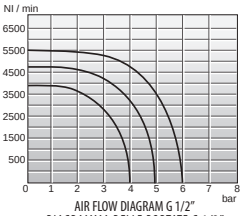
AIR FLOW DIAGRAM G 1/8"

DIAGRAMMA DELLE PORTATE G 1/8"



AIR FLOW DIAGRAM G 1/4"

DIAGRAMMA DELLE PORTATE G 1/4"

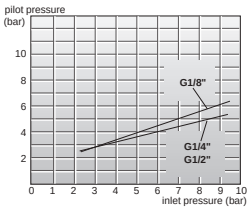


AIR FLOW DIAGRAM G 1/2"

DIAGRAMMA DELLE PORTATE G 1/2"

Size *Taglia*	A	B	C	D	E	ØF	G	H
G1/8	30	26	74	18	23	4,25	G1/8	G1/8
G1/4	40	30	81,5	20	30	4,25	G1/4	G1/8
G1/2	60	40	127	40	50	5,5	G1/2	G1/8

DIAGRAM / *DIAGRAMMA*



PILOT PRESSURE

DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

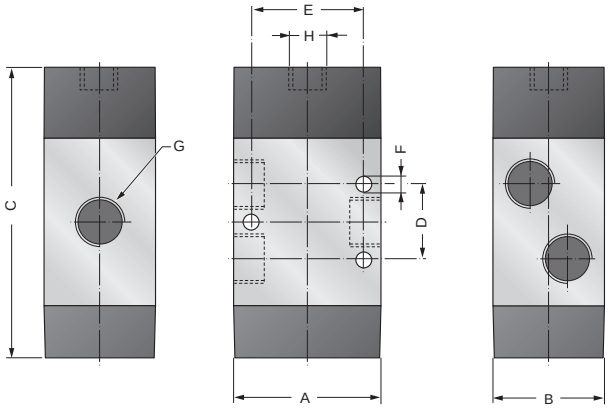
V32V1P . M.



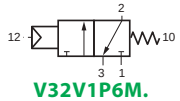
VALVE / *VALVOLA* 3/2

SINGLE PNEUMATIC PILOT - SPRING RETURN

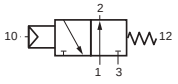
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA MECCANICA



SIMBOLS / *SIMBOLI*

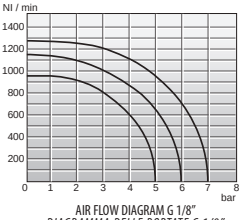


V32V1P6M.



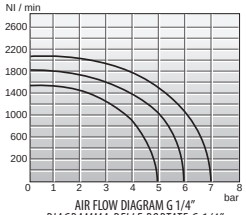
V32V1P9M.

DIAGRAMS / *DIAGRAMMI*



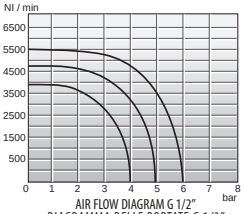
AIR FLOW DIAGRAM G 1/8"

DIAGRAMMA DELLE PORTATE G 1/8"



AIR FLOW DIAGRAM G 1/4"

DIAGRAMMA DELLE PORTATE G 1/4"



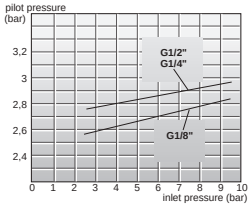
AIR FLOW DIAGRAM G 1/2"

DIAGRAMMA DELLE PORTATE G 1/2"

(⁎) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

	Size *Taglia*	A	B	C	D	E	ØF	G	H
	G1/8	30	26	74	18	23	4,25	G1/8	G1/8
(⁎)	G1/4	40	30	81,5	20	30	4,25	G1/4	G1/8
(⁎)	G1/2	60	40	118	40	50	5,5	G1/2	G1/8

DIAGRAM / *DIAGRAMMA*



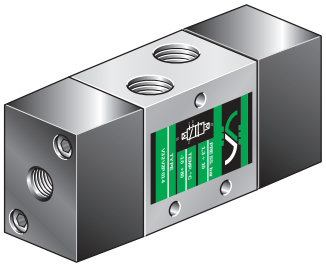
PILOT PRESSURE

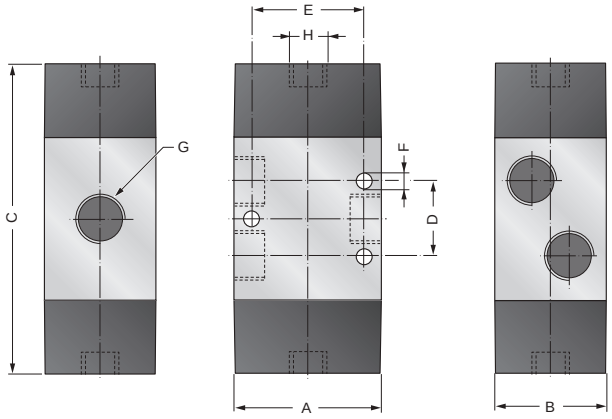
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

VALVE / VALVOLA 3/2

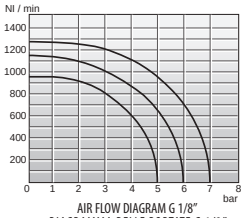
DOUBLE PNEUMATIC PILOT / *DOPPIO COMANDO PNEUMATICO*

V32V2P01.

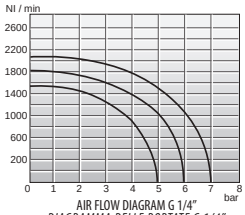




DIAGRAMS / *DIAGRAMMI*

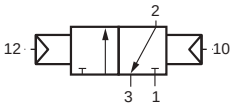


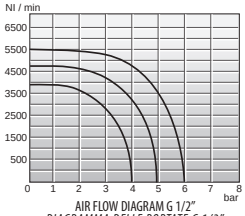
AIR FLOW DIAGRAM G 1/8"
DIAGRAMMA DELLE PORTATE G 1/8"



AIR FLOW DIAGRAM G 1/4"
DIAGRAMMA DELLE PORTATE G 1/4"

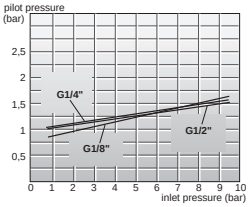
SIMBOL / *SIMBOLO*





AIR FLOW DIAGRAM G 1/2"
DIAGRAMMA DELLE PORTATE G 1/2"

DIAGRAM / *DIAGRAMMA*



PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

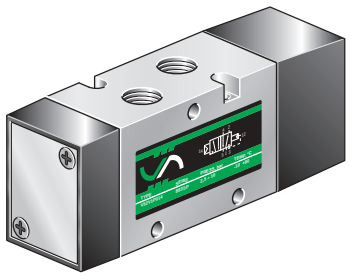
(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

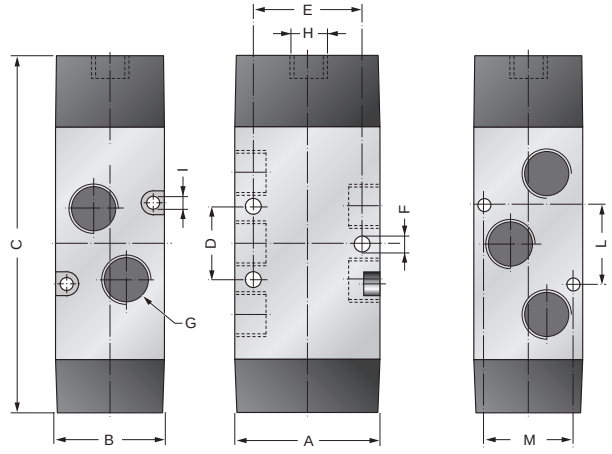
	Size *Taglia*	A	B	C	D	E	ØF	G	H
	G1/8	30	26	79	18	23	4,25	G1/8	G1/8
(*)	G1/4	40	30	87	20	30	4,25	G1/4	G1/8
(*)	G1/2	60	40	132	40	50	5,5	G1/2	G1/8

VALVE / VALVOLA 5/2

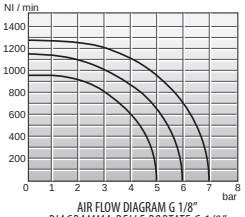
SINGLE PNEUMATIC PILOT / *COMANDO PNEUMATICO*

V52V1P . 1.

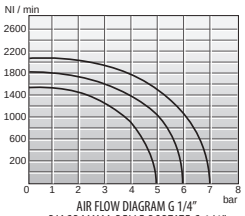




DIAGRAMS / *DIAGRAMMI*

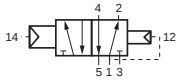


AIR FLOW DIAGRAM G 1/8"
DIAGRAMMA DELLE PORTATE G 1/8"

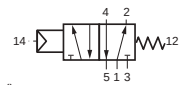


AIR FLOW DIAGRAM G 1/4"
DIAGRAMMA DELLE PORTATE G 1/4"

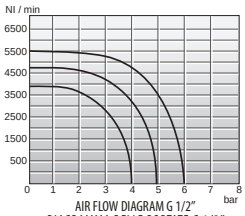
SIMBOLS / *SIMBOLI*



V52V1P01.

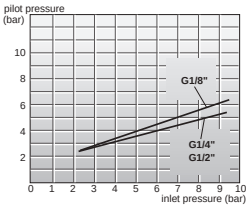


() **V52V1PM1.**



AIR FLOW DIAGRAM G 1/2"
DIAGRAMMA DELLE PORTATE G 1/2"

DIAGRAM / *DIAGRAMMA*

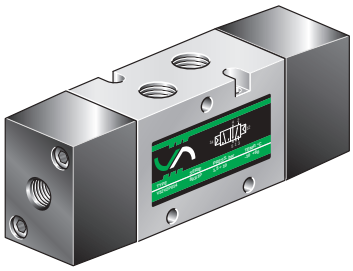


PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

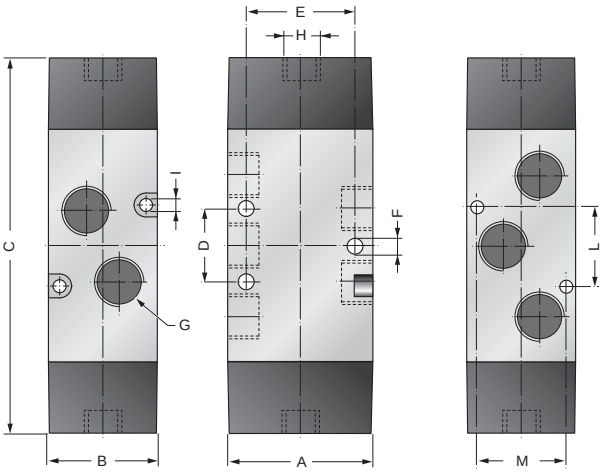
	Size *Taglia*	A	B	C	D	E	ØF	G	H	ØI	L	M
	1/8	30	26	91	18	23	4,25	G1/8	G1/8	3,25	28,6	20
(*)	1/4	40	30	100	20	30	4,25	G1/4	G1/8	3,25	21	24,6
(*)	1/2	60	40	167	40	50	5,5	G1/2	G1/8	—	—	—

V52V2P . 1.

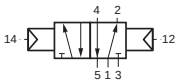


VALVE / *VALVOLA* 5/2

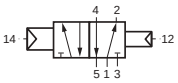
DOUBLE PNEUMATIC PILOT / *DOPPIO COMANDO PNEUMATICO*



SIMBOLS / *SIMBOLI*

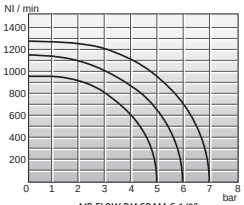


V52V2P01.

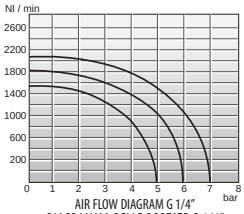


V52V2PD1.

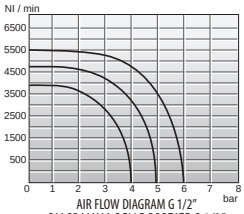
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G 1/8"
DIAGRAMMA DELLE PORTATE G 1/8"



AIR FLOW DIAGRAM G 1/4"
DIAGRAMMA DELLE PORTATE G 1/4"

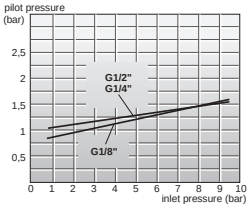


AIR FLOW DIAGRAM G 1/2"
DIAGRAMMA DELLE PORTATE G 1/2"

(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

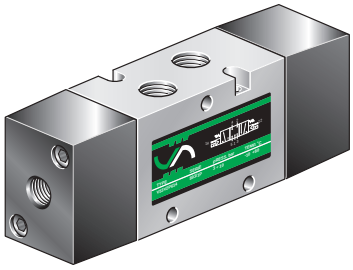
Size *Taglia*	A	B	C	D	E	ØF	G	H	ØI	L	M
1/8	30	26	96	18	23	4,25	G1/8	G1/8	3,25	28,6	20
(*) 1/4	40	30	105	20	30	4,25	G1/4	G1/8	3,25	21	24,6
(*) 1/2	60	40	172	40	50	5,5	G1/2	G1/8	—	—	—

DIAGRAM / *DIAGRAMMA*



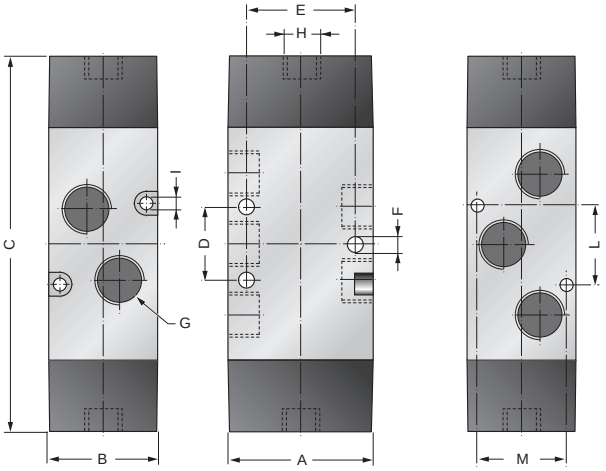
PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

V53V2P . 1.

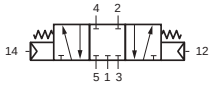


VALVE / *VALVOLA* 5/3

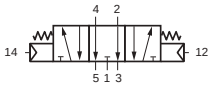
DOUBLE PNEUMATIC PILOT / *DOPPIO COMANDO PNEUMATICO*



SIMBOLS / *SIMBOLI*

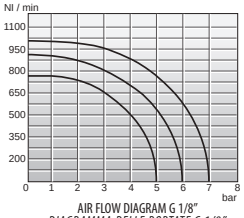


V53V2P61.

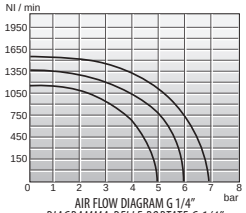


V53V2P91.

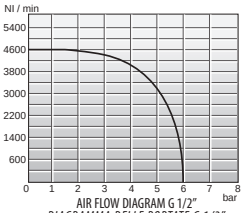
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G 1/8"
DIAGRAMMA DELLE PORTATE G 1/8"



AIR FLOW DIAGRAM G 1/4"
DIAGRAMMA DELLE PORTATE G 1/4"

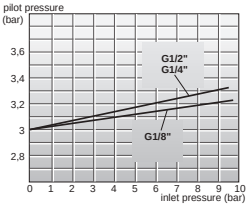


AIR FLOW DIAGRAM G 1/2"
DIAGRAMMA DELLE PORTATE G 1/2"

(*) versions see / *Versioni vedi P.* ***B-113***

Size *Taglia*	A	B	C	D	E	ØF	G	H	ØI	L	M
1/8	30	26	108	18	23	4,25	G1/8	G1/8	3,25	28,6	20
1/4	40	30	105	20	30	4,25	G1/4	G1/8	3,25	21	24,6
1/2	60	40	192	40	50	5,5	G1/2	G1/8	—	—	—

DIAGRAM / *DIAGRAMMA*



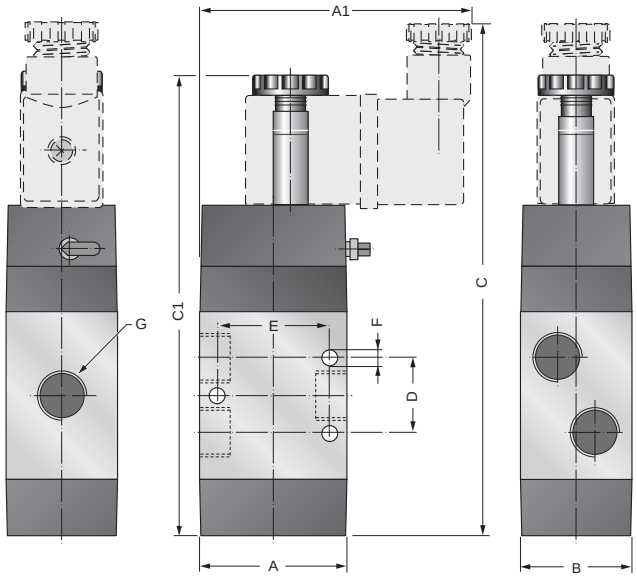
PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

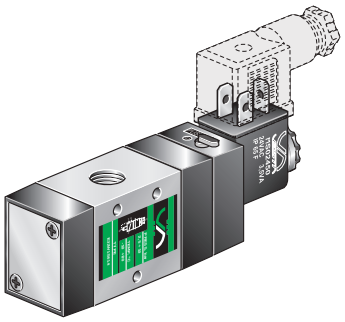
SOLENOID VALVE / 3/2

SINGLE SOLENOID VALVE - INTERNAL PRESSURE RETURN

COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO MOLLA PNEUMATICA

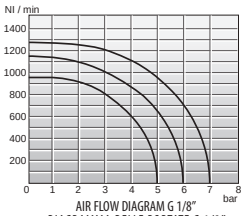
E32W1S . 1. - .....





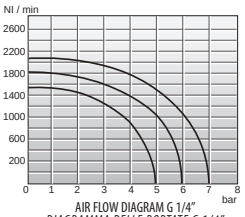
Size *Taglia*	A	A1	B	C	C1	D	E	ØF	G
1/8	30	63	26	133	119	18	23	4,25	G1/8
1/4	40	73	30	140	125	20	30	4,25	G1/4
1/2	60	60	40	181	167	40	50	5,5	G1/2

DIAGRAMS / *DIAGRAMMI*



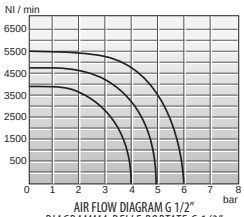
AIR FLOW DIAGRAM G 1/8"

DIAGRAMMA DELLE PORTATE G 1/8"



AIR FLOW DIAGRAM G 1/4"

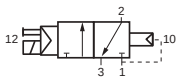
DIAGRAMMA DELLE PORTATE G 1/4"



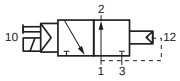
AIR FLOW DIAGRAM G 1/2"

DIAGRAMMA DELLE PORTATE G 1/2"

SIMBOLS / *SIMBOLI*



E32W1S61. -.....



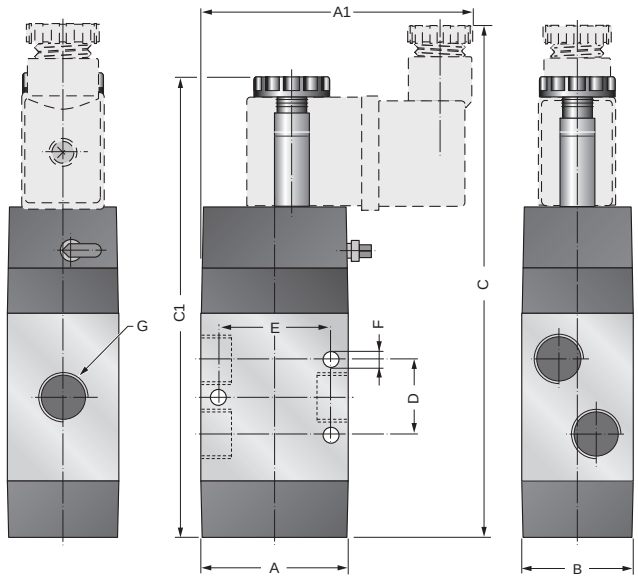
E32W1S91. -.....

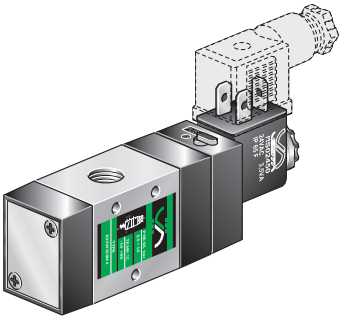
SOLENOID VALVE / *ELETTROVALVOLA* 3/2

SINGLE SOLENOID VALVE - SPRING RETURN

COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO MOLLA MECCANICA

E32W1S . M. - .....

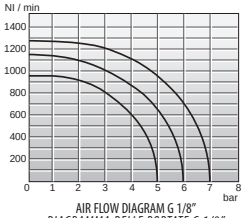




(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.*

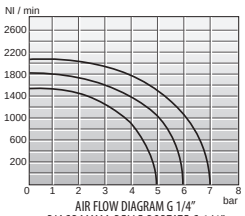
Size *Taglia*	A	A1	B	C	C1	D	E	ØF	G
1/8	30	63	26	133	119	18	23	4,25	G1/8
(*) 1/4	40	73	30	140	125	20	30	4,25	G1/4
(*) 1/2	60	60	40	172	158	40	50	5,5	G1/2

DIAGRAMS / *DIAGRAMMI*



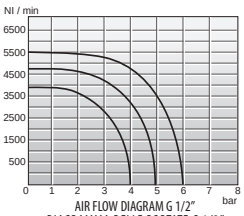
AIR FLOW DIAGRAM G 1/8"

DIAGRAMMA DELLE PORTATE G 1/8"



AIR FLOW DIAGRAM G 1/4"

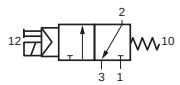
DIAGRAMMA DELLE PORTATE G 1/4"



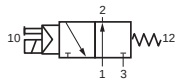
AIR FLOW DIAGRAM G 1/2"

DIAGRAMMA DELLE PORTATE G 1/2"

SIMBOLS / *SIMBOLI*

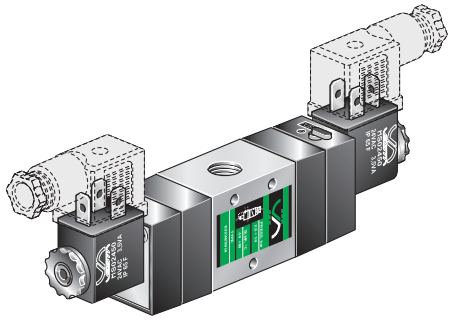


E32W1S6M -.....



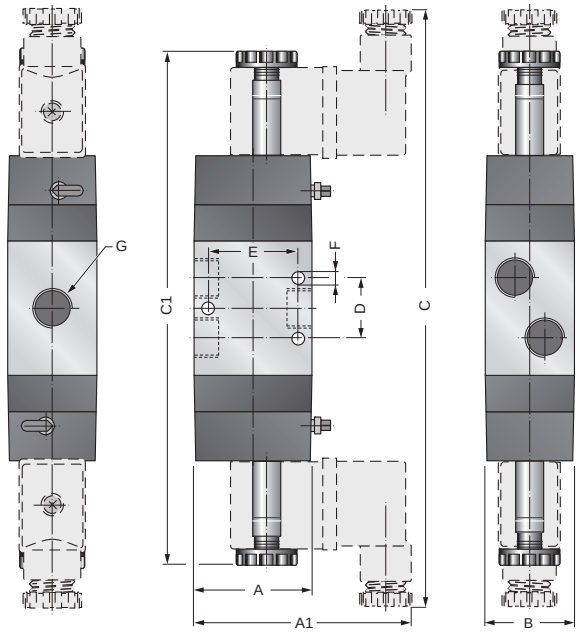
E32W1S9M -.....

E32W2S01. - .....

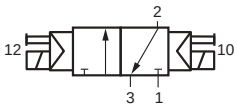


SOLENOID VALVE / 3/2

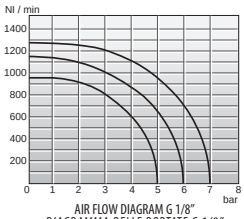
DOUBLE SOLENOID VALVE / *DOPPIO COMANDO ELETTROPNEUMATICO*



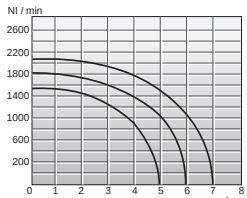
SIMBOL / *SIMBOLO*



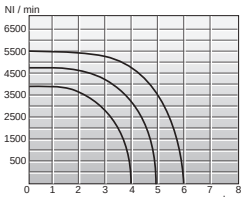
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G 1/8"
DIAGRAMMA DELLE PORTATE G 1/8"



AIR FLOW DIAGRAM G 1/4"
DIAGRAMMA DELLE PORTATE G 1/4"

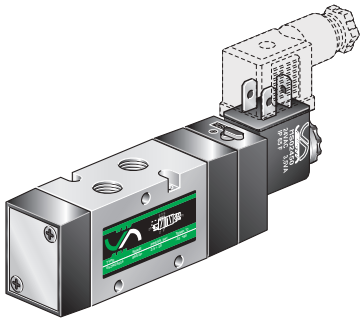


AIR FLOW DIAGRAM G 1/2"
DIAGRAMMA DELLE PORTATE G 1/2"

(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

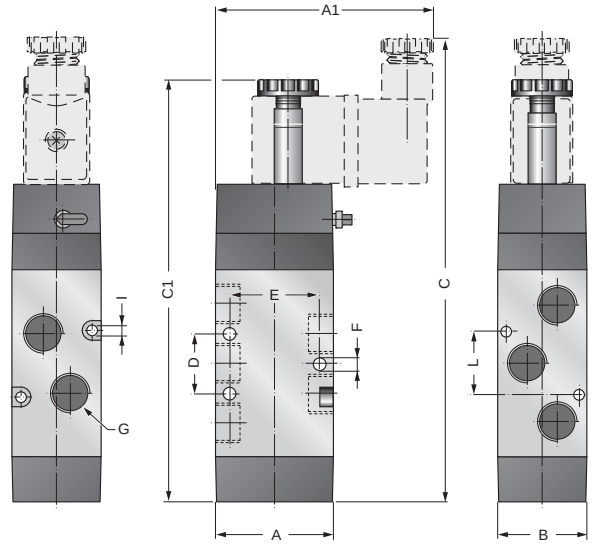
	Size *Taglia*	A	A1	B	C	C1	D	E	ØF	G
	1/8	30	63	26	197	169	18	23	4,25	G1/8
(*)	1/4	40	73	30	203	175	20	30	4,25	G1/4
(*)	1/2	60	60	40	240	212	40	50	5,5	G1/2

E52W1S . 1. - .....

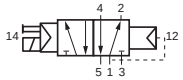


SOLENOID VALVE / 5/2

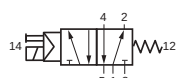
SINGLE SOLENOID VALVE / *COMANDO ELETTROPNEUMATICO*



SIMBOLS / *SIMBOLI*

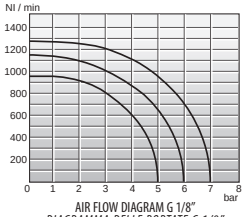


E52W1S01. -.....

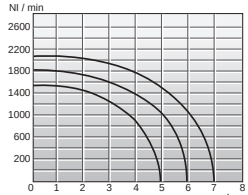


(*) **E52W1SM1. -.....**

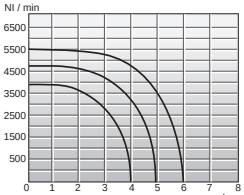
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G 1/8"
DIAGRAMMA DELLE PORTATE G 1/8"



AIR FLOW DIAGRAM G 1/4"
DIAGRAMMA DELLE PORTATE G 1/4"



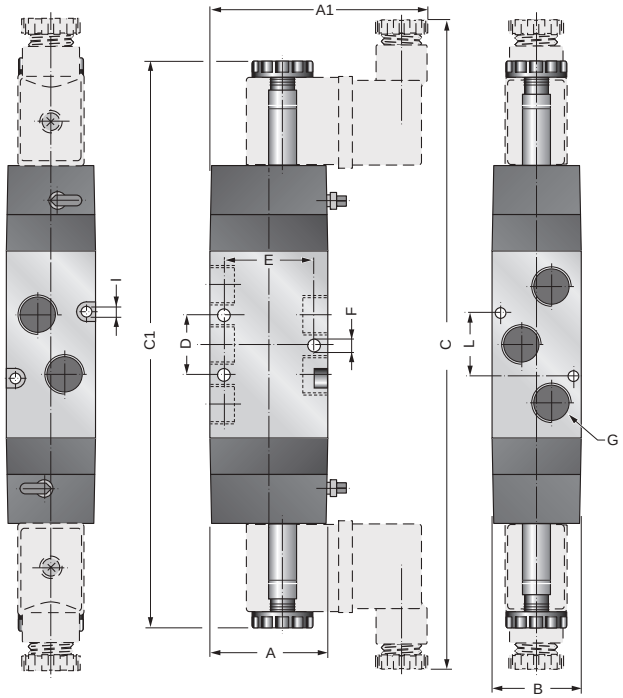
AIR FLOW DIAGRAM G 1/2"
DIAGRAMMA DELLE PORTATE G 1/2"

(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

	Size *Taglia*	A	A1	B	C	C1	D	E	ØF	G	ØI	L
	1/8	30	63	26	150	136	18	23	4,25	G1/8	3,25	28,6
(*)	1/4	40	73	30	158	143	20	30	4,25	G1/4	3,25	21
(*)	1/2	60	60	40	221	207	40	50	5,5	G1/2	—	—

SOLENOID VALVE / 5/2

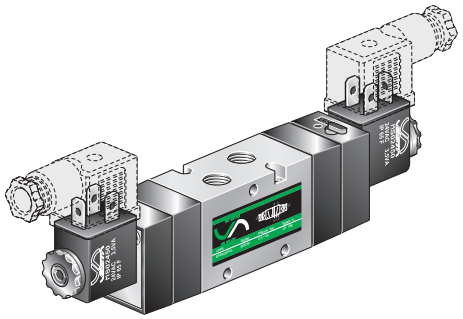
DOUBLE SOLENOID VALVE / *DOPPIO COMANDO ELETTROPNEUMATICO*



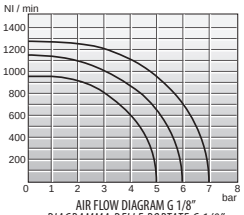
	Size *Taglia*	A	A1	B	C	C1	D	E	ØF	G	ØI	L
	1/8	30	63	26	215	186	18	23	4,25	G1/8	3,25	28,6
(*)	1/4	40	73	30	220	191	20	30	4,25	G1/4	3,25	21
(*)	1/2	60	60	40	280	252	40	50	5,5	G1/2	—	—

(*) **ATEX** versions see P. **B-113**
Versioni **ATEX** *vedi P.* ***B-113***

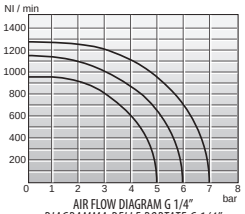
E52W2S01. - .....



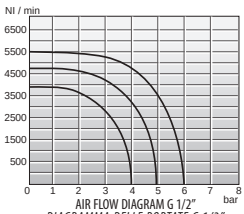
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G 1/8"
DIAGRAMMA DELLE PORTATE G 1/8"

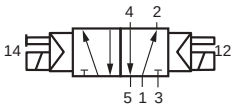


AIR FLOW DIAGRAM G 1/4"
DIAGRAMMA DELLE PORTATE G 1/4"



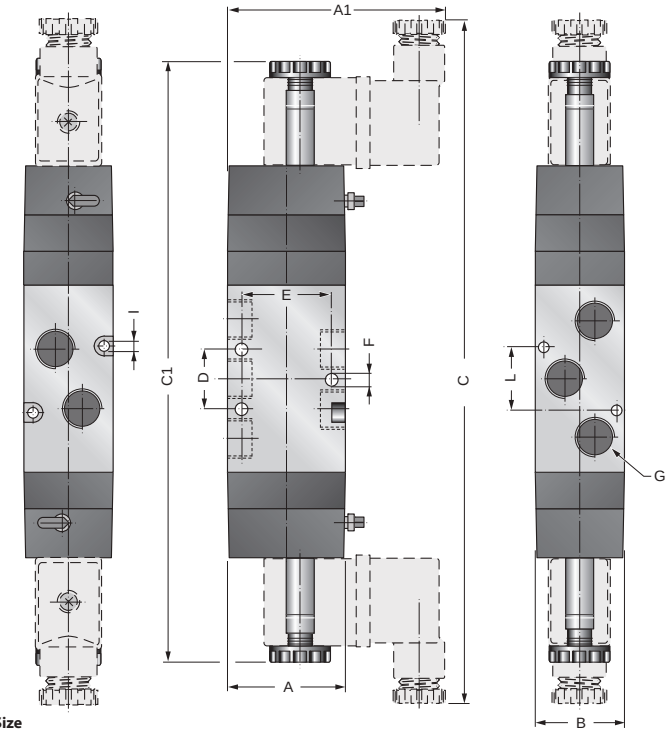
AIR FLOW DIAGRAM G 1/2"
DIAGRAMMA DELLE PORTATE G 1/2"

SIMBOL / *SIMBOLO*



SOLENOID VALVE / 5/3

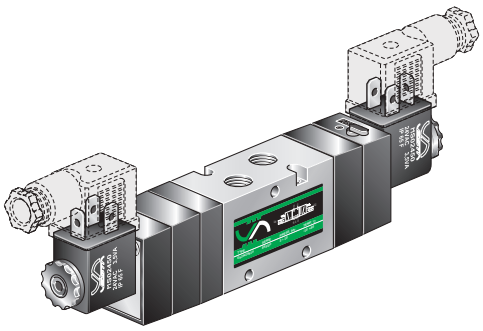
DOUBLE SOLENOID VALVE / *DOPPIO COMANDO ELETTROPNEUMATICO*



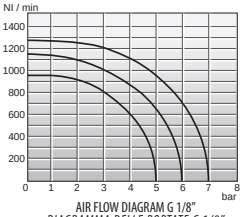
	Size *Taglia*	A	A1	B	C	C1	D	E	ØF	G	ØI	L
	1/8	30	63	26	227	198	18	23	4,25	G1/8	3,25	28,6
	1/4	40	73	30	232	203	20	30	4,25	G1/4	3,25	21
	1/2	60	60	40	280	252	40	50	5,5	G1/2	—	—

(*) **ATEX** versions see P. **B-113**
Versioni **ATEX** *vedi P.* ***B-113***

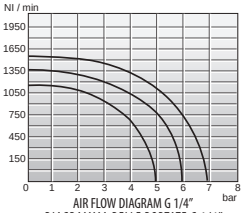
E53W2S . 1. - .....



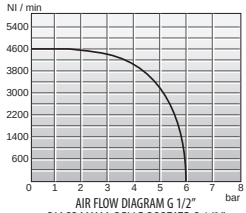
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G 1/8"
DIAGRAMMA DELLE PORTATE G 1/8"

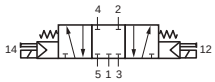


AIR FLOW DIAGRAM G 1/4"
DIAGRAMMA DELLE PORTATE G 1/4"

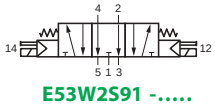


AIR FLOW DIAGRAM G 1/2"
DIAGRAMMA DELLE PORTATE G 1/2"

SIMBOLS / *SIMBOLI*



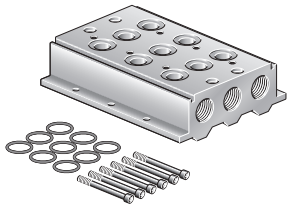
E53W2S61 -.....



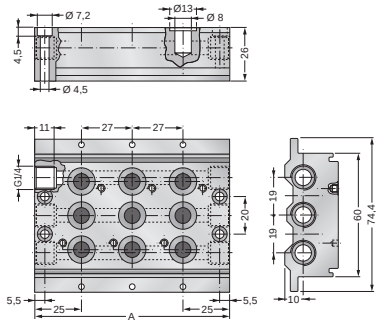
E53W2S91 -.....

ME .18

DOUBLE INLET MANIFOLD FOR ASSEMBLING VALVES AND SOLENOID VALVES G1/8
BASE A DOPPIO INGRESSO PER ASSEMBLAGGIO VALVOLE ED ELETTROVALVOLE G1/8



- Completly of gasket and screw for assembling valves on manifold .
- *Nella confezione sono presenti le guarnizioni e le viti per fissare le valvole alla base.*

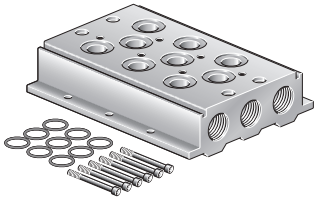


CODES / *CODICI*

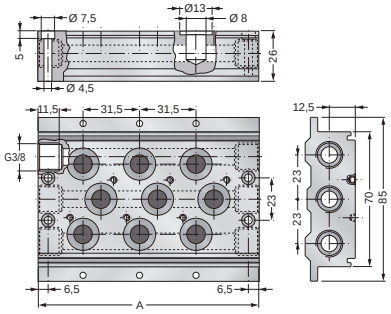
Code *Codice*	A *A*	Place *Posti*
ME 218	77	2
ME 318	104	3
ME 418	131	4
ME 518	158	5
ME 618	185	6
ME 718	212	7
ME 818	239	8
ME 918	266	9
ME 1018	293	10

ME .14

(*) DOUBLE INLET MANIFOLD FOR ASSEMBLING VALVES AND SOLENOID VALVES G1/4
BASE A DOPPIO INGRESSO PER ASSEMBLAGGIO VALVOLE ED ELETTROVALVOLE G1/4



- Completly of gasket and screw for assembling valves on manifold.
- *Nella confezione sono presenti le guarnizioni e le viti per fissare le valvole alla base.*



CODES / *CODICI*

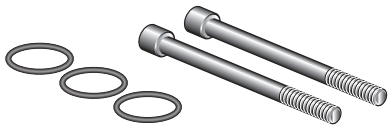
Code *Codice*	A *A*	Place *Posti*
ME 214	91,5	2
ME 314	123,5	3
ME 414	154,5	4
ME 514	186,5	5
ME 614	217,5	6
ME 714	249,5	7
ME 814	280,5	8
ME 914	312,5	9
ME 1014	343,5	10

(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

SEALS KIT AND ACCESSORIES FOR VALVES AND SOLENOID VALVES G 1/8 AND G 1/4
RICAMBI ED ACCESSORI PER VALVOLE ED ELETTROVALVOLE G 1/8 E G 1/4

KM 018 (G1/8) KM 014 (G1/4)

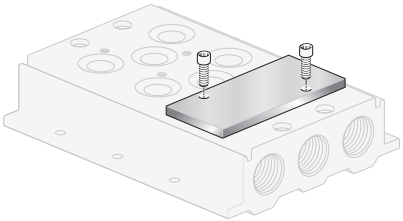
ASSEMBLING KIT
KIT DI ASSEMBLAGGIO



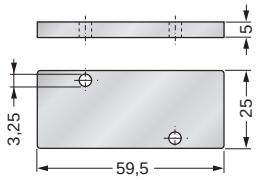
- Subbases are supplied with assembling screws and seals.
  Kit of screws and seals can be supplied also as spare parts with the code **KM 018** and **KM 014**.
- *Le basi sono complete delle viti e delle guarnizioni necessarie per il fissaggio delle valvole.*
  Tuttavia può essere fornito come ricambio il kit **KM 018** *per il fissaggio di singole valvole da G1/8 oppure* **KM 014** *per il fissaggio di singole valvole da G1/4*

PCH 018 (G1/8) PCH 014 (G1/4)

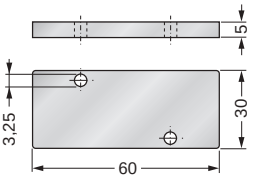
PLUG-FLAT
CHIUSURA POSTO INUTILIZZATO



PCH 018

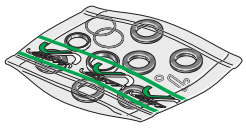


PCH 014



SET . 1/4 SG

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO



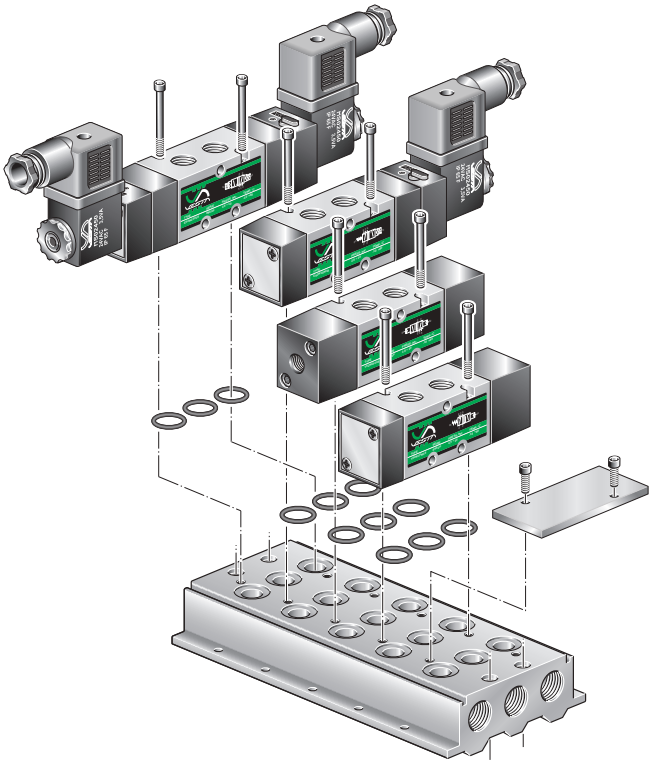
Seals kit code - *Codice del kit*

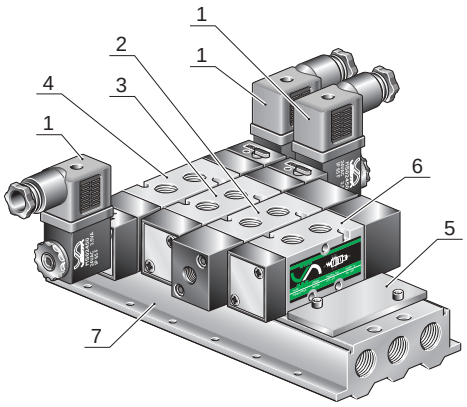
SET 1 1/4 SG: for G1/4 **mono-stable** valves - *per valvole* ***monostabili*** *G1/4.*

SET 2 1/4 SG: for G1/4 **bi-stable** valves - *per valvole* ***bistabili*** *G1/4*

Example / *Esempio:* **E52W1SM14-02400 —> SET 1 1/4 SG** **E52W2S014-02400 —> SET 2 1/4 SG**

EXAMPLE OF MODULAR ASSEMBLING VALVES AND SOLENOID VALVES G1/8
ESEMPIO DI ASSEMBLAGGIO MODULARE DI VALVOLE ED ELETTROVALVOLE G1/8

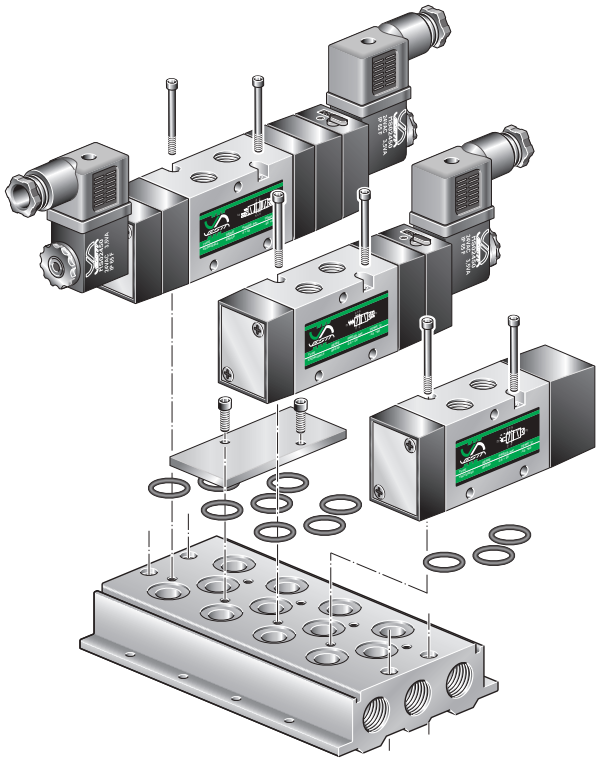


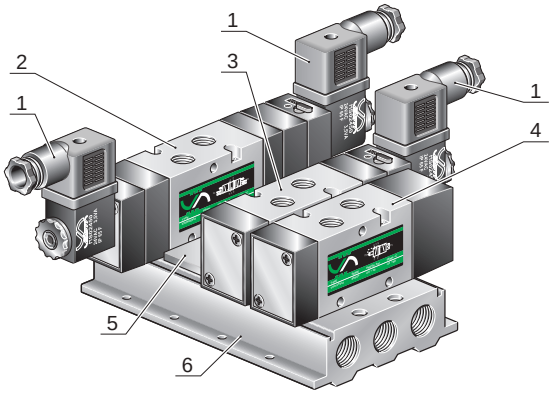


Components needed for assembling manifold on the picture.
Esempio di componenti necessari a realizzare la batteria raffigurata.

Position *Posizione*	Quantity *Quantità*	Code *Codice*
1	N° 3	CEP/1
2	N° 1	V52V2P018
3	N° 1	E52W1S018 - 02450
4	N° 1	E52W2S018 - 02450
5	N° 1	PCH 018
6	N° 1	V52V1PM18
7	N° 1	ME 518

EXAMPLE OF MODULAR ASSEMBLING VALVES AND SOLENOID VALVES G1/4
ESEMPIO DI ASSEMBLAGGIO MODULARE DI VALVOLE ED ELETTROVALVOLE G1/4





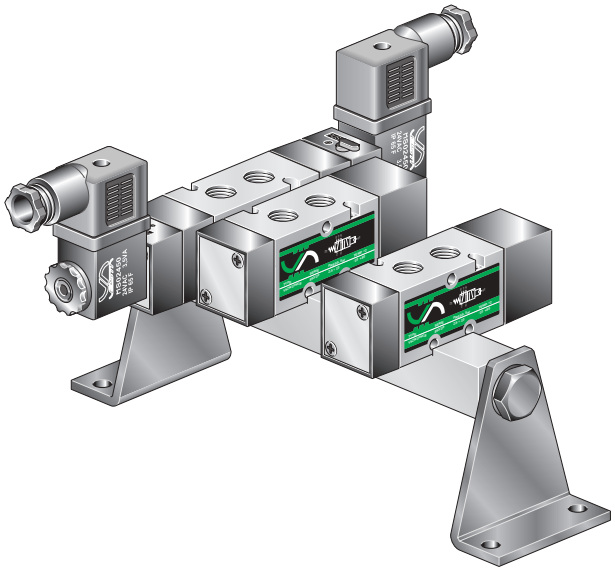
Components needed for assembling manifold on the picture.
Esempio di componenti necessari a realizzare la batteria raffigurata.

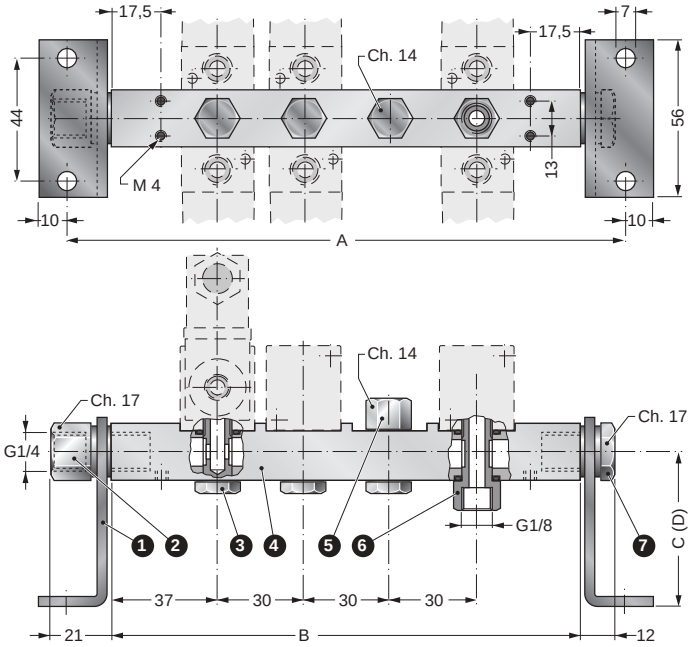
Position *Posizione*	Quantity *Quantità*	Code *Codice*
1	N° 3	CEP/1
2	N° 1	E53W2S914 - 02450
3	N° 1	E52W1SM14 - 02450
4	N° 1	V52V1PM14
5	N° 1	PCH014
6	N° 1	ME 414

MANIFOLD ASSEMBLING VALVES AND SOLENOID VALVES G1/8
ASSEMBLAGGIO SU COLLETTORE DELLE VALVOLE ED ELETTROVALVOLE G 1/8

RTCOV . 18
SBCOV . 18
SACOV . 18

MANIFOLDS WITH COMMON INLET AIR FOR G1/8 VALVES
COLLETTORI PER VALVOLE FILETTATE G1/8





CODES / *CODICI*

Code *Codice*	A	B	C	D	Place *Posti*
ASSEMBLED MANIFOLD RT018 WITH FITTINGS **COLLETTORE RT018 COMPLETO DI RACCORDI**					
RTCOV218	-	104	-	-	2
RTCOV318	-	134	-	-	3
RTCOV418	-	164	-	-	4
RTCOV518	-	194	-	-	5
ASSEMBLED MANIFOLD RT018 WITH FITTINGS AND LOW SUPPORTS SB018 ***COLLETTORE RT018 COMPLETO DI RACCORDI E SUPPORTI BASSI SB018***					
SBCOV218	134	104	72	-	2
SBCOV318	164	134	72	-	3
SBCOV418	194	164	72	-	4
SBCOV518	224	194	72	-	5
ASSEMBLED MANIFOLD RT018 WITH FITTINGS AND HIGH SUPPORTS SA018 ***COLLETTORE RT018 COMPLETO DI RACCORDI E SUPPORTI ALTI SA018***					
SACOV218	134	104	-	125	2
SACOV318	164	134	-	125	3
SACOV418	194	164	-	125	4
SACOV518	224	194	-	125	5

Position *Posizione*	Code *Codice*	Description *Descrizione*
1	**SB018** (ref. C)	Low supports mounted "C" / *Supporto basso "C"*
	SA018 (ref. D)	High supports mounted "D" / *Supporto alto "D"*
2	**RFS18**	Fixing supports fitting with inlet air *Raccordo fissaggio supporto con connessione*
3	**RT018**	Fixing valve fitting *Raccordo fissaggio valvola*
4	**COV218**	Manifold 2 valves / *Collettore 2 valvole*
	COV318	Manifold 3 valves / *Collettore 3 valvole*
	COV418	Manifold 4 valves / *Collettore 4 valvole*
	COV518	Manifold 5 valves / *Collettore 5 valvole*
5	**TF018**	Closed fitting *Tappo chiusura raccordo*
6	**RTP18**	Fixing valve fitting with inlet air *Raccordo di fissaggio valvola passante*
7	**RC018**	Fixing supports fitting *Raccordo di chiusura collettore*

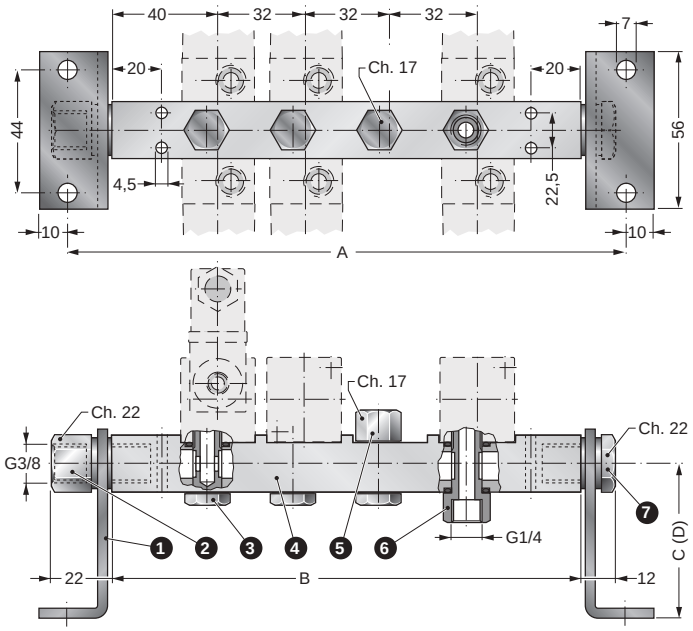
Maximum numbers of valves depends on: air consumption, number of valves contemporary in use user's air flow.
Fitting and supports are supplied with washers

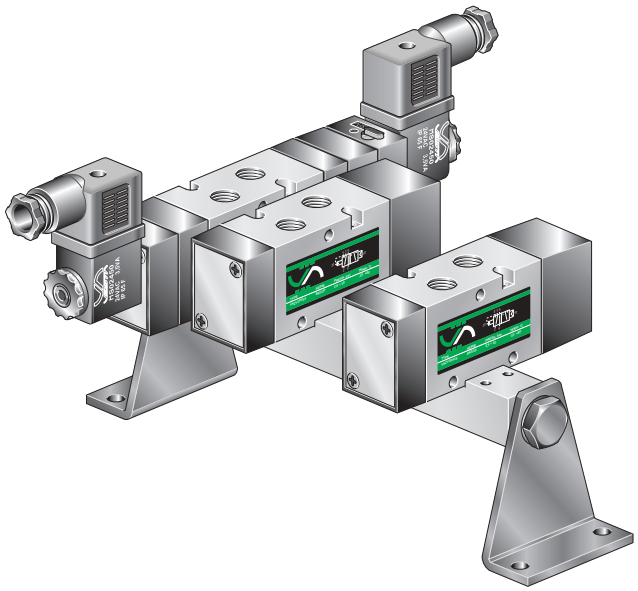
Il numero massimo di valvole dipende dal consumo totale d'aria, da quante valvole vengono azionate contemporaneamente e dalla portata degli utilizzi collegati a valle. I raccordi di fissaggio valvole e supporti vengono forniti completi di rondelle di tenuta.

MANIFOLD ASSEMBLING VALVES AND SOLENOID VALVES G1/4
ASSEMBLAGGIO SU COLLETTORE DELLE VALVOLE ED ELETTROVALVOLE G 1/4

RTCOV . 14
SBCOV . 14
SACOV . 14

MANIFOLDS WITH COMMON INLET AIR FOR G1/4 VALVES
COLLETTORI PER VALVOLE FILETTATE G1/4





CODES / *CODICI*

Code *Codice*	A	B	C	D	Place *Posti*
ASSEMBLED MANIFOLD RT014 WITH FITTINGS					
COLLETTORE RT014 COMPLETO DI RACCORDI					
RTCOV214	-	112	-	-	2
RTCOV314	-	144	-	-	3
RTCOV414	-	176	-	-	4
RTCOV514	-	208	-	-	5
ASSEMBLED MANIFOLD RT014 WITH FITTINGS AND LOW SUPPORTS SB014					
COLLETTORE RT014 COMPLETO DI RACCORDI E SUPPORTI BASSI SB014					
SBCOV214	134	104	95	-	2
SBCOV314	164	134	95	-	3
SBCOV414	194	164	95	-	4
SBCOV514	224	194	95	-	5
ASSEMBLED MANIFOLD RT014 WITH FITTINGS AND HIGH SUPPORTS SA014					
COLLETTORE RT014 COMPLETO DI RACCORDI E SUPPORTI ALTI SA014					
SACOV214	134	104	-	133	2
SACOV314	164	134	-	133	3
SACOV414	194	164	-	133	4
SACOV514	224	194	-	133	5

Position *Posizione*	Code *Codice*	Description *Descrizione*
1	**SB014** (ref. C)	Low supports mounted "C" / *Supporto basso "C"*
	SA014 (ref. D)	High supports mounted "D" / *Supporto alto "D"*
2	**RFS14**	Fixing supports fitting with inlet air *Raccordo fissaggio supporto con connessione*
3	**RT014**	Fixing valve fitting *Raccordo fissaggio valvola*
4	**COV214**	Manifold 2 valves / *Collettore 2 valvole*
	COV314	Manifold 3 valves / *Collettore 3 valvole*
	COV414	Manifold 4 valves / *Collettore 4 valvole*
	COV514	Manifold 5 valves / *Collettore 5 valvole*
5	**TF014**	Closed fitting *Tappo chiusura raccordo*
6	**RTP14**	Fixing valve fitting with inlet air *Raccordo di fissaggio valvola passante*
7	**RC014**	Fixing supports fitting *Raccordo di chiusura collettore*

Maximum numbers of valves depends on: air consumption, number of valves contemporary in use user's air flow.
Fitting and supports are supplied with washers

Il numero massimo di valvole dipende dal consumo totale d'aria, da quante valvole vengono azionate contemporaneamente e dalla portata degli utilizzi collegati a valle. I raccordi di fissaggio valvole e supporti vengono forniti completi di rondelle di tenuta.

DIRECT ACTUATED SOLENOID VALVES 3/2 G1/8 - *ELETTROVALVOLE A COMANDO DIRETTO 3/2 G1/8*

BE □ □ - □ □□□□□ □□

Number place of base-plate
Numero posti della base:
1, **2**, **3**, ...

M
with manual control
con controllo manuale

(Standard without manual control
Standard senza controllo manuale)

Coil / *Solenoide*:
00000 .. No coil / *Senza solenoide*
01200 .. 12 V DC
02400 .. 24 V DC
02450 .. 24 V 50/60Hz AC
11050 .. 110 V 50/60Hz AC
22050 .. 220 V 50/60Hz AC

For **NO** versions only 5 Watt coil.
*Per versioni **NO** solo solenoidi 5 Watt.*

Flow section / *Diametro nominale*:
2 Ø1,2 mm
5 Ø1,5 mm

NC Normally closed
Normalmente chiusa
NO Normally open
Normalmente aperta

ATEX versions see
*Versioni **ATEX** vedi* P. ***B-113***

TECHNICAL FEATURES

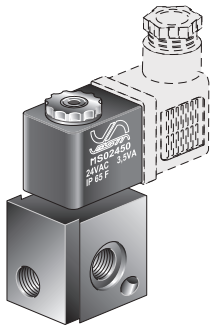
Fixing	n°2 holes Ø3,3.
Connection	G 1/8
Flow section	Ø 1,2 mm (on request Ø1,5 mm)
Environment temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Lubrication	Not required.
Medium	Filtered lubricated or non lubr. air
Operating pressure range	0 ÷ 10 bar (0 ÷ 6 bar for Ø1,5 mm)
Reference temperature	+20 °C
Reference pressure	6 bar
Nominal air flow	80 Nl/min (130 Nl/min for Ø1,5 mm)
Electrical characteristics coil	For **NC** valve see **MS** pag. B-36. For **NO** coil 5 Watt.

CARATTERISTICHE TECNICHE

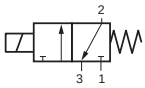
Fissaggio	*n° 2 fori Ø 3,3 superiori.*
Connessioni	*G 1/8*
Diametro nominale	*Ø 1,2 mm (su richiesta Ø1,5 mm)*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Lubrificazione	*Non necessaria*
Fluido	*Aria filtrata lubrif. e non*
Pressione di esercizio	*0 ÷ 10 bar (0 ÷ 6 bar per Ø1,5 mm)*
Temperatura nominale	*+20 °C*
Pressione nominale	*6 bar*
Portata nominale	*80 Nl/min (130 Nl/min per Ø1,5 mm)*
Caratteristiche elettriche solenoide	*Per valvole **NC** vedi **MS** pag. B-36. Per valvole **NO** bobina 5 Watt.*

BE 1 - .....

DIRECT ACTING SOLENOID VALVE 3/2 G1/8
ELETTROVALVOLA A COMANDO DIRETTO 3/2 G1/8

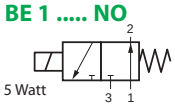


BE 1 ..... NC (*)



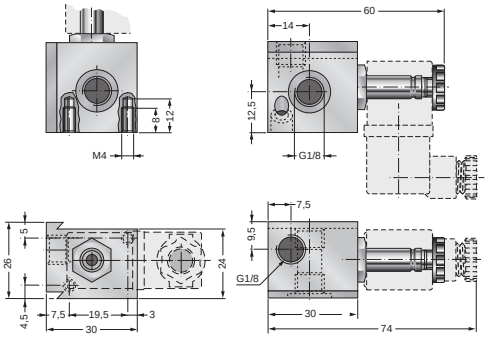
NORMALLY CLOSED *NORMALMENTE CHIUSA*

BE 1 ..... NO



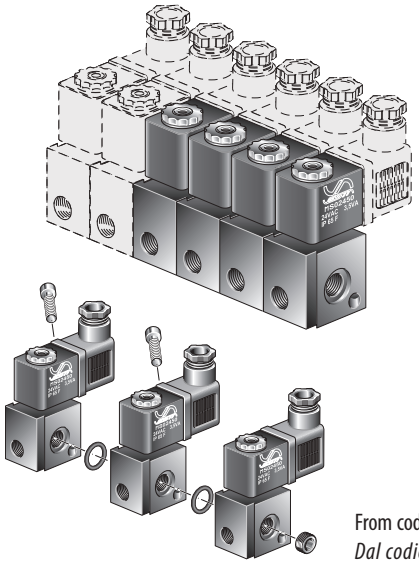
5 Watt

NORMALLY OPEN *NORMALMENTE APERTA*

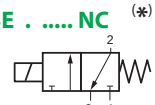


BE _ - .....

DIRECT ACTING SOLENOID VALVES 3/2 G1/8 - MANIFOLD
ELETTROVALVOLE A COMANDO DIRETTO 3/2 G1/8 IN BATTERIA

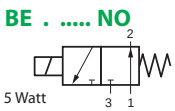


BE . ..... NC (*)



NORMALLY CLOSED *NORMALMENTE CHIUSA*

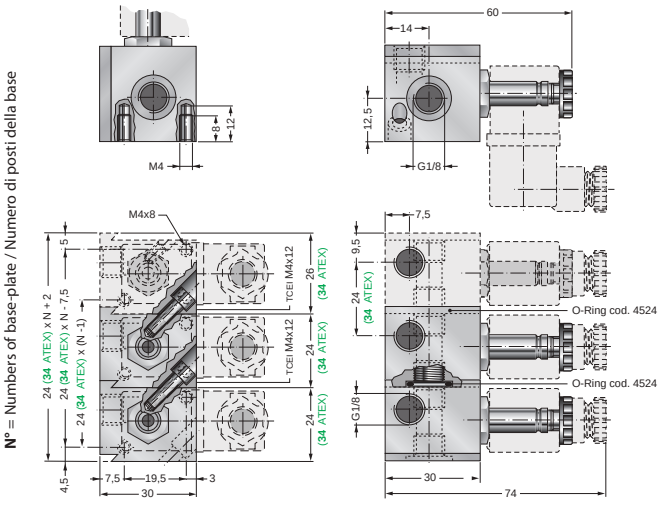
BE . ..... NO



5 Watt

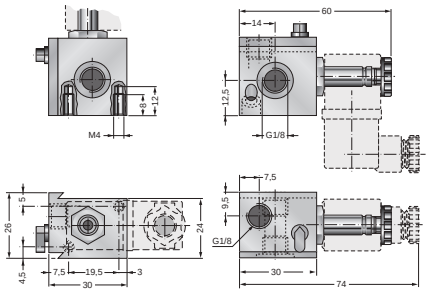
NORMALLY OPEN *NORMALMENTE APERTA*

(*) **ATEX** versions see
*Versioni **ATEX** vedi* P. **B-113**



From code **BE2-.....** valves are supplied assembled. Plug (**PL-BE**) not included.
*Dal codice **BE2-.....** le valvole vengono fornite assemblate. Il tappo di chiusura (**PL-BE**) non è incluso.*

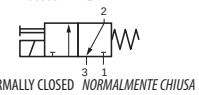
BE.M-.....NC Version



DIRECT ACTING SOLENOID VALVE 3/2 G1/8 WITH MANUAL OVERRIDE
ELETTROVALVOLA A COMANDO DIRETTO 3/2 G1/8 CON COMANDO MANUALE

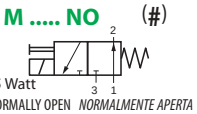
BE 1M - .....

BE 1M ..... NC (*)



NORMALLY CLOSED *NORMALMENTE CHIUSA*

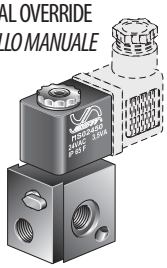
BE 1M ..... NO (#)



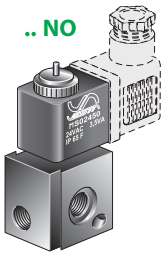
5 Watt
NORMALLY OPEN *NORMALMENTE APERTA*

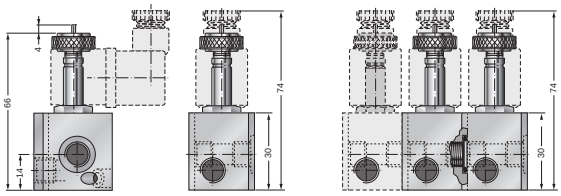
WITH MANUAL OVERRIDE
CON CONTROLLO MANUALE

.. NC



.. NO





(#) MANUAL OVERRIDE
CONTROLLO MANUALE

BE . M -..... NO

The electrically actuated valves normally open, single or multiple base-plate, code **BE_M-.....NO**, are supplied with manual override on the figure and **coil 5 Watt**.

Le elettrovalvole a comando diretto normalmente aperte, singole o in batteria, con codice ***BE_M-.....NO*** *sono fornite con comando manuale come in figura e con* ***solenoide di 5 Watt***.

COILS AND ACCESSORIES FOR SOLENOID VALVES / *SOLENOIDI ED ACESSORI PER ELETTROVALVOLE*

G1/8 PLUG
TAPPO G1/8

PL-BE

Plug for single valve function (**BE 1**) or for manifold.

Tappo di chiusura per elettropilota singolo oppure per elettropiloti in batteria



ASSEMBLING KIT
KIT DI ASSEMBLAGGIO

KM-BE

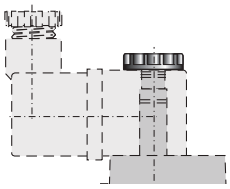
Kit for assembling single valve into multiple station subbase.

kit **KM BE** *composto da 1 vite + 1 O-Ring necessario per il fissaggio di ogni elettropilota* **BE 1** *in batteria.*



STANDARD
STANDARD

GE

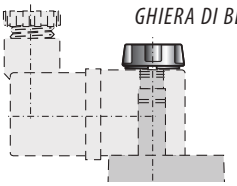




Coil locking nut with open exaust (standard equipement).
Ghiera di bloccaggio bobina con scarico aperto (dotazione standard).

COIL LOCKING NUT **MS**
GHIERA DI BLOCCAGGIO BOBINA ***MS***

GE1





On request, solenoid valves avaiable with coil locking nut with radial exaust valve.
A richiesta le elettrovalvole sono fornite con ghiera di bloccaggio bobina con scarico radiale.

DIRECT ACTUATED VALVES 3/2 NC TUBE Ø4mm *ELETTROVALVOLE A COMANDO DIRETTO 3/2 NC TUBO Ø4mm*

MBE - □ 4- □□□□□

Number of station valves
Numero posti
2, 4, 6, ..., 16

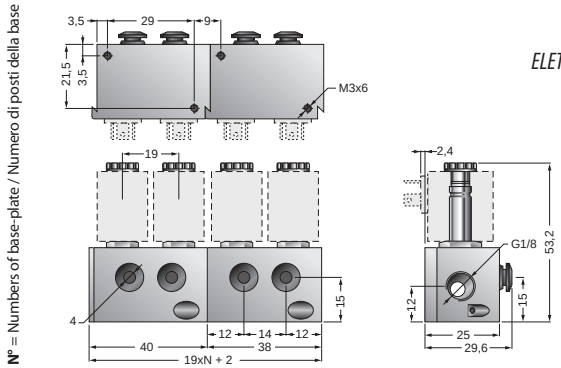
Coil / *Solenoide*: (*see* **CS** / *vedere* **CS** P. **B-52**)
00000 .. No coil / *Senza solenoide*
01200 .. 12 V DC
02400 .. 24 V DC
02450 .. 24 V 50/60Hz AC
11050 .. 110 V 50/60Hz AC
22050 .. 220 V 50/60Hz AC

TECHNICAL FEATURES

Flow section	Ø1mm
Nominal Flow	50Nl/min
Working pressure	0-9bar
Environment temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Solenoids	Refer to **CS** series page B-52

CARATTERISTICHE TECNICHE

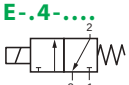
Diametro nominale	*Ø1mm*
Portata nominale	*50Nl/min*
Pressione esercizio	*0-9bar*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Solenoide	*Vedere* ***CS*** *pag. B-52*



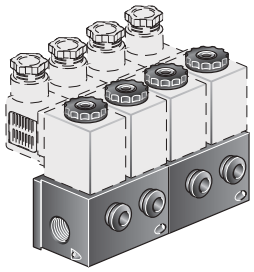
DIRECT ACTING SOLENOID VALVES 3/2 TUBE Ø4mm - MANIFOLD
ELETTROVALVOLE A COMANDO DIRETTO 3/2 TUBO Ø4mm IN BATTERIA

MBE- . 4-.....

MBE-.4-....



NORMALLY CLOSED *NORMALMENTE CHIUSA*



DIRECT ACTUATED VALVES 3/2 NC G1/8 - *ELETTROVALVOLE A COMANDO DIRETTO 3/2 NC G1/8*

MBE - □ 8 - □ - □□□□□ - □□

Number of station valves / *Numero posti*
2, 4, 6, ..., 16

M with manual control / *con controllo manuale*
(Standard without manual control / *Standard senza controllo manuale*)

Coil / *Solenoide*: (*see / vedere* P.)
00000 .. No coil / *Senza solenoide*
01200 .. 12 V DC
02400 .. 24 V DC
02450 .. 24 V 50/60Hz AC
11050 .. 110 V 50/60Hz AC
22050 .. 220 V 50/60Hz AC
For versions only 5 Watt coil. / *Per versioni* **NO** *solo solenoidi 5 Watt.*

NC Normally closed / *Normalmente chiusa*
NO Normally open / *Normalmente aperta*

TECHNICAL FEATURES

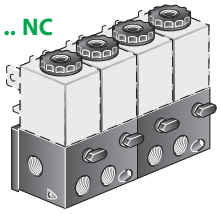
Flow section	Ø1,2mm
Nominal Flow	80Nl/min
Working pressure	0-9bar
Environment temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Solenoids	Refer to **MS** series page B-36

CARATTERISTICHE TECNICHE

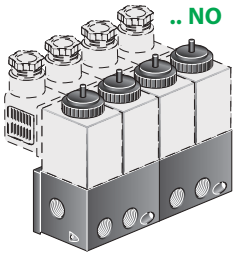
Diametro nominale	*Ø1,2mm*
Portata nominale	*80Nl/min*
Pressione esercizio	*0-9bar*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Solenoide	*Vedere* ***MS*** *pag. B-36*

MBE- . 8-..-.-.....

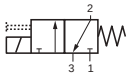
DIRECT ACTING SOLENOID VALVES 3/2 G1/8 - MANIFOLD
ELETTROVALVOLE A COMANDO DIRETTO 3/2 G1/8 IN BATTERIA



WITH MANUAL OVERRIDE
CON CONTROLLO MANUALE

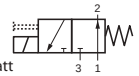


MBE-.8-.-.....-NC

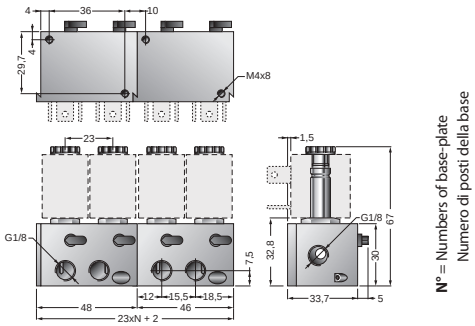


NORMALLY CLOSED *NORMALMENTE CHIUSA*

MBE-.8-.-.....-NO (#)



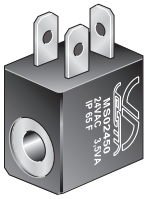
5 Watt
NORMALLY OPEN *NORMALMENTE APERTA*

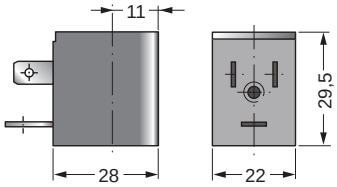


N° = Numbers of base-plate
Numero di posti della base

MS . . . . .

COIL
SOLENOIDE





CODES / *CODICI*

Ordination code / *Codice ordinazione*	Voltage / *Tensione*
MS01200	12 V DC
MS02400	24 V DC
MS02450	24 V 50/60Hz AC
MS11050 (*)	110 V 50/60Hz AC
MS22050 (*)	220 V 50/60Hz AC

(*) Please see page / *Vedi pag.* **B-37**

TECHNICAL FEATURES

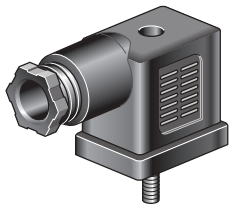
Standard voltage	12, 24 V DC 24,110, 220 V AC (50/60 Hz)
Solenoid characteristics	2,5 Watt in DC; 3,5 V A in AC
Tension	± 10%
Ambient temperature range	-20 °C ÷ +50 °C
Degree of	Class F
Expoy	Incapsulated

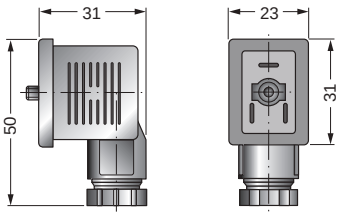
CARATTERISTICHE TECNICHE

Tensione standard	*12, 24 V DC* *24,110, 220 V AC (50/60 Hz)*
Prestazioni bobina	*2,5 Watt in DC; 3,5 V A in AC*
Tensione nominale	*± 10% a bobina calda*
Limiti di temperatura ambiente	*-20 °C ÷ +50 °C*
Protezione	*IP 65 secondo IEC 144 con connettore e guarnizioni montate*
Bobina	*Classe F, Filo rame classe 200 °C*
Sovrastampatura	*Resina epossidica*

CEP-1 . . . . . .

SOLENOID CONNECTOR
CONNETTORE





CODES / *CODICI*

Description / *Descrizione*	Code / *Codice*	Tension / *Tensione*
Universal connector *Connettore universale*	**CEP-1**	All tension *Tutte le tensioni*
Connector with led *Connettore con led*	**CEP-1 L 10/50** **CEP-1 L 70/250**	10/50 V AC / DC 70/250 V AC / DC
Connector with led and varistor *Connettore con led e varistore*	**CEP-1 LV 24** **CEP-1 LV 110** **CEP-1 LV 220**	24 V AC / DC 110 V AC / DC 220 V AC / DC

TECHNICAL FEATURES

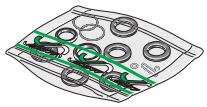
Wire connection	With screwed terminals
Gland thread	PG 9
Number of poles	2 Poles + earth
Housing colour	Black, transparent in the led version.

CARATTERISTICHE TECNICHE

Connessione cavi	*Con morsetti a vite*
Filettatura passacavo	*PG 9*
N° Poli	*2 Poli + terra*
Colori connettore	*Nero, trasparente nelle versioni con led.*

SET . 1/2 SG

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO



Seals kit code - *Codice del kit*
SET 1 1/2 SG: for G1/2 **mono-stable** valves - *per valvole* ***monostabili*** *G1/2.*
SET 2 1/2 SG: for G1/2 **bi-stable** valves - *per valvole* ***bistabili*** *G1/2.*

Example / *Esempio:* **E52W1SM12-02400 —> SET 1 1/2 SG** **E52W2S012-02400 —> SET 2 1/2 SG**

INSTRUCTION OF USE
MANUALE USO E MANUTENZIONE

INSTRUCTIONS FOR USE OF THE FOLLOWING VESTA PRODUCTS
IL PRESENTE MANUALE DI USO E MANUTENZIONE È VALIDO PER I SEGUENTI PRODOTTI VESTA:

COILS SINGLES OR ASSEMBLED ON VALVES / *SOLENOIDI SINGOLI O ASSEMBLATI SU ELETTROVALVOLE:*

MS11050, MS22050, CS11050, CS22050, SCN11050, SCN22050

Please pay attention to the following Vesta products:
Coil and connector offer protection from dust and water to IP65 only when correctly installed with the fixing screw and rubber gasket which are supplied as standard (grommet, coil seal, "O" ring).

Prescrizioni di montaggio per preservare il grado di protezione IP65
Per preservare il grado di protezione IP65 del collegamento elettrico è necessario eseguire il montaggio nel seguente modo:
- Prima di effettuare il collegamento elettrico dei cavi al connettore infilare nel cavo stesso il pressacavo avvitando il serracavo sul connettore.
- Montare la guarnizione bobina fra bobina e connettore, quindi fissare il connettore alla bobina con l'apposita vite, avvitandola adeguatamente.
- Montare quindi la bobina sulla valvola posizionando l'anello di tenuta (OR) nell'apposita sede della bobina.

Ground connection
Ground connection must be secure and adequate.

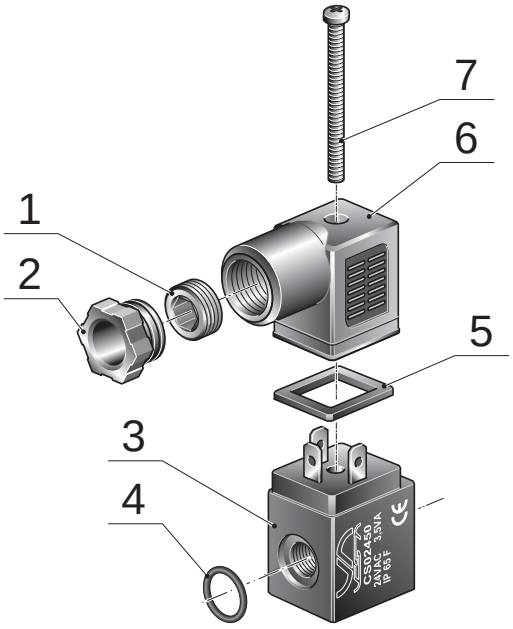
Messa a terra
La bobina prevede il morsetto a terra che deve essere collegato opportunamente all'impianto di messa a terra dell'installazione che deve essere realizzata a regola d'arte.

Electrical connection
When choasing the cable for electrical connections, take into account the location and environment of the installation (ex. Following the CEI 60204-1 stamdard).

Collegamento elettrico
I conduttori utilizzati per il collegamento devono essere scelti e montati a regola d'arte tenuto conto dell'ambiente e delle condizioni di utilizzo nonché delle caratteristiche elettriche di impiego (tensione e corrente di esercizio). Si consiglia di seguire, ove applicabile, la pertinente normativa applicabile (ad es. CEI EN 60204-1).

Should the above instructions not be followed to the letter Vesta Automation will not be hold responsible.

L'installatore e l'utilizzatore sono tenuti ad attenersi scrupolosamente alle indicazioni impartite.
Qualsiasi omissione solleverà Vesta Automation s.r.l. da ogni responsabilità e danno conseguenti.

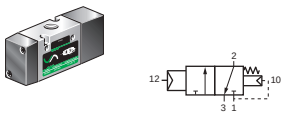


Coils and accessories for solenoid valves.
Solenoidi ed accessori per elettrovalvole.

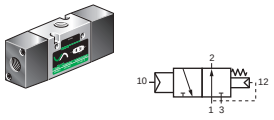
Position *Posizione*	**Description** *Descrizione*
1	Grommet / *Pressacavo*
2	Gland nut / *Serracavo*
3	Solenoid coil / *Bobina*
4	O-Ring / *OR*
5	Coil seal / *Guarnizione bobina*
6	Connector / *Connettore*
7	Fixing screw / *Vite*

INDEX / *INDICE*

G1/8 MINI VALVES AND MINI SOLENOID VALVES SERIES "K" / MINI *VALVOLE E MINI ELETTROVALVOLE SERIE " K"*

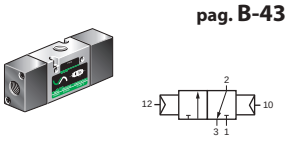


K32P1618
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIT. MOLLA MECCANICA E PNEUMATICA



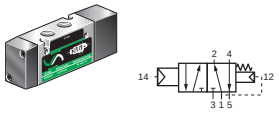
K32P1918
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIT. MOLLA MECCANICA E PNEUMATICA

pag. **B-43**



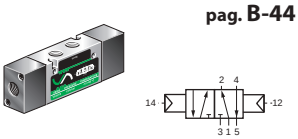
K32P2018
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

pag. **B-44**

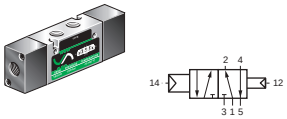


K52P1018
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIT. MOLLA MECCANICA E PNEUMATICA

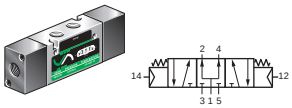
pag. **B-44**



K52P2018
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

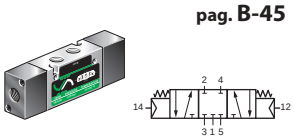


K52DP218
DOUBLE DIFFERENTIAL PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO DIFFERENZIALE



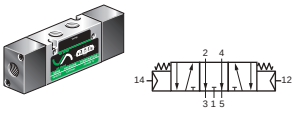
K53P2318
DOUBLE PNEUMATIC PILOT (MID-POSITION PRESSURIZED)
DOPPIO COMANDO PNEUMATICO (CENTRI IN PRESSIONE)

pag. **B-45**

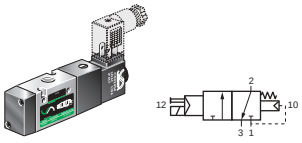


K53P2618
DOUBLE PNEUMATIC PILOT (MID-POSITION CLOSED)
DOPPIO COMANDO PNEUMATICO (CENTRI CHIUSI)

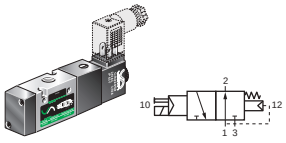
pag. **B-45**



K53P2918
DOUBLE PNEUMATIC PILOT (MID-POSITION EXHAUSTED)
DOPPIO COMANDO PNEUMATICO (CENTRI APERTI)

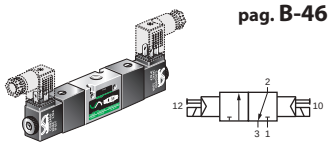


K32W1S618
SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO A MOLLA

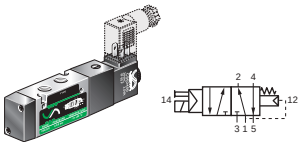


K32W1S918
SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO A MOLLA

pag. **B-46**

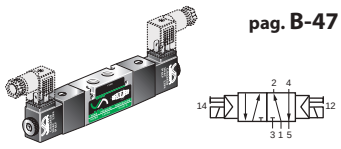


K32W2S018
DOUBLE SOLENOID PILOT
DOPPIO COMANDO ELETTROPNEUMATICO

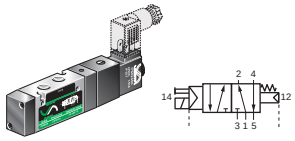


K52W1018
SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO A MOLLA

pag. **B-47**

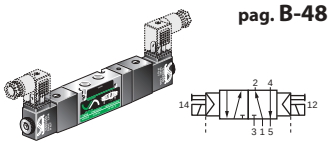


K52W2018
DOUBLE SOLENOID PILOT
DOPPIO COMANDO ELETTROPNEUMATICO

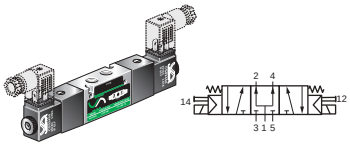


K52W10E8
SINGLE SOLENOID PILOT - EXTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - PILOTAGGIO ESTERNO

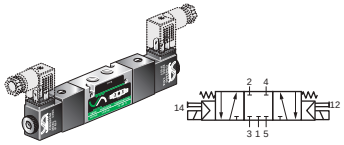
pag. **B-48**



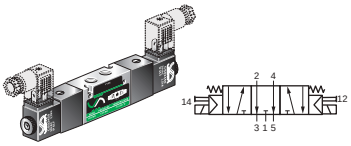
K52W20E8
DOUBLE SOLENOID PILOT - EXTERNAL PRESSURE RETURN
DOPPIO COMANDO ELETTROPNEUM. - PILOTAGGIO ESTERNO



K53W2S318
DOUBLE SOLENOID PILOT (MID-POSITION PRESSURIZED)
DOPPIO COMANDO ELETTROPNEUM. (CENTRI IN PRESSIONE)

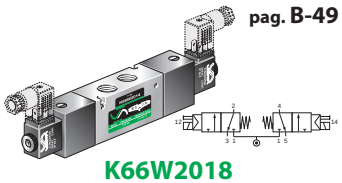


K53W2S618
DOUBLE SOLENOID PILOT (MID-POSITION CLOSED)
DOPPIO COMANDO ELETTROPNEUMATICO (CENTRI CHIUSI)



K53W2S918
DOUBLE SOLENOID PILOT (MID-POSITION EXHAUSTED)
DOPPIO COMANDO ELETTROPNEUMATICO (CENTRI APERTI)

pag. **B-49**



K66W2018
DUBLE 3/2 N.C. SPRING RETURN VALVE
DOPPIA VALVOLA 3/2 N.C. RITORNO A MOLLA MECCANICA



K99W2018
DUBLE 3/2 N.O. SPRING RETURN VALVE
DOPPIA VALVOLA 3/2 N.O. RITORNO A MOLLA MECCANICA

pag. **B-50**



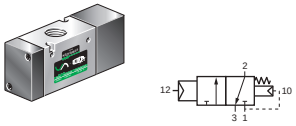
K69W2018
3/2 N.C. + 3/2 N.O. VALVES SPRING RETURN
VALVOLA 3/2 N.C. + VALVOLA 3/2 N.O. RITORNO A MOLLA MECCANICA

pag. **B-51**

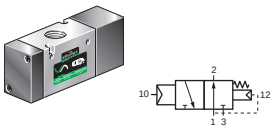


KME . 18
ENBLOC TILL 10 SIZES MAX
BASE DOPPIO INGRESSO FINO A 10 POSTI

MINI VALVES AND MINI SOLENOID VALVES SERIES "K" / MINI *VALVOLE E MINI ELETTROVALVOLE SERIE "K"* G1/4-G1/2

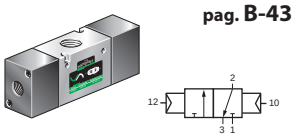


K32P161.
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIT. MOLLA MECCANICA E PNEUMATICA



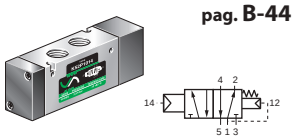
K32P191.
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIT. MOLLA MECCANICA E PNEUMATICA

pag. B-43



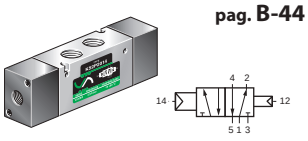
K32P201.
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

pag. B-44

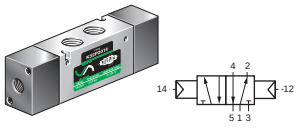


K52P101.
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIT. MOLLA MECCANICA E PNEUMATICA

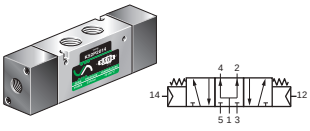
pag. B-44



K52DP214
DOUBLE DIFFERENTIAL PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO DIFFERENZIALE

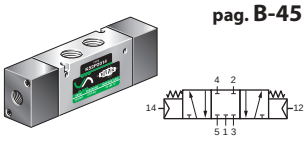


K52P201.
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO



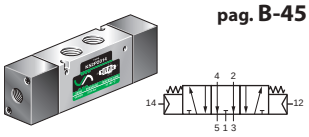
K53P231.
DOUBLE PNEUMATIC PILOT (MID-POSITION PRESSURIZED)
DOPPIO COMANDO PNEUMATICO (CENTRI IN PRESSIONE)

pag. B-45

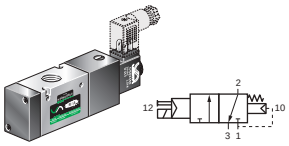


K53P261.
DOUBLE PNEUMATIC PILOT (MID-POSITION CLOSED)
DOPPIO COMANDO PNEUMATICO (CENTRI CHIUSI)

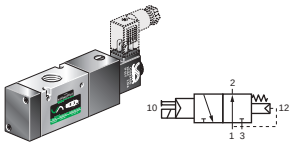
pag. B-45



K53P291.
DOUBLE PNEUMATIC PILOT (MID-POSITION EXHAUSTED)
DOPPIO COMANDO PNEUMATICO (CENTRI APERTI)

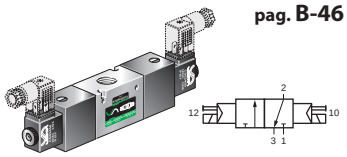


K32W1S61.
SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO A MOLLA

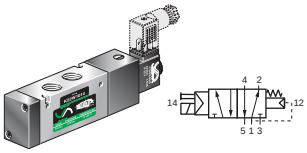


K32W1S91.
SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO A MOLLA

pag. B-46

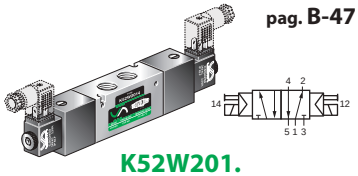


K32W2S01.
DOUBLE SOLENOID PILOT
DOPPIO COMANDO ELETTROPNEUMATICO

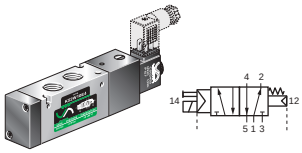


K52W101.
SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO A MOLLA

pag. B-47

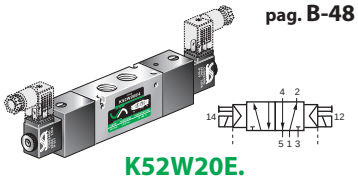


K52W201.
DOUBLE SOLENOID PILOT
DOPPIO COMANDO ELETTROPNEUMATICO

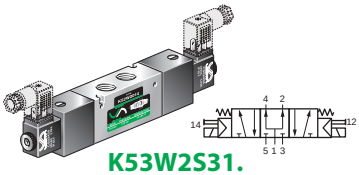


K52W10E.
SINGLE SOLENOID PILOT - EXTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - PILOTAGGIO ESTERNO

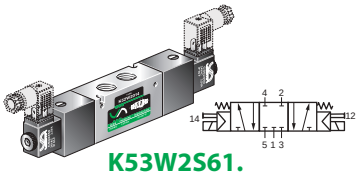
pag. B-48



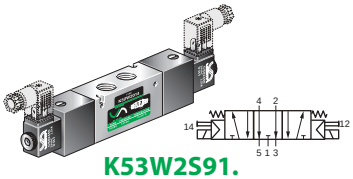
K52W20E.
DOUBLE SOLENOID PILOT - EXTERNAL PRESSURE RETURN
DOPPIO COMANDO ELETTROPNEUMATICO - PILOTAGGIO ESTERNO



K53W2S31.
DOUBLE SOLENOID PILOT (MID-POSITION PRESSURIZED)
DOPPIO COMANDO ELETTROPNEUMATICO (CENTRI IN PRESSIONE)

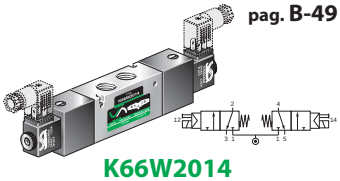


K53W2S61.
DOUBLE SOLENOID PILOT (MID-POSITION CLOSED)
DOPPIO COMANDO ELETTROPNEUMATICO (CENTRI CHIUSI)

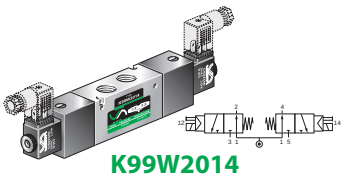


K53W2S91.
DOUBLE SOLENOID PILOT (MID-POSITION EXHAUSTED)
DOPPIO COMANDO ELETTROPNEUMATICO (CENTRI APERTI)

pag. B-49

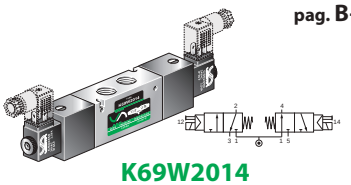


K66W2014
DUBLE 3/2 N.C. SPRING RETURN VALVE
DOPPIA VALVOLA 3/2 N.C. RITORNO A MOLLA MECCANICA



K99W2014
DUBLE 3/2 N.O. SPRING RETURN VALVE
DOPPIA VALVOLA 3/2 N.O. RITORNO A MOLLA MECCANICA

pag. B-50



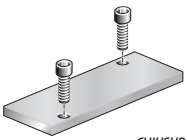
K69W2014
3/2 N.C. + 3/2 N.O. VALVES SPRING RETURN
VALVOLA 3/2 N.C. + VALVOLA 3/2 N.O. RITORNO A MOLLA MECCANICA

pag. B-51



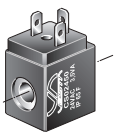
KME . 14
ENBLOC TILL 10 SIZES MAX
BASE DOPPIO INGRESSO FINO A 10 POSTI

ACCESSORIES / *ACCESSORI*

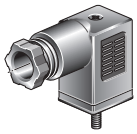


pag. B-52

KPCH0..
PLUG FLAT
CHIUSURA POSTO INUTILLIZZATO



CS . . . . .
COILS
SOLENOIDI PER ELETTROVALVOLE



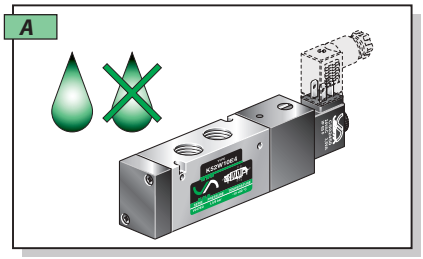
pag. B-52

CEP/0 . . . . . .
SOLENOID CONNECTORS
CONNETTORI

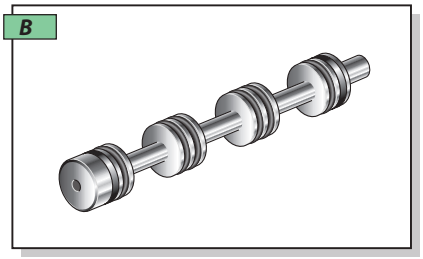
BUILDING FEATURES / *CARATTERISTICHE COSTRUTTIVE*

Series **K** mini-valves and solenoid valves are built in compact dimensions and are capable to be assembled on manifolds. In order to assure their performance, particular care and attention have been offered in developing each component for this product.
Possibility to operate continuosly without lubrication (**A**).
The spool is manifactured in a light alloy (**B**).
This offers lasting durability and a hight working frequency (**E**) : due to the manifacturing of the internal moving parts, inertia and friction are greatly reduced, and a better resistence to the external agressive agents is assured by the nickel treatment (**C**).
The nominal air flow of the valve is around 730, 1300, 4000 Nl/min (**D**), despite of its small dimensions.
The solenoid valves, complete with coil and connector, follows EEC directives on the electromagnetic compatibility (89/336/EEC) and low voltage (73/23/EEC).

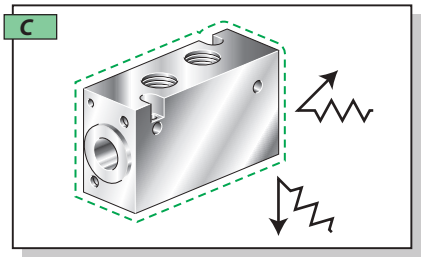
*Le mini valvole ed elettrovalvole Vesta serie **K** funzionano secondo il principio del cassetto bilanciato (vedi fig. **1** e **2**), presentano ingombri molto ridotti e la possibilità di assemblaggio in batterie compatte.*
*Particolare cura è stata prestata nella progettazione e realizzazione di ogni singolo componente del prodotto, al fine di consentire elevate prestazioni funzionali. Caratteristiche comuni a tutte le valvole della serie sono l'alta velocità di scambio (**E**), la possibilità di funzionamento continuo privo di lubrificazione (**A**) ottenuto con l'impiego di materiali particolari come, ad esempio, la spola, realizzata in lega leggera (**B**), ed il corpo, in alluminio trattato al nichel (**C**). Tutto ciò garantisce una elevata frequenza di lavoro e una lunga vita del sistema, grazie ad una riduzione dell' inerzia delle parti mobili, ad una riduzione degli attriti interni e ad un maggior grado di resistenza agli agenti aggressivi esterni. Particolarmente interessante, nonostante le ridotte dimensioni, la portata nominale: 730, 1300, 4000 Nl/min. (**D**).*
Le elettrovalvole complete di bobina e connettore, sono conformi alle direttive CEE relative alla compabilità elettromagnetica (89/336/CEE) ed alla bassa tensione (73/23/CEE).



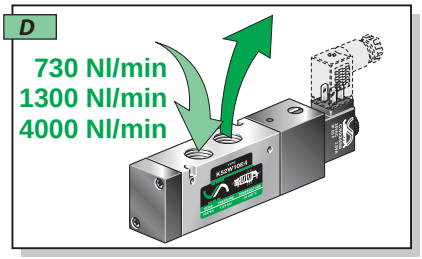
Possibility to operate continuosly without lubrication.
Possibilità di funzionamento continuo privo di lubrificazione.



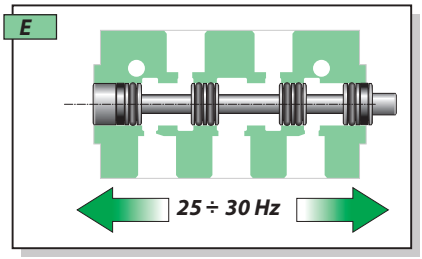
Light alloy spool.
Spola in lega leggera.



Nickel treated body.
Corpo in alluminio trattato al nichel.



Nominal air flow: (730, 1300, 4000 Nl/min.
Alta portata nominale: (730, 1300, 4000 Nl/min a 6 bar).

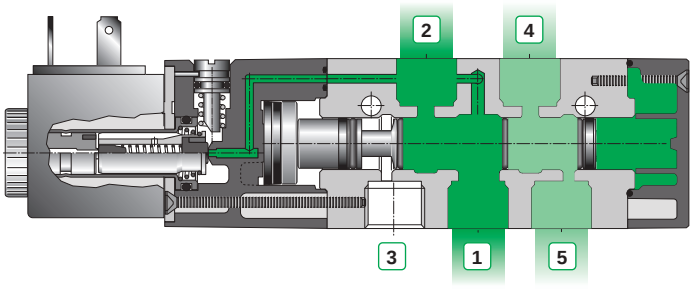


High working frequency.
Alta velocità di scambio.

WORKING PRINCIPLE / *PRINCIPIO DI FUNZIONAMENTO*

In the example here below (**K52W1018-02450** - 5/2 valve, single solenoid, spring return), when the valve stands in the normal position, ports **4 - 5** and **1- 2** are connected and the position is kept thanks to the pressure assured to the smallest piston and to the spring force (right side of the valve). When the valve is actuated, the same pressure is fed to the biggest piston. Its bigger surface create a force which allows to the spool to move and therefore to connect ports **4 - 1** and **2 - 3**. Spring return assures (grant) the normal position of the spool even if no pressure is brought to the valve.
In the bistable versions, the position of the valve remains in its last switched state.

Il principio di funzionamento del distributore 5/2 (nell'esempio l'elettrovalvola ***K52W1018-02450*** *con comando elettropneumatico e riposizionamento a molla) consiste nel mantenere la spola in posizione di riposo per azione sia di una molla meccanica che per effetto della pressione creata dalla fonte d'aria compressa presente nel condotto di alimentazione* ***1*** *sulla spola stessa (fig.* ***1****) collegando le vie* ***1- 2*** *e* ***4 - 5****.*
L' eccitazione del solenoide mette in comunicazione il condotto ***1*** *con la camera dove é alloggiato il pistone di comando. Quest'ultimo contrasta l'insieme delle forze create dalla molla e dalla pressione sul lato opposto della spola, spostandola in modo tale da collegare i canali* ***1- 4*** *e* ***2- 3*** *(fig.* ***2****).*
Diseccitando il solenoide si ripristina la posizione iniziale. La combinazione del sistema a molla meccanica con il riposizionamento pneumatico consente di avere sempre la spola in posizione di riposo anche dopo la caduta di pressione del sistema.
Nei sistemi bistabili (doppio comando elettropneumatico o doppio comando pneumatico) in assenza di segnale rimangono i collegamenti formatisi nell'ultimo azionamento.



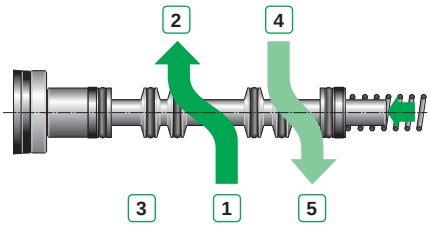
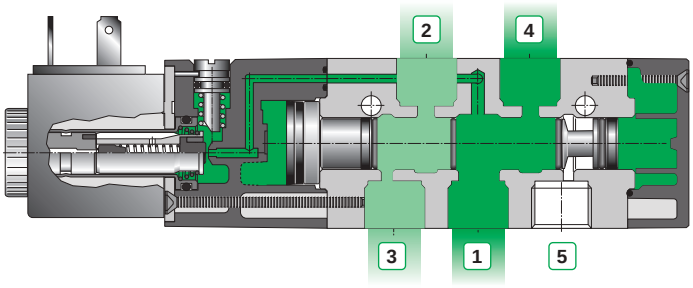


fig. 1

NORMAL POSITION / *POSIZIONE A RIPOSO*



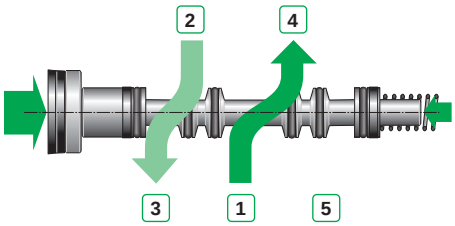
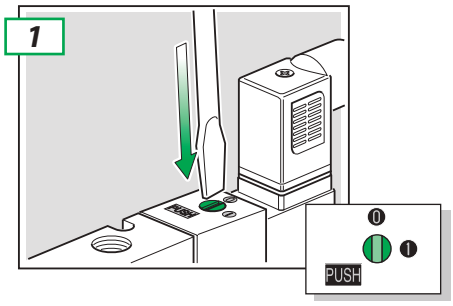


fig. 2

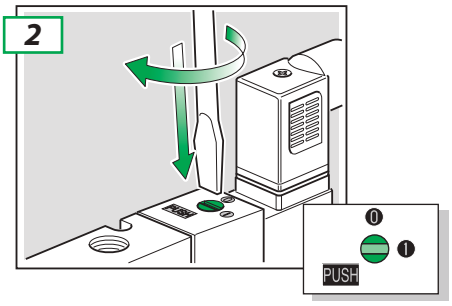
ACTUATED POSITION / *POSIZIONE DI LAVORO*

MANUAL OVERRIDING / *AZIONAMENTO COMANDO MANUALE*



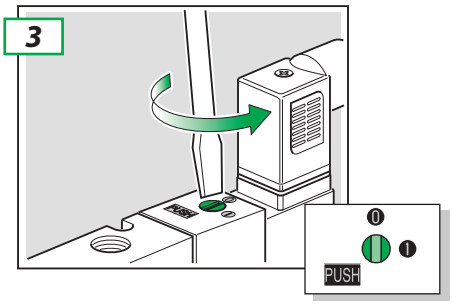
Push to actuated valve without locking. ***Relise the button to get back to normal position.***

Per azionare la valvola, durante la fase di collaudo con pressione in linea senza collegamento elettrico, usare un adeguato cacciavite per premere la vite del comando manuale. ***Rilasciare per ripristinare la condizione di riposo.***



To active the valve permanently, push the M/O using a screwdriver and rotate clockwise 90°.

Per azionare la valvola in modo permanente premere la vite del comando manuale e ruotare in senso orario sino alla posizione 1.



To get back to normal position push the M/O again and turn 90° anti-clockwise.

Ruotare in senso antiorario la vite del comando manuale per ripristinare la condizione di riposo.

SERIE **K**

TECHNICAL FEATURES / *CARATTERISTICHE TECNICHE*

COMMON TECHNICAL FEATURES K SERIE / *CARATTERISTICHE TECNICHE COMUNI SERIE K*

Port connections	**G1/8, G1/4**
Flow section	**G1/8"**= Ø 6 mm **G1/4"**= Ø 8 mm **G1/2"**= Ø 14 mm
Environment temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Lubrication	Not required
Medium	Filtered air
Reference pressure	6 bar
Nominal air flow 3/2 and 5/2 valves (valves 5/3)	**G1/8"**: 730 (552) Nl/min **G1/4"**: 1300 (1040) Nl/min **G1/2"**: 4000 (3500) Nl/min

Connessioni di lavoro	***G1/8, G1/4***
Diametro nominale	***G1/8"***= *Ø 6 mm* ***G1/4"***= *Ø 8 mm* ***G1/2"***= *Ø 14 mm*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Lubrificazione	*Non necessaria*
Fluido	*Aria filtrata*
Pressione nominale	*6 bar*
Portata nominale valvole 3/2 e 5/2 (valvole 5/3)	***G1/8"**: 730 (552) Nl/min* ***G1/4"**: 1300 (1040) Nl/min* ***G1/2"**: 4000 (3500) Nl/min*

PNEUMATIC VALVES FEATURES / CARATTERISTICHE *VALVOLE PNEUMATICHE*

G 1/8"

	K32P1618	K32P1918	K32P2018	K52P1018	K52DP218	K52P2018	K53P2318	K53P2618	K53P2918
Nominal pilot pressure (bar) ***Pressione di pilotaggio nominale (bar)***	3,1 bar (9 bar)	3,1 bar (9 bar)	0,97 bar	3,1 bar (9 bar)	(12) 1,35 bar (14) 0,97 bar	0,97 bar	3 bar	3 bar	3 bar
Nominal max frequence (Hz) ***Frequenza max nominale (Hz)***	30 Hz	30 Hz	33 Hz	30 Hz	30 Hz	33 Hz	10 Hz	10 Hz	10 Hz
Operating pressure range (bar) ***Pressione di esercizio (bar)***	2,5 ÷ 9 bar	2,5 ÷ 9 bar	0 ÷ 9 bar	2,5 ÷ 9 bar	0 ÷ 9 bar	0 ÷ 9 bar	0 ÷ 9 bar	0 ÷ 9 bar	0 ÷ 9 bar

G 1/4"

	K32P1614	K32P1914	K32P2014	K52P1014	K52DP214	K52P2014	K53P2314	K53P2614	K53P2914
Nominal pilot pressure (bar) ***Pressione di pilotaggio nominale (bar)***	3,1 bar (9 bar)	3,1 bar (9 bar)	0,97 bar	3,1 bar (9 bar)	(12) 1,35 bar (14) 0,97 bar	0,97 bar	3 bar	3 bar	3 bar
Nominal max frequence (Hz) ***Frequenza max nominale (Hz)***	30 Hz	30 Hz	33 Hz	30 Hz	30 Hz	33 Hz	10 Hz	10 Hz	10 Hz
Operating pressure range (bar) ***Pressione di esercizio (bar)***	2,5 ÷ 9 bar	2,5 ÷ 9 bar	0 ÷ 9 bar	2,5 ÷ 9 bar	0 ÷ 9 bar	0 ÷ 9 bar	0 ÷ 9 bar	0 ÷ 9 bar	0 ÷ 9 bar

G 1/2"

	K32P1612	K32P1912	K32P2012	K52P1012	-	K52P2012	K53P2312	K53P2612	K53P2912
Nominal pilot pressure (bar) ***Pressione di pilotaggio nominale (bar)***	3,1 bar (9 bar)	3,1 bar (9 bar)	0,97 bar	3,1 bar (9 bar)	-	0,97 bar	3 bar	3 bar	3 bar
Nominal max frequence (Hz) ***Frequenza max nominale (Hz)***	15 Hz	15 Hz	18 Hz	15 Hz	-	18 Hz	10 Hz	10 Hz	10 Hz
Operating pressure range (bar) ***Pressione di esercizio (bar)***	2,5 ÷ 9 bar	2,5 ÷ 9 bar	0 ÷ 9 bar	2,5 ÷ 9 bar	-	0 ÷ 9 bar	0 ÷ 9 bar	0 ÷ 9 bar	0 ÷ 9 bar

SOLENOID VALVES FEATURES / CARATTERISTICHE *ELETTROVALVOLE*

G 1/8"

	K32W1S618	K32W1918	K32W2S018	K52W1018	K52W2018	K52W10E8	K52W20E8	K53W2S318 K53W2S618 K53W2S918	K66W2018 K99W2018 K69W2018
Nominal max frequence (Hz) ***Frequenza max nominale (Hz)***	27Hz **AC** 17Hz **DC**	27Hz **AC** 17Hz **DC**	42Hz **AC** 34Hz **DC**	27Hz **AC** 17Hz **DC**	42Hz **AC** 34Hz **DC**	27Hz **AC** 17Hz **DC**	42Hz **AC** 34Hz **DC**	12Hz **AC** 10Hz **DC**	27Hz **AC** 17Hz **DC**
Operating pressure range (bar) ***Pressione di esercizio (bar)***	2,5÷9 bar	2,5÷9 bar	1,5÷9 bar	2,5÷9 bar	1,5÷9 bar	0÷9 bar	0÷9 bar	3÷9 bar	3÷9 bar
External pilot port ***Connessione di pilotaggio esterna***	-	-	-	-	-	M5	M5	-	-
Pilot pressure ***Pressione di pilotaggio***	-	-	-	-	-	3÷9 bar	3÷9 bar	-	-

G 1/4"

	K32W1S614	K32W1914	K32W2S014	K52W1014	K52W2014	K52W10E4	K52W20E4	K53W2S314 K53W2S614 K53W2S914	K66W2014 K99W2014 K69W2014
Nominal max frequence (Hz) ***Frequenza max nominale (Hz)***	27Hz **AC** 17Hz **DC**	27Hz **AC** 17Hz **DC**	42Hz **AC** 34Hz **DC**	27Hz **AC** 17Hz **DC**	42Hz **AC** 34Hz **DC**	27Hz **AC** 17Hz **DC**	42Hz **AC** 34Hz **DC**	12Hz **AC** 10Hz **DC**	27Hz **AC** 17Hz **DC**
Operating pressure range (bar) ***Pressione di esercizio (bar)***	2,5÷9 bar	2,5÷9 bar	1,5÷9 bar	2,5÷9 bar	1,5÷9 bar	0÷9 bar	0÷9 bar	3÷9 bar	3÷9 bar
External pilot port ***Connessione di pilotaggio esterna***	-	-	-	-	-	M5	M5	-	-
Pilot pressure ***Pressione di pilotaggio***	-	-	-	-	-	3÷9 bar	3÷9 bar	-	-

G 1/2"

	K32W1S612	K32W1912	K32W2S012	K52W1012	K52W2012	K52W10E2	K52W20E2	K53W2S312	K53W2S612	K53W2S912
Nominal max frequence (Hz) ***Frequenza max nominale (Hz)***	13Hz **AC** 11Hz **DC**	13Hz **AC** 11Hz **DC**	17Hz **AC** 16Hz **DC**	13Hz **AC** 11Hz **DC**	17Hz **AC** 16Hz **DC**	13Hz **AC** 11Hz **DC**	17Hz **AC** 16Hz **DC**	13Hz **AC** 8Hz **DC**	13Hz **AC** 8Hz **DC**	13Hz **AC** 8Hz **DC**
Operating pressure range (bar) ***Pressione di esercizio (bar)***	2,5÷9 bar	2,5÷9 bar	1,5÷9 bar	2,5÷9 bar	1,5÷9 bar	0÷9 bar	0÷9 bar	3÷9 bar	3÷9 bar	3÷9 bar
External pilot port ***Connessione di pilotaggio esterna***	-	-	-	-	-	M5	M5	-	-	-
Pilot pressure ***Pressione di pilotaggio***	-	-	-	-	-	3÷9 bar	3÷9 bar	-	-	-

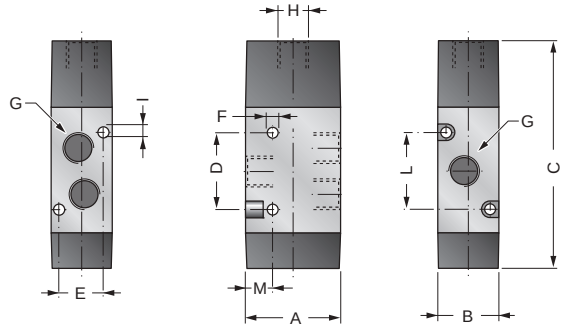
For electrical features solenoid pilot see p. B-52 for G1/8 and pp. B-35 ÷ B-37 for G1/4.
Caratteristiche elettriche elettrovalvole per solenoide vedi p. B-52 per G1/8. e pp. B-35 ÷ B-37 per G1/4.

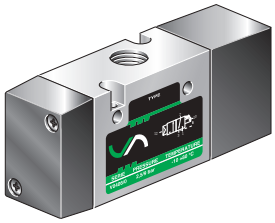
VALVE / *VALVOLA* 3/2

SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN AND SPRING

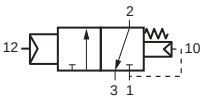
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA PNEUMATICA E MECCANICA

K32P1.1.

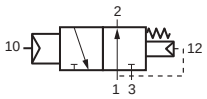




SIMBOLS / *SIMBOLI*

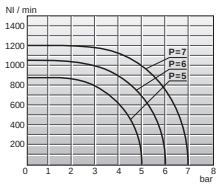


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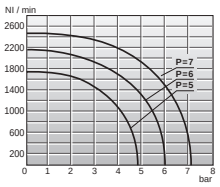


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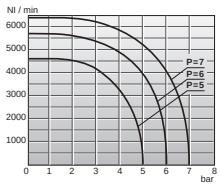
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"

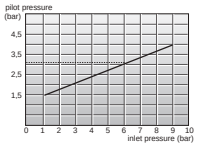


AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"



AIR FLOW DIAGRAM G1/2"
DIAGRAMMA DELLE PORTATE G1/2"

DIAGRAM / *DIAGRAMMA*



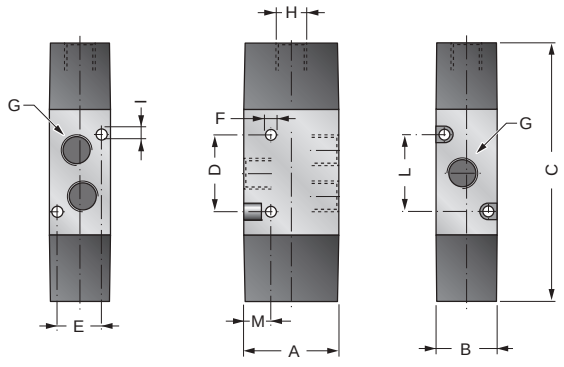
PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

Size / *Taglia*	A	B	C	D	E	ØF	G	H	ØI	L	M
1/8	28	18	66,2	22,2	13	3,2	G1/8	G1/8	3,2	22,2	8
1/4	32	22	75,3	29,3	16,2	4,2	G1/4	G1/8	3,5	29,3	7,3
1/2	50	30	108	45,6	-	5,2	G1/2	G1/8	-	-	11

VALVE / *VALVOLA* 3/2

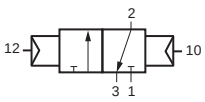
DOUBLE PNEUMATIC PILOT / *DOPPIO COMANDO PNEUMATICO*

K32P201.



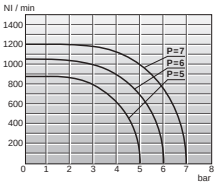


SIMBOL / *SIMBOLO*

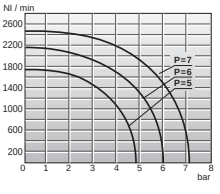


K32P201.

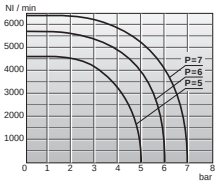
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"

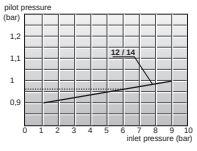


AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"



AIR FLOW DIAGRAM G1/2"
DIAGRAMMA DELLE PORTATE G1/2"

DIAGRAM / *DIAGRAMMA*



PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

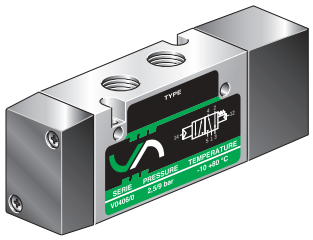
Size / *Taglia*	A	B	C	D	E	ØF	G	H	ØI	L	M
1/8	28	18	76,2	22,2	13,5	3,2	G1/8	G1/8	3,2	22,2	8
1/4	32	22	88,3	29,3	16,2	4,2	G1/4	G1/8	3,5	29,3	7
1/2	50	30	121	45,6	-	5,2	G1/2	G1/8	-	-	11

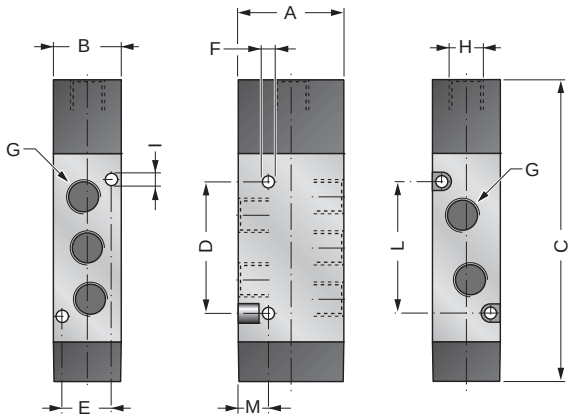
K52P101.

VALVE / *VALVOLA* 5/2

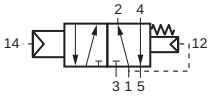
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN AND SPRING

COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA PNEUMATICA E MECCANICA

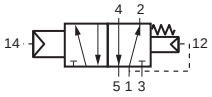




SIMBOLS / *SIMBOLI*

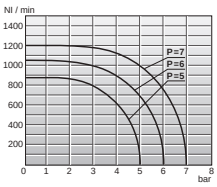


K52P1018

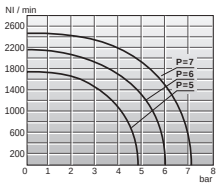


K52P1014 - K52P1012

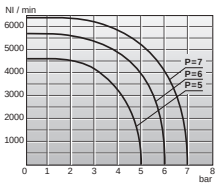
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"



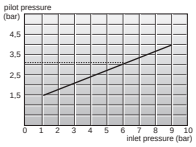
AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"



AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"

Size *Taglia*	A	B	C	D	E	ØF	G	H	ØI	L	M
1/8	28	18	80	35	13	3,2	G1/8	G1/8	3,2	35	8
1/4	32	22	96	50	16,2	4,2	G1/4	G1/8	3,5	50	7,3
1/2	50	30	137	74,6	-	5,2	G1/2	G1/8	-	-	11

DIAGRAM / *DIAGRAMMA*

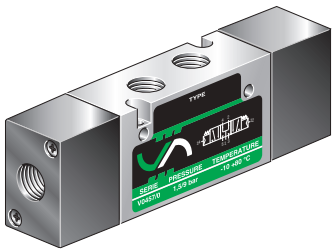


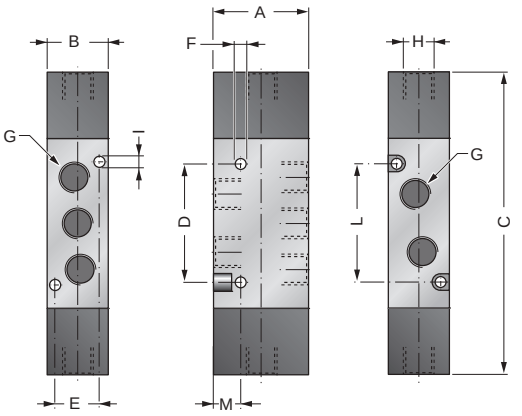
PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

K52P201.

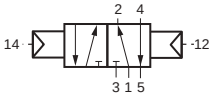
VALVE / *VALVOLA* 5/2

DOUBLE PNEUMATIC PILOT / *DOPPIO COMANDO PNEUMATICO*

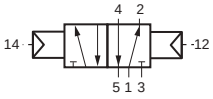




SIMBOLS / *SIMBOLI*

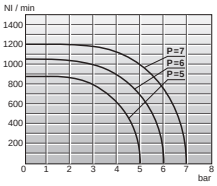


K52P2018

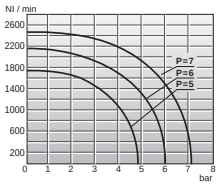


K52P2014 - K52P2012

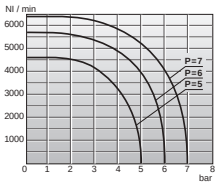
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"



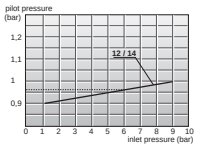
AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"



AIR FLOW DIAGRAM G1/2"
DIAGRAMMA DELLE PORTATE G1/2"

Size *Taglia*	A	B	C	D	E	ØF	G	H	ØI	L	M
1/8	28	18	89	35	13	3,2	G1/8	G1/8	3,2	35	8
1/4	32	22	109	50	16,2	4,2	G1/4	G1/8	3,5	50	7,3
1/2	50	30	108	45,6	-	5,2	G1/2	G1/8	-	-	11

DIAGRAM / *DIAGRAMMA*



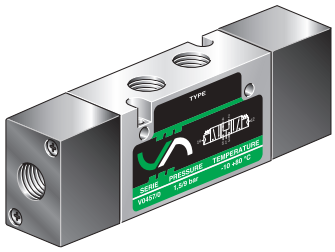
PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

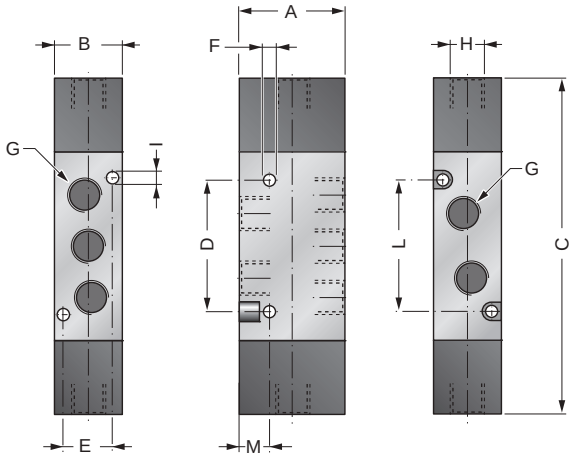
VALVE / 5/2

DOUBLE DIFFERENTIAL PNEUMATIC PILOT

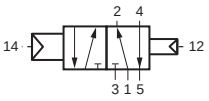
DOPPIO COMANDO PNEUMATICO DIFFERENZIALE

K52DP21.

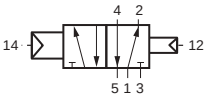




SIMBOLS /

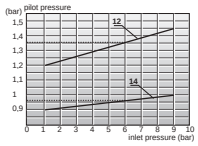


K52DP218



K52DP214

DIAGRAM / *DIAGRAMMA*

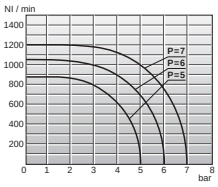


PILOT PRESSURE

DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

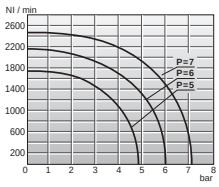
Size *Taglia*	A	B	C	D	E	ØF	G	H	ØI	L	M
1/8	28	18	89	35	13	3,2	G1/8	G1/8	3,2	35	8
1/4	32	22	109	50	16,2	4,2	G1/4	G1/8	3,5	50	7,3

DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G1/8"

DIAGRAMMA DELLE PORTATE G1/8"



AIR FLOW DIAGRAM G1/4"

DIAGRAMMA DELLE PORTATE G1/4"

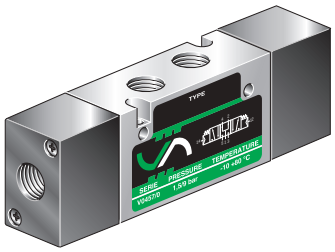
VALVE / *VALVOLA* 5/3

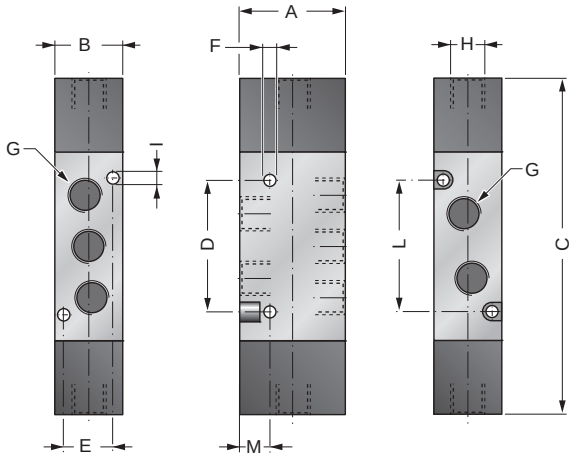
DOUBLE PNEUMATIC PILOT (MID-POSITION PRESSURIZED) / *DOPPIO COMANDO PNEUMATICO (CENTRI IN PRESSIONE)*

DOUBLE PNEUMATIC PILOT (MID-POSITION CLOSED) / *DOPPIO COMANDO PNEUMATICO (CENTRI CHIUSI)*

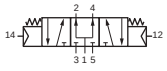
DOUBLE PNEUMATIC PILOT (MID-POSITION EXHAUSTED) / *DOPPIO COMANDO PNEUMATICO (CENTRI APERTI)*

K53P2 . 1.

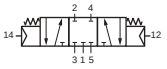




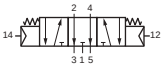
SIMBOLS / *SIMBOLI*



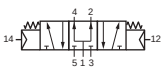
K53P2318



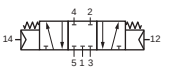
K53P2618



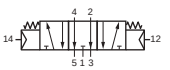
K53P2918



K53P2314 - K53P2312

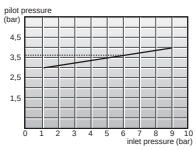


K53P2614 - K53P2612



K53P2914 - K53P2912

DIAGRAM / *DIAGRAMMA*

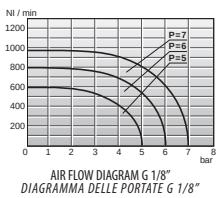


PILOT PRESSURE

DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

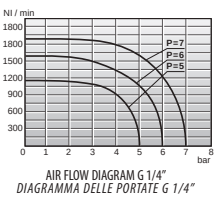
Size *Taglia*	A	B	C	D	E	ØF	G	H	ØI	L	M
1/8	28	18	89	35	13	3,2	G1/8	G1/8	3,2	35	8
1/4	32	22	109	50	16,2	4,2	G1/4	G1/8	3,5	50	7,3
1/2	50	30	108	45,6	-	5,2	G1/2	G1/8	-	-	11

DIAGRAMS / *DIAGRAMMI*



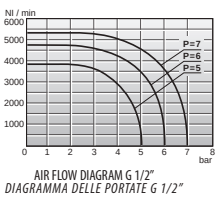
AIR FLOW DIAGRAM G 1/8"

DIAGRAMMA DELLE PORTATE G 1/8"



AIR FLOW DIAGRAM G 1/4"

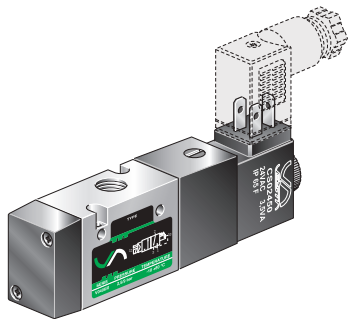
DIAGRAMMA DELLE PORTATE G 1/4"



AIR FLOW DIAGRAM G 1/2"

DIAGRAMMA DELLE PORTATE G 1/2"

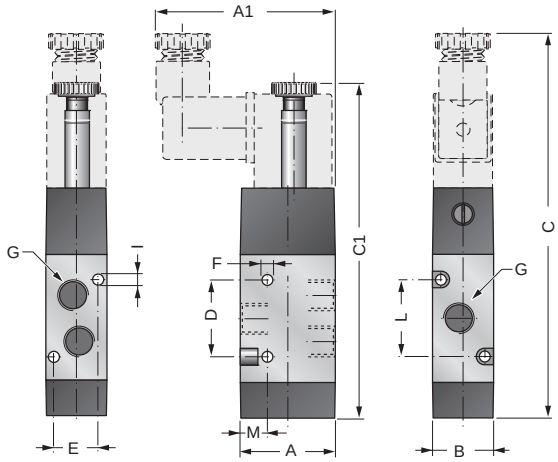
K32W1S.1.



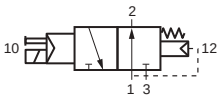
VALVE / 3/2

SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN AND SPRING

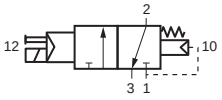
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO A MOLLA PNEUMATICA E MECCANICA



SIMBOLS / *SIMBOLI*

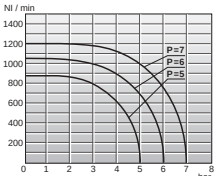


K32W1S918 - K32W1S914
K32W1S912

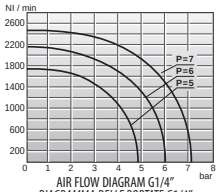


K32W1S618 - K32W1S614
K32W1S612

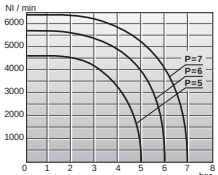
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"



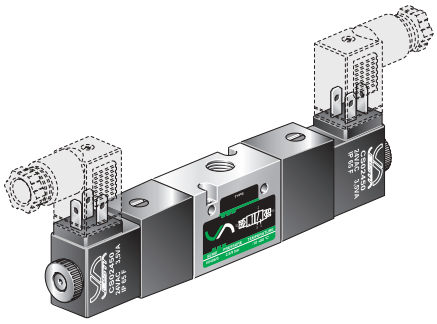
AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"



AIR FLOW DIAGRAM G1/2"
DIAGRAMMA DELLE PORTATE G1/2"

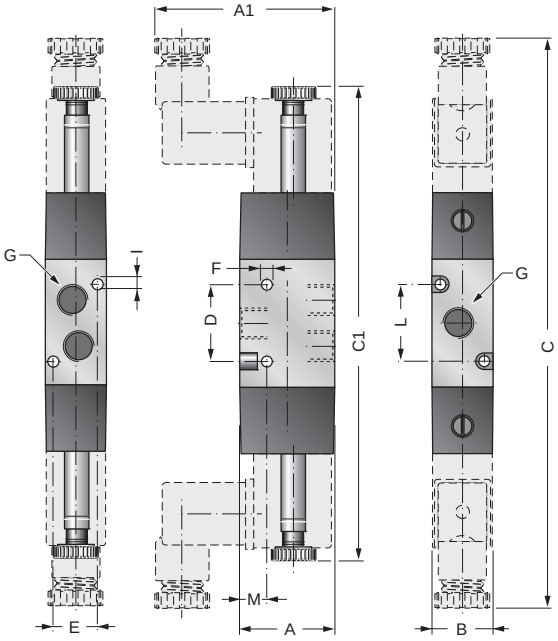
Size *Taglia*	A	A1	B	C	C1	D	E	ØF	G	ØI	L	M
1/8	28	~53	18	112,5	~99	22,2	13	3,2	G1/8	3,2	22,2	8
1/4	32	~55	22	121	~107,5	29,3	16,2	4,2	G1/4	3,5	29,3	7,3
1/2	50	~75	30	~150	~137	45,6	-	5,2	G1/2	-	-	11

K32W2S01.

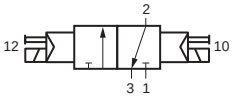


VALVE / *VALVOLA* 3/2

DOUBLE SOLENOID PILOT / *DOPPIO COMANDO ELETTROPNEUMATICO*

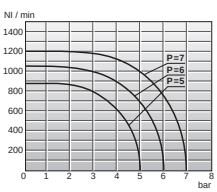


SIMBOLS / *SIMBOLI*

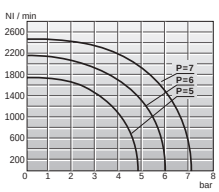


K32W2S018 - K32W2S014 - K32W2S012

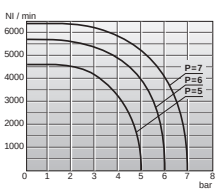
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"



AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"



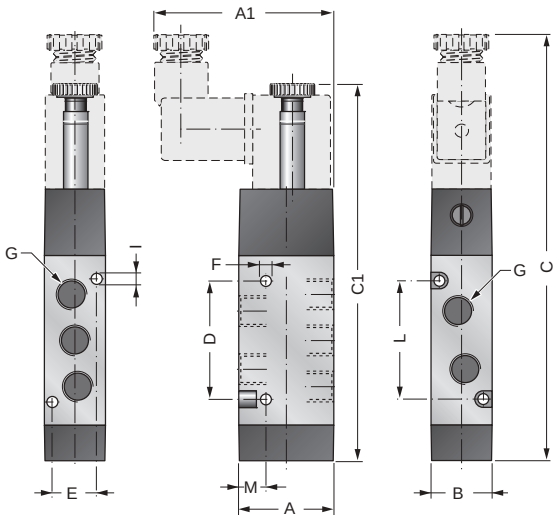
AIR FLOW DIAGRAM G1/2"
DIAGRAMMA DELLE PORTATE G1/2"

Size *Taglia*	A	A1	B	C	C1	D	E	ØF	G	ØI	L	M
1/8	28	~53	18	170	~143	22,2	13	3,2	G1/8	3,2	22,2	8
1/4	32	~55	22	181	~154	29,3	16,2	4,2	G1/4	3,5	29,3	7,3
1/2	50	~75	30	~210	~180	45,6	-	5,2	G1/2	-	-	11

VALVE / *VALVOLA* 5/2

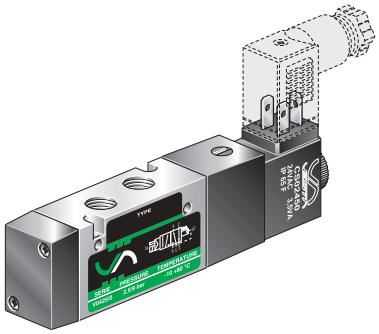
SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN AND SPRING

COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO A MOLLA PNEUMATICA E MECCANICA

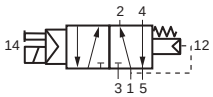


Size *Taglia*	A	A1	B	C	C1	D	E	ØF	G	ØI	L	M
1/8	28	~53	18	~125,5	112	35	13	3,2	G1/8	3,2	35	8
1/4	32	~55	22	142,5	~129	50	16,2	4,2	G1/4	3,5	50	7,3
1/2	50	~75	30	~180	~166	46	-	5,2	G1/2	-	-	11

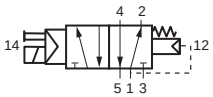
K52W101.



SIMBOLS / *SIMBOLI*

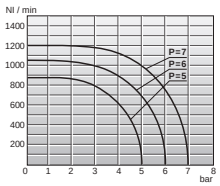


K52W1018

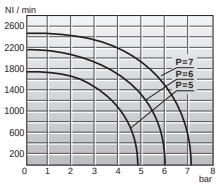


K52W1014 - K52W1012

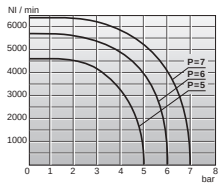
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"



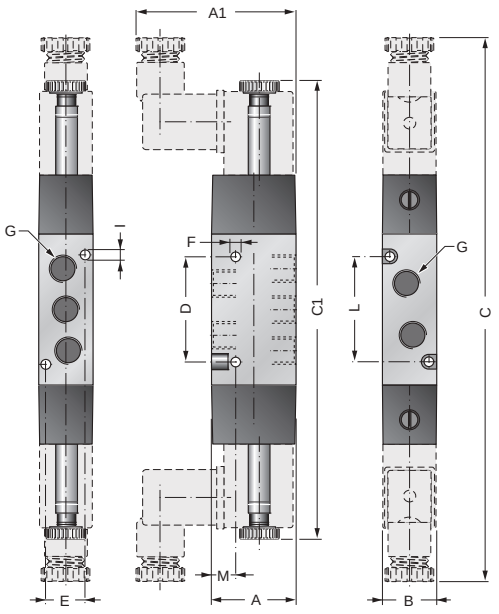
AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"



AIR FLOW DIAGRAM G1/2"
DIAGRAMMA DELLE PORTATE G1/2"

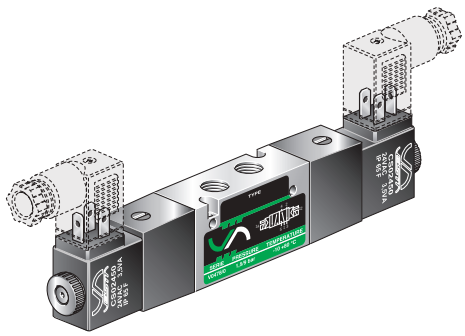
VALVE / 5/2

DOUBLE SOLENOID PILOT / *DOPPIO COMANDO ELETTROPNEUMATICO*

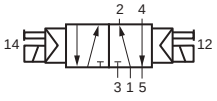


Size *Taglia*	A	A1	B	C	C1	D	E	ØF	G	ØI	L	M
1/8	28	~53	18	180	~152	35	13	3,2	G1/8	3,2	35	8
1/4	32	~55	22	202	~174	50	16,2	4,2	G1/4	3,5	50	7,3
1/2	50	~75	30	~240	~210	45,6	-	5,2	G1/2	-	-	11

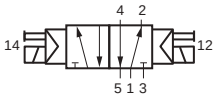
K52W201.



SIMBOLS / *SIMBOLI*

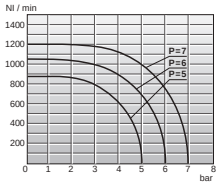


K52W2018

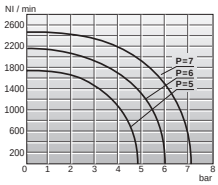


K52W2014 - K52W2012

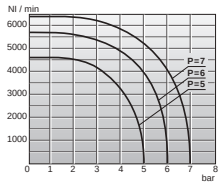
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"

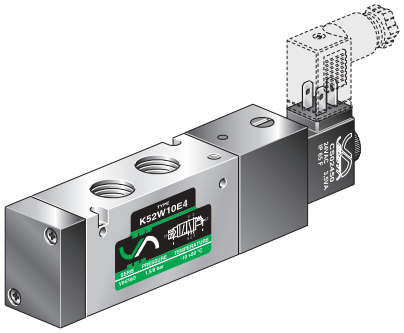


AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"

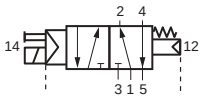


AIR FLOW DIAGRAM G1/2"
DIAGRAMMA DELLE PORTATE G1/2"

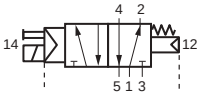
K52W10E.



SIMBOLS / *SIMBOLI*

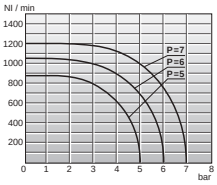


K52W10E8

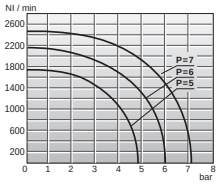


K52W10E4 - K52W10E2

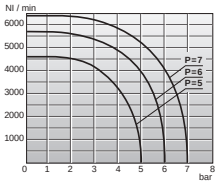
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"



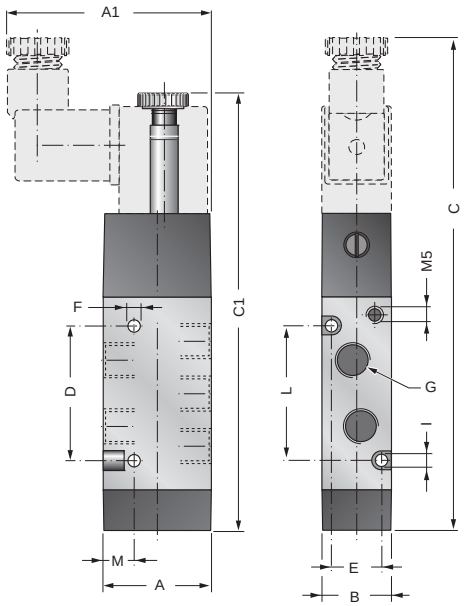
AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"



AIR FLOW DIAGRAM G1/2"
DIAGRAMMA DELLE PORTATE G1/2"

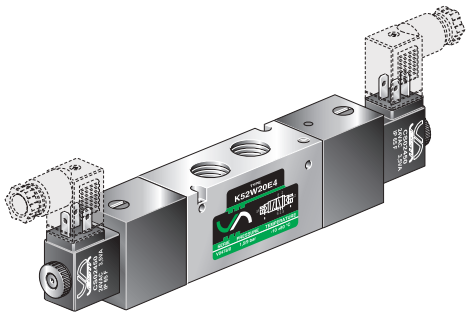
VALVE / 5/2

SINGLE SOLENOID PILOT - EXTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - PILOTAGGIO ESTERNO

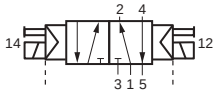


Size *Taglia*	A	B	C	D	E	ØF	G	ØI	L	M	A1	C1
1/8	28	18	127	35	13	3,2	G1/8	3,2	35	8	53	112
1/4	32	22	142,5	50	16,2	4,2	G1/4	3,5	50	7,3	55	129
1/2	50	30	~180	46	-	5,2	G1/2	-	-	11	~75	~166

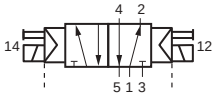
K52W20E.



SIMBOLS / *SIMBOLI*

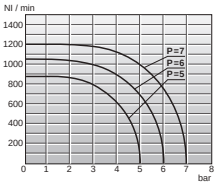


K52W20E8

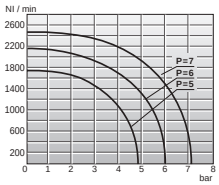


K52W20E4 - K52W20E2

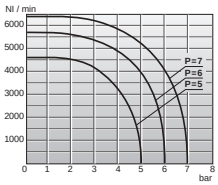
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"



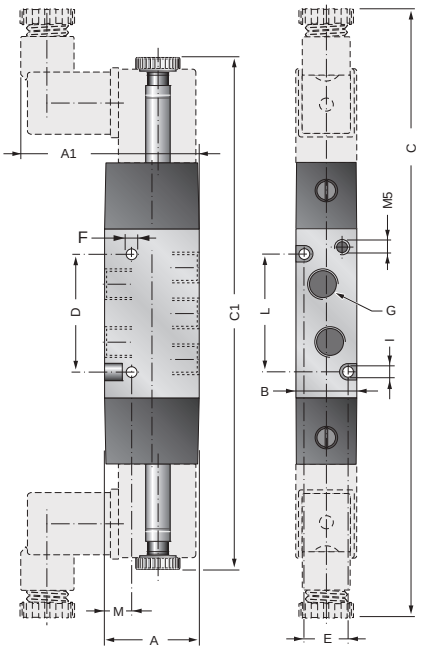
AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"



AIR FLOW DIAGRAM G1/2"
DIAGRAMMA DELLE PORTATE G1/2"

VALVE / *VALVOLA* 5/2

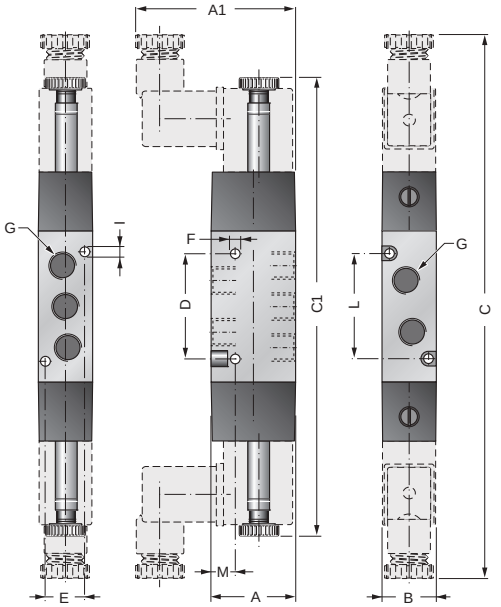
DOUBLE SOLENOID PILOT - EXTERNAL PRESSURE RETURN
DOPPIO COMANDO ELETTROPNEUMATICO - PILOTAGGIO ESTERNO



Size *Taglia*	A	B	C	D	E	ØF	G	ØI	L	M	A1	C1
1/8	28	18	180	35	13	3,2	G1/8	3,2	35	8	53	152
1/4	32	22	202	50	16,2	4,2	G1/4	3,5	50	7,3	55	174
1/2	50	30	~240	45,6	-	5,2	G1/2	-	-	11	~75	~210

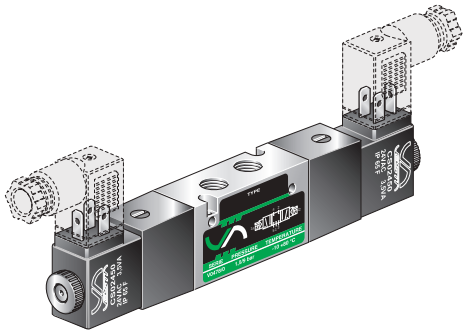
VALVE / 5/3

DOUBLE PNEUMATIC PILOT (MID-POSITION PRESSURIZED) / *DOPPIO COMANDO PNEUMATICO (CENTRI IN PRESSIONE)*
DOUBLE PNEUMATIC PILOT (MID-POSITION CLOSED) / *DOPPIO COMANDO PNEUMATICO (CENTRI CHIUSI)*
DOUBLE PNEUMATIC PILOT (MID-POSITION EXHAUSTED) / *DOPPIO COMANDO PNEUMATICO (CENTRI APERTI)*

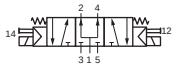


Size / *Taglia*	A	A1	B	C	C1	D	E	ØF	G	ØI	L	M
1/8	28	~53	18	180	~152	35	13	3,2	G1/8	3,2	35	8
1/4	32	~55	22	202	~174	50	16,2	4,2	G1/4	3,5	50	7,3
1/2	50	~75	30	~240	~210	45,6	-	5,2	G1/2	-	-	11

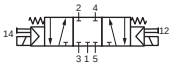
K53W2S . 1.



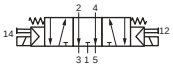
SIMBOLS / *SIMBOLI*



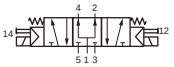
K53W2S318



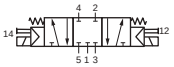
K53W2S618



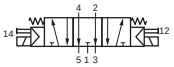
K53W2S918



K53W2S314
K53W2S312

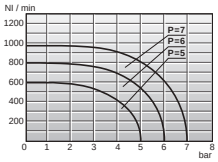


K53W2S614
K53W2S612

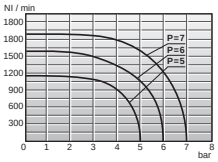


K53W2S914
K53W2S912

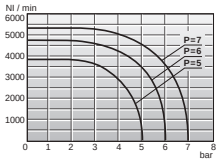
DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"



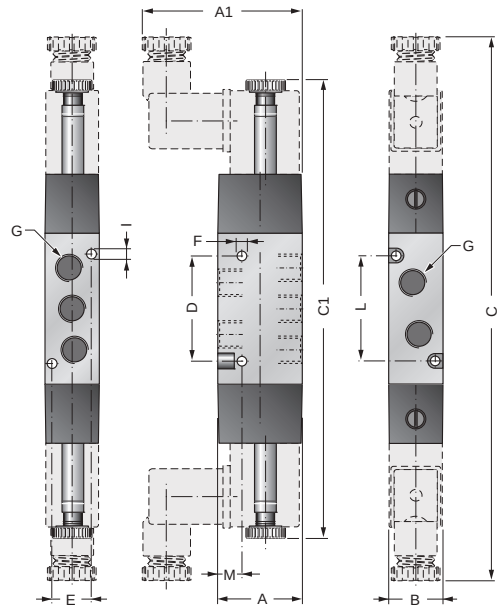
AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"



AIR FLOW DIAGRAM G1/2"
DIAGRAMMA DELLE PORTATE G1/2"

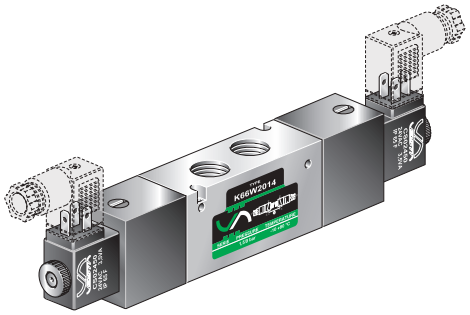
DOUBLE 3/2 VALVE / DOPPIA 3/2

DUBLE 3/2 N.C. SPRING RETURN VALVE
DOPPIA VALVOLA 3/2 N.C. RITORNO A MOLLA MECCANICA

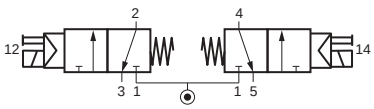


Size / *Taglia*	A	A1	B	C	C1	D	E	ØF	G	ØI	L	M
1/8	28	~53	18	180	~152	35	13	3,2	G1/8	3,2	35	8
1/4	32	~55	22	202	~174	50	16,2	4,2	G1/4	3,5	50	7,3

K66W201.

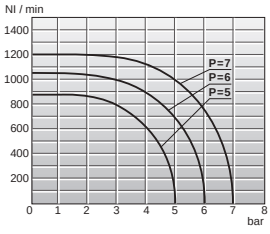


SIMBOLS / *SIMBOLI*

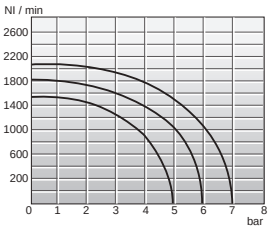


K66W2018 - K66W2014

DIAGRAMS / *DIAGRAMMI*

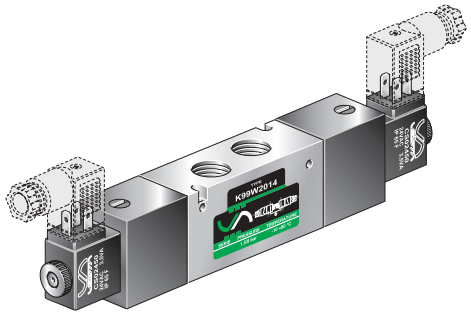


AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"



AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"

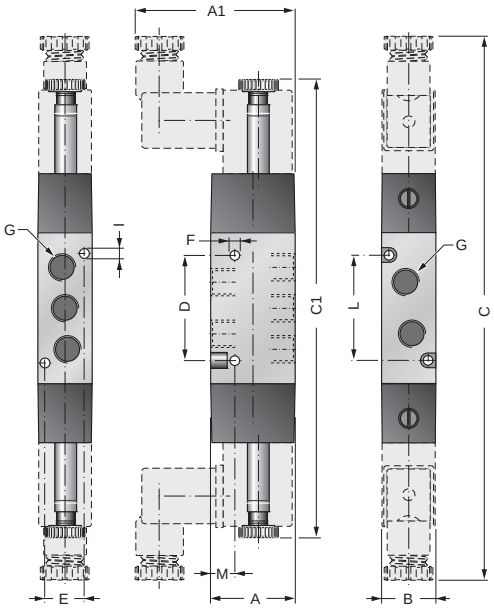
K99W201.



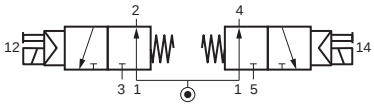
DOUBLE 3/2 VALVE / DOPPIA *VALVOLA* 3/2

DUBLE 3/2 N.O. SPRING RETURN VALVE

DOPPIA VALVOLA 3/2 N.O. RITORNO A MOLLA MECCANICA

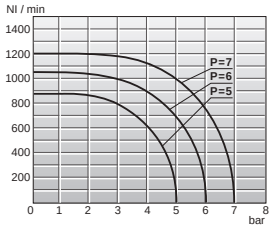


SIMBOLS / *SIMBOLI*

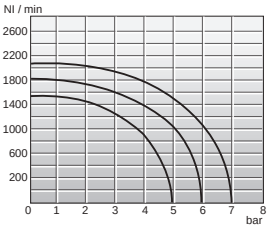


K99W2018 - K99W2014

DIAGRAMS / *DIAGRAMMI*



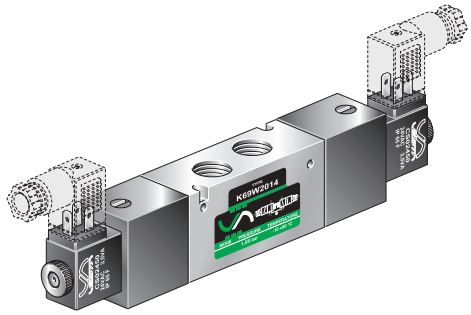
AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"



AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"

Size *Taglia*	A	A1	B	C	C1	D	E	ØF	G	ØI	L	M
1/8	28	~53	18	180	~152	35	13	3,2	G1/8	3,2	35	8
1/4	32	~55	22	202	~174	50	16,2	4,2	G1/4	3,5	50	7,3

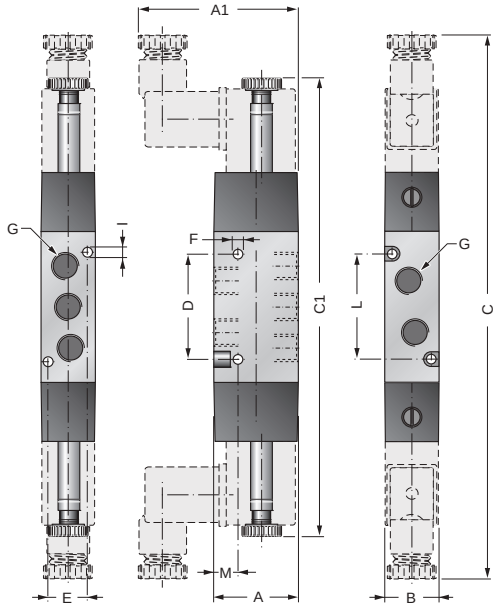
K69W201.



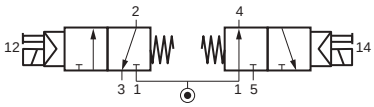
DOUBLE 3/2 VALVE / DOPPIA *VALVOLA* 3/2

3/2 N.C. + 3/2 N.O. VALVES SPRING RETURN

VALVOLA 3/2 N.C. + VALVOLA 3/2 N.O. RITORNO A MOLLA MECCANICA

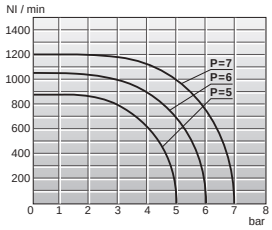


SIMBOLS / *SIMBOLI*

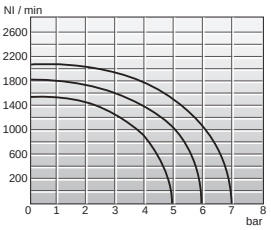


K69W2018 - K69W2014

DIAGRAMS / *DIAGRAMMI*



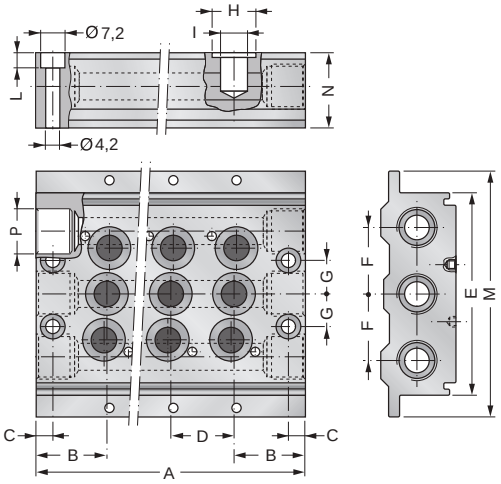
AIR FLOW DIAGRAM G1/8"
DIAGRAMMA DELLE PORTATE G1/8"



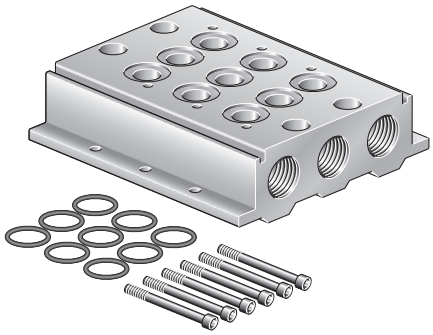
AIR FLOW DIAGRAM G1/4"
DIAGRAMMA DELLE PORTATE G1/4"

Size *Taglia*	A	A1	B	C	C1	D	E	ØF	G	ØI	L	M
1/8	28	~53	18	180	~152	35	13	3,2	G1/8	3,2	35	8
1/4	32	~55	22	202	~174	50	16,2	4,2	G1/4	3,5	50	7,3

KME . . .



Size *Taglia*	B	C	D	E	F	G	ØH	ØI	L	M	N	P
1/8	21	5	19	60	19	10	13	8	4,5	74,5	26	G1/4
1/4	25	6,5	23	70	23	11,5	15,9	10	5	85	26	G3/8



- Available upon request manifold up to 20 places.
- Valves fixing screws and seals are supplied with manifold.
- Subbase fixing screws not supplied.
- Manifold suppied assembled on demand.
- *A richiesta sono fornibili basi sino a 20 posti*
- *Le viti e le guarnizioni per il fissaggio delle valvole vengono fornite con la base.*
- *Il fissaggio alla base è a cura del cliente.*
- *A richiesta, la base può essere fornita preassemblata.*

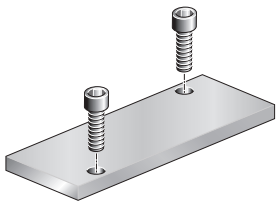
CODES / *CODICI*

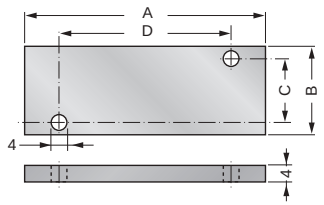
Code *Codice*	A	Place *Posti*
KME218	61	2
KME318	80	3
KME418	99	4
KME518	118	5
KME618	137	6
KME718	156	7
KME818	175	8
KME918	194	9
KME1018	213	10
KME1218	251	12
KME1418	289	14
KME1618	327	16
KME214	73	2
KME314	96	3
KME414	119	4
KME514	142	5
KME614	165	6
KME714	188	7
KME814	211	8
KME914	234	9
KME1014	257	10
KME1214	303	12
KME1414	349	14
KME1614	395	16

COILS SOLENOID VALVES AND ACCESSORIES - *SOLENOIDI PER ELETTROVALVOLE ED ACCESSORI*

KPCH01.

PLUG FLAT
CHIUSURA POSTO INUTILIZZATO





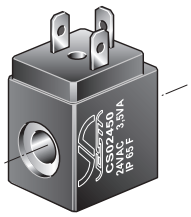
Plug flat includes assembling screws.

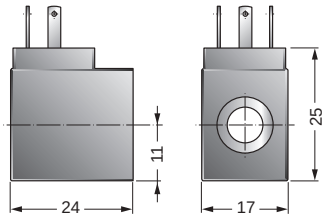
La piastrina di chiusura dei posti non utilizzati della base é fornita con le relative viti di fissaggio.

Size *Taglia*	A	B	C	D	Code *Codice*
1/8	49	18	13	35,5	KPCH018
1/4	60	22	16,2	50	KPCH014

CS . . . . .

COILS
SOLENOIDI PER ELETTROVALVOLE





CODES / *CODICI*

Code ordination *Codice ordinazione*	Voltage *Tensione*
CS01200	12 V DC
CS02400	24 V DC
CS02450	24 V 50/60Hz AC
CS11050 (*)	110 V 50/60Hz AC
CS22050 (*)	220 V 50/60Hz AC

(*) Please see page / *Vedi pag.* **B-37**

TECHNICAL FEATURES

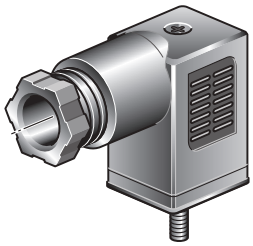
Standard tensions	12, 24, V DC 24, 110, 220 V AC (50/60 Hz)
Other tensions	Contact our commercial department
Duty cicle	100% (continuos)
Power at 20°C	2,4 Watt DC; 3,5 VA AC
Nominal tension	± 10% during normal working
Operating temperature range	-20°C ÷ +50°C
Degree of protection	Fixed plug IP 65 (IEC 144) with connector
Insulation	Class F
Materials	Wire class H - coil moulding glass filled nylon

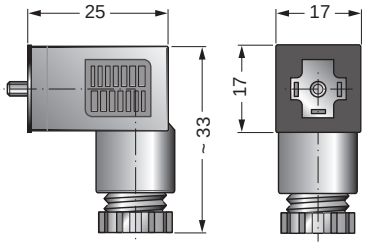
CARATTERISTICHE TECNICHE

Tensioni standard	*12, 24, V DC* *24,110, 220 V AC (50/60 Hz)*
Altre tensioni	*Interpellare il ns. servizio tecnico commerciale*
Funzionamento	*100% ED alla potenza ed alla temperatura ambiente indicata*
Potenza assorbita a 20 C°	*2,4 Watt in DC; 3,5 VA in AC*
Tensione nominale	*± 10% a bobina calda*
Limiti di temperatura ambiente	*-20 °C ÷ +50 °C*
Protezione	*IP 65 secondo IEC 144 con connettore*
Bobina	*Bobina completa classe F*
Materiali	*Rivestimento nylon caricato vetro filo di rame classe H*

CEP/ 0 . . . . . .

SOLENOID CONNECTORS
CONNETTORI





CODES / *CODICI*

Description *Descrizione*	Code *Codice*	Voltage *Tensione*
Universal connector *Connettore universale*	CEP/0	All tension *Tutte le tensioni*
Connector with led *Connettore con led*	CEP/0 L 10 / 50 CEP/0 L 70 / 250	10/50 V AC / DC 70/250 V AC / DC
Connector with led and varistor *Connettore con led e varistore*	CEP/0 LV 24 CEP/0 LV 110 CEP/0 LV 220	24 V AC / DC 110 V AC / DC 220 V AC / DC

TECHNICAL FEATURES

Wire connection	With screwed terminals
Gland thread	PG 7
Number of poles	2 Poles + earth
Housing colour	Black, transparent in the led version.

CARATTERISTICHE TECNICHE

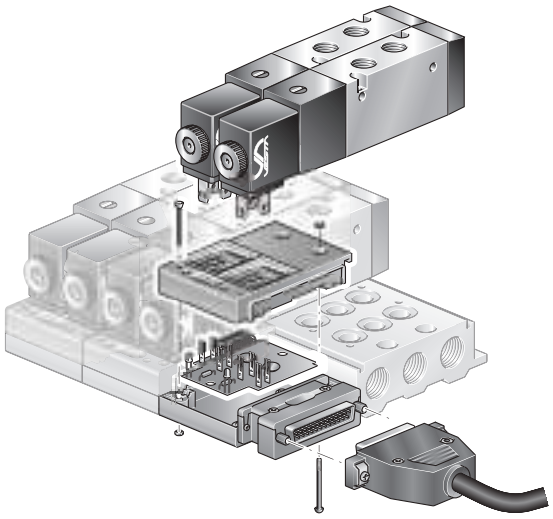
Connessione cavi	*Con morsetti a vite*
Filettatura passacavo	*PG 7*
N° Poli	*2 Poli + terra*
Colori connettore	*Nero, trasparente nelle versioni con led.*

VERSATILE MULTIPOLE CONNECTION
CONNESSIONE MULTIPOLARE VERSATILE
MPV

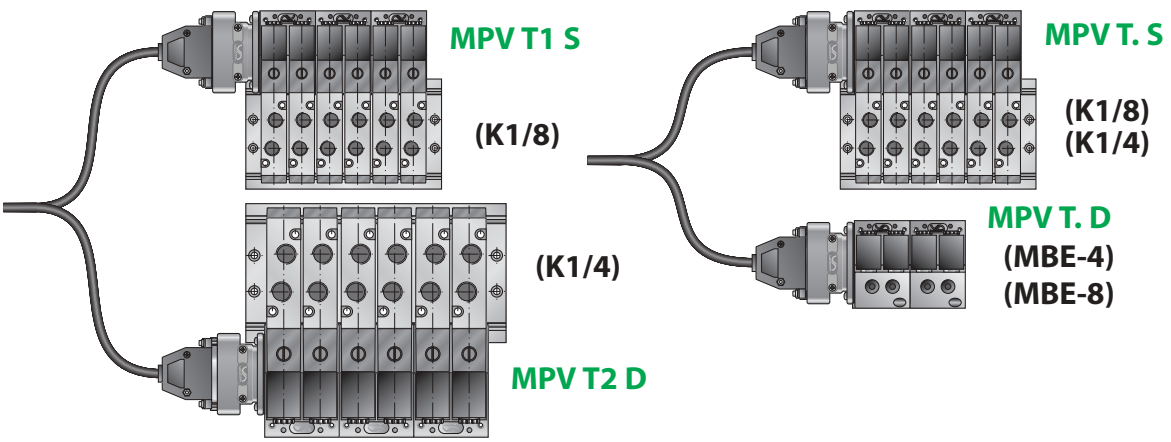


With **Vesta MPV** system, offering integrated electrical connections, it is possible to connect different versions of manifold valves. Each module connection is designed for 2 valves and it is available in two different sizes: size T1 and size T2. With size T1 it is possible to assemble manifolds of K1/8 valves and direct actuated valves MPB Ø4; with size T2 it is possible to assemble manifolds of K1/4 valves and direct actuated valves MPB G1/8. The MPV system is available with solenoid valves K1/8 and K1/4 series in all versions 5/2, 5/3 and 2x3/2. The **Vesta MPV** system is compact, versatile, easy to assembly and can operate up to 32 solenoids. It is available with 24V DC or 24 V AC voltage solenoids with led and varistor protection as standard.

*Il sistema **Vesta MPV** di connessione elettrica integrata consente di collegare isole di valvole di taglia e tipologia differenti. I moduli di collegamento elettrico sono a 2 posti valvola ciascuno e sono fornibili in due taglie differenti: la taglia T1 e la taglia T2. La taglia T1 collega valvole k1/8 in batteria e valvole ad azionamento diretto della nuova serie MPB Ø4; la taglia T2 collega valvole K1/4 in batteria e valvole ad azionamento diretto della nuova serie MPB G1/8. Il sistema **MPV** supporta tutte le versioni di elettrovalvole 5/2, 5/3 e 2x3/2 della serie K1/8 e K1/4. La soluzione compatta, robusta e facile da assemblare consente di controllare fino a 32 solenoidi. La tensione dei solenoidi è di 24V DC o AC, ogni output è dotato di Led di presenza segnale e varistore di protezione alle sovratensioni.*



SYSTEM VERSATILY EXAMPLES **MPV** / *ESEMPIO DI VERSATILITA' DEL SISTEMA **MPV***



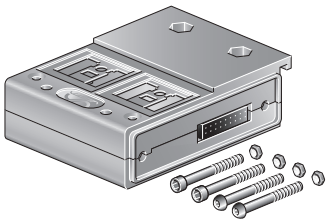
MPV T1

ELECTRICAL CONNECTION MODULE SIZE T1
MODULO DI COLLEGAMENTO ELETTRICO TAGLIA T1

MODULE FOR ASSEMBLING OF FOLLOWING MANIFOLD:
MODULO PER ASSEMBLARE LE SEGUENTI BATTERIE:

MPK-18
K1/8 SOLENOID VALVES
ELETTROVALVOLE K1/8

MPB-4
DIRECT ACTUATED VALVES 3/2 TUBE Ø4
ELETTROVALVOLE A COMANDO DIRETTO 3/2 TUBO Ø4

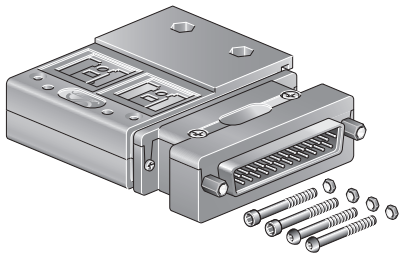


Connection for 2 valve stations
Connessione per 2 valvole

MPV T1 - □

S To use with cable MPW-16 and MPW-32
Position N°0÷16
Per cavo MPW-16 o MPW-32
Posizione N°0÷16

D To use with cable MPW-32
Position N°17÷32
Per cavo MPW-32
Posizione N°17÷32



FRONT connection for 2 valve stations
Connessione FRONTALE per 2 valvole

MPV T1 - □ SBD25

S To use with cable MPW-16 and MPW-32
Position N°0÷16
Per cavo MPW-16 o MPW-32
Posizione N°0÷16

D To use with cable MPW-32
Position N°17÷32
Per cavo MPW-32
Posizione N°17÷32

MANIFOLD OF DIRECT ACTUATED VALVES 3/2 NC TUBE Ø4mm IN MULTIPOLE CONNECTION SYSTEM
BATTERIA MULTIPOLARE DI ELETTROVALVOLE A COMANDO DIRETTO 3/2 NC TUBO Ø4mm

MPB-4-□-□□-□

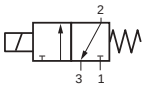
Number of station valves
Numero posti
2, 4, 6, ..., 16

CS Solenoid (refer to page B-52)
Solenoide CS (vedere pag. B-52)
24V dc: **00**
24V ac: **50**

S To use with cable MPW-16
To use with cable MPW-32
Position N°0÷16
Per cavo MPW-16
Per cavo MPW-32
Posizione N°0÷16

D To use with cable MPW-32
Position N°17÷32
Per cavo MPW-32
Posizione N°17÷32

SIMBOL / *SIMBOLO*



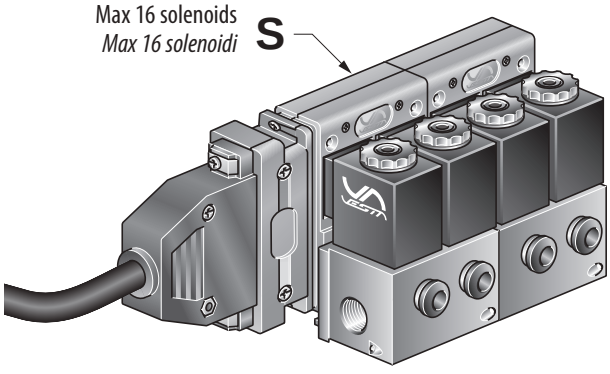
TECHNICAL FEATURES

Flow section	Ø1mm
Nominal Flow	50Nl/min
Working pressure	0-9bar
Environment temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Solenoids	Refer to CS series page B-52

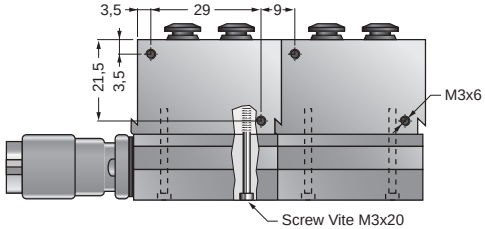
CARATTERISTICHE TECNICHE

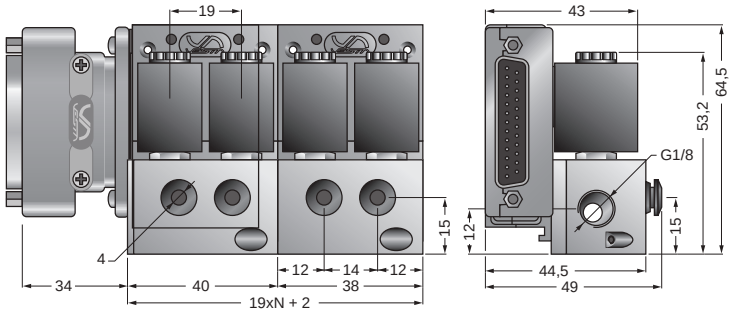
Diametro nominale	*Ø1mm*
Portata nominale	*50Nl/min*
Pressione esercizio	*0-9bar*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Solenoide	*Vedere CS pag. B-52*

Max 16 solenoids
Max 16 solenoidi **S**



MBE-24 see
***MBE-24** vedi* P. **B-35**





MANIFOLD OF K1/8 VALVES IN MULTIPOLE CONNECTION SYSTEM
BATTERIA MULTIPOLARE DI VALVOLE K1/8

Max 16 valve stations / *Max16 posti valvola*

MPK-18- □□-□□-□□-□□-□□-□□-□□ □□-□□

- **B** 5/2 ways double soilenoid valve(K52W2018) *5/2 bistabile (K52W2018)*
- **C** 5/3 ways mid position closed (K53W2S618) *5/3 centri chiusi (K53W2S618)*
- **D** 2x3/2 NC or 5/3 mid position open (K66W2018 o K53W2S918) *2x3/2 NC o 5/3 centri aperti (K66W2018 o K53W2S918)*
- **E** 2x3/2 NO o 5/3 mid position pressurized (K99W2018 o K53W2S318) *2x3/2 NO o 5/3 centri in pressione (K99W2018 o K53W2S318)*
- **F** 3/2NC +3/2NO (K96W2018) *3/2NC +3/2NO (K96W2018)*
- **M** 5/2 ways single solenoid valve (K52W1018) *5/2 monostabile (K52W1018)*
- **V** free place for single solenoid valve *posto vuoto singolo solenoide*
- **W** free place for double solenoid valve *posto vuoto doppio solenoide*

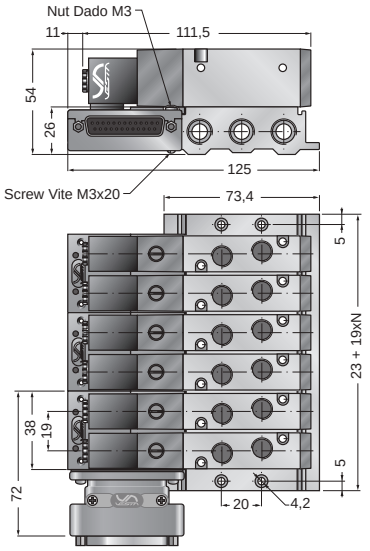
CS Solenoid (refer to page B-52) *Solenoide CS (vedere pag. B-52)*
- **00** 24V dc
- **50** 24V ac

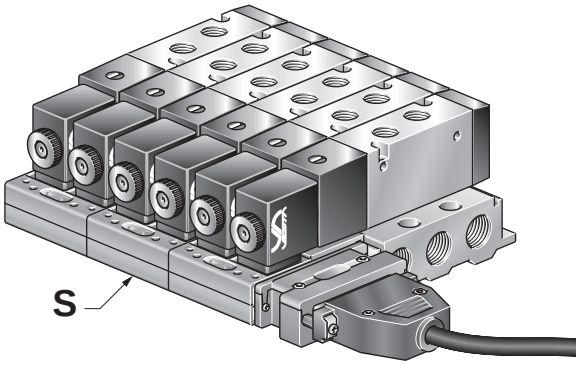
TECHNICAL FEATURES

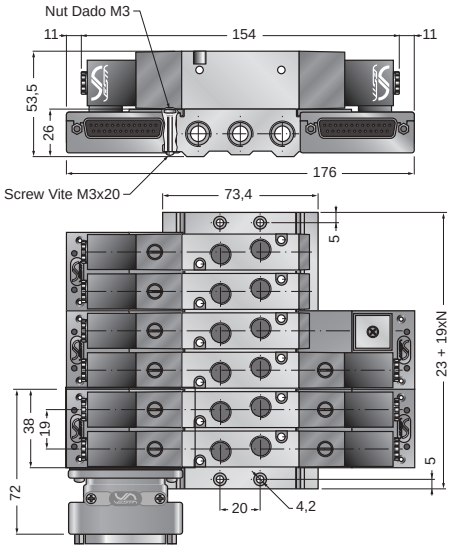
Working pressure	0-9bar
Environment temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Valves	Refer to K1/8 series page B-42
Air flow	730Nl/min

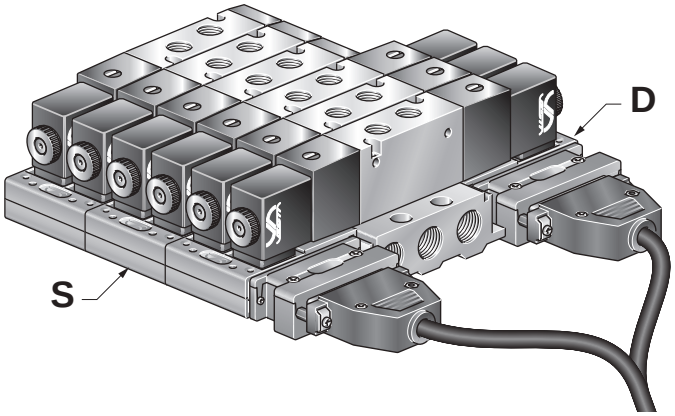
CARATTERISTICHE TECNICHE

Pressione esercizio	*0-9bar*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Valvole	*Vedere K1/8 pag. B-42*
Portata	*730Nl/min*







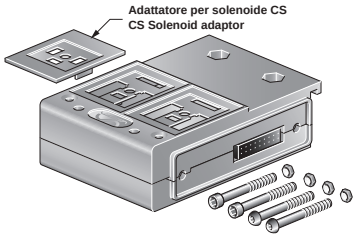


MPV T2 ELECTRICAL CONNECTION MODULE SIZE T2
MODULO DI COLLEGAMENTO ELETTRICO TAGLIA T2

MODULE FOR ASSEMBLING OF FOLLOWING MANIFOLD:
MODULO PER ASSEMBLARE LE SEGUENTI BATTERIE:

MPK-14
K1/4 SOLENOID VALVES
ELETTROVALVOLE K1/4

MPB-8
DIRECT ACTUATED VALVES 3/2 G1/8
ELETTROVALVOLE A COMANDO DIRETTO 3/2 G1/8

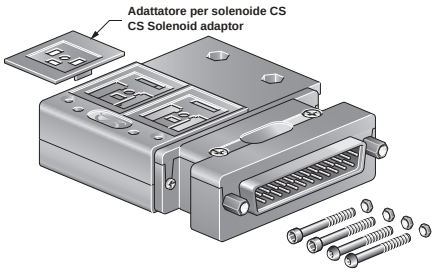


Connection for 2 valve stations
Connessione per 2 valvole

MPV T2 - □

S To use with cable MPW-16 and MPW-32
Position N°0÷16
Per cavo MPW-16 o MPW-32
Posizione N°0÷16

D To use with cable MPW-32
Position N°17÷32
Per cavo MPW-32
Posizione N°17÷32



FRONT connection for 2 valve stations
Connessione FRONTALE per 2 valvole

MPV T2 - □ SBD25

S To use with cable MPW-16 and MPW-32
Position N°0÷16
Per cavo MPW-16 o MPW-32
Posizione N°0÷16

D To use with cable MPW-32
Position N°17÷32
Per cavo MPW-32
Posizione N°17÷32

MANIFOLD OF DIRECT ACTUATED VALVES 3/2 NC - G1/8 IN MULTIPOLE CONNECTION SYSTEM
BATTERIA MULTIPOLARE DI ELETTROVALVOLE A COMANDO DIRETTO 3/2 NC G1/8

MPB-8- □ - □ - □□ - □

Number of station valves
Numero posti
2, 4, 6, ..., 16

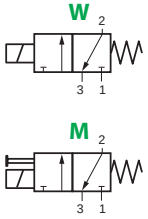
With override **M**
Manuale
Without override **W**
Senza manuale

MS Solenoid (refer to page B-36)
Solenoide MS (vedere pag. B-36)
24V dc: **00**
24V ac: **50**

S To use with cable MPW-16
To use with cable MPW-32
Position N°0÷16
Per cavo MPW-16
Per cavo MPW-32
Posizione N°0÷16

D To use with cable MPW-32
Position N°17÷32
Per cavo MPW-32
Posizione N°17÷32

SIMBOLS / *SIMBOLI*



(*) Available upon request N.O. solenoid operator max 6 bar
Disponibile anche operatore N.A. su richiesta, max 6 bar

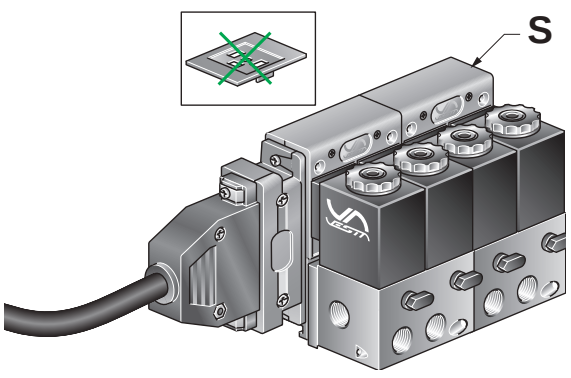
TECHNICAL FEATURES

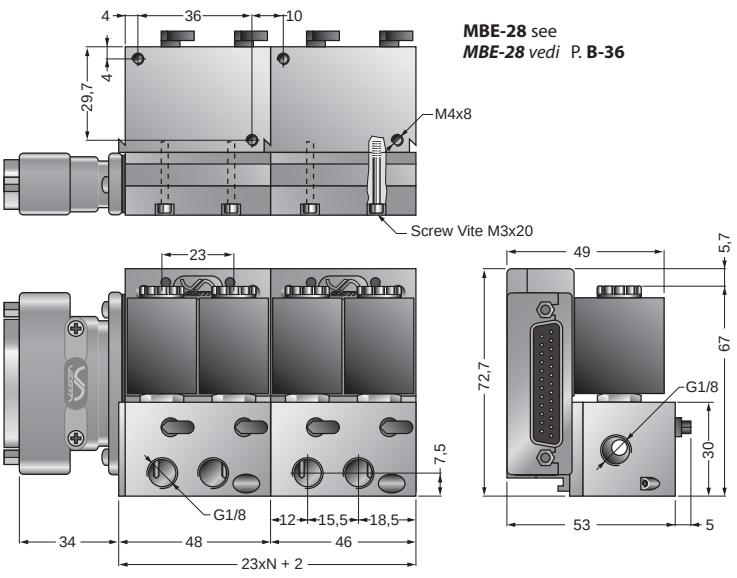
Flow section	Ø1,2mm
Nominal Flow	80Nl/min
Working pressure	0-9bar
Environment temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Solenoids	Refer to MS series page B-36

CARATTERISTICHE TECNICHE

Diametro nominale	*Ø1,2mm*
Portata nominale	*80Nl/min*
Pressione esercizio	*0-9bar*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Solenoide	*Vedere MS pag. B-36*

Max 16 solenoids
Max 16 solenoidi





MBE-28 see
***MBE-28** vedi* P. **B-36**

MANIFOLD OF K1/4 VALVES IN MULTIPOLE CONNECTION SYSTEM
BATTERIA MULTIPOLARE DI VALVOLE K1/4

Max 16 valve stations / *Max16 posti valvola*

MPK-14- □□-□□-□□-□□-□□-□□-□□-□□-□□

- **B** 5/2 ways double soilenoid valve(K52W2014)
  5/2 bistabile (K52W2014)
- **C** 5/3 ways mid position closed (K53W2S614)
  5/3 centri chiusi (K53W2S614)
- **D** 2x3/2 NC o 5/3 mid position open (K66W2014 o K53W2S914)
  2x3/2 NC o 5/3 centri aperti (K66W2014 o K53W2S914)
- **E** 2x3/2 NO o 5/3 mid position pressurized (K99W2014 o K53W2S314)
  2x3/2 NO o 5/3 centri in pressione (K99W2014 o K53W2S314)
- **F** 3/2NC +3/2NO (K96W2014)
  3/2NC +3/2NO (K96W2014)
- **M** 5/2 ways single solenoid valve (K52W1014)
  5/2 monostabile (K52W1014)
- **V** free place for single solenoid valve
  posto vuoto singolo solenoide
- **W** free place for double solenoid valve
  posto vuoto doppio solenoide

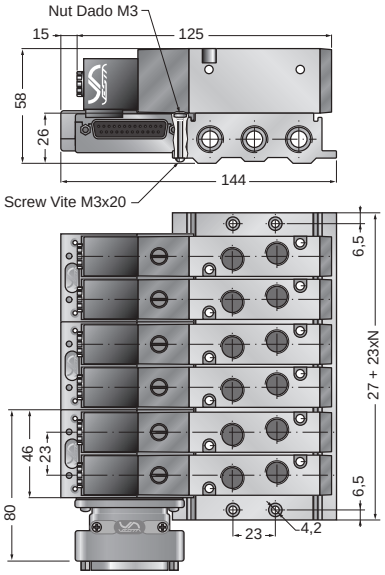
CS Solenoid (refer to page B-52)
Solenoide CS (vedere pag. B-52)
- **00** 24V dc
- **50** 24V ac

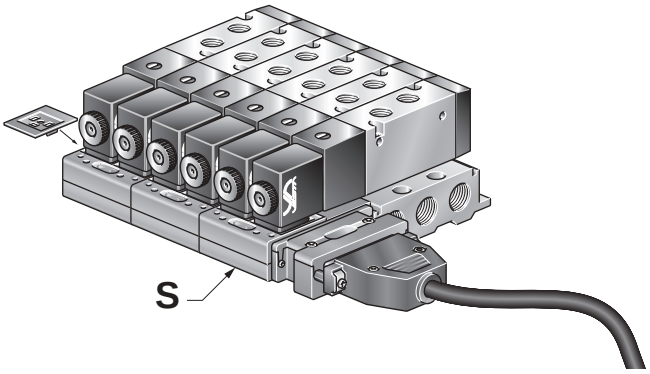
TECHNICAL FEATURES

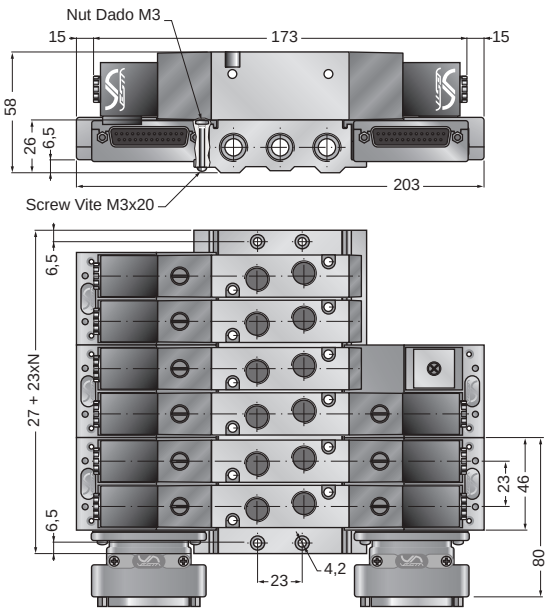
Working pressure	0-9bar
Environment temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Valves	Refer to K1/4 series page B-42
Air flow	1300Nl/min

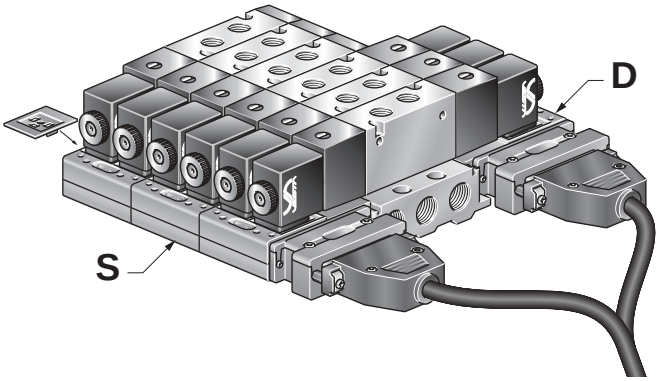
CARATTERISTICHE TECNICHE

Pressione esercizio	*0-9bar*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Valvole	*Vedere K1/4 pag. B-42*
Portata	*1300Nl/min*



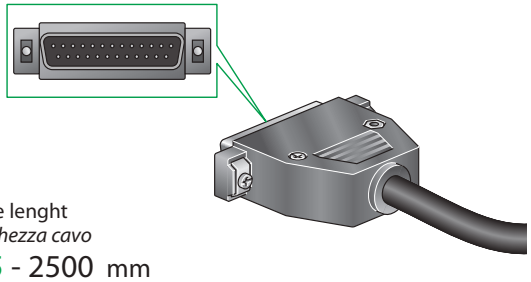




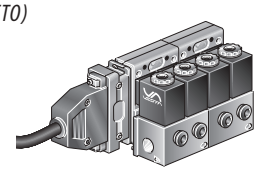


MPW-SD25...

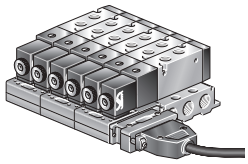
CABLE FOR SINGLE CONNECTION (STRAIGHT CABLE)
CAVO A SINGOLA CONNESSIONE (CAVO DRITTO)



Cable lenght
Lunghezza cavo
025 - 2500 mm
050 - 5000 mm



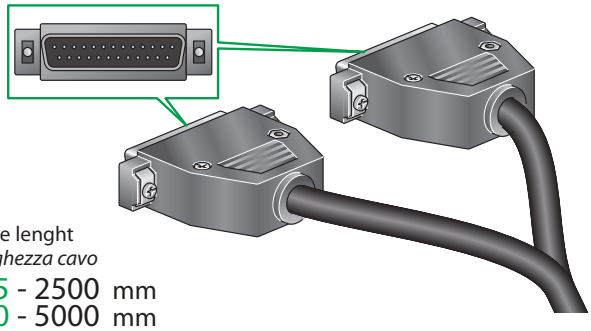
To use with **MPB-8 S** and **MPB-4 S**
(Max 16 solenoids)
*Per **MPB-8 S** e **MPB-4 S***
(Max 16 solenoidi)



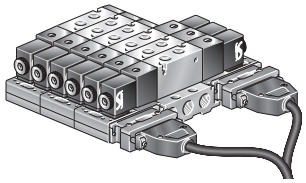
To use with and With single solenoid valves
(Max 16 solenoids)
*Per **MPK-18** e **MPK-14** Con valvole singolo solenoide (Max 16 solenoidi)*

MPW-YSD25...

CABLE FOR DOUBLE CONNECTION ("Y" CABLE)
CAVO A DOPPIA CONNESSIONE (CAVO AD "Y")



Cable lenght
Lunghezza cavo
025 - 2500 mm
050 - 5000 mm

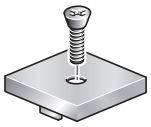


To use with **MPK-18** and **MPK-14** With double solenoid valves (Max 32 solenoids)
*Per **MPK-18** e **MPK-14** Con valvole doppio solenoide (Max 32 solenoidi)*

ACCESSORIES / *ACCESSORI*

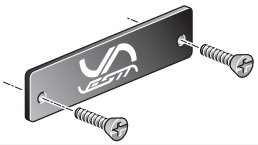
MPS

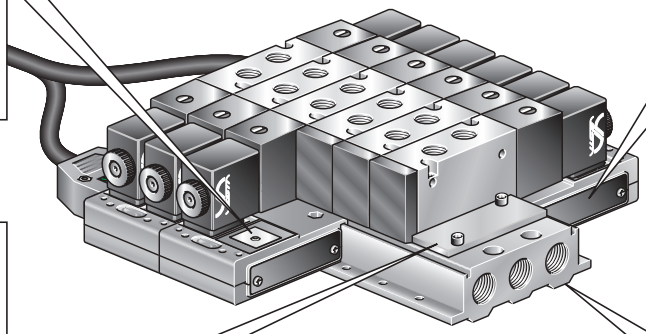
Plug for missing solenoid
Chiusura per solenoide mancante



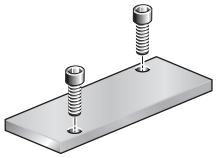
MPFP

End plug
Terminale di chiusura





KPCH01 .



Features see:
Caratteristiche vedi: **Pag. B-52**

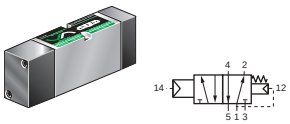
KME ...



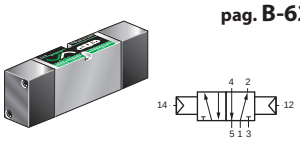
Features see:
Caratteristiche vedi: **Pag. B-51**

INDEX / *INDICE*

MINI VALVES AND MINI SOLENOID VALVES ISO 18 SERIES / *MINI VALVOLE E MINI ELETTROVALVOLE SERIE ISO 18*

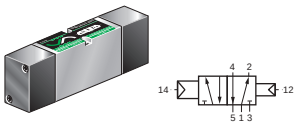


SVP18 52 100
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIPOSIZIONAMENTO MOLLA PNEUMATICA

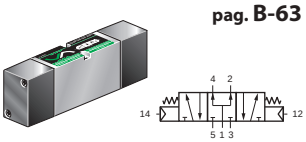


pag. **B-62**

SVP18 52 200
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

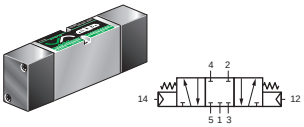


SVP18 52 2D0
DOUBLE DIFFERENTIAL PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO DIFFERENZIALE

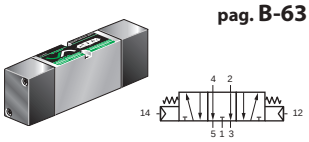


pag. **B-63**

SVP18 53 230
DOUBLE PNEUMATIC PILOT (CENTRE POSITION IN PRESSURE)
DOPPIO COMANDO PNEUMATICO (CENTRI IN PRESSIONE)

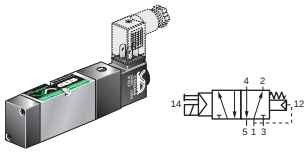


SVP18 53 260
DOUBLE PNEUMATIC PILOT (CENTRE POSITION CLOSED)
DOPPIO COMANDO PNEUMATICO (CENTRI CHIUSI)

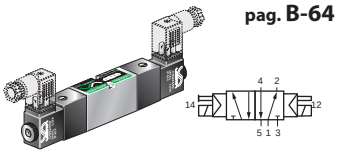


pag. **B-63**

SVP18 53 290
DOUBLE PNEUMATIC PILOT (CENTRE POSITION OPEN)
DOPPIO COMANDO PNEUMATICO (CENTRI APERTI)

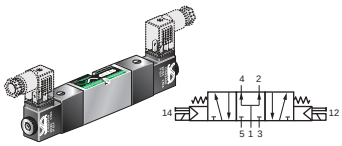


SVE18 52 100 - .....
SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO MOLLA PNEUMATICA

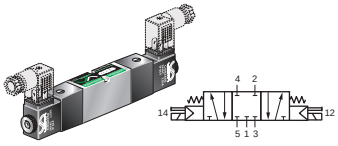


pag. **B-64**

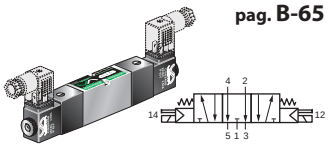
SVE18 52 200 - .....
DOUBLE SOLENOID PILOT
DOPPIO COMANDO ELETTROPNEUMATICO



SVE18 53 230 - .....
DOUBLE SOLENOID PILOT (CENTRE POSITION IN PRESSURE)
DOPPIO COMANDO ELETTROPNEUMATICO (CENTRI IN PRESSIONE)



SVE18 53 260 - .....
DOUBLE SOLENOID PILOT (CENTRE POSITION CLOSED)
DOPPIO COMANDO ELETTROPNEUMATICO (CENTRI CHIUSI)

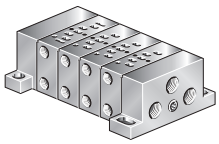


pag. **B-65**

SVE18 53 290 - .....
DOUBLE SOLENOID PILOT (CENTRE POSITION OPEN)
DOPPIO COMANDO ELETTROPNEUMATICO (CENTRI APERTI)

pag. **B-66**

BTC 18
BMI 18 E
BMI 18 EP
BTI 18
PCBM 18

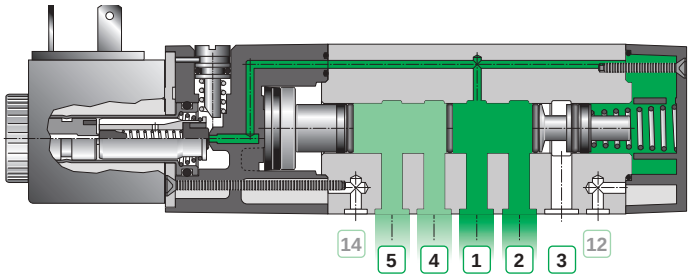


ISO-VDMA 24563 MODULAR MANIFOLD SIZE 18 mm
BASI MODULARI ISO-VDMA *TAGLIA 18 mm*

BUILDING FEATURES ISO 24563 / *CARATTERISTICHE COSTRUTTIVE VALVOLE ISO 24563*

Series **SV . 18** valves and solenoid valves are built in compact dimensions for very flexible and small manifolds.
The solenoid valves, complete with coil and connector, follows EEC directives on the electromagnetic compatibility (89/336/EEC) and low voltage (73/23/EEC). The **SV . 18** valves are built with high quality materials and components, and thanks to this the quality, reliability and performances are very high

*Le valvole ed elettrovalvole Vesta serie **SV . 18** funzionano secondo il principio del cassetto bilanciato (vedi fig. **1** e **2**), presentano ingombri molto ridotti per l'assemblaggio in batterie compatte.*
*Le elettrovalvole complete di bobina e connettore, sono conformi alle direttive CEE relative alla compabilità elettromagnetica (89/336/CEE) ed alla bassa tensione (73/23/CEE). L'impiego di materiali e componenti di alta qualità conferisce alla serie **SV . 18** caratteristiche di qualità, prestazioni ed affidabilità molto elevate.*



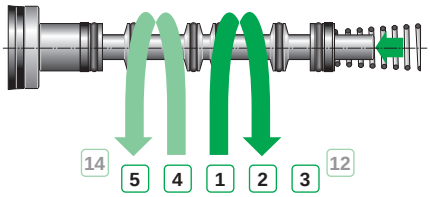
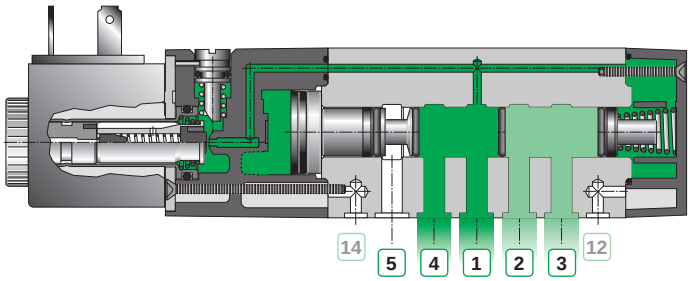


fig. 1

NORMAL POSITION / *POSIZIONE A RIPOSO*



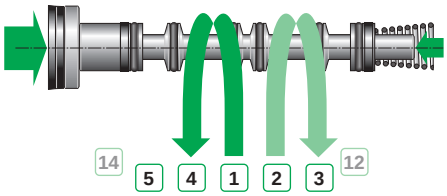


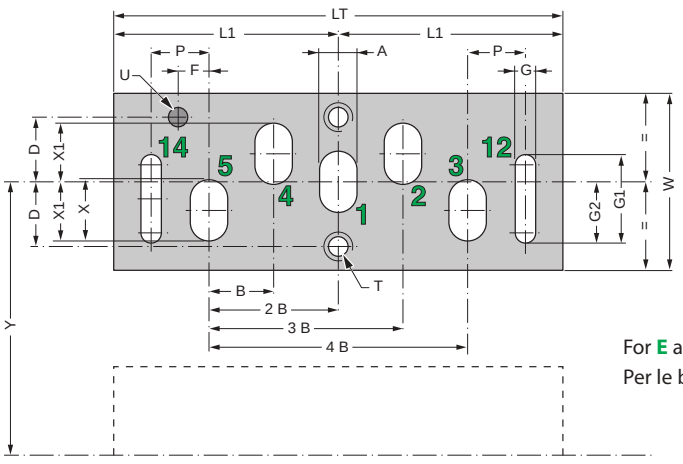
fig. 2

ACTUATED POSITION / *POSIZIONE DI LAVORO*

MOUNTING INTERFACE SURFACE ISO 24563 / *DIMENSIONI DEI PIANI DI POSA ISO 24563*

Standard **ISO - 24563**, indicates the main dimensions of the mounting interface surface; the minimun distance of each subbase and the port connection numbers as figure shows. VESTA subbase design is in complance with the VDMA standards.

*La norma **ISO - 24563**, emanata dall'Organismo Internazionale di Standardizzazione e accettata da tutti i grandi utilizzatori, stabilisce le dimensioni del piano di posa del distributore, l'interasse minimo tra due basi affiancate e la numerazione delle connessioni di entrata e di uscita come da schema a fianco riportato.*
Nella concezione delle basi VESTA, inoltre, si sono seguite le raccomandazioni VDMA che definiscono in maniera più precisa la geometria della base stessa.



For **E** and **EP** manifold version see
Per le basi versione **E** ed **EP** vedi ..... **Pag. B-66**

	A	B	D	F	G	G1	G2	L1	LT	P	T	U	W min.	X	X1	Y	Area mm²
ISO 18 mm	3,5	7	6,25	3	2	8	6	25	50	6	M3	Ø3,2 x 4	18	6,5	5,25	19	20

TECHNICAL FEATURES / *CARATTERISTICHE TECNICHE*

SERIE **SVP18 - SVE18**

COMMON TECHNICAL FEATURES SVP18 AND SVE18

Fixing	2 manifold holes Ø 3,1	Lubrication	Not required
Port connections	ISO -VDMA 24563 standard	Medium	Filtered air
Flow section	Ø 4,5 mm	Reference pressure	6 bar
Ambient temperature range	-10 °C / +50 °C	Nominal air flow 5/2 valves	480 Nl/min
Temperature range of medium	0 °C / +40 °C	Nominal air flow 5/3 valves	390 Nl/min

PNEUMATIC VALVES FEATURES SVP18

SVP18 52 100	Nominal pilot pressure	3,1 bar (9 bar)	
	Nominal max. frequence	30 Hz	
	Operating pressure range	**2,5 ÷ 9 bar**	
SVP18 52 2D0	Nominal pilot (12) pressure	1,35 bar	
	Nominal pilot (14) pressure	0,97 bar	
	Nominal max. frequence	30 Hz	
	Operating pressure range	**0 ÷ 9 bar**	
SVP18 53 260	Nominal pilot pressure	3 bar	
	Nominal max. frequence	10 Hz	
	Operating pressure range	**0 ÷ 9 bar**	
SVP18 52 200	Nominal pilot pressure	0,97 bar	
	Nominal max. frequence	33 Hz	
	Operating pressure range	**0 ÷ 9 bar**	
SVP18 53 230	Nominal pilot pressure	3 bar	
	Nominal max. frequence	10 Hz	
	Operating pressure range	**0 ÷ 9 bar**	
SVP18 53 290	Nominal pilot pressure	3 bar	
	Nominal max. frequence	10 Hz	
	Operating pressure range	**0 ÷ 9 bar**	

SOLENOID VALVES FEATURES SVE18

		AC	DC
SVE18 52 100	Nominal max. frequence	27 Hz	17 Hz
	Operating pressure range	**2,5 ÷ 9 bar**	
SVE18 53 230	Nominal max. frequence	12 Hz	10 Hz
	Operating pressure range	**3 ÷ 9 bar**	
SVE18 53 290	Nominal max. frequence	12 Hz	10 Hz
	Operating pressure range	**3 ÷ 9 bar**	
SVE18 52 200	Nominal max. frequence	42 Hz	34 Hz
	Operating pressure range	**1,5 ÷ 9 bar**	
SVE18 53 260	Nominal max. frequence	12 Hz	10 Hz
	Operating pressure range	**3 ÷ 9 bar**	

For electrical features solenoid pilot SVE18 serie see pp. B-52

CARATTERISTICHE TECNICHE COMUNI SVP18 *E* SVE18

Fissaggio	*2 fori Ø 3,1 per montaggio su base*	*Lubrificazione*	*Non necessaria*
Connessioni	*ISO -VDMA 24563 standard*	*Fluido*	*Aria filtrata*
Diametro nominale	*Ø 4,5 mm*	*Pressione nominale*	*6 bar*
Temperatura ambiente	*-10 °C / +50 °C*	*Portata nominale valvole 5/2*	*480 Nl/min*
Temperatura fluido	*0 °C / +40 °C*	*Portata nominale valvole 5/3*	*390 Nl/min*

CARATTERISTICHE VALVOLE PNEUMATICHE SVP18

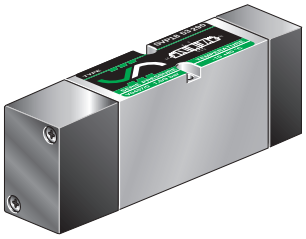
SVP18 52 100	*Pressione di pilotaggio nominale*	*3,1 bar (9 bar)*	
	Frequenza max. nominale	*30 Hz*	
	Pressione di esercizio	***2,5 ÷ 9 bar***	
SVP18 52 2D0	*Pressione di pilotaggio (12) nominale*	*1,35 bar*	
	Pressione di pilotaggio (14) nominale	*0,97 bar*	
	Frequenza max. nominale	*30 Hz*	
	Pressione di esercizio	***0 ÷ 9 bar***	
SVP18 53 260	*Pressione di pilotaggio nominale*	*3 bar*	
	Frequenza max. nominale	*10 Hz*	
	Pressione di esercizio	***0 ÷ 9 bar***	
SVP18 52 200	*Pressione di pilotaggio nominale*	*0,97 bar*	
	Frequenza max. nominale	*33 Hz*	
	Pressione di esercizio	***0 ÷ 9 bar***	
SVP18 53 230	*Pressione di pilotaggio nominale*	*3 bar*	
	Frequenza max. nominale	*10 Hz*	
	Pressione di esercizio	***0 ÷ 9 bar***	
SVP18 53 290	*Pressione di pilotaggio nominale*	*3 bar*	
	Frequenza max. nominale	*10 Hz*	
	Pressione di esercizio	***0 ÷ 9 bar***	

CARATTERISTICHE ELETTROVALVOLE SVE18

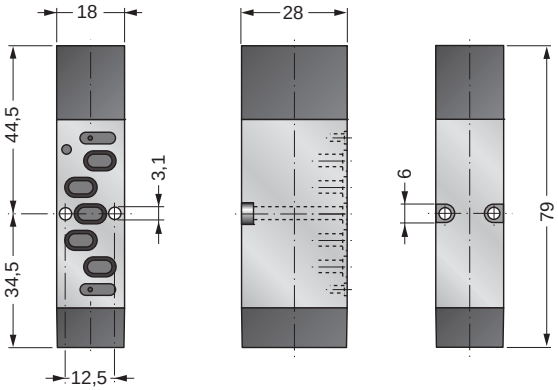
		AC	DC
SVE18 52 100	*Frequenza max. nominale*	*27 Hz*	*17 Hz*
	Pressione di esercizio	***2,5 ÷ 9 bar***	
SVE18 53 230	*Frequenza max. nominale*	*12 Hz*	*10 Hz*
	Pressione di esercizio	***3 ÷ 9 bar***	
SVE18 53 290	*Frequenza max. nominale*	*12 Hz*	*10 Hz*
	Pressione di esercizio	***3 ÷ 9 bar***	
SVE18 52 200	*Frequenza max. nominale*	*42 Hz*	*34 Hz*
	Pressione di esercizio	***1,5 ÷ 9 bar***	
SVE18 53 260	*Frequenza max. nominale*	*12 Hz*	*10 Hz*
	Pressione di esercizio	***3 ÷ 9 bar***	

Caratteristiche elettriche bobina per elettrovalvole* SVE18 *vedi pp. B-52

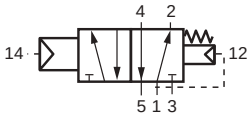
SVP18 52 100



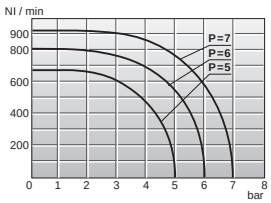
VALVE / *VALVOLA* 5/2
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA PNEUMATICA



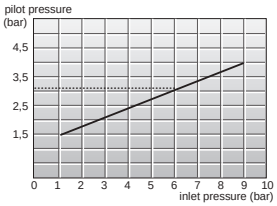
SIMBOL / *SIMBOLO*



DIAGRAMS / *DIAGRAMMI*

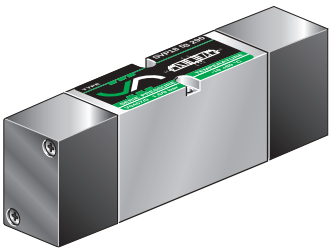


AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

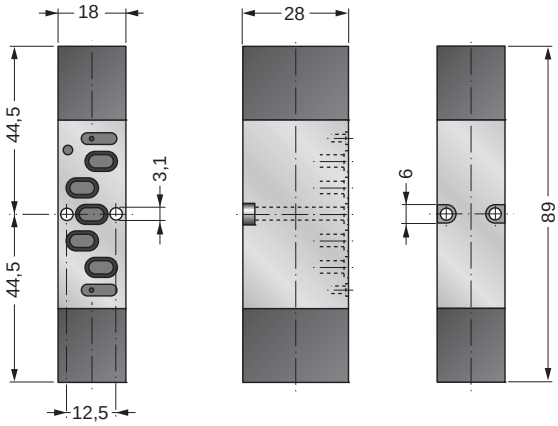


PILOT PRESSURE / INLET PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

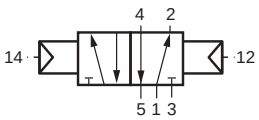
SVP18 52 200



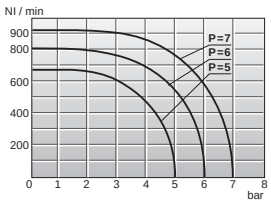
VALVE / *VALVOLA* 5/2
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO



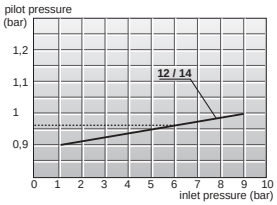
SIMBOL / *SIMBOLO*



DIAGRAMS / *DIAGRAMMI*



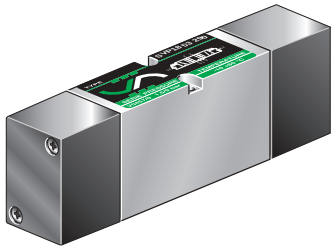
AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

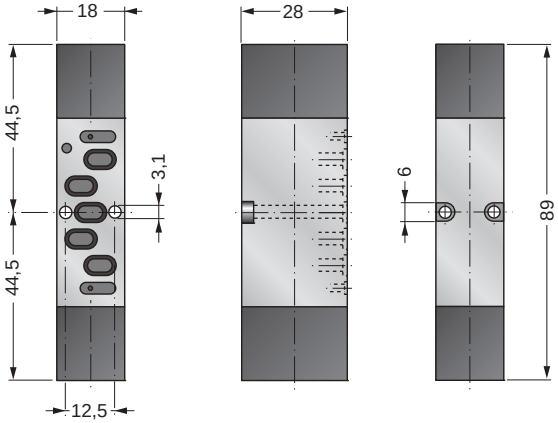


PILOT PRESSURE / INLET PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

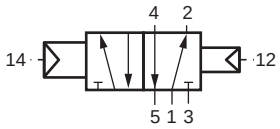
VALVE / *VALVOLA* 5/2
DOUBLE DIFFERENTIAL PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO DIFFERENZIALE

SVP18 52 2D0

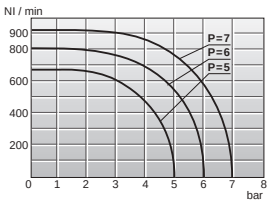




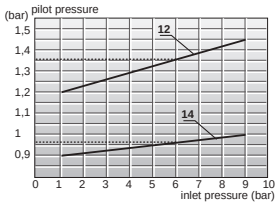
SIMBOL / *SIMBOLO*



DIAGRAMS / *DIAGRAMMI*



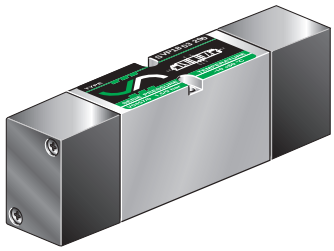
AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

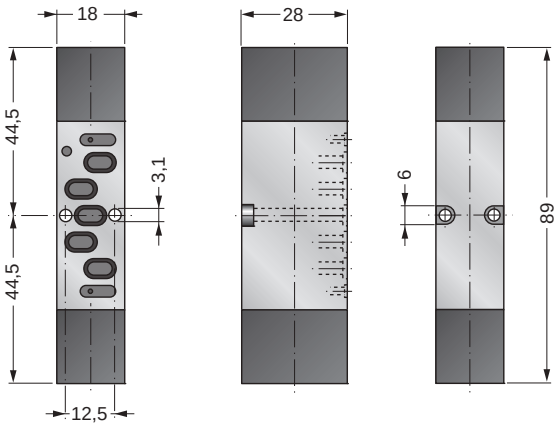


PILOT PRESSURE / INLET PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

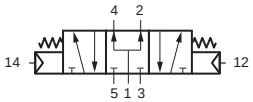
VALVE / *VALVOLA* 5/3
DOUBLE PNEUMATIC PILOT - SPRING RETURN
DOPPIO COMANDO PNEUMATICO - RITORNO A MOLLA

SVP18 53 2 . 0

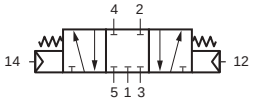




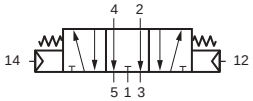
SIMBOLS / *SIMBOLI*



SVP18 53 230

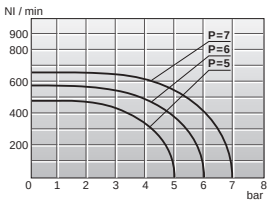


SVP18 53 260

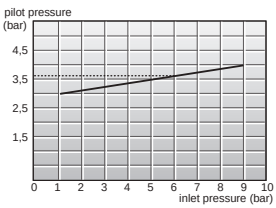


SVP18 53 290

DIAGRAMS / *DIAGRAMMI*

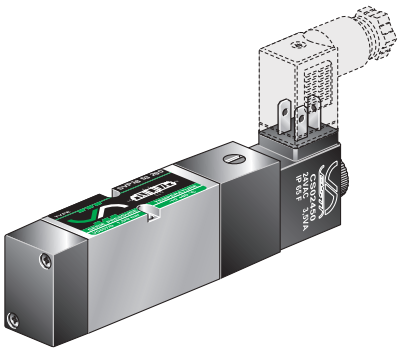


AIR FLOW DIAGRAM / *DIAGRAMMA DELLE PORTATE*

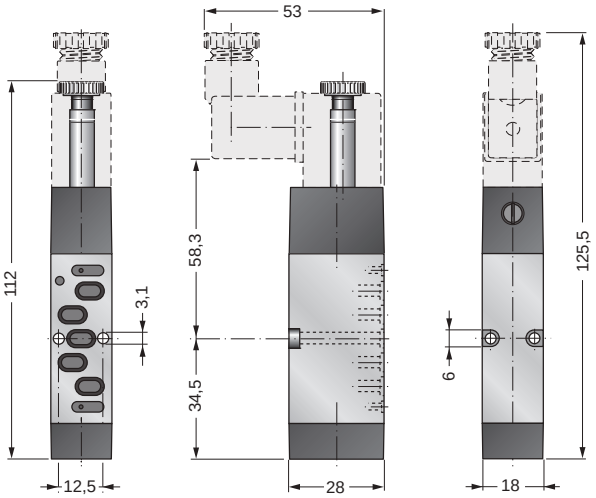


PILOT PRESSURE / INLET PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

SVE18 52 100 - .....



SOLENOID VALVE / *ELETTROVALVOLA* 5/2
SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO A MOLLA PNEUMATICA



SIMBOL / *SIMBOLO*

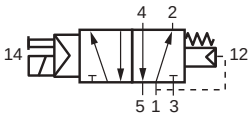
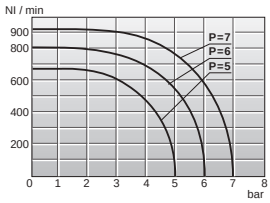


DIAGRAM / *DIAGRAMMA*

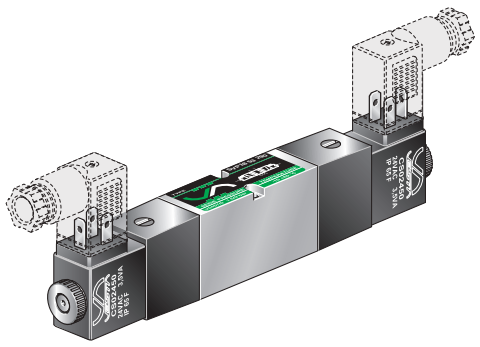


AIR FLOW DIAGRAM / *DIAGRAMMA DELLE PORTATE*

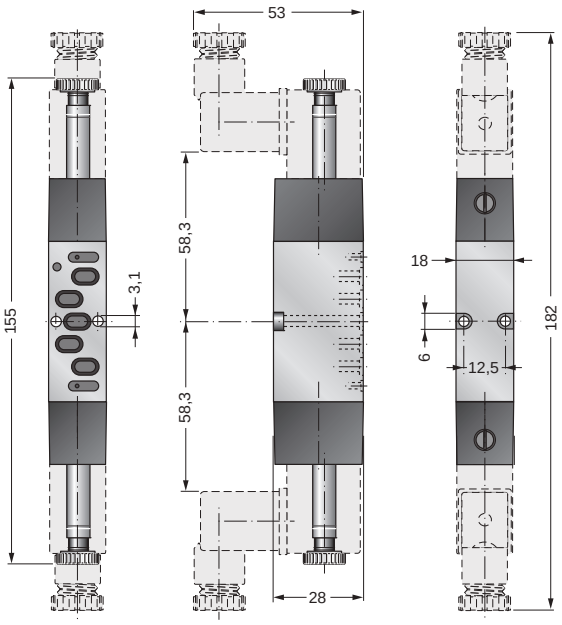
CODES / *CODICI*

Ordination code *Codice ordinazione*	**Voltage** *Tensione*
SVE18 52 100-00000	No coil / *Senza solenoide*
SVE18 52 100-01200	12 V DC
SVE18 52 100-02400	24 V DC
SVE18 52 100-02450	24 V 50/60Hz AC
SVE18 52 100-11050	110 V 50/60Hz AC
SVE18 52 100-22050	220 V 50/60Hz AC

SVE18 52 200 - .....



SOLENOID VALVE / 5/2
DOUBLE SOLENOID PILOT
DOPPIO COMANDO ELETTROPNEUMATICO



SIMBOL / *SIMBOLO*

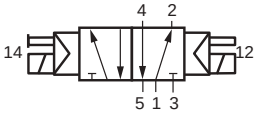
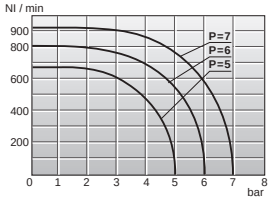


DIAGRAM / *DIAGRAMMA*



AIR FLOW DIAGRAM / *DIAGRAMMA DELLE PORTATE*

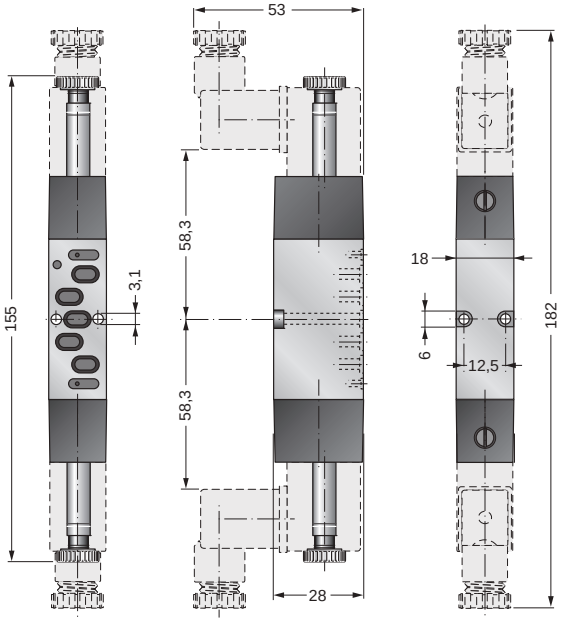
CODES / *CODICI*

Ordination code *Codice ordinazione*	**Voltage** *Tensione*
SVE18 52 200-00000	No coils / *Senza solenoidi*
SVE18 52 200-01200	12 V DC
SVE18 52 200-02400	24 V DC
SVE18 52 200-02450	24 V 50/60Hz AC
SVE18 52 200-11050	110 V 50/60Hz AC
SVE18 52 200-22050	220 V 50/60Hz AC

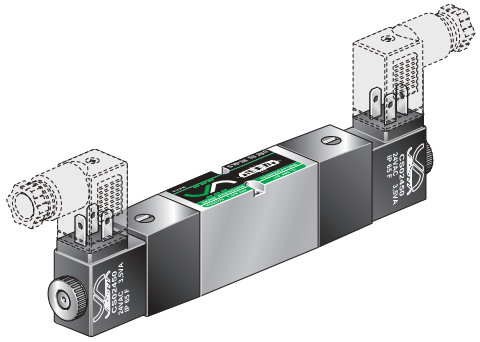
SOLENOID VALVE / *ELETTROVALVOLA* 5/3

DOUBLE SOLENOID PILOT

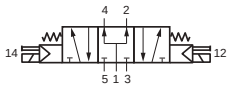
DOPPIO COMANDO ELETTROPNEUMATICO



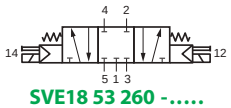
SVE18 53 2 . 0 - .....



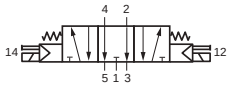
SIMBOL / *SIMBOLO*



SVE18 53 230 -.....

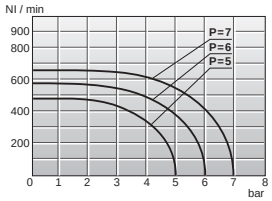


SVE18 53 260 -.....



SVE18 53 290 -.....

DIAGRAM / *DIAGRAMMA*



AIR FLOW DIAGRAM / *DIAGRAMMA DELLE PORTATE*

CODES / *CODICI*

Ordination code *Codice ordinazione*	Voltage *Tensione*
SVE18 53 2 . 0-00000	No coils / *Senza solenoidi*
SVE18 53 2 . 0-01200	12 V DC
SVE18 53 2 . 0-02400	24 V DC
SVE18 53 2 . 0-02450	24 V 50/60Hz AC
SVE18 53 2 . 0-11050	110 V 50/60Hz AC
SVE18 53 2 . 0-22050	220 V 50/60Hz AC

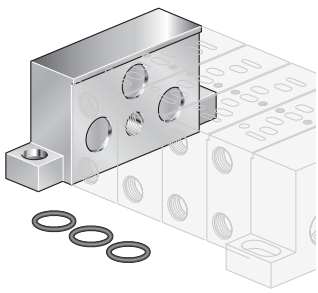
ISO 18 MANIFOLD / *BATTERIA ISO 18*

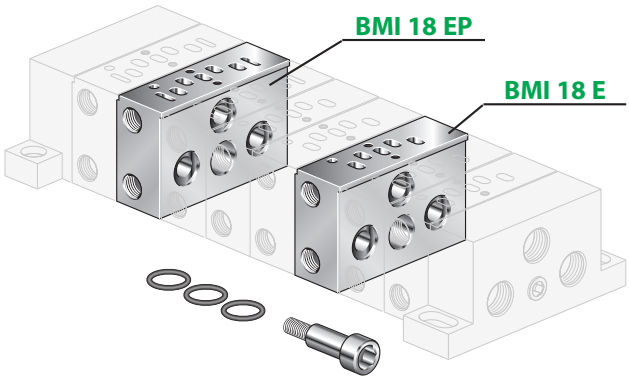
BTC 18 END PLATE *BASE DI CHIUSURA*

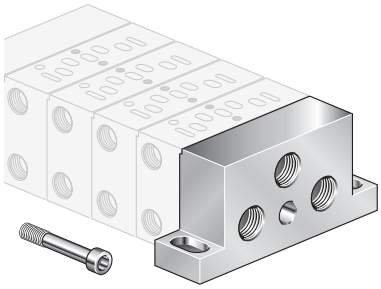
BMI 18 E MIDDLE PLATE FOR SOLENOID VALVE MOUNTING *BASE INTERMEDIA PER IL MONTAGGIO DI ELETTROVALVOLE*

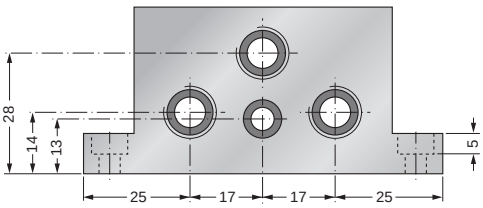
BTI 18 INLET END PLATE *BASE DI INGRESSO*

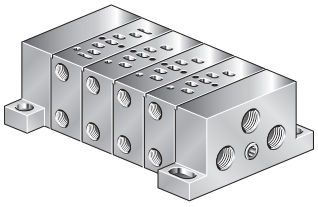
BMI 18 EP MIDDLE PLATE FOR PNEUMATIC AND SOLENOID VALVE MOUNTING *BASE INTERMEDIA PER IL MONTAGGIO DI VALVOLE PNEUMATICHE ED ELETTROPNEUMATICHE*

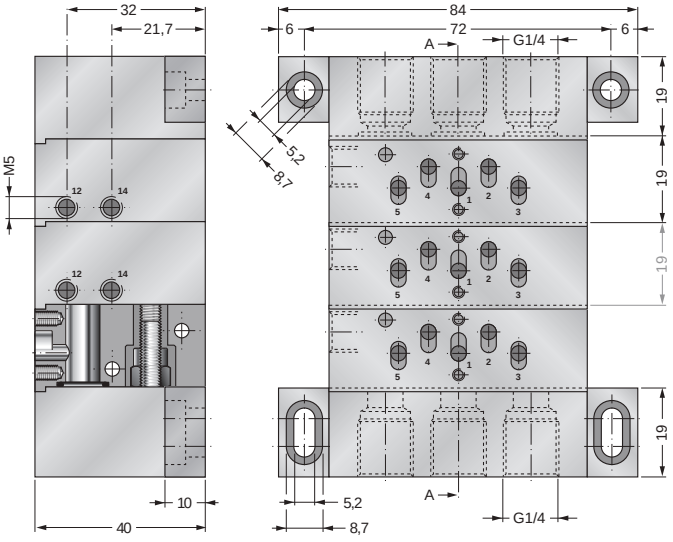




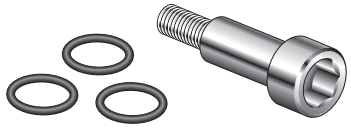


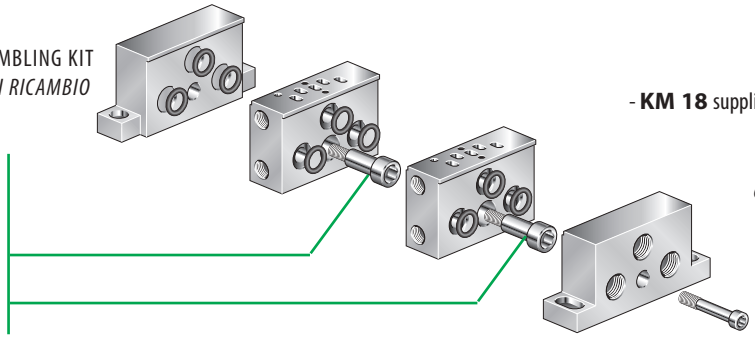






KM 18 ASSEMBLING KIT *KIT DI RICAMBIO*





- **KM 18** supplied with **BMI 18 E** and **BTI 18 P**,
- Supplied separatly on demand.

*- Il kit **KM 18** viene fornito con le basi **BMI 18 E** e **BTI 18 P**,*

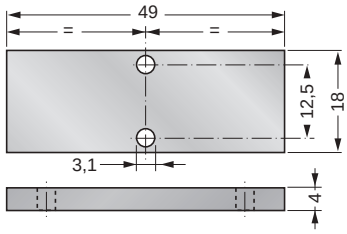
- A richiesta può essere fornito come ricambio.

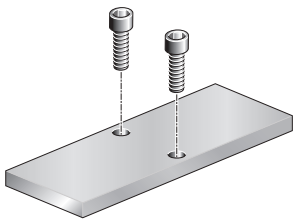
PLUG FLAT
CHIUSURA POSTO INUTILIZZATO

PCBM 18

Plug flat includes assembling screws.

La piastrina di chiusura dei posti non utilizzati della base é fornita con le relative viti di fissaggio.

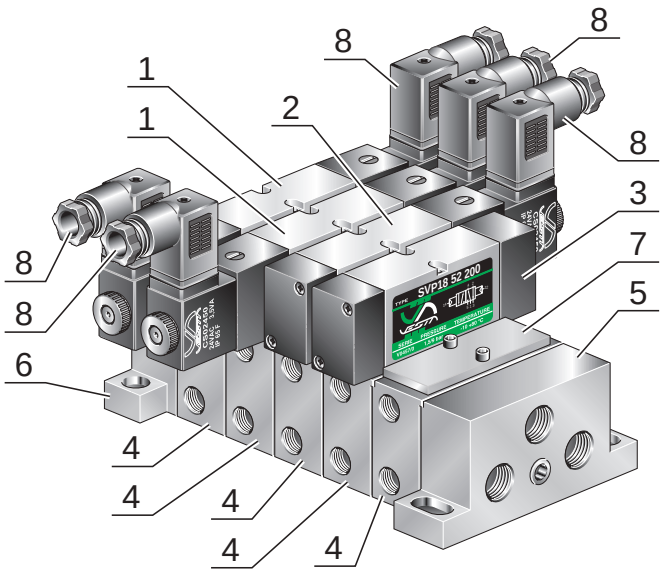




HOW TO ASSEMBLE ISO 18 MANIFOLD / *ESEMPIO DI ASSEMBLAGGIO BATTERIA ISO 18*

Components needed to assemble the manifold in figure.
Esempio di componenti necessari a realizzare la batteria raffigurata.

Position *Posizione*	**Quantity** *Quantità*	**Ordination code** *Codice ordinazione*
1	N° 2	**SVE18 52 200 - 02450**
2	N° 1	**SVE18 52 100 - 02450**
3	N° 1	**SVP18 52 200**
4	N° 5	**BMI 18**
5	N° 1	**BTI 18**
6	N° 1	**BTC 18**
7	N° 1	**PCBM 18**
8	N° 5	**CEP/0**



- Valves fixing screws and seals are supplied with valves.
- Subbase fixing screws not supplied.
- Manifold suppied assembled on demand.
- ***KM 18*** *available as spare part separatly.*

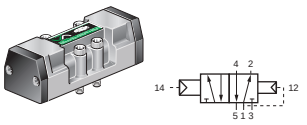
- *Le viti e le guarnizioni per il fissaggio vengono fornite con le valvole.*
- *Il fissaggio alla base è a cura del cliente.*
- *A richiesta, la base può essere fornita preassemblata.*
- *A richiesta, il kit* ***KM 18*** *può essere fornito come ricambio.*

For electrical features solenoid pilot see p. B-52.
Caratteristiche elettriche bobina per elettrovalvole vedi p. B-52.

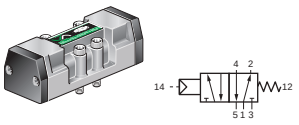
INDEX / *INDICE*

(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

VALVES AND SOLENOID VALVES ISO 5599 SIZE 1 / *VALVOLE E ELETTROVALVOLE ISO 5599 TAGLIA 1*

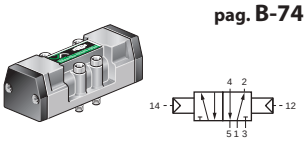


SVP4 52 100
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIPOSIZIONAMENTO PNEUMATICO



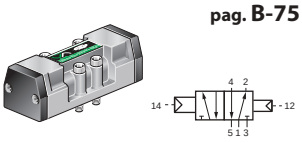
(*) **SVP4 52 1M0**
SINGLE PNEUMATIC PILOT - SPRING RETURN
COMANDO PNEUMATICO - RIPOSIZIONAMENTO MOLLA MECCANICA

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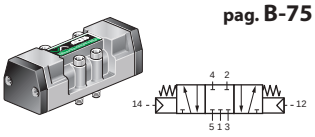
(*) **SVP4 52 200**
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

pag. **B-75**

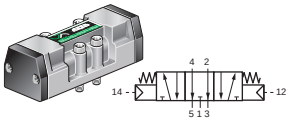


SVP4 52 2D0
DOUBLE DIFFERENTIAL PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO DIFFERENZIALE

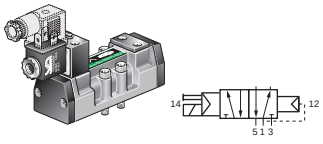
pag. **B-75**



SVP4 53 260
DOUBLE PNEUMATIC PILOT (CENTRE POSITION CLOSED)
DOPPIO COMANDO PNEUMATICO (CENTRI CHIUSI)

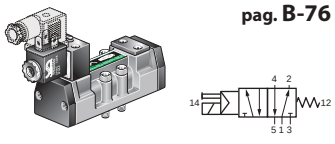


SVP4 53 290
DOUBLE PNEUMATIC PILOT (CENTRE POSITION OPEN)
DOPPIO COMANDO PNEUMATICO (CENTRI APERTI)

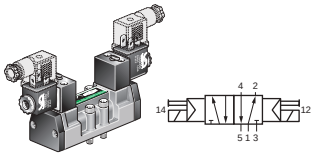


SVE5 52 100 - .....
SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO PNEUMATICO

pag. **B-76**

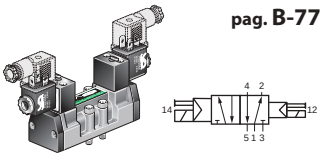


(*) **SVE5 52 1M0 - .....**
SINGLE SOLENOID PILOT - SPRING RETURN
COMANDO ELETTROPNEUMATICO - RIPOSIZ. MOLLA MECCANICO

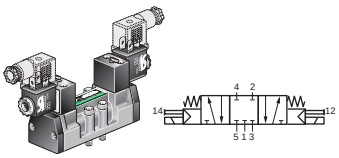


(*) **SVE5 52 200 - .....**
DOUBLE SOLENOID PILOT
DOPPIO COMANDO ELETTROPNEUMATICO

pag. **B-77**

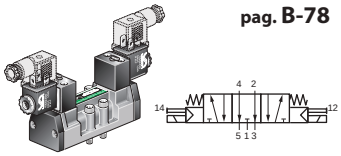


SVE5 52 2D0 - .....
DOUBLE DIFFERENTIAL SOLENOID PILOT
DOPPIO COMANDO ELETTROPNEUMATICO DIFFERENZIALE



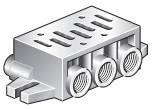
SVE5 53 260 - .....
DOUBLE SOLENOID PILOT (CENTRE POSITION CLOSED)
DOPPIO COMANDO ELETTROPNEUMATICO (CENTRI CHIUSI)

pag. **B-78**

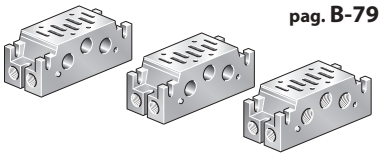


SVE5 53 290 - .....
DOUBLE SOLENOID PILOT (CENTRE POSITION OPEN)
DOPPIO COMANDO ELETTROPNEUMATICO (CENTRI APERTI)

pag. **B-79**

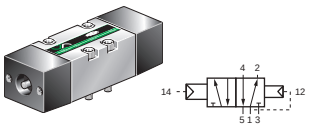


(*) **BS 1**
ISO 5599 SINGLE MANIFOLD BASE SIZE 1
BASE SINGOLA ISO 5599 TAGLIA 1



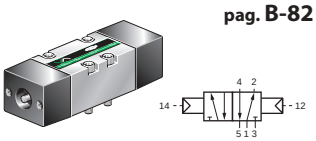
(*) **BTC 1** (*) **BMI 1** (*) **BTI 1**
ISO 5599 MODULAR MANIFOLD BASES SIZE 1
BASI MODULARI ISO 5599 TAGLIA 1

VALVES AND SOLENOID VALVES ISO 5599 SIZE 2 / *VALVOLE E ELETTROVALVOLE ISO 5599 TAGLIA 2*

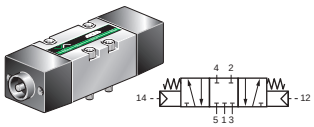


SVP2 52 100
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIPOSIZIONAMENTO PNEUMATICO

pag. **B-82**

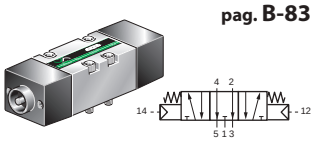


SVP2 52 200
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

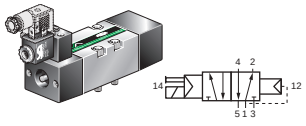


SVP2 53 260
DOUBLE PNEUMATIC PILOT (CENTRE POSITION CLOSED)
DOPPIO COMANDO PNEUMATICO (CENTRI CHIUSI)

pag. **B-83**

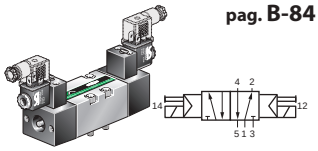


SVP2 53 290
DOUBLE PNEUMATIC PILOT (CENTRE POSITION OPEN)
DOPPIO COMANDO PNEUMATICO (CENTRI APERTI)

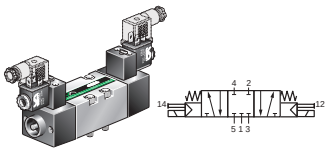


SVE2 52 100 - .....
SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO PNEUMATICO

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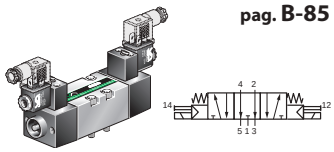


SVE2 52 200 - .....
DOUBLE SOLENOID PILOT
DOPPIO COMANDO ELETTROPNEUMATICO

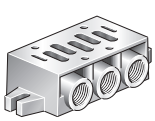


SVE2 53 260 - .....
DOUBLE SOLENOID PILOT (CENTRE POSITION CLOSED)
DOPPIO COMANDO ELETTROPNEUMATICO (CENTRI CHIUSI)

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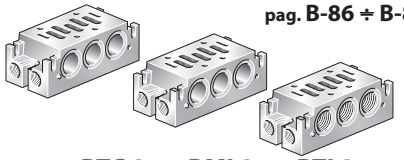


SVE2 53 290 - .....
DOUBLE SOLENOID PILOT (CENTRE POSITION OPEN)
DOPPIO COMANDO ELETTROPNEUMATICO (CENTRI APERTI)

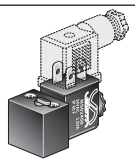


BS 2
ISO 5599 SINGLE MANIFOLD BASE SIZE 2
BASE SINGOLA ISO 5599 TAGLIA 2

pag. **B-86 ÷ B-87**

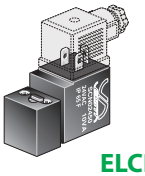


BTC 2 **BMI 2** **BTI 2**
ISO 5599 MODULAR MANIFOLD BASES SIZE 2
BASI MODULARI ISO 5599 TAGLIA 2



ELBAC - .....
CNOMO SOLENOID VALVE 2,5 Watt - 3,5 V A COIL
ELETTROPILOTA CNOMO CON BOBINA 2,5 Watt - 3,5 V A

pag. **B-88 ÷ B-89**

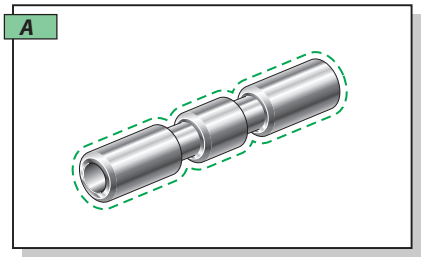


ELCDC - .....
CNOMO SOLENOID VALVE 2,5 Watt - 3,5 V A COIL
ELETTROPILOTA CNOMO CON BOBINA 2,5 Watt - 3,5 V A

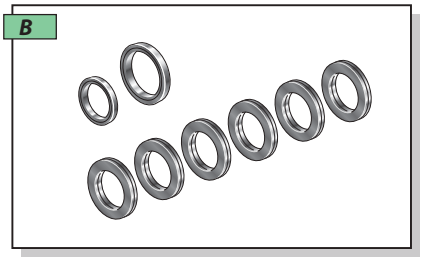
BUILDING FEATURES / *CARATTERISTICHE COSTRUTTIVE*

Valves and solenoid valves series **SVE** and **SVP** are manifactured according to the ISO 5599/1 standards (see here below).
The choice of high quality materials and the technical solution adopted allows to the ISO valves to reach a good performance even in harsh environmental conditions. The spool, made by a light alloy aluminium, nickel treated by Niploy Process (see fig. **A**)to give its surface a smooth finisch and a better resistace to aggressive agent. Its particular shape allows high nominal flow rates (see fig.**D**) and the combination with self lubricating lip rubber seals (see fig.**B**) bring to reduced internal friction (see fig.**C**) and provides the valve with a long lasting durable life span.
The ISO valves can operate continuosly without lubrication (see fig.**E**) and are sealed against working environment.

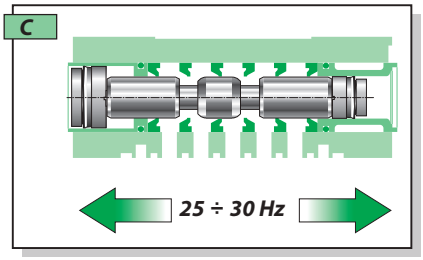
*Le valvole ed elettrovalvole VESTA serie **SVE** e **SVP** sono prodotte in conformità alle normative ISO 5599/1 (si veda la scheda tecnica a fondo pagina).*
Le soluzioni tecniche adottate ed i materiali impiegati hanno permesso di realizzare un prodotto che presenta elevate prestazioni funzionali anche in condizioni di impiego particolarmente gravose.
*La spola, costruita in lega leggera e progettata per consentire elevate portate nominali (**D**),viene trattata superficialmente al nickel (Niploy Process) (**A**)onde acquisire una durezza maggiore ed una più elevata resistenza agli agenti aggressivi. La combinazione tra la spola e le guarnizioni in elastomero nitrilico con profilo del labbro anti-usura (**B**), permette, accanto ad una riduzione degli attriti, una alta velocità di scambio e cicli di lavoro elevati (**C**), garantendo una maggiore durata della meccanica interna. Tutti i modelli di valvola serie **SVE** e **SVP** possono essere utilizzati anche in assenza di lubrificazione (**E**). L'ermeticità di funzionamento verso l'ambiente di lavoro ne fa inoltre un prodotto adatto all'impiego in settori cosiddetti "difficili" (**F**).*
Nelle pagine che seguono tutte le caratteristiche funzionali di ciascuna valvola sono convalidate dal Dipartimento di Meccanica del Politecnico di Torino.



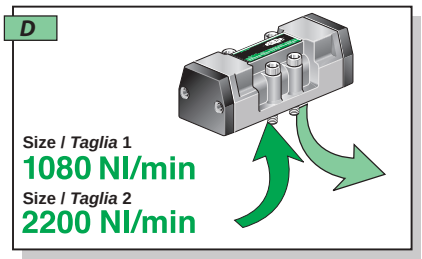
Light alloy spool with Niploy Process treated surface.
Spola in lega leggera con trattamento superficiale Niploy Process.



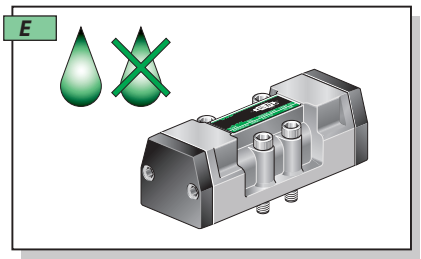
Self lubricating lip rubber seals.
Guarnizioni in elastomero nitrilico con profilo del labbro antiusura.



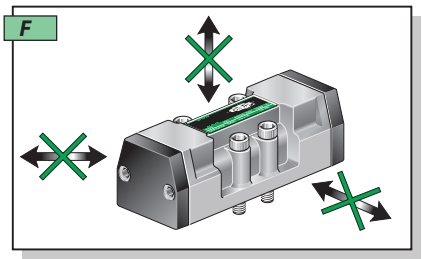
High working frequency.
Alta velocità di scambio per cicli di lavoro elevati.



Nominal air flow (1080 and 2200 Nl/min 5/2 valves).
Alta portata nominale (1080 e 2200 Nl/min per le valvole 5/2).



Possibility of operating continuosly without lubrication.
Possibilità di funzionamento continuo privo di lubrificazione.

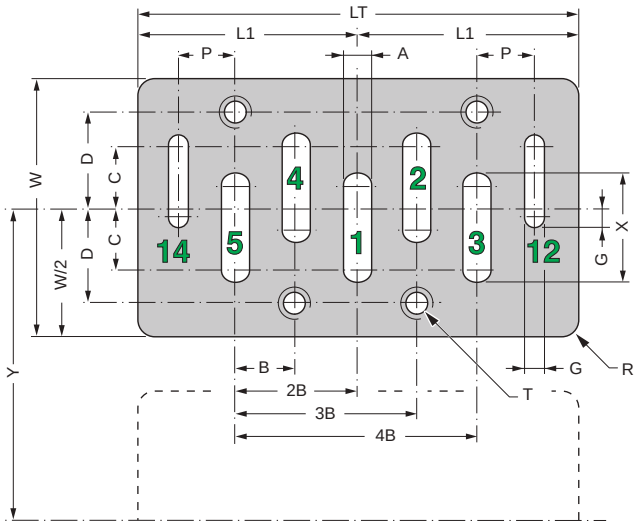


Sealed against working environment.
Ermeticità di funzionamento verso l'ambiente di lavoro.

MOUNTING INTERFACE SURFACE ISO 5599 / 1 / *DIMENSIONI DEI PIANI DI POSA ISO 5599 / 1*

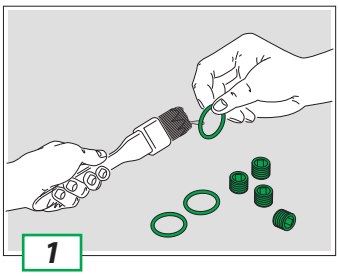
Standard **ISO 5599/1**, indicates the main dimensions of the mounting interface surface; the minimun distance of each subbase and the port connection numbers as figure shows.
While VESTA subbase design is in complance with the CEPTOP standards and the solenoid pilot mounting interface surface follows the CNOMO standard.

*La norma **ISO 5599/1**, emanata dall'Organismo Internazionale di Standardizzazione e accettata da tutti i grandi utilizzatori, stabilisce le dimensioni del piano di posa del distributore, l'interasse minimo tra due basi affiancate e la numerazione delle connessioni di entrata e di uscita come da schema a fianco riportato.*
Nella concezione delle basi VESTA, inoltre, si sono seguite le raccomandazioni CETOP che definiscono in maniera più precisa la geometria della base stessa.
Il piano di posa dell'elettropilota, infine, é conforme a quanto previsto dalle normative CNOMO.



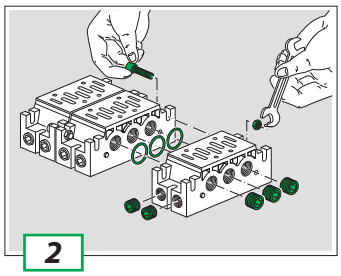
	A	B	C	D	G	L1 min.	LT min.	P	R max	T	W min.	X	Y min.	
SIZE 1	4,5	9	9	14	3	32,5	65	8,5	2,5	M5x0,8	38	16,5	43	***TAGLIA 1***
SIZE 2	7	12	10	19	3	40,5	81	10	3	M6x1	50	22	56	***TAGLIA 2***

HOW TO ASSEMBLE MANIFOLDS AND RELATED ACCESSORIES
CONSIGLI DI MONTAGGIO DELLE BASI MODULARI E RELATIVI ACCESSORI


1

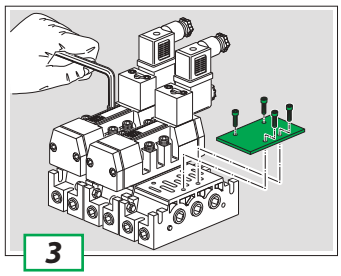
Before assembling the single subbases :
- lubricate seals with grease;
- cover all male thread with teflon or glue.

Prima di assemblare tra di loro le basi lubrificare le guarnizioni con apposito grasso, rivestire la parte filettata dei tappi di chiusura delle connessioni inutilizzate nonché dei raccordi di collegamento con collante fermafiletti o teflon, avendo cura che i residui non vengano dispersi nei condotti.


2

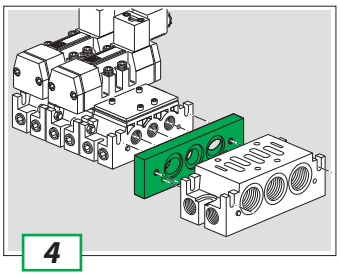
Verify the right position of the seals to avoid leakages.
Fix the fixing screws untill tight.

E' importante verificare il corretto montaggio delle guarnizioni sulle relative sedi per evitare che durante il serraggio delle basi possano subire schiacciamenti o tagli.
Posizionare inoltre i bulloni di fissaggio completamente in fondo alle rispettive asole per garantire la stabilità del fissaggio.


3

Lubricate coupling valve seals.
Close the unused subbase with a flat plate.

Lubrificare la guarnizione di accoppiamento delle valvole e procedere al montaggio delle stesse.
Chiudere le basi eventualmente inutilizzate con l'apposita piastrina di chiusura.


4

It is possible to interface manifold size 1 and 2 with the **INTF 1-2** adapter plate, following the assembly instruction above indicated.

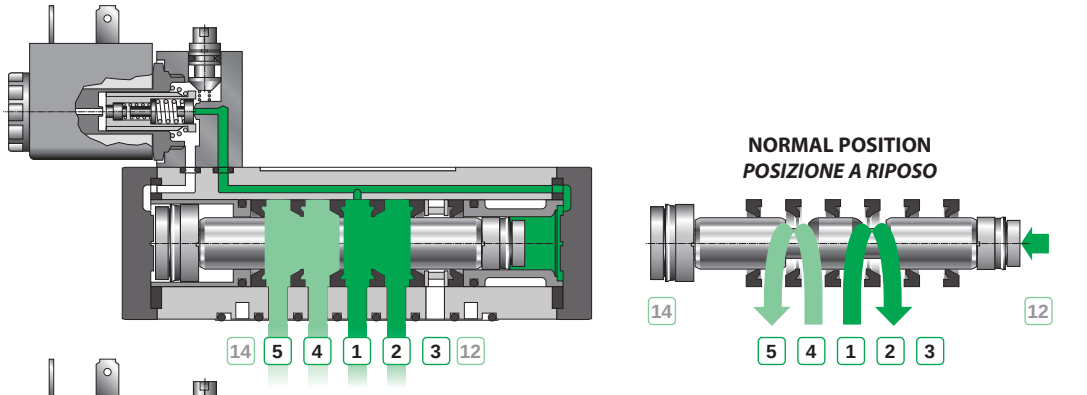
*E' possibile interfacciare basi di taglia 1 con basi di taglia 2 per mezzo dell'interfaccia **INTF 1-2**, seguendo le stesse modalità di montaggio delle basi sopra descritte.*

WORKING PRINCIPLE / *PRINCIPIO DI FUNZIONAMENTO*

In the example below, when the valve stands in the normal position, ports 4 - 5 and 1 - 2 are connected and the position is kept thanks to the pressure assured to the smallest piston (right side of the valve). When the valve is acuated, the same pressure is fed to the biggest piston. It' s bigger surface create a force which allows the spool to move and therefore to connect ports 4 - 1 and 2 - 3. In the mechanical spring version, the valve is kept in the normal position by a mechanical spring. In the bistable version, the position of the valve remains in its last switched state.

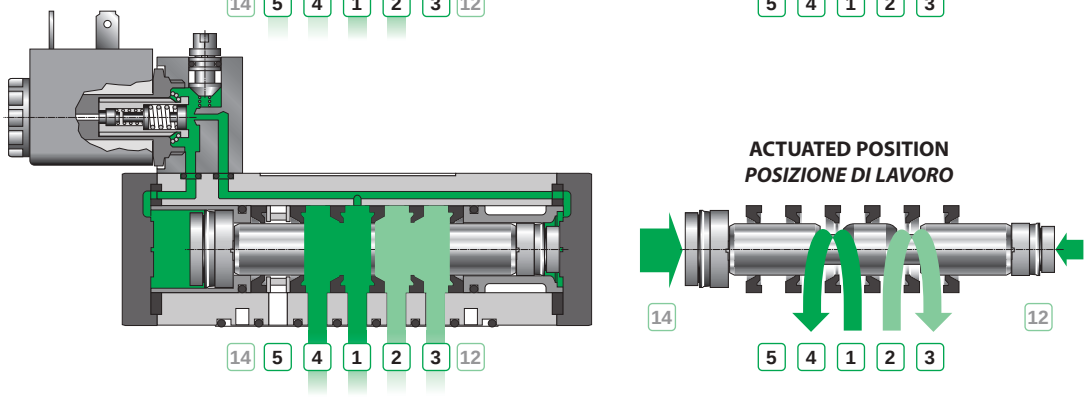
Il principio di funzionamento del distributore 5/2 (nell'esempio l'elettrovalvola ***SVE5 52 100 - 02450*** *con comando elettropneumatico e riposizionamento a molla pneumatica) consiste nel mantenere costantemente in pressione il pistone di riposizionamento (fig.* ***1****), utilizzando la fonte d'aria compressa presente nel condotto di alimentazione* ***1****, collegando le vie* ***1 - 2*** *e* ***4 - 5****. L' eccitazione del solenoide mette in comunicazione il condotto* ***1*** *con la camera dove é alloggiato il pistone di comando. Quest'ultimo, avendo un'area di spinta maggiore del pistone di riposizionamento, sposta la spola in modo tale da collegare i canali* ***1 - 4*** *e* ***2 - 3*** *(fig.* ***2****). Diseccitando il solenoide si ripristina la posizione iniziale.*
Nei sistemi bistabili (doppio comando elettropneumatico o doppio comando pneumatico) in assenza di segnale rimangono i collegamenti formatisi nell'ultimo azionamento.

fig. 1



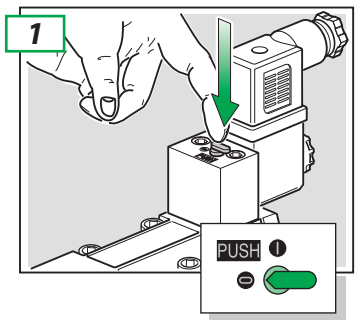
NORMAL POSITION
POSIZIONE A RIPOSO

fig. 2



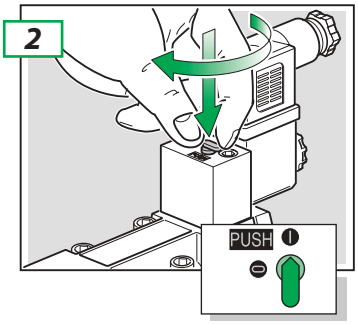
ACTUATED POSITION
POSIZIONE DI LAVORO

MANUAL OVERRIDING / *AZIONAMENTO COMANDO MANUALE*



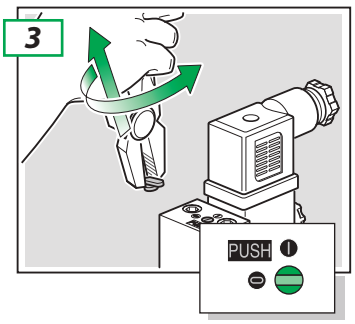
Push to actuated valve without locking. ***Relise the button to get back to normal position.***

Per azionare la valvola, durante la fase di collaudo con pressione in linea senza collegamento elettrico, premere la leva del comando manuale. ***Rilasciare per ripristinare la condizione di riposo.***



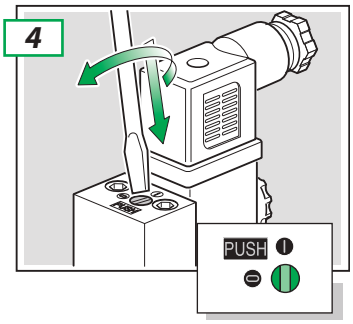
To active the valve permanently push the M/O (manual override) and rotate clockwise 90°. ***To return to normal position, push the M/O again and turn 90° anti-clockwise.***

Per azionare la valvola in modo permanente premere la leva del comando manuale e ruotare in senso orario sino alla posizione 1. ***Ruotare in senso antiorario per ripristinare la condizione di riposo.***



Should the M/O no longer be required, then turn the M/O anticlockwise until it breaks off.

Terminato il collaudo ruotare in senso antiorario la leva sino alla rottura.



Should the M/O be required after breaking off, then a screwdriver may be used.

Per interventi successivi sul comando manuale usare un adeguato cacciavite ed operare come al punto ***1*** *o* ***2****.*

TECHNICAL FEATURES / *CARATTERISTICHE TECNICHE*

SERIE **SVP4 - SVE5**

COMMON TECHNICAL FEATURES SVP4 AND SVE5

Fixing	Single subbase pag. B-73 Manifold mounting pag. B-73
Flow section	Ø 13 mm
Ambient temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Lubrication	Not required
Medium	Filtered air
Reference temperature	+20 °C
Reference pressure	6 bar

VALVES AND SOLENOID VALVES 5/2

Nominal air flow	1080 Nl/min
Fluid conductance "C"	4,34 Nl/s bar
Critical pressure ratio "b"	0,212

VALVES AND SOLENOID VALVES 5/3

Nominal air flow	800 Nl/min
Fluid conductance "C".	3,22 Nl/s bar
Critical pressure ratio "b"	0,265

PNEUMATIC VALVES FEATURES SVP4

SVP4 52 100	Nominal pilot pressure	4 bar (10 bar)
	Nominal max. frequence	21 Hz
	Operating pressure range	**2,5 ÷ 10 bar**
SVP4 52 2D0	Nominal pilot (12) pressure	1,4 bar
	Nominal pilot (14) pressure	2,2 bar
	Nominal max. frequence	25 Hz

SVP4 52 200	Nominal pilot pressure	1,3 bar
	Nominal max. frequence	30 Hz
	Operating pressure range	**1,5 ÷ 10 bar**
SVP4 53 260 **SVP4 53 290**	Nominal pilot pressure	3,6 bar
	Nominal max. frequence	8 Hz
	Nominal suggested frequence	6 Hz
	Operating pressure range	**3 ÷ 10 bar**

SOLENOID VALVES FEATURES SVE5

		AC	DC
SVE5 52 100 **SVE5 52 1D0**	Nominal frequence (max)	16 Hz	13 Hz
	Average actioning response	18 ms	21 ms
	Average disactioning response	33 ms	44 ms
	Operating pressure range	**2,5 ÷ 10 bar**	
SVE5 52 2D0	Nominal frequence (max)	25 Hz	19 Hz
	Average actioning response	11 ms	14 ms
	Average disactioning response	12 ms	15 ms
	Operating pressure range	**2,5 ÷ 10 bar**	

		AC	DC
SVE5 52 200	Nominal frequence (max)	27 Hz	21 Hz
	Average actioning response	11 ms	14 ms
	Average disactioning response	11 ms	14 ms
	Operating pressure range	**1,5 ÷ 10 bar**	
SVE5 53 260 **SVE5 53 290**	Nominal frequence (max)	8 Hz	8 Hz
	Nominal frequence suggested	6 Hz	6 Hz
	Average actioning response	30 ms	35 ms
	Average disactioning response	35 ms	40 ms
	Operating pressure range	**3 ÷ 10 bar**	

For electrical features solenoid SVE5 with CNOMO pilot see pp. B-88.

CARATTERISTICHE TECNICHE COMUNI SVP4 E SVE5

Fissaggio	*Base singola uscite frontali pag. B-71* *Basi in batteria pag. B-71*
Diametro nominale	*Ø 8 mm*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Lubrificazione	*Non necessaria*
Fluido	*Aria filtrata*
Temperatura nominale	*+20 °C*
Pressione nominale	*6 bar*

VALVOLE ED ELETTROVALVOLE 5/2

Portata nominale	*1080 Nl/min*
Valore conduttanza "C"	*4,34 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,212*

VALVOLE ED ELETTROVALVOLE 5/3

Portata nominale	*800 Nl/min*
Valore conduttanza "C"	*3,22 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,265*

CARATTERISTICHE VALVOLE PNEUMATICHE SVP4

SVP4 52 100	*Pressione di pilotaggio nominale*	*4 bar (10 bar)*
	Frequenza max nominale	*21 Hz*
SVP4 52 2D0	*Pressione di pilotaggio (12) nominale*	*1,4 bar*
	Pressione di pilotaggio (14) nominale	*2,2 bar*
	Frequenza max nominale	*25 Hz*
	Pressione di esercizio	***2,5 ÷ 10 bar***

SVP4 52 200	*Pressione di pilotaggio nominale*	*1,3 bar*
	Frequenza max nominale	*30 Hz*
SVP4 53 260 **SVP4 53 290**	*Pressione di pilotaggio nominale*	*3,6 bar*
	Frequenza max nominale	*8 Hz*
	Frequenza max consigliata	*6 Hz*
	Pressione di esercizio	***3 ÷ 10 bar***

CARATTERISTICHE ELETTROVALVOLE SVE5

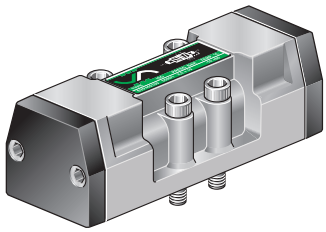
		AC	DC
SVE5 52 100 **SVE5 52 1D0**	*Frequenza max nominale*	*16 Hz*	*13 Hz*
	Tempo medio di risposta in eccitazione	*18 ms*	*21 ms*
	Tempo medio di risp. in diseccitazione	*33 ms*	*44 ms*
	Pressione di esercizio	***2,5 ÷ 10 bar***	
SVE5 52 2D0	*Frequenza max nominale*	*25 Hz*	*19 Hz*
	Tempo medio di risposta in eccitazione	*11 ms*	*14 ms*
	Tempo medio di risp. in diseccitazione	*12 ms*	*15 ms*

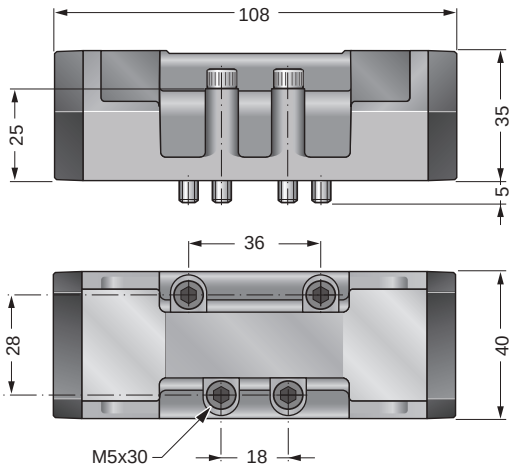
		AC	DC
SVE5 52 200	*Frequenza max nominale*	*27 Hz*	*21 Hz*
	Tempo medio di risposta in eccitazione	*11 ms*	*14 ms*
	Tempo medio di risp. in diseccitazione	*11ms*	*14 ms*
	Pressione di esercizio	***1,5 ÷ 10 bar***	
SVE5 53 260 **SVE5 53 290**	*Frequenza max nominale*	*8 Hz*	*8 Hz*
	Frequenza max nominale consigliata	*6 Hz*	*6 Hz*
	Tempo medio di risposta in eccitazione	*30 ms*	*35 ms*
	Tempo medio di risp. in diseccitazione	*35 ms*	*40 ms*
	Pressione di esercizio	***3 ÷ 10 bar***	

Caratteristiche elettriche bobina per elettrovalvole SVE5 con elettropilota CNOMO vedi pp. B-88

SVP4 52 100
SVP4 52 1M0 (*)

VALVE / *VALVOLA* 5/2
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN OR SPRING RETURN
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA PNEUMATICA O MOLLA MECCANICA



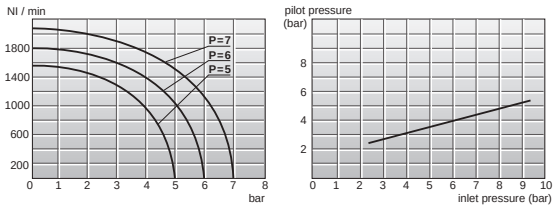


SIMBOL / *SIMBOLO*



SVP4 52 100 (*) **SVP4 52 1M0**

DIAGRAMS / *DIAGRAMMI*



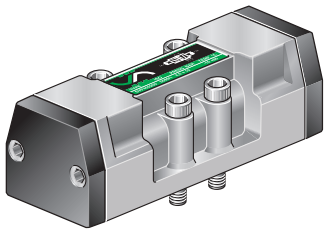
AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

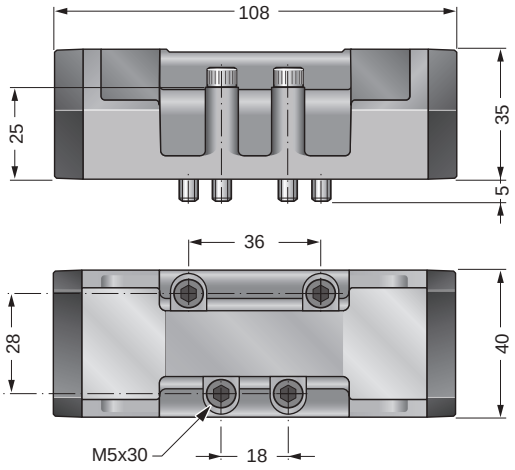
PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

(*) **ATEX** versions see / *Versioni* **ATEX** *vedi* P. ***B-113***

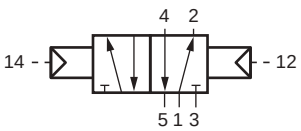
SVP4 52 200 (*)

VALVE / *VALVOLA* 5/2
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

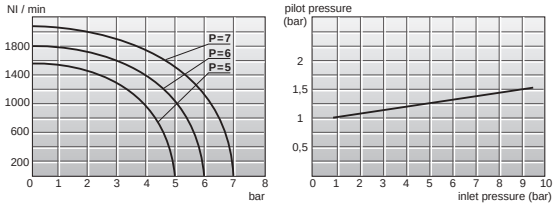




SIMBOL / *SIMBOLO*



DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

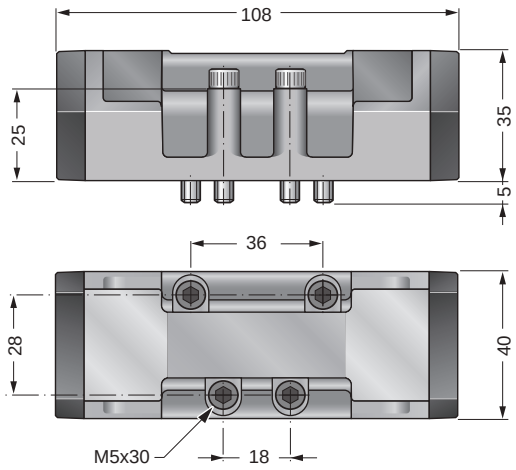
PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

(*) **ATEX** versions see / *Versioni* **ATEX** *vedi* P. ***B-113***

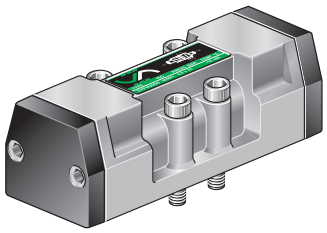
VALVE / *VALVOLA* 5/2

DOUBLE DIFFERENTIAL PNEUMATIC PILOT

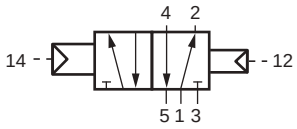
DOPPIO COMANDO PNEUMATICO DIFFERENZIALE



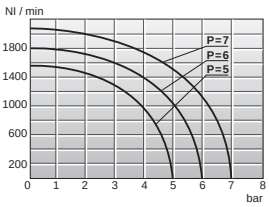
SVP4 52 2D0



SIMBOL / *SIMBOLO*

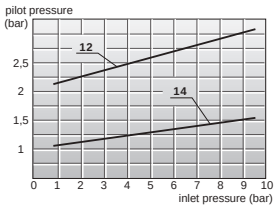


DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE



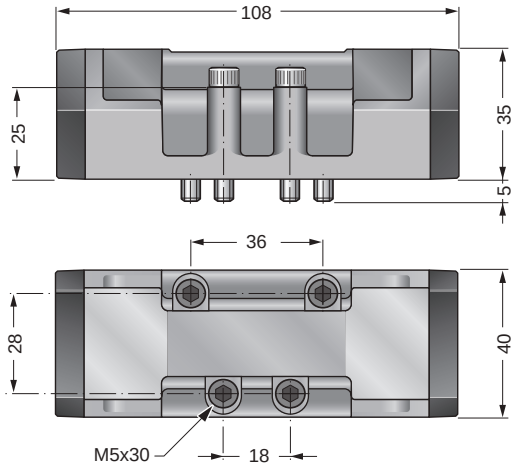
PILOT PRESSURE

DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

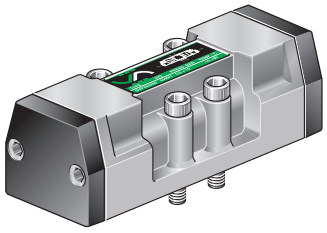
VALVE / *VALVOLA* 5/3

DOUBLE PNEUMATIC PILOT - CENTER POSITIO CLOSED

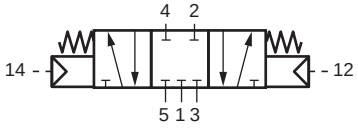
DOPPIO COMANDO PNEUMATICO - CENTRI CHIUSI



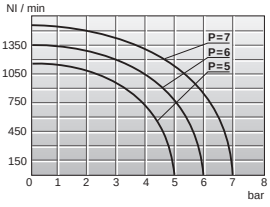
SVP4 53 260



SIMBOL / *SIMBOLO*

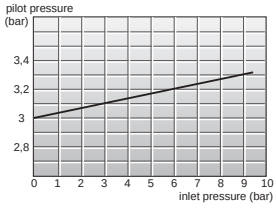


DIAGRAMS / *DIAGRAMMI*



DAIR FLOW DIAGRAM

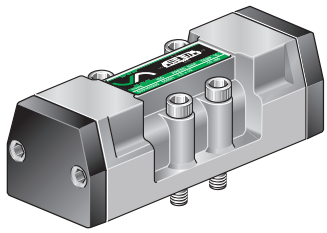
DIAGRAMMA DELLE PORTATE



PILOT PRESSURE

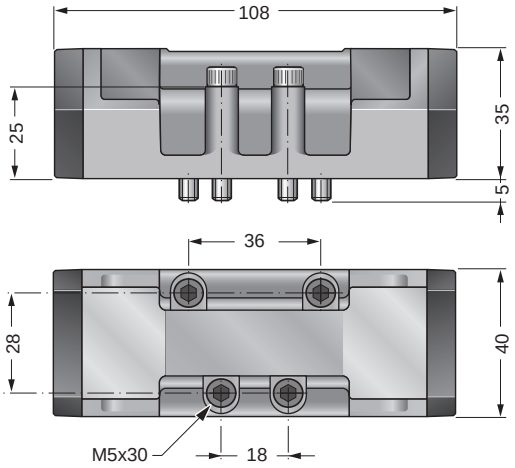
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

SVP4 53 290

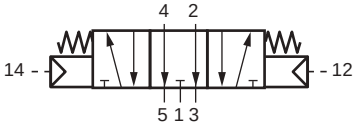


VALVE / *VALVOLA* 5/3

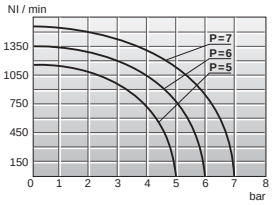
DOUBLE PNEUMATIC PILOT - CENTER POSITION OPEN
DOPPIO COMANDO PNEUMATICO - CENTRI APERTI



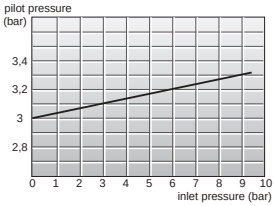
SIMBOL / *SIMBOLO*



DIAGRAMS / *DIAGRAMMI*

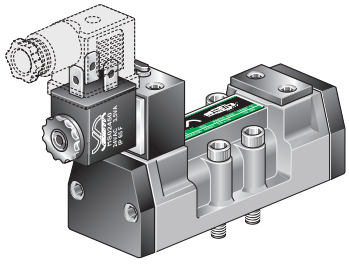


AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE



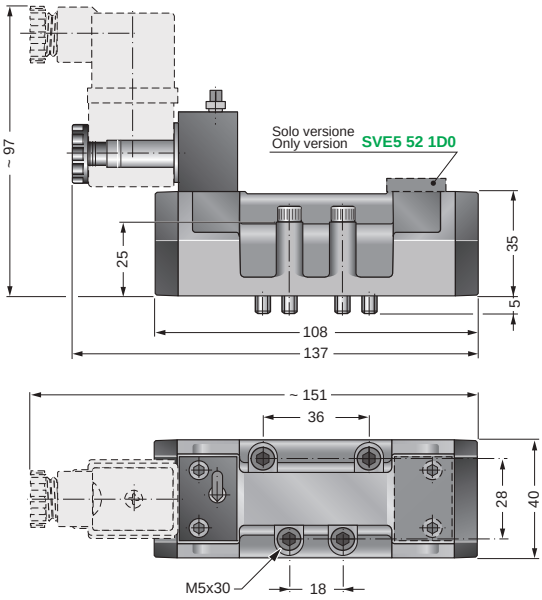
PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

SVE5 52 100 - .....
SVE5 52 1M0 - ..... (*)

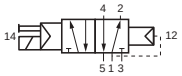


SOLENOID VALVES / *ELETTROVALVOLA* 5/2

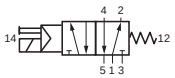
SINGLE SOLENOID PILOT - INTERNAL PRESSURE RETURN OR SPRING RETURN
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO PNEUMATICO O MOLLA MECCANICA



SIMBOL / *SIMBOLO*

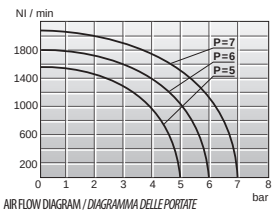


SVE5 52 1.0 -.....



(*) **SVE5 52 1M0 - .....**

DIAGRAM / *DIAGRAMMA*



AIR FLOW DIAGRAM / *DIAGRAMMA DELLE PORTATE*

CODES / *CODICI*

Ordination code *Codice ordinazione*	Voltage *Tensione*
SVE5 52 100-00000	No coil / *Senza solenoide*
SVE5 52 100-01200	12 V DC
SVE5 52 100-02400	24 V DC
SVE5 52 100-02450	24 V 50/60Hz AC
SVE5 52 100-11050	110 V 50/60Hz AC
SVE5 52 100-22050	220 V 50/60Hz AC

It is possible from **SVE5 52 1D0** to obtain **SVE5 52 2D0** changing the plug with **ELBAC** (pag B-88).

*E' possibile ordinare la versione **SVE5 52 1D0** che può successivamente essere equipaggiata con l'elettropilota cnomo **ELBAC** (pag B-88) ottenendo la **SVE5 52 2D0** a doppio comando elettropneumatico differenziale.*

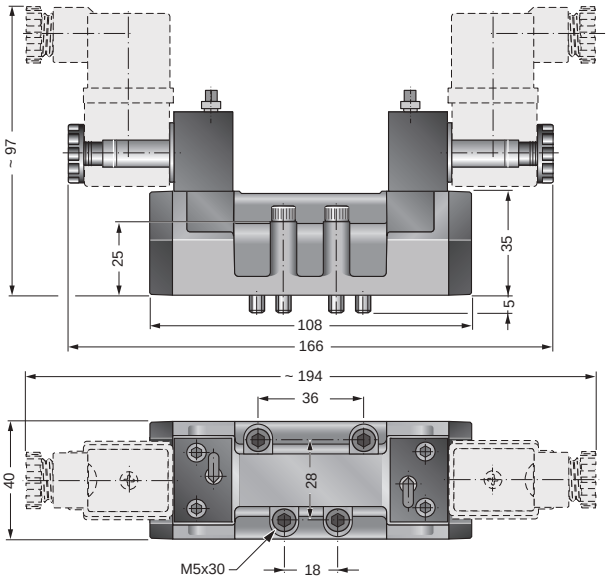
(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

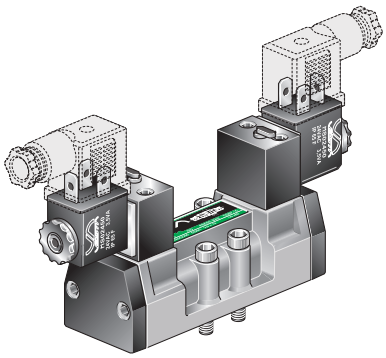
SOLENOID VALVES / *ELETTROVALVOLA* 5/2

DOUBLE SOLENOID PILOT

DOPPIO COMANDO ELETTROPNEUMATICO

(*) SVE5 52 200 - .....





SIMBOL / *SIMBOLO*

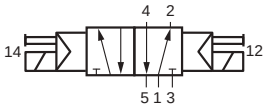
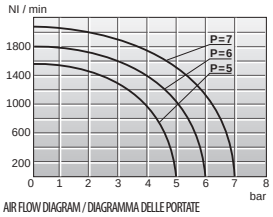


DIAGRAM / *DIAGRAMMA*



AIR FLOW DIAGRAM / DIAGRAMMA DELLE PORTATE

CODES / *CODICI*

Ordination code *Codice ordinazione*	**Voltage** *Tensione*
SVE5 52 200-00000	No coils / *Senza solenoidi*
SVE5 52 200-01200	12 V DC
SVE5 52 200-02400	24 V DC
SVE5 52 200-02450	24 V 50/60Hz AC
SVE5 52 200-11050	110 V 50/60Hz AC
SVE5 52 200-22050	220 V 50/60Hz AC

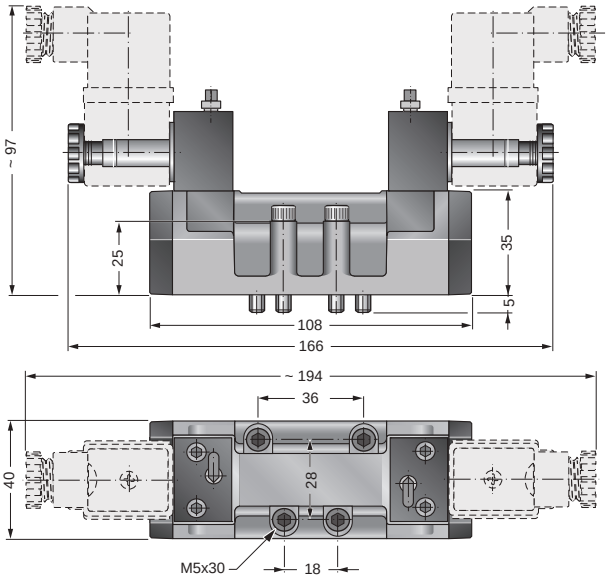
(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

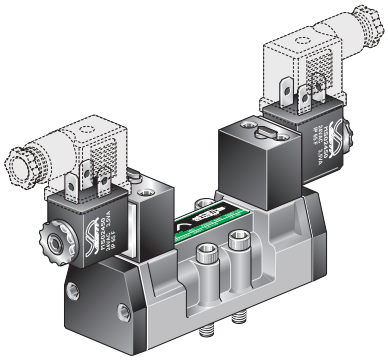
SOLENOID VALVES / *ELETTROVALVOLA* 5/2

DOUBLE DIFFERENTIAL SOLENOID PILOT

DOPPIO COMANDO ELETTROPNEUMATICO DIFFERENZIALE

SVE5 52 2D0 - .....





SIMBOL / *SIMBOLO*

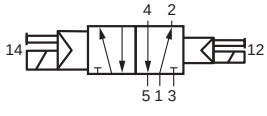
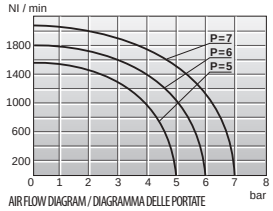


DIAGRAM / *DIAGRAMMA*

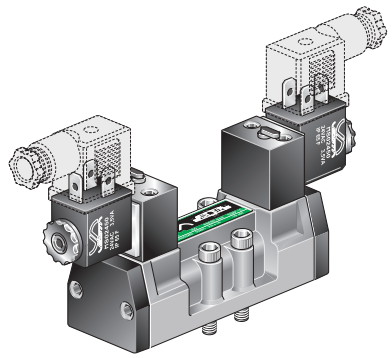


AIR FLOW DIAGRAM / DIAGRAMMA DELLE PORTATE

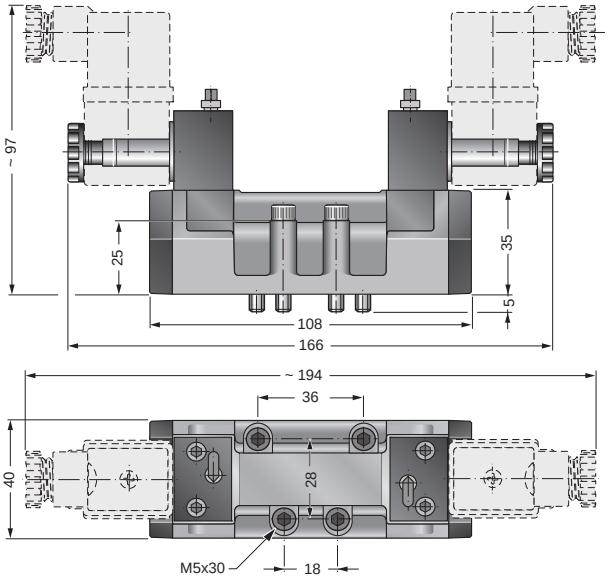
CODES / *CODICI*

Ordination code *Codice ordinazione*	**Voltage** *Tensione*
SVE5 52 2D0-00000	No coils / *Senza solenoidi*
SVE5 52 2D0-01200	12 V DC
SVE5 52 2D0-02400	24 V DC
SVE5 52 2D0-02450	24 V 50/60Hz AC
SVE5 52 2D0-11050	110 V 50/60Hz AC
SVE5 52 2D0-22050	220 V 50/60Hz AC

SVE5 53 260 - .....



SOLENOID VALVES / 5/3
DOUBLE SOLENOID PILOT - CENTER POSITION CLOSED
DOPPIO COMANDO ELETTROPNEUMATICO - CENTRI CHIUSI



SIMBOL / *SIMBOLO*

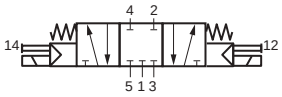
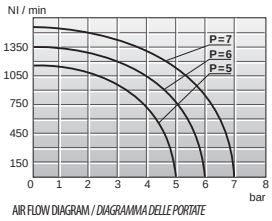


DIAGRAM / *DIAGRAMMA*

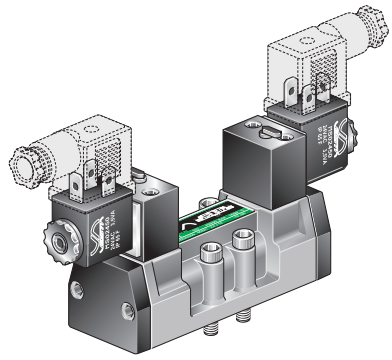


AIR FLOW DIAGRAM / *DIAGRAMMA DELLE PORTATE*

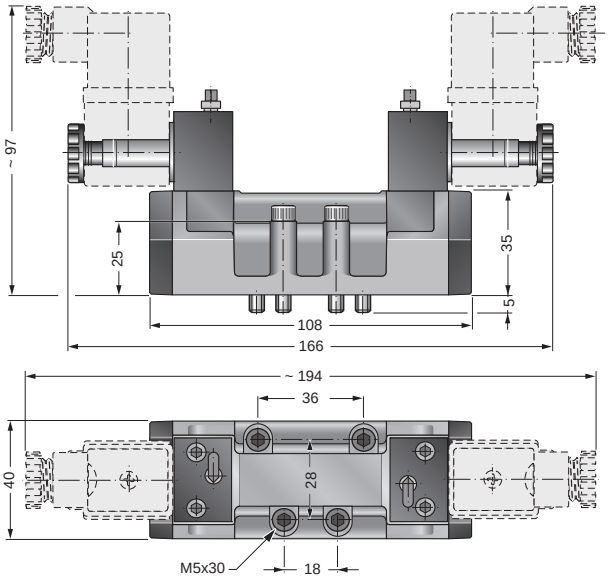
CODES / *CODICI*

Ordination code *Codice ordinazione*	Voltage *Tensione*
SVE5 53 260 -00000	No coils / *Senza solenoidi*
SVE5 53 260 -01200	12 V DC
SVE5 53 260 -02400	24 V DC
SVE5 53 260 -02450	24 V 50/60Hz AC
SVE5 53 260 -11050	110 V 50/60Hz AC
SVE5 53 260 -22050	220 V 50/60Hz AC

SVE5 53 290 - .....



SOLENOID VALVES / *ELETTROVALVOLA* 5/3
DOUBLE SOLENOID PILOT - CENTER POSITION OPEN
DOPPIO COMANDO ELETTROPNEUMATICO - CENTRI APERTI



SIMBOL / *SIMBOLO*

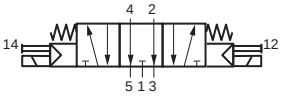
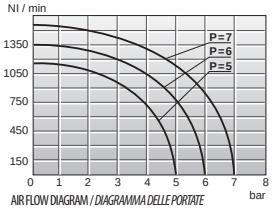


DIAGRAM / *DIAGRAMMA*

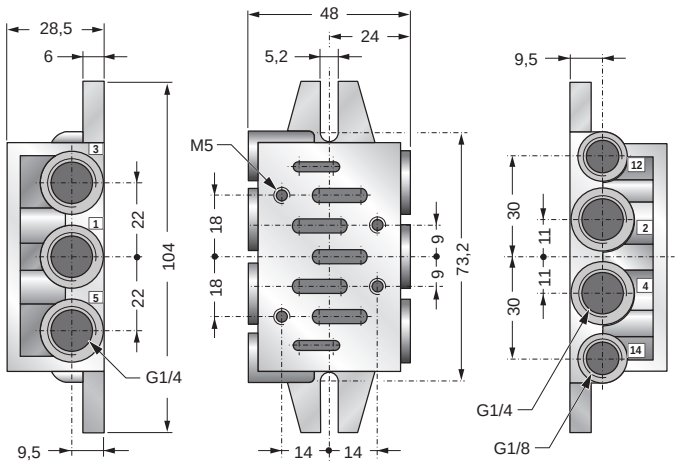


AIR FLOW DIAGRAM / *DIAGRAMMA DELLE PORTATE*

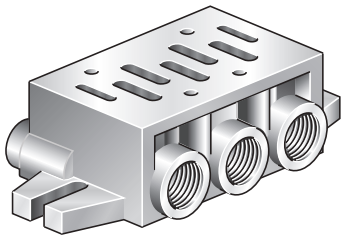
CODES / *CODICI*

Ordination code *Codice ordinazione*	Voltage *Tensione*
SVE5 53 290 -00000	No coils / *Senza solenoidi*
SVE5 53 290 -01200	12 V DC
SVE5 53 290 -02400	24 V DC
SVE5 53 290 -02450	24 V 50/60Hz AC
SVE5 53 290 -11050	110 V 50/60Hz AC
SVE5 53 290 -22050	220 V 50/60Hz AC

ISO 5599 SINGLE MANIFOLD SIZE 1
BASE SINGOLA ISO 5599 TAGLIA 1



(*) **BS 1**



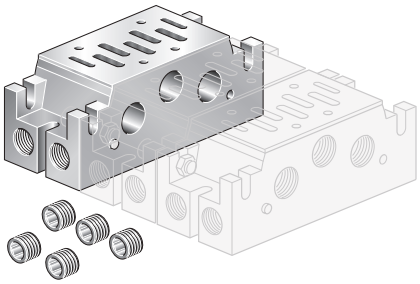
SINGLE SUBBASE
BASE SINGOLA USCITE LATERALI

- Valves fixing screws supplied with valves.
- Subbase fixing screws not supplied.
- Manifold suppied assembled on demand.

- *Le viti di fissaggio vengono fornite con le valvole.*
- *Il fissaggio alla base è a cura del cliente.*
- *La fornitura della base può essere completata, a richiesta, con il montaggio della valvola od elettrovalvola desiderata.*

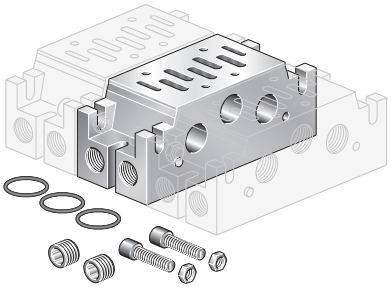
(*) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

(*) **BTC 1**



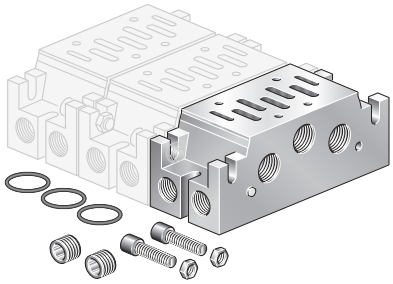
END PLATE / BOTTOM SIDE OUT LET
BASE DI CHIUSURA USCITE FONDO E LATERALI

(*) **BM I 1**



MIDDLE PLATE / BOTTOM SIDE OUT LET
BASE INTERMEDIA USCITE FONDO E LATERALI

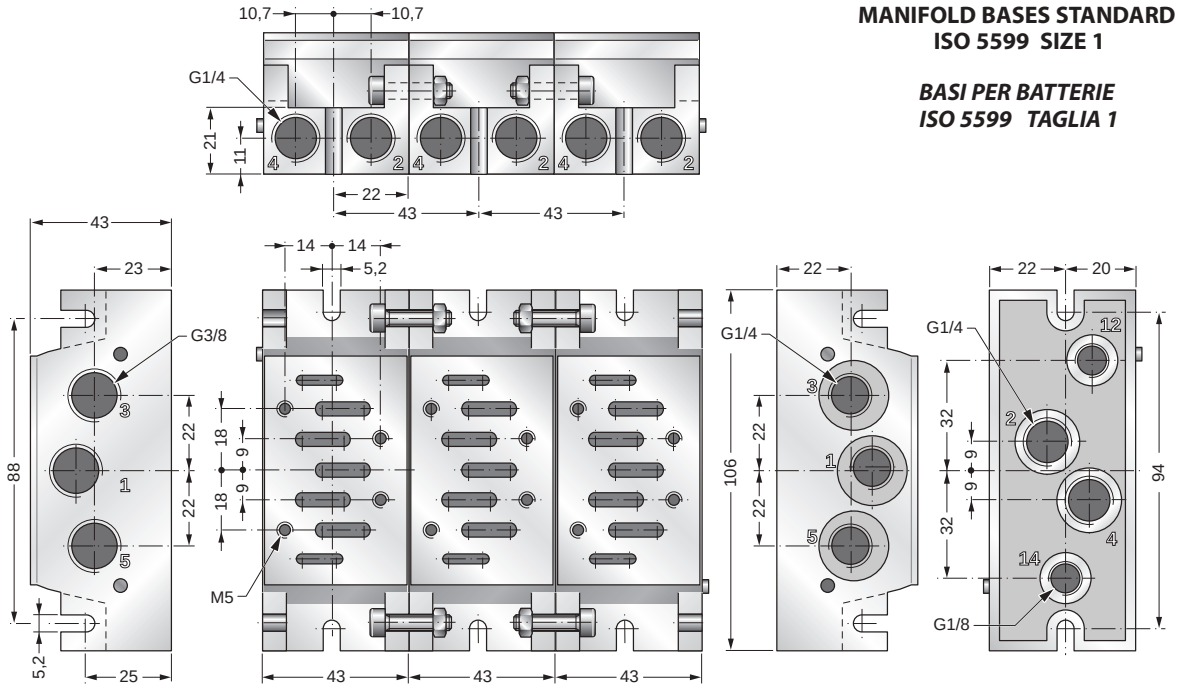
(*) **BTI 1**



INLET END PLATE / BOTTOM SIDE OUT LET
BASE DI INGRESSO USCITE FONDO E LATERALI

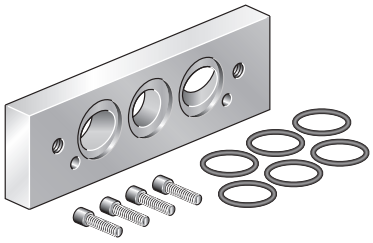
MANIFOLD BASES STANDARD
ISO 5599 SIZE 1

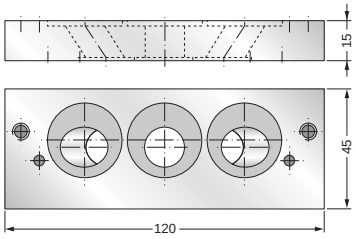
BASI PER BATTERIE
ISO 5599 TAGLIA 1



INTF 1-2

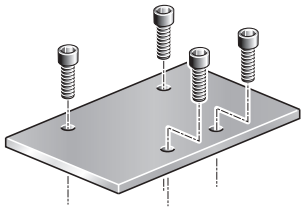
ADAPTOR PLATE FROM **SIZE 1** TO **SIZE 2**
*INTERFACCIA PER BASI DA **TAGLIA 1** A **TAGLIA 2***

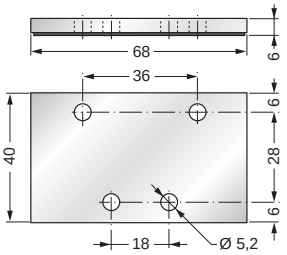




PCBM 1

PLUG FLAT
CHIUSURA POSTO INUTILIZZATO



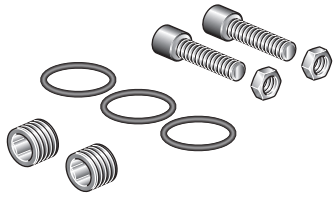


- Supplied with fixing screws.

- *La piastrina di chiusura del posto inutilizzato viene fornita con le viti per il fissaggio sulla base.*

KM 1

ASSEMBLING KIT
KIT DI RICAMBIO

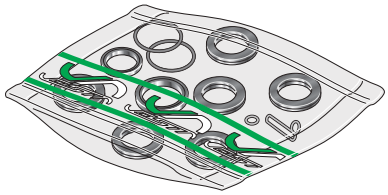


- **KM 1** supplied with **BMI 1 and BTI 1**,
- Supplied separatly on demand.

- *Il kit **KM 1** viene fornito con le basi **BMI 1** e **BTI 1**,*
- *A richiesta può essere fornito come ricambio.*

SET . 1/4 SG

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO

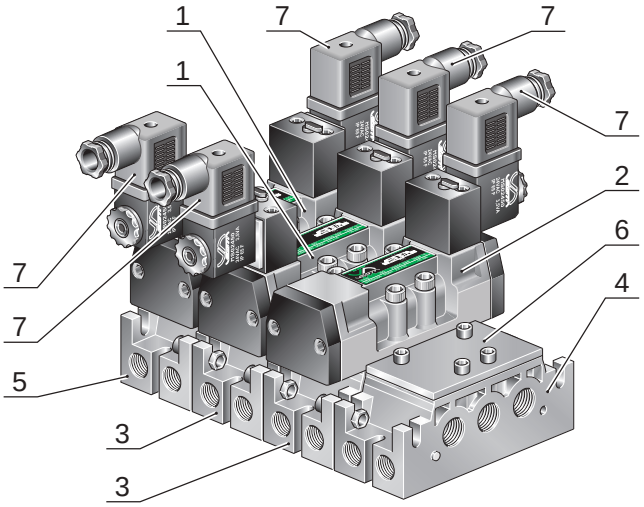


Seals kit code - *Codice del kit*

SET 1 1/4 SG: for ISO 1 **mono-stable** valves - *per valvole **monostabili** ISO 1.*
SET 2 1/4 SG: for ISO 1 **bi-stable** valves - *per valvole **bistabili** ISO 1.*

Example / *Esempio:* **SVE5 52 100 -02400 —> SET 1 1/4 SG**
SVE5 52 200 -02400 —> SET 2 1/4 SG

HOW TO ASSEMBLE A SIZE 1 MANIFOLD / *ESEMPIO DI ASSEMBLAGGIO BATTERIA TAGLIA 1*



Components needed to assemble the manifold in figure.
Esempio di componenti necessari a realizzare la batteria raffigurata.

Pos. *Posizione*	**Quantity** *Quantità*	**Code** *Codice ordinazione*
1	N° 2	**SVE5 52 200 - 02450**
2	N° 1	**SVE5 52 100 - 02450**
3	N° 2	**BMI 1**
4	N° 1	**BTI 1**
5	N° 1	**BTC 1**
6	N° 1	**PCBM 1**
7	N° 5	**CEP/ 1**

- Valves fixing screws and seals are supplied with valves.
- Subbase fixing screws not supplied.
- Manifold suppied assembled on demand.

- *Le viti e le guarnizioni per il fissaggio vengono fornite con le valvole.*
- *Il fissaggio alla base è a cura del cliente.*
- *A richiesta, la base può essere fornita preassemblata.*

TECHNICAL FEATURES / *CARATTERISTICHE TECNICHE*

SERIE **SVP2 - SVE2**

COMMON TECHNICAL FEATURES SVP2 AND SVE2

Fixing	Single subbase pag. B-80 Manifold mounting pag. B-80
Flow section	Ø 8 mm
Ambient temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Lubrication	Not required
Medium	Filtered air
Reference temperature	+20 °C
Reference pressure	6 bar

VALVES AND SOLENOID VALVES 5/2

Nominal air flow	2200 Nl/min
Fluid conductance "C"	7,6 Nl/s bar
Critical pressure ratio "b"	0,38

VALVES AND SOLENOID VALVES 5/3

Nominal air flow	1800 Nl/min
Fluid conductance "C"	7,1 Nl/s bar
Critical pressure ratio "b"	0,45

PNEUMATIC VALVES FEATURES SVP2

SVP2 52 100	Nominal pilot pressure	4 bar (10 bar)
	Nominal max. frequence	16 Hz
	Operating pressure range	**2,5 ÷ 10 bar**
SVP2 53 260	Nominal pilot pressure	3,2 bar
	Nominal max. frequence	8 Hz
	Nominal suggested frequence	5 Hz
	Operating pressure range	**3 ÷ 10 bar**
SVP2 52 200	Nominal pilot pressure	1,3 bar
	Nominal max. frequence	25 Hz
	Operating pressure range	**1,5 ÷ 10 bar**
SVP2 53 290	Nominal pilot pressure	3,2 bar
	Nominal max. frequence	8 Hz
	Nominal suggested frequence	5 Hz
	Operating pressure range	**3 ÷ 10 bar**

SOLENOID VALVES FEATURES SVE2

		AC	DC
SVE2 52 100	Nominal frequence (max)	13 Hz	10 Hz
	Average actioning response	21 ms	24 ms
	Average disactioning response	36 ms	47 ms
	Operating pressure range	**2,5 ÷ 10 bar**	
SVE2 53 260	Nominal frequence (max)	8 Hz	8 Hz
	Nominal frequence suggested	5 Hz	5 Hz
	Average actioning response	30 ms	35 ms
	Average disactioning response	35 ms	40 ms
	Operating pressure range	**3 ÷ 10 bar**	
SVE2 52 200	Nominal frequence (max)	24 Hz	18 Hz
	Average actioning response	14 ms	17 ms
	Average disactioning response	14 ms	17 ms
	Operating pressure range	**1,5 ÷ 10 bar**	
SVE2 53 290	Nominal frequence (max)	8 Hz	8 Hz
	Nominal frequence suggested	5 Hz	5 Hz
	Average actioning response	30 ms	35 ms
	Average disactioning response	35 ms	40 ms
	Operating pressure range	**3 ÷ 10 bar**	

For electrical features solenoid SVE5 with CNOMO pilot see pp. B-88.

CARATTERISTICHE TECNICHE COMUNI SVP2 E SVE2

Fissaggio	*Base singola uscite frontali pag. B-78* *Basi in batteria pag. B-78*
Diametro nominale	*Ø 8 mm*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Lubrificazione	*Non necessaria*
Fluido	*Aria filtrata*
Temperatura nominale	*+20 °C*
Pressione nominale	*6 bar*

VALVOLE ED ELETTROVALVOLE 5/2

Portata nominale	*2200 Nl/min*
Valore conduttanza "C"	*7,6 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,38*

VALVOLE ED ELETTROVALVOLE 5/3

Portata nominale	*1800 Nl/min*
Valore conduttanza "C"	*7,1 Nl/s bar*
Rapporto critico delle pressioni "b"	*0,45*

CARATTERISTICHE VALVOLE PNEUMATICHE SVP2

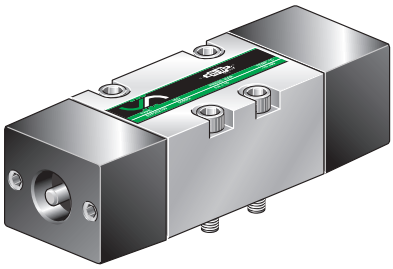
SVP2 52 100	*Pressione di pilotaggio nominale*	*4 bar (10 bar)*
	Frequenza max nominale	*16 Hz*
	Pressione di esercizio	***2,5 ÷ 10 bar***
SVP2 53 260	*Pressione di pilotaggio nominale*	*3,2 bar*
	Frequenza max nominale	*8 Hz*
	Frequenza max consigliata	*5 Hz*
	Pressione di esercizio	***3 ÷ 10 bar***
SVP2 52 200	*Pressione di pilotaggio nominale*	*1,3 bar*
	Frequenza max nominale	*25 Hz*
	Pressione di esercizio	***1,5 ÷ 10 bar***
SVP2 53 290	*Pressione di pilotaggio nominale*	*3,2 bar*
	Frequenza max nominale	*8 Hz*
	Frequenza max consigliata	*5 Hz*
	Pressione di esercizio	***3 ÷ 10 bar***

CARATTERISTICHE ELETTROVALVOLE SVE5

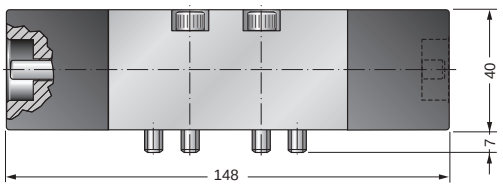
		AC	DC
SVE2 52 100	*Frequenza max nominale*	*13 Hz*	*10 Hz*
	Tempo medio di risposta in eccitazione	*21 ms*	*24 ms*
	Tempo medio di risp. in diseccitazione	*36 ms*	*47 ms*
	Pressione di esercizio	***2,5 ÷ 10 bar***	
SVE2 53 260	*Frequenza max nominale*	*8 Hz*	*8 Hz*
	Frequenza max nominale consigliata	*6 Hz*	*5 Hz*
	Tempo medio di risposta in eccitazione	*30 ms*	*35 ms*
	Tempo medio di risp. in diseccitazione	*35 ms*	*40 ms*
	Pressione di esercizio	***3 ÷ 10 bar***	
SVE2 52 200	*Frequenza max nominale*	*24 Hz*	*18 Hz*
	Tempo medio di risposta in eccitazione	*14 ms*	*17 ms*
	Tempo medio di risp. in diseccitazione	*14 ms*	*17 ms*
	Pressione di esercizio	***1,5 ÷ 10 bar***	
SVE2 53 290	*Frequenza max nominale*	*8 Hz*	*8 Hz*
	Frequenza max nominale consigliata	*6 Hz*	*5 Hz*
	Tempo medio di risposta in eccitazione	*30 ms*	*35 ms*
	Tempo medio di risp. in diseccitazione	*35 ms*	*40 ms*
	Pressione di esercizio	***3 ÷ 10 bar***	

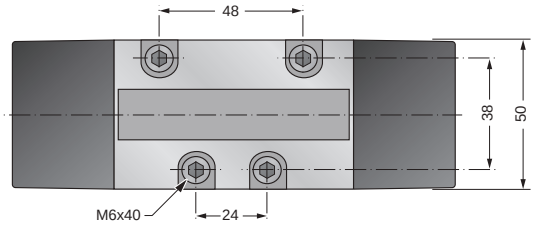
Caratteristiche elettriche bobina per elettrovalvole* SVE5 *con elettropilota CNOMO vedi pp. B-88.

SVP2 52 100

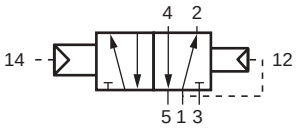


VALVE / *VALVOLA* 5/2
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIPOSIZIONAMENTO MOLLA PNEUMATICA

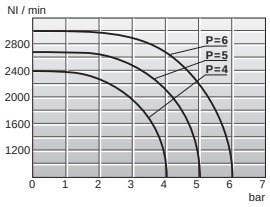




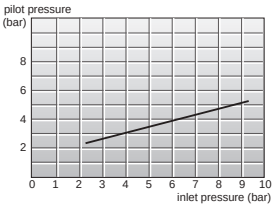
SIMBOL / *SIMBOLO*



DIAGRAMS / *DIAGRAMMI*

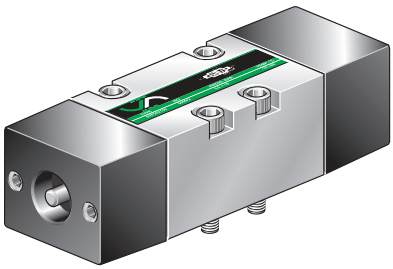


AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

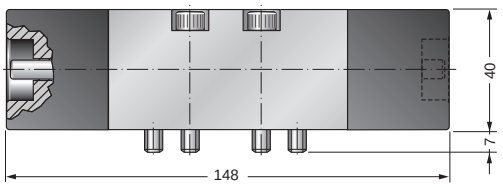


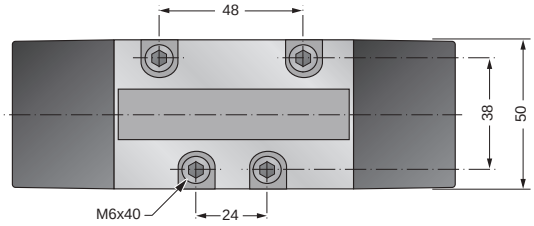
PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

SVP2 52 200

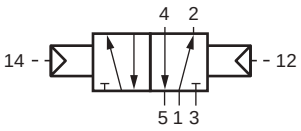


VALVE / *VALVOLA* 5/2
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

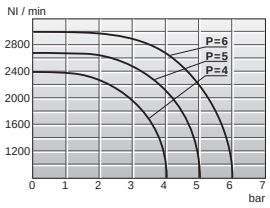




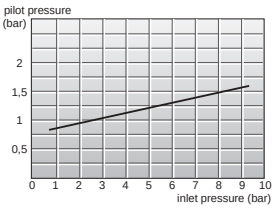
SIMBOL / *SIMBOLO*



DIAGRAMS / *DIAGRAMMI*



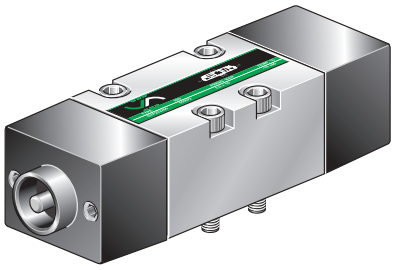
AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

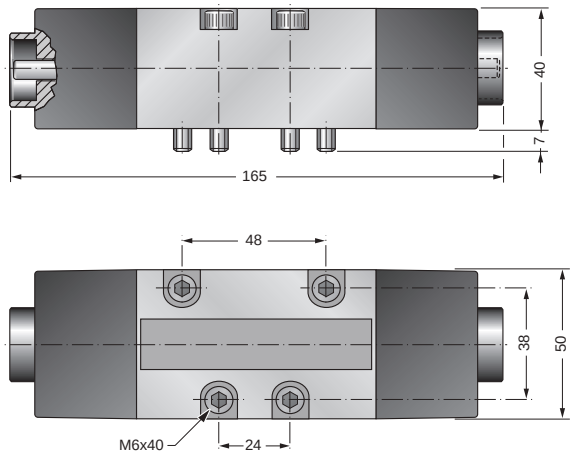


PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

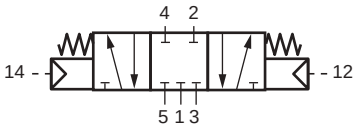
VALVE / *VALVOLA* 5/3
DOUBLE PNEUMATIC PILOT - CENTER POSITION CLOSED
DOPPIO COMANDO PNEUMATICO - CENTRI CHIUSI

SVP2 53 260

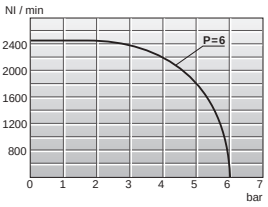




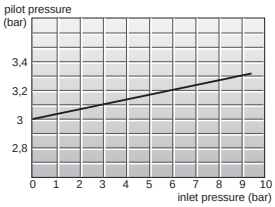
SIMBOL / *SIMBOLO*



DIAGRAMS / *DIAGRAMMI*



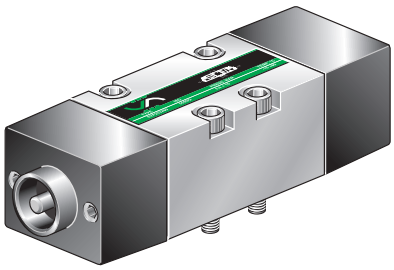
AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

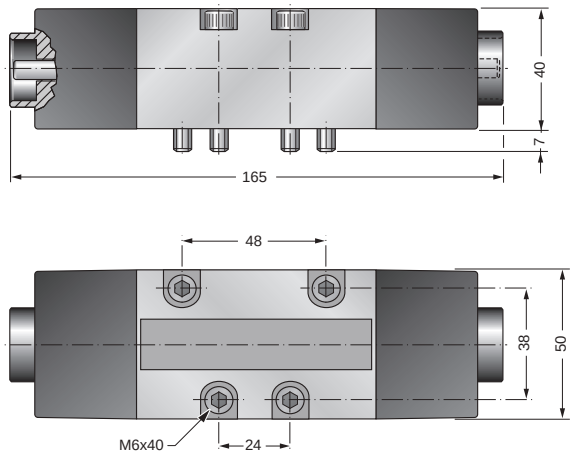


PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

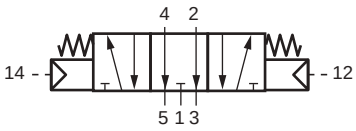
VALVE / *VALVOLA* 5/3
DOUBLE PNEUMATIC PILOT - CENTER POSITION OPEN
DOPPIO COMANDO PNEUMATICO - CENTRI APERTI

SVP2 53 290

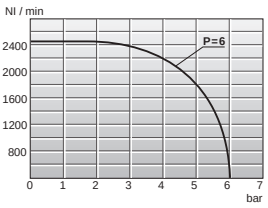




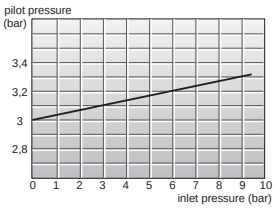
SIMBOL / *SIMBOLO*



DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE



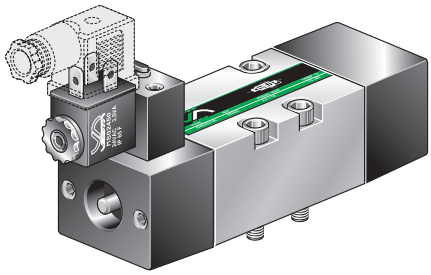
PILOT PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO

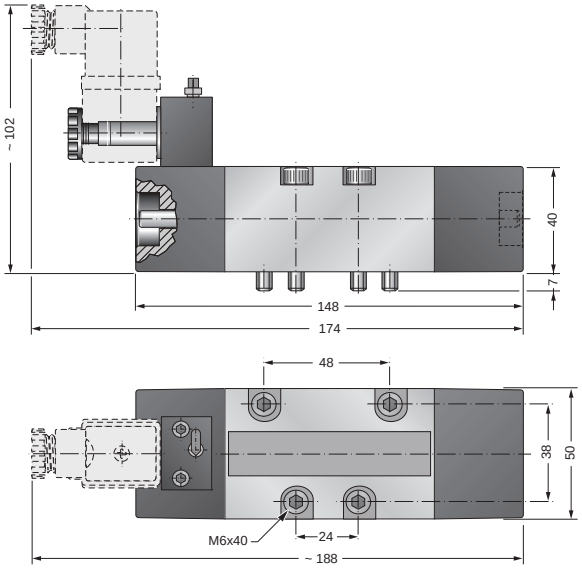
SVE2 52 100 - .....

SOLENOID VALVES / *ELETTROVALVOLA* 5/2

SOLENOID PILOT - INTERNAL PRESSURE RETURN

COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO MOLLA PNEUMATICA





SIMBOL / *SIMBOLO*

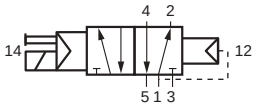
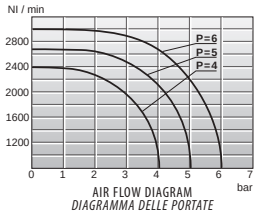


DIAGRAM / *DIAGRAMMA*



AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

CODES / *CODICI*

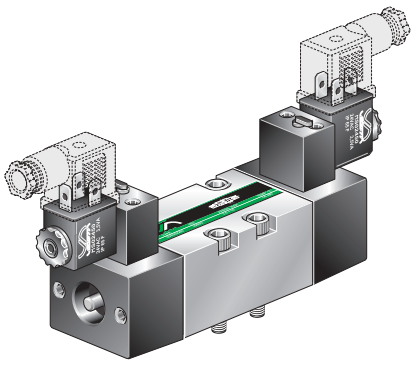
Ordination code *Codice ordinazione*	**Voltage** *Tensione*
SVE2 52 100 - 00000	No coil / *Senza solenoide*
SVE2 52 100 - 01200	12 V DC
SVE2 52 100 - 02400	24 V DC
SVE2 52 100 - 02450	24 V 50/60Hz AC
SVE2 52 100 - 11050	110 V 50/60Hz AC
SVE2 52 100 - 22050	220 V 50/60Hz AC

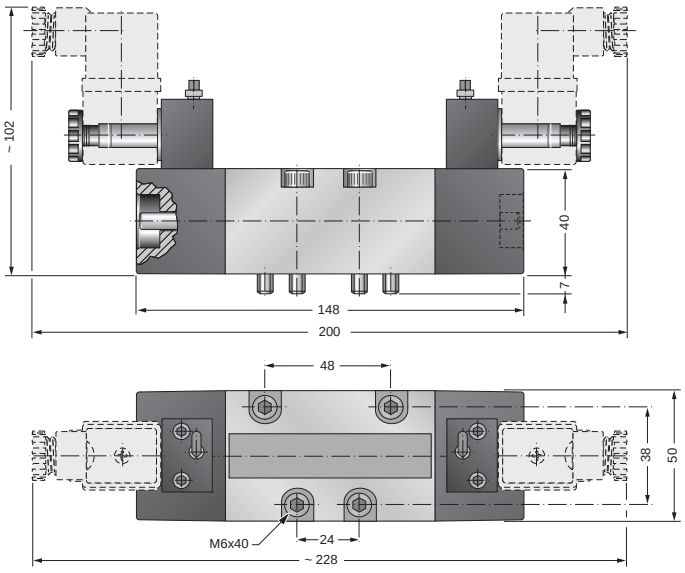
SVE2 52 200 - .....

SOLENOID VALVES / *ELETTROVALVOLA* 5/2

DOUBLE SOLENOID PILOT

DOPPIO COMANDO ELETTROPNEUMATICO





SIMBOL / *SIMBOLO*

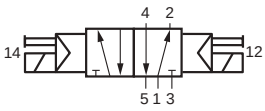
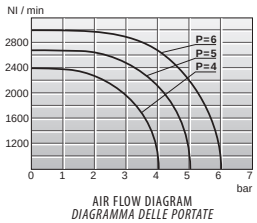


DIAGRAM / *DIAGRAMMA*



AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

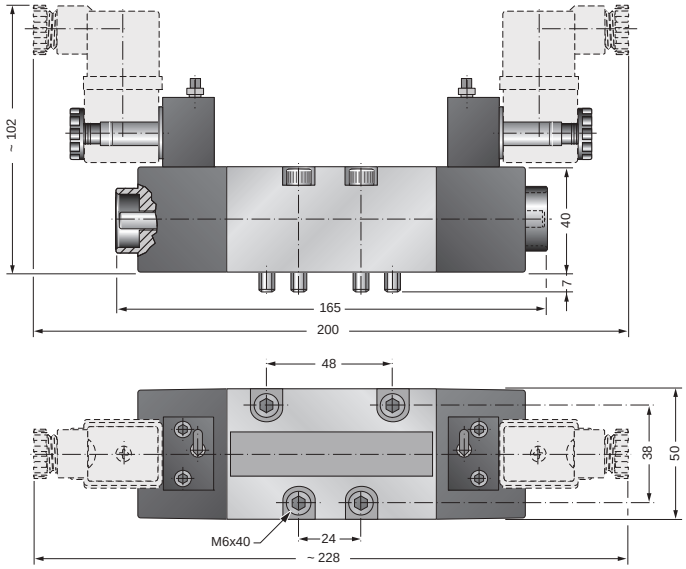
CODES / *CODICI*

Ordination code *Codice ordinazione*	**Voltage** *Tensione*
SVE2 52 200 - 00000	No coils / *Senza solenoidi*
SVE2 52 200 - 01200	12 V DC
SVE2 52 200 - 02400	24 V DC
SVE2 52 200 - 02450	24 V 50/60Hz AC
SVE2 52 200 - 11050	110 V 50/60Hz AC
SVE2 52 200 - 22050	220 V 50/60Hz AC

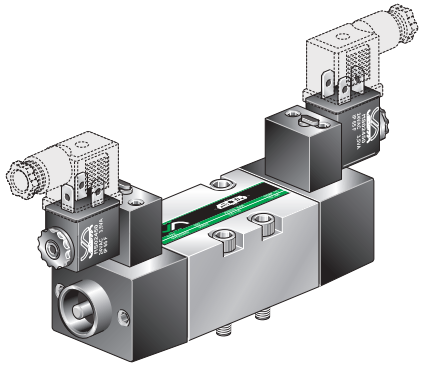
SOLENOID VALVES / *ELETTROVALVOLA* 5/3

DOUBLE SOLENOID PILOT - CENTER POSITION CLOSED

DOPPIO COMANDO ELETTROPNEUMATICO - CENTRI CHIUSI



SVE2 53 260 - .....



SIMBOL / *SIMBOLO*

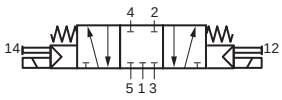
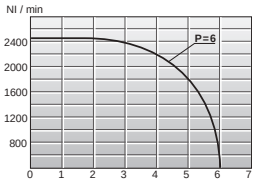


DIAGRAM / *DIAGRAMMA*



AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

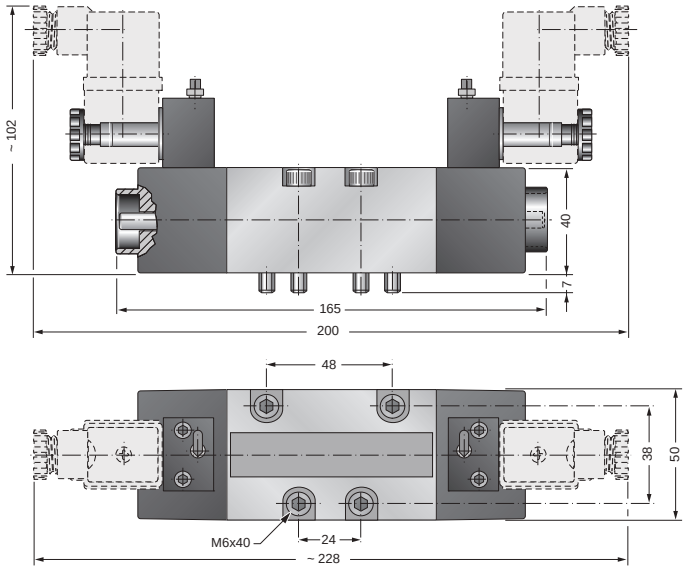
CODES / *CODICI*

Ordination code *Codice ordinazione*	**Voltage** *Tensione*
SVE2 53 260-00000	No coils / *Senza solenoidi*
SVE2 53 260-01200	12 V DC
SVE2 53 260-02400	24 V DC
SVE2 53 260-02450	24 V 50/60Hz AC
SVE2 53 260-11050	110 V 50/60Hz AC
SVE2 53 260-22050	220 V 50/60Hz AC

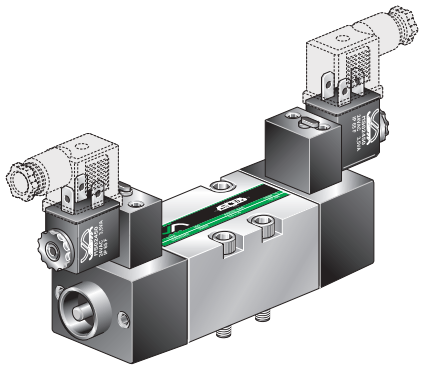
SOLENOID VALVES / *ELETTROVALVOLA* 5/3

DOUBLE SOLENOID PILOT - CENTER POSITION OPEN

DOPPIO COMANDO ELETTROPNEUMATICO - CENTRI APERTI



SVE2 53 290 - .....



SIMBOL / *SIMBOLO*

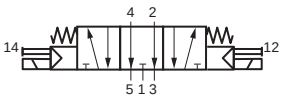
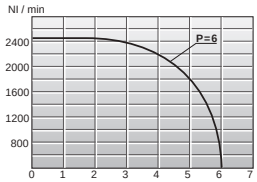


DIAGRAM / *DIAGRAMMA*



AIR FLOW DIAGRAM

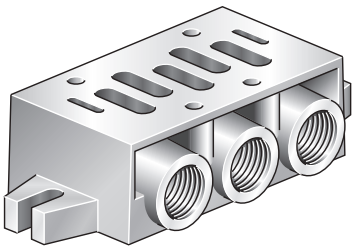
DIAGRAMMA DELLE PORTATE

CODES / *CODICI*

Ordination code *Codice ordinazione*	**Voltage** *Tensione*
SVE2 53 290-00000	No coils / *Senza solenoidi*
SVE2 53 290-01200	12 V DC
SVE2 53 290-02400	24 V DC
SVE2 53 290-02450	24 V 50/60Hz AC
SVE2 53 290-11050	110 V 50/60Hz AC
SVE2 53 290-22050	220 V 50/60Hz AC

BS 2

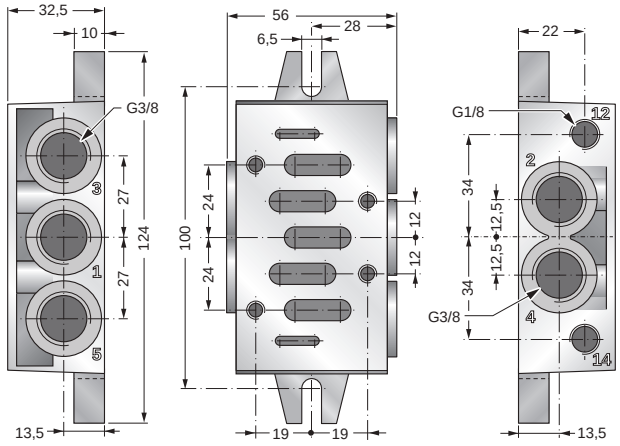
ISO 5599 SINGLE SUBBASE SIZE 2
BASE SINGOLA ISO 5599 TAGLIA 2



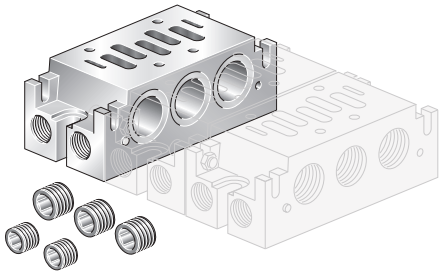
SINGLE MANIFOLD BASE / BASE SINGOLA USCITE LATERALI

- Valves fixing screws supplied with valves.
- Subbase fixing screws not supplied.
- Manifold supplied assembled on demand.

- *Le viti di fissaggio vengono fornite con le valvole.*
- *Il fissaggio alla base è a cura del cliente.*
- *La fornitura della base può essere completata, a richiesta, con il montaggio della valvola od elettrovalvola desiderata.*

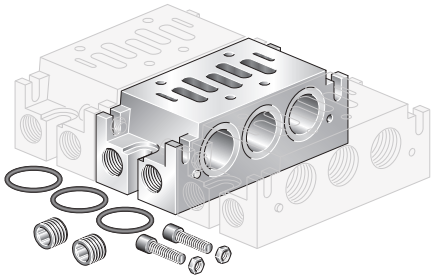


BTC 2



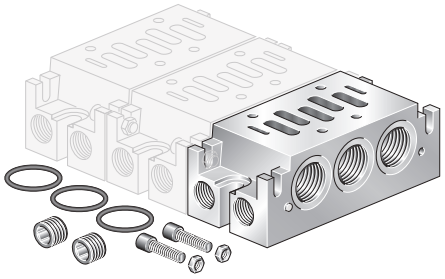
END PLATE / BOTTOM SIDE OUTLET
BASE DI CHIUSURA USCITE FONDO E LATERALI

BM I 2



MIDDLE PLATE / BOTTOM SIDE OUTLET
BASE INTERMEDIA USCITE FONDO E LATERALE LATERALI

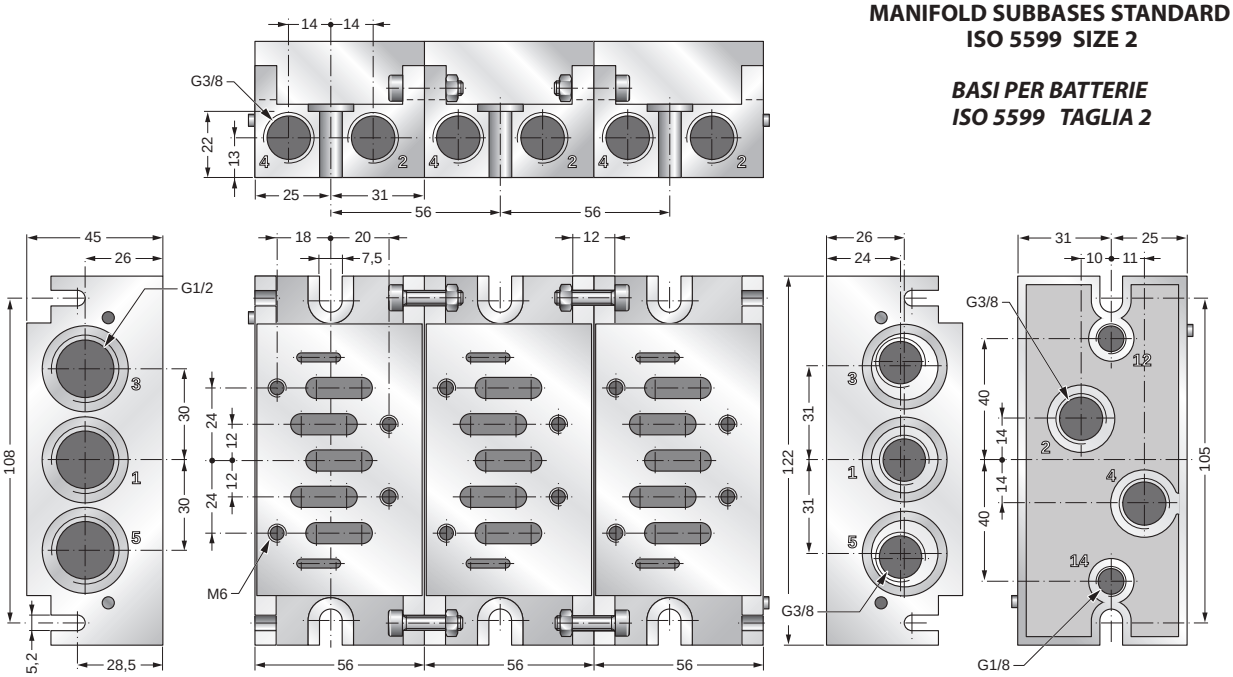
BTI 2



INLET END PLATE / BOTTOM SIDE OUTLET
BASE DI INGRESSO USCITE FONDO E LATERALI

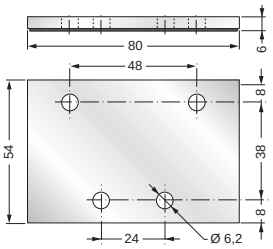
MANIFOLD SUBBASES STANDARD
ISO 5599 SIZE 2

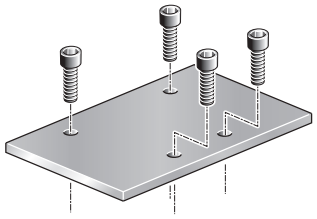
BASI PER BATTERIE
ISO 5599 TAGLIA 2



PLUG FLAT
CHIUSURA POSTO INUTILIZZATO

PCBM 2



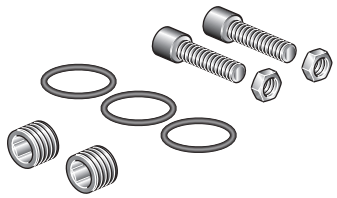


- Supplied with fixing screws.

- *La piastrina di chiusura del posto inutilizzato viene fornita con le viti per il fissaggio sulla base.*

ASSEMBLING KIT
KIT DI RICAMBIO

KM 2

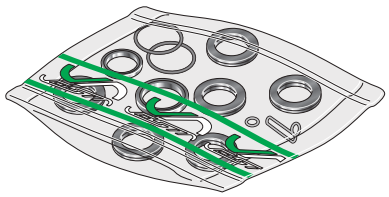


- **KM 2** supplied with **BMI 2 and BTI 2**,
- Supplied separatly on demand.

- *Il kit **KM 2** viene fornito con le basi **BMI 2** e **BTI 2**,*
- *A richiesta può essere fornito come ricambio.*

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO

SET . 1/2 SG



Seals kit code - *Codice del kit*

SET 1 1/2 SG: for ISO 2 **mono-stable** valves - *per valvole **monostabili** ISO 2.*

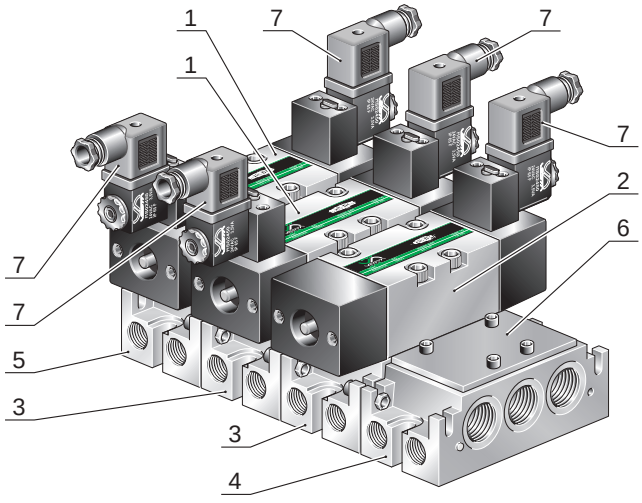
SET 2 1/2 SG: for ISO 2 **bi-stable** valves - *per valvole **bistabili** ISO 2.*

Example / *Esempio:* **SVE2 52 100 -02400 —> SET 1 1/2 SG**
SVE2 52 200 -02400 —> SET 2 1/2 SG

HOW TO ASSEMBLE A SIZE 2 MANIFOLD / *ESEMPIO DI ASSEMBLAGGIO BATTERIA TAGLIA 2*

Components needed to assemble the manifold in figure.
Esempio di componenti necessari a realizzare la batteria raffigurata.

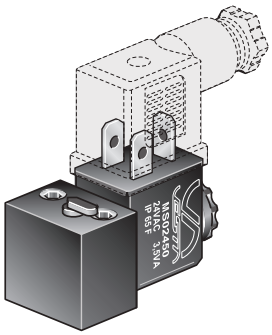
Pos. *Posizione*	**Quantity** *Quantità*	**Code** *Codice ordinazione*
1	N° 2	**SVE2 52 200 - 02450**
2	N° 1	**SVE2 52 100 - 02450**
3	N° 2	**BMI 2**
4	N° 1	**BTI 2**
5	N° 1	**BTC 2**
6	N° 1	**PCBM 2**
7	N° 5	**CEP/ 1**

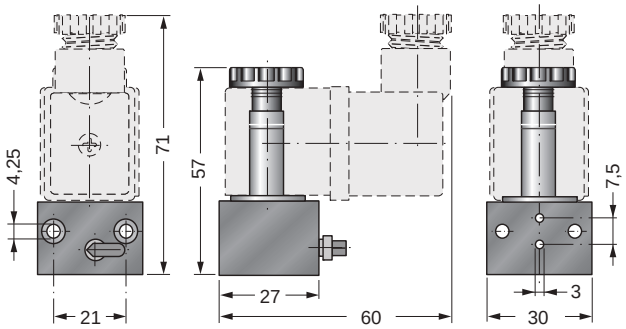


CNOMO PILOT CONTROL SOLENOID VALVES AND ACCESSORIES / *ELETTROPILOTI CNOMO ED ACCESSORI*

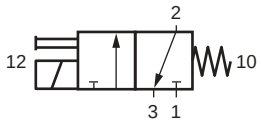
ELBAC - .....

CNOMO PILOT CONTROL SOLENOID VALVE
ELETTROPILOTA CNOMO CON BOBINA ***DIN 43650-A***





SIMBOL / *SIMBOLO*



CODES / *CODICI*

Code *Codice ordinazione*	**Voltage** *Tensione*
ELBAC - 00000	No coil / *Senza solenoide*
ELBAC - 01200	12 V DC
ELBAC - 02400	24 V DC
ELBAC - 02450	24 V 50/60Hz AC
ELBAC - 11050 (*)	110 V 50/60Hz AC
ELBAC - 22050 (*)	220 V 50/60Hz AC

(*) Please see page / *Vedi pag.* **B-37**

TECHNICAL FEATURES

Flow section	Ø 1 mm
Ambient temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +50 °C
Lubrication	Not required
Medium	Filtered air
Operating pressure range	0 ÷ 10 bar
Reference temperature	+20 °C
Reference pressure	6 bar
Nominal air flow	80 Nl/min
Coils electrical features	**See MS ..... (pag. B-35 ÷ B-37)**

CARATTERISTICHE TECNICHE

Diametro nominale	*Ø 1 mm*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +50 °C*
Lubrificazione	*Non necessaria*
Fluido	*Aria filtrata*
Pressione d'esercizio	*0 ÷ 10 bar*
Temperatura nominale	*+20 °C*
Pressione nominale	*6 bar*
Portata nominale	*80 Nl/min*
Caratteristiche elettriche bobina	***Vedi MS ..... (pag. B-35 ÷ B-37)***

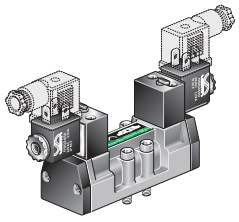
SOLENOID VALVES OPTIONS SERIES SVE 5 .. ... AND SVE 2 .. ...
OPZIONI PER ELETTROVALVOLE SERIE SVE 5 .. ... E SVE 2 .. ...

Series SVE5 ... and SVE2 ... **on request** can mount CNOMO solenoid pilots, with connectors in according DIN 43650 - B (**see ELCDC page B-89**) changing the order codes in:

Le elettrovalvole SVE5 ... e SVE2 ... possono essere equipaggiate ***su richiesta*** *con elettropiloti CNOMO con connettore in accordo alle norme* DIN 43650 - B (***vedi ELCDC pagina B-89***) *sostituendo nell'ordinazione il codice standard:*

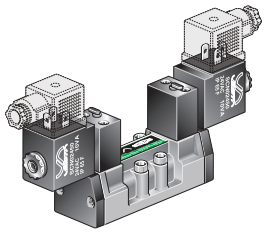
SVE5 ... ----> SVE6 ... (size 1) **SVE2 ... ----> SVE3 ...** (size 2).

example / *esempio*



SVE5 52 200-02450
with CNOMO solenoids
24 V at 50 Hz AC; 2,5 Watt
(**MS..** coil)

con elettropiloti CNOMO solenoidi da 24 V a 50 Hz AC; potenza di 2,5 Watt (bobina **MS..** *)*



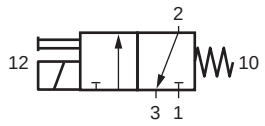
SVE6 52 200-02450
with CNOMO solenoids
24 V at 50 Hz AC; 2,5 Watt
in according DIN 43650 - B (**SCN..** coil)

con elettropiloti CNOMO solenoidi da 24 V a 50 Hz AC; potenza di 2,5 Watt conforme DIN 43650 - B *(bobina* **SCN..** *)*

CNOMO PILOT CONTROL SOLENOID VALVE
ELETTROPILOTA CNOMO CON BOBINA ***DIN 43650-B***

ELCDC - .....

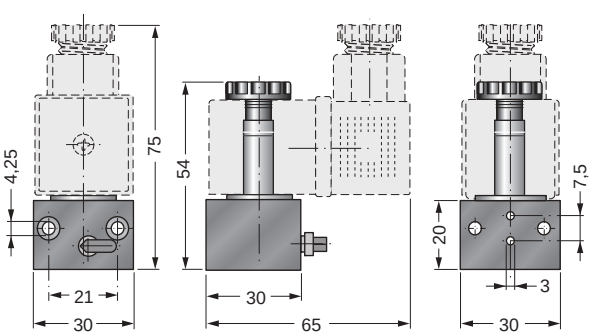
SIMBOL / *SIMBOLO*

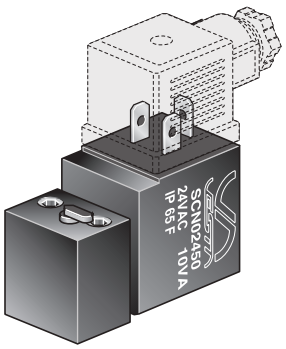


CODES / *CODICI*

Ordination code *Codice ordinazione*	**Voltage** *Tensione*
ELCDC - 00000	No coil / *Senza solenoide*
ELCDC - 01200	12 V DC
ELCDC - 02400	24 V DC
ELCDC - 02450	24 V 50/60Hz AC
ELCDC - 11050 (*)	110 V 50/60Hz AC
ELCDC - 22050 (*)	220 V 50/60Hz AC

(*) Please see page / *Vedi pag.* **B-37**





TECHNICAL FEATURES

Flow section	Ø 1,5 mm
Ambient temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +50 °C
Lubrication	Not required
Medium	Filtered air
Operating pressure range	0 ÷ 10 bar
Reference temperature	+20 °C
Reference pressure	6 bar
Nominal air flow	100 Nl/min
Coils electrical features	See **SCN..... (pag. B-89)**

CARATTERISTICHE TECNICHE

Diametro nominale	*Ø 1,5 mm*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +50 °C*
Lubrificazione	*Non necessaria*
Fluido	*Aria filtrata*
Pressione d'esercizio .	*0 ÷ 10 bar*
Temperatura nominale	*+20 °C*
Pressione nominale	*6 bar*
Portata nominale	*100 Nl/min*
Caratteristiche elettriche bobina	*Vedi* ***SCN..... (pag. B-89)***

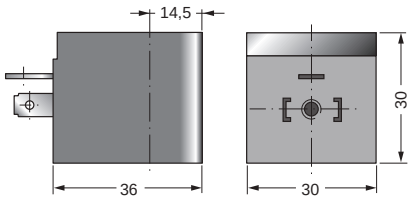
COIL FOR **ELCDC** SOLENOID VALVE
SOLENOIDE PER ELETTROPILOTA

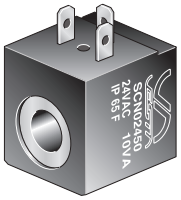
SCN . . . . .

CODES / *CODICI*

Ordination code *Codice ordinazione*	**Voltage** *Tensione*
SCN01200	12 V DC
SCN02400	24 V DC
SCN02450	24 V 50/60Hz AC
SCN11050 (*)	110 V 50/60Hz AC
SCN22050 (*)	220 V 50/60Hz AC

(*) Please see page / *Vedi pag.* **B-37**





DIN 43650 - A

TECHNICAL FEATURES

Standard voltage	12, 24 V DC 24,110, 220 V AC (50/60 Hz)
Solenoid characteristics	2,5 Watt in DC; 3,5 V A in AC
Voltage	± 10% (continuos)
Ambient temperature range	-20 °C ÷ +50 °C
Degree of protection	Fixed plug IP 65 with connector
Pins according	DIN 43650 - B
Insulation	Class F
Expoy	Incapsulated

CARATTERISTICHE TECNICHE

Tensione standard	*12, 24 V DC* *24,110, 220 V AC (50/60 Hz)*
Prestazioni bobina	*2,5 Watt in DC; 3,5 V A in AC*
Tensione nominale	*± 10% a bobina calda*
Limiti di temperatura ambiente	*-20 °C ÷ +50 °C*
Protezione	*IP 65 secondo IEC 144 con connettore e guarnizioni montate*
Connessione elettrica	*Secondo norma DIN 43650 - B*
Bobina	*Classe F, Filo rame classe 200 °C*
Sovrastampatura	*Resina epossidica*

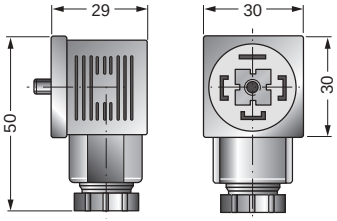
SOLENOID CONNECTOR FOR **SCN** COIL
CONNETTORE PER SOLENOIDE SERIE ***SCN***

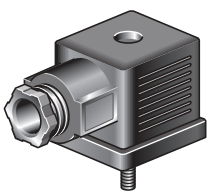
CEP/2 . . . . . .

CODES / *CODICI*

Description *Descrizione*	**Code** *Codice*	**Voltage** *Tensione*
Universal connector *Connettore universale*	**CEP/2**	All tension *Tutte le tensioni*
Connector with led *Connettorecon led*	**CEP/2 L 10 / 50** **CEP/2 L 70 / 250** (*)	10/50 V AC / DC 70/250 V AC / DC
Connector with led and varistor *Connettorecon led e varistore*	**CEP/2 LV 24** **CEP/2 LV 110** (*) **CEP/2 LV 220** (*)	24 V AC / DC 110 V AC / DC 220V AC / DC

(*) Please see page / *Vedi pag.* **B-37**





TECHNICAL FEATURES

Wire connection	With screwed terminals
Gland thread	PG 11
Number of poles	2 Poles + earth
Housing colour	Black, transparent in the led version

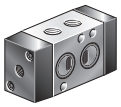
CARATTERISTICHE TECNICHE

Connessione cavi	*Con morsetti a vite*
Filettatura passacavo	*PG 11*
N° Poli	*2 Poli + terra*
Colori connettore	*Nero, trasparente nella versione con led.*

INDEX / *INDICE*

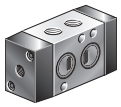
(✱) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

VALVES AND SOLENOID VALVES SERIES NAMUR 3/2 / *VALVOLE ED ELETTOVALVOLE SERIE NAMUR 3/2*



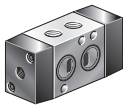
(✱) **NM32V1P - SR**
SINGLE PNEUMATIC PILOT - SPRING RETURN
COMANDO PNEUMATICO - MOLLA MECCANICA

pag. **B-95**

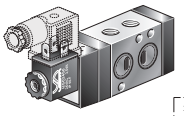


NM32V1P - PR
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - MOLLA PNEUMATICA

pag. **B-96**

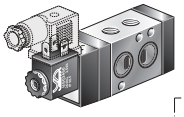


(✱) **NM32V2P - TP**
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO



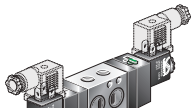
(✱) **NM32W1S - SR - .....**
SOLENOID VALVE - SPRING RETURN
COMANDO ELETTROPNEUMATICO - MOLLA MECCANICA

pag. **B-96**



NM32W1S - PR - .....
SOLENOID VALVE - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - MOLLA PNEUMATICA

pag. **B-97**

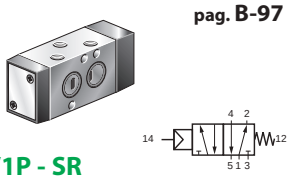


(✱) **NM32W2S - TP - .....**
DOUBLE SOLENOID VALVE
DOPPIO COMANDO ELETTROPNEUMATICO

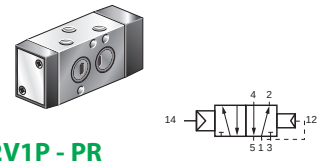
(✱) **ATEX** versions see / *Versioni* **ATEX** *vedi P.* ***B-113***

VALVES AND SOLENOID VALVES SERIES NAMUR 5/2 / *VALVOLE ED ELETTOVALVOLE SERIE NAMUR 5/2*

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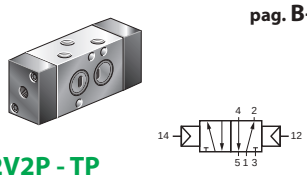


(✱) **NM52V1P - SR**
SINGLE PNEUMATIC PILOT - SPRING RETURN
COMANDO PNEUMATICO - MOLLA MECCANICA



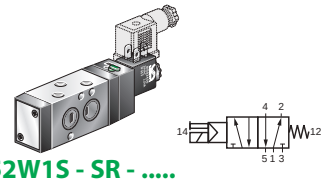
NM52V1P - PR
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - MOLLA PNEUMATICA

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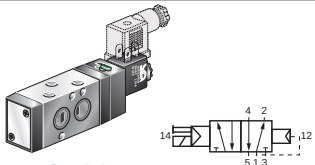


(✱) **NM52V2P - TP**
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO

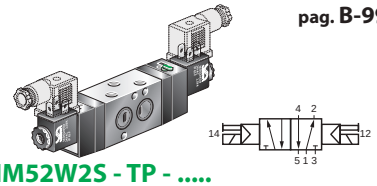
pag. **B-99**



(✱) **NM52W1S - SR - .....**
SOLENOID VALVE - SPRING RETURN
COMANDO ELETTROPNEUMATICO - MOLLA MECCANICA



NM52W1S - PR - .....
SOLENOID VALVE - INTERNAL PRESSURE RETURN
COMANDO ELETTROPNEUMATICO - MOLLA PNEUMATICA

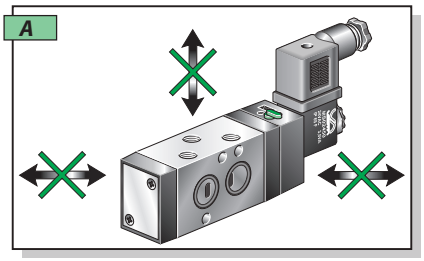


(✱) **NM52W2S - TP - .....**
DOUBLE SOLENOID VALVE
DOPPIO COMANDO ELETTROPNEUMATICO

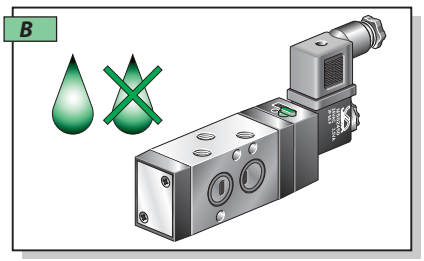
BUILDING FEATURES / *CARATTERISTICHE COSTRUTTIVE*

VESTA "**NAMUR**" valves are available in the 3/2 and 5/2 versions, with different forms of actuation (i.e. solenoid / pilot etc).
This series of valves present a high nominal air flow and no environmental contact between the namur valve and the actuator being switched (See Fig. **A**). These namur valves have a high working frequency and can be used with lubricated or non-lubricated air (See Fig. **B**), thanks to a spool made of a light alloy aluminium, nickel treated by "Niploy Process" (See Fig. **C**) to give the surface a smooth finish. The self lubricating lip rubber seals which the spool runs in, assures the valves of a long lasting durable life span.

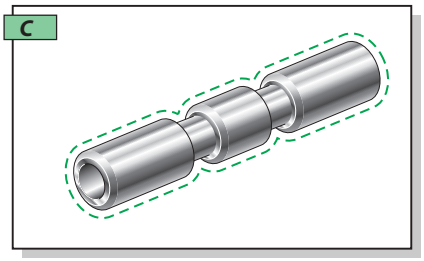
*Le valvole ed elettrovalvole VESTA della serie **NAMUR** funzionano secondo il principio del distributore a cassetto bilanciato (vedi fig. **1** e **2**).*
La serie, realizzata nelle funzioni 3/2 e 5/2, viene fornita con più sistemi di azionamento e riposizionamento.
*Le caratteristiche fondamentali sono: grande portata d'aria, ermeticità di funzionamento verso l' ambiente di lavoro nei modelli bistabili e in quelli con ritorno a molla pneumatica (**A**), alta velocità di scambio, possibilità di funzionamento continuo privo di lubrificazione (**B**) ottenuto con l'impiego di materiali particolari come, ad esempio, la spola realizzata in lega leggera con trattamento Niploy Process che le conferisce notevole durezza superficiale e caratteristiche autolubrificanti (**C**), e le guarnizioni in elastomero nitrilico con profilo a labbro antiusura.*



Protected against working evnironment.
Protezione verso l'ambiente di lavoro.



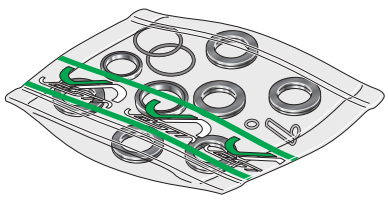
Possibility of operating continuosly without lubrication.
Possibilità di funzionamento continuo privo di lubrificazione.



Light alloy spool with Niploy Process treated surface.
Spola in lega leggera con trattamento speciale Niploy Process.

SET . 1/4 SG

SEALS KIT
KIT GUARNIZIONI DI RICAMBIO



Seals kit code - *Codice del kit*

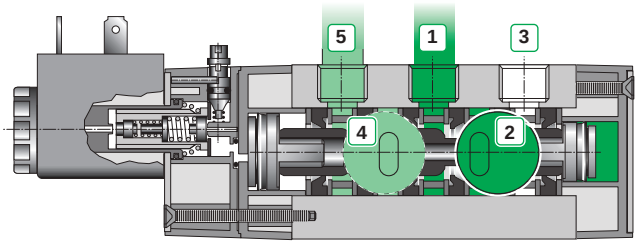
SET 1 1/4 SG for NAMUR **mono-stable** valves - *per valvole NAMUR.*

SET 2 1/4 SG for NAMUR **bi-stable** valves - *per valvole NAMUR.*

Example / *Esempio:* **NM32W1S-SR -02400 —> SET 1 1/4 SG** **NM32W2S-TP -02400 —> SET 2 1/4 SG**

In the example here below, when the valve **NM52W1S-PR-02450** (see the draw) stands in the normal position, ports **4 - 5** and **1 - 2** are connected and the position is kept thanks to the pressure assured to the smallest piston (right side of the valve).
When the valve is actuated, the same pressure is fed to the biggest piston. It's bigger surface create a force which allows to the spool to move and therefore to connect ports **4 - 1** and **2 - 3**. In the mechanical spring version, the valve is kept in the normal position by a mechanical spring. In the bistable versions, the position of the valve remains in its last switched state.

Il principio di funzionamento dei distributori 3/2 e 5/2 (nell'esempio l'elettrovalvola **NM52W1S-PR-02450** *con comando elettropneumatico e riposizionamento a molla pneumatica) consiste nel mantenere costantemente in pressione il pistone di riposizionamento (fig.* ***1****), utilizzando la fonte d'aria compressa presente nel condotto di alimentazione* ***1****, collegando le vie* ***1- 2*** *e* ***4 - 5****.*
L' eccitazione del solenoide mette in comunicazione il condotto ***1*** *con la camera dove é alloggiato il pistone di comando. Quest'ultimo, avendo un'area di spinta maggiore del pistone di riposizionamento, sposta la spola in modo tale da collegare i canali* ***1- 4*** *e* ***2- 3*** *(fig.* ***2****).*
Diseccitando il solenoide si ripristina la posizione iniziale. Nel sistema dotato di riposizionamento con molla meccanica il funzionamento é analogo, mentre nei sistemi bistabili (doppio comando elettropneumatico o doppio comando pneumatico) in assenza di segnale rimangono i collegamenti formatisi nell'ultimo azionamento.



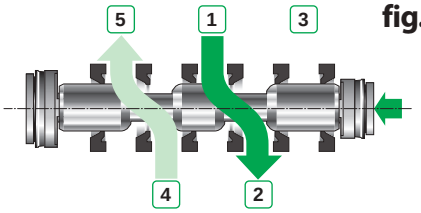
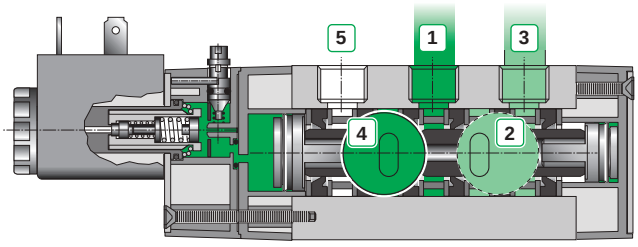


fig. 1

NORMAL POSITION / *POSIZIONE A RIPOSO*



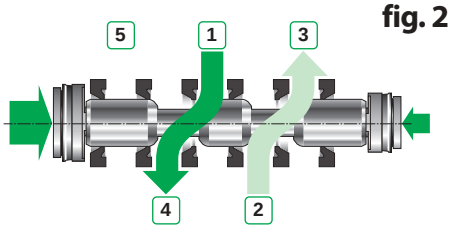
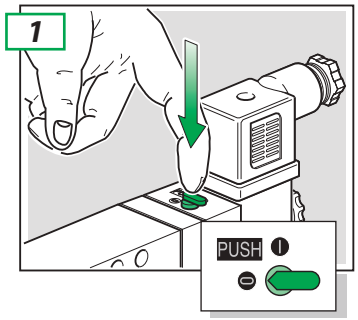


fig. 2

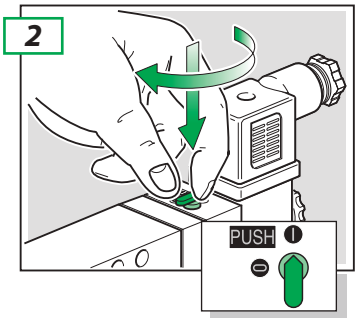
ACTUATED POSITION / *POSIZIONE DI LAVORO*

MANUAL OVERRIDING / *AZIONAMENTO COMANDO MANUALE*



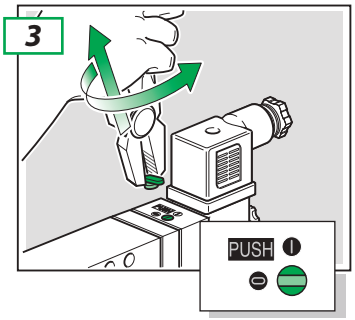
Push to actuated valve without locking. ***Relise the button to get back to normal position.***

Per azionare la valvola, durante la fase di collaudo con pressione in linea senza collegamento elettrico, premere la leva del comando manuale. ***Rilasciare per ripristinare la condizione di riposo.***



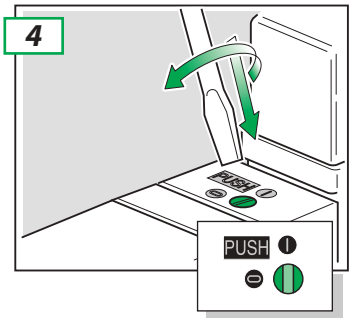
To active the valve permanently push the M/O (manual override) and rotate clockwise 90°. ***To return to normal position, push the M/O again and turn 90° anti-clockwise.***

Per azionare la valvola in modo permanente premere la leva del comando manuale e ruotare in senso orario sino alla posizione 1. ***Ruotare in senso antiorario per ripristinare la condizione di riposo.***



Should the M/O no longer be required, then turn the M/O anticlockwise until it breaks off.

Terminato il collaudo ruotare in senso antiorario la leva sino alla rottura.



Should the M/O be required after breaking off, then a screwdriver may be used.

Per interventi successivi sul comando manuale usare un adeguato cacciavite ed operare come al punto ***1*** *o* ***2****.*

SERIE **NM**

TECHNICAL FEATURES / *CARATTERISTICHE TECNICHE*

COMMON TECHNICAL FEATURES NM

Fixing	N° 2 Holes Ø 5,3	Medium	Filtered air
Port connections	G 1/4	Reference temperature	+20 °C
Flow section	Ø 8 mm	Reference pressure	6 bar
Environment temperature range	-10 °C / +50 °C	Nominal air flow	1080 Nl/min
Temperature range of medium	0 °C / +40 °C	Fluid conductance "C"	4,34 Nl/s bar
Lubrication	Not required	Critical pressure ratio "b"	0,212

PNEUMATIC VALVES FEATURES NM

NM32V1P - SR **NM52V1P - SR**	Nominal max frequence **Operating pressure range**	10 Hz **2,5 ÷ 10 bar**		**NM32V1P - PR** **NM52V1P - PR**	Nominal max frequence **Operating pressure range**	20 Hz **2,5 ÷ 10 bar**
NM32V2P - TP **NM52V2P - TP**	Nominal max frequence **Operating pressure range**	30 Hz **1,5 ÷ 10 bar**				

SOLENOID VALVES FEATURES NM

		AC	DC
NM32W1S - SR **NM52W1S - SR**	Nominal. max frequence	11 Hz	11 Hz
	Response time - swich ON	19 ms	21 ms
	Response time - swich OFF	35 ms	46 ms
	Operating pressure range	**2,5 ÷ 10 bar**	
NM32W2S - TP **NM52W2S - TP**	Nominal. max frequence	27 Hz	21 Hz
	Response time - swich ON	11 ms	14 ms
	Response time - swich OFF	11 ms	14 ms
	Operating pressure range	**1,5 ÷ 10 bar**	

		AC	DC
NM32W1S - PR **NM52W1S - PR**	Nominal. max frequence	16 Hz	13 Hz
	Response time - swich ON	18 ms	21 ms
	Response time - swich OFF	33 ms	44 ms
	Operating pressure range	**2,5 ÷ 10 bar**	

For electrical features solenoid pilot NAMUR serie pp. B-35 ÷ B-37.

CARATTERISTICHE TECNICHE COMUNI NM

Fissaggio	*N° 2 fori Ø 5,3*	*Fluido*	*Aria filtrata*
Connessioni	*G 1/4*	*Temperatura nominale*	*+20 °C*
Diametro nominale	*Ø 8 mm*	*Pressione nominale*	*6 bar*
Temperatura ambiente	*-10 °C / +50 °C*	*Portata nominale*	*1080 Nl/min*
Temperatura fluido	*0 °C / +40 °C*	*Valore conduttanza "C"*	*4,34 Nl/s bar*
Lubrificazione	*Non necessaria*	*Rapporto critico delle pressioni "b"*	*0,212*

CARATTERISTICHE VALVOLE PNEUMATICHE NM

NM32V1P - SR **NM52V1P - SR**	*Frequenza max nominale* ***Pressione di esercizio***	*10 Hz* ***2,5 ÷ 10 bar***		**NM32V1P - PR** **NM52V1P - PR**	*Frequenza max nominale* ***Pressione di esercizio***	*20 Hz* ***2,5 ÷ 10 bar***
NM32V2P - TP **NM52V2P - TP**	*Frequenza max nominale* ***Pressione di esercizio***	*30 Hz* ***1,5 ÷ 10 bar***				

CARATTERISTICHE ELETTROVALVOLE NM

		AC	DC
NM32W1S - SR **NM52W1S - SR**	*Frequenza max nominale*	*11 Hz*	*11 Hz*
	Tempo medio di risposta in eccitazione	*19 ms*	*21 ms*
	Tempo medio di risposta in diseccitazione	*35 ms*	*46 ms*
	Pressione di esercizio	***2,5 ÷ 10 bar***	
NM32W2S - TP **NM52W2S - TP**	*Frequenza max nominale*	*27 Hz*	*21 Hz*
	Tempo medio di risposta in eccitazione	*11 ms*	*14 ms*
	Tempo medio di risposta in diseccitazione	*11 ms*	*14 ms*
	Pressione di esercizio	***1,5 ÷ 10 bar***	

		AC	DC
NM32W1S - PR **NM52W1S - PR**	*Frequenza max nominale*	*16 Hz*	*13 Hz*
	Tempo medio di risposta in eccitazione	*18 ms*	*21 ms*
	Tempo medio di risposta in diseccitazione	*33 ms*	*44 ms*
	Pressione di esercizio	***2,5 ÷ 10 bar***	

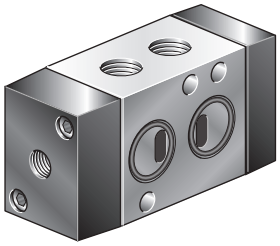
***Caratteristiche elettriche bobina per elettrovalvole serie* NAMUR *vedi pp.* B-35 ÷ B-37.**

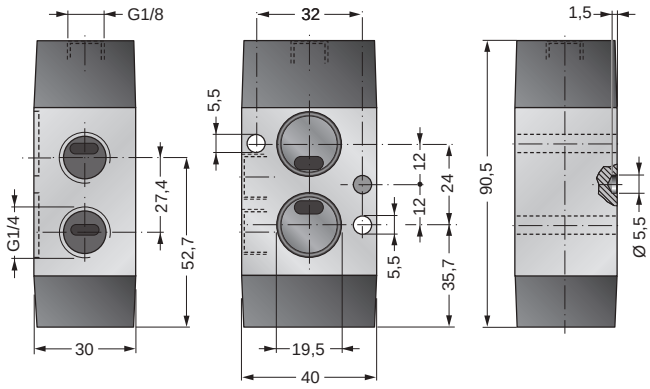
VALVE / *VALVOLA* 3/2

SINGLE PNEUMATIC PILOT - SPRING RETURN

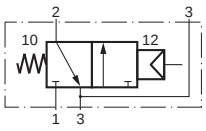
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA MECCANICA

NM32V1P - SR

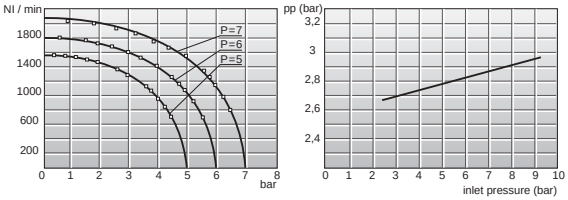




SIMBOL / *SIMBOLO*



DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

PILOT PRESSURE / INLET PRESSURE

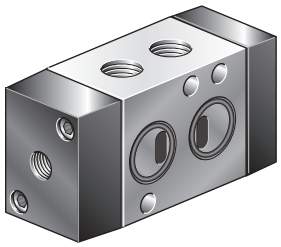
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO IN RELAZIONE ALLA PRESSIONE DI ALIMENTAZIONE

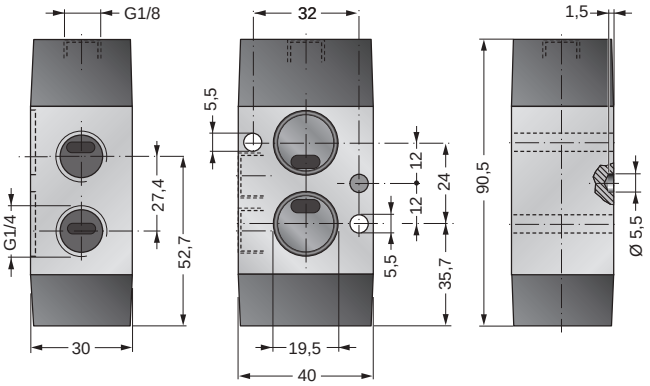
VALVE / *VALVOLA* 3/2

SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN

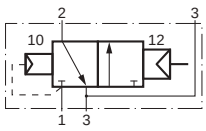
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA PNEUMATICA

NM32V1P - PR

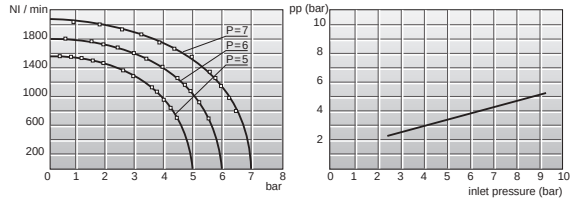




SIMBOL / *SIMBOLO*



DIAGRAMS / *DIAGRAMMI*



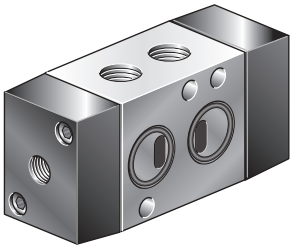
AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

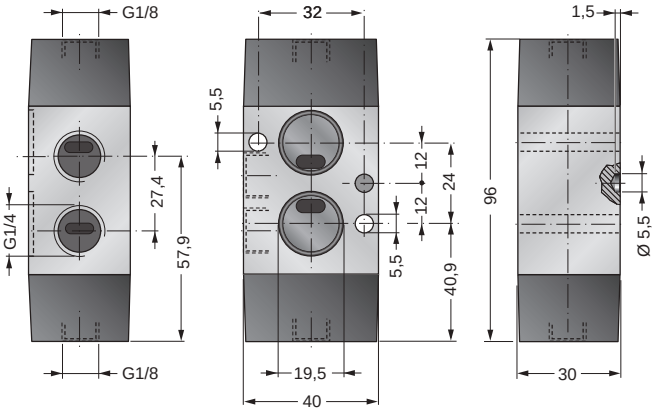
PILOT PRESSURE / INLET PRESSURE

DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO IN RELAZIONE ALLA PRESSIONE DI ALIMENTAZIONE

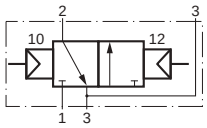
NM32V2P - TP



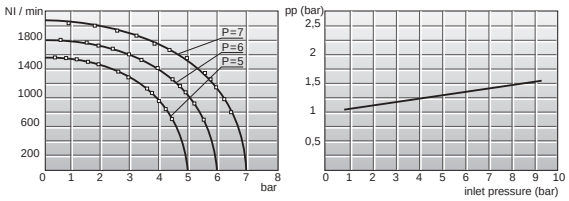
VALVE / *VALVOLA* 3/2
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO



SIMBOL / *SIMBOLO*



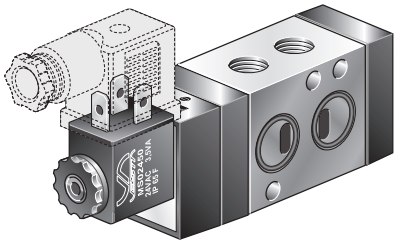
DIAGRAMS / *DIAGRAMMI*



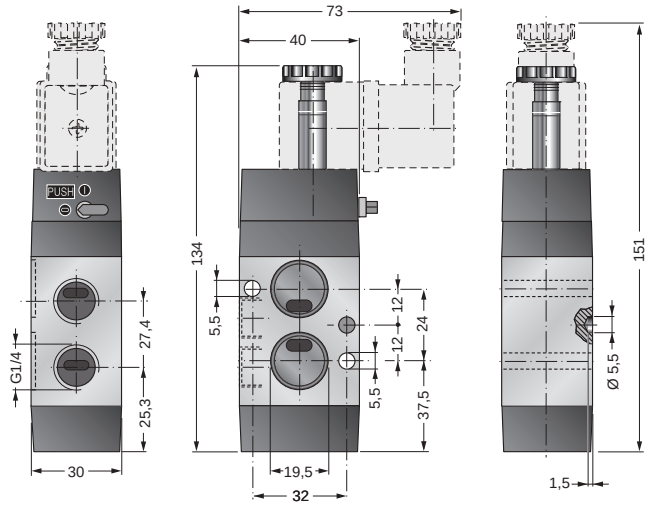
AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

PILOT PRESSURE / INLET PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO IN RELAZIONE ALLA PRESSIONE DI ALIMENTAZIONE

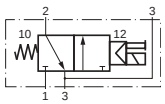
NM32W1S - .R - .....



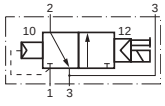
VALVE / *VALVOLA* 3/2
SOLENOID VALVE
COMANDO ELETTROPNEUMATICO



SIMBOLS / *SIMBOLI*

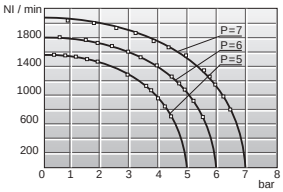


NM32W1S-SR-.....



NM32W1S-PR-.....

DIAGRAM / *DIAGRAMMA*



AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

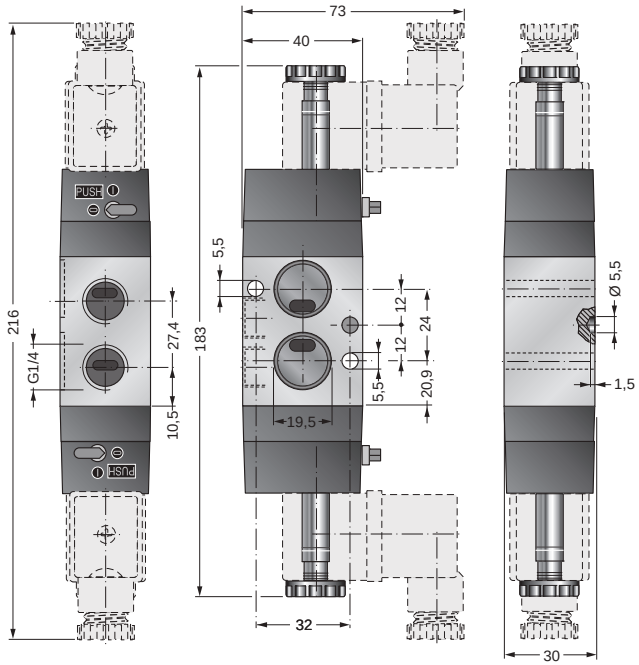
CODES / *CODICI*

Ordination code *Codice ordinazione*	**Voltage** *Tensione*
NM32W1S - .R - 00000	No coil / *Senza solenoide*
NM32W1S - .R - 01200	12 V DC
NM32W1S - .R - 02400	24 V DC
NM32W1S - .R - 02450	24 V 50/60Hz AC
NM32W1S - .R - 11050	110 V 50/60Hz AC
NM32W1S - .R - 22050	220 V 50/60Hz AC

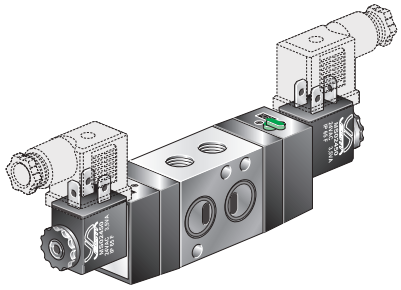
VALVE / *VALVOLA* 3/2

DOUBLE SOLENOID VALVE

DOPPIO COMANDO ELETTROPNEUMATICO



NM32W2S - TP - .....



SIMBOL / *SIMBOLO*

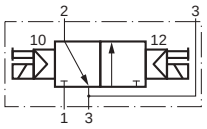
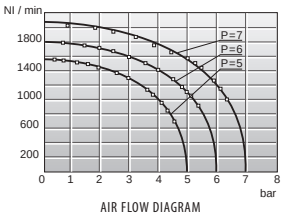


DIAGRAM / *DIAGRAMMA*



AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

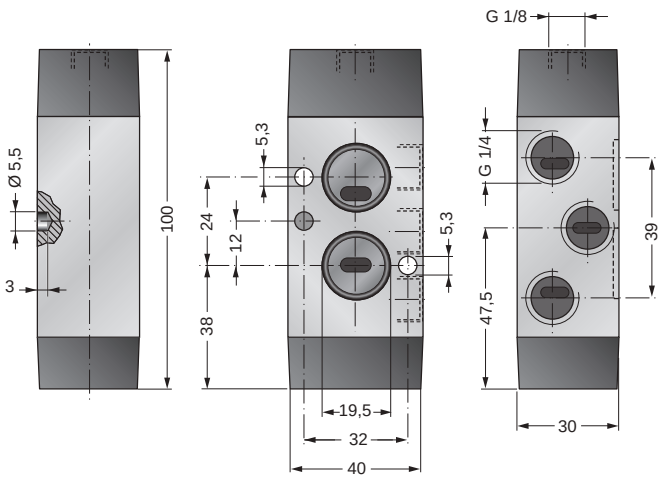
CODES / *CODICI*

Ordination code *Codice ordinazione*	Voltage *Tensione*
NM32W2S - TP - 00000	No coils / *Senza solenoidi*
NM32W2S - TP - 01200	12 V DC
NM32W2S - TP - 02400	24 V DC
NM32W2S - TP - 02450	24 V 50/60Hz AC
NM32W2S - TP - 11050	110 V 50/60Hz AC
NM32W2S - TP - 22050	220 V 50/60Hz AC

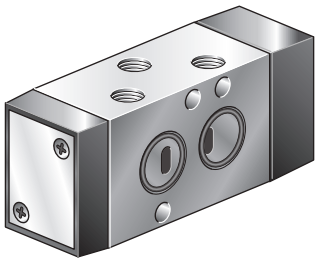
VALVE / *VALVOLA* 5/2

SINGLE PNEUMATIC PILOT - SPRING RETURN

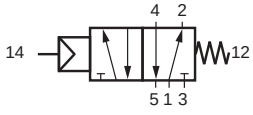
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA MECCANICA



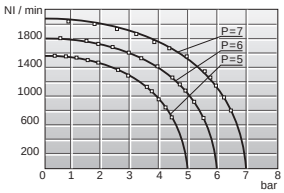
NM52V1P - SR



SIMBOL / *SIMBOLO*

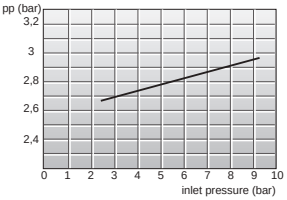


DIAGRAMS / *DIAGRAMMI*



AIR FLOW DIAGRAM

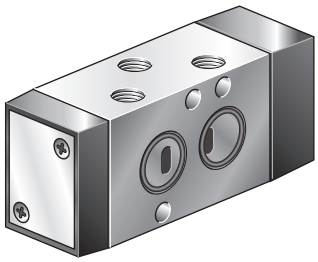
DIAGRAMMA DELLE PORTATE



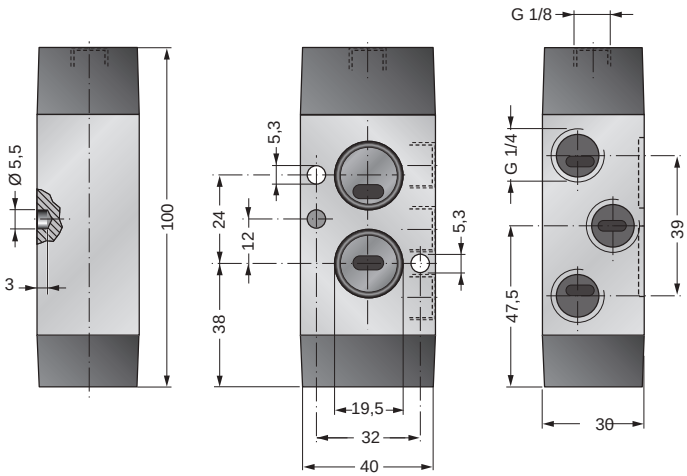
PILOT PRESSURE / INLET PRESSURE

DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO IN RELAZIONE ALLA PRESSIONE DI ALIMENTAZIONE

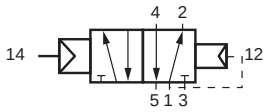
NM52V1P - PR



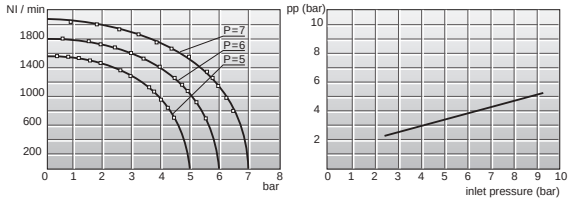
VALVE / *VALVOLA* 5/2
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA PNEUMATICA



SIMBOL / *SIMBOLO*



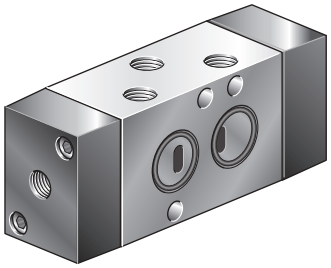
DIAGRAMS / *DIAGRAMMI*



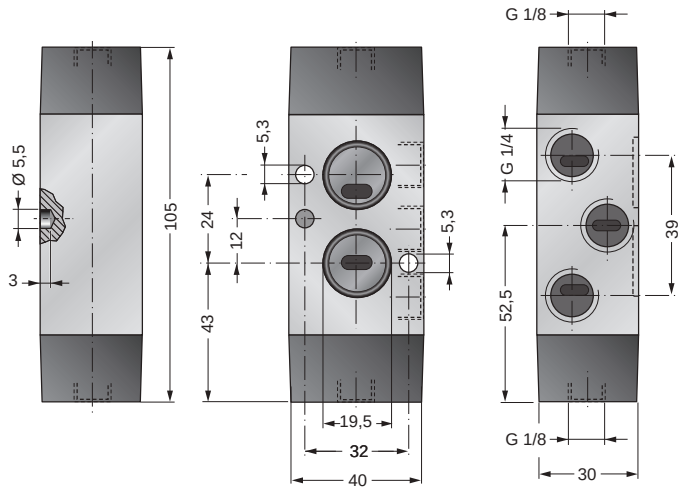
AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

PILOT PRESSURE / INLET PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO IN RELAZIONE ALLA PRESSIONE DI ALIMENTAZIONE

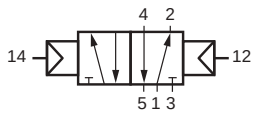
NM52V2P - TP



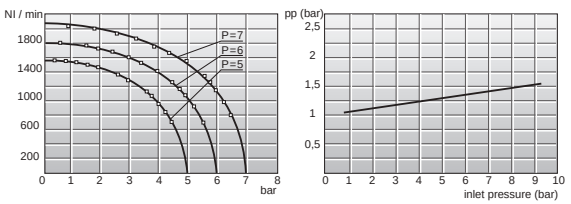
VALVE / *VALVOLA* 5/2
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO



SIMBOL / *SIMBOLO*



DIAGRAMS / *DIAGRAMMI*



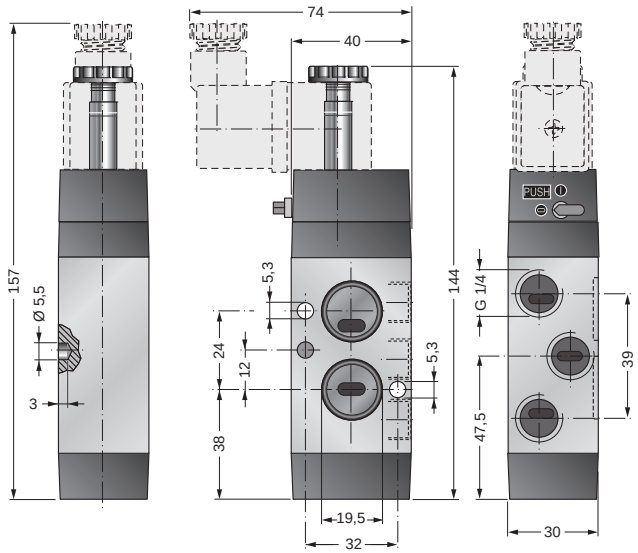
AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

PILOT PRESSURE / INLET PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO IN RELAZIONE ALLA PRESSIONE DI ALIMENTAZIONE

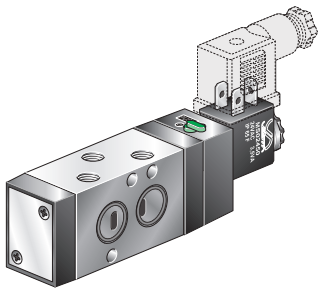
VALVE / *VALVOLA* 5/2

SOLENOID VALVE - SPRING RETURN

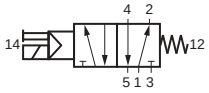
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO A MOLLA MECCANICA



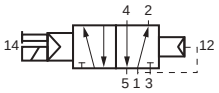
NM52W1S - .R -.....



SIMBOLS / *SIMBOLI*

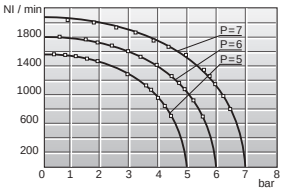


NM52W1S-SR-.....



NM52W1S-PR-.....

DIAGRAM / *DIAGRAMMA*



AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

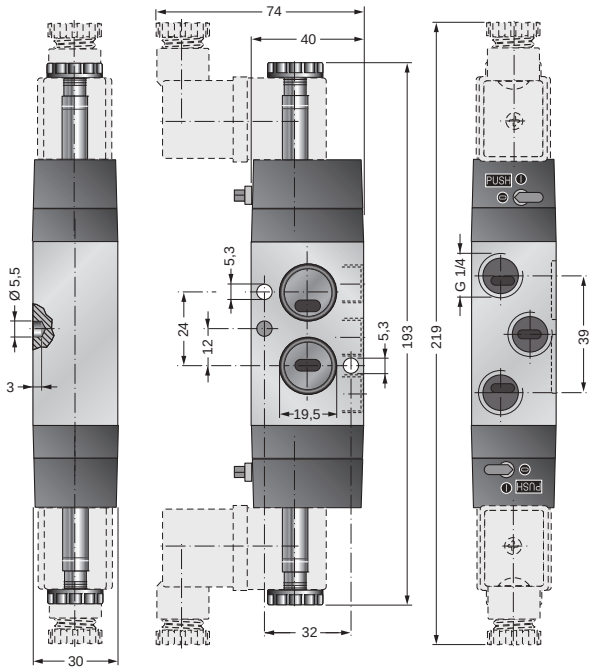
CODES / *CODICI*

Ordination code	Voltage
NM52W1S - .R - 00000	No coil / *Senza solenoide*
NM52W1S - .R - 01200	12 V DC
NM52W1S - .R - 02400	24 V DC
NM52W1S - .R - 02450	24 V 50/60Hz AC
NM52W1S - .R - 11050	110 V 50/60Hz AC
NM52W1S - .R - 22050	220 V 50/60Hz AC

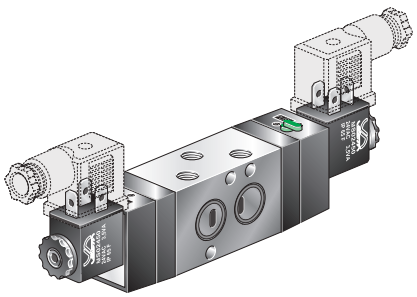
VALVE / 5/2

DOUBLE SOLENOID VALVE

DOPPIO COMANDO ELETTROPNEUMATICO



NM52W2S TP -.....



SIMBOL / *SIMBOLO*

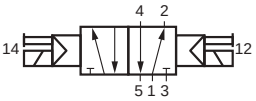
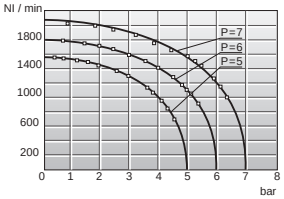


DIAGRAM / *DIAGRAMMA*



AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

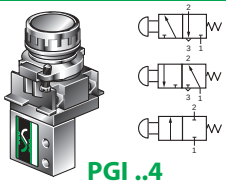
CODES / *CODICI*

Ordination code *Codice ordinazione*	Voltage *Tensione*
NM52W2S - TP - 00000	No coils / *Senza solenoidi*
NM52W2S - TP - 01200	12 V DC
NM52W2S - TP - 02400	24 V DC
NM52W2S - TP - 02450	24 V 50/60Hz AC
NM52W2S - TP - 11050	110 V 50/60Hz AC
NM52W2S - TP - 22050	220 V 50/60Hz AC

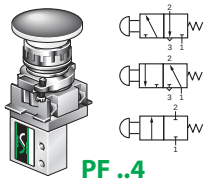
INDEX / *INDICE*

MANUAL VALVES / *VALVOLE A COMANDO MANUALE*

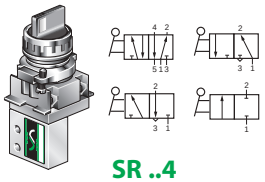
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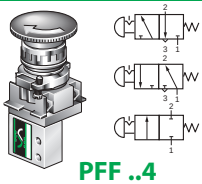
PGI ..4
PUSH BUTTON, SPRING RETURN
COMANDO A PULSANTE



PF ..4
MUSHROOM PUSH BUTTON, SPRING RETURN
COMANDO A FUNGO

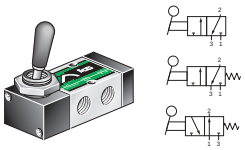


SR ..4
SHORT LEVER SELECTOR, MANUAL RETURN
COMANDO A SELETTORE

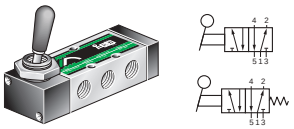


PFF ..4
EMERGENCY PUSH BUTTON
PULSANTE D' EMERGENZA

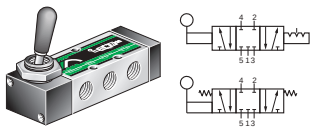
pag. B-103



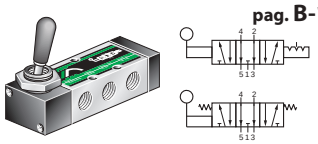
VCML32..8
VALVE 3/2, LEVER VALVE
VALVOLA 3/2, *COMANDO A LEVA*



VCML52.18
VALVE 5/2, LEVER VALVE
VALVOLA 5/2, *COMANDO A LEVA*

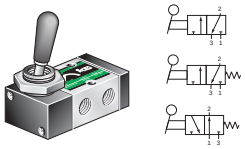


VCML536.8
VALVE 5/3, LEVER VALVE
VALVOLA 5/3, *COMANDO A LEVA*

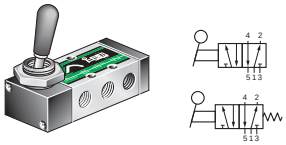


VCML539.8
VALVE 5/3, LEVER VALVE
VALVOLA 5/3, *COMANDO A LEVA*

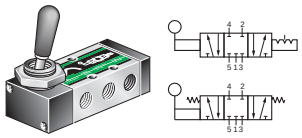
pag. B-103



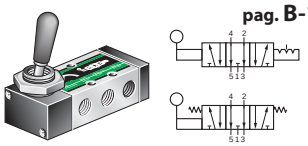
VCML32..4
VALVE 3/2, LEVER VALVE
VALVOLA 3/2, *COMANDO A LEVA*



VCML52.14
VALVE 5/2, LEVER VALVE
VALVOLA 5/2, *COMANDO A LEVA*

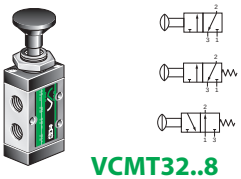


VCML536.4
VALVE 5/3, LEVER VALVE
VALVOLA 5/3, *COMANDO A LEVA*

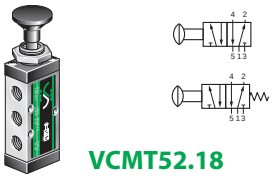


VCML539.4
VALVE 5/3, LEVER VALVE
VALVOLA 5/3, *COMANDO A LEVA*

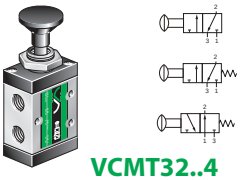
pag. B-104



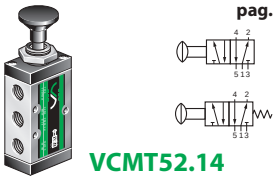
VCMT32..8
VALVE 3/2, BUTTON VALVE
VALVOLA 3/2, *COMANDO A TIRETTO*



VCMT52.18
VALVE 3/2, BUTTON VALVE
VALVOLA 3/2, *COMANDO A TIRETTO*

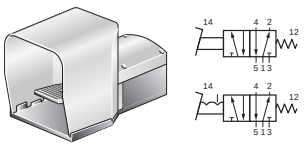


VCMT32..4
VALVE 3/2, BUTTON VALVE
VALVOLA 3/2, *COMANDO A TIRETTO*

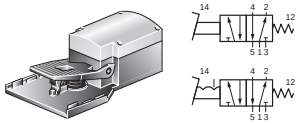


VCMT52.14
VALVE 3/2, BUTTON VALVE
VALVOLA 3/2, *COMANDO A TIRETTO*

pag. B-105



VFPP52..4
PORT CONNECTION G1/4 - FOOT-PEDAL VALVE
CONNESSIONI G1/4 - *COMANDO A PEDALE*



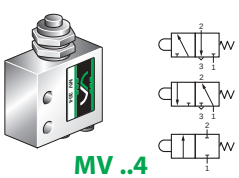
VFP52..4
PORT CONNECTION G1/4 - FOOT-PEDAL VALVE
CONNESSIONI G1/4 - *COMANDO A PEDALE*



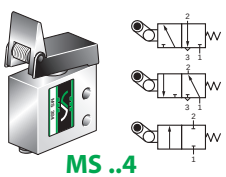
VFPMA304
PORT CONNECTION Ø4 - FOOT-PEDAL VALVE
CONNESSIONI Ø4 - *COMANDO A PEDALE*

MECHANICAL VALVES / *VALVOLE A COMANDO MECCANICO*

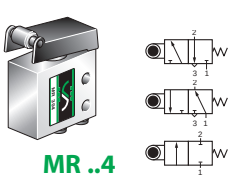
pag. B-106



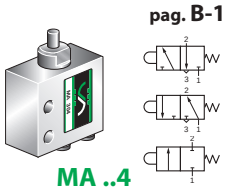
MV ..4
MECHANICAL VALVE
MICROVALVOLA FINECORSA



MS ..4
MECHANICAL VALVE
MICROVALVOLA FINECORSA

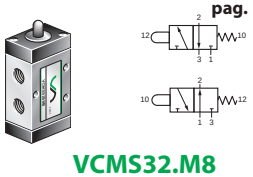


MR ..4
MECHANICAL VALVE
MICROVALVOLA FINECORSA



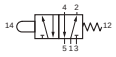
MA ..4
MECHANICAL VALVE
MICROVALVOLA FINECORSA

pag. B-107

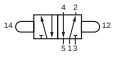


VCMS32.M8
VALVE 3/2, CAM ACTUATED VALVE
VALVOLA 3/2, *COMANDO A PUNTALE*

MECHANICAL VALVES / *VALVOLE A COMANDO MECCANICO*

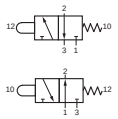



VCMS52M18
VALVE 5/2, CAM ACTUATED VALVE
VALVOLA 5/2, *COMANDO A PUNTALE*

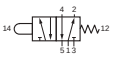



VCMS52S18
VALVE 5/2, CAM ACTUATED VALVE
VALVOLA 5/2, *COMANDO A PUNTALE*

pag. B-107

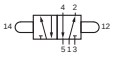



VCMS32.M4
VALVE 3/2, CAM ACTUATED VALVE
VALVOLA 3/2, *COMANDO A PUNTALE*

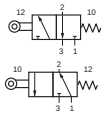



VCMS52M14
VALVE 5/2, CAM ACTUATED VALVE
VALVOLA 5/2, *COMANDO A PUNTALE*

pag. B-108

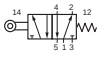



VCMS52S14
VALVE 5/2, CAM ACTUATED VALVE
VALVOLA 5/2, *COMANDO A PUNTALE*

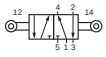



VCLR32.M8
VALVE 3/2, ROLLER-LEVER VALVE
VALVOLA 3/2, *COMANDO A RULLO*

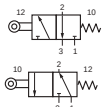
pag. B-108

VCLR52M18
VALVE 5/2, ROLLER-LEVER VALVE
VALVOLA 5/2, *COMANDO A RULLO*

VCLR52018
VALVE 5/2, DUAL ROLLER-LEVER VALVE
VALVOLA 5/2, DOPPIO *COMANDO A RULLO*

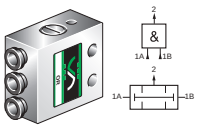
VCLL32.M8
LATERAL ROLLER-LEVEL VALVE
VALVOLA AD AZIONAMENTO LEVA-RULLO LATERALE

pag. B-109

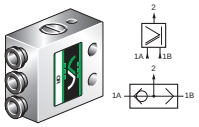



VCLL52M18
LATERAL ROLLER-LEVEL VALVE
VALVOLA AD AZIONAMENTO LEVA-RULLO LATERALE

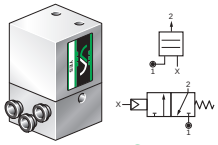
AUTOMATIC VALVES / *VALVOLE AUTOMATICHE*



AND
LOGIC ELEMENT "AND" FUNCTION
UNITA' LOGICA FUNZIONE "AND"

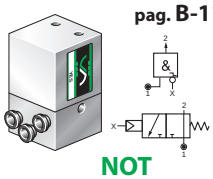


OR
LOGIC ELEMENT "OR" FUNCTION
UNITA' LOGICA FUNZIONE "OR"

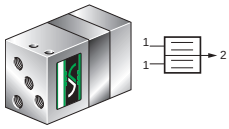


YES
LOGIC ELEMENT "YES" FUNCTION
UNITA' LOGICA FUNZIONE "YES"

pag. B-110

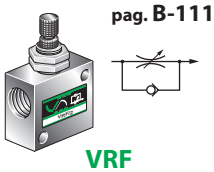


NOT
LOGIC ELEMENT "NOT" FUNCTION
UNITA' LOGICA FUNZIONE "NOT"



SBI
TWO - HAND SAFETY VALVE
SICUREZZA BIMANUALE

pag. B-111



VRF
FLOW REGULATORS
REGOLATORE DI FLUSSO

MANUAL - MECHANICAL OPERATED VALVES / *VALVOLE MANUALI MECCANICHE*

The choice of high quality materials and the technical solution adopted allows to the VESTA valves to reach good performances even in harsh environmental conditions. The spool is made in stainless steel. Its particular shape allows high nominal flow rates, and the combination with self lubricating lip rubber seals, reduce internal friction and provides the valve with a long lasting durable life span.
VESTA manual valves can operate continuosly without lubrication.

Le valvole manuali e meccaniche VESTA sono disponibili in una vasta gamma di modelli e di taglie.
Le soluzioni tecniche adottate ed i materiali impiegati hanno permesso di realizzare un prodotto che presenta elevate prestazioni funzionali anche in condizioni di impiego particolarmente gravose. La combinazione tra la spola in acciaio inox e le guarnizioni in elastomero nitrilico con profilo del labbro anti-usura, permette, accanto ad una riduzione degli attriti, un' alta velocità di scambio e cicli di lavoro elevati, garantendo una maggiore durata della meccanica interna. Tutti i modelli di valvole possono essere utilizzati anche in assenza di lubrificazione.

TECHNICAL FEATURES / *CARATTERISTICHE TECNICHE*

SERIE **VC..**

COMMON TECHNICAL FEATURES VALVES VCM - VCP - VCLR - VCLL

Fixing	n°3 holes Ø 4,3
Port connection	G1/8 G1/4
Flow section	Ø 6 mm for G1/8 Ø 8 mm for G1/4
Ambient temperature range	-10 °C ÷ +50 °C
Temperature range of medium	0 °C ÷ +40 °C
Lubrication	Not required
Medium	Filtered air
Operating pressure range	0 ÷ 10 bar
Reference temperature	+20 °C
Reference pressure	6 bar
Nominal air flow	650 Nl/min for G1/8 1080 Nl/min for G1/4

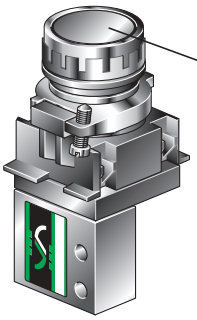
CARATTERISTICHE COMUNI VALVOLE VCM - VCP - VCLR - VCLL

Fissaggio	*n°3 fori laterali Ø 4,3*
Connessioni	*G1/8* *G1/4*
Diametro nominale	*Ø 6 mm per G1/8* *Ø 8 mm per G1/4*
Temperatura ambiente	*-10 °C ÷ +50 °C*
Temperatura fluido	*0 °C ÷ +40 °C*
Lubrificazione	*Non necessaria*
Fluido	*Aria filtrata*
Pressione d'esercizio	*0 ÷ 10 bar*
Temperatura nominale	*+20 °C*
Pressione nominale	*6 bar*
Portata nominale	*650 Nl/min per G1/8* *1080 Nl/min per G1/4*

MANUAL MICROVALVES PUSH-IN Ø4 mm / *MICROVALVOLE TUBO Ø4 mm*

PGI ..4

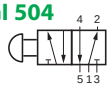
PUSH BUTTON - SPRING RETURN
COMANDO A PULSANTE



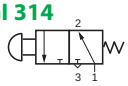
PGI ..4 R
Red - *Rosso*

PGI ..4 B
Black - *Nero*

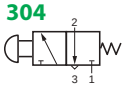
PGI 504



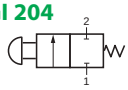
PGI 314

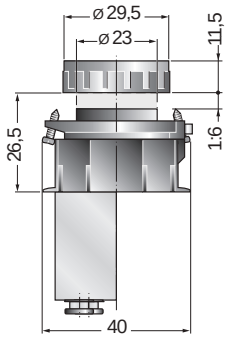


PGI 304



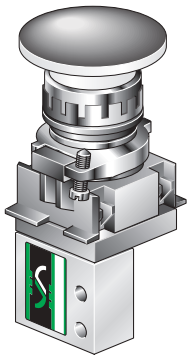
PGI 204



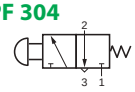


PF ..4

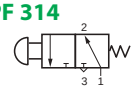
MUSHROOM PUSH BUTTON - SPRING RETURN
COMANDO A FUNGO



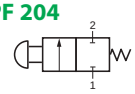
PF 304

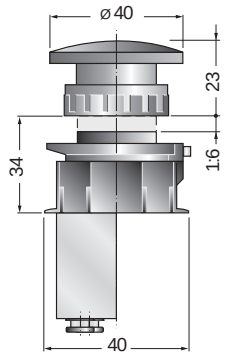


PF 314



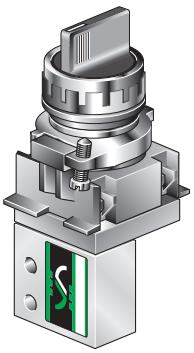
PF 204



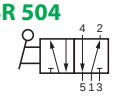


SR ..4

SHORT LEVER SELECTOR - MANUAL RETURN
COMANDO A SELETTORE



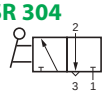
SR 504



SR 314

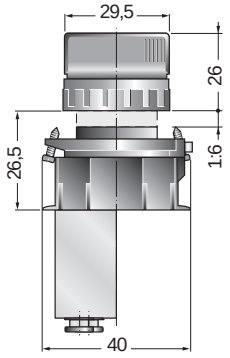


SR 304



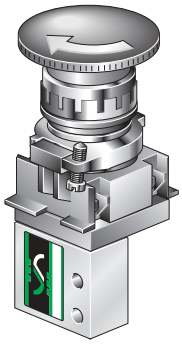
SR 204



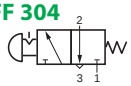


PFF ..4

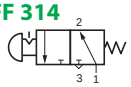
EMERGENCY PUSH BUTTON
PULSANTE D' EMERGENZA



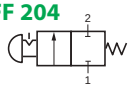
PFF 304

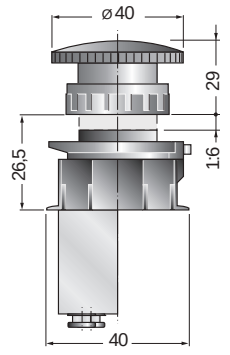


PFF 314



PFF 204





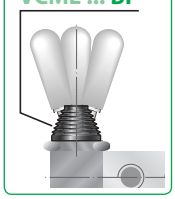
LEVER VALVES / *VALVOLE COMANDO A LEVA*

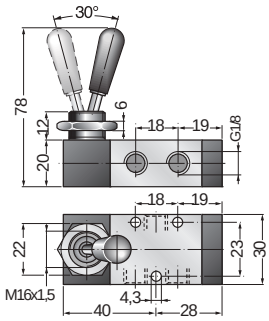
PORT CONNECTION G1/8 - LEVER VALVE
CONNESSIONI G1/8 - COMANDO MANUALE A LEVA

VCML32..8

VALVE / *VALVOLA 3/2*

on request bellow protection
a richiesta soffietto di protezione
VCML ... BP

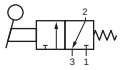




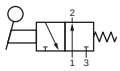
VCML32018

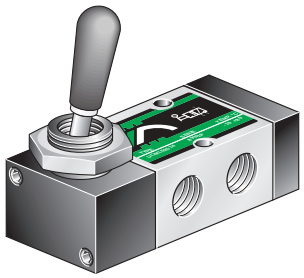


VCML326M8



VCML329M8

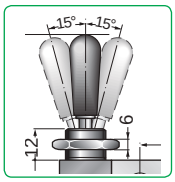




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Disponibile con soffietto di protezione

PORT CONNECTION G1/8 - LEVER VALVE
CONNESSIONI G1/4 - COMANDO MANUALE A LEVA

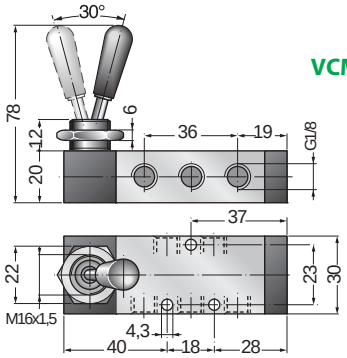
VCML5 ... 8



on request bellow protection
a richiesta soffietto di protezione
VCML ... BP



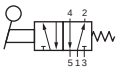
VALVE / *VALVOLA 5/2 - 5/3*



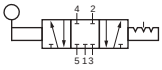
VCML52018



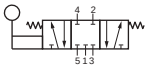
VCML52M18



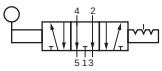
VCML53618



VCML536M8

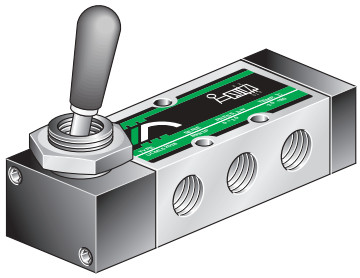


VCML53918



VCML539M8





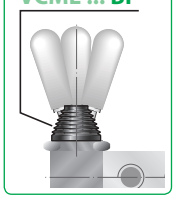
Available with rubber bellow protection
Disponibile con soffietto di protezione

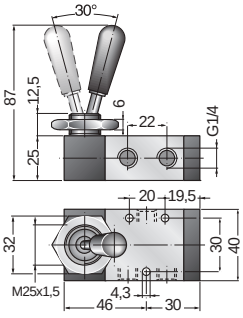
PORT CONNECTION G1/4 - LEVER VALVE
CONNESSIONI G1/4 - COMANDO MANUALE A LEVA

VCML32..4

VALVE /*VALVOLA 3/2*

on request bellow protection
a richiesta soffietto di protezione
VCML ... BP

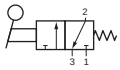




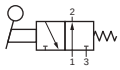
VCML32014

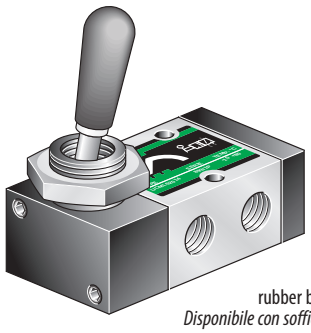


VCML326M4



VCML329M4

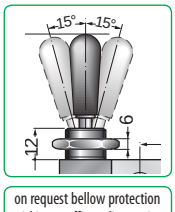




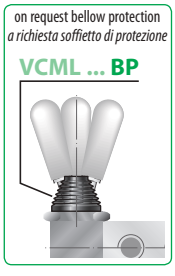
Available with
rubber bellow protection
Disponibile con soffietto di protezione

PORT CONNECTION G1/4 - LEVER VALVE
CONNESSIONI G1/4 - COMANDO MANUALE A LEVA

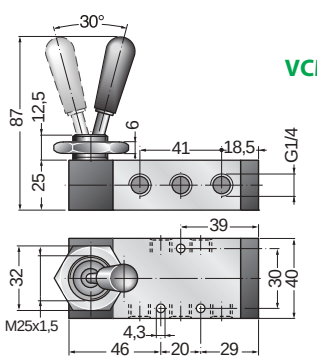
VCML5 ... 4



on request bellow protection
a richiesta soffietto di protezione
VCML ... BP



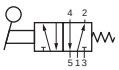
VALVE /*VALVOLA 5/2 - 5/3*



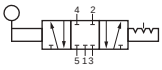
VCML52014



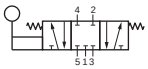
VCML52M14



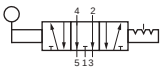
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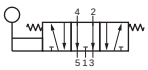
VCML536M4

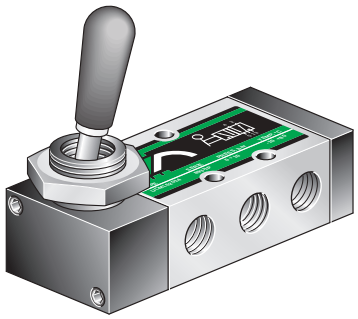


VCML53914



VCML539M4





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BUTTON VALVES / *VALVOLE COMANDO A TIRETTO*

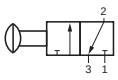
VCMT32..8

PORT CONNECTION G1/8 - BUTTON VALVE
CONNESSIONI G1/8 - COMANDO A TIRETTO

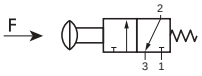


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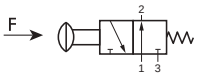
VCMT32018



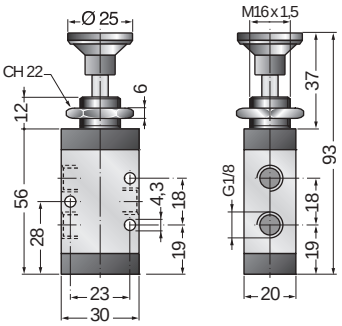
VCMT326M8



VCMT329M8



VALVE /*VALVOLA 3/2*



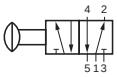
VCMT52.18

PORT CONNECTION G1/8 - BUTTON VALVE
CONNESSIONI G1/8 - COMANDO A TIRETTO

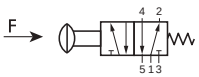


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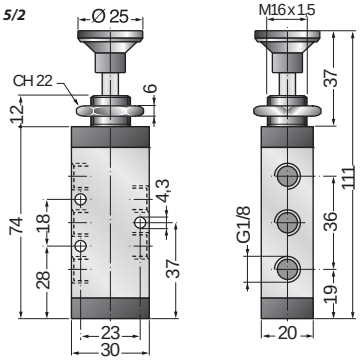
VCMT52018



VCMT52M18



VALVE /*VALVOLA 5/2*



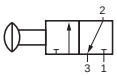
VCMT32..4

PORT CONNECTION G1/4 - BUTTON VALVE
CONNESSIONI G1/4 - COMANDO A TIRETTO

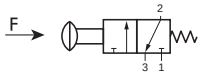


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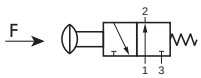
VCMT32014



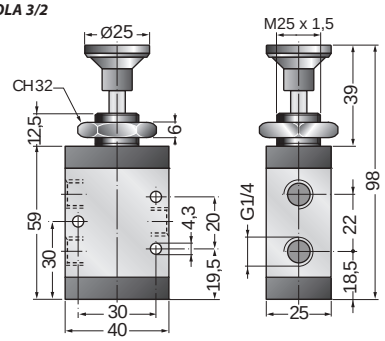
VCMT326M4



VCMT329M4



VALVE /*VALVOLA 3/2*



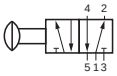
VCMT52.14

PORT CONNECTION G1/4 - BUTTON VALVE
CONNESSIONI G1/4 - COMANDO A TIRETTO

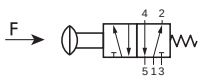


F min = 40N
F max = 60N

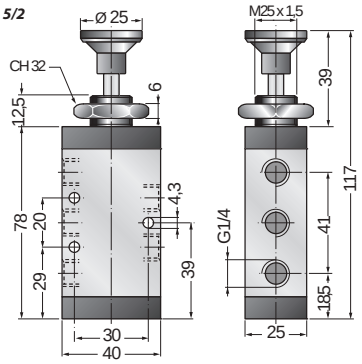
VCMT52014



VCMT52M14



VALVE /*VALVOLA 5/2*

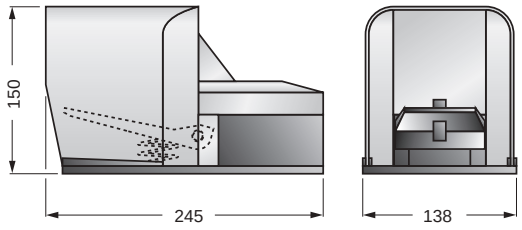


FOOT-PEDAL VALVES / *VALVOLE COMANDO A PEDALE*

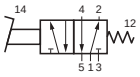
PORT CONNECTION G1/4 - FOOT-PEDAL VALVE
CONNESSIONI G1/4 - COMANDO A PEDALE

VFPP52..4

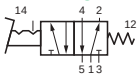
VALVE /*VALVOLA 5/2*

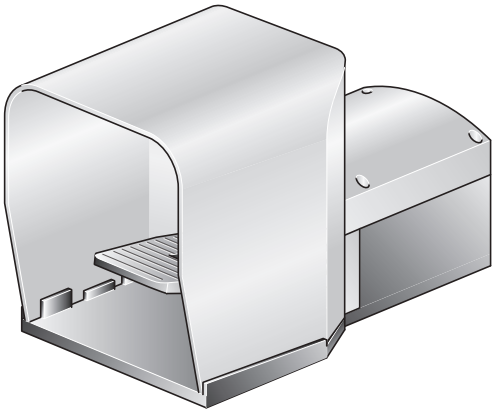


VFPP52M14



VFPP52FP4

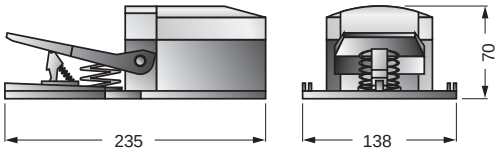




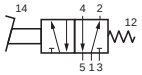
PORT CONNECTION G1/4 - FOOT-PEDAL VALVE
CONNESSIONI G1/4 - COMANDO A PEDALE

VFP52..4

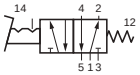
VALVE /*VALVOLA 5/2*

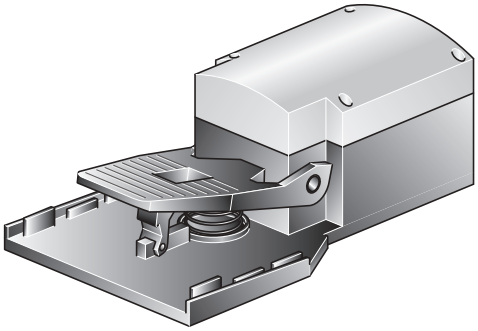


VFP52M14



VFP52FP4

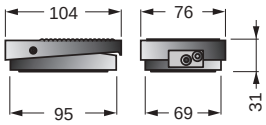




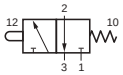
PORT CONNECTION Ø4 - FOOT-PEDAL VALVE
CONNESSIONI Ø4 - COMANDO A PEDALE

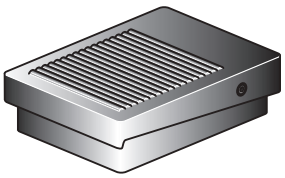
VFPMA304

VALVE /*VALVOLA 3/2*



VFPMA304

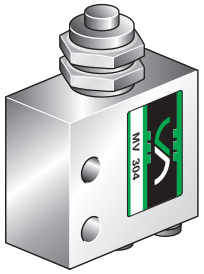




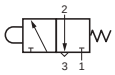
MECHANICAL MICROVALVES PUSH-IN Ø4 mm / *VALVOLE A COMANDO MECCANICO TUBO Ø4 mm*

MV ..4

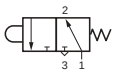
MECHANICAL VALVE
MICROVALVOLA FINECORSA



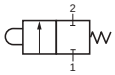
MV 304



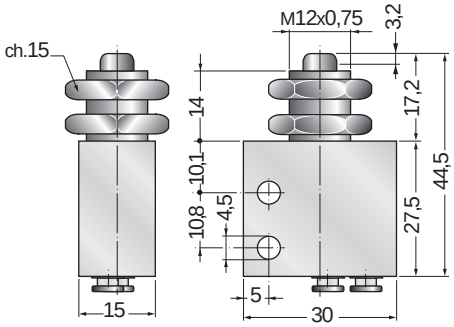
MV 314



MV 204

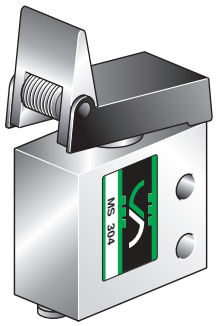


VALVE /*VALVOLA 3/2 e 2/2*

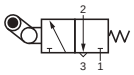


MS ..4

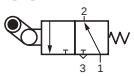
MECHANICAL VALVE
MICROVALVOLA FINECORSA



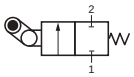
MS 304



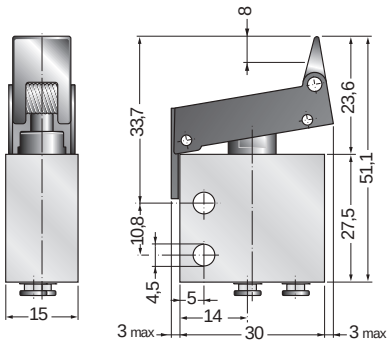
MS 314



MS 204

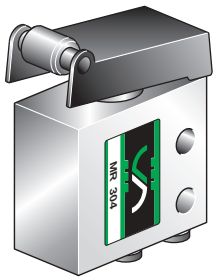


VALVE /*VALVOLA 3/2 e 2/2*

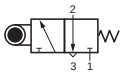


MR ..4

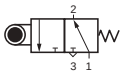
MECHANICAL VALVE
MICROVALVOLA FINECORSA



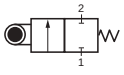
MR 304



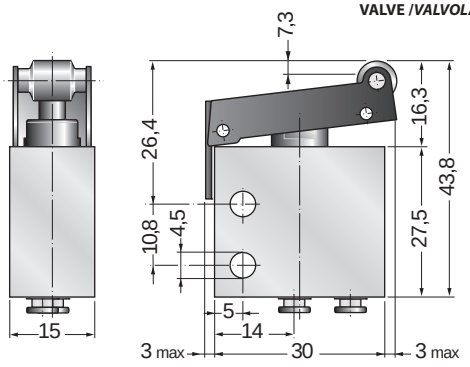
MR 314



MR 204

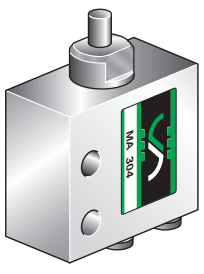


VALVE /*VALVOLA 3/2 e 2/2*

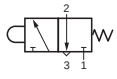


MA ..4

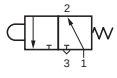
MECHANICAL VALVE
MICROVALVOLA FINECORSA



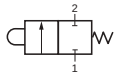
MA 304



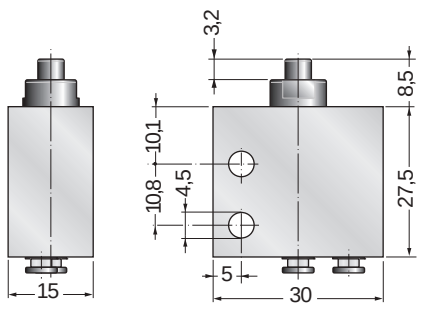
MA 314



MA 204



VALVE /*VALVOLA 3/2 e 2/2*

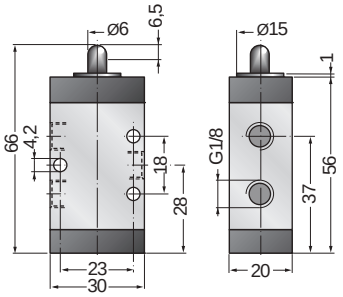


CAM ACTUATED VALVES G1/8 / *VALVOLE COMANDO A PUNTALE G1/8*

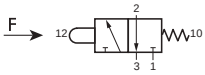
VALVE /*VALVOLA 3/2*

PORT CONNECTION G1/8 - CAM ACTUATED VALVE
CONNESSIONI G1/8 - COMANDO A PUNTALE

VCMS32.M8

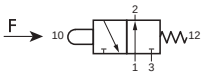


VCMS326M8



F min = 20N
F max = 40N

VCMS329M8

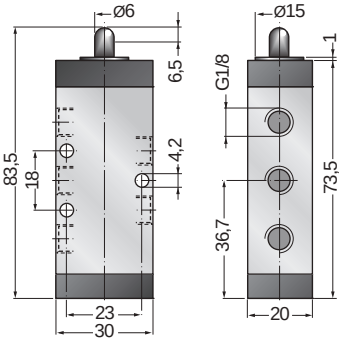




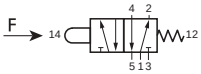
VALVE /*VALVOLA 5/2*

PORT CONNECTION G1/8 - CAM ACTUATED VALVE
CONNESSIONI G1/8 - COMANDO A PUNTALE

VCMS52M18



VCMS52M18



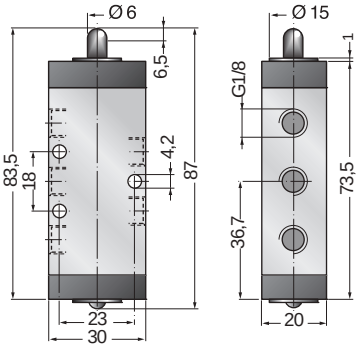
F min = 20N
F max = 40N



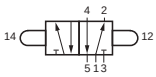
VALVE /*VALVOLA 5/2*

PORT CONNECTION G1/8 - CAM ACTUATED VALVE
CONNESSIONI G1/8 - COMANDO A PUNTALE

VCMS52S18



VCMS52S18



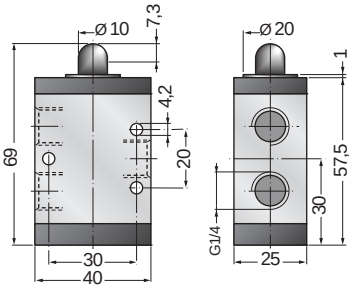


CAM ACTUATED VALVES G1/4 / *VALVOLE COMANDO A PUNTALE G1/4*

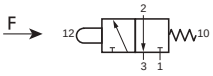
VALVE /*VALVOLA 3/2*

PORT CONNECTION G1/4 - CAM ACTUATED VALVE
CONNESSIONI G1/4 - COMANDO A PUNTALE

VCMS32.M4

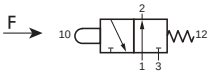


VCMS326M4



F min = 40N
F max = 60N

VCMS329M4



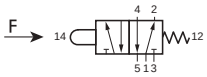


VCMS52M14

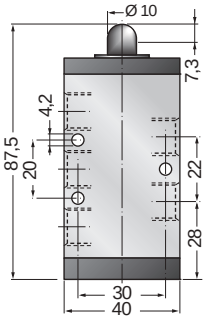
PORT CONNECTION G1/4 - CAM ACTUATED VALVE
CONNESSIONI G1/4 - COMANDO A PUNTALE

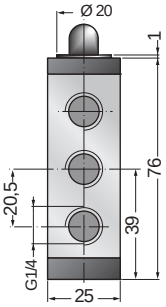


VCMS52M14



F min = 40N
F max = 60N





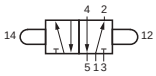
VALVE /*VALVOLA 5/2*

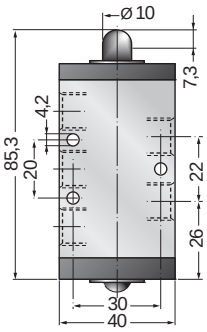
VCMS52S14

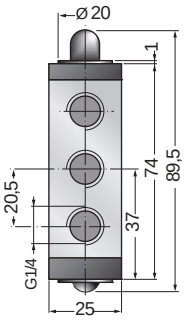
PORT CONNECTION G1/4 - CAM ACTUATED VALVE
CONNESSIONI G1/4 - COMANDO A PUNTALE



VCMS52S14







VALVE /*VALVOLA 5/2*

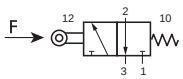
ROLLER-LEVER MECHANICAL VALVES / *VALVOLE AD AZIONAMENTO MECCANICO A LEVA-RULLO*

VCLR32 . M8

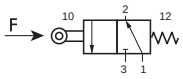
ROLLER-LEVER VALVE
VALVOLA AD AZIONAMENTO LEVA-RULLO



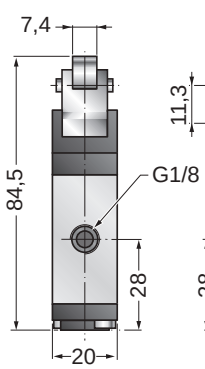
VCLR326M8

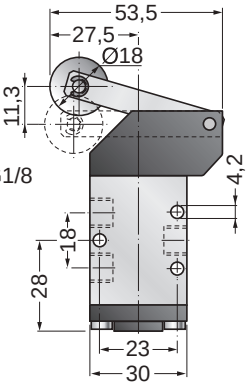


VCLR329M8



F min = 10N
F max = 20N





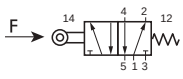
VALVE /*VALVOLA 3/2*

VCLR52M18

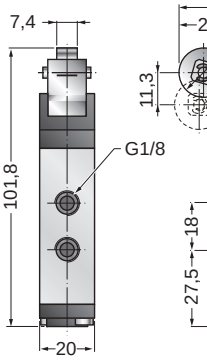
ROLLER-LEVER VALVE
VALVOLA AD AZIONAMENTO LEVA-RULLO

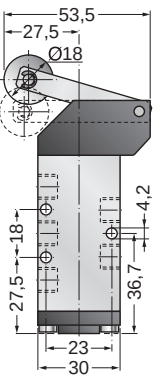


VCLR52M18



F min = 10N
F max = 20N



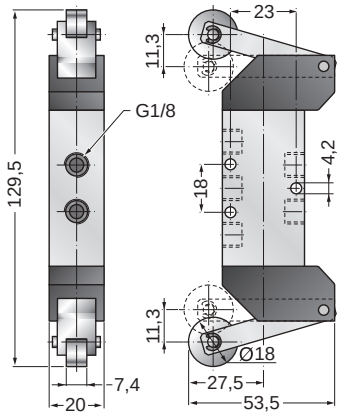


VALVE /*VALVOLA 5/2*

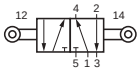
DUAL ROLLER-LEVER VALVE
VALVOLA A DOPPIO AZIONAMENTO LEVA-RULLO

VCLR52018

VALVE /*VALVOLA 5/2*



VCLR52018

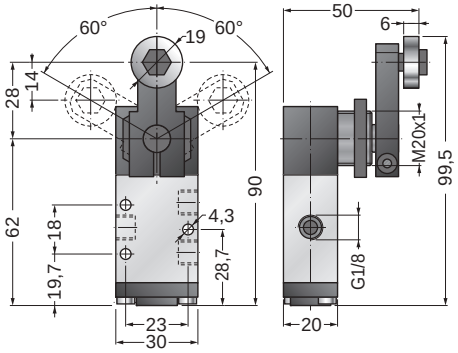




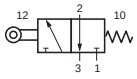
LATERAL ROLLER-LEVER VALVE
VALVOLA AD AZIONAMENTO LEVA-RULLO LATERALE

VCLL32 . M8

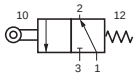
VALVE /*VALVOLA 3/2*



VCLL326M8



VCLL329M8

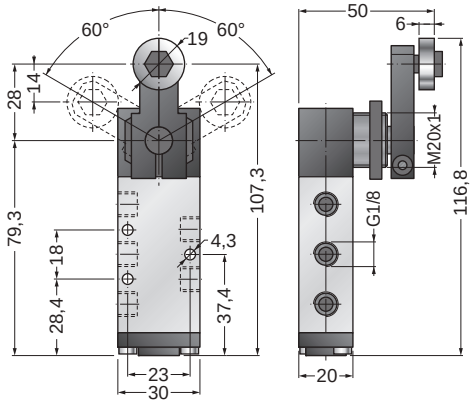




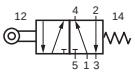
LATERAL ROLLER-LEVER VALVE
VALVOLA AD AZIONAMENTO LEVA-RULLO LATERALE

VCLL52M18

VALVE /*VALVOLA 3/2*



VCLL52M18

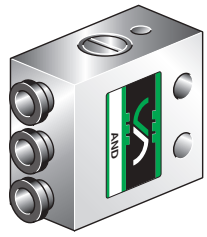




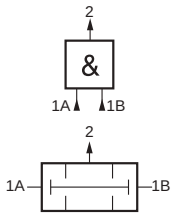
AUTOMATIC MICROVALVES PUSH-IN Ø4 mm / *MICROVALVOLE AUTOMATICHE TUBO Ø4 mm*

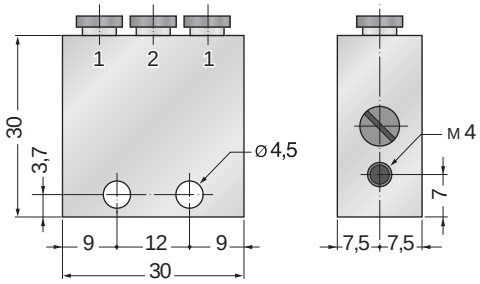
AND 42

LOGIC ELEMENT
UNITA' LOGICA



AND



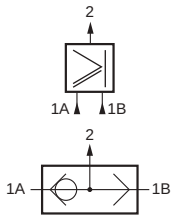


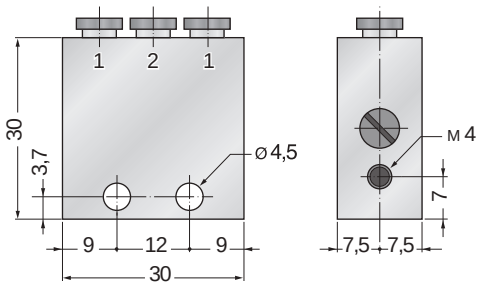
OR 42

LOGIC ELEMENT
UNITA' LOGICA



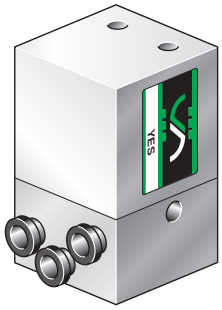
OR



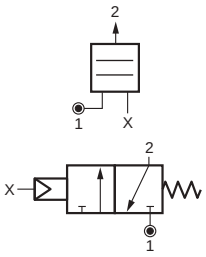


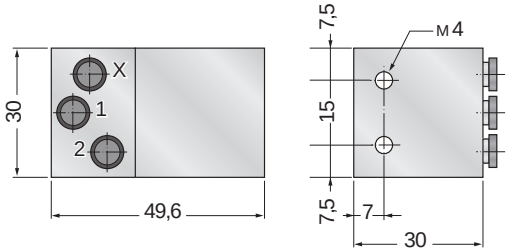
YES

LOGIC ELEMENT
UNITA' LOGICA



YES



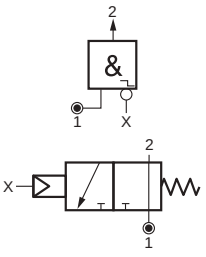


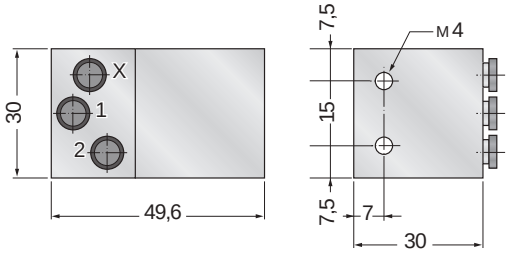
NOT

LOGIC ELEMENT
UNITA' LOGICA



NOT

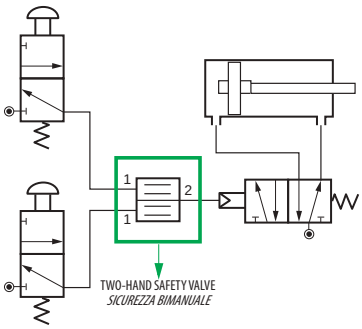




TWO - HAND SAFETY VALVE
SICUREZZA BIMANUALE

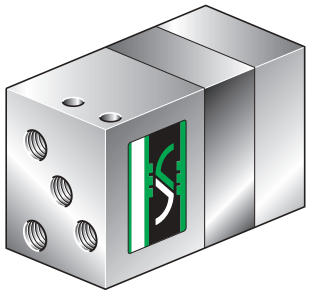
SBI

APPLICATION SKETCH / *SCHEMA APPLICATIVO*



SBI



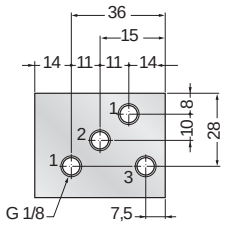


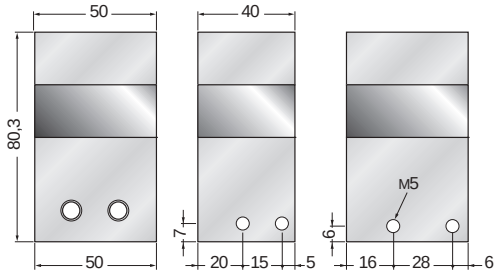
TECHNICAL FEATURES

Maximun flow rate	100 NL/min
Ports	G1/8"
Working pressure	3 ÷ 8 bar; 0.3 ÷ 0.8 MPa
Temperature range	Max +60°C
Safety	As per EN 574 type 3A
Delay between two actuating signals	Dt < 0.5 s
Fluid	50m filtered air
Lubrication	Not required

CARATTERISTICHE TECNICHE

Portata massima	*100 NL/min*
Attacchi	*G1/8"*
Pressione d' esercizio	*3 ÷ 8 bar; 0.3 ÷ 0.8 MPa*
Temperatura di esercizio	*Max +60°C*
Sicurezza	*Conforme alla norma EN 574 tipo 3A*
Intervallo di tempo tra due segnali di comando	*Dt < 0.5 s*
Fluido	*Aria filtrata 50m*
Lubrificazione	*Non necessaria*





MATERIALS

Body	Aluminium 11S
Springs	Stainless steel
Seals	NBR
Internal parts	Ottone OT58

MATERIALI

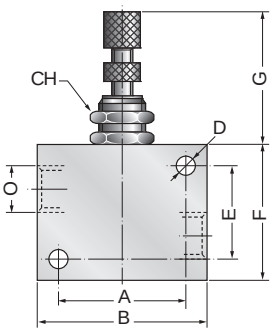
Corpo	*Alluminio 11S*
Molle	*INOX*
Guarnizioni	*NBR*
Parti interne	*Ottone OT58*

This valve is used to pilot high-flow directional control valves connected to machines which have a high risk of injuries to the hands.
The machine operator must simultaneously operate, in a safe area, two three-way manual valves for correct operation. The safety valve will ignore a single depression of one of the manual valves.
To repeat the cycle both pilot signals must be exhausted and the manual valves simultaneously actuated again.

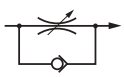
E' utilizzabile per il comando di valvole di potenza connesse a macchine che presentano un elevato rischio di infortunio alle mani. Impone all' operatore di utilizzare entrambe le mani per inviare l'impulso alla valvola di potenza, evitando in questo modo che esse vengano accidentalmente a trovarsi nell' area dei meccanismi in movimento.
L'impulso di comando viene generato dalla sicureza bimanuale solo in presenza di due segnali di azionamento contemporanei provenienti da microvalvole a tre vie NC da collegare ai due attacchi indicati con 1. L' intervallo Dt tra questi due segnali, comunque inferiore a 0,5 sec., varia a seconda della pressione di alimentazione e può essere determinato facendo riferimento al grafico "risposta tempo-pressione".
La sicurezza bimanuale è dotata di un dispositivo antiripetitivo che garantisce la generazione di un solo impulso in presenza dei due segnali e procedere a un nuovo azionamento.

FLOW REGULATORS
REGOLATORE DI FLUSSO

VRF

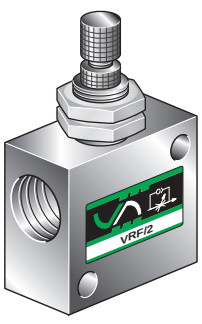


VRF .



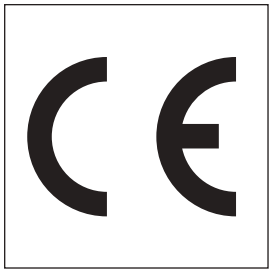
Code *Codice*	A	B	CH	D	E
VRF 8	23	30	15	4,5	13
VRF 4	30	40	15	4,5	22
VRF 3	43	56	24	6,5	27
VRF 2	43	56	24	6,5	27

Code *Codice*	F	G	O	Thicness *Spessore*
VRF 8	20	35	1/8	17
VRF 4	30	35	1/4	22
VRF 3	40	43	3/8	30
VRF 2	40	43	1/2	30



TECHNICAL FEATURES / *CARATTERISTICHE COSTRUTTIVE*







The 94/9/EC directive - ATEX (atmosphere explosive)

Since the 1st July 2003 the 94/9/EC Directive is the only certification for devices used in certain explosive zones. Aim of the directive is to achieve a uniform level of safety and removing barriers to trade. The new requirements of the 94/9/EC have extended the safety level to the mechanical devices, taking in consideration the presence of dust in potentially explosive atmosphere. The marking of the device has become necessary in order to certificate the products into the classifying zones. Sparks, arcs, hot surfaces, adiabatic compression, are some of the sources of ignition considered for Vesta Atex production.

Group II

These equipments are used in areas where probability an explosive atmosphere (consisting of a mixture of air and gases, vapours or mixture of dust and air) will occur.

Vesta Automation gives all indications about group and categories of its Atex products, furthermore advises users to an accurate classification of the zones into the specific case of use in which a potentially explosive atmosphere could be present. For a right and safety classification of the zones it's a good rule to follow the below European standard:

EN 60079-10 Classification of hazardous areas
EN 50281-3 Classification of areas where combustible dusts are or may be present

La direttiva 94/9/CE - ATEX (atmospheres explosive)

A partire dal 1-7-2003 la Direttiva dell'unione Europea 94/9/CE è l'unica certificazione valida per le apparecchiature antideflagranti immesse nel mercato dell'UE. Obbiettivo di tale direttiva è garantire la sicurezza e la salute delle persone e dei beni promuovendo la libera circolazione dei prodotti sopra citati su tutto il territorio della comunità europea fornendo un unico riferimento per impianti sotterranei (gruppo I) e di superficie (gruppo II).

Le novità introdotte dalla direttiva hanno ampliato il campo della sicurezza estendendolo agli apparecchi non elettrici e alla presenza di polveri combustibili introducendo delle zone di rischio e imponendo la marcatura CE.

Tra le fonti di accensioni non elettriche contemplate troviamo scintille, archi, superfici calde, compressioni adiabatiche, scariche elettrostatiche.

Gruppo II

Apparecchi destinati ad essere utilizzati in luoghi in cui è probabile che si presentino atmosfere esplosive causate da miscele di aria e gas, vapori o nebbie o da miscele di aria/polveri.

***Vesta Automation** fornisce le indicazioni relative al gruppo e categoria del prodotto, e consiglia l'utilizzatore ad un'attenta classificazione delle zone nel proprio contesto in termini di luoghi e attività lavorative che contengono o possono dar luogo a pericolo di esplosione. Per una corretta e sicura classificazione delle zone è buona regola riferirsi alle norme tecniche relative ai settori specifici, tra queste citiamo:*

EN 60079-10 Classificazione dei luoghi per atmosfere esplosive per la presenza di gas
EN 50281-3 Classificazione dei luoghi dove sono o posssono essere presenti polveri combustibili

ATEX SERIE

ATEX VALVES RANGE
GAMMA VALVOLE ATEX

NON ELECTRICAL DEVICE MARKING EXAMPLE / *ESEMPIO DI MARCATURA DI APPARECCHIO NON ELETTRICO*

CE Ex II 2 GD c T3 T130°C -15°≤Ta≤60°C

- CE symbol — *Simbolo CE*
- Ex symbol for use in hazardous areas — *Simbolo antideflagrante*
- Equipement group — *Gruppo area di utilizzo*
- Equipement category — *Categoria*
- Explosive atmosphere (G=gas, D=dust) — *Tipo di atmosfera potenzialmente esplosiva (G=gas, D= polvere)*
- **Ignition protection category** constructional safety - **c** encapsulation m, level mb - **m**
  Tipo di protezione specifica *protezione attraverso la sicurezza costruttiva - **c** protezione attraverso incapsulamento, livello mb - **m***
- Max surface temperature for use in dust-hazard areas — *Classe di temperatura in riferimento alle polveri*
- Environment temperature range in which the product can be used — *Temperatura ambiente di esercizio*

Temperature class for gas ***Classe di temperatura per gas***	**Max surface temperature** ***Temperatura max di superfice***
T1	450°C
T2	300°C
T3	200°C
T4	135°C
T5	100°C
T6	85°C

GROUP II non mining areas - *GRUPPO II impianti non minerari*

Zone - *Zona*	**Type of atmosphere** ***Tipo di atmosfera***	**Presence of explosive atmosphere** ***Presenza di atmosfera esplosiva***	**Category of devices** ***Categoria***
0 20	gas (G) dust - polveri (D)	continuous, long period continuo	1
1 21	gas (G) dust - polveri (D)	occasional occasionale	2
2 22	gas (G) dust - polveri (D)	seldom, short periods breve	3

The class of an entire assembled system is the one of the lowest classified item.
Un assieme appartiene alla classe più bassa tra quelle dei particolari che lo compongono.

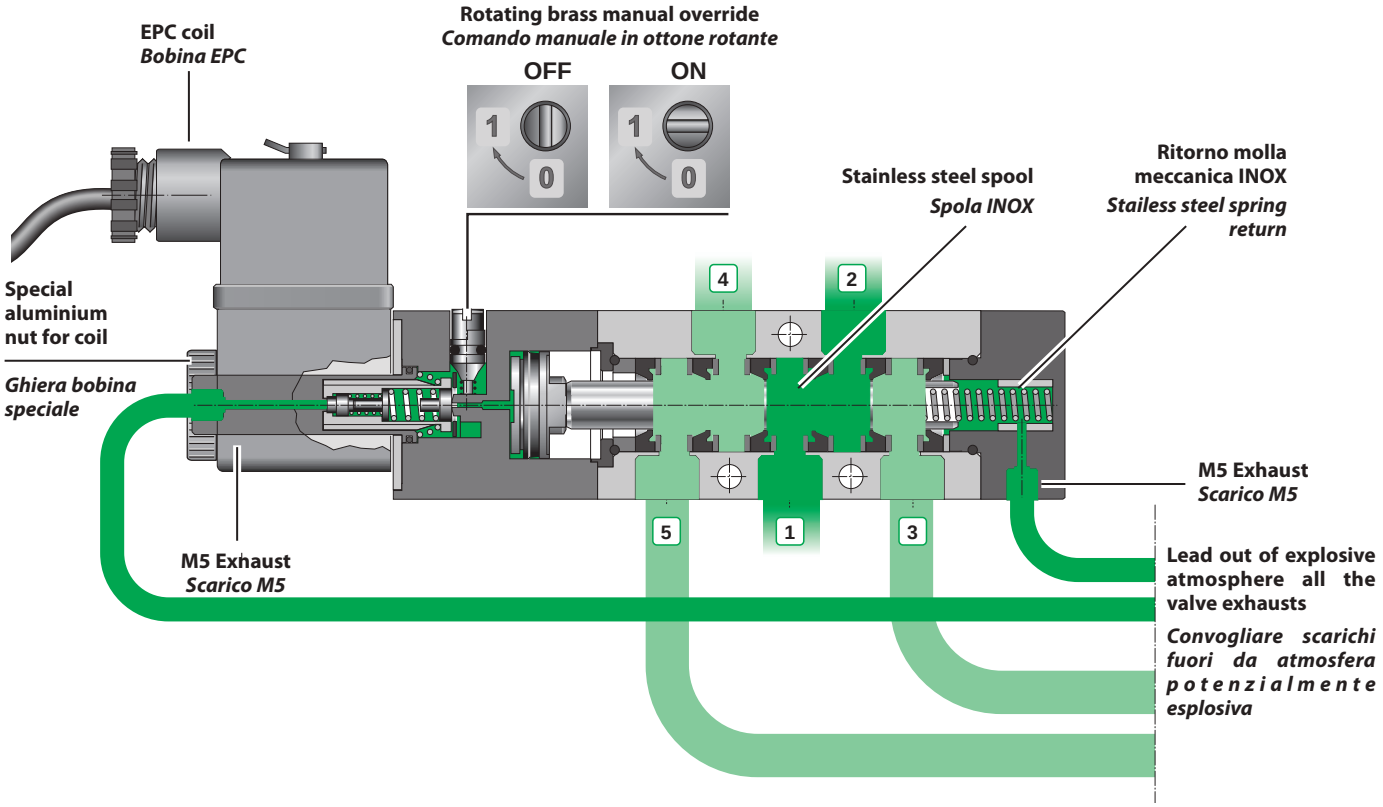
Power valve - *Valvola*	**Coil - *Solenoide***	**Resulting category - *Categoria risultante***
II 2GD .... T4 T150°C	II 2GD T5	II 2GD .... T4 T150°C
II 2GD .... T4 T150°C	II 3GD .... T150°	II 3GD .... T4 T150°
II 2G T4	II 2GD T5	II 2G T4
II 2G T4	II 2GD .... IIC T6	II 2G ..... IIC T4

ATEX VALVES RANGE
GAMMA VALVOLE ATEX

SERIE **ATEX**

Vesta ATEX valves satisfy all directives 94/9/EC to avoid mechanical risks of ignition in explosive atmosphere (category II2GD). Design, materials and technical solutions are made to prevent mechanical sparks, electrostatic charges, heating of surfaces due to friction, etc. All these solutions make Vesta ATEX valves in "constructional safety". They grant the earthing of all their parts, due to alodine surface treatment of body and heads operator. This treatment grants protection to products, while allows electrical conduction. All the parts are Atex compliant and valves have overcome Atex impact tests and protection degree IP65 tests. Use only EPC coils on Vesta ATEX solenoid valves.

Le valvole ATEX VESTA rispettano tutti i requisiti di sicurezza previsti dalla direttiva 94/9/CE per evitare il rischio meccanico di accensione di atmosfere potenzialmente esplosive di categoria II2GD. Questo risultato si è ottenuto con la scelta progettuale di materiali e di soluzioni tecniche atti a prevenire scintillii, accumuli di cariche elettrostatiche, surriscaldamenti locali per attrito o sfregamento, ecc; pertanto la protezione viene garantita attraverso la sicurezza costruttiva. Le valvole Atex vesta consentono la messa a terra di tutte le loro parti, grazie al trattamento alodine sul corpo e sui fondelli che permette la conduzione elettrica e la protezione dagli agenti esterni. Tutta la componentistica utilizzata soddisfa i requisiti Atex. Le valvole hanno superato i test d'impatto previsti dalla direttiva, nonché il test del grado di protezione IP 65. Le elettrovalvole ATEX VESTA devono essere equipaggiate esclusivamente con solenoidi ATEX serie EPC.



TECHNICAL FEATURES - *CARATTERISTICHE TECNICHE*

- Atex category II2GD
- IP65 protection degree
- Aluminium body and heads operator with alodine surface treatment.
- NBR seals
- Brass spacers
- Medium T: 0°<Tfluido<25°C
- Enviroment T: -5°<Tamb<50°C
- Medium: filtered air (quality 5 ISO 8573-1)
- Lubrication not required
- For technical features of atex valves please see the corrispondent non atex valves
- For use instructions please see **www.vesta.it**
- For 94/9/EC atex directive please see pag B-113

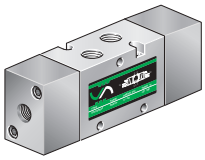
- *Classificazione atex II2GD*
- *Protezione IP65*
- *Fondelli e corpo alluminio con trattamento alodine*
- *Guarnizioni NBR*
- *Distanziali ottone*
- *T fluido: 0°<Tfluido<25°C*
- *T ambiente: -5°<Tamb<50°C*
- *Fluido: aria filtrata (qualità 5 secondo ISO 8573-1)*
- *Lubrificazione non necessaria*
- *Per caratteristiche pneumatiche vedere codici corrispondenti senza la "X"*
- *Per manuale di uso e manutenzione consultare il sito **www.vesta.it***
- *Per informazioni su direttiva 94/9/CE atex vedere pag B-113*

ATEX SERIE

ATEX VALVES RANGE
GAMMA VALVOLE ATEX

XV 14
PNEUMATIC VALVES
VALVOLE PNEUMATICHE

XV 12
PNEUMATIC VALVES
VALVOLE PNEUMATICHE



G1/2 - G1/4; 3/2 - 5/2 - 5/3

CE Ex

II 2GD c T4 T 160 °C

CODES G1/4 / *CODICI G1/4:*

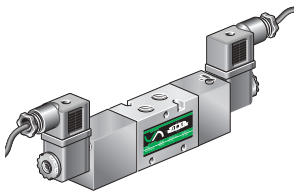
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XV32V1P9M2 ..... **Pag. B-24**
XV32V2P012 ..... **Pag. B-25**
XV52V1PM12 ..... **Pag. B-25**
XV52V2P012 ..... **Pag. B-26**
XV53V2P612 ..... **Pag. B-26**
XV53V2P912 ..... **Pag. B-26**

XE 14
SOLENOID VALVES
ELETTROVALVOLE

XE 12
SOLENOID VALVES
ELETTROVALVOLE



G1/2 - G1/4; 3/2 - 5/2 - 5/3

CE Ex

II 2GD c T4 T 160 °C

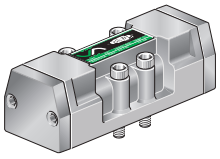
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VALVES G1/2 / *CODICI G1/2:*

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XE32W1S9M2 ..... **Pag. B-27**
XE32W2S012 ..... **Pag. B-28**
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XE52W2S012 ..... **Pag. B-29**
XE53W2S612 ..... **Pag. B-29**
XE53W2S912 ..... **Pag. B-29**

XSVP ....
PNEUMATIC VALVES
VALVOLE PNEUMATICHE



ISO 1; 5/2

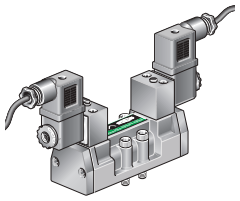
CE Ex

II 2GD c T4 T 155 °C

CODES / *CODICI:*

XSVP4521M0 ..... **Pag. B-74**
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XSVE ....
SOLENOID VALVES
ELETTROVALVOLE



ISO 1; 5/2

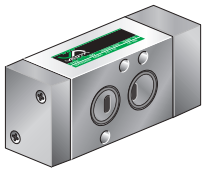
CE Ex

II 2GD c T4 T 155 °C

CODES / *CODICI:*

XSVE6521M0 ..... **Pag. B-76**
XSVE652200 ..... **Pag. B-77**

XNM .... P
NAMUR VALVES SERIES
VALVOLE SERIE NAMUR



NAMUR; 3/2 - 5/2

CE Ex

II 2GD c T4 T 160 °C

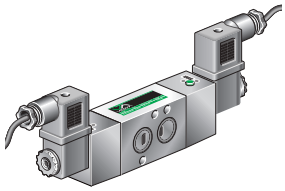
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XNM .... S
NAMUR VALVES SERIES
VALVOLE SERIE NAMUR



NAMUR; 3/2 - 5/2

CE Ex

II 2GD c T4 T 160 °C

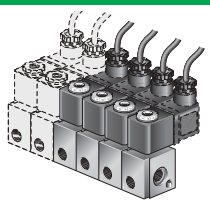
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XNM32W2S-TP ..... **Pag. B-97**

CODES / *CODICI:*

XNM52W1S-SR ..... **Pag. B-99**
XNM52W2S-TP ..... **Pag. B-99**

XBE .... NC
DIRECT ACTING SOLENOID VALVE 3/2 NC
ELETTROVALVOLA A COMANDO DIRETTO 3/2 NC



3/2 - 2/2

CE Ex

II 2GD c T4 T 160 °C

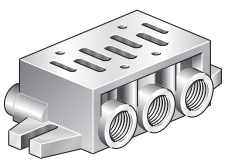
CODES / *CODICI:*

XBE 1-2 ..... **Pag. B-34**
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ATEX Manifold / Basi ATEX



CE Ex

II 2GD c T4 T 160 °C

CODES / *CODICI:*

XME . 14 ..... **Pag. B-30**

CODES / *CODICI:*

XBS1 ..... **Pag. B-79**
XBTC1 ..... **Pag. B-79**
XBMI1 ..... **Pag. B-79**
XBTI1 ..... **Pag. B-79**

ATEX VALVES RANGE
GAMMA VALVOLE ATEX

SERIE **ATEX**

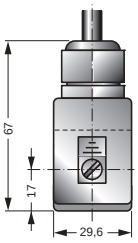
CE 0722 Ex II 2GD EEX mb T5 T100°C IP66

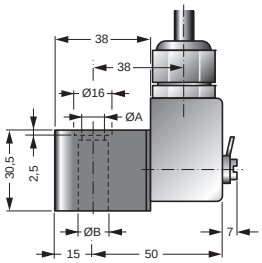
EXPLOSION PROOF COILS
SOLENOIDE ANTIDEFLAGRANTE

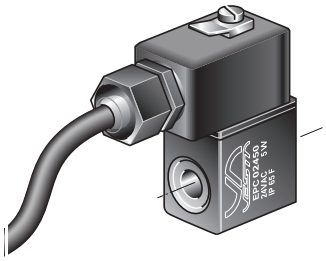
EPC . . . . .

CODES / *CODICI*

Code ordination *Codice ordinazione*	**Voltage** *Tensione*
EPC02400	24 V DC
EPC02450	24 V 50/60Hz AC
EPC04850	48 V 50/60Hz AC
EPC11050	110 V 50/60Hz AC
EPC22050	220 V 50/60Hz AC







TECHNICAL FEATURES

Standard voltage ..... 24 V DC
24, 48, 110, 220 V AC (50/60 Hz)
Power ..... 2,5 Watt in DC; 3 V A in AC
Voltage ..... ± 10%
Ambient temperature range ..... -20 °C ÷ +50 °C
Electrical connection ..... By triple cable, 3m length

Solenoids **EPC** series follow Ex II 2GD EEX mb T5 T100°C IP66, according to standard *ATEX 94/9/CE* :

EEx ..... Component following the EN 50015 ...EN50028 standards
m ..... Resin Incapsulated
II ..... For surface application
T5 ..... Maximum working temperature (see technical features).

Coils series EPC are supplied with solenoid connector and cable.

CARATTERISTICHE TECNICHE

Tensioni standard ..... 24 V DC
24, 48, 110, 220 V AC (50/60 Hz)
Potenza assorbita ..... 2,5 Watt in DC; 3 V A in AC
Tensione nominale ..... ± 10% a bobina calda
Limiti di temperatura ambiente ..... -20 °C ÷ +50 °C
Connessione elettrica ..... Cavo tripolare, lunghezza 3m

Il solenoide serie ***EPC*** *risponde alle specifiche* Ex II 2GD EEX mb T5 T100°C IP66 *in accordo con la normativa ATEX 94/9/CE:*

EEx ..... Simbolo per apparecchiatura protetta secondo le norme EN 50015 ...EN50028
m ..... Incapsulamento in resina
II ..... Per applicazioni in superficie
T5 ..... Max temperatura ambiente (vedi caratteristiche tecniche).

Le bobine serie EPC sono fornite complete di connettore e cavo.

air treatment units

gruppi trattamento aria



INDEX / *INDICE*

MICROREGULATORS MR / *MICROREGOLATORI MR* G1/8 - G1/4



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MR R18 ..
MR R14 ..
MICROREGULATOR
MICROREGOLATORE



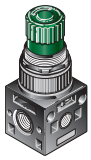
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MR R08 ..
MR R04 ..
PRECISION MICROREGULATOR
MICROREGOLATORE DI PRECISIONE



MR R08 .. FA
MR R04 .. FA
PRECISION MICROREGULATOR CONTROLLED AIR ESCAPE
MICROREGOLATORE DI PRECISIONE A FUGA D'ARIA CONTROLLATA

MODULAR LINE M14 / *LINEA MODULARE M14* G1/4



R M14 ..
REGULATOR
REGOLATORE



F M14 ..
FILTER
FILTRO

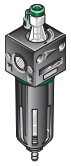


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MF M14 ..
MICROFILTER
MICROFILTRO



L M14 ..
LUBRICATOR
LUBRIFICATORE



L M14 .. VL
LUBRICATOR VL
LUBRIFICATORE VL



pag. C-12

FR M14 ..
FILTER REGULATOR
FILTRO REGOLATORE



V3 M14
3 WAY ON-OFF VALVE
VALVOLA A 3 VIE



SV M14 ..
SHUT-OFF VALVE
VALVOLA DI SEZIONAMENTO



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AVP M14 APC
SLOW START VALVE
AVVIATORE PROGRESSIVO



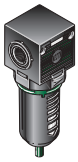
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FR+L M14 ..
FR+L UNIT
GRUPPO FR+L

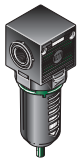
MODULAR LINE M38 / *LINEA MODULARE M38* G3/8



R M38 ..
REGULATOR
REGOLATORE



F M38 ..
FILTER
FILTRO



pag. C-17

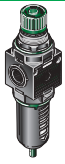
MF M38 ..
MICROFILTER
MICROFILTRO



L M38 ..
LUBRICATOR
LUBRIFICATORE

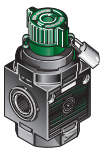


L M38 .. VL
LUBRICATOR VL
LUBRIFICATORE VL



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FR M38 ..
FILTER REGULATOR
FILTRO REGOLATORE



V3 M38
3 WAY ON-OFF VALVE
VALVOLA A 3 VIE

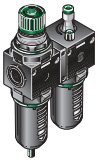


SV M38 ..
SHUT-OFF VALVE
VALVOLA DI SEZIONAMENTO



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AVP M38 APC
SLOW START VALVE
AVVIATORE PROGRESSIVO



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FR+L M38 ..
FR+L UNIT
GRUPPO FR+L

MODULAR LINE M12 / *LINEA MODULARE M12* G1/2



R M12 ..
REGULATOR
REGOLATORE



F M12 ..
FILTER
FILTRO



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MF M12 ..
MICROFILTER
MICROFILTRO



L M12 ..
LUBRICATOR
LUBRIFICATORE

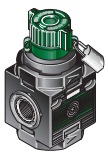


L M12 .. VL
LUBRICATOR VL
LUBRIFICATORE VL



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FR M12 ..
FILTER REGULATOR
FILTRO REGOLATORE



V3 M12
3 WAY ON-OFF VALVE
VALVOLA A 3 VIE

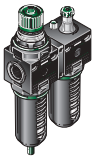


SV M12 ..
SHUT-OFF VALVE
VALVOLA DI SEZIONAMENTO



pag. C-25

AVP M12 APC
SLOW START VALVE
AVVIATORE PROGRESSIVO

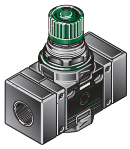


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FR+L M12 ..
FR+L UNIT
GRUPPO FR+L

INDEX / *INDICE*

G3/4 MODULAR LINE M34 / *LINEA MODULARE M34*



R M34 ..
REGULATOR
REGOLATORE



F M34 ..
FILTER
FILTRO



MF M34 ..
MICROFILTER
MICROFILTRO

pag. **C-29**



L M34 ..
LUBRICATOR
LUBRIFICATORE

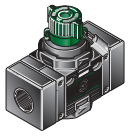


L M34 .. VL
LUBRICATOR VL
LUBRIFICATORE VL



FR M34 ..
FILTER REGULATOR
FILTRO REGOLATORE

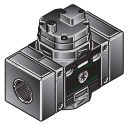
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V3 M34
3 WAY ON-OFF VALVE
VALVOLA A 3 VIE

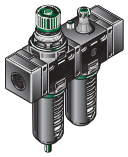


SV M34 ..
SHUT-OFF VALVE
VALVOLA DI SEZIONAMENTO



AVP M34 APC
SLOW START VALVE
AVVIATORE PROGRESSIVO

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FR+L M34 ..
FR+L UNIT
GRUPPO FR+L

pag. **C-32**

G1 MODULAR LINE M10 / *LINEA MODULARE M10*



R M10 ..
REGULATOR
REGOLATORE



F M10 ..
FILTER
FILTRO

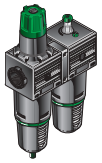


L M10 ..
LUBRICATOR
LUBRIFICATORE

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FR M10 ..
FILTER REGULATOR
FILTRO REGOLATORE

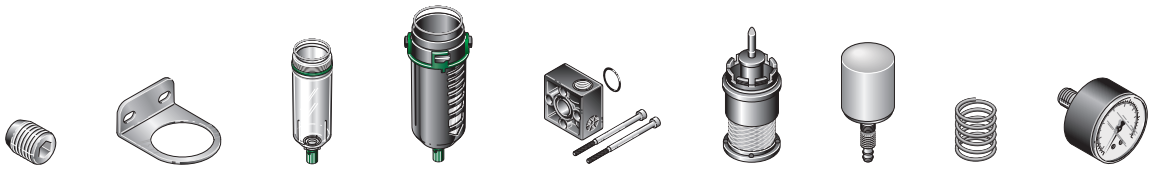


FR+L M10 ..
FR+L UNIT
GRUPPO FR+L

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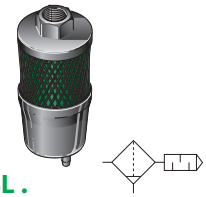
SPARE PARTS AND ACCESSORIES FOR MODULAR LINE / *ACCESSORI E RICAMBI PER LINEE MODULARI*

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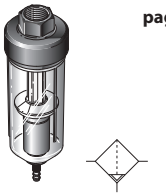


SPARE PARTS AND ACCESSORIES / *ACCESSORI E RICAMBI*

ACCESSORIES FOR PNEUMATIC SYSTEMS / *ACCESSORI PER SISTEMI PNEUMATICI*



DSL .
OIL REMOVERS-SILENCIERS
DISOLEATORI-SILENZIATORI



SCL
DRIP LEG DRAIN
SCARICATORE PER LINEE

pag. **C-40**

GUIDE TO REFERENCE FOR CODING / *GUIDA DI RIFERIMENTO PER LA CODIFICA*

FR	M14	20	08	R	PE	SS	

Product / *Prodotto*

Microregulator - *Microregolatore*	**MR**
Regulator - *Regolatore*	**R**
Filter - *Filtro*	**F**
Microfilter - *Microfiltro*	**MF**
Lubricator - *Lubrificatore*	**L**
Filter regulator - *Filtro regolatore*	**FR**
3 way on-off valve - *Valvola a 3 vie*	**V3**
Shut-off valve - *Valvola di sezionamento*	**SV**
Slow start valve - *Avviatore progressivo*	**AVP**

Line / *Serie*

Microregulator - *Microregolatore*	G1/8	**R18**
Microregulator - *Microregolatore*	G1/4	**R14**
Precision microregulator - *Microregolatore di precisione*	G1/8	**R08**
Precision microregulator - *Microregolatore di precisione*	G1/4	**R04**
Modular line - *Linea modulare*	G1/4	**M14**
Modular line - *Linea modulare*	G3/8	**M38**
Modular line - *Linea modulare*	G1/2	**M12**
Modular line - *Linea modulare*	G3/4	**M34**
Modular line - *Linea modulare*	G1	**M10**

Filtering element / *Elemento filtrante*

5 Micron	**5**
20 Micron (standard)	**20**
0,1 Micron (only **MF**)	**0,1**

Pressure regulation range / *Campo di regolazione*

0 ÷ 2 Bar (only **MR**)	**02**
0 ÷ 4 Bar (only **MR**)	**04**
0 ÷ 8 Bar (standard)	**08**
0 ÷ 12 Bar	**12**

Version / *Versione*

Relieving (standard)	**R**
No relieving (for water, only **MR** - *per acqua, solo* **MR**)	**A**

Bowls / *Tazze*

External protection *Protezione esterna* (standard)	**PE**

Drain / *Scarico*

Semiautomatic drain - *Scarico semiautomatico* (standard)	**SS**
Automatic drain - *Scarico automatico*	**SA**

Special type / *Tipo speciale*

Controlled air escape (only **MR**) - *Fuga d'aria controllata (solo* **MR**)	**FA**
Vacuum loading (**L**) - *Caricamento in depressione (***L**)	**VL**

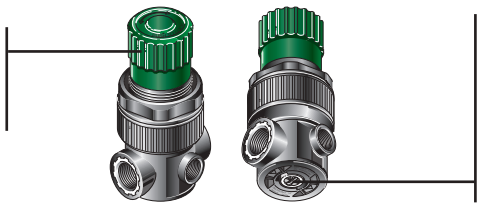
R.18 .. - R.14 ..

MICROREGULATORS G1/8 AND G1/4
MICROREGOLATORI G1/8 E G1/4

The microregulators G1/8 and G1/4, available in the **MR R14 ..** and **MR R18 ..** standard series, are characterized by good flow-rate with a small overall body size and a wide range of pressure regulating springs. They are available both with a device of downstream overpressure (relieving), **R** type for air with green regulating knob, and without relieving **A** type for water, with black regulating knob, both with a black plug at the bottom.
The precision microregulators **MR R04 ..** and **MR R08 ..** are provided with a regulating system with rolling diaphragm, with or without relieving device, in order to assure a good regulating accuracy and a high stability of the pressure adjustment. They keep aesthetic and dimensional features of the **MR R14 ..** and **MR R18 ..** standard ranges and they distinguish themselves for the grey plug at the bottom.
Microregulators of high accuracy **MR R04 .. FA** and **MR R08 .. FA** are also available with characteristics similar to the previous range, supplied with relieving (only for air), provided with a controlled air escape which is able to achieve higly accurate pressure adjustment.
This range has a white plug at the bottom.

*I microregolatori G1/8 e G1/4, disponibili nella serie standard **MR R14 ..** ed **MR R18 ..**, sono caratterizzati da buona portata con ingombri molto contenuti ed ampia gamma di molle di regolazione della pressione. Sono fornibili sia con dispositivo di scarico di sovrapressione a valle (relieving), modello **R** per aria con il pomello di regolazione verde, che senza relieving modello **A** per acqua, con il pomello di regolazione nero, entrambi con il tappo nero sul fondo.*
*I microregolatori di precisione **MR R04 ..** ed **MR R08 ..** sono provvisti di sistema di regolazione con membrana a rotolamento, con o senza dispositivo di relieving, per garantire una buona precisione di regolazione ed alta stabilità della pressione regolata. Conservano le caratteristiche estetiche e dimensionali delle serie standard MR R14.. ed MR R18.. e si distinguono per il tappo di colore grigio sul fondo.*
*Sono disponibili inoltre microregolatori di alta precisione **MR R04 .. FA** ed **MR R08 .. FA**, con caratteristiche analoghe alla serie precedente, provvisti di relieving (solo per aria), dotati di un dispositivo a fuga d'aria controllata che garantisce una alta precisione della pressione regolata. Questa serie monta il tappo di colore bianco sul fondo.*

GREEN knob ..... With Relieving (for air)
Pomello VERDE ..... Con Relieving (per aria)
BLACK knob ..... Without Relieving (for water)
Pomello NERO ..... Senza Relieving (per acqua)



BLACK plug ..... Standard Microregulator
Tappo NERO ..... Microregolatore Standard
GREY plug ..... Precision Microregulator
Tappo GRIGIO ..... Microregolatore di Precisione
WHITE plug ..... Precision Microregulator with controlled air escape
Tappo BIANCO ..... Microregolatore di Precisione a fuga d'aria controllata

TECHNICAL FEATURES

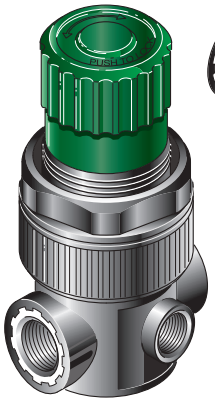
Connections ..... G1/8 (**MR R18 ..; MR R08 ..; MR R08 .. FA**)
G1/4 (**MR R14 ..; MR R04 ..; MR R04 .. FA**)
Body ..... Acetalic resin (POM).
Environment temperature range ..... +5 ÷ +50 °C (41 ÷ 122 °F)
Gauge connections G1/8
Maximum inlet pressure ..... 16 Bar (230 Psi)
Fixing ..... Complete with ring nut for panel assembly, or can be wall mounted on a braket .

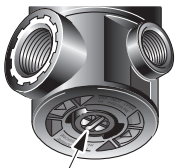
CARATTERISTICHE TECNICHE

Connessioni ..... G1/8 (MR R18 ..; MR R08 ..; MR R08 .. FA)
G1/4 (MR R14 ..; MR R04 ..; MR R04 .. FA)
Corpo ..... Resina acetalica (POM).
Temperatura ambiente ..... +5 ÷ +50 °C (41 ÷ 122 °F)
Connessioni manometro G1/8
Pressione massima di ingresso ..... 16 Bar (230 Psi)
Fissaggio ..... Completo di ghiera per il montaggio a pannello, o Possibilità di fissaggio parete con staffa.

MR R18 ..
MR R14 ..

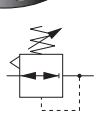
MICROREGULATOR
MICROREGOLATORE





BLACK
NERO

G1/8
G1/4
0,095 Kg

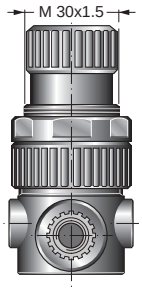


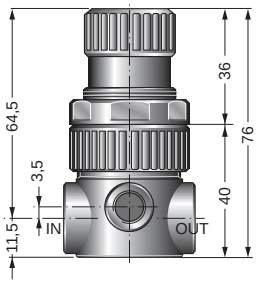
MICROREGULATOR

- Diaphragm operation.
- Lockable safety knob.
- Can be used with air (relieving and green knob: **R** version) or water (without relieving, with black knob: **A** version).
- Pressure ranges: 0÷2 Bar; 0÷4 Bar; 0÷8 Bar (standard); and 0÷12 Bar,

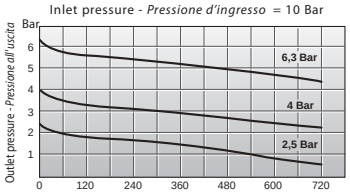
MICROREGOLATORE

- *Funzionamento a membrana.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Disponibile nelle versioni per aria (con relieving e pomello verde: modello **R**) o per acqua (senza relieving e pomello nero: modello **A**).*
- *Campi di pressione: 0÷2 ; 0÷4 ;0÷8 (standard) e0÷12 Bar.*

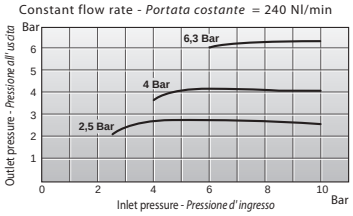


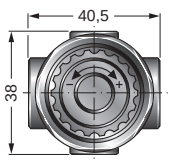


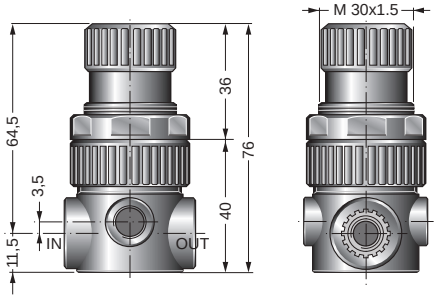
FLOW CHART - *CURVE DI PORTATA*
Inlet pressure - *Pressione d'ingresso* = 10 Bar

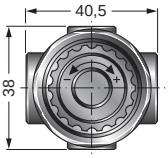


REGULATION FEATURES - *CURVE DI REGOLAZIONE*
Constant flow rate - *Portata costante* = 240 Nl/min









PRECISION MICROREGULATOR

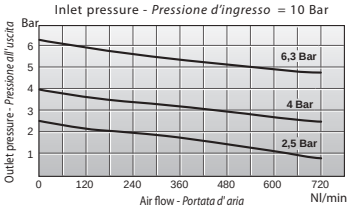
- Rolling diaphragm.
- Lockable safety knob.
- Can be used with air (relieving and green knob: **R** version) or water (without relieving, with black knob: **A** version).
- Pressure ranges: 0÷2 Bar; 0÷4 Bar; 0÷8 Bar (standard); and 0÷12 Bar,

MICROREGOLATORE DI PRECISIONE

- *Membrana a rotolamento.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Disponibile nelle versioni per aria (con relieving e pomello verde: modello **R**) o per acqua (senza relieving e pomello nero: modello **A**).*
- *Campi di pressione: 0÷2; 0÷4 ;0÷8 (standard) e0÷12 Bar.*

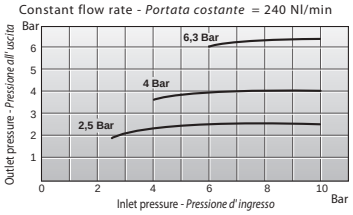
FLOW CHART - *CURVE DI PORTATA*

Inlet pressure - *Pressione d'ingresso* = 10 Bar



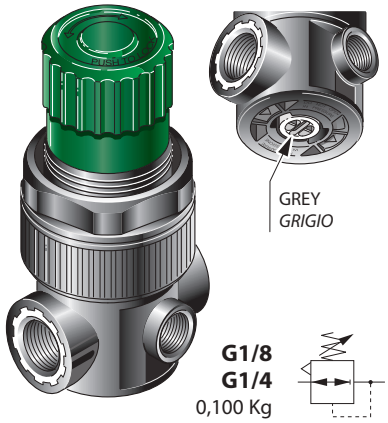
REGULATION FEATURES - *CURVE DI REGOLAZIONE*

Constant flow rate - *Portata costante* = 240 Nl/min



MR R08..
MR R04..

PRECISION MICROREGULATOR
MICROREGOLATORE DI PRECISIONE



G1/8
G1/4
0,100 Kg

PRECISION MICROREGULATOR WITH CONTROLLED AIR ESCAPE

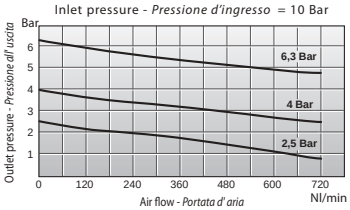
- Rolling diaphragm.
- Lockable safety knob.
- Only relieving version (for air)
- Pressure ranges: 0÷2 Bar; 0÷4 Bar; 0÷8 Bar (standard); and 0÷12,5 Bar,

MICROREGOLATORE DI PRECISIONE A FUGA D'ARIA CONTROLLATA

- *Membrana a rotolamento.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Disponibile solo nella versione con relieving (per aria)*
- *Campi di pressione: 0÷2 Bar; 0÷4 Bar; 0÷8 Bar (standard); e 0÷12 Bar,*

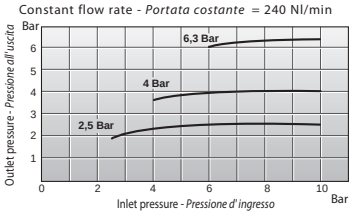
FLOW CHART - *CURVE DI PORTATA*

Inlet pressure - *Pressione d'ingresso* = 10 Bar



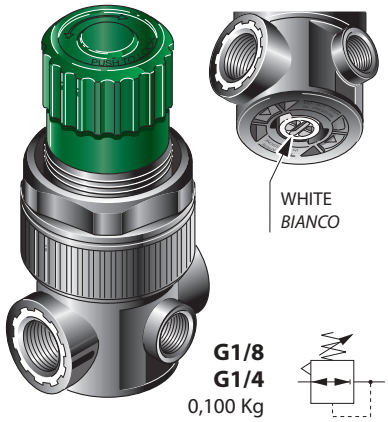
REGULATION FEATURES - *CURVE DI REGOLAZIONE*

Constant flow rate - *Portata costante* = 240 Nl/min



PRECISION MICROREGULATOR
CONTROLLED AIR ESCAPE
MICROREG. DI PRECISIONE A FUGA D'ARIA CONTROLLATA

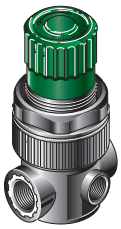
MR R08..FA
MR R04..FA



G1/8
G1/4
0,100 Kg

ORDER CODE SERIES MR / *CODICI DI ORDINAZIONE SERIE MR*

MICROREGULATOR / *MICROREGOLATORE*

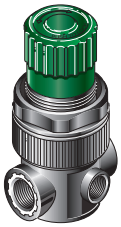


G1/8	MR R18	02	R
	MR R18	04	R
	MR R18	**08**	**R**
	MR R18	12	R
	MR R18	02	A
	MR R18	04	A
	MR R18	08	A
	MR R18	12	A
G1/4	MR R14	02	R
	MR R14	04	R
	MR R14	**08**	**R**
	MR R14	12	R
	MR R14	02	A
	MR R14	04	A
	MR R14	08	A
	MR R14	12	A

STANDARD = **MR R14 08 R**

Accessories and spare parts see pages C38 and C-40.
Accessori e ricambi vedi pagine C38 e C-40.

PRECISION MICROREGULATOR / *MICROREGOLATORE DI PRECISIONE*



G1/8	MR R08	02	R
	MR R08	04	R
	MR R08	**08**	**R**
	MR R08	12	R
	MR R08	02	A
	MR R08	04	A
	MR R08	08	A
	MR R08	12	A
G1/4	MR R04	02	R
	MR R04	04	R
	MR R04	**08**	**R**
	MR R04	12	R
	MR R04	02	A
	MR R04	04	A
	MR R04	08	A
	MR R04	12	A

CONTROLLED AIR ESCAPE

G1/8	MR R08	02	R	FA
	MR R08	04	R	FA
	MR R08	**08**	**R**	**FA**
	MR R08	12	R	FA
G1/4	MR R04	02	R	FA
	MR R04	04	R	FA
	MR R04	**08**	**R**	**FA**
	MR R04	12	R	FA

ASSEMBLING SYSTEM MODULAR LINE / *SISTEMA DI ASSEMBLAGGIO MODULARE*

The assembling system modular line of components offers some advantages such as the possibility to obtain air treatment groups optimized for linked users, simplicity in assembling the components and quickness of servicing or of replacement for spare parts.
The components are made with shock-proof material of the best quality (see technical features), the bodies have threaded connections made from brass fittings and the bowls with outer bowl guard offer a direct check of the condensate level or of the lubricant (transparent bowls for **M14** series as optional).
The praticality of the quick coupling of the bowls with safety bayonet connection system allow the disassembling without tools.
(The **M14** series uses threaded coupling bowls).
When installing, follow the assembling instructions and make sure that the flow goes in the directions printed on the bodies: 3 way on-off valve - filter - microfilter - regulator - shut-off valve - slow start valve - lubricator.
This is also valid for the assembling of few components, in order to avoid, for example, that the mounting of the lubricator before the filter causes the obstruction of the latter, or that the regulator and accessories work with not filtered air and its efficiency is compromised.
For the **M14** series the assembling must be made with screws of such a length according to the number of components that have to be linked, and with or without air inlet (see following pictures).
All the units must be mounted respecting the position of the bowls towards the bottom. When working, it is preferable that the pressure of the regulator is set clockwise, in order to assure the repeatibility of the setting.
It is recommended not to exceed the maximum levels indicated both for the filter condensate or microfilter, and for the lubricant of the lubricator, for which oils with ISO VG32 viscosity are recommended.

La modularità di assemblaggio dei componenti offre vantaggi quali la possibilità di comporre gruppi di trattamento dell'aria ottimizzati per il tipo di utenza collegata, semplicità di montaggio dei componenti e rapidità degli interventi di manutenzione o di sostituzione dei ricambi.
I componenti sono realizzati con materiali antiurto della migliore qualità (vedi caratteristiche tecniche), i corpi sono dotati di connessioni filettate ricavate da inserti in ottone, e le tazze vengono realizzate con una protezione esterna che offre un immediato controllo del livello della condensa o del lubrificante (opzionali, solo per la serie **M14,** *le tazze trasparenti).*
Inoltre la praticità dell'aggancio rapido delle tazze, con meccanismo di inserzione a baionetta con sicurezza, ne permette lo smontaggio in linea senza alcun attrezzo (La serie **M14** *utilizza tazze con aggancio filettato).*
Nella fase di installazione è necessario assicurarsi che il flusso segua il senso delle frecce stampate sui corpi, e che l'ordine di montaggio sia corretto: valvola a 3 vie - filtro - microfiltro - regolatore - valvola di sezionamento - avviatore progressivo - lubrificatore.
In questo modo, anche nel caso di assemblaggio di pochi componenti, si evitano numerosi problemi (il montaggio del lubrificatore prima del filtro per esempio, può portare all'immediato intasamento di quest'ultimo, oppure il regolatore e gli accessori che lavorando con aria non filtrata risultano inaffidabili).
Per la serie **M14** *l'assemblaggio deve essere eseguito con le viti di lunghezza adeguata al numero di componenti da vincolare e dalla presenza o meno della presa d'aria (vedi figure seguenti).*
Tutti i gruppi devono essere montati in modo tale da mantenere la posizione delle tazze rivolte verso il basso.
Durante l'utilizzazione è preferibile che la pressione del regolatore sia impostata in senso orario per una garanzia di ripetitibilità dell' impostazione, si raccomanda di non superare i livelli massimi indicati sia per la condensa del filtro o microfiltro, sia per il lubrificante del lubrificatore, per il quale si consigliano oli con viscosità ISO VG32.

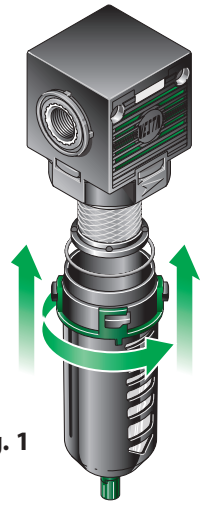


Fig. 1

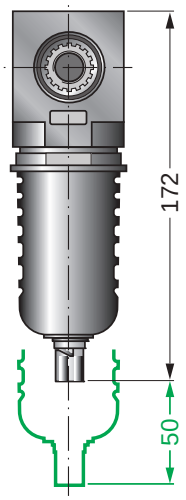


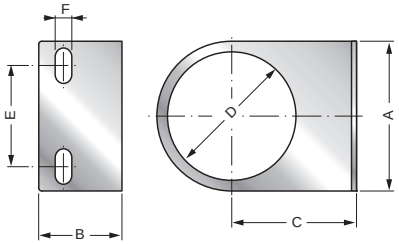
Fig. 2

(On examples **M12** modular line - *Negli esempi la serie modulare* ***M12***)

As regards filters, filter regulators or lubricators, the bowl is engaged to the filter (or to the lubricator) and the green ring nut must be snap-shut counterclockwise (**fig. 1**).
In the technical drawings of each component provided with collecting bowl, the necessary space for the disassembling is indicated, by considering the overall dimensions of the internal parts (filters or pipe for oil suction).
This dimension is useful for the evaluation of an eventual placing in boxes or closed spaces (**fig. 2**).

Per i gruppi filtro, filtroregolatori o lubrificatori la tazza si innesta nel corpo del filtro (o lubrificatore) e si ruota la ghiera verde in senso antiorario sino allo scatto di bloccaggio (***fig. 1*** *).*
Nei disegni tecnici di ogni componente dotato di vaso di raccolta viene indicato lo spazio necessario per lo smontaggio, considerando l'ingombro degli organi interni (filtro o cannula per il pescaggio dell'olio), questo valore è utile per valutare l'eventuale collocazione in cassette o vani chiusi (***fig. 2*** *).*

BRAKET FOR WALL FIXING OF REGULATOR AND FILTER REGULATOR / ***STAFFA*** *PER IL FISSAGGIO A PARETE DI REGOLATORE E FILTROREGOLATORE*



Code - *Codice*	A	B	C	D	E	F
K BRS	46	20	23	30	30	5,5
K BRL	55	27	40	42	33	5,5

(See Pag. **C-39** - *Vedi Pag.* **C-39**)

ASSEMBLING SYSTEM MODULAR LINE / *SISTEMA DI ASSEMBLAGGIO MODULARE*

Serie **M14**, **G1/4”**

Compact modular line that allows a complete compressed air treatment for plants of small dimensions. It assures considerable flow rates, an excellent efficiency of the filtering, accuracy of the regulation and good lubrication.

Linea modulare di dimensioni compatte, consente un completo trattamento dell’aria compressa per impianti di limitate dimensioni, garantendo notevoli valori di portata ed ottima efficienza nel filtraggio, precisione della regolazione e buona capacità di lubrificazione.

Serie **M38**, **G3/8”**

Modular line with an excellent relation between dimensions/performances. It is particularly suitable for all medium plants with linked users that need a particular care in air treatment.

Linea modulare con eccezionale rapporto dimensioni / prestazioni, particolarmente indicata per tutti gli impianti di media portata con utenze collegate che necessitano di particolare cura nel trattamento del flusso d’aria.

Serie **M12**, **G1/2”**

Battery for air treatment with high performances and an excellent strenght, for fixed plants or industrial automation systems with users who need very high flow rates.

Batteria di trattamento dell’aria ad elevate prestazioni e di notevole robustezza, per impianti fissi o apparati per l’automazione industriale dotati di utenze che necessitano di portate particolarmente elevate.

Serie **M34**, **G3/4”**

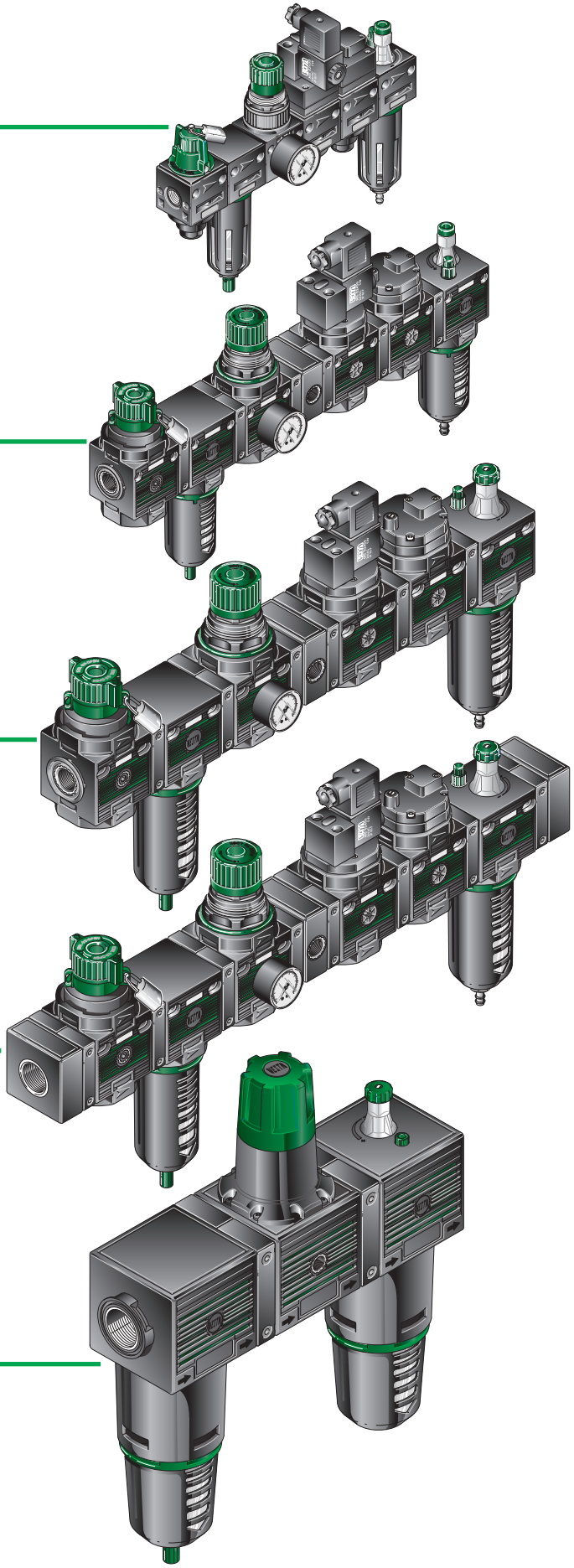
It comes from LM 12 serie. In fact it has the same technical features. It is supplied with G 3/4” connections for the feating of single components (or treatment groups) in the plants provided with the above connections.

*Derivata dalla serie **LM12,** della quale ne conserva le caratteristiche tecniche, é dotata di connessioni da G3/4” per l’inserimento di singoli componenti (o gruppi di trattamento) negli impianti che sono dotati di tali connessioni.*

Serie **M10**, **G1”**

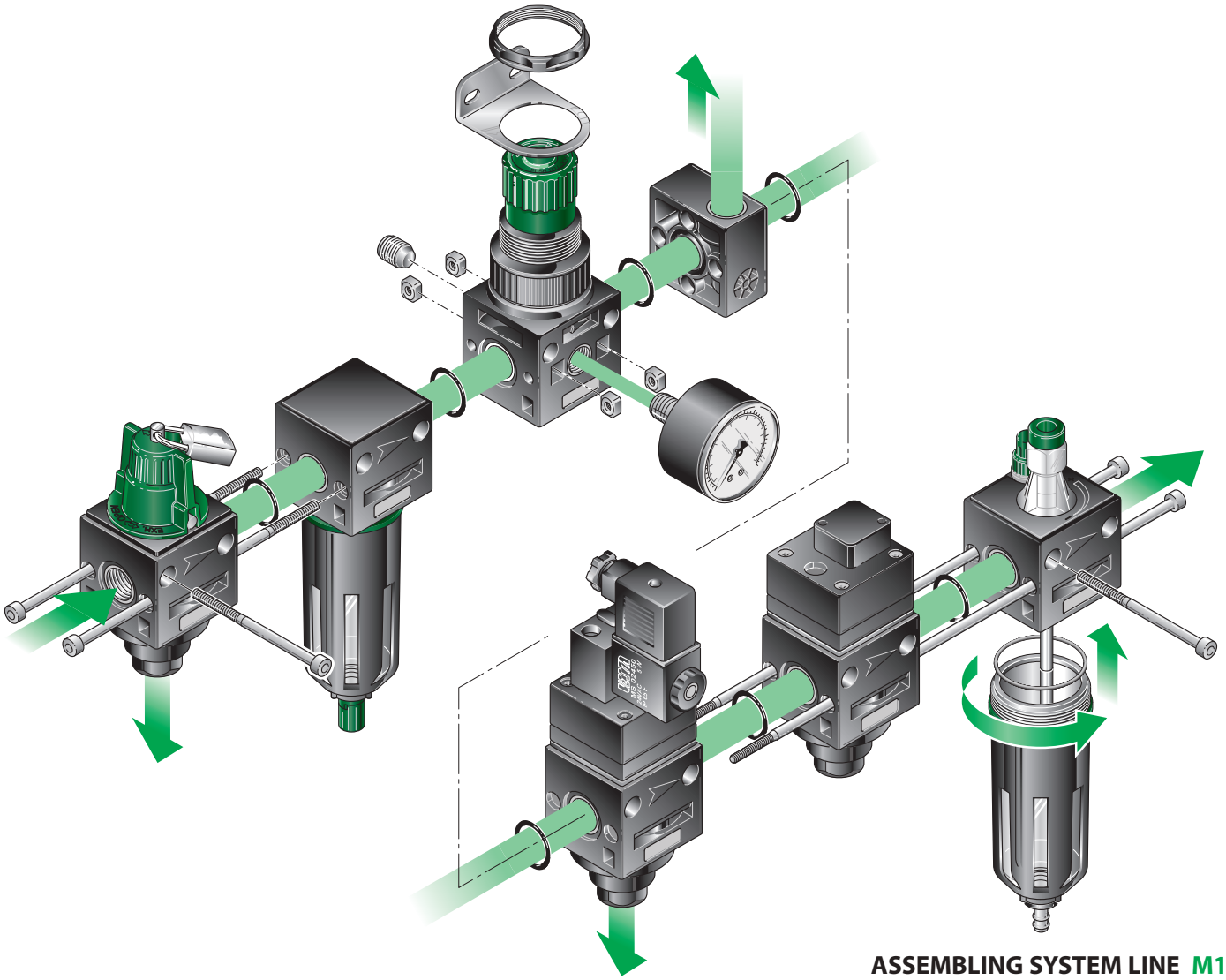
Battery for air treatment with very high performances and an excellent strenght, for fixed plants or industrial automation systems with users who need very high flow rates.

Batteria di trattamento dell’aria ad elevatissime prestazioni e di notevole robustezza, per impianti fissi o apparati per l’automazione industriale dotati di utenze che necessitano di portate particolarmente elevate.



.. M14 ..

MODULAR LINE G1/4
LINEA MODULARE G1/4



ASSEMBLING SYSTEM LINE M14
SCHEMA DI MONTAGGIO LINEA M14

TECHNICAL FEATURES

Connections	G1/4
Body and bowl guard	Acetalic resin (POM).
Bowl	Transparent toughened polyamide.
Environment temperature range	+5 ÷ +50 °C (41 ÷ 122 °F)
Gauge connections	G1/8
Maximum inlet pressure	16 Bar (230 Psi)
Fixing	Complete with ring nut for panel assembly, or can be wall mounted on a braket .

CARATTERISTICHE TECNICHE

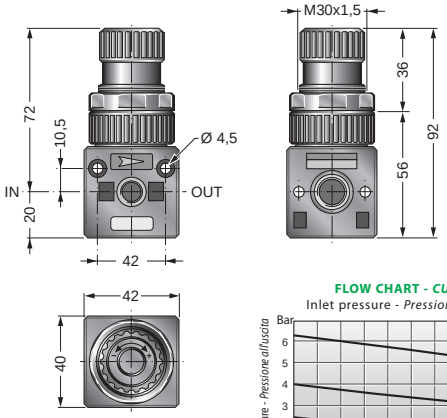
Connessioni	*G1/4*
Corpo e protezione della tazza	*Resina acetalica (POM).*
Tazza	*Poliammide trasparente tenacizzato antiurto.*
Temperatura ambiente	*+5 ÷ +50 °C (41 ÷ 122 °F)*
Connessioni manometro	*G1/8*
Pressione massima di ingresso	*16 Bar (230 Psi)*
Fissaggio	*Completo di ghiera per il montaggio a pannello, o Possibilità di fissaggio parete con staffa.*

The **M14** serie, that is also available with transparent bowls, is characterized by compact dimensions. It offers a complete range of components for air treatment. The range covers: filters and microfilters with different levels of dust extraction and condensate with the possibility of mounting the automatic drainage; pressure regulators until 12 bar; lubricators both standard and with depression loading; 3 way on-off valves with lock; shut off valves with a device used to shut off the air supply, while relieving the downstream circuit by a remote electric or pneumatic control; slow start valves for a gradual pressurization of the system.
Complete groups for air treatment are available, such as: filter regulator + lubricator, filter regulator + lubricator + shut off upstream valve, or filter + regulator + lubricator.

*La serie **M14**, disponibile anche con tazze trasparenti, è caratterizzata da dimensioni compatte ed offre una gamma completa di componenti per il trattamento dell'aria. La serie comprende: filtri e microfiltri con vari livelli di estrazione delle polveri e condensa con possibilità di montaggio dello scarico automatico; i regolatori di pressione sino a 12 Bar; i lubrificatori sia standard che con caricamento a depressione; le valvole di intercettazione a 3 vie con blocco; le valvole di sezionamento a comando elettropneumatico o pneumatico azionabile a distanza, per escludere l'alimentazione e mettere in scarico il circuito di valle; gli avviatori progressivi per la pressurizzazione graduale dell'impianto.*
Sono disponibili gruppi preassemblati completi per il trattamento dell'aria quali: filtroregolatore+lubrificatore, filtroregolatore+lubrificatore+valvola di sezionamento a monte, oppure filtro+regolatore+lubrificatore.

REGULATOR
REGOLATORE

R M14 ..



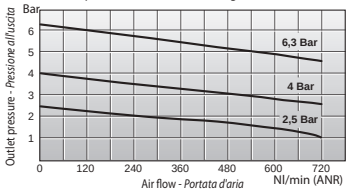
REGULATOR

- Diaphragm operation.
- Can be wall mounted using the relative holes, with ring nut for panel assembly or braket.
- Lockable safety knob.
- Pressure ranges: 0 ÷ 8 Bar (standard) or 0 ÷ 12 Bar.
- Built-in overpressure relieving function.

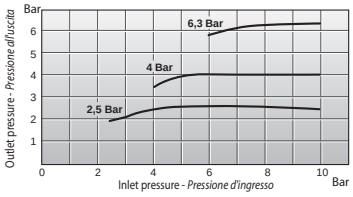
REGOLATORE

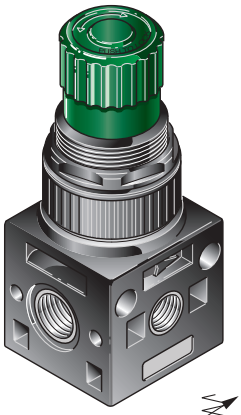
- *Funzionamento a membrana.*
- *Fissaggio a parete con fori predisposti, su pannello o su staffa per mezzo della ghiera in dotazione.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Campi di pressione: 0 ÷ 8 Bar (standard) o 0 ÷ 12 Bar.*
- *Scarico della sovrapressione (relieving) incorporato.*

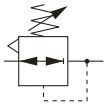
FLOW CHART - *CURVE DI PORTATA*
Inlet pressure - *Pressione d'ingresso* = 10 Bar



REGULATION FEATURES - *CURVE DI REGOLAZIONE*
Constant flow rate - *Portata costante* = 240 Nl/min



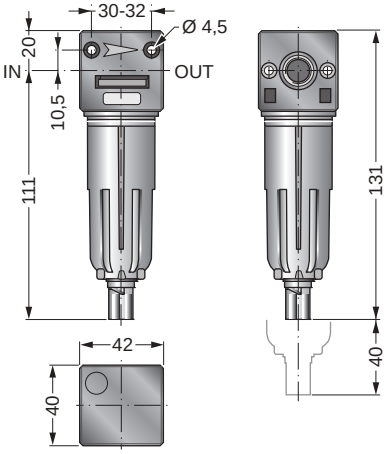




G1/4
0,135 Kg

FILTER
FILTRO

F M14 ..



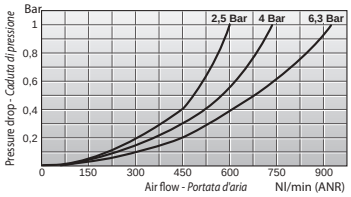
FILTER

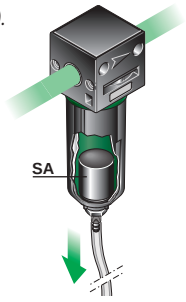
- Filtering degree: 5 micron or 20 micron (standard).
- Low pressure drop (max inlet pressure: 16 Bar).
- Bowl guard (standard, 22 cc.).
- Condensate drainage: manual and semiautomatic in the integrated or **float type automatic version (SA)**.

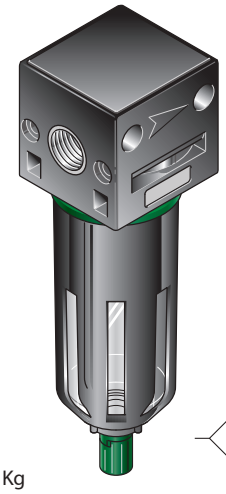
FILTRO

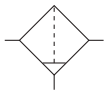
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Bassa caduta di pressione (Press. max ingresso: 16 Bar).*
- *Tazza protetta (standard, 22 cc.).*
- *Drenaggio della condensa: manuale e semiautomatico in versione integrata, oppure **automatico a galleggiante (SA)**.*

FLOW CHART - *CURVE DI PORTATA*
Filtering element - *Elemento filtrante* = 20 micron





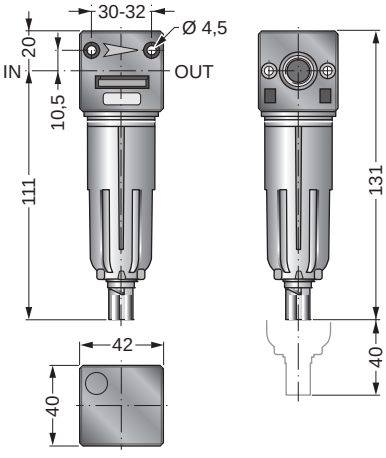




G1/4
0,100 Kg

MICROFILTER
MICROFILTRO

MF M14 ..



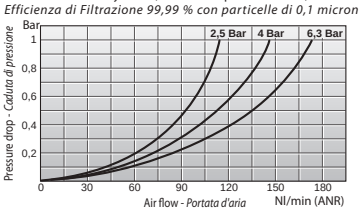
COALESCENT OIL-PROOF MICROFILTER

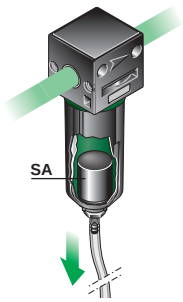
- Essential in circuit where oil is not permitted.
- 99,99 % filtering efficiency with 0,1 micron particles.
- Long-lasting filtering element.
- It is advisable to install a filter on the inlet.
- Bowl and condensate drainage: see **F M14 ..** .

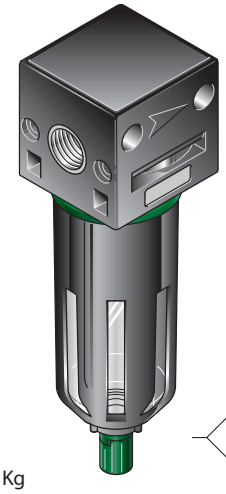
MICROFILTRO ANTIOLIO A COALESCENZA

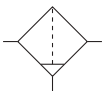
- *Per circuiti dove non è ammessa la presenza di olio.*
- *Efficienza di filtrazione del99,99 % su particelle di 0,1 µ.*
- *Lunga durata dell'elemento filtrante.*
- *E' consigliata l'installazione di un filtro a monte.*
- *Tazza e drenaggio come modello **F M14 ..** .*

FLOW CHART - *CURVE DI PORTATA*
Filtration efficiency of 99,99 % with particles of 0,1 micron
Efficienza di Filtrazione 99,99 % con particelle di 0,1 micron





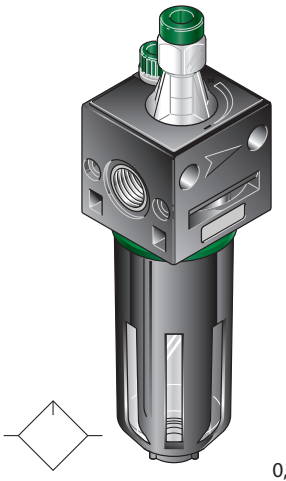




G1/4
0,099 Kg

GRUPPI ARIA AIR TREATMENT

L M14 .. LUBRICATOR / *LUBRIFICATORE*



G1/4
0,100 Kg

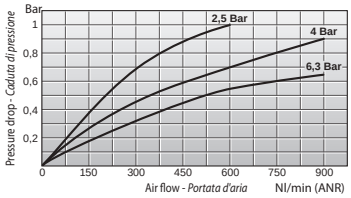
LUBRICATOR

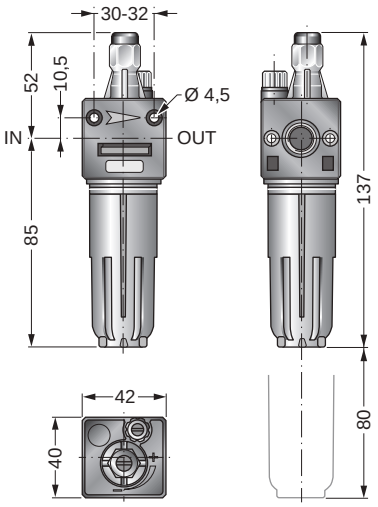
- Proportional oil mist type, with constantly steady delivery and suction ensured even with low flow rates.
- Can be wall mounted using the relative holes (Ø 4,5 mm).
- Bowl guard (standard, 42 cc.).
- Recommended oil viscosity ISO VG32.
- Maximum operating pressure: 16 Bar (230Psi).

LUBRIFICATORE

- *Di tipo proporzionale a nebbia d'olio con erogazione costante nel tempo e pescaggio anche a basse portate.*
- *Fissaggio a parete con fori predisposti (Ø 4,5 mm).*
- *Tazza protetta (standard, 42 cc.).*
- *Viscosità olio consigliata ISO VG32 .*
- *Massima pressione di ingresso: 16 Bar (230Psi).*

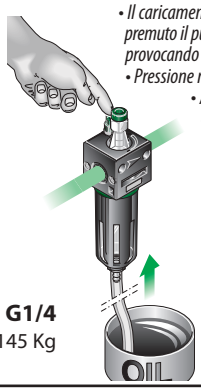
FLOW CHART - *CURVE DI PORTATA*





L M14 ..VL LUBRICATOR VL / *LUBRIFICATORE VL*





G1/4
0,145 Kg

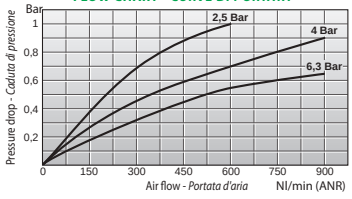
AUTOMATIC FILLING LUBRICATOR

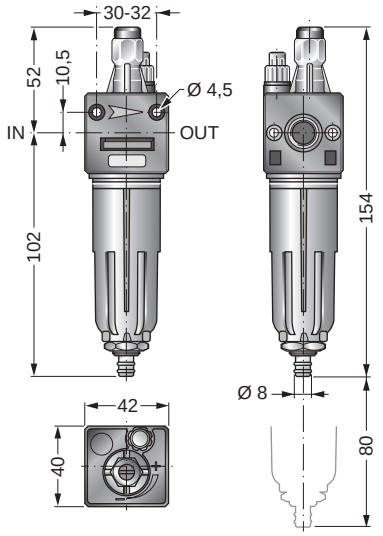
- Filling of oil is achieved **without interrupting the normal operation of the system** by keeping the button at the base of the lubricator casing pushed. This provokes a vacuum inside the bowl enabling the oil to be intaken.
- Minimum attivation pressure: 3 Bar (40 Psi).
- Other functional features as standard model.

LUBRIFICATORE CARICA A DEPRESSIONE

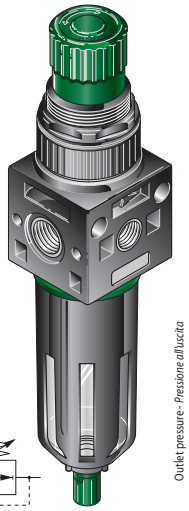
- *Il caricamento dell'olio avviene , tenendo premuto il pulsante posto sulla base del corpo del lubrificatore, provocando la depressione che ne permette l'aspirazione.*
- *Pressione minima di attivazione: 3 Bar (40 Psi).*
- *Altre caratteristiche funzionali come il modello standard.*

FLOW CHART - *CURVE DI PORTATA*





FR M14 .. FILTER REGULATOR / *FILTRO REGOLATORE*



G1/4
0,170 Kg

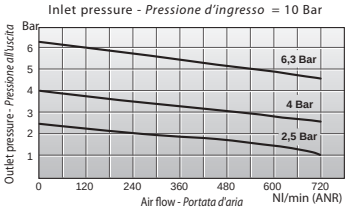
FILTER REGULATOR

- Diaphragm operation.
- Lockable safety knob.
- Built-in overpressure relieving function.
- Filtering degree: 5 micron or 20 micron (standard).
- Pressure ranges: 0 ÷ 8 Bar (standard) or 0 ÷ 12 Bar.
- Fixing, bowl and condensate drainage: see **F M14 ..** .

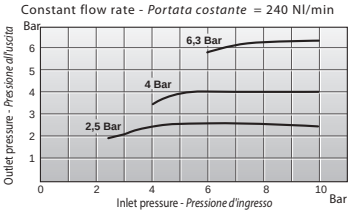
FILTRO REGOLATORE

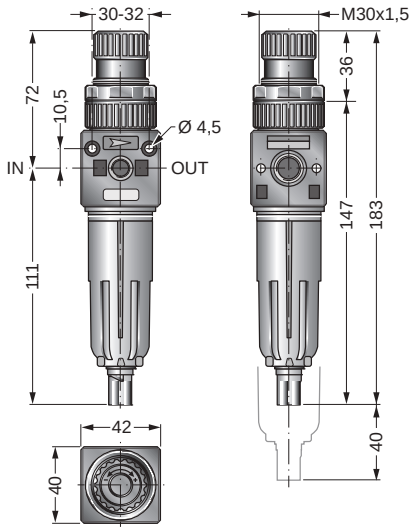
- *Funzionamento a membrana.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Scarico della sovrapressione (relieving) incorporato.*
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Campi di pressione: 0 ÷ 8 Bar (standard) o 0 ÷ 12 Bar.*
- *Fissaggio, tazza e drenaggio come modello .*

FLOW CHART - *CURVE DI PORTATA*
Inlet pressure - *Pressione d'ingresso* = 10 Bar



REGULATION FEATURES - *CURVE DI REGOLAZIONE*
Constant flow rate - *Portata costante* = 240 Nl/min





3 WAY ON-OFF VALVE WITH LOCK

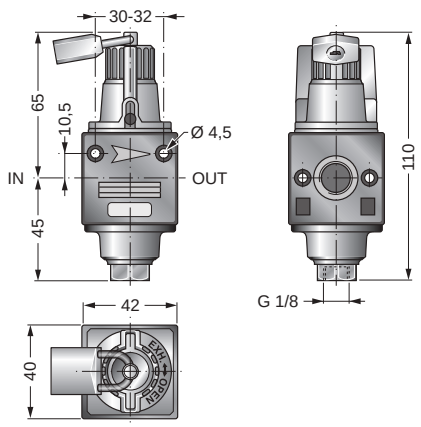
- Used to shut off the air supply while relieving the downstream circuit.
- Used during maintenance operations to prevent the system from being accidentally or wrongly pressurized.
- Discarge connection: G1/8 BSP.
- The device is equipped with 1 lock.

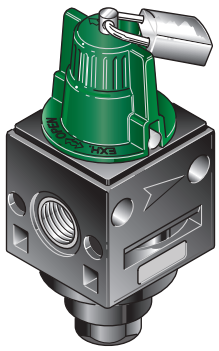
VALVOLA A 3 VIE CON BLOCCO

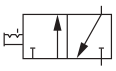
- *Viene utilizzata per chiudere l'alimentazione dell'aria e contemporaneamente mettere in scarico il circuito di valle.*
- *Necessario nelle operazioni di manutenzione evitando la messa in pressione accidentale o non autorizzata dell'impianto.*
- *Connessione di scarico G1/8 BSP.*
- *L'apparecchio viene fornito con 1 lucchetto.*

3 WAY ON-OFF VALVE
VALVOLA A 3 VIE

V3 M14

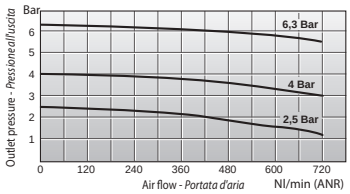






G1/4
0,135 Kg

FLOW CHART - *CURVE DI PORTATA*
Inlet pressure - *Pressione d'ingresso* = 10 Bar



SHUT-OFF VALVE

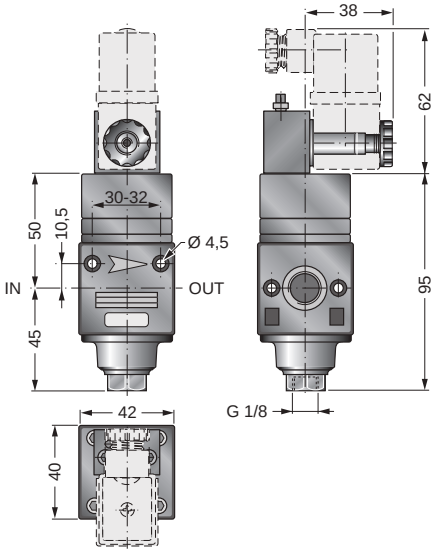
- Available with CNOMO standards remote electric control (**E1S** version) or remote pneumatic control (**PP** version).
- Discarge connection: G1/8 BSP.
- Minimum pressure admitted: 3 Bar (40 Psi).
- Maximum working pressure: 10 Bar (145 Psi).
- For electric components see **ELBAC...** *page* B-88 or **ELCDC...** *page* B-89

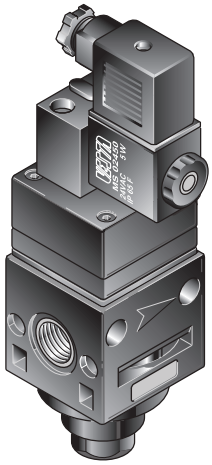
VALVOLA DI SEZIONAMENTO

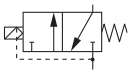
- *Disponibile con pilotaggio elettrico a norme CNOMO o ad azionamento pneumatico (da ordinarsi separatamente).*
- *Connessione di scarico G1/8 BSP.*
- *Pressione minima ammessa: 3 Bar (40 Psi).*
- *Pressione massima di ingresso: 10 Bar (145 Psi).*
- *Per componenti elettrici vedi* **ELBAC...** *pagina* B-88 *o* **ELDCC...** *pagina* B-89

SHUT-OFF VALVE
VALVOLA DI SEZIONAMENTO

SV M14...

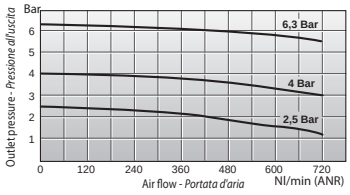






G1/4
0,145 Kg

FLOW CHART - *CURVE DI PORTATA*
Inlet pressure - *Pressione d'ingresso* = 10 Bar



SLOW START VALVE

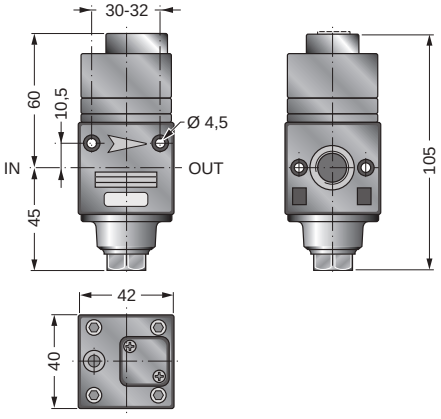
- Before delivering the maximum available pressure, the air is allowed to slowly flow around the downstream circuit until about 60 % of the pressure is reached upstream.
- Discarge connection: G1/8 BSP.
- Use built-in flow governor to establish the pressurizing time.
- Operating pressure range: 3 ÷10 Bar (40 ÷ 145 Psi).

AVVIATORE PROGRESSIVO

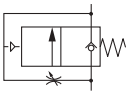
- *Prima che la valvola eroghi la massima pressione disponibile, l'aria viene fatta fluire lentamente nel circuito di valle fino al raggiungimento del 60 % circa della pressione a monte.*
- *Connessione di scarico G1/8 BSP.*
- *L'apposito regolatore di flusso incorporato fissa il tempo della messa in pressione del circuito pneumatico.*
- *Pressione di esercizio: 3 ÷ 10 Bar (40 ÷ 145 Psi).*

SLOW START VALVE
AVVIATORE PROGRESSIVO

AVP M14 APC

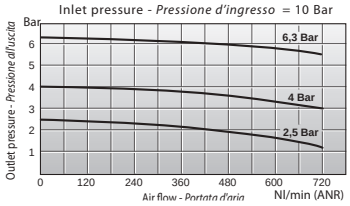






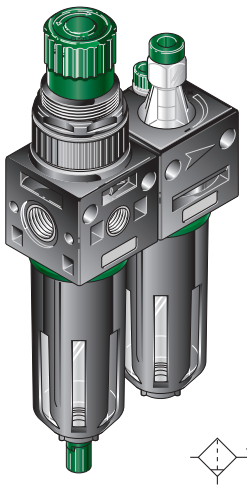
G1/4
0,155 Kg

FLOW CHART - *CURVE DI PORTATA*
Inlet pressure - *Pressione d'ingresso* = 10 Bar

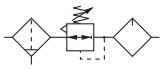


FR+L M14 ..

FR+L UNIT
GRUPPO FR+L



G1/4
0,290 Kg

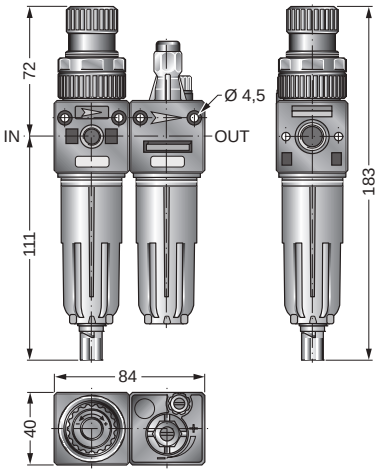


FILTER REGULATOR + LUBRICATOR UNIT

- Integrated unit for air treatment assembling with:
  - **FR M14 ..** Filter regulator (Pag. C-12).
  - **L M14 ..** Lubricator (Pag. C-12).
- Filtering degree: 5 micron or 20 micron (standard).
- Recommended oil viscosity ISO VG32.
- Maximum operating pressure: 16 Bar (230Psi).

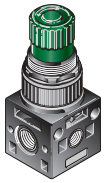
GRUPPO FILTROREGOLATORE + LUBRIFICATORE

- *Gruppo integrato di trattamento aria composto da:*
  - ***FR M14 ..*** *Filtroregolatore (Pag.* C-12 *).*
  - ***L M14 ..*** *Lubrificatore (Pag.* C-12 *).*
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Viscosità olio consigliata ISO VG32 .*
- *Massima pressione di ingresso: 16 Bar (230Psi).*



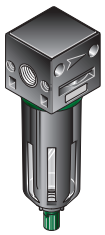
ORDER CODE LINE M14 / *CODICI DI ORDINAZIONE LINEA M14*

REGULATOR / *REGOLATORE*



R	M14	08	R
R	M14	12	R

FILTER / *FILTRO*



F	M14	20	PE	SS
F	M14	20	PE	SA
F	M14	5	PE	SS
F	M14	5	PE	SA

COALESCENT OIL-PROOF MICROFILTER
FILTRO ANTIOLIO A COALESCENZA

MF	M14	0,1	PE	SS
MF	M14	0,1	PE	SA

LUBRICATOR / *LUBRIFICATORE*



L	M14	PE

AUTOMATIC FILLING LUBRICATOR
LUBR. CON CARICAMENTO A DEPRESSIONE

L	M14	PE	VL

3 WAY ON-OFF VALVE / *VALVOLA A 3 VIE*



V3	M14

STANDARD = FR+L M14 20 08 PE SS

Accessories and spare parts see pages C38 and C-40.
Accessori e ricambi vedi pagine C38 e C-40.

SHUT-OFF VALVE / *VALVOLA DI SEZIONAMENTO*



SV	M14	E1S
SV	M14	PP

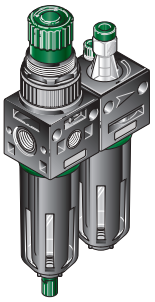
For coils and electric components see page B-89.
Per solenoidi e componenti elettrici vedi pagina B-89.

SLOW START VALVE / *AVVIATORE PROGRESSIVO*



AVP	M14	APC

FR+L UNIT / *GRUPPO FR+L*



FR+L	M14	20	08	R	PE	SS	
FR+L	M14	20	12	R	PE	SS	
FR+L	M14	5	08	R	PE	SS	
FR+L	M14	5	12	R	PE	SS	
FR+L	M14	20	08	R	PE	SA	
FR+L	M14	20	12	R	PE	SA	
FR+L	M14	5	08	R	PE	SA	
FR+L	M14	5	12	R	PE	SA	
FR+L	M14	20	08	R	PE	SS	VL
FR+L	M14	20	12	R	PE	SS	VL
FR+L	M14	5	08	R	PE	SS	VL
FR+L	M14	5	12	R	PE	SS	VL
FR+L	M14	20	08	R	PE	SA	VL
FR+L	M14	20	12	R	PE	SA	VL
FR+L	M14	5	08	R	PE	SA	VL
FR+L	M14	5	12	R	PE	SA	VL

FILTER REGULATOR / *FILTRO REGOLATORE*



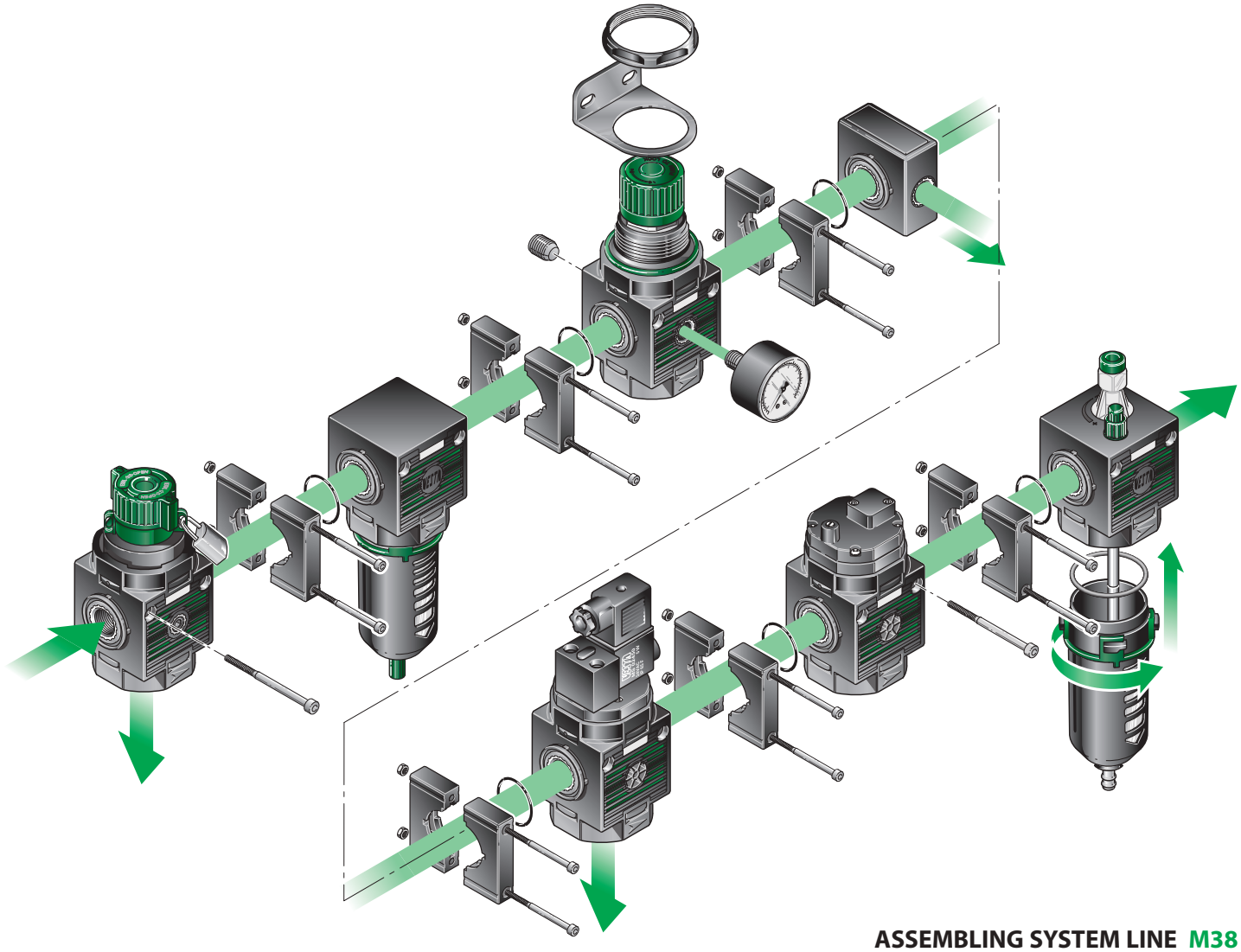
FR	M14	20	08	R	PE	SS
FR	M14	20	12	R	PE	SS
FR	M14	5	08	R	PE	SS
FR	M14	5	12	R	PE	SS
FR	M14	20	08	R	PE	SA
FR	M14	20	12	R	PE	SA
FR	M14	5	08	R	PE	SA
FR	M14	5	12	R	PE	SA

All filters, filter regulators and lubricators versions of the **M14** serie, if requested can mount transparent bowls. In the code it is necessary to replace **PE** with **TT** example: from **F M14 20 PE SS** to **F M14 20 TT SS**

Tutte le versioni dei filtri, filtroregolatori e lubrificatori della serie **M14** *sopra indicati possono montare a richiesta le tazze trasparenti, nella codifica occorre sostituire* **PE** *con* **TT** *esempio: da* ***F M14 20 PE SS*** *a* ***F M14 20 TT SS***

.. M38 ..

MODULAR LINE G3/8
LINEA MODULARE G3/8



ASSEMBLING SYSTEM LINE M38
SCHEMA DI MONTAGGIO LINEA M38

TECHNICAL FEATURES

Connections	G3/8
Body and bowl guard	Polyamide glass reinforced.
Bowl	Transparent toughened polyamide.
Environment temperature range	+5 ÷ +50 °C (41 ÷ 122 °F)
Gauge connections	G1/8
Maximum inlet pressure	16 Bar (230 Psi)
Fixing	Complete with ring nut for panel assembly, or can be wall mounted on a braket .

CARATTERISTICHE TECNICHE

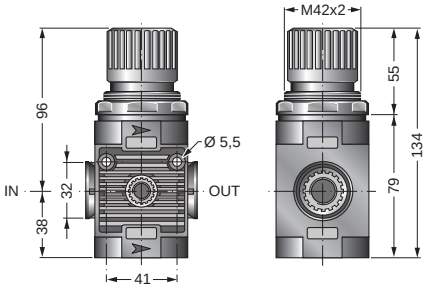
Connessioni	*G3/8*
Corpo e protezione della tazza	*Poliammide rinforzato vetro.*
Tazza	*Poliammide trasparente tenacizzato antiurto.*
Temperatura ambiente	*+5 ÷ +50 °C (41 ÷ 122 °F)*
Connessioni manometro	*G1/8*
Pressione massima di ingresso	*16 Bar (230 Psi)*
Fissaggio	*Completo di ghiera per il montaggio a pannello, o Possibilità di fissaggio parete con staffa.*

The **M38** serie is provided with an excellent relation between dimensions/performances. It offers a complete range of components for air treatment. The range covers: filters and microfilters with different levels of dust extraction and condensate with the possibility of mounting the automatic drainage; pressure regulators until 12 bar; lubricators both standard and with depression loading; 3 way on-off valves with lock; shut off valves with a device used to shut off the air supply, while relieving the downstream circuit by a remote electric or pneumatic control; slow start valves for a gradual pressurization of the system.
Complete groups for air treatment are available, such as: filter regulator + lubricator, filter regulator + lubricator + shut off upstream valve, or filter + regulator + lubricator.

*La serie **M38** é dotata di un eccezionale rapporto dimensioni / prestazioni ed offre una gamma completa di componenti per il trattamento dell'aria. La serie comprende: filtri e microfiltri con vari livelli di estrazione delle polveri e condensa con possibilità di montaggio dello scarico automatico; i regolatori di pressione sino a 12 Bar; i lubrificatori sia standard che con caricamento a depressione; le valvole di intercettazione a 3 vie con blocco; le valvole di sezionamento a comando elettropneumatico o pneumatico azionabile a distanza, per escludere l'alimentazione e mettere in scarico il circuito di valle; gli avviatori progressivi per la pressurizzazione graduale dell'impianto.*
Sono disponibili gruppi preassemblati completi per il trattamento dell'aria quali: filtroregolatore+lubrificatore, filtroregolatore+lubrificatore+valvola di sezionamento a monte, oppure filtro+regolatore+lubrificatore.

REGULATOR
REGOLATORE

R M38 ..



REGULATOR

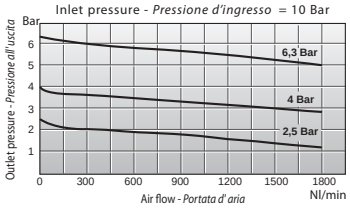
- Rolling diaphragm.
- Can be wall mounted using the relative holes, with ring nut for panel assembly or braket.
- Lockable safety knob.
- Pressure ranges: 0 ÷ 8 Bar (standard) or 0 ÷ 12 Bar.
- Built-in overpressure relieving function.

REGOLATORE

- *Membrana a rotolamento.*
- *Fissaggio a parete con fori predisposti, su pannello o su staffa per mezzo della ghiera in dotazione.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Campi di pressione: 0 ÷ 8 Bar (standard) o 0 ÷ 12 Bar.*
- *Scarico della sovrapressione (relieving) incorporato.*

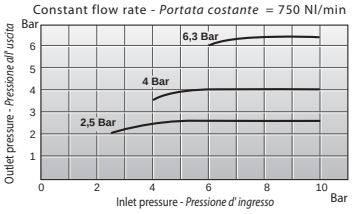
FLOW CHART - *CURVE DI PORTATA*

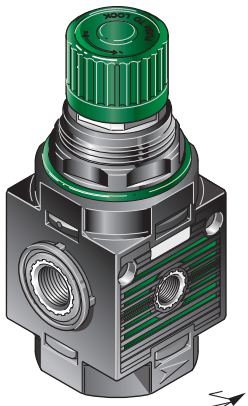
Inlet pressure - *Pressione d'ingresso* = 10 Bar

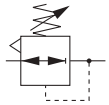


REGULATION FEATURES - *CURVE DI REGOLAZIONE*

Constant flow rate - *Portata costante* = 750 Nl/min



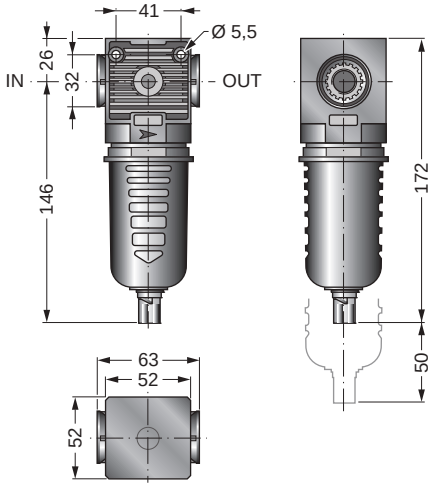




G3/8
0,325 Kg

FILTER
FILTRO

F M38 ..



FILTER

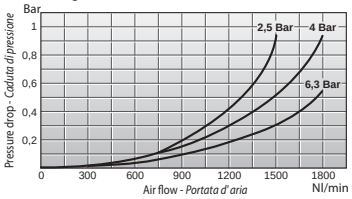
- Filtering degree: 5 micron or 20 micron (standard).
- Low pressure drop (max inlet pressure: 16 Bar).
- Bowl guard 42 cc. with quick safety connection.
- Condensate drainage: manual and semiautomatic in the integrated version or **float type automatic version (SA)**.

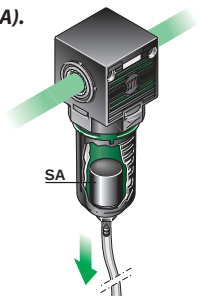
FILTRO

- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Bassa caduta di pressione (Press. max ingresso: 16 Bar).*
- *Tazza protetta 42 cc. ad aggancio rapido antiespulsione.*
- *Drenaggio della condensa: manuale e semiautomatico in versione integrata, oppure **automatico a galleggiante (SA).***

FLOW CHART - *CURVE DI PORTATA*

Filtering element - *Elemento filtrante* = 20 micron



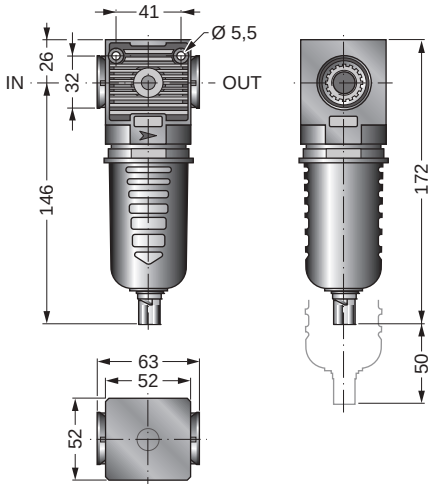




G3/8
0,225 Kg

MICROFILTER
MICROFILTRO

MF M38 ..



COALESCENT OIL-PROOF MICROFILTER

- Essential in circuit where oil is not permitted.
- 99,99 % filtering efficiency with 0,1 micron particles.
- Long-lasting filtering element.
- It is advisable to install a filter on the inlet.
- Bowl and condensate drainage: see **F M38 ..** .

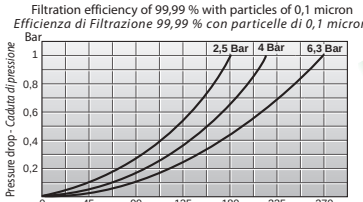
MICROFILTRO ANTIOLIO A COALESCENZA

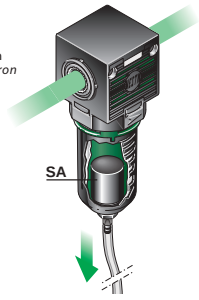
- *Per circuiti dove non è ammessa la presenza di olio.*
- *Efficienza di filtrazione del 99,99 % su particelle di 0,1 µ.*
- *Lunga durata dell'elemento filtrante.*
- *E' consigliata l'installazione di un filtro a monte.*
- *Tazza e drenaggio come modello **F M38 ..** .*

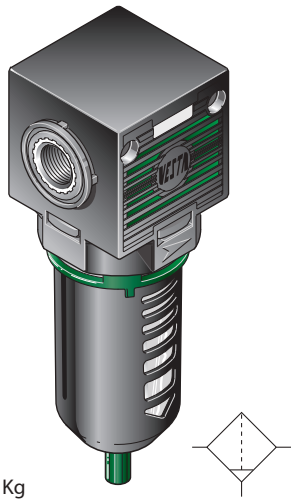
FLOW CHART - *CURVE DI PORTATA*

Filtration efficiency of 99,99 % with particles of 0,1 micron

Efficienza di Filtrazione 99,99 % con particelle di 0,1 micron

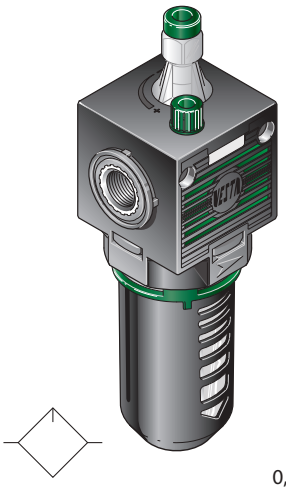






G3/8
0,221 Kg

L M38 .. LUBRICATOR *LUBRIFICATORE*



G3/8
0,230 Kg

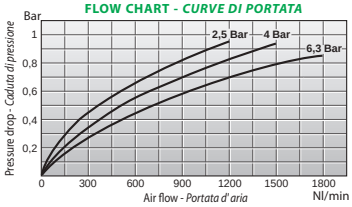
LUBRICATOR

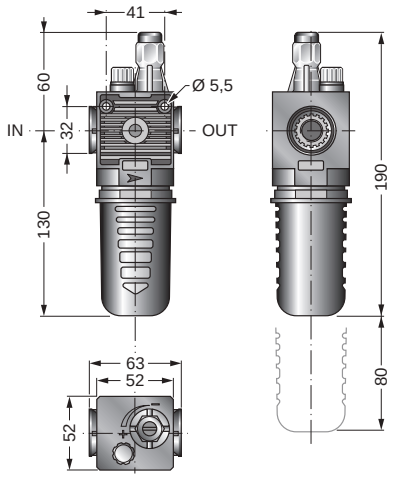
- Proportional oil mist type, with constantly steady delivery and suction ensured even with low flow rates.
- Can be wall mounted using the relative holes (Ø 5,5 mm).
- Bowl guard 68 cc. with quick connection by means of the safety ring mechanism.
- Recommended oil viscosity ISO VG32.
- Maximum operating pressure: 16 Bar (230Psi).

LUBRIFICATORE

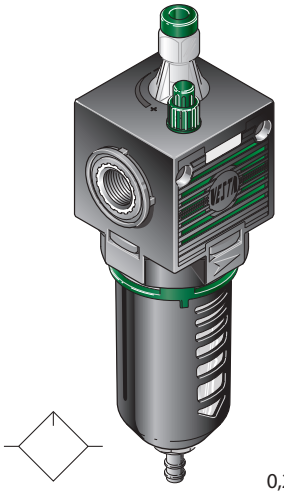
- *Di tipo proporzionale a nebbia d'olio con erogazione costante nel tempo e pescaggio anche a basse portate.*
- *Fissaggio a parete con fori predisposti (Ø 5,5 mm).*
- *Tazza protetta68 cc. ad aggancio rapido antiespulsione.*
- *Viscosità olio consigliata ISO VG32 .*
- *Massima pressione di ingresso: 16 Bar (230Psi).*

FLOW CHART - *CURVE DI PORTATA*

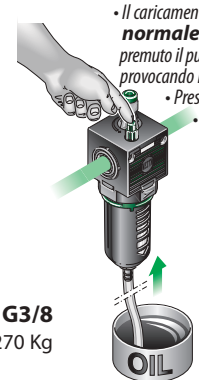




L M38 ..VL LUBRICATOR VL *LUBRIFICATORE VL*



G3/8
0,270 Kg



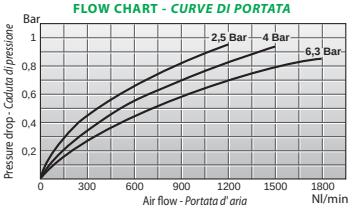
AUTOMATIC FILLING LUBRICATOR

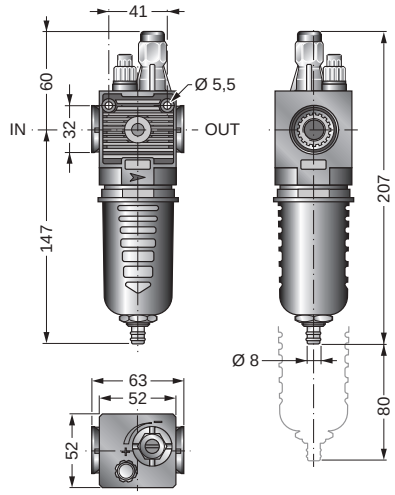
- Filling of oil is achieved **without interrupting the normal operation of the system** by keeping the button at the base of the lubricator casing pushed. This provokes a vacuum inside the bowl enabling the oil to be intaken.
- Minimum attivation pressure: 3 Bar (40 Psi).
- Other functional features as standard model.

LUBRIFICATORE CARICA A DEPRESSIONE

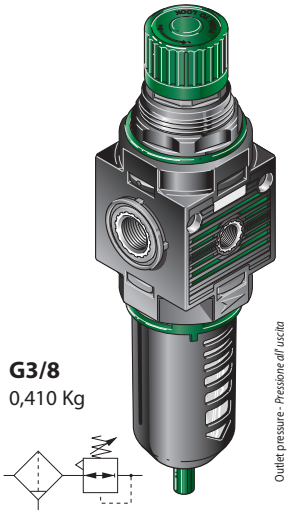
- *Il caricamento dell'olio avviene **senza interrompere il normale funzionamento dell'impianto**, tenendo premuto il pulsante posto sulla base del corpo del lubrificatore, provocando la depressione che ne permette l'aspirazione.*
- *Pressione minima di attivazione: 3 Bar (40 Psi).*
- *Altre caratteristiche funzionali come il modello standard.*

FLOW CHART - *CURVE DI PORTATA*





FR M38 .. FILTER REGULATOR *FILTRO REGOLATORE*



G3/8
0,410 Kg

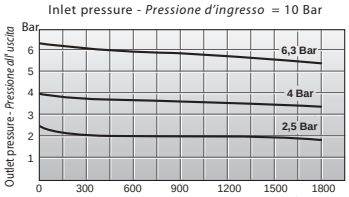
FILTER REGULATOR

- Rolling diaphragm.
- Lockable safety knob.
- Built-in overpressure relieving function.
- Filtering degree: 5 micron or 20 micron (standard).
- Pressure ranges: 0 ÷ 8 Bar (standard) or 0 ÷ 12 Bar.
- Fixing, bowl and condensate drainage: see **F M38 ..** .

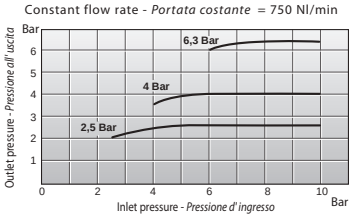
FILTRO REGOLATORE

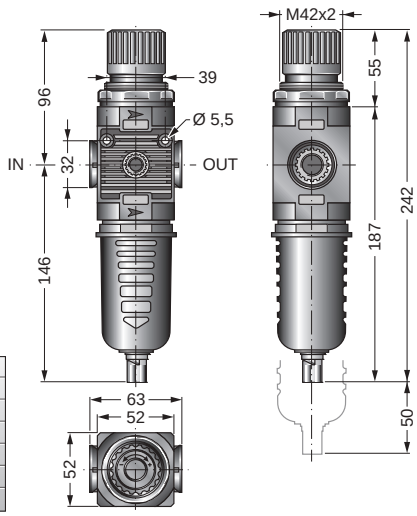
- *Membrana a rotolamento.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Scarico della sovrapressione (relieving) incorporato.*
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Campi di pressione: 0 ÷ 8 Bar (standard) o 0 ÷ 12 Bar.*
- *Fissaggio, tazza e drenaggio come modello **F M38 ..** .*

FLOW CHART - *CURVE DI PORTATA*
Inlet pressure - *Pressione d'ingresso* = 10 Bar



REGULATION FEATURES - *CURVE DI REGOLAZIONE*
Constant flow rate - *Portata costante* = 750 Nl/min

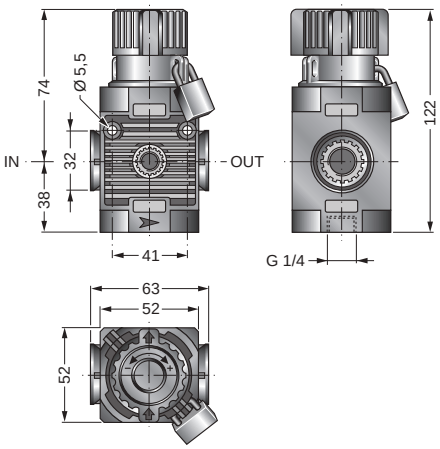




3 WAY ON-OFF VALVE WITH LOCK

3 WAY ON-OFF VALVE
VALVOLA A 3 VIE

V3 M38



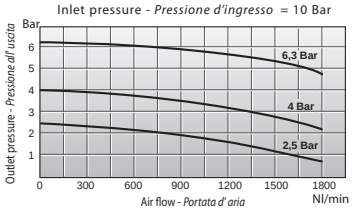
- Used to shut off the air supply while relieving the downstream circuit.
- Used during maintenance operations to prevent the system from being accidentally or wrongly pressurized.
- Discarge connection: G1/4 BSP.
- The device is equipped with 1 lock.

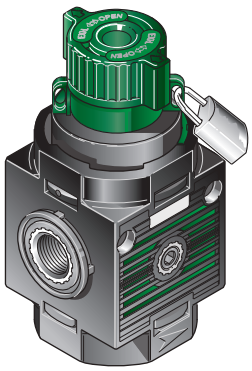
VALVOLA A 3 VIE CON BLOCCO

- *Viene utilizzata per chiudere l'alimentazione dell'aria e contemporaneamente mettere in scarico il circuito di valle.*
- *Necessario nelle operazioni di manutenzione evitando la messa in pressione accidentale o non autorizzata dell'impianto.*
- *Connessione di scarico G1/4 BSP.*
- *L'apparecchio viene fornito con 1 lucchetto.*

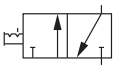
FLOW CHART - *CURVE DI PORTATA*

Inlet pressure - *Pressione d'ingresso* = 10 Bar





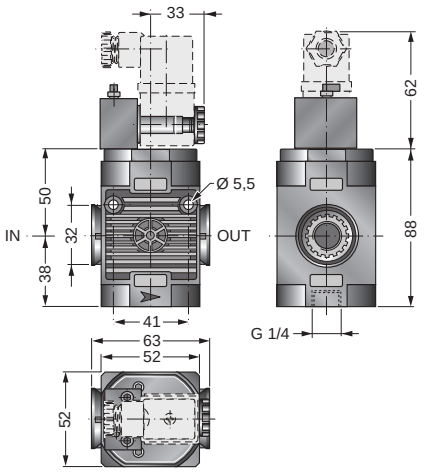
G3/8
0,270 Kg



SHUT-OFF VALVE

SHUT-OFF VALVE
VALVOLA DI SEZIONAMENTO

SV M38...



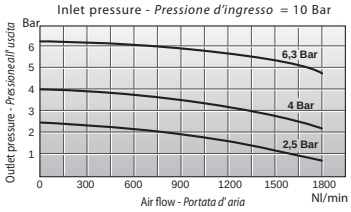
- Available with CNOMO standards remote electric control (**E1S** version) or remote pneumatic control (**PP** version).
- Discarge connection: G1/4 BSP.
- Minimum pressure admitted: 3 Bar (40 Psi).
- Maximum working pressure: 10 Bar (145 Psi).
- For electric components see **ELBAC...** *page* B-88 or **ELCDC...** *page* B-89

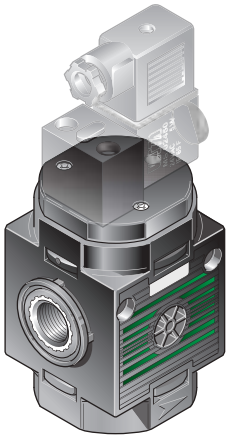
VALVOLA DI SEZIONAMENTO

- *Disponibile con pilotaggio elettrico a norme CNOMO o ad azionamento pneumatico (da ordinarsi separatamente).*
- *Connessione di scarico G1/4 BSP.*
- *Pressione minima ammessa: 3 Bar (40 Psi).*
- *Pressione massima di ingresso: 10 Bar (145 Psi).*
- *Per componenti elettrici vedi* **ELBAC...** *pagina* B-88 *o* **ELDCC...** *pagina* B-89

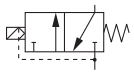
FLOW CHART - *CURVE DI PORTATA*

Inlet pressure - *Pressione d'ingresso* = 10 Bar





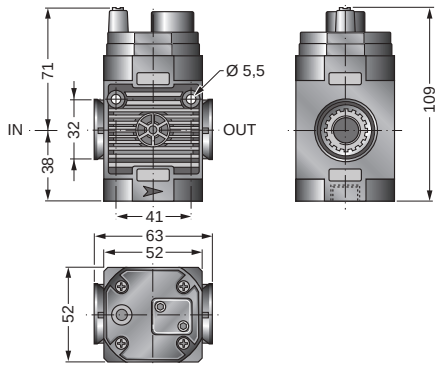
0,280 Kg



SLOW START VALVE

SLOW START VALVE
AVVIATORE PROGRESSIVO

AVP M38 APC



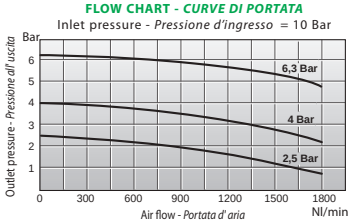
- Before delivering the maximum available pressure, the air is allowed to slowly flow around the downstream circuit until about 60 % of the pressure is reached upstream.
- Discarge connection: G1/4 BSP.
- Use built-in flow governor to establish the pressurizing time.
- Operating pressure range: 3 ÷10 Bar (40 ÷ 145 Psi).

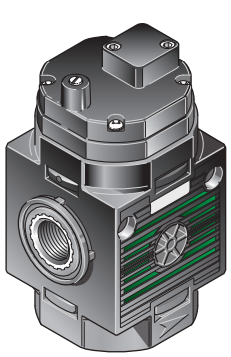
AVVIATORE PROGRESSIVO

- *Prima che la valvola eroghi la massima pressione disponibile, l'aria viene fatta fluire lentamente nel circuito di valle fino al raggiungimento del 60 % circa della pressione a monte.*
- *Connessione di scarico G1/4 BSP.*
- *L'apposito regolatore di flusso incorporato fissa il tempo della messa in pressione del circuito pneumatico.*
- *Pressione di esercizio: 3 ÷ 10 Bar (40 ÷ 145 Psi).*

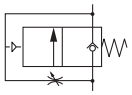
FLOW CHART - *CURVE DI PORTATA*

Inlet pressure - *Pressione d'ingresso* = 10 Bar



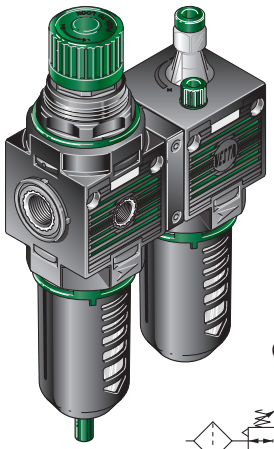


0,270 Kg

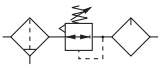


FR+L M38..

FR+L UNIT
GRUPPO FR+L



0,660 Kg

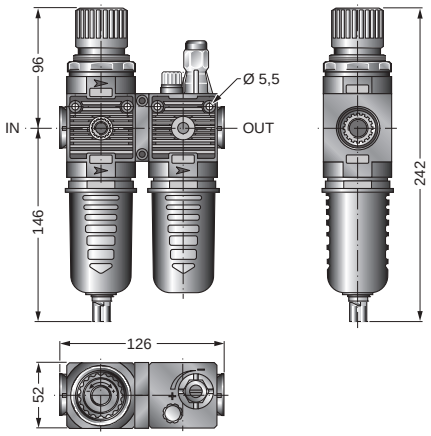


FILTER REGULATOR + LUBRICATOR UNIT

- Integrated unit for air treatment assembling with:
  - **FR M38 ..** Filter regulator (Pag. C-18).
  - **L M38 ..** Lubricator (Pag. C-18).
- Filtering degree: 5 micron or 20 micron (standard).
- Recommended oil viscosity ISO VG32.
- Maximum operating pressure: 16 Bar (230Psi).

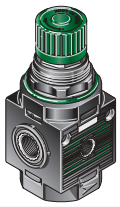
GRUPPO FILTROREGOLATORE + LUBRIFICATORE

- *Gruppo integrato di trattamento aria composto da:*
  - ***FR M38 ..*** *Filtroregolatore (Pag.* C-18 *).*
  - ***L M38 ..*** *Lubrificatore (Pag.* C-18 *).*
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Viscosità olio consigliata ISO VG32 .*
- *Massima pressione di ingresso: 16 Bar (230Psi).*



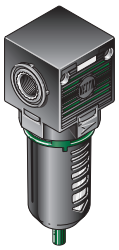
ORDER CODE LINE M38 / *CODICI DI ORDINAZIONE LINEA M38*

REGULATOR / *REGOLATORE*



R	M38	08	R
R	M38	12	R

FILTER / *FILTRO*

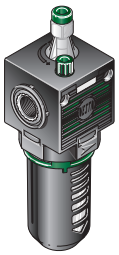


F	M38	20	PE	SS
F	M38	20	PE	SA
F	M38	5	PE	SS
F	M38	5	PE	SA

COALESCENT OIL-PROOF MICROFILTER
FILTRO ANTIOLIO A COALESCENZA

MF	M38	0,1	PE	SS
MF	M38	0,1	PE	SA

LUBRICATOR / *LUBRIFICATORE*

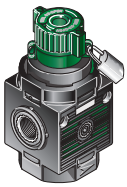


L	M38	PE

AUTOMATIC FILLING LUBRICATOR
LUBR. CON CARICAMENTO A DEPRESSIONE

L	M38	PE	VL

3 WAY ON-OFF VALVE / *VALVOLA A 3 VIE*



V3	M38

STANDARD = | FR+L | M38 | 20 | 08 | PE | SS |

Accessories and spare parts see pages C38 and C-40.
Accessori e ricambi vedi pagine C38 e C-40.

SHUT-OFF VALVE / *VALVOLA DI SEZIONAMENTO*



SV	M38	E1S
SV	M38	PP

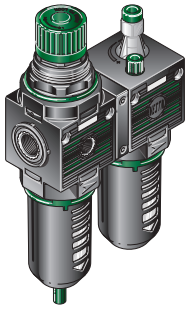
For coils and electric components see page B-89.
Per solenoidi e componenti elettrici vedi pagina B-89.

SLOW START VALVE / *AVVIATORE PROGRESSIVO*



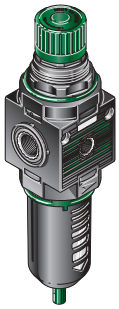
AVP	M38	APC

FR+L UNIT / *GRUPPO FR+L*



FR+L	M38	20	08	R	PE	SS	
FR+L	M38	20	12	R	PE	SS	
FR+L	M38	5	08	R	PE	SS	
FR+L	M38	5	12	R	PE	SS	
FR+L	M38	20	08	R	PE	SA	
FR+L	M38	20	12	R	PE	SA	
FR+L	M38	5	08	R	PE	SA	
FR+L	M38	5	12	R	PE	SA	
FR+L	M38	20	08	R	PE	SS	VL
FR+L	M38	20	12	R	PE	SS	VL
FR+L	M38	5	08	R	PE	SS	VL
FR+L	M38	5	12	R	PE	SS	VL
FR+L	M38	20	08	R	PE	SA	VL
FR+L	M38	20	12	R	PE	SA	VL
FR+L	M38	5	08	R	PE	SA	VL
FR+L	M38	5	12	R	PE	SA	VL

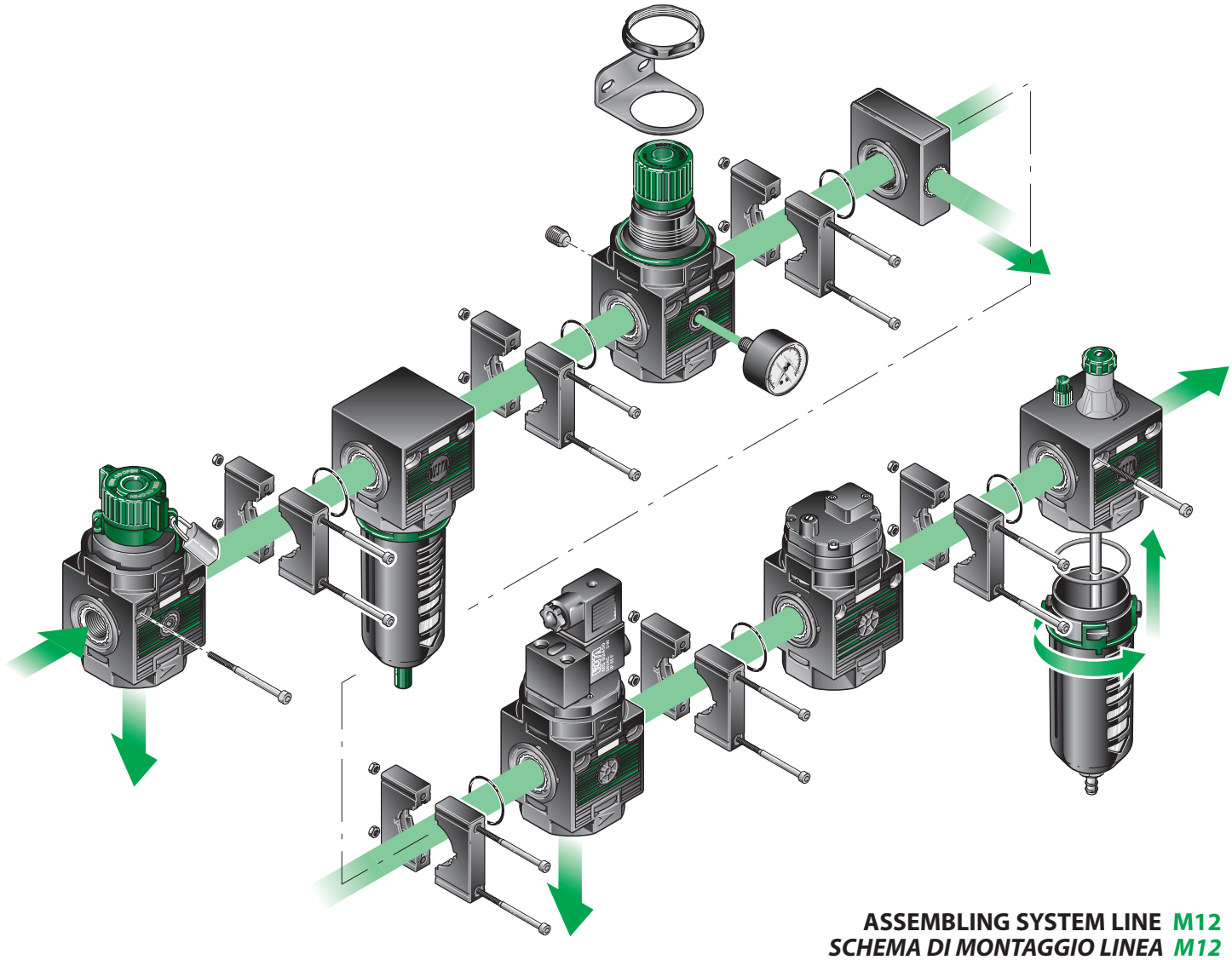
FILTER REGULATOR / *FILTRO REGOLATORE*



FR	M38	20	08	R	PE	SS
FR	M38	5	08	R	PE	SS
FR	M38	5	12	R	PE	SS
FR	M38	20	08	R	PE	SA
FR	M38	20	12	R	PE	SA
FR	M38	5	08	R	PE	SA
FR	M38	5	12	R	PE	SA

.. M12 ..

MODULAR LINE G1/2
LINEA MODULARE G1/2



ASSEMBLING SYSTEM LINE M12
SCHEMA DI MONTAGGIO LINEA M12

TECHNICAL FEATURES

Connections	G1/2
Body and bowl guard	Polyamide glass reinforced.
Bowl	Transparent toughened polyamide.
Environment temperature range	+5 ÷ +50 °C (41 ÷ 122 °F)
Gauge connections	G1/8
Maximum inlet pressure	16 Bar (230 Psi)
Fixing	Complete with ring nut for panel assembly, or can be wall mounted on a braket .

CARATTERISTICHE TECNICHE

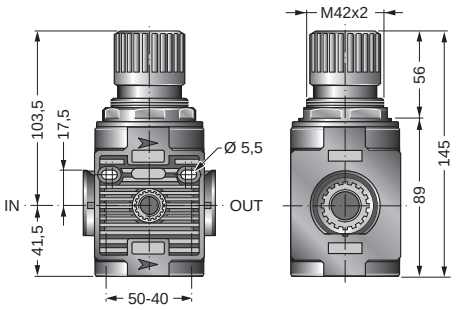
Connessioni	*G1/2*
Corpo e protezione della tazza	*Poliammide rinforzato vetro.*
Tazza	*Poliammide trasparente tenacizzato antiurto.*
Temperatura ambiente	*+5 ÷ +50 °C (41 ÷ 122 °F)*
Connessioni manometro	*G1/8*
Pressione massima di ingresso	*16 Bar (230 Psi)*
Fissaggio	*Completo di ghiera per il montaggio a pannello, o Possibilità di fissaggio parete con staffa.*

The **M12** serie is indicated for high flow rates. It offers a complete range of components for air treatment. The range covers: filters and microfilters with different levels of dust extraction and condensate with the possibility of mounting the automatic drainage; pressure regulators until 12 bar; lubricators both standard and with depression loading; 3 way on-off valves with lock; shut off valves with a device used to shut off the air supply, while relieving the downstream circuit by a remote electric or pneumatic control; slow start valves for a gradual pressurization of the system.
Complete groups for air treatment are available, such as: filter regulator + lubricator, filter regulator + lubricator + shut off upstream valve, or filter + regulator + lubricator.

*La serie **M12** é indicata per grandi portate ed offre una gamma completa di componenti per il trattamento dell'aria. La serie comprende: filtri e microfiltri con vari livelli di estrazione delle polveri e condensa con possibilità di montaggio dello scarico automatico; i regolatori di pressione sino a 12 Bar; i lubrificatori sia standard che con caricamento a depressione; le valvole di intercettazione a 3 vie con blocco; le valvole di sezionamento a comando elettropneumatico o pneumatico azionabile a distanza, per escludere l'alimentazione e mettere in scarico il circuito di valle; gli avviatori progressivi per la pressurizzazione graduale dell'impianto.*
Sono disponibili gruppi preassemblati completi per il trattamento dell'aria quali filtroregolatore+lubrificatore, filtroregolatore+lubrificatore+valvola di sezionamento a monte, oppure filtro+regolatore+lubrificatore.

REGULATOR
REGOLATORE

R M12 ..



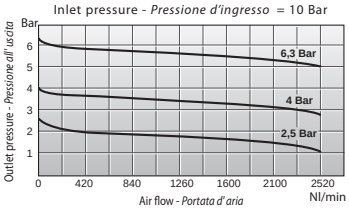
REGULATOR

- Rolling diaphragm.
- Can be wall mounted using the relative holes, with ring nut for panel assembly or braket.
- Lockable safety knob.
- Pressure ranges: 0 ÷ 8 Bar (standard) or 0 ÷ 12 Bar.
- Built-in overpressure relieving function.

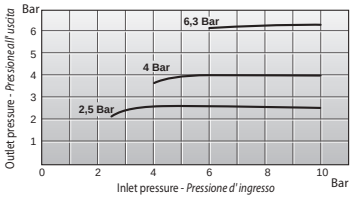
REGOLATORE

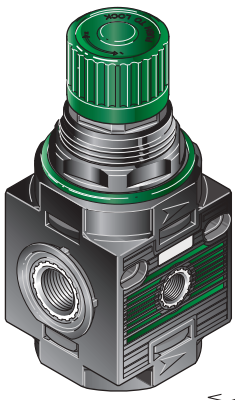
- *Membrana a rotolamento.*
- *Fissaggio a parete con fori predisposti, su pannello o su staffa per mezzo della ghiera in dotazione.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Campi di pressione: 0 ÷ 8 Bar (standard) o 0 ÷ 12 Bar.*
- *Scarico della sovrapressione (relieving) incorporato.*

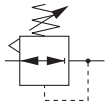
FLOW CHART - *CURVE DI PORTATA*
Inlet pressure - *Pressione d'ingresso* = 10 Bar



REGULATION FEATURES - *CURVE DI REGOLAZIONE*
Constant flow rate - *Portata costante* = 900 Nl/min



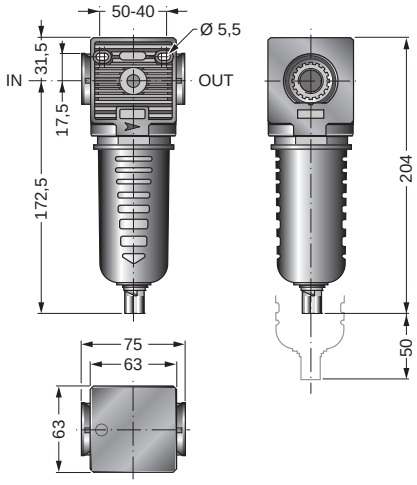




G1/2
0,435 Kg

FILTER
FILTRO

F M12 ..



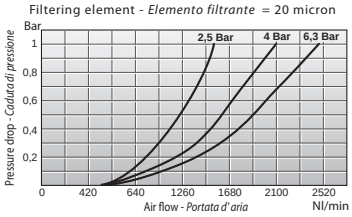
FILTER

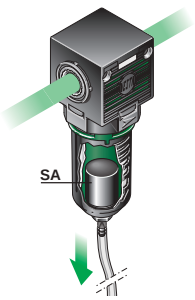
- Filtering degree: 5 micron or 20 micron (standard).
- Low pressure drop (max inlet pressure: 16 Bar).
- Bowl guard 100 cc. with quick safety connection
- Condensate drainage: manual and semiautomatic in the integrated version or **float type automatic version (SA)**.

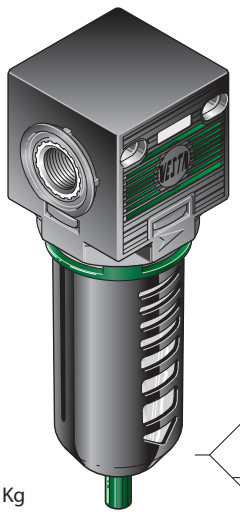
FILTRO

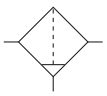
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Bassa caduta di pressione (Press. max ingresso: 16 Bar).*
- *Tazza protetta 100 cc. ad aggancio rapido antiespulsione.*
- *Drenaggio della condensa: manuale e semiautomatico in versione integrata, oppure **automatico a galleggiante (SA)**.*

FLOW CHART - *CURVE DI PORTATA*
Filtering element - *Elemento filtrante* = 20 micron





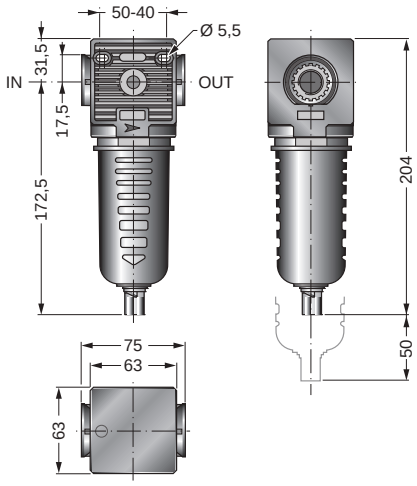




G1/2
0,355 Kg

MICROFILTER
MICROFILTRO

MF M12 ..



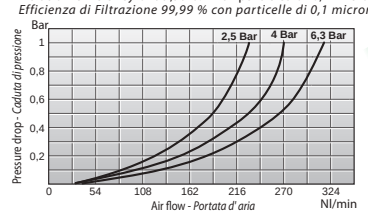
COALESCENT OIL-PROOF MICROFILTER

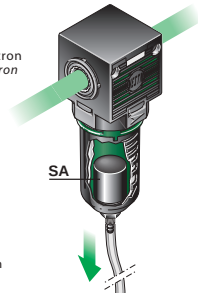
- Essential in circuit where oil is not permitted.
- 99,99 % filtering efficiency with 0,1 micron particles.
- Long-lasting filtering element.
- It is advisable to install a filter on the inlet.
- Bowl and condensate drainage: see **F M12 ..** .

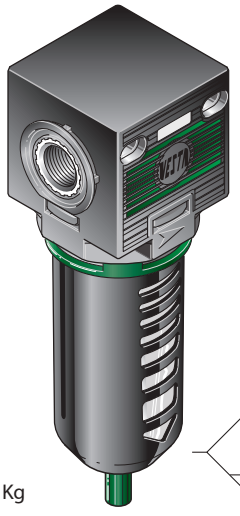
MICROFILTRO ANTIOLIO A COALESCENZA

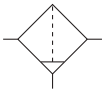
- *Per circuiti dove non è ammessa la presenza di olio.*
- *Efficienza di filtrazione del 99,99 % su particelle di 0,1 µ.*
- *Lunga durata dell'elemento filtrante.*
- *E' consigliata l'installazione di un filtro a monte.*
- *Tazza e drenaggio come modello **F M12 ..** .*

FLOW CHART - *CURVE DI PORTATA*
Filtration efficiency of 99,99 % with particles of 0,1 micron
Efficienza di Filtrazione 99,99 % con particelle di 0,1 micron









G1/2
0,355 Kg

L M12 .. LUBRICATOR *LUBRIFICATORE*



G1/2
0,355 Kg

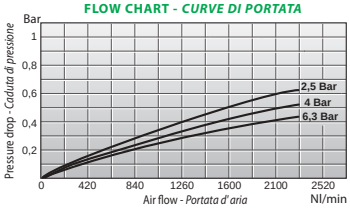
LUBRICATOR

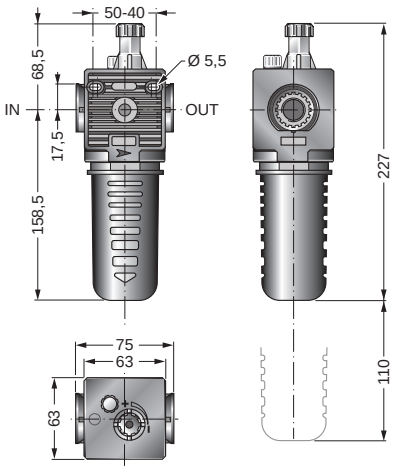
- Proportional oil mist type, with constantly steady delivery and suction ensured even with low flow rates.
- Can be wall mounted using the relative holes (Ø 5,5 mm).
- Bowl guard 140 cc with quick connection by means of the safety ring mechanism.
- Recommended oil viscosity ISO VG32.
- Maximum operating pressure: 16 Bar (230Psi).

LUBRIFICATORE

- *Di tipo proporzionale a nebbia d'olio con erogazione costante nel tempo e pescaggio anche a basse portate.*
- *Fissaggio a parete con fori predisposti (Ø 5,5 mm).*
- *Tazza protetta 140 cc ad aggancio rapido antiespulsione.*
- *Viscosità olio consigliata ISO VG32 .*
- *Massima pressione di ingresso: 16 Bar (230Psi).*

FLOW CHART - *CURVE DI PORTATA*





L M12 ..VL LUBRICATOR VL *LUBRIFICATORE VL*



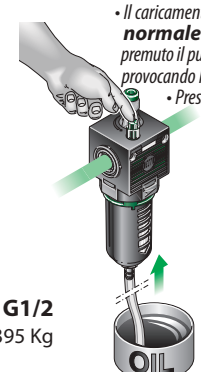
G1/2
0,395 Kg

AUTOMATIC FILLING LUBRICATOR

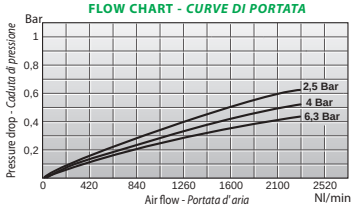
- Filling of oil is achieved **without interrupting the normal operation of the system** by keeping the button at the base of the lubricator casing pushed. This provokes a vacuum inside the bowl enabling the oil to be intaken.
- Minimum attivation pressure: 3 Bar (40 Psi).
- Other functional features as standard model.

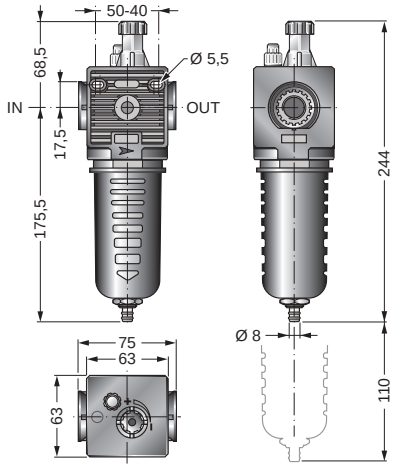
LUBRIFICATORE CARICA A DEPRESSIONE

- *Il caricamento dell'olio avviene **senza interrompere il normale funzionamento dell'impianto**, tenendo premuto il pulsante posto sulla base del corpo del lubrificatore, provocando la depressione che ne permette l'aspirazione.*
- *Pressione minima di attivazione: 3 Bar (40 Psi).*
- *Altre caratteristiche funzionali come il modello standard.*

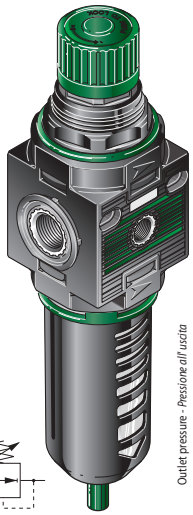


FLOW CHART - *CURVE DI PORTATA*

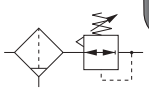




FR M12 .. FILTER REGULATOR *FILTRO REGOLATORE*



G1/2
0,565 Kg



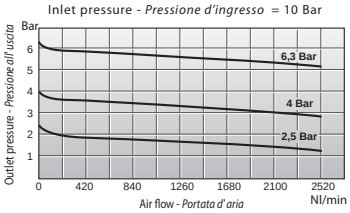
FILTER REGULATOR

- Rolling diaphragm.
- Lockable safety knob.
- Built-in overpressure relieving function.
- Filtering degree: 5 micron or 20 micron (standard).
- Pressure ranges: 0 ÷ 8 Bar (standard) or 0 ÷ 12 Bar.
- Fixing, bowl and condensate drainage: see **F M12 ..** .

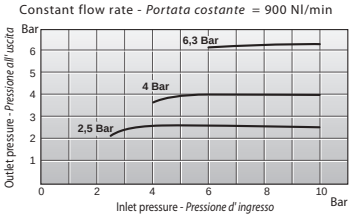
FILTRO REGOLATORE

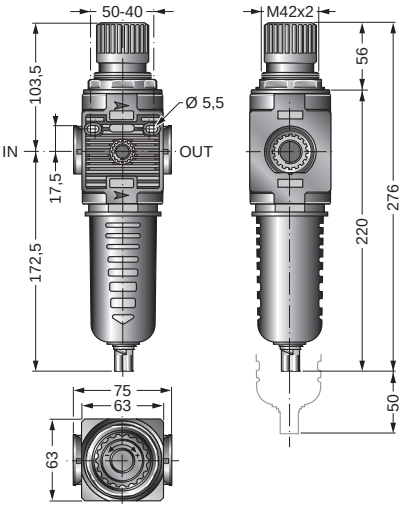
- *Membrana a rotolamento.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Scarico della sovrapressione (relieving) incorporato.*
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Campi di pressione: 0 ÷ 8 Bar (standard) o 0 ÷ 12 Bar.*
- *Fissaggio, tazza e drenaggio come modello **F M12 ..** .*

FLOW CHART - *CURVE DI PORTATA*
Inlet pressure - *Pressione d'ingresso* = 10 Bar



REGULATION FEATURES - *CURVE DI REGOLAZIONE*
Constant flow rate - *Portata costante* = 900 Nl/min

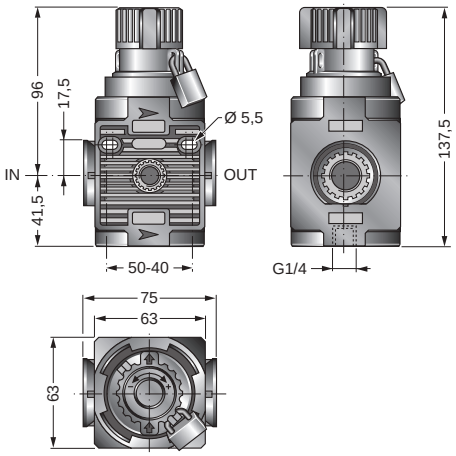




3 WAY ON-OFF VALVE WITH LOCK

3 WAY ON-OFF VALVE
VALVOLA A 3 VIE

V3 M12



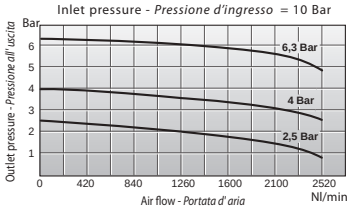
- Used to shut off the air supply while relieving the downstream circuit.
- Used during maintenance operations to prevent the system from being accidentally or wrongly pressurized.
- Discarge connection: G1/4 BSP.
- The device is equipped with 1 lock.

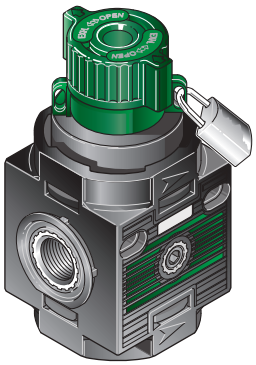
VALVOLA A 3 VIE CON BLOCCO

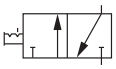
- *Viene utilizzata per chiudere l'alimentazione dell'aria e contemporaneamente mettere in scarico il circuito di valle.*
- *Necessario nelle operazioni di manutenzione evitando la messa in pressione accidentale o non autorizzata dell'impianto.*
- *Connessione di scarico G1/4 BSP.*
- *L'apparecchio viene fornito con 1 lucchetto.*

FLOW CHART - *CURVE DI PORTATA*

Inlet pressure - *Pressione d'ingresso* = 10 Bar





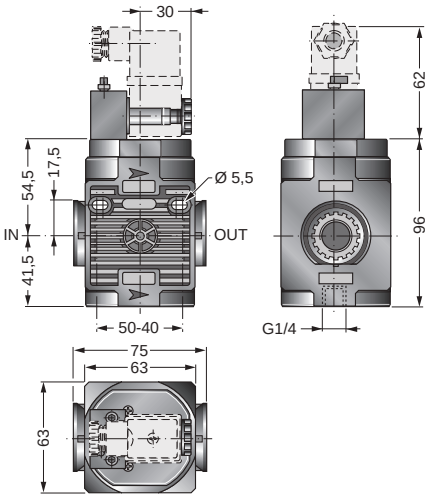


G1/2
0,390 Kg

SHUT-OFF VALVE

SHUT-OFF VALVE
VALVOLA DI SEZIONAMENTO

SV M12...



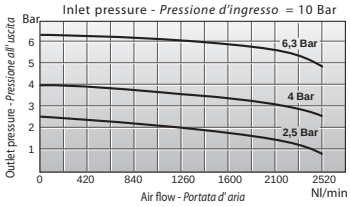
- Available with CNOMO standards remote electric control (**E1S** version) or remote pneumatic control (**PP** version).
- Discarge connection: G1/4 BSP.
- Minimum pressure admitted: 3 Bar (40 Psi).
- Maximum working pressure: 10 Bar (145 Psi).
- For electric components see **ELBAC...** *page* B-88 or **ELCDC...** *page* B-89

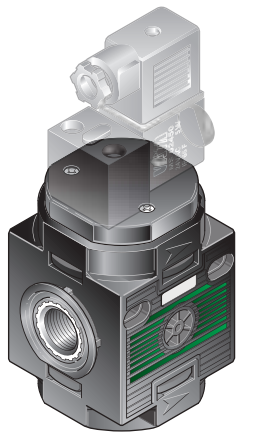
VALVOLA DI SEZIONAMENTO

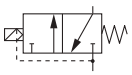
- *Disponibile con pilotaggio elettrico a norme CNOMO (versione **E1S**) o ad azionamento pneumatico (versione **PP**): da ordinarsi separatamente.*
- *Connessione di scarico G1/4 BSP.*
- *Pressione minima ammessa: 3 Bar (40 Psi).*
- *Pressione massima di ingresso: 10 Bar (145 Psi).*
- *Per componenti elettrici vedi **ELBAC...** pagina* B-88 *o **ELDCC...** pagina* B-89

FLOW CHART - *CURVE DI PORTATA*

Inlet pressure - *Pressione d'ingresso* = 10 Bar





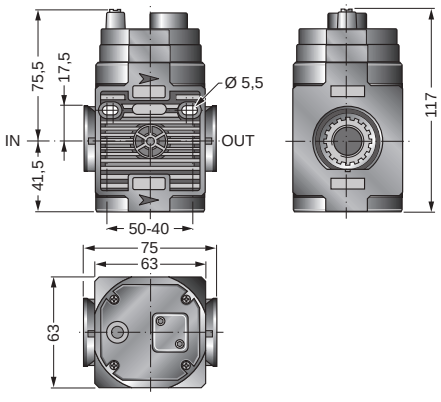


G1/2
0,400 Kg

SLOW START VALVE

SLOW START VALVE
AVVIATORE PROGRESSIVO

AVP M12 APC



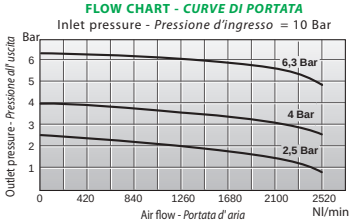
- Before delivering the maximum available pressure, the air is allowed to slowly flow around the downstream circuit until about 60 % of the pressure is reached upstream.
- Discarge connection: G1/4 BSP.
- Use built-in flow governor to establish the pressurizing time.
- Operating pressure range: 3 ÷10 Bar (40 ÷ 145 Psi).

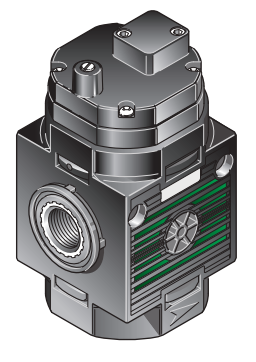
AVVIATORE PROGRESSIVO

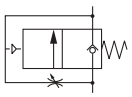
- *Prima che la valvola eroghi la massima pressione disponibile, l'aria viene fatta fluire lentamente nel circuito di valle fino al raggiungimento del 60 % circa della pressione a monte.*
- *Connessione di scarico G1/4 BSP.*
- *L'apposito regolatore di flusso incorporato fissa il tempo della messa in pressione del circuito pneumatico.*
- *Pressione di esercizio: 3 ÷ 10 Bar (40 ÷ 145 Psi).*

FLOW CHART - *CURVE DI PORTATA*

Inlet pressure - *Pressione d'ingresso* = 10 Bar



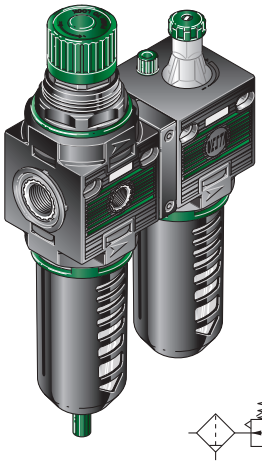




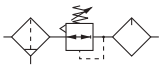
G1/2
0,410 Kg

FR+L M12..

FR+L UNIT
GRUPPO FR+L



G1/2
0,940 Kg

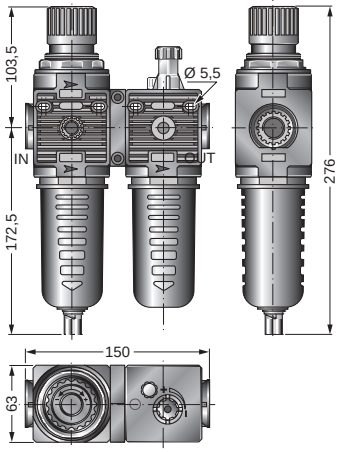


FILTER REGULATOR + LUBRICATOR UNIT

- Integrated unit for air treatment assembling with:
  - **FR M12 ..** Filter regulator (Pag. C-24).
  - **L M12 ..** Lubricator (Pag. C-24).
- Filtering degree: 5 micron or 20 micron (standard).
- Recommended oil viscosity ISO VG32.
- Maximum operating pressure: 16 Bar (230Psi).

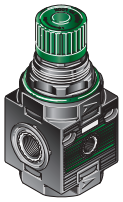
GRUPPO FILTROREGOLATORE + LUBRIFICATORE

- *Gruppo integrato di trattamento aria composto da:*
  - ***FR M12 ..*** *Filtroregolatore (Pag.* C-24 *).*
  - ***L M12 ..*** *Lubrificatore (Pag.* C-24 *).*
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Viscosità olio consigliata ISO VG32 .*
- *Massima pressione di ingresso: 16 Bar (230Psi).*



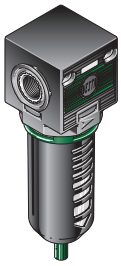
ORDER CODE LINE M12 / *CODICI DI ORDINAZIONE LINEA M12*

REGULATOR / *REGOLATORE*



R	M12	08	R
R	M12	12	R

FILTER / *FILTRO*

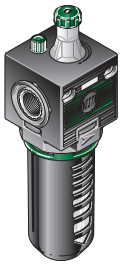


F	M12	20	PE	SS
F	M12	20	PE	SA
F	M12	5	PE	SS
F	M12	5	PE	SA

COALESCENT OIL-PROOF MICROFILTER
FILTRO ANTIOLIO A COALESCENZA

MF	M12	0,1	PE	SS
MF	M12	0,1	PE	SA

LUBRICATOR / *LUBRIFICATORE*

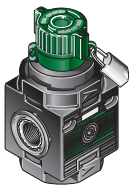


L	M12	PE

AUTOMATIC FILLING LUBRICATOR
LUBR. CON CARICAMENTO A DEPRESSIONE

L	M12	PE	VL

3 WAY ON-OFF VALVE / *VALVOLA A 3 VIE*



V3	M12

STANDARD = FR+L M12 20 08 PE SS

Accessories and spare parts see pages C38 and C-40.
Accessori e ricambi vedi pagine C38 e C-40.

SHUT-OFF VALVE / *VALVOLA DI SEZIONAMENTO*



SV	M12	E1S
SV	M12	PP

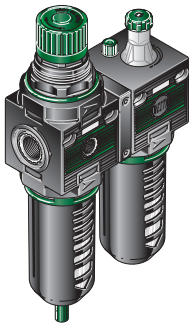
For coils and electric components see page B-89.
Per solenoidi e componenti elettrici vedi pagina B-89.

SLOW START VALVE / *AVVIATORE PROGRESSIVO*



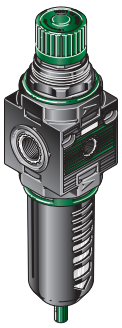
AVP	M12	APC

FR+L UNIT / *GRUPPO FR+L*



FR+L	M12	20	08	R	PE	SS	
FR+L	M12	5	08	R	PE	SS	
FR+L	M12	5	12	R	PE	SS	
FR+L	M12	20	08	R	PE	SA	
FR+L	M12	20	12	R	PE	SA	
FR+L	M12	5	08	R	PE	SA	
FR+L	M12	5	12	R	PE	SA	
FR+L	M12	20	08	R	PE	SS	VL
FR+L	M12	20	12	R	PE	SS	VL
FR+L	M12	5	08	R	PE	SS	VL
FR+L	M12	5	12	R	PE	SS	VL
FR+L	M12	20	08	R	PE	SA	VL
FR+L	M12	20	12	R	PE	SA	VL
FR+L	M12	5	08	R	PE	SA	VL
FR+L	M12	5	12	R	PE	SA	VL

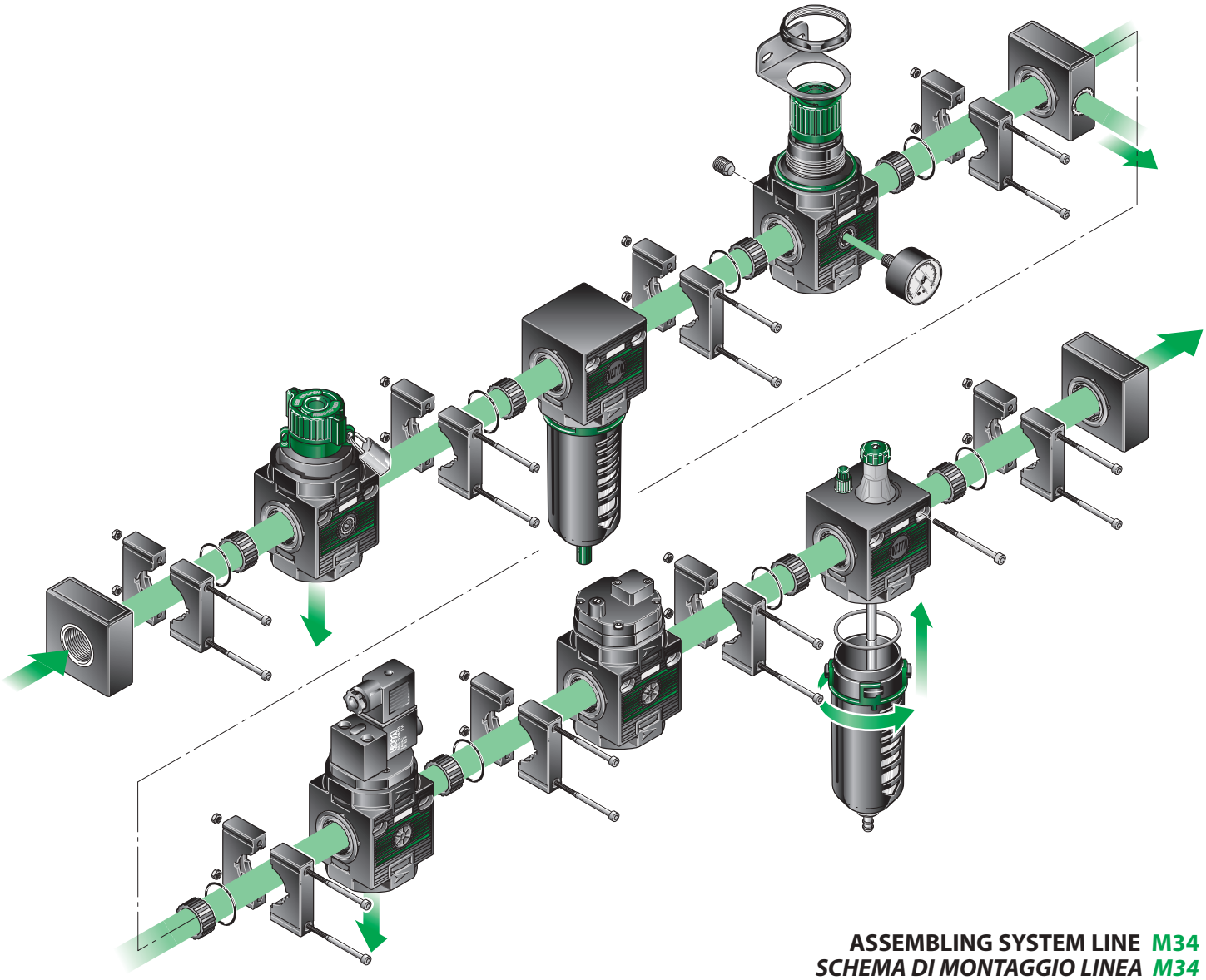
FILTER REGULATOR / *FILTRO REGOLATORE*



FR	M12	20	08	R	PE	SS
FR	M12	20	12	R	PE	SS
FR	M12	5	08	R	PE	SS
FR	M12	5	12	R	PE	SS
FR	M12	20	08	R	PE	SA
FR	M12	20	12	R	PE	SA
FR	M12	5	08	R	PE	SA
FR	M12	5	12	R	PE	SA

.. M34 ..

MODULAR LINE G3/4
LINEA MODULARE G3/4



ASSEMBLING SYSTEM LINE M34
SCHEMA DI MONTAGGIO LINEA M34

TECHNICAL FEATURES

Connections	G3/4
Body and bowl guard	Polyamide glass reinforced.
Bowl	Transparent toughened polyamide.
Environment temperature range	+5 ÷ +50 °C (41 ÷ 122 °F)
Gauge connections	G1/8
Maximum inlet pressure	16 Bar (230 Psi)
Fixing	Complete with ring nut for panel assembly, or can be wall mounted on a braket .

CARATTERISTICHE TECNICHE

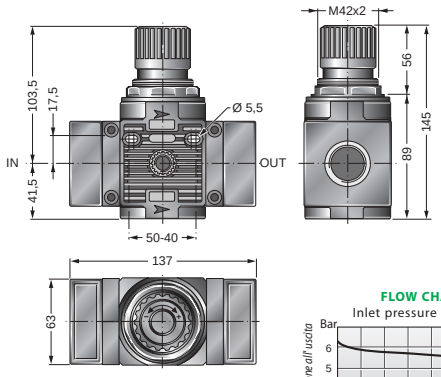
Connessioni	*G3/4*
Corpo e protezione della tazza	*Poliammide rinforzato vetro.*
Tazza	*Poliammide trasparente tenacizzato antiurto.*
Temperatura ambiente	*+5 ÷ +50 °C (41 ÷ 122 °F)*
Connessioni manometro	*G1/8*
Pressione massima di ingresso	*16 Bar (230 Psi)*
Fissaggio	*Completo di ghiera per il montaggio a pannello, o Possibilità di fissaggio parete con staffa.*

The **M 34** comes from the LM 12 serie but with G 3/4 connections. The range covers: filters and microfilters with different levels of dust extraction and condensate with the possibility of mounting the automatic drainage; pressure regulators until 12 bar; lubricators both standard and with depression loading; 3 way on-off valves with lock; shut off valves with a device used to shut off the air supply, while relieving the downstream circuit by a remote electric or pneumatic control; slow start valves for a gradual pressurization of the system.
Complete groups for air treatment are available, such as: filter regulator + lubricator, filter regulator + lubricator + shut off upstream valve, or filter + regulator + lubricator.

*La serie **M34** é derivata dalla serie LM12 ma con connessioni da G3/4 ed offre una gamma completa di componenti per il trattamento dell'aria.*
La serie comprende: filtri e microfiltri con vari livelli di estrazione delle polveri e condensa con possibilità di montaggio dello scarico automatico; i regolatori di pressione sino a 12 Bar; i lubrificatori sia standard che con caricamento a depressione; le valvole di intercettazione a 3 vie con blocco; le valvola di sezionamento a comando elettropneumatico o pneumatico azionabile a distanza, per escludere l'alimentazione e mettere in scarico il circuito di valle; avviatori progressivi per la pressurizzazione graduale dell'impianto.
Sono disponibili gruppi preassemblati completi per il trattamento dell'aria quali filtroregolatore+lubrificatore, filtroregolatore+lubrificatore+valvola di sezionamento a monte, oppure filtro+regolatore+lubrificatore.

REGULATOR
REGOLATORE

R M34 ..



REGULATOR

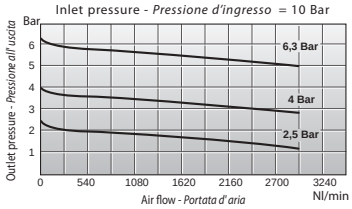
- Rolling diaphragm.
- Can be wall mounted using the relative holes, with ring nut for panel assembly or braket.
- Lockable safety knob.
- Pressure ranges: 0 ÷ 8 Bar (standard) or 0 ÷ 12 Bar.
- Built-in overpressure relieving function.

REGOLATORE

- *Membrana a rotolamento.*
- *Fissaggio a parete con fori predisposti, su pannello o su staffa per mezzo della ghiera in dotazione.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Campi di pressione: 0 ÷ 8 Bar (standard) o 0 ÷ 12 Bar.*
- *Scarico della sovrapressione (relieving) incorporato.*

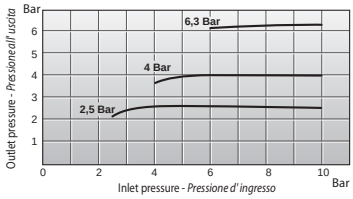
FLOW CHART - *CURVE DI PORTATA*

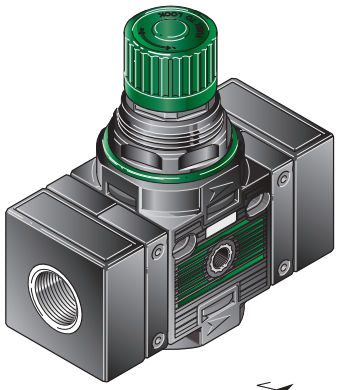
Inlet pressure - *Pressione d'ingresso* = 10 Bar

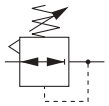


REGULATION FEATURES - *CURVE DI REGOLAZIONE*

Constant flow rate - *Portata costante* = 900 Nl/min



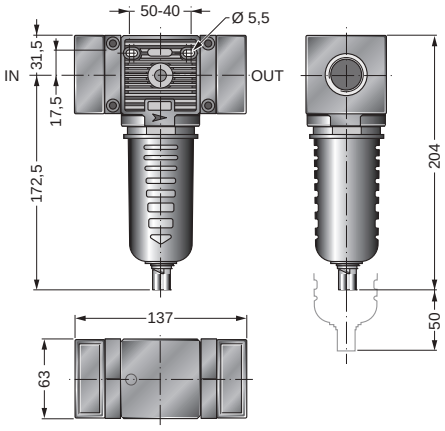




G3/4
0,755 Kg

FILTER
FILTRO

F M34 ..



FILTER

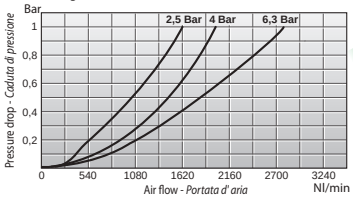
- Filtering degree: 5 micron or 20 micron (standard).
- Low pressure drop (max inlet pressure: 16 Bar).
- Bowl guard 100 cc. with quick safety connection.
- Condensate drainage: manual and semiautomatic in the integrated version or **float type automatic version (SA)**.

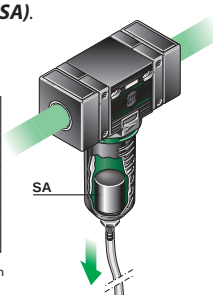
FILTRO

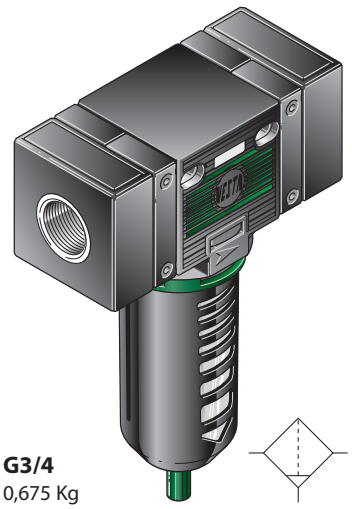
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Bassa caduta di pressione (Press. max ingresso: 16 Bar).*
- *Tazza protetta 100 cc. ad aggancio rapido antiespulsione.*
- *Drenaggio della condensa: manuale e semiautomatico in versione integrata, oppure **automatico a galleggiante (SA)**.*

FLOW CHART - *CURVE DI PORTATA*

Filtering element - *Elemento filtrante* = 20 micron



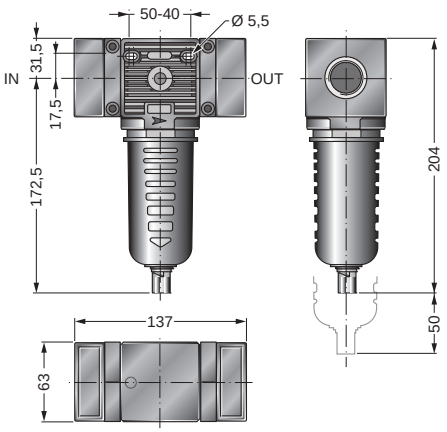




G3/4
0,675 Kg

MICROFILTER
MICROFILTRO

MF M34 ..



COALESCENT OIL-PROOF MICROFILTER

- Essential in circuit where oil is not permitted.
- 99,99 % filtering efficiency with 0,1 micron particles.
- Long-lasting filtering element.
- It is advisable to install a filter on the inlet.
- Bowl and condensate drainage: see **F M34 ..** .

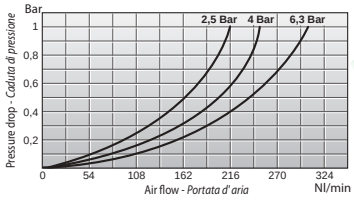
MICROFILTRO ANTIOLIO A COALESCENZA

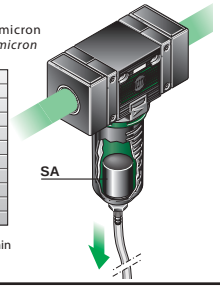
- *Per circuiti dove non è ammessa la presenza di olio.*
- *Efficienza di filtrazione del 99,99 % su particelle di 0,1 µ.*
- *Lunga durata dell'elemento filtrante.*
- *E' consigliata l'installazione di un filtro a monte.*
- *Tazza e drenaggio come modello **F M34 ..** .*

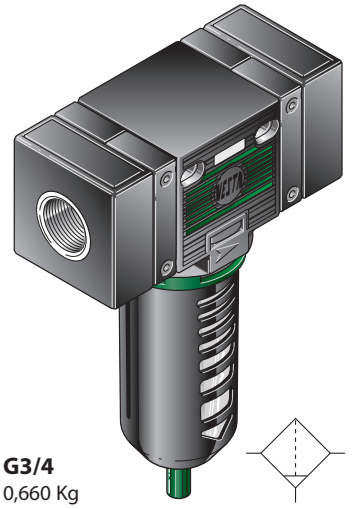
FLOW CHART - *CURVE DI PORTATA*

Filtration efficiency of 99,99 % with particles of 0,1 micron

Efficienza di Filtrazione 99,99 % con particelle di 0,1 micron

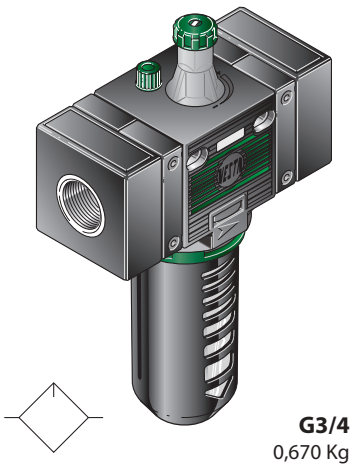






G3/4
0,660 Kg

L M34 .. LUBRICATOR *LUBRIFICATORE*



G3/4
0,670 Kg

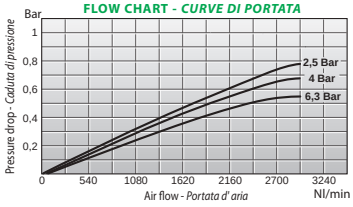
LUBRICATOR

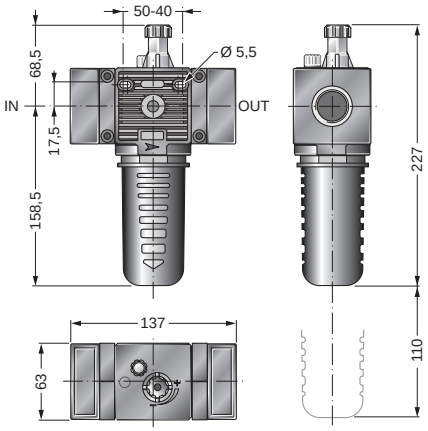
- Proportional oil mist type, with constantly steady delivery and suction ensured even with low flow rates.
- Can be wall mounted using the relative holes (Ø 5,5 mm).
- Bowl guard 140 cc. with quick connection by means of the safety ring mechanism.
- Recommended oil viscosity ISO VG32.
- Maximum operating pressure: 16 Bar (230Psi).

LUBRIFICATORE

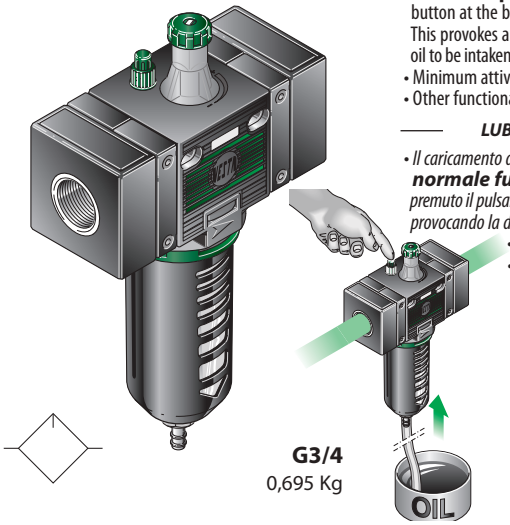
- *Di tipo proporzionale a nebbia d'olio con erogazione costante nel tempo e pescaggio anche a basse portate.*
- *Fissaggio a parete con fori predisposti (Ø 5,5 mm).*
- *Tazza protetta 140 cc. ad aggancio rapido antiespulsione.*
- *Viscosità olio consigliata ISO VG32 .*
- *Massima pressione di ingresso: 16 Bar (230Psi).*

FLOW CHART - *CURVE DI PORTATA*





L M34 ..VL LUBRICATOR VL *LUBRIFICATORE VL*



G3/4
0,695 Kg

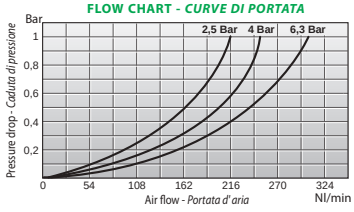
AUTOMATIC FILLING LUBRICATOR

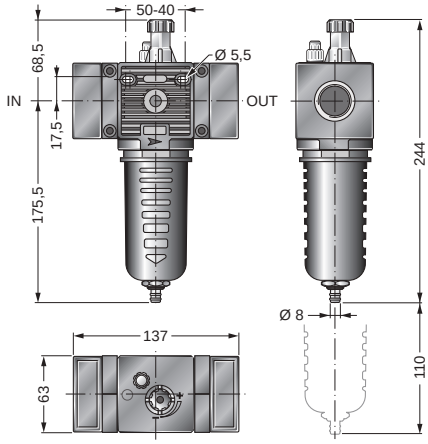
- Filling of oil is achieved **without interrupting the normal operation of the system** by keeping the button at the base of the lubricator casing pushed. This provokes a vacuum inside the bowl enabling the oil to be intaken.
- Minimum attivation pressure: 3 Bar (40 Psi).
- Other functional features as standard model.

LUBRIFICATORE CARICA A DEPRESSIONE

- *Il caricamento dell'olio avviene **senza interrompere il normale funzionamento dell'impianto**, tenendo premuto il pulsante posto sulla base del corpo del lubrificatore, provocando la depressione che ne permette l'aspirazione.*
- *Pressione minima di attivazione: 3 Bar (40 Psi).*
- *Altre caratteristiche funzionali come il modello standard.*

FLOW CHART - *CURVE DI PORTATA*





FR M34 .. FILTER REGULATOR *FILTRO REGOLATORE*



G3/4
0,880 Kg

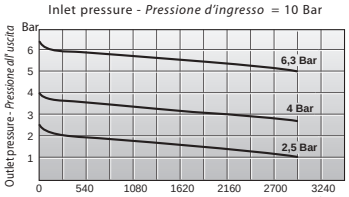
FILTER REGULATOR

- Rolling diaphragm.
- Lockable safety knob.
- Built-in overpressure relieving function.
- Filtering degree: 5 micron or 20 micron (standard).
- Pressure ranges: 0 ÷ 8 Bar (standard) or 0 ÷ 12 Bar.
- Fixing, bowl and condensate drainage: see **F M34 ..** .

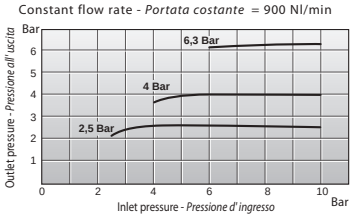
FILTRO REGOLATORE

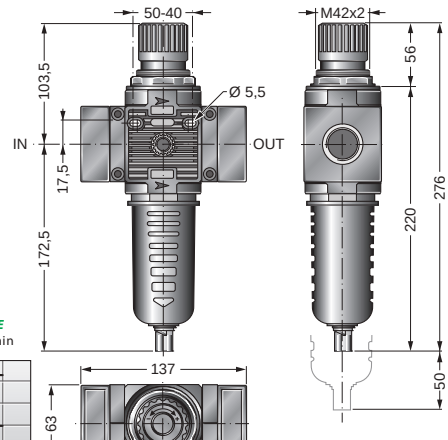
- *Membrana a rotolamento.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Scarico della sovrapressione (relieving) incorporato.*
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Campi di pressione: 0 ÷ 8 Bar (standard) o 0 ÷ 12 Bar.*
- *Fissaggio, tazza e drenaggio come modello **F M34 ..** .*

FLOW CHART - *CURVE DI PORTATA*
Inlet pressure - *Pressione d'ingresso* = 10 Bar



REGULATION FEATURES - *CURVE DI REGOLAZIONE*
Constant flow rate - *Portata costante* = 900 Nl/min

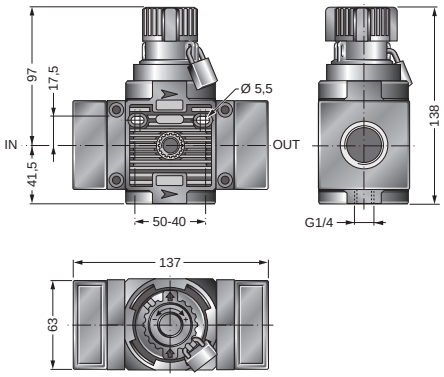




3 WAY ON-OFF VALVE WITH LOCK

3 WAY ON-OFF VALVE
VALVOLA A 3 VIE

V3 M34



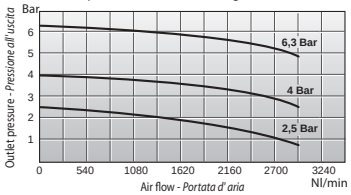
- Used to shut off the air supply while relieving the downstream circuit.
- Used during maintenance operations to prevent the system from being accidentally or wrongly pressurized.
- Discarge connection: G1/4 BSP.
- The device is equipped with 1 lock.

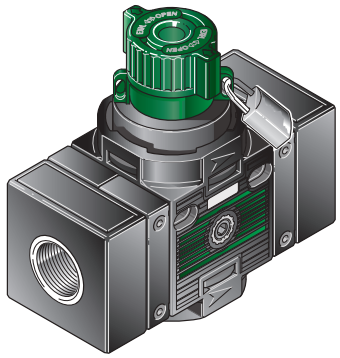
VALVOLA A 3 VIE CON BLOCCO

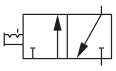
- *Viene utilizzata per chiudere l'alimentazione dell'aria e contemporaneamente mettere in scarico il circuito di valle.*
- *Necessario nelle operazioni di manutenzione evitando la messa in pressione accidentale o non autorizzata dell'impianto.*
- *Connessione di scarico G1/4 BSP.*
- *L'apparecchio viene fornito con 1 lucchetto.*

FLOW CHART - *CURVE DI PORTATA*

Inlet pressure - *Pressione d'ingresso* = 10 Bar





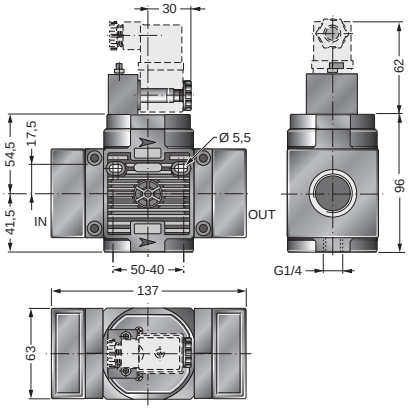


G3/4
0,690 Kg

SHUT-OFF VALVE

SHUT-OFF VALVE
VALVOLA DI SEZIONAMENTO

SV M34...



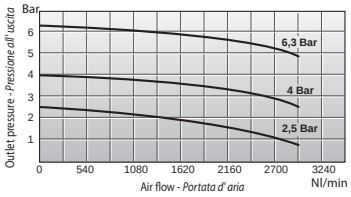
- Available with CNOMO standards remote electric control (**E1S** version) or remote pneumatic control (**PP** version).
- Discarge connection: G1/4 BSP.
- Minimum pressure admitted: 3 Bar (40 Psi).
- Maximum working pressure: 10 Bar (145 Psi).
- For electric components see **ELBAC...** *page* B-88 or **ELCDC...** *page* B-89

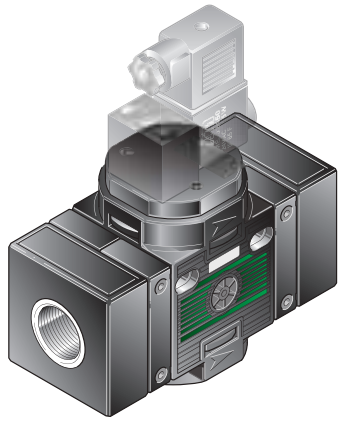
VALVOLA DI SEZIONAMENTO

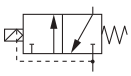
- *Disponibile con pilotaggio elettrico a norme CNOMO o ad azionamento pneumatico (da ordinarsi separatamente).*
- *Connessione di scarico G1/4 BSP.*
- *Pressione minima ammessa: 3 Bar (40 Psi).*
- *Pressione massima di ingresso: 10 Bar (145 Psi).*
- *Per componenti elettrici vedi* **ELBAC...** *pagina* B-88 *o* **ELDCC...** *pagina* B-89

FLOW CHART - *CURVE DI PORTATA*

Inlet pressure - *Pressione d'ingresso* = 10 Bar





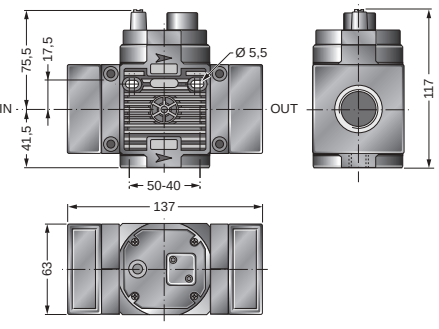


G3/4
0,700 Kg

SLOW START VALVE

SLOW START VALVE
AVVIATORE PROGRESSIVO

AVP M34 APC



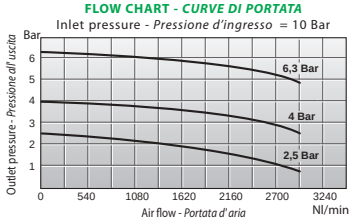
- Before delivering the maximum available pressure, the air is allowed to slowly flow around the downstream circuit until about 60 % of the pressure is reached upstream.
- Discarge connection: G1/4 BSP.
- Use built-in flow governor to establish the pressurizing time.
- Operating pressure range: 3 ÷10 Bar (40 ÷ 145 Psi).

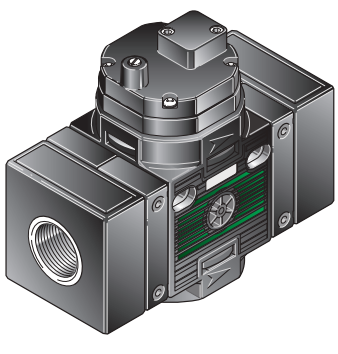
AVVIATORE PROGRESSIVO

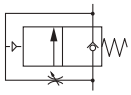
- *Prima che la valvola eroghi la massima pressione disponibile, l'aria viene fatta fluire lentamente nel circuito di valle fino al raggiungimento del 60 % circa della pressione a monte.*
- *Connessione di scarico G1/4 BSP.*
- *L'apposito regolatore di flusso incorporato fissa il tempo della messa in pressione del circuito pneumatico.*
- *Pressione di esercizio: 3 ÷ 10 Bar (40 ÷ 145 Psi).*

FLOW CHART - *CURVE DI PORTATA*

Inlet pressure - *Pressione d'ingresso* = 10 Bar



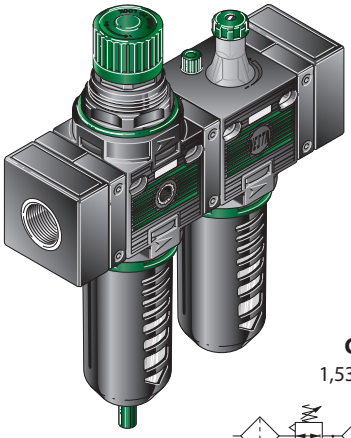




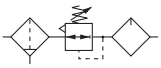
G3/4
0,715 Kg

FR+L M34..

FR+L UNIT
GRUPPO FR+L



G3/4
1,530 Kg

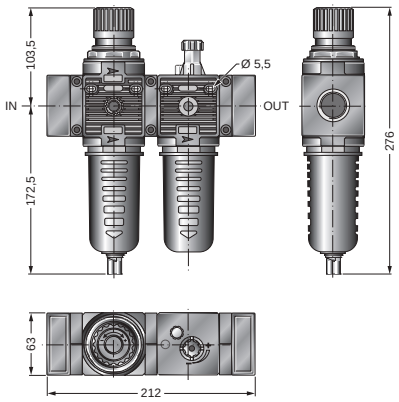


FILTER REGULATOR + LUBRICATOR UNIT

- Integrated unit for air treatment assembling with:
  - **FR M34 ..** Filter regulator (Pag. C-30).
  - **L M34 ..** Lubricator (Pag. C-30).
- Filtering degree: 5 micron or 20 micron (standard).
- Recommended oil viscosity ISO VG32.
- Maximum operating pressure: 16 Bar (230Psi).

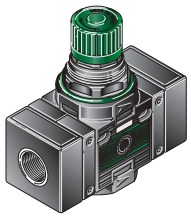
GRUPPO FILTROREGOLATORE + LUBRIFICATORE

- *Gruppo integrato di trattamento aria composto da:*
  - ***FR M34 ..*** *Filtroregolatore (Pag.* C-30 *).*
  - ***L M34 ..*** *Lubrificatore (Pag.* C-30 *).*
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Viscosità olio consigliata ISO VG32 .*
- *Massima pressione di ingresso: 16 Bar (230Psi).*



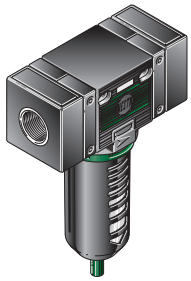
ORDER CODE LINE M34 / *CODICI DI ORDINAZIONE LINEA M34*

REGULATOR / *REGOLATORE*



R	M34	08	R
R	M34	12	R

FILTER / *FILTRO*

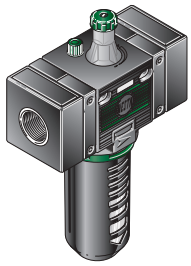


F	M34	20	PE	SS
F	M34	20	PE	SA
F	M34	5	PE	SS
F	M34	5	PE	SA

COALESCENT OIL-PROOF MICROFILTER
FILTRO ANTIOLIO A COALESCENZA

MF	M34	0,1	PE	SS
MF	M34	0,1	PE	SA

LUBRICATOR / *LUBRIFICATORE*

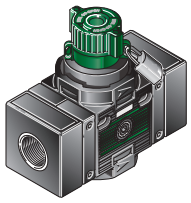


L	M34	PE

AUTOMATIC FILLING LUBRICATOR
LUBR. CON CARICAMENTO A DEPRESSIONE

L	M34	PE	VL

3 WAY ON-OFF VALVE / *VALVOLA A 3 VIE*



V3	M34

STANDARD = FR+L M34 20 08 PE SS

Accessories and spare parts see pages C38 and C-40.
Accessori e ricambi vedi pagine C38 e C-40.

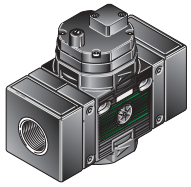
SHUT-OFF VALVE /



SV	M34	E1S
SV	M34	PP

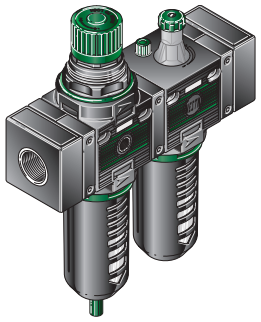
For coils and electric components see page B-89.
Per solenoidi e componenti elettrici vedi pagina B-89.

SLOW START VALVE / *AVVIATORE PROGRESSIVO*



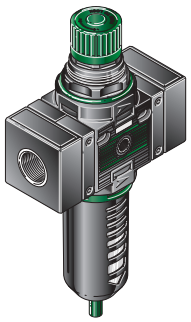
AVP	M34	APC

FR+L UNIT / *GRUPPO FR+L*



FR+L	M34	20	08	R	PE	SS	
FR+L	M34	20	12	R	PE	SS	
FR+L	M34	5	08	R	PE	SS	
FR+L	M34	5	12	R	PE	SS	
FR+L	M34	20	08	R	PE	SA	
FR+L	M34	20	12	R	PE	SA	
FR+L	M34	5	08	R	PE	SA	
FR+L	M34	5	12	R	PE	SA	
FR+L	M34	20	08	R	PE	SS	VL
FR+L	M34	20	12	R	PE	SS	VL
FR+L	M34	5	08	R	PE	SS	VL
FR+L	M34	5	12	R	PE	SS	VL
FR+L	M34	20	08	R	PE	SA	VL
FR+L	M34	20	12	R	PE	SA	VL
FR+L	M34	5	08	R	PE	SA	VL
FR+L	M34	5	12	R	PE	SA	VL

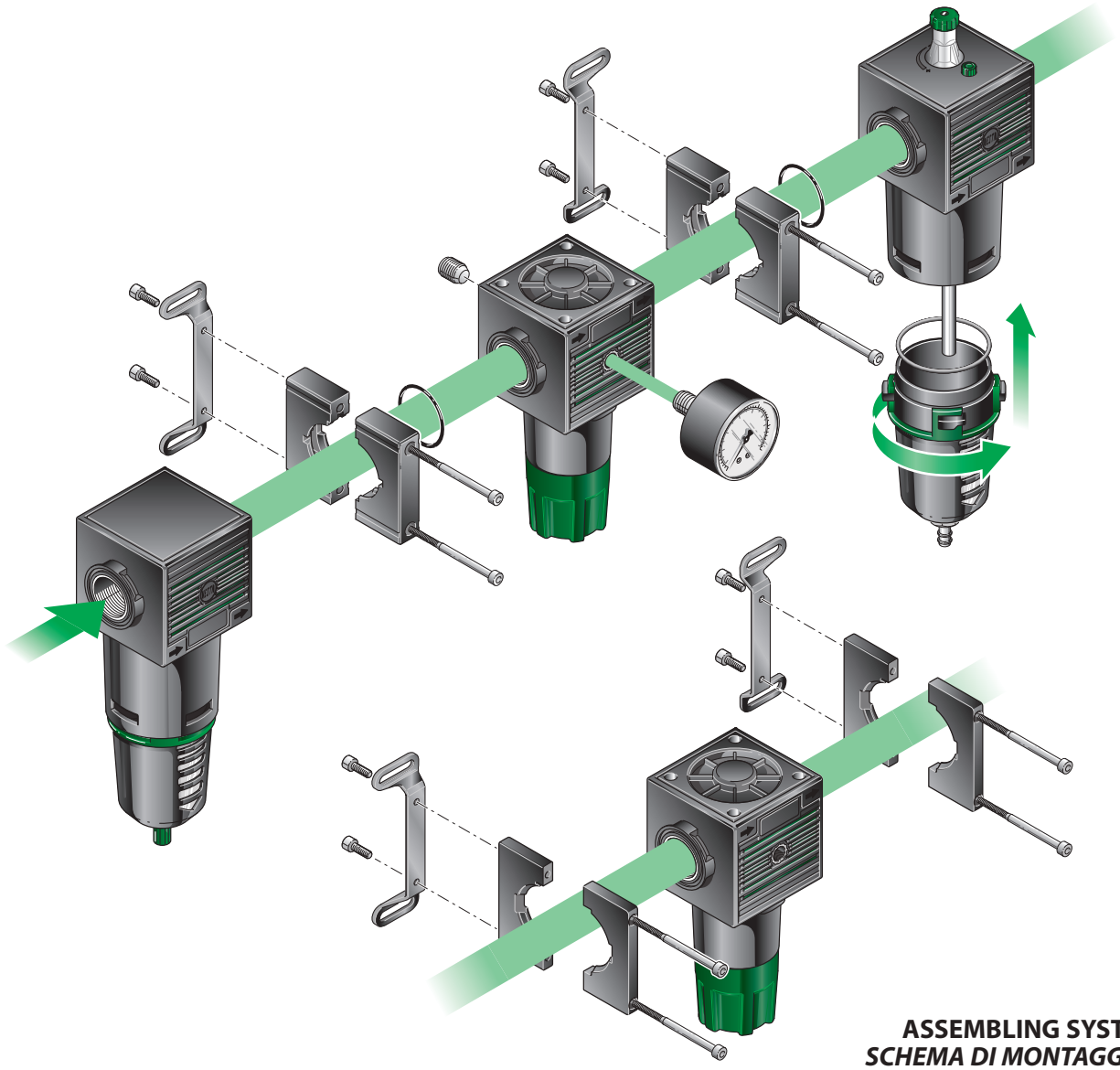
FILTER REGULATOR / *FILTRO REGOLATORE*



FR	M34	20	08	R	PE	SS
FR	M34	20	12	R	PE	SS
FR	M34	5	08	R	PE	SS
FR	M34	5	12	R	PE	SS
FR	M34	20	08	R	PE	SA
FR	M34	20	12	R	PE	SA
FR	M34	5	08	R	PE	SA
FR	M34	5	12	R	PE	SA

.. M10 ..

MODULAR LINE G1
LINEA MODULARE G1



ASSEMBLING SYSTEM LINE M10
SCHEMA DI MONTAGGIO LINEA M10

TECHNICAL FEATURES

Connections	G1
Body and bowl guard	Polyamide glass reinforced.
Bowl	Transparent toughened polyamide.
Environment temperature range	+5 ÷ +50 °C (41 ÷ 122 °F)
Gauge connections	G1/8
Maximum inlet pressure	16 Bar (230 Psi)
Fixing	Complete with ring nut for panel assembly, or can be wall mounted on a braket .

CARATTERISTICHE TECNICHE

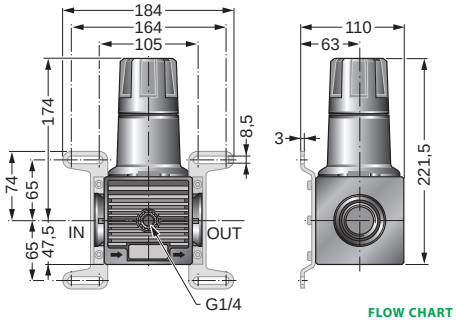
Connessioni	*G1*
Corpo e protezione della tazza	*Poliammide rinforzato vetro.*
Tazza	*Poliammide trasparente tenacizzato antiurto.*
Temperatura ambiente	*+5 ÷ +50 °C (41 ÷ 122 °F)*
Connessioni manometro	*G1/8*
Pressione massima di ingresso	*16 Bar (230 Psi)*
Fissaggio	*Completo di ghiera per il montaggio a pannello, o Possibilità di fissaggio parete con staffa.*

The **M10** series is designed for high flow rates. It offers a complete range of components for air treatment.
The range covers: filters with different levels of dust and condensate extraction; pressure regulators up to 12 bar and lubricators both standard.
Complete groups for air treatment are available, such as: filter regulator + lubricator or filter + regulator + lubricator.

*La serie **M10** è indicata per grandi portate ed offre una gamma completa di componenti per il trattamento dell'aria. La serie comprende: filtri con vari livelli di estrazione delle polveri e condensa; i regolatori di pressione sino a 12 Bar ed lubrificatori*
Sono disponibili gruppi preassemblati completi per il trattamento dell'aria quali filtroregolatore+lubrificatore oppure filtro+regolatore+lubrificatore.

REGULATOR
REGOLATORE

R M10 ..



REGULATOR

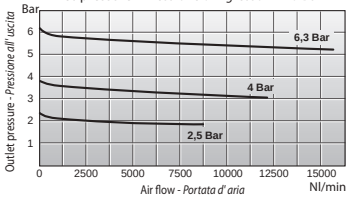
- Rolling diaphragm.
- Can be wall mounted using the appropriate brackets.
- Lockable safety knob.
- Pressure ranges: 0 ÷ 8 Bar (standard) or 0 ÷ 12 Bar.
- Built-in overpressure relieving function.
- Temperature range: 5 ÷ 50 °C.

REGOLATORE

- *Membrana a rotolamento.*
- *Fissaggio a parete utilizzando staffe predisposte.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Campi di pressione: 0 ÷ 8 Bar (standard) o 0 ÷ 12 Bar.*
- *Scarico della sovrapressione (relieving) incorporato.*
- *Campo di temperatura di utilizzo: 5 ÷ 50 °C.*

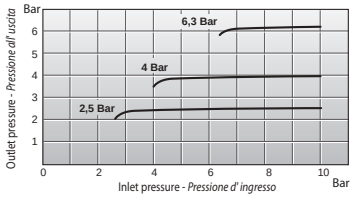
FLOW CHART - *CURVE DI PORTATA*

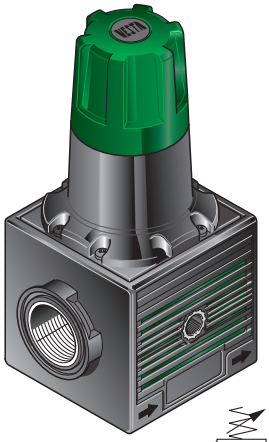
Inlet pressure - *Pressione d'ingresso* = 10 Bar

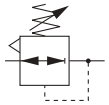


REGULATION FEATURES - *CURVE DI REGOLAZIONE*

Constant flow rate - *Portata costante* = 1500 Nl/min



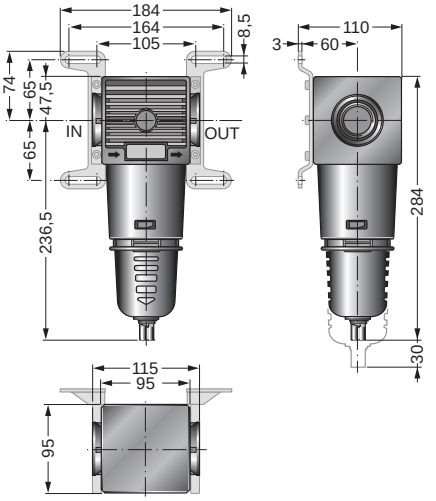




G1
1,721 Kg

FILTER
FILTRO

F M10 ..



FILTER

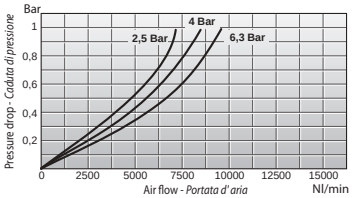
- Filtering degree: 5 micron or 20 micron (standard).
- Low pressure drop (max inlet pressure: 12 Bar).
- Bowl guard 200 cc. with quick safety connection.
- Condensate drainage: manual and semiautomatic in the integrated version or **float type automatic version (SA)**.

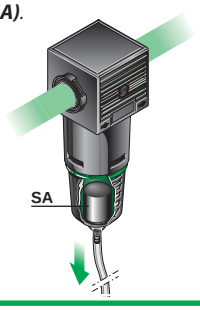
FILTRO

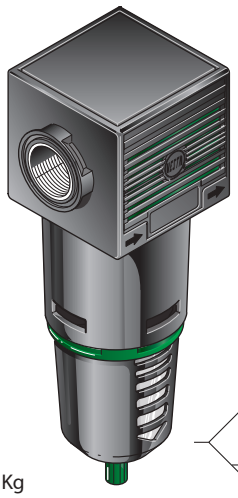
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Bassa caduta di pressione (Press. max ingresso: 12 Bar).*
- *Tazza protetta 200 cc. ad aggancio rapido antiespulsione.*
- *Drenaggio della condensa: manuale e semiautomatico in versione integrata, oppure **automatico a galleggiante (SA)**.*

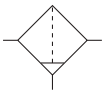
FLOW CHART - *CURVE DI PORTATA*

Filtering element - *Elemento filtrante* = 20 micron





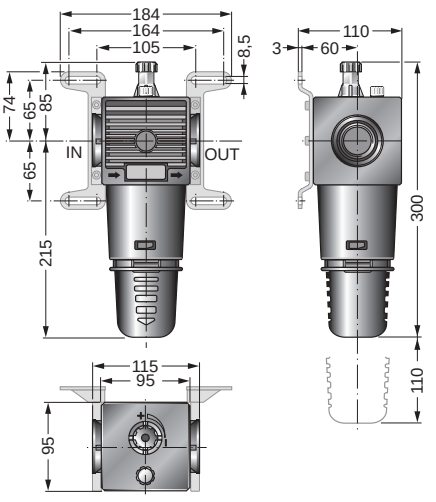




G1
1,212 Kg

LUBRICATOR
LUBRIFICATORE

L M10 ..



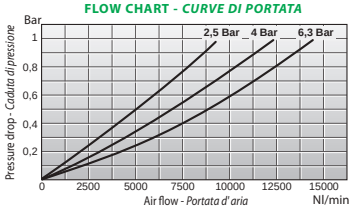
LUBRICATOR

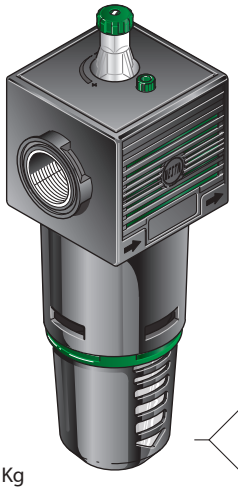
- Proportional oil mist type, with constantly steady delivery and suction ensured even with low flow rates.
- Can be wall mounted using the appropriate brackets.
- Bowl guard 440 cc. with quick connection by means of the safety ring mechanism.
- Recommended oil viscosity ISO VG32.
- Maximum operating pressure: 12 Bar.

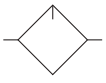
LUBRIFICATORE

- *Di tipo proporzionale a nebbia d'olio con erogazione costante nel tempo e pescaggio anche a basse portate.*
- *Fissaggio a parete utilizzando staffe predisposte.*
- *Tazza protetta 440 cc. ad aggancio rapido antiespulsione.*
- *Viscosità olio consigliata ISO VG32 .*
- *Pressione massima di esercizio: 12 Bar.*

FLOW CHART - *CURVE DI PORTATA*



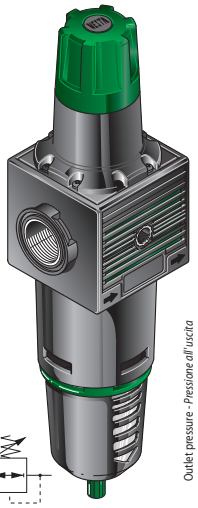




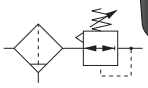
G1
1,194 Kg

FR M10 ..

FILTER REGULATOR
FILTRO REGOLATORE



G1
2,060 Kg



FILTER REGULATOR

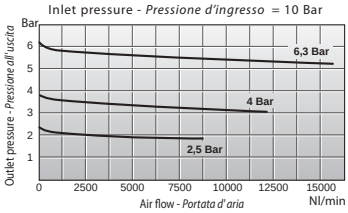
- Rolling diaphragm.
- Lockable safety knob.
- Built-in overpressure relieving function.
- Filtering degree: 5 micron or 20 micron (standard).
- Pressure ranges: 0 ÷ 8 Bar (standard) or 0 ÷ 12 Bar.
- Fixing, bowl and condensate drainage: see **F M10 ..** .

FILTRO REGOLATORE

- *Membrana a rotolamento.*
- *Pomello con dispositivo di bloccaggio della regolazione.*
- *Scarico della sovrapressione (relieving) incorporato.*
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Campi di pressione: 0 ÷ 8 Bar (standard) o 0 ÷ 12 Bar.*
- *Fissaggio, tazza e drenaggio come modello **F M10 ..** .*

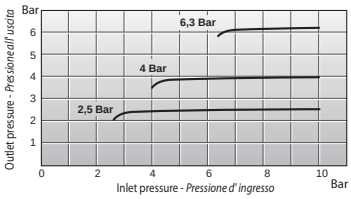
FLOW CHART - *CURVE DI PORTATA*

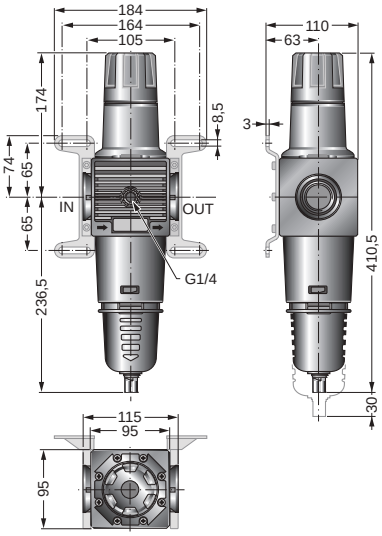
Inlet pressure - *Pressione d'ingresso* = 10 Bar



REGULATION FEATURES - *CURVE DI REGOLAZIONE*

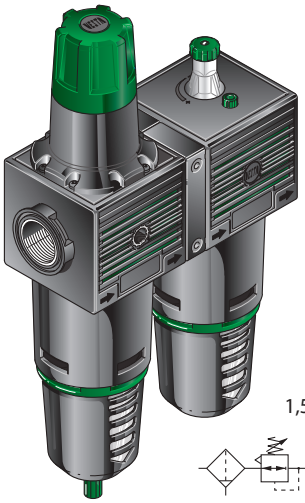
Constant flow rate - *Portata costante* = 1500 Nl/min





FR+L M10 ..

FR+L UNIT
GRUPPO FR+L



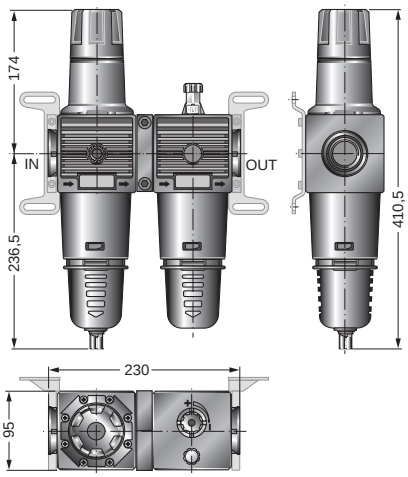
G3/4
1,530 Kg

FILTER REGULATOR + LUBRICATOR UNIT

- Integrated unit for air treatment assembling with:
  - Filter regulator (Pag. C-36).
  - Lubricator (Pag. C-35).
- Filtering degree: 5 micron or 20 micron (standard).
- Recommended oil viscosity ISO VG32.
- Maximum operating pressure: 12 Bar.

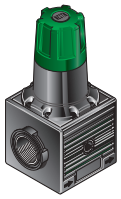
GRUPPO FILTROREGOLATORE + LUBRIFICATORE

- *Gruppo integrato di trattamento aria composto da:*
  - ***FR M10 ..** Filtroregolatore (Pag.* C-36 *).*
  - ***L M10 ..** Lubrificatore (Pag.* C-35 *).*
- *Grado di filtrazione: 5 micron o 20 micron (standard).*
- *Viscosità olio consigliata ISO VG32 .*
- *Pressione massima di esercizio: 12 Bar.*



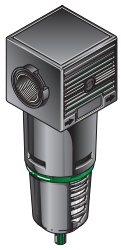
CODICI DI ORDINAZIONE LINEA *M10*

REGULATOR / *REGOLATORE*



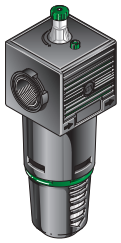
R	M10	08	R
R	M10	12	R

FILTER / *FILTRO*



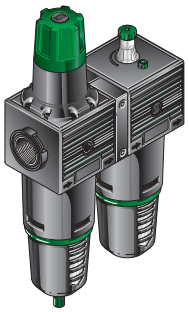
F	M10	20	PE	SS
F	M10	20	PE	SA
F	M10	5	PE	SS
F	M10	5	PE	SA

LUBRICATOR / *LUBRIFICATORE*



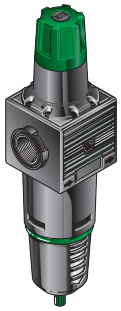
L	M10	PE

FR+L UNIT / *GRUPPO FR+L*



FR+L	M10	20	08	R	PE	SS
FR+L	M10	20	12	R	PE	SS
FR+L	M10	5	08	R	PE	SS
FR+L	M10	5	12	R	PE	SS
FR+L	M10	20	08	R	PE	SA
FR+L	M10	20	12	R	PE	SA
FR+L	M10	5	08	R	PE	SA
FR+L	M10	5	12	R	PE	SA

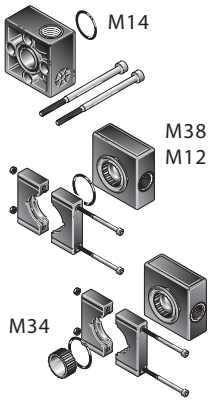
FILTER REGULATOR / *FILTRO REGOLATORE*



FR	M10	20	08	R	PE	SS
FR	M10	20	12	R	PE	SS
FR	M10	5	08	R	PE	SS
FR	M10	5	12	R	PE	SS
FR	M10	20	08	R	PE	SA
FR	M10	20	12	R	PE	SA
FR	M10	5	08	R	PE	SA
FR	M10	5	12	R	PE	SA

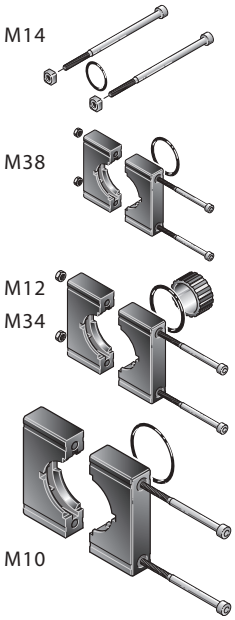
STANDARD = FR+L M10 20 08 PE SS

Accessories and spare parts see pages C38 and C-40.
Accessori e ricambi vedi pagine C38 e C-40.



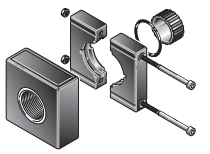
AIR TAKEOFF
PRESA D'ARIA

CODE / *CODICE*	SERIE	PRODUCT / *PRODOTTO*
K BUI H (For unit - per unità)	M14	F+R+L; FR+L V3+FR+L; F+L; F+MF
K BUI K (For battery - per batterie)	M14	FR+SV; AVP+L FR+SV+AVP+L
K BUI E	M38	F+R+L; FR+L; F+L
K BUI F	M12	F+R+L; FR+L; F+L
K BUI G	M34	F+R+L; FR+L; F+L



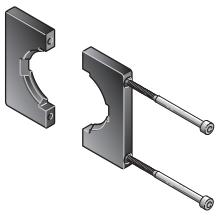
KIT ASSEMBLING UNIT
KIT PER ASSEMBLAGGIO GRUPPI

CODE / *CODICE*	SERIE	PRODUCT / *PRODOTTO*
K AU A (4 screws + 2 OR)	M14	F+R+L; V3+FR+L
K AU B (2 screws + 1 OR)	M14	FR+L
K AU C (2 screws + 1 OR)	M14	F+L; F+MF
K AU K (For battery - per batterie)	M14	FR+SV; AVP+L FR+SV+AVP+L
K AU G	M38	F+R+L
K AU H	M38	FR+L; F+L
K AU I	M12	F+R+L
K AU L	M12	FR+L; F+L
K AU M	M34	F+R+L
K AU N	M34	FR+L; F+L
K AU O	M10	F+R+L
K AU P	M10	FR+L; F+L



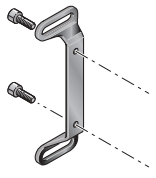
INPUT-OUTPUT KIT
KIT TERMINALE INGRESSO - USCITA

CODE / *CODICE*	SERIE	CONNECTION / *CONNESSIONE*
K TI34	M34 G3/4	Input / *Ingresso*
K TO34	M34 G3/4	Output / *Uscita*



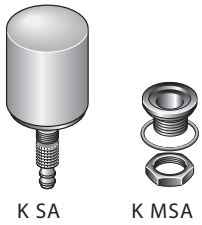
WALL FIXING KIT
KIT DI STAFFAGGIO

CODE / *CODICE*	SERIE	PRODUCT / *PRODOTTO*
K WF A	M10	R + F + L + FR



BRAKET
STAFFA DI FISSAGGIO PARETE

CODE / *CODICE*	SERIE	PRODUCT / *PRODOTTO*
K WB A	M10	R + F + L + FR



AUTOMATIC DRAIN
SCARICO CONDENSA AUTOMETICO

CODE / *CODICE*	SERIE	PRODUCT / *PRODOTTO*
K SA	M14; M38; M12; M34; M10	F; FR; MF.

KIT MOUNTING AUTOMATIC DRAIN / KIT DI MONTAGGIO KBSA

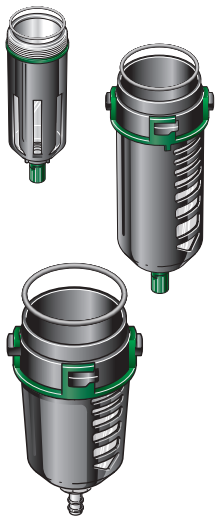
CODE / *CODICE*	SERIE	PRODUCT / *PRODOTTO*
K MSA	M14; M38; M12; M34; M10	F; FR; MF.



TRANSPARENT BOWL
TAZZA TRASPARENTE

CODE *CODICE*	SERIE *SERIE*	PRODUCT *PRODOTTO*	DRAIN *SCARICO*
K TT A	M14	F; FR	M/S
K TT B	M14	L	-
K TT C	M14	L (VL)	-

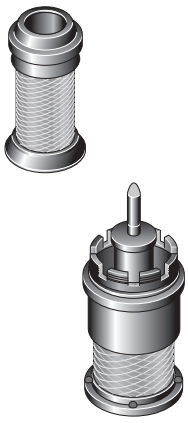
M/S = Manual and semiautomatic condensate drainage
Scarico della condensa manuale/semiautomatico



OUTER BOWL GUARD
TAZZA CON PROTEZIONE ESTERNA

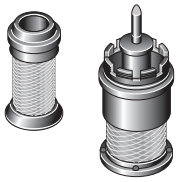
CODE *CODICE*	SERIE *SERIE*	PRODUCT *PRODOTTO*	DRAIN *SCARICO*
K PE A	M14	F; FR	M/S
K PE B	M38	F; FR	M/S
K PE C	M12; M34	F; FR	M/S
K PE D	M14	L	-
K PE E	M38	L	-
K PE F	M12; M34	L	-
K PE G	M14	L (VL)	-
K PE H	M38	L (VL)	-
K PE I	M12; M34	L (VL)	-
K PE L	M10	F; FR	M/S
K PE M	M10	L	-
K PE N	M10	L (VL)	-

M/S = Manual and semiautomatic condensate drainage
Scarico della condensa manuale/semiautomatico



FILTERING ELEMENT
GRUPPO DI FILTRAGGIO

CODE *CODICE*	SERIE *SERIE*	PRODUCT *PRODOTTO*	FILTERING DEGREE *GRADO FILTRAZIONE*
K EF A	M14	F	20 µ
K EF A1	M14	FR	20 µ
K EF B	M38	F	20 µ
K EF C	M38	FR	20 µ
K EF D	M12; M34	F	20 µ
K EF E	M12; M34	FR	20 µ
K EF G	M14	F	5 µ
K EF G1	M14	FR	5 µ
K EF H	M38	F	5 µ
K EF I	M38	FR	5 µ
K EF L	M12; M34	F	5 µ
K EF M	M12; M34	FR	5 µ
K EF N	M10	F + FR	20 µ
K EF O	M10	F + FR	5 µ



COALESCENT FILTERING ELEMENT
GRUPPO DI FILTRAGGIO A COALESCENZA

CODE *CODICE*	SERIE *SERIE*	PRODUCT *PRODOTTO*	FILTERING DEGREE *GRADO FILTRAZIONE*
K CF A	M14	MF	0,1 µ
K CF B	M38	MF	0,1 µ
K CF C	M12; M34	MF	0,1 µ



BRAKET
STAFFA A PARETE

CODE / *CODICE*	SERIE	PRODUCT / *PRODOTTO*
K BRS	R18; R14; R08; R04; M14	MR; R; FR
K BRL	M38; M12 M34	R; FR



REGULATION SPRING
MOLLA DI REGOLAZIONE

CODE / *CODICE*	SERIE	REGULATION / *REGOLAZIONE*
K RS14 02	MR (all versions);	0 ÷ 2 Bar
K RS14 04	MR (all versions);	0 ÷ 4 Bar
K RS14 08	MR (all versions); M14	0 ÷ 8 Bar
K RS14 12	MR (all versions); M14	0 ÷ 12 Bar
K RS38 08	M38	0 ÷ 8 Bar
K RS38 12	M38	0 ÷ 12 Bar
K RS12 08	M12; M34	0 ÷ 8 Bar
K RS12 12	M12; M34	0 ÷ 12 Bar



GAUGE G1/8
MANOMETRO G1/8

CODE / *CODICE*	SERIE	PRODUCT / *PRODOTTO*
K MM40 06 Ø40 0÷6 Bar	MR (all versions); M14	MR; R; FR
K MM40 12 Ø40 0÷12 Bar	MR (all versions); M14	MR; R; FR
K MM50 06 Ø50 0÷6 Bar	M38; M12; M34	R; FR
K MM50 12 Ø50 0÷12 Bar	M38; M12; M34	R; FR
K MM63 12 Ø63 0÷12 Bar	M10 (conn. G1/4)	R; FR



PLUG
GRANO

CODE / *CODICE*	SERIE	PRODUCT / *PRODOTTO*
K GC18	R18; R14; R08; R04; M14; M38; M12; M34	MR; R; FR
K GC14	M10	R; FR

DSL .

OIL REMOVERS-SILENCIERS
DISOLEATORE-SILENZIATORE

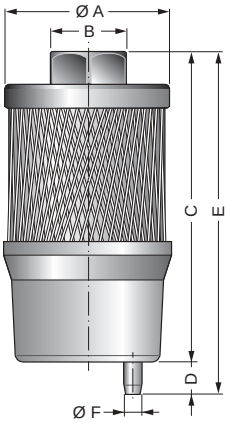


OIL REMOVERS - SILENCIERS

- Outlet oil remover / silencer for pneumatic systems.
- Eliminate oil mist pollution produced by valve and cylinder outlets.
- Reduce acoustic pollution by 25 dBA, restoring noise levels to values accepted by the safety standards in force.
- Filtering element in coalescent glass fiber.
- Oil accumulating cup with drainage plug.
- The collected oil can be conveyed trough a Ø6 mm pipe.
- DSL is a disposable and should therefore be replaced when the overpressure becomes excessive.
- Operating range: 2 ÷ 50 °C (36 ÷ 122 °F).

DISOLEATORE - SILENZIATORE

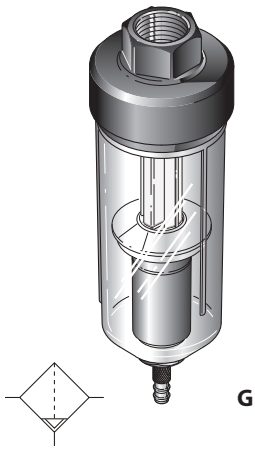
- *Disoleatore - silenziatore di scarico per sistemi pneumatici.*
- *Elimina l'inquinamento da nebbia d'olio prodotto dagli scarichi di valvole e cilindri.*
- *Riduce l'inquinamento acustico di 25 dBA riportando il livello del rumore a valori accettati dagli standard di sicurezza.*
- *Elemento filtrante in fibra di vetro coalescente.*
- *Tazza di raccolta olio con tappo di drenaggio.*
- *Possibilità di convogliare l'olio raccolto con un tubo Ø 6 mm.*
- *Il disoleatore é un dispositivo a perdere e va sostituito quando la contropressione diventa eccessiva.*
- *Campo di temperatura di utilizzo: 2 ÷ 50 °C (36 ÷ 122 °F).*



Type *Modello*	ØA	B	C	D	E	ØF	Connection *Connessione*	Portata NL/min	Portata scfm	Weight/*Peso* Kg
DSL 1	61	Ch.28	113	12	125	6	1/2"	1500	53	0,10
DSL 2	61	Ch.40	161	12	173	6	1"	3000	105	0,14
DSL 3	86	Ch.55	205	12	217	6	1 1/2"	9000	315	0,37

SCL

DRIP LEG DRAIN
SCARICATORE PER LINEE



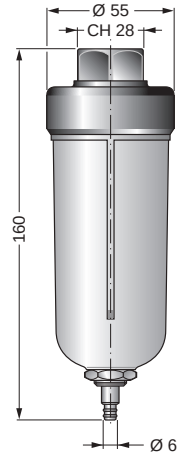
G1/2 BSP
0,225 Kg

DRIP LEG DRAIN

- Automatically eliminates condensed fluids from pipes.
- In the absence of pressure the outlet remains opening, ensuring that all settled fluid particles are eliminated.
- Equipped with hose nipple to convey the collected condensate away.
- To allow servicing operations, pressure can be relieved by slakening the knurled part at the end of the appliance.
- Maximum operating pressure: 12 Bar (180 Psi; 1,2 MPa).
- Temperature range: 5 ÷ 50 °C (41 ÷ 122 °F).
- Transparent bowl with deep safety thickness.

SCARICATORE PER LINEE

- *Consente l'eliminazione dei liquidi condensati dalle tubazioni senza alcun intervento manuale.*
- *In assenza di pressione lo scarico rimane aperto garantendo la rimozione di particelle liquide depositate.*
- *Dotato di portagomma per convogliare la condensa raccolta.*
- *Per consentire le operazioni di manutenzione é possibile togliere pressione allo scaricatore allentando la parte zigrinata posta nella zona terminale dell'apparecchio.*
- *Pressione massima di esercizio: 12 Bar (180 Psi; 1,2 MPa).*
- *Range di temperatura: 5 ÷ 50 °C (41 ÷ 122 °F).*
- *Tazza trasparente a grande spessore di sicurezza.*



SPARE PARTS FOR DRIP LEG DRAIN / *RICAMBI PER SCARICATORE*



FILTERING ELEMENT FOR DRIP LEG DRAIN
FILTRO PER SCARICATORE

CODE / *CODICE*	SERIE	PRODUCT / *PRODOTTO*
K F SCL	SCL	SAL



BOWL WITH AUTOMATIC DRAIN
TAZZA CON SCARICO AUTOMATICO

CODE / *CODICE*	SERIE	PRODUCT / *PRODOTTO*
K TSA SCL	SCL	SAL

STANDARD SALES CONDITIONS

STANDARD SALES CONDITIONS

These standard sales conditions comes directly from the system of rules designed by Assofluid (Italian Associations of Hydraulic and Pneumatic Operators and Manufacturer), to manage trade relationships about the supply of hydraulic and pneumatic equipment.

1 SUBJECT AND SCOPE OF APPLICATION OF THESE STANDARD CONDITIONS

1.1 These standard conditions shall govern all present and future contractual and re-contractual relations between parties concerning the supply of pneumatic components, equipment and systems. They shall be co-ordinated with any special conditions agreed in writing by the parties or inserted in the Supplier's written confirmation of acceptance of order.

1.2 Unless specifically approved in writing by Vesta Automation Srl, deviant general or special conditions included or referred to by the Customer in his communications to Vesta Automation Srl shall however be deemed null and void.

2 FORMATION OF CONTRACT

2.4 The supply contract comes into force upon written confirmation of acceptance of order by Vesta Automation Srl.

2.5 However, if the conditions indicated in the Customer's order differ from those in the confirmation written by Vesta Automation, the latter shall count as a new proposal and the contract shall be deemed completed at the moment in which the Customer starts to execute it or accepts the products supplied without express written reservation.

2.6 Every further Supplier's offer shall be deemed valid only within the period of time it itself states and exclusively for the complete supply the offer rates.

3 TECHNICAL DATA, DRAWINGS AND DOCUMENTS PERTAINING TO THE SUPPLIES

3.1 The data and illustrations resulting from the catalogues, brochures, circulars or other illustrative documents from Vesta Automation Srl shall be an indicative nature. This data shall have no commitment value unless expressly mentioned as such in the confirmation of order.

3.2 Vesta Automation Srl reserves the right to make any modifications to his own products at any moment as he deems appropriate.

3.3 If the Customer proposes modifications so that it becomes compulsory to implement them, there shall be full written agreement between the parties on the variations which such modifications may cause to prices and delivery periods previously established. Moreover, the prices could vary in cause the ordered quantities should be reduced or the Customers should ask for a more prompt delivery.

3.4 The Customer shall expressly undertake not to use, for purposes other than those envisaged in the supply contract, the drawings, technical information and discoveries relating to the supply which shall remain the property of Vesta Automation Srl and which the Customer shall not be able to deliver to third parties nor reproduce without written permission.

3.5 Should there be any particular normative law to respect in the Country of destination of the Supply, the Customer is bound to inform Vesta Automation Srl before the stipulation of the contract.

4.1 Unless otherwise agreed in writing, the plan of the system, the installation of equipment supplied, special testing, manuals and trading courses, assistance with start-up and all services and costs not mentioned in confirmation written by Vesta Automation Srl for acceptance of the order shall not be included in the supply.

4.2 Likewise the costs of packing, taxes, stamp duties, customs expenses, duties and any other extra expenses shall not be included in the prices unless otherwise stated in the confirmation of acceptance of order written by Vesta Automation Srl.

5 DELIVERY

5.1 Unless there is agreement to the contrary, the supplies shall be deemed to be goods supplied ex works, without packing.

5.2 With handover of the equipment to the Customer or carrier, Vesta Automation Srl shall be released from the obligation to deliver and all risks on the equipment itself shall pass to the Customer even in the event where Vesta Automation Srl is responsible for the despatch or assembly for working.

5.3 The delivery deadlines shall be regarded as an indication and shall be reckoned in working days.

5.4 Unless otherwise agreed by the parties, the deadlines shall start to run from the moment of conclusion of the contract, unless the Customer has to meet part of the price on an account basis because then the elapse of the deadlines shall be suspended until he has paid this.

5.5 It shall be understood that the delivery deadlines are automatically extended:
1) if the Customer does not supply in reasonable time the data or equipment necessary to the supply or requests changes during execution or, even, delays in meeting the request for approval of the drawings or working diagrams;
2) if causes independent of the goodwill and diligence of Vesta Automation Srl, including delays of sub-contractors, impede or render excessively difficult delivery in the terms established.

5.6 In the event the Customer is not in order with payments relating to other supplies, the elapse of the deadlines shall be suspended and Vesta Automation Srl may delay delivery until the Customer has paid the sums due.

5.7 It shall be understood that the delivery deadlines are set to favour Vesta Automation Srl; the Customer may not therefore refuse to take delivery of products before the date set.

5.8 Unless prescribed under Art. 11 below, in the event of failure to take delivery of products by the Customer for reasons for which is he is to blame or, in any case, for a reason independent of the goodwill of Vesta Automation Srl, the Customer shall bear the risk and expanses for their safe keeping.

5.9 If the parties have agreed that, in the event of delayed delivery, Vesta Automation Srl is obliged to pay a sum as a penalty, the Customer may not ask for sums in excess of the penalty as compensation for damages suffered because of the delay.

6 TESTING AND ASSEMBLY WORK

6.1 Special testing wich may be provided in the written confirmation of acceptance of order shall be carried out at the Customer's expense on the premises indicated by Vesta Automation Srl.

7 PAYMENTS

7.1 Unless otherwise agreed, payments shall be made by the Customer within the terms provided in the written confirmation of acceptance of order at the domicile of Vesta Automation Srl or with the Bank indicated by him: in the event of delay, the Customer shall be bound to pay interest or arrears which shall be calculated automatically and without the need to set up a moratorium at the official rate of discount plus three points, in any case reserving to Vesta Automation Srl the option to request compensation for greater damage suffered and termination of the contract as per Art. 11 below.

7.2 Any disputes which may arise between the parties shall not release the Customer from the obligation of observing the payment terms and conditions.

8 GUARANTEE

8.1 Vesta Automation Srl shall guarantee conformity of the products supplied, which shall mean that they are without defects in their materials and/or processing and that they correspond to the provisions of the specific contract agreed to by both parties.

8.2 The duration of the guarantee shall be twelve months counting from the delivery of the products and, for substituted products or components, from the day of their substitution.

8.3 Within this period Vesta Automation Srl to whom the Customer has reported in writing the existence of evident defects no later than eight days from their delivery and the existence of hidden defects no later than eight days from their discovery shall undertake, at this choice, to repair or substitute free the products or parts thereof which have proved to be detective. The return of not conforming goods shall be always authorized in writing by Vesta Automation Srl and shall have to keep the original packaging.

8.4 The substitutions or repairs shall as a rule be carried out ex-works: the costs and risks for transport of faulty products shall be at the Customers's expense. However, if Vesta Automation Srl, in agreement with the Customers, deems it more appropriate to carry out the necessary work for substitution or repair on the Customer's premises, the latter shall bear the travelling and accommodation expenses of the technical staff made available by Vesta Automation Srl and shall supply all means and auxiliary staff requested for carrying out the operation in the quickest and safest way.

8.5 The guarantee shall cease whenever products have not been correctly assembled or used, or have received insufficient maintenance or have been modified or repaired without the permission of Vesta Automation Srl. Moreover, Vesta Automation Srl shall not be held responsible for the conformity defects of the products caused by the ordinary wear of those parts which are normally subject to continuous and rapid wear.

9 SUPPLIER RESPONSIBILITY

9.1 Vesta Automation Srl shall be solely responsible for the good operation of the pneumatic equipment supplied as regards features and performances expressly indicated by himself. He shall not, however, assume any liability for any faulty operation of machines or systems made by the Customer or third parties with pneumatic components from Vesta Automation Srl even if the individual pneumatic equipment have been assembled or connected according to diagrams or drawings proposed by Vesta Automation Srl, unless such diagrams and drawings have been the subject of separate remuneration, in which case the liability of Vesta Automation Srl shall in any case be limited to what is contained in the above/mentioned drawings or diagrams.

9.2 In any case, outside the cases governed by the Italian law DPR May 24th, 1988, no.224, and except what provided by the art. 1229 of the Italian Civil Code, the Customer shall not be able to request compensation for indirect damage, loss or profits of production, not shall he be able to claim entitlement to compensation of sums in excess of the value of the equipment supplied.

10 RESERVATION OF OWNERSHIP

10.1 Vesta Automation Srl shall retain ownership of the products supplied until full payment of the price agreed.

11 TERMINATION CLAUSE AND RESOLUTORY CONDITION

11.1 The contract for supply shall be terminated automatically, accordino to art. 1456 of the Italian Civil Code, through simple written declaration by Vesta Automation Srl that he wishes to avail himself of this express termination clause if the Customer:
1) omits or delays payments due;
2) delays or fails to take delivery of the products in the times provided under art. 5 above;
3) does not fulfil the obligations of confidentiality provided under art. 3.4.

11.2 The contract shall be deemed terminated automatically if the Customer is put into liquidation or is subject to any bankruptcy proceedings.

12 WITHDRAWAL BY AGREEMENT

12.1 If the Customer reduces the guarantees he had given or does not provide the guarantees he had promised, Vesta Automation Srl shall have the option of withdrawn from the contract without the need of prior notification.

13 LAW APPLICABLE

13.1 Every supply contract entered into among the parties, even with foreign countries, shall be regulated by these standard conditions and governed by the Italian law.

14 COMPETENT COURT

14.1 For any dispute pertaining to the execution, interpretation, validity, termination or cessation contracts entered into between the parties, if the action is brought by the Customer, Vesta Automation's Court exclusively shall be competent; if, however, the action is brought by Vesta Automation Srl, as well as the Court of Vesta Automation Srl himself, any other Court established by law shall be competent.

Rovigo, January 1st 2004

VESTA AUTOMATION S.r.l.

CONDIZIONI GENERALI DI VENDITA

CONDIZIONI GENERALI DI VENDITA

Le presenti condizioni generali di vendita derivano espressamente dall'impianto normativo elaborato in sede Assofluid (Associazione Italiana dei Costruttori ed Operatori del Settore Oleoidraulico e Pneumatico) allo scopo di regolamentare i rapporti commerciali aventi ad oggetto la fornitura di componenti, attrezzature ed impianti oleoidraulici e pneumatici.

1 OGGETTO E AMBITO DI APPLICAZIONE DELLE PRESENTI CONDIZIONI GENERALI

1.1 Le presenti condizioni generali disciplinano tutti gli attuali e futuri rapporti contrattuali tra le parti relativi alla fornitura di componenti, attrezzature e impianti pneumatici. Esse devono essere coordinate con le condizioni generali speciali eventualmente concordate per iscritto dalle parti o inserite nella conferma scritta di Vesta Automation Srl di accettazione dell'ordine.

1.2 A meno che non siano state specificamente approvate per iscritto da Vesta Automation Srl dovranno, invece, ritenersi prive di effetto le condizioni generali o speciali difformi riportate o richiamate dal Cliente nelle sue comunicazioni a Vesta Automation Srl.

2 FORMAZIONE DEL CONTRATTO

2.1 Il contratto di fornitura si perfeziona con la conferma scritta di Vesta Automation Srl di accettazione dell'ordine.

2.2 Tuttavia se le condizioni indicate nell'ordine del Cliente differiscono da quelle della conferma scritta di Vesta Automation Srl, queste ultime valgono come nuova proposta ed il contratto si intende perfezionato nel momento in cui il Cliente inizia a darvi esecuzione o accetta i prodotti senza espressa riserva scritta.

2.3 Eventuali offerte di Vesta Automation Srl si considerano valide limitatamente al periodo di tempo indicato sulle medesime ed esclusivamente per l'integrale fornitura di quanto nelle stesse quotato.

3 DATI TECNICI, DISEGNI E DOCUMENTI INERENTI LA FORNITURA

3.1 I dati e le illustrazioni risultanti dai cataloghi, prospetti, circolari o altri documenti illustrativi di Vesta Automation Srl hanno carattere indicativo. Questi dati non hanno valore impegnativo se non espressamente menzionati come tali nella conferma d'ordine di Vesta Automation Srl.

3.2 Vesta Automation Srl si riserva la facoltà di apportare in qualunque momento ai propri prodotti le modifiche che ritenesse convenienti.

3.3 Qualora il Cliente proponesse delle modifiche ai prodotti, affinché le medesime divengano di obbligatoria esecuzione, dovrà esistere pieno accordo scritto tra le parti sulle variazioni che tali modifiche dovessero determinare sui prezzi e sui periodi di consegna precedentemente stabiliti. I prezzi potranno inoltre subire variazioni qualora le quantità ordinate vengano ridotte o venga richiesta una consegna più sollecita rispetto a quanto già concordato.

3.4 Il Cliente si impegna espressamente a non far uso, per ragioni diverse da quelle previste nel contratto di fornitura, dei disegni, delle informazioni tecniche e dei ritrovati relativi alla fornitura, che restano di proprietà di Vesta Automation Srl e che il Cliente non può consegnare a terzi né riprodurre senza autorizzazione scritta.

3.5 Il Cliente è tenuto ad informare Vesta Automation Srl, in fase precontrattuale, dell'esistenza di eventuali normative particolari da rispettare nel Paese di destinazione finale della merce da fornire.

4 ESCLUSIONI

4.1 Salvo diverso accordo scritto, non sono compresi nella fornitura il progetto del sistema, l'installazione delle apparecchiature fornite, specifici collaudi, manuali e corsi di addestramento, assistenza all'avviamento e tutte le prestazioni e gli oneri non menzionati nella conferma scritta di Vesta Automation Srl di accettazione dell'ordine.

4.2 Analogamente i costi di imballaggio, le imposte, i bolli, le spese doganali, i dazi ed ogni altro onere aggiuntivo non sono compresi nei prezzi se non risulta altrimenti dalla conferma scritta di Vesta Automation Srl di accettazione dell'ordine.

5 CONSEGNE

5.1 Salvo patto contrario le forniture si intendono per merce resa Franco Fabbrica, senza imballaggio.

5.2 Con la rimessione dei materiali al Cliente o al vettore, Vesta Automation Srl si libera dell'obbligo di consegna e tutti i rischi sui materiali stessi passano al Cliente anche nel caso in cui Vesta Automation Srl sia incaricata della spedizione o del montaggio in opera.

5.3 I termini di consegna hanno carattere indicativo e si computano a giorni lavorativi.

5.4 Se non diversamente pattuito dalle parti, essi iniziano a decorrere dal momento della conclusione del contratto, a meno che il Cliente non debba corrispondere parte del prezzo a titolo di acconto, perché allora la decorrenza dei termini è sospesa fintantoché non vi abbia provveduto.

5.5 I termini di consegna si intendono prolungati di diritto:
1) qualora il Cliente non fornisca in tempo utile i dati o i materiali necessari alla fornitura o richiesta delle varianti in corso di esecuzione o, ancora, ritardi nel rispondere alla richiesta di approvazione dei disegni o degli schemi esecutivi;
2) qualora cause indipendenti dalla buona volontà e diligenza di Vesta Automation Srl, ivi compresi ritardi di subfornitori, impediscano o rendano eccessivamente onerosa la consegna nei termini stabiliti.

5.6 Nel caso in cui il Cliente non sia in regola con i pagamenti relativi ad altre forniture la decorrenza dei termini è sospesa e Vesta Automation Srl può ritardare le consegne fintantoché il Cliente non abbia corrisposto le somme dovute.

5.7 I termini di consegna si intendono stabiliti a favore di Vesta Automation Srl; pertanto il Cliente non potrà rifiutare di prendere in consegna i prodotti prima della data stabilita.

5.8 Salvo quanto previsto nel successivo art.11, nel caso di mancata presa in consegna dei prodotti da parte del Cliente per fatto a lui imputabile o, comunque, per causa indipendente dalla volontà di Vesta Automation Srl, il Cliente sopporterà i rischi e le spese per la loro custodia.

5.9 Qualora le parti abbiano pattuito che, in caso di ritardata consegna, Vesta Automation Srl sia tenuta a pagare una somma a titolo di penale, il Cliente non potrà chiedere somme superiori alla penale come risarcimento per i danni patiti a causa del ritardo.

6 COLLAUDI E MONTAGGI

6.1 Collaudi speciali, eventualmente previsti nella conferma scritta di accettazione d'ordine, verranno eseguiti a spese del Cliente nello stabilimento indicato da Vesta Automation Srl.

7 PAGAMENTI

7.1 Salvo diverso accordo, i pagamenti devono essere effettuati dal Cliente entro i termini previsti nella conferma scritta di accettazione d'ordine presso il domicilio di Vesta Automation Srl o presso l'Istituto di credito da lui indicato: in caso di ritardo il Cliente sarà tenuto al pagamento degli interessi moratori che verranno conteggiati di pieno diritto e senza necessità di costituzione in mora nella misura del tasso ufficiale di sconto in vigore nel paese di Vesta Automation Srl aumentato di tre punti, salva in ogni caso la facoltà per Vesta Automation Srl di chiedere il risarcimento del maggior danno subito e la risoluzione del contratto ai sensi del successivo art.11.

7.2 Eventuali contestazioni che dovessero insorgere tra le parti non dispensano il Cliente dall'obbligo di osservare le condizioni e i termini di pagamento.

8 GARANZIA

8.1 Vesta Automation Srl garantisce la conformità di prodotti forniti, intendendosi cioè che i prodotti sono privi di difetti nei materiali e/o lavorazioni e che sono conformi a quanto stabilito da specifico contratto accettato dalle parti.

8.2 La durata della garanzia è di dodici mesi che decorrono dalla consegna dei prodotti e, per i prodotti o componenti sostituiti, dal giorno della loro sostituzione.

8.3 Entro tale periodo Vesta Automation Srl al quale il Cliente, non più tardi di otto giorni dalla consegna per i difetti palesi ed otto giorni dalla scoperta per quelli occulti, abbia denunciato per iscritto l'esistenza dei difetti, si impegna a sua scelta – entro un termine ragionevole avuto riguardo all'entità della contestazione – a riparare o sostituire gratuitamente i prodotti o le parti di essi che fossero risultati difettosi. Il reso di merce non conforme dovrà essere sempre autorizzato da Vesta Automation Srl per iscritto e dovrà rispettare l'imballo originale.

8.4 Le sostituzioni o le riparazioni vengono di regola effettuate Franco Fabbrica: le spese ed i rischi per il trasporto dei prodotti difettosi sono a carico del Cliente. Tuttavia, qualora Vesta Automation Srl d'accordo con il Cliente ritenesse più opportuno svolgere i lavori necessari alla sostituzione o riparazione presso il Cliente, quest'ultimo sosterrà le spese di viaggio e soggiorno del personale tecnico messo a disposizione da Vesta Automation Srl e fornirà tutti i mezzi ed il personale ausiliario richiesti per eseguire l'intervento nel modo più rapido e sicuro.

8.5 La garanzia decade ogniqualvolta i prodotti siano stati montati o utilizzati non correttamente oppure abbiano ricevuto una manutenzione insufficiente o siano stati modificati o riparati senza l'autorizzazione di Vesta Automation Srl. Vesta Automation Srl non risponde inoltre dei difetti di conformità dei prodotti dovuti all'usura normale di quelle parti che, per loro natura, sono soggette ad usura rapida e continua.

9 RESPONSABILITA' DEL FORNITORE

9.1 Vesta Automation Srl è esclusivamente responsabile del buon funzionamento di componenti, attrezzature e impianti pneumatici forniti in rapporto alle caratteristiche e prestazioni da lui espressamente indicate. Egli non si assume, invece, alcuna responsabilità per l'eventuale difettoso funzionamento di macchine o sistemi realizzati dal Cliente o da terzi con componenti pneumatici di Vesta Automation Srl, anche se le singole apparecchiature pneumatiche sono state montate o collegate secondo schemi o disegni suggeriti dal Vesta Automation Srl, a meno che tali schemi o disegni non siano stati oggetto di distinta remunerazione, nel qual caso la responsabilità di Vesta Automation Srl sarà comunque circoscritta a quanto compreso nei suddetti disegni o schemi.

9.2 In ogni caso, al di fuori delle ipotesi disciplinate dal D.P.R. n.224 del 24/05/1988, e salvo quanto previsto dall'art.1229 Cod. Civile, il Cliente non potrà chiedere il risarcimento di danni indiretti, mancati profitti o perdite di produzione, né potrà pretendere a titolo di risarcimento somme superiori al valore della merce fornita.

10 RISERVA DI PROPRIETA'

10.1 Vesta Automation Srl conserva la proprietà dei prodotti forniti fino al totale pagamento del prezzo pattuito.

11 CLAUSOLA RISOLUTIVA ESPRESSA E CONDIZIONE RISOLUTIVA

11.1 Il contratto di fornitura sarà risolto di diritto ai sensi dell'art.1456 C.C. per effetto della semplice dichiarazione scritta di Vesta Automation Srl di volersi avvalere della presente clausola risolutiva espressa, qualora il Cliente:
1) ometta o ritardi i pagamenti dovuti;
2) ritardi o manchi di prendere in consegna i prodotti nei termini previsti dal precedente art.5;
3) non osservi gli obblighi di riservatezza previsti dall'art.3.4

11.2 Il contratto si intenderà risolto di diritto nel caso in cui il Cliente venga posto in liquidazione o sia stato assoggettato ad una qualsiasi procedura concorsuale.

12 RECESSO CONVENZIONALE

12.1 Nel caso in cui il Cliente diminuisca le garanzie che aveva dato o non fornisca le garanzie che aveva promesso, Vesta Automation Srl avrà facoltà di recedere dal contratto senza necessità di preavviso.

13 LEGGE APPLICABILE

13.1 Tutti i contratti di fornitura con l'estero disciplinati dalle presenti condizioni generali sono regolati dalla legge italiana.

14 FORO COMPETENTE

14.1 Per qualsiasi controversia inerente all'esecuzione, interpretazione, validità, risoluzione, cessazione di contratti di fornitura intervenuti tra le parti ove l'azione sia promossa dal Cliente è esclusivamente compente il Foro di Padova, ove invece l'azione sia promossa da Vesta Automation Srl è competente oltre al Foro di Padova ogni altro Foro stabilito per legge.

Rovigo, 01/01/2004

VESTA AUTOMATION S.r.l.