Oil Control Group

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ELETTROVALVOLE A COMANDO DIRETTO LC1 (CETOP 3)

SOLENOID OPERATED DIRECTIONAL VALVES LC1 (CETOP 3)

CONDIZIONI DI FORNITURA E GARANZIA

CONDIZIONI DI FORNITURA
Oleodinamica LC s.r.l., con Stabilimento ed Uffici situati in:
via G. Di Vittorio, 8 - 42030 Vezzano sul Crostolo (REGGIO EMILIA) Italia,
distribuisce le proprie valvole attraverso la propria Rete Commerciale in conformità con le condizioni generali di fornitura (contratto) che sono riportate nella modulistica specifica (offerte, conferme d'ordine, fatture) e a tali condizioni farà riferimento per quanto qui non indicato.

ORDINI
Gli ordini devono pervenire in forma scritta e devono riportare le seguenti indicazioni:
a) data e luogo di emissione dell'ordine;
b) esatta denominazione della società acquirente con indirizzo completo;
c) sottoscrizione di un suo legale rappresentante con indicazione della relativa qualifica;
d) numero offerta società fornitrice (se esistente);
e) codice di ordinazione completo, con eventuale descrizione della merce ordinata;
f) numero di pezzi;
g) termine indicativo di consegna (eventuale);
h) vettore (eventuale);
L'ordine é da ritenersi valido alle condizioni generali di fornitura LC.
I termini di consegna indicati, o eventualmente scambiati, saranno da ritenersi essenziali solo in caso di specifico accordo sottoscritto dalle parti, fornitore ed acquirente.

GARANZIA
La garanzia LC ha durata di un anno a partire dalla data di fornitura del materiale.
Qualora l'acquirente ritenga che uno o piu prodotti siano viziati per cause imputabili a LC, l'acquirente si impegna a contestare immediatamente a LC la presenza dei pretesi vizi, mediante l'invio di una relazione tecnica dettagliata, affinché LC possa constatare, attraverso un tecnico di propria fiducia, se i vizi denunciati sussistano effettivamente.
Nell'ipotesi che il tecnico di fiducia LC abbia constatato la presenza di difetti imputabili ad Oleodinamica LC s.r.l., quest'ultima si impegna a riparare o a sostituire la valvola entro un congruo termine. Da parte sua l'acquirente si impegna a non chiedere la risoluzione del contratto se non decorso il congruo termine senza che la valvola sia stata riparata o sostituita.
Ogni restituzione in garanzia di valvole ritenute difettose dovrà essere preventivamente autorizzata per iscritto da Oleodinamica LC s.r.l. e dovrà essere effettuata franco destino, allegando una dettagliata descrizione delle anomalie riscontrate e delle condizioni di impiego.
La garanzia non si applica alle valvole che siano state contaminate, impiegate erroneamente o manomesse senza controllo o autorizzazione di LC Oleodinamica, così come la garanzia non si applica qualora siano state apportate modifiche a circuiti o a impianti tali da influenzare negativamente il funzionamento della valvola stessa.
Qualora la valvola fornita debba essere assemblata in impianti potenzialmente in grado di cagionare danni a terzi di importo di gran lunga superiore al prezzo della valvola stessa, l'acquirente si impegna ad adottare tutti i mezzi di sicurezza possibili per evitare qualsiasi danno, essendo consapevole che la produzione in serie a prezzi di mercato del prodotto stesso comporta il rischio, pur limitato, della presenza di pezzi difettosi.

PRESCRIZIONI D'USO
E' fatto divieto all'acquirente di adibire le valvole a usi diversi da quelli descritti nei disegni tecnici o nei cataloghi Oleodinamica LC s.r.l..
Qualora l'acquirente intenda adibire le valvole fornite ad usi diversi ha l'obbligo di chiedere preventivamente specifica autorizzazione a Oleodinamica LC s.r.l..
Le valvole LC sono sottoposte a collaudi funzionali conformemente alle specifiche riportate nella relativa documentazione tecnica. Poiché le effettive e dettagliate condizioni di funzionamento dell'apparecchiatura dell'acquirente possono non essere integralmente riproducibili nei laboratori di prova LC, la completa idoneità all'uso è responsabilità dell'acquirente stesso.
Generalmente egli validerà il prodotto attraverso la costruzione di uno o più prototipi da sottoporre ad un completo ciclo di prove funzionali.

DICHIARAZIONE
Le valvole e i gruppi integrati descritti nel presente catalogo sono destinati ad essere incorporati in macchine alle quali si applica la Direttiva CEE 98/37/CE (Direttiva Macchine) e successivi emendamenti. E' fatto divieto di mettere in funzione le valvole o i blocchi integrati prima che la macchina in cui sono incorporati sia dichiarata conforme alle disposizioni della direttiva citata.

VALVOLE IDRAULICHE EDI SYSTEM
Il presente catalogo include alcuni tra i prodotti più significativi della gamma Edi System. Per maggiori informazioni vedere il Catalogo Generale EDI SYSTEM.

GIURISDIZIONE
In caso di contestazione in cui Oleodinamica LC s.r.l. sia convenuta, è esclusivamente competente il foro di Reggio Emilia.

N.B.
- Il presente catalogo annulla e sostituisce i precedenti.
- Oleodinamica LC s.r.l. si riserva il diritto di cessare la produzione o di variare le specifiche o i disegni di qualsiasi modello di valvola senza preavviso e senza incorrere in obblighi.
- Tutti i diritti sono riservati. E' fatto espresso divieto di qualunque riproduzione parziale o totale del presente catalogo.

DATI TECNICI D'USO

COLLAUDO FUNZIONALE
Tutte le curve di funzionamento riportate a catalogo sono state rilevate utilizzando olio minerale con grado di viscosità ISO-VG32 alla temperatura di 40°C..
Tutte le valvole vengono collaudate a queste condizioni su banchi prova che assicurano un grado di filtrazione assoluta di 15 micron.

VALORI LIMITE DI TEMPERATURA

Temperatura ambiente	da –20°C a +50°C
Temperatura olio	da –20°C a +80°C

ATTACCHI DELLE VALVOLE CON COLLETTORE
Gli attacchi filettati sono normalmente del tipo "G", gas cilindrico (BSPP) nelle dimensioni da G ¼" a G 1".
Altri tipi di attacchi filettati (O-Ring SAE, ISO) sono disponibili a richiesta.

GUARNIZIONI
O-RING: Acrilo – Nitrite Butadiene NBR (BUNA-N) standard per temperature comprese tra –20°C e +100°C. A richiesta sono disponibili in FLUOROCARBONIO FPM (Viton) ed in altre mescole.
ANELLI ANTIESTRUSIONE: LUBRIFLON – PTFE – PBK.

CONSERVAZIONE A MAGAZZINO DELLE VALVOLE NUOVE
Le valvole vanno conservate protette nel loro involucro termoretraibile, in luogo asciutto, lontane dall'irraggiamento solare o da sorgenti di calore e di ozono (evitare la vicinanza con motori elettrici funzionanti) in un ambiente con temperatura tra –20°C e +50°C.

INSTALLAZIONE DELLE VALVOLE
Si raccomanda di seguire scrupolosamente la seguente procedura:
- Assicurarsi che la base di fissaggio non sia sporca o in cattive condizioni (vd. Catalogo)
- Assicurarsi che gli O-ring siano integri e correttamente montati
- Non serrare viti o raccordi con momento di serraggio superiore al valore massimo indicato sul catalogo

TENSIONE DI ALIMENTAZIONE
Per ottenere un corretto funzionamento ed una lunga durata di esercizio delle bobine è necessario che le variazioni della tensione di alimentazione non siano superiori al ±10% della tensione nominale.

INTERMITTENZA DI FUNZIONAMENTO DIN VDE 0580
L'intermittenza di funzionamento ED di un elettromagnete è il valore percentuale del tempo di inserzione t_i rispetto al tempo completo di funzionamento t_c, dove $t_c = t_i + t_r$ con t_r = tempo di riposo.
$ED = (t_i / t_c) \cdot 100\ \%$
Tutte le bobine funzionano con ED=100% purchè non venga superato il valore limite di temperatura per la loro classe di isolamento.

PROTEZIONE EN 60529
IP 65 con connettore DIN 43650 correttamente montato.
Il grado di protezione viene indicato con le lettere IP seguito da due cifre: la prima indica il grado di protezione contro la penetrazione di corpi solidi estranei, la seconda contro la penetrazione di liquidi.
IP 65 SIGNIFICA PROTEZIONE TOTALE CONTRO:
- Polvere
- Acqua spruzzata in getti a bassa pressione

Quindi le bobine possono entrare in contatto con un getto d'acqua ma non possono rimanere immerse in acqua.
Il grado di protezione non prende comunque in considerazione rischi di esplosione o condizioni particolari come umidità, ambienti corrosivi, muffe, etc.

FLUIDO IDRAULICO
Si raccomanda l'impiego di OLI A BASE MINERALE con caratteristiche fisico-chimiche idonee all'utilizzo in apparati oleodinamici.
OLI A BASE MINERALE tipo HL (DIN 51524 parte 1)
OLI A BASE MINERALE tipo HLP (DIN 51524 parte 2)

Si prega di consultare LC Oleodinamica prima dell'eventuale utilizzo di fluidi "ecologici" (generalmente a base vegetale o poliglycolica).

Classe di viscosità: secondo gli standard ISO DIN, viene espressa con il n. ISO-VG, che indica la viscosità media a 40°C (mm^2/s o centiStokes – cSt-).

- Vd. Tab. A -

CONTAMINAZIONE – FILTRAZIONE
CONSIDERAZIONI GENERALI: i maggiori costruttori ed utilizzatori di componenti e sistemi oleodinamici riconoscono che la eccessiva contaminazione del fluido è la principale causa di guasti e disfunzioni negli impianti oleodinamici. Le particelle abrasive che circolano nel fluido provocano l'erosione delle parti in movimento, che porta all'usura dei componenti e al conseguente malfunzionameno dell'impianto.
Si raccomanda di mantenere il livello di contaminazione per lo meno ai valori nominali indicati in tabella, adottando i sistemi di filtrazione più idonei allo scopo.

RAPPORTO DI FILTRAZIONE BETAx (β_x): è il rapporto tra il numero di particelle all'ingresso e all'uscita del filtro che hanno diametro maggiore di x micron.

GRADO DI FILTRAZIONE ASSOLUTA ISO 4572: è il diametro x della particella più grande, con $\beta_x \geq 75$.

CLASSE DI CONTAMINAZIONE ISO 4406: è espressa da 3 numeri che indicano rispettivamente: il numero di particelle di diametro maggiore o pari a 4 µm(c); il numero di particelle di diametro maggiore o pari a 6 micron(c); il numero di particelle di diametro maggiore o pari a 14 micron(c), contenute in 1 ml di fluido.

CLASSE DI CONTAMINAZIONE NAS 1638: è espressa da un numero che indica il numero di particelle contenute in 100 ml di fluido suddivise per classi dimensionali.

- Vd. Tab. B -

SALES, DELIVERY AND WARRANTY TERMS

SALES AND DELIVERY TERMS
Oleodinamica LC s.r.l., with factory and offices situated at:
via G. Di Vittorio, 8 - 42030 Vezzano sul Crostolo (REGGIO EMILIA) Italy,
distributes its valves throught its sales network in compliance with the delivery terms (contract) shown in the specific documents (offers, order, confirmations, invoices), and those conditions shall be applicable for all what not specified here.

ORDERS
All orders shall be in written form and shall show the following information:

a) date and place where the order is issued;
b) full name and address of the purchasing company;
c) signature of a legal representative, with indication of his/her qualification;
d) reference of the suppliers offer (when applicable);
e) complete ordering code and eventual description of the valves ordered;
f) number of pieces;
g) delivery time requested (eventual)
h) carrier (eventual).

The order will be considered valid at the LC Oleodinamica delivery terms.
The delivery terms requested or shown, and eventually notified in writing, can be considered essential only in case of specific signed agreement between both parties, supplier and buyer.

WA R R ANTY
The LC limited warranty lasts for a period of 12 months starting from the delivery date of the valve.
If the buyer deems that one or more products are faulty due to improper manufacturing, he undertakes to notify Immediately the presence of these faults to the supplier, by means of detailed written report, so that LC may verify, through an expert of its own trust, whether the complained faults are really present.
Once the LC expert has verified that the notified faults are effectively present and that they are due to manufacturing defects, Oleodinamica LC s.r.l. undertakes to repair or to replace the valve within an adeguate term and the buyer undertakes not to ask for contract cancellation before the adeguate term to repair or replace the valve has expired.
Written permission for warranty returns must be obtained from Oleodinamica LC s.r.l. prior to shipment. All warranty returns shall be shipped freight pre-paid and shall include a detailed description of the malfunction and of the working conditions. The warranty does not cover products which have been contaminated, used improperly or tampered without control and approval of Oleodinamica LC s.r.l.. Similarly the warranty is not valid if changes are made to the circuits or systems which could negatively affect the valve function. If the valve supplied must be assembled in systems which could cause damages to third parties exceeding by for the price of the valve, the buyer undertakes to adapt all safety measures in order to avoid any damage, since he recognizes that mass production of the valves at market prices entails the risk, even if limited, that occasional faulty valves may result.

USER'S INTRUCTIONS
The buyer shall not use the valves for purposes different from what pointed out in the relevant drawings or in the Oleodinamica LC s.r.l. catalogues.
If the buyer wants to use the valves for other purposes he shall ask specific approval from Oleodinamica LC s.r.l..
All LC valves are tested and checked in compliance with the specifications shown by the relevant documents. Since the actual detailed performance of the buyer's equipment cannot be totally reproduced in LC's testing laboratory, the full assurance of suitability of LC valves in the buyer's applications is the responsibility of the buyer.
Generally the buyer will validate the valve in his own application by manufacturing a prototype to be submitted to a full testing program.

STATEMENT
The valves and the multifunction integrated blocks described in this catalogue can be employed in systems or machines falling into the specifications of EEC Directive 89/37/CE (Machine Directive) and later amendments. The valves and the blocks shall not be operated before the complete machine is verified to be in compliance with the requirements of the above mentioned Directive.

EDI SYSTEM HYDRAULIC VALVES
The present catalogue includes technical specification pages of any current Edi System valves.
More detailed information are available in the Edi System General Catalogue.

JURISDICTION
In case of a dispute where Oleodinamica LC s.r.l. is summoned before court, the Court of law in Reggio Emilia (Italy) is exclusively competent: drafts, acceptance of settlement, dispatches without or with C.O.D. do not constitute a derogation from this clause of jurisdiction even in case Oleodinamica LC s.r.l. should be pursued for concession or continence of cause. When Oleodinamica LC s.r.l. is the plantiff, it will be able to recur both to the Court of Law in Reggio Emilia and to that where the other party resides.

Notes
- The present catalogue cancels and supersedes all the previous issues.
- Oleodinamica LC s.r.l. reserves the right to stop production or to change specifications and dimensions of any valve without prior notice and without incurring in any obbligation.
-

TECHNICAL DATA

FUNCTIONAL TESTING
All performance curves in this catalogue are obtained using mineral based hydraulic oil with 32 cSt viscosity at 40°C (ISO VG 32 viscosity class).
All valves go through functional testing at these conditions before shipment.
Our test stands ensure 15 micron Absolute Filtration.

TEMPERATURE RANGES

Ambient Temperature from	–20°C to +50°C
Oil Temperature from	–20°C to +80°C

PORTS
G sizes (BSPP) from G ¼" to G 1" are standard; SAE sizes (straight thread, with O-Ring) can be manufactured upon request.

SEALS
O-RINGS: Acryl – Nitrile Butadiene Rubber NBR (BUNA-N) standard for temperature between –20°C and +100°C. Fluorocarbo FPM (Viton) and other compounds are available on request.
BACKUP RINGS: Lubriflon – PTFE – PBK.

STOCKING OF NEW VALVES
Encapsulated by a protective wrapping, the valves shall not be exposed to direct sun light nor to source of heat or ozone (like electric motors running) and kept in a dry place at a temperature between –20°C and +50°C.

VALVES INSTALLATION
It is reccomended to follow these steps:
- Inspect the sub-plate to ensure that it is in good conditions and no external contaminant is present.
- Check that O-Rings are intact and correctly positioned.
- Don't tighten screws or connectors more than the maximum torque specified in the catalogue.

INLET VOLTAGE
To obtain correct operation and long life of coils it is necessary that the operating voltage fluctuations do not exceed ±10 % of nominal voltage.

WORKING DUTY
The working duty ED of a coil is the ratio between energized time $\mathbf{t_i}$ and full cycle time $\mathbf{t_c}$ where $\mathbf{t_c = t_i + t_r}$ and $\mathbf{t_r}$ = de-energized time.
ED = $(\mathbf{t_i}/\mathbf{t_c}) \cdot 100$ %
All coils are rated for ED = 100 % provided that temperature limit of their insulation class is not exceeded.

PROTECTION EN 60529
IP 65 with DIN 43650 connector correctly mounted
Is protection class in designed by the letter IP followed by two digits: the first indicates protection against penetration of foreign solid bodies, the second against penetration of water.
IP 65 MEANS TOTAL PROTECTION AGAINST:
- Dust
- Low pressure water jets

Our coils resist therefore to water sprayed from every direction but cannot be plunged into water or remain under water.
Protection class doesn't apply to explosion risks or to conditions such as moisture, corrosive agents, mildew, etc.

HYDRAULIC FLUID
It must have physical lubricating and chemical properties suitable for use in hydraulic systems such as, for example:
MINERAL OIL FLUIDS HL (DIN 51524 part1)
MINERAL OIL FLUIDS HLP (DIN 51524 part2)
For use of environmentally acceptable fluids (vegetable or polyglycol base) please consult LC Oleodinamica.
Viscosity class: with ISO-DIN, the viscosity class is expressed by ISO-VG (no.); the no. Indicates the average kinematic viscosity at 40°C in mm^2/s or centiStoks (cSt).

- See Tab. A -

CONTAMINATION – FILTRATION
GENERAL INFORMATION: Manufacturers and users of hydraulic equipment admit that contamination is the most likely cause of malfunction or failure in hydraulic systems and reduces security and reliability of components and systems. Metal particles flowing throughout the circuit scratch moving surfaces so that contamination level, if not controlled, increases very rapidly.
It is strongly recomended to mantain contamination level at least at nominal values shown below, choosing adequate filtration products.

FILTRATION RATIO BETAx (β_x): It's the ratio between the number of particles before and after the filter with diameter larger than X micron.

ABSOLUTE FILTRATION RATIO ISO 4572: It's the diameter X of the largest particle with $\beta_x \geq 75$.

CONTAMINATION CLASS ISO 4406: it's expressed by 3 scale numbers representing respectively: the number of particles equal to or larger than 4 µm(c); the number of particles equal to or larger than 6 micron(c); the number of particles equal to or larger than 14 micron(c), contained in 1 ml of fluid.

CONTAMINATION CLASS NAS 1638: It's expressed by one scale numbers representing the number of particles of different size ranges contained in 100 ml of fluid.

- See Tab. B -

TABELLE VISCOSITA' E CONTAMINAZIONE

VISCOSITY CLASS AND FILTRATION DATA

- Tabella A -

CLASSE DI VISCOSITA' VISCOSITY CLASS	VISCOSITA' CINEMATICA - KINEMATIC VISCOSITY		
	MAXIMUM AT 0°C	MEDIUM AT 40°C	MINIMUM AT 100°C
ISO VG 10	90	10	2.4
ISO VG 22	300	22	4.1
ISO VG 32	420	32	5.0
ISO VG 46	780	46	6.1
ISO VG 68	1400	68	7.8
ISO VG 100	2560	100	9.9

- Tabella B -

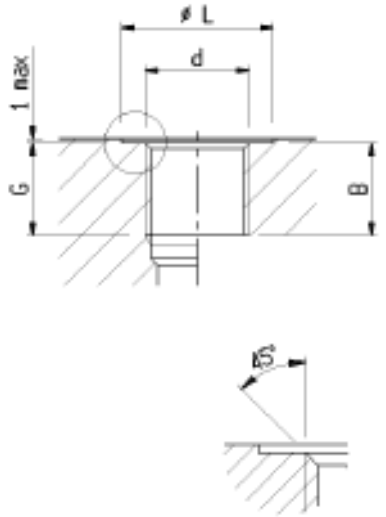
TIPO DI IMPIANTO TIPO DI VALVOLA TYPE OF SYSTEM TYPE OF VALVE	SPECIFICHE L.C. SUL GRADO DI CONTAMINAZIONE DELL'OLIO L.C. FILTRATION RECCOMENDATIONS			
	CAPACITA' DI FILTRAZIONE NOMINALE NOMINAL FILTRATION (micron)	FILTRAZIONE ASSOLUTA SECONDO ISO 4572 ABSOLUTE FILTRATION RATING ISO 4572 ($\beta x \geq 75$)	CLASSE DI CONTAMINAZIONE SECONDO: CONTAMINATION CLASS ACCORDIG TO:	
			ISO 4406	NAS 1638
Apparati o componenti funzionanti ad ALTA PRESSIONE >250 bar APPLICAZIONI GRAVOSE Valvole e componenti poco tolleranti alla contaminazione dell'olio. System/components operating at HIGH PRESSURE > 250 bar HIGH DUTY CYCLE APPLICATIONS Systems/components with LOW dirt tolerance	10	X = 10...12	* / 17 / 14	8
Apparati o componenti funzionanti d MEDIA PRESSIONE APPLICAZIONI GRAVOSE Valvole e componenti mediamente tolleranti alla contaminazione dell'olio. System/components operating at MEDIUM HIGH PRESSURE HIGH DUTY CYCLE APPLICATIONS Systems/components with moderately dirt tolerance	15	X = 12...15	* / 18 / 14	9
Apparati o componenti funzionanti a BASSA PRESSIONE < 100 bar APPLICAZIONI POCO GRAVOSE Valvole e componenti ben tolleranti alla contaminazione dell'olio. System/components operating at LOW PRESSURE < 100 bar LOW DUTY CYCLE APPLICATIONS Systems/components with GOOD dirt tolerance	25	X = 15...25	* / 19 / 15	10 - 11

MATERIALI • MATERIALS

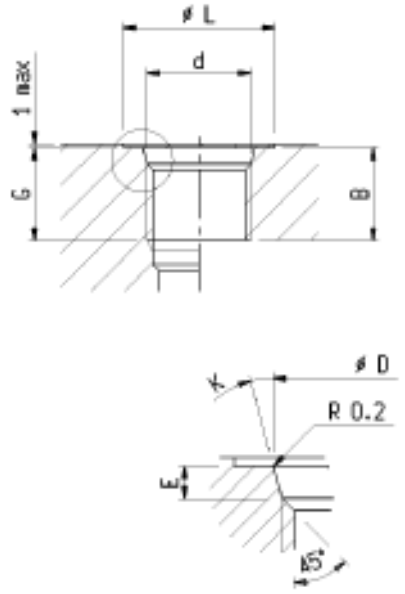
ALLUMINIO	EN 573	UNI	DIN
Al 2011	EN AW 2011	9002 / 5	AlCuBiPb
Al 6082	EN AW 6082	9006 / 4	AlMgSi1
Al 7020	EN AW 7020	9007 / 1	AlZn4,5Mg1
GHISA	**UNI EN 1561**	**UNI EN 1563**	**ASTM A842-85**
Lamellare	GJL 250		
Sferoidale		GJS 450-10	
Vermiculare			350
Vermiculare			400

ACCIAIO	UNI 4838 UNI 10233-4	UNI EN 10087 EN 10277-3
Automatico	CF 9SMnPb28	11SMnPb30
Automatico	CF 9SMnPb36	11SMnPb37
Autom. da bonifica	CF 35SMnPb20	10SMnPb20
Da bonifica al carbonio	C 40	C40E
Da cementazione legato	16 CrNi 4	16NiCrS4

ATTACCHI • PORTS



Codice Code		Filettature Thtreads UNI-ISO 228 d	G - B	Ø L			
14		G 1/8	9	15			
09		G 1/4	13	19			
02		G 3/8	13	25			
03		G 1/2	15	29			
04		G 3/4	17	36			
05		G 1"	19	45			
06		G 1" 1/4	29	57			



Codice Code	Dimensioni Size SAE	Filettature Thtreads ASA-B1-1 d	G - B	Ø L	Ø D	E	K
54	4	7/16-20 UNF-2B	12	19	12.5	2.4	12°
55	6	9/16-18 UNF-2B	13	26	15.6	2.5	12°
56	8	3/4-16 UNF-2B	15	30	20.6	2.6	15°
85	10	7/8-14 UNF-2B	17	34	23.9	2.6	15°
57	12	1 1/16-12 UNF-2B	20	41	29.2	3.3	15°
27	16	1 5/16-12 UNF-2B	20	50	35.5	3.3	15°
58	20	1 5/8-12 UNF-2B	20	60	43.5	3.4	15°

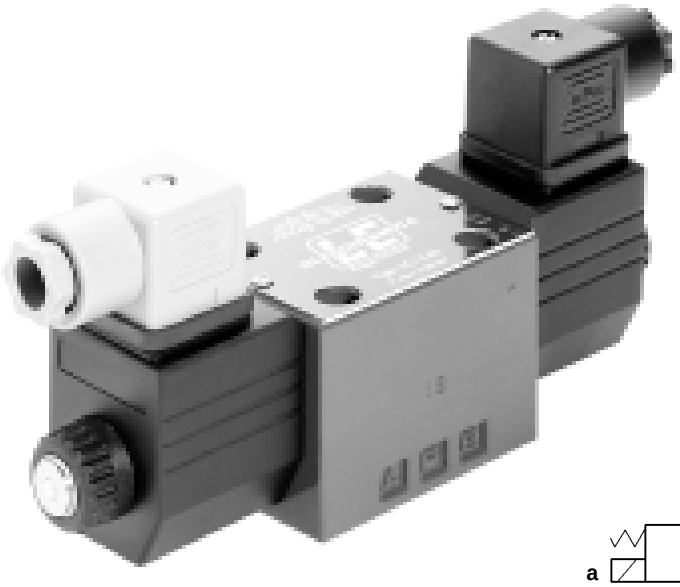
CAPITOLO 2 - LC 1

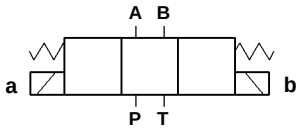
Grandezza / Size : **ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3**

LC1Z

Elettrovalvole a comando diretto

Solenoid operated directional valves

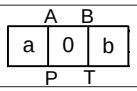
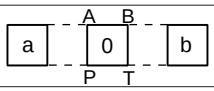
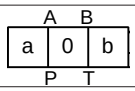
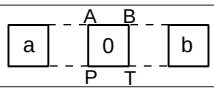
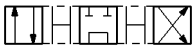
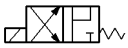
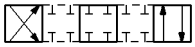
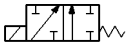
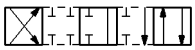
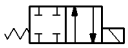
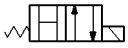
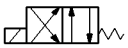
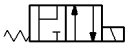
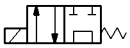
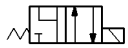
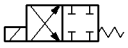
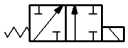




CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima : 30 l/min
Pressione massima d'esercizio su A-B-P : 250 bar
Pressione massima in T: dinamica=180 bar - statica=210 bar

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow : 30 l/min
Max operating pressure on A-B-P: 250 bar
Max pressure in T: dynamic=180 bar - static=210 bar

TIPI DI CIRCUITI • SPOOL TYPES

Sigla Code	Simbolo Circuit	Direzione del flusso durante il passaggio al centro Oil direction during shift	Sigla Code	Simbolo Circuit	Direzione del flusso durante il passaggio al centro Oil direction during shift
					
A2			D11C		
B2			E11C		
C2			N11C		
D2			A12A		
E2			A12C		
K2			A12S		
R2			B13C		
A11A			C13A		
A11C			D13C		
A11S			E12C		
B11C			N12C		
C11A					

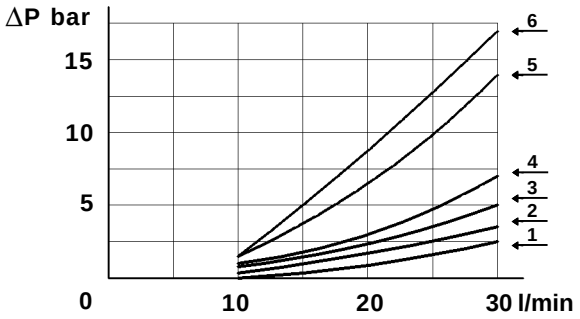
CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

Tutte le elettrovalvole della serie LC1Z sono costruite per funzionare con alimentazione in corrente continua.
Il funzionamento in corrente alternata è possibile utilizzando un connettore con raddrizzatore. (Vedi pag. 2.41.05)

All the LC1Z series solenoid valves are intended to be used in DC.
It is possible to use the valves in AC applications by using a connector with rectifier. (see page 2.41.05)

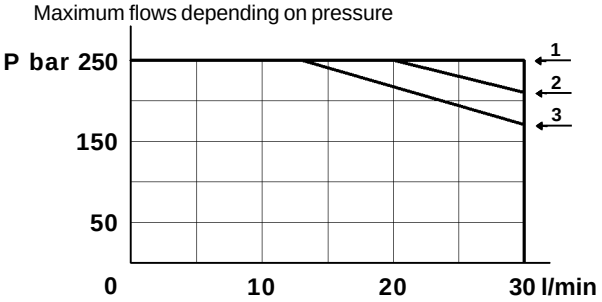
Tipo di circuito Spool type	P>T	P>A	P>B	A>T	B>T
A2 - A11S - A12S	4	5	5	6	6
A11A - A12A		3	3	2	2
A11C - A12C		3	3	2	2
B2 - B11C - B13C		3	3	3	3
C2 - C11A - C13A	2	3	3	1	1
D2 - D11C - D13C		2	2	3	3
E2 - E11C - E12C		4	4	1	1
N11C - N12C		3	3		
K2 - R2		3	3	3	3

Cadute di pressione · Pressure drop



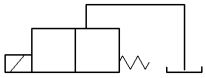
Nr. di riferimento Reference number	Tipo di circuito Spool type
1	A2 - A11S - A12S - A12C - A12A A11A - A11C - C2 - C11A - C13A D2 - D11C - D13C
2	B2 - B11C - B13C - K2 - R2
3	E2 - E11C - E12C - N11C - N12C

Portate massime in funzione della pressione
Maximum flows depending on pressure



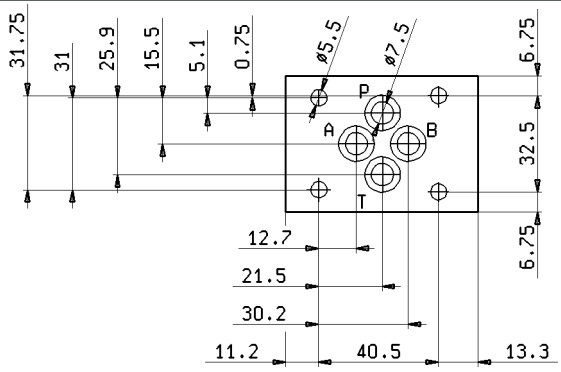
I valori indicati nel grafico non sono validi se l'elettrovalvola è utilizzata in applicazioni con collegamenti 2 o 3 vie.

The values indicated in the graph are not valid if the solenoid valve is used in applications with 2 or 3 way connections.



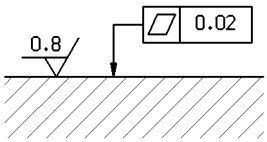
Tempi di commutazione (rilevati con 25 l/min e 150 bar) Shifting time (taken with 25 l/min and 150 bar)	C.C. - D.C.	
	Eccitazione Energised	**Diseccitazione** De-energised
	50 ÷90 ms	40 ÷60 ms

GRANDEZZA • SIZE : ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3



Qualità superficie di attacco.

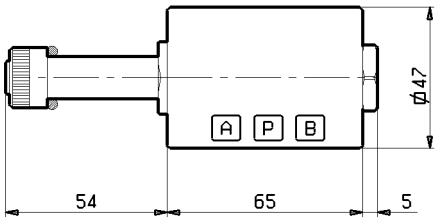
Mounting plane quality.



DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS

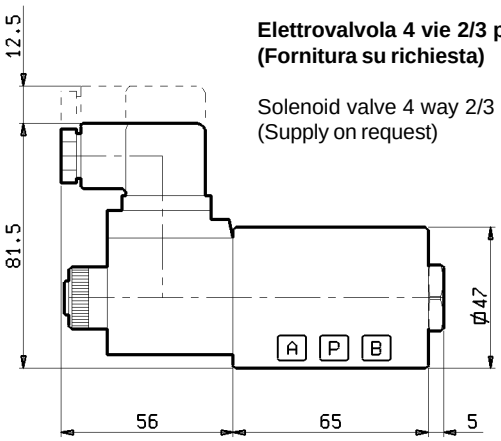
Elettrovalvola 4 vie 2/3 posizioni. (Fornitura standard)

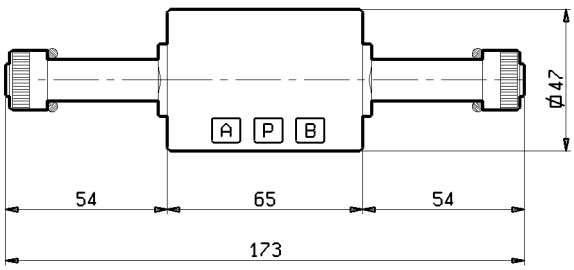
Solenoid valve 4 way 2/3 positions. (standard)



Elettrovalvola 4 vie 2/3 posizioni. (Fornitura su richiesta)

Solenoid valve 4 way 2/3 positions. (Supply on request)



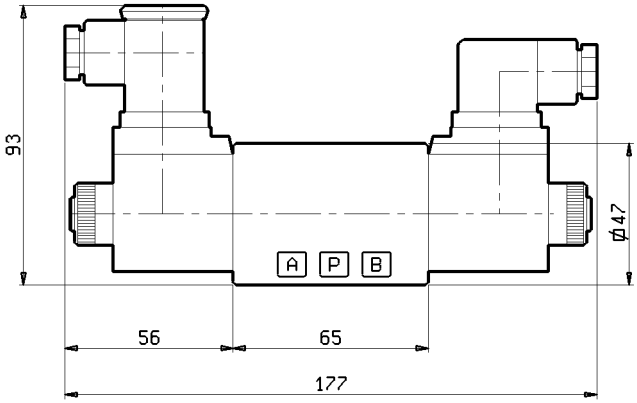


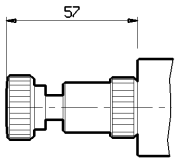
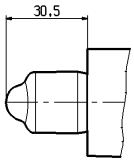
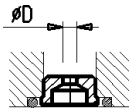
Connettore con raddrizzatore

Connector with rectifier

Connettore standard

Standard connector



Comando manuale di emergenza a vite Screwed manual override	Comando manuale di emergenza a pulsante Push-button manual override	Strozzatore per utilizzi P,T,A,B Flow restrictor for P,T,A,B ports	ø D mm	Codice Designation code
 E/F	 E/P		0.8	50-0500
			1.0	50-0501
			1.2	50-0502
			1.5	50-0503
			2.0	50-0504

Pesi • Weights	
Elettrovalvola con 1 solenoide: With 1 solenoid :	1,20 Kg
Elettrovalvola con 2 solenoidi: With 2 solenoids:	1,45 Kg

Serraggio cannotto • Tube mounting
Ch. 24 mm **Momento massimo di serraggio: 20 Nm** Maximum blocking torque: 20 Nm

Viti di fissaggio • Fixing screws
N°4 DIN 912-8.8 M5 x 30 **Momento massimo di serraggio: 6 Nm** Maximum blocking torque. 6 Nm

SOLENOIDI • SOLENOIDS : GM 3060

Tensione frequenza Voltage and frequency	Potenza max Inrush max watt GM 3060	Corrente nominale Nominal current ampere GM 3060	Frequenza di inserzione: 3Hz Switching frequency: 3Hz
12 Volt D.C. 24 Volt D.C. 48 Volt D.C. 110 Volt D.C.	29	2.26 1.17 0.60 0.25	**Connettore standard DIN 43650 tipo MPM 182-09** Standard connector DIN 43650 type MPM 182-09
24 Volt 50/60 Hz 110 Volt 50/60 Hz 230 Volt 50/60 Hz	29	1.25 0.30 0.14	**Connettore con raddrizzatore DIN 43650 tipo MPM 532-09 RAC** Connector with rectifier DIN 43650 type MPM 532-09 RAC

Per ulteriori informazioni tecniche su connettori e bobine vedi pag. 2.41.05 e pag. 2.41.09

For further information regarding connectors and coils please see page 2.41.05 and page 2.41.09

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1 Z A11C 24DC 0 V EP

Elettrovalvola CETOP 3
CETOP 3 solenoid valve

Modello
Model

Tipo di circuito
Spool type

0= elettrovalvola senza bobina (standard)
24DC = tensione solenoide con bobina (Vedi pag. 2.41.05)

0= Solenoid valve without coils
24DC = Solenoid voltage with coil (see page 2.41.05)

Comando manuale di emergenza
Escludere per versione standard

Manual emergency control.
Omit if not required.

V = guarnizioni in Viton
Escludere per versione standard

V = seals in Viton
Omit for standard seals

0 = senza connettore DIN 43650
1 = con connettore DIN 43650 (standard).Vedi pag. 2.41.09
2 =
3 = bobina con attacco AMP JUNIOR (Vedi pag. 2.41.09)

0 = without DIN 43650 connector
1 = with DIN 43650 connector (standard).see page 2.41.09
2 =
3 = coil with AMP JUNIOR connector (see page 2.41.09)

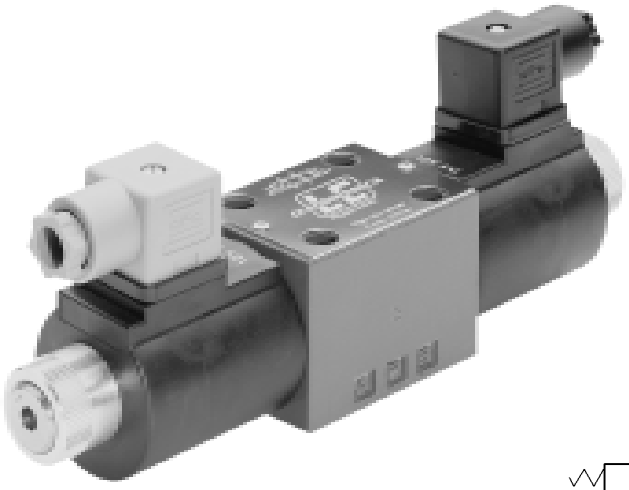
Le elettrovalvole sono normalmente fornite con i tubi montati, le bobine e i connettori devono essere ordinati separatamente.

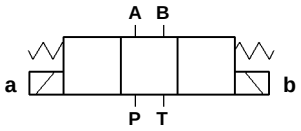
The solenoid valves are normally supplied with the solenoid tubes mounted, and the coils and connectors should be ordered separately.

LC1AZ / LC1DZ

Elettrovalvole a comando diretto

Solenoid operated directional valves





CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3

LC1AZ - CORRENTE ALTERNATA: Portata massima : 60 l/min
Pressione massima d'esercizio su A-B-P: 250bar
Pressione massima in T: dinamica=160 bar - statica=180 bar

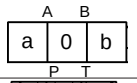
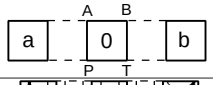
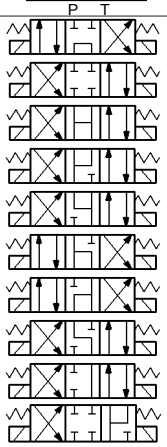
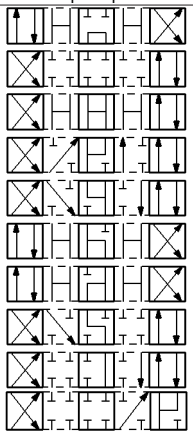
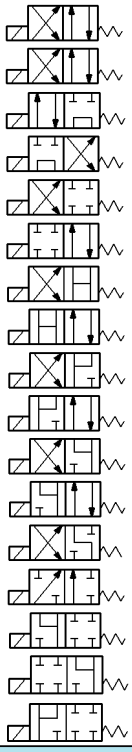
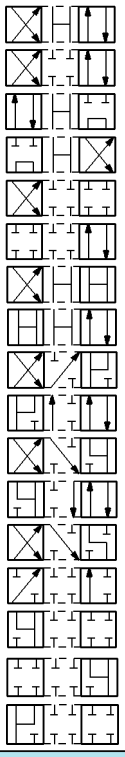
LC1DZ - CORRENTE CONTINUA: Portata massima : 70 l/min
Pressione massima d'esercizio su A-B-P: 310bar
Pressione massima in T: dinamica=250 bar - statica=310 bar

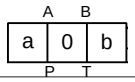
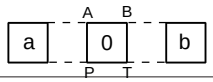
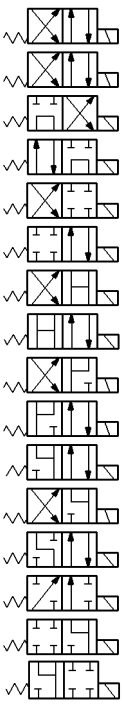
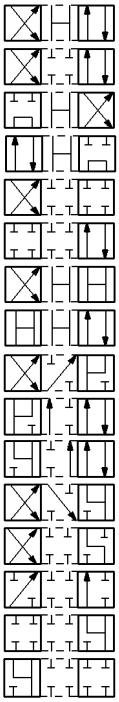
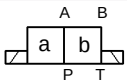
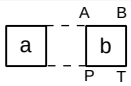
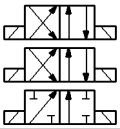
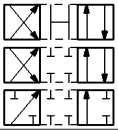
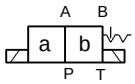
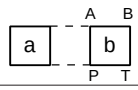
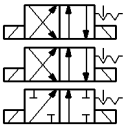
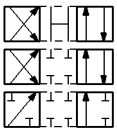
TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3

LC1AZ - A.C. VERSION: Max flow : 60 l/min
Max operating pressure on A-B-P: 250bar
Max pressure in T: dynamic=160 bar - static=180 bar

LC1DZ - D.C. VERSION: Max flow : 70 l/min
Max operating pressure on A-B-P: 310bar
Max pressure in T: dynamic=250 bar - static=310 bar

TIPI DI CIRCUITI • SPOOL TYPES

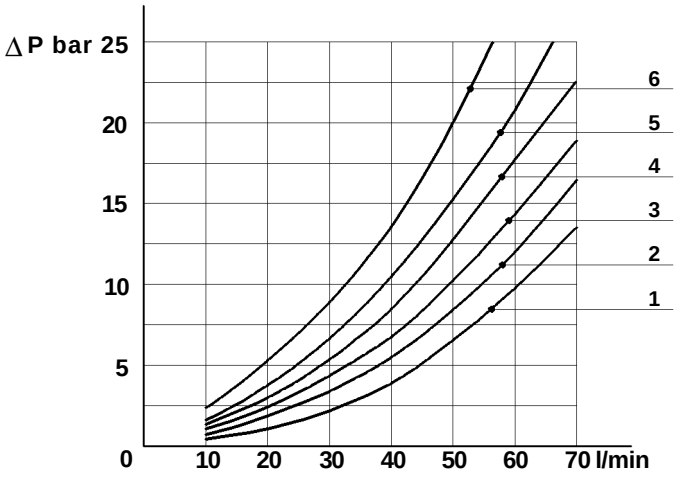
Sigla Code	Simbolo Circuit	Direzione del flusso durante il passaggio al centro Oil direction during shift
		
A2		
B2		
C2		
D2		
E2		
G2		
H2		
K2		
R2		
U2		
A11A		
A11C		
A11S		
A14S		
B11C		
B14C		
C11A		
C14A		
D11C		
D14C		
E11C		
E14C		
K11C		
N11C		
T11C		
T13C		
U11C		

Sigla Code	Simbolo Circuit	Direzione del flusso durante il passaggio al centro Oil direction during shift
		
A12A		
A12C		
A12S		
A13S		
B12C		
B13C		
C12A		
C13A		
D12C		
D13C		
E12C		
E13C		
K12C		
N12C		
T12C		
T14C		
		
M2A		
M2C		
N2		
		
M2A/D		
M2C/D		
N2/D		

CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

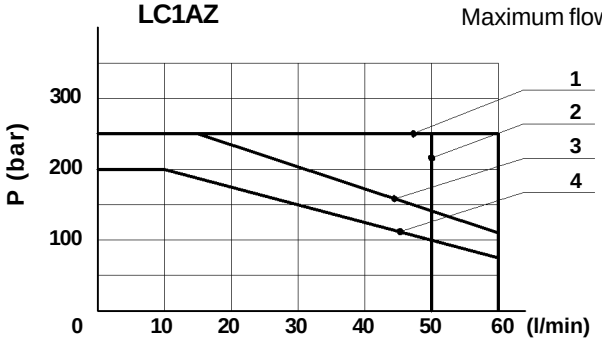
Cadute di pressione · Pressure drop **LC1AZ - LC1DZ**

Tipo di circuito Spool type	P > T	P > A	P > B	A > T	B > T
A2 - A11S - A12S - A13S A14S - G2 - H2	5	6	6	6	6
B2 - B11C - B13C - B12C B14C - M2A - M2C - U2		3	3	3	3
C2 - C11A - C12A - C13A C14A	1	2	2	1	1
D2 - D11C - D12C - D13C D14C		1	1	2	2
E2 - E11C - E12C - E13C E14C - T11C - T12C		2	2	1	1
K2 - R2		2	2	4	4
A11A -A12A -A11C -A12C		3	3	3	3
N11C - N12C - N2		3	3		

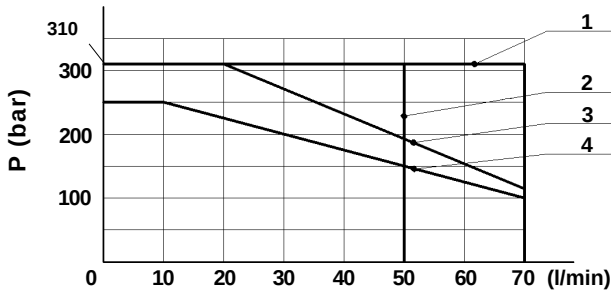


Portate massime in funzione della pressione
Maximum flows depending on pressure

LC1AZ



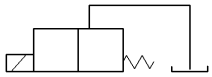
LC1DZ



Numero di riferimento Reference number	**Tipo di circuito** Spool type
1	**B2 - B11C - B12C - B13C - B14C - C2 - C11A - C12A - C13A - C14A - T12C** D2 - D11C - D12C - D13C - D14C - E2 - E11C - E12C - E13C - E14C - T11C
2	**A2 - A11S - A12S - A13S - A14S - G2 - H2 - K2 - R2**
3	**A11C - A12C - A11A - A12A - M2C - M2A - U2**
4	**N11C - N12C - N2**

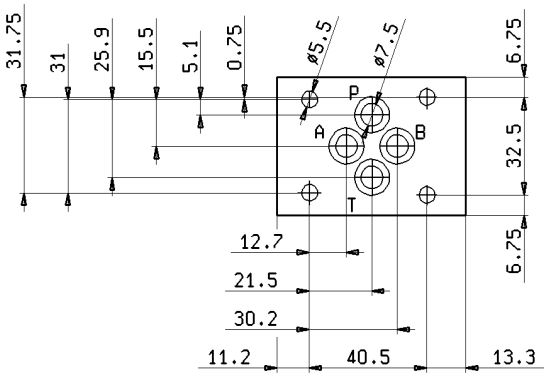
I valori indicati nel grafico non sono validi se l'elettrovalvola è utilizzata in applicazioni con collegamenti 2 o 3 vie

The values indicated in the graph are not valid if the solenoid valve is used in applications with 2 or 3 way connections.



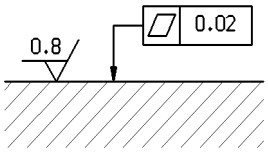
Tempi di commutazione (rilevati con 40 l/min e 150 bar) Shifting time (taken with 40 l/min and 150 bar)	**c.c.** - DC		**c.a.** - AC	
	Eccitazione Energised	**Diseccitazione** De-energised	**Eccitazione** Energised	**Diseccitazione** De-energised
	30 ÷ 50 ms	40 ÷ 60 ms	10 ÷ 30 ms	20 ÷ 50 ms

GRANDEZZA • SIZE : ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3



Qualità superficie di attacco.

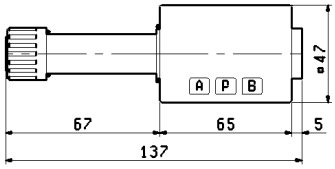
Mounting plane quality.

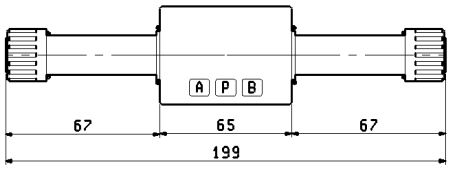


DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS

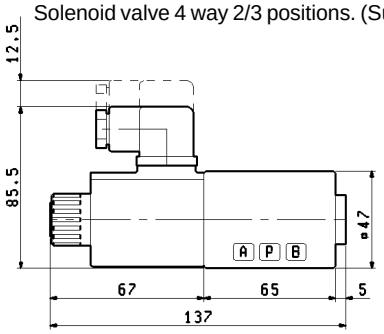
Elettrovalvola 4 vie 2/3 posizioni. (Fornitura standard)
Solenoid valve 4 way 2/3 positions. (Standard supply)

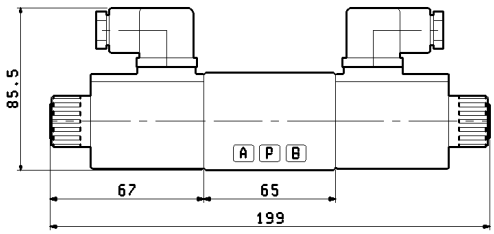
LC1AZ





Elettrovalvola 4 vie 2/3 posizioni. (Fornitura su richiesta)
Solenoid valve 4 way 2/3 positions. (Supply on request)

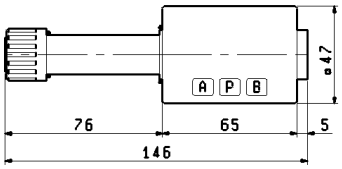


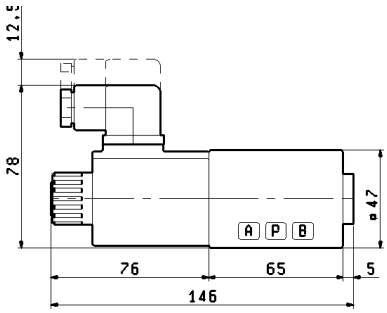


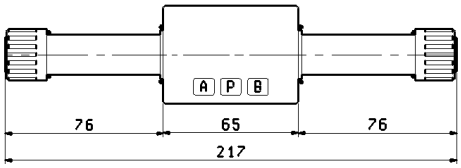
Elettrovalvola 4 vie 2/3 posizioni. (Fornitura standard)
Solenoid valve 4 way 2/3 positions. (Standard supply)

Elettrovalvola 4 vie 2/3 posizioni. (Fornitura su richiesta)
Solenoid valve 4 way 2/3 positions. (Supply on request)

LC1DZ

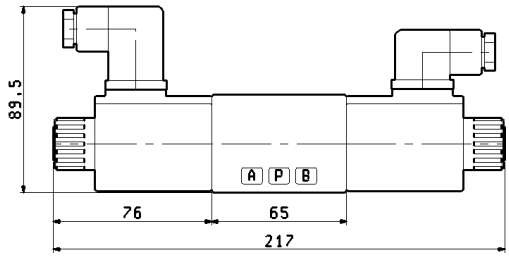






Connettore con raddrizzatore
Connector with rectifier

Connettore standard
Standard connector

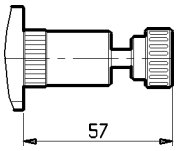


Pesi • Weights	
LC1AZ	
Con 1 solenoide With 1 solenoid	1,25 Kg
Con 2 solenoidi With 2 solenoids	1,66 Kg
LC1DZ	
Con 1 solenoide With 1 solenoid	1,33 Kg
Con 2 solenoidi With 2 solenoids	1,82 Kg

Viti di fissaggio • Fixing screws
Nº4 DIN 912-8.8 M5 x 30 **Momento massimo di serraggio: 6 Nm** Maximum blocking torque. 6 Nm

Serraggio cannotto • Tube mounting
AZ : Ch. 13 mm - DZ : Ch. 16 mm **Momento massimo di serraggio: 20 Nm** Maximum blocking torque. 20 Nm

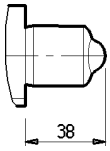
Comando manuale di emergenza a vite
Screwed manual override



E/F

LC1DZ

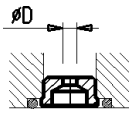
Comando manuale di emergenza a pulsante
Push-button manual override



E/P

LC1AZ - LC1DZ

Strozzatore per utilizzi P,T,A,B
Flow restrictor for P,T,A,B ports



ø D **mm**	**Codice** Designation code
0.8	**50-0500**
1.0	**50-0501**
1.2	**50-0502**
1.5	**50-0503**
2.0	**50-0504**

SOLENOIDI • SOLENOIDS : GM 5043 - K14

Tensione frequenza Voltage and frequency	Potenza max Inrush max watt	Corrente nominale Nominal current ampere	Potenza assorbita allo spunto Inrush power V A	Potenza assorbita a regime Holding power V A	Frequenza di inserzione · Switching frequency - c.c. / DC : 5 Hz - a.c. / AC : 2 Hz
	GM 5043				
12 volt DC 24 volt DC 48 volt DC	33	2.8 1.4 0.7	-	-	Connettore standard DIN 43650 tipo MPM 182-09 Standard connector DIN 43650 type MPM 182-09
24 volt 50/60 Hz 48 volt 50/60 Hz 110 volt 50/60 Hz 230 volt 50/60 Hz	33	1.6 0.8 0.35 0.16	-	-	Conn. con raddrizzatore DIN 43650 tipo MPM 532-09 RAC Connector with rectifier DIN 43650 type MPM 532-09 RAC
	K 14				
24 volt 50/60 Hz 110 volt 50/60 Hz 230 volt 50/60 Hz 240 volt 50/60 Hz	23	2 0.52 0.23 0.23	220	50	Connettore standard DIN 43650 tipo MPM 182-09 Standard connector DIN 43650 type MPM 182-09

Per ulteriori informazioni tecniche su connettori e bobine vedi pagg. 2.41.06 - 2.41.07 - 2.41.09

For further information regarding connectors and coils please see pages 2.41.06 - 2.41.07 - 2.41.09

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1 D Z A11C 24DC 0 V EP

Elettrovalvola CETOP 3
CETOP 3 solenoid valve

A= corrente alternata / D= c. continua
A= a.c. version / D= d.c. version

Modello
Model

Tipo di circuito
Spool type

0= elettrovalvola senza bobina (standard)
24DC = tensione solenoide con bobina
(Vedi pagg 2.41.06 e 2.41.07)

0= Solenoid valve without coil (standard supply)
24DC = Solenoid voltage with coil (see pages 2.41.06 and 2.41.07)

Comando manuale di emergenza
Escludere per versione standard

Manual emergency control
Omit if not required

V = guarnizioni in Viton
Escludere per versione standard

V = seals in Viton
Omit for standard seals

0 = senza connettore DIN 43650
1 = con connettore DIN 43650 (standard).Vedi pag. 2.41.09
2 =
3 =

0 = without DIN 43650 connector
1 = with DIN 43650 connector (standard).see page **2.41.09**
2 =
3 =

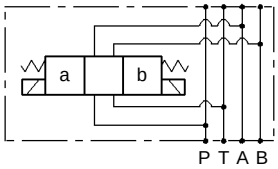
Le elettrovalvole sono normalmente fornite con i tubi montati, le bobine e i connettori devono essere ordinati separatamente.

The solenoid valves are normally supplied with the solenoid tubes mounted, and the coils and connectors should be ordered separately.

LC1AZC - LC1AZCT
LC1DZC - LC1DZCT

Elettrovalvole di commutazione a comando diretto

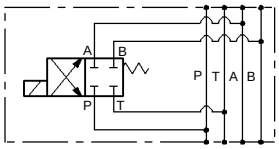
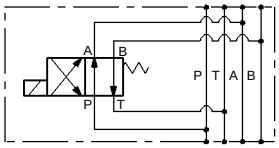
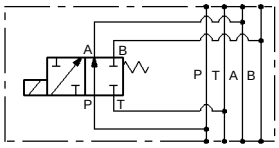
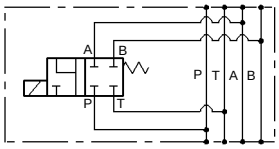
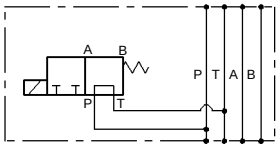
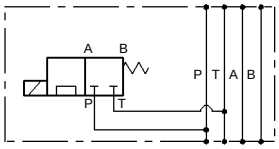
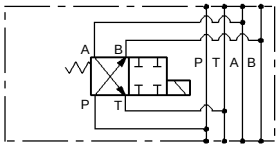
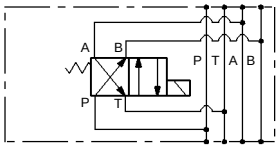
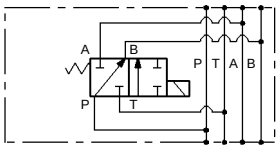
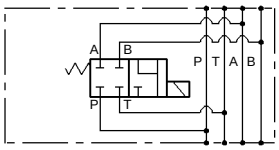
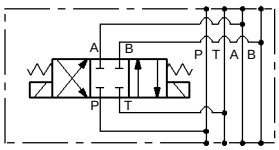
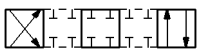
Solenoid operated modular directional valves



CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
LC1AZC - LC1AZCT - CORRENTE ALTERNATA: Portata massima : 50 l/min
Pressione massima d'esercizio su A-B-P: 250bar
Pressione massima in T: dinamica=160 bar - statica=180 bar
LC1DZC - LC1DZCT - CORRENTE CONTINUA: Portata massima : 50 l/min
Pressione massima d'esercizio su A-B-P: 310bar
Pressione massima in T: dinamica=250 bar - statica=310 bar

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
LC1AZC - LC1AZCT - AC VERSION: Max flow : 50 l/min
Max operating pressure on A-B-P: 250bar
Max pressure in T: dynamic=160 bar - static=180 bar
LC1DZC - LC1DZCT - DC VERSION: Max flow : 50 l/min
Max operating pressure on A-B-P: 310bar
Max pressure in T: dynamic=250 bar - static=310 bar

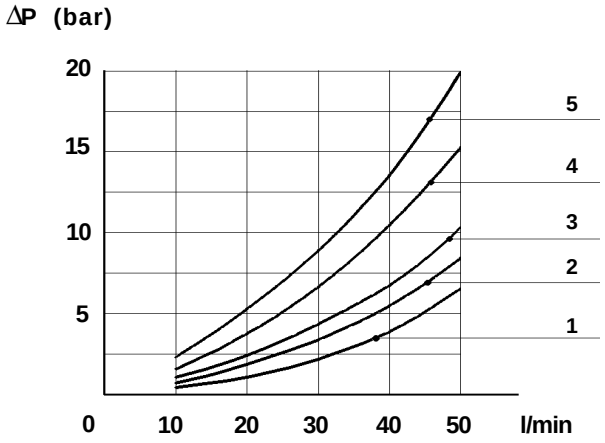
TIPI DI CIRCUITI • SPOOL TYPES

Sigla Sigle *Code* Bezeichnung	**Simbolo** Symbole *Circuit* Schema	**Direzione del flusso durante il passaggio al centro** Direction du fluide durant le passage au centre *Oil direction during shift* Verbindung der Anschlüsse während dem Schaltvorgang	**Portata max.** Débit max. *Max. flow* Durchfluss max. **l/min**				**Pressione max.** Press. max. *Max. pressure* Max. Drück **bar**			
			AZC	**AZCT**	**DZC**	**DZCT**	**AZC**	**AZCT**	**DZC**	**DZCT**
B11C			50		50		250		310	
A11C			50		50		250		310	
N11C			50		50		250		310	
T11C			50		50		250		310	
A11S				40		40		250		310
A14S				40		40		250		310
B12C			50		50		250		310	
A12C			50		50		250		310	
N12C			50		50		250		310	
T12C			50		50		250		310	
B2			50		50		250		310	

CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

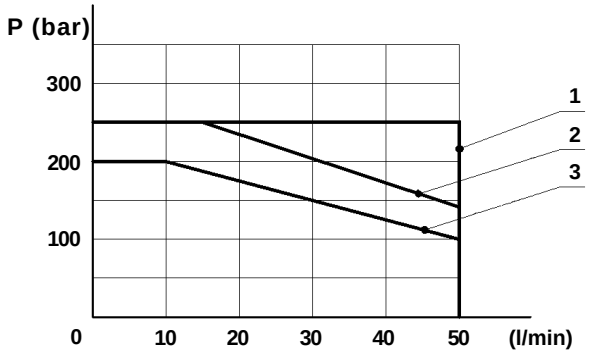
Cadute di pressione · Pressure drop

Tipo di circuito *Spool type*	P > T	P > A	P > B	A > T	B > T
A11S - A14S	4	5	5	5	5
B2 - B11C - B12C		3	3	3	3
T11C - T12C		2	2	1	1
A11C - A12C		3	3	3	3
N11C - N12C		3	3		



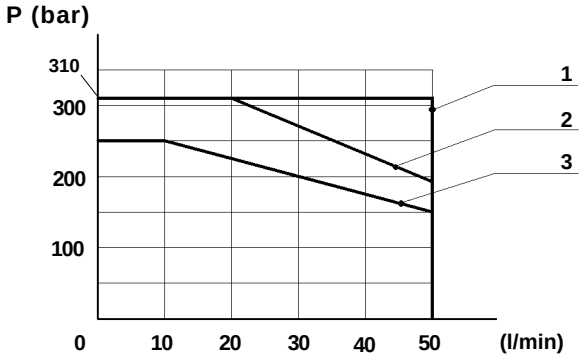
Portate massime in funzione della pressione
Maximum flows depending on pressure

LC1AZC - LC1AZCT



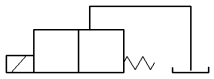
Nr. di riferimento *Reference number*	**Tipo di circuito** *Spool type*
1	**A11S - A14S - B2 - B11C - B12C** T12C - T11C
2	**A11C - A12C**
3	**N11C - N12C**

LC1DZC - LC1DZCT



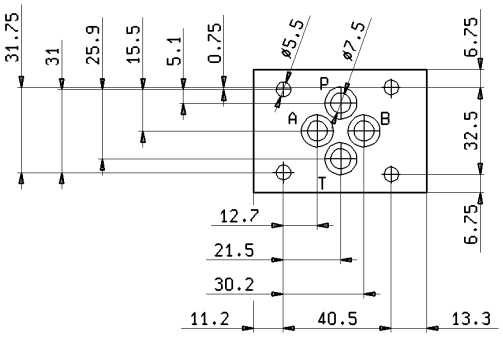
I valori indicati nel grafico non sono validi se l'elettrovalvola è utilizzata in applicazioni con collegamenti 2 o 3 vie

The values indicated in the graph are not



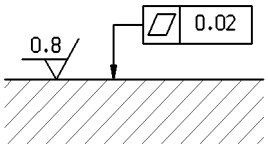
Tempi di commutazione (rilevati con 40 l/min e 150 bar) Shifting time (taken with 40 l/min and 150 bar)	**c.c.** - DC		**c.a.** - AC	
	Eccitazione Energised	**Diseccitazione** De-energised	**Eccitazione** Energised	**Diseccitazione** De-energised
	30 ÷ 50 ms	40 ÷ 60 ms	10 ÷ 30 ms	20 ÷ 50 ms

GRANDEZZA • SIZE : ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3



Qualità superficie di attacco.

Mounting plane quality.

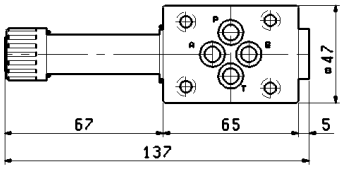


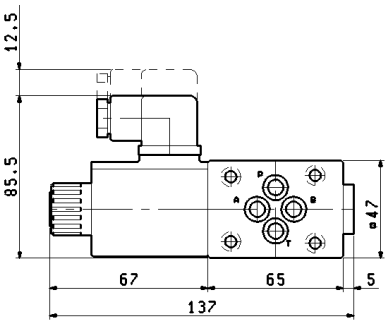
DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS

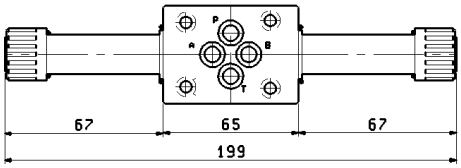
Elettrovalvola 4 vie 2/3 posizioni. (Fornitura standard)
Solenoid valve 4 way 2/3 positions. (Standard supply)

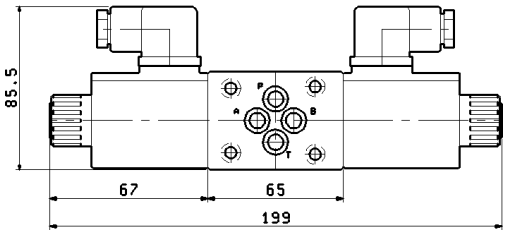
Elettrovalvola 4 vie 2/3 posizioni. (Fornitura su richiesta)
Solenoid valve 4 way 2/3 positions. (Supply on request)

LC1AZC
LC1AZCT





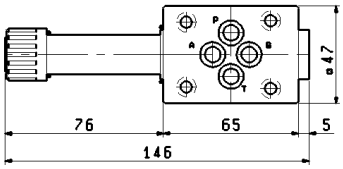


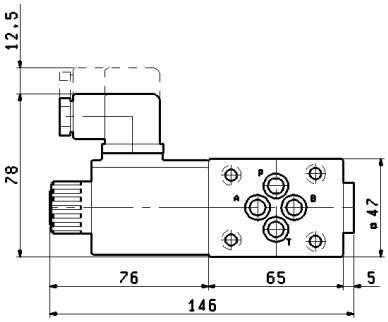


Elettrovalvola 4 vie 2/3 posizioni. (Fornitura standard)
Solenoid valve 4 way 2/3 positions. (Standard supply)

Elettrovalvola 4 vie 2/3 posizioni. (Fornitura su richiesta)
Solenoid valve 4 way 2/3 positions. (Supply on request)

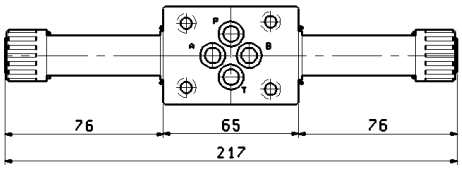
LC1DZC
LC1DZCT

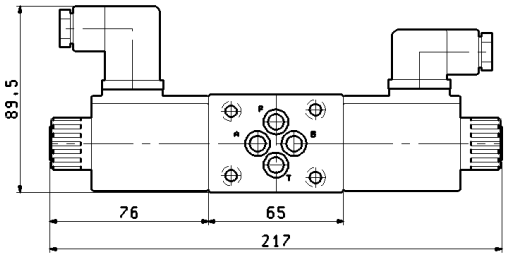




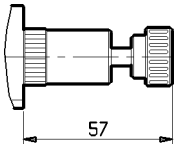
Connettore con raddrizzatore
Connector with rectifier

Connettore standard
Standard connector





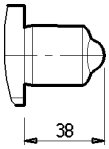
Comando manuale di emergenza a vite
Screwed manual override



E/F

LC1DZC - LC1DZCT

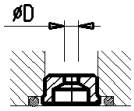
Comando manuale di emergenza a pulsante
Push-button manual override



E/P

LC1AZC - LC1AZCT - LC1DZC - LC1DZCT

Strozzatore per utilizzi P,T,A,B
Flow restrictor for P,T,A,B ports



ø D mm	**Codice** Designation code
0.8	**50-0500**
1.0	50-0501
1.2	50-0502
1.5	50-0503
2.0	50-0504

Pesi • Weights				**Serraggio cannotto** • Tube mounting
LC1AZC - LC1AZCT		**LC1DZC - LC1DZCT**		**AZ : Ch. 13 mm - DZ : Ch. 16 mm** **Momento massimo serraggio: 20**
Con 1 solenoide With 1 solenoid	1,25 Kg	**Con 1 solenoide** With 1 solenoid	1,33 Kg	
Con 2 solenoidi With 2 solenoids	1,66 Kg	**Con 2 solenoidi** With 2 solenoids	1,82 Kg	

SOLENOIDI • SOLENOIDS : GM 5043 - K 14

Tensione frequenza Voltage and frequency	**Potenza max** Inrush max **watt**	**Corrente nominale** Nominal current **ampere**	**Potenza assorbita allo spunto** Inrush power **V A**	**Potenza assorbita a regime** Holding power **V A**	**Frequenza di inserzione** • Switching frequency - c.c. / DC : 5 Hz - a.c. / AC : 2 Hz
	GM 5043				
12 volt DC **24 volt DC** **48 volt DC**	**33**	**2.8** **1.4** **0.7**	-	-	**Connettore standard DIN 43650 tipo MPM 182-09** Standard connector DIN 43650 type MPM 182-09
24 volt 50/60 Hz **48 volt 50/60 Hz** **110 volt 50/60 Hz** **230 volt 50/60 Hz**	**33**	**1.6** **0.8** **0.35** **0.16**	-	-	**Conn. con raddrizzatore DIN 43650 tipo MPM 532-09 RAC** Connector with rectifier DIN 43650 type MPM 532-09 RAC
	K 14				
24 volt 50/60 Hz **110 volt 50/60 Hz** **230 volt 50/60 Hz** **240 volt 50/60 Hz**	**23**	**2** **0.52** **0.23** **0.23**	**220**	**50**	**Connettore standard DIN 43650 tipo MPM 182-09** Standard connector DIN 43650 type MPM 182-09

Per ulteriori informazioni tecniche su connettori e bobine vedi pagg. 2.41.06 - 2.41.07 - 2.41.09

For further information regarding connectors and coils please see pages 2.41.06 - 2.41.07 - 2.41.09

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1 D Z A11C 24DC 0 V EP

Elettrovalvola CETOP 3
CETOP 3 solenoid valve

A= corrente alternata / D= c. continua
A= AC version / D= DC version

Modello
Model

Tipo di circuito
Spool type

0= elettrovalvola senza bobina (standard)
24DC = tensione solenoide con bobina (Vedi pagg 2.41.06 e 2.41.07)

0= Solenoid valve without coil (standard supply)
24DC = Solenoid voltage with coil (see pages 2.45.06 and 2.45.07)

Comando manuale di emergenza
Escludere per versione standard
Manual emergency control
Omit if not required

V = guarnizioni in Viton
Escludere per versione standard
V = seals in Viton
Omit if not required

0 = senza connettore DIN 43650
1 = con connettore DIN 43650 (standard).Vedi pag. 2.41.09
2 =
3 =

0 = without DIN 43650 connector
1 = with DIN 43650 connector (standard).see page **2.41.09**
2 =
3 =

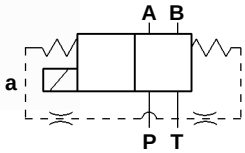
Le elettrovalvole sono normalmente fornite con i tubi montati, le bobine e i connettori devono essere ordinati separatamente.

The solenoid valves are normally supplied with the solenoid tubes mounted, and the coils and connectors should be ordered separately.

LC1S

Elettrovalvole a comando diretto con regolazione del tempo d'intervento

Solenoid operated directional valves with adjustment of the operating time



CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima : 50 l/min
Pressione massima d'esercizio su A-B-P: 310 bar
Pressione massima in T: dinamica = 250 bar - statica = 310 bar

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow : 50 l/min
Max operating pressure on A-B-P: 310 bar
Max pressure in T: dynamic = 250 bar - static = 310 bar

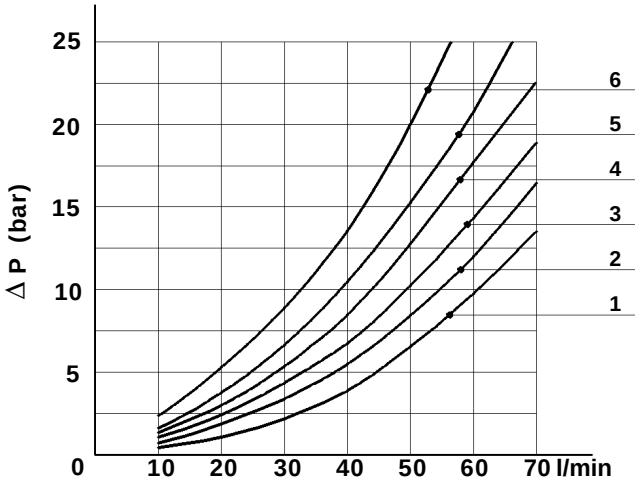
TIPI DI CIRCUITI • SPOOL TYPES

Sigla Code	**Simbolo** Circuit	**Direzione del flusso durante il passaggio al centro** Oil direction during shift	**Portata max** Max flow **l/min**	**Pressione max** Max pressure **bar**
	A B a 0 b P T	A B a 0 b P T		
A11A			50	310
A11C			50	310
N11C			50	310
B11C			50	310
C11A			50	310
A11S			50	310
E11C			50	310
A12A			50	310
A12C			50	310
N12C			50	310
B13C			50	310
A12S			50	310
E12C			50	310
A2			50	310
B2			50	310
C2			50	310
E2			50	310
M2C			50	310
M2A			50	310
N2			50	310

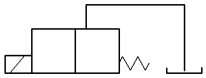
CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

Cadute di pressione
Pressure drop diagrams

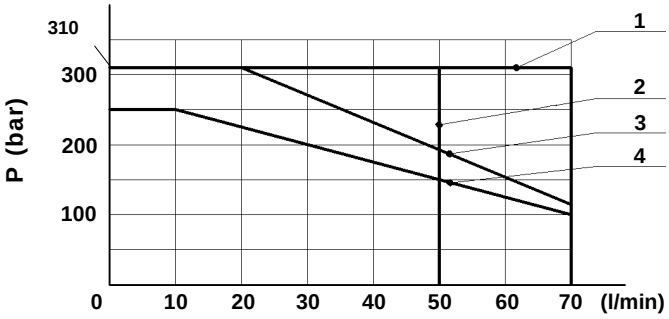
Tipo di circuito Spool type	P > T	P > A	P > B	A > T	B > T
A2 - A11S - A12S - G2	5	6	6	6	6
B2 - B11C - B13C - M2A		3	3	3	3
C2 - C11A	1	2	2	1	1
E2 - E11C - E12C		2	2	1	1
A11A -A12A -A11C -A12C		3	3	3	3
N11C - N12C - N2		3	3		



Portate massime in funzione della pressione (non valida per collegamento secondo schema)
Maximum flows depending on pressure (not valid for connection according to diagram)



Numero di riferimento Reference number	**Tipo di circuito** Spool type
1	**B2 - B11C - B13C - C2 - C11A - E2 - E11C - E12C**
2	**A2 - A11S - A12S**
3	**A11C - A12C - A11A - A12A - M2C - M2A**
4	**N11C - N12C - N2**



Grani di strozzamento disponibili • Available flow restrictor screws

Tipo Type	**Ø D**	**Codice** Code
G 0,15	0,15	18 - 0091
G 0,3	0,3	18 - 0092
G 0,4	0,4	18 - 0093
G 0,5	0,5	18 - 0094
G 0,6	0,6	18 - 0095

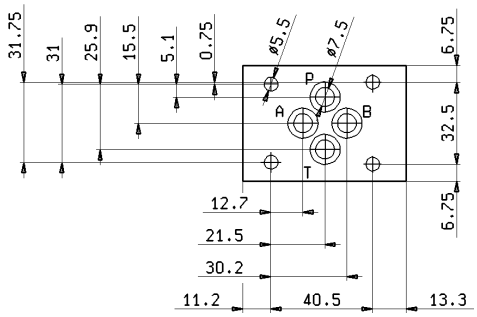
Norme d'impiego
Le elettrovalvole LC1S (temporizzate), sono provviste di due grani di strozzamento con diverse forature come da tabella e permettono il controllo del tempo d'intervento del solenoide (da 0÷3 sec. circa), realizzando l'ammortizzazione dell'organo azionato.
Per un corretto funzionamento si richiede di montare sullo scarico della elettrovalvola LC1S una valvola di non ritorno, onde evitare lo svuotamento della stessa.
Nella fase iniziale: eccitare l'elettrovalvola a varie riprese, per avere un corretto riempimento delle camere di regolazione.

Operating instructions
The solenoid valves LC1S (slow action) come with two flow restrictor screws which can have different holes (see table), enabling to control the operating time of the solenoid (approx. 0 to 3 seconds), in order to obtain a cushioned effect on the operated equipment.
For a correct operation an in order to prevent the valve from emptying, we recommend fitting a non-return valve on the return line of the solenoid valve LC1S.
In the initial phase: energise the solenoid valve several times in order to fill the regulating chambers.

SOLENOIDI • SOLENOIDS

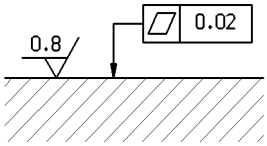
Tensione frequenza Voltage and frequency	Potenza max Inrush max watt	Corrente nominale Nominal current ampere	Potenza assorbita allo spunto Inrush power V A	Potenza assorbita a regime Holding power V A	Frequenza di inserzione • Switching frequency - c.c. / DC : 5 Hz - a.c. / AC : 2 Hz
	GM 5043				
12 volt DC 24 volt DC 48 volt DC	33	2.8 1.4 0.7	-	-	Connettore standard DIN 43650 tipo MPM 182-09 Standard connector DIN 43650 type MPM 182-09
24 volt 50/60 Hz 48 volt 50/60 Hz 110 volt 50/60 Hz 230 volt 50/60 Hz	33	1.6 0.8 0.35 0.16	-	-	Conn. con raddrizzatore DIN 43650 tipo MPM 532-09 RAC Connector with rectifier DIN 43650 type MPM 532-09 RAC
	K 14				
24 volt 50/60 Hz 110 volt 50/60 Hz 230 volt 50/60 Hz 240 volt 50/60 Hz	23	2 0.52 0.23 0.23	220	50	Connettore standard DIN 43650 tipo MPM 182-09 Standard connector DIN 43650 type MPM 182-09

GRANDEZZA • SIZE : ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3

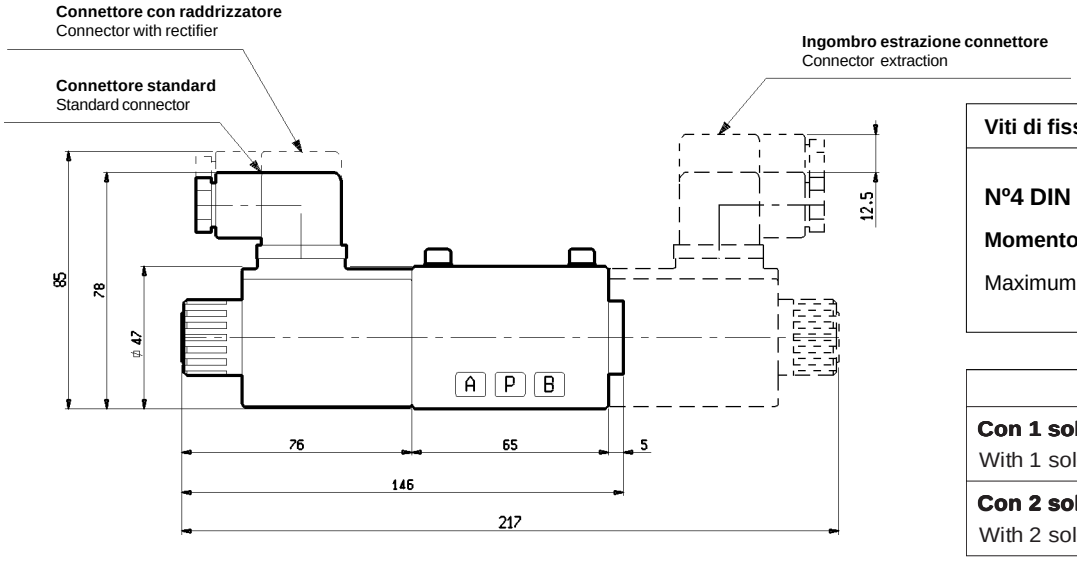


Qualità superficie di attacco.

Mounting plane quality.



DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS



Viti di fissaggio • Fixing screws

N°4 DIN 912-8.8 M5 x 30

Momento massimo di serraggio: 6 Nm

Maximum blocking torque: 6 Nm

Pesi • Weights	
Con 1 solenoide: With 1 solenoid:	**1,33 Kg**
Con 2 solenoidi: With 2 solenoids:	**1,82 Kg**

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1S A11A / 110-50 G 0,3

Grani di strozzatura • Flow restrictor screws

Tipo di elettrovalvola • Solenoid valve type

Caratteristiche elettriche del solenoide
Electrical specification

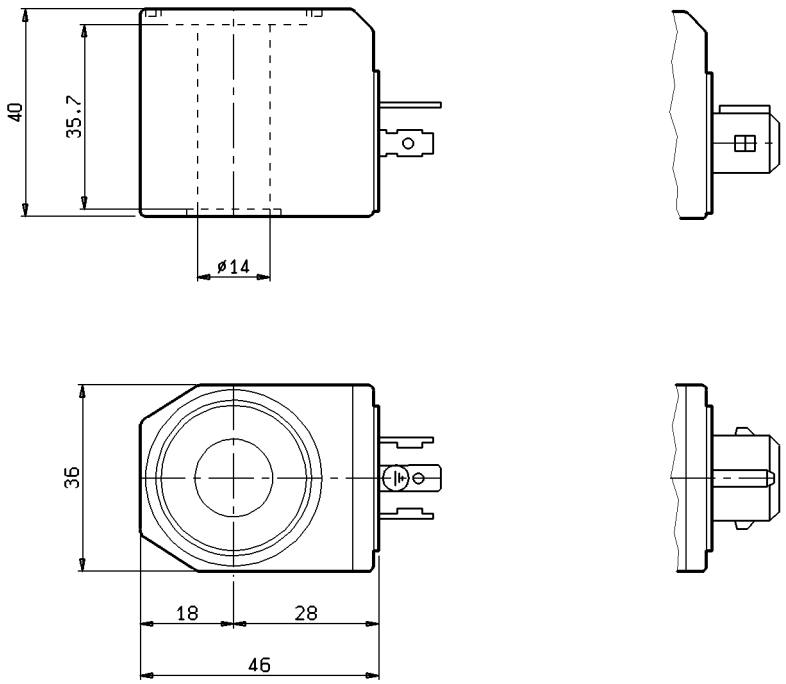
Tipo di circuito • Spool type

BOBINE • COILS : LC1Z

Queste bobine sono incapsulate in I.X.E.F.
Peso : 0.200 Kg
Classe di isolamento: H
Grado di protezione: IP 65 (DIN = 40050) solo nel caso in cui la bobina sia montata correttamente con O-Ring e ghiera di fermo, e il connettore DIN 43650 sia montato con guarnizioni in gomma e vite di fissaggio opportunamente bloccata.
Intermittenza di funzionamento: ED = 100% solo se la temperatura ambiente non supera i 40°C.
Tensione di alimentazione: non deve superare ±10% del valore nominale.
Tensioni disponibili: vedi tabella.
Su richiesta possono essere fornite versioni speciali.
Connessioni standard: DIN 43650, ISO 4400.
A richiesta si possono fornire bobine con connessioni AMP JUNIOR.
Bassa tensione: conforme alle direttive 73/23/CEE e 89/336/CEE.

These coils are housed in I.X.E.F.
Weight: 0,200 kg
Insulation Class: H
Protection Class: IP 65 (DIN = 40050) only if the coil is assembled correctly with O'ring and retainer, and the connector DIN 43650 is assembled with rubber seals and the fixing screw is properly tightened.
Working Duty: ED = 100% only if the room temperature does not exceed 40°C.
Inlet voltage: should not exceed ±10% of the nominal value.
Available voltages: Look at table. On request different voltages can be supplied.
Standard Connections: DIN 43650, ISO 4400. On request it is possible to supply coils with AMP JUNIOR.
Low voltage: conforms to the 73/23/CEE and 89/336/CEE directives.

DIN 43650 - ISO 4400 **AMP JUNIOR**



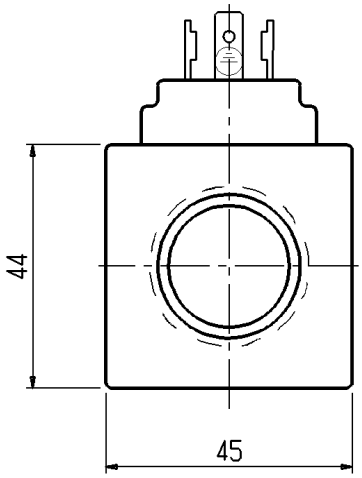
Codice Designation code	Tipo Type	Connessione Connection	Tensione nominale Nominal voltage volt	Marcatura Marking	Potenza Power watt	Corrente nominale Nominal current ampere	Resistenza Resistance Ω	
							± 7%	T=20°C
271-0510	C36D 1 12DC	DIN 43650 - ISO 4400	12 DC	V 12 DC	27	2.26	5.3	
271-05102	C36D 3 12DC	AMP JUNIOR	12 DC	V 12 DC	27	2.26	5.3	
271-0511	C36D 1 24DC	DIN 43650 - ISO 4400	24 DC	V 24 DC	27.5	1.17	20.5	
271-05112	C36D 3 24DC	AMP JUNIOR	24 DC	V 24 DC	27.5	1.17	20.5	
271-0512	C36D 1 48DC	DIN 43650 - ISO 4400	48 DC	V 48 DC	31	0.60	74	
271-05110	C36D 1 24-50/60 Hz	DIN 43650 - ISO 4400	21.5 DC	V 21.5 DC	27	1.25	17.2	
271-0513	C36D 1 110-50/60 Hz	DIN 43650 - ISO 4400	98 DC	V 98 DC	29	0.30	327	
271-0515	C36D 1 230-50/60 Hz	DIN 43650 - ISO 4400	207 DC	V 207 DC	29	0.14	1460	

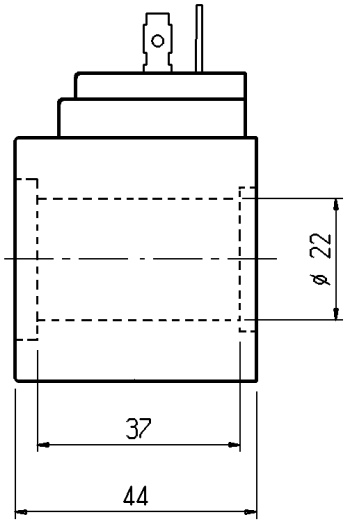
BOBINE • COILS : LC1AZ - LC1AZC - LC1AZCT - LC1S

Queste bobine sono incapsulate in I.X.E.F.
Peso : 0.238 Kg
Classe di isolamento: H
Grado di protezione: IP 65 (DIN = 40050) solo nel caso in cui la bobina sia montata correttamente con O-Ring e ghiera di fermo, e il connettore DIN 43650 sia montato con guarnizioni in gomma e vite di fissaggio opportunamente bloccata.
Intermittenza di funzionamento: ED = 100% solo se la temperatura ambiente non supera i 40°C.
Tensione di alimentazione: non deve superare -10% +5% del valore nominale.
Tensioni disponibili: vedi tabella.
Su richiesta possono essere fornite tensioni speciali.
Connessioni standard: DIN 43650 - ISO 4400.

These coils are housed in I.X.E.F.
Weight: 0,238 kg
Insulation Class: H
Protection Class: IP 65 (DIN = 40050) only if the coil is assembled correctly with O'ring and retainer, and the connector DIN 43650 is assembled with rubber seals and the fixing screw is properly tightened.
Working Duty: ED = 100% only if the room temperature does not exceed 40°C.
Inlet voltage: should not exceed -10% +5% of the nominal value.
Available voltages: Look at table. On request different voltages can be supplied.
Standard Connections: DIN 43650 - ISO 4400.

DIN 43650 - ISO 4400





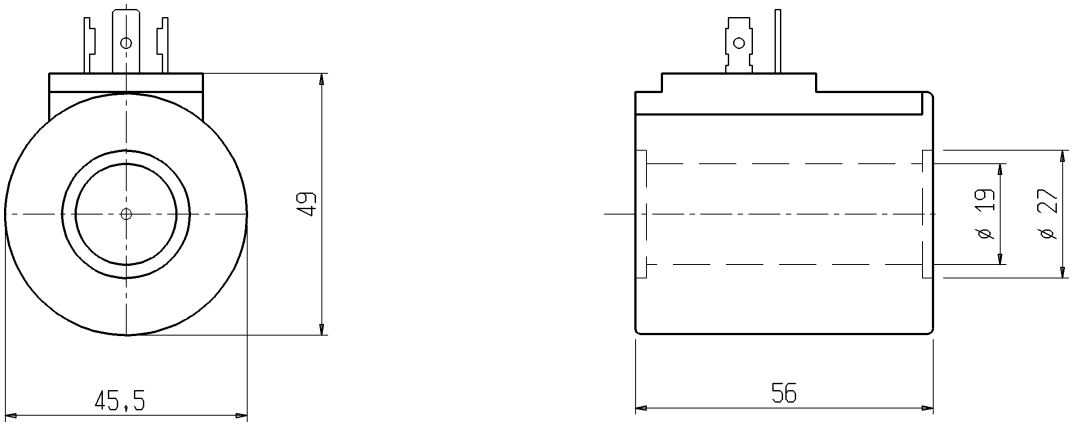
Codice Designation code	**Tipo** Type	**Connessione** Connection	**Tensione nominale** Rated voltage **volt**	**Frequenza** Frequency **Hz**	**Potenza** Power **watt**	**Corrente a regime** Holding current **ampere** (± 10%)	**Resistenza** Resistance **Ω** ± 5% T=20°C
271 - 0550	**K14 - 2053 - 164**	**DIN 43650 - ISO 4400**	**24 AC**	**60**	**19**	**1.5**	**1.37**
			24 AC	**50**	**23**	**2.0**	**1.37**
271 - 0560	**K14 - 2053 - 175**	**DIN 43650 - ISO 4400**	**110 AC**	**50**	**23**	**0.52**	**34.3**
			120 AC	**60**	**24**	**0.45**	**34.3**
271 - 0570	**K14 - 2053 -210**	**DIN 43650 - ISO 4400**	**230 AC**	**60**	**19**	**0.17**	**141**
			230 AC	**50**	**23**	**0.23**	**141**
271 - 0580	**K14 - 2053 -181**	**DIN 43650 - ISO 4400**	**240 AC**	**50**	**23**	**0.23**	**145**

BOBINE • COILS : LC1DZ - LC1DZC - LC1DZCT - LC1S

Queste bobine sono incapsulate in PBT.
Peso : 0.335 Kg
Classe di isolamento: H
Grado di protezione: IP 65 (DIN = 40050) solo nel caso in cui la bobina sia montata correttamente con O-Ring e ghiera di fermo, e il connettore DIN 3650 sia montato con guarnizioni in gomma e vite di fissaggio opportunamente bloccata.
Intermittenza di funzionamento: ED = 100% solo se la temperatura ambiente non supera i 40°C.
Tensione di alimentazione: non deve superare ±10% del valore nominale.
Tensioni disponibili: vedi tabella.
Su richiesta possono essere fornite versioni speciali.
Connessioni standard: DIN 43650, ISO 4400.
Bassa tensione: conforme alle direttive 73/23/CEE e 89/336/CEE.

These coils are housed in PBT.
Weight: 0,335 kg
Insulation Class: H
Protection Class: IP 65 (DIN = 40050) only if the coil is assembled correctly with O'ring and retainer, and the connector DIN 43650 is assembled with rubber seals and the fixing screw is properly tightened.
Working Duty: ED 100% only if the room temperature does not exceed 40°C.
Inlet voltage: should not exceed ±10% of the nominal value.
Available voltages: Look at table. On request different voltages can be supplied.
Standard Connections: DIN 43650, ISO 4400.
Low voltage: conforms to the 73/23/CEE and 89/336/CEE directives.

DIN 43650 - ISO 4400

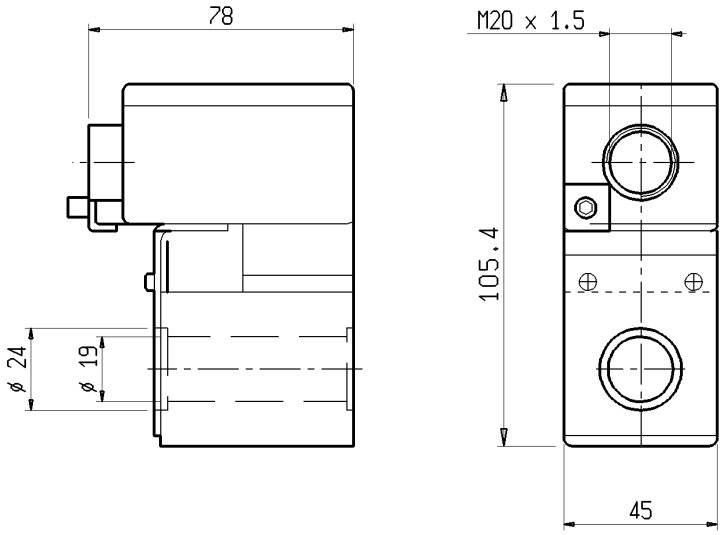


Codice Designation code	**Tipo** Type	**Connessione** Connection	**Tensione nominale** Nominal voltage **volt**	**Marcatura** Marking	**Potenza** Power **watt**	**Corrente nominale** Nominal current **ampere**	**Resistenza** Resistance Ω ± 7%	T=20°C
271-0417	**C45D1 12DC**	**DIN 43650 - ISO 4400**	**12 DC**	**12 VDC**	**33**	**2.8**	**4.35**	
271-0418	**C45D1 24DC**	**DIN 43650 - ISO 4400**	**24 DC**	**24 VDC**	**33**	**1.4**	**17.45**	
271-0419	**C45D1 48DC**	**DIN 43650 - ISO 4400**	**48 DC**	**48 VDC**	**33**	**0.7**	**69.8**	
271-04191	**C45D1 24-50/60 RAC**	**DIN 43650 - ISO 4400**	**21.5 DC**	**21.5 VDC**	**34.8**	**1.6**	**13.4**	
271-04192	**C45D1 110-50/60 RAC**	**DIN 43650 - ISO 4400**	**98 DC**	**98 VDC**	**33**	**0.35**	**287**	
271-04193	**C45D1 230-50/60 RAC**	**DIN 43650 - ISO 4400**	**207 DC**	**207 VDC**	**33**	**0.16**	**1290**	

BOBINE ANTIDEFLAGRANTI . EXPLOSION PROOF COILS

Disponibili per LC1 ed LC1DZ
Gli elettromagneti antideflagranti sono costruiti secondo le norme CENELEC
BS 5501 - Part. 1 = EN 50 014, 1977 (da A1 a A5, specifiche generali)
BS 5501 - Part. 6 = EN 50 019, 1977 (A1 ed A2, sicurezza incrementata “e”)
BS 5501 - Part. 8 = EN 50 028, 1987 (rivestimento “m”)
Incapsulate in resina di polyestere rinforzata con fibra di vetro.
Peso: 0.738 Kg
Grado di protezione: IP 66 (in relazione al connettore montato)
Temperatura ambiente classe T4 (40ºC)
Intermittenza di funzionamento: ED = 100%
Tensione di alimentazione: non deve superare ±10% del valore nominale.
Tensioni disponibili: vedi tabella.
Omologati con certificato BASEEFA EX89Y5111X. Codice: EEx me II.
Funzionano in corrente continua; l’esecuzione per l’alimentazione in corrente alternata incorpora un raddrizzatore a ponte.

Available for LC1 and LC1DZ
Explosion-proof solenoids are buit to standard CENELEC
BS 5501 – Part. 1 = EN 50 014, 1977 (from A1 to A5, general requirements)
BS 5501 – Part. 6 = EN 50 019, 1977 (A! and A2, increased safety “e”)
BS 5501 – Part. 8 = EN 50 028, 1987 (encapsulation “m”)
Encapsulated in a glass fibre filled polyester resin.
Weight: 0.738 Kg
Protection Class: IP 66 (depending on the connector)
Ambient temperature class T4 (40ºC)
Working Duty: ED = 100%
Inlet voltage: should not exceed ±10% of the nominal value.
Available voltages: Look at table. On request different voltages can be supplied.
BASEEFA Apparatus Certificate Number EX89Y5111X. Code: EEx me II.
They operate in direct current. The AC version must be fed by means of a built-in bridge rectifier.

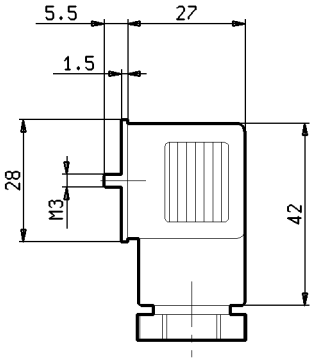


Codice Designation code	**Tipo** Type	**Tensione nominale** Rated voltage **volt**	**Corrente nominale** Rated corrent **ampere**	**Potenza ass. a regime** Holding power **watt**
27 - 05001	**D12 T4**	**12 DC**	**2.85**	**34**
27 - 0500	**D12 T4**	**24 DC**	**1.42**	**34**
27 - 0501	**K12 T4**	**230 (50 / 60 Hz)**	**0.16**	**34**

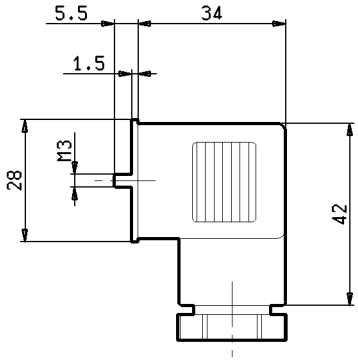
Questi connettori sono normalizzati DIN 43650 - ISO 4400. Sono disponibili in quattro versioni:
_ versione standard MPM 182-09
_ versione con raddrizzatore MPM 532-09 RAC
_ versione con LED luminoso (indica la presenza di tensione) MPM 182-LED-T-A1
_ versione con VDR (dispositivo che taglia le sovratensioni in ingresso) MPM 182-09-G-DO-2-1
Per un corretto funzionamento e per garantire il grado di protezione IP65 è indispensabile montare i connettori con guarnizioni in gomma e vite di fissaggio opportunamente bloccata.

These connectors are standardised DIN 43650 – ISO 4400. Four versions are available:
_ standard version MPM 182-09
_ version with rectifier MPM 532-09 RAC
_ version with LED (which indicates presence of voltage) MPM 182-LED-T-A1
_ version with VDR (device which cuts over-voltage in input) MPM 182-09-G-DO-2-1
For a correct functioning and to guarantee the level of protection IP 65, it is essential to assemble the connectors with rubber seals and have the mounting screw fully screwed in.

MPM 182-09
MPM 182-LED-T-A1
MPM 182-09-G-DO-2-1



MPM 532-09 RAC



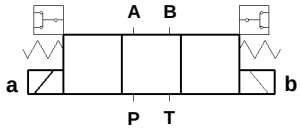
Codice Designation code	**Tipo di connettore** Type of connector
29-0001	**MPM 182-09 GRIGIO**
29-0002	**MPM 182-09 NERO**
29-0003/A	**MPM 532-09 RADD GRIGIO**
29-0003	**MPM 532-09 RADD NERO**
29-0004	**MPM 182-LED-T-A1 12DC/AC**
29-0005	**MPM 182-LED-T-A1 24DC/AC**
29-0006	**MPM 182-LED-T-A1 48DC/AC**
29-0007	**MPM 182-LED-T-A1 110DC/AC**
29-0008	**MPM 182-LED-T-A1 230DC/AC**
29-00010	**MPM 182-09-G-DO-2-1 12DC CON VDR**
29-00011	**MPM 182-09-G-DO-2-1 24DC CON VDR**

Nº poli	**2 + terra**
Portata nominale sui contatti	**10 A**
Portata max sui contatti	**16 A**
Resistenza sui contatti	**4 mΩ**
Sezione max conduttori	**1.5 mm²**
Filettatura serracavo	**Pg 9 Din 40430**
Grado di protezione	**IP65 DIN 40050**
Isolamento elettrico	**VDE 0110**
Coppia di serraggio	**3 ÷ 4 Nm**
Number of poles	2 + earth
Rated current capacity	10 A
Max current capacity	16 A
Contact resistance	4 mΩ
Max wire section area	1.5 mm²
Cable gland thread	Pg 9 Din 40430
Protection class	IP65 DIN 40050
Electrical insulation	VDE 0110
Tightening torque	3 ÷ 4 Nm

LC1/PRO - LC1X/PRO

Elettrovalvole a comando diretto con sensore induttivo di prossimitá

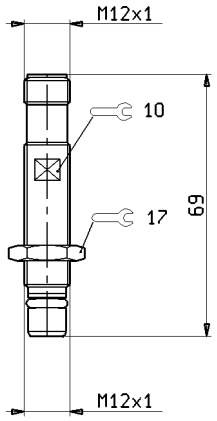
Solenoid operated directional valves with proximity inductive sensor



CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima : LC1=60 l/min - LC1X=70 l/min
Pressione massima d'esercizio su A-B-P: LC1=250bar - LC1X=310bar
Pressione massima in T : 50 bar
(Solo per elettrovalvole con ritorno a molla)

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow : LC1=60 l/min - LC1X=70 l/min
Max operating pressure un A-B-P: LC1=250bar - LC1X=310bar
Max pressure in T : 50 bar
(Only for valves with spring return)

CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

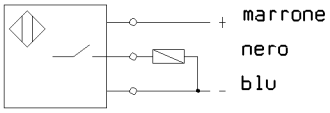


SENSORE INDUTTIVO	INDUCTIVE SENSOR
PNP - NA	PNP - NA
Filetto: M12x1	M12 x 1 thread
Distanza di lavoro nominale:1,5mm	Rated operating distance: 1,5mm
Pressione max di resistenza: 500bar	Pressure rated to : 500 Bar
Tensione di misura: 24V DC	Rated operational voltage: 24 VDC
Tensione di lavoro: 10 ... 30V DC	Supply voltage: 10 ... 30 VDC
Temperatura ambiente: -25°C ... +80°C	Ambient temperature range: -25°C … +80°C
Frequenza di lavoro: 1000 Hz	Max. switching frequency: 1000 Hz
Tipo di protezione: IP68	Degree of protection: IP 68
Tipo di collegamento: connettore S4	Connection: connector S4

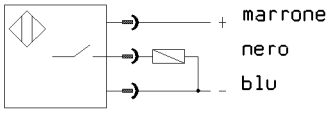
Schema elettrico

Electrical wiring diagram

Cavo/Morsetti • Cables

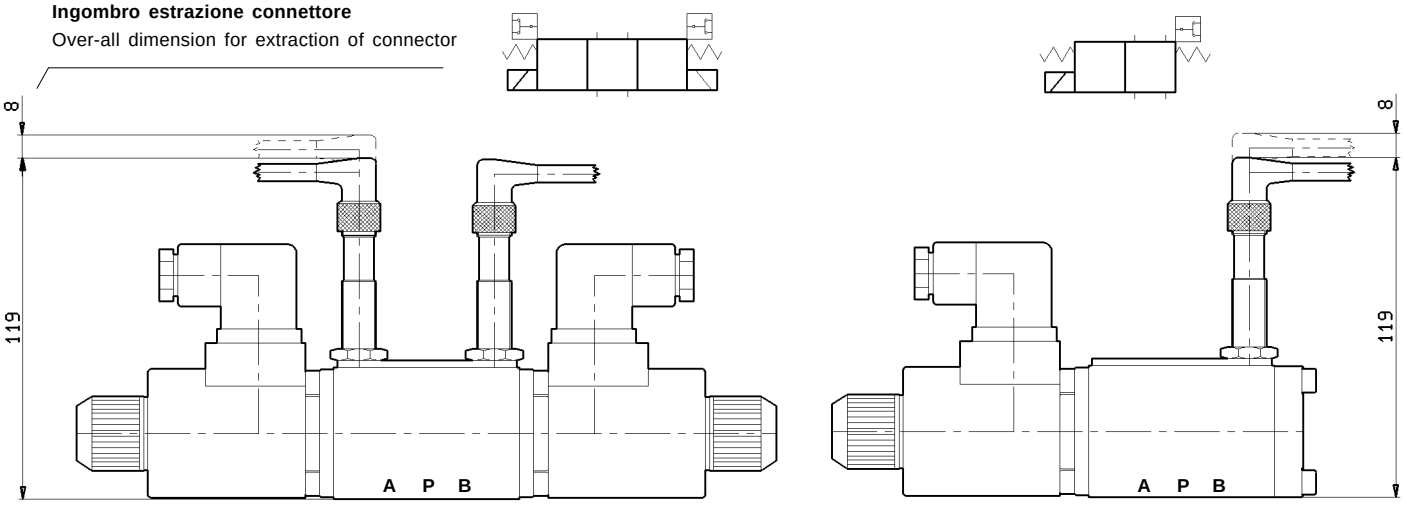


Connettore • Connector



Ingombro estrazione connettore

Over-all dimension for extraction of connector



Sono disponibili tutti i circuiti 2 e 3 posizioni presenti nelle elettrovalvole a comando diretto con ritorno a molla, con le stesse cadute di pressione.

Available on all 2 and 3 position circuits of solenoid operated directional valves with spring return, with the same pressure drops.

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1 X B2 110-50 / PRO

Elettrovalvola a comando diretto
Solenoid operated directional valve

Tipo di elettrovalvola
Solenoid valve type

Tipo di circuito • Spool type

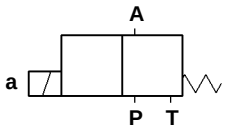
Sensore induttivo di prossimità
Proximity inductive sensor

Caratteristiche elettriche del solenoide
Electrical specification

LC1KX

Elettrovalvole a cartuccia a comando diretto

Cartridge-check type solenoid operated valves



CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima: 20 l/min
Pressione massima d'esercizio su A-P-T: 250 bar
Tenuta ermetica sugli utilizzi

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow: 20 l/min.
Max operating pressure on A-P-T: 250 bar
Leak-proof work ports

TIPI DI CIRCUITI • SPOOL TYPES

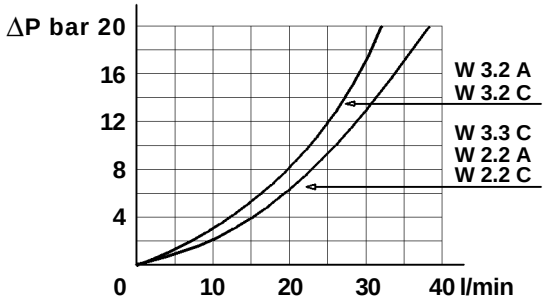
Sigla Code	**Simbolo** Circuit	**Direzione del flusso durante il passaggio al centro** Oil direction during shift
	A a 0 b P T	A a 0 b P T
W 2.2 C		
W 2.2 A		
W 3.2 C		
W 3.2 A		
W 3.3 C		

I circuiti W 3.2 A e W 3.2 C non possono funzionare contemporaneamente con portata e pressione massima. Si consiglia di ridurre del 20% uno dei due valori.

W 3.2 A and W 3.2 C circuits cannot operate with the maximum flow and pressure at the same time. We advise reducing one of these two values by 20%.

Cadute di pressione

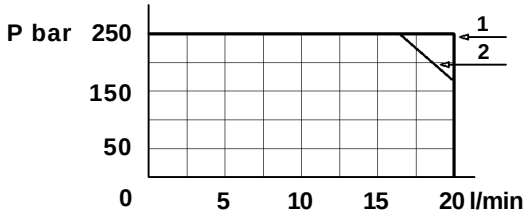
Pressure drop diagrams



Portate massime in funzione della pressione

Maximum flows depending on pressure

Nr di riferimento Reference number	**Tipo di circuito** Spool type
1	**W 2.2 C - W 2.2 A - W 3.3 C**
2	**W 3.2 C - W 3.2 A**



SOLENOIDI • SOLENOIDS

Tensione e frequenza Voltage and frequency	**Potenza ass. allo spunto** Inrush power **watt**	**Potenza ass. a regime** Holding power **watt**
	D12 2095	
12 Volt D.C. **24 Volt D.C.** ***48 Volt D.C.** **98 Volt D.C.** **196 Volt D.C.**	28	28
	D12 2095 + RAC	
24 Volt 50/60 Hz ***48 Volt 50/60 Hz** **110 Volt 50/60 Hz** **220 Volt 50/60 Hz**	28	28

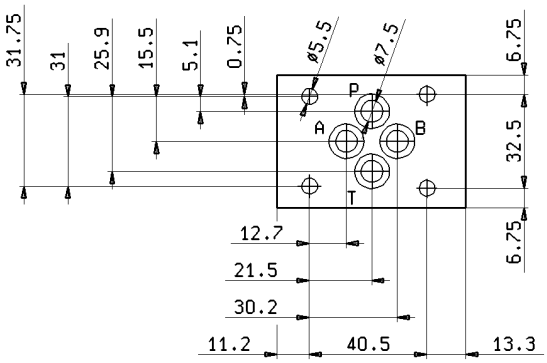
*** Tensione non standard** - Non standard voltages

Le elettrovalvole LC1KX montano solenoidi D12-2095 in c.c. Per applicazioni in c.a. si devono alimentare i solenoidi con raddrizzatori tipo MPM 112-09-I/RAC.

Solenoid valves LC1KX use D12-2095 solenoids in DC
For applications in AC the solenoids must be fed with rectifier connectors type MPM 112-09-I/RAC.

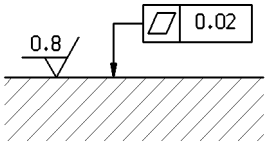
Frequenza d'inserzione:	Switching frequency:
c.c.: 18.000 inserzioni/ora	DC: 18.000 switches/hours
c.a.: 7.000 inserzioni/ora	AC: 7.000 switches/hours

GRANDEZZA • SIZE : ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3



Qualità superficie di attacco.

Mounting plane quality.



DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS

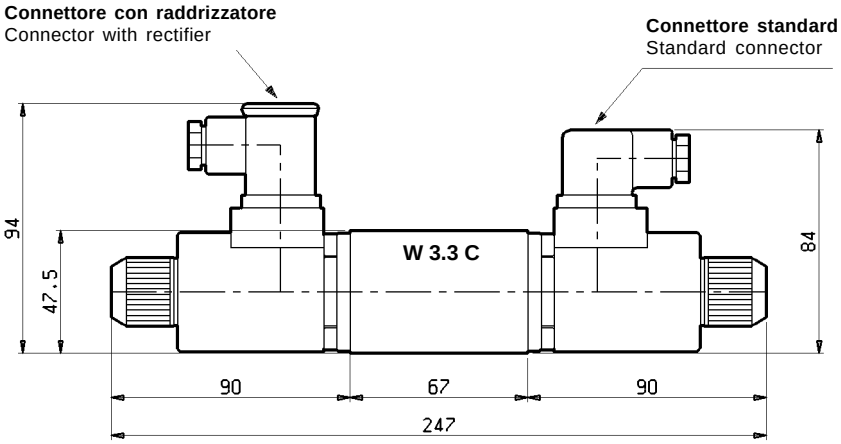
Viti di fissaggio • Fixing screws

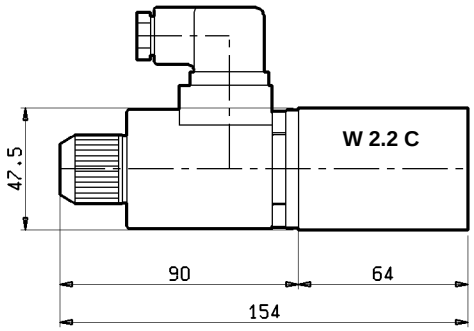
Nº4 DIN 912-8.8 M5 x 55

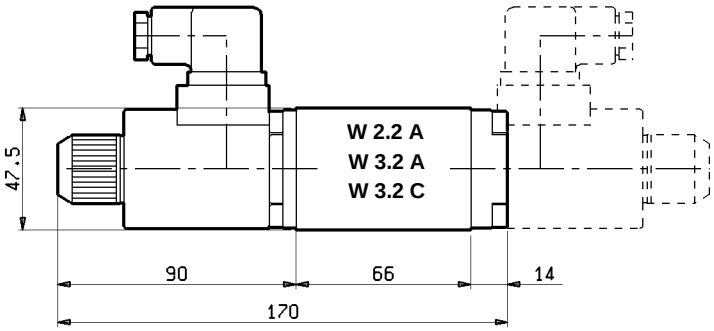
Momento massimo di serraggio: 6 Nm

Maximum blocking torque. 6 Nm

Pesi • Weights	
LC1KX - 2.2C	**1,54 Kg**
LC1KX - 2.2A	**1,70 Kg**
LC1KX - 3.2C	**1,73 Kg**
LC1KX - 3.2A	**1,73 Kg**
LC1KX - 3.3C	**2,21 Kg**







ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1KX **W2.2C** / **24 DC**

Tipo di elettrovalvola • Solenoid valve type

Tipo di circuito • Spool type

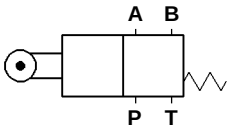
Caratteristiche elettriche del solenoide

Electrical specification

LC1/C

Valvole con comando a camma

Cam-operated directional valves



CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima: 70 l/min
Pressione massima d'esercizio su A-B-P: 310 bar
Pressione massima in T: 70 bar

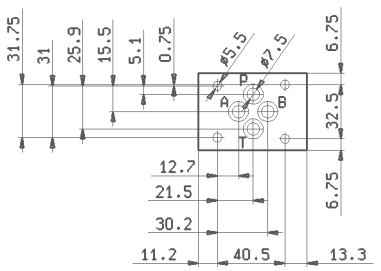
TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow: 70 l/min
Max operating pressure on A-B-P: 310 bar
Max pressure in T: 70 bar

TIPI DI CIRCUITI E CARATTERISTICHE • SPOOL TYPES AND FEATURES

Sigla Code	**Simbolo** Circuit	**Direzione del flusso durante il passaggio al centro** Oil direction during shift	**Pressione max** Max pressure **bar**	**Portata max** Max flow **l/min**	**Corsa camma** Cam-drive stroke **mm**
	A B a 0 b P T	A B a 0 b P T			
A11C			310	70	5
A11A			310	70	5
N11C			310	70	2,5
B11C			310	70	2,5
C11A			310	70	2,5
E11C			310	70	2,5
A12C			310	70	5
A12A			310	70	5
N12C			310	70	2,5
B13C			310	70	2,5
C13A			310	70	2,5
E12C			310	70	2,5
M2C			310	70	5
M2A			310	70	5
N2			310	70	5

Grandezza · Size

ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3



Viti di fissaggio • Fixing screws

Nº4 DIN 912-8.8 M5 x 30

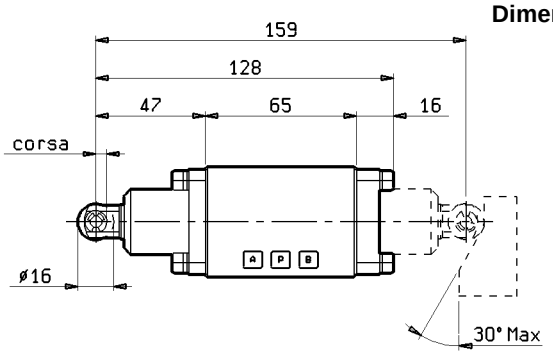
Momento massimo di serraggio: 6 Nm

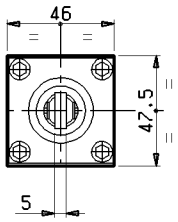
Maximum blocking torque. 6 Nm

Pesi • Weights	
Con 1 comando: With 1 control:	**1,18 Kg**
Con 2 comandi: With 2 controls:	**2,26 Kg**

Forza azionamento camma Cam operating force	
Senza contropressione sullo scarico Without tank line back pressure	**7 Kg**
Contropressione sullo scarico 70 bar Tank line back pressure 70 bar	**30 Kg**

Dimensioni · Over-all dimensions





ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1 **A11A** / **C**

Tipo di valvola • Valve type

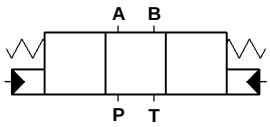
Tipo di circuito • Spool type

Comando a camma • Cam-operated valve

LC1/P

Valvole a comando oleodinamico o pneumatico

Air/oil operated directional valves



CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima: 70 l/min
Pressione massima d'esercizio su A-B-P: 310 bar
Pressione massima in T: 200 bar
Pressione minima di pilotaggio: 3,5 bar
Pressione massima di pilotaggio: 200 bar

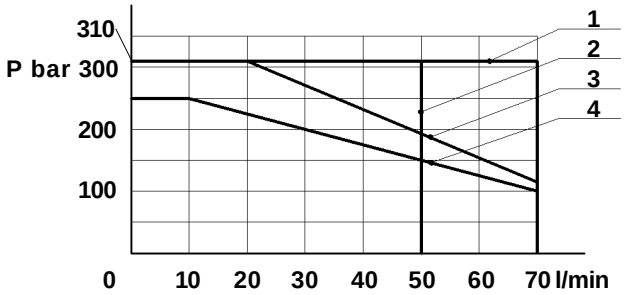
TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow: 70 l/min
Max operating pressure on A-B-P: 310 bar
Max pressure in T: 200 bar
Min pilot pressure: 3,5 bar
Max pilot pressure: 200 bar

CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

Portate massime consigliate in funzione della pressione

Maximum recommended flows depending on pressure

Nr. di riferimento Reference number	**Tipo di circuito** Spool type
1	**E2 - E11C - E12C - E13C - E14C - B2 - B11C - B12C** B13C - B14C - M2A - M2C - N2
2	**A2 - A11S - A12S - A13S - A14S - A11A - A12A - U2** U11C - K2 - R2
3	**D2 - D11C - D12C - D13C - D14C - A11C - A12C** T11C - T12C - G2 - H2
4	**C2 - C11A - C12A - C13A - C14A - N11C - N12C**

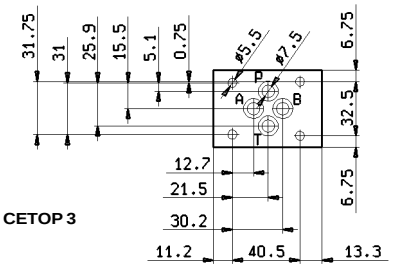


Funzionamento • Working conditions

Sono disponibili tutti i circuiti a 2 e 3 posizioni come nelle elettrovalvole tipo x a comando diretto, con le stesse cadute di pressione. Pilotaggio: la valvola può funzionare con una pressione di 3,5 bar in assenza di pressione in T. (Nelle applicazioni con pressione in T considerare un rapporto di pilotaggio 8:1). La pressione massima di 200 bar è ammessa solo con pressione ≤ 150 bar in T.

All 2 and 3 position spools used with the direct acting solenoid valve LC1X*sn can be used in air/oil operated versions with the same pressure drop figures. Pilot : the valve can work with a pressure of 3,5 bar when there is no pressure on 'T '. (applications with pressure on 'T' consider a pilot ratio of 8 :1). The maximum pilot pressure of 200 bar is possible only if the pressure on 'T' is ≤ 150 bar.

DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS



Grandezza · Size

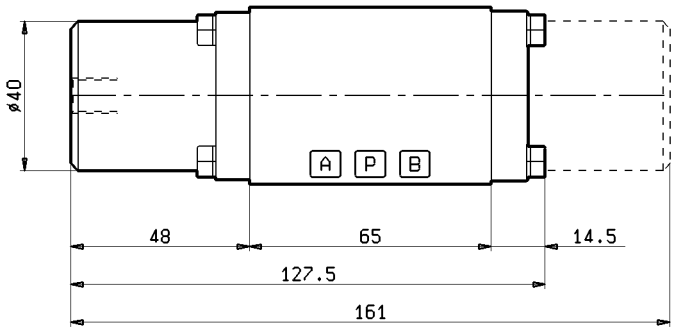
ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3

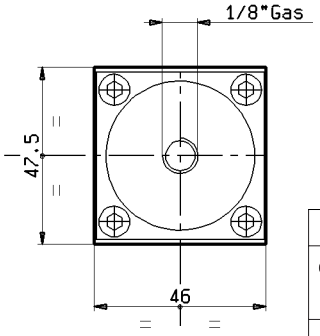
Viti di fissaggio • Fixing screws

N°4 DIN 912-8.8 M5 x 30

Momento massimo di serraggio: 6 Nm

Maximum blocking torque. 6 Nm





Pesi • Weights	
Con 1 comando: With 1 control:	**1,3 Kg**
Con 2 comandi: With 2 controls:	**1,7 Kg**

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1 - M2C / 2P D

Tipo di valvola • Valve type

Tipo di circuito • Spool type

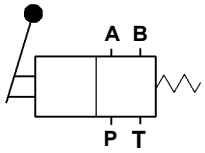
Versione con posizione fissa • Version with detent

Numero dei comandi • Number of controls

LC1/L

Valvole con comando a leva

Lever operated directional valves



CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima: 70 l/min
Pressione massima d'esercizio su A-B-P: 310 bar
Pressione massima in T: 100 bar

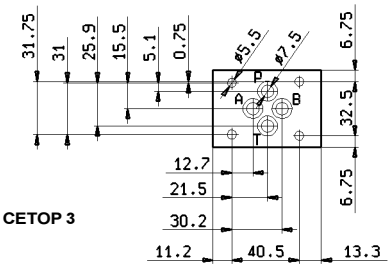
TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow: 70 l/min
Max operating pressure on A-B-P: 310 bar
Max pressure in T: 100 bar

TIPI DI CIRCUITI • SPOOL TYPES

Sono disponibili i seguenti circuiti ▫ Following circuits are available:

A11S, A12S, A13S, A14S, A2, B11C, B12C, B13C, B14C, B2, C11A, C12A, C13A, C14A, C2, D11C, D12C, D13C, D14C, D2, E11C, E12C, E13C, E14C, E2, N11C, N12C, G2, H2.

DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS



Grandezza ▫ Size

ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3

Viti di fissaggio • Fixing screws

Nº4 DIN 912-8.8 M5 x 30

Momento massimo di serraggio: 6 Nm

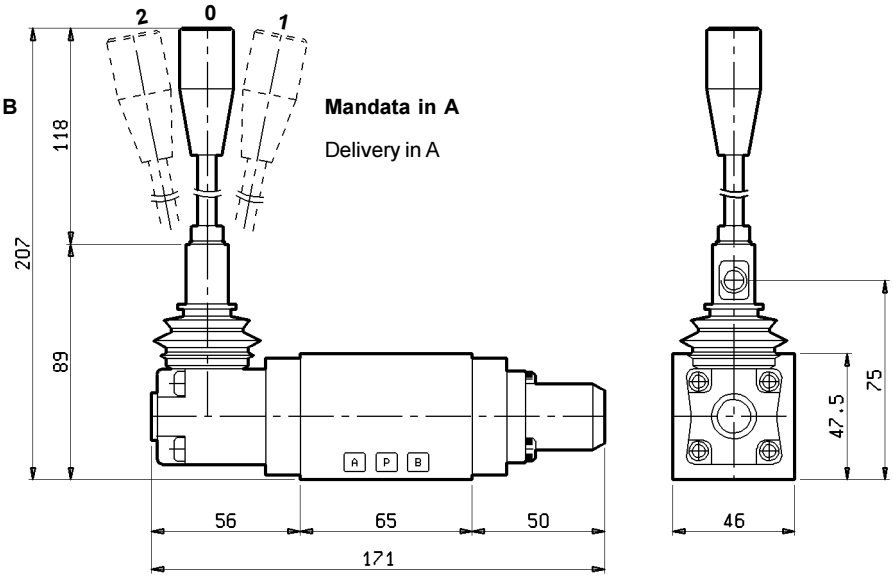
Maximum blocking torque. 6 Nm

Mandata in B

Delivery in B

Mandata in A

Delivery in A



Versione con comando microinterruttore a richiesta

By request version with microswitch control

Peso • Weight
1,35 Kg

TIPO DI CONTROLLO DEL CURSORE • TYPE OF SPOOL CONTROL

Schema Diagram	**Codice** Designation code
1 0 2	**3M**
1 2	**2M/1-2**
1 0	**2M/1-0**
0 2	**2M/0-2**

Schema Diagram	**Codice** Designation code
1 0 2	**3F**
1 2	**2F/1-2**
1 0	**2F/1-0**
0 2	**2F/0-2**

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1L **A11A** / **2M**

Tipo di valvola • Valve type

Tipo di circuito • Spool type

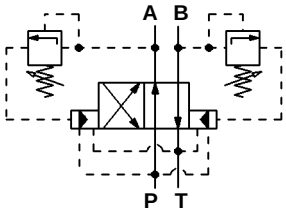
Tipo di controllo cursore

Type of spool contrôl

LC1 - IA6

Valvole di commutazione automatica

Automatic inversion valves



CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata minima: 3 l/min
Portata massima: 35 l/min
Pressione minima d'esercizio: 10 bar
Pressione massima d'esercizio: 310 bar

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Min flow: 3 l/min
Max flow: 35 l/min
Min operating pressure: 10 bar
Max operating pressure: 310 bar

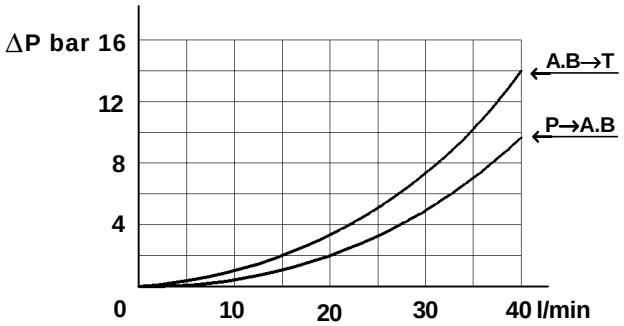
CARATTERISTICHE • FEATURES

Sono valvole a doppio effetto in grado di commutare automaticamente la direzione del flusso dell'olio. Il movimento è completamente idraulico e avviene normalmente a fine corsa del cilindro. L'inversione può anche verificarsi in qualsiasi posizione, a condizione che si crei una resistenza esterna operante sul sistema, tale da aumentare la pressione di lavoro, fino al raggiungimento del valore di taratura della valvola pilota.Il ciclo di inversione inizia al 90% della pressione di taratura delle valvole pilota. La differenza di taratura fra le valvole degli utilizzi A e B non deve essere superiore a 30 bar.

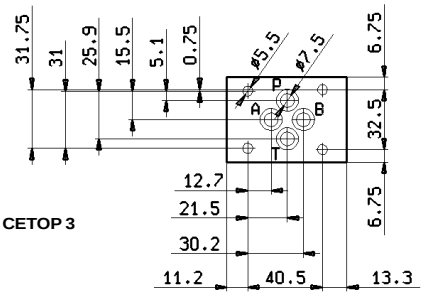
These are double-acting valves which automatically change-over the oil flow direction. The motion is completely automatic and normally takes place when the cylinder reaches its end of stroke. Inversion can also occur in any position whatsoever, as long as an external resistance acting on the system is created in order to increase the working pressure to reach the setting pressure of the pilot valve. Inversion cycle starts at 90% of the setting pressure of the pilot valves. Setting difference between the valves on A and B ports should not be higher than 30 bar.

Cadute di pressione · Pressure drop diagrams

Campo di taratura Pressure range	**2 : 20 ÷ 310 bar**



DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS

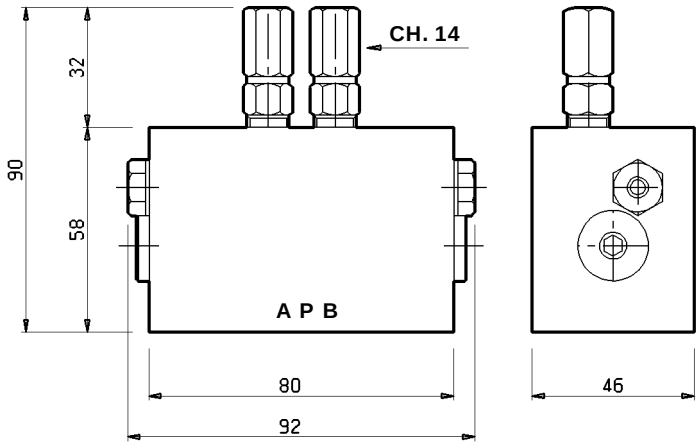


Grandezza · Size

ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3

Installare in posizione orizzontale

Always install horizontally



Viti di fissaggio • Fixing screws

Nº4 DIN 912-8.8 M5 x 60

Momento massimo di serraggio: 6 Nm

Maximum blocking torque. 6 Nm

Peso • Weight

1,75 Kg

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1 - IA6 / 2 F

Serie • Series

Tipo di valvola • Valve type

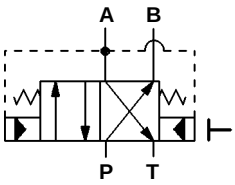
Regolazione a vite • Screw adjustment

Campo di taratura • Pressure range

LC1 - IA8

Valvole di commutazione automatica

Automatic inversion valves



CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata minima: 3 l/min
Portata massima: 30 l/min
Pressione minima d'esercizio: 45 bar
Pressione massima d'esercizio: 250 bar

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Min flow: 3 l/min
Max flow: 30 l/min
Min operating pressure: 45 bar
Max operating pressure: 250 bar

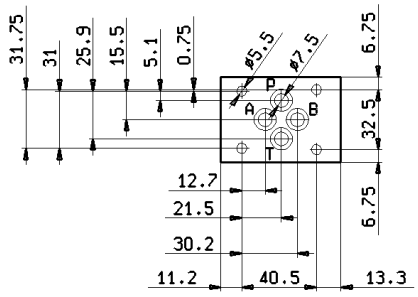
CARATTERISTICHE • FEATURES

Sono valvole a doppio effetto in grado di commutare automaticamente la direzione del flusso dell'olio. Il movimento è completamente idraulico e avviene normalmente a fine corsa del cilindro. In caso di arresto della manovra si ripristina automaticamente la posizione P>B.

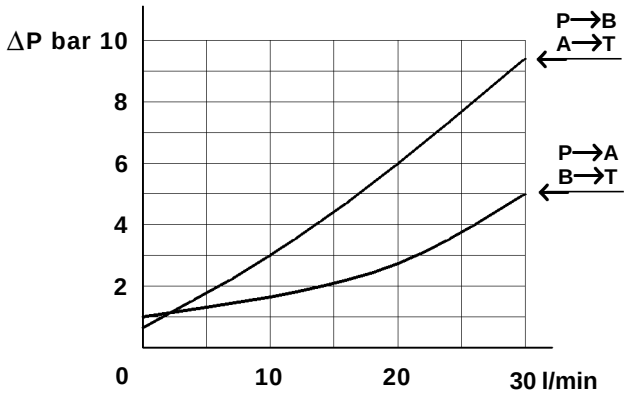
These are double-acting valves which automatically change-over the oil flow direction. The motion is completely automatic and normally takes place when the cylinder reaches its end of stroke. In case the movement is stopped the valve resets automatically back to P>B.

NOTA: Nel caso di utilizzo, in versione standard, con valvola di ritegno pilotata, è possibile impiegare solamente la versione LC1-VR/A.
NOTE: In case of use in standard version with pilot operated check valve, it is allowed to use only LC1-VR/A.

Grandezza · Size
ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3



Cadute di pressione · Pressure drop diagrams



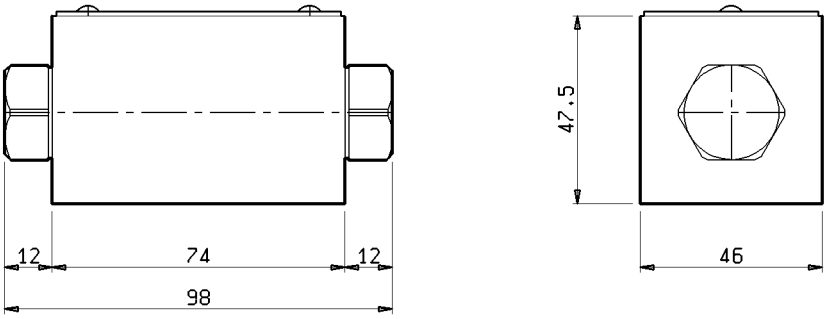
Viti di fissaggio • Fixing screws

Nº4 DIN 912-8.8 M5 x 30

Momento massimo di serraggio: 6 Nm

Maximum blocking torque. 6 Nm

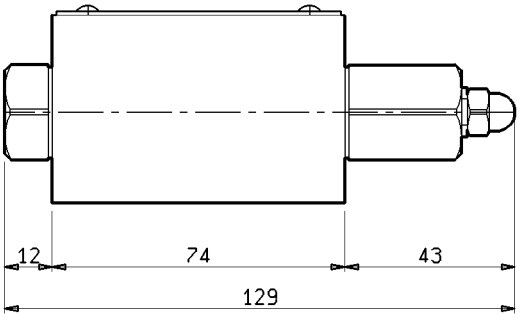
LC1 - IA8

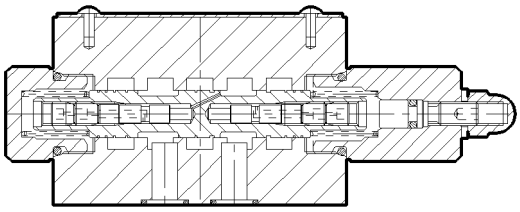


Peso • Weight

IA8 : 1.080 Kg
IA8/R : 1.150 Kg

LC1 - IA8 **/ R**





Trafilamento max interno: 0,5 l/min

Max internal leakage: 0,5 l/min

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1 - IA8 / R

Serie • Series

Tipo di valvola • Valve type

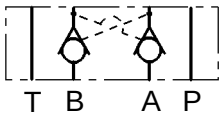
Con dispositivo di fermo per la regolazione della valvola limitatrice di pressione

With stopping device for the setting system relief valve.

LC1 - VR

Valvole modulari di ritegno semplici e pilotate

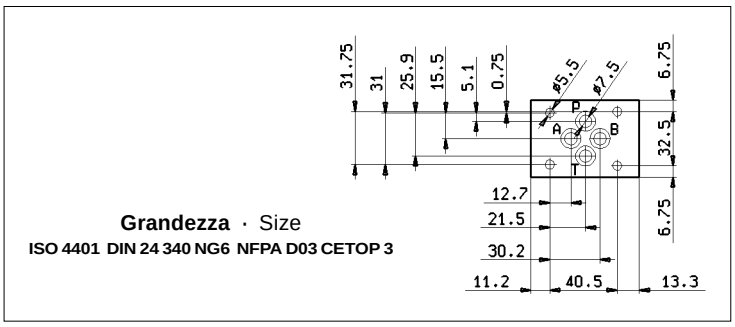
Direct and pilot operated modular check valves

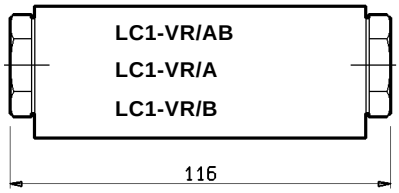


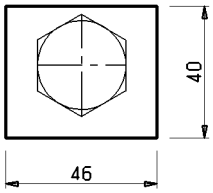
CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima: 60 l/min
Pressione massima d'esercizio: 310 bar
Rapporto di pilotaggio = 1:3

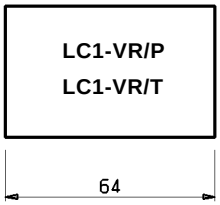
TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow: 60 l/min
Max operating pressure: 310 bar
Pilot ratio = 1:3

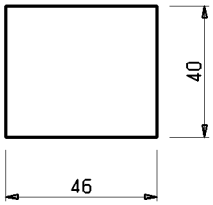
DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS





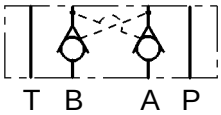
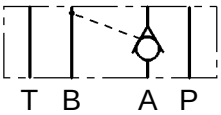
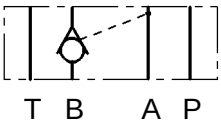






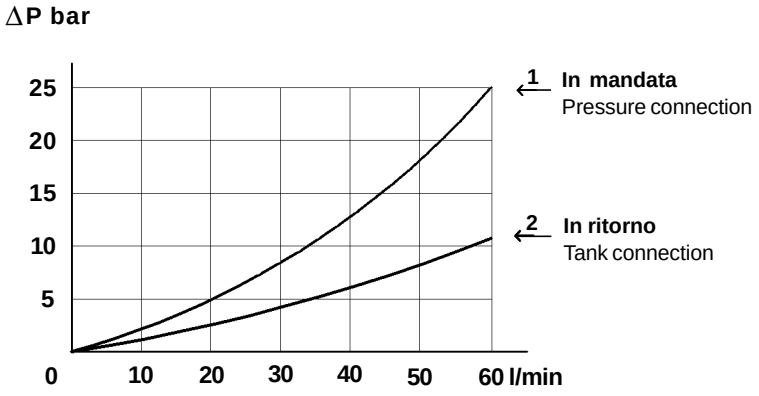
Pesi • Weights	
LC1-VR/AB	1,12 Kg
LC1-VR/A	1,11 Kg
LC1-VR/B	1,11 Kg
LC1-VR/P	0,75 Kg
LC1-VR/T	0,75 Kg

TIPI DI VALVOLE • VALVES TYPES

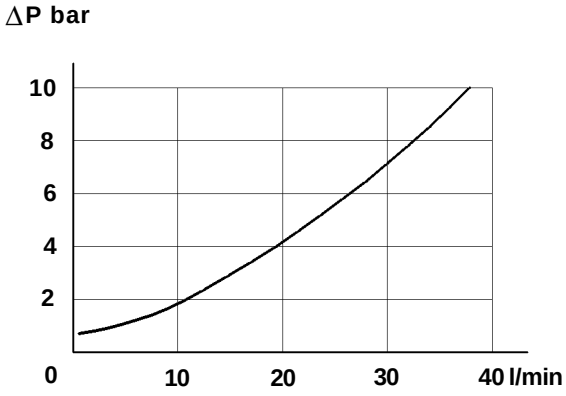
LC1-VR/AB	LC1-VR/A	LC1-VR/B	LC1-VR/P	LC1-VR/T
				

CADUTE DI PRESSIONE • PRESSURE DROPS

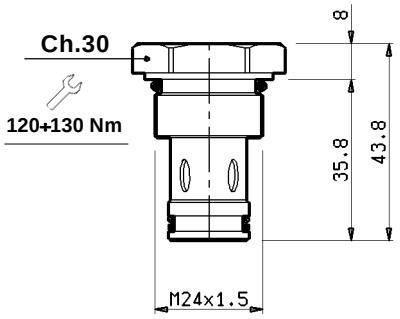
VR/AB

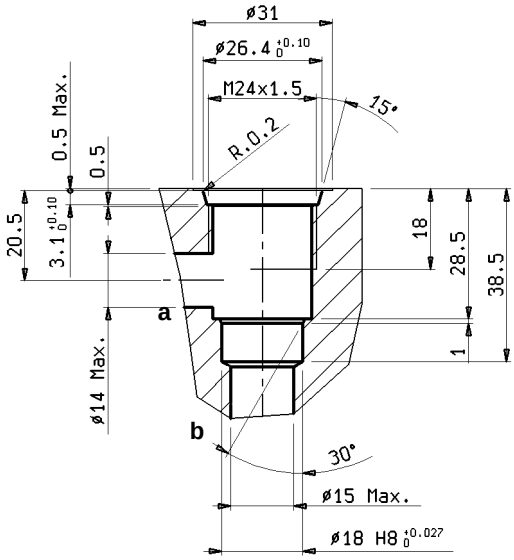


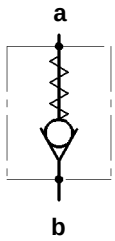
VR/P VR/T



VALVOLA UNIDIREZIONALE A CARTUCCIA • UNI-DIRECTIONAL CARTRIDGE VALVE

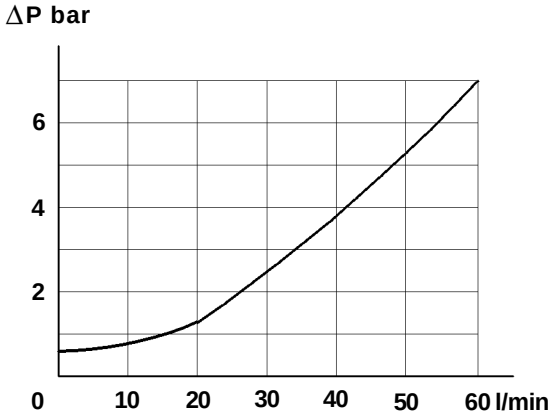






Codice Type	**Diam. nominale di passaggio** ø Size	**Portata max** Max flow **l/min**	**Pressione max** Max pressure **bar**	**Pressione di apertura** Cracking pressure **bar**	**Cavità** Cavity **nº**	**Peso** Weight
VU 6	**8**	**60**	**350**	**1**	**15**	**0,110 Kg**

Diagramma caduta di pressione · Pressure drop diagram



ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1 - VR / T

Serie
Series

Tipo di valvola
Valve type

Singola o doppia
Single or double acting

LC1 - VM

Valvole limitatrici di pressione modulari ad azione diretta

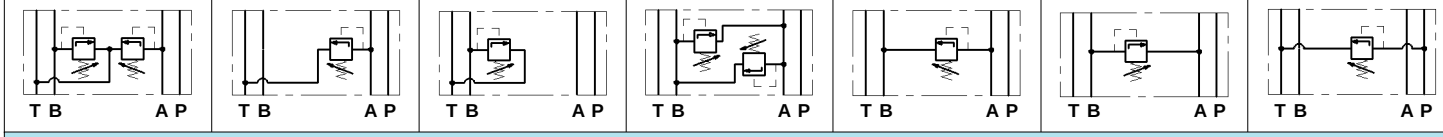
Direct acting adjustable pressure modular relief valves

CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima: 60 l/min
Pressione massima d'esercizio: 310 bar

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow: 60 l/min
Max operating pressure: 310 bar

TIPI DI VALVOLE • VALVES TYPES

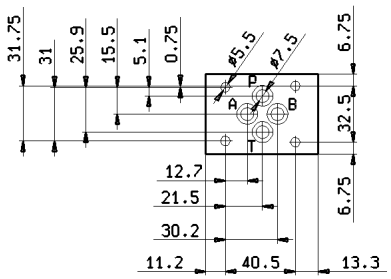
LC1-VM1/AB	LC1-VM1/A	LC1-VM1/B	LC1-VM2/AB	LC1-VM2/A	LC1-VM2/B	LC1-VM1/P

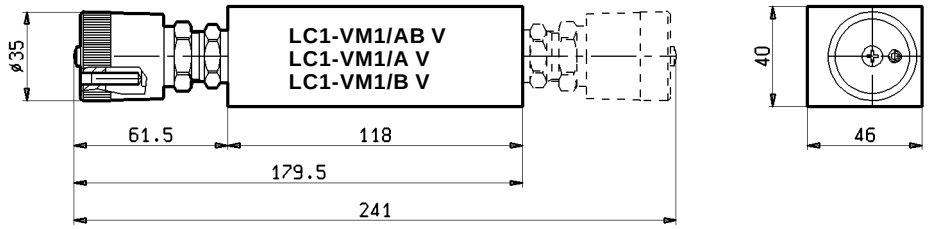


DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS

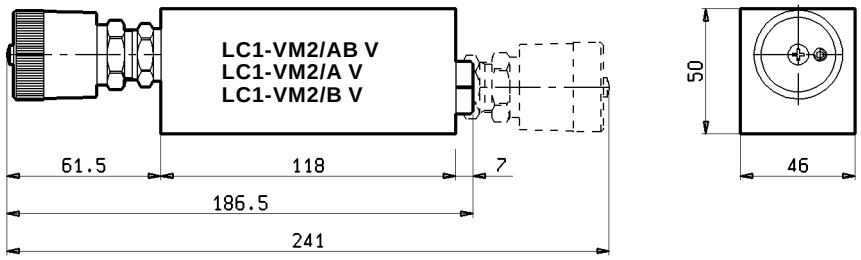
Pesi • Weights	
LC1-VM1/AB	1,57 Kg
LC1-VM1/A	1,49 Kg
LC1-VM1/B	1,49 Kg
LC1-VM2/AB	1,95 Kg
LC1-VM2/A	1,87 Kg
LC1-VM2/B	1,87 Kg
LC1-VM1/P	1,30 Kg

Grandezza · Size
ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3

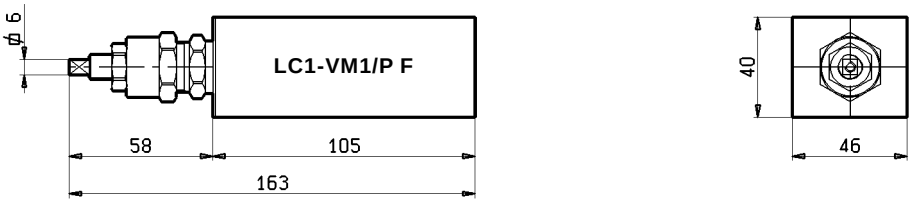




V = **Valvola con taratura a volantino**
Knob adjustment

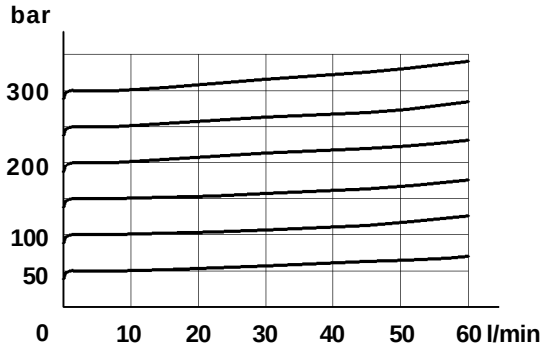


F = **Valvola con taratura a chiave**
Screw adjustment

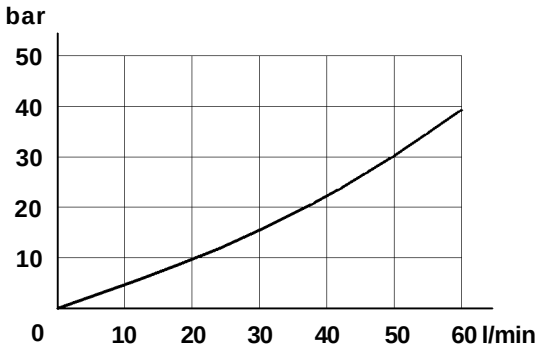


CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

Curve di apertura
Opening curves

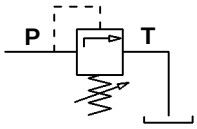


Valore min di taratura
Min adjustable setting

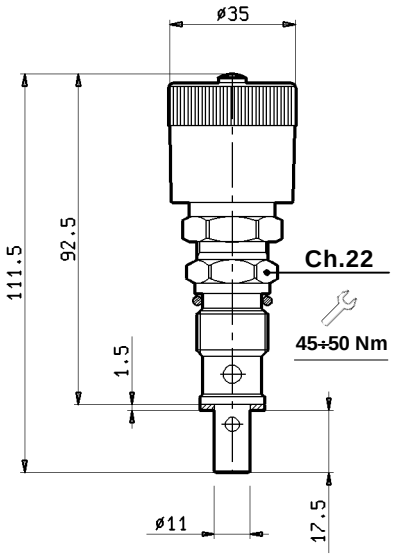


VALVOLA LIMITATRICE DI PRESSIONE A CARTUCCIA • RELIEF VALVE CARTRIDGE

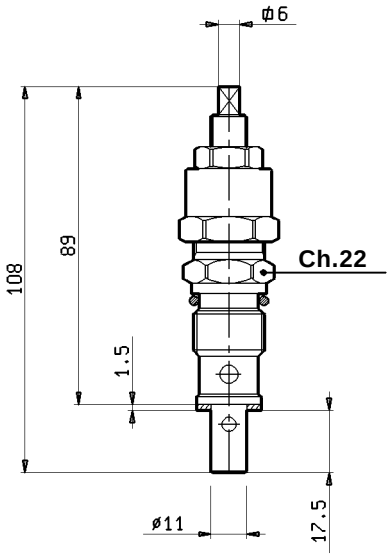
VM 7

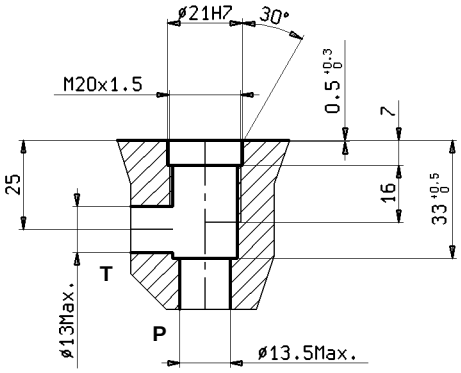


Tipo Type **V**



Tipo Type **F**





Codice Type	**Codice** Type	**Portata max** Max flow **l/min**	**Pressione max** Max pressure **bar**	**Campo di taratura** Pressure range **bar**	**Cavità** Cavity **nº**	**Peso** Weight
VM7 - 0 V	**VM7 - 0 F**	60	310	0 ÷ 75	11	0,160 Kg
VM7 - 1 V	**VM7 - 1 F**			15 ÷ 150		
VM7 - 2 V	**VM7 - 2 F**			35 ÷ 210		
VM7 - 3 V	**VM7 - 3 F**			120 ÷ 310		

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1-VM 1 / AB - 2 V

Tipo di valvola • Valve type

Funzione • Function

Singola o doppia • Single or double

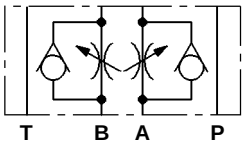
Taratura a volantino (V) od a chiave (F)
Setting by knob (V) or screw (F)

Campo di taratura
Pressure range

LC1 - VF

Valvole modulari di regolazione portata

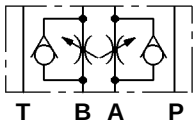
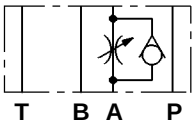
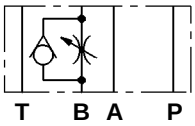
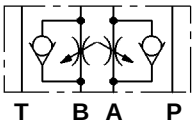
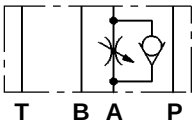
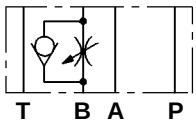
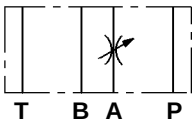
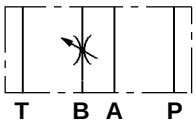
Flow regulator modular valves



CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima: LC1-VF.20 = 30 l/min - LC1-VF = 60 l/min
Pressione massima d'esercizio: 310 bar
Valvole di regolazione portata non compensate per il controllo del flusso dell'olio in uscita o in ritorno

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow: LC1-VF.20 = 30 l/min - LC1-VF = 60 l/min
Max operating pressure: 310 bar
Non-compensated flow regulator valves for the oil flow control at outlet or on return

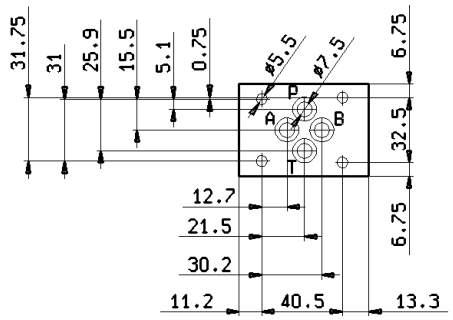
TIPI DI VALVOLE • VALVES TYPES

LC1-VF1/AB	LC1-VF1/A	LC1-VF1/B	LC1-VF2/AB	LC1-VF2/A
				
LC1-VF2/B	LC1-VFB/A	LC1-VFB/B	LC1-VFB/P	
				

DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS

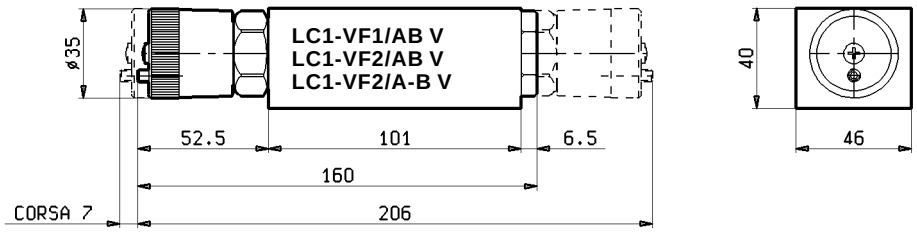
Pesi • Weights	
LC1-VF1/AB	1,44 Kg
LC1-VF2/AB	1,44 Kg
LC1-VF2/A-B	1,33 Kg
LC1-VF B/A-B	1,34 Kg
LC1-VF 1/A	1,34 Kg
LC1-VF 1/B	1,34 Kg
LC1-VF B/P	1,02 Kg

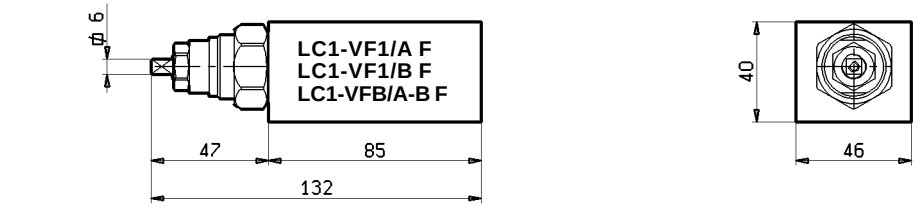
Grandezza · Size
ISO4401 DIN 24 340 NG6 NFPAD03 CETOP3



V = **Valvola con taratura a volantino**

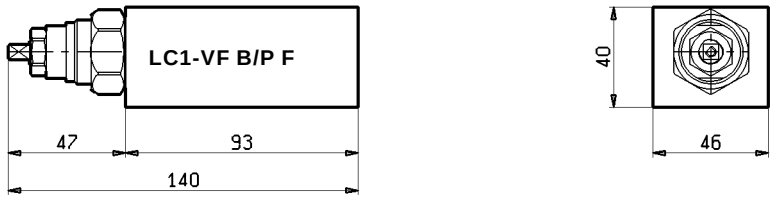
Knob adjustment





F = **Valvola con taratura a chiave**

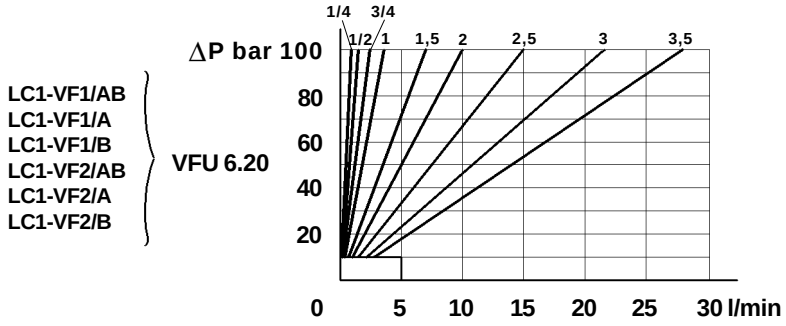
Screw adjustment

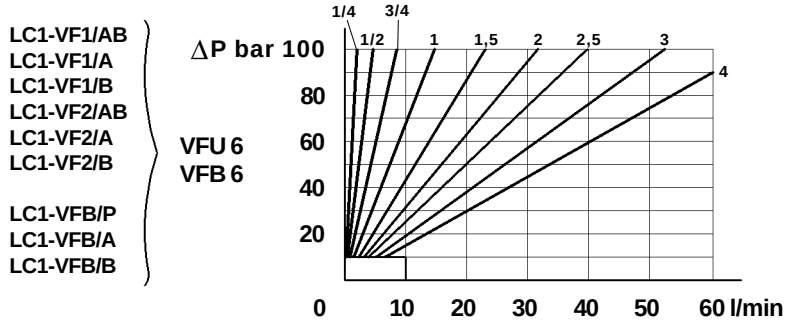


CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

Caduta di pressione in funzione dei giri del volantino da inizio apertura

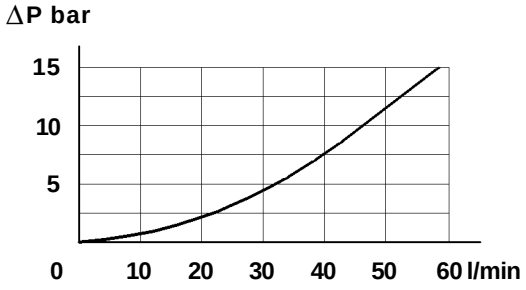
Pressure drop depending on knob revolutions from opening start



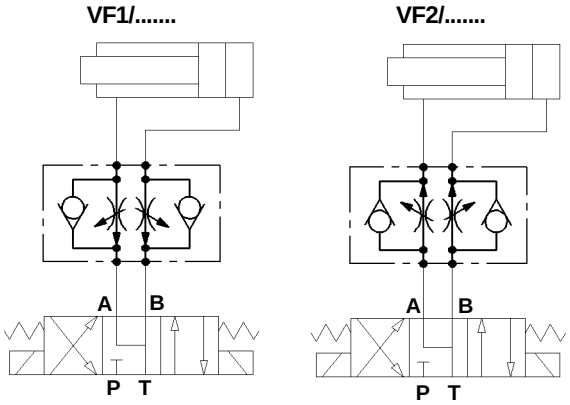


Caduta di pressione nel senso del flusso libero

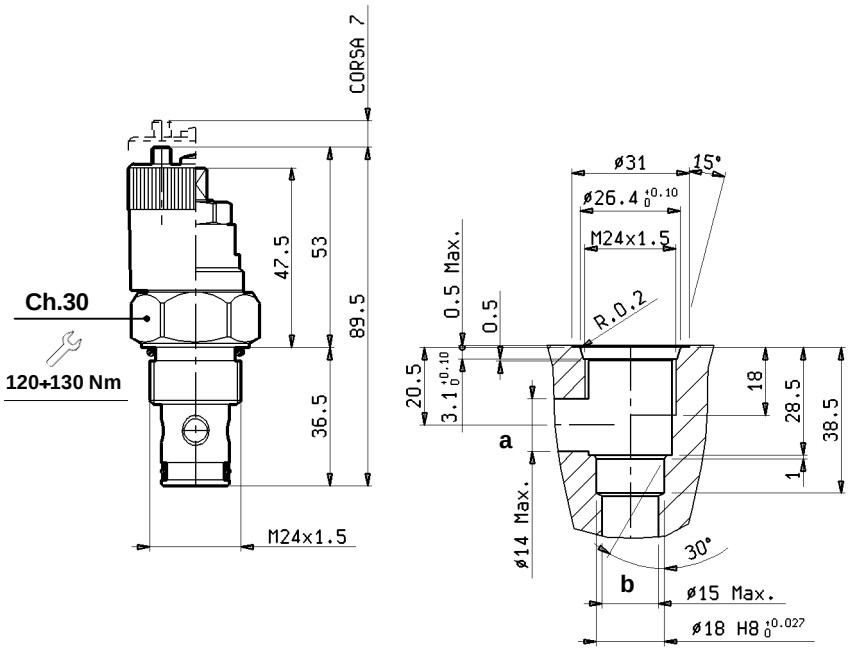
Pressure drop in the free flow direction



Esempio di applicazione • Application example



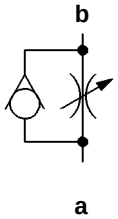
VALVOLA A CARTUCCIA • CARTRIDGE VALVE



VFU6

Valvola unidirezionale

Uni-directional valve



VFB6

Valvola bidirezionale

Bi-directional valve

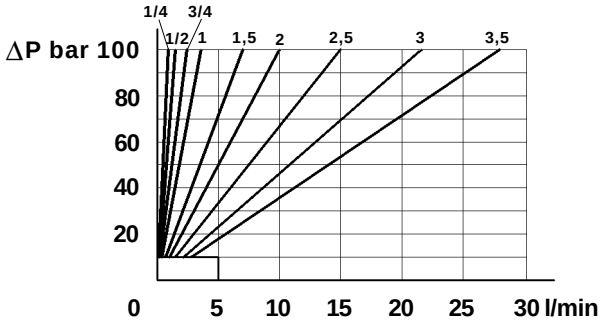
Tipo Type	**Diam. nominale di passaggio** ø Size **mm**	**Portata max** Max flow **l/min**	**Pressione max** Max pressure **bar**	**Numero dei giri volantino** Knob revolutions number **nº**	**Cavità** Cavity **nº**	**Peso** Weight
VFU 6.20	**8.5**	**30**	**350**	**6**	**15**	**0,220 Kg**
VFU 6	**8.5**	**60**				**0,220 Kg**
VFB 6	**6.5**	**60**				**0,220 Kg**

CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

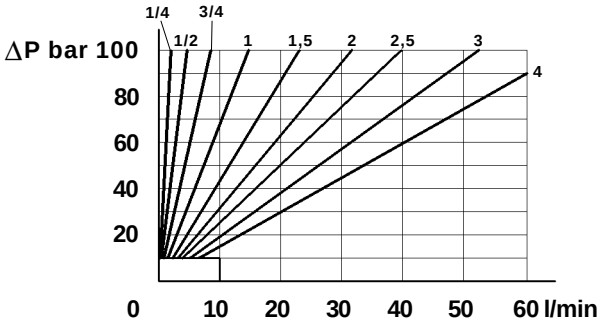
Caduta di pressione in funzione dei giri del volantino da inizio apertura

Pressure drop depending on knob revolutions from opening start

VFU 6.20

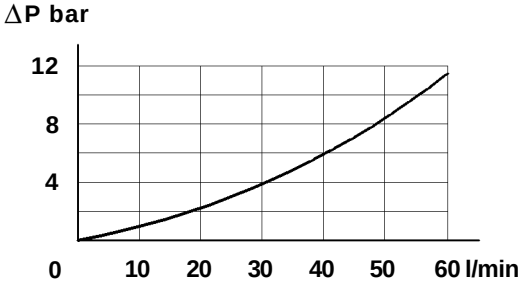


VFU 6
VFB 6



Caduta di pressione nel senso del flusso libero

Pressure drop in the free flow direction



ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1-VF 1 20 / AB V

Tipo di valvola · Valve type

Funzione · Function

Portata nominale (se non specificato Q = 60 l/min.)
Rated flow (if not specified Q = 60 lpm)

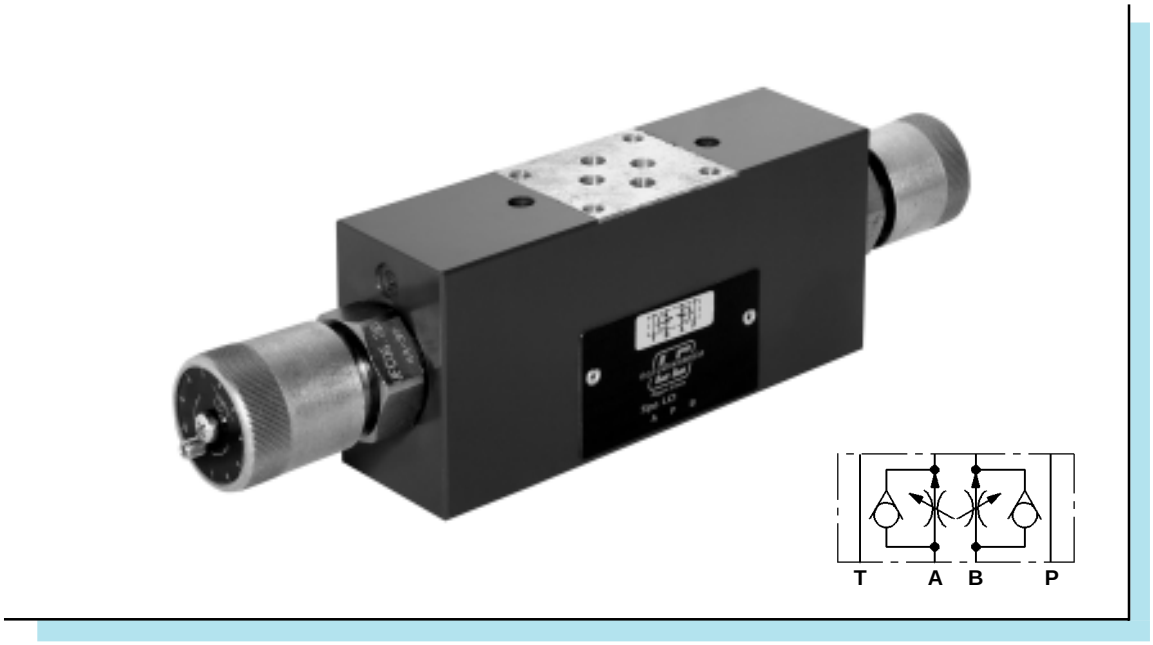
Taratura a volantino (V) od a chiave (F)
Setting by knob (V) or screw (F)

Singola o doppia
Single or double

LC1-VFCU6 • 20/ABV
LC1-VFCU6 • 40/ABV

Valvole modulari di regolazione portata a compensazione barica

Pressure compensated flow regulator modular valves

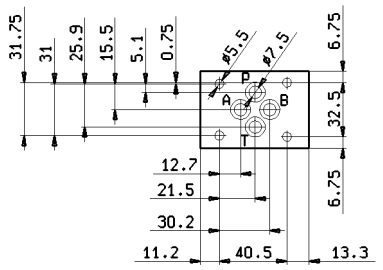


CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima: 45 l/min
Pressione massima d'esercizio: 310 bar
Valvole di regolazione portata compensate per il controllo del flusso dell'olio in uscita o in ritorno

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow: 45 l/min
Max operating pressure: 310 bar
Pressure compensated flow regulator valves for the oil flow control at outlet or on return

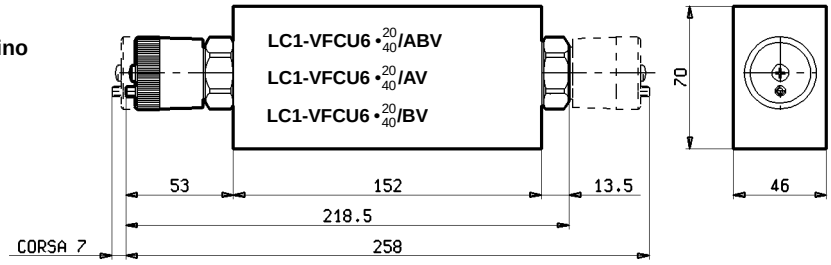
VERSIONE MODULARE • MODULAR VERSION

Grandezza · Size
ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3

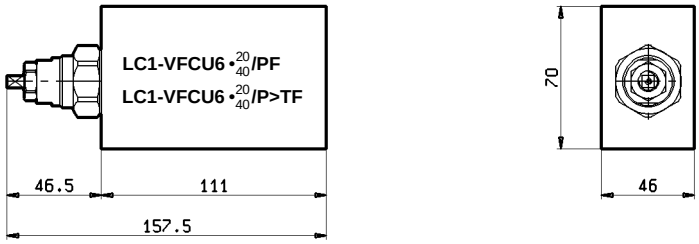


Pesi • Weights		
LC1-VFCU6• /AB	20 40	1,80 Kg
LC1-VFCU6• /A	20 40	1,50 Kg
LC1-VFCU6• /B	20 40	1,50 Kg
LC1-VFCU6• /P	20 40	1,20 Kg
LC1-VFCU6• /P>T	20 40	1,20 Kg

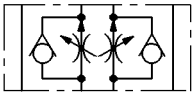
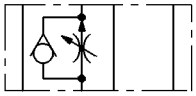
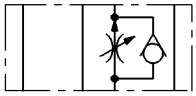
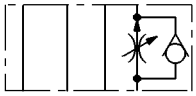
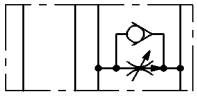
V = **Valvola con taratura a volantino**
Knob adjustment



F = **Valvola con taratura a chiave**
Screw adjustment

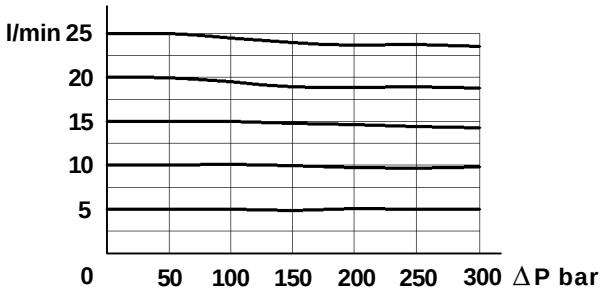


TIPI DI VALVOLE • VALVES TYPES

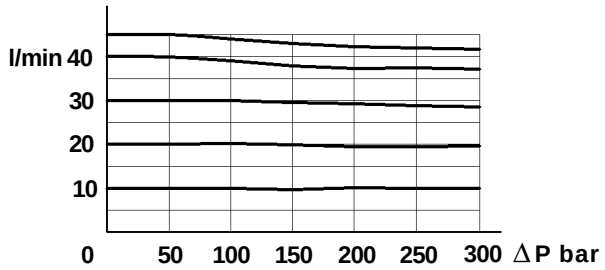
LC1-VFCU6 •20/40/AB	LC1-VFCU6 20/40 /A	LC1-VFCU6 •20/40/B	LC1-VFCU6 •20/40/P	LC1-VFCU6 •20/40/P>T
				
T A B P	T A B P	T A B P	T A B P	A B P T

CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

Variazione di portata in funzione della pressione
Flow change depending on pressure

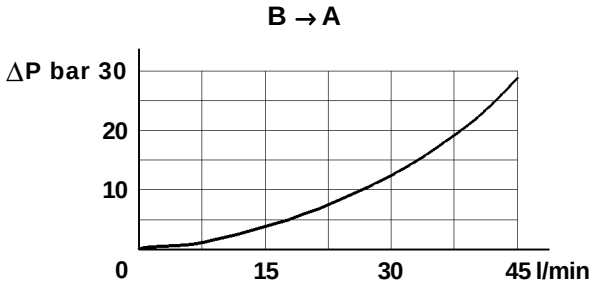


VFCU 6.20



VFCU 6.40

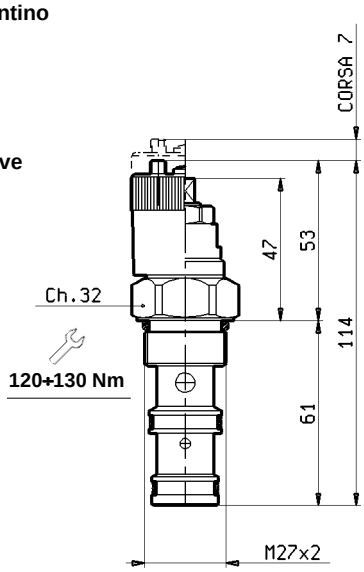
Caduta di pressione nel senso del flusso libero
Pressure drop in the free flow direction

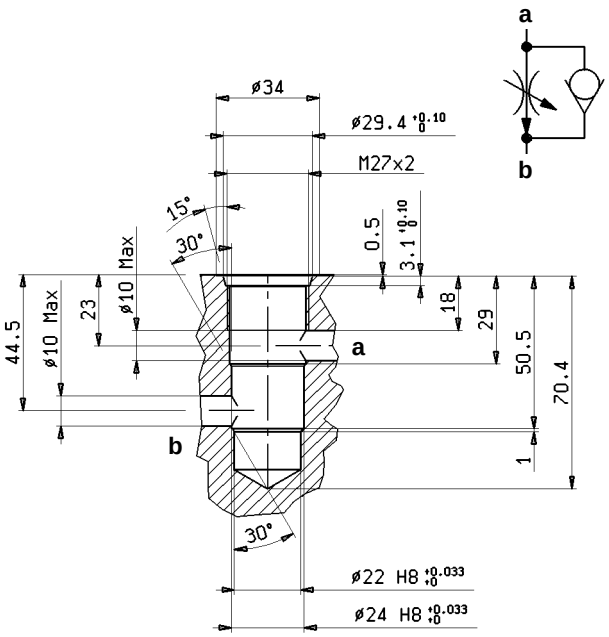


VALVOLA UNIDIREZIONALE A CARTUCCIA • UNI-DIRECTIONAL CARTRIDGE VALVE

V = **Valvola con taratura a volantino**
Knob adjustment

F = **Valvola con taratura a chiave**
Screw adjustment



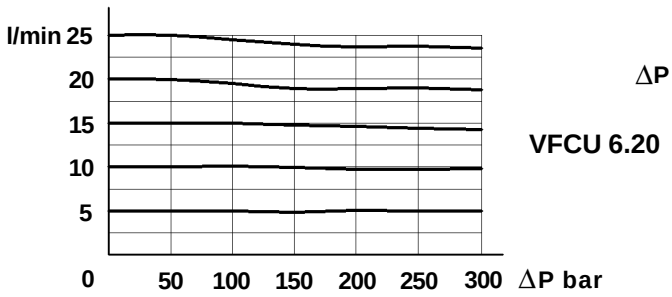


Codice Type	**Diam. nominale di passaggio** ø Size **mm**	**Portata max** Max flow **l/min**	**Pressione max** Max pressure **bar**	**Nº di giri del volantino** Knob revolutions number **nº**	**Cavità** Cavity **nº**	**Peso** Weight
VFCU6 • 20	**8,5**	**25**	**310**	**6**	**21**	**0,300 kg**
VFCU6 • 40	**8,5**	**45**				

CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

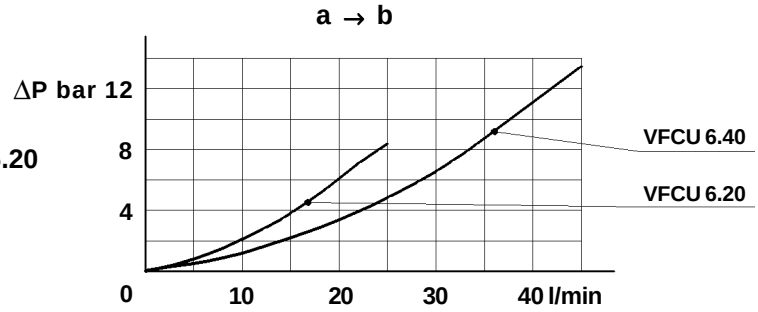
Variazione di portata in funzione della pressione

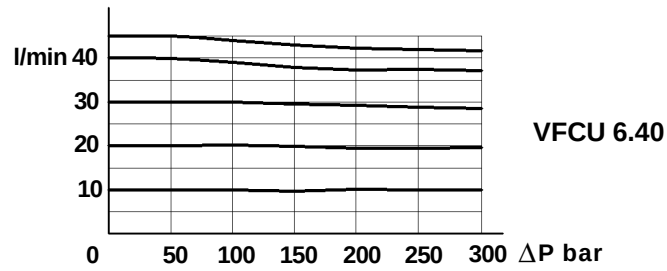
Flow change depending on the pressure



Caduta di pressione da a > b (con regolatore aperto)

Pressure drop from a to b (with the regulator open)

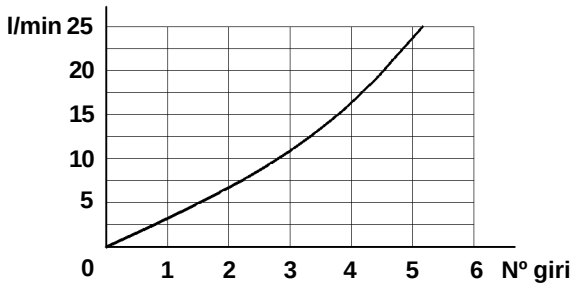




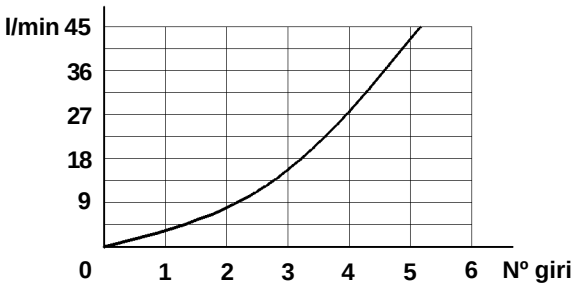
Regolazione portata in funzione dei giri del volantino (da inizio apertura)

Flow adjustment depending on knob rev. (aperture start)

VFCU 6.20



VFCU 6.40



ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1 - VFCU6•20 / AB V

Tipo di valvola
Valve type

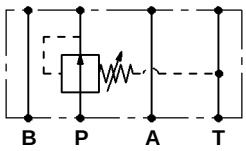
Singola o doppia
Single or double

Taratura a volantino (V) od a chiave (F)
Setting by knob (V) or screw (F)

LC1 - VRPM

Valvole riduttrici di pressione modulari

Pressure reducing modular valves



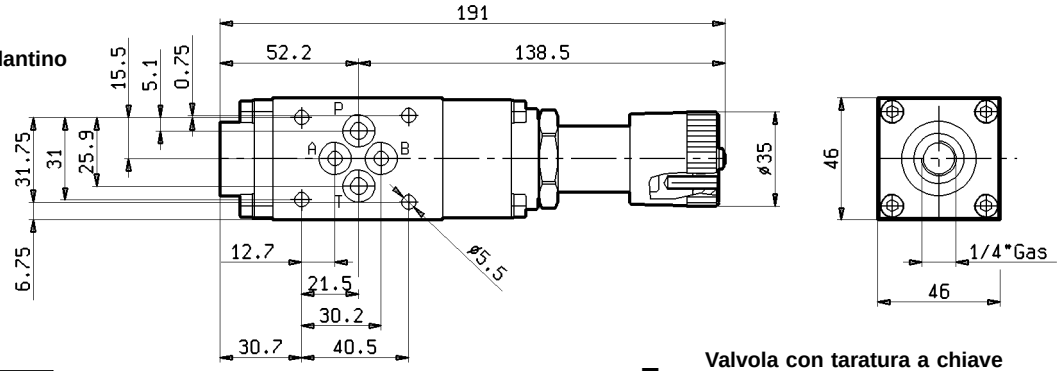
CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima: 40 l/min
Pressione massima in entrata: 310 bar
Pressione controllata in uscita: 5 ÷ 300 bar
Valvole riduttrici di pressione pilotate agenti su P e A

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow: 40 l/min
Inlet max pressure: 310 bar
Controlled pressure at outlet port: 5 to 300 bar
Pilot operated pressure reducing valves acting on P and A

DIMENSIONI E CARATTERISTICHE • DIMENSIONS AND FEATURES

V = **Valvola con taratura a volantino**

Knob adjustment

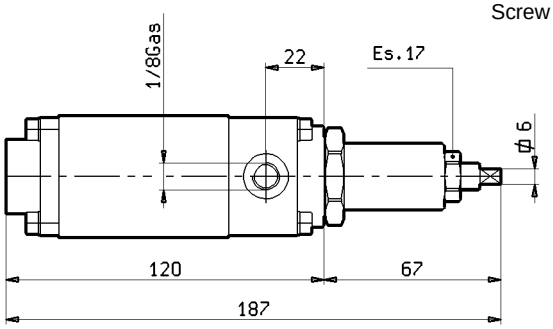


Campo di taratura · Pressure range
0 : 0 ÷ 70 bar **1 : 10 ÷ 180 bar** **2 : 30 ÷ 300 bar**

Peso • Weight
1,62 Kg

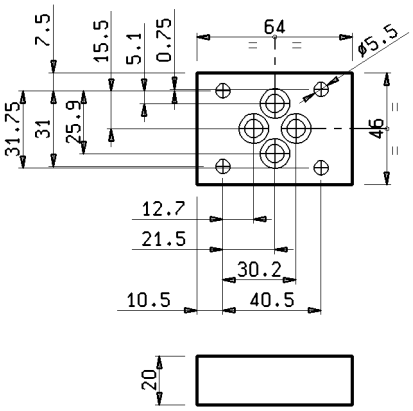
F = **Valvola con taratura a chiave**

Screw adjustment



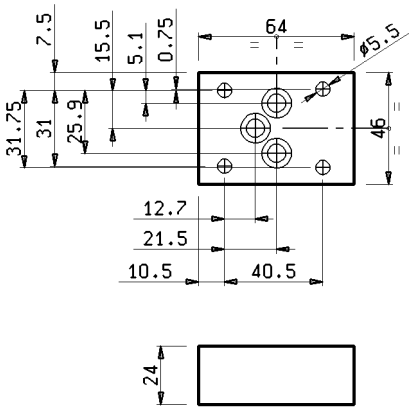
Piastra di collegamento **P → A** **Tipo** **1PR1**

Connection sub-plate Type

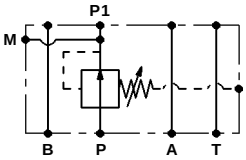


Piastra con ritegno da **A → P** **Tipo** **1PR2**

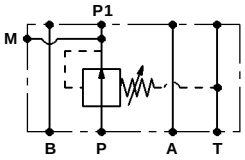
Sub-plate with check valve from Type



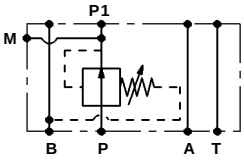
LC1-VRPM-E/P
Drenaggio esterno
External drain



LC1-VRPM-I/P
Drenaggio interno in T
Internal drain to T

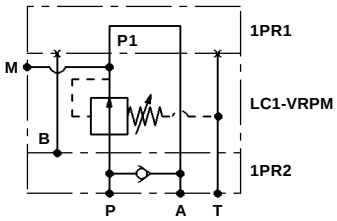


LC1-VRPM-I/A
Drenaggio interno in B
Internal drain to B



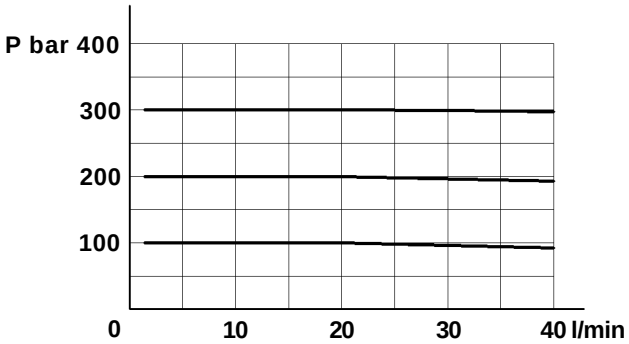
Esempio di montaggio piastre 1PR1-1PR2

Example of assembly of 1PR1-1PR2 sub plates



Curve caratteristiche valvole

Relief valves diagram characteristics



Pressione ridotta

Reduced pressure

CARATTERISTICHE DI FUNZIONAMENTO • SPECIFICATIONS

Le valvole LC1-VRPM, sono da impiegare quando in un circuito si vuole ottenere una riduzione costante di pressione su uno o più utilizzi.

Eventuali aumenti di pressione sull'entrata "P" non hanno influenza sulla pressione ridotta.

LC1-VRPM/A pressione ridotta su utilizzo A.

LC1-VRPM.../P pressione ridotta su utilizzo P1.

The valves LC1-VRPM must be used when in a circuit a constant reduced pressure is needed on one or more ports.

Possible pressure increase on the inlet "P" Line do not influence the reduced pressure.

LC1-VRPM/A reduced pressure on port A.

LC1-VRPM.../P reduced pressure on port P1.

DRENAGGIO • DRAIN

Le valvole LC1-VRPM/A sono montate con drenaggio nell'utilizzo B.

Le valvole LC1-VRPM.../P vengono montate a richiesta con drenaggio interno o esterno.

Interno specificare I.

Esterno specificare E.

In caso di contropressione in T superiore a 1 bar, impiegare la versione drenaggio E (esterno).

Per variare il sistema di drenaggio, da interno (I) a esterno (E), ruotare il coperchio anteriore (lato volantino) di 180º, togliendo il tappo DIN 906 1/8" gas, e collegando il drenaggio al serbatoio.

Valore massimo di drenaggio 0,25 l/min.

The valves LC1-VRPM/A are supplied with drain connected to B.

The valves LC1-VRPM.../P are supplied with internal or external drain by request.

Internal specify I.

External specify E.

Whenever there is back pressure exceeding 1 bar, in the tank line T the external drain should be used.

To modify the drain system from internal (I) to external (E), turn the back cover (knob side) by 180º, opening the DIN 906 1/8" BSP screw plug and connecting the drain to the tank.

Max drainage value 0.25 l/min.

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1-VRPM E / A - 1 V 1PR1 - 1PR2

Tipo di valvola • Valve type

Drenaggio • Drain

Riduttrice su A • Reducing to A

Campo di taratura • Pressure range

Piastra con ritegno da A → P
Sub-plate with check valve from

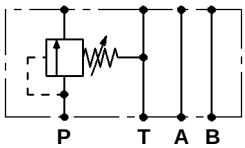
Piastra di collegamento P → A
Connection sub-plate

Taratura a volantino (V) od a chiave (F)
Setting by knob (V) or screw (F)

LC1 - VSPM

Valvole di sequenza modulari

Sequence modular valves

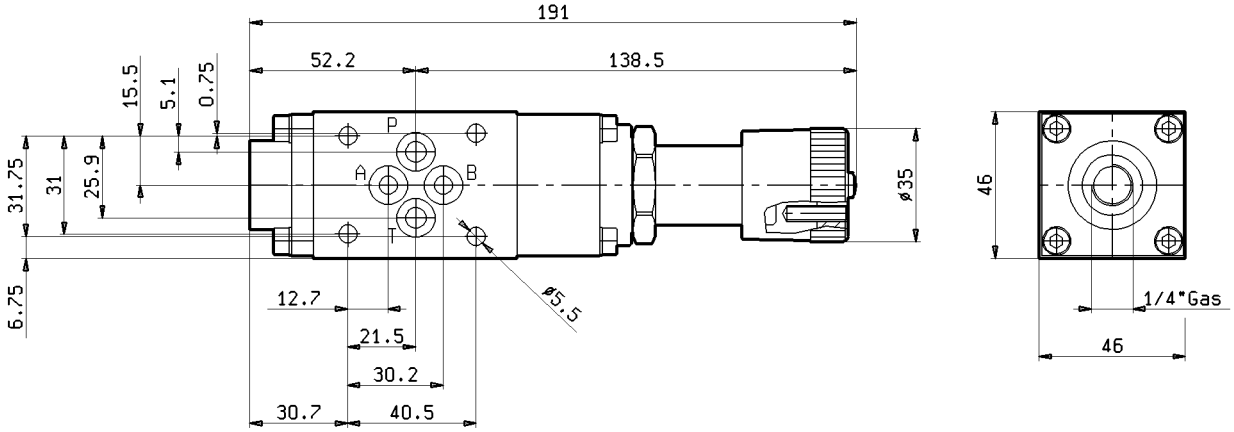


CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima: 40 l/min
Pressione massima in entrata: 310 bar
Pressione minima controllata: 5 bar
Valvole di sequenza pilotate agenti su P

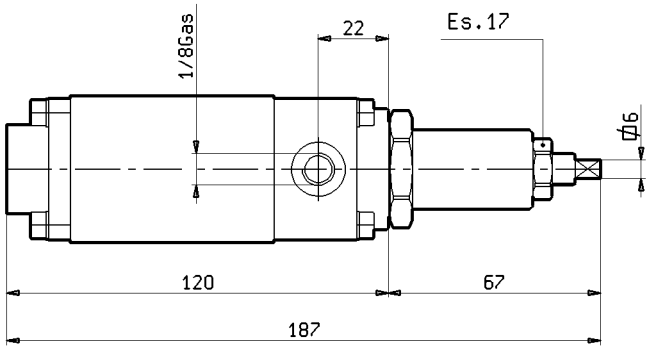
TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow: 40 l/min
Inlet max pressure: 310 bar
Min pressure setting: 5 bar
Pilot operated sequence valves acting on P

DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS

V = **Valvola con taratura a volantino**
Knob adjustment



F = **Valvola con taratura a chiave**
Screw adjustment



Campo di taratura Pressure range	**0 : 0 ÷ 70 bar** **1 : 10 ÷ 180 bar** **2 : 30 ÷ 300 bar**

Peso • Weight
1,62 Kg

Le dimensioni d'ingombro e i collegamenti, drenaggio interno o esterno, delle valvole LC1-VSPM sono uguali al tipo LC1-VRPM.
The over-all dimensions and the external or internal drain connections of the valve LC1-VSPM are the same as the type LC1-VRPM.

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1-VSPM E / 1 - V

Tipo di valvola
Valve type

Drenaggio
Drain

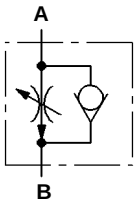
Taratura a volantino (V) od a chiave (F)
Setting by knob (V) or screw (F)

Campo di taratura
Pressure range

LC1-VFCU6.20/3
LC1-VFCU6.40/3

Valvole di regolazione portata a compensazione barica

Pressure compensated flow regulator valves



CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima: 45 l/min
Pressione massima d'esercizio: 310 bar
Valvole di regolazione portata compensate per il controllo del flusso dell'olio in uscita o in ritorno

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow: 45 l/min
Max operating pressure: 310 bar
Pressure compensated flow regulator valves for the oil flow control at outlet or on return

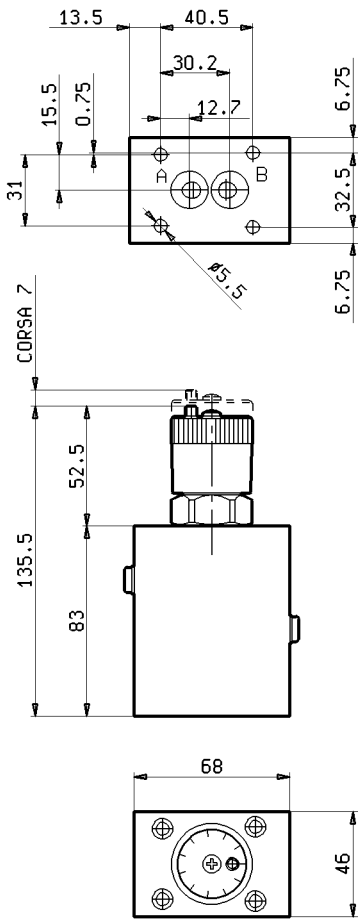
VERSIONE CETOP • CETOP VERSION

Viti di fissaggio • Fixing screws

N°4 DIN 912-8.8 M5 x 80

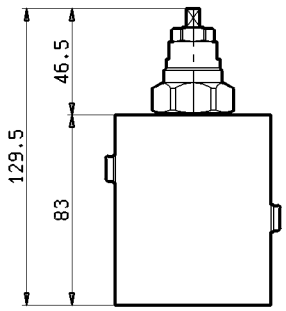
Momento massimo di serraggio: 6 Nm

Maximum blocking torque. 6 Nm



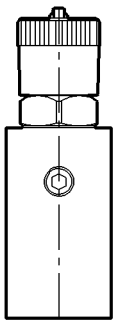
F = **Valvola con taratura a chiave**

Screw adjustment



V = **Valvola con taratura a volantino**

Knob adjustment

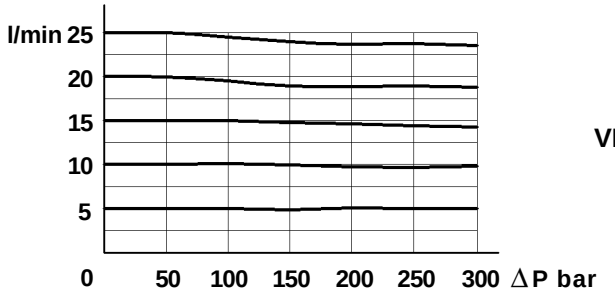


Tipo Type	**Diam. nominale di passaggio** ø Size **mm**	**Portata max** Max flow **l/min**	**Pressione max** Max pressure **bar**	**N° dei giri del volantino** Knob revolutions number **n°**	**Peso** Weight
LC1-VFCU6 • 20/3	**8,5**	**25**	**310**	**6**	**1,00 kg**
LC1-VFCU6 • 40/3	**8,5**	**45**			

CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

Variazione di portata in funzione della pressione

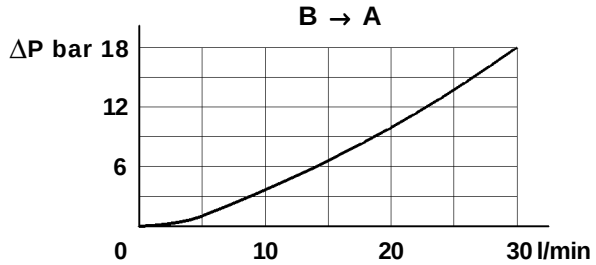
Flow change depending on the pressure

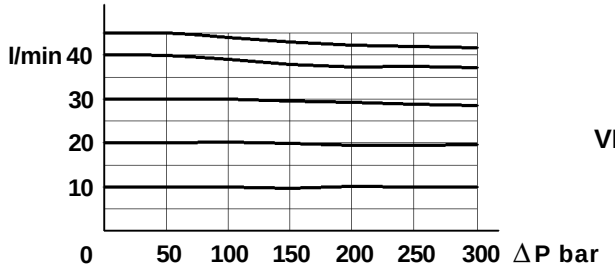


VFCU 6.20

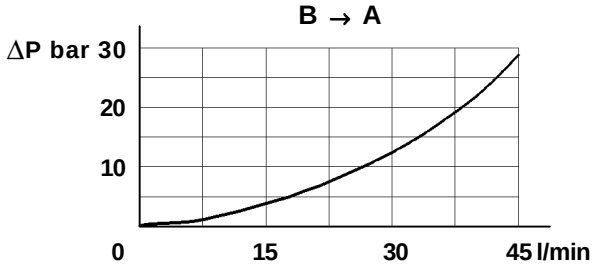
Caduta di pressione nel senso del flusso libero

Pressure drop in the free flow direction

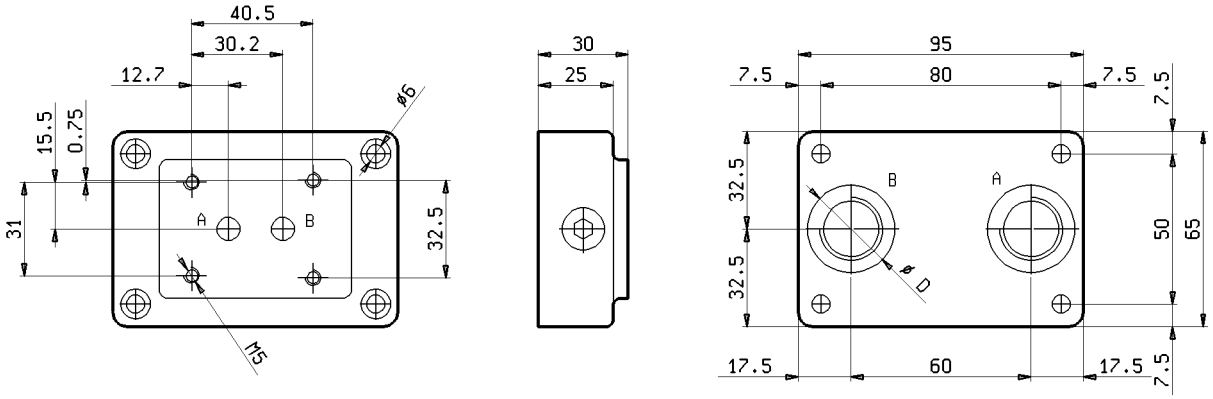




VFCU 6.40



PIASTRE • PLATES

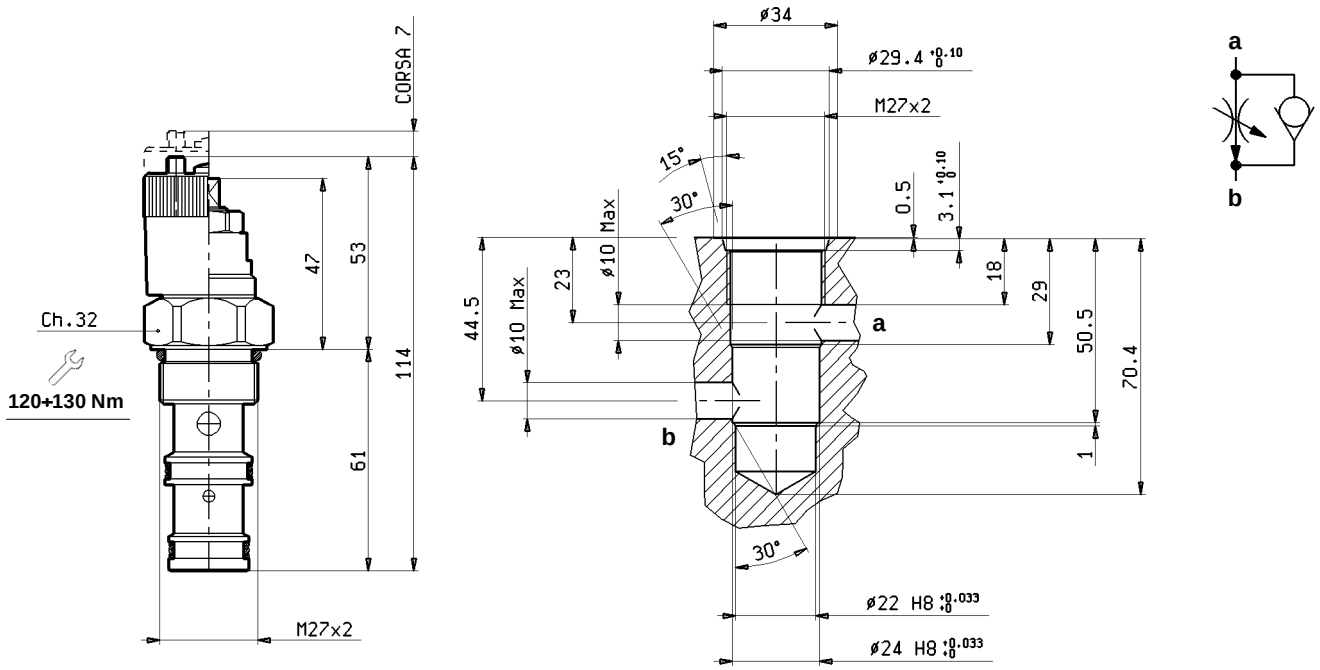


Viti di fissaggio • Fixing screws
Nº4 DIN 912-8.8 M5 x 25 **Momento massimo di serraggio: 6 Nm** Maximum blocking torque. 6 Nm

Tipi • Types	**ø D**
PDM 116	1/4"Gas
PDM 118	3/8"Gas

VALVOLA UNIDIREZIONALE A CARTUCCIA • UNI-DIRECTIONAL CARTRIDGE VALVE

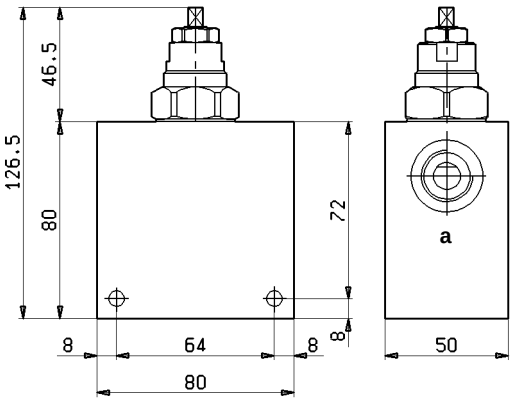
Tipo Type	**Diam. nominale di passaggio** ø Size **mm**	**Portata max** Max flow **l/min**	**Pressione max** Max pressure **bar**	**Nº dei giri del volantino** Knob revolutions number **nº**	**Cavità** Cavity **nº**	**Peso** Weight
VFCU6 • 20	**8,5**	**25**	**310**	**6**	**21**	**0,300 kg**
VFCU6 • 40	**8,5**	**45**				

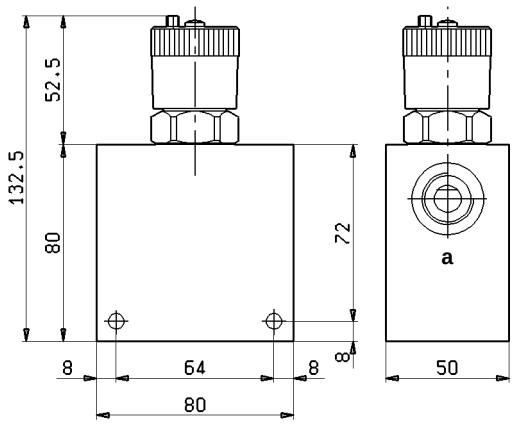


F = **Valvola con taratura a chiave**
Screw adjustment

V = **Valvola con taratura a volantino**
Knob adjustment

VERSIONE IN LINEA • IN LINE VERSION





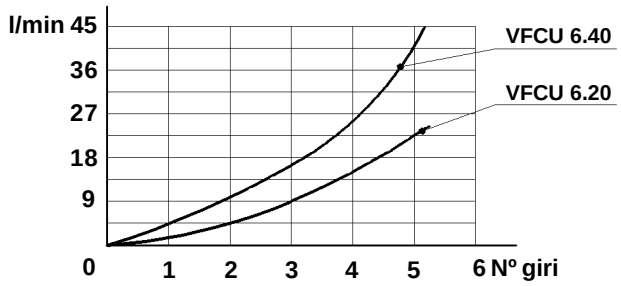
V = **Valvola con taratura a volantino**
Knob adjustment

F = **Valvola con taratura a chiave**
Screw adjustment

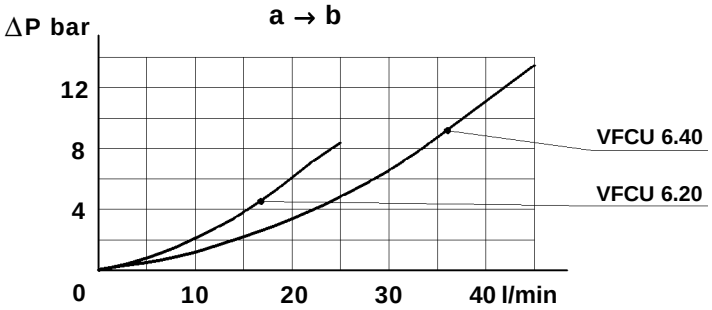
Tipi • Types	**Attacchi** • Ports	**Pesi** • Weights
CFCU6/38 + VFCU6•20/F-V	**3/8"Gas**	**1,10 Kg**
CFCU6/12 + VFCU6•40/F-V	**1/2"Gas**	**1,05 Kg**

CARATTERISTICHE TECNICHE • TECHNICAL FEATURES

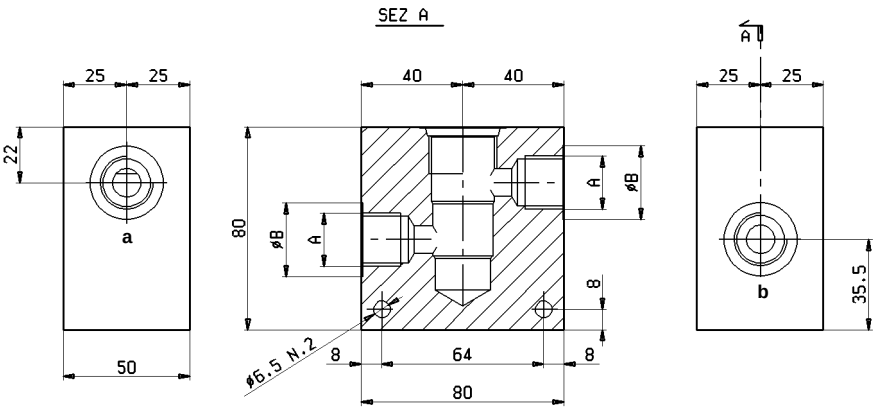
Regolazione portata in funzione dei giri del volantino (da inizio apertura)
Flow adjustment depending on knob rev (aperture start)



Caduta di pressione da a > b (con regolatore aperto)
Pressure drop from a to b (with the regulator open)



COLLETTORE • MANIFOLDS



Tipi • Types	**A**	**B**	**Pesi** • Weights
CFCU6/38	**3/8"Gas**	**25**	**0,80 Kg**
CFCU6/12	**1/2"Gas**	**29**	**0,75 Kg**

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1-VFCU6. 20 / 3 V

Tipo di valvola • Valve type

Portata nominale • Nominal flow

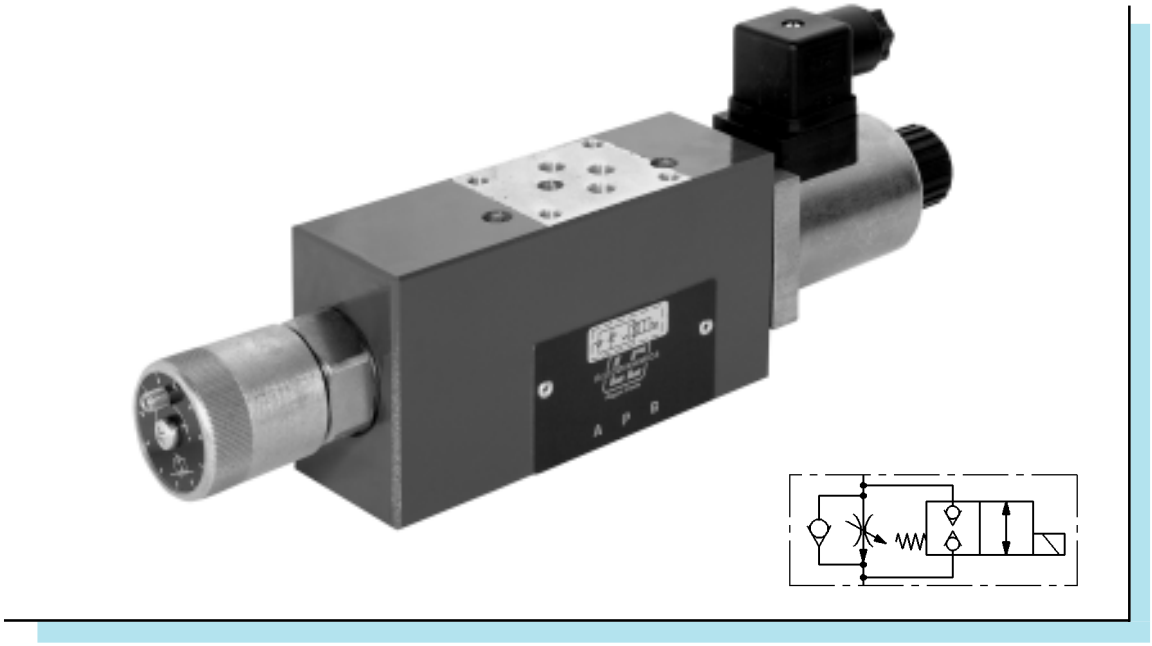
Taratura a volantino (V) od a chiave (F)
Setting by knob (V) or screw (F)

Grandezza CETOP 3 • Size CETOP 3

LC1-VFCU6•20/PV-W2.2C
LC1-VFCU6•40/PV-W2.2C

Gruppi modulari rapido - lento

Modular assemblies quick - slow

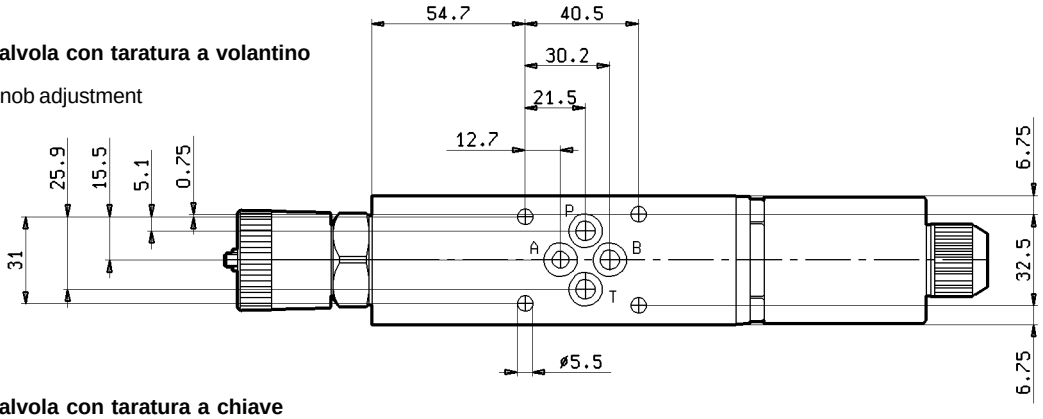


CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Portata massima : LC1-VFCU6•20 = 25 l/min - LC1-VFCU6•40 = 40 l/min
Pressione massima d'esercizio: 310 bar

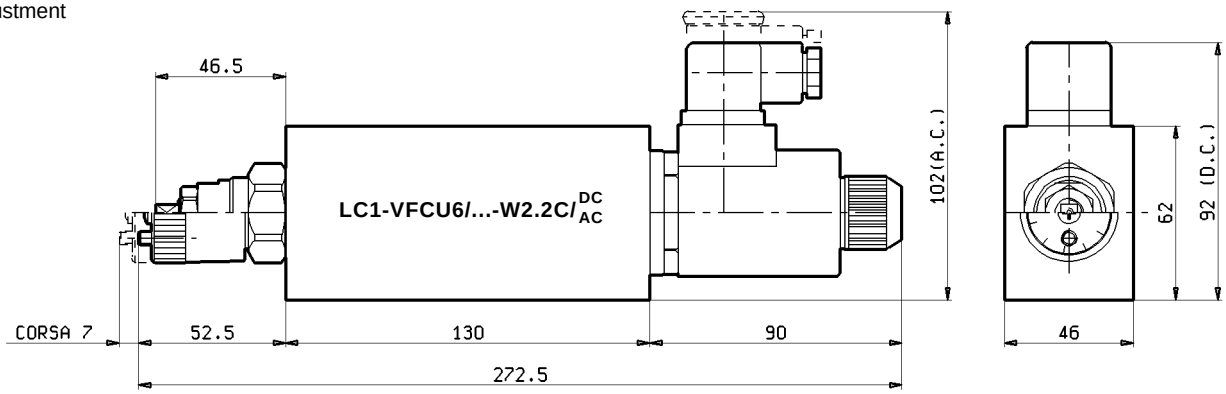
TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Max flow: LC1-VFCU6•20 = 25 l/min - LC1-VFCU6•40 = 40 l/min
Max operating pressure: 310 bar

DIMENSIONI DI INGOMBRO • OVER-ALL DIMENSIONS

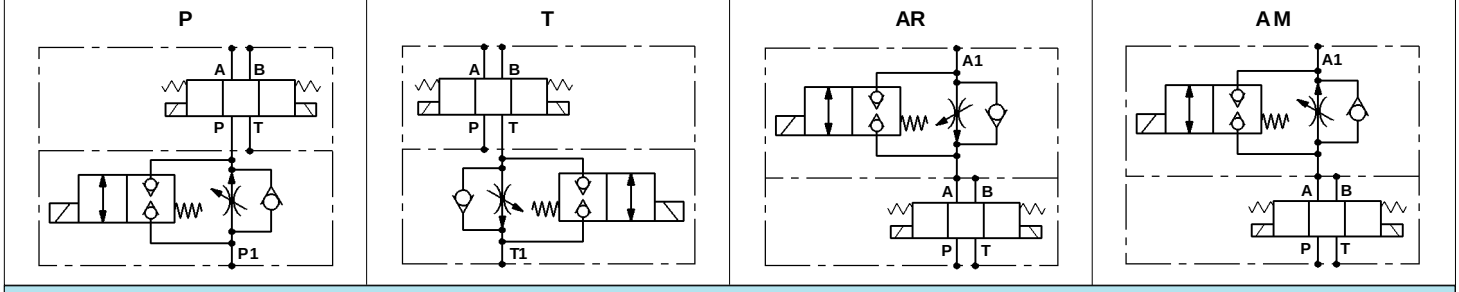
V = **Valvola con taratura a volantino**
Knob adjustment



F = **Valvola con taratura a chiave**
Screw adjustment



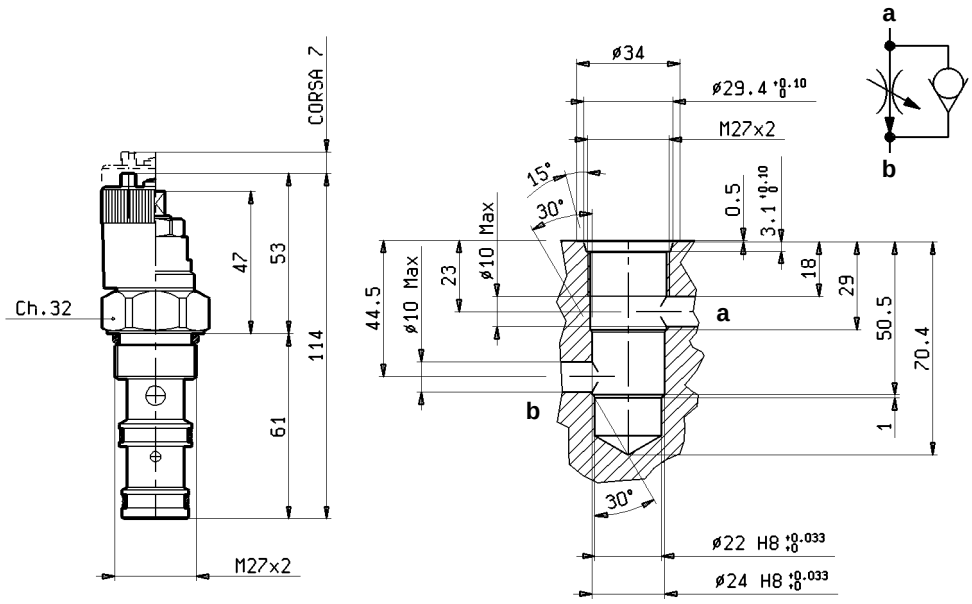
TIPI DI CIRCUITI • SPOOL TYPES



VALVOLA UNIDIREZIONALE A CARTUCCIA • UNI-DIRECTIONAL CARTRIDGE VALVE

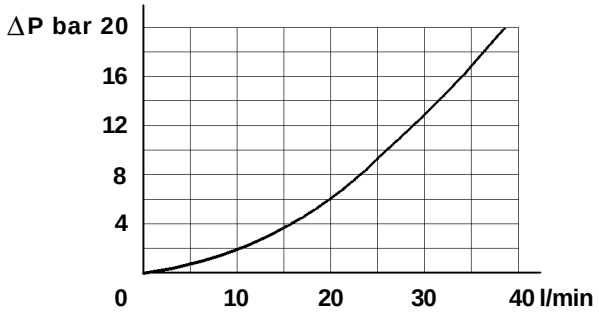
V = **Valvola con taratura a volantino**
Knob adjustment

F = **Valvola con taratura a chiave**
Screw adjustment



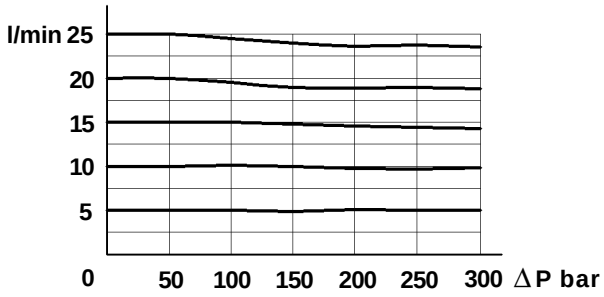
Caduta di pressione
Pressure drop

W 2.2 C

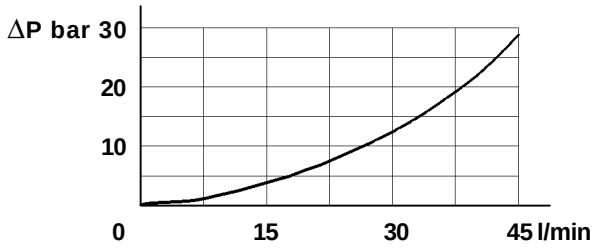


Variazione di portata in funzione della pressione
Flow change depending on the pressure

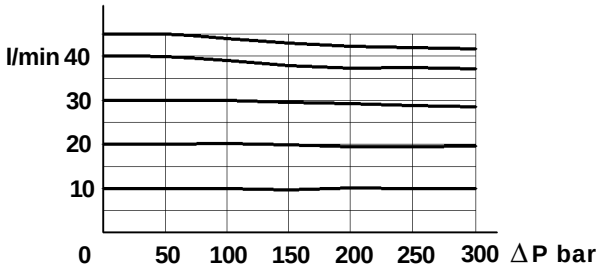
VFCU 6.20



Caduta di pressione nel senso del flusso libero
Pressure drop in the free flow direction



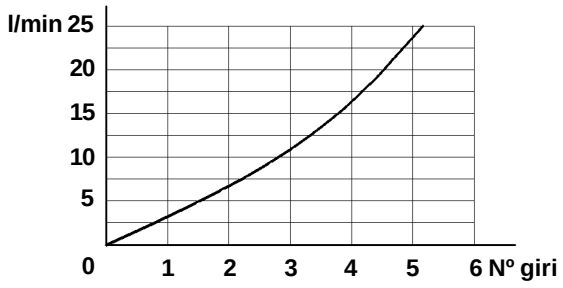
VFCU 6.40



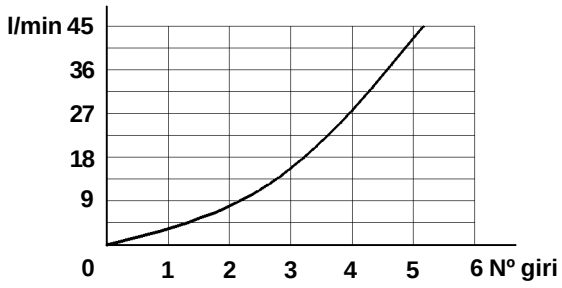
Regolazione portata in funzione dei giri del volantino (da inizio apertura)

Flow adjustment depending on knob rev (aperture start)

VFCU 6.20



VFCU 6.40



ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

LC1-VFCU6•20 / AM - V - W2.2C/110-50

Tipo di valvola
Valve type

Tipo di circuito
Spool type

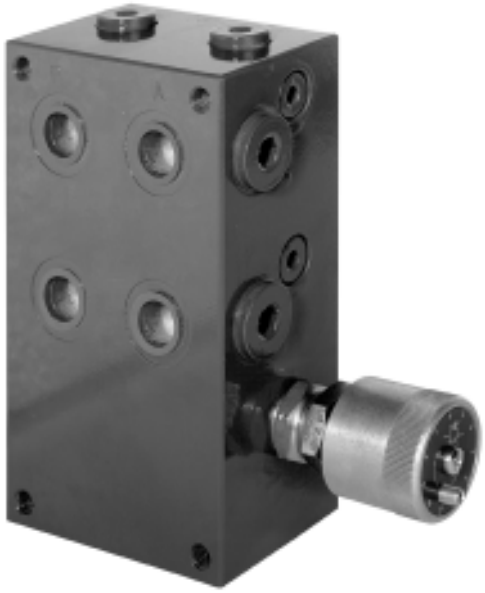
Caratteristiche tecniche ed elettriche della valvola
Technical and electrical features of the valve

Taratura a volantino (V) od a chiave (F)
Setting by knob (V) or screw (F)

PDM - PDT

Piastre per elettrovalvole LC 1

Sub-plates for solenoid valves LC 1



CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Disponibili con o senza valvola limitatrice di pressione
Versione in ghisa EN GJL 250
Versioni singola, componibili e monoblocco da 1 a 10 elementi.
Pressione max di lavoro: 300 bar
Circuiti in parallelo ed in serie

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Available with or without pressure relief valve
Version made in cast-iron EN GJL 250
Single, stacking and multielement plates version from 1 to 10 elements.
Max working pressure: 300 bar
Parallel and series circuits

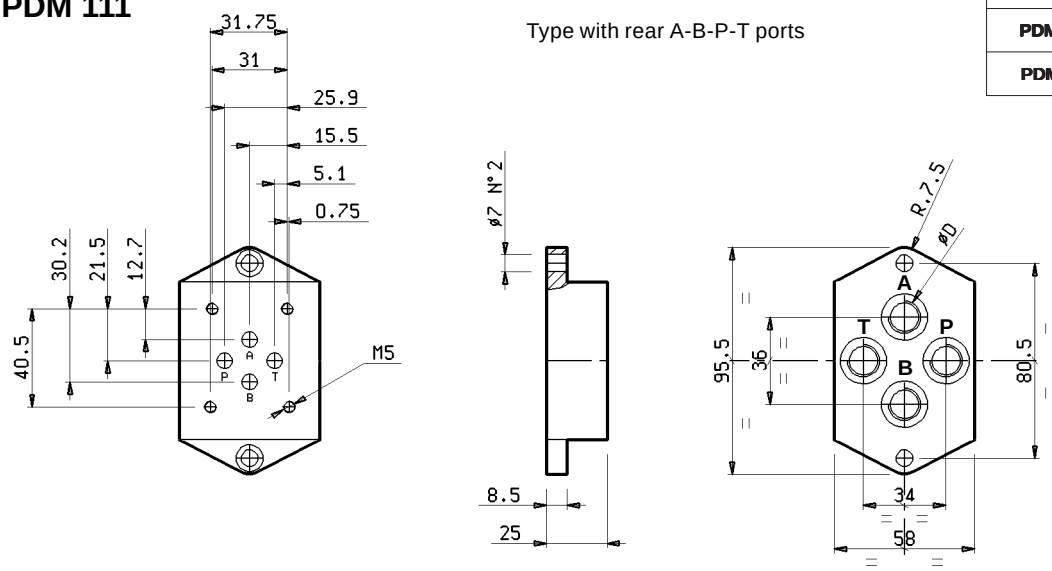
PIASTRA PER ELETTROVALVOLA SINGOLA
MOUNTING PLATE FOR ONE SOLENOID VALVE

PDM 110
PDM 111

Tipo con attacchi A-B-P-T posteriori

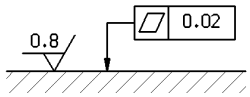
Type with rear A-B-P-T ports

Tipi • Types	ø D	Pesi • Weights
PDM 110	1/8"Gas	0,640 Kg
PDM 111	1/4"Gas	0,620 Kg



Qualità superficie di attacco

Mounting plane quality

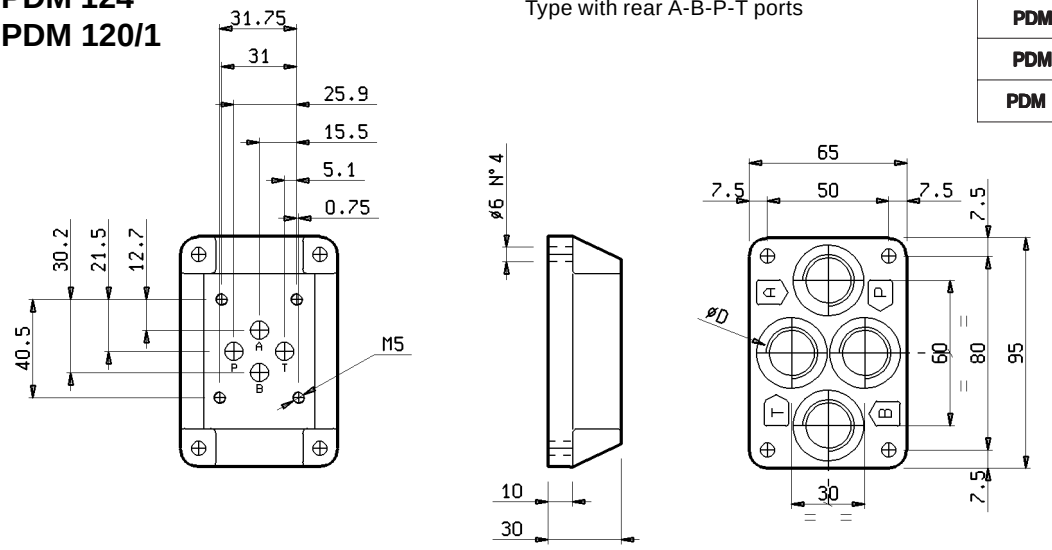


PDM 120
PDM 124
PDM 120/1

Tipo con attacchi A-B-P-T posteriori

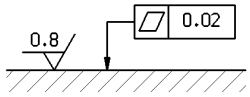
Type with rear A-B-P-T ports

Tipi • Types	ø D	Pesi • Weights
PDM 120	3/8"Gas	0,880 Kg
PDM 124	1/4"Gas	0,930 Kg
PDM 120/1	1/2"Gas	0,830 Kg



Qualità superficie di attacco

Mounting plane quality

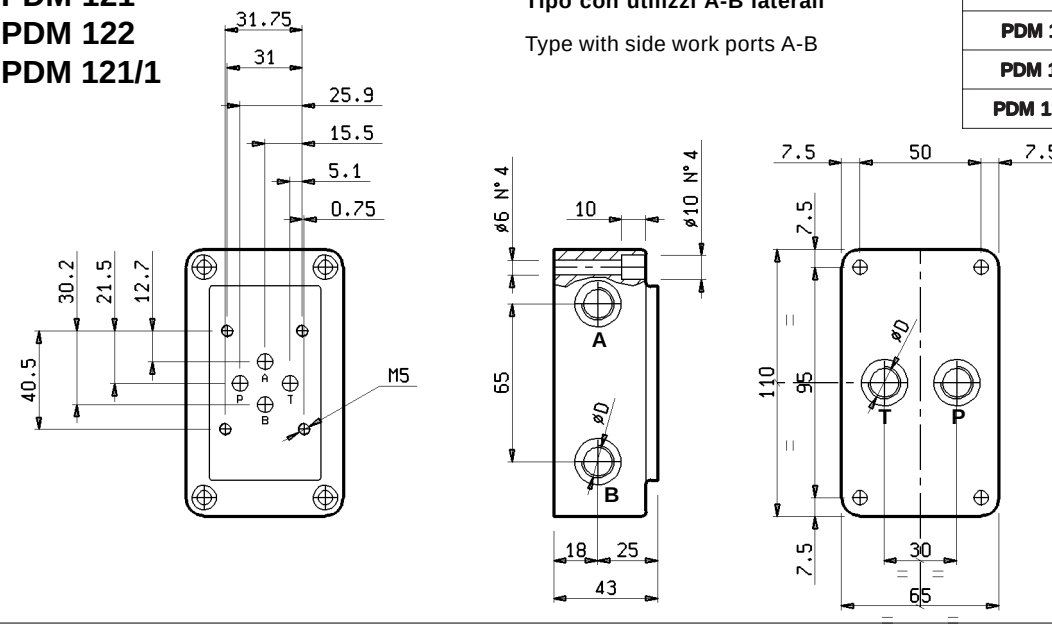


PDM 121
PDM 122
PDM 121/1

Tipo con utilizzi A-B laterali

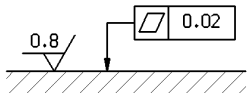
Type with side work ports A-B

Tipi • Types	ø D	Pesi • Weights
PDM 121	3/8"Gas	1,820 Kg
PDM 122	1/4"Gas	1,870 Kg
PDM 121/1	1/2"Gas	1,770 Kg



Qualità superficie di attacco

Mounting plane quality

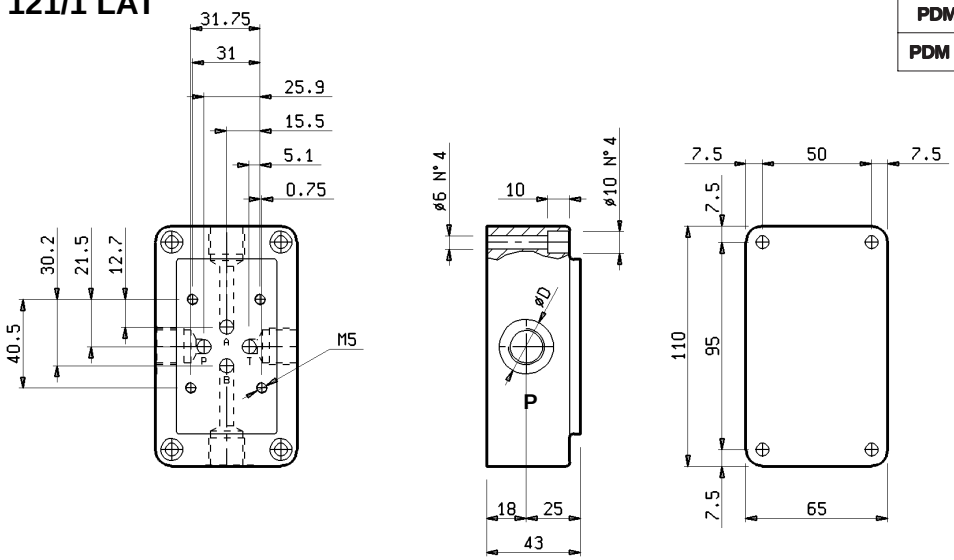


PDM 121 LAT
PDM 122 LAT
PDM 121/1 LAT

Tipo con attacchi A-B-P-T laterali radiali

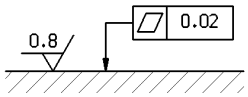
Type with radial side A-B-P-T ports

Tipi • Types	**ø D**	**Pesi** • Weights
PDM 121 LAT	3/8"Gas	1,800 Kg
PDM 122 LAT	1/4"Gas	1,850 Kg
PDM 121/1 LAT	1/2"Gas	1,750 Kg



Qualità superficie di attacco

Mounting plane quality

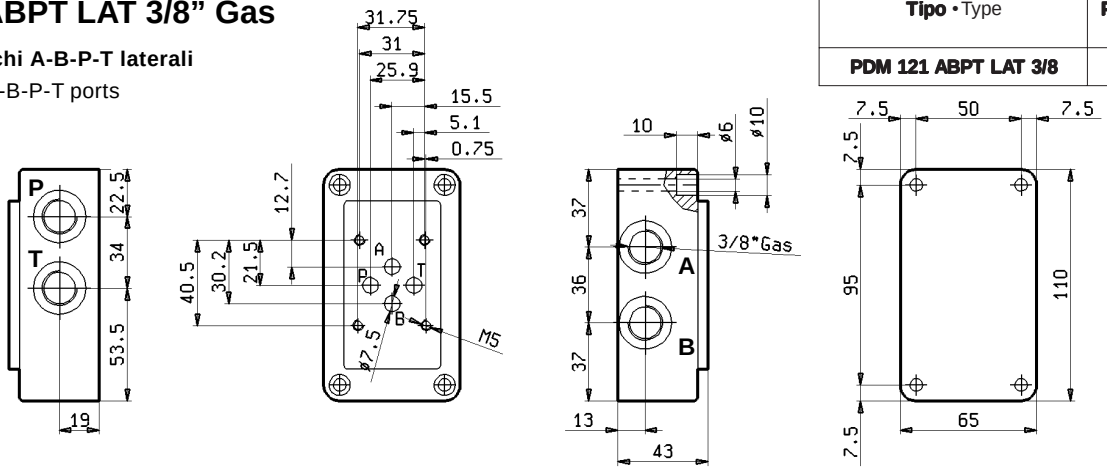


PDM 121 ABPT LAT 3/8" Gas

Tipo con attacchi A-B-P-T laterali

Type with side A-B-P-T ports

Tipo • Type	**Peso** • Weight
PDM 121 ABPT LAT 3/8	1,840 Kg

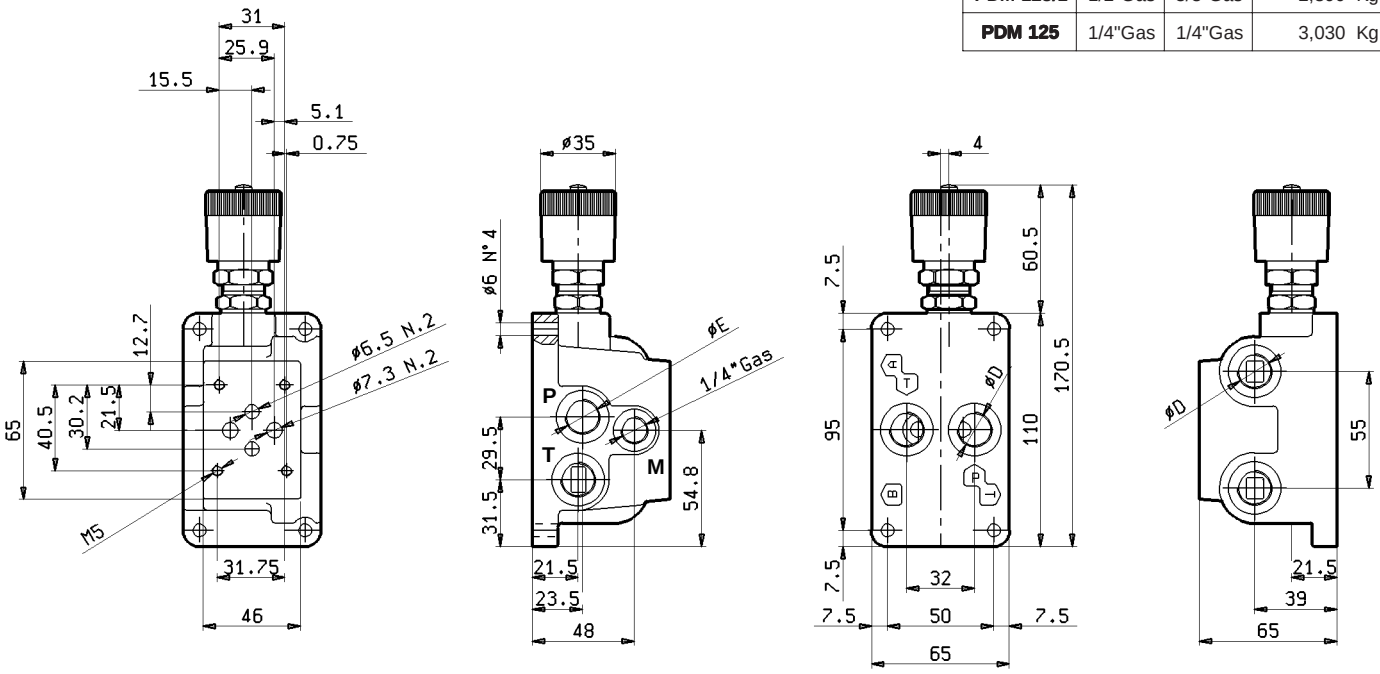


PDM 123
PDM 123/1
PDM 125

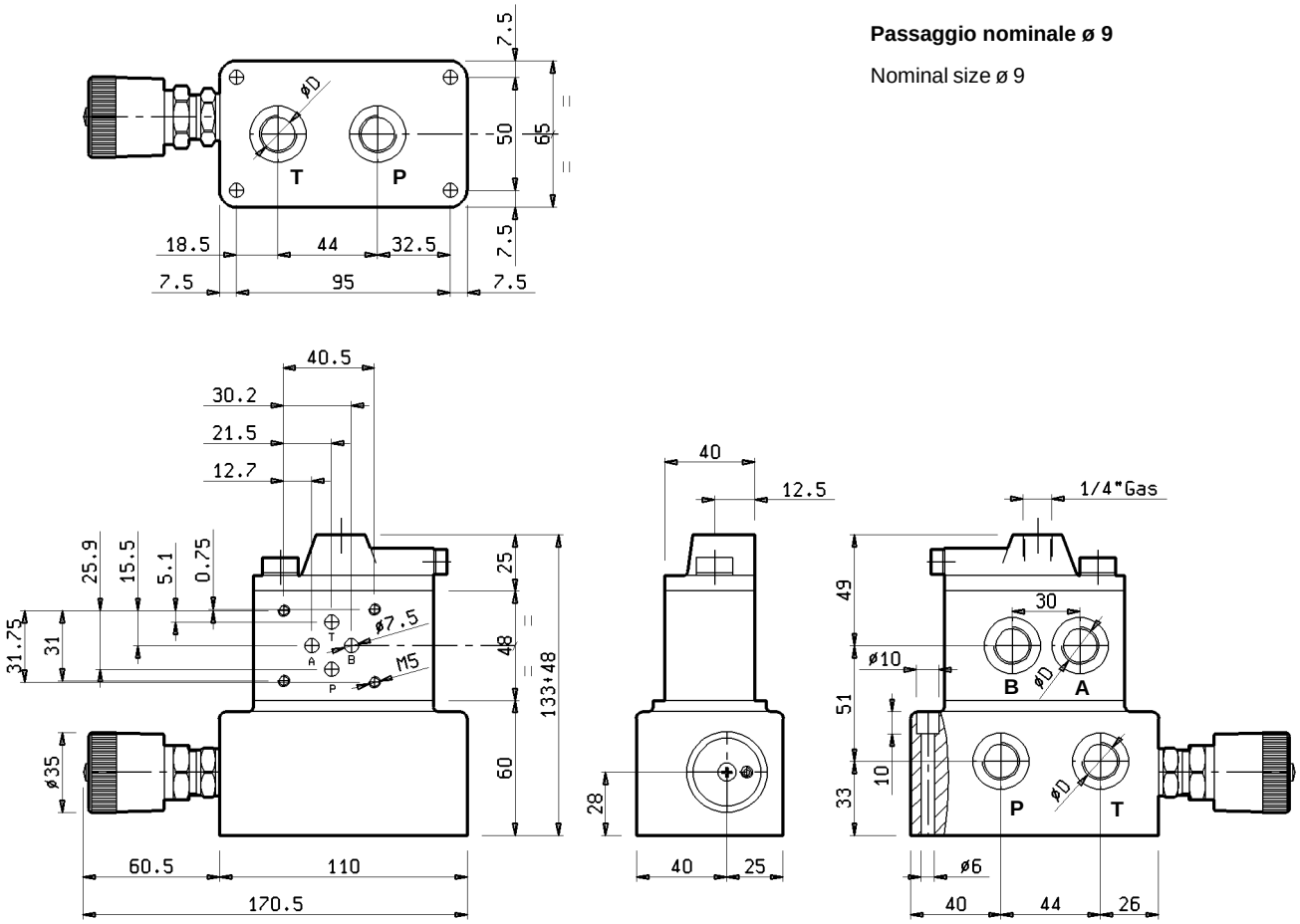
Tipo con valvola limitatrice di pressione VM7 incorporata

Type with built-in pressure relief valve VM7

Tipi • Types	**ø D**	**ø E**	**Pesi** • Weights
PDM 123	3/8"Gas	3/8"Gas	2,940 Kg
PDM 123/1	1/2"Gas	3/8"Gas	2,890 Kg
PDM 125	1/4"Gas	1/4"Gas	3,030 Kg

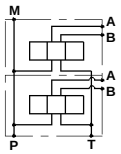
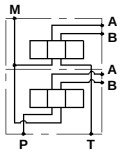


PIASTRE COMPONIBILI PER ELETTROVALVOLE
STACKING PLATES FOR SOLENOID VALVES



Passaggio nominale ø 9

Nominal size ø 9

Tipo di piastra (Nr 2 tiranti) • Type of plate (No 2 tie-rods)		ø D	**Peso** • Weight **Kg.**	**Codice** Code
Collegamento in parallelo Parallel connection		3/8"Gas	0,93	**PDT 130**
		1/4"Gas	1,03	**PDT 131**
Collegamento in serie Series connection		3/8"Gas	0,92	**PDT 135**
		1/4"Gas	1,02	**PDT 136**
Piastra di base	**Con valvola limitatrice di pressione VM7** With pressure relief valve VM7	3/8"Gas	2,81	**PDT 150**
		1/4"Gas	2,92	**PDT 151**
	Senza valvola limitatrice di pressione Without pressure relief valve	3/8"Gas	2,73	**PDT 140**
		1/4"Gas	2,93	**PDT 141**
Coperchio di chiusura • Closing cover		1/4"Gas su P - sur P to P - in P	0,28	**PDT 103**

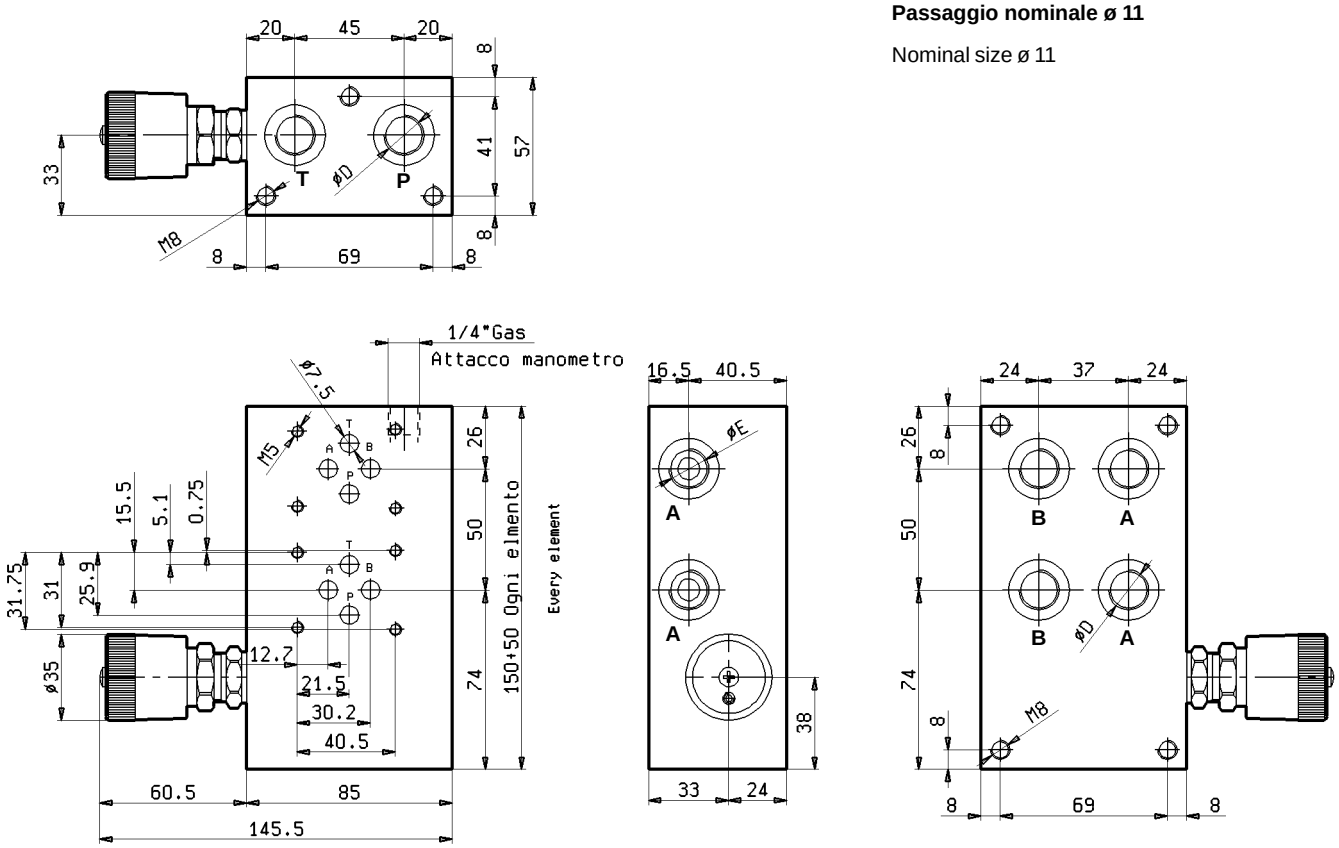
LUNGHEZZA VITI (V) O TIRANTI (T) • LENGTH OF BOLT (V) OR TIE-RODS (T)

Nr. elementi Elements no	**PDT 130/1**	**PDT 130/2**	**PDT 130/3**	**PDT 130/4**	**PDT 130/5**	**PDT 130/6**	**PDT 130/7**	**PDT 130/8**	**PDT 130/9**	**PDT 130/10**
Tiranti o viti Tie - Rods	**V** M8 x 65	**V** M8 x 115	**V** M8 x 160	**V** M8 x 210	**V** M8 x 270	**V** M8 x 315	**V** M8 x 365	**V** M8 x 410	**V** M8 x 460	**V** M8 x 510

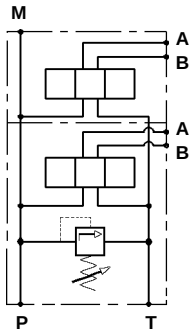
PIASTRE MONOBLOCCO PER ELETTROVALVOLE • MULTIELEMENT SUB-PLATES

Passaggio nominale ø 11

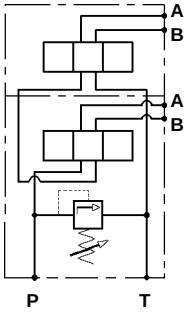
Nominal size ø 11



Tipo di piastra Type of plate		N. elettrovalvole No of solenoid valve	Ø D = 3/8"Gas Ø E = 3/8"Gas		Ø D = 1/2"Gas Ø E = M10 X 1	
			Peso • Weight **Kg**	**Codice** Code	**Peso** • Weight **Kg**	**Codice** Code
STANDARD **Collegamento in parallelo** Parallel connection	**Con valvola limitatrice di pressione VM7** With pressure relief valve VM7	2	4,63	PDT 190/2	4,57	PDT 191/2
		3	6,16	PDT 190/3	6,07	PDT 191/3
		4	7,69	PDT 190/4	7,57	PDT 191/4
		5	9,22	PDT 190/5	9,07	PDT 191/5
		6	10,75	PDT 190/6	10,57	PDT 191/6
		7	12,28	PDT 190/7	12,07	PDT 191/7
		8	13,81	PDT 190/8	13,57	PDT 191/8
		9	15,34	PDT 190/9	15,07	PDT 191/9
		10	16,87	PDT 190/10	16,57	PDT 191/10
	Senza valvola limitatrice di pressione (chiusa con tappo) Without pressure relief valve (closed with cap)	2	4,58	PDT 180/2	4,52	PDT 181/2
		3	6,11	PDT 180/3	6,02	PDT 181/3
		4	7,64	PDT 180/4	7,52	PDT 181/4
		5	9,17	PDT 180/5	9,02	PDT 181/5
		6	10,70	PDT 180/6	10,52	PDT 181/6
		7	12,23	PDT 180/7	12,02	PDT 181/7
		8	13,76	PDT 180/8	13,52	PDT 181/8
		9	15,29	PDT 180/9	15,02	PDT 181/9
		10	16,82	PDT 180/10	16,52	PDT 181/10



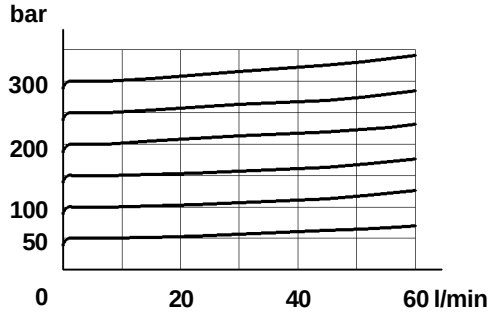
Tipo di piastra Type of plate		N. elettrovalvole No. of solenoid valve	Ø D = 3/8"Gas Ø E = 3/8"Gas		Ø D = 1/2"Gas Ø E = M10 X 1	
			Peso • Weight **Kg**	**Codice** Code	**Peso** • Weight **Kg**	**Codice** Code
Collegamento in serie Series connection	**Con valvola limitatrice di pressione VM7** With pressure relief valve VM7	2	4,63	PDT 190/2-S	4,57	PDT 191/2-S
		3	6,16	PDT 190/3-S	6,07	PDT 191/3-S
		4	7,69	PDT 190/4-S	7,57	PDT 191/4-S
		5	9,22	PDT 190/5-S	9,07	PDT 191/5-S
		6	10,75	PDT 190/6-S	10,57	PDT 191/6-S
		7	12,28	PDT 190/7-S	12,07	PDT 191/7-S
		8	13,81	PDT 190/8-S	13,57	PDT 191/8-S
		9	15,34	PDT 190/9-S	15,07	PDT 191/9-S
		10	16,87	PDT 190/10-S	16,57	PDT 191/10-S
	Senza valvola limitatrice di pressione (chiusa con tappo) Without pressure relief valve (closed with cap)	2	4,58	PDT 180/2-S	4,52	PDT 181/2-S
		3	6,11	PDT 180/3-S	6,02	PDT 1813-S
		4	7,64	PDT 180/4-S	7,52	PDT 181/4-S
		5	9,17	PDT 180/5-S	9,02	PDT 181/5-S
		6	10,70	PDT 180/6-S	10,52	PDT 181/6-S
		7	12,23	PDT 180/7-S	12,02	PDT 181/7-S
		8	13,76	PDT 180/8-S	13,52	PDT 181/8-S
		9	15,29	PDT 180/9-S	15,02	PDT 181/9-S
		10	16,82	PDT 180/10-S	16,52	PDT 181/10-S



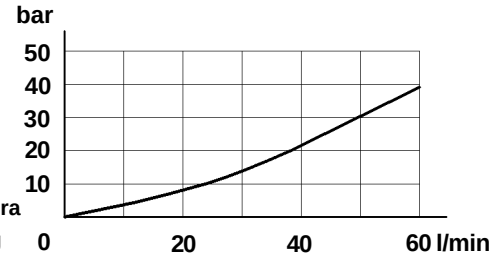
VALVOLA LIMITATRICE DI PRESSIONE A CARTUCCIA
CARTRIDGE TYPE PRESSURE RELIEF VALVE

Tipi Types	**Portata max** Max flow **l/min**	**Pressione max** Max pressure **bar**	**Campo di taratura** Pressure range **bar**
VM 7	60	310	**0 : 0 ÷ 75 bar** **1 : 15 ÷ 150 bar** **2 : 35 ÷ 210 bar** **3 : 120 ÷ 310 bar**
VM 10	80	300	**0 : 0 ÷ 60 bar** **1 : 10 ÷ 140 bar** **2 : 20 ÷ 200 bar** **3 : 50 ÷ 300 bar**

Curve di apertura
Opening curves

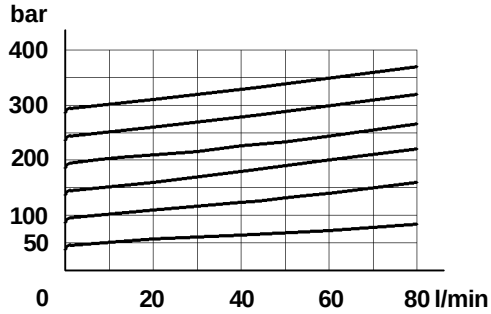


VM 7

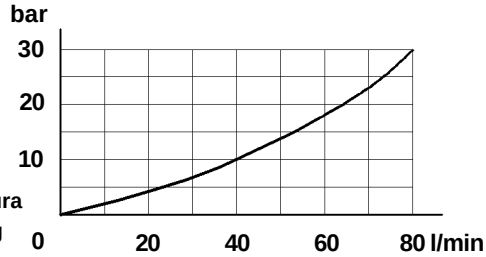


Valore min di taratura
Min adjustable setting

Curve di apertura
Opening curves



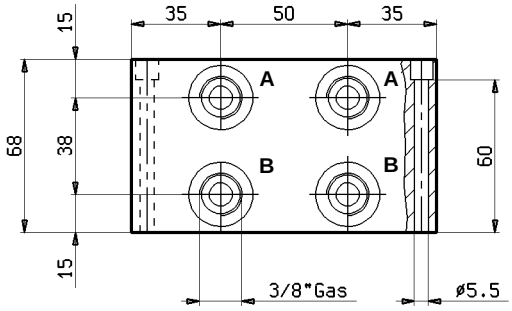
VM 10

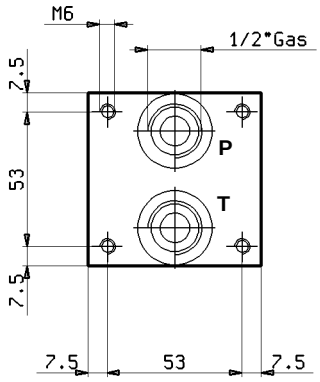


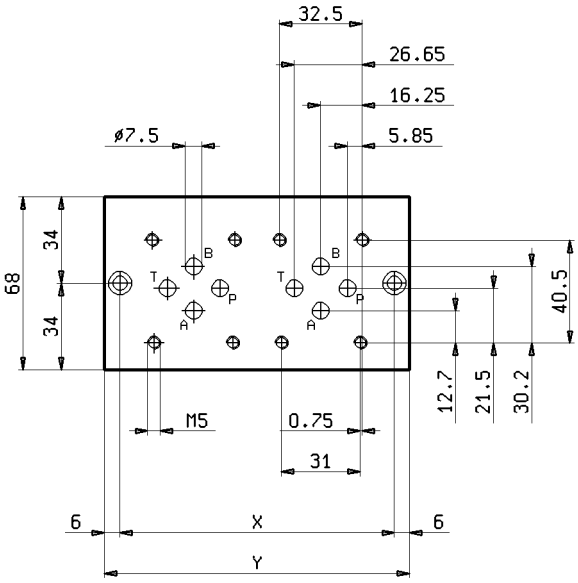
Valore min di taratura
Min adjustable setting

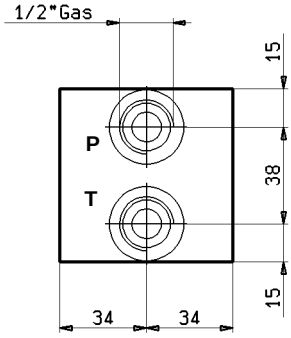
Passaggio nominale ø 11

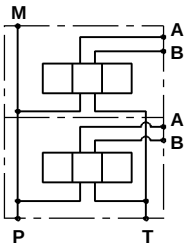
Nominal size ø 11





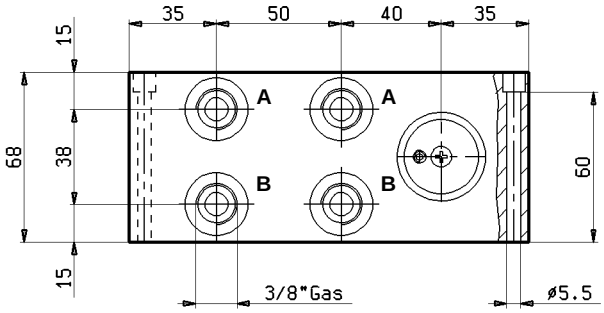




Tipo di piastra Type of plate	**N. elettrovalvole** No of solenoid valve	**X** **mm**	**Y** **mm**	**Peso** Weight **Kg**	**Codice** Code
Collegamento in parallelo Parallel connection 	1	58	70	2,00	PDT 182/1
	2	108	120	3,45	PDT 182/2
	3	158	170	4,90	PDT 182/3
	4	208	220	6,35	PDT 182/4
	5	258	270	7,80	PDT 182/5
	6	308	320	9,25	PDT 182/6
	7	358	370	10,70	PDT 182/7

Passaggio nominale ø 11

Nominal size ø 11

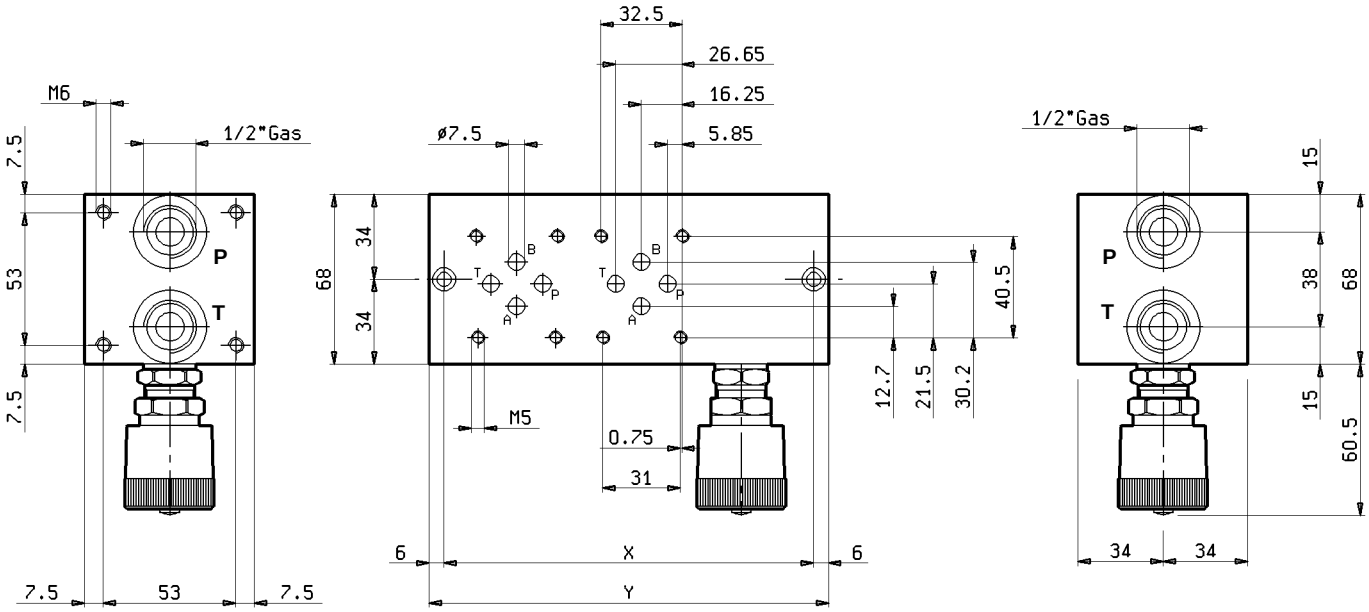


VM 7

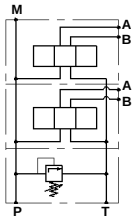
Campo di taratura

Pressure range

0 : 0 ÷ 75 bar
1 : 15 ÷ 150 bar
2 : 35 ÷ 210 bar
3 : 120 ÷ 310 bar



Tipo di piastra Type of plate	**N. elettrovalvole** No. of solenoid valve	**X** **mm**	**Y** **mm**	**Peso** Weight **Kg**	**Codice** Code
Collegamento in parallelo con valvola limitatrice di pressione incorporata VM7 Parallel connection with built-in pressure relief valve VM7	1	98	110	3,60	PDT 192/1
	2	148	160	5,05	PDT 192/2
	3	198	210	6,50	PDT 192/3
	4	248	260	7,95	PDT 192/4
	5	298	310	9,40	PDT 192/5
	6	348	360	10,85	PDT 192/6
	7	398	410	12,30	PDT 192/7



ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

PDT 190 / 2 1 V

Serie • Series

Tipo di piastra • Sub plate type

Nº degli elementi • Elements no.

Taratura a volantino (V) od a chiave (F)

Setting by knob (V) or screw (F)

Campo di taratura

Pressure range

PA 03

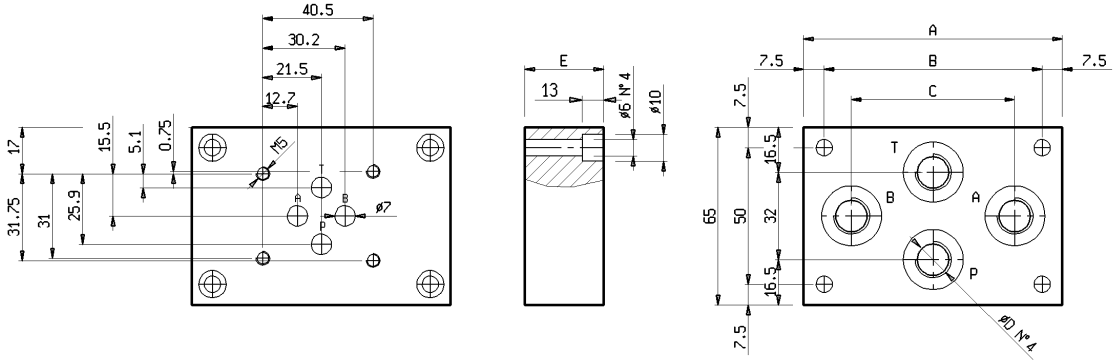
Piastre per elettrovalvole LC 1

Sub-plates for solenoid valves LC 1

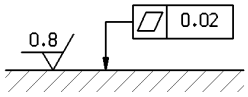
CARATTERISTICHE TECNICHE
Grandezza: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Disponibili con o senza valvola limitatrice di pressione
Versione in lega di alluminio 2011 UNI 9002 / 5 anodizzata nera
Pressione max di lavoro: 250 bar
Circuiti in parallelo. Circuiti in serie a richiesta.

TECHNICAL CHARACTERISTICS
Size: ISO 4401 DIN 24 340 NG6 NFPA D03 CETOP 3
Available with or without pressure relief valve
Version made in aluminum 2011 UNI 9002 / 5 anodized black
Max working pressure: 250 bar
Parallel circuits. Series circuits by request.

PA 03.020 Tipo con attacchi A-B-P-T posteriori • Type with rear A-B-P-T ports

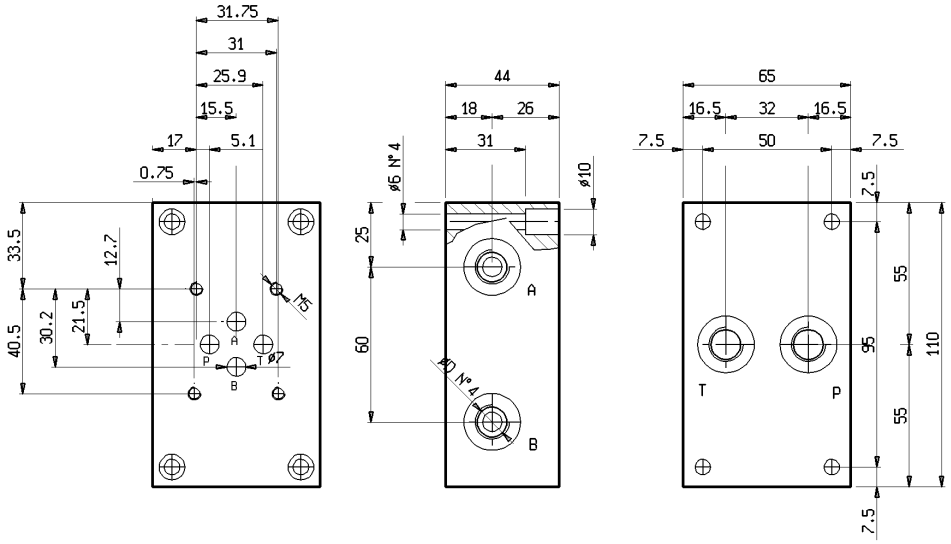


Qualità superficie di attacco
Mounting plane quality

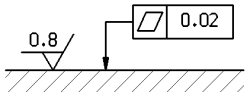


Codice Code	Ø D	A mm	B mm	C mm	E mm	Peso Weight
PA 03.020.09	1/4"	95	80	60	29	0,445 Kg
PA 03.020.02	3/8"	95	80	60	29	0,430 Kg
PA 03.020.03	1/2"	110	95	65	44	0,405 Kg

PA 03.021 Tipo con attacchi A-B laterali • Type with lateral A-B work ports

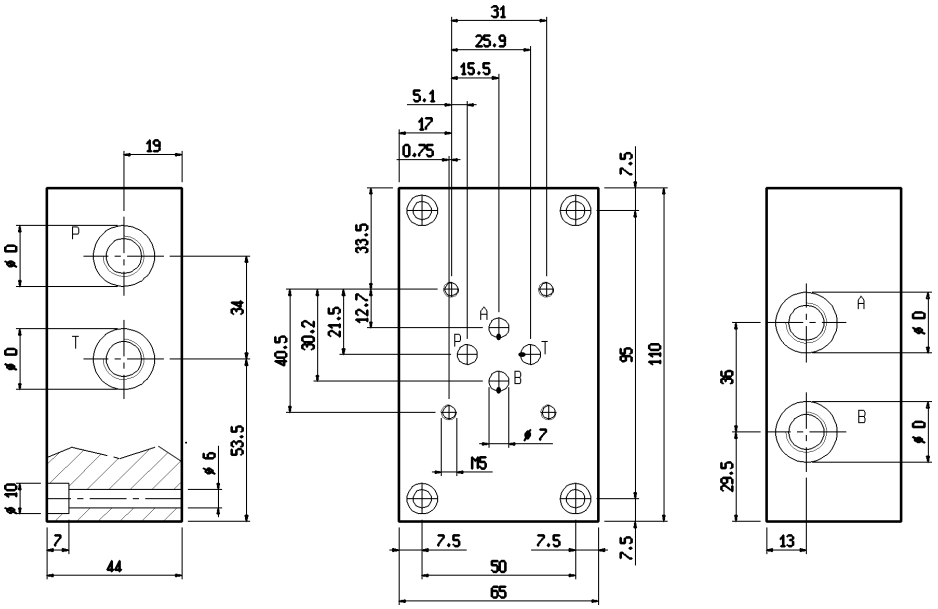


Qualità superficie di attacco
Mounting plane quality

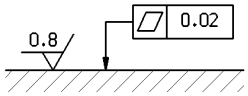


Codice Code	Ø D	Peso Weight
PA 03.021.09	1/4"	0,810 Kg
PA 03.021.02	3/8"	0,795 Kg
PA 03.021.03	1/2"	0,770 Kg

PA 03.027 Tipo con attacchi P-T e A-B laterali • Type with lateral P-T and A-B work ports



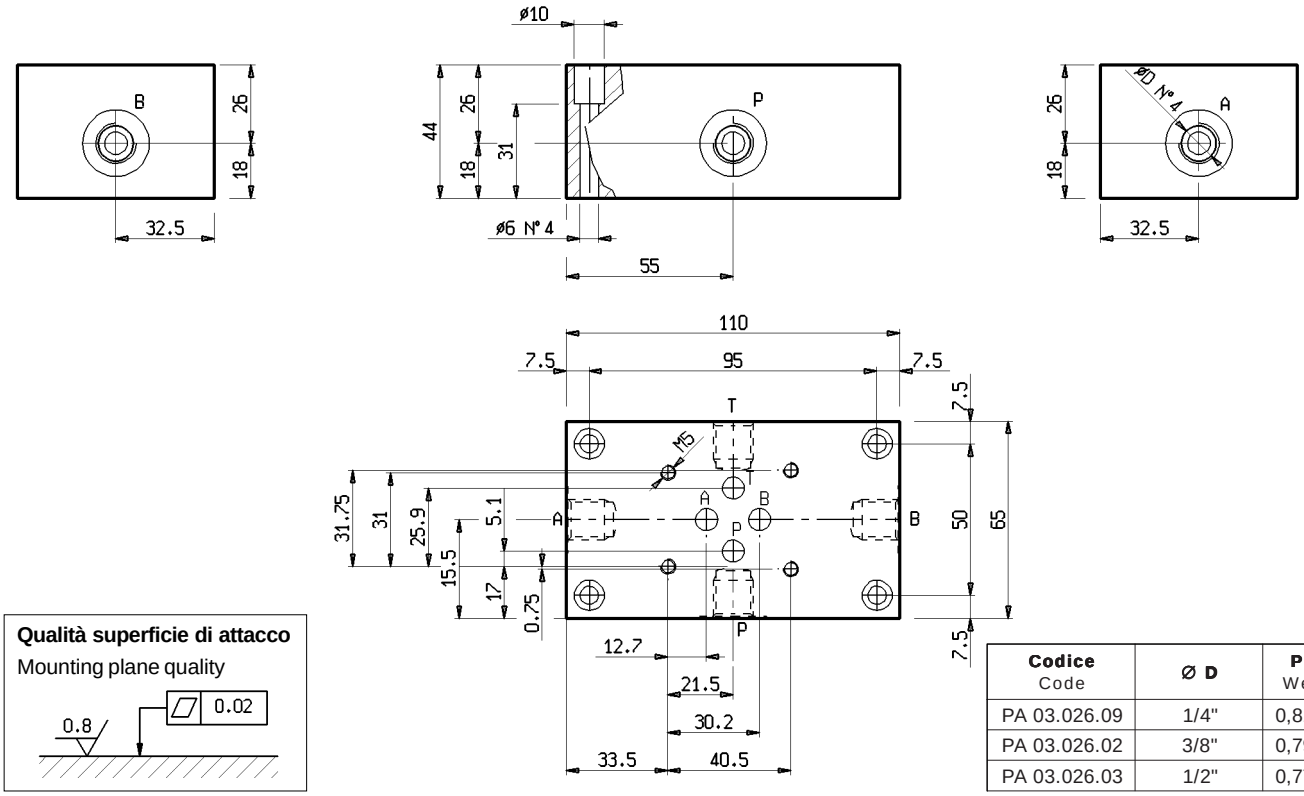
Qualità superficie di attacco
Mounting plane quality



Codice Code	Ø D	Peso Weight
PA 03.027.09	1/4"	0,350 Kg
PA 03.027.02	3/8"	0,350 Kg
PA 03.027.03	1/2"	0310 Kg

PA 03.026 Tipo con attacchi A-B-P-T laterali su 4 lati

Type with lateral A-B-P-T ports on 4 sides



Qualità superficie di attacco

Mounting plane quality

Codice Code	Ø D	Peso Weight
PA 03.026.09	1/4"	0,810 Kg
PA 03.026.02	3/8"	0,795 Kg
PA 03.026.03	1/2"	0,770 Kg

PA 03.023 Tipo con valvola limitatrice di pressione VM7 incorporata (attacchi AB laterali)

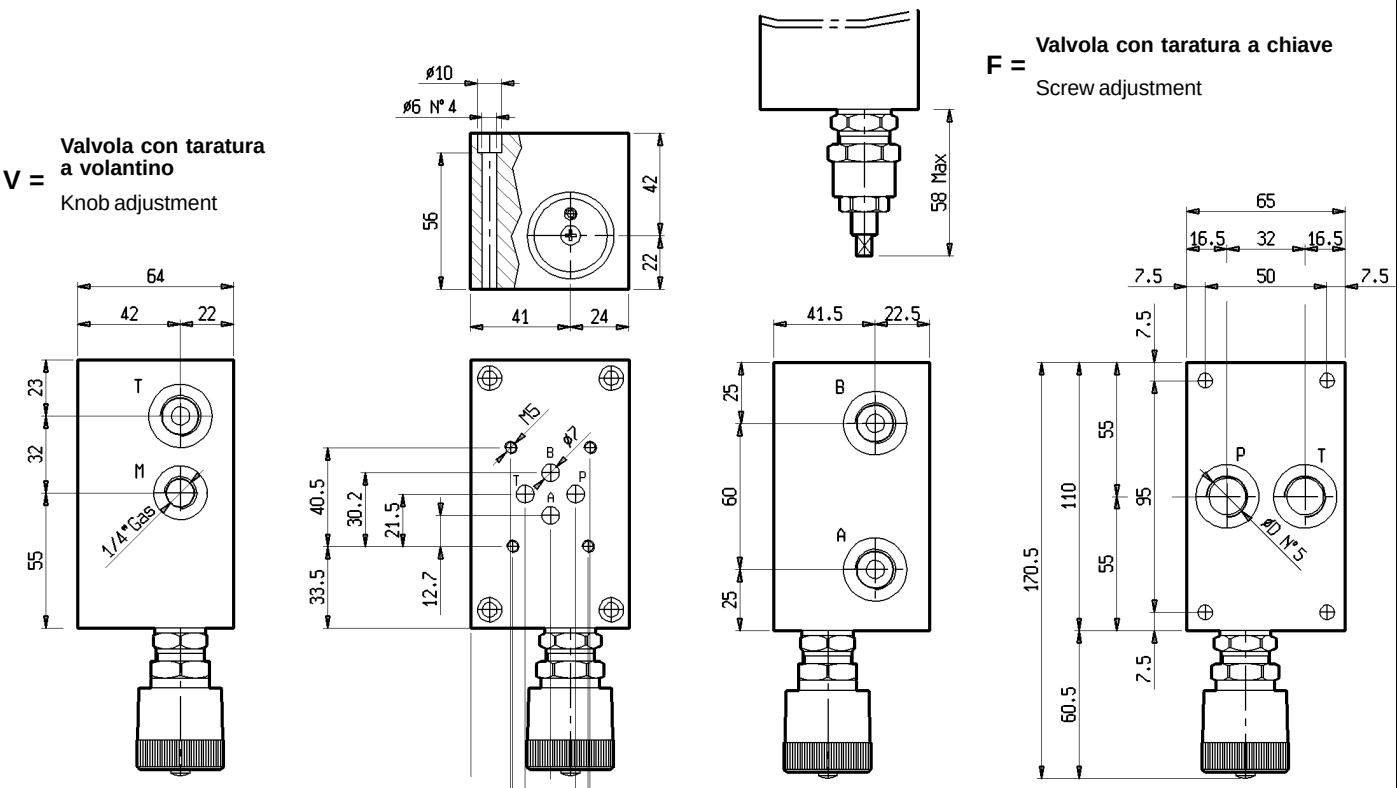
Type including VM7 pressure relief valve (lateral AB ports)

V = **Valvola con taratura a volantino**

Knob adjustment

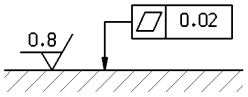
F = **Valvola con taratura a chiave**

Screw adjustment



Qualità superficie di attacco

Mounting plane quality



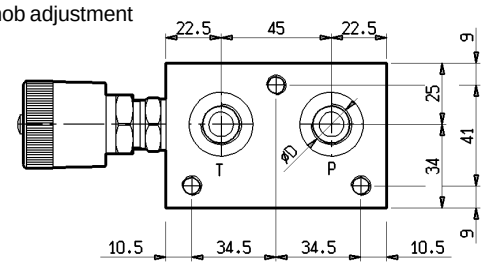
xx = Codice valvola limitatrice di pressione (pag 2.200.08)

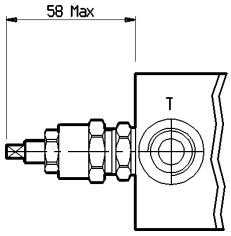
xx = Pressure relief valve code

(See page 2.200.08)

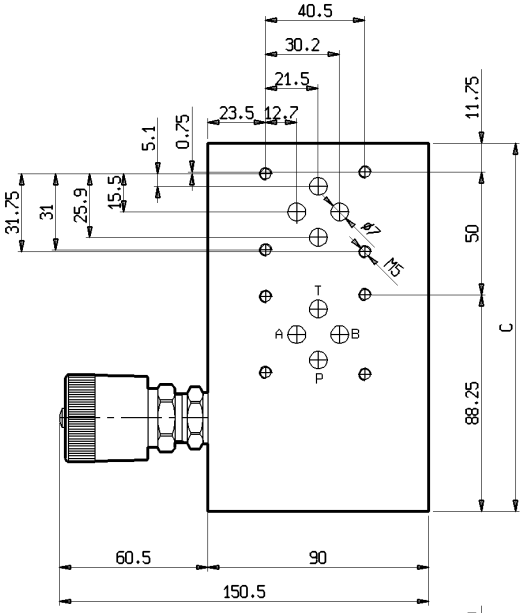
Codice Code	Ø D	Peso Weight
PA 03.023.02.xx	3/8"	1,360 Kg
PA 03.023.03.xx	1/2"	1,335 Kg

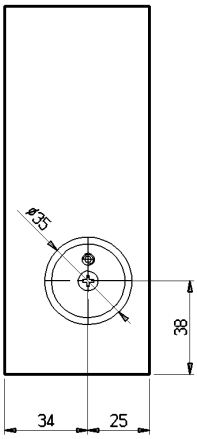
V = **Valvola con taratura a volantino**
Knob adjustment

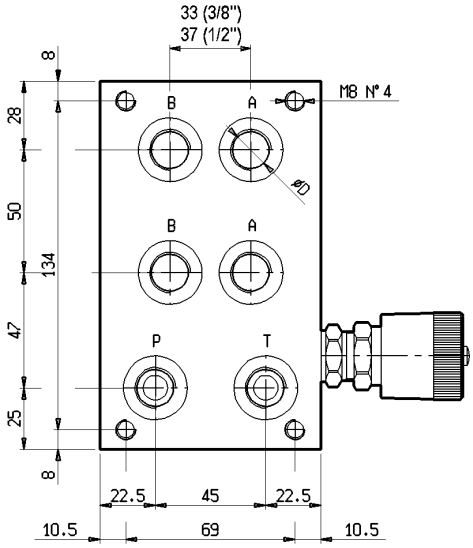


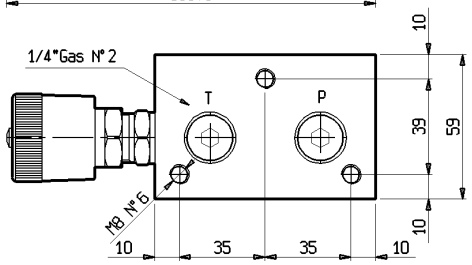


F = **Valvola con taratura a chiave**
Screw adjustment



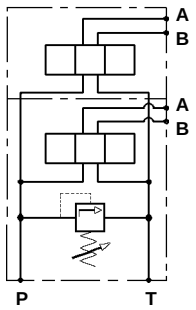






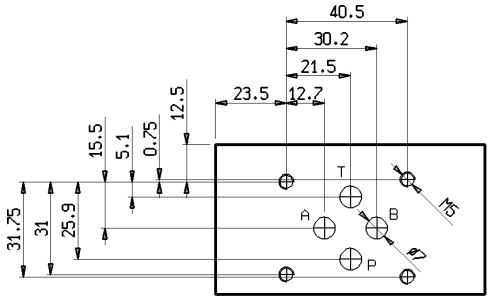
xx = Codice valvola limitatrice di pressione (Vd pag 2.200.08)
00 = Senza valvola limitatrice di pressione.
xx = Pressure relief valve code (See page 2.200.08)
00 = Without pressure relief valve.

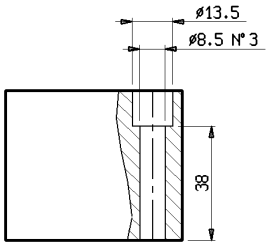
Tipo di piastra modulare Type of modular mounting plate		**Nr elettrovalvole** No of valves	**Attacchi** Ports size **Ø D**	**C** **mm**	**AI 2011**	
					Peso Weight **Kg**	**Codice** Code
Circuiti in parallelo Parallel connection	**Con valvola limitatrice di pressione VM7** With pressure relief valve VM7	2	3/8"	150	2,160	PA 03.091.02.xx.2E.P
		3		200	2,860	PA 03.091.02.xx.3E.P
		4		250	3,560	PA 03.091.02.xx.4E.P
		2	1/2"	150	2,100	PA 03.091.03.xx.2E.P
		3		200	2,800	PA 03.091.03.xx.3E.P
		4		250	3,500	PA 03.091.03.xx.4E.P
	Senza valvola limitatrice di pressione (chiusa con tappo) Without pressure relief valve (closed with cap)	2	3/8"	150	2,000	PA 03.081.02.00.2E.P
		3		200	2,700	PA 03.081.02.00.3E.P
		4		250	3,400	PA 03.081.02.00.4E.P
		2	1/2"	150	1,940	PA 03.081.03.00.2E.P
		3		200	2,640	PA 03.081.03.00.3E.P
		4		250	3,340	PA 03.081.03.00.4E.P

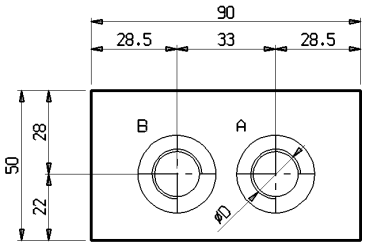


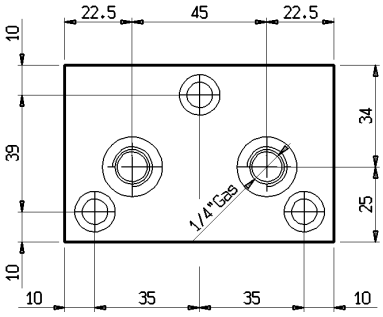
ELEMENTI MODULARI SINGOLI • MODULAR SINGLE ELEMENTS

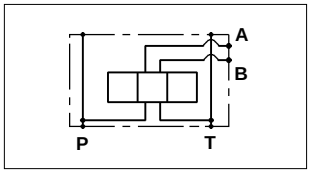
Uno o più elementi modulari singoli si possono comporre con la piastra modulare (Vd pag 2.200.04)
One or more single element can be assembled with modular sub-plate (See page 2.200.04)



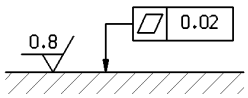








Qualità superficie di attacco
Mounting plane quality



Codice Code	Ø D	**Peso** Weight
PA 03.030.02	3/8"	0,665 Kg
PA 03.030.03	1/2"	0,640 Kg

SOLUZIONI DI MONTAGGIO • ASSEMBLING OPTIONS

Viti di assemblaggio • Assembling screws

Nº3 DIN 912-8.8 M8 x A

Momento massimo di serraggio: 13 Nm

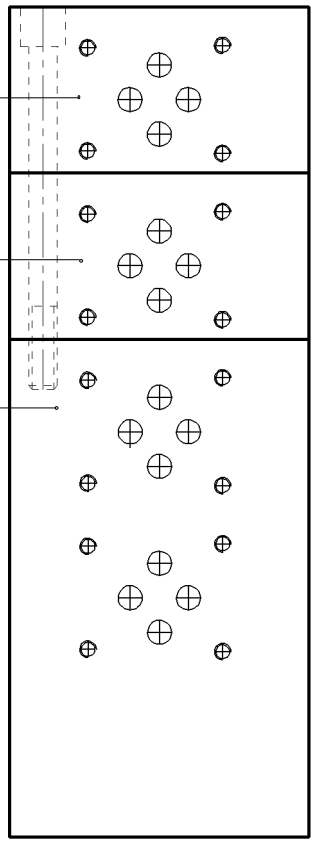
Maximum blocking torque: 13 Nm

Esempio di montaggio • Assembling example

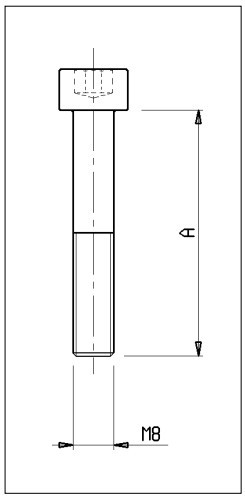
Elemento modulare singolo PA 03.030.02
Modular single element
PA 03.030.02

Elemento modulare singolo PA 03.030.02
Modular single element
PA 03.030.02

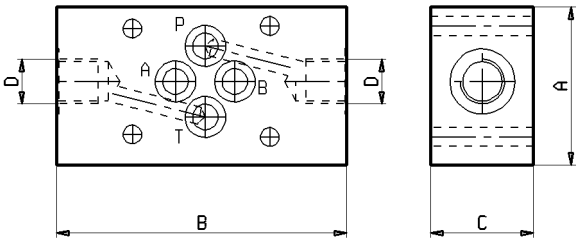
Piastra modulare per 2 valvole PA 03.081.02.00.2E.P
Modular sub-plate for 3 valves
PA 03.081.02.00.2E.P



Nr elementi modulari singoli da aggiungere No of modular single elements to be added	**A** **mm**	**Codice vite** Screw code
1	50	42 - 0170
2	100	42 - 0172
3	150	42 - 01741
4	200	42 - 01753
5	250	42 - 01763
6	300	-



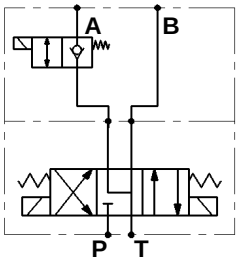
PIASTRE DI COLLEGAMENTO • CONNECTION SUB-PLATES



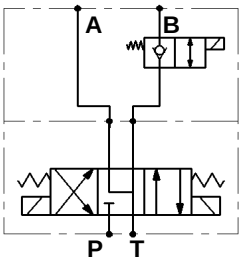
Collegamento supplementare Additional connection	D	A mm	B mm	C mm	Peso Weight (AI 2011)	Codice Designation code
A	1/4" Gas	46	67	30	0,20 Kg	PA.03.0A9.09
B	1/4" Gas	46	67	30	0,20 Kg	PA.03.0B9.09
AB	1/4" Gas	46	67	30	0,19 Kg	PA.03.AB9.09
PT	1/4" Gas	46	67	30	0,20 Kg	PA.03.PT9.09
A	3/8" Gas	46	72	30	0,20 Kg	PA.03.0A9.02
B	3/8" Gas	46	72	30	0,20 Kg	PA.03.0B9.02
AB	3/8" Gas	46	72	30	0,19 Kg	PA.03.AB9.02
PT	3/8" Gas	46	72	30	0,20 Kg	PA.03.PT9.02
P →A / B→T	-	46	64	20	0,13 Kg	PA.03.014
P →B / A→T	-	46	64	20	0,13 Kg	PA.03.011

PIASTRE MODULARI PER VALVOLE VEI • PACKING PLATES FOR VEI VALVES

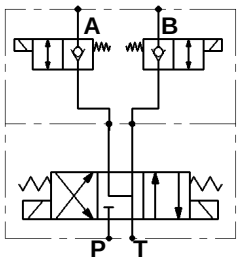
PA 03.0A5 + VEI/A

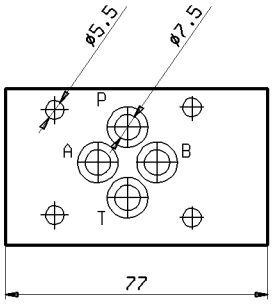


PA 03.0B5 + VEI/B

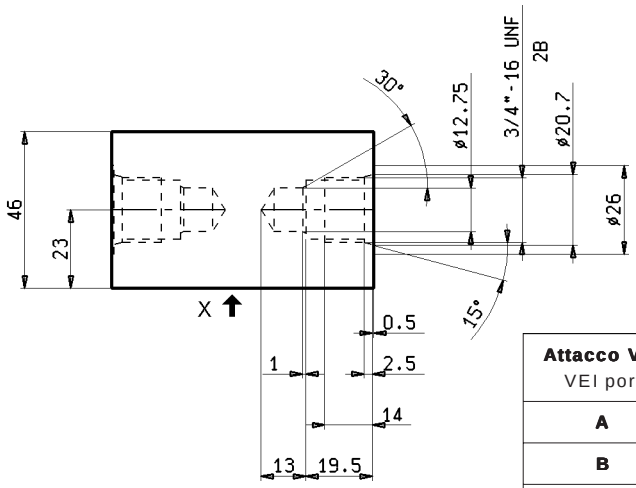


PA 03.AB5 + VEI/AB



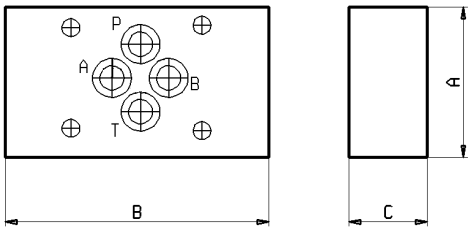


Vista da X



Attacco VEI VEI port	Peso • Weight (AI 2011)	Codice • Code
A	0,350 Kg	PA 03.0A5
B	0,350 Kg	PA 03.0B5
A + B	0310 Kg	PA 03.AB5

PIASTRE DI RIDUZIONE • REDUCTION PLATES

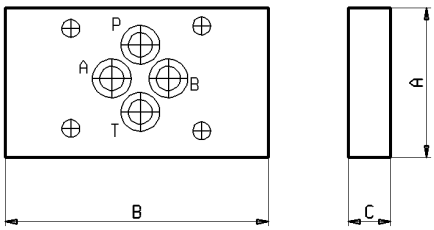


Tipo Type	A mm	B mm	C mm	Peso Weight (AI 2011)	Codice Code
LC 1 / LC 0.4	46	64	25	0,18 Kg	PA.03.005

N.B. Nel passaggio Cetop3→ Cetop2 gli utilizzi A e B vengono invertiti

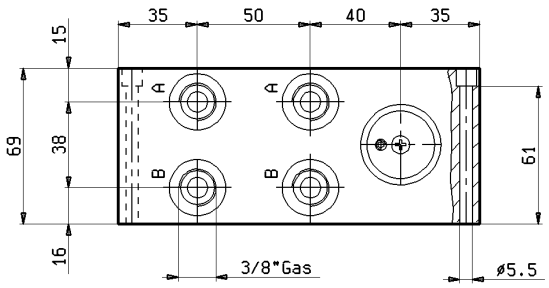
Important Information: From Cetop3 to Cetop2, A and B ports are inverted

PIASTRE DI CHIUSURA • CLOSING PLATES

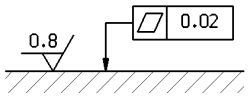


Tipo Type	A mm	B mm	C mm	Peso Weight (AI 2011)	Codice Code
Chiusura·Closing	46	64	10	0,08 Kg	PA 03.001

PIASTRE MONOBLOCCO • MONOBLOC PLATES

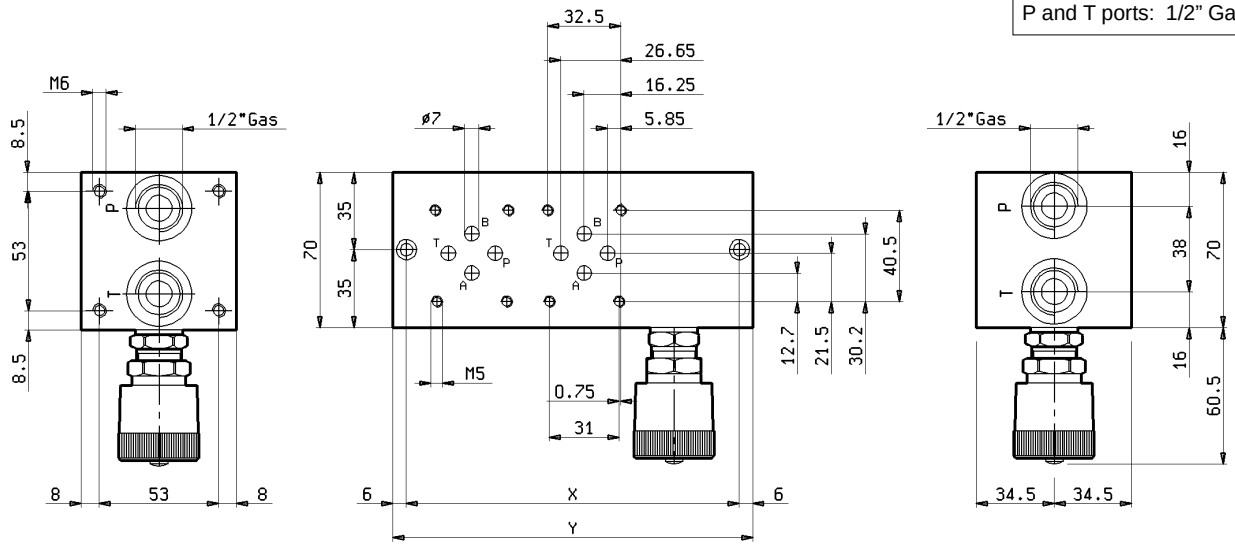


Qualità superficie di attacco
Mounting plane quality

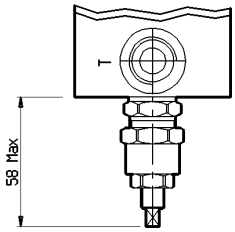


Nota Bene • Important Information

Attacchi A e B: 3/8" Gas
Attacchi P e T: 1/2" Gas
A and B ports: 3/8" Gas
P and T ports: 1/2" Gas



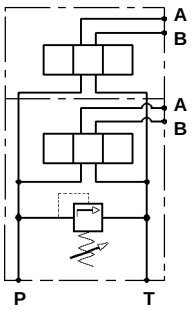
V = Valvola con taratura a volantino
Knob adjustment



F = Valvola con taratura a chiave
Screw adjustment

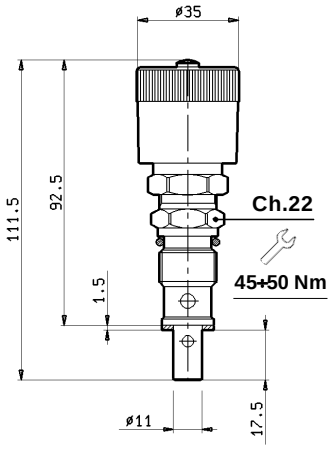
xx = Codice valvola limitatrice di pressione (Vd pag 2.200.08)
00 = Senza valvola limitatrice di pressione.
xx = Pressure relief valve code (See page 2.200.08)
00 = Without pressure relief valve.

Tipo di piastra Type of mounting plate		**Nr elettrovalvole** No of valves	**Y** **mm**	**X** **mm**	**Al 2011**	
					Peso Weight **Kg**	**Codice** Code
Circuiti in parallelo Parallel connection	**Con valvola limitatrice di pressione VM7** With pressure relief valve VM7	2	160	148	1,70	PA 03.092.02.xx.2E.P
		3	210	198	2,20	PA 03.092.02.xx.3E.P
		4	260	248	2,70	PA 03.092.02.xx.4E.P
		5	310	298	3,20	PA 03.092.02.xx.5E.P
		6	360	348	3,70	PA 03.092.02.xx.6E.P
		7	410	398	4,20	PA 03.092.02.xx.7E.P
		8	460	448	4,70	PA 03.092.02.xx.8E.P
	Senza valvola limitatrice di pressione Without pressure relief valve	2	120	108	1,15	PA 03.082.02.00.2E.P
		3	170	158	1,65	PA 03.082.02.00.3E.P
		4	220	208	2,15	PA 03.082.02.00.4E.P
		5	270	258	2,65	PA 03.082.02.00.5E.P
		6	320	308	3,15	PA 03.082.02.00.6E.P
		7	370	358	3,65	PA 03.082.02.00.7E.P
		8	420	408	4,15	PA 03.082.02.00.8E.P

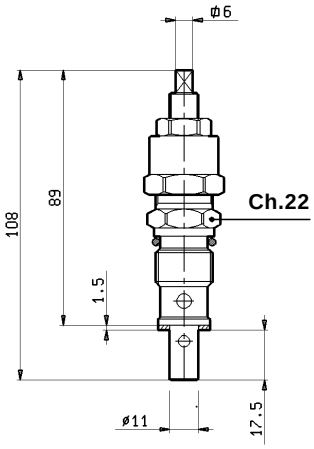


VALVOLA LIMITATRICE DI PRESSIONE A CARTUCCIA
CARTRIDGE TYPE PRESSURE RELIEF VALVE

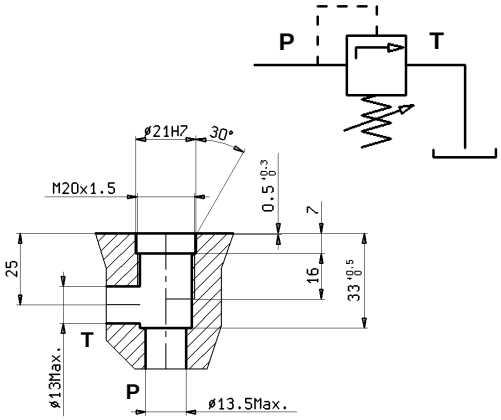
Tipo Type **V**



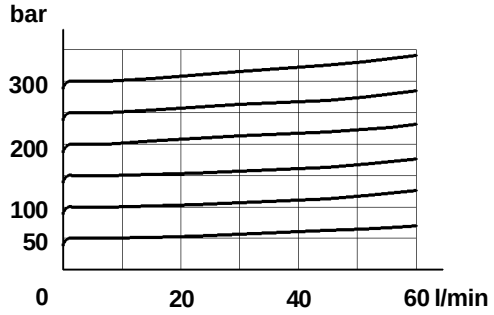
Tipo Type **F**



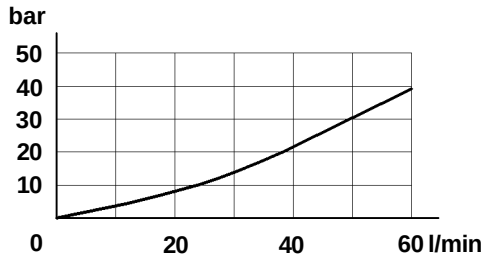
VM 7



Curve di apertura • Opening curves



Valore min di taratura • Min adjustable setting



Tipo Type	**Codice taratura (xx)** Adjustment code (x x)		**Portata massima** Max flow	**Pressione massima** Max pressure	**Campo di taratura** Pressure range	**Cavità** Cavity	**Peso** Weight
	Volantino Knob	**Chiave** Screw	**l/min**	**bar**	**bar**	**nº**	**Kg**
VM7	**0 V**	**0 F**	60	310	0 ÷ 75	11	0.160
	1 V	**1 F**			15 ÷ 150		
	2 V	**2 F**			35 ÷ 210		
	3 V	**3 F**			120 ÷ 310		

0 0 : Senza valvola limitatrice di pressione / Without pressure relief valve

ESEMPIO DI CODIFICA PER ORDINAZIONE • HOW TO ORDER

PA 03 . 091 . 02 . 1 V . 2 E . P

Serie • Series

Grandezza • Size

Tipo di piastra • Sub plate type

Tipo di attacco • Port type

P = **Collegamento in parallelo** · Parallel connection
S = **Collegamento in serie** · Series connection

Numero di elementi
Elements number

Taratura a volantino (V) od a chiave (F)
Setting by knob (V) or screw (F)

Campo di taratura
Pressure range

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