CATALOGUE

Pressure relief valves

walvoil
HYDRAULIC CONTROL SYSTEMS

WARNING!

Variations and modifications of technical features and dimensions are reserved.
WALVOIL S.p.A. also reserves the right to stop production of each and any model listed in the catalogue with no notice.

WALVOIL IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY AN INCORRECT USE OF THE PRODUCT.

1st EDITION MAY 2010

General Information

Fluid:best use mineral oil with viscosity ranging between 10 and 200 cSt.
Filter:dirty oil is the main reason for failure and troubles of hydraulic parts and systems.
The table below contains **OLEOSTAR S.p.A**. recommendations about the minimum oil contamination level according to individual specifications of different items. For further safety of your hydraulic equipment and of all valves assembled on it, we either recommend use suction filters (rather than return filters) or separated filter lines.

TYPE OF EQUIPMENT - TYPE OF VALVE	CONTAMINATION LEVEL According to ISO 4406
- Heavy duty equipment - Equipment running at 210-350 bar (3050-5100 psi) working pressure - Equipment using proportional controls - Equipment with high frequency cycles	-/16/13
- Equipment running up to 210 bar *(3050 psi)* working pressure - Spool-type valves - Valves with calibrated ports	-/18/14
- Equipment running at low working pressure - Pilot plants and equipment - Equipment with low frequency cycles	-/19/15

Installation:make sure to provide suitable gasket lubrication with clean oil before screwing the cartridge on the valve body . Also make sure to screw the cartridge manually in to reach against the gaskets in the valve body.
Material:internal components made out of high grade steel duly treated and fabricated.
For more information please ask our technical office .
Working temperature:min. -25°C *(-13°F)* max. 90°C *(194°F)* with standard BUNA N seals.
min. -20°C *(-4°F)* max. 200°C *(392°F)* with optional VITON seals.
Rating diagrams:all rating diagrams of this catalogue are measured with mineral oil of 46 cSt viscosity at 40° *(104°F)* temperature.
All drawings dimensions are defined as $\frac{mm}{in}$

Index

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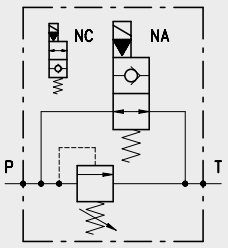
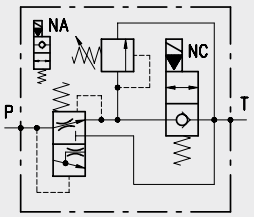
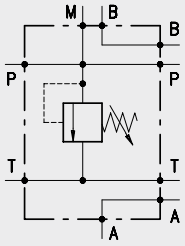
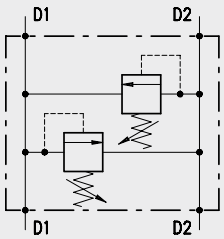
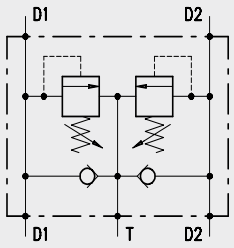
Index

Hydraulic diagram	Type	Description	Maximum flow up to		Maximum pressure		Page
			l/min	*US gpm*	bar	*psi*	
	**VMP/VE 14 (38)**	Pressure relief valve with electric bypass	35	*9.2*	350	*5100*	77

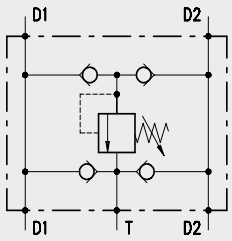
Hydraulic diagram	Type	Description	Maximum flow up to		Maximum pressure		Page
			l/min	*US gpm*	bar	*psi*	
	**VMP/VE 12 (34)**	Pressure relief valve with electric bypass	90	*24*	350	*5100*	73
	VMP/VE 100 (114)		250	*66*			

Hydraulic diagram	Type	Description	Maximum flow up to		Maximum pressure		Page
			l/min	*US gpm*	bar	*psi*	
	**PBL**	Basic block (NG 06 or 10) with conical pressure relief valve, direct acting	60	*16*	350	*5100*	81

Hydraulic diagram	Type	Description	Maximum flow up to		Maximum pressure		Page
			l/min	*US gpm*	bar	*psi*	
	**VAIL**	Dual cross-line relief valve. Direct acting, poppet type, line mounting.	180	*48*	350	*5100*	85
	VADDL	Dual cross-line relief valve. Differential control, poppet type, line mounting					

Hydraulic diagram	Type	Description	Maximum flow up to		Maximum pressure		Page
			l/min	*US gpm*	bar	*psi*	
	**VAIL/VA**	Dual cross-line relief valve. Direct acting, poppet type, line mounting.	80	*21*	300	*4350*	93
	VADDL/VA	Dual cross-line relief valve with anti cavitation. Differential control, poppet type, line mounting	180	*48*	350	*5100*	

Index

Hydraulic diagram	Type	Description	Maximum flow up to		Maximum pressure		Page
			l/min	*US gpm*	bar	*psi*	
	**VAA/RU/DL**	Antishock valve with anti cavitation and single pressure adjustment. Differential control, poppet type line mounting	180	*48*	350	*5100*	99

Proportional Coils

Solenoid Connectors

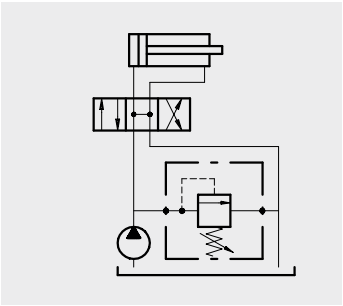
Adjustments

Valves bodies

Cavities, tool and tap

Operation

Allows oil flow from P (1) to T (2) when pressure in P (1) reaches the setting of the spring.



Performance

Body Valves

Type VMP	Maximum flow		Maximum pressure		Application range with standard spring*	Hysteresis	Oil leaks from P to T	Weight		Cavities and tools
	l/min	*US gpm*	bar	*psi*				kg	*lb*	
VMP 02	5	*1.32*	350	*5100*	**TV)** 5÷80 bar - *72.5÷1150 psi* **TS)** 50÷220 bar - *725÷ 3200 psi* **TR)** 180÷350 bar - *2600÷5100 psi*	90% of the setting value for flow capacity 1 l/min. *(0,26 US gpm)*	disregar-dable	0,05	*0.11*	Cavity VSE/ P/2/150 see page 113
VMP 5	35	*9.2*			**TB)** 5÷40 bar - *72.5÷580 psi* **TV)** 20÷80 bar - *290÷1150 psi* **TS)** 50÷220 bar - *725÷ 3200 psi* **TR)** 180÷350 bar - *2600÷5100 psi*	85% of the setting value for flow capacity 1 l/min. *(0,26 US gpm)*		0,14	*0.31*	Cavity VMP 5 see page 114
VMP 5Y					**TB)** 5÷80 bar - *72.5÷1150 psi* **TV)** 40÷150 bar - *580÷2200 psi* **TS)** 140÷190 bar - *2050÷2750 psi* **TR)** 180÷350 bar - *2600÷5100 psi*					
VMP 5J					**TV)** 40÷80 bar - *580÷1150 psi* **TS)** 63÷200 bar - *910÷2900 psi* **TR)** 160÷315 bar - *2300÷4600 psi*					
VMP 10	60	*16*			See VMP 5			0,25	*0.55*	Cavity VMP 10 see page 115
VMP 10Y	100	*26*	315	*4600*	**TV)** 100÷160 bar - *1450÷2400 psi* **TS)** 125÷250 bar - *1800÷3600 psi* **TR)** 200÷315 bar - *2900÷4600 psi*			0,45	*0.99*	Cavity VMP 20 see page 116
VMP 20	100	*26*	400	*5800*	See VMP 5					
VMP 20Y	160	*42*	315	*4600*	See VMP 10Y					
VMP 12	35	9.2	300	*4350*	5÷40 bar - *72.5÷580 psi* (test setting: 30 bar - *430 psi* at 5 l/min. *-1.32 US gpm)* 20÷100 bar - *290÷1450 psi* (test setting: 70 bar - *1010 psi* at 5 l/min. - *1.32 US gpm)* 50÷200 bar - *725÷2900 psi* (test setting: 140 bar - *2050 psi* at 5 l/min. - *1.32 US gpm)*** 100÷300 bar - *1450÷4350 psi (*test setting: 210 bar - *3050 psi* at 5 l/min. - *1.32 US gpm)***			0,20	*0.44*	Cavity VMP 12 see page 120
VMP 34	80	*21*						0,33	*0.73*	Cavity VMP 34 see page 121

***To perform setting of the valve see the pressure drop/ flow diagram**

****(Only for VMP34) when the valve is ordered by itself max adjustable pressure is 150 bar *(2200 psi)*. Cartridge may be set higher than 150 bar *(2200 psi)* when installed in the machine or into a proper body**

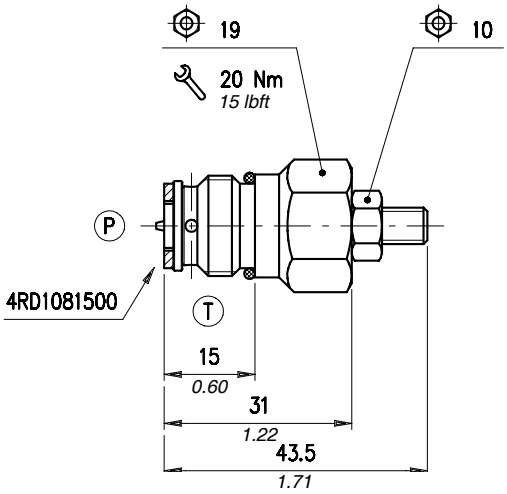
Cartridges

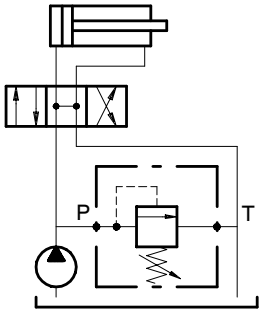
Type MC	Maximum flow		Max. pres		Application range with standard spring*	Hysteresis	Oil leaks from 1 to 2	Weight		Cavities and tools
	l/min	*US gpm*	bar	*psi*				kg	*lb*	
MC08A	10	*2.6*	350	*5100*	**1)** 5÷50 bar - *72.5÷725 psi* (test setting 30 bar - *435 psi* at 5 l/min.- *1.32 US gpm*) pressure increase by steps 11,5 bar -*165 psi* per screw turn **2)** 50÷200 bar - *725÷2900 psi* (test setting 150 bar - *2200 psi* at 5 l/min.-*1.32 US gpm*-) pressure increase by steps 31,5 bar - *450 psi* per screw turn **3)** 150÷350 bar - *2175÷5100 psi* (test setting 250 bar-*3600 psi* at 5 l/min.-*1.32 US gpm*-) pressure increase by steps 74 bar -*1070 psi* per screw turn	90% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	disregardable	0,19	*0.42*	● see cavity SAE 8-2 page 112
MC08D	20	*5.3*			**1)** 20÷80 bar - *290÷1150 psi* (test setting 50 bar -*725 psi* at 5 l/min.-*1.32 US gpm*-) pressure increase by steps 26,6 bar - *380 psi* per screw turn **2)** 50÷200 bar - *725÷2900 psi* (test setting 150 bar - *2200 psi* at 5 l/min.-*1.32 US gpm*) pressure increase 60,3 bar - *870 psi* per screw turn **3)** 150÷350 bar - *2200÷5100 psi* (test setting 250 bar- *3600 psi* at 5 l/min.-*1.32 US gpm*) pressure increase 121,2 bar -*1750 psi* per screw turn **5)** 5÷50 bar - *72.5÷725 psi* (test setting 30 bar - *435 psi* at 5 l/min.- *1.32 US gpm*) pressure increase 11,3 bar - *160 psi* per screw turn	85% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*		0,13	*0.29*	● see cavity SAE 8-2 page 112
MC10A	40	*10.5*			**1)** 20÷100 bar - *290÷1450 psi* (test setting 50 bar - *725 psi* at 5 l/min.-*1.32 US gpm*) pressure increase 7 bar -*100 psi* per screw turn **2)** 50÷200 bar - *725÷2900 psi* (test setting 150 bar - *2200 psi* at 5 l/min.- *1.32 US gpm*) pressure increase 24 bar - *345 psi* per screw turn **3)** 150÷350 bar - *2200÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min.- *1.32 US gpm*) pressure increase 72 bar -*1040 psi* per screw turn	90% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*		0,33	*0.73*	● see cavity SAE 10-2 page 112
MC12A	100	*26*			**1)** 20 ÷ 100 bar - *290÷1450 psi* (test setting 50 bar -*725 psi* at 5 l/min.-*1.32 US gpm*) pressure increase 5,7 bar - *80 psi* per screw turn **2)** 50 ÷ 200 bar - *725÷2900 psi* (test setting 150 bar - *2200 psi* at 5 l/min.- *1.32 US gpm*) pressure increase 26,5 bar - *380 psi* per screw turn **3)** 150 ÷ 350 bar - *2200÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min.-*1.32 US gpm*) pressure increase 35 bar - *505 psi* per screw turn	95% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*		0,86	*1.89*	● see cavity SAE 12-2 page 112

***To perform setting of the valve see the pressure drop/ flow diagram**

●The cavity have to report also the features of variation "A" see page 112

Dimensions and hydraulic circuit





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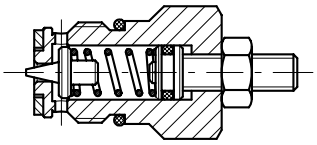
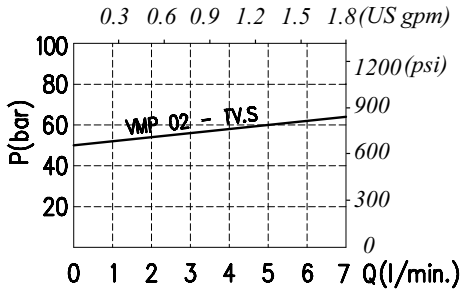
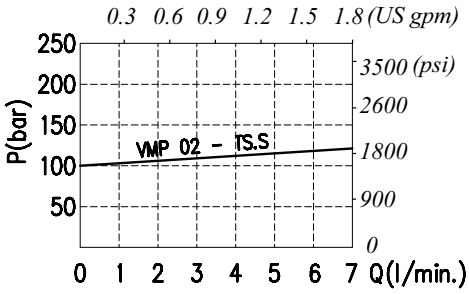


Rating diagrams

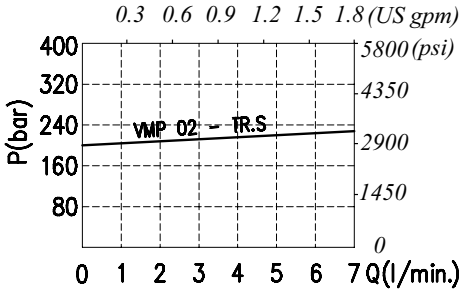
Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP02 / □□ . □

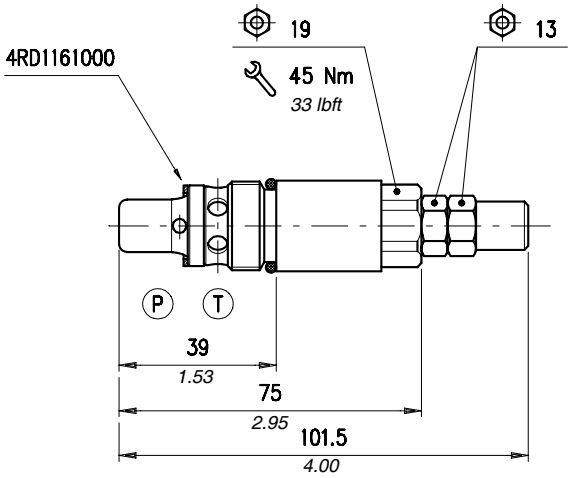
Pressure settings

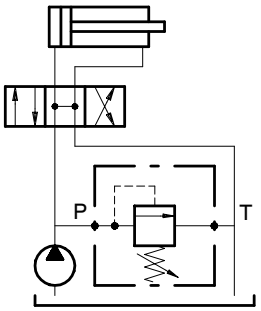
TV) 5÷80 bar *(72.5÷1150 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*
TB) 0÷50 bar *(0÷725 psi)*

Adjustment
(see page 105)

S (screw)
V (handknob)

Dimensions and hydraulic circuit





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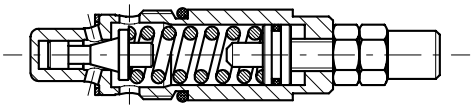
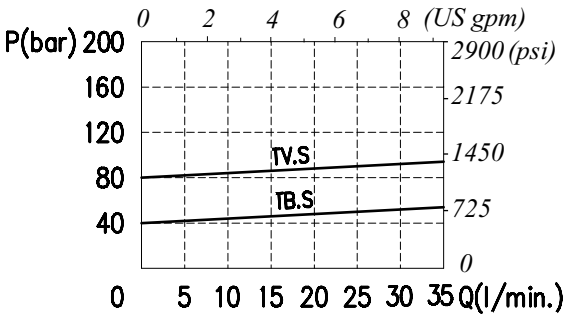
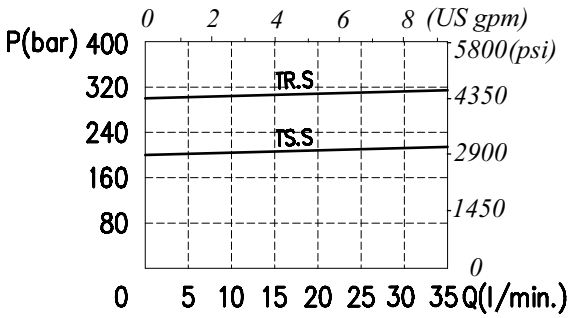


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP5 / □ . □

Pressure settings

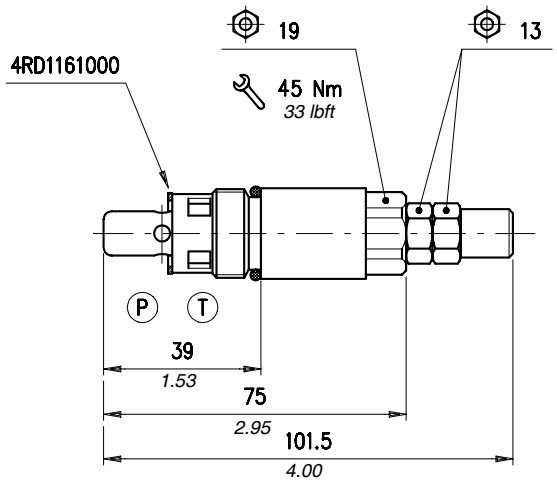
TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷80 bar *(290÷1150 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*

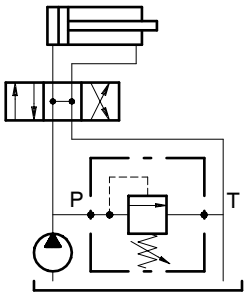
Adjustment

(see page 105)

S (screw)
V (handknob)
W (capped adjustement)
P (panel mount)
PV (panel mount+handknob)

Dimensions and hydraulic circuit





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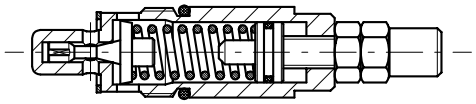
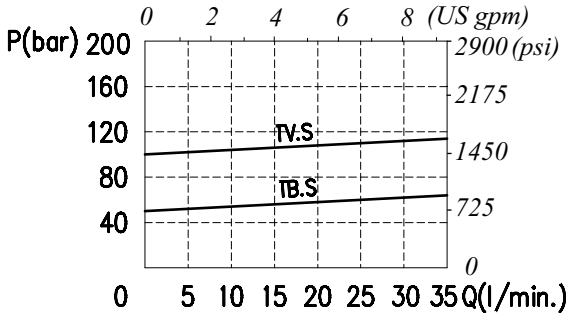
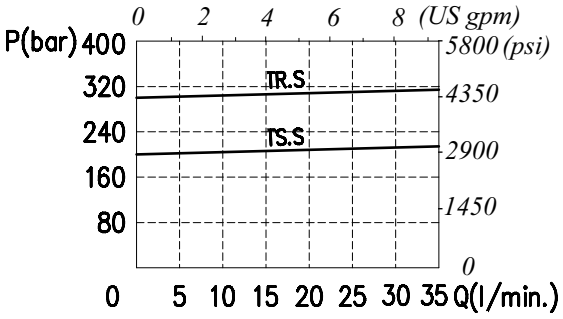


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP5Y / □□ . □

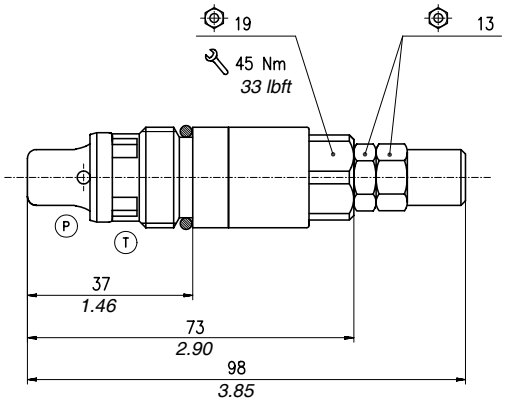
Pressure settings

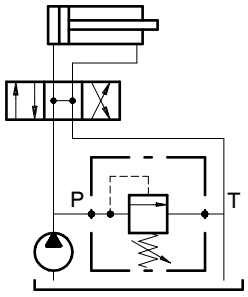
TB) 5÷80 bar *(72.5÷1150 psi)*
TV) 40÷150 bar *(580÷2200 psi)*
TS) 140÷190 bar *(2050÷2750 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*

Adjustment
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)
P (panel mount)
PV (panel mount+handknob)

Dimensions and hydraulic circuit





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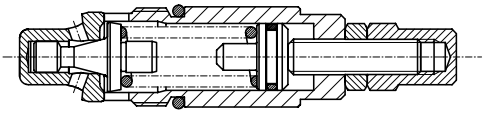
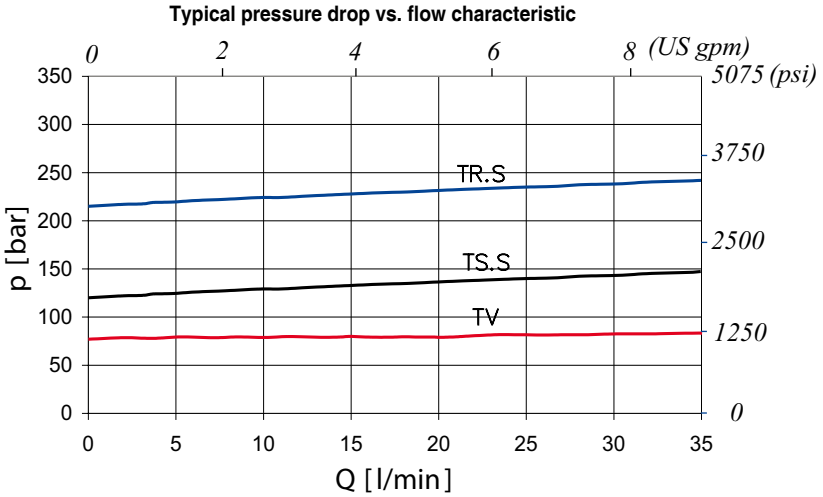


Rating diagrams



Order code

VMP5J / □□ . □

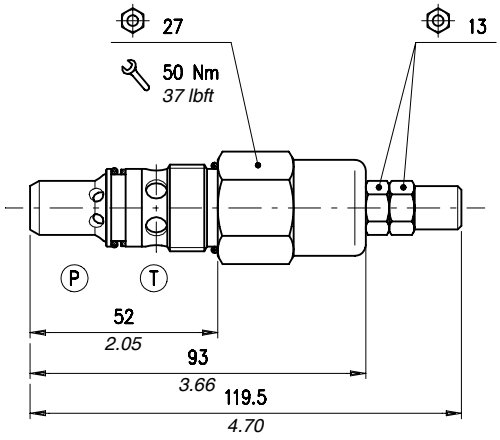
Pressure settings

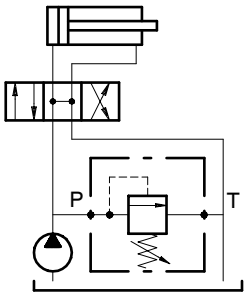
TV) 40÷80 bar *(580÷1150 psi)*
TS) 63÷200 bar *(910÷2900 psi)*
TR) 160÷315 bar *(2300÷4600 psi)*

Adjustment
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)
P (panel mount)
PV (panel mount+handknob)

Dimensions and hydraulic circuit





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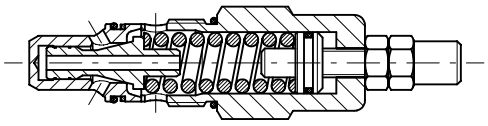
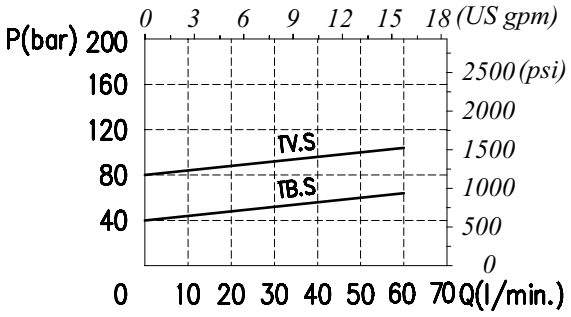
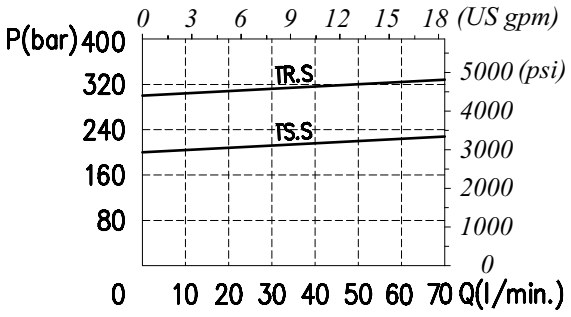


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP 10 / □ . □

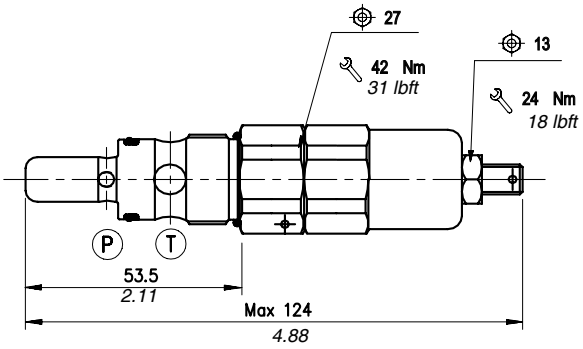
Pressure settings (bar)

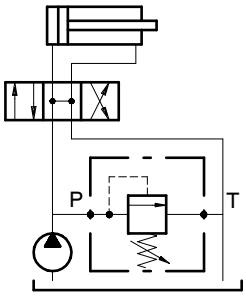
TB) 5÷40 *(72.5÷580 psi)*
TV) 20÷80 *(290÷1150 psi)*
TS) 50÷220 *(725÷3200 psi)*
TR) 180÷350 *(2600÷5100 psi)*

Adjustment
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)
P (panel mount)
PV (panel mount+handknob)

Dimensions and hydraulic circuit





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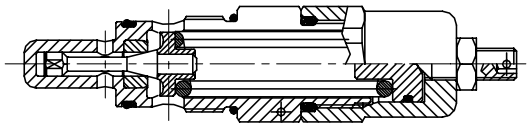
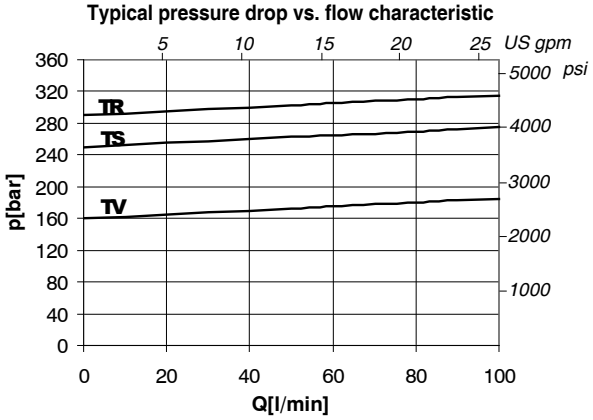


Rating diagrams



Order code

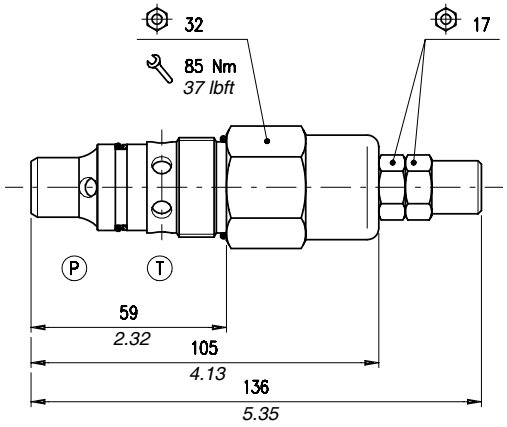
VMP 10Y / □ . □

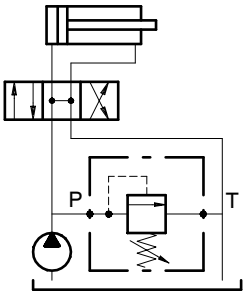
Pressure settings (bar)

Adjustment
(see page 105)

TV) 100÷160 *(1450÷2320 psi)* **W** (capped adjustement)
TS) 125÷250 *(1800÷3600 psi)*
TR) 200÷315 *(2900÷4600 psi)*

Dimensions and hydraulic circuit





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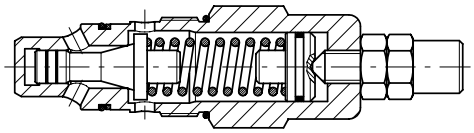
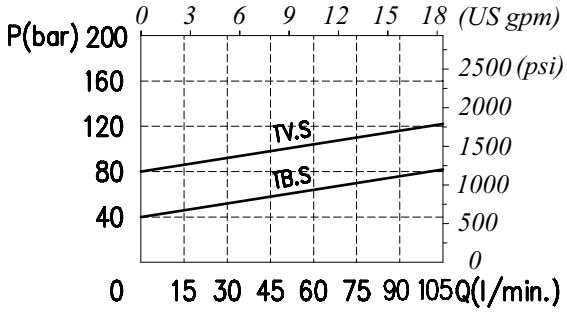
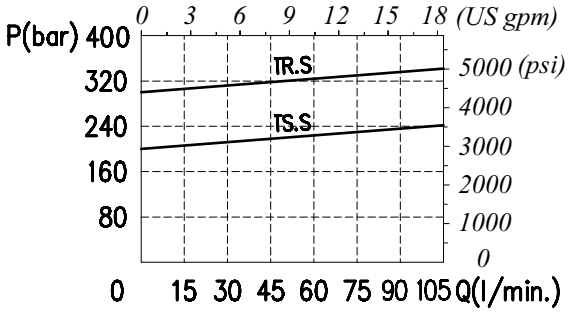


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP 20 / □ . □

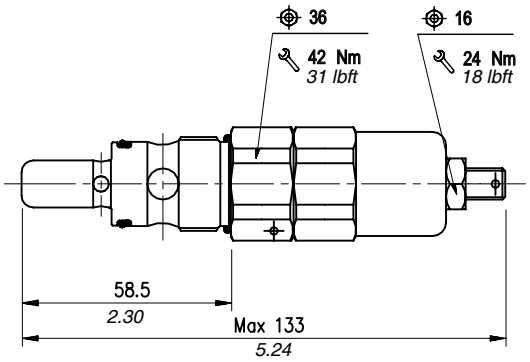
Pressure settings (bar)

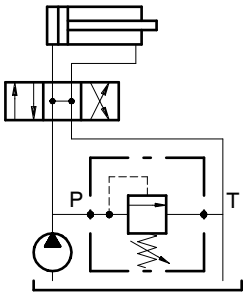
TB) 5÷40 *(72.5÷580 psi)*
TV) 20÷80 *(290÷1150 psi)*
TS) 50÷220 *(725÷3200 psi)*
TR) 180÷350 *(2600÷5100 psi)*

Adjustment
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)
P (panel mount)
PV (panel mount+handknob)

Dimensions and hydraulic circuit





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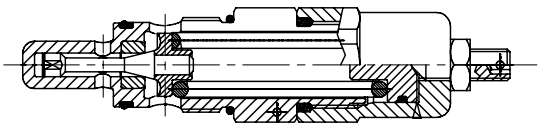
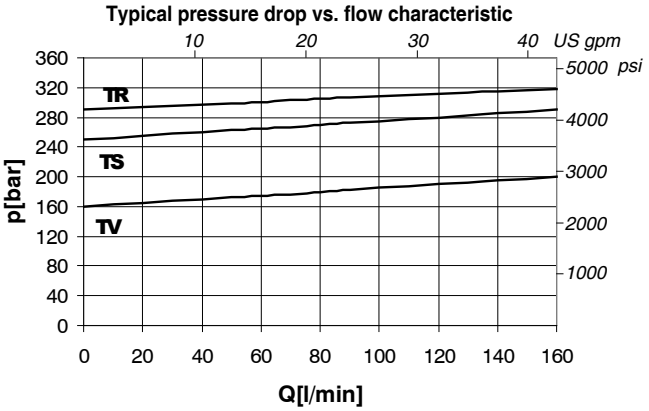


Rating diagrams



Order code

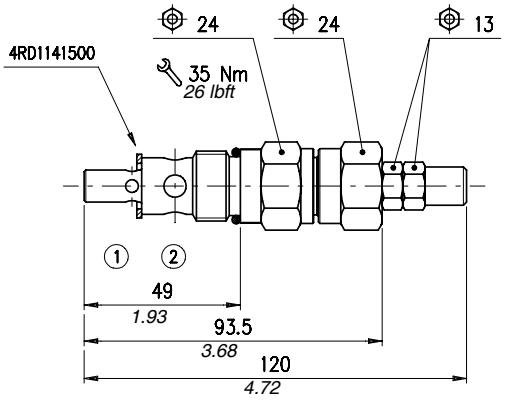
VMP 20Y / □ . □

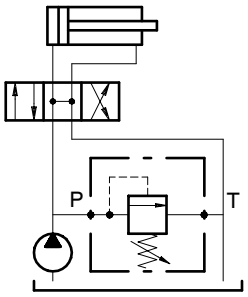
Pressure settings (bar)

Adjustment
(see page 105)

TV) 100÷160 *(1450÷2320 psi)* **W** (capped adjustement)
TS) 125÷250 *(1800÷3600 psi)*
TR) 200÷315 *(2900÷4600 psi)*

Dimensions and hydraulic circuit





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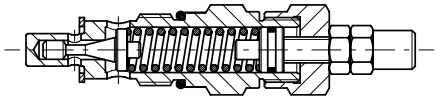
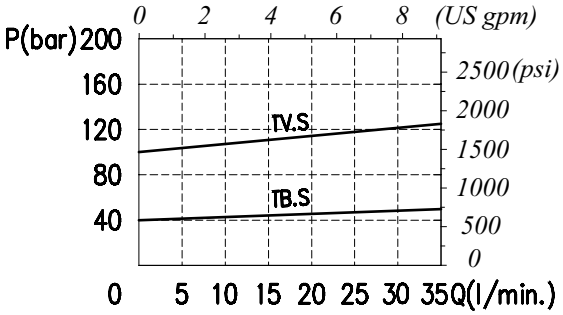
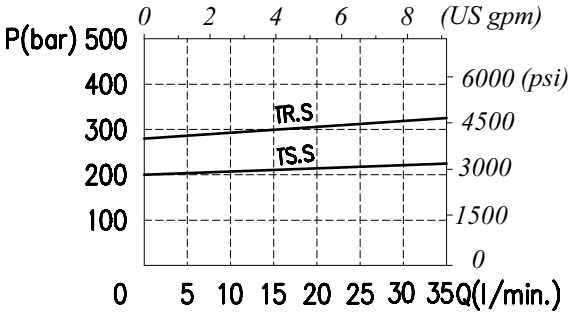


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP 12 / □□ . □

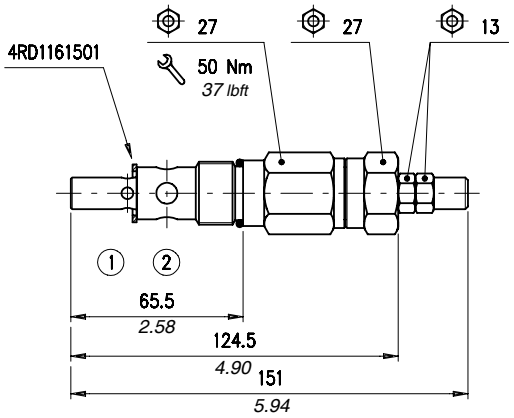
Pressure settings

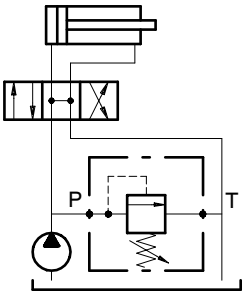
TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷100 bar *(290÷1450 psi)*
TS) 50÷200 bar *(725÷2900 psi)*
TR) 100÷300 bar *(1450÷4350 psi)*

Adjustment

(see page 105)
S (screw)
V (handknob)
P (panel mount)
PV (panel mount+handknob)

Dimensions and hydraulic circuit





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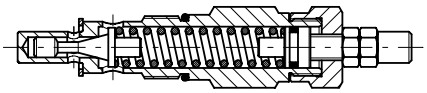
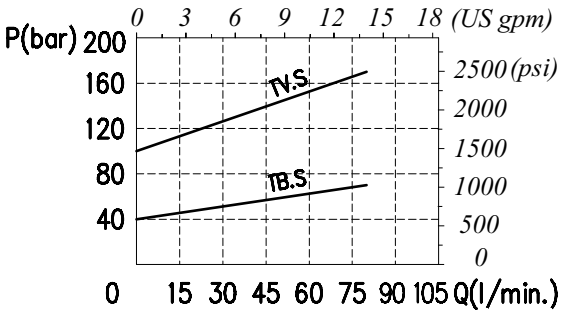
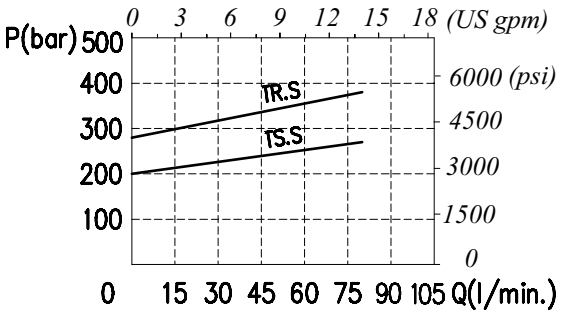


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP 34 / □□ . □

Pressure settings

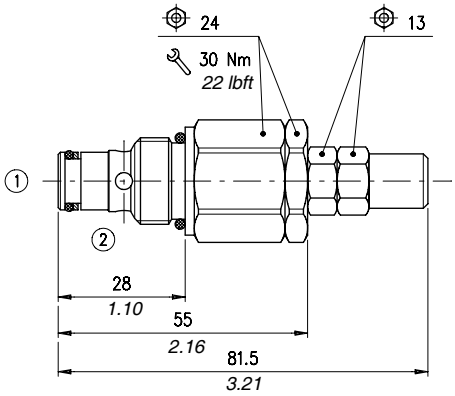
TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷100 bar *(290÷1450 psi)*
TS) 50÷200 bar ✱ *(725÷2900 psi)*
TR) 100÷300 bar ✱ *(1450÷4350 psi)*

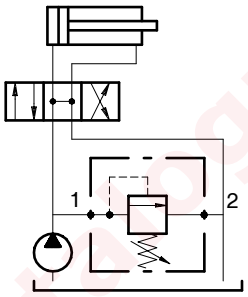
Adjustment
(see page 105)

S (screw)
V (handknob)
P (panel mount)
PV (panel mount+handknob)

✱ when the valve is ordered by itself max adjustable pressure is 150 bar - *2200 psi.*
Cartridge may be set higher than 150 bar - *2200 psi* when instelled in the machine or into a proper body

Dimensions and hydraulic circuit





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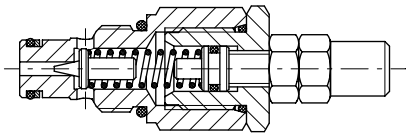
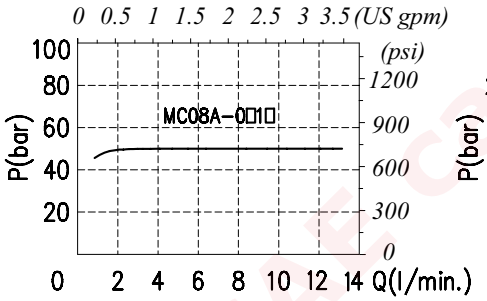
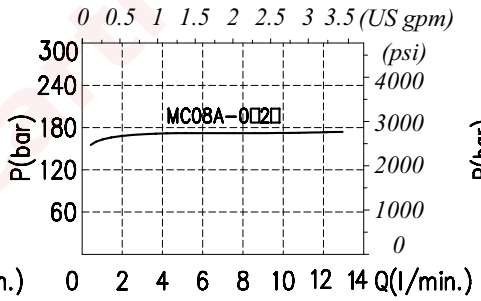


Rating diagrams

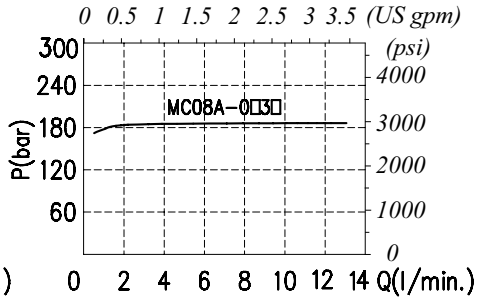
Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

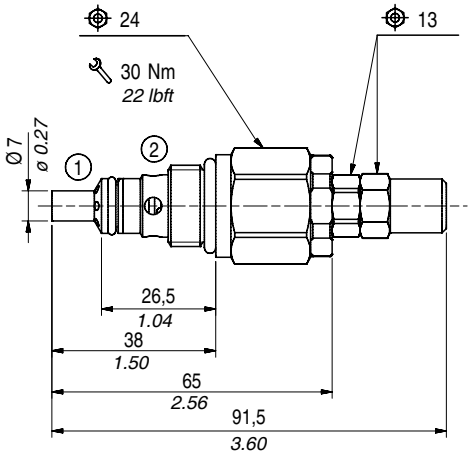
MC08A / 0 -□ -□ -□

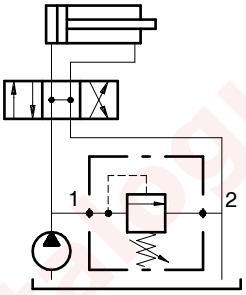
Adjustments
(see page 105)
- **S** (screw)
- **V** (handknob)
- **W** (capped adjustement)

Pressure settings
- **1)** 5÷50 bar *(72.5÷725 psi)*
- **2)** 50÷200 bar *(725÷2900 psi)*
- **3)** 150÷350 bar *(2200÷5100 psi)*

Seals
- **B)** Buna
- **V)** Viton

Dimensions and hydraulic circuit





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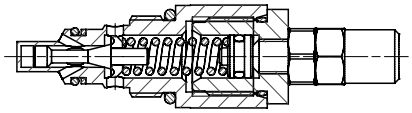
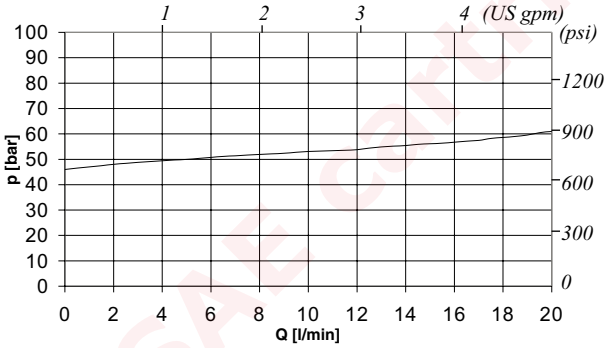
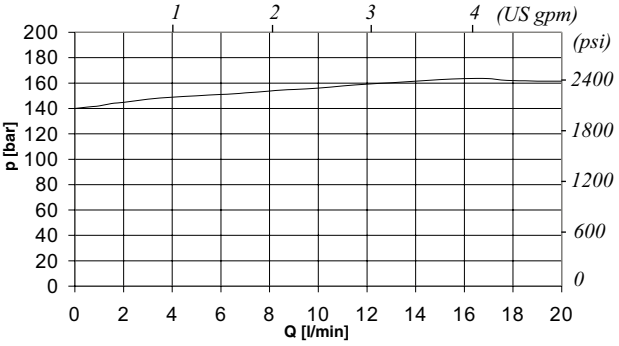


Rating diagrams

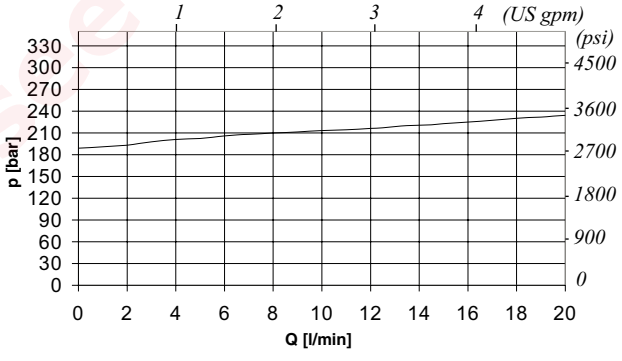
MC08D/0_1_
Typical pressure drop vs.flow characteristic



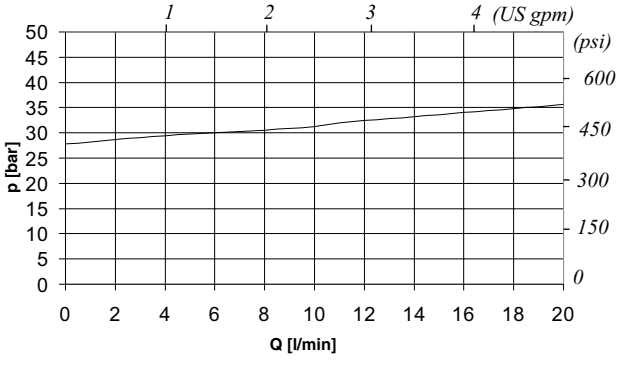
MC08D/0_2_
Typical pressure drop vs.flow characteristic



MC08D/0_3_
Typical pressure drop vs.flow characteristic



MC08D/0_5_
Typical pressure drop vs.flow characteristic



Order code

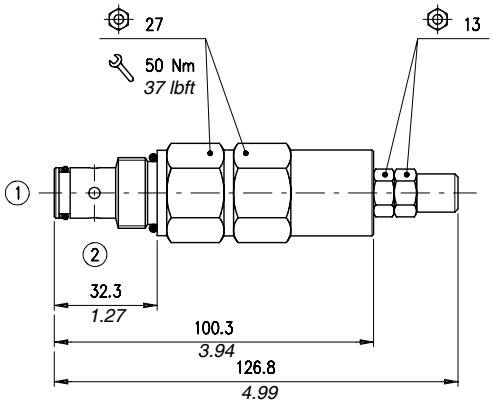
MC08D / 0 -□ -□ -□

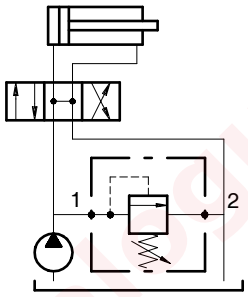
Adjustments
(see page 105)
V (handknob)
W (capped adjustement)

Pressure settings
1) 5÷50 bar *(72.5÷725 psi)*
2) 50÷200 bar *(725÷2900 psi)*
3) 150÷350 bar *(2200÷5100 psi)*
5) 50÷350 bar *(725÷5100 psi)*

Seals
B) Buna
V) Viton

Dimensions and hydraulic circuit





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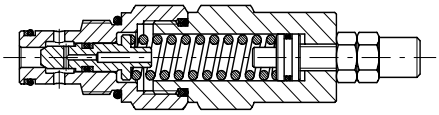
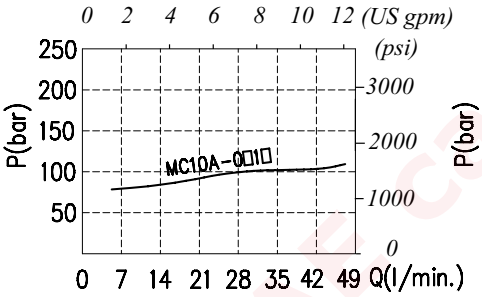
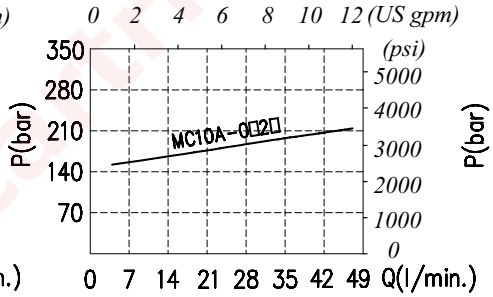


Rating diagrams

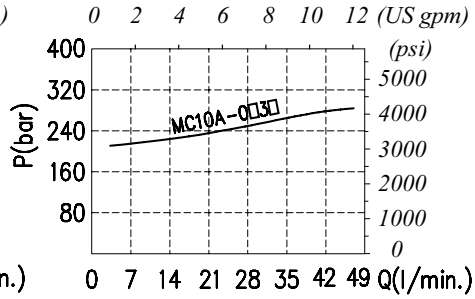
Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

MC10A / 0 -□ -□ -□

Adjustments
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)

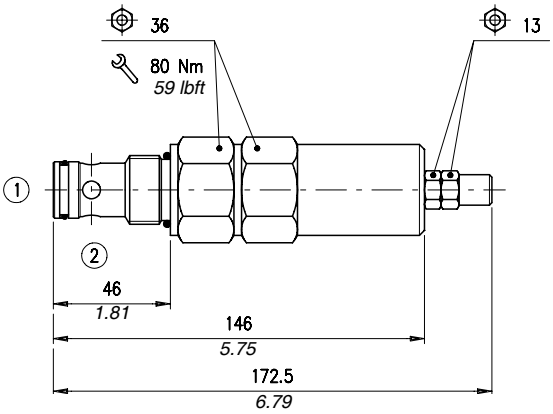
Pressure settings

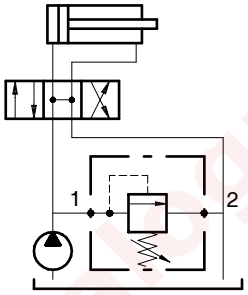
1) 20÷100 bar *(290÷1450 psi)*
2) 50÷200 bar *(725÷2900 psi)*
3) 150÷350 bar *(2200÷5100 psi)*

Seals

B) Buna
V) Viton

Dimensions and hydraulic circuit





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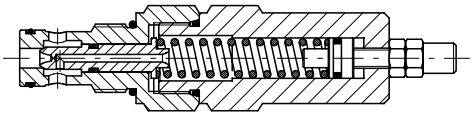
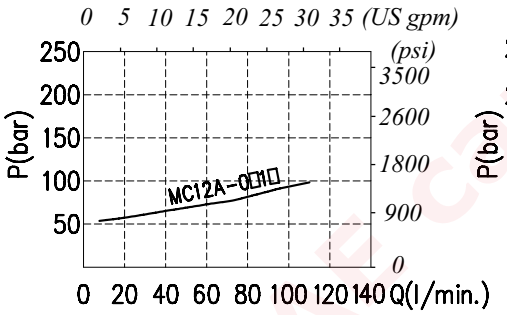
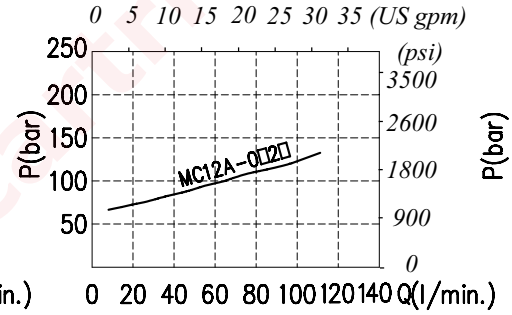


Rating diagrams

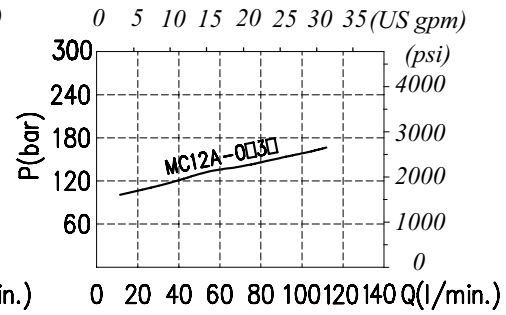
Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

MC12A / 0 -□ -□ -□

Adjustments
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)

Pressure settings

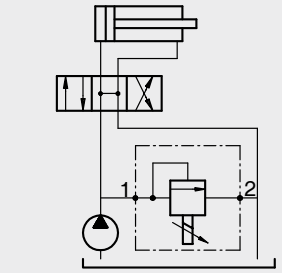
1) 20÷100 bar *(290÷1450 psi)*
2) 50÷200 bar *(725÷2900 psi)*
3) 150÷350 bar *(2200÷5100 psi)*

Seals

B) Buna
V) Viton

Operation

Allows oil flow from 1 to 2 when pressure in 1 reaches the setting regulated by the proportional coil. Bottom manual override available as option (notice: if it's activated with energised coil, the setting established will be effected).



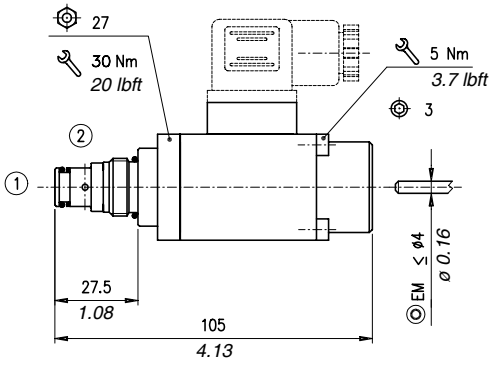
Performance

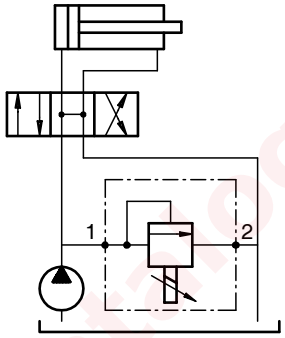
Cartridges

Type MC..Y	Max. flow Q		Max.pres.		Rated and max current	Dither frequency	Hysteresis with dither operational relief pressure range from zero to max. control current	Oil leaks from 1 to 2	Cavities and tools	Weight	
	l/min	*US gpm*	bar	*psi*						kg	*lb*
MC08Y	1	*0.26*	350	*5100*	1,1 A for coils 12V 0,55 A for coils 24V	150 Hz	0÷100 bar - *0÷1450 psi* with 0.5 l/min. - *0.13 US gpm* remainig pressure with no voltage 5 bar - *72.5 psi* 50÷200 bar - *25÷2900 psi* with 0.5 l/min. - *0.13 US gpm* remainig pressure with no voltage 5 bar - *72.5 psi* 80÷350 bar - *1150÷5100 psi* with 0.5 l/min. - *0.13 US gpm* remainig pressure with no voltage 12 bar - *170 psi* 5÷40 bar - *72.5÷580 psi* with 0.5 l/min. - *0.13 US gpm* remainig pressure with no voltage 3 bar - *43.5 psi*	disregardable	*cavity SAE 8-2 see page 112	0,55	*1.21*

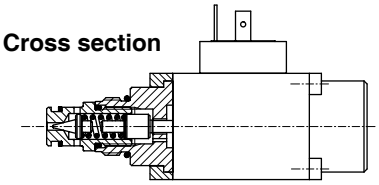
*the cavity have to report also the features of variation "A" see page 112

Dimensions and hydraulic circuit



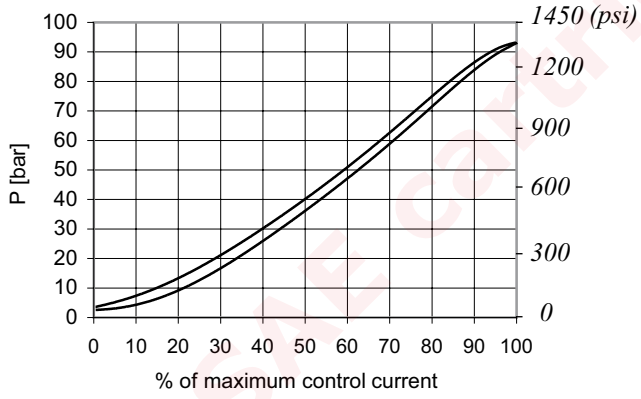


Cross section

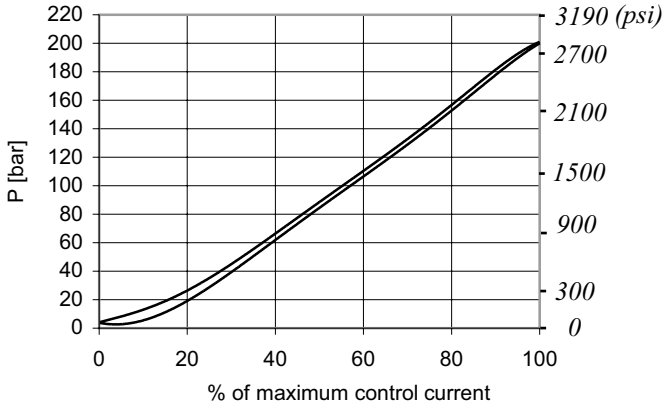


Rating diagrams

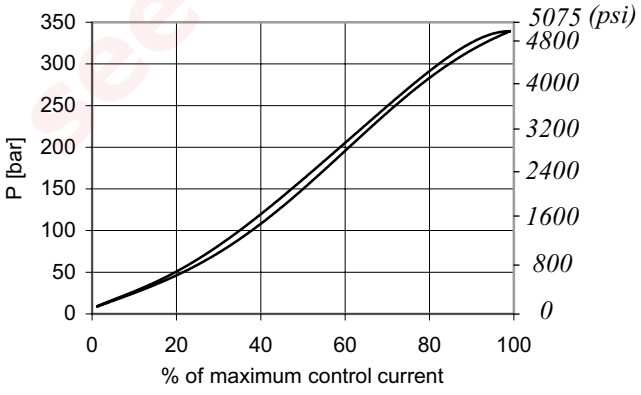
Pressure range 10/100 bar *(145/1450 US gpm)*



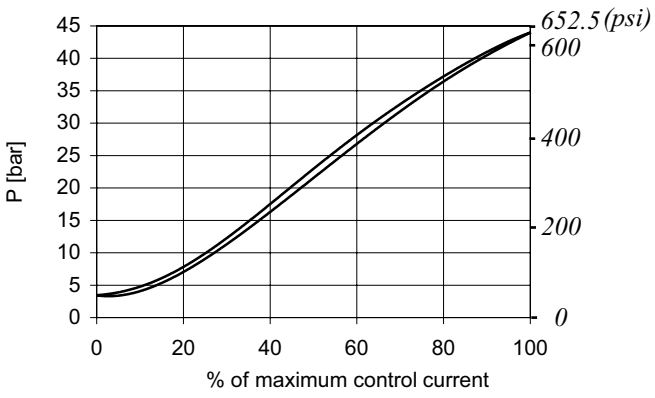
Pressure range 50/200 bar *(725/2900 US gpm)*



Pressure range 80/350 bar



Pressure range 5/40 bar



Order code

MC08Y /0 -□-□-□

Voltage

2) 12V
4) 24V

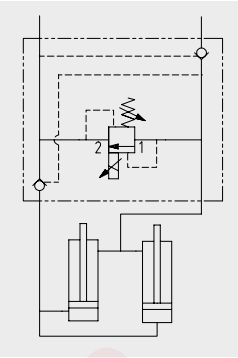
Pressure settings

1) 10÷100 bar *(145÷1450 psi)*
2) 50÷200 bar *(725÷2900 psi)*
3) 80÷350 bar *(1150÷5100 psi)*
4) 5÷40 bar *(725÷580 psi)*

Seals

B) Buna
V) Viton

Operation



This kind of valve Allows oil flow from 1 to 2 when pressure in 1 reaches the setting regulated by the proportional coil.
Bottom manual override available as option (notice: if it's activated with energised coil, the setting established will be effected).

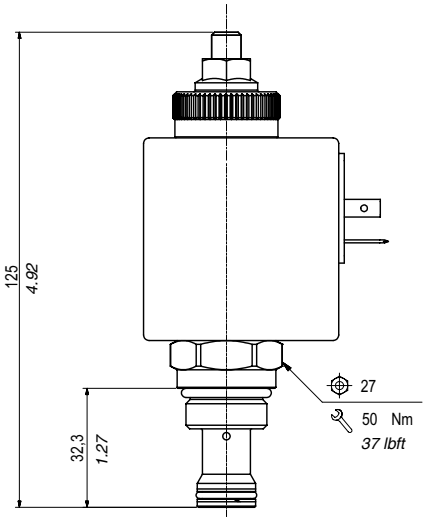
Performance

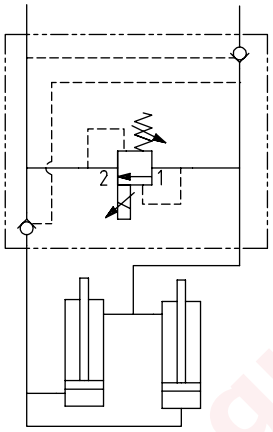
Cartridges

Type MC..T	Flow Q max.		Max. press.		Rated and max current	Dither frequency	Pressure range bar *(psi)*	Oil leaks	Cavities and tools	Weight kg	
	l/min	*US gpm*	bar	*psi*						kg	*lb*
MC10T	3	*0.79*	350	*5100*	2) Square-coil 12Vcc connect-tor DIN (In=1,25A) 3) Round coil 12Vcc connect-tor DIN (In=1,8A) 4) Square-coil 24Vcc connect-tor DIN (In=0,63A) 5) Round coil 24V connect-tor DIN (In=0,9A)	130 Hz	1) 15-130 *(217-1885)* 2) 15-170 *(217-2465)* 3) 15-210 *(217-3045)*	-	Cavity SAE 10-2 page112	-	-

*
the cavity have to report also the features of variation "A" see page 112

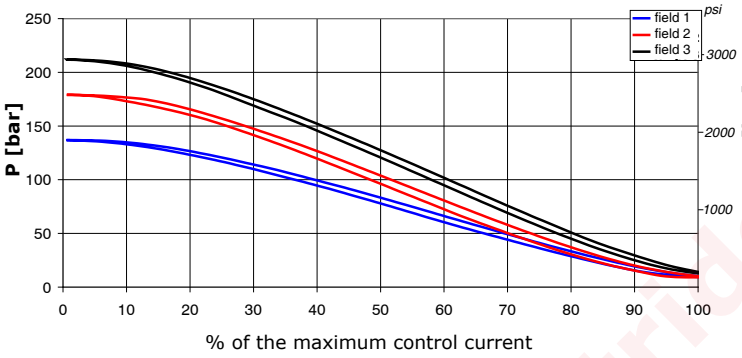
Dimensions and hydraulic circuit



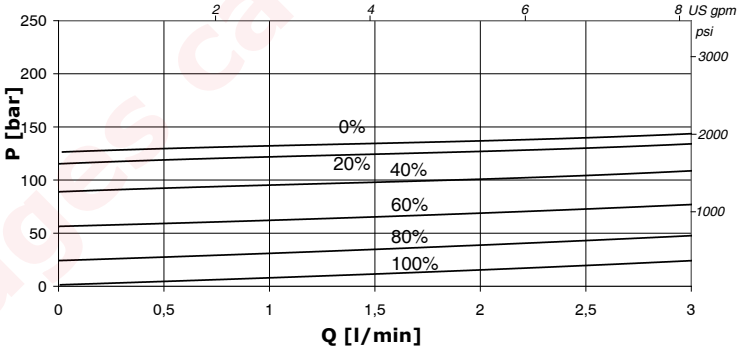


Rating diagrams

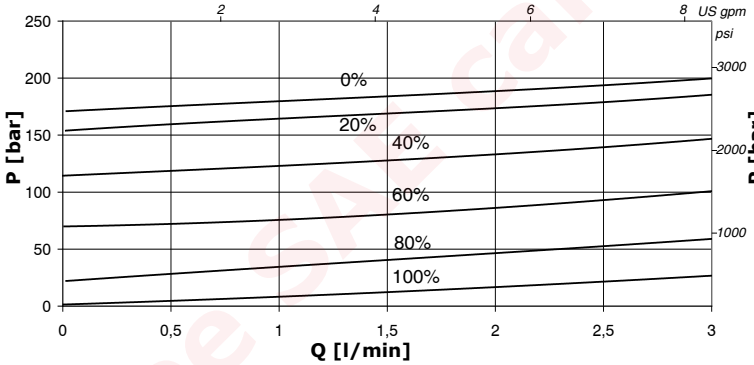
Relief Pressure vs. % of the Maximun Control Current
Q=1 l/min *(0.26 US gpm)* - Power supply 12 Vdc



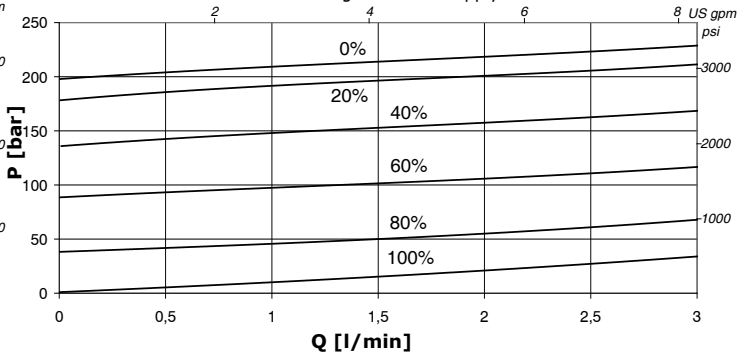
Typical Relief Pressure vs.Flow Characteristic 1->2
At various %'s of maximum control current
Pressure setting 1 - Power supply 12 Vdc



Typical Relief Pressure vs.Flow Characteristic 1->2
At various %'s of maximum control current
Pressure setting 2 - Power supply 12 Vdc



Typical Relief Pressure vs.Flow Characteristic 1->2
At various %'s of maximum control current
Pressure setting 3 - Power supply 12 Vdc



Order code

MC10T/0 -☐ -☐ -☐

Adjustment

2) Square coil 12Vcc connector DIN (In=1,25A)
3) Round coil 12Vcc connector DIN (In=1,8A)
4) Square coil 24Vcc connector DIN (In=0,63A)
5) Round coil 12Vcc connector DIN (In=0,9A)

Pressure range

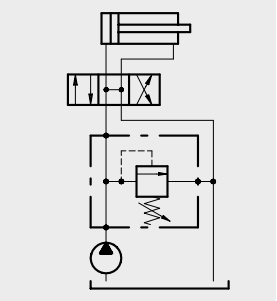
1) 15-130 bar
2) 15-170 bar
3) 15-210 bar

Seals

B) Buna
V) Viton

Operation

Allows oil flow from P to T when pressure in P reaches the setting of the spring.



Performance

Body Valves

Type VMP	Max.flow		Max. pres.		Application range with standard spring*	Hystere-sis	Oil leaks from P to T	Cartr.	Weight	
	l/min	*US gpm*	bar	*psi*					kg	*lb*
VMP /B /L 02-14	5	*1.32*	alum. body 210 steel body 350	*alum. body 3050* *steel body 5100*	5÷80 bar - *72.5÷1150 psi* (test setting 50 bar - *725 psi* at 3 l/min. - *0.79 US gpm*) 50÷220 bar - *725÷3200 psi* (test setting 150 bar *-2200 psi* at 3 l/min. - *0.79 US gpm*) 180÷350 bar - *2600÷5100 psi* (test setting 250 bar - *3600 psi* at 3 l/min. - *0.79 US gpm*)	90% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	disregar-dable	VMP 02	alum. body 0,21 steel body 0,48	*alum. body 0.46* *steel body 1.06*
VMP /B /L 03-14	10	*2.6*			5÷50 bar - *72.5÷725 psi* (test setting 30 bar - *435 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 11.5 bar *-160 psi* per screw turn 50÷200 bar - *725÷2900 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 31.5 bar - *450 psi* per screw turn 180÷350 bar - *2600÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 74 bar - *1000 psi* per screw turn			MC 08 A	alum. body 0,40 steel body 0,84	*alum. body 0.88* *steel body 1.85*
VMP/B/L 5 -□□	35	*9.2*			5÷40 bar - *72.5÷580 psi* (test setting 30 bar - *435 psi* at 5 l/min. - *1.32 US gpm*) 20÷80 bar - *290÷1150 psi* (test setting 60 bar - *870 psi* at 5 l/min - *1.32 US gpm*) 50÷220 bar - *725÷3200 psi* (test setting 160 bar - *2300 psi* at 5 l/min. - *1.32 US gpm*) 180÷350 bar - *2600÷5100 psi* (test setting 280 bar - *4000 psi* at 5 l/min. - *1.32 US gpm*)	85% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*		VMP 02	alum. body 0,50 steel body 1,07	*alum. body 1.10* *steel body 2.36*
VMP/B/L 5Y -□□					5÷80 bar - *72.5÷1150 psi* (test setting 60 bar - *870 psi* at 5 l/min. - *1.32 US gpm*) 40÷150 bar - *580÷2200 psi* (test setting 120 bar - *1750 psi* at 5 l/min. - *1.32 US gpm*) 140÷190 bar - 2050*÷2750 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) 180÷350 bar - *2600÷5100 psi* (test setting 260 bar - 3800 psi at 5 l/min. - *1.32 US gpm*)			VMP 5Y	alum. body 0.50 steel body 1,07	*alum. body 1.10* *steel body 2.36*

***To perform setting of the valve see the pressure drop/ flow diagram**

Body Valves

<table>
<tr><th rowspan="2">Type VMP</th><th colspan="2">Max.flow</th><th colspan="2">Max. pres.</th><th rowspan="2">Application range with standard spring*</th><th rowspan="2">Hysteresis</th><th rowspan="2">Oil leaks from P to T</th><th rowspan="2">Cartri-dges</th><th colspan="2">Weight</th></tr>
<tr><th>l/min</th><th>US gpm</th><th>bar</th><th>psi</th><th>kg</th><th>lb</th></tr>
<tr><td>VMP /B /L 10 -□□</td><td>60</td><td>16</td><td rowspan="4">alum. body 210

steel body 350</td><td rowspan="4">alum. body 3050

steel body 5100</td><td rowspan="2">see setting VMP/B/L 5 -□□</td><td rowspan="4">85% of the setting value for flow capacity 1 l/min. -0.26 US gpm-</td><td rowspan="4">disregar-dable</td><td>VMP 10</td><td>aluminium body 0,77 (VMP/B/L 10-12) 0,87 (VMP/B/L 10-34)

steel body 1,47 (VMP/B/L 10-12) 1,74 (VMP/B/L 10-34)</td><td>alum. body 1.70

1.91

steel body 3.24

3.84</td></tr>
<tr><td>VMP /B /L 20 -□□</td><td>100</td><td>26</td><td>VMP 20</td><td>aluminium body 1,70 (VMP/B/L 20-34) 2,31 (VMP/B/L 20-100)

steel body 2,91 (VMP/B/L 20-34) 5,20 (VMP/B/L 20-100)</td><td>alum. body 3.75

5.09

steel body 6.41

11.46</td></tr>
<tr><td>VMP /B 12</td><td>35</td><td>9.2</td><td rowspan="2">5÷40 bar - 72.5÷580 psi (test setting 30 bar - 435 psi at 5 l/min. - 1.32 US gpm)
20÷100 bar -290÷1450 psi (test setting 70 bar - 1015 psi at 5 l/min. - 1.32 US gpm-)
50÷200 bar -725÷2900 psi (test setting 140 bar - 2030 psi at 5 l/min.-1.32 US gpm)
100÷300 bar - 1450÷4350 psi (test setting 210 bar - 3050 psi at 5 l/min. - 1.32 US gpm)</td><td>VMP 12</td><td>aluminium body 0,65

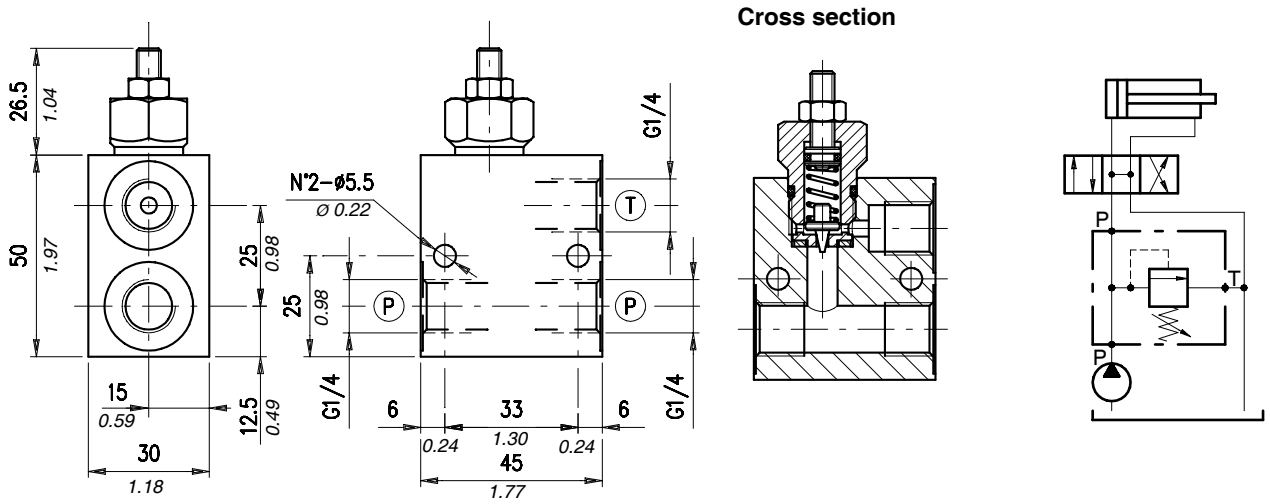
steel body 1,41</td><td>alum. body 1.43

steel body 3.11</td></tr>
<tr><td>VMP /B 34</td><td>80</td><td>21</td><td>VMP 34</td><td>aluminium body 1,00

steel body 2,15</td><td>alum. body 2.20

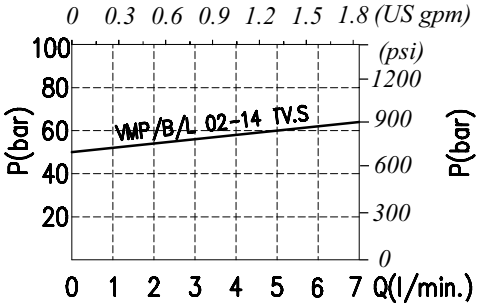
steel body 4.74</td></tr>
</table>

Dimensions and hydraulic circuit

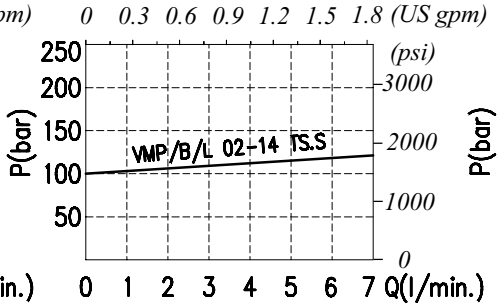


Rating diagrams

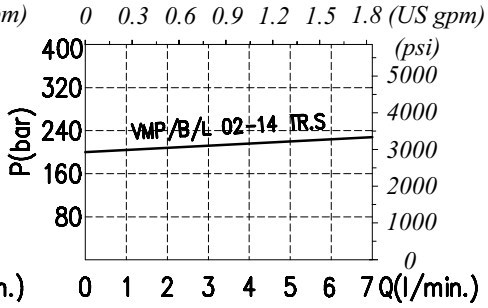
Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP/B/L 02-14 / □□ . □ / □□

Pressure settings

TV) 5÷80 bar *(72.5÷1150 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*

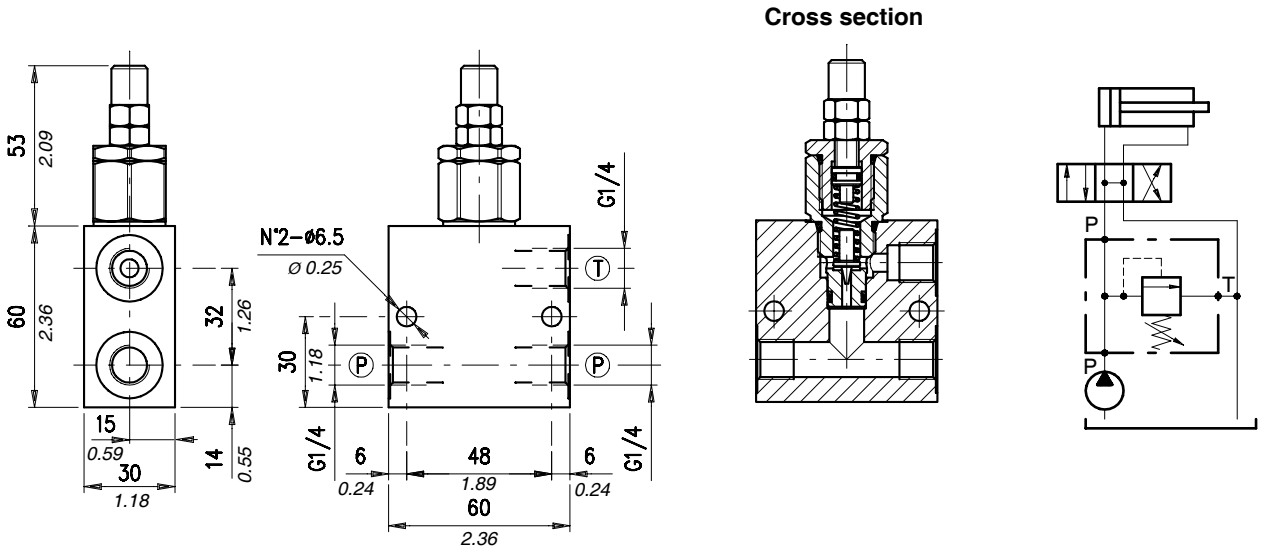
Adjustment
(see pag.105)

S (screw)
V (handknob)

Body material

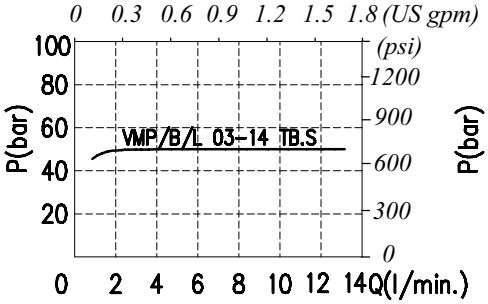
_ Aluminium
ac Steel

Dimensions and hydraulic circuit

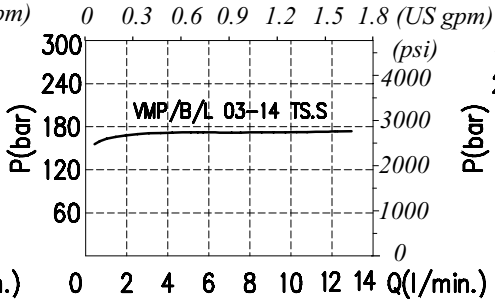


Rating diagrams

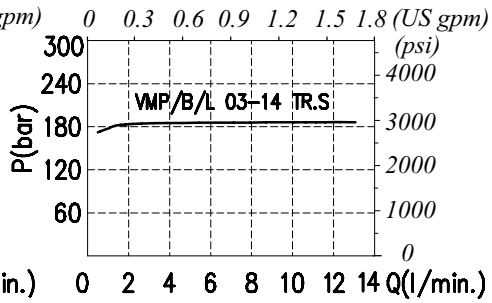
Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP/B/L 03-14 / □ . □ / □

Pressure settings

TB) 5÷50 bar *(72.5÷725 psi)*
TS) 50÷200 bar *(725÷2900 psi)*
TR) 150÷350 bar *(2200÷5100 psi)*

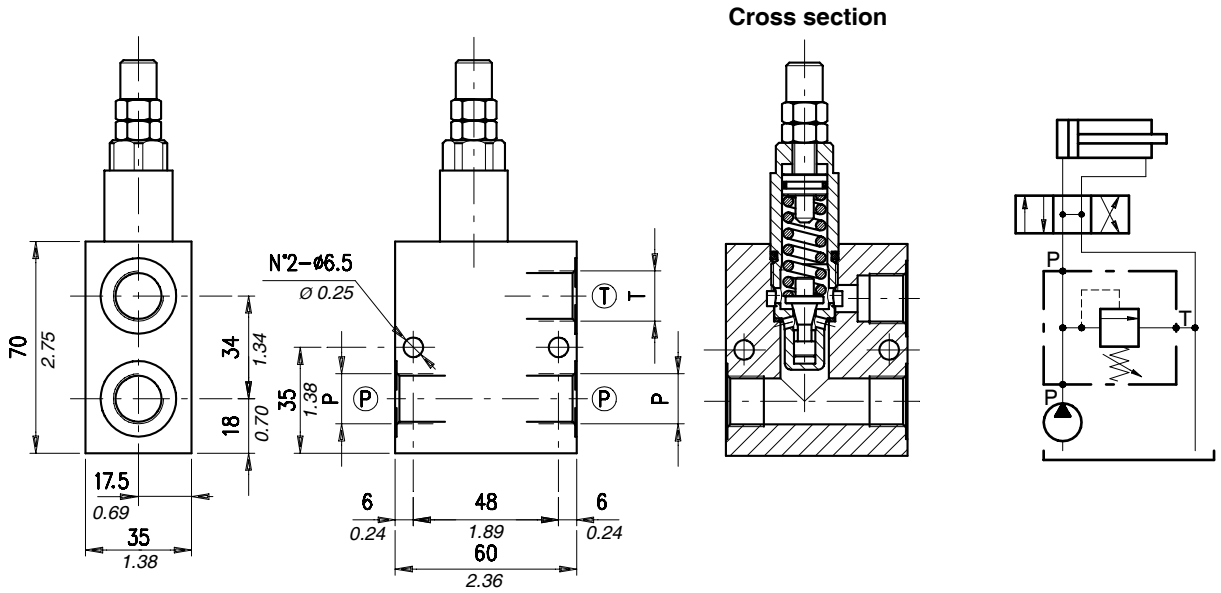
Adjustment
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)

Body material

_ Aluminium
ac Steel

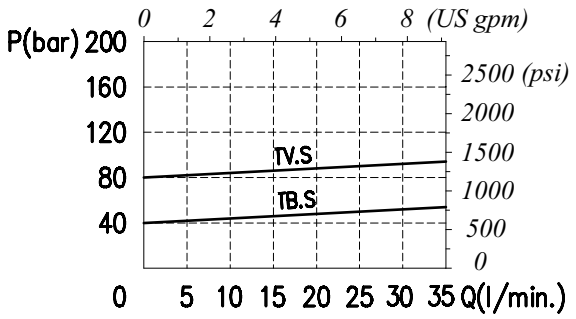
Dimensions and hydraulic circuit



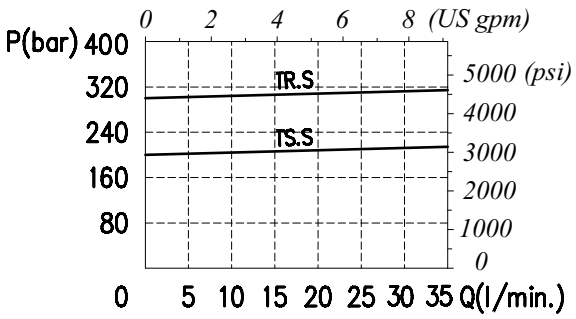
VMP/B/L 5	P	T
38	G3/8	G3/8
12	G1/2	G1/2

Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP /B /L 5- □□ / □□ . □ /□□

Port size

38) G 3/8
12) G 1/2

Pressure settings

TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷80 bar *(290÷1150 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*

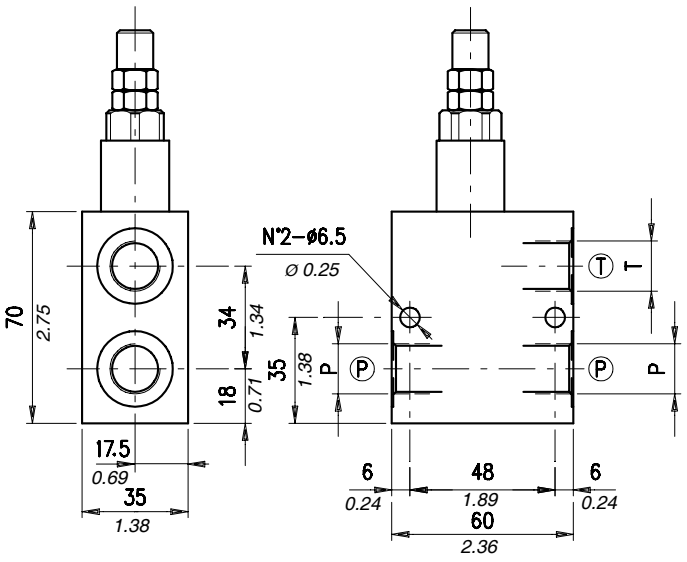
Adjustment
(see page 105)

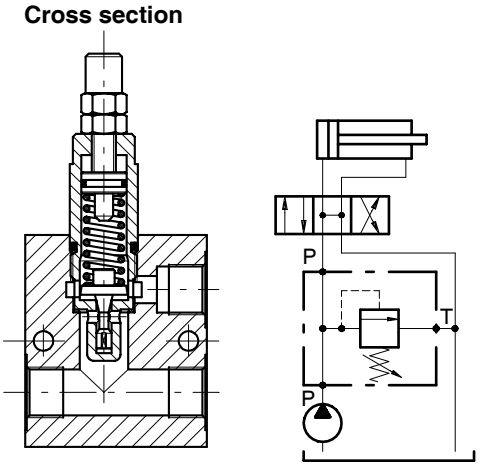
S (screw)
V (handknob)
W (capped adjustement)
P (panel mount)
PV (panel mount+handknob)

Body material

_ Aluminium
ac Steel

Dimensions and hydraulic circuit

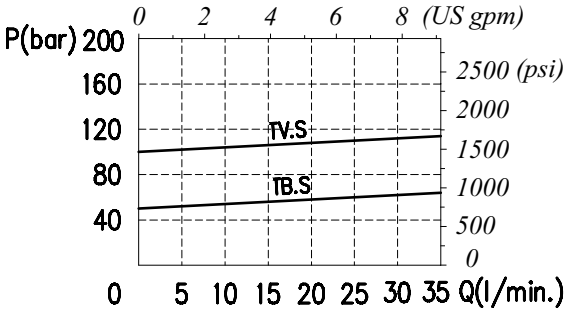




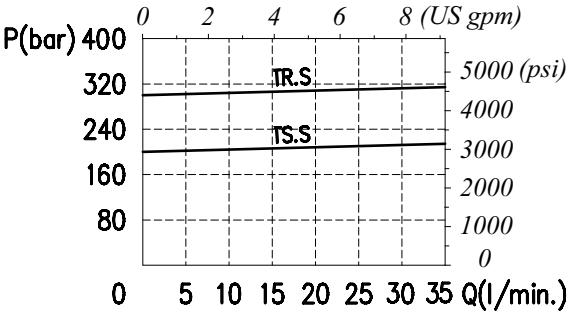
VMP/B/L 5Y	P	T
38	G3/8	G3/8
12	G1/2	G1/2

Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP /B /L 5Y- □□ / □□ . □ /□□

Port size

38) G 3/8
12) G 1/2

Pressure settings

TB) 5÷80 bar *(72.5÷1150 psi)*
TV) 40÷150 bar *(580÷2200 psi)*
TS) 140÷190 bar *(2050÷2750 psi)*
TR) 180÷320 bar *(2600÷4650 psi)*

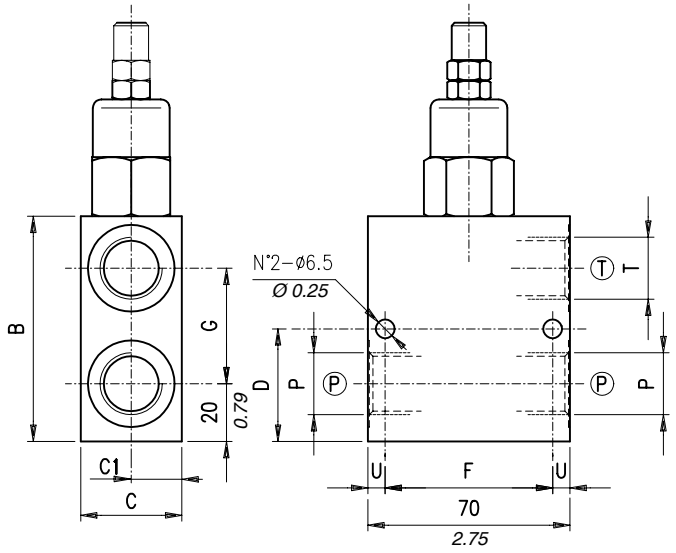
Adjustment
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)
P (panel mount)
PV (panel mount+handknob)

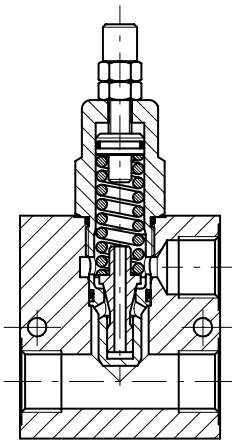
Body material

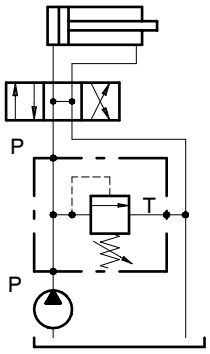
_ Aluminium
ac Steel

Dimensions and hydraulic circuit



Cross section



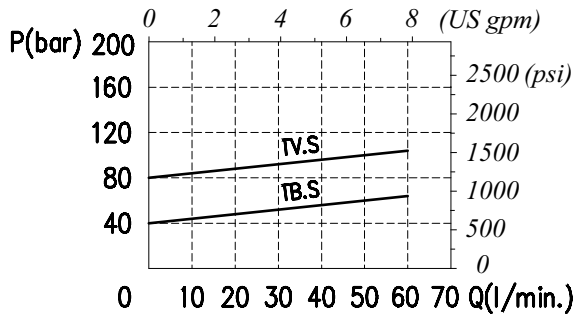


VMP/B/L 10	B	C	C 1	D	F	G	P	T	U	Z
12	78 - *3.07*	35 - *1.38*	17.5 - *0.69*	39 - *1.53*	58 - *2.28*	40 - *2.28*	G1/2	G1/2	6 - *0.24*	6.5 - *0.25*
34	90 - *3.54*	40 - *1.57*	20 - *0.79*	45 - *1.77*	54 - *2.12*	50 - *1.97*	G3/4	G3/4	8 - *0.31*	8.5 - *0.33*

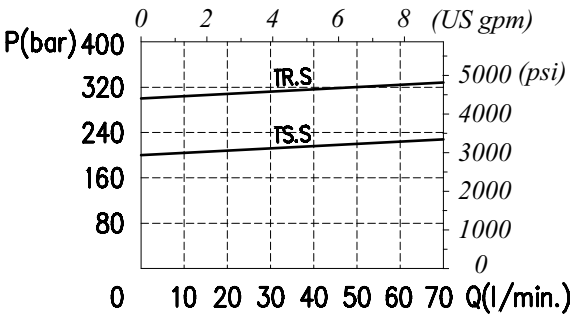
*Dimensions are in mm - *in*

Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP /B /L 10 - □□ / □□ . □ / □□

Port size

12) G 1/2
34) G 3/4

Pressure settings

TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷80 bar *(290÷1150 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*

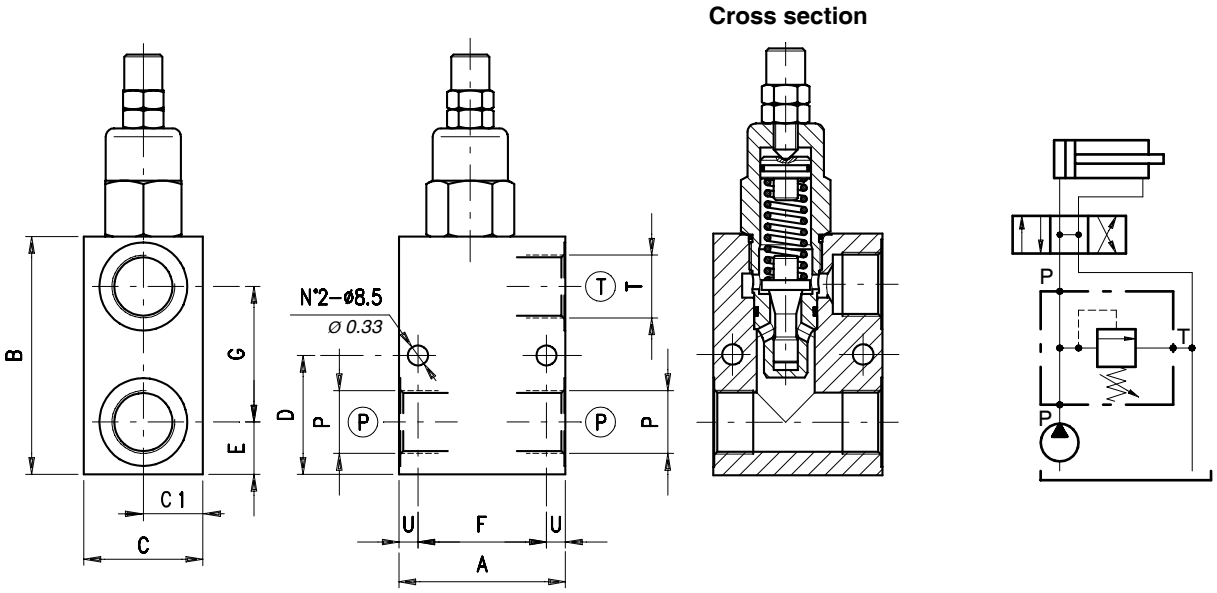
Adjustment
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)
P (panel mount)
PV (panel mount+handknob)

Body material

_ Aluminium
ac Steel

Dimensions and hydraulic circuit

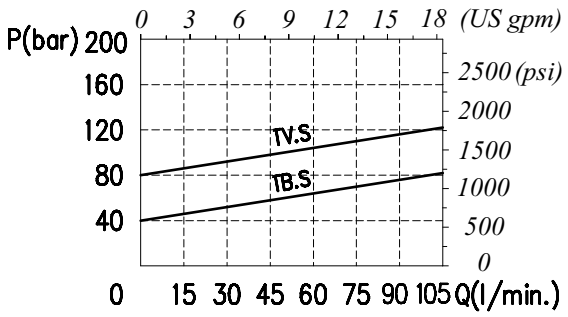


VMP/B/L 20	A	B	C	C 1	D	E	F	G	P	T	U
34	70 - *2.75*	100 - *3.94*	50 - *1.97*	25 - *0.98*	50 - *1.97*	22 - *0.87*	54 - *2.12*	57 - *2.24*	G3/4	G3/4	8 - *0.31*
100	85 - *3.34*	120 - *4.72*	60 - *2.36*	30 - *1.18*	63 - *2.48*	30 - *1.18*	65 - *2.56*	65 - *2.56*	G 1	G 1	10 - *0.39*

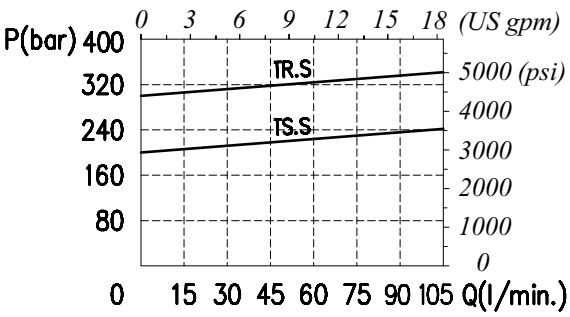
Dimensions are in mm - *in*

Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP /B /L 20 - □□ / □□ . □ / □□

Port size

34) G 3/4
100) G 1

Pressure settings

TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷80 bar *(290÷1150 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*

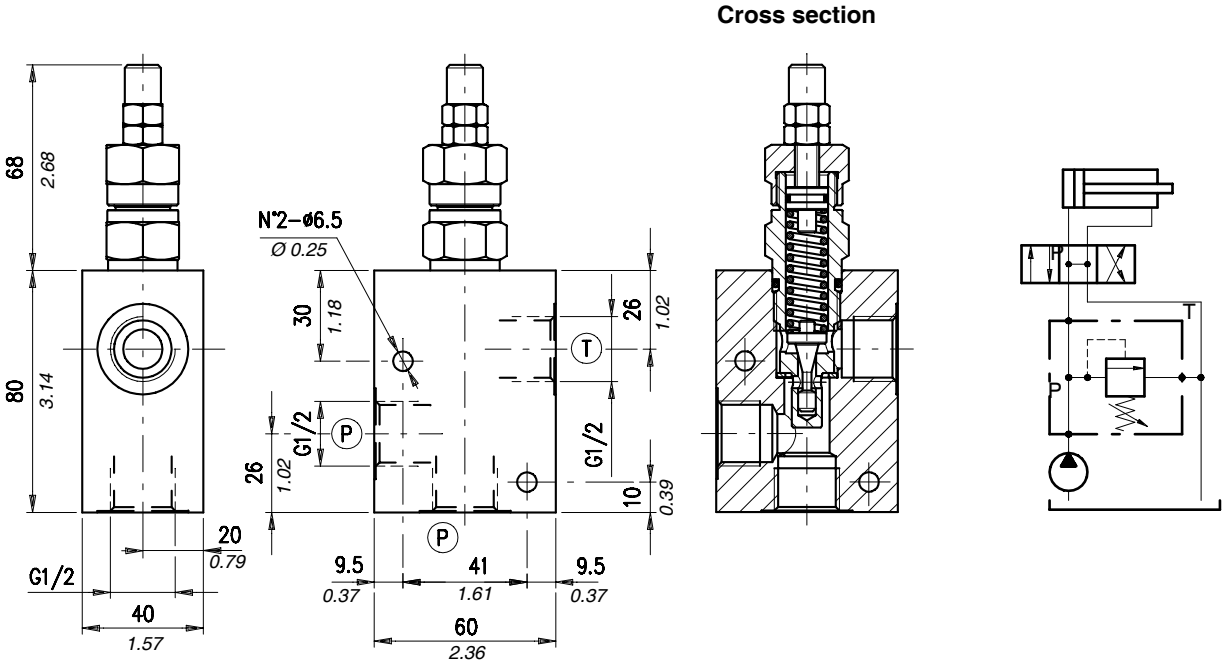
Adjustment
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)
P (panel mount)
PV (panel mount+handknob)

Body material

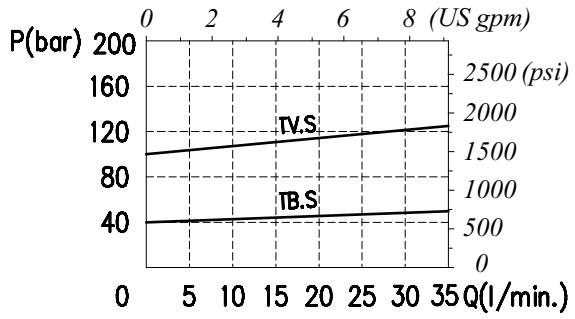
_ Aluminium
ac Steel

Dimensions and hydraulic circuit

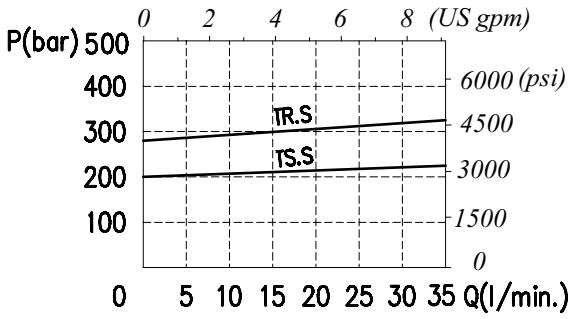


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP /B 12 / □□ . □ / □□

Pressure settings

TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷100 bar *(290÷1450 psi)*
TS) 50÷200 bar *(725÷2900 psi)*
TR) 100÷300 bar *(1450÷4350 psi)*

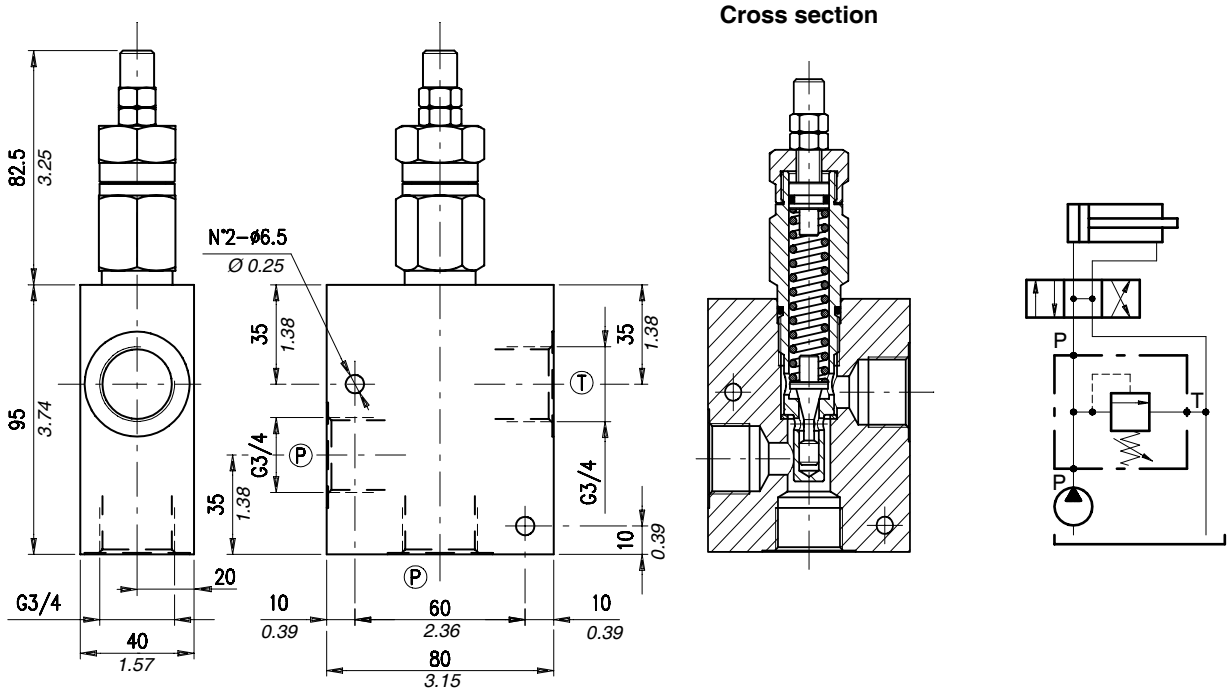
Adjustment
(see page 105)

S (screw)
V (handknob)
P (panel mount)
PV (panel mount+handknob)

Body material

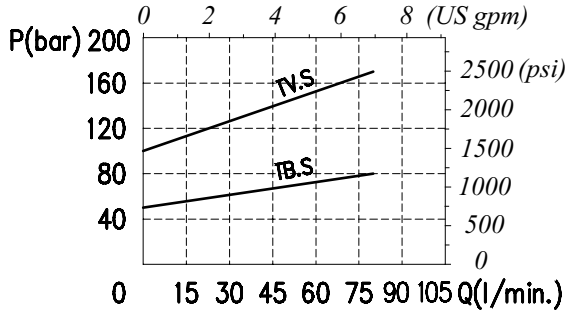
_ Aluminium
ac Steel

Dimensions and hydraulic circuit

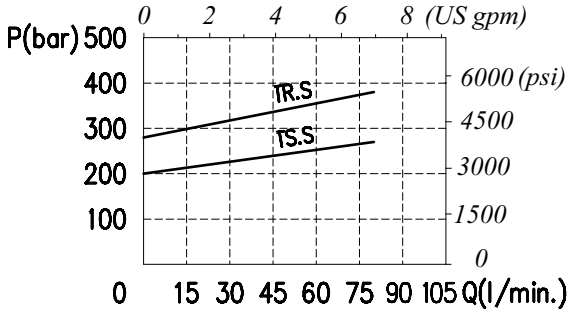


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP /B 34 / □□ . □ / □□

Pressure settings

TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷100 bar *(290÷1450 psi)*
TS) 50÷200 bar *(725÷2900 psi)*
TR) 100÷300 bar *(1450÷4350 psi)*

Adjustment
(see page 105)

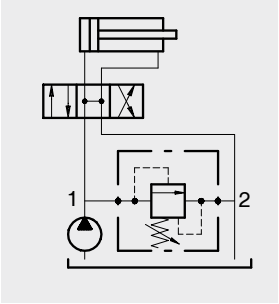
S (screw)
V (handknob)
P (panel mount)
PV (panel mount+handknob)

Body material

_ Aluminium
ac Steel

Operation

Allows oil flow from 2 to 1 when pressure in 2 reaches the setting of the spring.



Performance

Body Valves

Type VMPD	Max.flow		Max. pres.		Application range with standard spring*	Hysteresis	Oil leaks from P to T	Cavities and tools	Weight	
	l/min	*US gpm*	bar	*psi*					kg	*lb*
VMPD 38	35	*9.2*	350	*5100*	5÷50 bar - *72.5÷725 psi* (test setting 30 bar - *435 psi* at 5 l/min. - *1.32 US gpm)* 20÷100 bar - *290÷1450 psi* (test setting 60 bar - *870 psi* at 5 l/min. - *1.32 US gpm*) 5÷210 bar - *72.5÷3050 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) 50÷350 bar - *72.5÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*)	85% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	disregardable	VMPD 38	0,25	*0.55*
VMPD 12	60	*16*			5÷210 bar - *72.5÷3050 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) 50÷350 bar - *72.5÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*)			VMPD 12	0,33	*0.73*
VMPD 34	100	*26*						VMPD 34	0,60	*1.32*
VMPD 100	180	*48*						VMPD 100	0,62	*1.37*

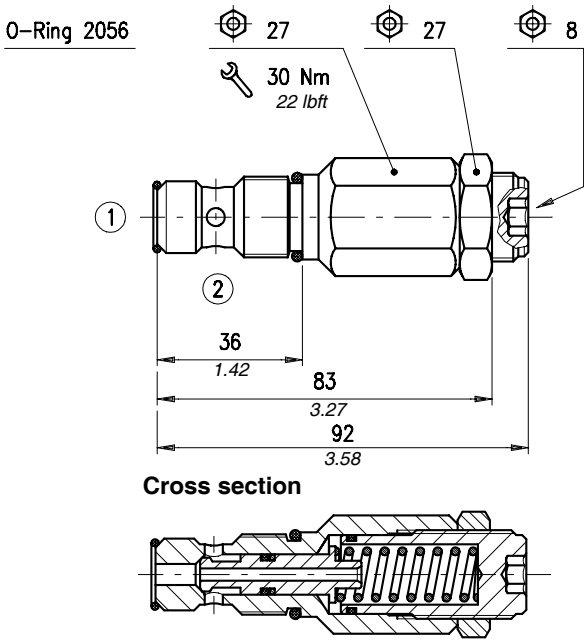
Cartridges

Type MG..A	Max.flow		Max. pres.		Application range with standard spring*	Hysteresis	Oil leaks from 2 to 1	Cavities and tools	Weight	
	l/min	*US gpm*	bar	*psi*					kg	*lb*
MG10A	60	*16*	350	*5100*	7÷40 bar - *101.5÷580 psi* (test setting 30 bar - *435 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 1.6 bar - *23.2 psi* per screw turn 20÷100 bar - *290÷1450 psi* (test setting 50 bar - 725 *psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 7 bar - *101.5 psi* per screw turn 50÷200 bar - *725÷2900 psi* (test setting 150 bar - *2200 psi* at 5 l/min *1.32 US gpm*) pressure increase by steps 24,5 bar - *355 psi* per screw turn 150÷350 bar - *2200÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 73 bar - *1060 psi* per screw turn	90% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	disregardable	• see cavity SAE 10-2 page 112	0,34	*0.75*
MG12A	100	*26*			2÷100 bar - *29÷1450 psi* (test setting 50 bar - *725 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 7 bar -*101.5 psi* per screw turn 50÷200 bar - *725÷2900 psi* (test setting 150 bar -*2200 psi* at 5 l/min. -*1.32 US gpm*) pressure increase by steps 27 bar - *390 psi* per screw turn 150÷350 bar - *2200÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 35 bar - *505 psi* per screw turn			• see cavity SAE 12-2 page 112	0,87	*1.92*

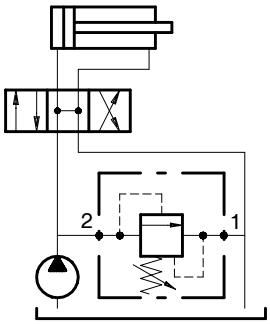
• the cavity have to report also the features of variation "A" see page 112

* **To perform setting of the valve see the pressure drop/ flow diagram**

Dimensions and hydraulic circuit

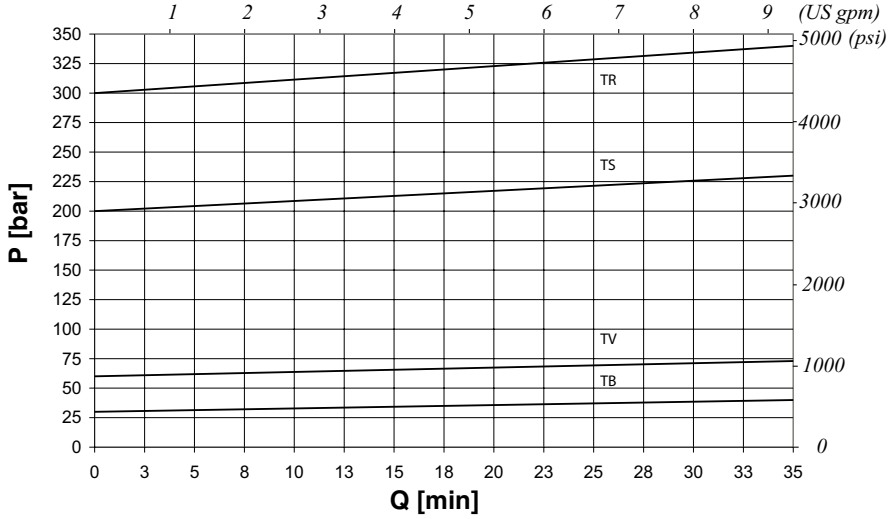


Cross section



Rating diagrams

Typical pressure drop vs. flow characteristic



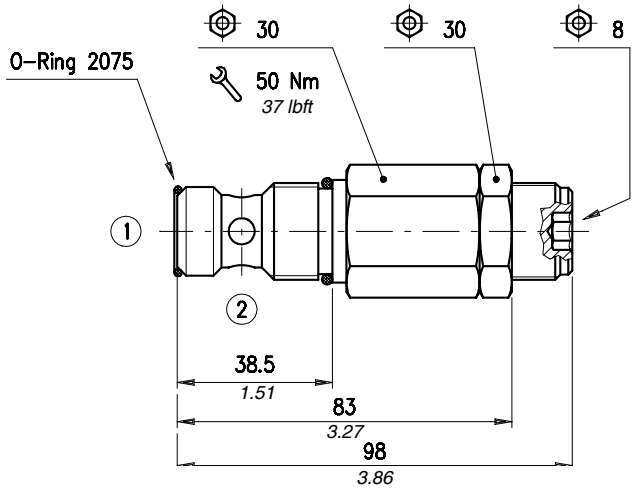
Order code

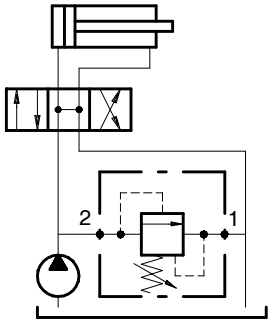
VMPD 38 / □□ . S

Pressure settings

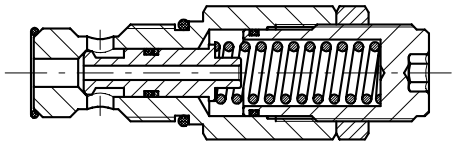
TB) 5÷50 bar *(72.5÷580 psi)*
TV) 20÷100 bar *(290÷1450 psi)*
TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725 ÷5100 psi)*

Dimensions and hydraulic circuit



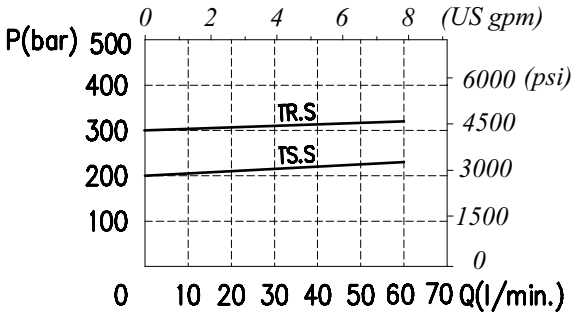


Cross section



Rating diagrams

Typical pressure drop vs. flow characteristic



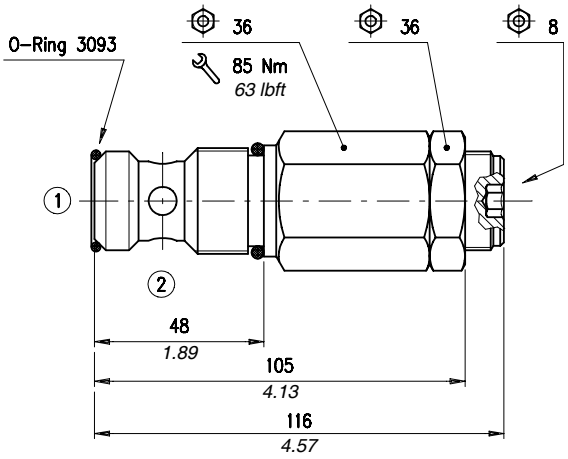
Order code

VMPD 12 / □□ . S

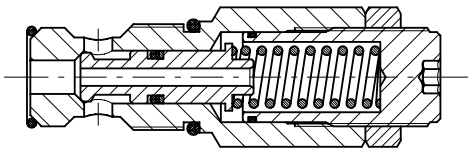
Pressure settings

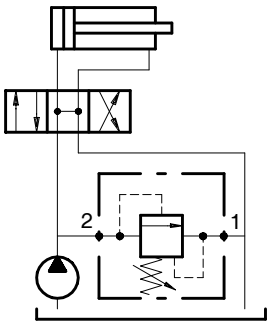
TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725 ÷5100 psi)*

Dimensions and hydraulic circuit



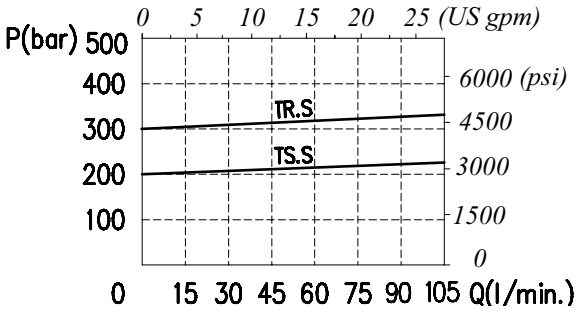
Cross section





Rating diagrams

Typical pressure drop vs. flow characteristic



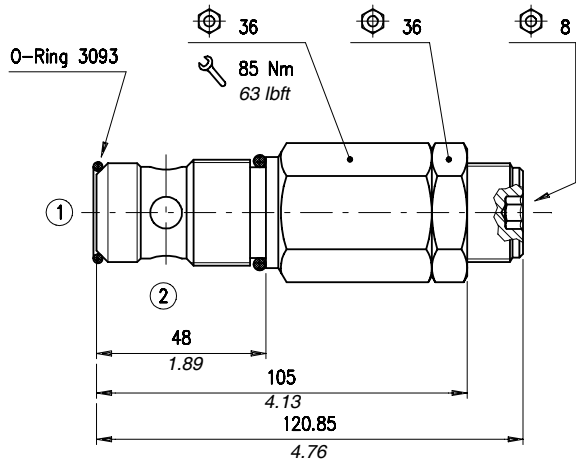
Order code

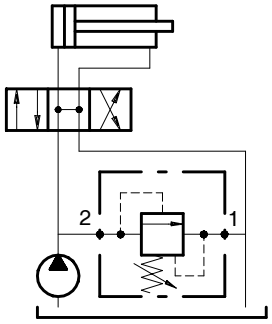
VMPD 34 / □□ . S

Pressure settings

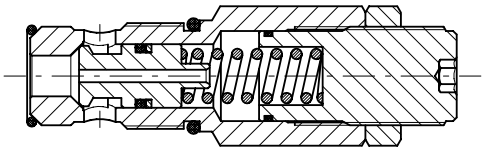
TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725 ÷5100 psi)*

Dimensions and hydraulic circuit



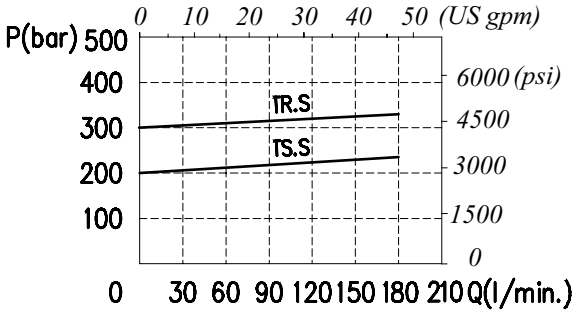


Cross section



Rating diagrams

Typical pressure drop vs. flow characteristic



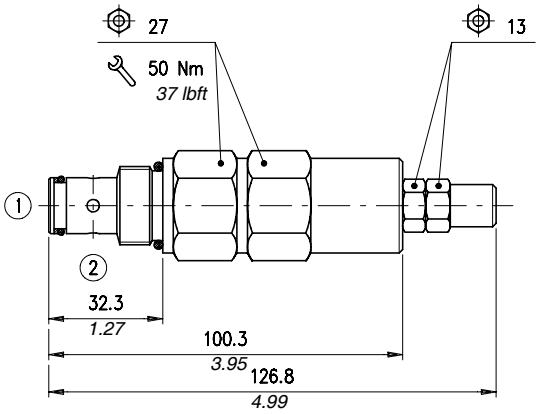
Order code

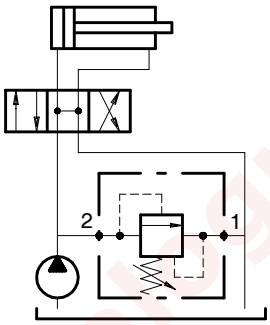
VMPD 100 / □□ . S

Pressure settings

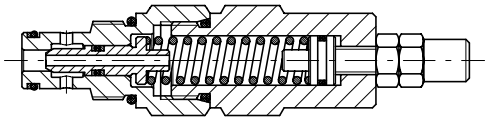
TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725 ÷5100 psi)*

Dimensions and hydraulic circuit



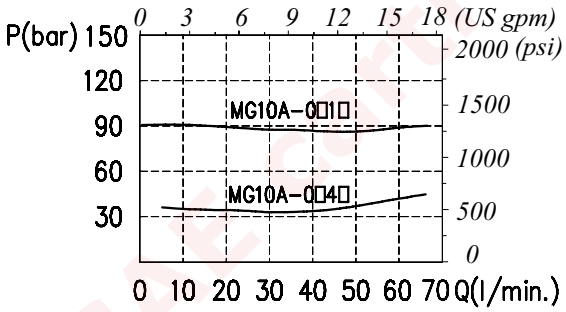


Cross section

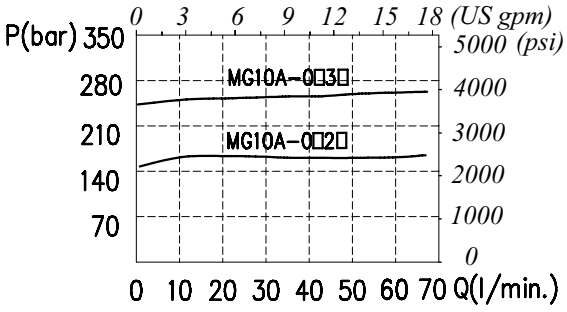


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

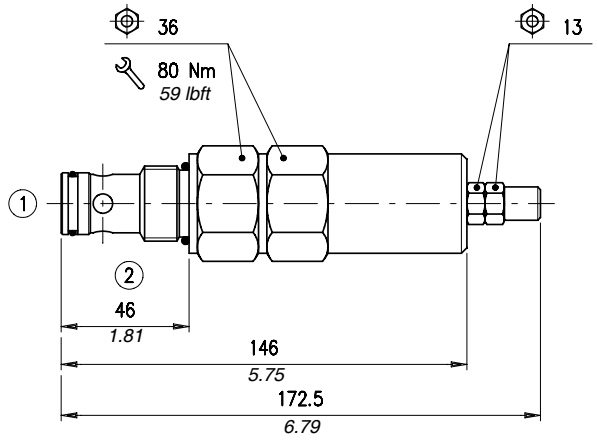
MG10A / 0 -□ -□ -□

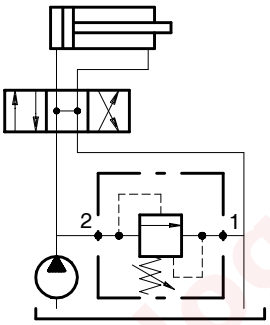
Adjustments
(see pag.105)
- **S** (screw)
- **V** (handknob)
- **W** (capped adjustement)

Pressure settings
- **1)** 20÷100 bar *(290÷1450 psi)*
- **2)** 50÷200 bar *(725 ÷2900 psi)*
- **3)** 150÷350 bar *(2200÷5100 psi)*
- **4)** 7÷40 bar *(101.5 ÷580 psi)*

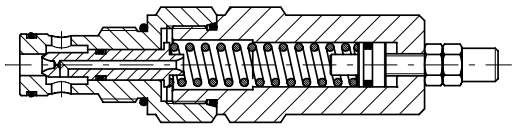
Seals
- **B)** Buna
- **V)** Viton

Dimensions and hydraulic circuit



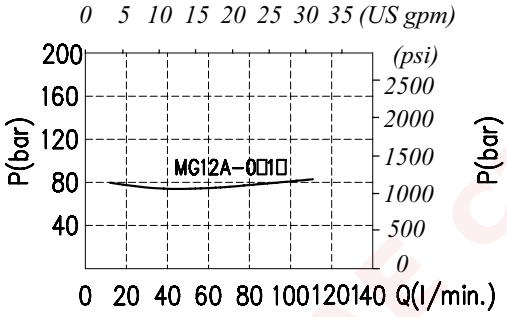


Cross section

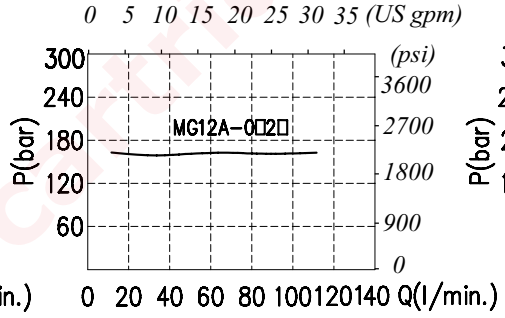


Rating diagrams

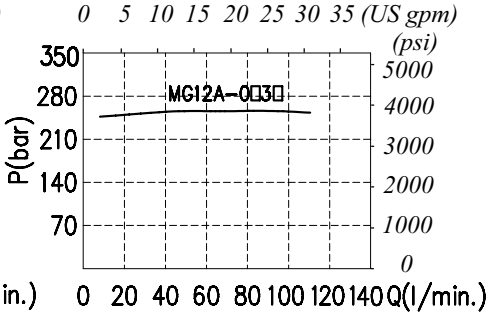
Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

MG12A / 0 -□ -□ -□

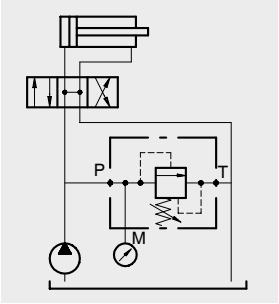
Adjustments
(see pag.105)
S (screw)
V (handknob)
W (capped adjustement)

Pressure settings
1) 20÷100 bar *(290÷1450 psi)*
2) 50÷200 bar *(725 ÷2900 psi)*
3) 150÷350 bar *(2200÷5100 psi)*

Seals
B) Buna
V) Viton

Operation

Allows oil flow from P to T when pressure in P reaches the setting of the spring.



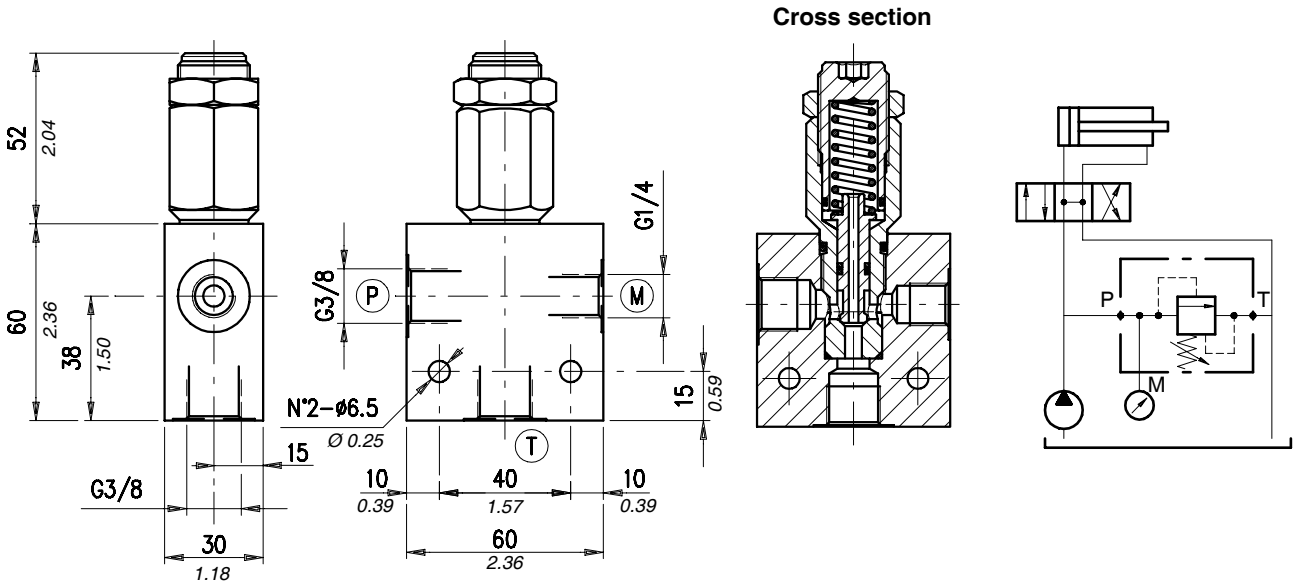
Performance

Body Valves

Type VMPD/B	Max.flow		Max. pres.		Application range with standard spring*	Hysteresis	Oil leaks from P to T	Cartridges	Weight	
	l/min	*US gpm*	bar	*psi*					kg	*lb*
VMPD/B 38	35	*9.2*	210 alum. body 350 steel body	*3050* *5100*	5÷210 bar - *72.5÷3050 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*-) 50÷350 bar - *72.5÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min.-*1.32 US gpm*-)	85% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	disregardable	VMPD 38	alum. body 0,50 steel body 0,90	*alum. body 1,10* *steel body 1,98*
VMPD/B 12	60	*16*			5÷210 bar - *72.5÷3050 psi*- (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) 50÷250 bar - *72.5÷3600 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*)			VMPD 12	alum. body 0,66 steel body 1,28	*alum. body 1,45* *steel body 2,82*
VMPD/B 34	100	*26*			5÷210 bar - *72.5÷3050 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) 50÷350 bar - *72.5÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*)			VMPD 34	alum. body 1,12 steel body 2,04	*alum. body 2,47* *steel body 4,50*
VMPD/B 100	180	*48*			5÷210 bar - *72.5÷3050 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) 50÷250 bar - *72.5÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*)			VMPD 100	alum. body 1,20 steel body 2,72	*alum. body 2,64* *steel body 6,00*

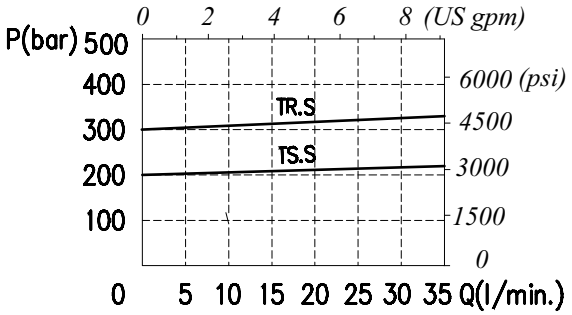
***To perform setting of the valve see the pressure drop/ flow diagram**

Dimensions and hydraulic circuit



Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VMPD /B 38 / □□ . S / □□

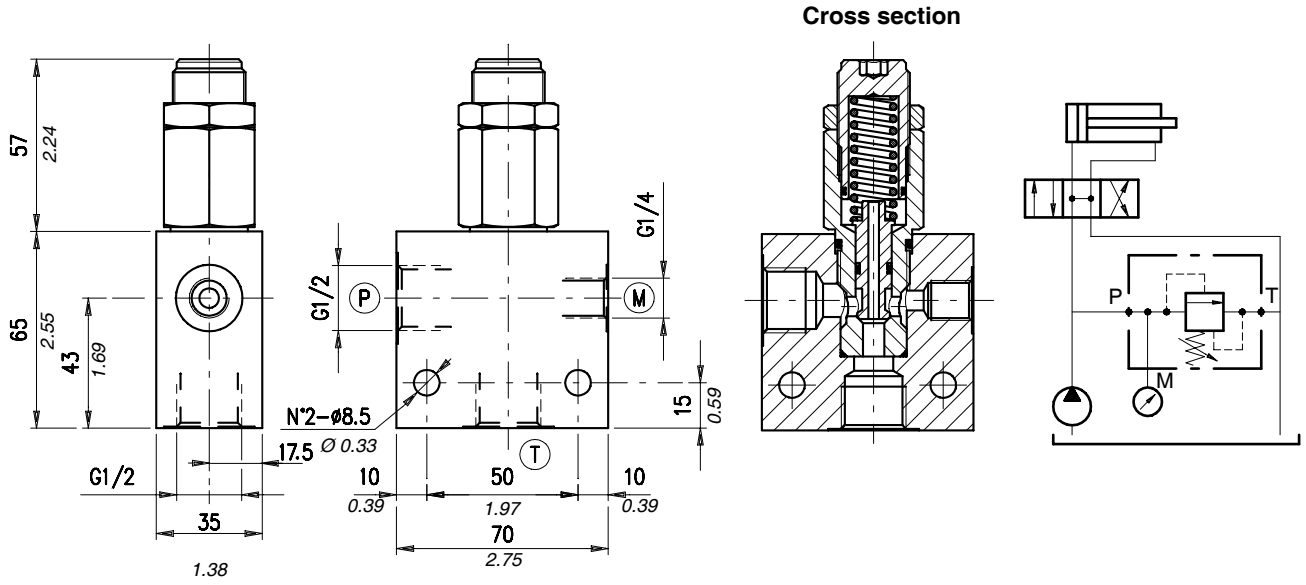
Pressure settings

TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725 ÷5100 psi)*

Body material

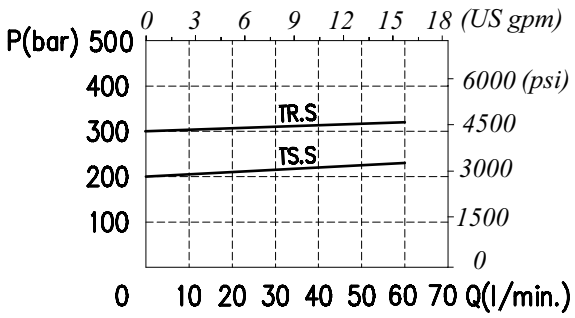
_ Aluminium
ac Steel

Dimensions and hydraulic circuit



Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VMPD /B 12 / □□ . S / □□

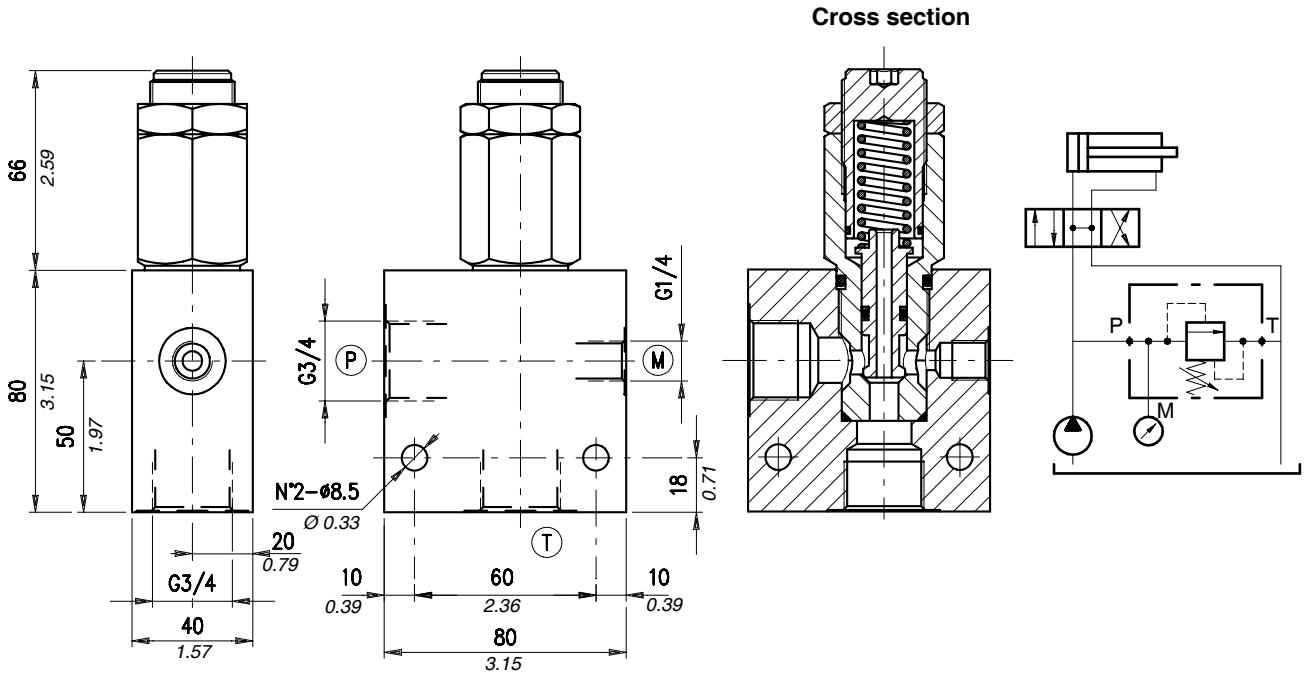
Pressure settings

TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725 ÷5100 psi)*

Body material

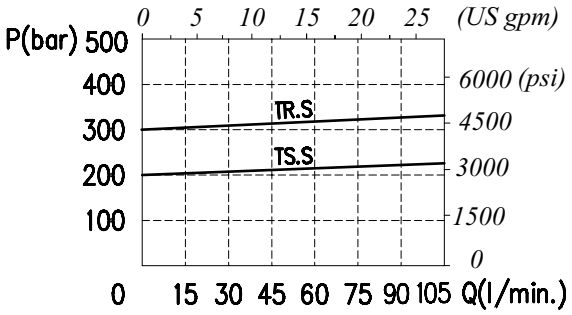
_ Aluminium
ac Steel

Dimensions and hydraulic circuit



Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VMPD /B 34 / □□ . S / □□

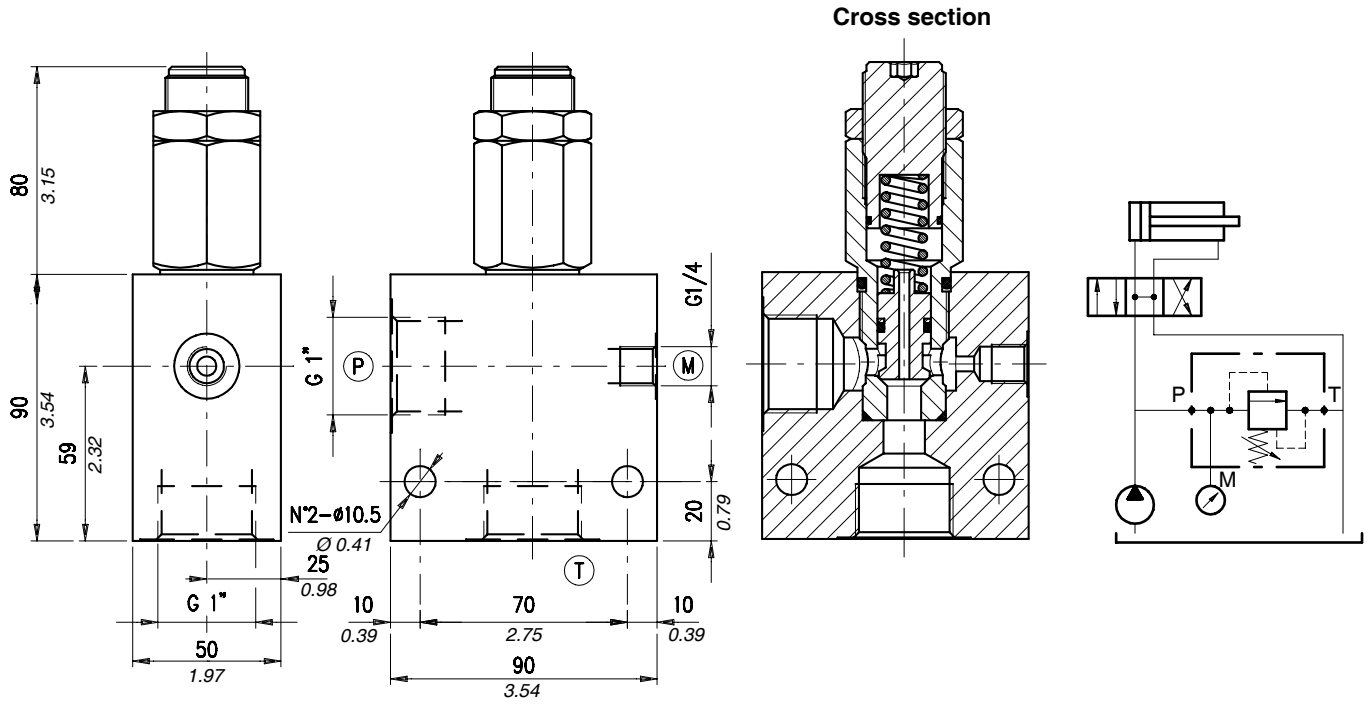
Pressure settings

TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725 ÷5100 psi)*

Body material

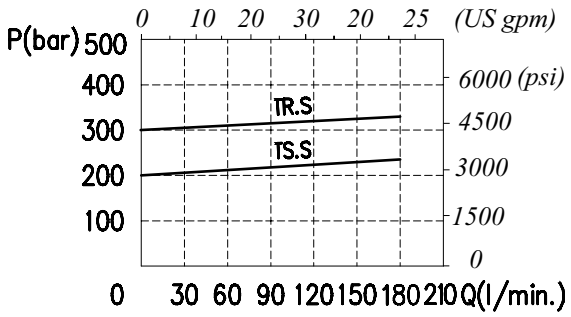
_ Aluminium
ac Steel

Dimensions and hydraulic circuit



Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VMPD /B 100 / □□ . S / □□

Pressure settings

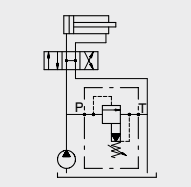
TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725 ÷5100 psi)*

Body material

_ Aluminium
ac Steel

Operation

Allows oil flow from P to T when pressure in P reaches the setting of the spring.



Performance

Body Valves

Type VMPP	Flow max.		Pressure max.		Application range with standard spring*	Hysteresis	Oil leaks from P to T	Cavities and tool	Weight	
	l/min	*US gpm*	bar	*psi*					kg	*lb*
VMPP 10	70	*18*	350	*5100*	**TB)** 5÷40 bar - *72.5÷580 psi* (test setting 20 bar - *290 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 8 bar *-116 psi* per screw turn **TS)** 20÷400 bar - *290÷5800 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 gpm*) pressure increase by steps 120 bar *-1750 psi* per screw turn	95% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	20 cm³/min. *- 1.22 in³/mm* at 100 bar *-1450 psi-*	VMP 10	0,26	*0.57*
VMPP 20	120	*32*			**TB)** 5÷40 bar - *72.5÷580 psi* (test setting 20 bar - *290 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 15 bar - *217.5 psi* per screw turn **TS)** 20÷400 bar - *290÷5800 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 115 bar - *1700 psi* per screw turn		25 cm³/min. *- 1.52 in³/mm* at 100 bar *-1450 psi-*	VMP 20	0,55	*1.21*

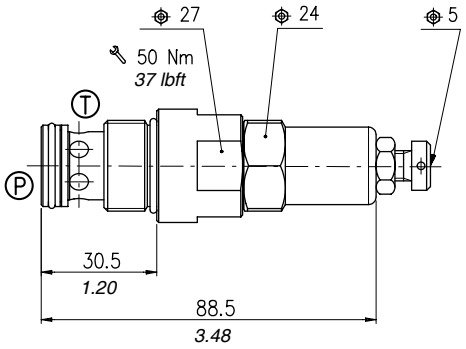
Cartridges

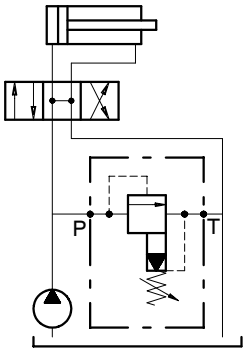
Type MP..A	Max.flow		Max. pres.		Application range with standard spring*	Hysteresis	Oil leaks from 1 to 2	Cavities and tool	Weight	
	l/min	*US gpm*	bar	*psi*					kg	*lb*
MP10A	60	*16*	350	*5100*	5÷50 bar *-72.5÷725 psi* (test setting 20 bar - *290 psi* at 5 l/min. - *1.32 gpm*) pressure increase by steps 10 bar - *145 psi* per screw turn 50÷220 bar - *725÷3200 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 gpm*) pressure increase by steps 42 bar - 609 psi per screw turn 150÷350 bar - *2200*÷5100 *psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 gpm*) pressure increase by steps 104 bar *-1508 psi* per screw turn	80% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	25 cm³/min. *-1.52 in³/mm* at 100 bar *-1450 psi-*	• Cavity SAE 10-2 see page 112	0,19	*0.42*
MP12A	100	*26*			10÷50 bar *-145÷725 psi* (test setting 20 bar - *290 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 10 bar - *145 psi* per screw turn 50÷220 bar - *725÷3200 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) pressure increase 37 bar - *536.5 psi* per screw turn 150÷350 bar - *2200÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min.- *1.32 US gpm*) pressure increase 92 bar *-1334 psi* per screw turn	95% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*		• Cavity SAE 12-2 see page 112	0,30	*0.66*
MP16A	180	*47.55*			see setting MP10A			• Cavity SAE 16-2 see page 112	0,44	*0.97*

• the cavity have to report also the features of variation "A" see page 112

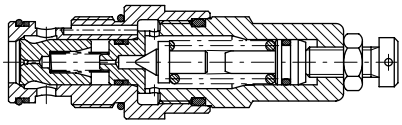
***To perform setting of the valve see the pressure drop/ flow diagram**

Dimensions and hydraulic circuit



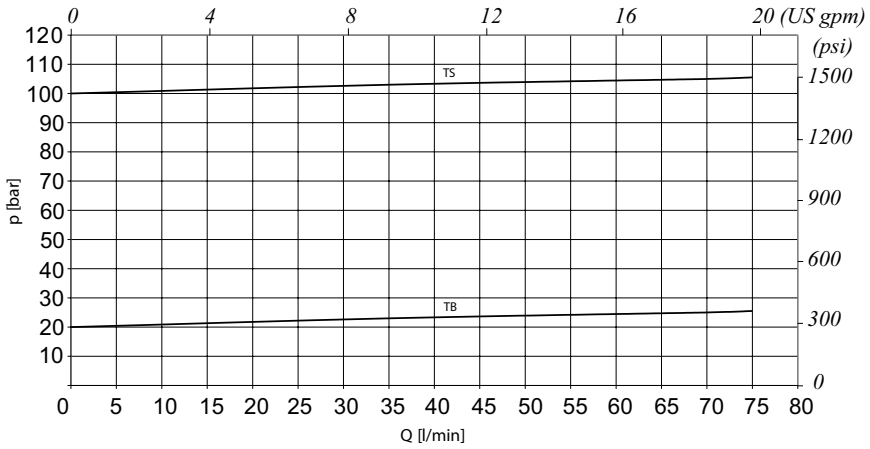


Cross section



Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

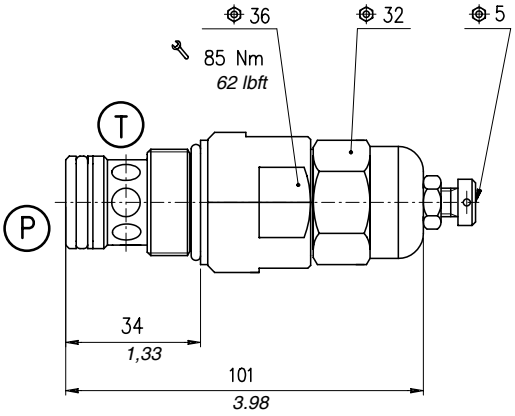
VMPP 10 / □ . □

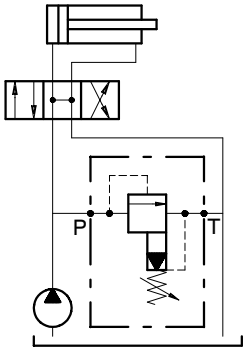
Pressure settings

TB) 5÷40 bar *(72.5÷580 psi)*
TS) 20÷400 bar *(290 ÷5800 psi)*

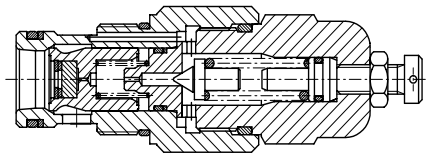
Adjustment
(see pag.105)
V (handknob)
W (capped adjustement)

Dimensions and hydraulic circuit



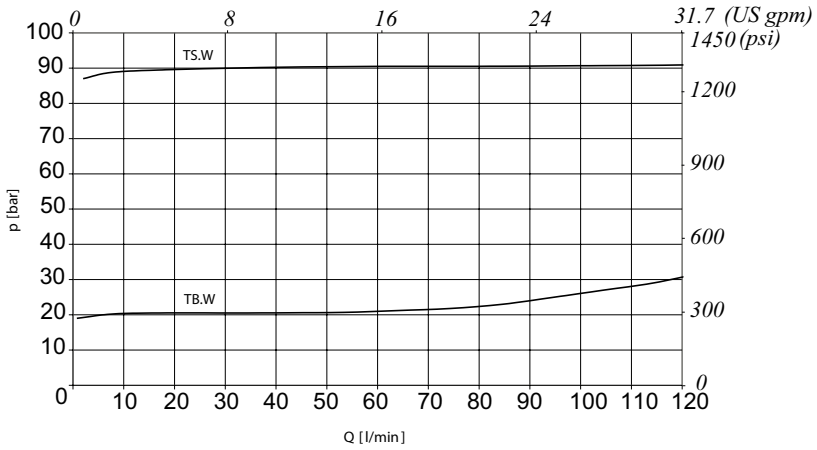


Cross section



Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VMPP 20 / ☐ . ☐

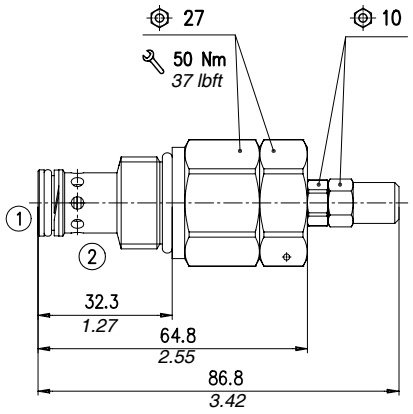
Pressure settings

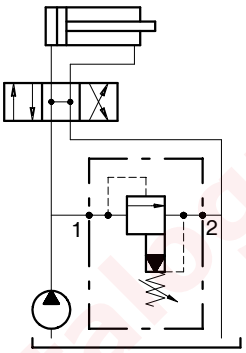
TB) 5÷40 bar *(72.5÷580 psi)*
TS) 20÷400 bar *(290 ÷5800 psi)*

Adjustment
(see pag.105)

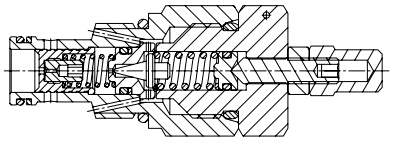
V (handknob)
W (capped adjustement)

Dimensions and hydraulic circuit



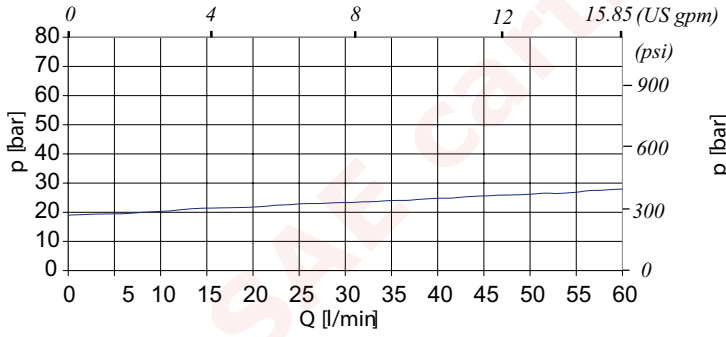


Cross section

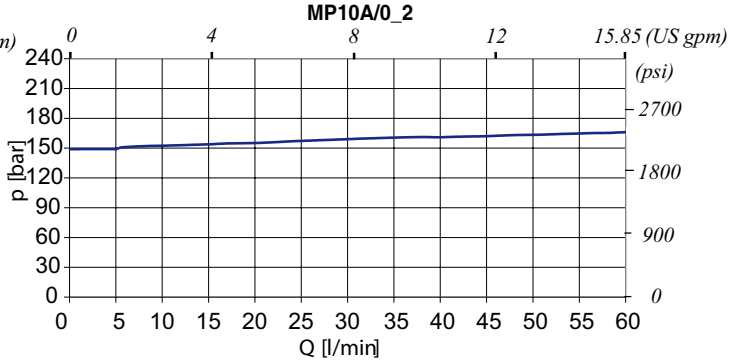


Rating diagrams

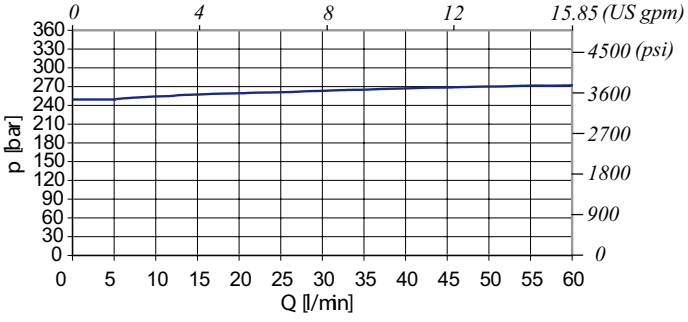
Typical pressure drop vs. flow characteristic
MP10A/0_1



Typical pressure drop vs. flow characteristic
MP10A/0_2



Typical pressure drop vs. flow characteristic
MP10A/0_3



Order code

MP10A / 0 -□ -□ -□

Adjustments
(see pag.105)

S (screw)
V (handknob)
W (capped adjustement)

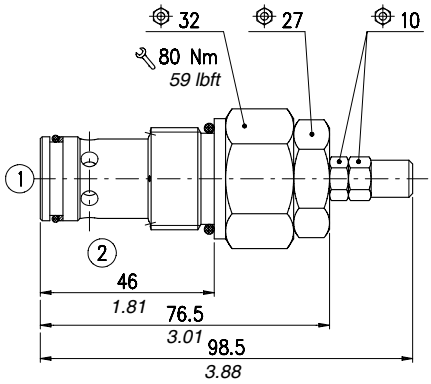
Pressure settings

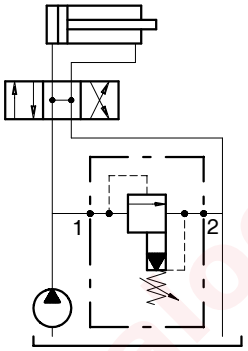
1) 5÷50 bar *(72.5÷725 psi)*
2) 50÷220 bar *(725 ÷3200 psi)*
3) 150÷350 bar *(2200 ÷5100 psi)*

Seals

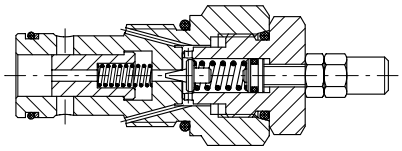
B) Buna
V) Viton

Dimensions and hydraulic circuit



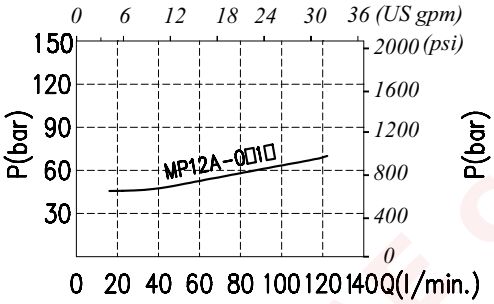


Cross section

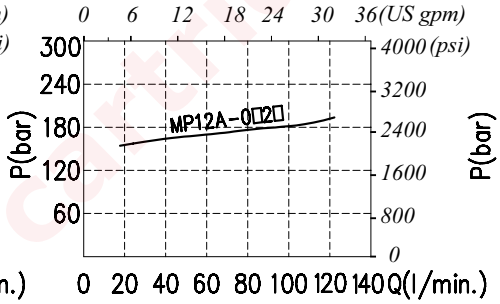


Rating diagrams

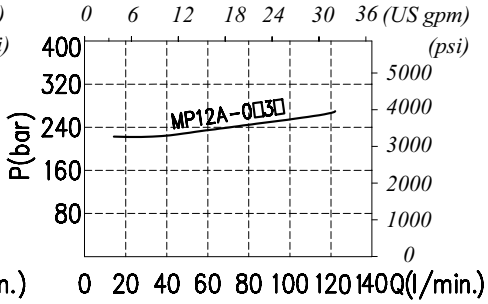
Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

MP12A / 0 -□ -□ -□

Adjustments
(see page 101)

S (screw)
V (handknob)
W (capped adjustement)

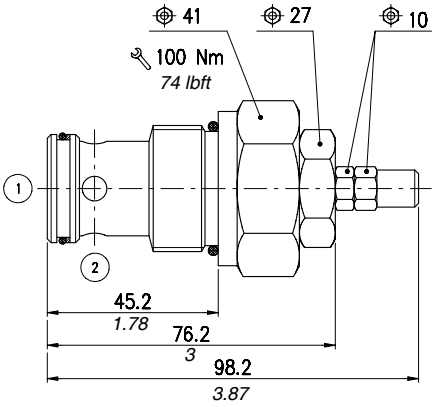
Pressure settings

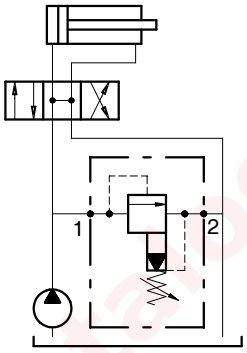
1) 10÷50 bar *(145÷725 psi)*
2) 50÷200 bar *(725÷2900 psi)*
3) 150÷350 bar *(2200÷5100 psi)*

Seals

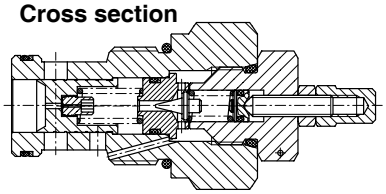
B) Buna
V) Viton

Dimensions and hydraulic circuit



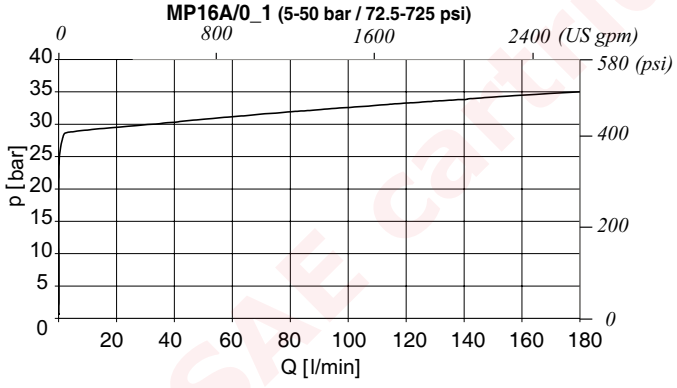


Cross section

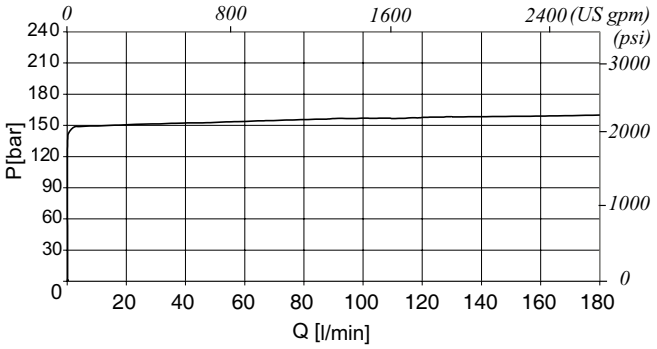


Rating diagrams

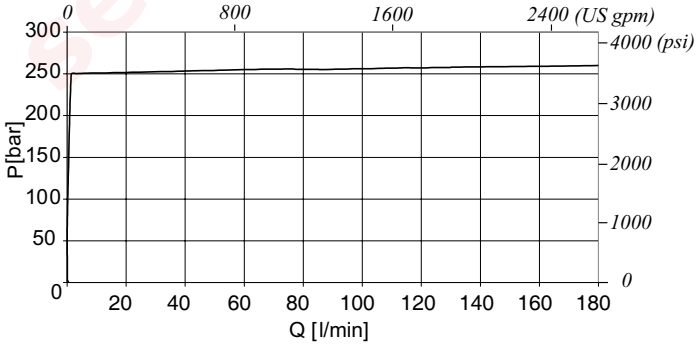
Typical pressure drop vs. flow characteristic
MP16A/0_1 (5-50 bar / 72.5-725 psi)



Typical pressure drop vs. flow characteristic
MP16A/0_2 (50-220 bar / 725-3190 psi)



Typical pressure drop vs. flow characteristic
MP16A/0_3 (150-350 bar / 2175-5075 psi)



Order code

MP16A / 0 -□ -□ -□

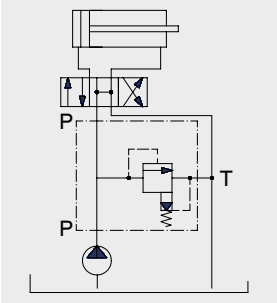
Adjustments
(see page 105)
S (screw)
V (handknob)
W (capped adjustement)

Pressure settings
1) 5÷50 bar *(72.5÷725 psi)*
2) 50÷220 bar *(725÷3200 psi)*
3) 150÷350 bar *(2200÷5100 psi)*

Seals
B) Buna
V) Viton

Operation

Allows oil flow from P (1) to T (2) when pressure in P (1) reaches the setting of the spring.



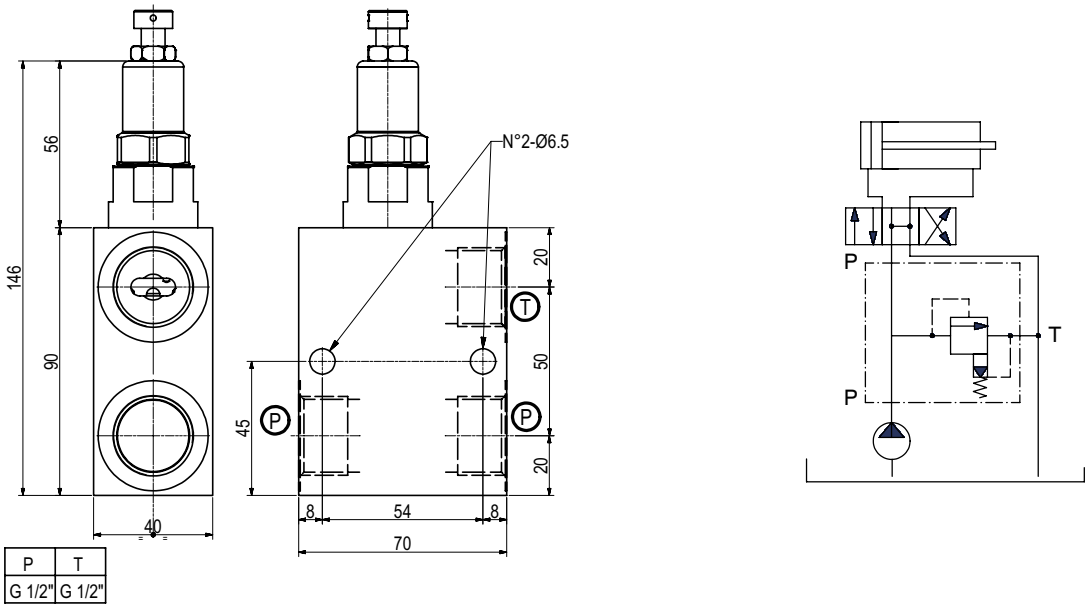
Performance

Body Valves

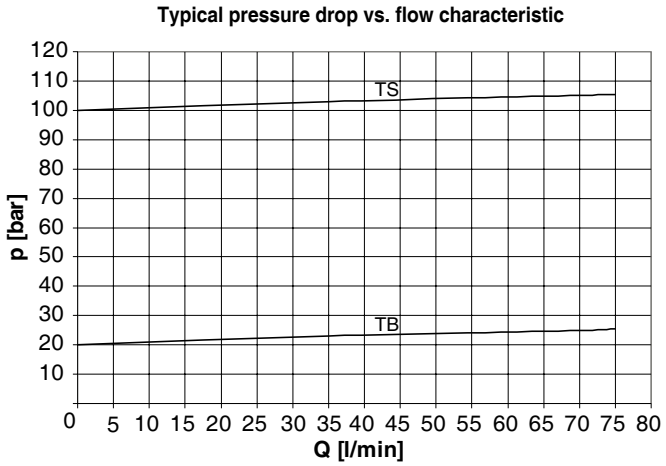
Type	Flow max.		Press.max		Application range with standard spring*	Hysteresis	Oil leaks from P to T	Cavities and tool	Weight	
	l/min	*US gpm*	bar	*psi*					kg	*lb*
VMPP/B/L 10	70	*18*	350	*5100*	**TB)** 5÷40 bar - *72.5÷580 psi* (test setting 20 bar - *290 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 8 bar *-116 psi* per screw turn **TS)** 20÷400 bar - *290÷5800 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 gpm*) pressure increase by steps 120 bar *-1750 psi* per screw turn	95% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	20 cm³/min. - *1.22 in³/mm* at 100 bar *-1450 psi*	Cavity VMP 10 see page 115	steel 1.4 alum. 0.5	*steel 3.09 alum. 1.10*
VMPP/B/L 20	120	*32*			**TB)** 5÷40 bar - *72.5÷580 psi* (test setting 20 bar - *290 psi* at 5 l/min. - *1.32 US gpm*) pressure increase by steps 15 bar *-217 psi* per screw turn **TS)** 20÷400 bar - *290÷5800 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 gpm*) pressure increase by steps 120 bar *-1667 psi* per screw turn		25 cm³/min. *-1.52 in³/mm* at 100 bar *-1450 psi-*	Cavity VMP 20 see page 116	steel 4 alum. 1.5	*steel 8.82 alum. 3.31*

***To perform setting of the valve see the pressure drop/ flow diagram**

Dimensions and hydraulic circuit



Rating diagrams



Order code

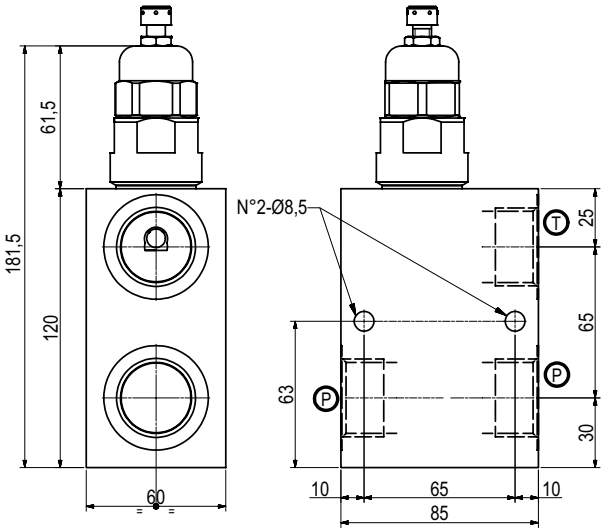
VMPP/B/L 10-12/❑❑.❑/❑❑

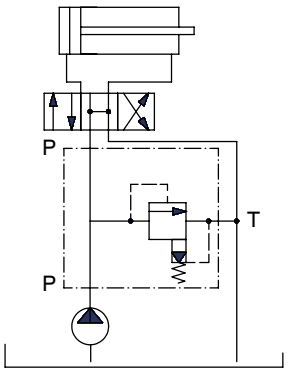
Pressure setting
TB) 5÷40
TS) 20÷400

Adjustments
(see page 105)
V (handknob)
W (copped adjustment)

Body material
_ Aluminium
ac Steel

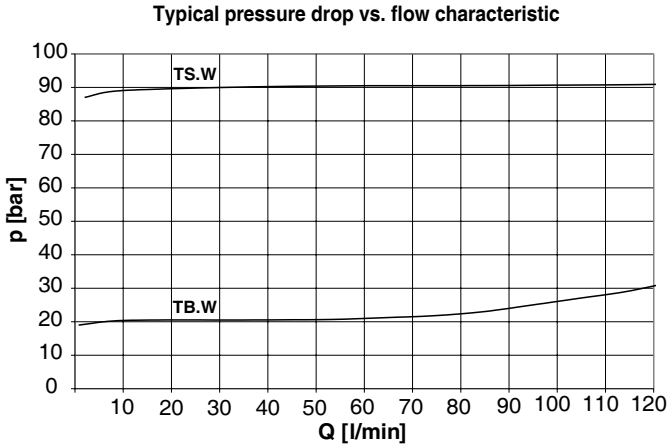
Dimensions and hydraulic circuit





VMPP/B/L 20	P	T
34	G 3/4"	G 3/4"
100	G 1"	G 1"

Rating diagrams



Order code

VMPP/B/L 20-❑❑/❑❑.❑/❑❑

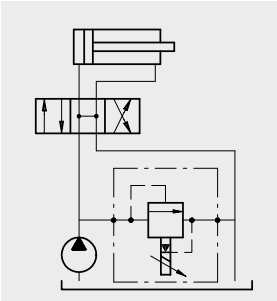
Port Size
34) G 3/4"
100) G 1"

Pressure settings
TB) 5÷40
TS) 20÷400

Adjustments
(see page 105)
V (handknob)
W (copped adjustment)

Body Material
_ Alum.
ac Steel

Operation



These valves permits free oil flow from 1 to 2 when the pressure in 1 exceeds the setting of the magnet
Push-button operation allowed. (If used with energized magnet, the valve will change the actual pressure setting).

Performance

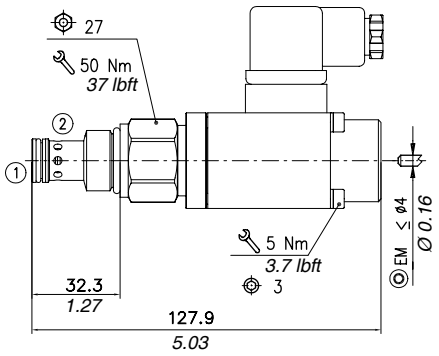
Cartridges

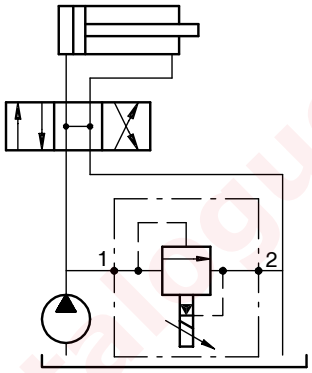
• the cavity have to report also the features of variation “A” see page 108

Type MP..Y	Max.flow		Max.pres.		Max. control current*	Current dither frequency	Hysteresis with 200 Hz current dither frequency	Relieving pressure range from zero threshold to max. control current	Weight		Cavity and tools
	l/min	*US gpm*	bar	*psi*					kg	*lb*	
MP10Y	50	*13.2*	350	*5100*	1,25 A for coils 12 V 0,68 A for coils 24 V	200	6%	10÷100 bar - *145÷1450 psi* at 5 l/min. - *1.32 US gpm* 50÷200 bar - *725÷2900 psi* at 5 l/min. - *1.32 US gpm* 80÷350 bar - *1150÷5100 psi* at 5 l/min. -*1.32 US gpm* 5÷40 bar - *72.5÷580* at 5 l/min. at *1.32 US gpm*	0,67	*1.48*	• see cavity SAE 10-2 page 112
MP16Y	150	*40*				150	4%		0,96	*2.12*	• see cavity SAE 16-2 page 112

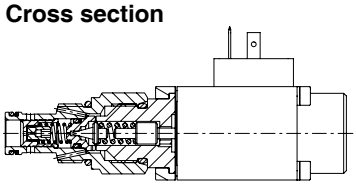
***For further informations see page 99 MP35X35**

Dimensions and hydraulic circuit



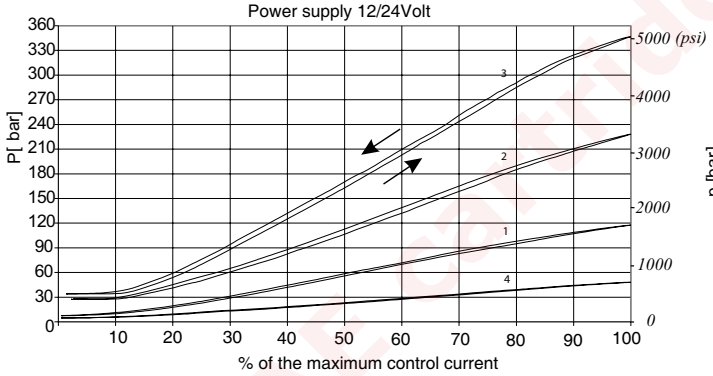


Cross section

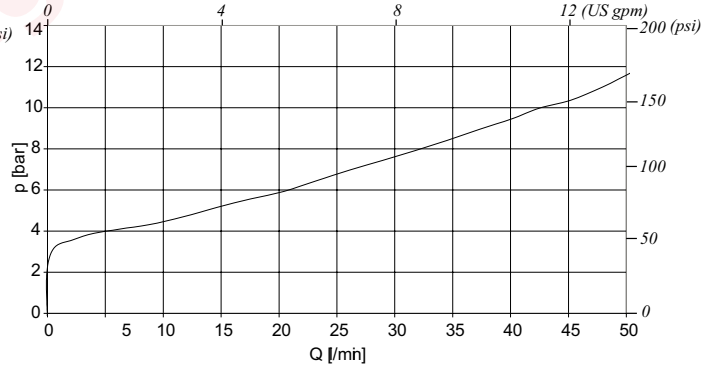


Rating diagrams

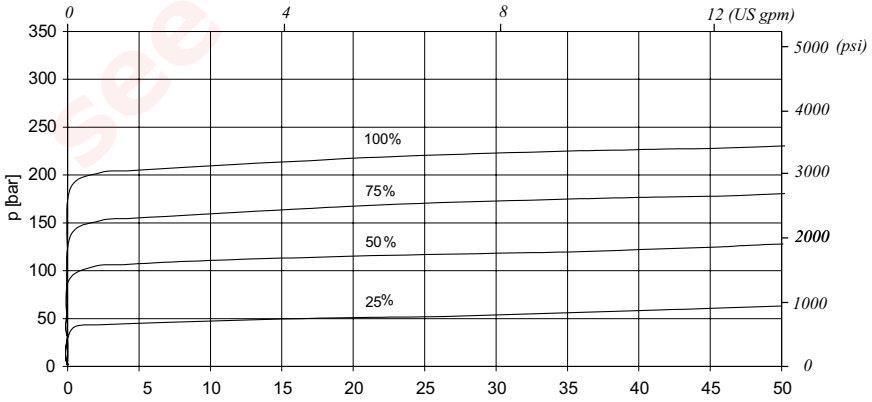
Relief Pressure vs. % of the Maximun Control Current
Power supply 12/24Volt



Typical Pressure drop vs. Flow Characteristic
Flow 1->2 with de-energized coil



Typical Relief Pressure vs.Flow Characteristic 1->2
At various %'s of maximum control current
Pressure setting 2 (50-200 bar) - Power supply 12/24 Volt



Order code

MP10Y / 0 -□ -□ -□

Power supply(Volt)

2) 12Vcc
4) 24Vcc

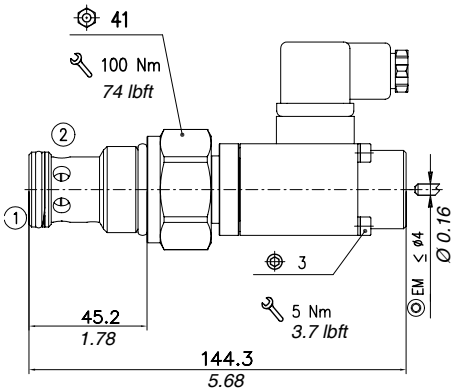
Pressure range

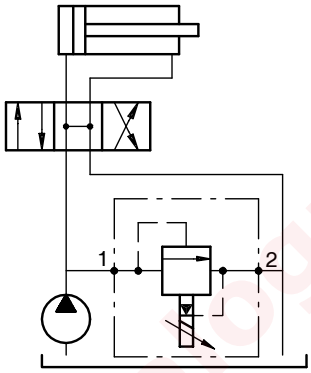
1) 10÷100 bar *(145÷1450 psi)*
2) 50÷200 bar *(725÷2900 psi)*
3) 80÷350 bar *(2200 ÷5100 psi)*
4) 5÷40 bar *(72.5÷580 psi)*

Seals

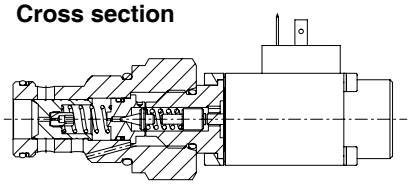
B) Buna
V) Viton

Dimensions and hydraulic circuit



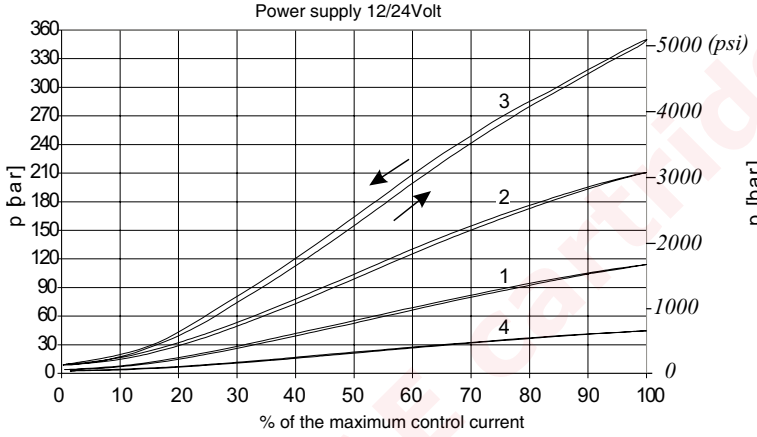


Cross section

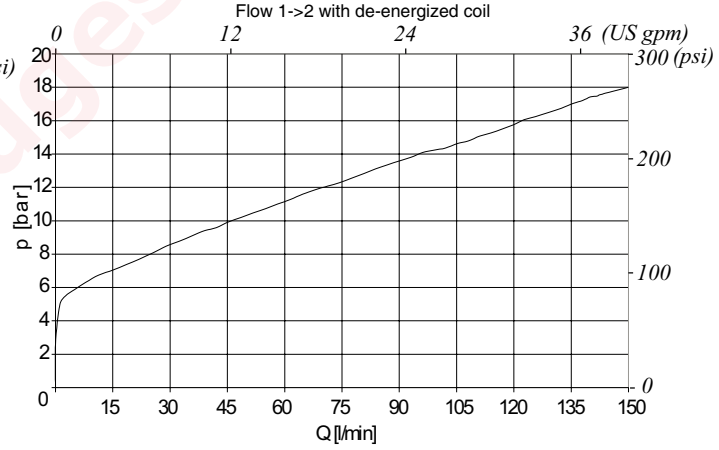


Rating diagrams

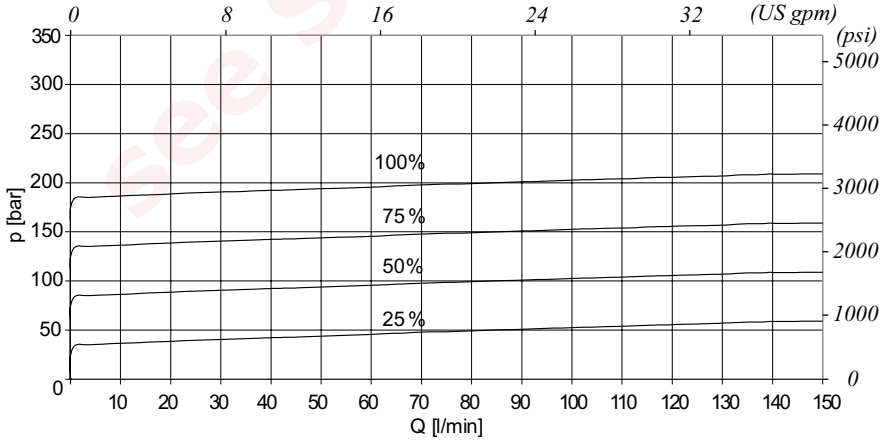
Relief Pressure vs. % of the Maximun Control Current
Power supply 12/24Volt



Typical Pressure drop vs. Flow Characteristic
Flow 1->2 with de-energized coil



Typical Relief Pressure vs.Flow Characteristic 1->2
At various %'s of maximum control current
Pressure setting 2 (50-200 bar) - Power supply 12/24 Volt



Order code

MP16Y / 0 -□ -□ -□

Power supply(Volt)

2) 12Vcc
4) 24Vcc

Pressure range

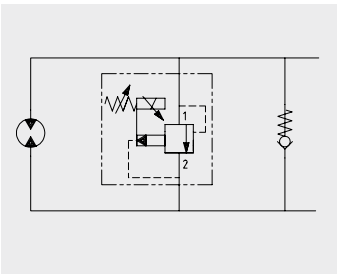
1) 10÷100 bar *(145÷1450 psi)*
2) 50÷200 bar *(725÷2900 psi)*
3) 80÷350 bar *(2200 ÷5100 psi)*
4) 5÷40 bar *(72.5÷580 psi)*

Seals

B) Buna
V) Viton

Operation

This kind of valve Allows oil flow from 1 to 2 when pressure in 1 reaches the setting regulated by the proportional coil.
Bottom manual override available as option (notice: if it's activated with energised coil, the setting established will be effected).



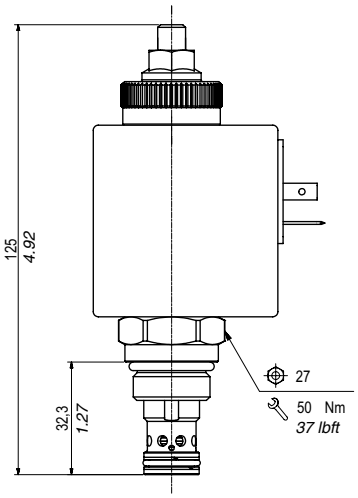
Performance

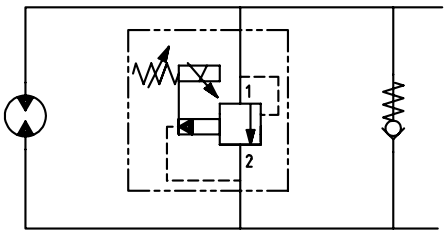
Cartridges

Type MP..T	Flow Q max.		Max. press.		Rated and max current	Dither frequency	Pressure range bar *(psi)*	Oil leaks	Cavities and tools	Weight	
	l/min	*US gpm*	bar	*psi*						kg	*lb*
MP10T	50	*13.2*	350	*5100*	2) Square-coil 12Vcc connect-tor DIN (In=1,25A) 3) Round coil 12Vcc connect-tor DIN (In=1,8A) 4) Square-coil 24Vcc connect-tor DIN (In=0,63A) 5) Round coil 24V connect-tor DIN (In=0,9A)	180 Hz	1) 8-130 *(116-1885)* 2) 8-180 *(116-2465)* 3) 8-240 *(116-3045)*	-	*Cavity SAE 10-2 page112	0,125	*0.275*

* the cavity have to report also the features of variation "A" see page 112

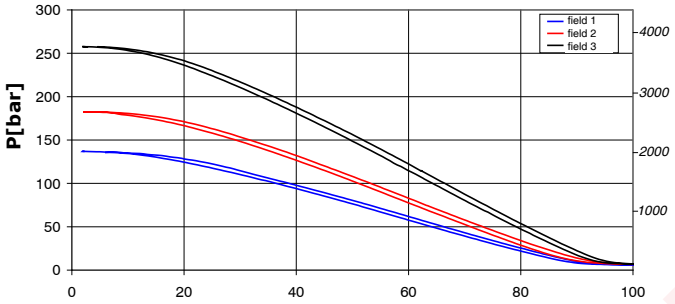
Dimensions and hydraulic circuit



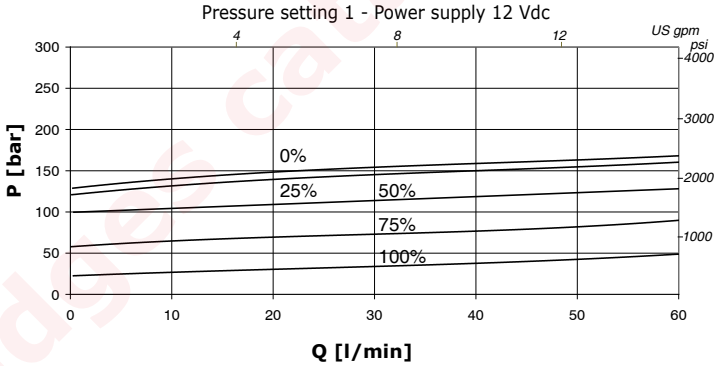


Rating diagrams

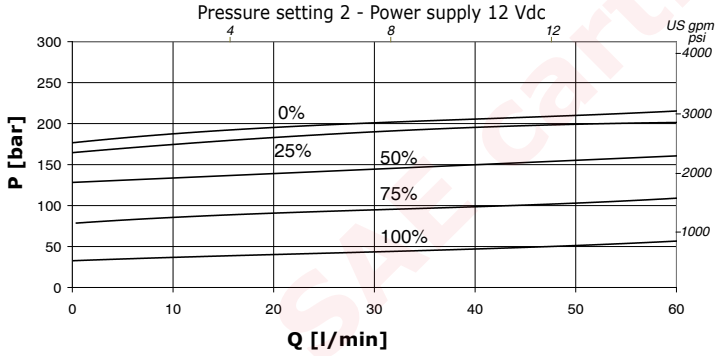
Relief Pressure vs. % of the Maximun Control Current
Q=5 l/min *(1.32 US gpm)* - Power supply 12 Vdc



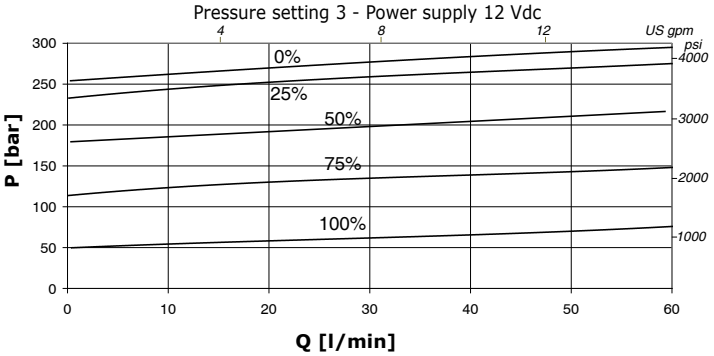
Typical Relief Pressure vs.Flow Characteristic 1->2
At various %'s of maximum control current
Pressure setting 1 - Power supply 12 Vdc



Typical Relief Pressure vs.Flow Characteristic 1->2
At various %'s of maximum control current
Pressure setting 2 - Power supply 12 Vdc



Typical Relief Pressure vs.Flow Characteristic 1->2
At various %'s of maximum control current
Pressure setting 3 - Power supply 12 Vdc



Order code

MP 10T/0 - □ - □ - □

Adjustment

2) Square coil 12Vcc connector DIN (In=1,25A)
3) Round coil 12Vcc connector DIN (In=1,8A)
4) Square coil 24Vcc connector DIN (In=0,63A)
5) Round coil 12Vcc connector DIN (In=0,9A)

Pressure range

bar *(psi)*

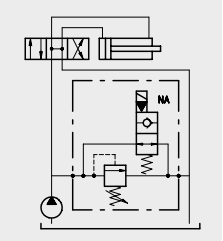
1) 8-130 *(116-1885)*
2) 8-180 *(116-2465)*
3) 8-240 *(116-3045)*

Seals

B) Buna
V) Viton

Operation

Pilot operated with venting for the 12 (34) and direct acting for the 14 (38). The valve Allows oil flow from P to T when pressure in P reaches the setting of the spring. Pick the solenoid UP (for NC types) or DOWN (for NA types) to allow for free oil flow from P into T.



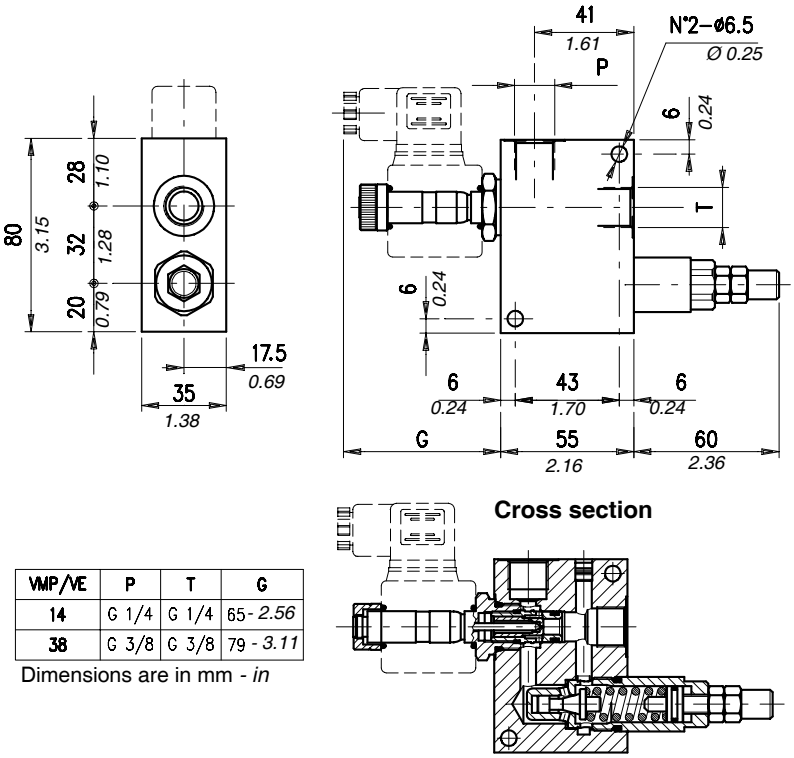
Performance

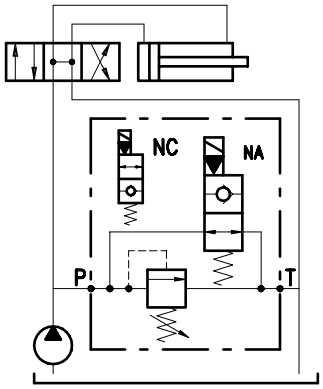
Body Valves

Type VMP/VE	Max. flow		Max. pres.		Application range with standard spring*	Hysteresis	Coils	Oil leaks from P to T	Weight		Cartridge
	l/min	*US gpm*	bar	*psi*					kg	*lb*	
VMP/VE 14 (38)	**(14)** 20 **(38)** 35	***(14)*** *5.3* ***(38)*** *9.2*	210 aluminium body 350 steel body	*3050* *5100*	5÷40 bar - *72.5÷580 psi* (test setting 30 bar - *435 psi* at 5 l/min. - *1.32 US gpm*) 20÷80 bar - *290÷1150 psi* (test setting 60 bar - *870 psi* at 5 l/min.- *1.32 US gpm*) 5÷220 bar - *72.5÷3200 psi* (test setting 160 bar - *2300 psi* at 5 l/min.- *1.32 US gpm*) 180÷350 bar - *2600÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*)	90% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	VMP/VE 14 (210 bar - *3050 psi*): see BE VMP/VE 14 (350 bar - *5100 psi*) and VMP/VE 38: see BT	disregarda-ble	aluminium body 0,60 steel body 1,13	*alum. body 1.32* *steel body 2.49*	VMP5Y VMP/VE 14 (210 bar - *3050 psi*): EC08A VMP/VE 14 (350 bar - *5100 psi*-) EC08A and VMP/VE 38: EC08B
VMP/VE 12 (34)	90	*24*			5÷50 bar - *72.5÷725 psi* (test setting 30 bar - *435 psi* at 5 l/min. - *1.32 US gpm*) 50÷200 bar - *725÷2900 psi* (test setting 160 bar - *2300 psi* at 5 l/min. - *1.32 US gpm*) 150÷350 bar - *2200÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*-)		VMP/VE 12-34 (210 bar- *3050 psi*) see BE VMP/VE 12-34 (350 bar- *5100 psi*) see BT		aluminium body 1,20 steel body 2,50	*alum. body 2.64* *steel body 5.51*	MC08A (210 bar - *350 psi*): EC08A (350 bar - *5100 psi*): EC08B
VMP/VE 100 (114)	**(100)** 150 **(114)** 250	***(100)*** *40* ***(114)*** *66*					VMP/VE 100-114/ (210 bar - *3050 psi*) see BE VMP/VE 100-114 BT/ (350 bar - *5100 psi*) see BT		aluminium body 1,92 (VMP/VE 100) 3,13 (VMP/VE 114) steel body 3,92 (VMP/VE 100) 7,63 (VMP/VE 114)	*alum. body 23* *6.9* *steel body 8.64* *16.82*	

***To perform setting of the valve see the pressure drop/ flow diagram.**

Dimensions and hydraulic circuit



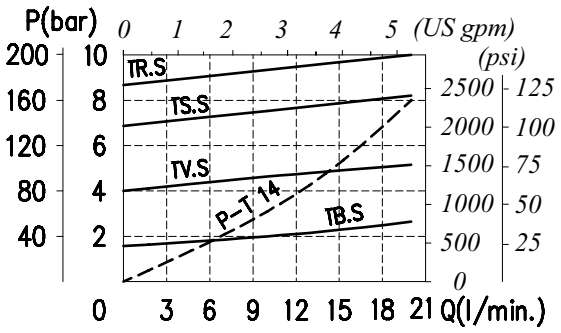


VMP/VE	P	T	G
14	G 1/4	G 1/4	65 - *2.56*
38	G 3/8	G 3/8	79 - *3.11*

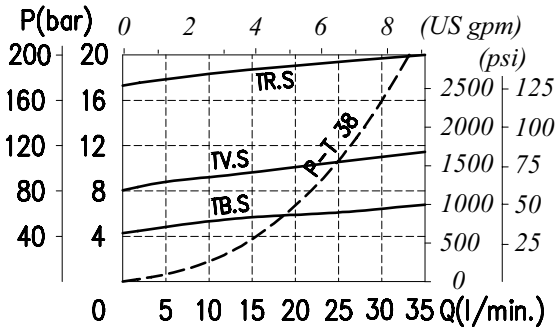
Dimensions are in mm - *in*

Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VMP /VE □□ / □□ / □□ . □ / □□

Port size

14) G 1/4
38) G 3/8

Assembly scheme

NA) Normally opened
NC) Normally closed

Pressure settings

TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷80 bar *(290÷1150 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar*(2600÷5100 psi)*

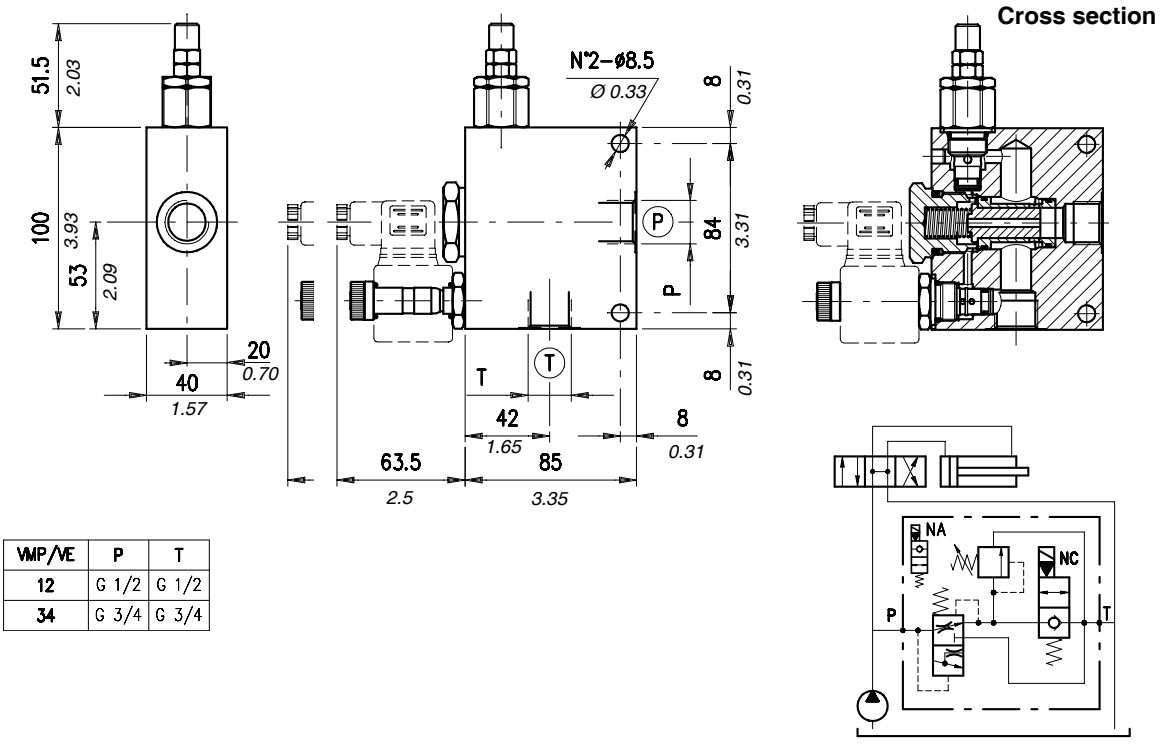
Adjustment
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)

Body material

_ Aluminium
ac Steel

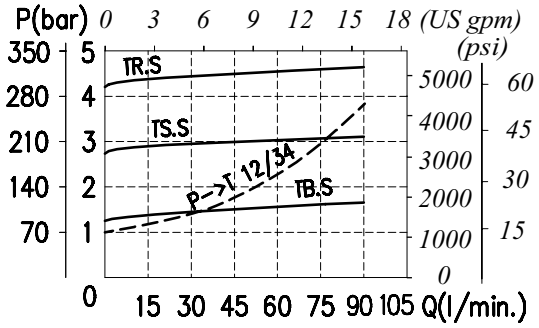
Dimensions and hydraulic circuit



VMP/VE	P	T
12	G 1/2	G 1/2
34	G 3/4	G 3/4

Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VMP /VE □□ / □□ / □□ . □ / □□

Port size

12) G 1/2
34) G 3/4

Assembly scheme

NA) Normally opened
NC) Normally closed

Pressure settings

TB) 5÷50 bar *(72.5÷725 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*

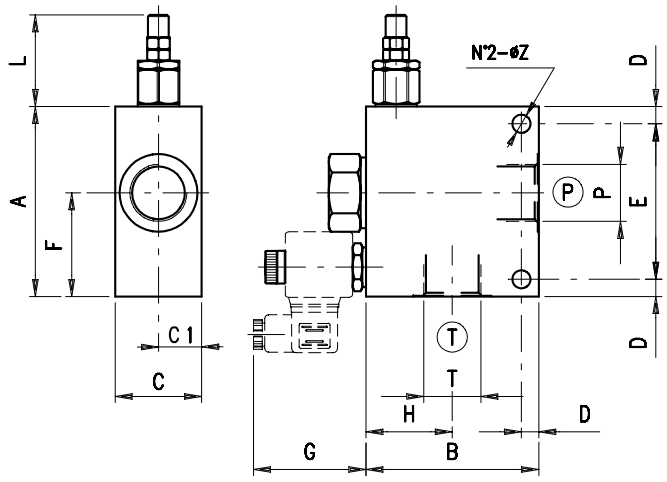
Adjustment
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)

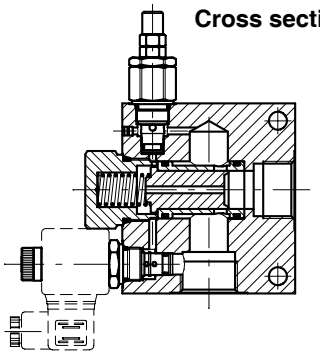
Body material

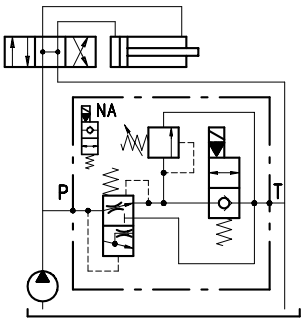
_ Aluminium
ac Steel

Dimensions and hydraulic circuit



Cross section



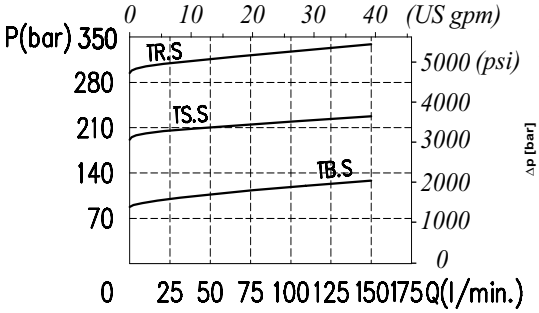


VMP/VE	P	T	A	B	C	C 1	D	E	F	G	H	L	Z
100	G 1	G 1	110 - *4.33*	100 - *3.94*	50 - *1.97*	25 - *0.98*	10 - *0.04*	90 - *3.54*	60 - *2.36*	65 - *2.56*	50 - *1.97*	53 - *2.09*	10.5 - *0.41*
114	G 1 1/4	G 1 1/4	130 - *5.12*	130 - *5.12*	70 - *2.75*	35 - *2.75*	12 - *0.47*	106 - *4.17*	72 - *2.83*	65 - *2.56*	62 - *2.44*	53 - *2.09*	12.5 - *0.49*

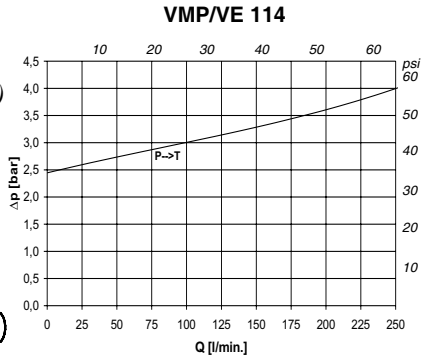
Dimensions are in mm - *in*

Rating diagrams

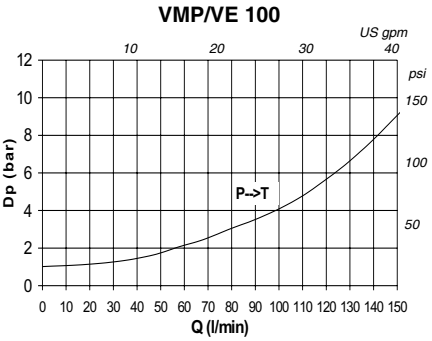
Typical pressure drop vs. flow characteristic



VMP/VE 114



VMP/VE 100



Order code

VMP /VE □ / □ / □ . □ / □

Port size

100) G 1
114) G 1 1/4

Assembly scheme

NA) Normally opened
NC) Normally closed

Pressure settings

TB) 5÷50 bar *(72.5÷725 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2610÷5100 psi)*

Adjustment
(see page 105)

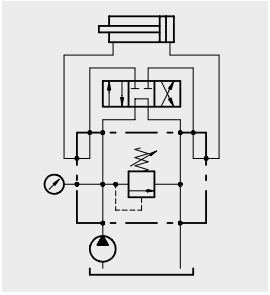
S (screw)
V (handknob)
W (capped adjustement)

Body material

_ Aluminium
ac Steel

Operation

The valve allows oil flow from P to T when pressure in P reaches the setting of the spring. "PBL" are normally used as pressure relief valves for modular systems.



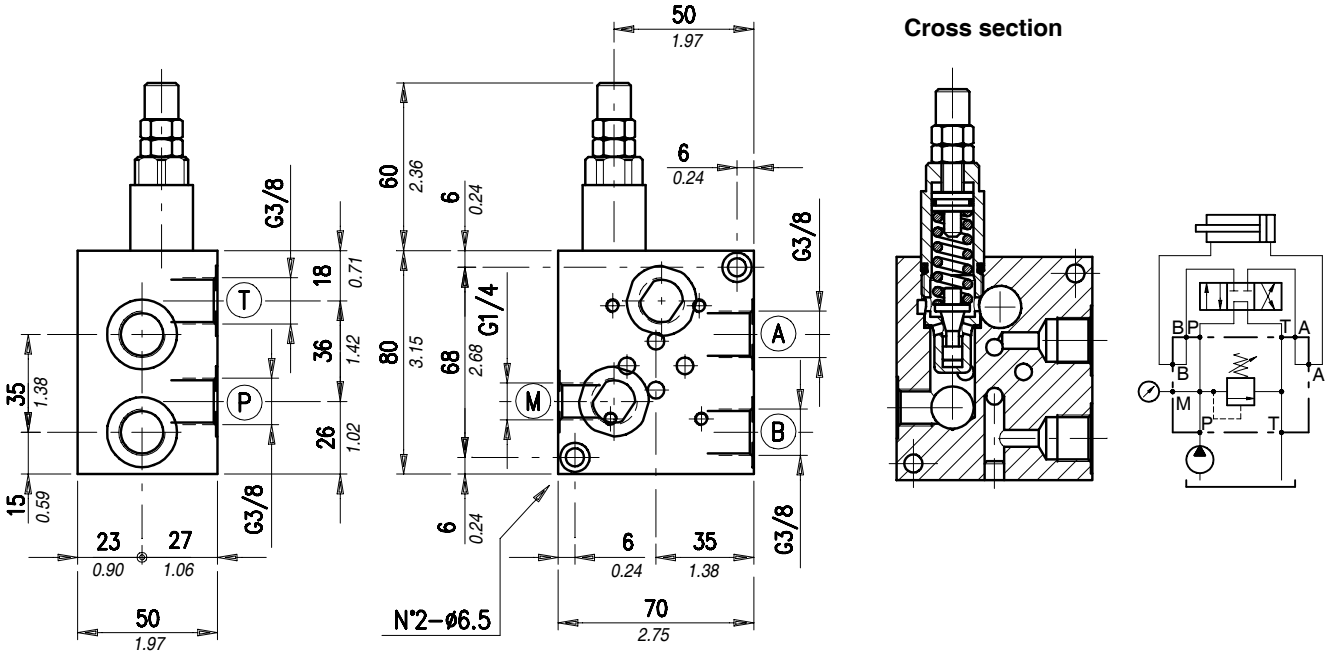
Performance

Body Valves

Tipo PBL	Max.flow		Max. pres.		Application range with standard spring*	Hysteresis	Oil leaks from P to T	Weight		Cartridge
	l/min	*US gpm*	bar	*psi*				kg	*lb*	
PBL6/VMP 38	35	*9.2*	alum. body 210 steel body 350	*alum body 3050* *steel body 5100*	5÷40 bar -*14.5÷580 psi* (test setting 30 bar - *435 psi)* at 5 l/min. - *1.32 US gpm*) 20÷80 bar -*290÷1150 psi* (test setting 60 bar - *870 psi* at 5 l/min. - *1.32 US gpm*) 50÷220 bar -725÷3200 psi (test setting 160 bar - *2300 psi* at 5 l/min. - *1.32 US gpm*) 180÷350 bar -2600÷5100 psi- (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*)	85% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	disregardable	alum. body 0,80 steel body 1,98	*alum. body 1.76* *steel body 4.36*	VMP 5
PBL6/VMP 5Y-38					5÷80 bar *14.5÷1150 psi* (test setting 60 bar - *870 psi* at 5 l/min. - *1.32 US gpm*) 40÷150 bar - *580÷2200 psi* (test setting 120 bar - *1750 psi* at 5 l/min. - *1.32 US gpm*) 140÷190 bar - *2050÷2750 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) 180÷350 bar - *2600÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*)					VMP 5Y
PBL10/VMP 12	60	*16*			see setting PBL6/VMP 38			alum. body 1,70 steel body 4,29	*alum. body 3.75* *steel body 9.46*	VMP 10

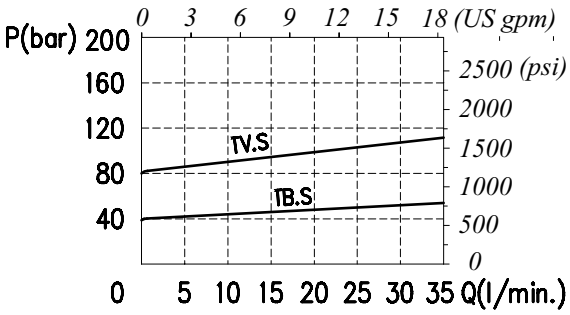
***To perform setting of the valve see the pressure drop/ flow diagram.**

Dimensions and hydraulic circuit

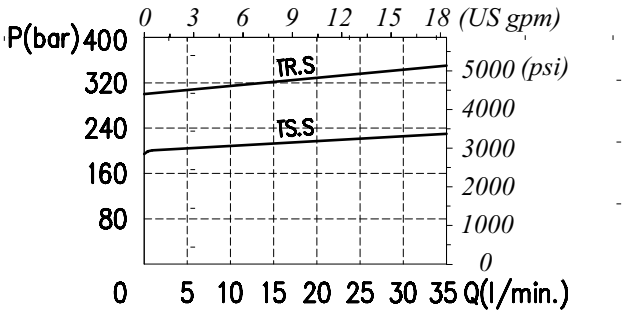


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

PBL6 /VMP38 /5 / □□ . □ / □□

Pressure settings

TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷80 bar *(290÷1150 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*

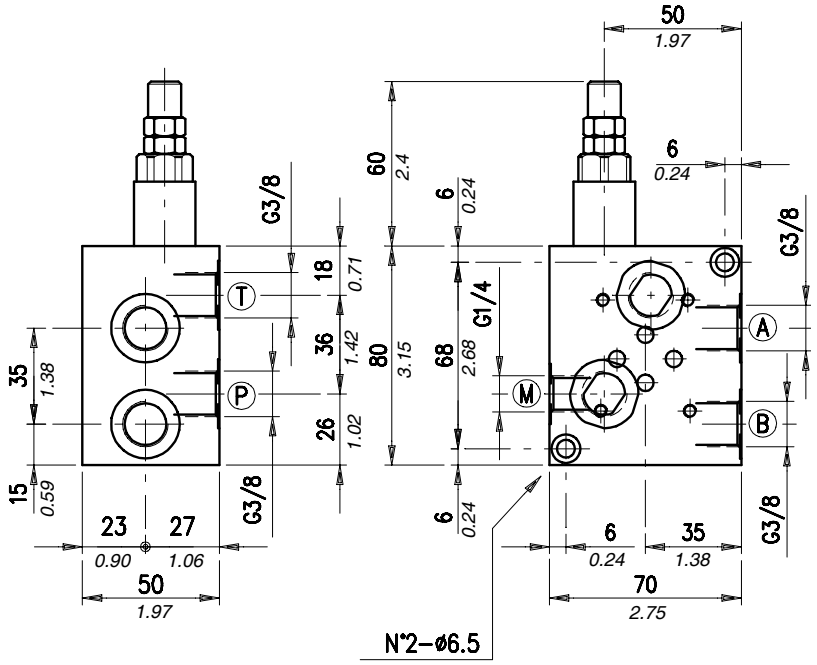
Adjustment
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)

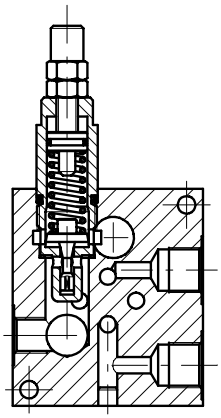
Body material

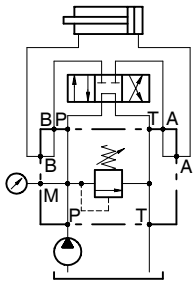
_ Aluminium
ac Steel

Dimensions and hydraulic circuit



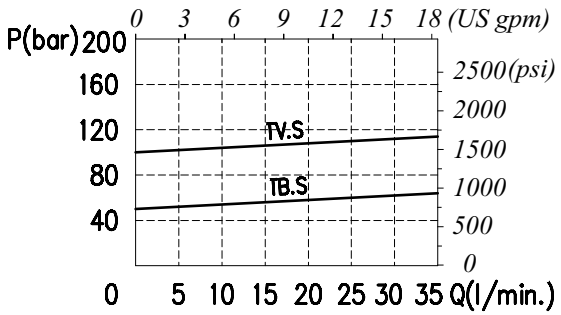
Cross section



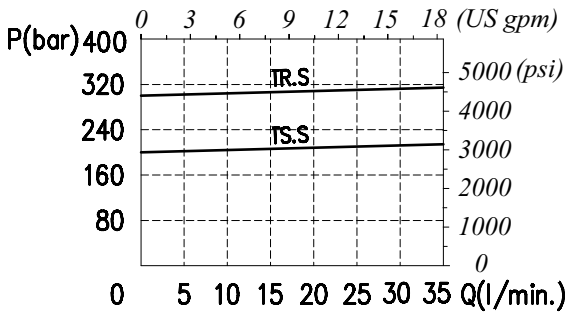


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

PBL6 /VMP38 /5Y / □□ . □ / □□

Pressure settings

TB) 5÷80 bar *(72.5÷580 psi)*
TV) 40÷150 bar *(290÷1150 psi)*
TS) 140÷190 bar *(2030÷2750 psi)*
TR) 180÷320 bar *(2600÷4650 psi)*

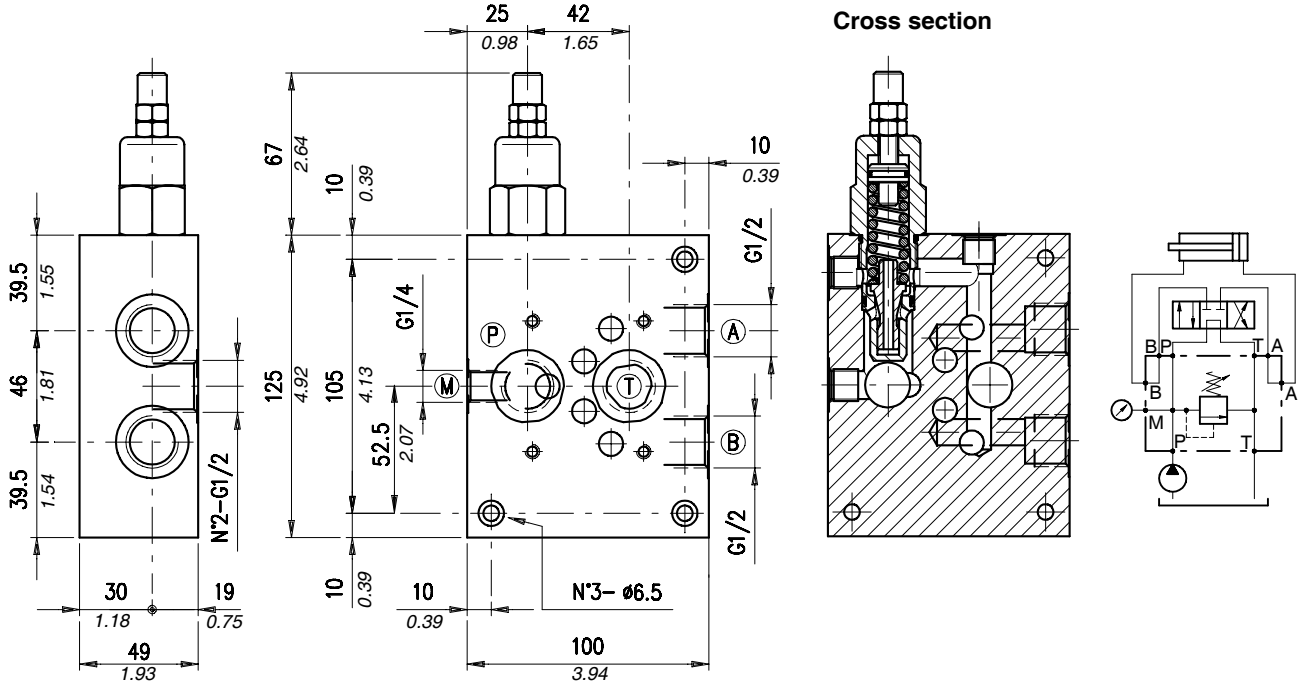
Adjustment
(see page 105)

S (screw)
V (handknob)
W (capped adjustement)

Body material

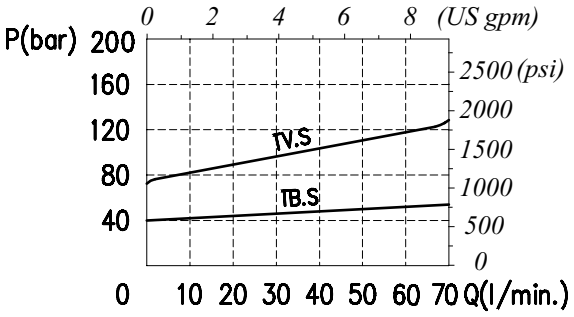
_ Aluminium
ac Steel

Dimensions and hydraulic circuit

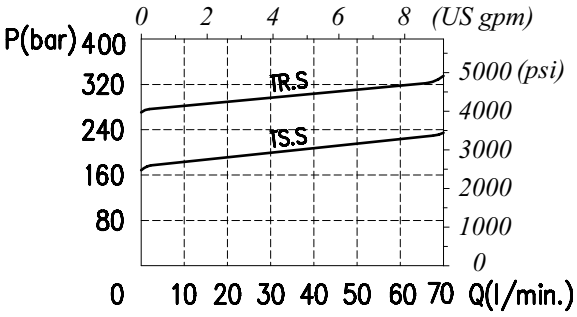


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

PBL6 /VMP12 / □□ / □□ . □ / □□

10
10Y

Pressure settings

TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷80 bar *(290÷1150 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*

Adjustment
(see page 105)

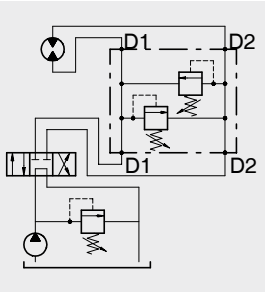
S (screw)
V (handknob)
W (capped adjustement)

Body material

_ Aluminium
ac Steel

Operation

Direct acting (differential control for the VADDL), poppet type, line mounting.
Allows pressure relief on delivery pipes to engines and cylinders.
Actuator close mount is recommended to assure a more rapid valve action.



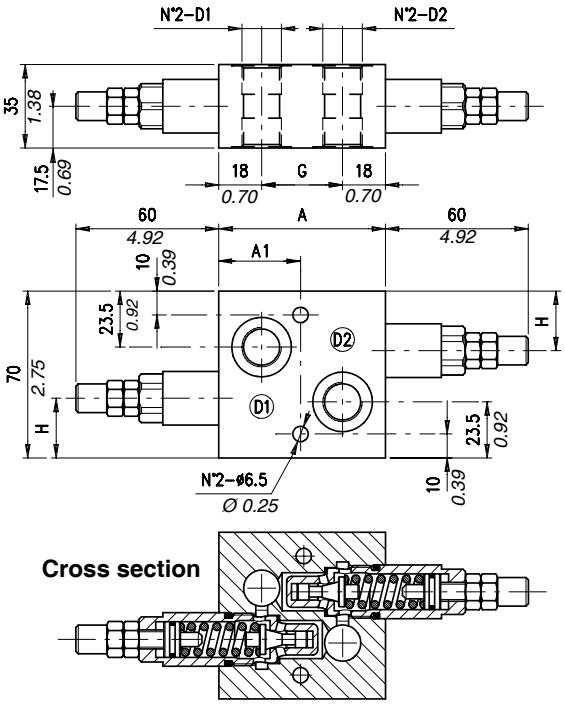
Performance

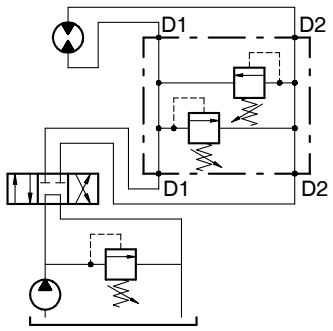
Body Valves

Type	Max.flow		Max. pres.		Application range with standard spring*	Hysteresis	Oil leaks from P to T	Weight		Cartridge
	l/ min	*US gpm*	bar	*psi*				kg	*lb*	
VAIL 5	**(38)** 25 **(12)** 35	***(38)*** *6.6* ***(12)*** 9.2	aluminium body 210 steel body 350	*3050* *5100*	5÷40 bar - *72.5÷580 psi* (test setting 30 bar - *435 psi* at 5 l/min. - *1.32 US gpm*) 20÷80 bar - *290÷1150 psi* (test setting 60 bar - *870 psi* at 5 l/min. - *1.32 US gpm*) 50÷220 bar -*725÷3200 psi* (test setting 160 bar - *2300 psi* at 5 l/min. - *1.32 US gpm*) 180÷350 bar - *2600÷5100 psi* (test setting 280 bar - *4100 psi* at 5 l/min. - *1.32 US gpm*)	85% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	-	alum. body 0,67 steel body 1,29	*alum. body 1.48 steel body 2.84*	VMP 5
VAIL 10	150	*40*					-	alum. body 1,12 steel body 2,20	*alum. body 2.47 steel body 4.85*	VMP 10
VAIL 20	**(34)** 100 **(100)** 180	***(34)*** *26* ***(100)*** *48*	350	*5100*			-	alum. body 2,00 steel body 3,55	*alum. body 4.40 steel body 7.83*	VMP 20
VADDL 38	35	*9.2*	aluminium body 210 steel body 350	*3050* *5100*	50÷210 bar - *725÷3050 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) 50-350 bar -*725÷5100 psi* (test setting 250 bar-*3600 psi* at 5 l/min. - *1.32 US gpm*)		disre-gar-dable	alum. body 0,86 steel body 1,50	*alum. body 1.89 steel body 3.30*	VMPD 38
VADDL 12	60	*16*						alum. body 1,14 steel body 2,00	*alum. body 2.56 steel body 4.41*	VMPD 12
VADDL 34 (100)	**(34)** 120 **(100)** 180	***(34)*** *32* ***(100)*** *48*						**(34)** alum. body 3,38 steel body 4,77 **(100)** alum. body 3,61 steel body 5,41	***(34)*** *alum. body 7.45 steel body 10.52* ***(100)*** *alum. body 7.96 steel body 11.93*	VMPD 34

***To perform setting of the valve see the pressure drop/ flow diagram.**

Dimensions and hydraulic circuit





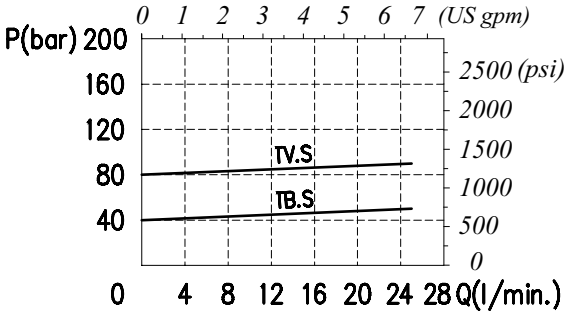
Cross section

VAIL	A	A1	G	H	D1	D2
5–38	70-*2.75*	35-*1.38*	34 -*1.34*	25 -*0.98*	G 3/8	G 3/8
5–12	75-*2.95*	37.5-*1.48*	39 -*1.53*	24.5-*0.96*	G 1/2	G 1/2

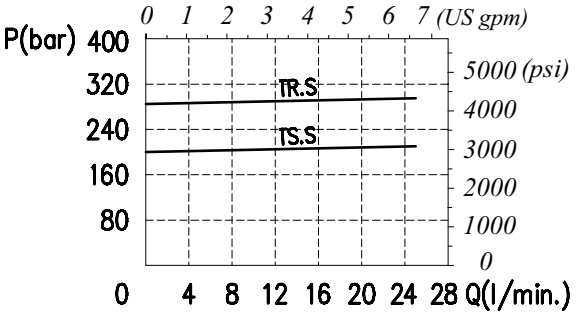
Dimensions are in mm - *in*

Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VAIL 5 - □□ / □□ . □ / □□

Port size

38) G 3/8
12) G 1/2

Pressure settings

TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷80 bar *(290÷1150 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*

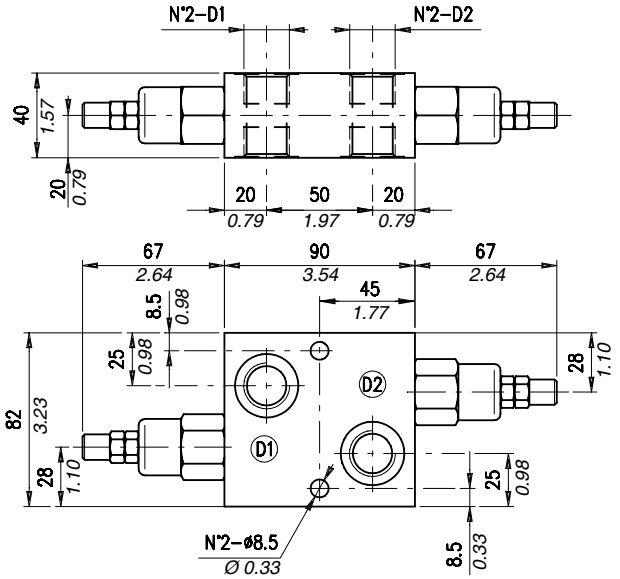
Adjustment
(see page 105)

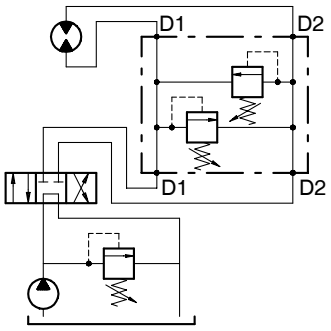
S (screw)
W (capped adjustement)

Body material

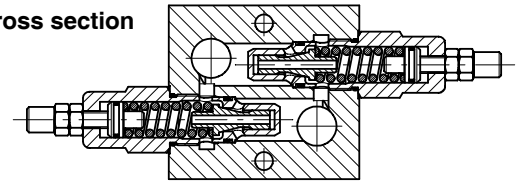
_ Aluminium
ac Steel

Dimensions and hydraulic circuit





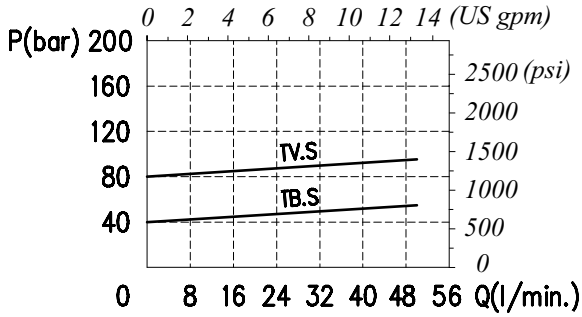
Cross section



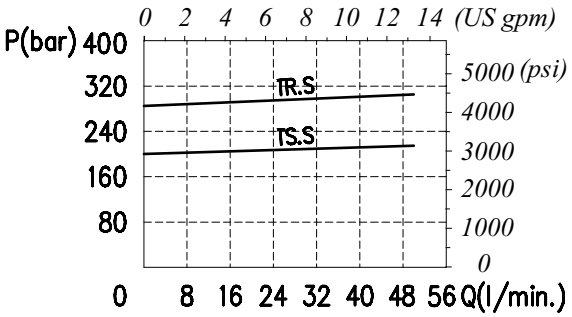
VAIL	D1	D2
10–12	G 1/2	G 1/2
10–34	G 3/4	G 3/4

Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VAIL 10 - □□ / □□ . □ / □□

Port size

12) G 1/2
34) G 3/4

Pressure settings

TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷80 bar *(290÷1150 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*

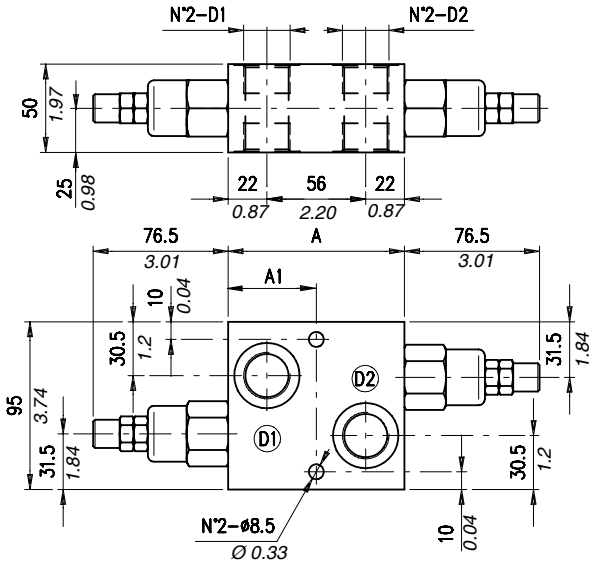
Adjustment
(see page 105)

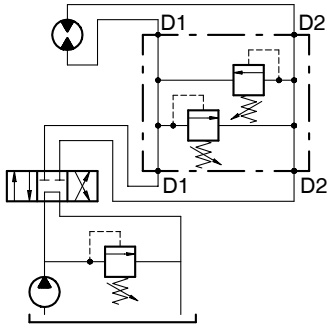
S (screw)
W (capped adjustement)

Body material

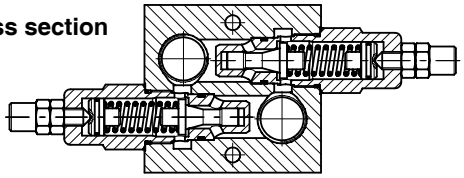
_ Aluminium
ac Steel

Dimensions and hydraulic circuit





Cross section

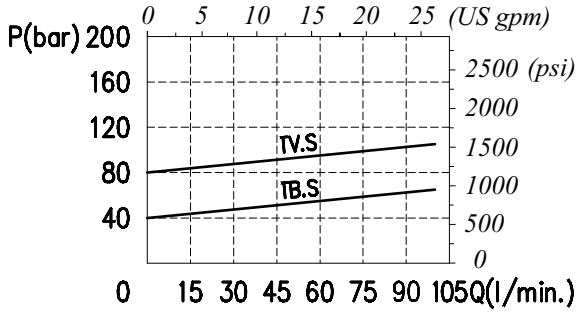


VAIL	A	A1	D1	D2
20–34	100 - *3.93*	50 - *1.97*	G 3/4	G 3/4
20–100	120 - *4.72*	60 - *2.36*	G 1	G 1

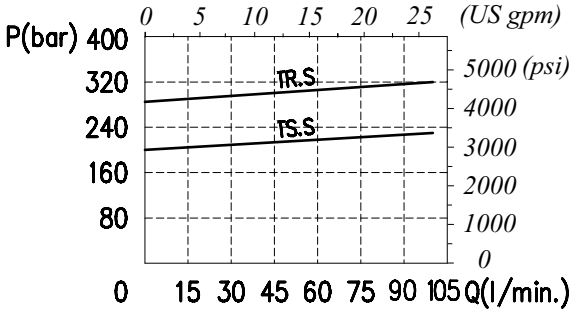
Dimensions are in mm - *in*

Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VAIL 20 - □□ / □□ . □ / □□

Port size

34) G 3/4
100) G 1

Pressure settings

TB) 5÷40 bar *(72.5÷580 psi)*
TV) 20÷80 bar *(290÷1150 psi)*
TS) 50÷220 bar *(725÷3200 psi)*
TR) 180÷350 bar *(2600÷5100 psi)*

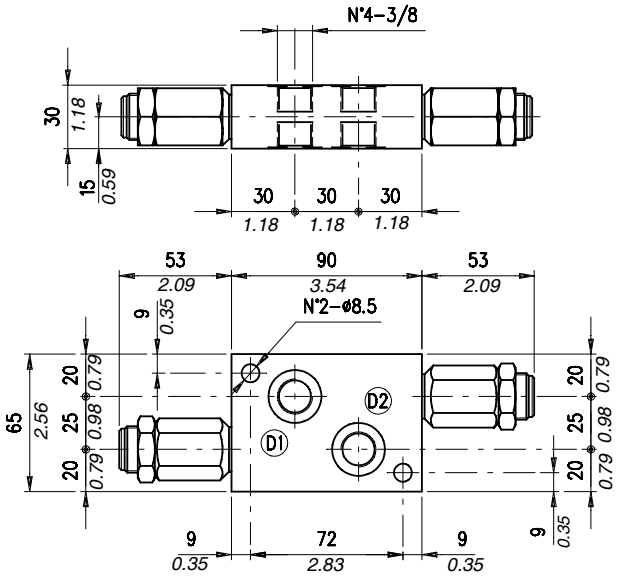
Adjustment
(see page 105)

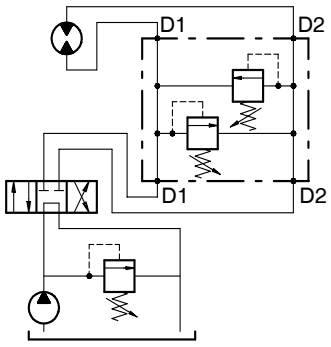
S (screw)
W (capped adjustement)

Body material

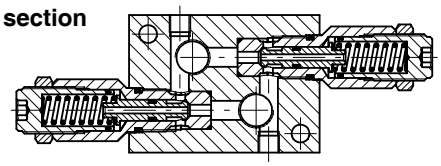
_ Aluminium
ac Steel

Dimensions and hydraulic circuit



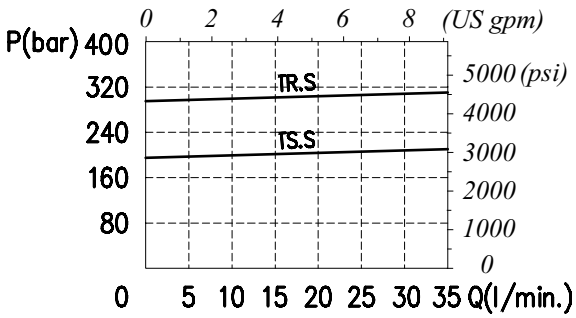


Cross section



Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VADDL 38 / □□ . S / □□

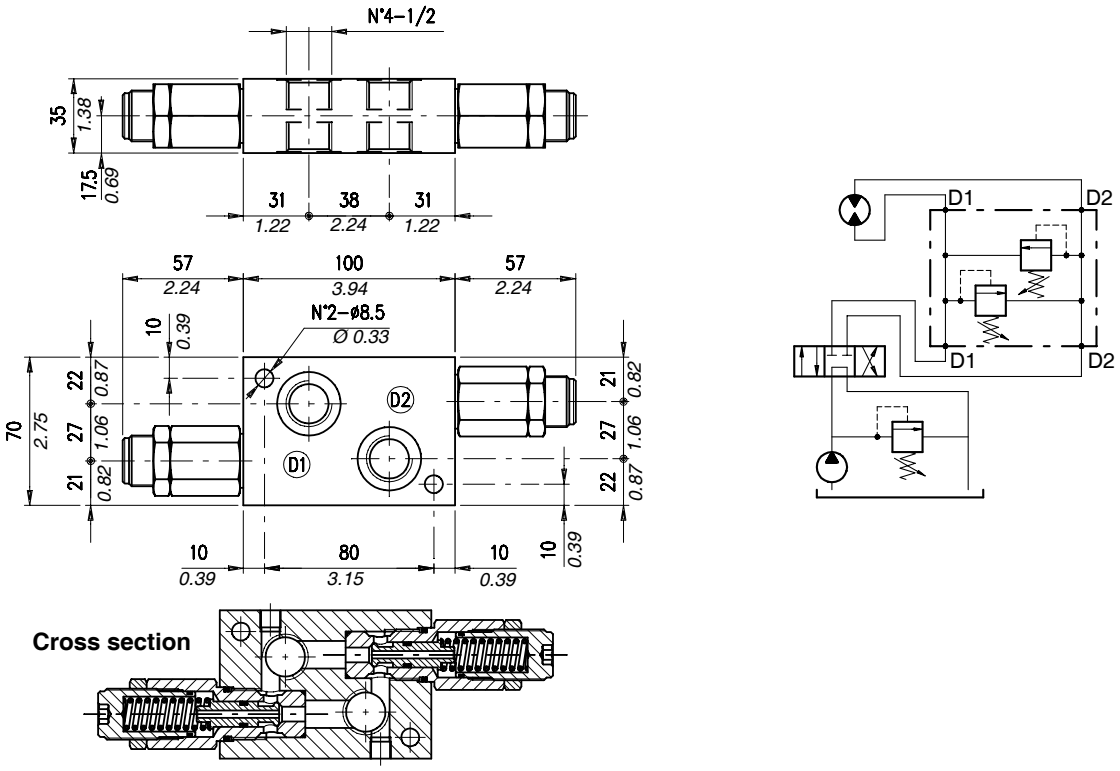
Pressure settings

TS) 5÷210 bar *(72.5÷580 psi)*
TR) 50÷350 bar *(725÷5100 psi)*

Body material

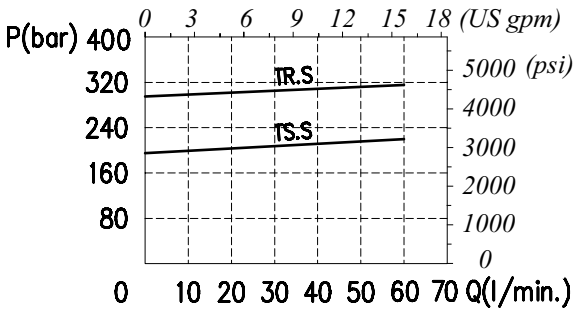
_ Aluminium
ac Steel

Dimensions and hydraulic circuit



Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VADDL 12 / □□ . S / □□

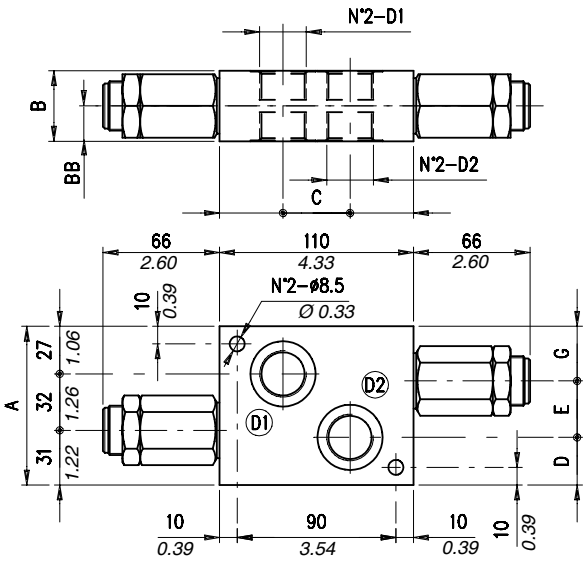
Pressure settings

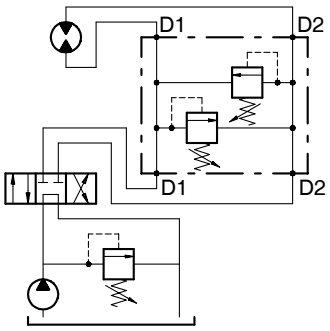
TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725÷5100 psi)*

Body material

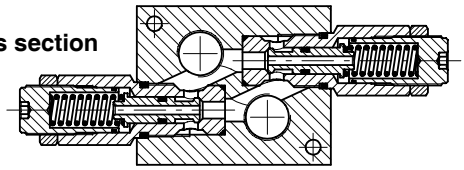
_ Aluminium
ac Steel

Dimensions and hydraulic circuit





Cross section

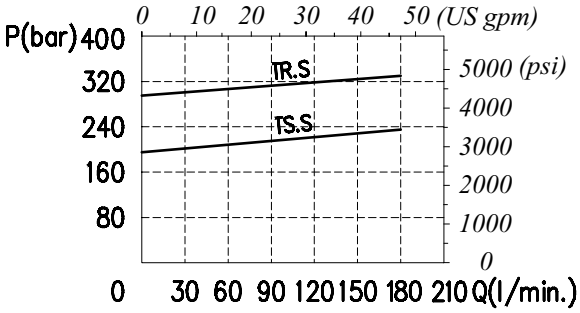


VADDL	A	B	BB	C	D	E	G	D1	D2
34	90 - *3.54*	40 - *1.57*	20 - *0.79*	38 - *1.50*	27 - *1.06*	32 - *1.26*	31 - *1.22*	G 3/4	G 3/4
100	100 - *3.94*	50 - *1.97*	25 - *0.98*	50 - *1.97*	28 - *1.10*	38 - *1.50*	34 - *1.34*	G 1	G 1

Dimensions are in mm - *in*

Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VADDL □□ / □□ . S / □□

Port size

34) G 3/4
100) G 1

Pressure settings

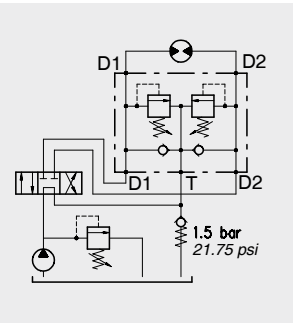
TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725÷5100 psi)*

Body material

_ Aluminium
ac Steel

Operation

Direct acting (differential control for the VADDL/VA), poppet type, line mounting. The valve allows pressure relief on delivery pipes to engines and cylinders. When the actuator is braking, two check valves allow for anti cavitation on delivery side.
Actuator close mount is recommended to assure a more rapid valve action.



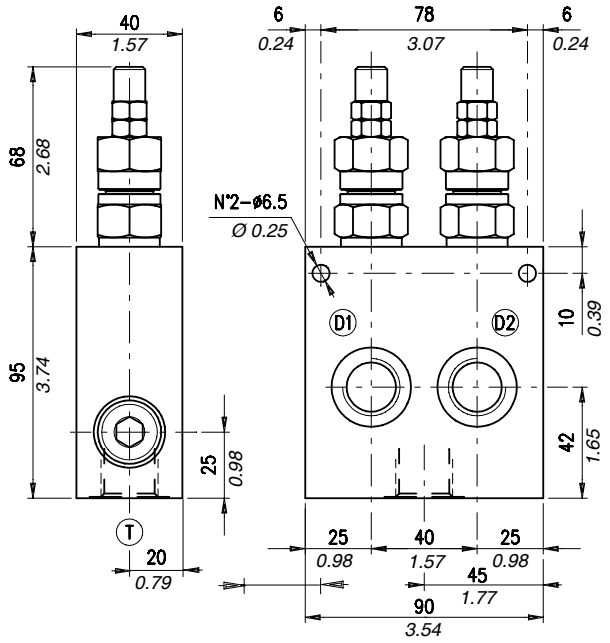
Performance

Body Valves

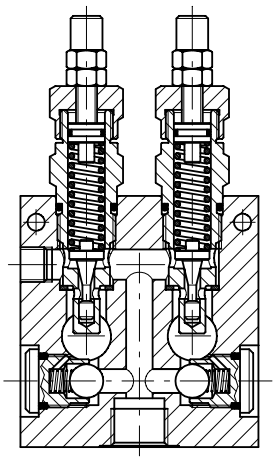
*To perform setting of the valve see the pressure drop/ flow diagram

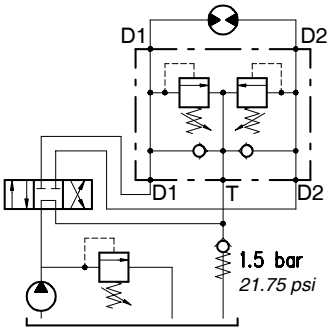
Type	Max.flow		Max. pres.		Application range with standard spring*	Hysteresis	Oil leaks from P to T	Weight		Cartridge
	l/min	*US gpm*	bar	*psi*				kg	*lb*	
VAIL/VA 12	35	*9.2*	alum. body 210 steel body 300	*alum. body 3050* *steel body 4350*	5÷40 bar - *72.5÷580 psi* (test setting 30 bar -*435 psi* at 5 l/min. - *1.32 US gpm*) 20÷100 bar - *290÷1450 psi* (test setting 70 bar -*1015 psi* - at 5 l/min. - *1.32 US gpm*) 50÷200 bar - *725÷2900 psi* (test setting 140 bar - *2050 psi* at 5 l/min. - *1.32 US gpm*) 100÷300 bar -*1450÷4350 psi* (test setting 210 bar - *3050 psi* at 5 l/min. - *1.32 US gpm*)	85% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	disregar-dable	alum. body 1,24 steel body 2,46	*alum. body 2.73* *steel body 5.42*	VMP 12
VAIL/VA 34	80	*21*						alum. body 2,20 steel body 4,34	*alum. body 4.85* *steel body 9.57*	VMP 12
VADDL/VA 38	35	*9.2*			5÷210 bar - *72.5÷3050 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) 50÷350 bar - *72.5÷5100 psi-* (test setting 250 bar *-3600 psi* at 5 l/min.-*1.32 US gpm*)			alum. body 1,14 steel body 2,10	*alum. body 2.51* *steel body 4.63*	VMPD 38
VADDL/VA 12	60	*16*			50÷210 bar -*72.5÷3050 psi* (test setting 150 bar - *2200 psi* at 5 l/min.-*1.32 US gpm*) 50÷250 bar - *725÷3600 psi* (test setting 250 bar *3600 psi* at 5 l/min. - *1.32 US gpm*)			alum. body 1,58 steel body 3,10	*alum. body 3.48* *steel body 6.83*	VMPD 12
VADDL/VA 34 (100)	**(34)** 120 **(100)** 180	***(34)*** *32* ***(100)*** *48*			5÷210 bar -*72.5÷3050 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) 50÷350 bar -*72.5-5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*)			**(34)** alum. body 3,25 steel body 6,50 **(100)** alum. body 4,10 steel body 7,90	***(34)*** *alum. body 7.16* *steel body 14.33* ***(100)*** *alum. body 9.04* *steel body 17.42*	VMPD 34

Dimensions and hydraulic circuit



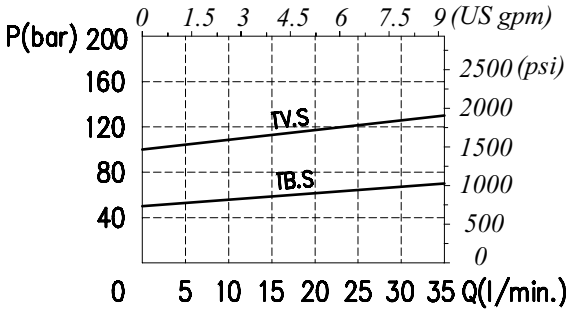
Cross section



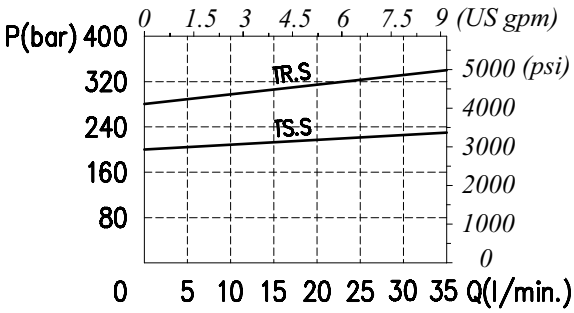


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VAIL/VA 12 / □□ . S / □□

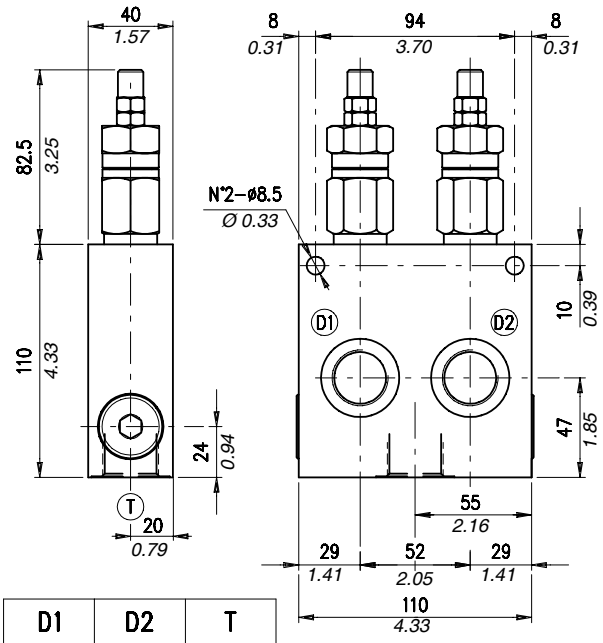
Pressure settings

TB) 5÷50 bar *(72.5÷725 psi)*
TV) 20÷100 bar *(290÷1450 psi)*
TS) 50÷200 bar *(725÷2900 psi)*
TR) 100÷300 bar *(1450÷4350 psi)*

Body material

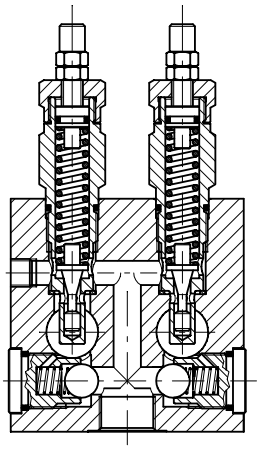
_ Aluminium
ac Steel

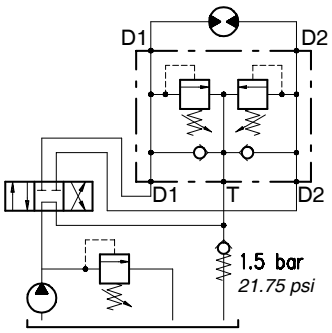
Dimensions and hydraulic circuit



D1	D2	T
G 3/4	G 3/4	G 3/4

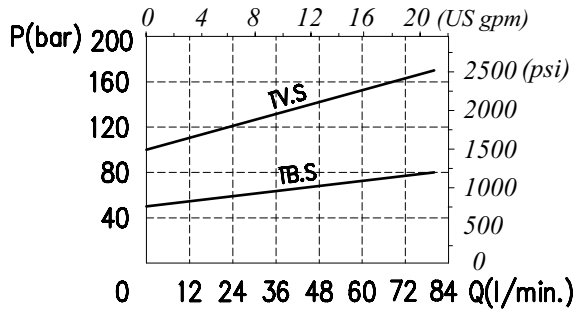
Cross section



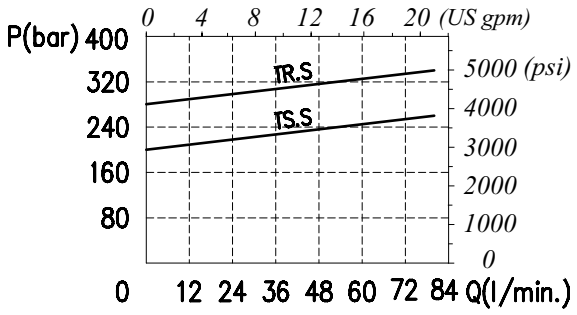


Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VAIL/VA 34 / □□ . S / □□

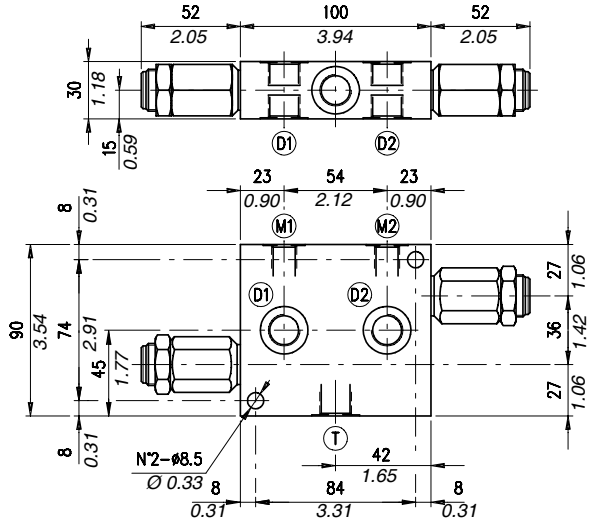
Pressure settings

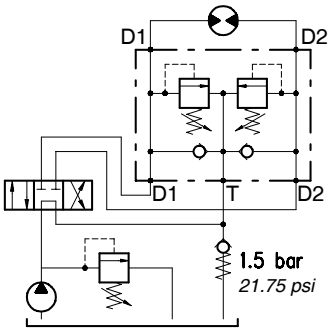
TB) 5÷50 bar *(72.5÷725 psi)*
TV) 20÷100 bar *(290÷1450 psi)*
TS) 50÷200 bar *(725÷2900 psi)*
TR) 100÷300 bar *(1450÷4350 psi)*

Body material

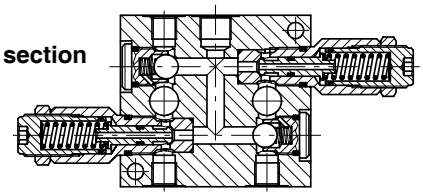
_ Aluminium
ac Steel

Dimensions and hydraulic circuit





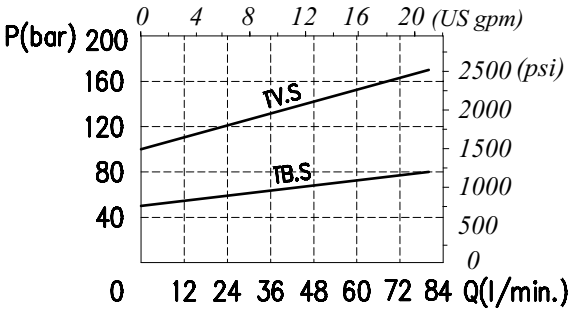
Cross section



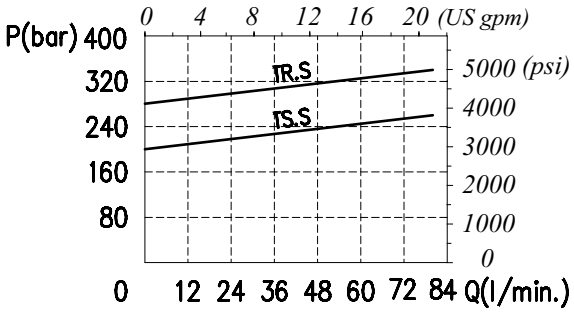
D1	D2	M1	M2	T
G 3/8	G 3/8	G1/4	G1/4	G 3/8

Rating diagrams

Typical pressure drop vs. flow characteristic



Typical pressure drop vs. flow characteristic



Order code

VADDL /VA 38 / □□ . S / □□

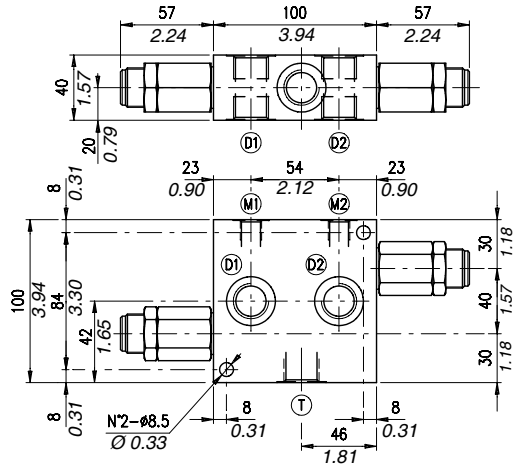
Pressure settings

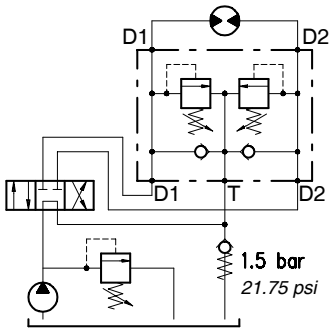
TS) 5÷210 bar *(72.5÷580 psi)*
TR) 50÷350 bar *(725÷5100 psi)*

Body material

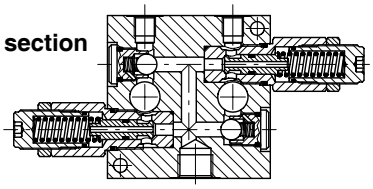
_ Aluminium
ac Steel

Dimensions and hydraulic circuit





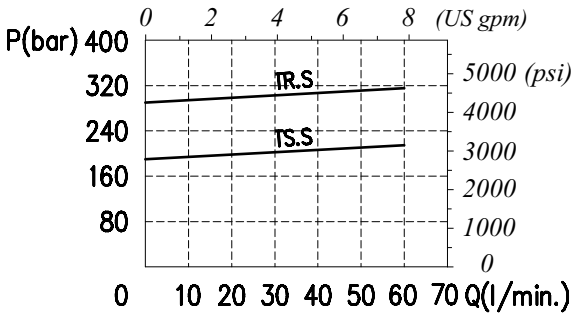
Cross section



D1	D2	M1	M2	T
G 1/2	G 1/2	G1/4	G1/4	G 1/2

Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VADDL /VA 12 / □□ . S / □□

Pressure settings

TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725÷5100 psi)*

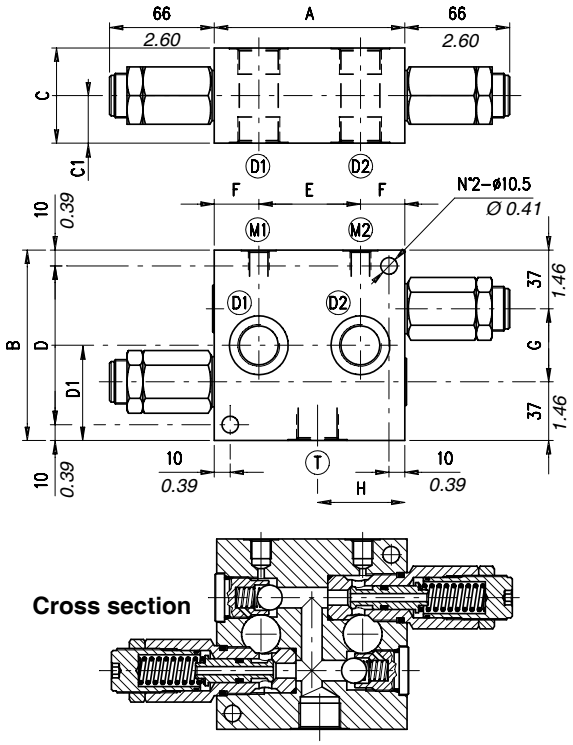
Body material

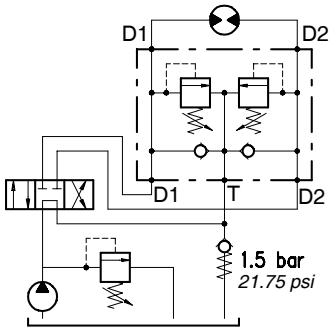
_ Aluminium
ac Steel

Type VADDL/VA 34 (100)

Dual cross-line relief valve with anti cavitation.
Differential control, poppet type, line mounting

Dimensions and hydraulic circuit





Cross section

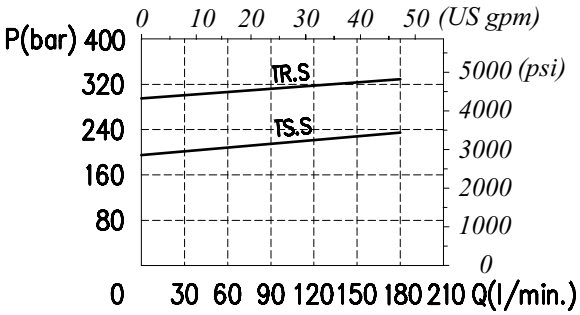
VADDL/VA	A	B	C	CC	D	DD
34	120 - *4.72*	120 - *4.72*	60 - *3.15*	30 - *1.18*	100 - *3.94*	50 - *1.97*
100	130 - *5.11*	130 - *5.11*	70 - *2.75*	35 - *1.38*	110 - *4.33*	55 - *2.16*

E	F	G	H	D1	D2	M1	M2	T
64 - *2.52*	28 - *1.10*	46 - *1.81*	55 - *1.97*	G 3/4	G 3/4	G1/4	G1/4	G 3/4
70 - *2.75*	30 - *1.18*	56 - *2.20*	60 - *2.16*	G 1	G 1	G1/4	G1/4	G 1

Dimensions are in mm - *in*

Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VADDL /VA □□ / □□ . S / □□

Port size

34) G 3
100) G 1

Pressure settings

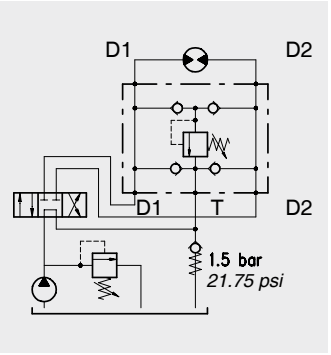
TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725÷5100 psi)*

Body material

_ Aluminium
ac Steel

Operation

Antishock valve with anti cavitation and single pressure adjustment. Differential control, poppet type line mounting.
The valve allows pressure relief on delivery pipes to engines and cylinders. When the actuator is braking, two check valves allow for anti cavitation on delivery side.
Actuator close mount is recommended to assure a more rapid valve action.



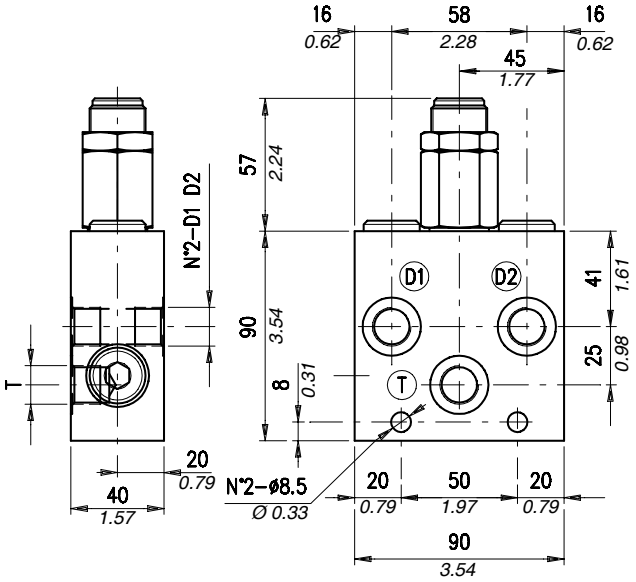
Performance

Body Valves

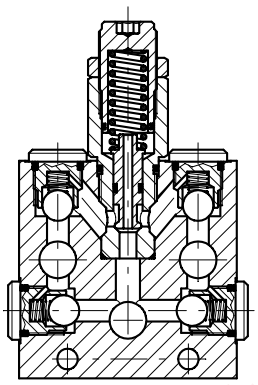
Type	Max.flow		Max. pres.		Application range with standard spring*	Hysteresis	Oil leaks from P to T	Weight		Cartridge
	l/min	*US gpm*	bar	*psi*						
VAA/RU/DL 38	35	*9.2*	alum. body 210 steel body 300	*alum. body 3050* *steel body 5100*	5÷210 bar - *72.5÷3050 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) 50÷350 bar - *725÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*)	85% of the setting value for flow capacity 1 l/min. *-0.26 US gpm-*	disregar-dable	alum. body 1,18 steel body 2,44	*alum. body 2.60* *steel body 5.38*	VMPD 38
VAA/RU/DL 12	60	*16*			5÷210 bar - *72.5÷3050 psi* (test setting 150 bar - *2200 psi* at 5 l/min. - *1.32 US gpm*) 50÷250 bar -*725÷300 psi*- (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*)			alum. body 1,15 steel body 2,29	*alum. body 2.53* *steel body 5.05*	VMPD 12
VAA/RU/DL 34 (100)	**(34)** 120 **(100)** 180	***(34)*** *32* ***(100)*** *48*			5÷210 bar -*72.5÷3050 psi* (test setting 150 bar - *2200 psi* at 5 l/min.- *1.32 US gpm*) 50÷350 bar -*725÷5100 psi* (test setting 250 bar - *3600 psi* at 5 l/min. - *1.32 US gpm*)			**-34-** alum. body 2,32 steel body 4,59 **-100-** alum. body 3,32 steel body 6,37	***-34-*** *alum. body 5.11 steel body 10.12* ***-100-*** *alum. body 7.32 steel body 14.04*	VMPD 38

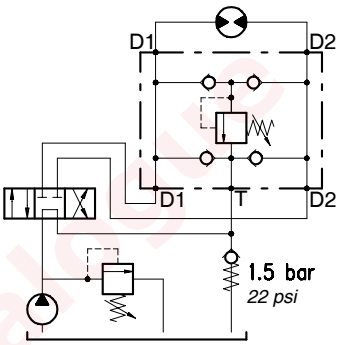
***To perform setting of the valve see the pressure drop/ flow diagram.**

Dimensions and hydraulic circuit



Cross section

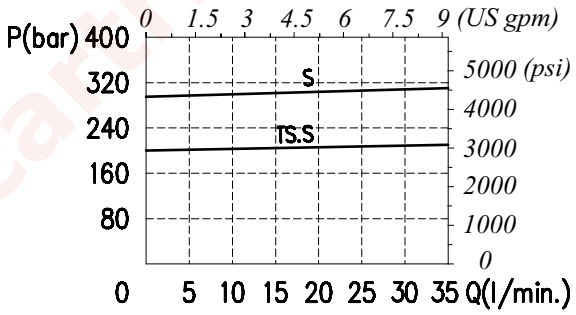




D1	D2	T
G 3/8	G 3/8	G 3/8

Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VAA /RU /DL 38/ □□ . S / □□

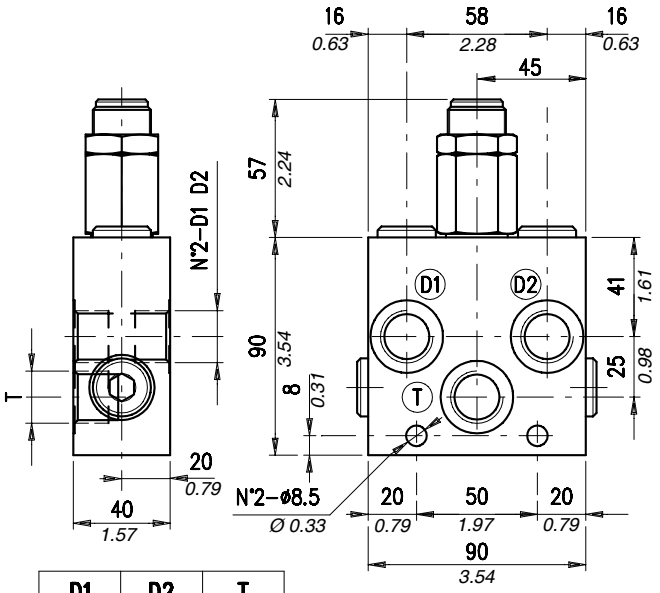
Pressure settings

TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725÷5100 psi)*

Body material

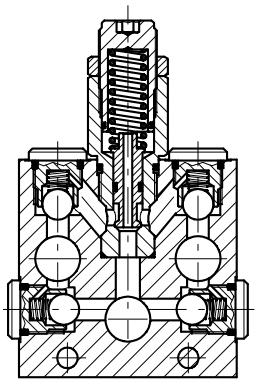
_ Aluminium
ac Steel

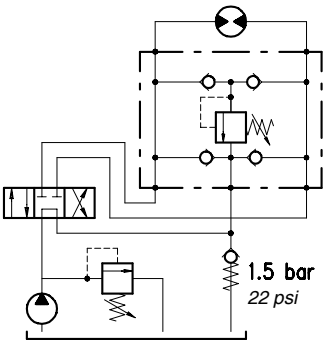
Dimensions and hydraulic circuit



D1	D2	T
G 1/2	G 1/2	G 1/2

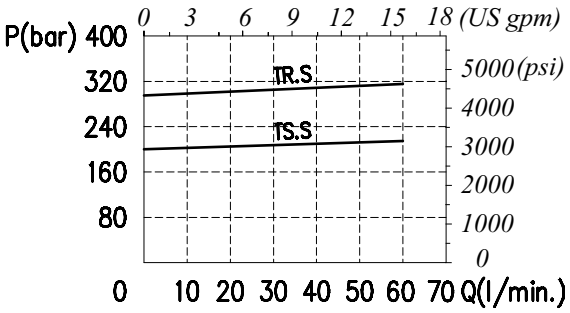
Cross section





Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

VAA /RU /DL 12/ □□ . S / □□

Pressure settings

TS) 5÷210 bar *(72.5÷3050 psi)*
TR) 50÷350 bar *(725÷5100 psi)*

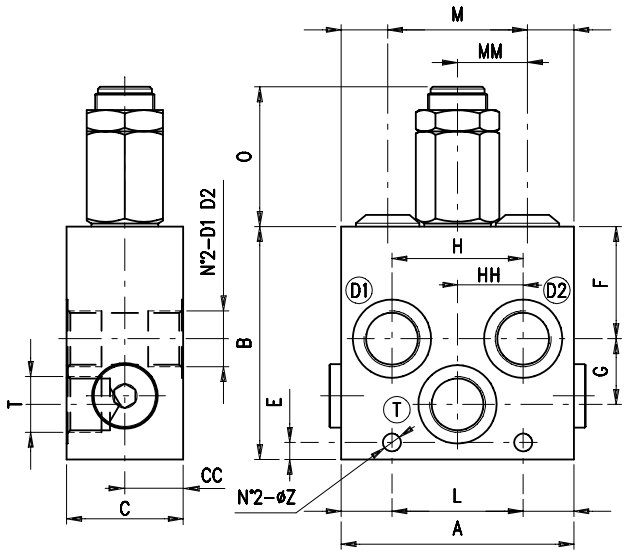
Body material

_ Aluminium
ac Steel

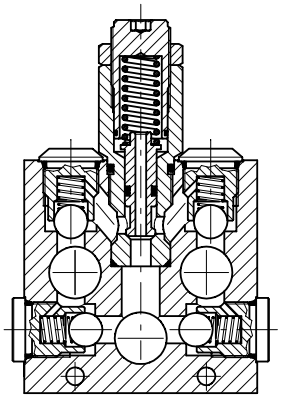
Type VAA/RU/DL 34 (100)

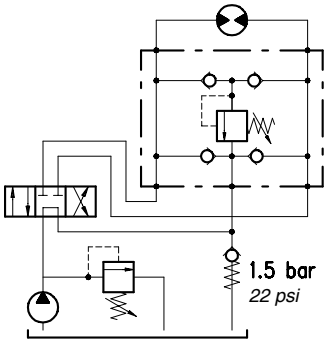
Antishock valve with anti cavitation and single pressure adjustment.
Differential control, poppet type line mounting

Dimensions and hydraulic circuit



Cross section



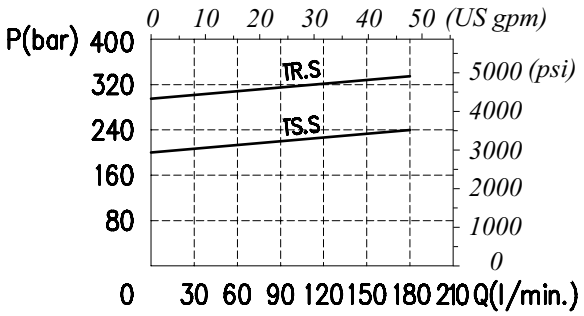


VAA/RU/DL	A	B	C	CC	E	F	G	H	HH	L	M	MM	O	D1	D2	T	Z	OR
34	110 - *4.33*	110 - *4.33*	55 - *2.16*	27.5 - *1.08*	8 - *0.31*	53 - *2.08*	31- *1.22*	62- *2.44*	31 - *1.22*	62- *2.44*	66 - *2.60*	33 - *1.30*	66 - *2.60*	G 3/4	G 3/4	G 3/ 4	8.5 - *0.33*	3093
100	140 - *5.51*	140 - *5.51*	60 - *2.36*	30 - *1.18*	11- *0.43*	65 - *2.56*	37- *1.46*	86 - *3.38*	43 - *1.69*	76- *2.99*	86 - *3.38*	43 - *1.69*	–	G 1	G 1	G 1	10.5 - *0.41*	3093

Dimensions are in mm - *in*

Rating diagrams

Typical pressure drop vs. flow characteristic



Order code

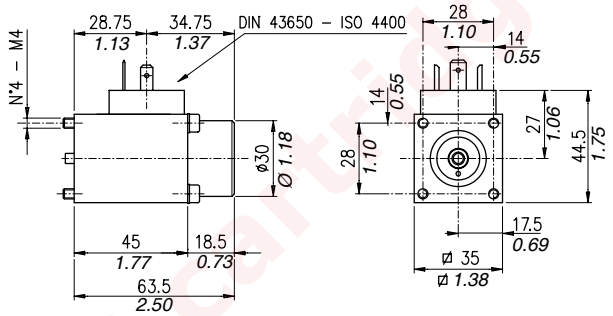
VAA /RU /DL □□ / □□ . S / □□

Port size	Pressure settings	Body material
34) G 3/4	**TS)** 5÷210 bar *(72.5÷3050 psi)*	**_** Aluminium
100) G 1	**TR)** 50÷350 bar *(725÷5100 psi)*	**ac** Steel

Operation

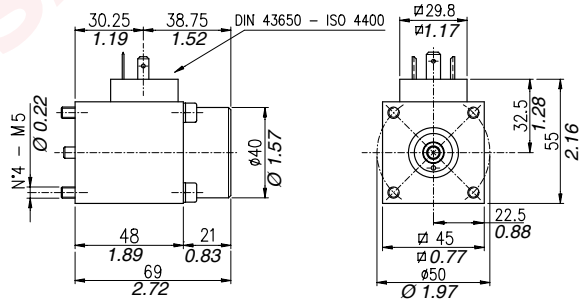
Proportional coil. 12 and 24 coils direct voltage, supply a force proportional to the current amount.
thermal insulation class: F (TMAX = 155°C - *303°F*) - (VDE 0580).
Relative duty cycle: ED = 100 % (VDE 0580).
To assure ED=100% and perform continuous coil operation, the following conditions should be met:
TA +ΔT < TMAX
TA= ambient temperature; ΔT = a temperature increase due to operation; TMAX = maximum admissible temperature according to insulation class.
We therefore recommend always checking that the maximum ambient temperature is same as Tmax-ΔT (providing no special operating requirement are there).
Safety standards (DIN40050): IP 54 without connector
IP 65 with connector
Admissible voltage range for long lasting and trouble free operations life: nominal voltage± 10 %
Current Hysteresis: <2,5%
Force Hysteresis: <2%

Voltage [Volt]	Resistance [Ω]	Current [A]		Power [W]		ΔT [C°] After 1 hour at: Ta=20-25°C *68-77°F* Nominal Voltage	Weight	
	Ta=20°C *68°F*	cold	warm	nom.	lim.		kg	*lb*
(35x35) 12	7,2	1,25		11,2	17,4	120	0,43	*0,95*
(35x35) 24	24,6	0,68		11,4				
(45x45) 12	4,3	1,78		13,6	20,8		0,75	*1,65*
(45x45) 24	21	0,81		13,8				



P.C. 35X35

Type	Ordering code	Ordering code with standard connector	Standard connector code	Connector Page
35x35 12 Vcc	4SL4000120	5SL4000120	4CN1009990	Page 104 (CC-CA)
35x35 24 Vcc	4SL4000240	5SL4000240		



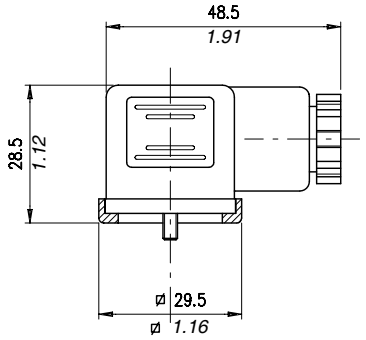
P.C. 45X45

Type	Ordering code	Ordering code with standard connector	Standard connector code	Connector page
45x45 12 Vcc	4SL4000243	5SL4000243	4CN1009990	Page 104 (CC-CA)
45x45 24 Vcc	4SL4000241	5SL4000241		

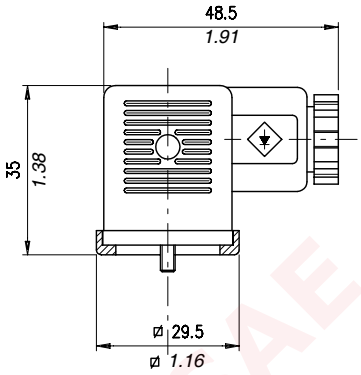
Operation

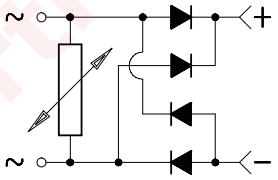
There are 3 types of different solenoid connectors:
"CC-CA" 2-poles + GROUND electric connectors in compliance with DIN and A/ISO standards 43650 and 4400.
Electric connectors suitable for connection of DC and AC current coils. Type of current must be same as for the coil used**.**
"CL" 2-poles + rectifier + GROUND electric connectors in compliance with DIN and A/ISO standards 43650 and 4400.
Electric connectors suitable for connection of DC current coils BE…RAC. AC current operation only. Use of these poles depends on the type of valve used.

Type	Nominal voltage	Maximum capacity of in-built diode	Nominal poles voltage	Max pole voltage	Poles resistance	Max poles section		Cable size options	Cable diameter		Safety standards	Insulation index
						mm	*in²*		mm	*in*		
CC-CA	AC max 250 V DC max 300 V	-	10 A	16 A	≤ 4 m Ohm	1,5	*0.002*	Pg09	6-8	*0.24 0.31*	IP65 (DIN 40050)	VDE0110-1/89
CL		1 A										
CP		3 A										

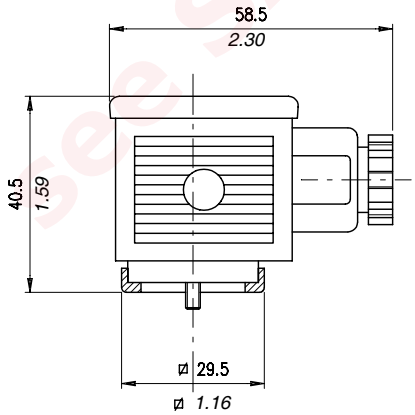


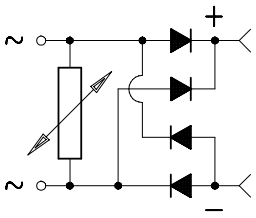
order code: CC-CA Connector





code number CL Connector



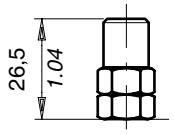
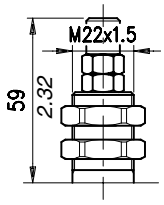
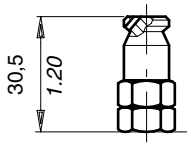
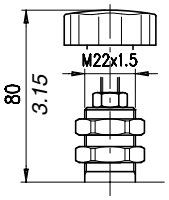
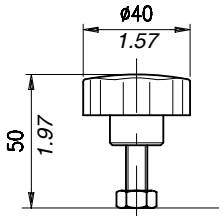


order code: CP Connector

Description and operation

This chapter show main adjusting devices for the valves listed in this catalog.
These regulations are used to adjust flow rate between inlet and working ports.

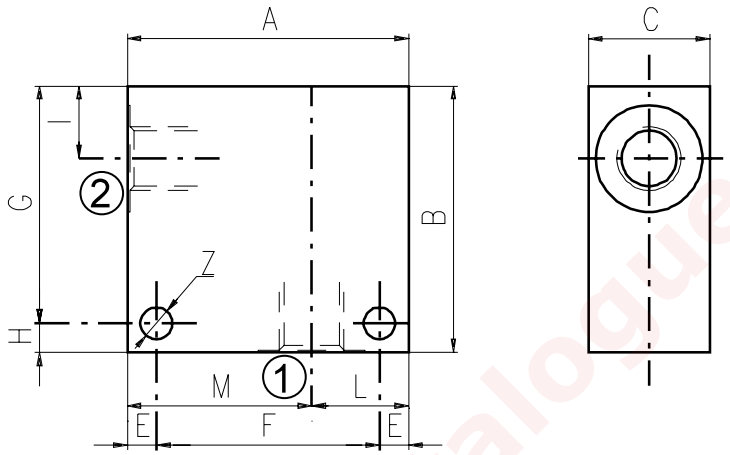
Performance

	**Screw "S"**		**Panel mount "P"**
	**Copped adjustment "W"**		**Panel mount+handknob "PV"**
	**Handknob "V"**		

2, 3 and 4 way Valves Bodies

Dimensions

Material	Max. pressure	
	bar	*psi*
Alluminium	210	*3050*
Steel	350	*5100*



Cavità	Attacchi		A	B	C	E	F	G	H	I	L	M	Z
SAE 8/2	G 1/2	**mm**	70	65	35	7	56	53	12	14,5	35	35	6,5
		in	*2.75*	*2.56*	*1.38*	*0.27*	*2.20*	*2.09*	*0.47*	*0.57*	*1.38*	*1.38*	*0.25*
	G 1/4	**mm**	50	50	30	6	38	44	6	14,8	20	30	6,5
		in	*1.97*	*1.97*	*1.18*	*0.24*	*1.50*	*1.73*	*0.24*	*0.58*	*0.79*	*1.18*	*0.25*
	G 3/8	**mm**	50	50	30	6	38	44	6	14,8	20	30	6,5
		in	*1.97*	*1.97*	*1.18*	*0.24*	*1.50*	*1.73*	*0.24*	*0.58*	*0.79*	*1.18*	*0.25*
	SAE6	**mm**	50	50	30	6	38	44	6	14,8	20	30	6,5
		in	*1.97*	*1.97*	*1.18*	*0.24*	*1.50*	*1.73*	*0.24*	*0.58*	*0.79*	*1.18*	*0.25*
SAE 10/2	G 1/4	**mm**	60	60	35	6	48	54	6	18,8	25	35	6,5
		in	*2.36*	*2.36*	*1.38*	*0.24*	*1.89*	*2.12*	*0.24*	*0.74*	*0.98*	*1.38*	*0.25*
	G 3/8	**mm**	60	60	35	6	48	54	6	18,8	25	35	6,5
		in	*2.36*	*2.36*	*1.38*	*0.24*	*1.89*	*2.12*	*0.24*	*0.74*	*0.98*	*1.38*	*0.25*
	G 1/2	**mm**	60	60	35	6	48	54	6	18,8	25	35	6,5
		in	*2.36*	*2.36*	*1.38*	*0.24*	*1.89*	*2.12*	*0.24*	*0.74*	*0.98*	*1.38*	*0.25*
	SAE8	**mm**	60	70	35	6	48	64	6	18,8	25	35	6,5
		in	*2.36*	*2.75*	*1.38*	*0.24*	*1.89*	*2.52*	*0.24*	*0.74*	*0.98*	*1.38*	*0.25*
	SAE10	**mm**	70	70	35	6	58	64	6	18,5	35	35	6,5
		in	*2.75*	*2.75*	*1.38*	*0.24*	*2.28*	*2.52*	*0.24*	*0.73*	*1.38*	*1.38*	*0.25*
	SAE12	**mm**	70	70	40	8	54	62	8	22	30	40	8,5
		in	*2.75*	*2.75*	*1.57*	*0.31*	*2.12*	*2.44*	*0.31*	*0.87*	*1.18*	*1.57*	*0.33*
SAE 12/2	G 1/2	**mm**	70	80	40	8	54	72	8	25	30	40	8,5
		in	*2.75*	*3.15*	*1.57*	*0.31*	*2.12*	*2.83*	*0.31*	*0.98*	*1.18*	*1.57*	*0.33*
	G 3/4	**mm**	70	90	40	8	54	82	8	25	30	40	8,5
		in	*2.75*	*3.54*	*1.57*	*0.31*	*2.12*	*3.23*	*0.31*	*0.98*	*1.18*	*1.57*	*0.33*
	SAE10	**mm**	70	85	40	8	54	77	8	25	30	40	8,5
		in	*2.75*	*3.35*	*1.57*	*0.31*	*2.12*	*3.03*	*0.31*	*0.98*	*1.18*	*1.57*	*0.33*
	SAE12	**mm**	70	85	40	8	54	77	8	25	30	40	8,5
		in	*2.75*	*3.35*	*1.57*	*0.31*	*2.12*	*3.03*	*0.31*	*0.98*	*1.18*	*1.57*	*0.33*

Cavity	Ports		A	B	C	E	F	G	H	I	L	M	Z
SAE 16/2	G 1/2	**mm**	80	90	50	10	60	80	10	25	35	45	10,5
		in	*3.15*	*3.54*	*1.97*	*0.39*	*2.36*	*3.15*	*0.39*	*0.98*	*1.38*	*1.77*	*0.41*
	G 3/4	**mm**	80	90	50	10	60	80	10	25	35	45	10,5
		in	*3.15*	*3.54*	*1.97*	*0.39*	*2.36*	*3.15*	*0.39*	*0.98*	*1.38*	*1.77*	*0.41*
	G 1	**mm**	85	100	60	10	65	90	10	23,5	40	45	10,5
		in	*3.35*	*3.94*	*2.36*	*0.39*	*2.56*	*3.54*	*0.39*	*0.92*	*1.57*	*1.77*	*0.41*
	SAE12	**mm**	80	90	50	10	60	80	10	25	35	45	10,5
		in	*3.15*	*3.54*	*1.97*	*0.39*	*2.36*	*3.15*	*0.39*	*0.98*	*1.38*	*1.77*	*0.41*
	SAE16	**mm**	80	100	50	10	60	90	10	25	35	45	10,5
		in	*3.15*	*3.94*	*1.97*	*0.39*	*2.36*	*3.54*	*0.39*	*0.98*	*1.38*	*1.77*	*0.41*

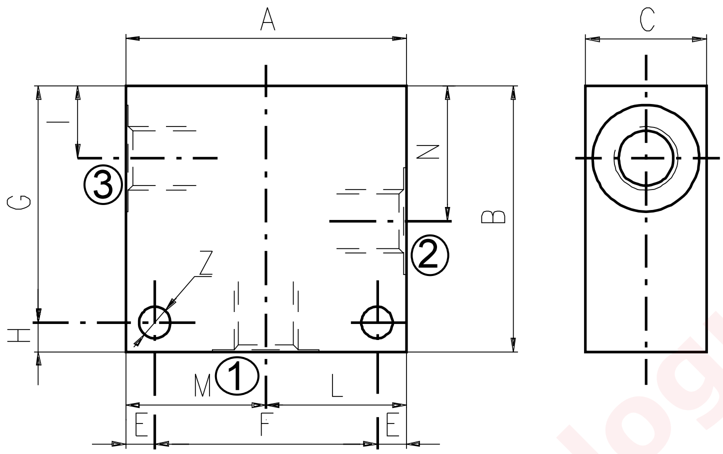
Order code

3/CC /- □ □ /20/□- □-1

Cavity	Ports	Materials
08	**B)** G 1/4	**1)** Aluminium
10	**C)** G 3/8	**2)** Steel
12	**D)** G 1/2	
16	**E)** G 3/4	
	F) G 1	

Dimensions

Material	Max. pressure	
	bar	*psi*
Alluminium	210	*3050*
Steel	350	*5100*



Cavity	Ports		A	B	C	E	F	G	H	I	L	M	N	Z
SAE 8/3	G 1/4	**mm**	60	60	30	7	46	48	12	14,8	30	30	29,1	6,5
		in	*2.36*	*2.36*	*1.18*	*0.27*	*1.81*	*1.89*	*0.47*	*0.58*	*1.18*	*1.18*	*1.14*	*0.25*
	G 3/8	**mm**	60	60	30	7	46	48	12	14,5	30	30	29,1	6,5
		in	*2.36*	*2.36*	*1.18*	*0.27*	*1.81*	*1.89*	*0.47*	*0.57*	*1.18*	*1.18*	*1.14*	*0.25*
	G 1/2	**mm**	70	65	35	7	56	53	12	14,5	35	35	29,1	6,5
		in	*2.75*	*2.56*	*1.38*	*0.27*	*2.20*	*2.09*	*0.47*	*0.57*	*1.38*	*1.38*	*1.14*	*0.25*
	SAE6	**mm**	60	60	30	7	46	48	12	14,5	30	30	29,1	6,5
		in	*2.36*	*2.36*	*1.18*	*0.27*	*1.81*	*1.89*	*0.47*	*0.57*	*1.18*	*1.18*	*1.14*	*0.25*
SAE 10/3	G 1/4	**mm**	60	65	35	6	48	59	6	18	30	30	34,5	7
		in	*2.36*	*2.56*	*1.38*	*0.24*	*1.89*	*2.32*	*0.24*	*0.70*	*1.18*	*1.18*	*1.36*	*0.27*
	G 3/8	**mm**	60	65	35	6	48	59	6	18,8	30	30	34,5	7
		in	*2.36*	*2.56*	*1.38*	*0.24*	*1.89*	*2.32*	*0.24*	*0.74*	*1.18*	*1.18*	*1.36*	*0.27*
	G 1/2	**mm**	65	70	35	6	53	64	6	18,8	32,5	32,5	34,5	7
		in	*2.56*	*2.75*	*1.38*	*0.24*	*2.09*	*2.52*	*0.24*	*0.74*	*1.28*	*1.28*	*1.36*	*0.27*
	SAE6	**mm**	65	70	35	6	53	64	6	18,8	32,5	32,5	34,5	7
		in	*2.56*	*2.75*	*1.38*	*0.24*	*2.09*	*2.52*	*0.24*	*0.74*	*1.28*	*1.28*	*1.36*	*0.27*
	SAE8	**mm**	65	70	35	6	53	64	6	18,8	32,5	32,5	34,5	7
		in	*2.56*	*2.75*	*1.38*	*0.24*	*2.09*	*2.52*	*0.24*	*0.74*	*1.28*	*1.28*	*1.36*	*0.27*
SAE 12/3	G 1/2	**mm**	70	100	40	8	54	92	8	25	35	35	53,5	8,5
		in	*2.75*	*3.94*	*1.57*	*0.31*	*2.12*	*3.6*	*0.31*	*0.98*	*1.38*	*1.38*	*2.10*	*0.33*
	G 3/4	**mm**	90	100	50	10	70	90	10	25,1	45	45	53,5	10,5
		in	*3.54*	*3.94*	*1.97*	*0.39*	*2.75*	*3.54*	*0.39*	*0.99*	*1.77*	*1.77*	*2.11*	*0.41*
	SAE10	**mm**	80	100	40	8	64	92	8	25	40	40	53,5	8,5
		in	*3.15*	*3.94*	*1.57*	*0.31*	*2.52*	*3.6*	*0.31*	*0.98*	*1.57*	*1.57*	*2.11*	*0.33*
	SAE12	**mm**	80	100	45	8	64	92	8	25	40	40	53,5	8,5
		in	*3.15*	*3.94*	*1.57*	*0.31*	*2.52*	*3.6*	*0.31*	*0.98*	*1.57*	*1.57*	*2.11*	*0.33*
SAE 16/3	G 3/4	**mm**	90	100	50	10	70	90	10	25,1	45	45	53,5	10,5
		in	*3.54*	*3.94*	*1.97*	*0.39*	*2.75*	*3.54*	*0.39*	*0.99*	*1.77*	*1.77*	*2.11*	*0.41*
	SAE12	**mm**	90	105	50	10	70	95	10	25,1	45	45	53,5	10,5
		in	*3.54*	*4.13*	*1.97*	*0.39*	*2.75*	*3.74*	*0.39*	*0.99*	*1.77*	*1.77*	*2.11*	*0.41*
	SAE16	**mm**	90	105	50	10	70	95	10	25,1	45	45	53,5	10,5
		in	*3.54*	*4.13*	*1.97*	*0.39*	*2.75*	*3.74*	*0.39*	*0.99*	*1.77*	*1.77*	*2.11*	*0.41*

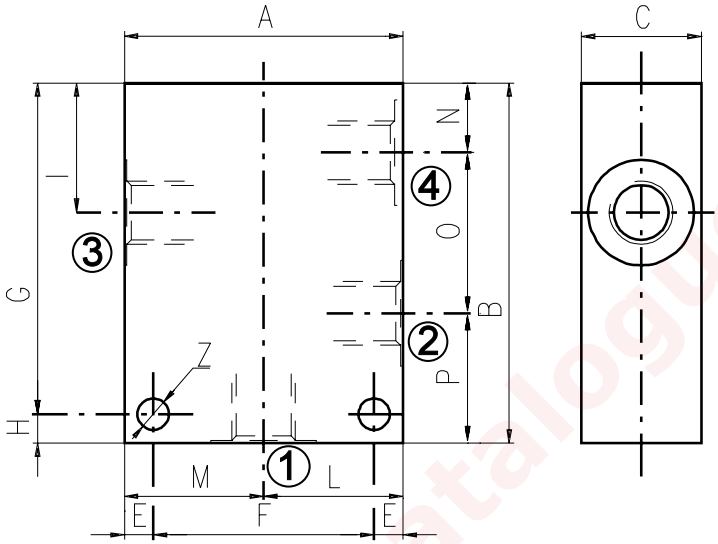
Order code

3/CC /- □ □ /30/□- □-1

Cavity	Ports	Materials
08	**B)** G 1/4	**1)** Aluminium
10	**C)** G 3/8	**2)** Steel
12	**D)** G 1/2	
16	**E)** G 3/4	

Dimensions

Material	Max. pressure	
	bar	*psi*
Alluminium	210	*3050*
Steel	350	*5100*

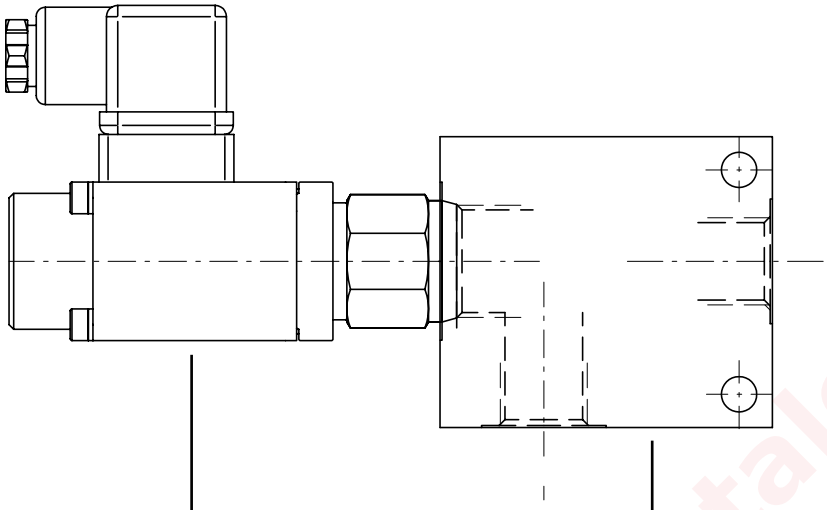


Cavity	Ports		A	B	C	E	F	G	H	I	L	M	N	O	P	Z
SAE 8/4	G 1/4	mm	60	75	30	7	46	63	12	29,1	30	30	14,8	29,1	31,1	6,5
		in	*2.36*	*2.95*	*1.18*	*0.27*	*1.81*	*2.48*	*0.47*	*1.14*	*1.18*	*1.18*	*0.58*	*1.14*	*1.22*	*0.25*
	SAE6	mm	60	75	30	7	46	63	12	29,1	30	30	14,8	29,1	31,1	6,5
		in	*2.36*	*2.95*	*1.18*	*0.27*	*1.81*	*2.48*	*0.47*	*1.14*	*1.18*	*1.18*	*0.58*	*1.14*	*1.22*	*0.25*
SAE 10/4	G 3/8	mm	60	85	35	6	48	79	6	34,5	30	30	18,8	31,7	34,5	7
		in	*2.36*	*3.35*	*1.38*	*0.24*	*1.89*	*3.11*	*0.24*	*1.36*	*1.18*	*1.18*	*0.74*	*1.25*	*1.36*	*0.27*
	G 1/2	mm	70	85	35	6	58	79	6	34,5	35	35	18,8	31,7	34,5	7
		in	*2.75*	*3.35*	*1.38*	*0.24*	*2.28*	*3.11*	*0.24*	*1.36*	*1.38*	*1.38*	*0.74*	*1.25*	*1.36*	*0.27*
	SAE6	mm	60	85	35	6	48	79	6	34,5	30	30	18,8	31,7	34,5	7
		in	*2.45*	*3.35*	*1.38*	*0.24*	*1.89*	*3.11*	*0.24*	*1.36*	*1.18*	*1.18*	*0.74*	*1.25*	*1.36*	*0.27*
	SAE8	mm	70	85	35	6	58	79	6	34,5	35	35	18,8	31,7	34,5	7
		in	*2.75*	*3.35*	*1.38*	*0.24*	*2.28*	*3.11*	*0.24*	*1.36*	*1.38*	*1.38*	*0.74*	*1.25*	*1.36*	*0.27*
SAE 12/4	G 1/2	mm	80	115	40	8	64	107	8	44	40	40	22	44,5	48,5	8,5
		in	*3.15*	*4.53*	*1.57*	*0.31*	*2.52*	*4.21*	*0.31*	*1.73*	*1.57*	*1.57*	*0.87*	*1.75*	*1.9*	*0.33*
	SAE10	mm	80	115	40	8	64	107	8	44	40	40	22	44,5	48,5	8,5
		in	*3.15*	*4.53*	*1.57*	*0.31*	*2.52*	*4.21*	*0.31*	*1.73*	*1.57*	*1.57*	*0.87*	*1.75*	*1.9*	*0.33*
SAE 16/4	G 3/4	mm	100	130	50	10	80	120	10	53,5	50	50	25,1	56,9	48	10,5
		in	*3.94*	*5.12*	*1.97*	*0.39*	*3.15*	*4.72*	*0.39*	*2.11*	*1.97*	*1.97*	*0.99*	*2.24*	*1.89*	*0.41*

3/CC /- □ □ /40/□- □-1

Cavity	Ports	Materials
08	**B)** G 1/4	**1)** Aluminium
10	**C)** G 3/8	**2)** Steel
12	**D)** G 1/2	
16	**E)** G 3/4	

How to order valves with body



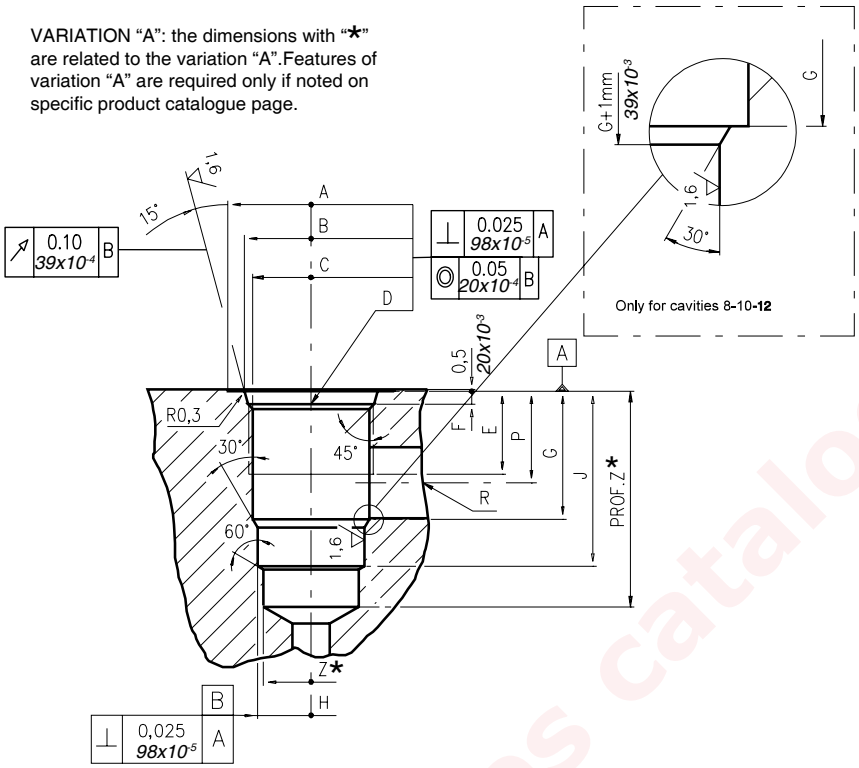
CARTRIDGE CODE **MP-10-Y/0-4-1V/**

BILLET CODE **C- 1-1**

Cavity	Ports	Materials
08	B) G 1/4	1) Aluminium
10	C) G 3/8	
12	D) G 1/2	
16	E) G 3/4	
	F) G 1	
	J) SAE 6	2) Steel
	K) SAE 8	
	L) SAE 10	
	M) SAE 12	
	N) SAE 16	

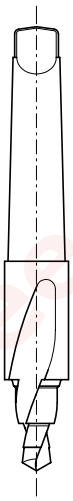
Dimensions

VARIATION “A”: the dimensions with “*” are related to the variation “A”.Features of variation “A” are required only if noted on specific product catalogue page.



\		A	B ±0,05	C ±0,05	D	E	F	G	H ±0,02	J	K ±0,02	L	M ±0,02	N	P	R øMAX	S	T øMAX	U	V øMAX	X øMAX	Z* øMIN	Prof.Z MIN*
08/2	mm	27	20,66	17,42	3/4-16 UNF	12,50	2,50	18,20	12,72	29,50	-	-	-	-	14,00	8,00	-	-	-	-	-	12,00	39
	in	*1.06*	*0.81*	*0.68*		*0.49*	*0.10*	*0.72*	*0.50*	*1.16*					*0.55*	*0.31*						*0.47*	*1.53*
10/2	mm	30	24,00	20,62	7/8-14 UNF	16,00	2,80	24,00	15,90	33,50	-	-	-	-	18,30	11,00	-	-	-	-	-	14,50	40
	in	*1.18*	*0.94*	*0.81*		*0.63*	*0.11*	*0.94*	*0.62*	*1.32*					*0.72*	*0.43*						*0.57*	*1.57*
12/2	mm	38	29,23	24,73	1 1/16-12 UNF	19,00	3,50	34,15	22,25	46,80	-	-	-	-	24,50	19,00	-	-	-	-	-	21,50	60
	in	*1.50*	*1.15*	*0.97*		*0.75*	*0.14*	*1.34*	*0.87*	*1.84*					*0.96*	*0.75*						*0.85*	*2.36*
16/2	mm	45	35,58	31,34	1 5/16-12 UNF	22,00	3,50	34,00	28,62	47,00	-	-	-	-	24,50	19,00	-	-	-	-	-	25,50	70
	in	*1.77*	*1.40*	*1.23*		*0.87*	*0.14*	*1.34*	*1.13*	*1.85*					*0.96*	*0.75*						*1,00*	*2.75*

Rougher tool



Cavity	Code number
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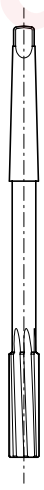
10/2	3UT00056610
12/2	3UT00054090
16/2	3UT00054510

Finisher tool



Cavity	Code number
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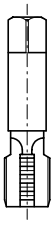
10/2	3UT00054580
12/2	3UT00054670
16/2	3UT00054520

Tap



Cavity	Code number
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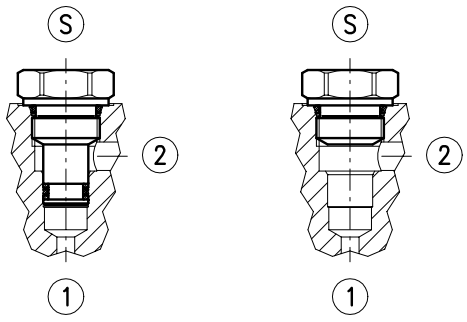
10/2	3UT07814UNF
12/2	3UT0111612UN
16/2	3UT0151612UN

Cavity plugs



Cavity	Code number	①	②	Ⓢ
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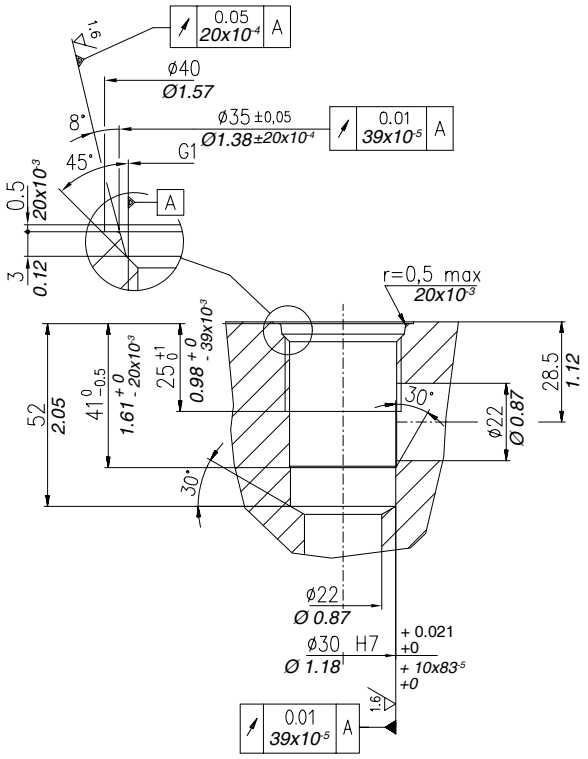
	4TP5531500	0	0	X
10/2	3XTP3544200	X	X	X
	3XTP1542300	0	0	X
12/2	3XTP3555400	X	X	X
	3XTP1552900	0	0	X
16/2	3XTP3575500	X	X	X
	3XTP1572900	0	0	X

X=Closed 0=Open

Dimensions



Rougher tool

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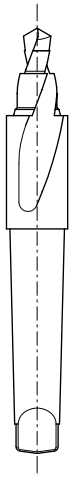
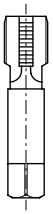


Finisher tool

Cod.3UTO6A3000N

Tap

Cod.3UT09A10F11G



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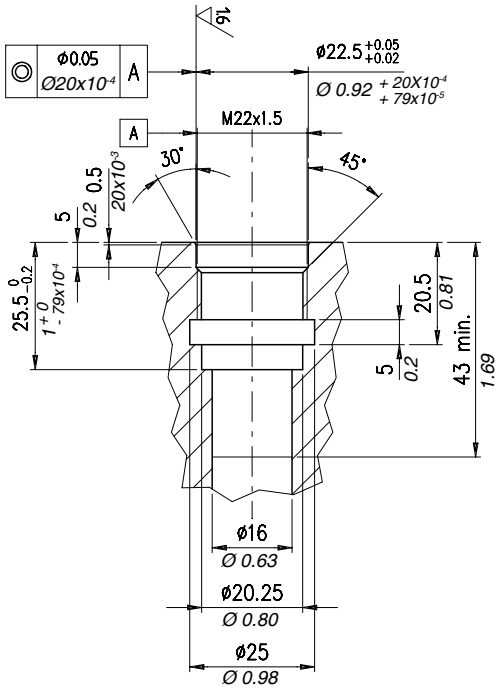

Rougher tool

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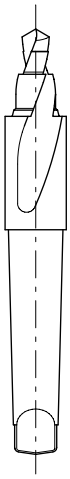

Finisher tool

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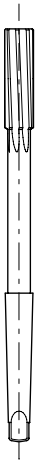

Tap

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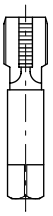

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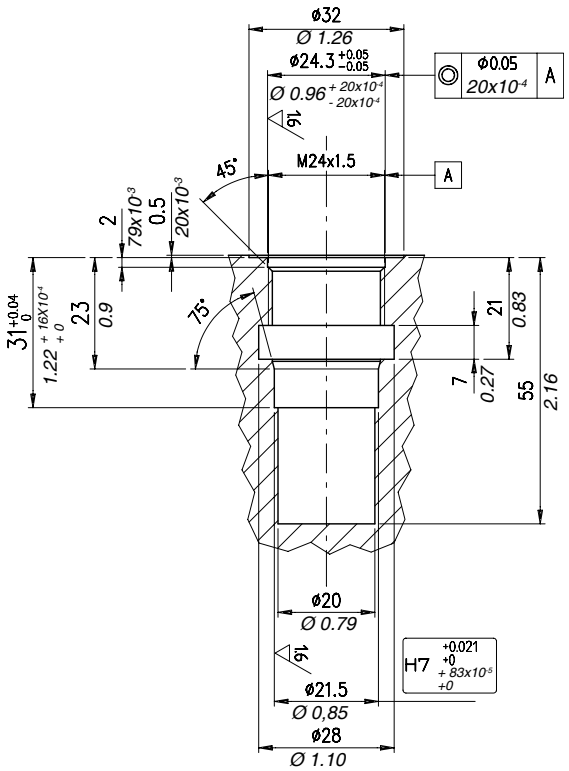

Rougher tool

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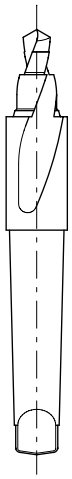

Finisher tool

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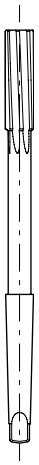

Tap

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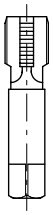
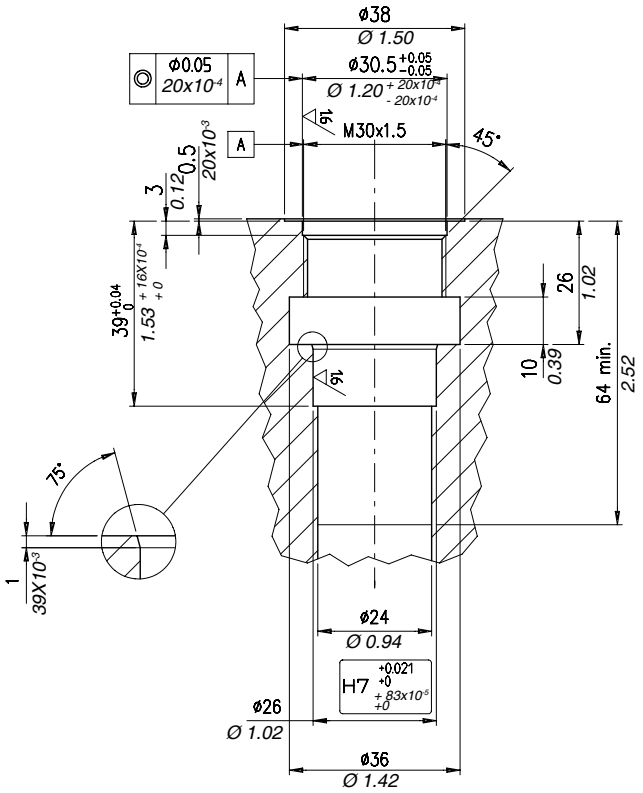


Dimensions



Rougher tool

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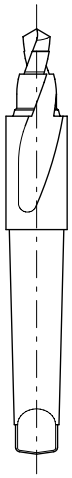

Finisher tool

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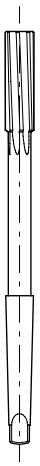

Tap

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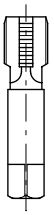

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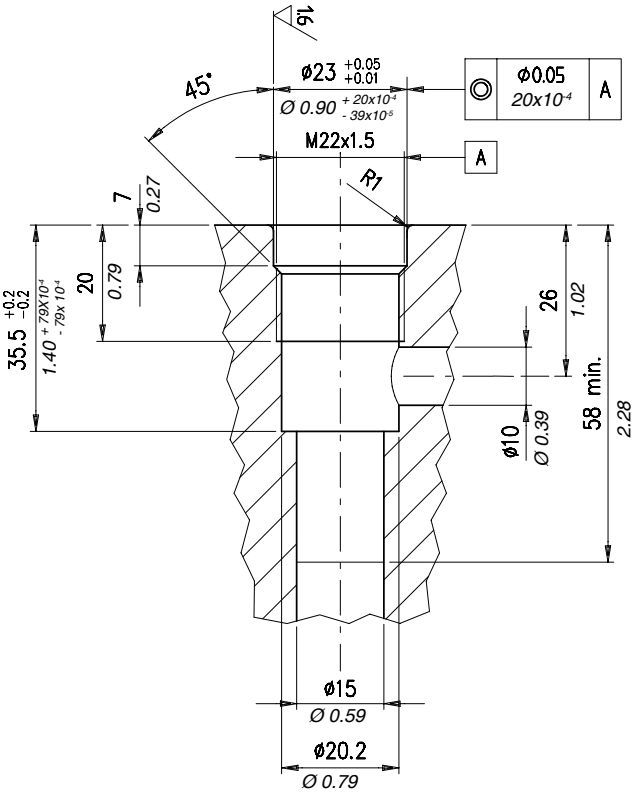

Rougher tool

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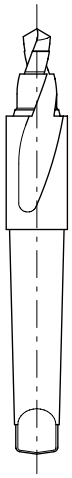

Finisher tool

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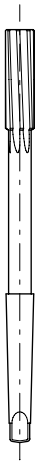

Tap

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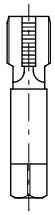

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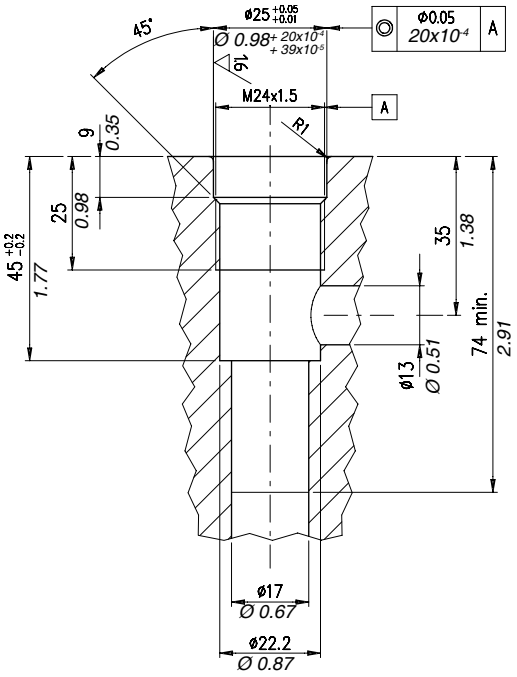

Rougher tool

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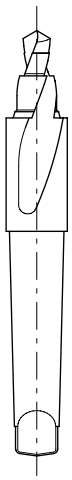
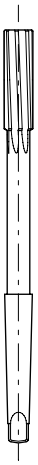


Finisher tool

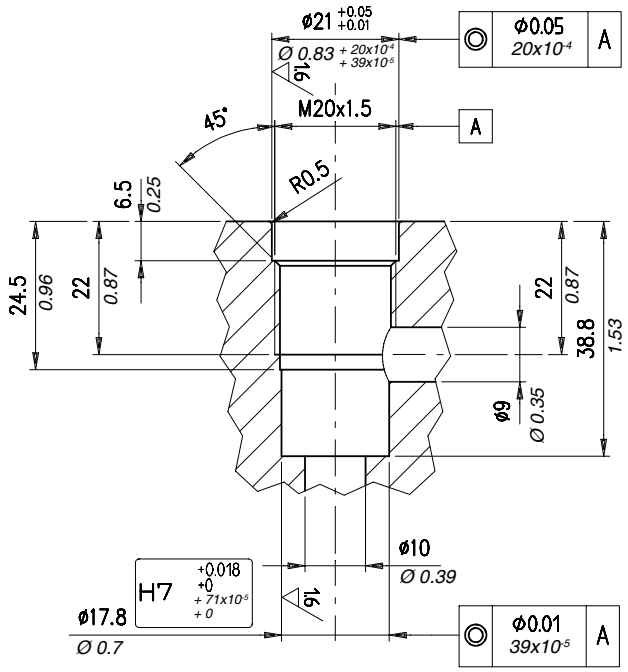
Code 3UT06A2500N



Tap

Code 3UT08A24F150

Dimensions



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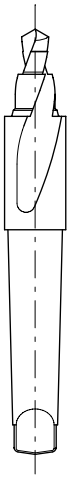

Finisher tool

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Tap

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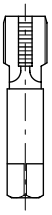

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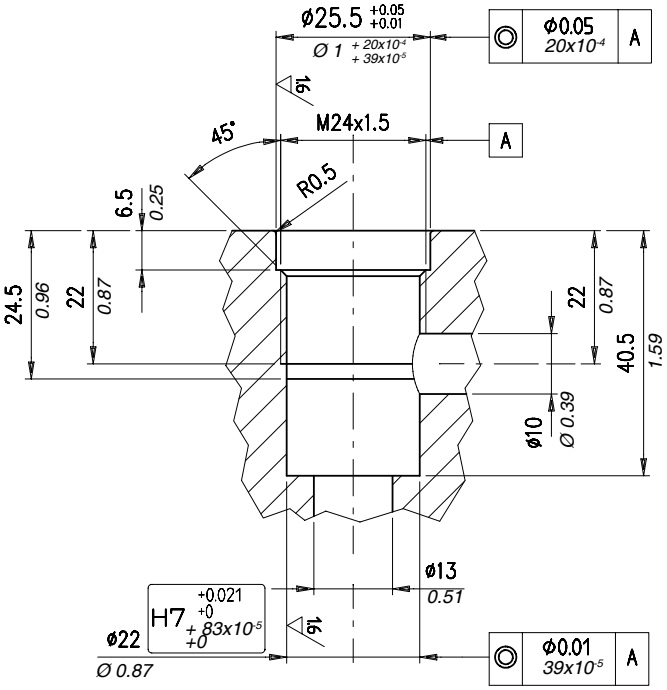

Rougher tool

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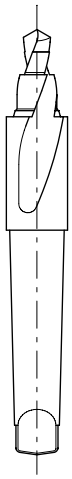

Finisher tool

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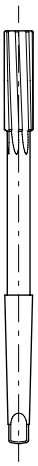

Tap

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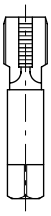
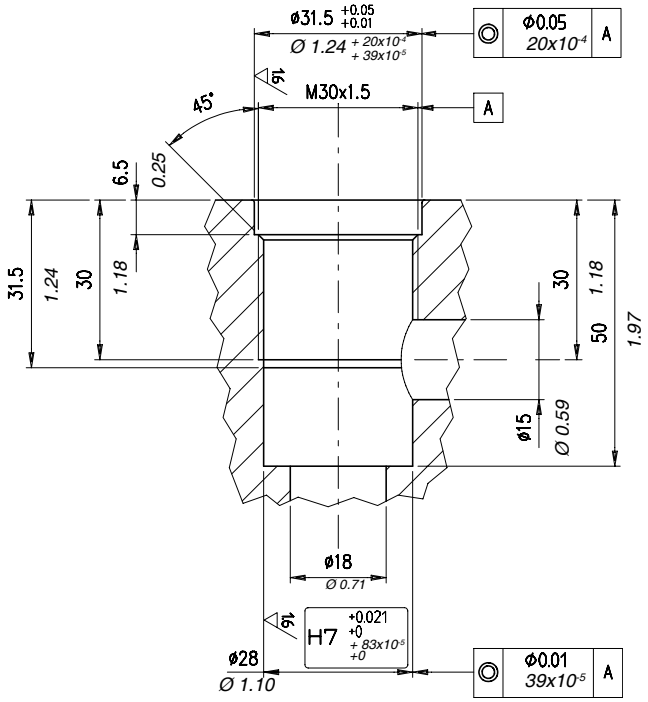


Dimensions



Rougher tool

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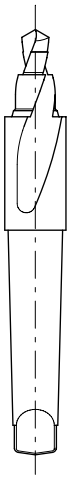

Finisher tool

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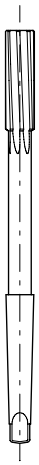

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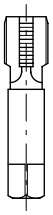

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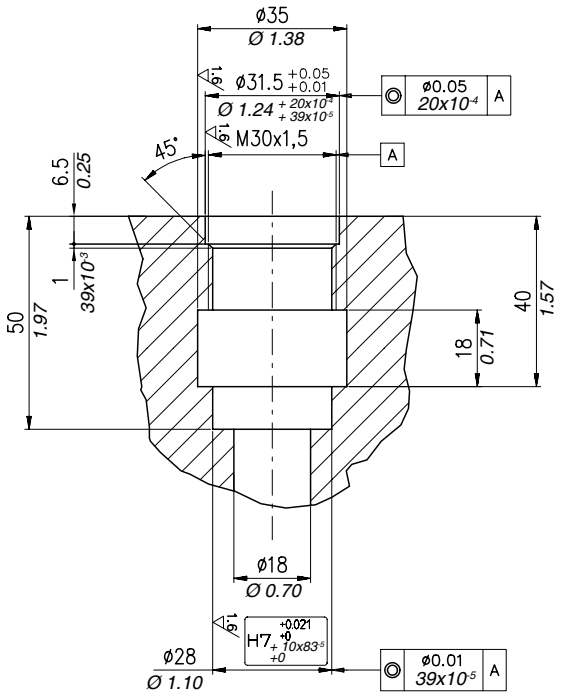

Rougher tool

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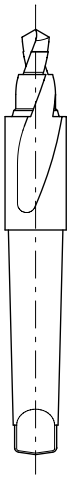

Finisher tool

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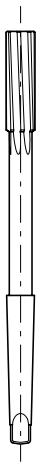
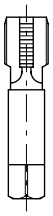


Tap

Code 3UT08A24F150



1st edition May 2010

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