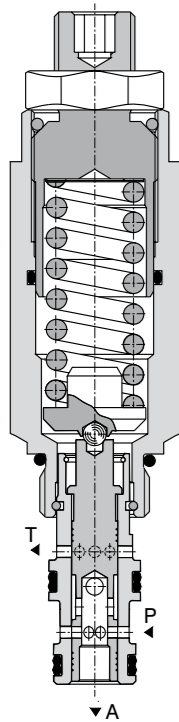


Pressure Reducing - Relieving Valve, Spool Type, Direct Acting

SP2A-A3

3/4-16 UNF • Q_{max} 20 l/min (5 GPM) • p_{max} 350 bar (5100 PSI)

Model S



Technical Features

- › Excellent stability throughout flow range with rapid response to dynamic pressure changes
- › Low hysteresis, accurate pressure control and low pressure drop
- › Wide pressure range up to 350 bar
- › Hardened precision parts
- › Adjustable by allen key or hand screw
- › In the standard version, the valve is zinc-coated for 240 h protection acc. to ISO 9227

Functional Description

The valve provides an adjustable regulated pressure level below supply pressure. This direct acting model is suitable for applications with lower flow rates and lower regulated pressures. In case of shock or surge pressures in the downstream line the valve acts as a relief valve, directing excessive pressure and flow to tank.



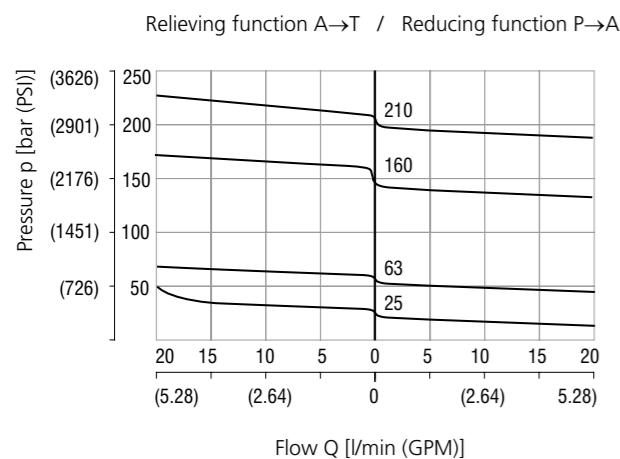
Technical Data

Valve size / Cartridge cavity		3/4-16 UNF-2A / A3			
Max. flow	l/min (GPM)	20 (5.3)			
Pressure range		2	6	16	21
Max. operating pressure (port P)	bar (PSI)	50 (730)	150 (2180)	250 (3630)	350 (5080)
Reduced pressure range (at Q = 5 l/min)	bar (PSI)	10-25 (150-360)	20-63 (290-910)	50-160 (730-2320)	100-210 (1450-3050)
Max. back pressure (port T)	bar (PSI)	200 (3630)			
Fluid temperature range (NBR)	°C (°F)	-30 ... +100 (-22 ... 212)			
Fluid temperature range (FPM)	°C (°F)	-20 ... +120 (-4 ... 248)			
Mass	kg (lbs)	0.13 (0.29)			

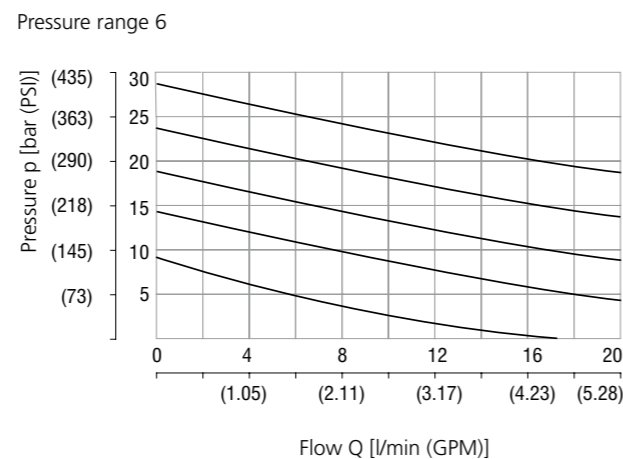
		Datasheet	Type
General information		GI_0060	Products and operating conditions
Valve bodies	In-line mounted	SB_0018	SB-A3*
	Sandwich mounted	SB-04(06)_0028	SB-*-A3*
Cavity details / Form tools		SMT_0019	SMT-A3*
Spare parts		SP_8010	

Characteristics measured at v = 32 mm²/s (156 SUS)

Reducing - relieving pressure related to flow rate

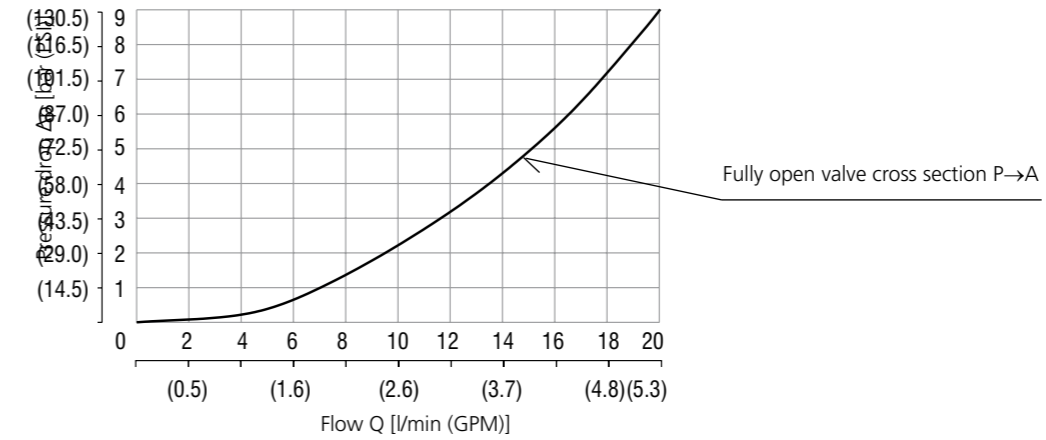


Minimum reducing pressure related to flow rate



Characteristics measured at v = 32 mm²/s (156 SUS)

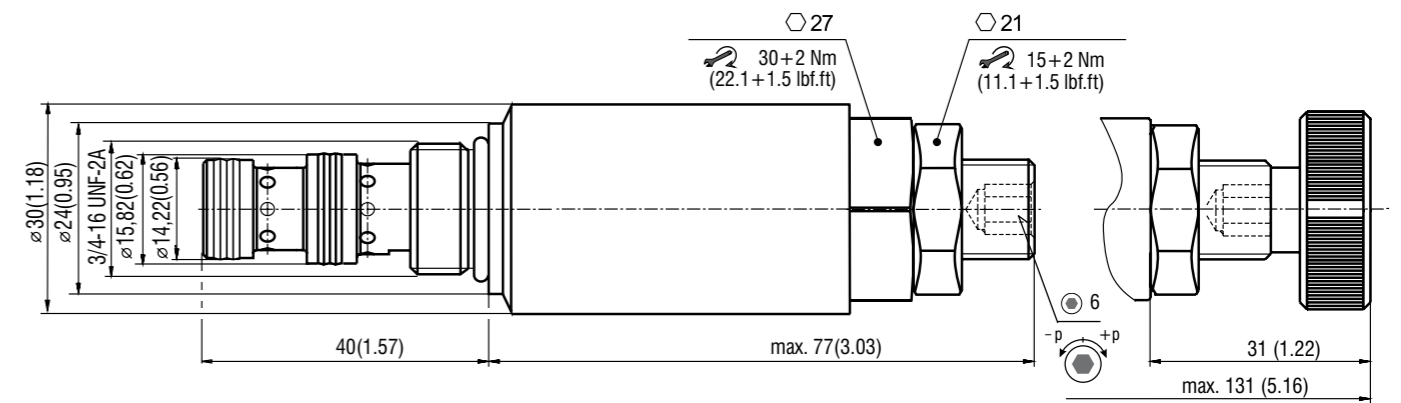
Pressure drop related to flow rate



Dimensions in millimeters (inches)

Model S

Model RS



Ordering Code

SP2A-A3 / [] [] [] [] - []

Pressure reducing - relieving valve, spool type, direct acting 3/4-16 UNF

Model L

Lightline

Surface treatment
A zinc-coated (ZnCr-3), ISO 9227 (240 h)
B zinc-coated (ZnNi), ISO 9227 (520 h)

Seals
NBR
FPM (Viton)

No designation V

Reduced pressure ranges (at Q = 5 l/min)

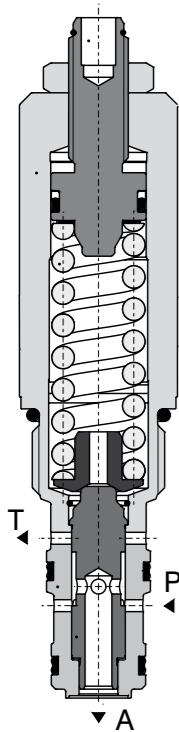
10 - 25 bar (150 - 360 PSI)	2
20 - 63 bar (290 - 910 PSI)	6
50 - 160 bar (730 - 2320 PSI)	16
100 - 210 bar (1450 - 3050 PSI)	21

Adjustment option
S allen key (hex. 6), without protective cap
RS hand screw, metal

Pressure Reducing - Relieving Valve, Spool Type, Direct Acting

SP2A-B3

7/8-14 UNF • Q_{max} 60 l/min (16 GPM) • p_{max} 420 bar (6100 PSI)



Technical Features

- › Excellent stability throughout flow range with rapid response to dynamic pressure changes
- › Low hysteresis, accurate pressure control and low pressure drop
- › Wide pressure range up to 420 bar
- › Hardened precision parts
- › Adjustable by allen key or hand screw
- › In the standard version, the valve is zinc-coated for 240 h protection acc. to ISO 9227

Functional Description

The valve provides an adjustable regulated pressure level below supply pressure. This direct acting model is suitable for applications with lower flow rates and lower regulated pressures. In cases of shock or surge pressures in the downstream line the valve acts as a relief valve, directing excessive pressure and flow to tank.



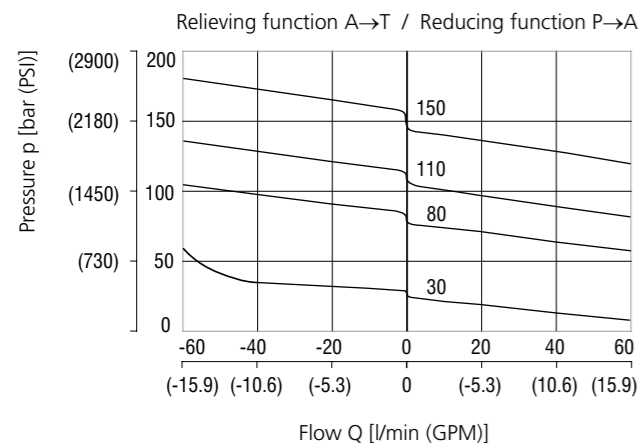
Technical Data

Valve size / Cartridge cavity		7/8-14 UNF-2A / B3			
Max. flow	l/min (GPM)	60 (15.9)			
Pressure range		3	8	11	15
Max. operating pressure	bar (PSI)	420 (6090)			
Reduced pressure range (at Q = 5 l/min)	bar (PSI)	10-30 (150-440)	20-80 (290-1160)	30-110 (440-1600)	40-150 (580-2180)
Max. back pressure (port T)	bar (PSI)	200 (3626)			
Fluid temperature range (NBR)	°C (°F)	-30 ... +100 (-22 ... 212)			
Fluid temperature range (FPM)	°C (°F)	-20 ... +120 (-4 ... 248)			
Mass	kg (lbs)	0.26 (0.57)			

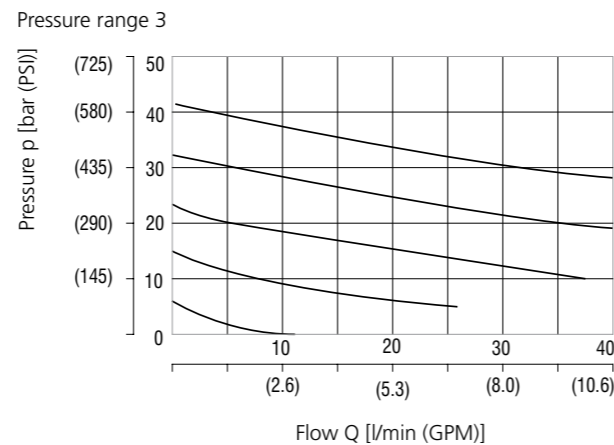
		Datasheet	Type
General information		GI_0060	Products and operating conditions
Valve bodies	In-line mounted	SB_0018	SB-B3*
	Sandwich mounted	SB-04(06)_0028	SB-*-B3*
Cavity details / Form tools		SMT_0019	SMT-B3*
Spare parts		SP_8010	

Characteristics measured at v = 32 mm²/s (156 SUS)

Reducing - relieving pressure related to flow rate

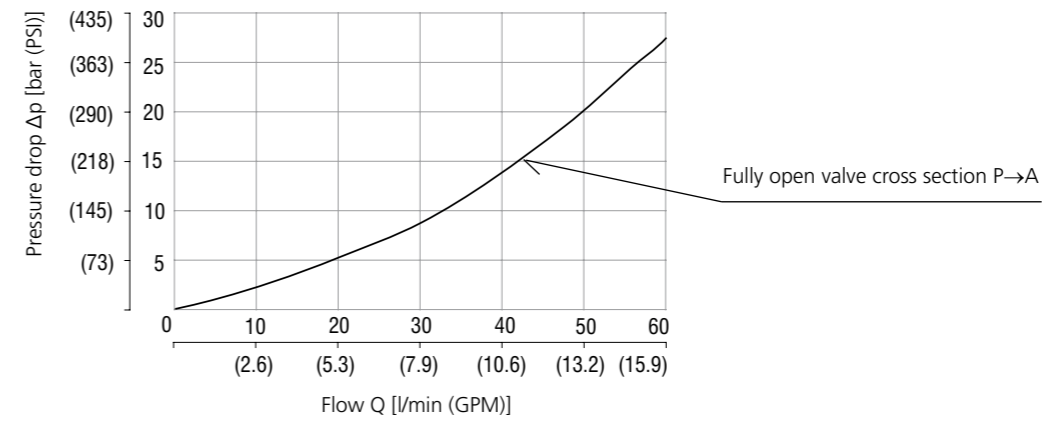


Minimum reducing pressure related to flow rate



Characteristics measured at v = 32 mm²/s (156 SUS)

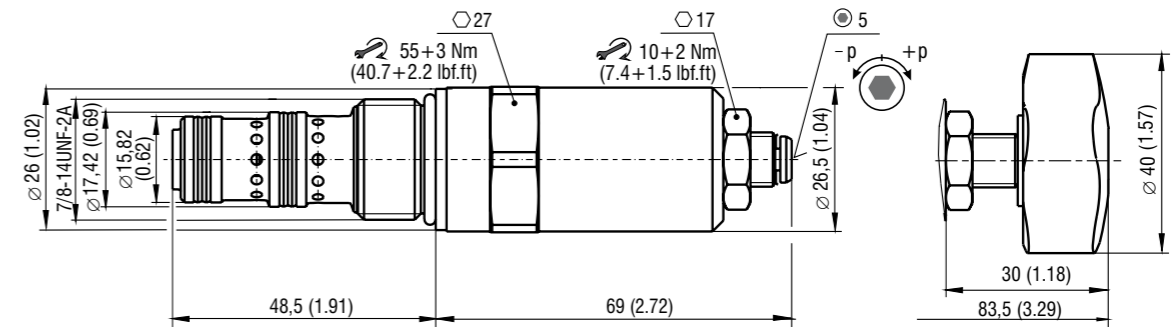
Pressure drop related to flow rate



Dimensions in millimeters (inches)

Model S

Model RP



Ordering Code

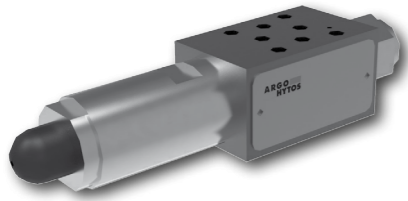
SP2A-B3 / [] [] [] [] - []

- Pressure reducing - relieving valve, spool type, direct acting 7/8-14 UNF**
- Model**
High performance **H**
- Reduced pressure range (at Q = 5 l/min)**
10 - 30 bar (150 - 440 PSI) **3**
20 - 80 bar (290 - 1160 PSI) **8**
30 - 110 bar (290 - 1600 PSI) **11**
40 - 150 bar (580 - 2180 PSI) **15**
- Surface treatment**
A zinc-coated (ZnCr-3), ISO 9227 (240 h)
B zinc-coated (ZnNi), ISO 9227 (520 h)
- Seals**
NBR
FPM (Viton)
- No designation**
V
- Adjustment option**
allen key (hex. 5), without protective cap
hand screw, plastic
- S**
RP

Pressure Reducing - Relieving Valve, Spool Type, Direct Acting, Modular

VRP2-04

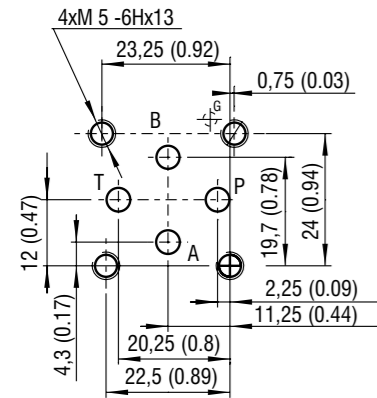
Size 04 (D02) • Q_{max} 20 l/min (5 GPM) • p_{max} 320 bar (4600 PSI)



Technical Features

- › Pressure reducing - relieving valve, spool type, direct acting, with mounting interface acc. to ISO 4401, DIN 24340 (CETOP 02)
- › Excellent stability throughout flow range with rapid response to dynamic pressure changes
- › Low hysteresis, accurate pressure control and low pressure drop
- › Wide pressure range up to 320 bar
- › Hardened precision parts
- › Pressure reduction function in ports P, A, or B
- › Adjustable by allen key or hand screw
- › Good adjustment sensitivity with reduced drainage flow
- › In the standard version, the valve housing is phosphated and steel parts are zinc-coated for 240 h protection acc. to ISO 9227

ISO 4401-02-01-0-05



Ports P, A, B, T - max. Ø4.5 mm (0.18 in)

Technical Data

Valve size	04 (D02)			
Max. flow	l/min (GPM)	20 (5.3)		
Max. operating pressure (ports P, A, B)	bar (PSI)	320 (4640)		
Max. operating pressure (port T)	bar (PSI)	210 (3050)		
Reduced pressure range (at Q = 5 l/min)	bar	10-25	20-63	30-160
	(PSI)	(150-360)	(290-910)	(440-2320)
Fluid temperature range (NBR)	°C (°F)	-30 ... +100 (-22 ... +212)		
Fluid temperature range (FPM)	°C (°F)	-20 ... +120 (-4 ... +248)		
Mass	- model "A"	0.82 (1.81)		
	- model "B", "P"	0.60 (1.32)		
Datasheet		Type		
General information	GI_0060	Products and operating conditions		
Mounting interface	SMT_0019	ISO 4401-02-01-0-05 DIN 24340 (CETOP 02)		
Spare parts	SP_8010			

Functional Description

The pressure valves VRP2 are directly operated reducing-relieving valves for vertical stacking assemblies designed as 3 way valves, which means it includes pressure protection of the secondary circuit. The valve consists of the valve body, control spool, spring, and adjustment element. The body includes a port M with thread G 1/4 for attachment of a pressure measuring device or a by-pass free flow check valve.

Model A

In model A, the fluid enters the valve body from the primary circuit through port A1 and passes through the metering edge, where its pressure is reduced. The flow is passed to the output port A2 and on to the user. The reverse free flow from port A2 to port A1 passes through a check valve which is connected in parallel to the metering edge of the control spool.

Model B

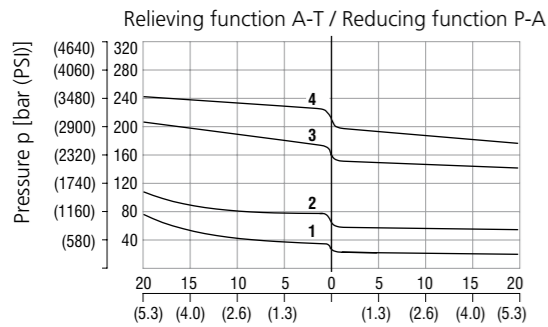
In model B, the pressure reduction occurs from port P2 to port P1, but only if the flow in port B passes towards the user (not opposite). The protection of the secondary circuit is therefore ensured for one flow direction only.

Model P

In model P, the pressure reduction occurs from port P2 to port P1, and is effective in both flow directions through the directional valve. Therefore, the protection of the secondary circuit is ensured for both flow directions.

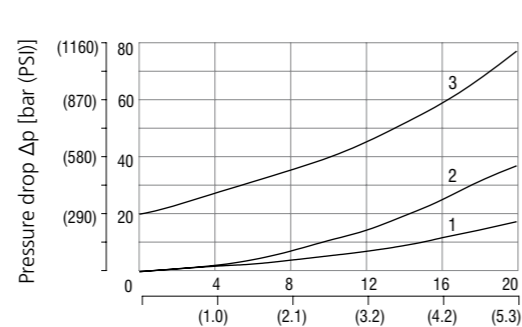
Characteristics measured at v = 32 mm²/s (156 SUS)

Reducing - relieving pressure related to flow rate



Pressure range	Flow Q [l/min (GPM)]
4	21
3	16
2	6
1	2

Pressure drop related to flow rate

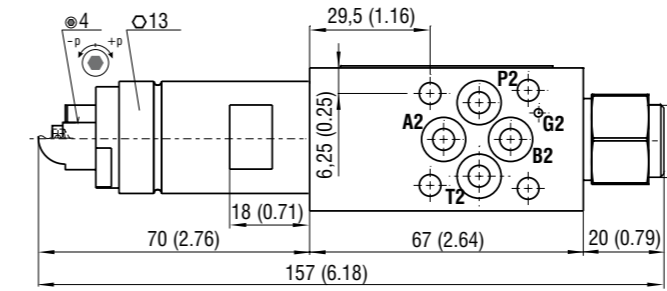


Direction	Model A		Models P, B	
	3	2	3	2
1 - Pressure drop of check valve	A2-T	P1-T	A2-T	P1-T
2 - Pressure drop of reducing valve at min. adjustable pressure range	A1-A2	P2-P1	A1-A2	P2-P1
3 - Pressure drop of relief valve at min. adjustable safety pressure	A2-A1		A2-A1	

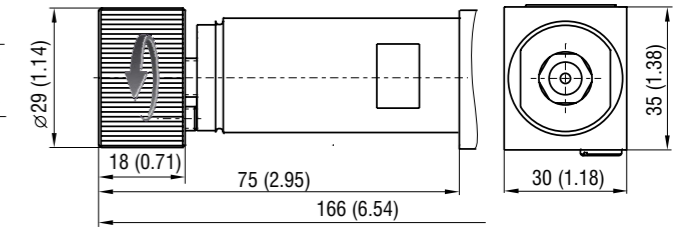
Dimensions in millimeters (inches)

Type „A“

Model S (T)

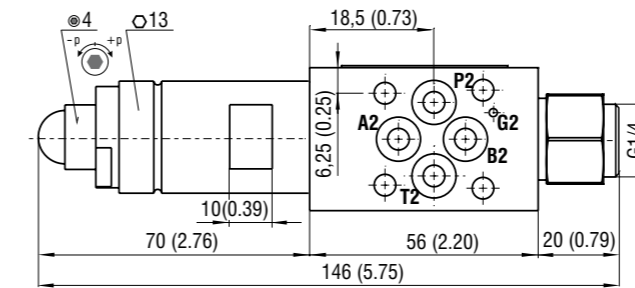


Model RS

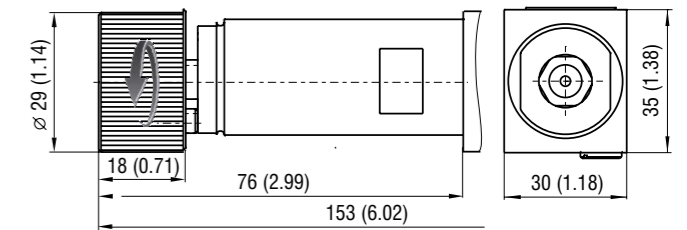


Type „B“ and „P“

Model S (T)

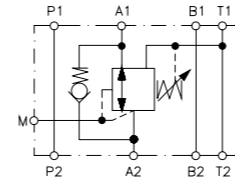


Model RS

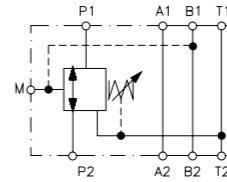


Functional symbols

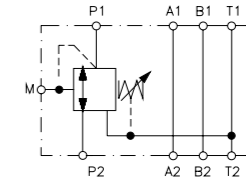
VRP2-04-A*



VRP2-04-B*



VRP2-04-P*



- ① valve side
- ② subplate or manifold side

Notice: The orientation of the symbol on the name plate corresponds with the valve function.

Ordering Code

VRP2 - 04 - [] / [] - []

Pressure reducing - relieving valve, spool type, direct acting, modular

Valve size
ISO 4401-02-01-0-05, DIN 24340 (CETOP 02), size 04

Surface treatment
No designation: body phosphated, steel parts
A: zinc-coated (ZnCr-3), ISO 9227 (240 h)
B: zinc-coated (ZnCr-3), ISO 9227 (240 h)
zinc-coated (ZnNi), ISO 9227 (520 h)

Seals
No designation: NBR
V: FPM (Viton)

Reduced pressure range (at Q = 5 l/min)
2: 10 - 25 bar (150 - 360 PSI)
6: 20 - 63 bar (290 - 910 PSI)
16: 30 - 160 bar (440 - 2320 PSI)
21: 50 - 210 bar (730 - 3050 PSI)

Model
Pressure reduction: on port A2, on port P1, on port P1
Pressure sensing: at port A2, at port B1, at port P1

Adjustment option
S: allen key (hex. 4), without protective cap
T: allen key (hex. 4), with protective cap
RS: hand screw, metal

Pressure Reducing - Relieving Valve, Spool Type, Direct Acting, Modular

VRP2-06

Size 06 (D03) • Q_{max} 50 l/min (13 GPM) • p_{max} 350 bar (5100 PSI)



Technical Features

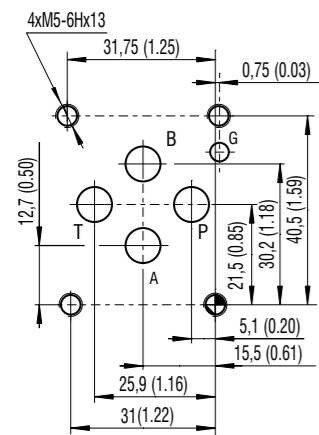
- › Pressure reducing - relieving valve, spool type, direct acting, with mounting interface acc. to ISO 4401, DIN 24340 (CETOP 03)
- › Excellent stability throughout flow range with rapid response to dynamic pressure changes
- › Low hysteresis, accurate pressure control and low pressure drop
- › Wide pressure range up to 350 bar
- › High flow capacity
- › Hardened precision parts
- › Pressure reduction function in ports P, A, or B
- › Adjustable by allen key or hand screw
- › Good adjustment sensitivity with reduced drainage flow
- › In the standard version, the valve housing is phosphated and steel parts are zinc-coated for 240 h protection acc. to ISO 9227

Technical Data

Valve size	06 (D03)			
Max. flow	l/min (GPM)	50 (13.2)		
Max. operating pressure (ports P, A, B)	bar (PSI)	350 (5080)		
Max. operating pressure (port T)	bar (PSI)	210 (3050)		
Reduced pressure range (at Q = 5 l/min)	bar	10-25	20-63	30-160
	(PSI)	(150-360)	(290-910)	(440-2320)
Fluid temperature range (NBR)	°C (°F)	-30 ... +100 (-22 ... +212)		
Fluid temperature range (FPM)	°C (°F)	-20 ... +120 (-4 ... +248)		
Mass	- model "A", "E"	1.75 (3.85)		
	- model "B", "P"	1.50 (3.31)		

General information	Datasheet	Type
	GI_0060	Products and operating conditions
Mounting interface	SMT_0019	ISO 4401-03-02-0-05 DIN 24340 (CETOP 03)
Spare parts	SP_8010	

ISO 4401-03-02-0-05



Ports P, A, B, T - max. Ø7.5 mm (0.29 in)

Functional Description

The pressure valves VRP2 are directly operated reducing-relieving valves for vertical stacking assemblies designed as 3 way valves, which means it includes pressure protection of the secondary circuit. The valve consists of the valve body, control spool, spring, and adjustment element. The body includes a port M with thread G 1/4 for attachment of a pressure measuring device or a by-pass free flow check valve.

Model A

In model A, the fluid enters the valve body from the primary circuit through port A1 and passes through the metering edge, where its pressure is reduced. The flow is passed to the output port A2 and on to the user. The reverse free flow from port A2 to port A1 passes through a check valve which is connected in parallel to the metering edge of the control spool.

Model E

In model E, the fluid enters the valve body from the primary circuit through port B1 and passes through the metering edge, where its pressure is reduced. The flow is passed to the output port B2 and on to the user. The reverse free flow from port B2 to port B1 passes through a check valve which is connected parallel to the metering edge of the control spool.

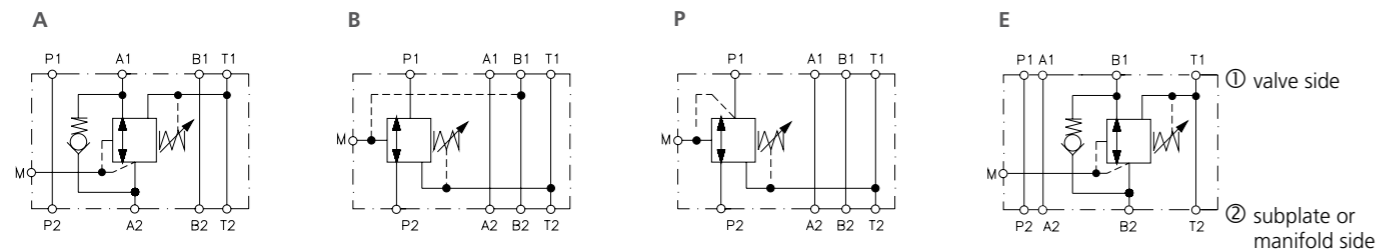
Model B

In model B, the pressure reduction occurs from port P2 to port P1, but only if the flow in port B passes towards the user (not opposite). The protection of the secondary circuit is therefore ensured for one flow direction only.

Model P

In model P, the pressure reduction occurs from port P2 to port P1, and is effective in both flow directions through the directional valve. Therefore, the protection of the secondary circuit is ensured for both flow directions.

Functional symbols



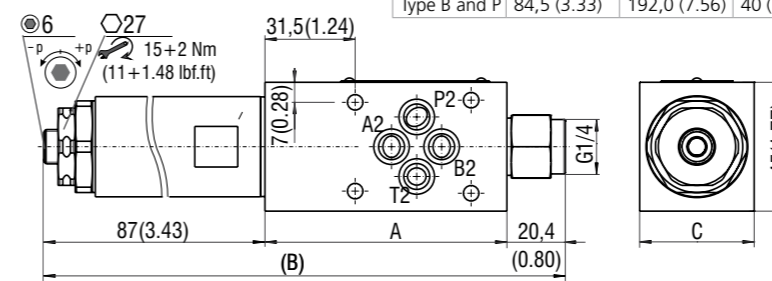
Notice: The orientation of the symbol on the name plate corresponds with the valve function.

Dimensions in millimeters (inches)

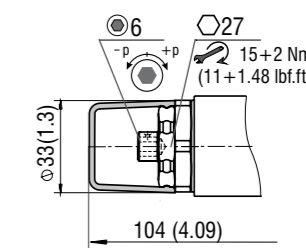
Type A, B, P

Dimensions	A	B	C
Type A	85,0 (3.35)	192,5 (7.58)	45 (1.77)
Type B and P	84,5 (3.33)	192,0 (7.56)	40 (1.57)

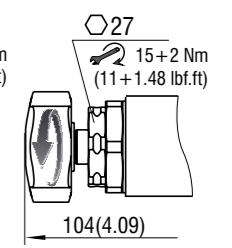
Model S



Model T

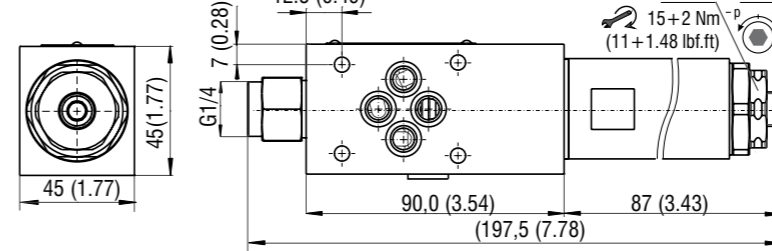


Model RP

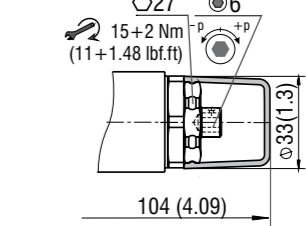


Type E

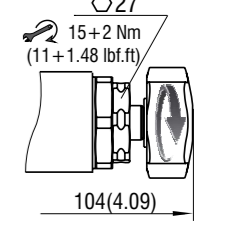
Model S



Model T

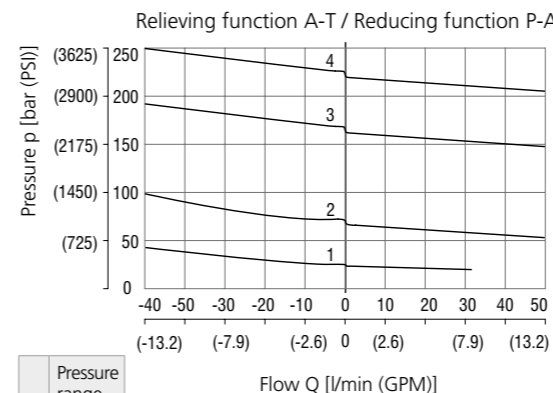


Model RP



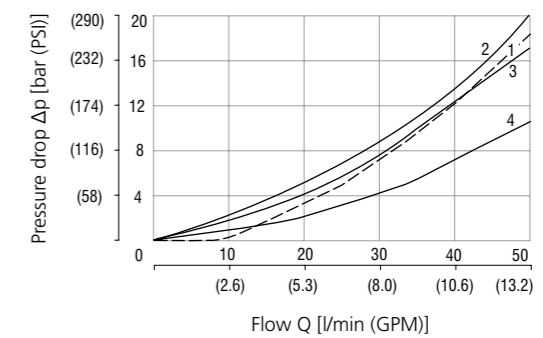
Characteristics measured at v = 32 mm²/s (156 SUS)

Reducing - relieving pressure related to flow rate



Pressure range	
4	21
3	16
2	6
1	2

Pressure drop related to flow rate



Flow direction - Model			
A	B	E	P
4	A1-A2	B1-B2	
3	A2-A1	B2-B1	
2	A2-T	P1-T	B2-T
1		P2-P1	P2-P1

- 1 (4) - Pressure drop of reducing valve at min. adjustable pressure range
- 2 - Pressure drop of relief valve at min. adjustable safety pressure
- 3 - Pressure drop of check valve

Ordering Code

VRP2 - 06 - [] [] / [] [] - []

Pressure reducing - relieving valve, spool type, direct acting, modular

Valve size
ISO 4401-03-02-0-05, DIN 24340 (CETOP 03), size 06

Model
Pressure reduction on port A2
on port P1
on port B2
on port P1

Pressure sensing
at port A2
at port B1
at port B2
at port P1

A
B
E
P

Surface treatment
No designation body phosphated, steel parts
A zinc-coated (ZnCr-3), ISO 9227 (240 h)
B zinc-coated (ZnNi), ISO 9227 (520 h)

Seals
No designation
V NBR
FPM (Viton)

Pressure range range (at Q = 5 l/min)
2 10 - 25 bar (150 - 360 PSI)
6 20 - 63 bar (290 - 910 PSI)
16 30 - 160 bar (440 - 2320 PSI)
21 40 - 210 bar (580 - 3050 PSI)

Adjustment option
S allen key (hex. 6), without protective cap
T allen key (hex. 6), with protective cap
RP hand screw, plastic

Pressure Reducing - Relieving Valve, Spool Type, Pilot Operated

VRN2-06/S

M22x1.5 • Q_{max} 40 l/min (11 GPM) • p_{max} 320 bar (4600 PSI)

Technical Features

- ▶ Excellent stability throughout flow range with rapid response to dynamic pressure changes
- ▶ Low hysteresis, accurate pressure control and low pressure drop
- ▶ Reverse relief protection
- ▶ Wide pressure range up to 320 bar
- ▶ High flow capacity
- ▶ Hardened precision parts
- ▶ Adjustable by allen key or hand screw, optionally sealable (lockwire holes)
- ▶ In the standard version, the valve is zinc-coated for 240 h protection acc. to ISO 9227

Functional Description

This 3 way pilot operated pressure reducing valve is designed to reduce the system pressure at the consumer port. Due to its 3 way design the valve provides reverse relief protection of the secondary circuit to the tank port. The pressure can be set by an adjustment screw (by allen key or by hand screw) and the valve is optionally equipped with lockwire holes for sealing.



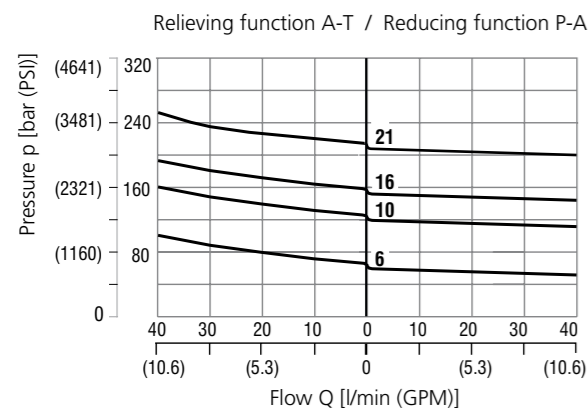
Technical Data

Valve size / Cartridge cavity		M22x1.5 / QF3
Max. flow	l/min (GPM)	40 (10.6)
Max. operating pressure	bar (PSI)	320 (4640)
Max. pressure (T port)	bar (PSI)	160 (2320)
Fluid temperature range (NBR)	°C (°F)	-30 ... +100 (-22 ... 212)
Fluid temperature range (FPM)	°C (°F)	-20 ... +120 (-4 ... 248)
Mass	kg (lbs)	0.22 (0.49)

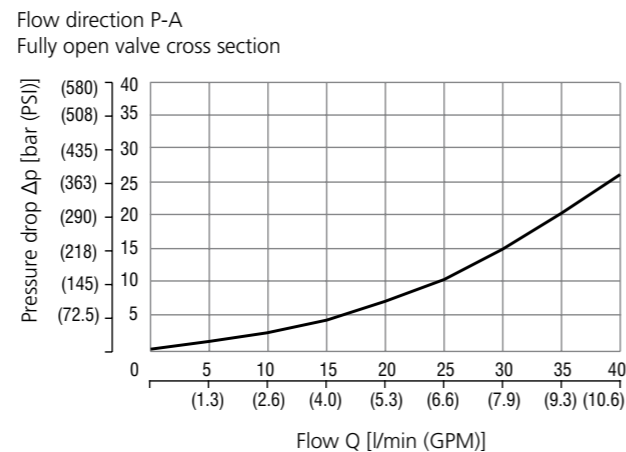
		Datasheet	Type
General information		GI_0060	Products and operating conditions
Valve bodies	In-line mounted	SB_0018	SB-QF3*
	Sandwich mounted	SB-04(06)_0028	SB-04(06)-QF3*
Cavity details		SMT_0029	SMT-QF3*
Spare parts		SP_8010	

Characteristics measured at v = 32 mm²/s (156 SUS)

Reducing - relieving pressure related to flow rate

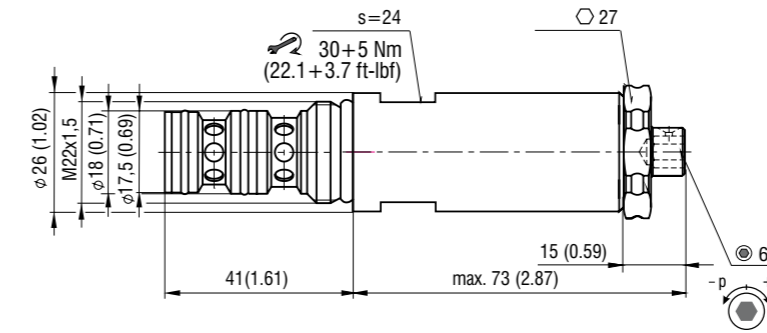


Pressure drop related to flow rate

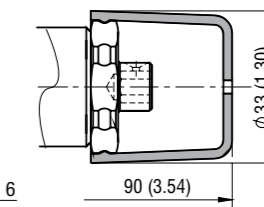


Dimensions in millimeters (inches)

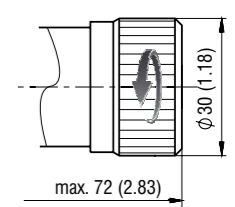
Model S



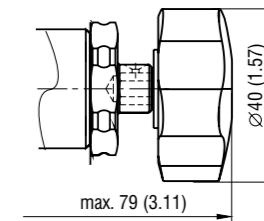
Model T



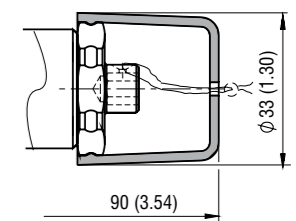
Model RS



Model RP



Model L



Ordering Code

VRN2-06 / S - [] [] [] - []

Pressure reducing - relieving valve, spool type, pilot operated M22x1.5

Surface treatment
 A zinc-coated (ZnCr-3), ISO 9227 (240 h)
 B zinc-coated (ZnNi), ISO 9227 (520 h)

Model
 screw-in cartridge

Seals
 NBR
 FPM (Viton)

Adjustment option
 allen key (hex. 6), without protective cap
 allen key (hex. 6), with protective cap
 hand screw, metal
 hand screw, plastic
 allen key (hex. 6), with protective cap, sealable (lockwire holes)

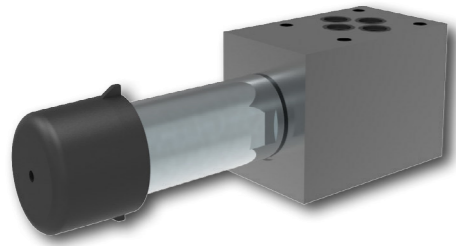
Pressure range
 up to 63 bar (910 PSI) 6
 up to 100 bar (1450 PSI) 10
 up to 160 bar (2320 PSI) 16
 up to 210 bar (3045 PSI) 21

No designation V

Pressure Reducing - Relieving Valve, Spool Type, Pilot Operated, Modular

VRN2-06/M(R)

Size 06 (D03) • Q_{max} 40 l/min (11 GPM) • p_{max} 320 bar (4600 PSI)



Technical Features

- Pressure reducing - relieving valve, spool type, pilot operated with mounting interface acc. to ISO 4401, DIN 24340 (CETOP 03)
- Excellent stability throughout flow range with rapid response to dynamic pressure changes
- Low hysteresis, accurate pressure control and low pressure drop
- Reverse relief protection
- Wide pressure range up to 320 bar
- High flow capacity
- Hardened precision parts
- Adjustable by allen key or hand screw, optionally sealable (lockwire holes)
- In the standard version, the valve housing is phosphated and steel parts are zinc-coated for 240 h protection acc. to ISO 9227

Functional Description

This pilot operated pressure reducing valve is designed to reduce the system pressure at the consumer port. Its 3 way design provides reverse relief protection of the secondary circuit to the tank port. The pressure can be set by an adjustment screw and the valve is optionally equipped with lockwire holes for sealing. Valve bodies for vertical stacking assemblies are available with pressure reduction in ports A and P. Check valves incorporated into the valve bodies MA(B) enable the reverse flow to pass freely through the valve.

Model MA, MB, MC

In models MA and MB, the flow enters the valve through port A1 (B1). The input pressure is reduced and routed to port A2 (B2). In model MB the reverse flow passes through a check valve. The MC type is identical to the MB type, but without the bypass check valve.

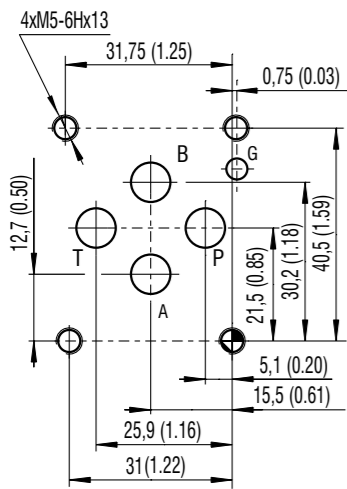
Model MP

In model MP, the pressure is reduced from port P2 to port P1. All models support the connection of a pressure gauge to port M (thread G 1/4).

Technical Data

Valve size / Cartridge cavity		Size 06 / QF3
Max. flow	l/min (GPM)	40 (10.6)
Max. operating pressure (ports P, A, B)	bar (PSI)	320 (4640)
Max. operating pressure (port T)	bar (PSI)	160 (2320)
Fluid temperature range (NBR)	°C (°F)	-30 ... +100 (-22 ... 212)
Fluid temperature range (FPM)	°C (°F)	-20 ... +120 (-4 ... 248)
Mass - models MA, MB	kg (lbs)	1.20 (2.65)
- models MC, MP		1.10 (2.43)
- model RA1		1.10 (2.43)
	Datasheet	Type
General information	GI_0060	Products and operating conditions
Mounting interface / tolerances	SMT_0019	ISO 4401-03-02-0-05 DIN 24340 (CETOP 03)
Spare parts	SP_8010	

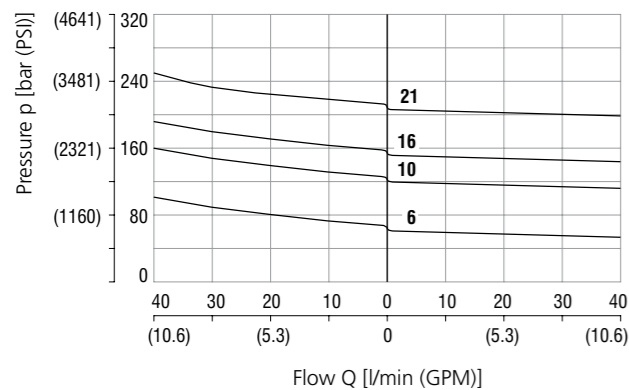
ISO 4401-03-02-0-05



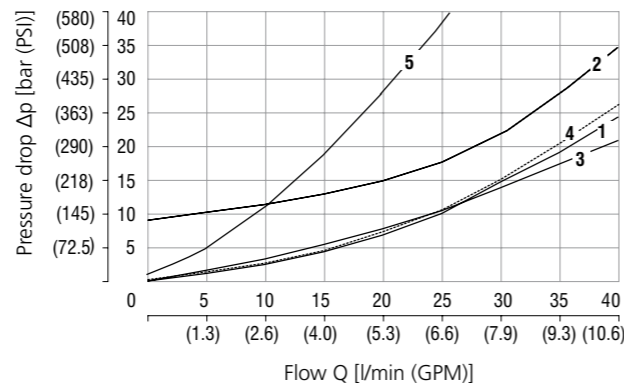
Ports P, A, B, T - max. Ø7.5 mm (0.29 in)

Characteristics measured at v = 32 mm³/s (156 SUS)

Reducing - relieving pressure related to flow rate
Relieving function A-T / Reducing function P-A



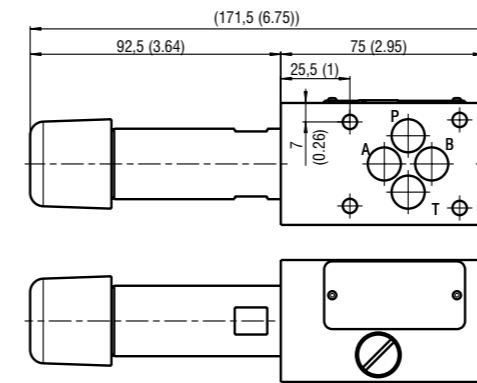
Pressure drop related to flow rate
Flow direction P-A Fully open valve through section



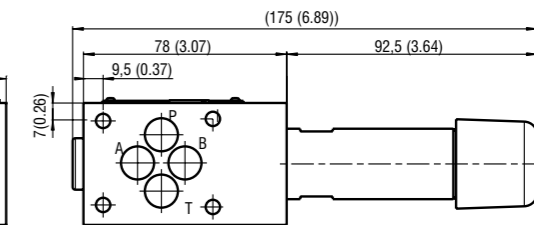
Flow direction	1	2	3	4	5
	A1-A2 B1-B2	A2-T B2-T	A2-A1 B2-B1	P2-P1	A2-A1 B2-B1
			flow through check valve and fully opened main spool		flow through check valve only

Dimensions in millimeters (inches)

Model MA

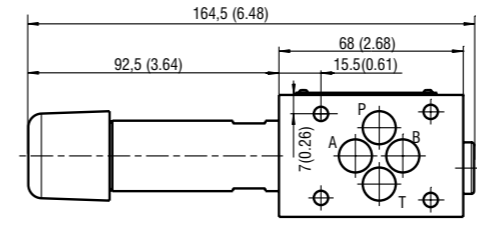


Models MB, MC

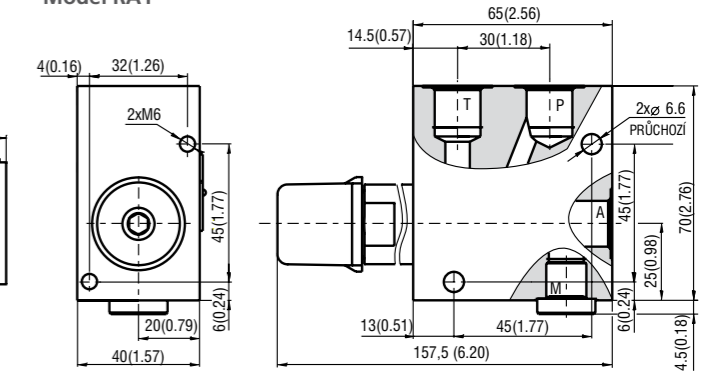


Dimensions in mm (in)				
Port	A	P	T	M
Thread	G 3/8			G 1/4
Depth of thread	12 (0.47)			12 (0.47)
Counterbore	Ø23			Ø20
Depth of counterbore	1	1	1	1

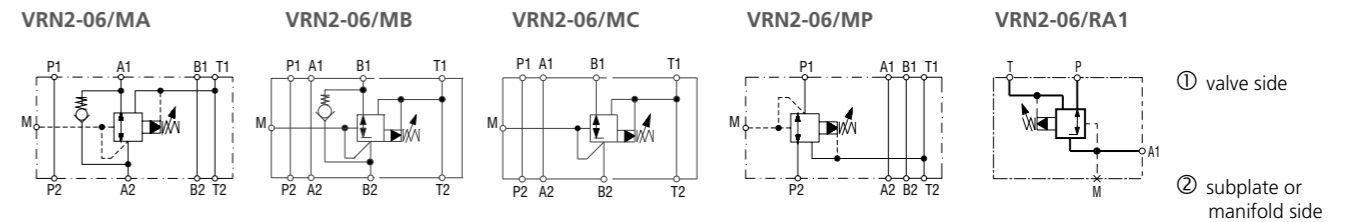
Model MP



Model RA1



Functional Symbols



Notice: The orientation of the symbol on the name plate corresponds with the valve function.

Ordering Code

VRN2-06/ [] - [] [] - []

Pressure reducing - relieving valve, spool type, pilot operated, modular

Valve size
ISO 4401-03-02-0-05, DIN 24340 (CETOP 03), size 06

Model **Pressure reduction**

modular valve, on port A2 (with by-pass check valve)	MA
modular valve, on port B2 (with by-pass check valve)	MB
modular valve, on port B2 (without by-pass check valve)	MC
modular valve, on port P1	MP
in-line valve, three ports, thread G 3/8 (P, T, A)	RA1

Pressure range

up to 63 bar (913 PSI)	6
up to 100 bar (1450 PSI)	10
up to 160 bar (2321 PSI)	16
up to 210 bar (3045 PSI)	21

Surface treatment

No designation	body phosphated, steel parts
A	zinc-coated (ZnCr-3), ISO 9227 (240 h)
B	zinc-coated (ZnNi), ISO 9227 (520 h)

Seals

No designation	NBR
V	FPM (Viton)

Adjustment option*

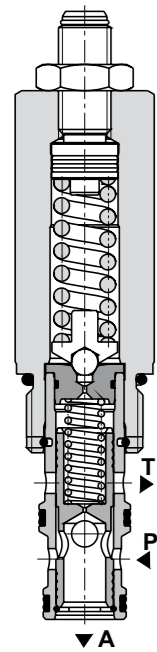
S	allen key (hex. 6), without protective cap
T	allen key (hex. 6), with protective cap
RS	hand screw, metal
RP	hand screw, plastic
L	allen key (hex. 6), with protective cap, sealable (lockwire holes)

*for dimensions of adjustment options see data sheet No.5153

Pressure Reducing Valve, Spool Type, Pilot Operated

SP4A-B3

7/8-14 UNF • Q_{max} 60 l/min (16 GPM) • p_{max} 350 bar (5100 PSI)



Technical Features

- › Excellent stability throughout flow range with rapid response to dynamic pressure changes
- › Low hysteresis, accurate pressure control and low pressure drop by CFD optimized flow path
- › Reverse relief protection
- › Wide pressure range up to 350 bar
- › High flow capacity
- › Hardened precision parts
- › Adjustable by allen key or hand screw
- › In the standard version, the valve is zinc-coated for 240 h protection acc. to ISO 9227

Functional Description

This 3 way pilot operated pressure reducing valve is designed to reduce the system pressure at the consumer port. Due to its 3 way design the valve provides reverse relief protection of the secondary circuit to the tank port. The pressure can be set by an adjustment screw (by allen key or by hand screw).



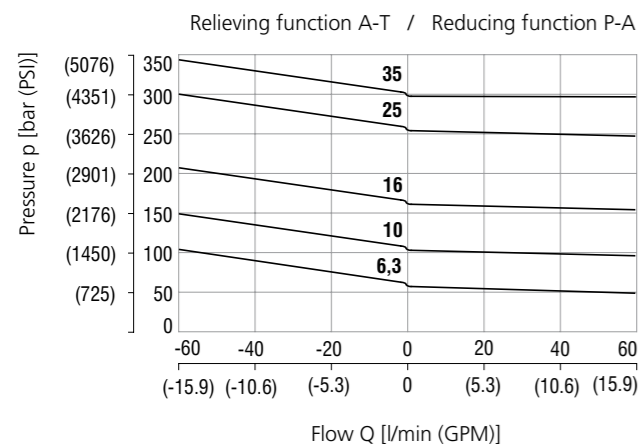
Technical Data

Valve size / Cartridge cavity		7/8-14 UNF-2A / B3
Max. flow	l/min (GPM)	60 (15.9)
Max. operating pressure	bar (PSI)	350 (5080)
Max. pressure (port T)	bar (PSI)	100 (1450)
Fluid temperature range (NBR)	°C (°F)	-30 ... +100 (-22 ... 212)
Fluid temperature range (FPM)	°C (°F)	-20 ... +120 (-4 ... 248)
Mass	kg (lbs)	0.24 (0.53)

	Datasheet	Type
General information	GI_0060	Products and operating conditions
Valve bodies	In-line mounted	SB_0018
	Sandwich mounted	SB-04(06)_0028
Cavity details / Form tools	SMT_0019	SMT-B3*
Spare parts	SP_8010	

Characteristics measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

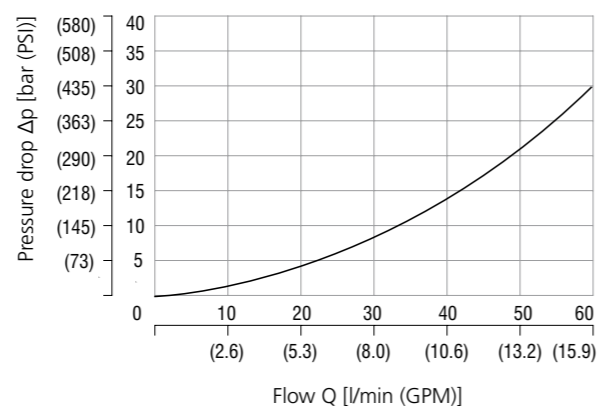
Reducing - relieving pressure related to flow rate



Pressure drop related to flow rate

Flow direction P - A

Fully open valve cross section

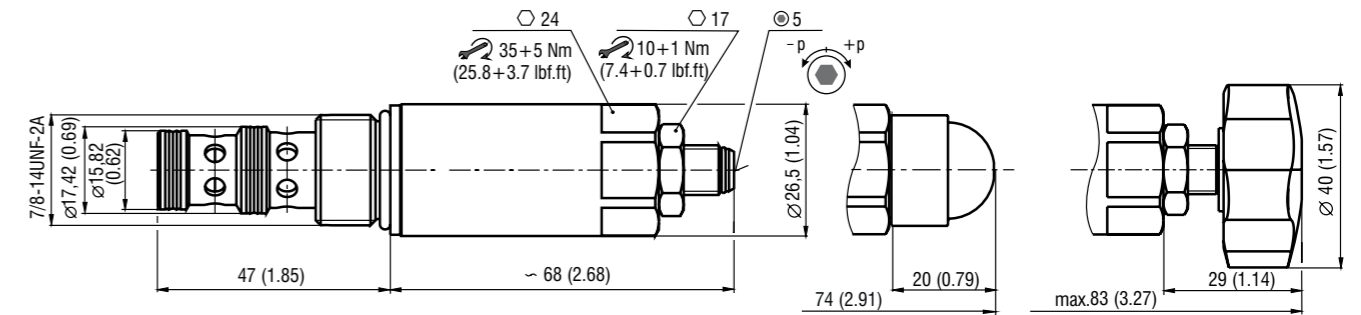


Dimensions in millimeters (inches)

Model S

Model T

Model RP



Ordering Code

SP4A-B3 / [] [] [] [] - []

Pressure reducing - relieving valve, spool type, pilot operated 7/8-14 UNF

Model
High performance **H**

Pressure range
up to 63 bar (910 PSI) **6**
up to 100 bar (1450 PSI) **10**
up to 160 bar (2320 PSI) **16**
up to 250 bar (3630 PSI) **25**
up to 350 bar (5080 PSI) **35**

Surface treatment
A zinc-coated (ZnCr-3), ISO 9227 (240 h)
B zinc-coated (ZnNi), ISO 9227 (520 h)

Seals
V No designation
NBR
FPM (Viton)

Adjustment option
S allen key (hex. 5), without protective cap
T allen key (hex. 5), with protective cap
RP hand screw, plastic

Pressure Reducing - Relieving Valve, Spool Type, Pilot Operated

VRN2-10/S

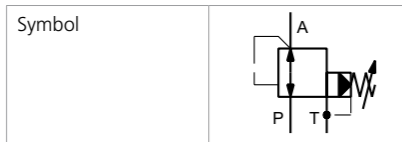
M27x2 • Q_{max} 150 l/min (40 GPM) • p_{max} 320 bar (4600 PSI)

Technical Features

- › Excellent stability throughout flow range with rapid response to dynamic pressure changes
- › Low hysteresis, accurate pressure control and low pressure drop
- › Reverse relief protection
- › Wide pressure range up to 320 bar
- › High flow capacity
- › Hardened precision parts
- › Adjustable by allen key or hand screw, optionally sealable (lockwire holes)
- › In the standard version, the valve is zinc-coated for 240 h protection acc. to ISO 9227

Functional Description

This 3 way pilot operated pressure reducing valve is designed to reduce the system pressure at consumer port. Due to its 3 way design the valve provides reverse relief protection of the secondary circuit to the tank port. The pressure can be set by an adjustment screw (by allen wrench or by hand) and the valve is optionally equipped with lockwire holes for sealing.



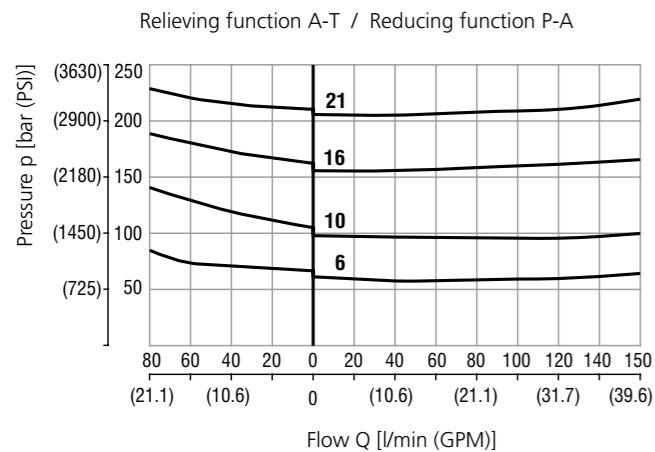
Technical Data

Valve size / Cartridge cavity	M27x2 / K3	
Max. flow	l/min (GPM)	150 (39.6)
Max. operating pressure	bar (PSI)	320 (4640)
Max. pressure (port T)	bar (PSI)	160 (2320)
Fluid temperature range (NBR)	°C (°F)	-30 ... +100 (-22 ... 212)
Fluid temperature range (FPM)	°C (°F)	-20 ... +120 (-4 ... 248)
Mass	kg (lbs)	0.35 (0.77)

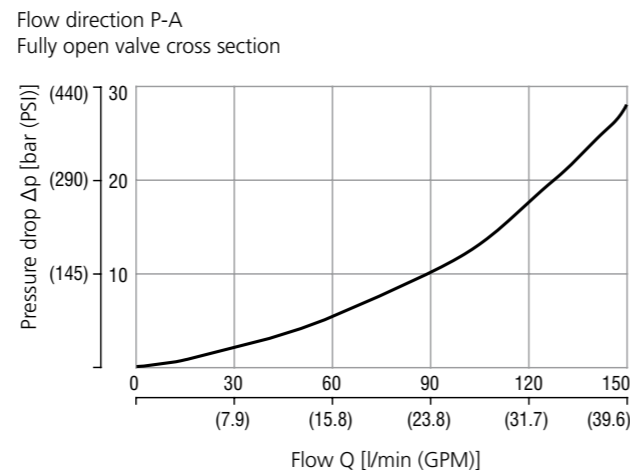
	Datasheet	Type
General information	GI_0060	Products and operating conditions
Valve bodies	In-line mounted	SB-0018
	Sandwich mounted	SB-04(06)_0028
Cavity details	SMT_0029	SMT-K3*
Spare parts	SP_8010	

Characteristics measured at v = 32 mm²/s (156 SUS)

Reducing - relieving pressure related to flow rate

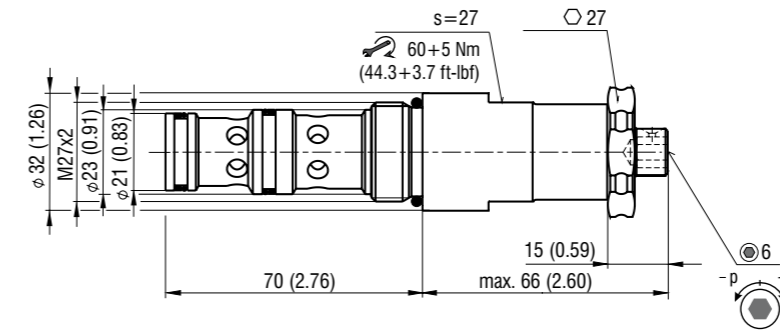


Pressure drop related to flow rate

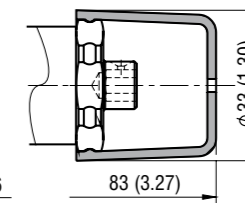


Dimensions in millimeters (inches)

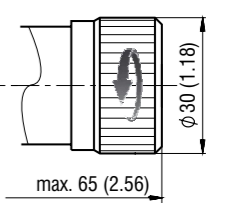
Model S



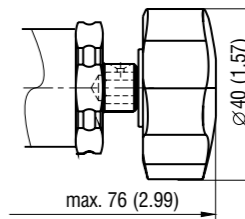
Model T



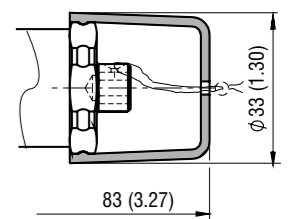
Model RS



Model RP



Model L



Ordering Code

VRN2-10 / S - [] [] [] - []

- Pressure reducing - relieving valve, spool type, pilot operated** M27x2
- Surface treatment**
 - A zinc-coated (ZnCr-3), ISO 9227 (240 h)
 - B zinc-coated (ZnNi), ISO 9227 (520 h)
- Model screw-in cartridge**
- Seals**
 - No designation NBR
 - V FPM (Viton)
- Adjustment option**
 - S allen key (hex. 6), without protective cap
 - T allen key (hex. 6), with protective cap
 - RS hand screw, metal
 - RP hand screw, plastic
 - L allen key (hex. 6), with protective cap, sealable (lockwire holes)
- Pressure range**
 - up to 63 bar (910 PSI) 6
 - up to 100 bar (1450 PSI) 10
 - up to 160 bar (2320 PSI) 16
 - up to 210 bar (3045 PSI) 21

