

FEATURES

Veljan Pressure control valves are superior in performance and design - even under high flow conditions at maximum operating pressure of 5000 psi (350 bar).

Series VR1E02 is a direct operated pressure relief valve designed to control system pressure remotely.

Pilot operated pressure control valves series VR4* & VR5* consist of two valve sections: a high flow poppet type seat valve section controlled by the low flow and adjustable pilot section mounted on top.

VR4* series are offered for various mounting options, subplate or pipe mounted, or as cartridge assemblies for manifold applications.

VR5* series pressure control valves are flange type suitable for mounting directly on pump delivery port thereby minimising piping and saving space.

The internal operating components of flange mounted Pressure Controls (VR5* series) are same as those of VR4* series.

Pressure Relief Valves (VR4V/VR5V) offer precise and smooth limitation of the system pressure in a hydraulic system.

Pressure Unloading Valves (VR4U/VR5U) are used to unload a circuit at preset low pressure when a pilot signal higher than the preset low pressure from external source is maintained (at Port X). This saves considerable energy.

Pressure Reducing Valves (VR4R) are used to control reduced pressure in the secondary part of a hydraulic system than its primary part and to maintain this pressure as set by the control knob on the pilot.

Pressure Sequence Valves (VR4S/VR5S) are used to operate the hydraulic system in a pressure sequence. After system pressure of the primary part of a system reaches to the preset value of the valve, the valve opens and allows flow to the secondary part of the system.

With a wide range of springs, it is possible to opt for precise setting of the pressures. Pressure settings are achieved by means of knurled hand knobs (option of two

sizes) or an acorn nut or key lock knob. Clockwise rotation increases the pressure.

All valves have pressure take-off orifices, external or internal drain and have the option of an integrally mounted Vent Valve (VVV01) which does not require any additional piping.

FAST RESPONSE

The poppet design seat valve with pilot control delivers the minimum possible friction, eliminates system shocks and optimum response to changes in operating conditions.

An exceptional fast response is possible due to the precise ratio between the main piston area and its mass. The outstanding design features of the pilot section allows for high pressure stability.

Response time (depending on the function) varies from 20 to 50 milli seconds.

HIGH PERFORMANCE

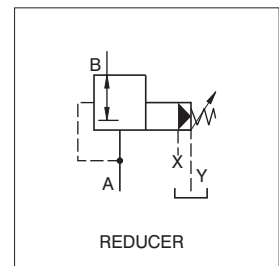
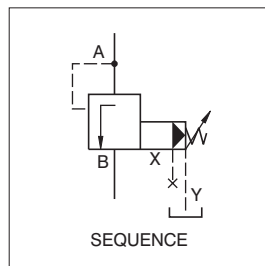
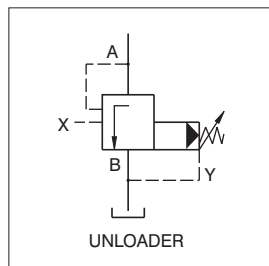
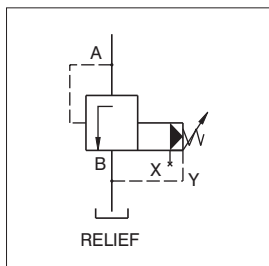
The VR4*/VR5* series valves are designed for high pressures with the option of different spring settings for sensitive control. The poppet design reduces pressure over travel cracking flow to a minimum, thus reducing power losses at high operating pressures.

ELECTRICALLY VENTED VALVE

This optionally available solenoid operated Vent Valve VVV01 is used for venting VR4*/VR5* series valves for pressure control from remote. This valve is integrally mounted and sandwiched between the pilot section and main body section of the pressure control valves and hence requires no additional piping.

STANDARDIZED MOUNTING

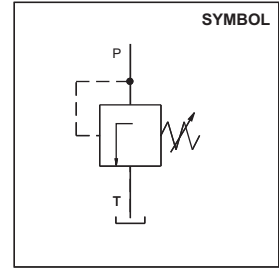
Mounting configuration of Pressure Controls VR4* series are in accordance with standards such as NFPA, or ISO, DIN, CETOP. Subplate Mounting, L or T body is standard. VR5* series are flange body units which facilitate direct mounting on a SAE pump outlet flange. In addition to the above mounting options, cartridge assembly can be offered for manifold applications.



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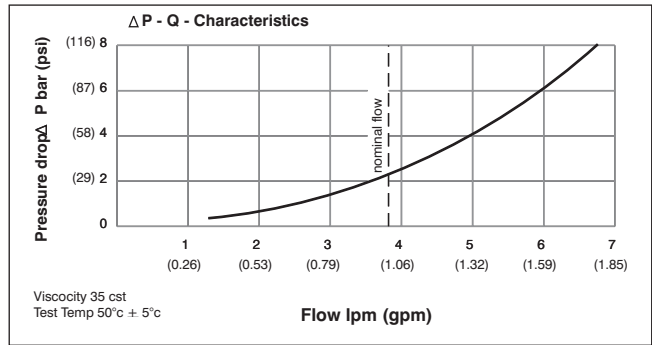
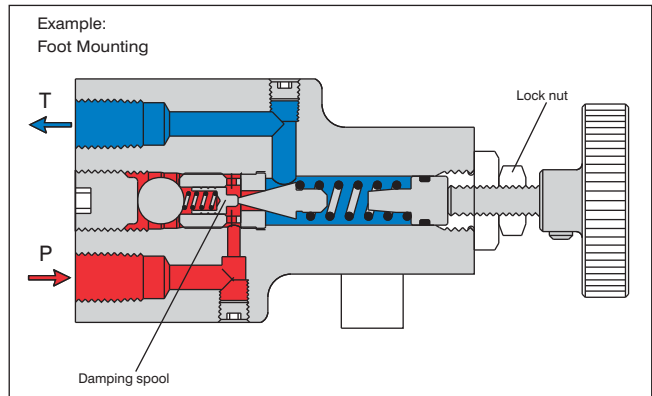
Veljan Series VR1E02 Remote Control Valves are direct operated Pressure Relief Valves. These are usable as remote control valves for all pilot operated pressure control valves e.g Veljan series VR4 & VR5. These may be located upto 3 meters distance from the main valves and are used to control maximum circuit pressure of any degree below the main valve pressure setting.

These seat type valves mainly consist of a seat, cone and a pressure spring. The valve is leak-free below the setting pressure. A damping spool maintains a stable function after the setting pressure is reached.



SPECIFICATIONS

- Type : Poppet design
- Mounting : Panel/foot/subplate/cartridge (manifold)
- Direction of flow : P T-
- Operating pressure range at inlet port P : 0 - 5000 psi (0 to 350 bar)
- Pressure setting range : 100 - 5000 psi (7 to 350 bar)
- Nominal flow : 3.8 lpm (1 gpm)
- Fluid : Mineral oil according to DIN 51524/25
- Viscosity range : 10 to 650 cSt (60 to 3900 SSU)
- Optimum viscosity : 30 cSt (180 SSU)
- Ambient temperature range : --20° C...+60° C (--4°F...+140°F)
- Fluid temperature range : --18° C...+80° C (--0°F...+176°F)
- Contamination level : Max. Permissible according to NAS 1638 class 8 (class 9 for 15 micron and smaller) or ISO 17/14



ORDERING CODE

VR1E02 - 3 3 1 1 - A - 1 - ***

Series _____

Body mounting* _____

0 - Cartridge, 1 - Foot Mounting, 2 - Panel Mounting, 3*- Subplate Mounting

Pressure setting range _____

1 - 100-1500 psi (7 to 105 bar), 3 - 100-3000 psi (7 to 210 bar), 5 - 100-5000 psi (7 to 350 bar)

Connections _____

0 - None (for cartridge), 1 - 1/4" NPTF, 2 - G 1/4", 3 - 7/16"-20 UNF

Type of control _____

1 - Hand knob (32mm dia), 2* - Hand knob (50mm dia), 3 - Acorn nut with lead seal,

Design letter _____

Seal class _____

1- Buna N - (Standard), 5 - Viton,

Modification _____

Order subplate and mounting screws separately (see page 6).

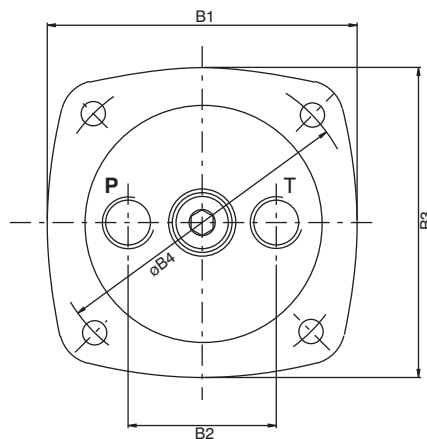
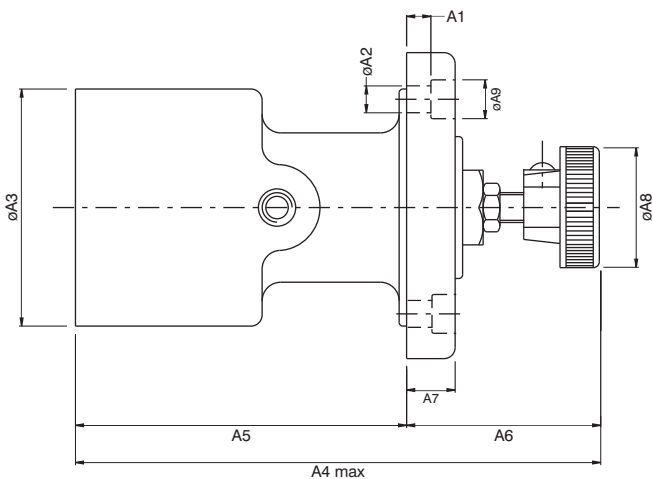
* While using control type 2 with subplate mounting body, use additional adapter plate(order no VS16-64188) with 4 nos valve mounting screws M10 x 55, DIN 912 -12.9 (order no V700-71447-8).

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INSTALLATION

Panel Mounting - VR1E02 (# 2)

Weight : 4.61 lbs (2.1 kg)



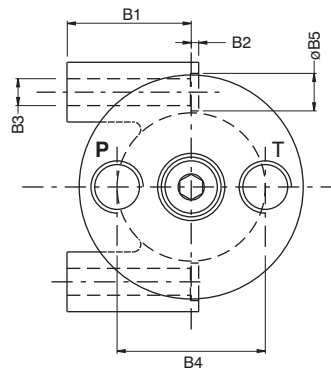
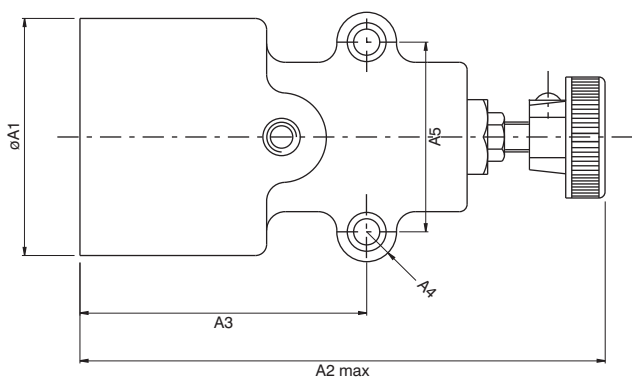
Ports P and T : 1/4" NPTF or G1/4"

Dimensions		
	in	mm
A1	0.26	6.5
A2	ø 0.28	ø 7.2
A3	ø 2.50	ø 63.5
A4	5.54	140.7
A5	3.50	88.7
A6	2.05	52.0
A7	0.51	13.0
A8	ø 1.26	ø 32.0
A9	ø 0.41	ø 10.4

Dimensions		
	in	mm
B1	3.26	83.0
B2	1.56	39.7
B3	3.26	83.1
B4	ø 3.25	ø 82.5

Foot Mounting - VR1E02 (# 1)

Weight : 4.61 lbs (2.1 kg)



Ports P and T : 1/4" NPTF or G 1/4"

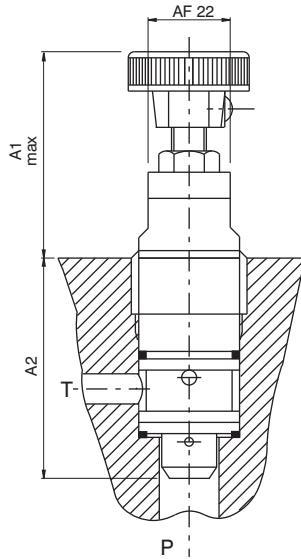
Dimensions		
	in	mm
A1	ø 2.5	ø 63.5
A2	5.54	140.7
A3	3.02	76.8
A4	0.315 r	8.0 r
A5	2.0	50.8

Dimensions		
	in	mm
B1	1.3	33.0
B2	0.086	2.2
B3	ø 0.28	ø 7.2
B4	1.56	39.7
B5		ø 10.4

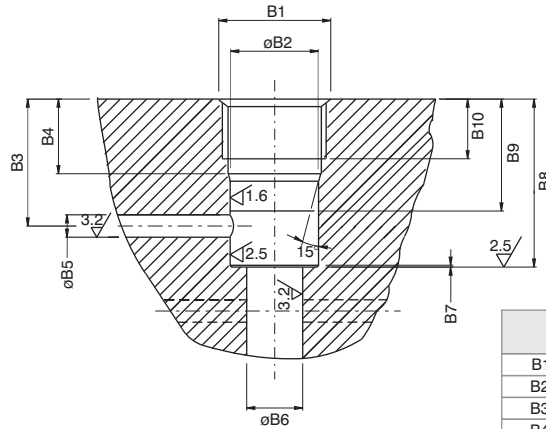
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CARTRIDGE VR1E02 (# 0)

Weight : 0.65 lbs (0.3 kg)



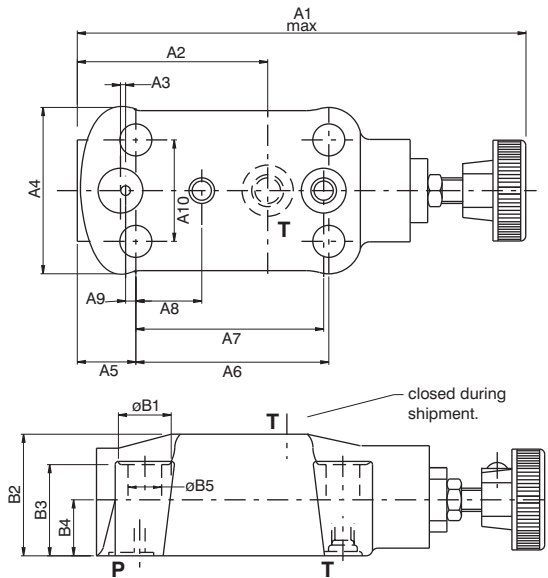
Dimensions		
	in	mm
A1	2.16	55.0
A2	2.32	59.0



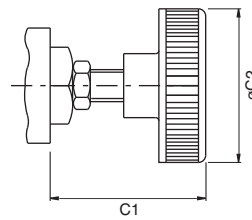
Dimensions		
	in	mm
B1		M28x1.5
B2	ø0.99 ^{H8}	ø25.0 ^{H8}
B3	1.34	34.0
B4	0.8	20.0
B5	ø0.236	ø 6.0
B6	ø0.59	ø 15.0
B7	0.02x45° or 0.02 r	0.5x45° or 0.5 r
B8	1.77	45.0
B9	1.18	30.0
B10	0.63	16.0

SUBPLATE MOUNTING VR1E02 (# 3)

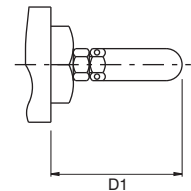
Weight : 2.2 lbs (1.0 kg)



Optional adjusting devices



Hand knob
50 mm dia



Acorn nut
with lead seal

Dimensions		
	in	mm
A1	5.55	141.0
A2	2.34	59.5
A3	0.063	1.6
A4	2.04	52.0
A5	0.72	18.3
A6	2.37	60.3
A7	2.31	58.7
A8	0.81	20.6
A9	0.126	3.2
A10	1.25	31.7

Dimensions		
	in	mm
B1	ø 0.65	ø 16.5
B2	1.59	38.0
B3	1.12	28.5
B4	0.69	17.5
B5	ø 0.41	ø 10.5

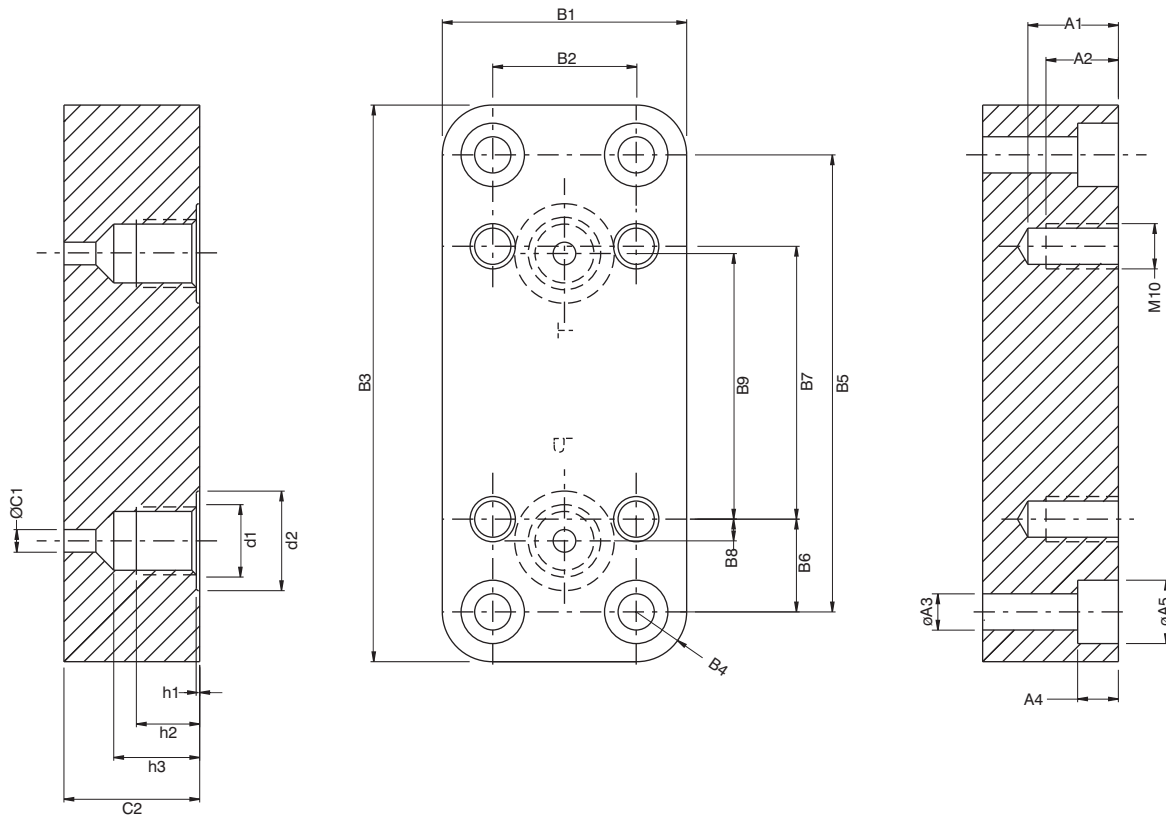
Dimensions		
	in	mm
C1	1.65	42.0
C2	ø 1.97	ø 50.0

Dimensions		
	in	mm
D1	1.61	41.0

SUBPLATE

Weight : 3.08 lbs (1.4 kg)

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Dimensions		
	in	mm
A1	0.80	20.0
A2	0.63	16.0
A3	ø 0.35	ø 9.0
A4	0.35	9.0
A5	ø 0.55	ø 14.0

Dimensions		
	in	mm
B1	2.126	54.0
B2	1.25	31.7
B3	4.84	123.0
B4	r 0.433	r 11.0
B5	3.98	101.0
B6	0.81	20.5
B7	2.37	60.3
B8	0.19	4.8
B9	2.31	58.7

Dimensions		
	in	mm
C1	ø 0.2	ø 5.0
C2	1.18	30.0

Model no.	Order no.	Port d1	Dimensions				4 Mounting screws*		
			h1	h2	h3	d2	Dimension	Order no.	
VSS - B - 04 - 04	VS16 - 33062 - 0	G 1/4"	mm	0.5	14.0	19.0	24.0	M10 x 40 lg.	V700 - 71595 - 8
			in	0.02	0.55	0.75	0.95		
VSS - B - 06 - 04	VS16 - 33064 - 0	G 3/8"	mm	0.5	14.0	19.0	24.0	DIN 912 : 12.9	
			in	0.02	0.55	0.75	0.95		
VSS - P - 04 - 04	VS16 - 33061 - 0	1/4" NPTF	mm	-	17.5	24.0	14.3	3/8" - 16UNC	V358 - 16200
			in	-	0.688	0.945	0.563		
VSS - P - 06 - 04	VS16 - 33063 - 0	3/8" NPTF	mm	-	17.5	24.0	14.3	1 1/2" lg.	
			in	-	0.688	0.945	0.563		

* Mounting screws are included in subplate order.
For valves ordered without subplate, mounting screws must be ordered separately.