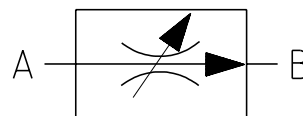


- ☐ Cartridge design
- ☐ Flow rate setting with adjustment screw
- ☐ For use in meter-in, meter-out and bleed-off applications



## Functional Description

Pressure compensated flow control valves VSS3-062 are employed in hydraulic systems where only small speed or revolution variation due to load changing are required.

The valve consists basically of throttling orifice (1), pressure compensator (2), bushing (3), adjustment screw (4) and spring (5).

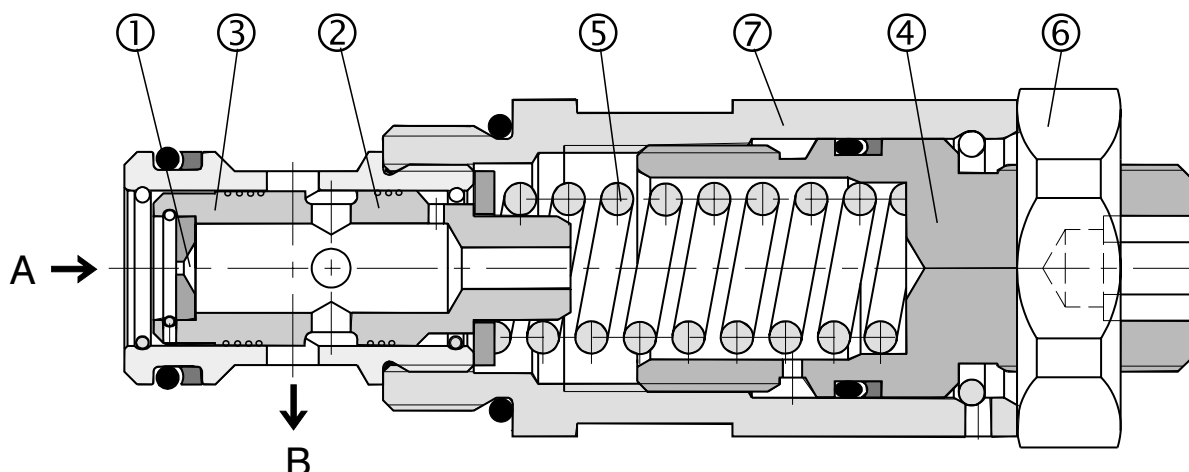
Throttling in direction A → B takes place on the throttling orifice. The flow rate depends on the orifice diameter and on the pressure difference at the orifice. The pressure difference can be adjusted in a certain range through preloading the spring (5), which results in the respective flow change. The allocation of the orifice diameters and the corresponding flow rates is apparent from the respective characteristics. The flow rate adjustment can be accomplished by adjustment screw (4). The clockwise rotation increases the flow rate, the anticlockwise rotation decreases the flow rate.

The flow rate stabilization is provided by pressure compensator (2), which is situated behind the throttling orifice and mounted into bushing (3). The pressure compensator continuously compares the pressure difference at the throttling orifice (1) with the value given by the spring parameters and the spring preloading and accomplishes the necessary control actions, thus holding the flow rate constant.

The valve cannot be closed. As mentioned above, only small flow rate adjustments can be realized.

In flow direction B → A, the valve works as an ordinary throttle valve. The pressure losses depend on the orifice diameter – see the respective characteristics.

The valve housing (7), the nut (6) and the adjustment screw (4) are zinc coated.



Flow control valves

Nominal size

2-way design

Cartridge

VSS3-062/S-

without designation  
V

Seals  
Standard (NBR)  
Viton (FPM)

1.6  
4  
6.3  
10  
16  
20

Nominal flow rates

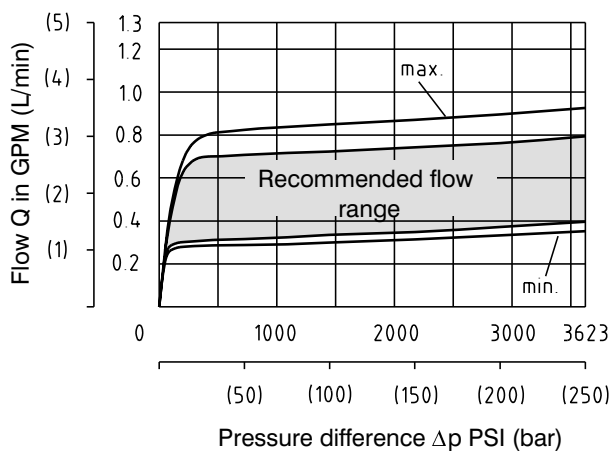
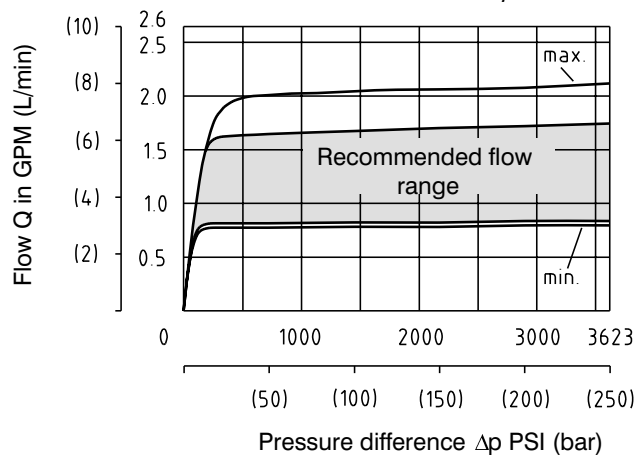
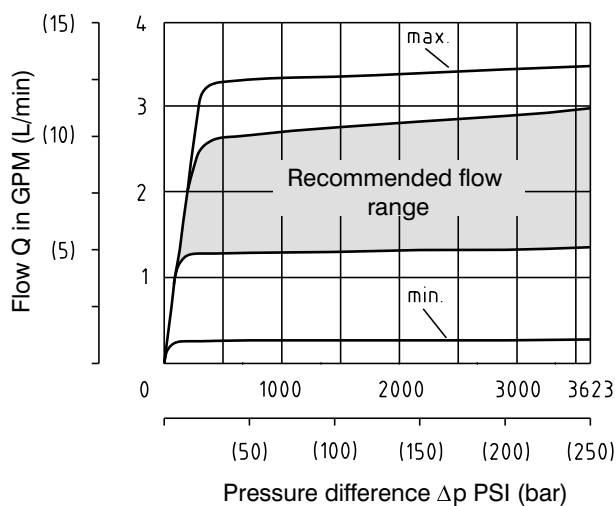
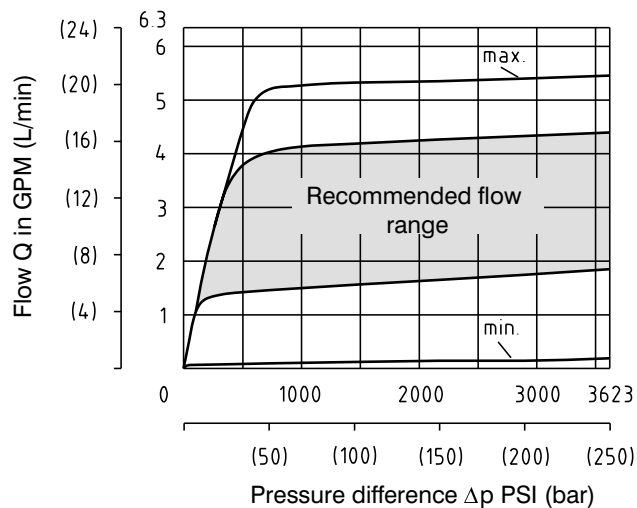
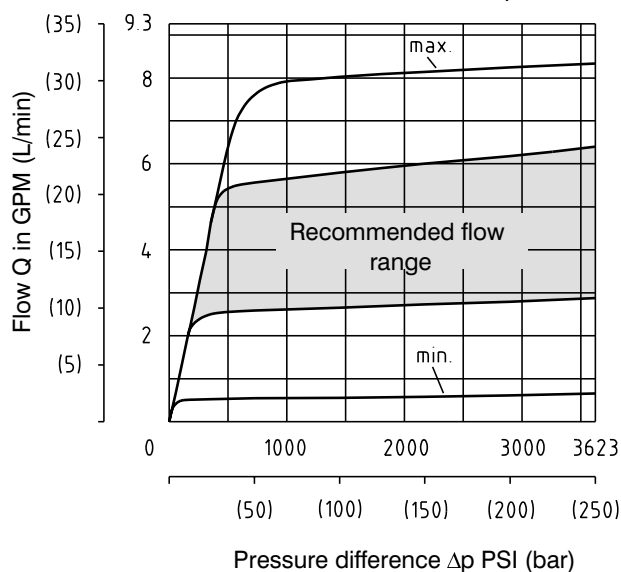
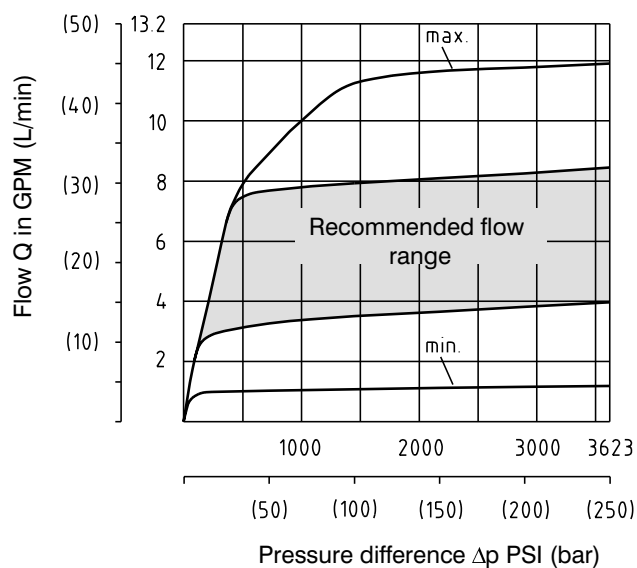
0.423 US GPM (1.6 L/min)  
1.057 US GPM (4 L/min)  
1.664 US GPM (6.3 L/min)  
2.642 US GPM (10 L/min)  
4.227 US GPM (16 L/min)  
5.283 US GPM (20 L/min)

Technical Data	
Nominal size	mm06
Nominal flow rates	US GPM (L/min)0.423 (1.6)1.057 (4)1.664 (6.3)2.642 (10)4.227 (16)5.283 (20)
Flow range	see Q-Δp characteristic
Maximum working pressure	PSI (bar)4641 (320)
Pressure difference	PSI (bar)see Q-Δp characteristic
Pressure drop B - A	PSI (bar)see Q-Δp characteristic
Hydraulic fluid	Hydraulic oils of power classes HM, HV to CETOP RP 91H in viscosity classes ISO VG 32, 46 and 68
Fluid temperature range (NBR)	°F (°C)-22 ... +176 (-30 ... +80)
Fluid temperature range (Viton)	°F (°C)-4 ... +176 (-20 ... +80)
Viscosity range	SUS (mm <sup>2</sup> /s)98 ... 1840 (20 ... 400)
Maximum degree of fluid contamination	Class 21/18/15 to ISO 4406 (1999).
Weight	lbs (kg)0.423 (0.192)
Mounting position	optional
Δp-Q Characteristic	
Measured at ν = 166 SUS (35 mm <sup>2</sup> /s) and t = 104 °F (40 °C)	

Flow directional B → A (Throttling without stabilization)

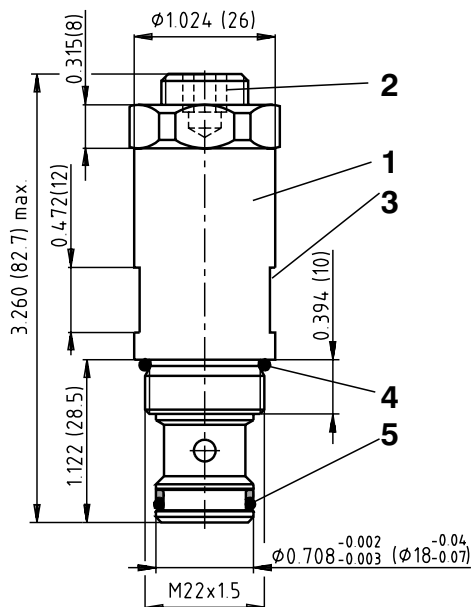
The graph plots Pressure drop  $\Delta p$  in PSI (bar) on the y-axis against Flow  $Q$  in GPM (L/min) on the x-axis. The y-axis has two scales: (250) to (200) PSI and 3623 to 500 bar. The x-axis has two scales: 0 to 10 GPM and (10) to (40) L/min. Three sets of curves are shown for orifice diameters  $\varnothing 0.089$  (2.5),  $\varnothing 0.118$  (3), and  $\varnothing 0.138$  (3.5). Each set contains curves for flow rates of 1.6, 4.0, 6.3, 10, 16, and 20 GPM (L/min). The pressure drop increases with both flow rate and orifice size.

2 ARGOHYTOS

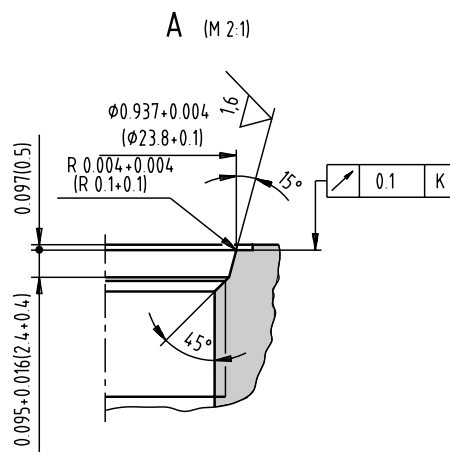
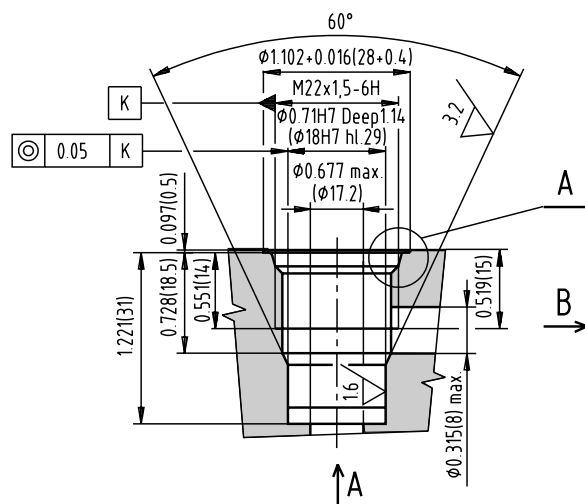
**$\Delta p$ -Q Characteristics**Measured at  $\nu = 166 \text{ SUS } (35 \text{ mm}^2/\text{s})$  and  $t = 104^\circ\text{F } (40^\circ\text{C})$ **Flow directional A  $\rightarrow$  B (Controlled flow)****Nominal flow rate 1.6 L/min****Nominal flow rate 4 L/min****Nominal flow rate 6.3 L/min****Nominal flow rate 10 L/min****Nominal flow rate 16 L/min****Nominal flow rate 20 L/min**

# Valve Dimensions

Dimensions in inches and millimeters (in brackets)



- 1 Type designation (stamped)
- 2 Screw for fine flow adjustment
  - inside hexagon 6 mm
  - anticlockwise rotation = flow decrease
  - clockwise rotation = flow increase
- 3 Wrench flats size 24 mm, tightening torque 44.25 ft-lbs (60 Nm)
- 4 Sealing: O-ring 19.4 x 2.1  
supplied with valve
- 5 Combined sealing: O-ring 14x1.78  
Back-up ring BBP80B015-N9  
14.73 x 17.43 x 1.14



## Spare Parts

### Seal kit

Type	Dimensions, quantity		Ordering number
	O-ring	Back-up ring	
Standard - NBR	19.4 x 2.1 NBR80 (1 pc.)	17.4 x 1.3 (1pc.)	520-0299
	17.17 x 1.78 NBR90 (1pc.)	14.73 x 17.43 x 1.14 (1 pc.)	
	14 x 1.78 NBR90 (1pc.)	-	
Viton	19.4 x 2.1 (1 pc.)	17.4 x 1.3 (1pc.)	520-0298
	17.17 x 1.78 (1pc.)	14.73 x 17.43 x 1.14 (1 pc.)	
	14 x 1.78 (1pc.)	-	

## Caution!

- The packing foil is recyclable.
- The technical information regarding the product presented in this catalogue is for descriptive purposes only. It should not be construed in any case as a guaranteed representation of the product properties in the sense of the law.

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