



PV-01

High-Precision Control Valve for Gases and Liquids

Description:

The PV-01 high-precision control valves are intended for precise fine-flow adjustment of gases or liquids flowing through pipes. The control valves consists of an inner valve and a body with straight or angled process connection. The PV-01 has a 15-turn spindle to fully open from a closed condition. The spindle operates practically without any hysteresis and closes leak-proof clockwise or optionally counterclockwise. The valve needle is non-rotating and thus provides a stable adjustment. Various Cv-values ensure optimal control ranges.

Features

- / High accurate flow-adjustment
- / Straight or angle designs
- / Cw- or ccw-closing
- / 15-turn spindl
- / Minimal hysteresis
- / Leak-proof when closed
- / Different Cv-values
- / Aluminium, brass or SS versions

Application:

High-precision control valves are deployed wherever flowing gases or liquids in industrial installations require a very fine and accurate adjustment. They are especially suitable for measuring operations in the areas of chemical process engineering, analytical technology, biotechnology, chemical nuclear technology, medical engineering and environmental technology.



Technical Specifications:

Design type /	straight valve, angled valve or valve cartridge for selfmounting (without body)
Rotating direction /	valve cw-closed (standard) or valve ccw-closed
Valve turns /	15-turn spindle, practically without hysteresis
Housing material /	aluminium anodized / brass nickel-plated or stainless steel 1.4305
Seal /	FKM, EPDM or FFKM
Process connection /	G 1/8"-IG, G 1/4"-IG, G 1/2"-IG, NPT 1/4"-IG or G 1/4"-IG female thread for compression fittings
Media /	5 µm filtered compressed air, non-corrosive gases or liquids
max. Operating pressure /	40 bar
min. Operating temp. /	-40 °C
max. Operating temp. /	+100 °C
Leak rate /	< 1 x 10 ⁻⁵ mbar l/s He
Options /	- standard knob with locking ring - locking nut (instead of standard knob) - digi-knob, 100 divisions and with display, only right-hand closing

Possible Configurations:

Version	Design size - small	Design size - large
Material (body, seals)	aluminium / brass, FKM; st. steel 1.4305, FKM; st. steel 1.4305, EPDM; st. steel 1.4305, FFKM	aluminium / brass, FKM;
Straight valve	x	x
Angled valve	x	
Valve insert without body	x	x
Cw-closed	x	x
Ccw-closed	x	
Process connection	Standard: G 1/4" Options: G 1/8", NPT 1/4" or G 1/4" for compression fittings	Standard: G 1/2" Options: -
Valve size (needle size)	NG 1.0; NG 1.5; NG 2.0; NG 2.5; NG 3.0	NG 4.0; NG 6.5

Materials:

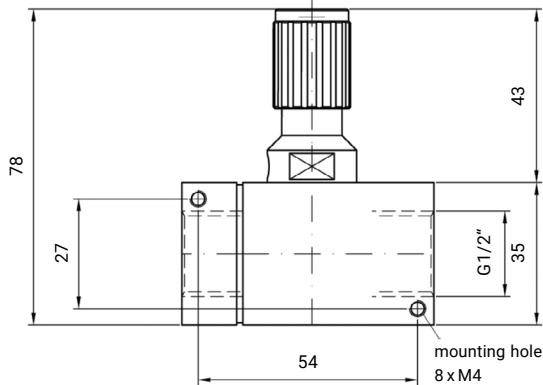
Component (wetted)	Aluminium / brass	Stainless Steel
Valve	aluminium anodized	St. Steel 1.4305
Valve insert / cartridge	brass nickel-plated	St. Steel 1.4305
Connections	brass nickel-plated	St. Steel 1.4305
Seals	FKM	FKM, EPDM or FFKM

Ordering Codes:

Order number	PV-01.	1.	2.	2.	1.	3.	6.	0
PV-01 High Precision Control Valve for Gases & Liquids								
Design size / 1 = small 2 = large								
Material (housing, seals) / 1 = aluminium anodized/brass nickel-plated, FKM 2 = stainless steel 1.4305, FKM 3 = stainless steel 1.4305, EPDM 4 = stainless steel 1.4305, FFKM								
Design type / 1 = straight valve 2 = angled valve 3 = valve insert without body								
Valve type / 1 = valve cw-closed (standard) 2 = valve ccw-closed								
Process connection / 1 = G 1/8" - female thread 2 = G 1/4" - female thread 3 = G 1/4" - female thread, compression fitting 4 = G 1/2" - female thread 5 = NPT 1/4" - female thread								
Valve size (needle size) / 1 = NG 1.0 2 = NG 1.5 3 = NG 2.0 4 = NG 2.5 5 = NG 3.0 6 = NG 4.0 7 = NG 6.5								
Optionen / 0 = without 1 = standard knob with locking ring 2 = locking nut (instead of standard knob) 3 = digi knob, 100 divisions (for cw-closed valve only) 9 = customer specific version (please specify in detailed text)								

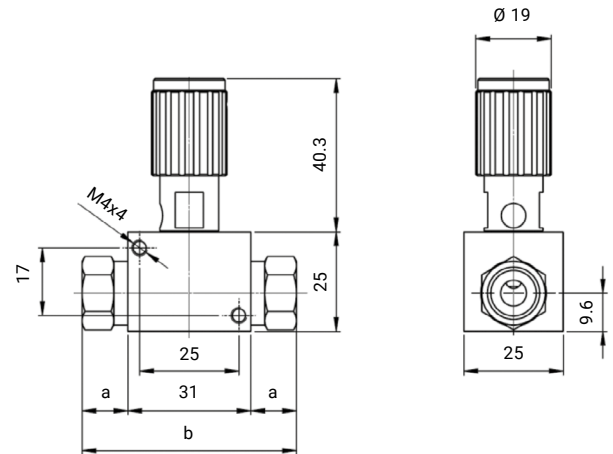


Dimensions in mm:



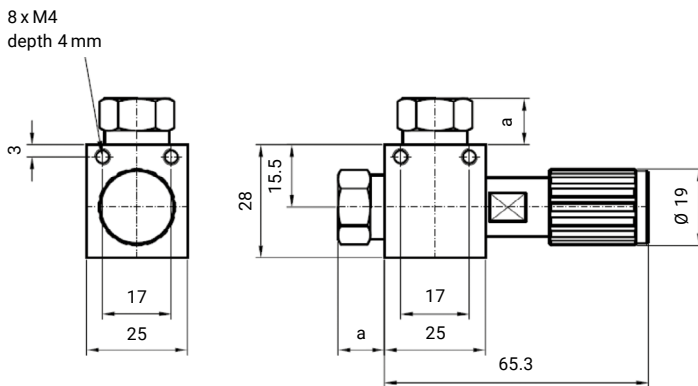
Straight valve - large size

Process connection	length	width
G 1/2" - female thread	62 mm	35 mm



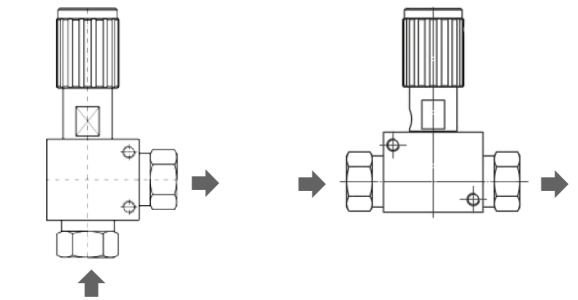
Straight valve - small size

Process connection	a	b	Thread depth
G 1/4" - female thread	12 mm	55 mm	7 mm
G 1/8" - female thread	12 mm	55 mm	8 mm
NPT 1/4" - female thread	16 mm	63 mm	9 mm
G 1/4" - female thread for compression fitting	17 mm	65 mm	12 mm



Angled valve - small size

Process connection	a	Thread depth
G 1/4" - female thread	12 mm	7 mm
G 1/8" - female thread	12 mm	8 mm
NPT 1/4" - female thread	16 mm	9 mm
G 1/4" - female thread for compression fitting	17 mm	12 mm



Angled valve

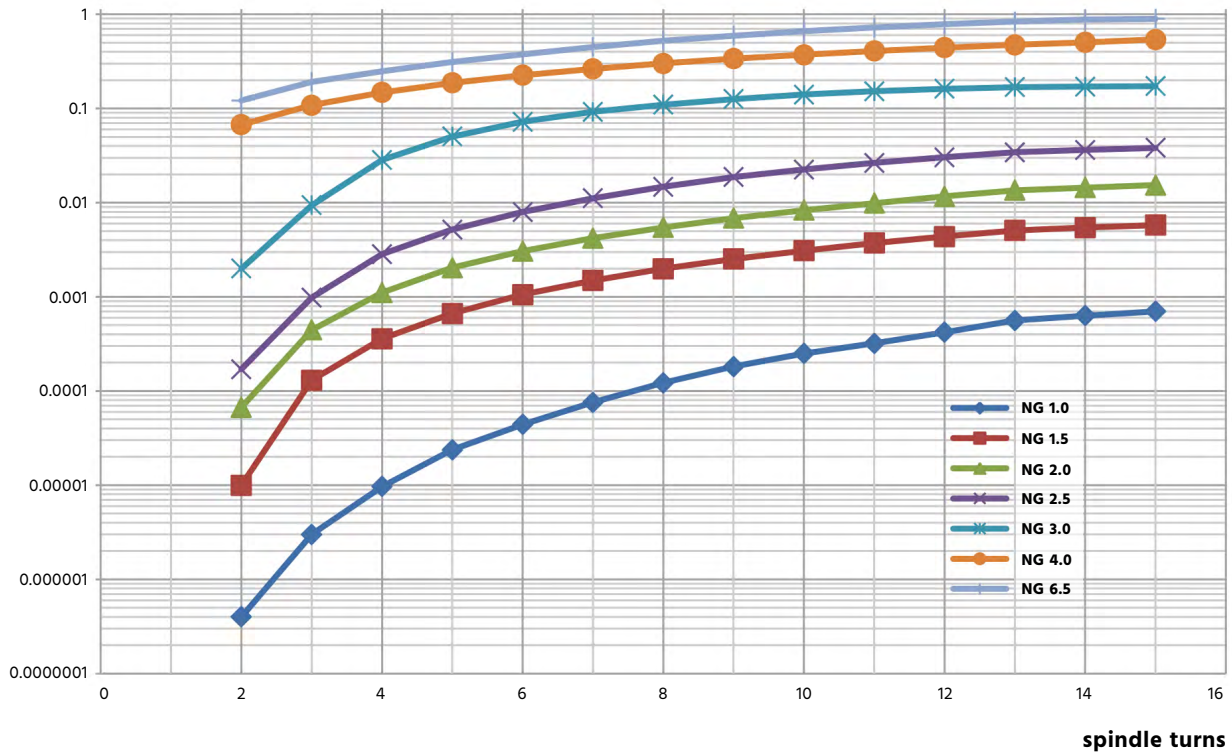
Straight valve



C_v-Values High-Precision Control Valve:

C_v-values for valves NG 1.0 to NG 6.5 (C_v-value 1 = 1 m³/h water at Δ p of 1 bar)

C_v-Value



Process connection	1.0	1.5	2.0	2.5	3.0	4.0	6.5
C _v -Value (m ³ /h)	0.0007	0.005	0.015	0.038	0.17	0.54	1.00

C_v-Value: For these flow values of water at 20 °C exactly 1 bar pressure will drop at the relevant valve. These are taken into regard so as to assess the loss of pressure on the valve with reference to the entire range.