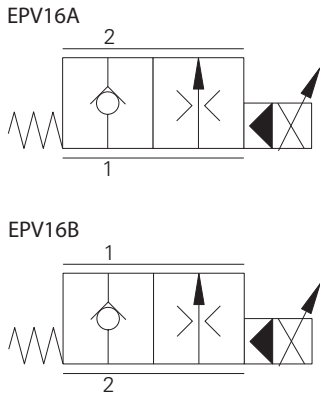


EPV16 - Proportional Valve

Proportional flow control, normally closed, poppet
160L/min (42 USgpm) • 280 bar (4000 psi)

B



Operation

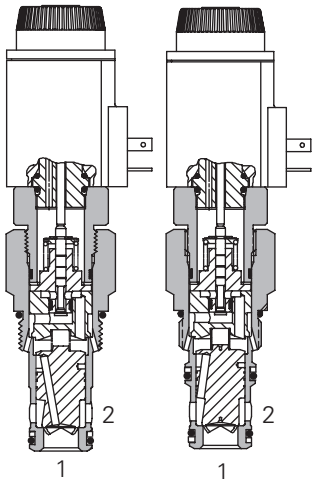
“A” style (nose in, side out) - In the de-energized position this valve remains closed from port 1 to port 2. When current is applied to the coil, a controlled increasing flow will be allowed from port 1 to port 2, in proportion to the current applied.

“B” style (side in, nose out) - in the de-energized position the valve remains closed from port 2 to port 1. When current is applied to the coil, a controlled increasing flow will be allowed from port 2 to port 1. In both examples free reverse flow is allowed in the opposite direction.

Features

Hardened and ground working parts. 280 bar working pressure, very low hysteresis, long life.

Sectional View



Description

This is a 2 way normally closed, pressure compensated, poppet type, electro proportional screw in cartridge valve with a low hysteresis and fine control. The valve is suitable for demanding applications where long life and accuracy is demanded

Performance Data

Ratings and Specifications

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

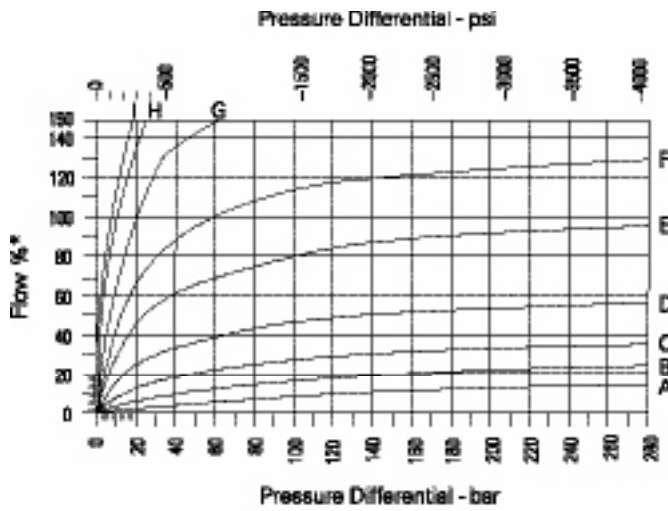
Typical application pressure (all ports)	280 bar (4000 psi)
Cartridge fatigue pressure (infinite life)	280 bar (4000 psi) NFPA rated
Rated flow	0 to 160 L/min (42 USgpm)
Internal leakage	EPV16A 50 cm ³ /min, max @ 140 bar (2000 psi) EPV16B 10 cm ³ /min, max @ 140 bar (2000 psi)
Oil viscosity range	10-800 cSt
Nominal supply voltage	12/24 VDC
Threshold current	Adj from 350-600 mA (12 VDC) Adj from 175-250 mA (24 VDC)
Coil current for maximum flow	0.7 amps @ 24 VDC 1.4 amps @ 12 VDC
Recommended PWM frequency	100-200 Hz application dependent, 150 Hz typ
Power consumption	12V-12.8 watts 24V-12.8 watts
Coil resistance	12v-6.5 /24V-25.0
Temperature range	-30° to 90°C (-22° to 194°F)
Cavity	C-16-3S (undercut)
Fluids	Antiwear hydraulic oils with Buna-N seals (standard) Phosphate esters (non-alkyl) with Viton®
Filtration	70-210 bar (1000-3000 psi) Cleanliness code 17/15/12 210+ bar (3000+ psi) Cleanliness code 15/13/11
Housing material (standard)	Aluminum or steel
Typical hysteresis	less than 4% of rated current @ 10 bar pressure drop-pulse width modulated (PWM)
Weight cartridge only	1 kg (2.2 lbs)
Seal kit	02-154069 (Buna-N)

Viton is a registered trademark of E.I. DuPont

EPV16 - Proportional Valve

Proportional flow control, normally closed, poppet
160L/min (42 USgpm) • 280 bar (4000 psi)

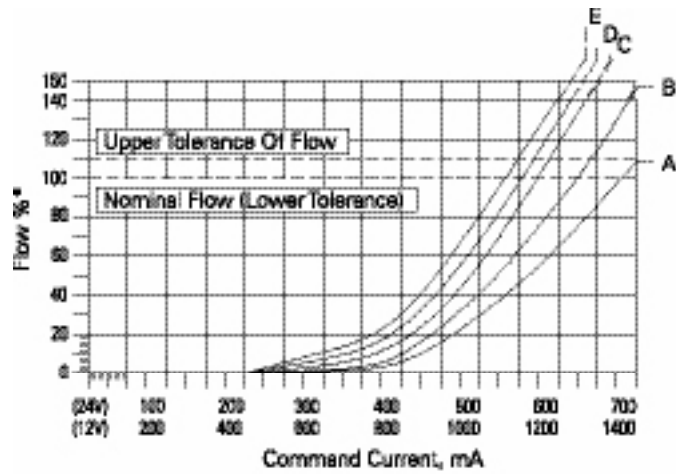
Pressure Drop Curves



* Flow interims of % for each poppet size

Command Current

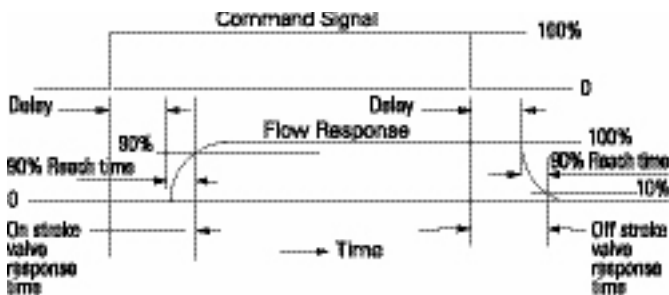
	12V	24V
A-	600 mA	300mA
B-	700 mA	350mA
C-	800 mA	400mA
D-	900 mA	450mA
E-	1000 mA	500mA
F-	1100 mA	550mA
G-	1200 mA	600mA
H-	1300 mA	650mA
I-	1400 mA	700mA



* Flow interims of % for each poppet size

Pressure Differential

A-	10 bar	150 psi
B-	20 bar	300 psi
C-	50 bar	700 psi
D-	100 bar	1500 psi
E-	200 bar	3000 psi



Pressure Drop @ 120 L/min (30 USgpm)

Pressure Drop P	On Stroke Delay/Reach 90%	Off Stroke Delay/Reach 90%
20 bar (290 psi)	24 ms/35 ms	5 ms/15 ms
100 bar (1450 psi)	24 ms/17 ms	5 ms/7 ms

EPV16A

Dimensions

Dimensions

mm (inch)

Valves are shown with "U" coil. See Section C for coil information.

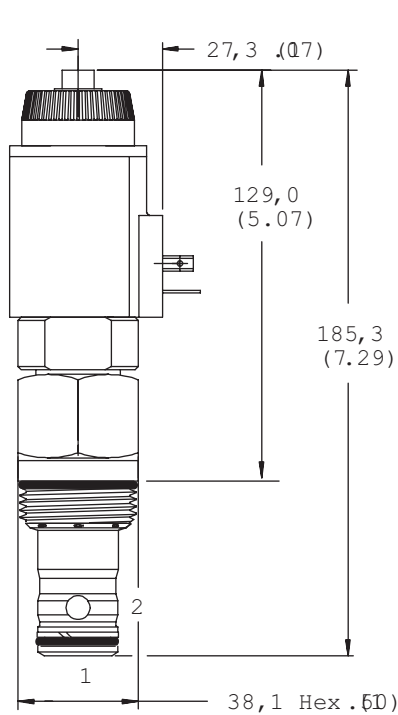
Torque cartridge in aluminum housing 108-122 Nm (80-90 ft. lbs)

Torque cartridge in steel housing 136-149 Nm (100-110 ft. lbs)

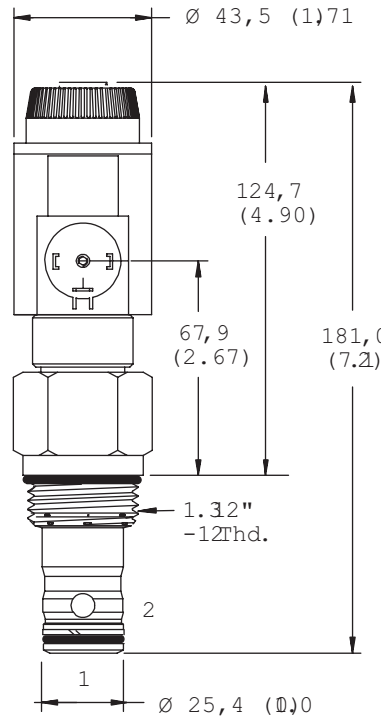
B

Cartridge Only - EPV16A

Nose-in, side out



With manual actuator

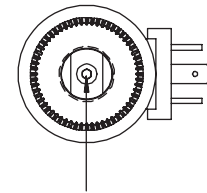


No manual actuator

Note:

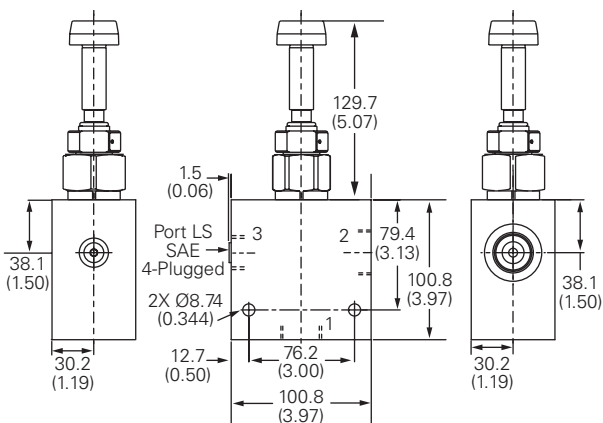
When stand alone housings are used, the following guidelines apply:

- EPV16-A: Port 3 is to be plugged.
- EPV16-B: Port 3 is to be connected to port 1 in order to provide the required feedback flow path.



Screw type actuator (shown) 3 mm hex socket

Installation Drawing (Steel)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

EPV16B

Dimensions

Dimensions

mm (inch)

Cartridge Only - EPV16B

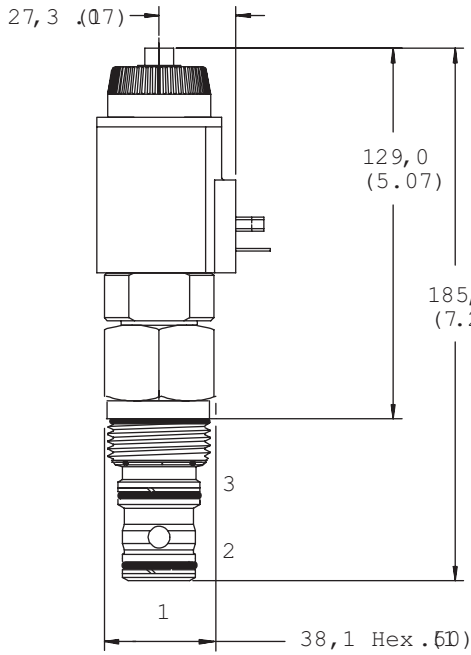
Side-in, nose out

For EPV16-B (flow 2 to 1), Port 3 must be connected to Port 1 externally to the cartridge, either by passages in the cavity block or external plumbing.

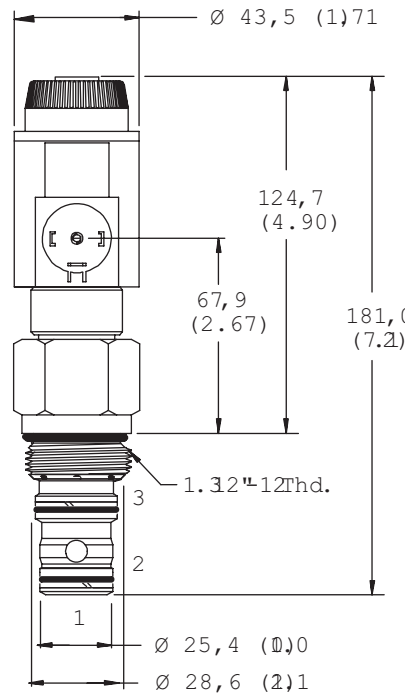
When purchased with undercut body, this connection is included in the body and Port 3 is not machined.

A separate external port connection is not required for EPV16-A (flow 1 to 2).

B

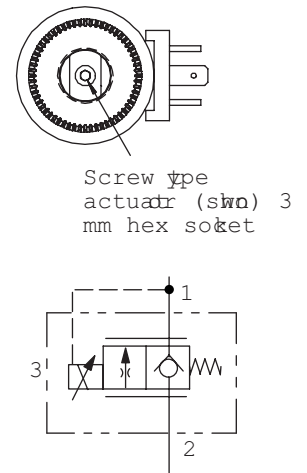


With manual actuator

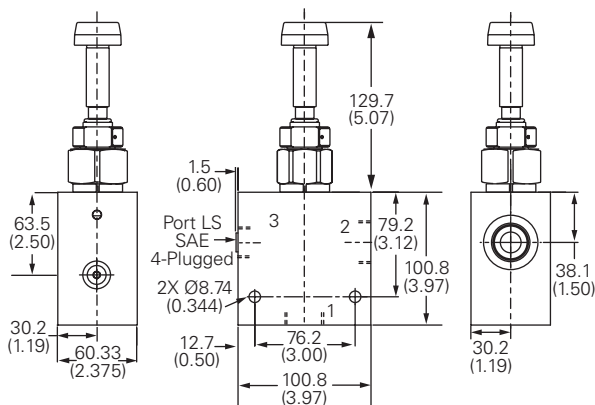


No manual actuator

Required external connection with standard C-16-3S cavity.



Installation Drawing (Steel)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

EPV16 - Proportional Valve

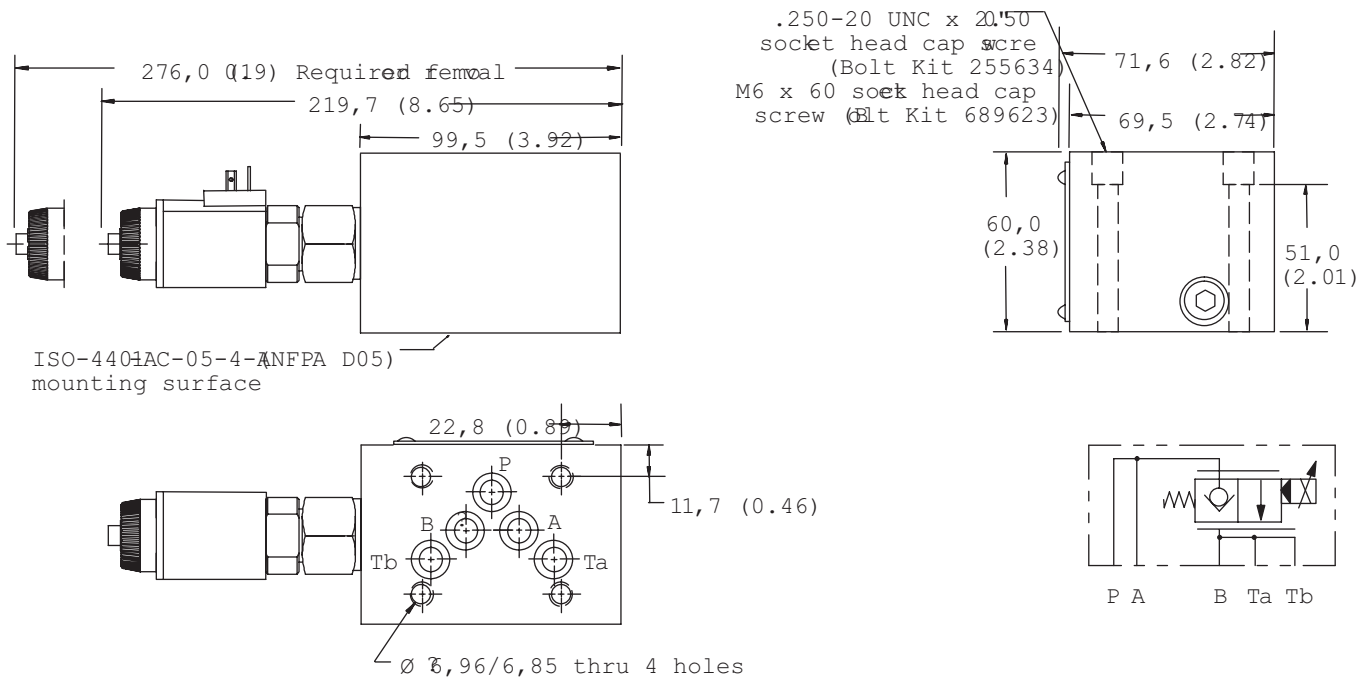
Dimensions

EPV16-A-**-S-5C-**-D-(*)-**-12

CETOP 5 Interface

mm (inch)

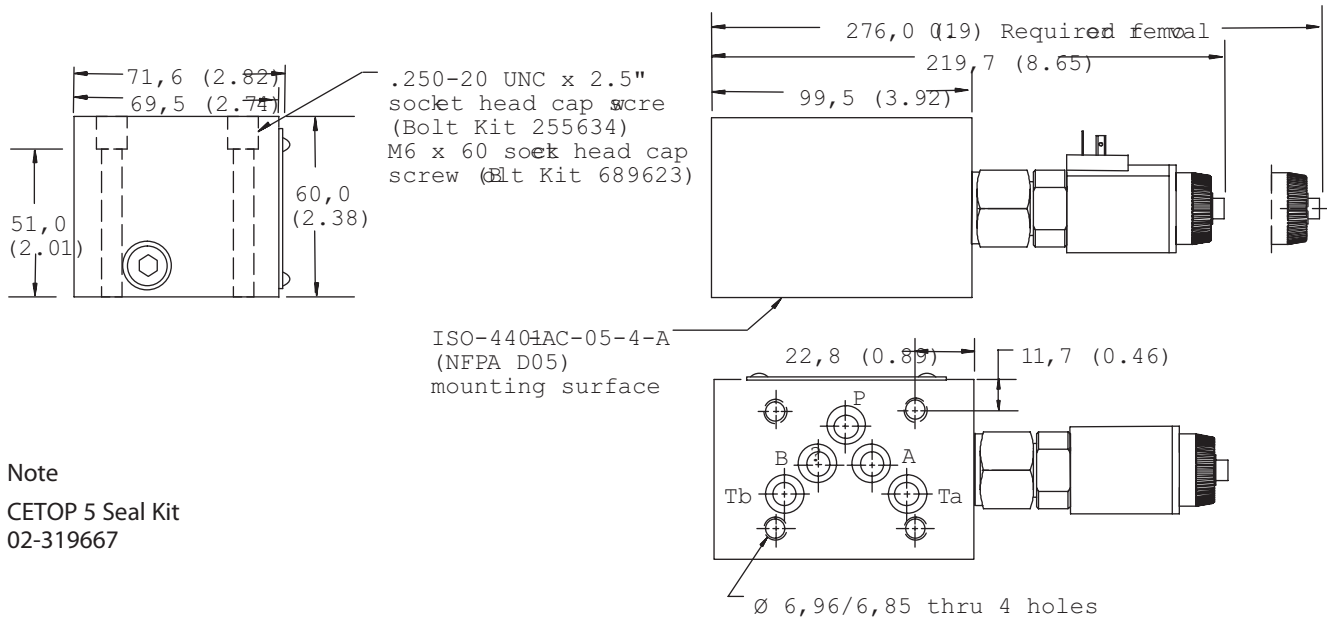
B



EPV16-B-**-S-5C-**-D-(*)-**-12

CETOP 5 Interface

mm (inch)



Note

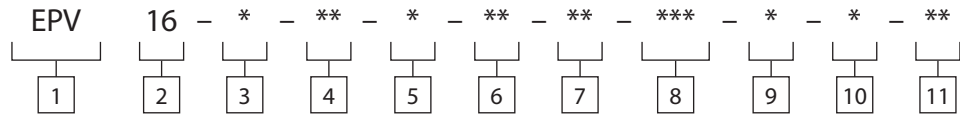
CETOP 5 Seal Kit
02-319667

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

EPV16 - Proportional Valve

Proportional flow control, NC, poppet
160L/min (42 USgpm) • 280 bar (4000 psi)

Model Code



- 1** Function
EPV - Solenoid valve

- 2** Size
16 - 16 size

- 3** Flow Direction
A - Nose-in, side-out
B - Side-in, nose-out

- 4** Rated Flow
4 - 40 L/min (10.5 USgpm)
6 - 60 L/min (16 USgpm)
10 - 100 L/min (26 USgpm)
16 - 160 L/min (42 USgpm)

- 5** Valve Housing Material
Omit for cartridge only
A - Aluminum
S - Steel
Note: Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housing must be used for operating pressures above 210 bar 3000 psi).

6 Port Size

Code	Port Size	Housing Number			
		Aluminium EPV16-A	EPV16-B	Steel EPV16-A	EPV16-B
0	Cartridge only				
4G	1/2" BSPP	02-185448	02-166607	02-180050	02-165500
6G	3/4" BSPP	02-185449	02-161592	02-180051	02-164931
10H	SAE 10	02-185450	02-170238	-	-
12H	SAE 12	02-185447	02-166609	-	-
10T	SAE 10	-	-	02-180048	02-161983
12T	SAE 12	-	-	02-180049	02-161982
5C	CETOP5 (NFPA D05) Interface (Requires steel body)				
See section J for housing details.					

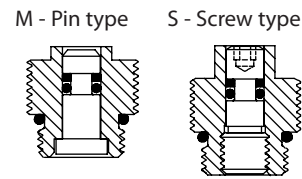
- 7** Seal Material
N - Buna-N
V - Viton
NF - Buna-N and 60 mesh filter screen
VF - Viton and 60 mesh filter screen

- 8** Voltage Rating
12D - 12VDC
24D - 24VDC

- 9** Manual Override Option
Blank - No manual override
M - Pin type
S - Screw type
Manual override is available in two different configurations, either push pin type is used when system pressure does not exceed 210 bar (3000 psi). The screw type can be used at any system pressure.
Note: When using the "Screw Type" override, care must be taken to return the override back to its neutral position before activating the valve. Failure to take this precaution may result in personal injury or damage to the machine.

- 10** Connector Type
Blank - No coil
F - Weatherpack male
Q - Spade Terminals (DC only)
W - Flying Lead
N - Deutsch DT04-2P
Y - Metripack 150 male*
U - DIN 43650
*Preferred Packard connector. For coil part numbers and dimensions see section C.

- 11** Special Features
00 - None



WARNING
When using the "Screw Type" override, care must be taken to return the override back to its neutral position before activating the valve. Failure to take this precaution may result in personal injury or damage to the machine.

CAUTION
A separate check valve is required down stream to isolate the EPV valve from load forces when the EPV is used to hold a load.