

# Directional valve 3-way/2-position

$Q_{\max} = 36 \text{ gpm}$ ,  $p_{\max} = 5000 \text{ psi}$   
direct acting, spool type, hydraulic operation  
Type series: DCPS-16-\_-E-...



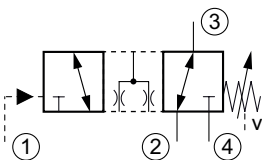
- Screw-in cartridge valve
- For cavity C1640
- All external parts zinc plated, chromited (CrVI-free)
- Installation in threaded port body type B1640
- Hardened precision fitted spool and sleeve provides reliable, long life
- Open center transition
- The spring chamber is vented (V) to atmosphere
- A unibody cage construction provides very low hysteresis, dependable and reliable operation

## Description

This unit is a direct acting, screw-in cartridge style, spool type, hydraulic 3-way directional control element, requiring remote pilot actuation. This valve allows flow from port 3 to port 2 with a spring biased spool. Port 4 is blocked. The spool will shift when pilo-

ted at port 1 with sufficient pressure to overcome the spring bias and allow flow from port 3 to port 4. "V" spring chamber is vented to atmosphere. This valve shifts in an open center position.

## Symbol



## Technical data

General Characteristics	Description, value, unit
Function group	Directional valve
Function	3-way/2-position
Design	Screw-in cartridge valve
Controls	hydraulic operation
Characteristic	direct acting, spool type
Transition/central position of spool/piston	zero overlap or underlap (open)
Construction size	SAE 16 / nominal size 12
Thread size	1 5/16-12 UN-2A
Mounting attitude	unrestricted
Weight	1.5 lb
Cavity acc. factory standard	For cavity C1640
Tightening torque steel	97.5 ft·lb
Tightening torque aluminium	72.5 ft·lb
Tightening torque tolerance	± 5 %
Minimum ambient temperature	- 40 °F
Maximum ambient temperature	+ 248 °F
Surface protection	All external parts zinc plated, chromited (CrVI-free)
Available seal types	several seal types available, see ordering code
Seal kit order number	NBR: SKN-1640 / FKM: SKV-1640

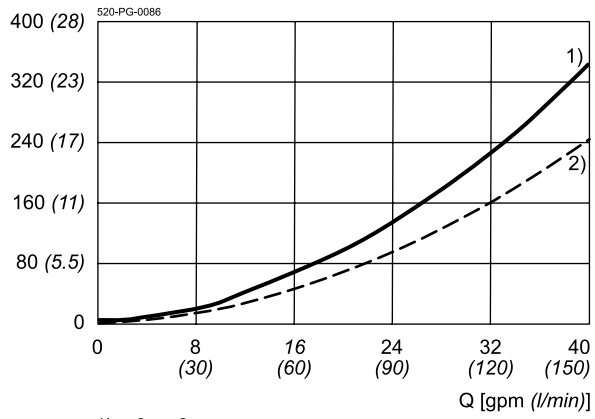
Hydraulic Characteristics	Description, value, unit
Maximum operating pressure	5000 psi
Maximum flow rate	36 gpm
Flow direction	see symbol
Hydraulic fluid	All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.
Minimum fluid temperature	- 13 °F
Maximum fluid temperature	+ 176 °F
Viscosity range	10 ... 500 mm <sup>2</sup> /s (cSt)
Recommended viscosity range	20 ... 130 mm <sup>2</sup> /s (cSt)
Minimum fluid cleanliness (cleanliness class according to ISO 4406:1999)	class 18/16/13
Minimum set pressure	60 psi
Maximum set pressure	160 psi
Internal leakage flow rate	5 cu.in/min at 5000 psi
Pilot operating media	hydraulic fluid

## Performance graphs

measured with oil viscosity 28.5 mm<sup>2</sup>/s (cSt)

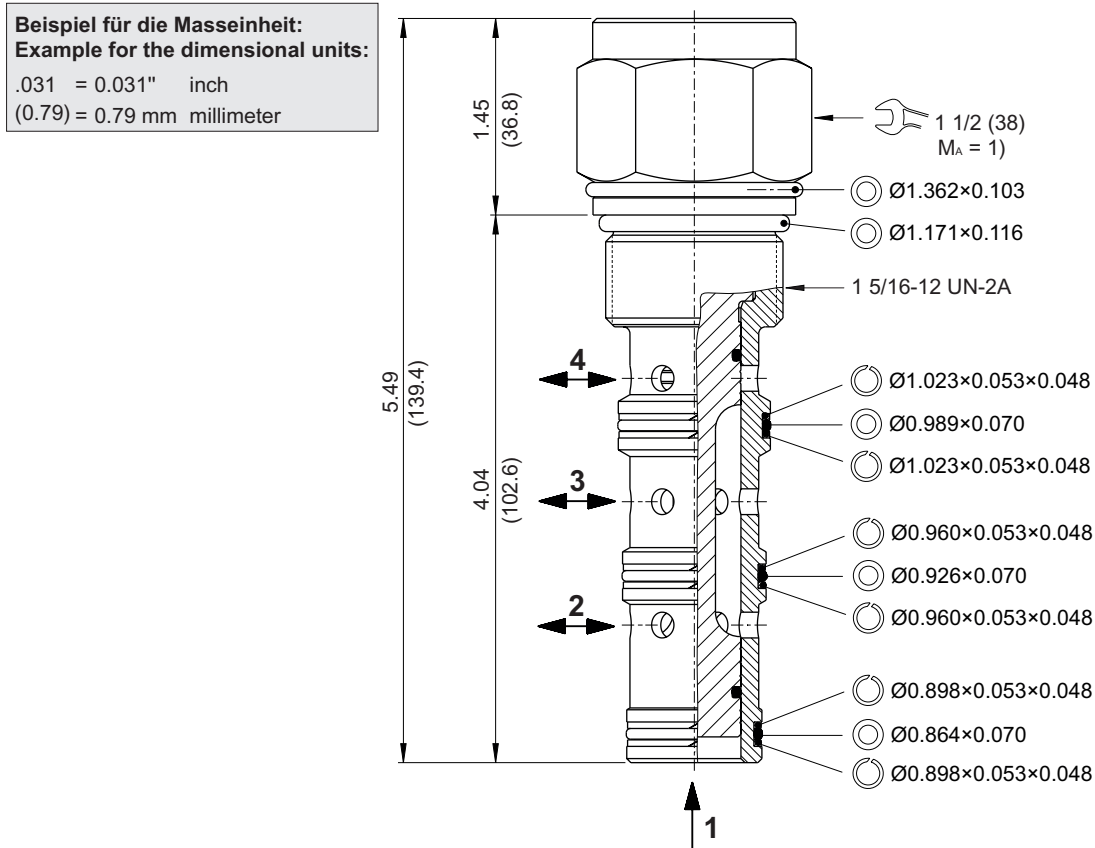
$\Delta p = f(Q)$  Pressure drop-flow rate characteristic

$\Delta p$  [psi (bar)]



1) = 3 → 2  
2) = 3 → 4

Dimensions and sectional view



Installation information



**ATTENTION!**

Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.



**NOTE!**

1) When fitting the screw-in cartridge valve, use the specified tightening torque. The value can be found in the chapter "Technical data".



**NOTE!**

The seals are not available individually. The seal kit order number can be found in the chapter "Technical data".

Ordering code

e.g. DCPS - 16 - N - E - F - 0 - 060

DCPS = directional control valve, direct acting, cartridge design

16 = nominal size SAE 16 / NG 12

N = NBR (nitril-butadien-rubber / BUNA) seals (*standard*)

V = FKM (fluorocarbon rubber / VITON) seals  
(*special seals - please consult BUCHER*)

E = spool type "E"

F = fixed (factory set)

0 = screw-in cartridge only

12TA = line-mounting body aluminum SAE #12 ports

12TS = line-mounting body steel SAE #12 ports

16TA = line-mounting body aluminum SAE #16 ports

16TS = line-mounting body steel SAE #16 ports

060 = pressure setting bias spring 60 psi

120 = pressure setting bias spring 120 psi

160 = pressure setting bias spring 160 psi

Related data sheets

Reference	Description
520-P-000050	Form tools
520-P-000440	Cavity C1640
520-P-000441	Threaded port body B1640