

ISO4401 Size 03; ANSI/B93.7M-D03
DG3VP-3, DG4VP-3, CVUA-6 20 Design
Solenoid operated poppet type directional valve
DG3/4VP-3 Subplate mounted model
CVUA-6-PD- cartridge model



DG3VP-3, DG4VP-3, CVUA-6 20 Design

Solenoid operated poppet type directional valve

DG3/4VP-3 Gasket Mounted Model CVUA-6-PD- Cartridge Model

Flow rating 40 l/min (11 gpm)

Pressure Rating 315bar (4500 psi)

Bidirectional seat-valve shut-off, direct acting

Description

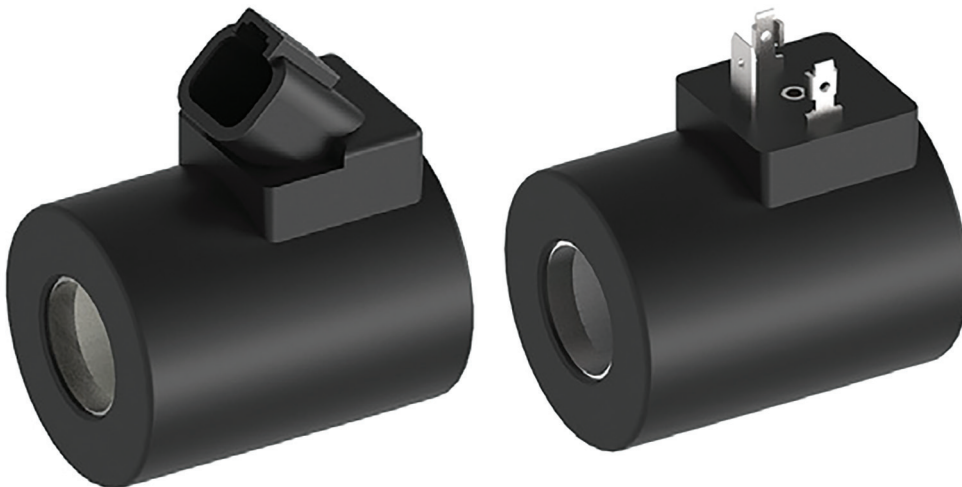
- CVUA/DG3/4VP-3 operated directional seat valves size ISO4401 - 03.
- Direct acting, pressure balanced
- Gasket mounted or push-in cartridges.
- Normal condition (de-energised closed), flow is shut off without leakage.
- The core element operates on the tried and tested principle of the guided poppet, and the guide spool has a seal.
- Two different mounting versions are available, which allows the designer to choose the insertion depth
- These type valves are predominantly used in mobile and industry where leak-tight shut off functions are crucially important.
- Zinc Nickel plated for corrosion protection
- A "de-energised open" function can be created by using the 3/2 solenoid cartridge valve and the line-mounting body.
- In this case, ports 2 and 3 are used. Port 1 is plugged.
- Design bidirectional seat-valve shut-off, direct acting poppet and valve-spool design (pressure balanced)
- Tightening torque 5.2 Nm . 5 % (4 ft-lbs . 5 %)
- Size 6, cavity type AA or cavity type AB
- Weight 0.85 kg (1.9 lbs)

Technical data

- De-energised closed
- Guided valve spool and poppet
- Available in two mounting versions
- All exposed parts with zinc-nickel plating
- High pressure wet-armature solenoids
- The slip-on coil can be rotated, and it can be replaced without opening the hydraulic envelope
- Can be fitted in a line-mounting body trial applications where leak-tight shut-off functions are crucially important.
- Examples are where loads, tensions, or clamping forces must be held without leakage.
- All external parts of the cartridge are zinc-nickel plated to DIN 50979 and are thus suitable for use in the harshest operating environments.
- The slip-on coils can be replaced without opening the hydraulic envelope and can be positioned at any angle through 360°.

General characteristics	Description, value, unit
Designation	2/2 solenoid cartridge valve
Design	Bidirectional seat-valve shut-off, direct acting poppet and valve-spool design (pressure balanced)
Mounting method	Push-in cartridge, 4 mounting bolts M5 x 10
Tightening torque	5.2 Nm $\pm$ 5 % (4 ft-lbs $\pm$ 5 %)
Size	size 6, cavity type AA or cavity type AB
Weight	0.85 kg (1.9 lbs)
Mounting attitude	Unrestricted

Coils available with DIN and Deutsch connectors



II-B

(F3) — DG*VP-3 — 10** — V M — * — * — 20



1	Seals	
	F3	Viton seals
	Blank	Nitrile seals
2	Function	
	3	Three-way
	4	Four-way
3	Spool and spring arrangement	
	102A	Normally open, spring offset, for DG3VP models
	103A	Normally closed, spring offset, for DG3VP models
	104C	Normally open, spring centered, for DG4VP models
	105C	Normally closed, spring centered, for DG4VP models
4	Solenoid identification	
	Blank	None
	V	Solenoid "A" is at port "A" end and / or solenoid "B" is at port "B" end independent of spool type

5	Flag symbol	
	M	Electrical options and features.
6	Coil type	
	U	ISO4400, DIN43650
	KUP5D3	Deutsch Connector H and G coils only
7	Coil rating	
	B	110V AC 50Hz / 115V AC 60 Hz
	D	220V AC 50Hz / 230V AC 60Hz
	ED	240V AC 50Hz
	G	12V DC
	H	24V DC
	OJ	48V D
		Other voltages on request
8	Design number	
		20 series

(F3) — CVUA-6-PD * — * — M — U — * — 20



1	Seals	
	F3	Viton seals
	Blank	Nitrile seals
2	Cartridge Valve Unit NG6	
3	Mounting Flange Type	
	N	Narrow thickness flange
	W	Wide thickness flange
4	Function	
	2	Two Way
	3	Three Way
5	Flag symbol	
	M	Electrical options and features.

6	Coil type	
	U	ISO4400, DIN43650
	KUP5D3	Deutsch Connector H and G coils only
7	Coil rating	
	B	110V AC 50Hz / 115V AC 60 Hz
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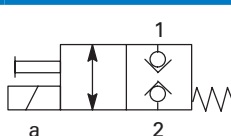
Hydraulic characteristics	Description, value, unit
Maximum operating pressure	...315bar (...4500 psi)
Maximum flow rate	40 l/min (11 gpm)
Flow direction	1 → 2 / 2 → 1, see symbols
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER
Ambient temperature range 1)	-25°C ... +80°C (13 °F ... +176 °F)
Hydraulic fluid temperature range	-25°C ... +80°C (13 °F ... +176 °F)
Viscosity range	10...500mm ² /s (cSt), recommended 15...250mm ² /s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406:1999	class 20/18/15

Electrical characteristics	Description, value, unit
Supply voltage	12V DC, 24V DC / 115V AC, 230V AC (50...60Hz)
Supply voltage tolerance	±10%
Ambient temperature range 1)	-25°C ... +50°C (13 °F ... +122 °F)
Nominal power consumption	V DC = 30...32 W / V AC = 31...32 W
Switching time	25 ... 170 ms (energising) 15 ... 70 ms (deenergising) These times are strongly influenced by fluid pressure, flow rate and viscosity, as well as by the dwell time under pressure.
Relative duty cycle	100%
Protection class to ISO20653 / EN60529	IP 65 / IP 67 / IP 69K, see "Ordering code" (with appropriate mating connector and proper fitting and sealing)
Electrical connection	DIN EN 175301-803, 3-pin 2 P+E (standard) for other connectors, see "Ordering code"

Functional symbols

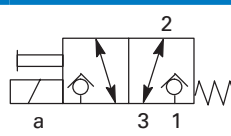
For electrical plugs see "installation dimensions" section.

CVUA-6-PD*-2

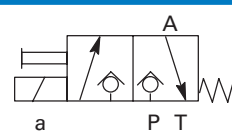


For tool kits for CVUA Valves see "installation dimensions" section.

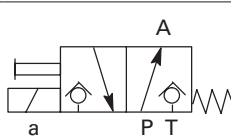
CVUA-6-PD*-3



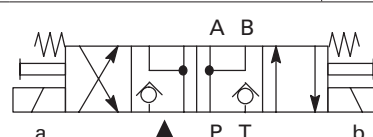
DG3VP-3-103A



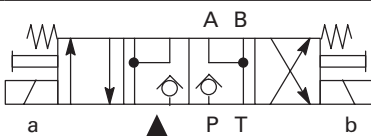
DG3VP-3-102A



DG4VP-3-104C



DG4VP-3-105C



Note: CVUA valves are supplied complete with mounting flanges and metric fixing bolts.

▲ This spool position is achieved only when both solenoids are energized simultaneously and remain so.

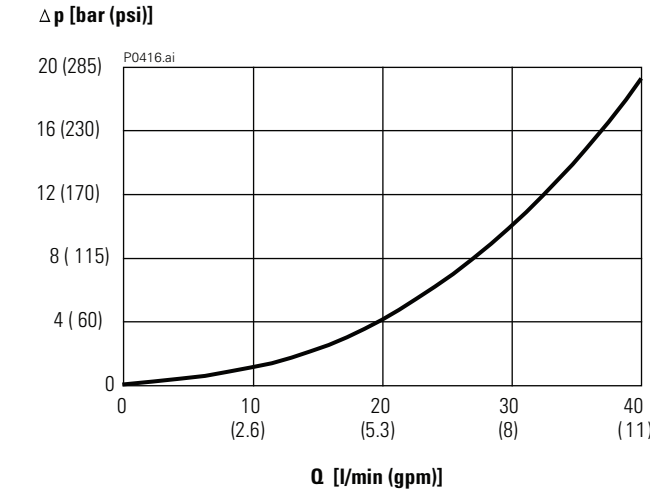
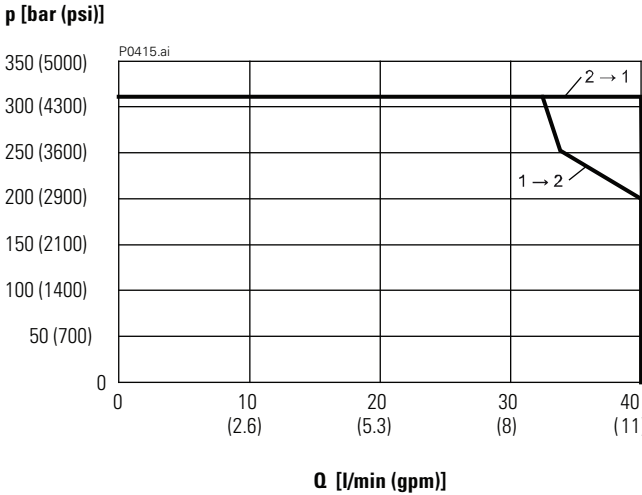
⊙ No leakage in either direction

↕ Through flow in both directions

II-B

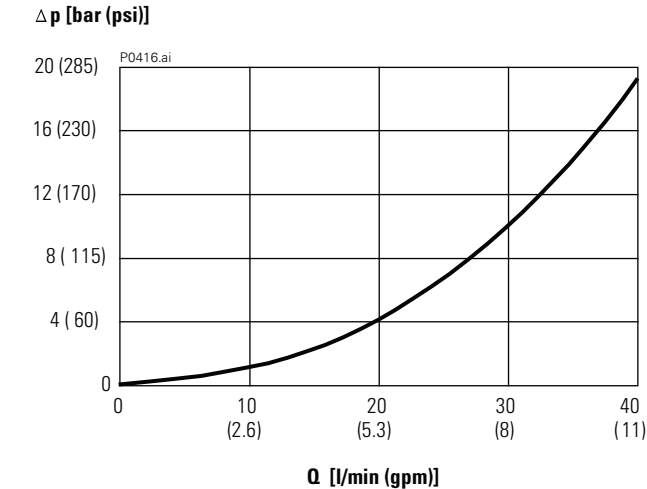
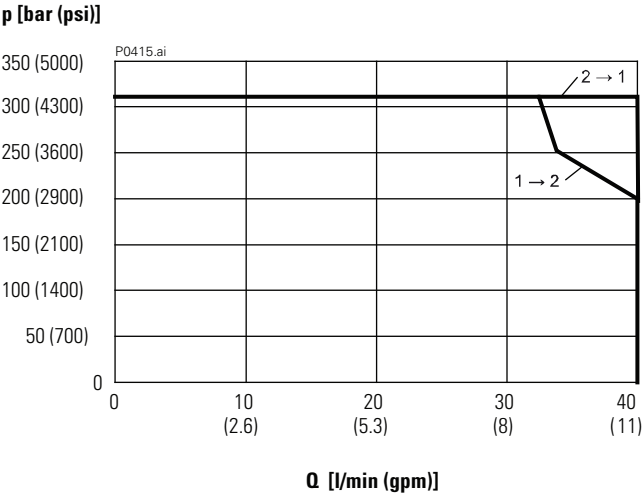
DG3/4VP-3

Measured with oil viscosity 33mm2/s (cSt), coil at steady-state temperature and 10 % undervoltage



CVUA-6

Measured with oil viscosity 33mm2/s (cSt), coil at steady-state temperature and 10 % undervoltage



[illegible]

CVUA-6-PD*-2

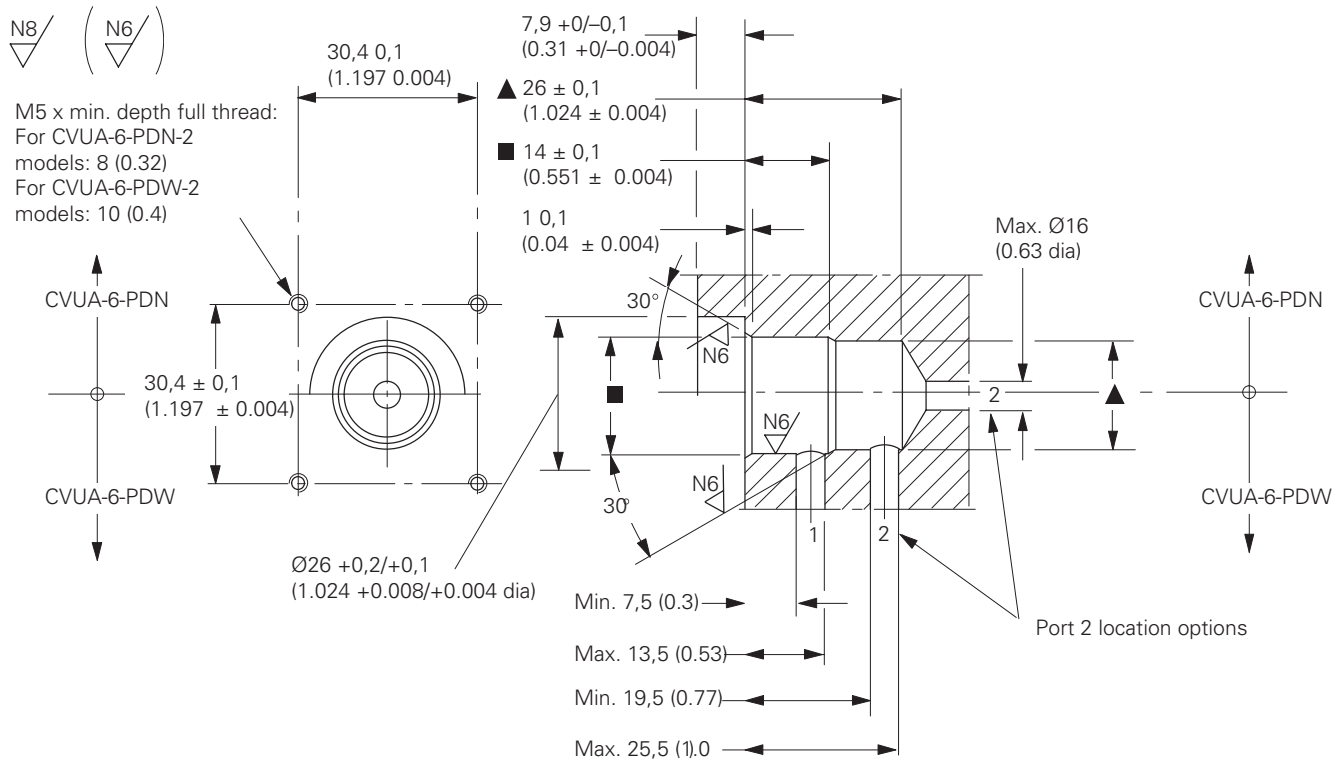
Recess dimensions

Notes (metric dimensions)

- ▲ Ø18 +0/-0,2 x 26 ± 0,1 deep: Ream Ø18 H7 x 20 deep min. ♦
 ■ Ø19 +0/-0,2 x 14 ± 0,1 deep: Ream Ø19 H7 x 8 deep min. ♦

Notes (inch dimensions)

- ▲ Diameter $0.709 +0/-0.008 \times 1.024 \pm 0.004$ deep: Ream Ø18 mm H7 x 0.79 deep min. ♦
- Diameter $0.748 +0/-0.008 \times 0.551 \pm 0.004$ deep: Ream Ø19 mm H7 x 0.32 deep min. ♦



◆ Tool kit 638692 for machining the Ø18 mm and Ø19 mm bores (and when required, the Ø26 mm bore) can be ordered if required. The kit comprises a stepped drill and a stepped reamer.

Seal kits

- 6045235-001** Seal Kit for CVUA-6 10 and 20 Design
6045236-001 Seal Kit for F3-CVUA-6 10 and 20 Design
6045237-001 Seal kit for DG3/4VP-3 10 and 20 Design
6045238-001 Seal kit for F3-DG3/4VP-3 and 20 Design

CVUA-6-PD*-3

II-B

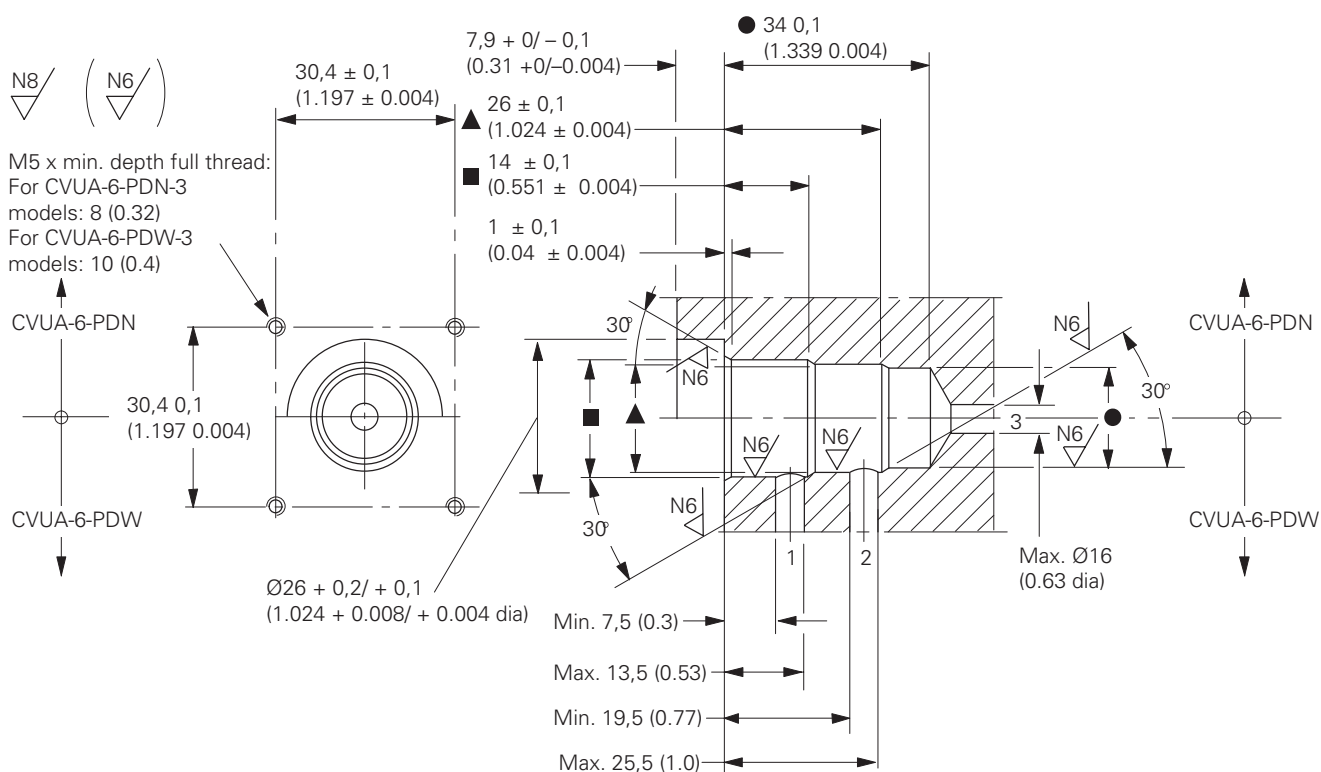
Recess dimensions

Notes (metric dimensions)

- $\varnothing 17 +0/-0,2 \times 34 \pm 0,1$ deep: Ream $\varnothing 17$ H7 x 32,5 deep min. ♦
- ▲ $\varnothing 18 +0/-0,2 \times 26 \pm 0,1$ deep: Ream $\varnothing 18$ H7 x 20 deep min. ♦
- $\varnothing 19 +0/-0,2 \times 14 \pm 0,1$ deep: Ream $\varnothing 19$ H7 x 8 deep min. ♦

Notes (inch dimensions)

- Diameter $0.669 +0/-0.008 \times 1.339 \pm 0.004$ deep: Ream $\varnothing 17$ mm H7 x 1.28 deep min. ♦
- ▲ Diameter $0.709 +0/-0.008 \times 1.024 \pm 0.004$ deep: Ream $\varnothing 18$ mm H7 x 0.79 deep min. ♦
- Diameter $0.748 +0/-0.008 \times 0.551 \pm 0.004$ deep: Ream $\varnothing 19$ mm H7 x 0.32 deep min. ♦



♦ Tool kit 459285 for machining the $\varnothing 17$ mm, $\varnothing 18$ mm and $\varnothing 19$ mm bores (and when required, the $\varnothing 26$ mm bore) can be ordered if required. The kit comprises a stepped drill and a stepped reamer.