



Powering Business Worldwide

Solenoid Operated Poppet-Type Directional Valve

CVUA-6-PD Cartridge Model

DG3/4VP-3 Gasket Mounted Model

General description

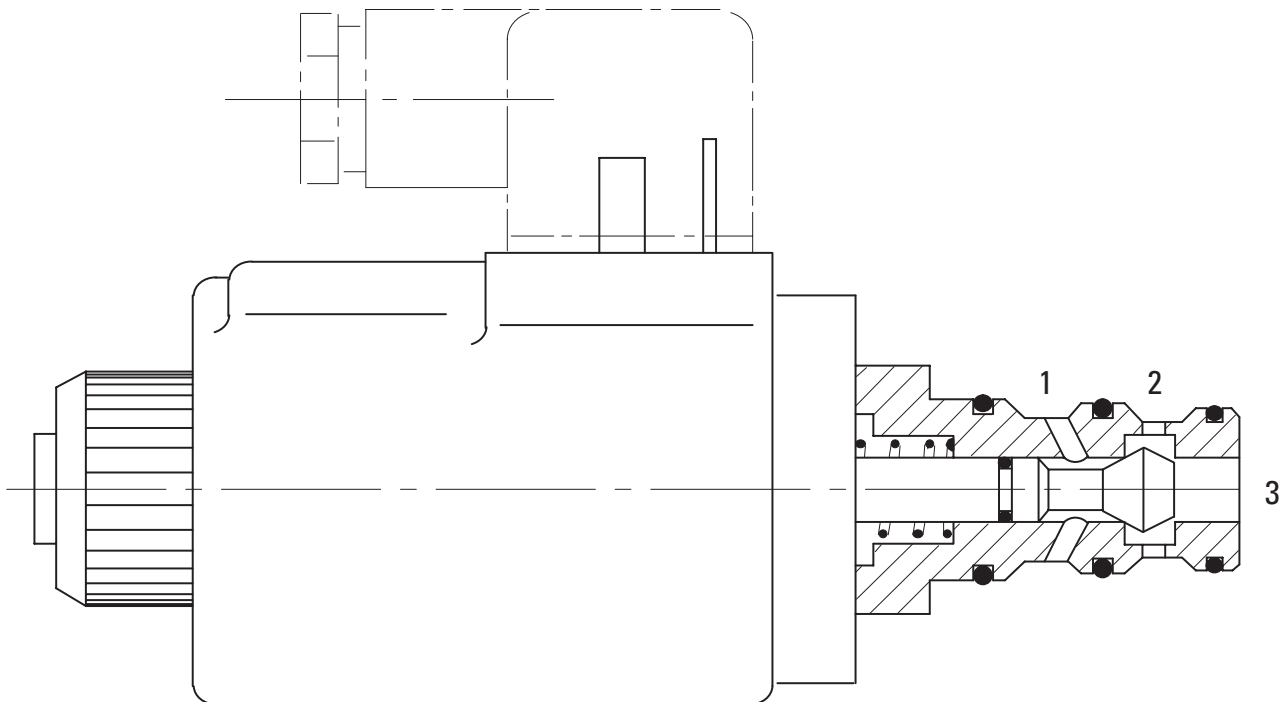
Solenoid operated poppet valves are used mainly for starting, stopping and controlling the direction of linear and rotary actuators or for use as a pilot valve. The gasket mounted types can also be used for controlling the pilot functions of cartridge valves to ISO 7368 (DIN 24342) (see catalog 2378).

All valves are of a "zero leakage design" which is the major design feature of poppet-type valves. The valves are available as either gasket mounted or cartridge insert type. The latter requires a housing having a purpose-formed recess (see recess hole drawing and special tool note).

Advantages

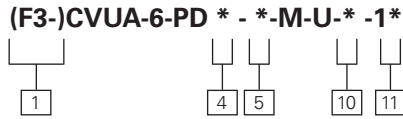
- Zero internal leakage in closed position
- Fast consistent response times
- Cost-efficient high pressure capability
- Simple assembly and installation
- Fast and easy servicing

3 Way/2 Position Cartridge Type Valve, Model CVUA-6-PDN-3-M-U

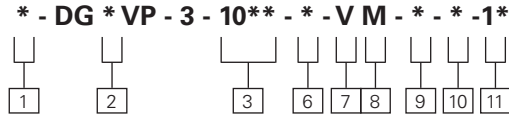


Model Codes

For CVUA Cartridge Valves



For DG*VP Valves



1 Prefix, fluid compatibility

Blank – For petroleum oils, water glycols and invert emulsions

F3 – For phosphate esters, petroleum oils, water glycols and invert emulsions

2 Function

3 – Three-way
4 – Four-way

3 Spool and spring arrangement

102A – Normally open, spring offset; option for DG3VP models

103A – Normally closed, spring offset; option for DG3VP models

104C – Normally open, spring centered; option for DG4VP models

105C – Normally closed, spring centered; option for DG4VP models

4 Mounting flange type

N – Narrow thickness flange
W – Wide thickness flange

5 Function

2 – Two-way
3 – Three-way

6 Manual override

Omit if not required
H – Weatherproof override in solenoid ends only

7 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

8 Flag symbol

M – Electrical options and features.

6 Coil type

U – ISO4400, DIN43650 connector

7 Coil rating

B – 110V AC 50Hz / 115V AC 60 Hz
D – 220V AC 50Hz / 230V AC 60Hz
DE – Q190V DC
DP – Q127V DC
EO – 207V DC
EP – 230V AC 50 Hz
G – 12V DC
H – 24V DC
KK – 48V AC 50 Hz
OJ – 48V DC
P – 110V DC
S – 220V DC

8 Design number, 10 series

Subject to change. Installation dimensions unaltered for design numbers 10 to 19 inclusive.

F

Functional Symbols

Spool Options

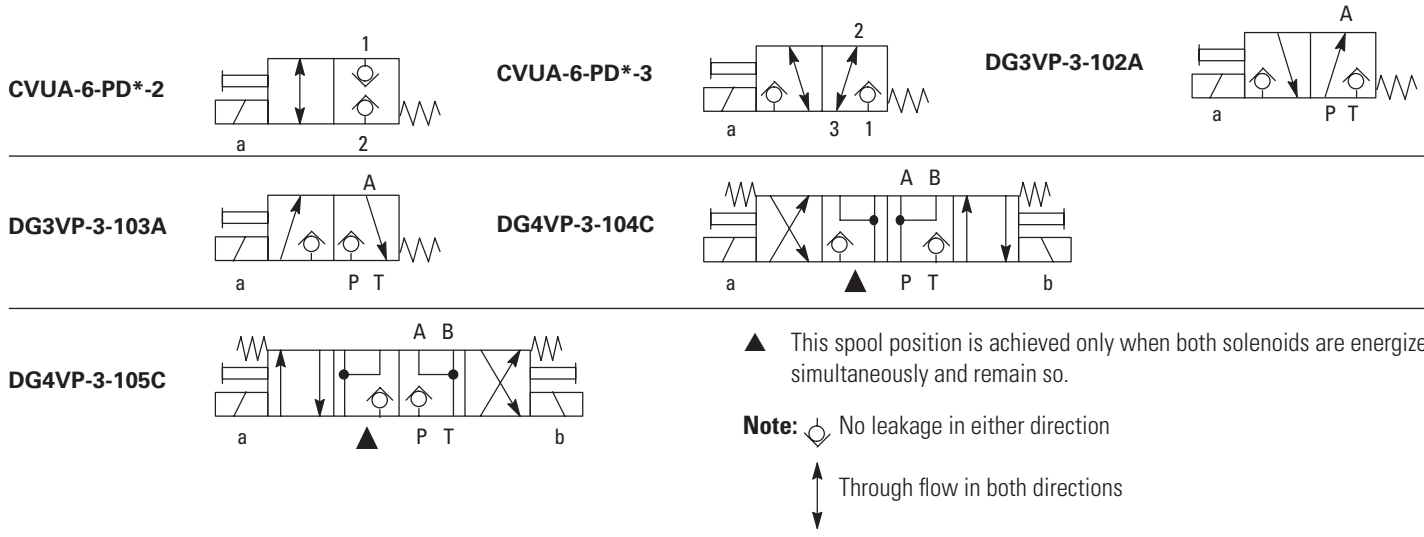
For Electrical Plugs

See "Installation Dimensions" section.

For Tool Kits for CVUA Valves

See "Installation Dimensions" section.

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



Operating Data

Pressure and Flow Limits

Features	DG3/4VP-3
Max Pressure	315 bar (4567 psi)
Maximum Flow	20 L/min (5.3 Usgpm)
Temperature	
Minimum Ambient	-20°C (-4°F)
Maximum Ambient	70°C (158°F)
Power Consumption (AC Solenoid)	
Inrush, Max (VA)	396
Steady-state (VA)	198
Holding (VA)	57
All above values are in RMS	
Response Times	
AC and DC Energizing	150ms
AD and DC* De-energizing	85ms
* In pure switched circuit conditions devoid of the effects of any suppression diodes and full wave rectifiers	
Power Consumption (DC Solenoid)	
At rated voltage and wire temperature of 20°C (68°F)	38W
Relative Duty Factor	100% continuous rating
Type of protection	IEC144 Class IP65
Winding insulation	Class H
Epoxy Resin	Class F
Permissible Voltage Fluctuation	±5% of rated voltage

Performance Data

Typical with mineral oil at 36 cSt (168.6 SUS) and a specific gravity of 0.87.

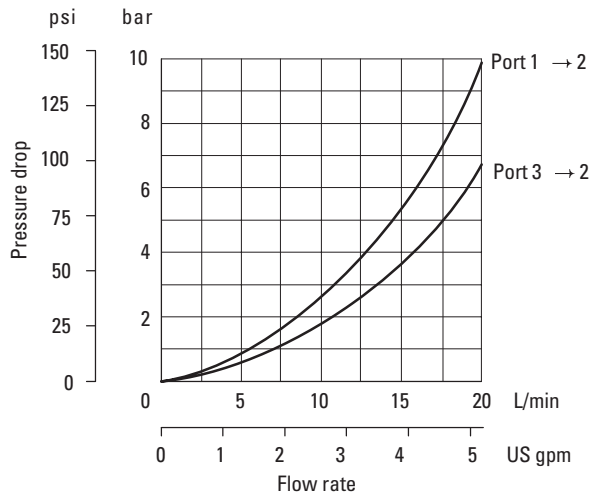
Maximum flow rates

Performance based on full power solenoid coils warm and operating at 90% rated voltage.

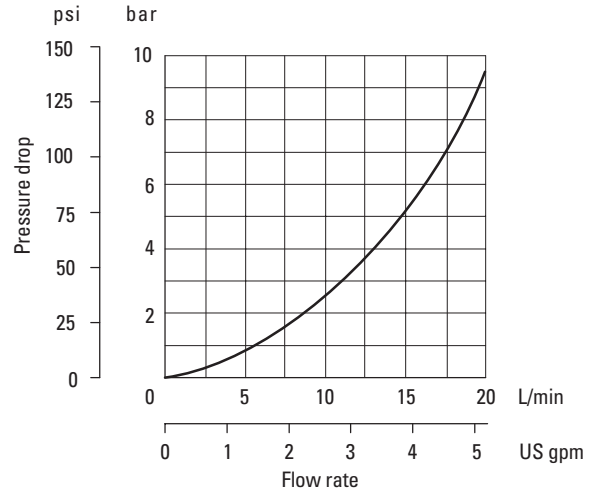
Pressure Drop Data

Typical with hydraulic petroleum oil at 36 cSt (170 SUS) and at 50°C (122°F)

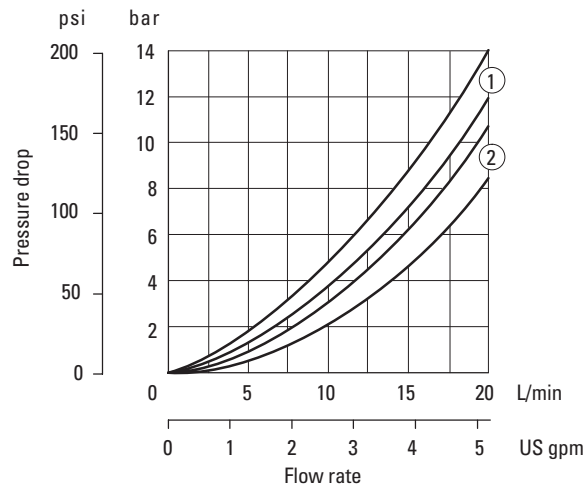
CVUA-6-PD*-3 Models



CVUA-6-PD*-2 Models



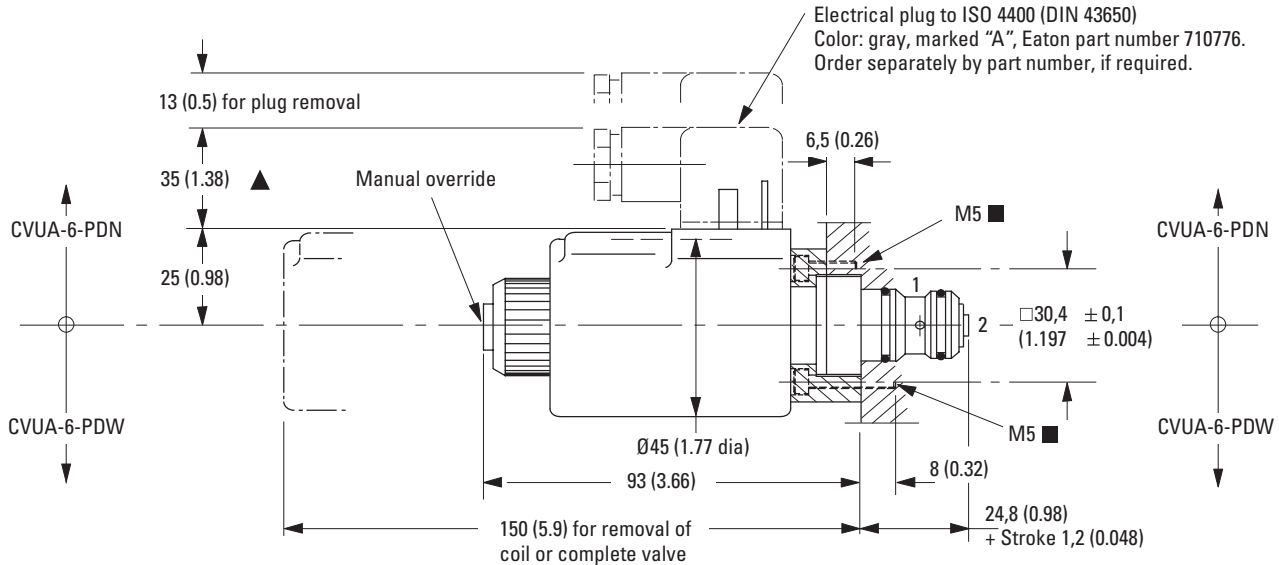
DG3VP-3 and DG4VP-3 Models



Model	Curve for flow:			
	P to A	P to B	A to T	B to T
DG3VP-3-102A	2	–	1	–
DG3VP-3-103A	1	–	2	–
DG4VP-3-104C	2	2	1	1
DG4VP-3-105C	1	1	2	2

Installation Dimensions

Model Types:
CVUA-6-PDN-2 and CVUA-6-PDW-2



▲ May vary depending on plug source.

■ Torque to 4-6 Nm (35-53 lbf.in)

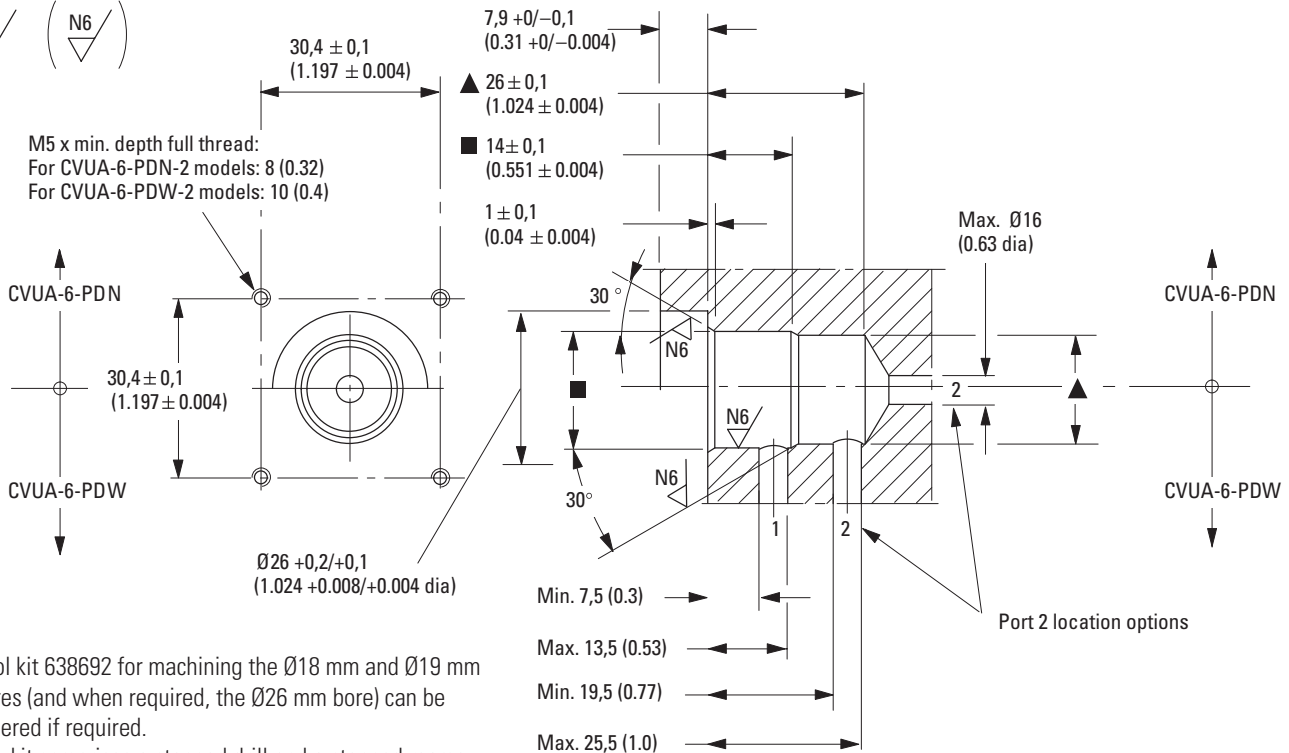
Recess Dimensions

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)

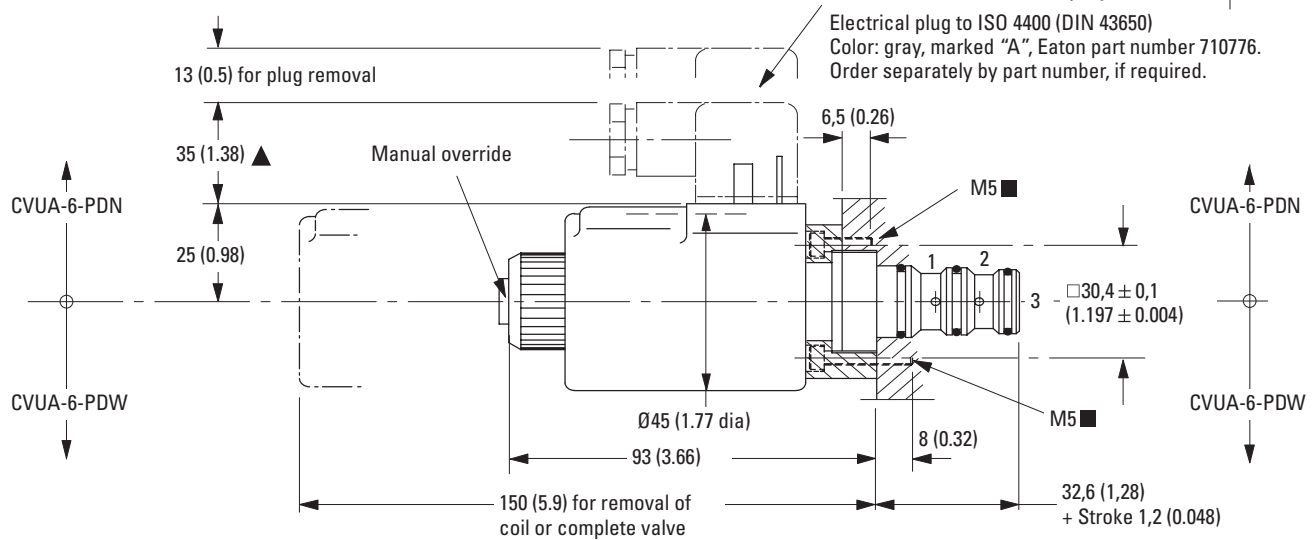
- ▲ Diameter 0.709 +0/-0.008 x 1.024 ± 0.004 deep:
Ream Ø18 mm H7 x 0.79 deep min. ◆
- Diameter 0.748 +0/-0.008 x 0.551 ± 0.004 deep:
Ream Ø19 mm H7 x 0.32 deep min. ◆



- ◆ 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.

Installation Dimensions

Model Types:
CVUA-6-PDN-3 and CVUA-6-PDW-3



- ▲ May vary depending on plug source.
- Torque to 4-6 Nm (35-53 lbf.in)

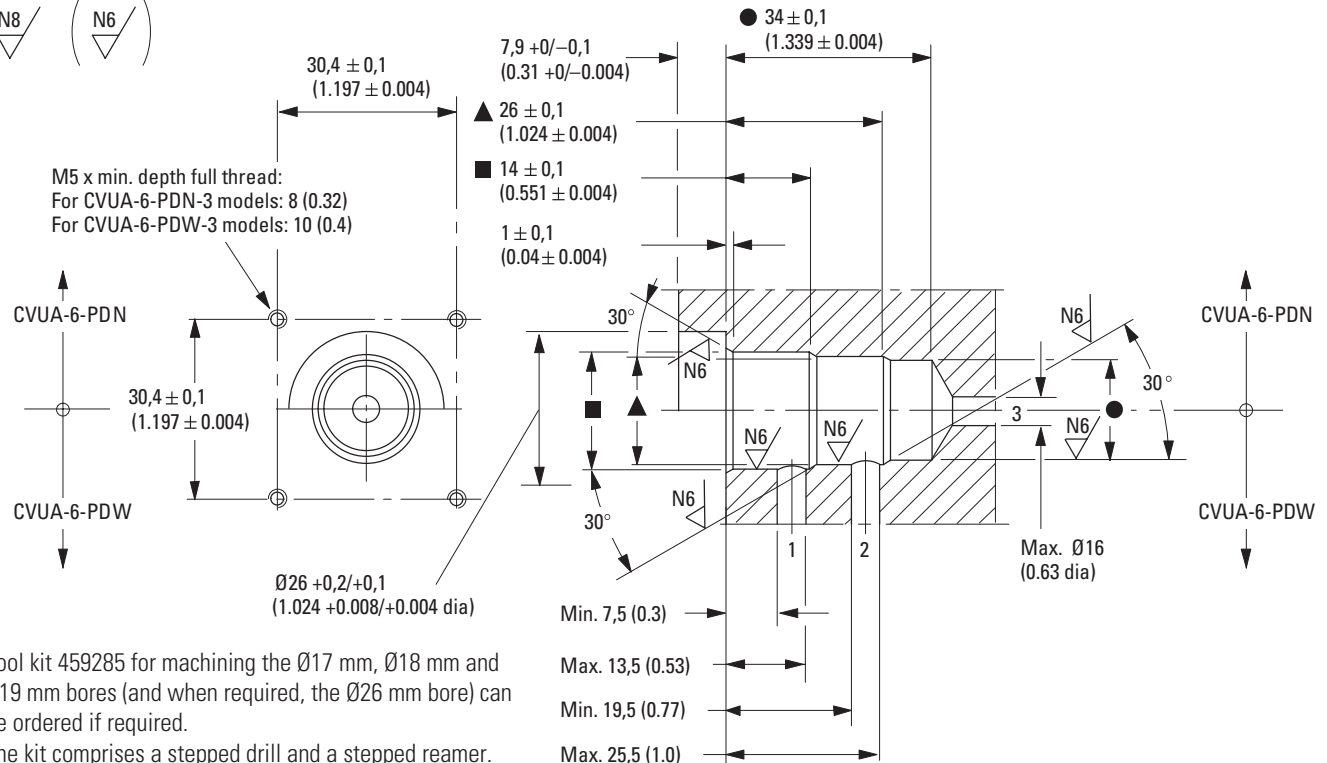
Recess Dimensions

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)

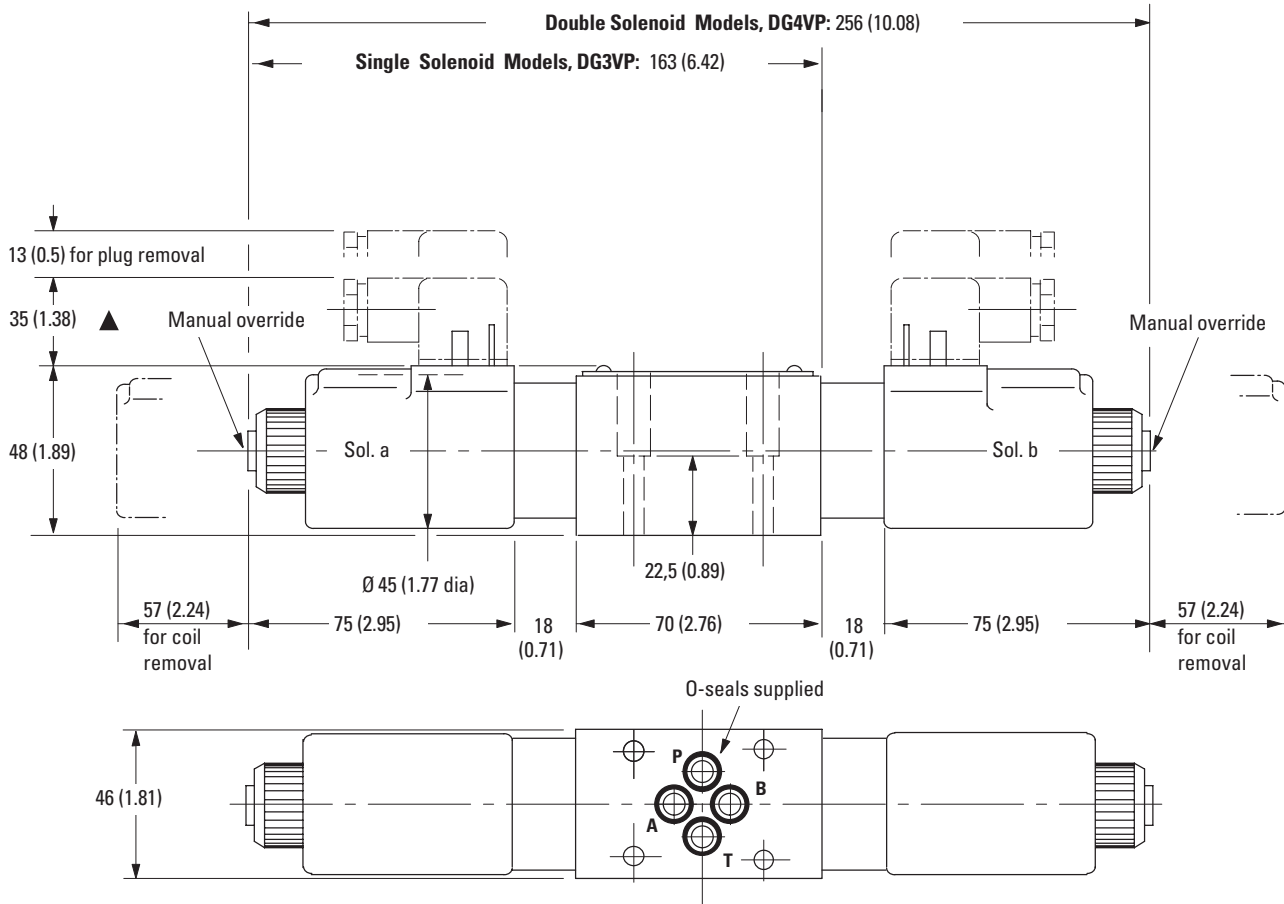
- Diameter $0.669 +0/-0.008 \times 1.339 \pm 0.004$ deep:
Ream $\varnothing 17$ mm H7 x 1.28 deep min. ◆
- ▲ Diameter $0.709 +0/-0.008 \times 1.024 \pm 0.004$ deep:
Ream $\varnothing 18$ mm H7 x 0.79 deep min. ◆
- Diameter $0.748 +0/-0.008 \times 0.551 \pm 0.004$ deep:
Ream $\varnothing 19$ mm H7 x 0.32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

Installation Dimensions

Model Types:
DG3VP-3-10*A and
DG4VP-3-10*C



For details of mounting interface to ISO 4401, size 03, see catalog 2425.
 For details of Eaton mounting bolt kits, see catalog 2314.

Mass, Approx. kg (lb)

CVUA-6-PD*-2-M-U-*-10	0,85 (1.9)
CVUA-6-PD*-3-M-U-*-10	0,86 (1.9)
DG3VP-3-10*A-VM-U-*-10	1,75 (3.8)
DG4VP-3-10*C-VM-U-*-10	2,50 (5.5)

Spare Parts Information

The only replacement parts available for these valves are as follows:

Seal kit	Part number
F3-prefix valves	638532
Non-F3 valves	992686

Solenoid Coils

Coil code	Coil rating	Part number
B	110V AC 50/115V AC 60	617947
D	220V AC 50/230V AC 60	617948
G	12V DC	617945
H	24V DC	617946

Electrical Plugs, ISO 4400 (DIN 43650)

Gray, marked "A"	710775
Black, marked "B"	710776

Tool Kits

For machining housing bores for:

CVUA-6-PD*-2 valves	Kit 638692
CVUA-6-PD*-3 valves	Kit 459285

Electrical Plugs and Connectors

DIN 43650 Connector

Cable diameter range:

Wire section range:

Terminals:

Type of protection:

Connector can be positioned at 90° intervals on valve by re-assembling contact holder into appropriate position inside connector housing.

Use U12 or U11 type connectors with 12 and 24V DC coil if rectification is required.

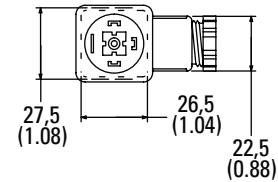
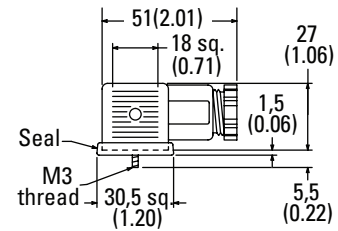
Connectors with and without indicator lights are available (order separately):

Ø6-10 mm (0.24-0.40)

Ø,5-1,5 mm²
(0.0008-0.0023 in²)

Screw type

IEC144 class IP65, when plugs are fitted correctly to the valves with interface seals (supplied with plugs) in place.



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