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# General Information

## Features

- For subplate mounting mounting pattern to DIN 24 340, form D, ISO 5781, CETOP-RP 121H,
- Three adjustment elements:
  - Rotary knob
  - Sleeve with hexagon and protective cap
  - Lockable rotary knob with scale
- Five Pressure settings
- Optional check valve

## General

XCG-2V-10 pressure valves are pilot operated pressure reducing valves, which are controlled from the secondary circuit.

They basically consist of main valve (1) with main spool insert (3) and pilot valve (2) with pressure adjustment element.

At rest, the valves are open, fluid can freely pass from port B to port A via the main spool insert (3).

Pressure present in port A acts upon the bottom side of the main spool. At the same time there is pressure acting on the ball (6) in the

pilot valve (2) via the orifice (4) on the spring-loaded side of the main piston (3) and via the port (5). Pressure from port A is also acting on the ball (6) via the orifice (7), control line (8), check valve (9) and orifice (10). According to setting of spring (11), pressure builds up in front of the ball (6), in port (5) and in spring chamber (12), holding the control piston (13) in the open position. Fluid can freely flow from port B to port A via main spool insert (3), until the pressure in port A exceeds the value set at spring (11) and opens the ball (6). The control piston (13) moves to closing position.

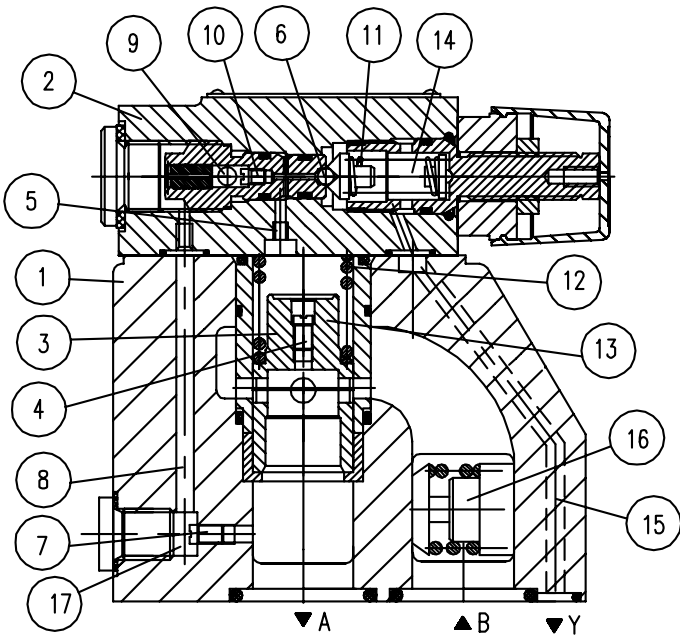
The desired reduced pressure is achieved, when

a balance between the pressure in port A and the pressure set at spring (11) is reached.

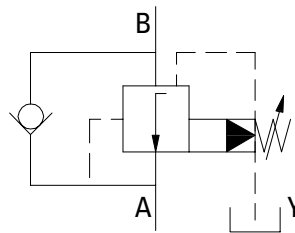
Pilot oil drain from spring chamber (14) to tank takes place externally via control line (15).

Free return flow from port A to B can be achieved by installing an optional check valve (16).

A pressure gauge connection (17) allows the reduced pressure in port A to be monitored

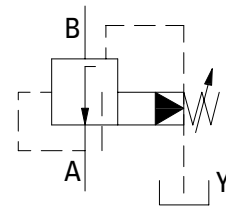


## Functional Symbols



**XCG**

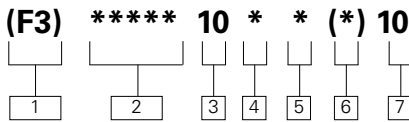
(with check valve)



**XG**

(without check valve)

# Series X(C)G2V-10 Model Code



**1 Seal Options**

**Blank** – Nitrile, for Mineral oil  
Anti-wear hydraulic oil (class  
L-HFC), Water glycol (class  
L-HFC)

**F3** – Fluorocarbon seals,  
for Phosphate Ester (class  
L\_HFD)

**2 Two stage reducing  
valve, Gasket mounted, 350  
bar rated**

**XCG2V** – With reverse flow  
check

**XG2V** – Without reverse flow  
check

**3 Size**

ISO6264-10  
NFPA/ANSI R10  
**10** - Cetop 10

**4 Pressure Range**

**B** – 50 bar  
**C** – 100 bar  
**F** – 200 bar  
**G** – 315 bar

**5 Adjustment**

**W** – Wrench and cover  
**H** – Knob  
**K** – Lockable knob

**6 External port thread**

**F** – Metric  
**B** – BSP

**7 Design Number**

**10**

# Series X(C)G2V-10

## Technical Data

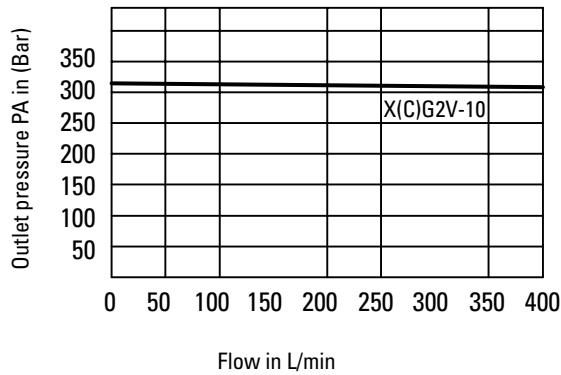
### Hydraulic Technical Data

|   |  |
|---|--|
| <b>Inlet pressure, port B</b>                   | up to 315 bar  |
| <b>Outlet pressure, port A</b>                  | 10 to 315 bar  |
| <b>Drain, port Y</b>                            | up to 315 bar  |
| <b>Maximum Flow</b>                             | 400 L/min.   |
| <b>Fluid</b>                                    | Fluid Mineral oils to (HL, HLP) DIN 51 524;<br>Phosphate ester (HFD-R)       |
| <b>Fluid temperature range (°C)</b>             | -30 up to + 80 (with Nitrile seals)<br>-20 to + 80 (with Fluorocarbon seals) |
| <b>Fluid Viscosity range (mm<sup>2</sup>/s)</b> | 10 to 800  |
| <b>Fluid Cleanliness Level</b>                  | ISO 19/17/14   |

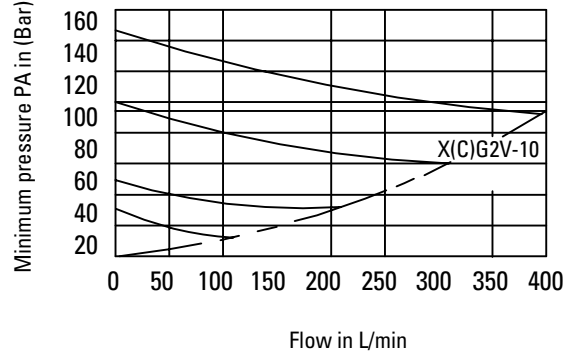
## Flow Curves

(measured at  $\nu = 41$  mm<sup>2</sup>/s and  $t = 50^{\circ}\text{C}$ )

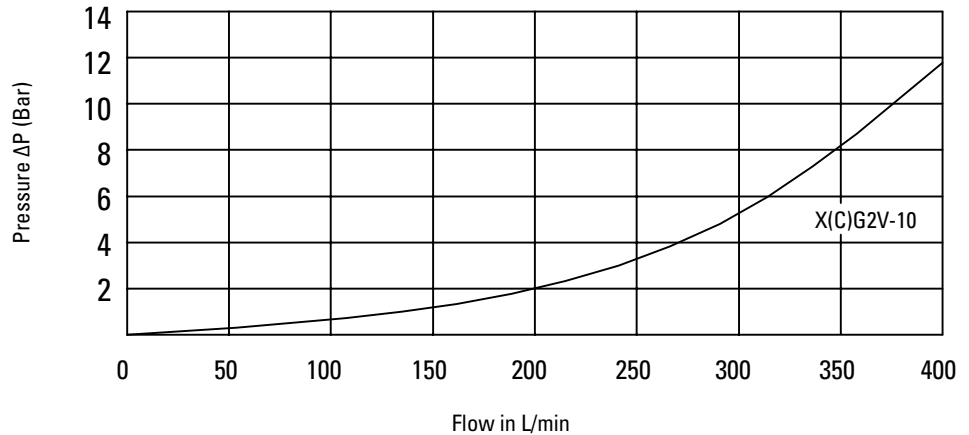
Outlet pressure  $P_A$  related to flow  $Q$  (B-A)



Min. Setting pressure  $P_A$  min related to flow  $Q$  (B-A)  
(Drain port 0 bar)



Minimum  $\Delta P$  related to  $Q$

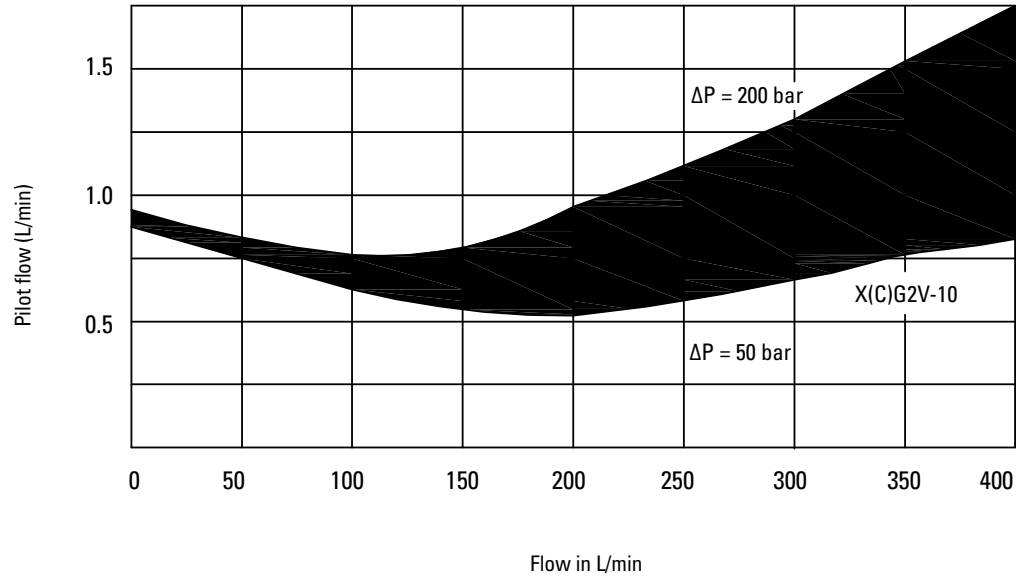


# Series X(C) G2V-10

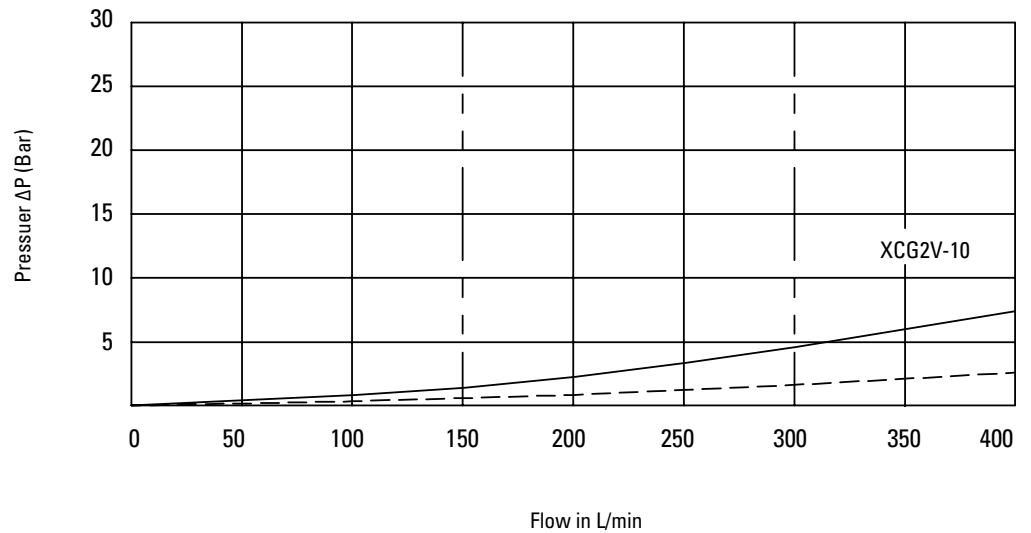
## Flow Curves

(measured at  $v = 41 \text{ mm}^2/\text{s}$  and  $t = 50^\circ\text{C}$ )

Pilot flow related to flow (B-A) and to pressure  $\Delta P$



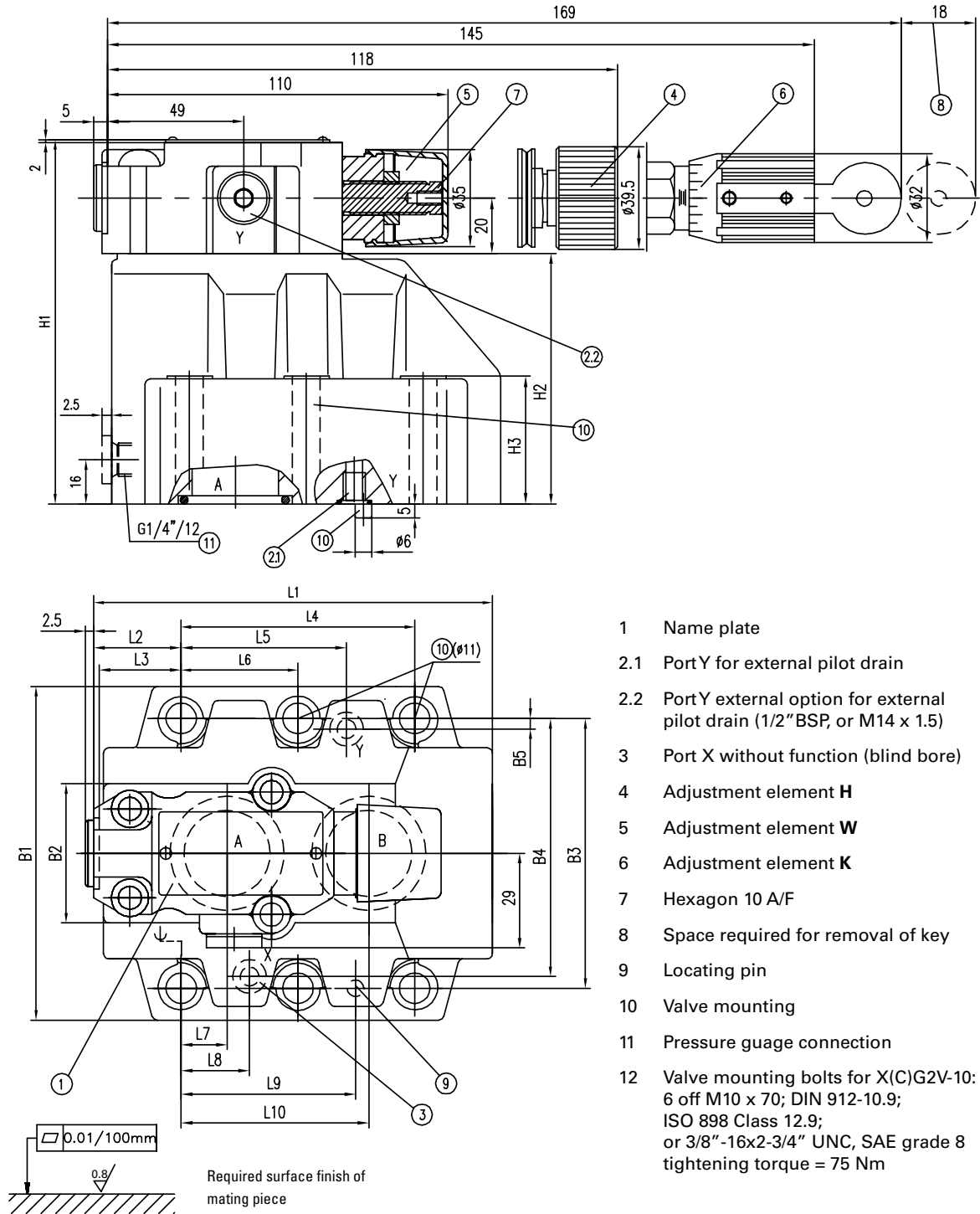
Pressure drop across check valve for reverse flow



—————  $\Delta P$  of reverse flow with main stage closed  
 - - - - -  $\Delta P$  of reverse flow with main stage fully open

# Series X(C)G2V-10

## Dimensions mm (inch)



| Size | L1  | L2 | L3   | L4   | L5   | L6   | L7   | L8   | L9   | L10  | B1  | B2 | B3   | B4   | B5  | H1  | H2  | H3 | O-ring(port A, B), | O-ring(port X, Y) |
|------|-----|----|------|------|------|------|------|------|------|------|-----|----|------|------|-----|-----|-----|----|--------------------|-------------------|
| 10   | 145 | 33 | 29.8 | 84.2 | 59.5 | 42.1 | 16.7 | 24.6 | 62.7 | 67.5 | 120 | 76 | 96.8 | 92.8 | 3.8 | 130 | 110 | 46 | 34.52x3.53         | 9.25x1.78         |

# Application Notes

1. The fluid must be filtered. The required fluid cleanliness level is ISO 19/17/14.
2. Surface finish of mating piece is required to 0.01/100mm.
3. Interface Seal Kit # for X(C)G2V-10  
02-412610, Nitrile  
02-412609, Fluorocarbon
4. Bolt kit for X(C)G2V-10  
(6) M10x70 mm  
(6) 3/8"-16x2-3/4" UNC,  
MA=430Nm (317 lb-ft)
5. Mounting bolts must be to DIN 912-10.9 class, or Class 12.9 (ISO 898), or SAE Grade 8.

## Released Part Numbers

| <b>Assembly Number</b> | <b>Model Code</b>      |
|------------------------|------------------------|
| <b>02-412641</b>       | <b>XCG2V-10CW-B-10</b> |
| 02-412642              | F3-XCG2V-10CW-B-10     |
| <b>02-412643</b>       | <b>XCG2V-10FW-B-10</b> |
| 02-412644              | XG2V-10FW-B-10         |
| 02-412645              | F3-XCG2V-10FW-B-10     |
| 02-412646              | XCG2V-10GW-B-10        |
| 02-412647              | XCG2V-10BW-B-10        |
| 02-412648              | F3-XCG2V-10BW-B-10     |

**Bold items have better lead-time**