

**Vickers®**  
Pressure Relief Valves

CG2V-10, CG5V-10  
350 Bar  
Subplate Mount



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# General Information

## Features

- Subplate mounting
- Porting pattern to DIN 24 340, form E, ISO 6264, CETOP-RP 121H and NFPA/ANSI
- Three adjustment elements:
  - Rotary knob
  - Hex. head screw with protective cap
  - Lockable rotary knob with scale
- Solenoid operated unloading

## General

CG2V and CG5V pressure valves are pilot operated pressure relief valves. They are used for the

limitation (CG2V) or limitation and solenoid actuated unloading (CG5V) of the control pressure.

The pressure relief valves (CG2V) consist mainly of the main valve (1) with main spool assembly (3) and pilot operated valve (2) with pressure adjustment element.

### Pressure relief valve type CG2V

The pressure present in port P acts on the main spool (3). At the same time pressure is applied via the control lines (6) and (7), which are fitted with orifices (4) and (5), on the spring loaded side of the main spool (3) and at the ball (8) in the

pilot control valve (2). If the pressure in port P exceeds the valve set at the spring (9), the ball (8) opens against the spring (9).

The signal for this comes internally via the control lines (10) and (6) from port P. The pressure fluid on the spring loaded side of the main spool (3) now flows via the control line (7), orifice bore (11) and ball (8) into the spring chamber (12). In type CG2V it flows internally via the control line (13) to tank, or in type CG2V...Y externally via the control line (14). Due to the orifices (4) and (5) a pressure drop occurs at the main spool (3), the connection from port P to port T is open.

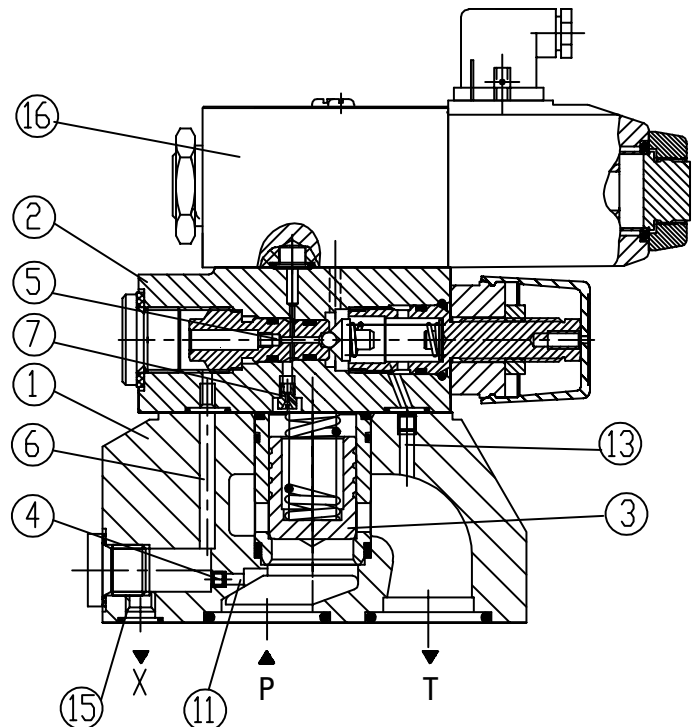
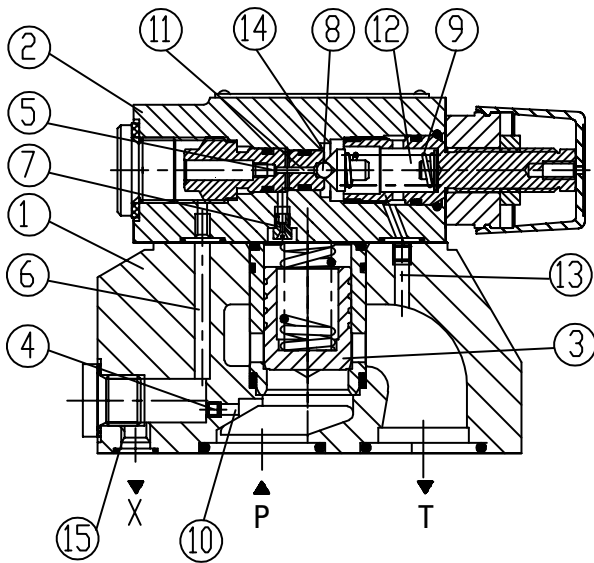
Now the pressure fluid flows from port P to port T whilst maintaining the set operating pressure.

The pressure relief valve may be unloaded or switched over to a different pressure (second pressure stage) via port X (15).

### Pressure relief valve type CG5V

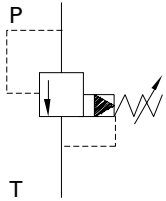
The function of this valve is basically same as the valve type CG2V.

The unloading at the main spool (3), however, is achieved by the built-in directional valve (16).

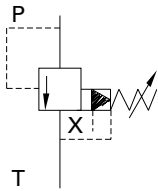


# Functional Symbols

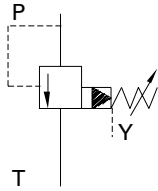
**CG2V**



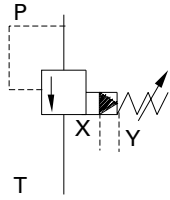
**CG2V... X**



**CG2V... Y**

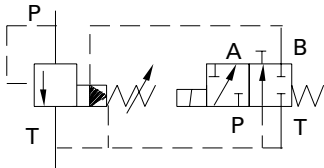


**CG2V... XY**



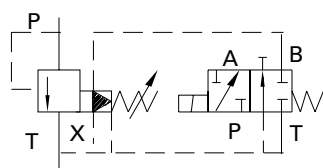
**CG5V**

Normally closed



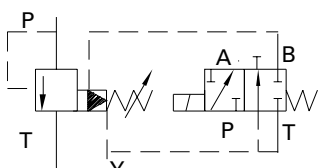
**CG5V**

Normally closed



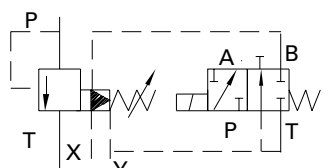
**CG5V**

Normally closed

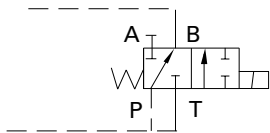


**CG5V**

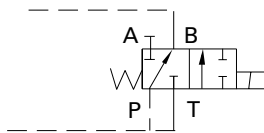
Normally closed



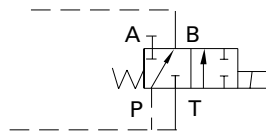
Normally open



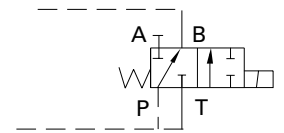
Normally open



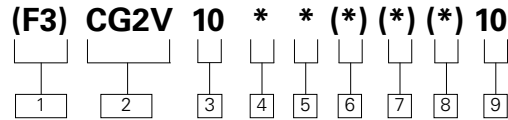
Normally open



Normally open



# Series CG2V Model Code



## 1 O-Ring Material

**Blank** – Nitrile  
**F3** – Fluorocarbon

## 2 Subplate Mounted Relief Valve

## 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  
**H** – 350 bar

## 5 Adjustment

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

## 6 Port Thread

**F** – Metric  
**B** – BSP

## 7 Cracking Pressure

**Blank** – Standard  
**U** – Minimum (not available with 350 bar range)

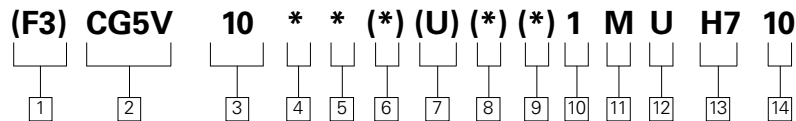
## 8 Pilot & Drain

**Blank** – Internal Pilot & Drain  
**X** – Internal Drain, External Pilot  
**Y** – Internal Pilot, External Drain  
**XY** – External Pilot & Drain

## 9 Design Number

**10**

# Series CG5V Model Code



## 1 O-Ring Material

**Blank** – Nitrile  
**F3** – Fluorocarbon

## 2 Subplate Mounted Relief Valve with unloading function

## 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  
**H** – 350 bar

## 5 Adjustment

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

## 6 External Connection

**F** – Metric  
**B** – BSP

## 7 Minimum Cracking Pressure

**Blank** – Standard  
**U** – Minimum Cracking Pressure (not available with 350 bar range)

## 8 Pilot & Drain

**Blank** – Internal Pilot & Drain  
**X** – Internal Drain, External Pilot  
**Y** – Internal Pilot, External Drain  
**XY** – External Pilot & Drain

## 9 Pilot Override

**Blank** – Manual Override  
**Z** – No Manual Override  
**H** – Weatherproof

## 10 Valve State

**1** – Normally Closed  
**2** – Normally Open

## 11 Flag

**M**

## 12 Connector

**U** – No Connector  
**U1** – Connector included  
**U6** – Connector with lights  
**FTWL** – Box with lights and 1/2" NPT conduit thread

## 13 Coil Voltage

**H7** – 24 VDC  
**G7** – 12 VDC  
**B6** – 110V50Hz/120V60Hz  
**D6** – 220V50Hz/240V60Hz

## 14 Design Number

**10**

# Series CG2V

## Technical Data

### Hydraulic Technical Data

<b>Maximum operating pressure at ports P, T, X (Bar)</b>	up to 350 (port P, X); 315 (port T)	
<b>Maximum back pressure at port Y</b>	CG2V (Bar) CG5V (Bar)	up to 315 up to 210
<b>Pressure Range</b>	Minimum (Bar) Maximum (Bar)	flow dependent (see flow curves ) 50, 100, 200, 315, 350
<b>Weight</b>	CG2V CG5V	4.4 Kg 5.6 Kg
<b>Maximum Flow</b>	650 Lpm	
<b>Fluid</b>	Mineral oil (for Nitrile seal) or phosphate ester (for Fluorocarbon seal)	
<b>Fluid temperature range (°C)</b>	-30 to + 80 (Temperature limit for DG4V3 is 70°C)	
<b>Fluid Viscosity range (mm²/s)</b>	10 to 800	
<b>Fluid Cleanliness Level</b>	ISO 19/17/14	

### Flow Curves

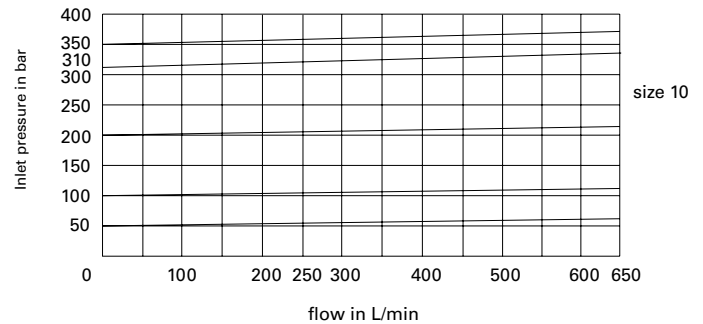
(measured at  $v = 41$  mm²/s and  $t = 50^{\circ}\text{C}$ )

The characteristic curves were measured with pilot externally drained.

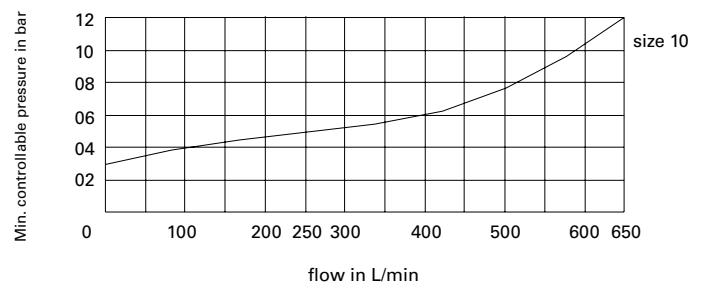
For internal pilot oil drain the inlet pressure increase by the outlet pressure present at port T.

\* The characteristic curves are valid for outlet pressure  $T = 0$  over the entire flow range!

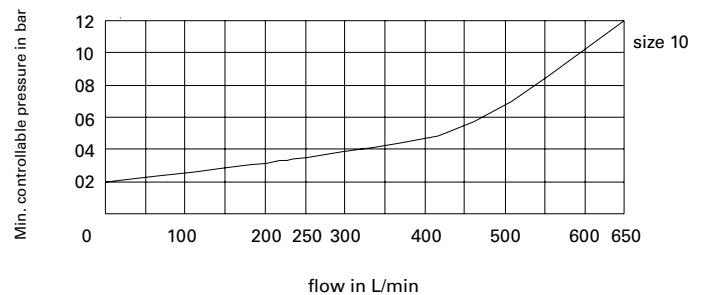
**Inlet pressure vs. flow**



**Minimum controllable pressure and bypass pressure in relation to the flow. \***

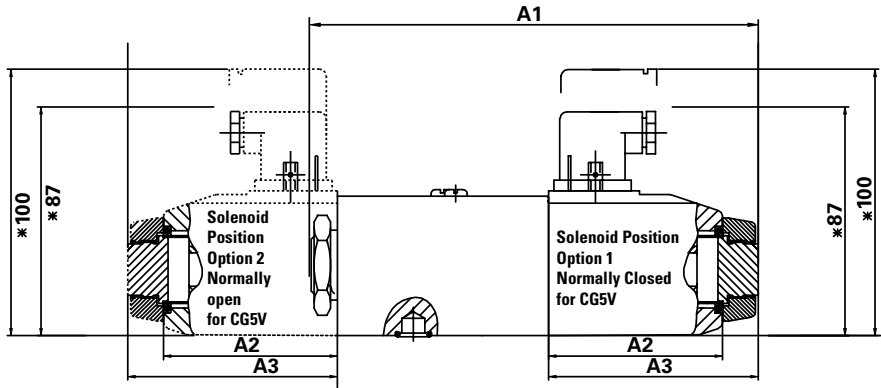


**Minimum controllable pressure and bypass pressure in relation to the flow Version U \***



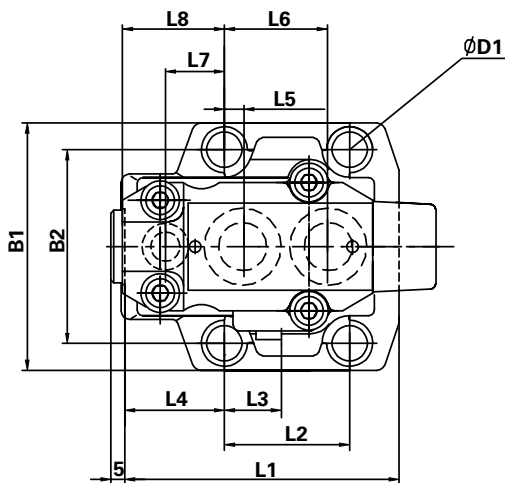
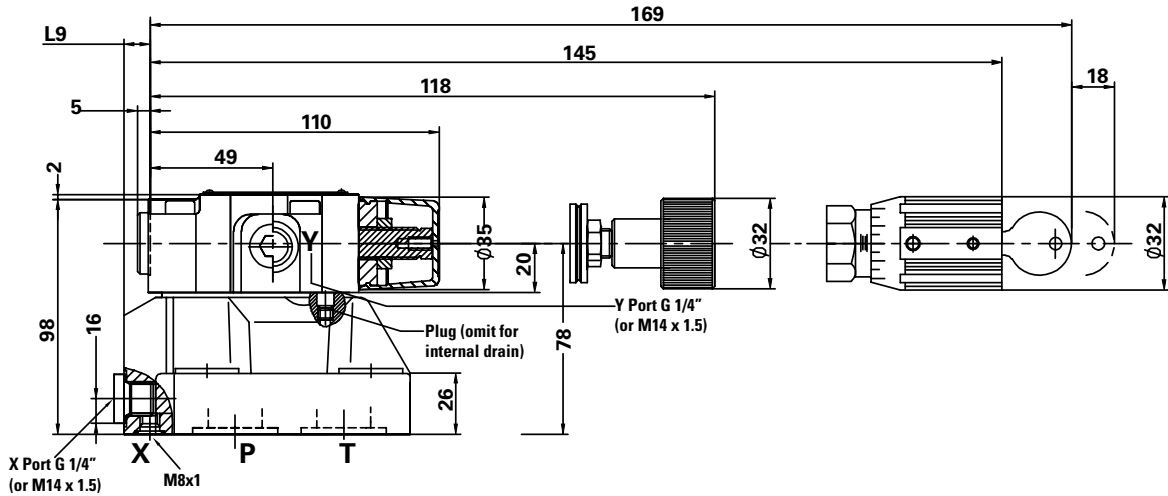
# CG2V/CG5V

Dimensions mm (inch)

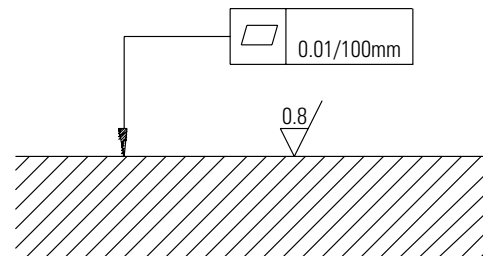


Coil	AC	DC
A1	161 (6.34)	151 (5.95)
A2	61 (2.4)	51 (2.0)
A3	73 (2.87)	63 (2.48)

\* This dimension can vary depend on source of plug ("U" option); See DG4V-3 Catalog for "FTWL" option.



Required surface finish of mating face



Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	B1	B2	ØD1	Ports P,T	Port X
CG2V/CG5V-10	1475 (5.81)	88.9 (3.5)	44.5 (1.75)	41 (1.61)	12.7 (0.5)	76.2 (3.0)	31.8 (1.27)	20 (0.79)	21 (0.83)	115 (4.53)	82.6 (3.25)	20 (0.79)	34.52 x 3.53 (1.36 x 0.14)	9.25 x 1.78 (0.36 x 0.07)

# 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 CG2V/5V-10  
02-412610, Nitrile  
02-412609, Fluorocarbon
4. Bolt kit for CG2V/5V-10  
(4) M18x50 (1.97 inch)  
(4) 3/4" -10x2" UNC,  
MA=430Nm (317 lb-ft)
5. Mounting bolts must be to DIN 912-10.9 class, or Class 12.9 (ISO 898)

## Released Part Numbers

### CG2V-10 Released Part Numbers

Assembly Number	Model Code
02-412579	CG2V-10-B-W-B-U-10
<b>02-412580</b>	<b>CG2V-10-F-W-B-10</b>
02-412581	CG2V-10-G-W-B-U-10
02-412582	CG2V-10-G-W-B-10
<b>02-412583</b>	<b>CG2V-10-H-W-B-10</b>
02-412584	CG2V-10-F-W-B-Y-10

**Bold items have better lead-time**

### CG5V-10 Released Part Numbers

Assembly Number	Model Code
02-412649	CG5V-10-B-W-B-U-2-M-U-H7-10
02-412650	CG5V-10-G-W-B-1-M-U-H7-10
02-412651	CG5V-10-G-W-B-2-M-U-H7-10
<b>02-412652</b>	<b>CG5V-10-H-W-B-2-M-U-H7-10</b>
02-412653	CG5V-10-F-W-B-1-M-U-H7-10
<b>02-412654</b>	<b>CG5V-10-F-W-B-2-M-U-H7-10</b>

**Bold items have better lead-time**



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