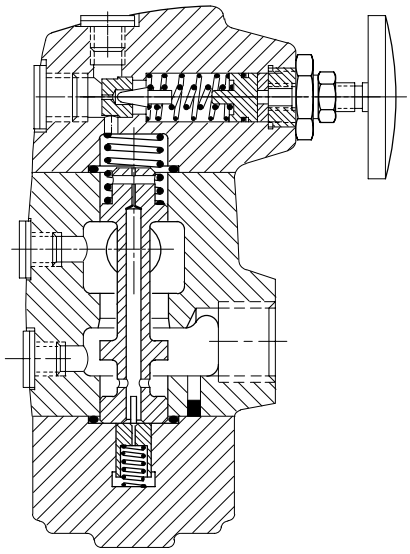
Pressure Reducing Valves for Line Mounting

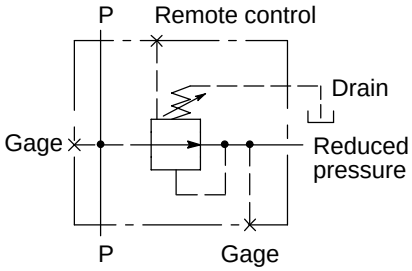
XT-03, 20 Series
X(C)T-06/10, 20 Series

Typical Section

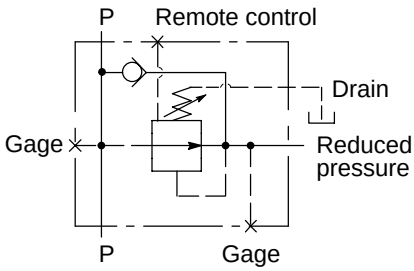


Functional Symbols

XT



XCT



Model Code

(F3-) X (C) T- ** - * * - 2* - UB

1 2 3 4 5 6 7

Basic Characteristics

Maximum supply pressure . . . . 210 bar (3000 psi)
Maximum flow . . . . . 284 l/min (75 USgpm)

General Description

Pressure reducing valves are used to reduce system pressure to a constant reduced outlet pressure regardless of fluctuations in the main system above the selected pressure.

The XCT models have an integral check valve that allows free flow from the outlet connection to inlet connection.

1 Special seals for phosphate ester fluids
Omit if not required

2 Reverse free flow check valve, 06 and 10 sizes only
Omit if not required

3 Nominal size
03 = $^3/_8$″
06 = $^3/_4$″
10 = $1^1/_4$″

4 Maximum adjustable reduced pressure
1 = 70 bar (1000 psi)
2 = 140 bar (2000 psi)
3 = 200 bar (2850 psi)

5 Flow rate/min. reduced pressure combinations
For use of, and performance data for symbols B or F at this location, see table “Max. Flow Rate and Min. Reduced Pressures” on next page.

6 Design number, 20 series
Subject to change. Installation dimensions unaltered for design numbers 20 to 29 inclusive.

7 Port threads
UB = G (BSPF) thread to ISO 228/1

Operating Data

Maximum Pressure
Inlet ports . . . . . 210 bar (3000 psi)
Drain ports . . . . . 1,7 bar (25 psi)
Note: Drain ports must be piped direct to reservoir. Any back pressure at this port will increase the effective pressure setting of the valve by the same amount.

Max. Flow Rate and Min. Reduced Pressures
Typical with petroleum oil at 21 cSt (102 SUS) and at 50°C (122°F).

Model type	Reduced pressure range				Max. flow rate	
	Maximum bar	(psi)	Minimum bar	(psi)	L/min	(USgpm)
XT-03-1B	70	(1000)	5,25	(76)	26	(6.7)
-1F			10,4	(150)	53	(14)
-2B	140	(2000)	5,25	(76)	26	(6.7)
-2F			10,4	(150)	53	(14)
-3B▲	200	(2850)	10,4	(150)	53	(14)
-3F						
X(C)T-06-1B	70	(1000)	5,6	(81)	57	(15)
-1F			13,8	(200)	114	(30)
-2B	140	(2000)	5,6	(81)	57	(15)
-2F			13,8	(200)	114	(30)
-3B	200	(2850)	5,6	(81)	57	(15)
-3F			13,8	(200)	114	(30)
X(C)T-10-1B	70	(1000)	6,9	(100)	95	(25)
-1B■			11,4	(165)	190	(50)
-1F			15,5	(225)	284	(75)
-2B	140	(2000)	6,9	(100)	95	(25)
-2B■			11,4	(165)	190	(50)
-2F			15,5	(225)	284	(75)
-3B	200	(2850)	6,9	(100)	95	(25)
-3B■			11,4	(165)	190	(50)
-3F			15,5	(225)	284	(75)

▲ *XT-03-**3B** combination not recommended. If max. inlet pressure is required with min. rated reduced pressure, consult your Vickers representative.*
■ *Alternative data giving max. flow for -*B- combinations.*

Inlet Pressure Setting
For proper functioning the inlet pressure must be maintained at least 10 bar (150 psi) above the setting of the reduced outlet pressure.

Remote Pressure Control
Reduced pressure may be adjusted remotely by connecting the remote control connection to the inlet port of a C-175 relief valve (catalog 411) or a CGR-02 relief valve (catalog 409).

Pressure setting of the X(C)T valve must be higher than that of the remote control valve.

Hydraulic Fluids
X(C)T valves are suitable for use with hydraulic oils, oil-in-water emulsions and water glycols.

When fitted with special seals (specify "F3" in model code [1]) these valves are suitable for use with phosphate esters (not alkyl-based).

The extreme operating range is from 500 to 13 cSt (2270 to 70 SUS) but the recommended running range is 54 to 13 cSt (245 to 70 SUS).

Temperature Limits
Ambient:
Minimum . . . . . –20°C (–4°F)
Maximum . . . . . +70°C (+158°F)

Fluid Temperature

	Petroleum oil	Water-containing
Min.	–20°C (–4°F)	+10°C (+50°F)
Max.*	+80°C (+176°F)	+54°C (+130°F)

* *To obtain optimum service life from both fluid and hydraulic system, 65°C (150°F) is the recommended maximum fluid temperature, except for water-containing fluids.*

For synthetic fluids consult the fluid manufacturer or Vickers where limits are outside those for petroleum oil.

Contamination Control Requirements
Recommendations on contamination control methods and the selection of products to control fluid condition are included in Vickers publication 9132 or 561, "Vickers Guide to Systemic Contamination Control". The book also includes information on the Vickers concept of "ProActive Maintenance". The following recommendations are based on ISO cleanliness levels at 2 µm, 5 µm and 15 µm. For products in this catalog the recommended levels are:

Up to 210 bar (3000 psi) 19/**17**/**14**

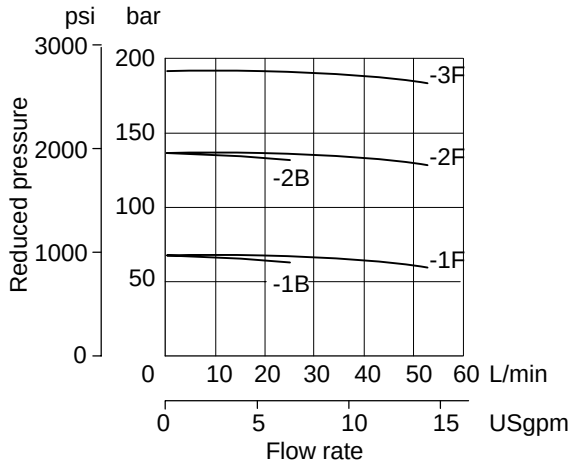
Mounting Attitude
Unrestricted.

Performance Data

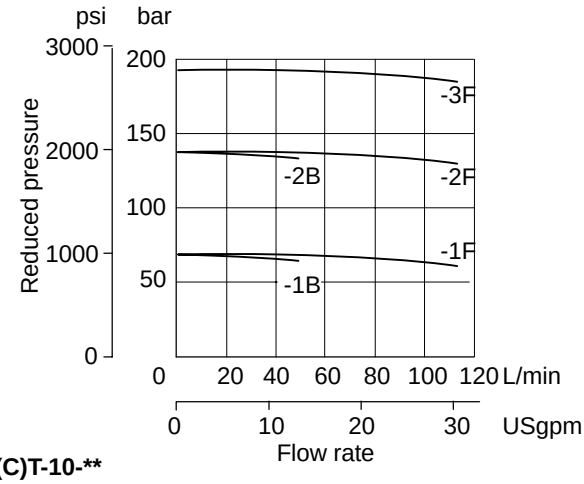
Typical with petroleum oil at 21 cSt (102 SUS) and at 50°C (122°F).

Reduced Pressure Override

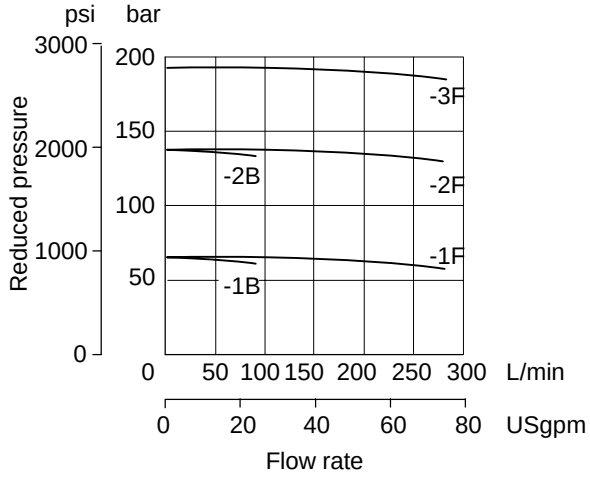
XT-03-**



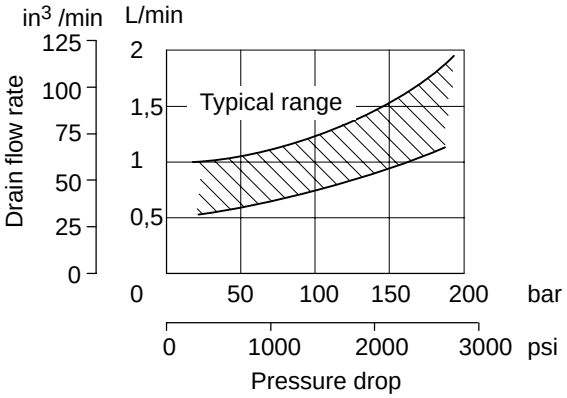
X(C)T-06-**



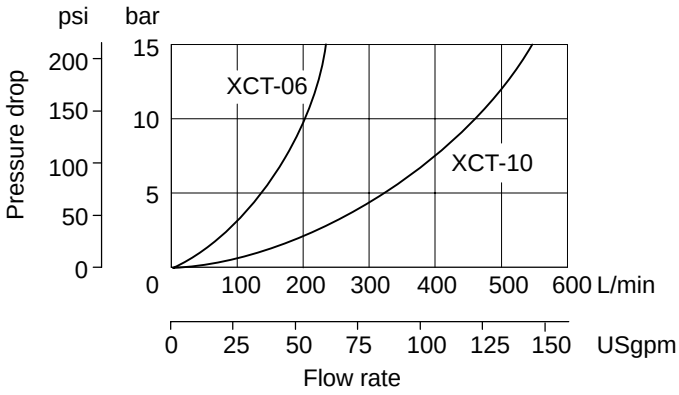
X(C)T-10-**



Pilot Control (Drain) Flow

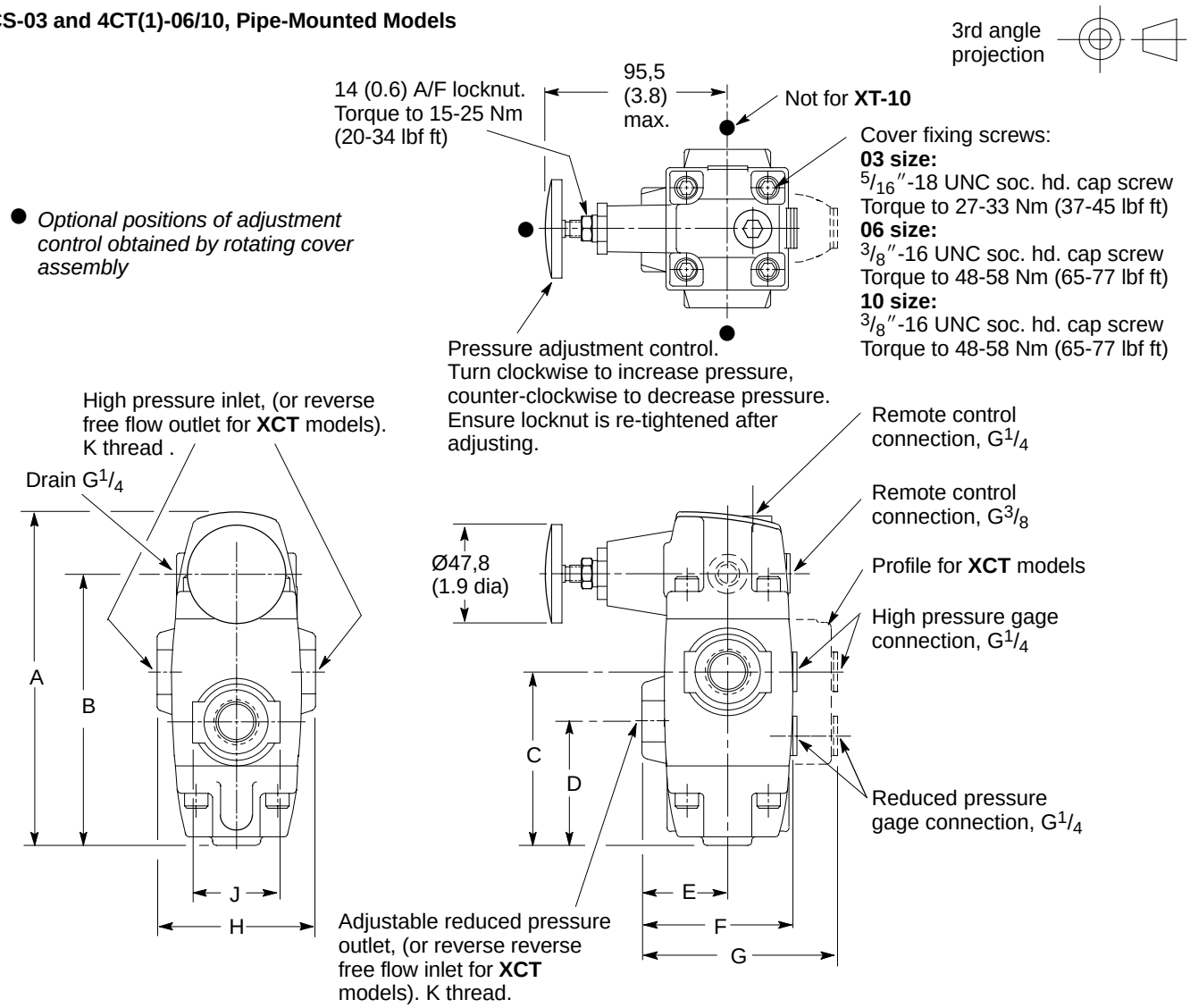


Pressure Drop



Installation Dimensions in mm (inches)

4CS-03 and 4CT(1)-06/10, Pipe-Mounted Models



Model	A	B	C	D	E	F	G	H	J	K
XT-03	142,2 (5.6)	116,8 (4.6)	69,1 (2.7)	46 (1.8)	39,6 (1.6)	69,4 (2.7)	– –	69,9 (0.27)	35,1 (1.4)	G3/8″
X(C)T-06	176,5 (7)	151,1 (5.9)	96,8 (3.8)	69,9 (2.75)	39,6 (1.6)	87,2 (3.4)	106,4 (4.2)	92,2 (3.6)	50,8 (2)	G3/4″
X(C)T-10	211,2 (8.3)	182,6 (7.2)	109,7 (4.3)	81 (3.2)	68,3 (2.7)	117,3 (4.6)	147,6 (5.8)	117,3 (4.6)	86,4 (3.4)	G11/4″

Mass

XT-03 . . . . . 3,2 kg (7 lb)
XT-06 . . . . . 5,6 kg (12.3 lb)
XT-10 . . . . . 12,1 kg (26.6 lb)
XCT-06 . . . . . 5,9 kg (13 lb)
XCT-10 . . . . . 13,0 kg (28.6 lb)

Ordering Procedure

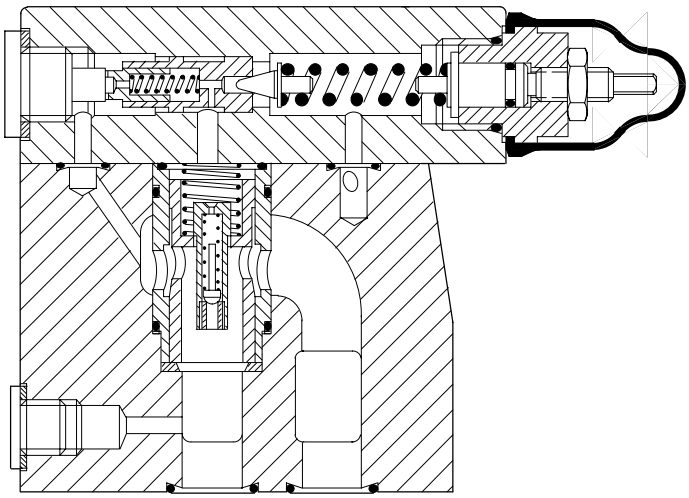
Specify full Model Code.

Pressure Reducing Valves

X(C)G2V-6/8, 10 Series

Typical Section

X(C)G2V-***-1* valve



Basic Characteristics

Max. inlet pressure . . . . . 350 bar (5000 psi)
Max. reduced pressure . . . . . 330 bar (4780 psi)
Maximum flow . . 300 L/min (80 USgpm)
Mounting face to ISO 5781
(B port high pressure inlet):
X(C)G2V-6 . . . . . AG-06-2-A
X(C)G2V-8 . . . . . AH-08-2-A

General Description

Where sections of an hydraulic system are required to operate at a pressure below that of the general system, it is frequently more convenient to use a pressure reducing valve than to add further pump sections.

These two-stage pressure reducing valves allow full flow from inlet to outlet port until the reduced pressure setting is reached, whereupon the outlet flow is closed off. Reduced pressure setting is manually adjustable at the pilot stage. Five ranges of reduced pressure adjustment are available.

High valve response ensures that the reduced outlet pressure is unaffected by inlet pressure peaks. Excessive build-up of outlet port pressure (e.g. caused by flow back from an actuator) is prevented by the small check in the main-stage which connects the outlet port to the pilot stage.

For applications where full reverse flow is required an optional integral check valve is available (model types XCG).

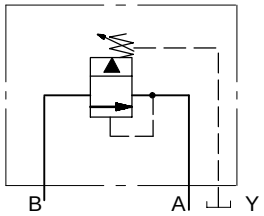
Models with electrohydraulic proportional control, types KX(C)GV, are described in catalog 2322.

Features and Benefits

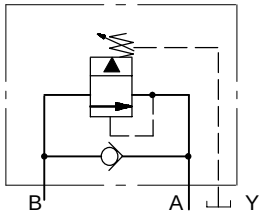
- Close matching to machine requirements with choice of five adjustment ranges of reduced pressure.
- Excellent repeatability and stable performance results from cartridge design of main-stage parts.
- Minimal pump flow losses when using several valves in parallel, results from design of internal pilot system.
- Free reverse flow from integral check valve option.
- International mounting surfaces.
- Low installed cost and space requirement from high power/size ratios (more than double that of many conventional designs).

Functional Symbols

XG2V model (no reverse flow check)



XCG2V model (integral check valve for free flow A to B)



Model Code

For valves with manual adjustment only

(F3-)X(C)G2V-* * * -1*

1 2 3 4 5 6

1 Fluid compatibility

Blank = Anti-wear hydraulic oil (class L-HM), invert emulsion (class L-HFB) or water glycol (class L-HFC)

F3 = As above or phosphate ester (class L-HFD)

2 Integral check valve (free reverse flow)

C = Integral check valve

Omit if not required

3 Mounting surface, ISO 5781

With B port, high pressure inlet and A port, reduced pressure outlet

6 = Size 06

8 = Size 08

4 Reduced pressure adjustment control range

A = 2 to 35 bar (30 to 500 psi)

B = 5 to 70 bar (44 to 1000 psi)

C = 5 to 140 bar (44 to 2000 psi)

F = 5 to 210 bar (44 to 3000 psi)

G = 5 to 330 bar (44 to 4780 psi)

5 Type of manual adjustment

K = Micrometer with keylock

M = Micrometer without keylock

W = Screw/locknut

6 Design number, 1* series

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

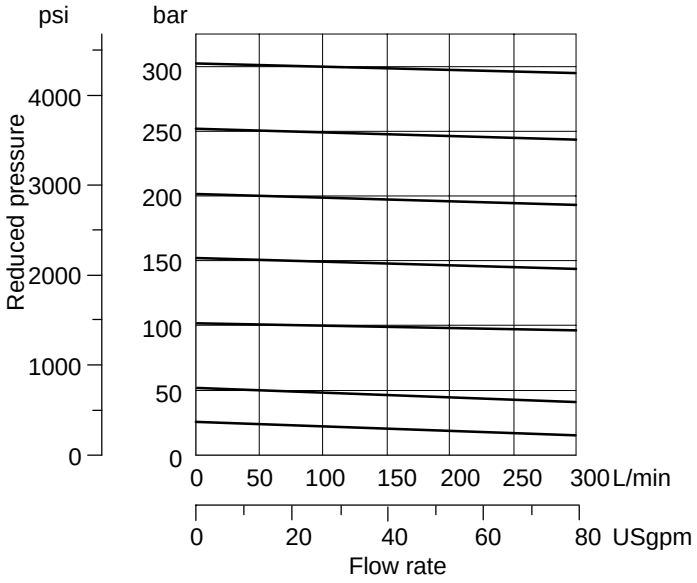
Operating Data

Data is typical with oil at 22 cSt (106 SUS) and at 50°C (122°F).

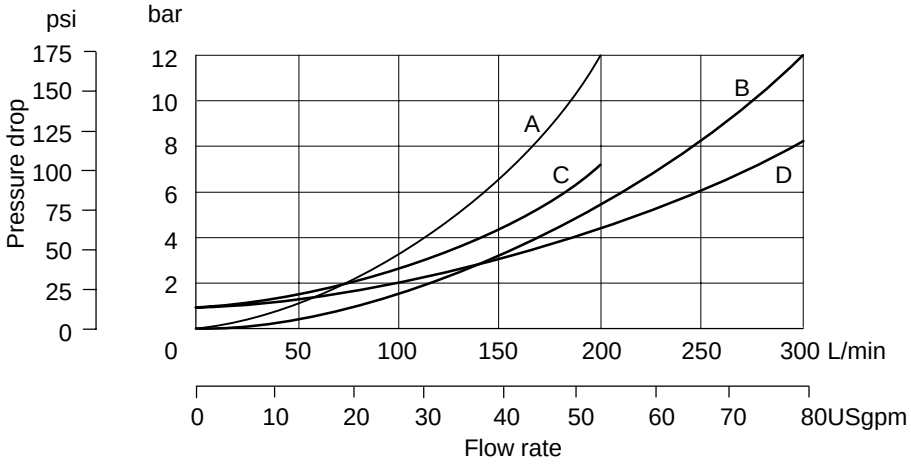
Maximum pressures: Port B (pressure inlet) Port A (reduced pressure outlet) Port Y■	 350 bar (5000 psi) See model code position 4 2 bar (30 psi)
Rated flow rates at Δp = 12 bar (175 psi): X(C)G2V-6 X(C)G2V-8	 200 L/min (53 USgpm) 300 L/min (80 USgpm)
Pressure adjustment ranges	See model code position 4
Minimum pressure differential (P_B - P_A) for effective reduced pressure control, all models	20 bar (300 psi) approx.
Pilot control drain flow, all models at P_B 100 bar (1450 psi) at P_B 300 bar (4350 psi)	 1,0 L/min (0.26 USgpm) 1,3 L/min (0.34 USgpm)
Hydraulic fluids and fluid temperatures	See page 3
Temperature limits	See page 3
Mass	See page 6
Spare parts/service information	40630

■ *Back pressure at this port is additive to the reduced pressure setting of the valve.*

Pressure Underride
X(C)G2V-8 examples



Pressure Drop



From port B to A at pressures below reduced pressure setting:
X(C)G2V-6 . . . . . Curve A
X(C)G2V-8 . . . . . Curve B

From port A to B through check valve (main stage assumed closed), XCG2V models only:
XCG2V-6 . . . . . Curve C
XCG2V-8 . . . . . Curve D

Hydraulic Fluids
All valves can be used with:
Anti-wear hydraulic oils (class L-HM)
Invert emulsions (class L-HFB)
Water glycol (class L-HFC)
Phosphate ester (class L-HFD), adding "F3-" prefix at model code [1]

The extreme viscosity range is from 500 to 13 cSt (2270 to 70 SUS) but the recommended range is 54 to 13 cSt (245 to 70 SUS).

For further information about fluids see catalog 694.

Temperature Limits
Ambient:
Min. . . . . –20°C (–4°F)
Max. . . . . 70°C (158°F)

Fluid temperature:
Min. . . . . –20°C (–4°F)
Max.* . . . . . 70°C (158°F)

* *To obtain optimum service life from both fluid and hydraulic system, 65°C (150°F) normally is the maximum temperature except for water-containing fluids.*

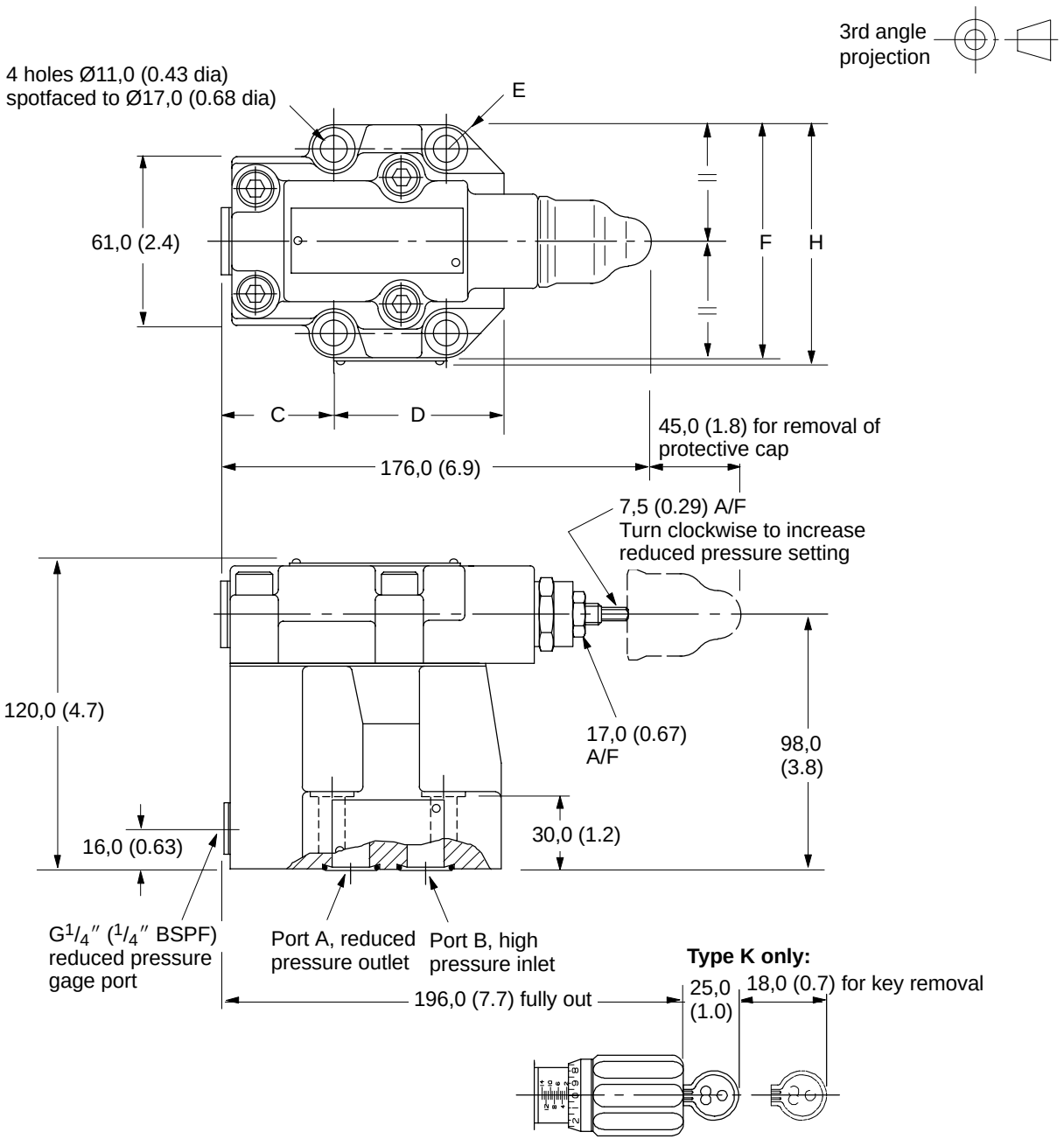
For synthetic fluids consult fluid manufacturer or Vickers representative where limits are outside those of petroleum oil.

Whatever the actual temperature range, ensure that viscosities stay within the limits specified in the "Hydraulic Fluids" section.

Contamination Control Requirements
Recommendations on contamination control methods and the selection of products to control fluid condition are included in Vickers publication 561, "Vickers Guide to Systemic Contamination Control". The book also includes information on the Vickers concept of "ProActive Maintenance". The following recommendations are based on ISO cleanliness levels at 2 μm, 5 μm and 15 μm. For products in this catalog the recommended levels are:

Up to 210 bar (3050 psi) 19/**17**/**14**
Above 210 bar (3050 psi) 19/**17**/**14**

Installation Dimensions in mm (inches)



Model	C	D	E	F	H
X(C)G2V-6	42,0 (1.7)	66,0 (2.6)	10,0 (0.4)	89,0 (3.5)	92,0 (3.65)
X(C)G2V-8	40,0 (1.6)	77,0 (3.1)	11,0 (0.43)	104,0 (4.1)	107,0 (4.25)

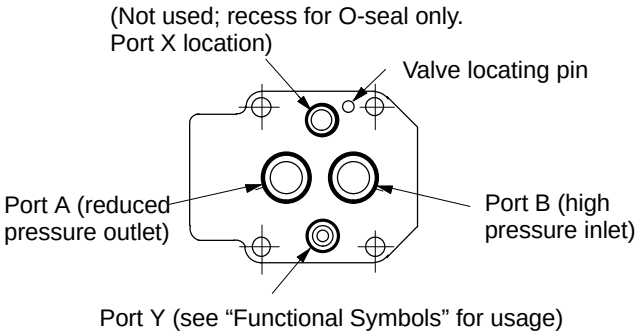
Micrometer Adjustment Options: "K" or "M" in Model Code 5

"K" Feature
To adjust pressure setting, insert key and turn clockwise. Turn micrometer knob clockwise to increase pressure setting; counter-clockwise to decrease setting.

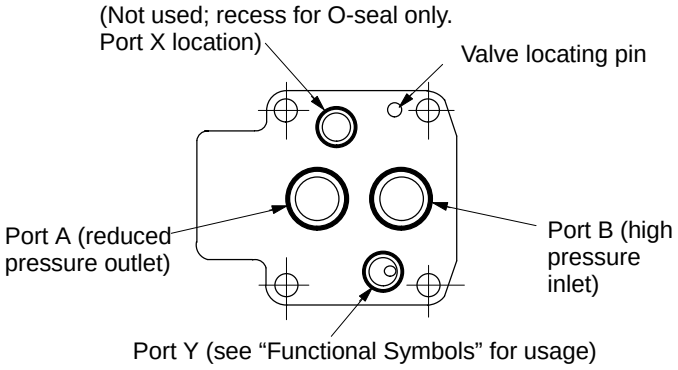
When the key is removed, the knob can spin freely without affecting the pressure setting.

Views on Bottom Face of Valves (See also “Mounting Surfaces”, page 6. All O-seals supplied).

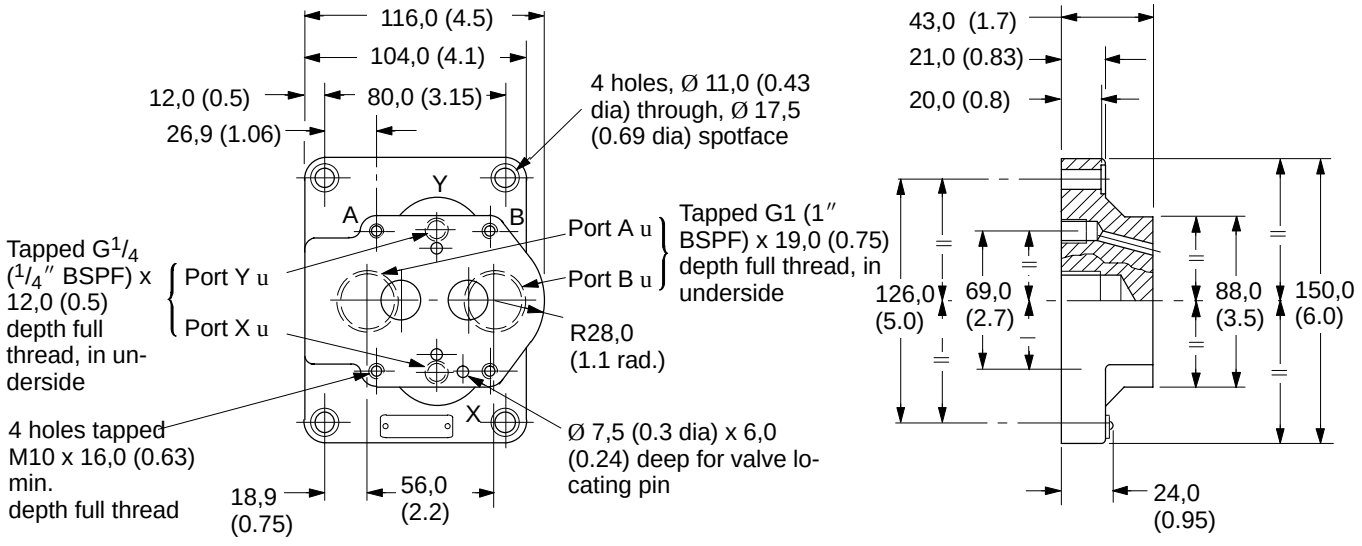
X(C)G2V-6



X(C)G2V-8



XCGVM-6-10R Subplate

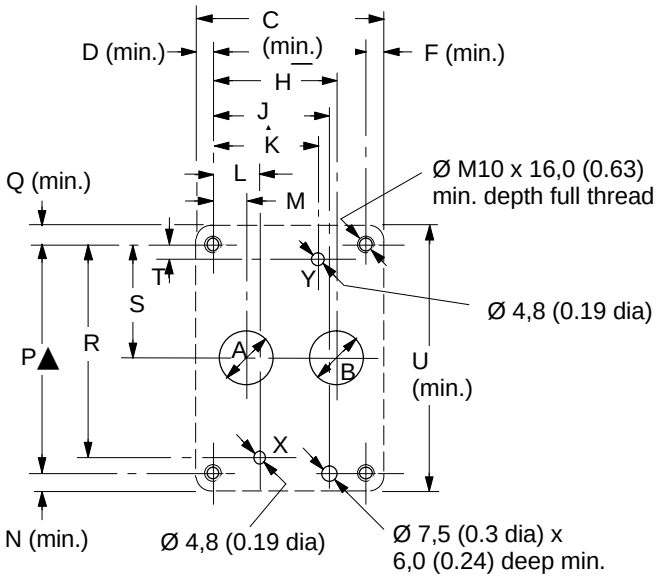


▲ *See “Mounting Surfaces” section on next page for port usage.*

Mounting Surfaces, Based on ISO 5781 Codes:
AG-06-2-A
AH-08-2-A

When a subplate is not used a raised machined pad must be provided for mounting. The pad must be flat within 0,01mm/100 mm (0.001″/10″) and smooth within 0,8 µm (32 µin). Dimensional tolerances are ±0,2 mm (0.008″) except where indicated.

Port functions
A = Reduced pressure outlet (also free reverse flow inlet for XCG2V valves)
B = High pressure inlet (also free reverse flow outlet for XCG2V valves)
X = Not used for X(C)G2V valves; can be omitted or plugged
Y = Drain port



Size	A dia.	B dia.	C	D	E	F	H	J	K
06	14,7 (0.58)	14,7 (0.58)	61,0 (2.4)	9,0 (0.4)	42,9 (1.69)	9,0 (0.4)	35,7 (1.4)	31,8 (1.25)	21,4 (0.84)
08	23,4 (0.92)	23,4 (0.92)	78,0 (3.1)	8,8 (0.35)	60,3 (2.37)	8,8 (0.35)	49,2 (1.94)	44,5 (1.75)	39,7 (1.56)

Size	L	M	N	P	Q	R	S	T	U
06	21,4 (0.84)	7,1 (0.28)	10,0 (0.4)	66,7 (2.62)	10,0 (0.4)	58,7 (2.3)	33,3 (1.3)	7,9 (0.31)	87,0 (3.4)
08	20,6 (0.81)	11,1 (0.44)	10,8 (0.43)	79,4 (3.125)	10,8 (0.43)	73,0 (2.87)	39,7 (1.56)	6,4 (0.25)	101,0 (4.0)

▲ *Tolerance on bolt and pin locations ±0,1 mm (0.004″).*

Installation Data

Mounting attitude unrestricted

Subplates

For X(C)G2V-6 valves see type XCGVM-6-10R, on page 5.
For X(C)G2V-8 valves consult your Vickers representative.

Mounting Bolts/Torques
For all models, bolt kit BKXG2V-6.
Bolts should be torqued to 59-73 Nm (44-53 lbf ft), with threads lubricated.

Mass

X(C)G2V-6 valves . . . . . 4,8 kg (10.6 lb)
X(C)G2V-8 valves . . . . . 5,6 kg (12.4 lb)

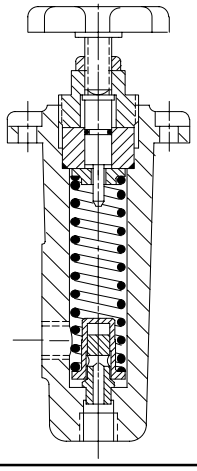
Ordering Procedure

All valves, subplates, bolt kits should be ordered by full model code designation.

Pressure Relief Valves

C175, 11 Design

Typical Section



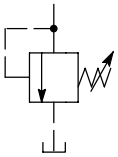
Basic Characteristics

Operating pressures . . . Up to 210 bar (3000 psi)
Flow rating . . . . . 12 L/min (3.2 USgpm)
Mounting . . . . . Panel

General Description

This single-stage valve is designed for applications requiring an adjustable pressure relief valve or pressure regulating valve of small capacity. It may also be used as a remote control valve for pilot operated pressure control valves (e.g. models ECG-06/10).

Functional Symbol



Model Code

F3 - C-175 - * - 11UB

1 2 3 4 5

1 Special seals
See “Hydraulic Fluids” section.

2 Basic model

3 Pressure adjustment range
B = 5,2-69 bar (75-1000 psi)
C = 35-138 bar (500-2000 psi)
F = 104-210 bar (1500-3000 psi)

4 Design number
Subject to change.
Installation dimensions remain as shown for designs 10-19 inclusive.

5 Port tappings
UB = G (BSPF) pipe threads

Operating Data

Maximum Pressure
According to adjustment range. See “Model Code” above.

Maximum Flow Rate
All models . . . . . 12 L/min (3.2 USgpm)

Hydraulic Fluids and Seals
All valves can be used with antiwear hydraulic oils, water-in-oil emulsions and water glycols.

Add prefix “F3” to model designation when phosphate ester (except alkyl-based) or chlorinated hydrocarbons are to be used.

Viscosities can range between 860 and 13 cSt (4000 and 70 SUS) but the recommended running range is from 54 to 13 cSt (245 to 70 SUS).

For further information about fluids see leaflet 694.

Temperature Limits
Ambient
Min. . . . . –20°C (–4°F)
Max. . . . . +70°C (158°F)

Fluid temperature

	Petroleum oil	Water-containing
Min.	–20°C (–4°F)	+10°C (50°F)
Max.*	+80°C (+176°F)	+54°C (129°F)

* *To obtain optimum service life from both fluid and hydraulic system 65°C (150°F) normally is the maximum temperature except for water-containing fluids.*

For synthetic fluids consult manufacturer or Vickers representative where limits are outside those for petroleum use. Whatever the actual temperature range, ensure that viscosities stay within the limits specified in the “Hydraulic Fluids” section.

Contamination Control Requirements
Recommendations on contamination control methods and the selection of products to control fluid condition are included in Vickers publication 561, “Vickers Guide to Systemic Contamination Control”. The book also includes information on the Vickers concept of “ProActive Maintenance”.The following recommendations are based on ISO cleanliness levels at 2 μm, 5 μm and 15 μm. For products in this catalog the recommended levels are:

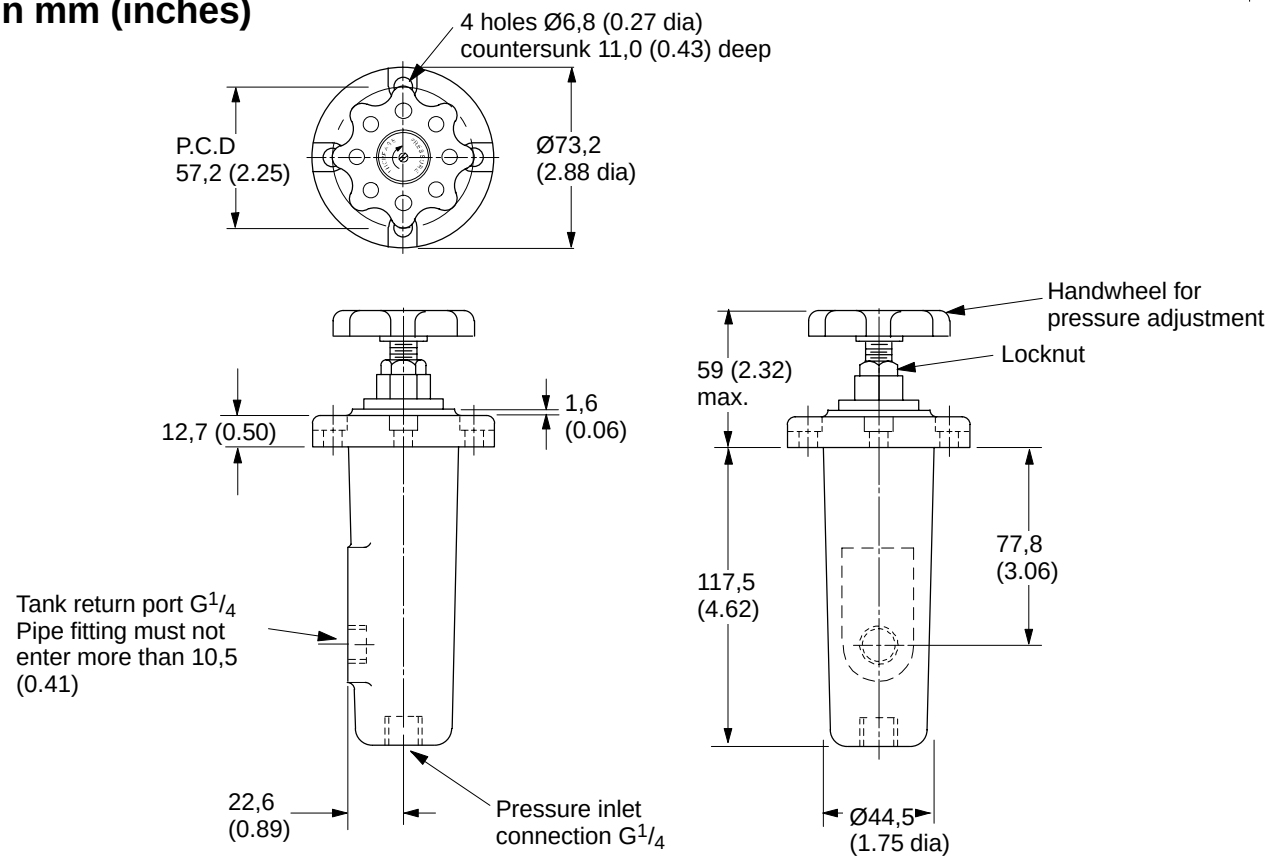
Up to 210 bar (3000 psi) 19/**17**/**14**

Control Data
The adjust the pressure slacken the locknut and turn the hand-wheel clockwise to increase pressure and counter-clockwise to decrease pressure, retighten locknut after setting the pressure.

The outlet port should be piped direct to tank at atmospheric pressure. Any pressure at the drain port is additive to the pressure setting of the valve.

Installation Dimensions
in mm (inches)

3rd angle projection



Mass

All models . . . . . 1,6 kg (3.52 lb)

Mounting Attitude

Optional.

Ordering Procedure

Before ordering check availability with your Vickers representative.

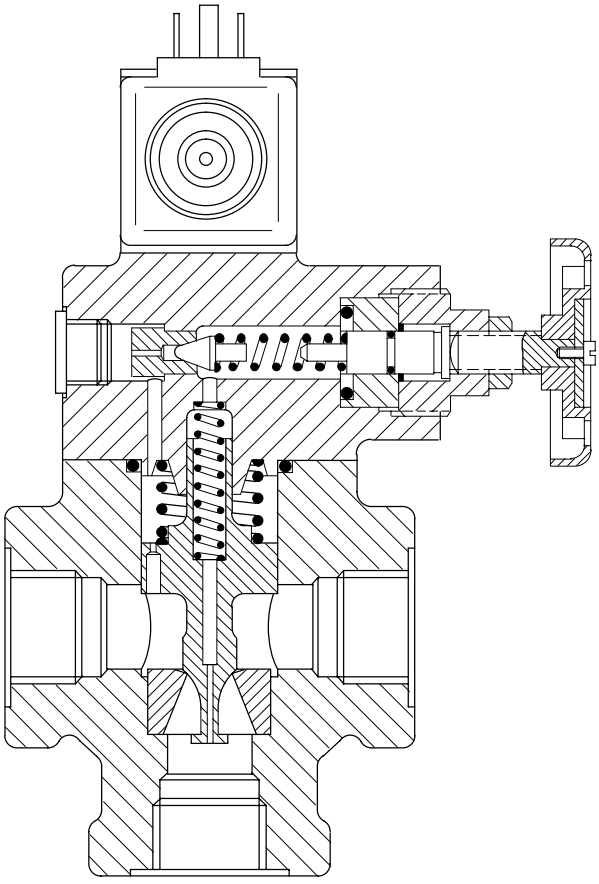
When ordering, please specify the complete model designation(s) of the valve(s) required. See “Model Code”.

Pressure Relief Valves for Pipe Mounting

ECT-06/10, 10 Series; ECT5-06/10, 30 Series

Typical Section

ECT5-10 example



Basic Characteristics

Max. pressure . . . . . 250 bar (3625 psi)
Max. flow rates:
ECT(5)-06 . . . . 200 L/min (757 US gpm)
ECT(5)-10 . . 380 L/min (1440 US gpm)

General Description

These adjustable pressure relief valves limit system pressure by directing pump flow to reservoir when the system pressure reaches the setting of the valve, thus preventing overloading the system. Their two-stage design ensures fast response and minimal pressure override. In addition to the conventional relief valve operation, a pilot venting feature allows the system pressure to be dropped to near-zero, or to a low-level pressure.

The valve is available in two versions: type ECT5, with integral solenoid operated pilot valve, and in basic form, type ECT.

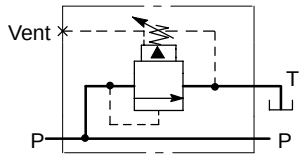
In the “ECT5” version, the pilot valve provides for selection of up to three pressures or one/two pressures plus off-loading according to the model type. The circuitry options can be further extended by the use of remote control valves.

In both the “ECT” and “ECT5” versions the “Vent” port can be connected to an on/off valve for load/unload, or to a pressure pilot valve for remote control of the pressure setting.

For both models the integral manual pressure adjustment is available as screw/locknut, or micrometer with keylock.

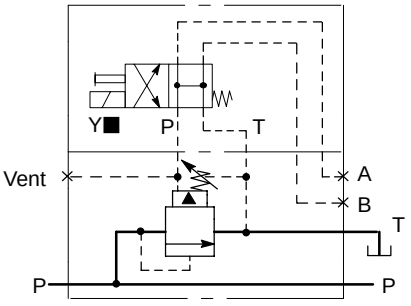
Functional Symbols

ECT valves

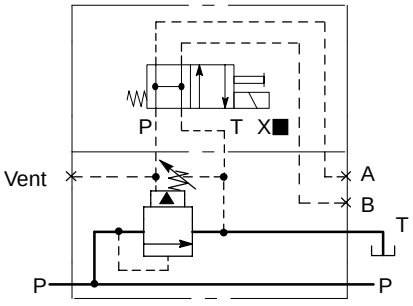


Notes:
1. All valves: Vent port fitted with removable plug.
2. ECT5 models: A and B ports fitted with removable plugs.
3. ECT5 models: Each valve carries two nameplates:
   The mainstage valve carries the lower half of the functional symbol and shows the full valve model code.
   The solenoid pilot valve carries the upper part of the functional symbol and shows the model code of the individual pilot valve.

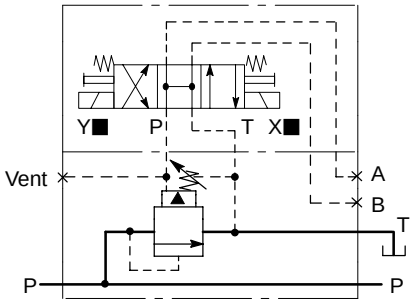
ECT5-***(V)-**0B**
Solenoid de-energized = Vented
Solenoid energized = On-load, by integral control



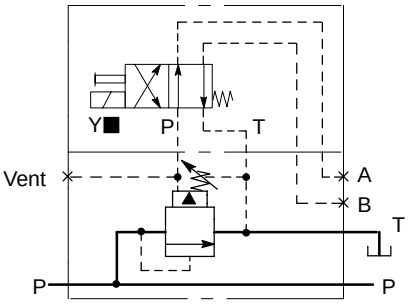
ECT5-***(V)-**0BL**
Solenoid de-energized = Vented
Solenoid energized = On-load, by integral control



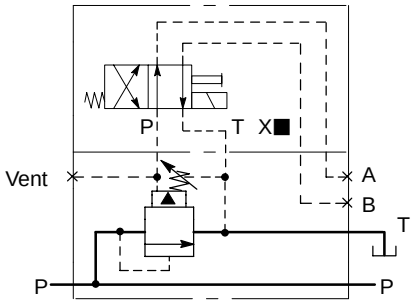
ECT5-***(V)-**0C**
Both solenoids de-energized = Vented
Right-hand solenoid■ energized = On-load, externally controlled at A
Left-hand solenoid■ energized = On-load, externally controlled at B



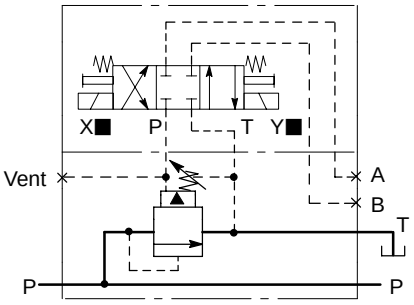
ECT5-***(V)-**2A**
Solenoid de-energized = On-load, externally controlled at A (or integral control if A plugged)
Solenoid energized = On-load, externally controlled at B (or integral control if B plugged)



ECT5-***(V)-**2AL**
Solenoid de-energized = On-load, externally controlled at B (or integral control if B plugged)
Solenoid energized = On-load, externally controlled at A (or integral control if A plugged)



ECT5-***(V)-**2C**
Both solenoids de-energized = On-load, by integral control
Right-hand solenoid■ energized = On-load, externally controlled at A
Left-hand solenoid■ energized = On-load, externally controlled at B



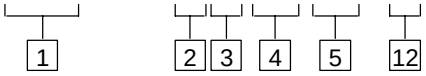
■ *For solenoid identities,"Sol. A"/"Sol. B", see nine pages on.*

Model Codes

Features in brackets ( ) may be omitted if not required. All other features must be specified.

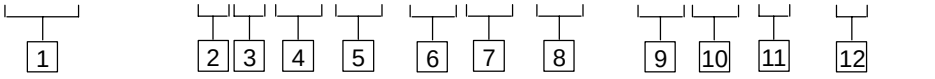
Basic Models (Without Integral Solenoid Pilot Valve)

(F3-)ECT- * (V)(-K)-1*TB**



Models With Integral Solenoid Pilot Valve

(F3-)ECT5- * (V)(-K)-*** (-*)-(V)M-*** (L)- * 5-3* TB**



1 Fluid compatibility

Blank = Anti-wear hydraulic oil (class L-HM), invert emulsion (class L-HFB) or water glycol (class L-HFC)
F3 = As above or phosphate ester (class L-HFD)

2 Nominal bore size

06 = $^{3}/_{4}''$
10 = $1^{1}/_{4}''$

3 Pressure adjustment range

B = 5 to 70 bar (75 to 1000 psi)
C = 35 to 140 bar (500 to 2000 psi)
F = 100 to 250 bar (1450 to 3625 psi)

4 High vent spring

Omit for low vent spring

5 Pressure adjustment method

K = Micrometer with keylock
Omit for screw/locknut method

6 Integral pilot valve spool/ spring arrangement

0B, 0BL, 0C, 2A, 2AL, 2C } See "Functional Symbols"

7 Manual override options

Override option in solenoid end(s) only
Blank = Plain manual override
H = Water-resistant override on DC solenoids only
Z = No override

8 Solenoid identity method

V = Solenoid "A" at port A end of pilot valve; solenoid "B" at B end of pilot valve (German practice).
Omit for solenoid identity to USA ANSI B93.9 standard, i.e. energize solenoid "A" for P to A; solenoid "B" for P to B.

9 Solenoid connection type ■

U = ISO 4400 (DIN 43650) on coil ▼
FW = $^{1}/_{2}''$ NPT thread conduit box
FTW= $^{1}/_{2}''$ NPT thread conduit box and terminal strip
FJ = M20 thread conduit box
FTJ = M20 thread conduit box and terminal strip

■ *Other connection types as shown in catalog 2015 (DG4V-3/3S) may be made available depending on quantities.*
▼ *Female connector to be supplied by user.*

10 Indicator lights

Option for solenoid connection types F(T)W and F(T)J
L = Lights fitted
Omit if lights not required.For U type coil use plug with integral light, see nine pages on.

11 Coil rating

A = 110V AC
B▲ = 110V AC 50 Hz/120V AC 60 Hz
C = 220V AC 50 Hz
D▲ = 220V AC 50 Hz/240V AC 60 Hz
G = 12V DC
H = 24V DC

▲ *For 60 Hz or dual frequency.*

12 Design number

10 series for ECT models
30 series for ECT5 models
Subject to change. Installation dimensions unaltered for design numbers 10-19 and 30-39 respectively.

Operating Data

Typical with petroleum oil at 21 cSt (102 SUS) and at 50°C (122°F).

Maximum pressures: Ports P, A, B and Vent Port T▲: ECT, 10 series ECT5, 30 series ▲ *Normally this is connected directly to the reservoir. Back pressure at port T is additive to the valve setting: if the back pressure exceeds system pressure by approx. 7 bar (100 psi), reverse flow T to P may occur.*	 250 bar (3625 psi) 250 bar (3625 psi) 100 bar (1450 psi) *ECT5, 30 series valves are designed to satisfy the needs of most applications. Consult your Vickers representative about an alternative model if:* *a) Valves are required to remain pressurized for long periods without frequent switching, and/or* *b) Back pressure at port T is required to rise above 100 bar (1450 psi).*
Pressure adjustment ranges	See "Model Code" 3
Maximum flow rates: ECT(5)-06 ECT(5)-10	 200 L/min (757 US gpm) 380 L/min (1440 US gpm)
Pressure override	See next page
Vent pressures	See next page
Vent flow	See next page
Response times, ECT5 models	See two pages on
Tank port leakage with valve closed.Valve set at max. pressure; pressure at port P = 50% of max. pressure. ECT(5)-**B ECT(5)-**C ECT(5)-**F	 <200 cm^3/min (12.2 in^3/min) <300 cm^3/min (18.3 in^3/min) <500 cm^3/min (30.5 in^3/min)
Thermal stability	See two pages on
Electrical Data for ECT5 Models	
Coil voltages	See "Model Code" 11
Permissible voltage fluctuation: Maximum Minimum	 See "Temperature Limits", three pages on 90% of rated voltage, see "Model Code" 11
Relative duty factor	Continuous, ED = 100%
Types of protection: ISO 4400 coils with plug fitted correctly Conduit box Coil winding Lead wires (coils type F**) Coil encapsulation	 IEC144, class IP65 IEC144, class IP65 Class H Class H Class F

Power consumption for coils listed in "Model Code" 11:	Initial◆ VA (rms)	Holding VA (rms)
AC coils:		
Types A, C at 50 Hz	225	39
Types B, D at 50 Hz	265	49
Types B, D at 60 Hz	260	48
DC coils:		
G	30W	–
H	30W	–

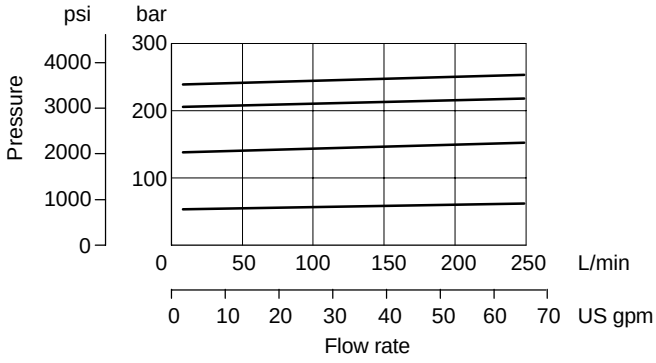
◆ *1st half cycle; solenoid armature fully retracted*

Performance Characteristics

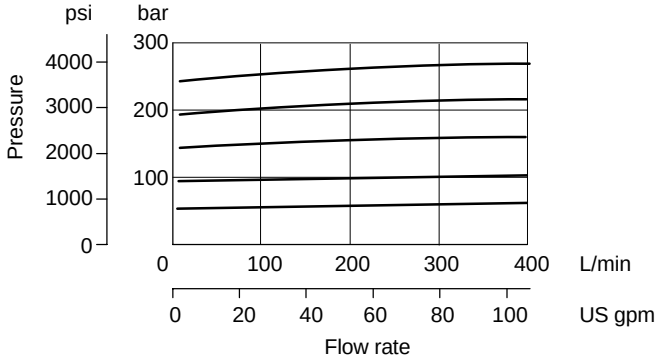
Typical with petroleum oil at 21 cSt (102 SUS) and at 50°C (122°F) unless stated otherwise.

Pressure Override at various settings

ECT(5)-06 models

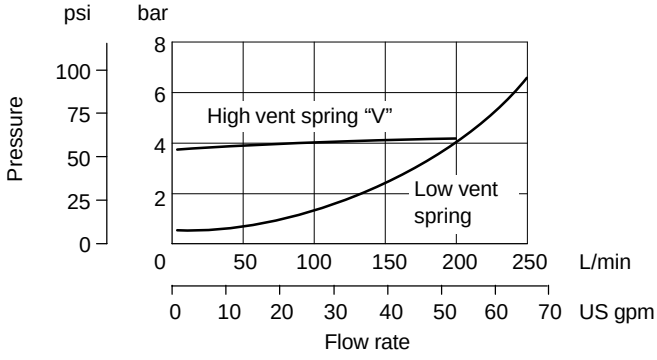


ECT(5)-10 models

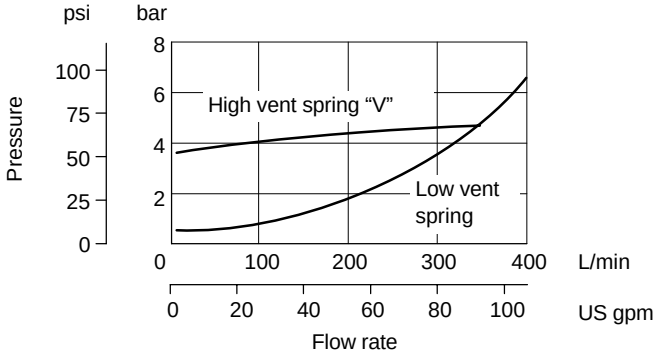


Vent Pressure Levels

ECT(5)-06 models

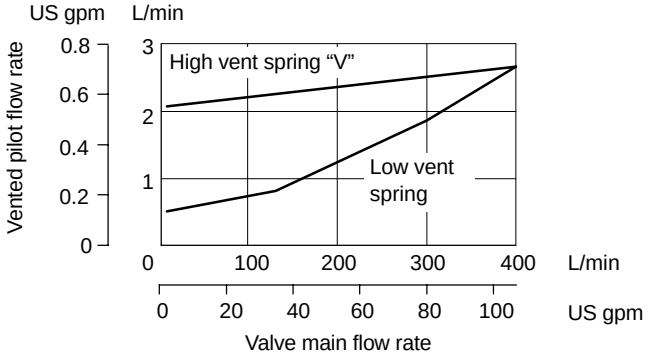


ECT(5)-10 models

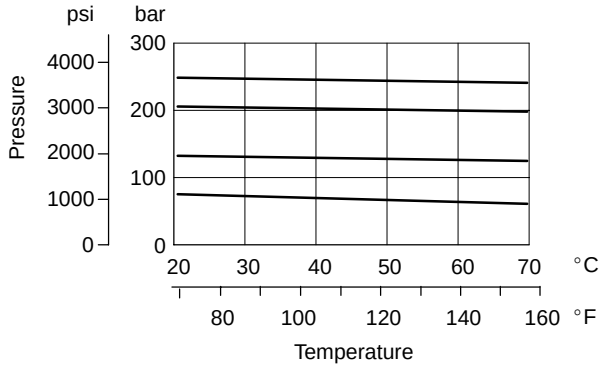


Vent Flow/Main Flow

Valid for ECT(5)-06 and -10 models

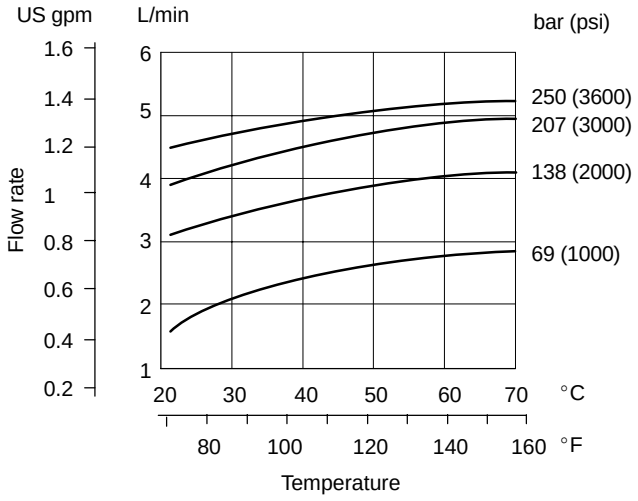


Thermal Stability
At various pressure settings and with flows:
ECT(5)-06 at 150 L/min (40 US gpm)
ECT(5)-10 at 300 L/min (80 US gpm)

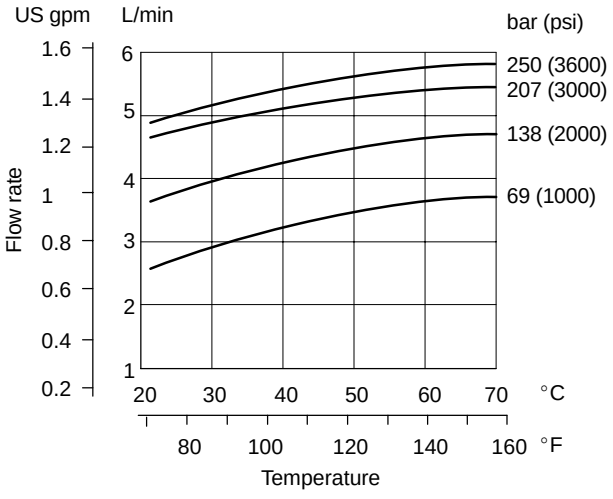


Under remote control conditions, vent line flow through pilot relief valve set at various pressures; main valves at maximum flow rates

ECT(5)-*** low vent pressure models



ECT(5)-***V high vent pressure models



Response Times, ECT5 Models
Approximate times for selecting remote and integral pressure settings from when a signal is first applied at the solenoid of an ECT5-***(V)-2** model.

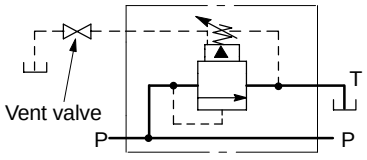
AC solenoids:
Energizing . . . . . 25 ms
De-energizing . . . . . 20 ms
DC solenoids:
Energizing . . . . . 50 ms
De-energizing . . . . . 25 ms ▲

▲ *In pure switched circuit conditions devoid of the effects of any suppression diodes and full-wave rectifiers.*

ECT5-***(V)-**0**** models (see “Functional Symbols”) are slower when closing from the vented condition, ECT5-***V** (high vent spring) models being faster than those without the “V” feature.

Control Methods

1. Manual adjustment of pressure setting
   For details see “Installation Dimensions” section.
2. Vent connection
   This connection allows a control valve to be placed in parallel with the pilot pressure stage of the valve. A suitable on/off valve can then be used to drop the system pressure to near-zero (or to the high vent pressure level), see diagram.



3. Remote control
   Alternatively a pilot relief valve can be connected in place of or after the on/off valve, to provide remote control of the ECT(5) pressure setting. Suitable pilot relief valves are Vickers models C-175 and CGR-02, described in catalogs 411 and 409 respectively.

For ECT5 models, control circuitry options can be extended by additional valves connected to ports A and B.

Hydraulic Fluids

All valves can be used with:
Antiwear hydraulic oils (class L-HM)
Invert emulsions (class L-HFB)
Water glycol (class L-HFC)
Phosphate ester (class L-HFD), adding “F3-” prefix at model code [1].

The extreme viscosity range is from 500 to 13 cSt (2270 to 70 SUS) but the recommended range is 54 to 13 cSt (245 to 70 SUS).

For further information about fluids see leaflet 920.

Temperature Limits

Minimum ambient . . . . . –20°C (–4°F)

Maximum ambient:
For ECT valves . . . . . 70°C (158°F)

For ECT5 valves with coils listed in model code [11] and at 110% of rated voltage:

Coil type and frequency	Max. ambient temperature
Dual frequency coils	
Types B and D at 50 Hz	65°C (150°F)
Types B and D at 60 Hz	65°C (150°F)
Single frequency (50 Hz) coils	
Types A and C at 50 Hz	65°C (150°F)
DC coils	
Types G and H	70°C (158°F)

Fluid Temperatures (all Models)

	Petroleum oil	Water-containing
Min.	–20°C (–4°F)	+10°C (50°F)
Max.*	+70°C (158°F)	+54°C (130°F)

* *To obtain optimum service life from both fluid and hydraulic system, 65°C (150°F) normally is the maximum temperature except for water-containing fluids.*

For synthetic fluids consult fluid manufacturer or Vickers representative where limits are outside those of petroleum oil.

Whatever the actual temperature range, ensure that viscosities stay within the limits specified in the “Hydraulic Fluids” section.

Contamination Control Requirements

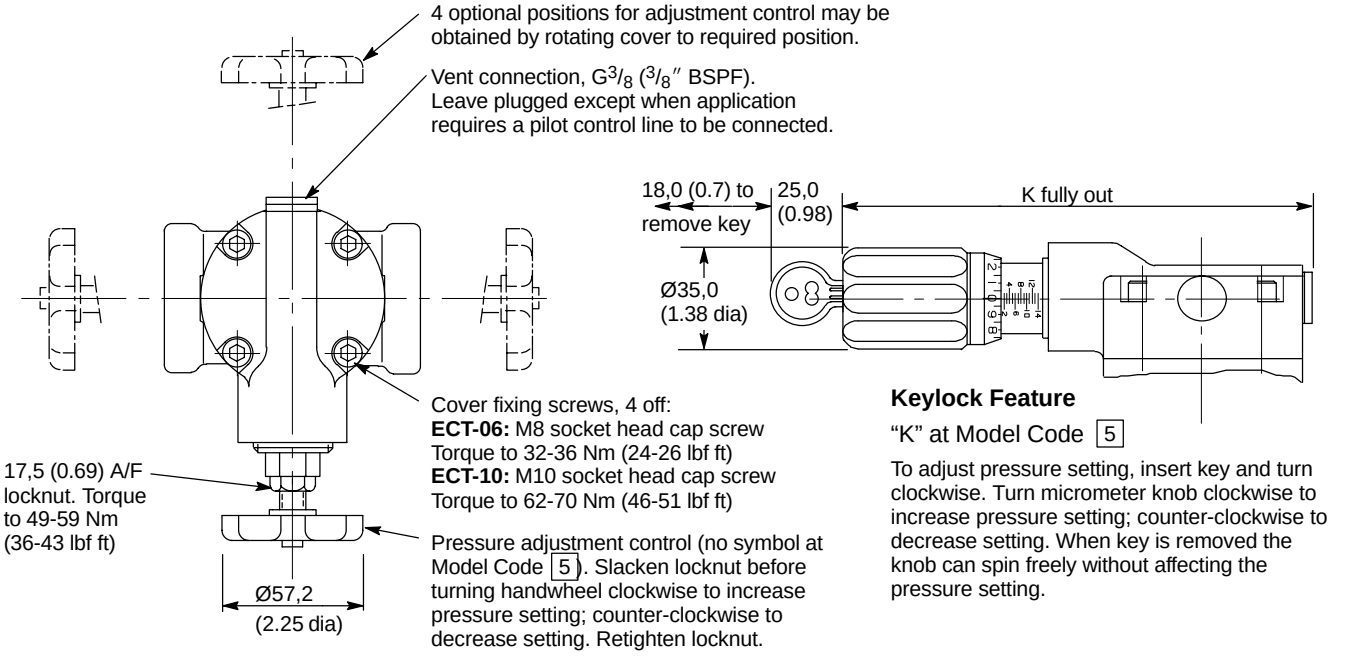
Recommendations on contamination control methods and the selection of products to control fluid condition are included in Vickers publication 9132 or 561, “Vickers Guide to Systemic Contamination Control”. The book also includes information on the Vickers concept of “ProActive Maintenance”. The following recommendations are based on ISO cleanliness levels at 2 μm, 5 μm and 15 μm. For products in this catalog the recommended levels are:

Up to 210 bar (3000 psi) 19/**17**/**14**
Above 210 bar (3000 psi) 19/**17**/**14**

Installation Dimensions in mm (inches)

ECT Models

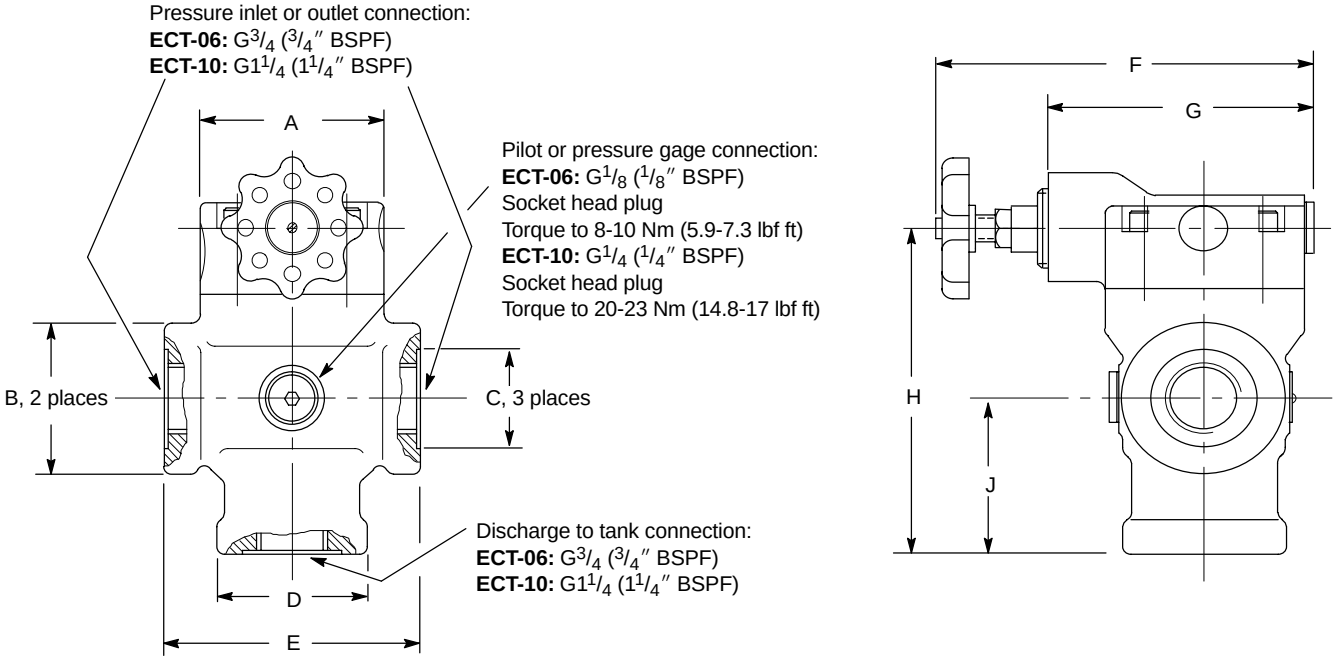
3rd angle projection



Keylock Feature

"K" at Model Code 5

To adjust pressure setting, insert key and turn clockwise. Turn micrometer knob clockwise to increase pressure setting; counter-clockwise to decrease setting. When key is removed the knob can spin freely without affecting the pressure setting.

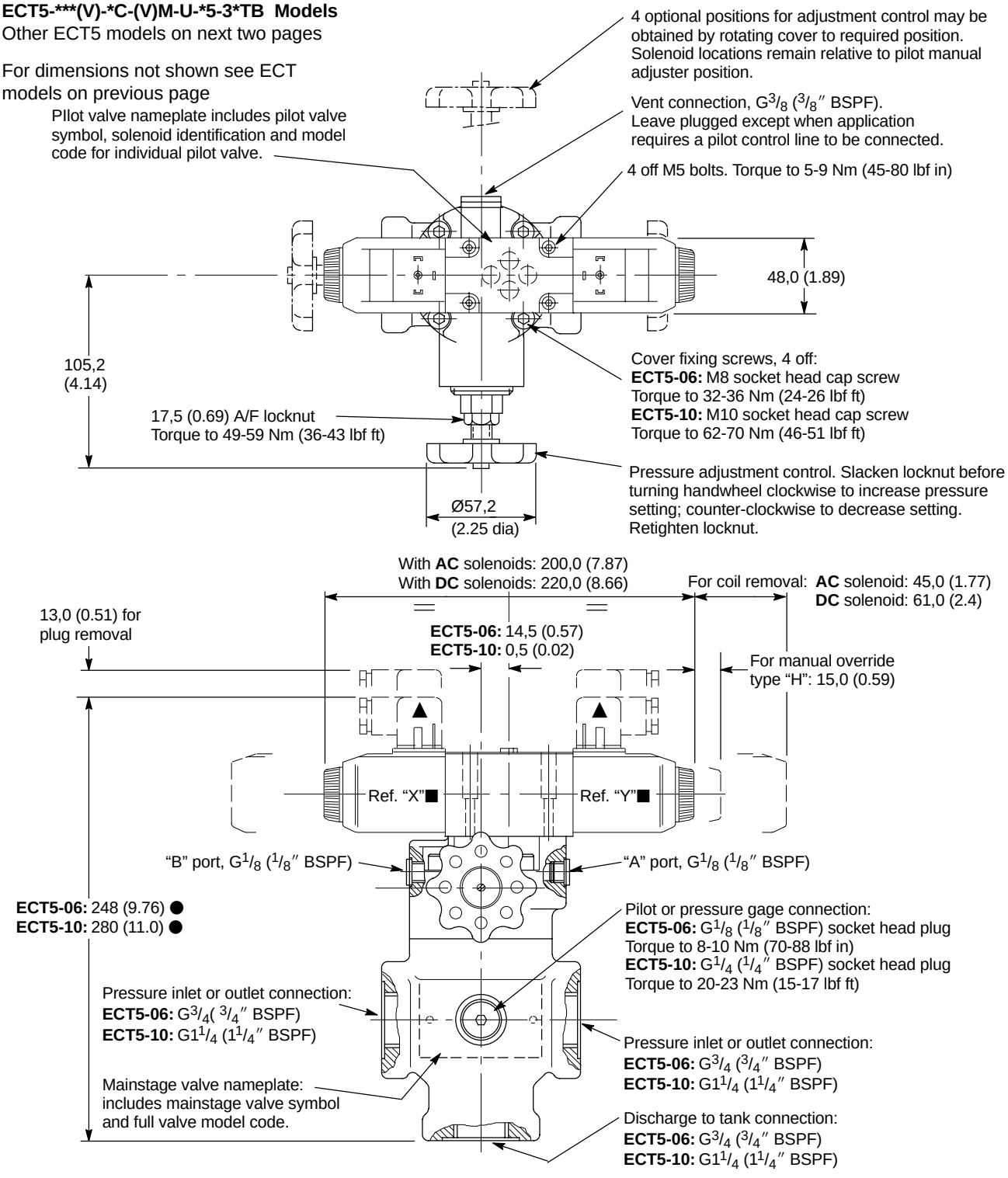


Model	A	B	C	D	E	F	G	H	J	K
ECT-06*(V)-(K)-10TB	77,7 (3.06)	57,2 (2.25)	42,0 (1.65)	63,5 (2.5)	106,4 (4.19)	146,0 (5.75)	103,0 (4.06)	133,3 (5.25)	63,5 (2.5)	179 (7.05)
ECT-10*(V)-(K)-10TB	95,3 (3.76)	76,2 (3.0)	56,0 (2.2)	76,2 (3.0)	124,0 (4.88)	155,5 (6.12)	112,5 (4.43)	163,6 (6.44)	76,2 (3.0)	189 (7.44)

ECT5 Models

ECT5-*(V)-*C-(V)M-U-*5-3*TB Models**
Other ECT5 models on next two pages

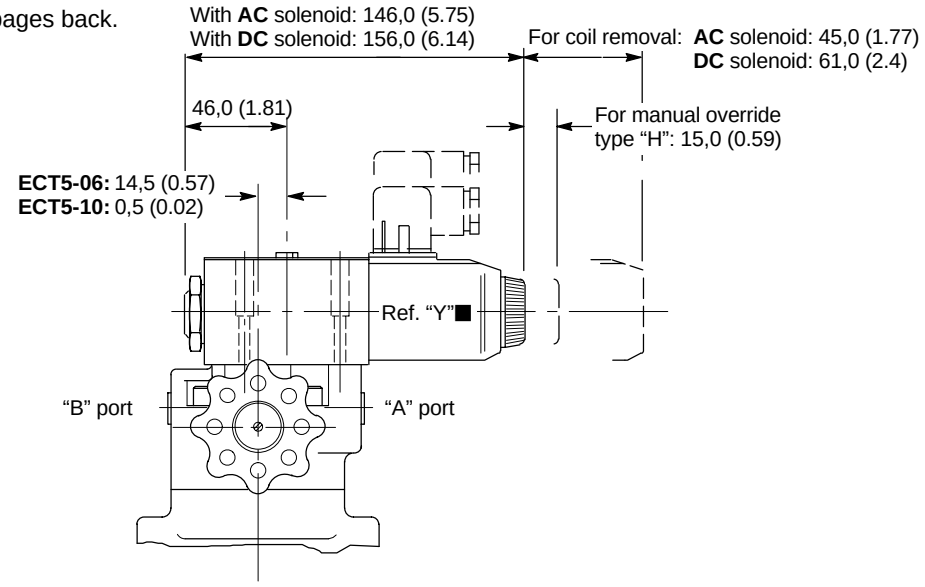
For dimensions not shown see ECT models on previous page



● *May vary according to plug source.*
■ *See "Solenoid Identities", two pages on.*
▲ *Plug not supplied; order separately if required. For available plug types see section "Electrical Plugs and Connectors".*

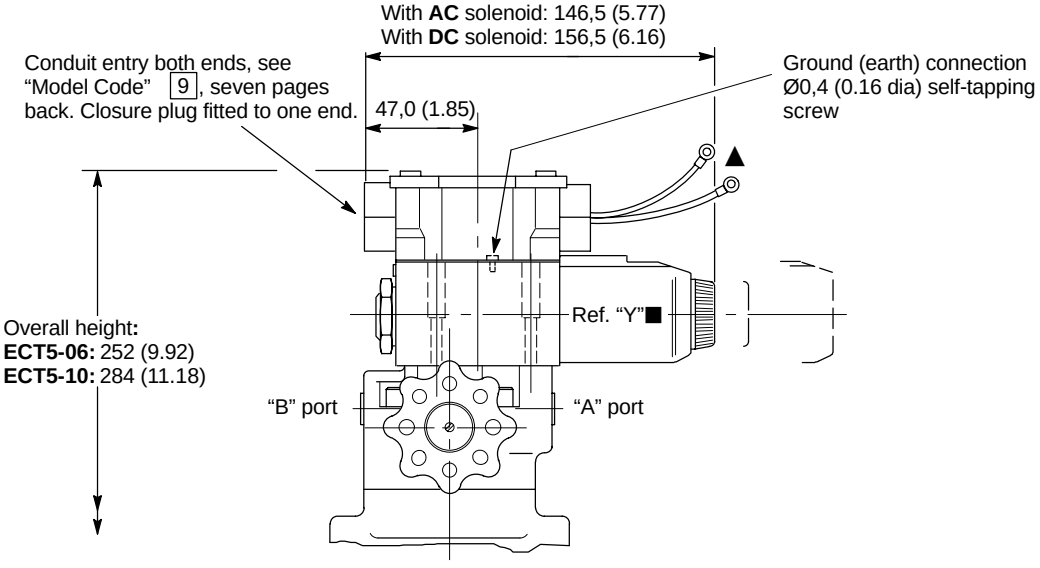
ECT5-*(V)(-K)-*A/B(L)(-*)-(V)M-U-*5-3*TB Models**
ECT5-***(V)-*A/B(-*)-(V)M-U-*5-3*TB example

For dimensions not shown see ECT5 models on previous page and ECT models two pages back.



ECT5-*(V)(-K)-*A/B(L)(-*)-(V)M-FJ(L)-*5-3*TB Models**
ECT5-*(V)(-K)-*A/B(L)(-*)-(V)M-FW(L)-*5-3*TB Models**
ECT5-***(V)-*A/B(-*)-(V)M-FJ/W*5-3*TB example

For dimensions not shown see ECT5 models on previous page and ECT models two pages back.

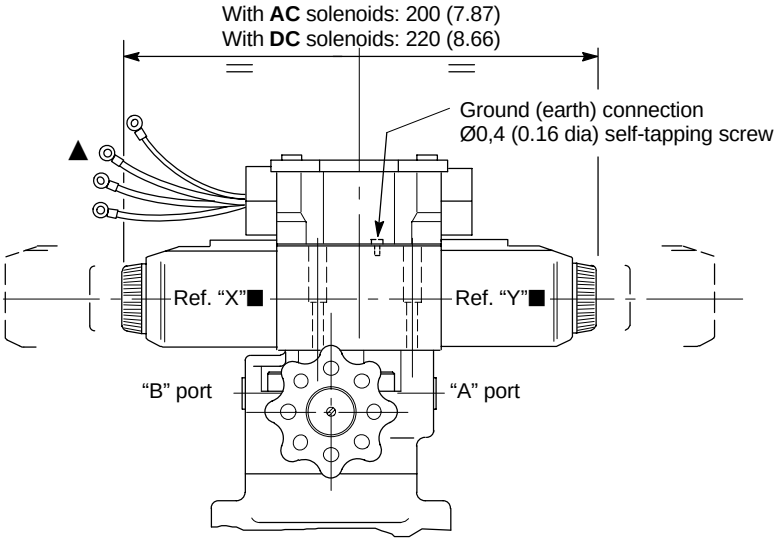


■ *For ECT5-***(V)(-K)-*AL/BL** models the pilot valve solenoid and body end plug are interchanged from as shown. The solenoid reference then becomes "Ref. X". See "Solenoid Identities" next page.*

▲ *Ref. Model Code* 9*:*
Codes "FJ" and "FW": 2 lead wires for each solenoid, approx 150 (6.0) long. M3 terminals provided for customer connection.
Codes "FTJ" and "FTW": lead wires connected into terminal strip suitable for M3 terminals on customer connection.

ECT5-*(V)(-K)-*C(-*)-(V)M-FJ(L)-*5-3*TB Models**
ECT5-*(V)(-K)-*C(-*)-(V)M-FW(L)-*5-3*TB Models**
ECT5-***(V)-*C(-*)-(V)M-FJ/W-*5-3*TB example

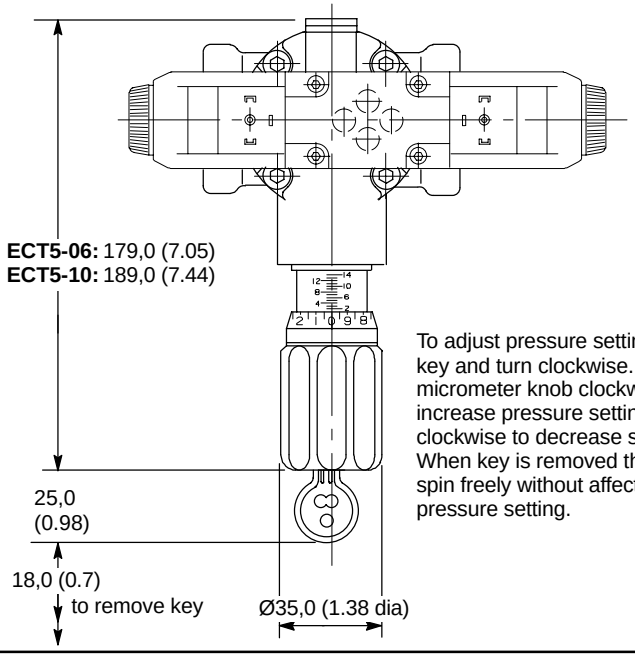
For dimensions not shown see ECT and ECT5 models three and two pages back respectively.



■ *See "Solenoid Identities" this page.*
▲ *Ref. Model Code* 9*:*
Codes "FJ" and "FW": 2 lead wires for each solenoid approx 150 (6.0) long. M3 terminals provided for customer connection.
Codes "FTJ" and "FTW": lead wires connected into terminal strip suitable for M3 terminals on customer connection.

ECT5-*(V)-K-**(L)(-*)-(V)M-***(L)-*5-3*TB Models**
ECT5-***(V)-K-**(L)(-*)-(V)M-U-*5-3*TB example

For dimensions not shown see ECT and ECT5 models three and two pages back respectively.



To adjust pressure setting, insert key and turn clockwise. Turn micrometer knob clockwise to increase pressure setting; counter-clockwise to decrease setting. When key is removed the knob can spin freely without affecting the pressure setting.

Solenoid Identities
The solenoid identity ("Sol. A"/Sol. B") is printed on the nameplate of the pilot valve of ECT5 models.

For ANSI/NFPA standard, no symbol at model code 8:

Spool/spring code at model code 6	Solenoid identity Ref. X	Ref. Y
0B	–	B
0BL	A	–
0C	A	B
2A	–	B
2AL	A	–
2C	A	B

For German practice, "V" at model code 8:

Spool/spring code at model code 6	Solenoid identity Ref. X	Ref. Y
0B	–	A
0BL	B	–
0C	B	A
2A	–	A
2AL	B	–
2C	B	A

Electrical Plugs and Connectors

Plugs for ISO 4400 (DIN 43650) Type Coil Connection

For valves with type “U” coils (model code 9).

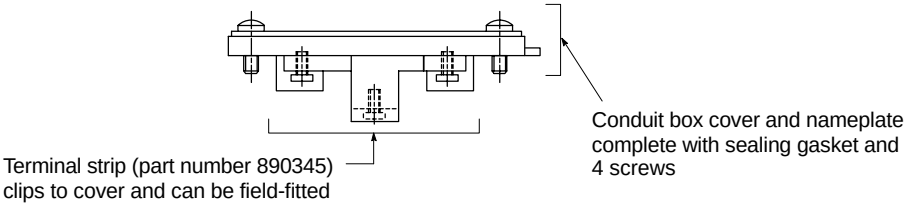
The cable entry on these plugs can be repositioned at 90° intervals by re-assembly of the contact holder relative to the plug housing. The cable entry is Pg11 for cable Ø 6-10 mm (0.24 to 0.39″ dia).

Order plugs separately by part number.

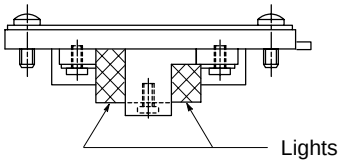
Voltage	Part number Gray (Sol. A)	Black (Sol. B)
Without indicator light		
–	710776	710775
With indicator light		
12- 24V	977467	977466
100-125V	977469	977468
200-240V	977471	977470

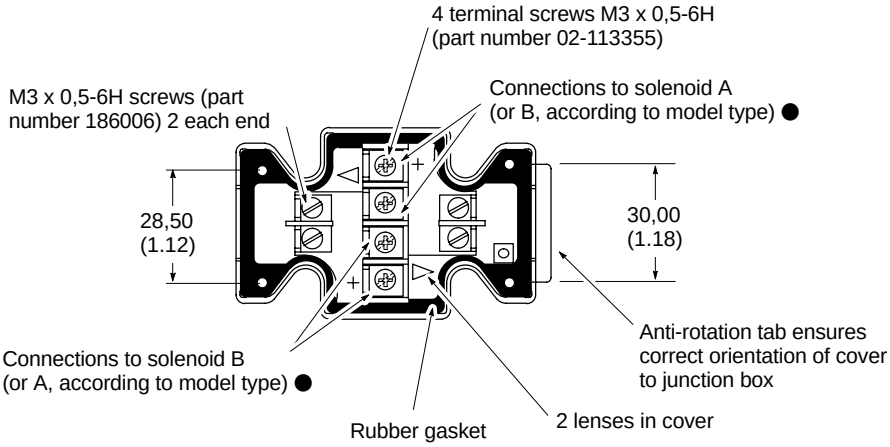
Terminal Strip and Lights

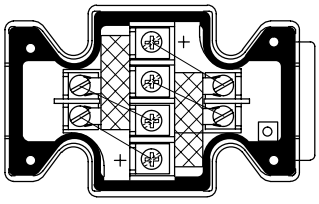
For “FTJ” or “FTW” at model code 9



For “FTJL” or “FTWL” at model code 9 + 10







● *1. For DC coils the +ve lead(s) must be connected to the terminal(s) marked +. When using 3-wire incoming leads to double solenoid valves (i.e. common neutral) the inner pair of terminals must be linked.*

2. For correct light indication of energized solenoid ensure that solenoid leads are correctly connected: light terminals are common with each outer pair of solenoid terminals according to the side with + mark.

Installation Data

Mounting attitude: unrestricted.

Mass (approx.), kg (lb)

ECT-06 . . . . . 4,5 (9.9)
ECT-10 . . . . . 9,1 (20.0)

ECT5 models	AC sol.	DC sol.
ECT5-06 with single solenoid	6,5 (14.3)	6,7 (14.7)
ECT5-06 with double solenoid	6,9 (15.2)	7,4 (16.3)
ECT5-10 with single solenoid	9,6 (21.1)	9,8 (21.6)
ECT5-10 with double solenoid	10,0 (22.0)	10,5 (23.1)

Ordering Procedure

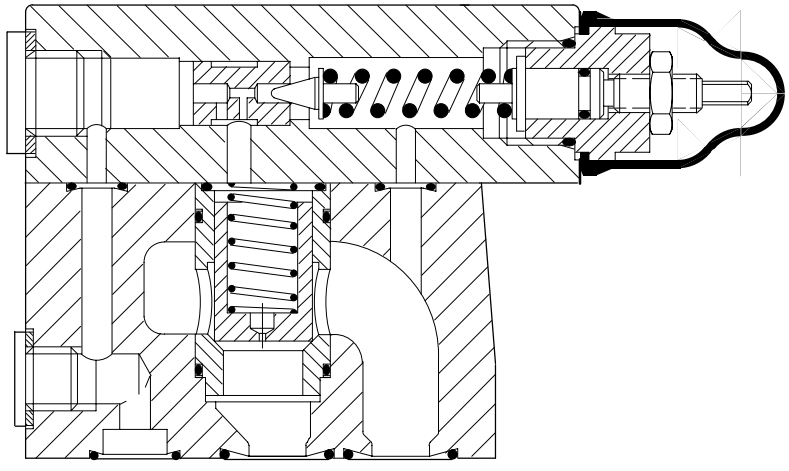
Specify valves by full model code; plugs by part number.

Pressure Relief and Sequence Valves

CG2V-6/8, 10 Series; CG5V-6/8, 20 Series

Typical Section

CG2V-6*W-10 relief valve



Basic Characteristics

Maximum pressure . . . . . 350 bar (5000 psi)
Maximum flow . . . . . 400 L/min (106 USgpm)
Mounting face to ISO 6264:
CG*V-6 valves AR-06-2-A
CG*V-8 valves AS-08-2-A

General Description

These two-stage valves are used to limit or control pressure by directing up to the total system fluid flow to reservoir when system pressure reaches the setting of the valve. System actuators are thus protected against overload.

Each relief valve incorporates a vent port that can be connected to a separate pilot control valve to remotely control or unload system pressure.

Two types of valve are presented in this catalog:

- CG2V-***, 10 series: relief/sequence valve with integral manual adjustment of pressure setting.
- CG5V-***, 20 series: relief valve with solenoid operated pilot valve for loading/unloading.

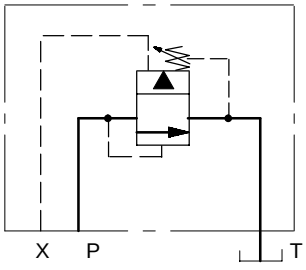
A third type, KCG-*, 10 series, with proportional pilot control valve, is described in catalog 2324.

Features and Benefits

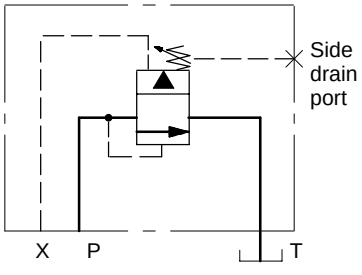
- Close matching to application requirements from choice of four adjustment control ranges covering 3 to 350 bar (44 to 5000 psi).
- Electrical on/off load from solenoid controlled models.
- Remote parallel control by other pilot valves connected to “vent” port.
- High machine productivity resulting from full system flow being available for work output until system pressure is very close to valve setting.
- Pressure override optimized without detriment to other performance parameters.
- Excellent repeatability and stable performance from cartridge-type design of mainstage parts.
- Low off-load power wastage.
- International mounting interfaces.
- Low installed cost and space requirement from high power/size ratios (more than double that of many conventional designs).

Functional Symbols

Relief valve, manually adjusted, CG2V-***-1* model

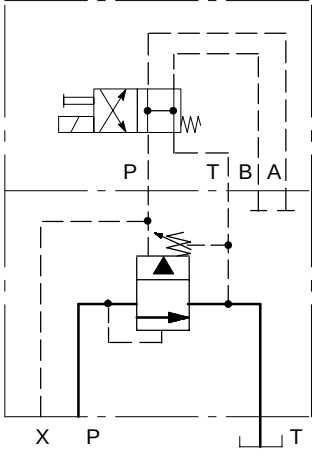


Sequence valve, manually adjusted, CG2V-***-**1**-1* model▲



▲ *If a valve with an integral, reverse free-flow check is required, use a type RCG valve, as in catalog 429.*

Solenoid controlled relief valve, pilots internally drained, CG5V-***-D-2* model



Model Codes

For Valves with Manual Adjustment Only

(F3-) CG2V-* * * (-1) -1*

1 2 3 4 5 11

For Valves with Manual Adjustment Plus Electrical Load/Unload

(F3-) CG5V-* * * -D (-*) - (V) M- * (-L) - * 5-2***

1 2 3 4 6 7 8 9 10 11

1 Fluid compatibility

Blank = Antiwear hydraulic oil (class L-HM), invert emulsion (class L-HFB) or water glycol (class L-HFC)
F3 = As above or phosphate ester (class L-HFD)

2 Mounting surface, ISO 6264

6 = AR-06-2-A
8 = AS-08-2-A

3 Pressure adjustment control range

B = 3 to 70 bar (44 to 1000 psi)
C = 3 to 140 bar (44 to 2000 psi)
F = 3 to 210 bar (44 to 3000 psi)
G = 3 to 350 bar (44 to 5000 psi)

4 Type of manual adjustment

K = Micrometer with keylock
M = Micrometer without keylock
W = Screw/locknut

5 Drain options

1 = External drain from side port: CG2V sequence-version (see “Functional Symbols”)
Omit for CG2V relief-version and for CG5V models

6 Manual override options, CG5V only

Override in solenoid end
Blank = Plain override
H = Water-resistant override, DC solenoid only
Z = No override

7 Solenoid energization identity, CG5V only

V = Solenoid “A” at port A end of pilot valve (energizing “A” connects P to B pilot ports): German practice.
Omit for solenoid identity “B” (energizing “B” connects P to B pilot ports): USA ANSI B93.9/ NFPA standard.

8 Solenoid connection type▲, CG5V only

U = ISO 4400 (DIN 43650)◆
FW = $^1/_2$″ NPT thread conduit box
FTW= $^1/_2$″ NPT thread conduit box and terminal strip
FJ = M20 thread conduit box
FTJ = M20 thread conduit box and terminal strip

▲ *Other connection types as shown in catalog 2015 (DG4V-3/3S) may be made available depending on quantities.*
◆ *Female connector to be supplied by user.*

9 Indicator lights, CG5V only

Option for solenoid connection types FTW and FTJ, see position 8
L = Lights fitted
Omit if lights not required

For U-code solenoid, use plug with integral light, see “Electrical Plugs and Connectors”

10 Coil rating, CG5V only

See “Operating Data” for further information

A = 110V AC 50 Hz
B■ = 110V AC 50 Hz/120V AC 60 Hz
C = 220V AC 50 Hz
D■ = 220V AC 50 Hz/240V AC 60 Hz
G = 12V DC
H = 24V DC

■ *For 60 Hz or dual frequency.*

11 Design number

10 series for CG2V valves
20 series for CG5V valves
Subject to change. Installation dimensions unaltered for design numbers 10-19 and 20-29 inclusive.

Operating Data

Data is typical with oil at 22 cSt (106 SUS) and at 50°C (122°F)

Maximum pressures: Ports P and X Port T▲: CG2V valves, 10 series CG5V valves, 20 series ▲*For relief valves this is normally connected directly to reservoir because back pressure here adds to the effective setting of the valve.*	 350 bar (5000 psi) 350 bar (5000 psi) 100 bar (1500 psi) *CG5V, 20 series valves are designed to satisfy the needs of most applications. Consult your Vickers representative about an alternative model if:* *a) Valves are required to remain pressurized for long periods without frequent switching, and/or* *b) Back pressure on port T is required to rise above 100 bar (1500 psi).*
Pressure adjustment ranges	See model code 3
Maximum flow rates: CG*V-6 CG*V-8	 200 L/min (53 USgpm) 400 L/min (106 USgpm)
Vent ▼ flow, port X, when used ▼*See “Vent Function” explanation two pages on.*	3 L/min (0.8 USgpm) with valve at max. flow rate
Drain flow, CG*V valves, when manual adjuster and/or pilot valve (i.e. CG5V) are in operation: CG*V-6 CG*V-8	 1,1 L/min (0.3 USgpm) 1,8 L/min (0.47 USgpm)
Response time, CG5V valves Typical time from applying signal at solenoid, with valve vented, until relief main valve closes; with minimum pressurized volume	 170 ms
Hydraulic fluids and fluid temperatures	See three pages on
Temperature limits	See three pages on
Thermal stability (pressure/temperature change)	0,2 bar/°C (1.6 psi/°F)
Spare parts/service information: CG*V valves	 Publication no. 40751

Electrical Data, CG5V Valves

Coil voltages	See model code 10	
Permissible voltage fluctuation:		
Maximum	See “Temperature Limits”, two pages on	
Minimum	90% rated (see model code 10)	
Relative duty factor	Continuous; ED = 100%	
Types of protection:		
ISO 4400 coils with plug fitted correctly	IEC144 class IP65	
Conduit box	IEC144 class IP65	
Coil winding	Class H	
Lead wires (coils type “F**”)	Class H	
Coil encapsulation	Class F	
Power consumption for coils listed in model code 10:	Initial ◆ VA (RMS)	Holding VA (RMS)
AC coils:		
Single frequency coils at 50 Hz	225	39
Dual frequency coils at 50 Hz	265	49
Dual frequency coils at 60 Hz	260	48
DC coils, at rated voltage and 20°C (68°F):		
Type G, 12V DC	30W	–
Type H, 24V DC	30W	–

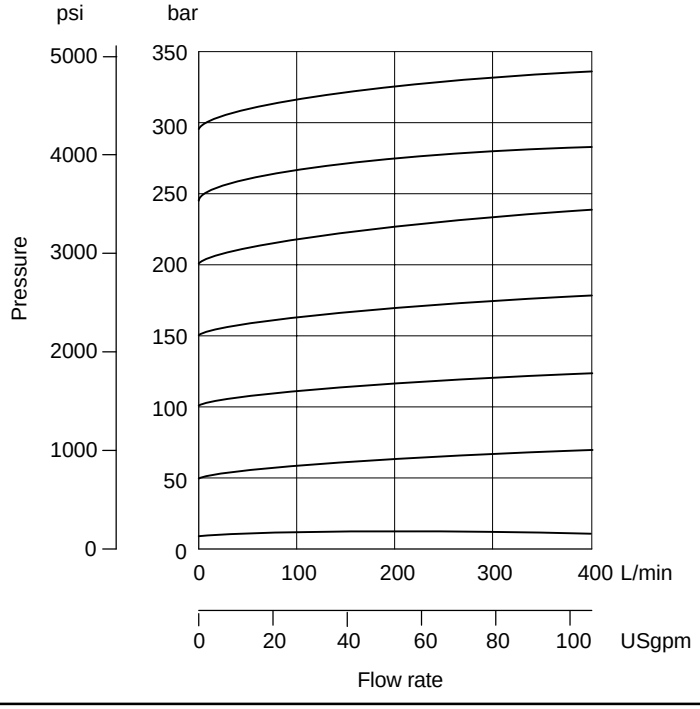
◆ *1st half cycle; solenoid armature fully retracted*

Performance Data

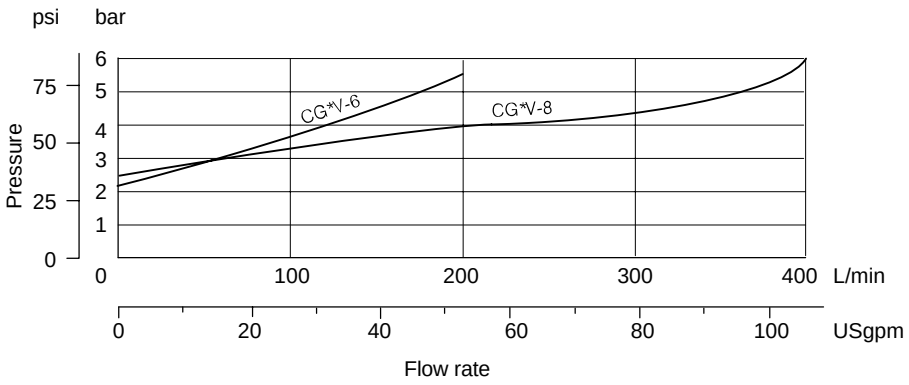
Typical with oil at 22 cSt (106 SUS) and at 50°C (122°F)

Pressure Override When Relieving

CG2V-8 examples

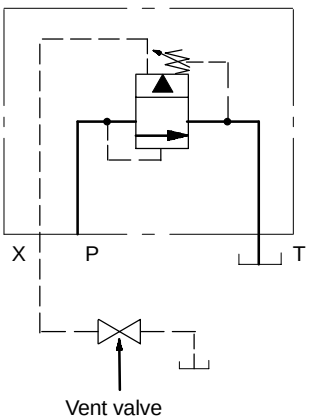


Pressure Override When Venting



Control Data for CG2V Valves
Manual adjustment of pressure setting described in “Installation Dimensions”.

Venting
System pressure can be dropped to near-zero by connecting vent port X to reservoir through a suitable pilot valve, e.g:



Hydraulic Remote Control
Remote adjustment of pressure setting can be made by a pilot relief valve, substituted for the vent valve in the diagram. Suitable pilot relief valves are described in catalogs 411 (type C-175 valves) and 409 (type CGR-02 valves).

Control Data for CG5V Valves
Vent Function
The solenoid operated pilot valve is Vickers model type DG4V-3S, with spool type “0B” (ref. catalog 2015). When the solenoid is de-energized, the CG5V relief valve is unloaded by venting the pilot drain to port T. Note that any back pressure at port T is additive to the minimum possible unloaded pressure, and is also additive to the on-load pressure setting.

When the solenoid is energized the pilot flow is blocked to bring the relief valve on load. For this function port X would normally be blocked (e.g. no connection from the mounting face). Further remote control pressure settings are possible by connecting port X to suitable pilot relief valves via other DG4V-3S type directional control valves.

Hydraulic Fluids

All valves can be used with:
Antiwear hydraulic oils (class L-HM)
Invert emulsions (class L-HFB)
Water glycol (class L-HFC)
Phosphate ester (class L-HFD), adding "F3-" prefix at model code [1].

The extreme viscosity range is from 500 to 13 cSt (2270 to 70 SUS) but the recommended range is 54 to 13 cSt (245 to 70 SUS).

For further information about fluids see "Technical Information" leaflet 920.

Temperature Limits

Minimum ambient: –20°C (–4°F)
Maximum ambient:
For CG2V valves: 70°C (158°F)

For CG5V valves with coils listed in model code [10] and at 110% of rated voltage:

Coil type and frequency	Max. ambient temperature
Dual frequency coils	
at 50 Hz	65°C (149°F)
at 60 Hz	65°C (149°F)
Single frequency (50 Hz) coils	
at 50 Hz	65°C (149°F)
DC coils	70°C (158°F)

Fluid temperatures (all models)

	Petroleum oil	Water-containing
Min.	–20°C (–4°F)	+10°C (+50°F)
Max.*	+70°C (+158°F)	+54°C (+129°F)

* *To obtain optimum service life from both fluid and hydraulic system, 65°C (150°F) normally is the maximum temperature except for water-containing fluids.*

For synthetic fluids consult fluid manufacturer or Vickers representative where limits are outside those of petroleum oil.

Whatever the actual temperature range, ensure that viscosities stay within the limits specified in the "Hydraulic Fluids" section.

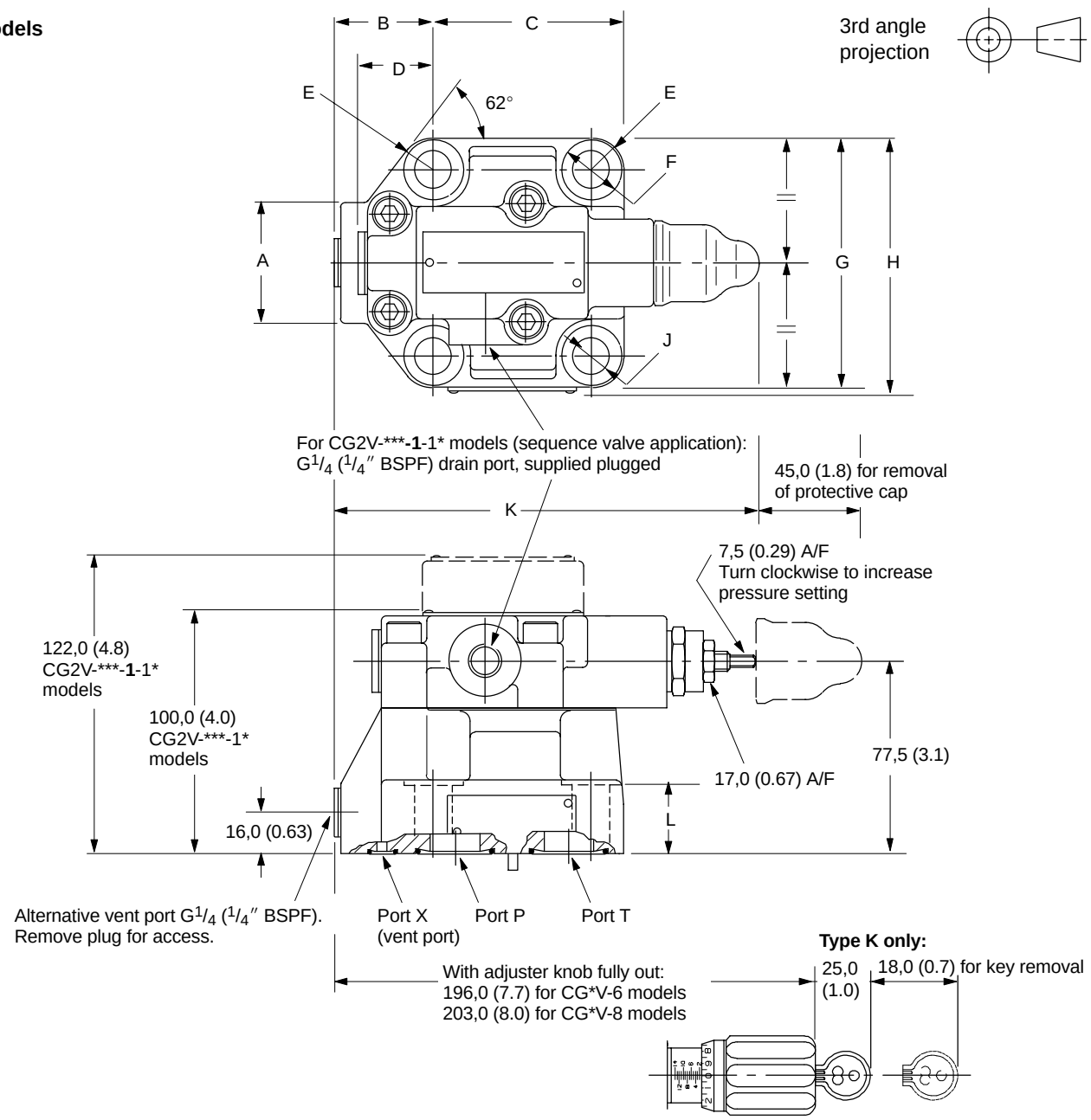
Contamination Control Requirements

Recommendations on contamination control methods and the selection of products to control fluid condition are included in Vickers publication 9132 or 561, "Vickers Guide to Systemic Contamination Control". The book also includes information on the Vickers concept of "ProActive Maintenance". The following recommendations are based on ISO cleanliness levels at 2 μm, 5 μm and 15 μm. For products in this catalog the recommended levels are:

Up to 210 bar (3050 psi) 19/**17**/**14**
Above 210 bar (3050 psi) 19/**17**/**14**

Installation Dimensions in mm (inches)

CG2V Models



Model	A	B	C	D	E rad.	Ø F (dia)	G
CG*V-6	58,0 (2.3)	35,0 (1.4)	68,0 (2.7)	35,0 (1.4)	12,0 (0.5)	20,0 (0.78)	79,0 (3.1)
CG*V-8	42,0 (1.7)	39,0 (1.54)	83,0 (3.3)	30,0 (1.2)	16,0 (0.63)	26,0 (1.02)	103,0 (4.1)

Model	H	Ø J (dia)	K	L	M (AC coils)	M (DC coils)
CG*V-6	82,0 (3.23)	13,5 (0.53)	176,0 (7.0)	20,0 (0.78)	160,0 (6.3)	170,0 (6.7)
CG*V-8	106,0 (4.2)	17,0 (0.7)	183,0 (7.2)	25,0 (1.0)	169,0 (6.65)	179,0 (7.1)

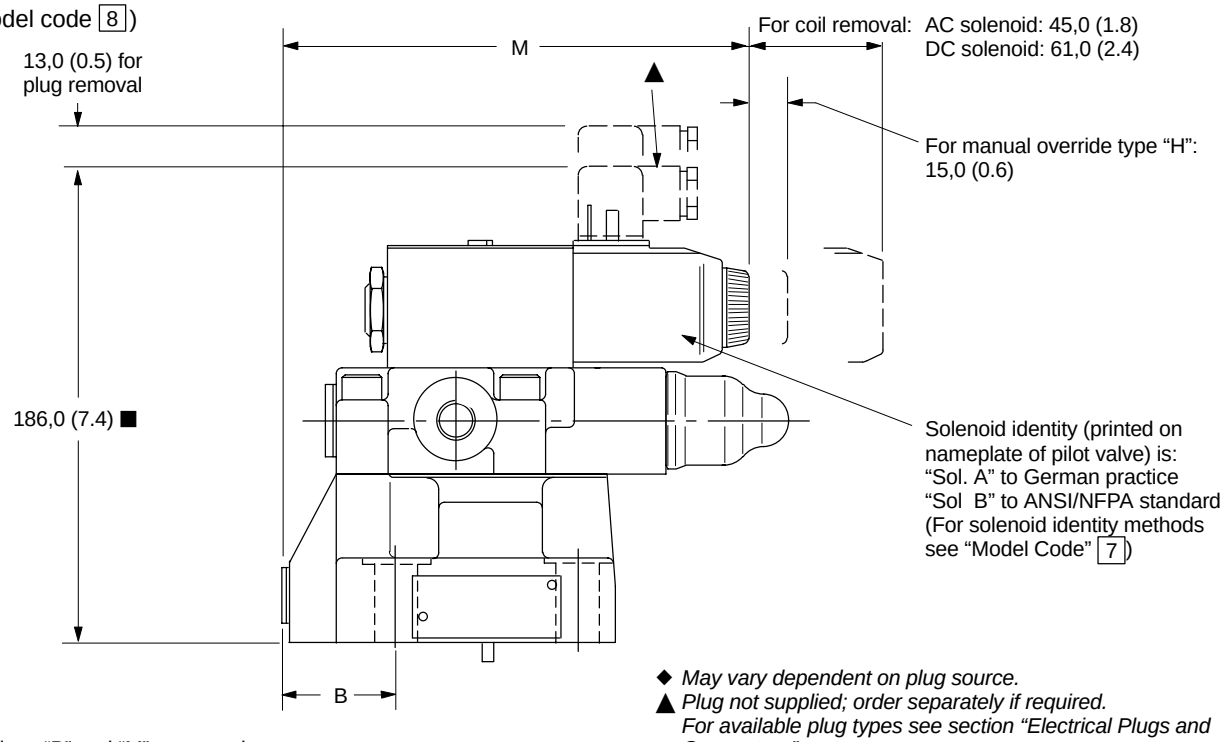
Micrometer Adjustment Options: "K" or "M" in Model Code 4

"K" Feature

To adjust pressure setting, insert key and turn clockwise. Turn micrometer knob clockwise to increase pressure setting; counter-clockwise to decrease setting. When the key is removed the knob can spin freely without affecting the pressure setting.

CG5V Models

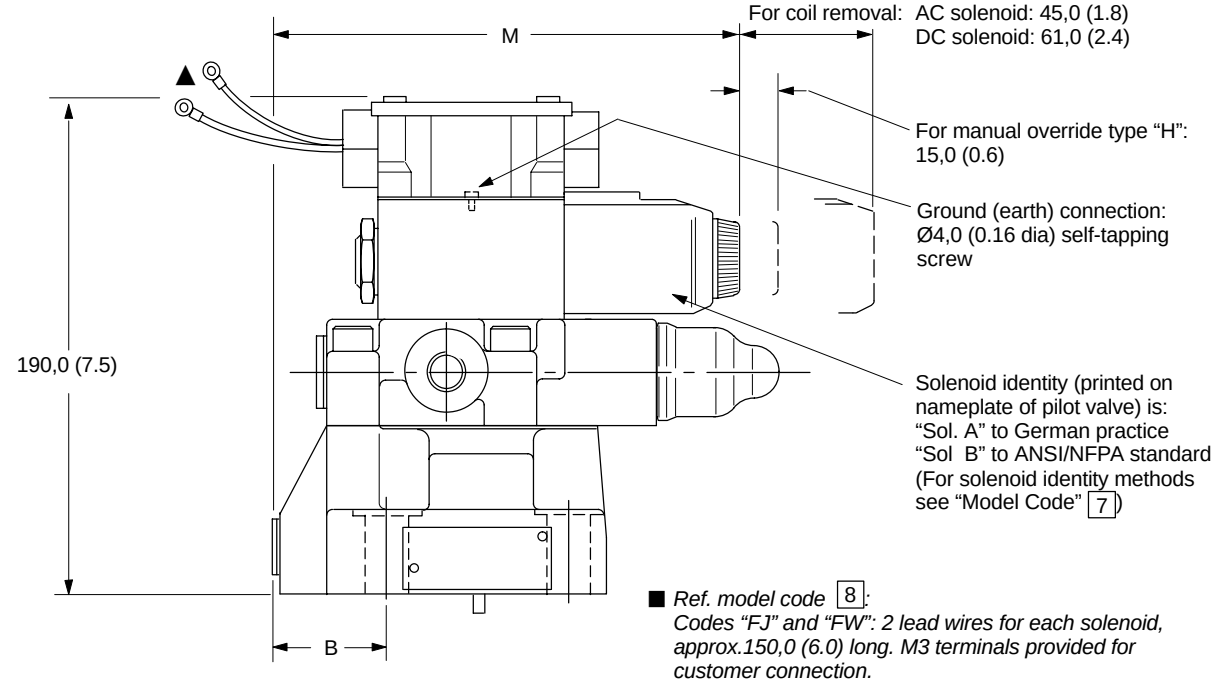
With Type “U” Coil Connection
(“U” at model code 8)



◆ *May vary dependent on plug source.*
▲ *Plug not supplied; order separately if required. For available plug types see section “Electrical Plugs and Connectors”.*

For dimensions “B” and “M”, see previous page.

With Type “F” Coil Connection
(“F(T)J” or “F(T)W” at model code 8)

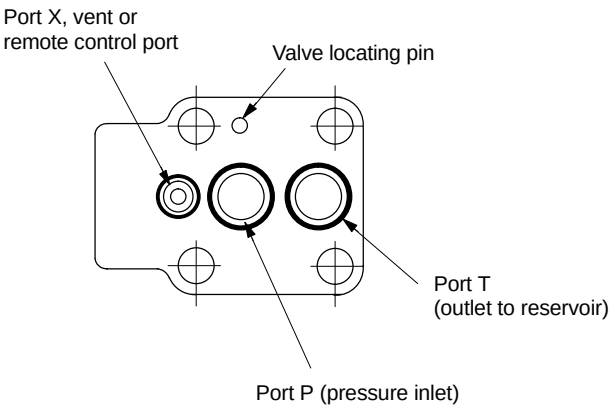


■ *Ref. model code 8:*
Codes “FJ” and “FW”: 2 lead wires for each solenoid, approx.150,0 (6.0) long. M3 terminals provided for customer connection.
Codes “FTJ” and “FTW”: lead wires connected into terminal strip suitable for M3 terminals on customer connection.

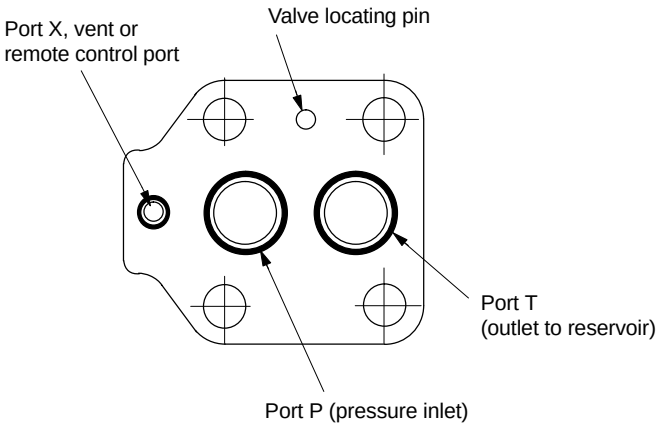
For dimensions “B” and “M”, see previous page.

Views on Bottom Faces of Valves
See also “Mounting Surfaces”.
All O-seals supplied.

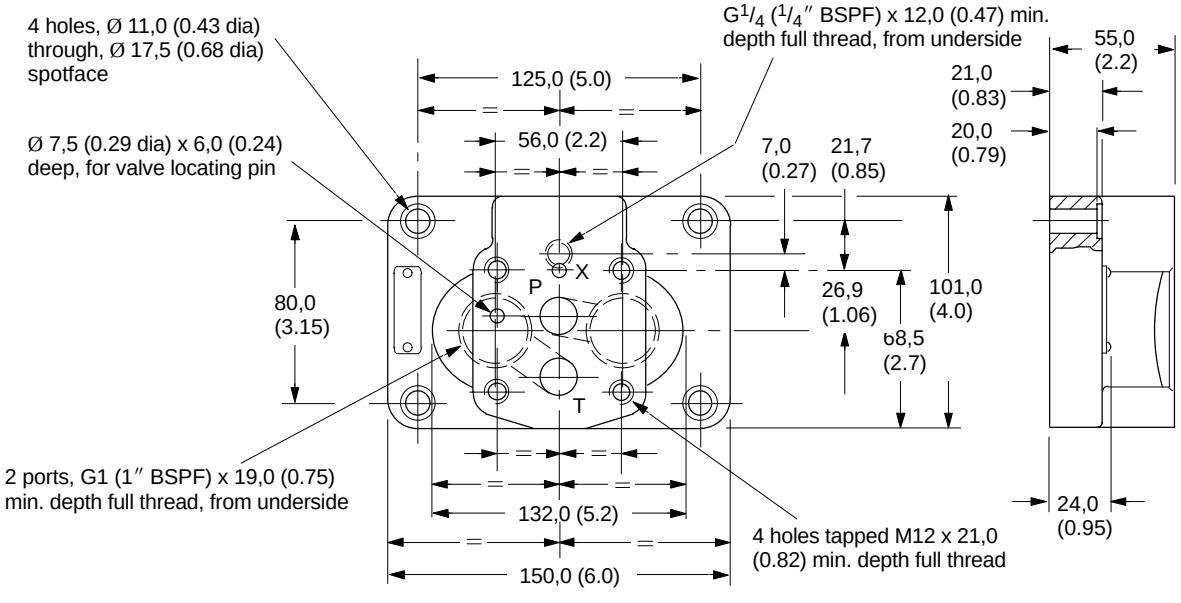
CG*V-6



CG*V-8



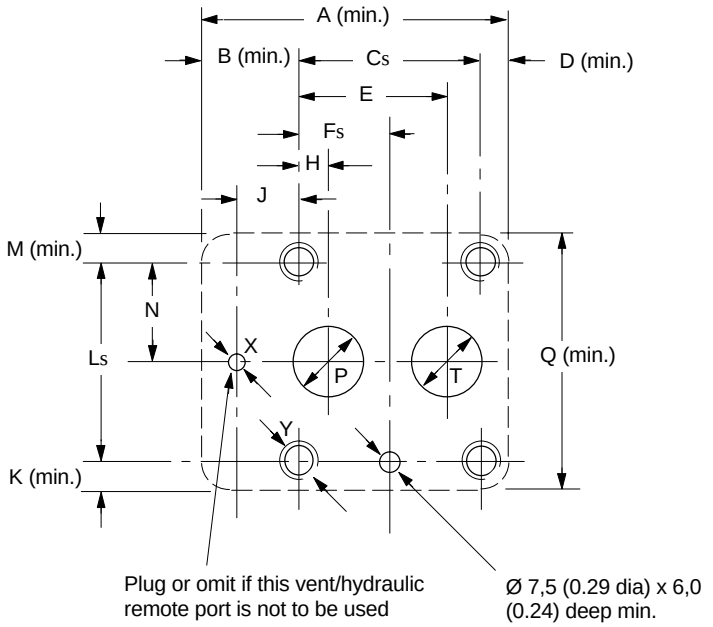
CGVM-6-10-R Subplate



Mounting Surfaces, ISO 6264
AR-06-2-A
AS-08-2-A

When a subplate is not used a raised pad must be provided for mounting. The pad must be flat within 0,001 mm/100 mm (0.0001″/10″) and smooth within 0,8 μm (32 μin). Dimensional tolerances are ±0,2 mm (0.008″) except where indicated.

Port functions
P = Pressure inlet
T = Outlet to reservoir
X = Vent, or remote pilot control port



Size	A	B	C	D	E	F	H	J	K	L
AR-06	80 (3.2)	13,1 (0.5)	53,8 (2.12)	13,1 (0.5)	47,5◆ (1.87)	22,1 (0.87)	22,1◆ (0.87)	0 (0)	13,1 (0.5)	53,8 (2.12)
AS-08	118 (4.7)	35,0 (1.4)	66,7 (2.63)	16,3 (0.7)	55,6 (2.19)	33,4 (1.35)	11,1 (0.44)	23,8 (0.94)	16,0 (0.63)	70,0 (2.76)

Size	M	N	Ø P (dia)	Q	Ø T (dia)	Ø X (dia)	Y thread x min. full thread depth
AR-06	13,1 (0.5)	26,9 (1.06)	14,7 (0.58)	80 (3.2)	14,7 (0.58)	4,8 (0.19)	M12 x 21 ($^{7}/_{16}$″ UNF x 0.83) ▼
AS-08	16,0 (0.63)	35,0 (1.38)	23,4 (0.92)	102 (4.0)	23,4 (0.92)	6,3 (0.25)	M16 x 30 ($^{5}/_{8}$″ UNF x 1.2) ▼

▲ *Tolerance on bolt and pin locations ±0,1 (0.004).*
◆ *These ISO standard dimensions can be used, but improved flow paths to and from valve are obtained by using 48,0 (1.89) instead of 47,5 (1.87), and 22,6 (0.89) instead of 22,1 (0.87).*
▼ *ISO standard does not give UNC bolt sizes. These are recommended equivalents to metric sizes specified in the standard.*

Installation Data

Mounting Attitude
Unrestricted.

Subplates
For CG*V-6 valves see type CGVM-6-10-R on previous page.
For CG*V-8 valves consult your Vickers representative.

Mounting Bolts/Torques
For CG*V-6 valves: bolt kit BKCG2V-6. Bolts should be torqued to 103-127 Nm (76-94 lbf ft), with threads lubricated.

For CG*V-8 valves: bolt kit BKCG2V-8. Bolts should be torqued to 257-315 Nm (190-232 lbf ft), with threads lubricated.

Mass (approx.)

CG2V-6 . . . . . 3,5 kg (7.7 lb)
CG2V-8 . . . . . 4,4 kg (9.7 lb)
CG5V-6:
With AC solenoid . . . . . 5,0 kg (11 lb)
With DC solenoid . . . . . 5,2 kg (11.5 lb)
CG5V-8:
AC solenoid . . . . . 5,9 kg (13 lb)
DC solenoid . . . . . 6,1 kg (13.5 lb)

Electrical Plugs and Connectors

Plugs for ISO 4400 (DIN 43650) Type Coil Connection
For CG5V valves with type “U” coils (model code 8)

The cable entry on these plugs can be repositioned at 90° intervals by reassembly of the contact holder relative to the plug housing. The cable entry is Pg11 for cable Ø 6-10 mm (0.24-0.4″).

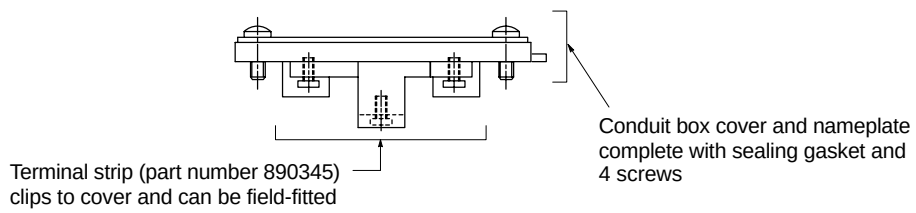
Order plugs separately by part number.

Voltage	Part number Gray (Sol.A)	Black (Sol.B)
Without indicator light		
–	710776	710775
With indicator light		
12- 24V	977467	977466
100-125V	977469	977468
200-240V	977471	977470

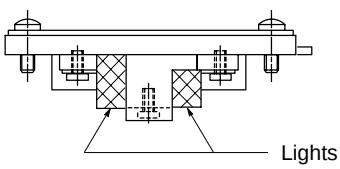
Terminal Strip and Lights

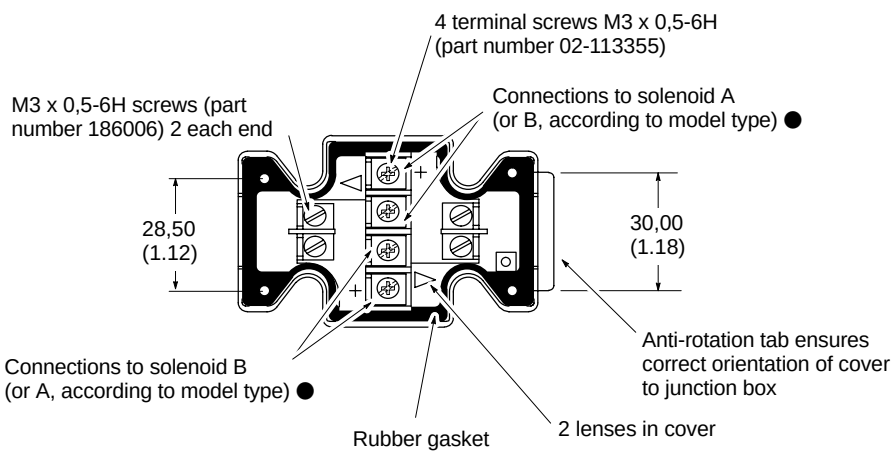
For CG5V valves with type F(T)J or F(T)W coils, see model code 8

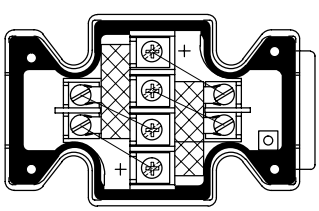
For “FTJ” or “FTW” at model code 8



For “FTJL” or “FTWL” at model code 8 + 9







● *1. For DC coils the +ve lead(s) must be connected to the terminal(s) marked +. When using 3-wire incoming leads to double solenoid valves (i.e. common neutral) the inner pair of terminals must be linked.*

2. For correct light indication of energized solenoid ensure that solenoid leads are correctly connected: light terminals are common with each outer pair of solenoid terminals according to the side with + mark.

Ordering Procedure

Valves, subplates and bolt kits should be ordered by full model code designation.
Order plugs by part number.

VICKERS®

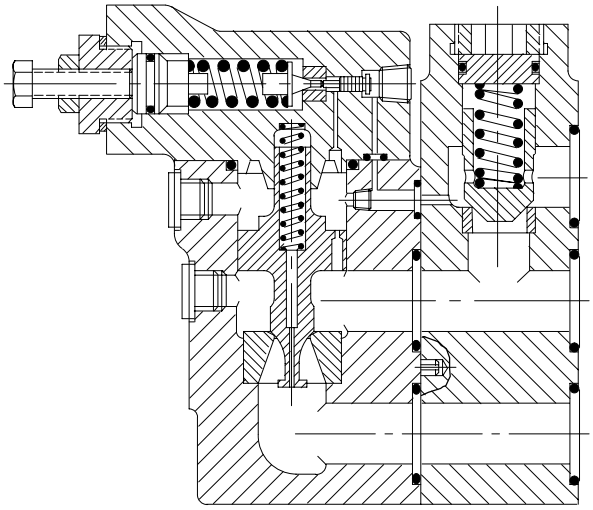
Pressure Relief Valves

Unloading Relief Valves

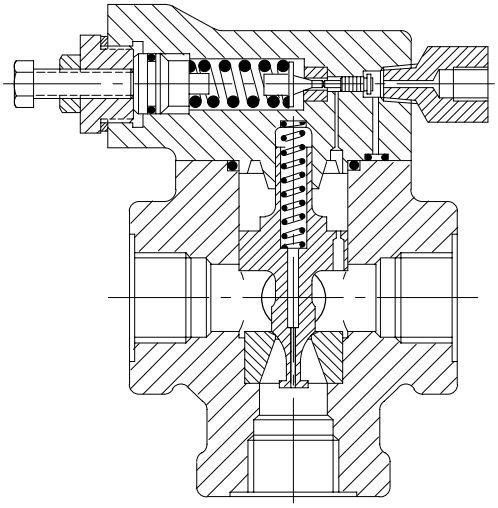
EURG1/2-06/10, 13 Design and EURT1/2-06/10, 12 Design

Sectional Illustrations

EURG*



EURT*



Basic Characteristics

Mounting . . . Pipe or subplate mounting
Unloading pressure . . . . . Up to 210 bar (3000 psi)
Rated flow . . . . . Up to 246 L/min (65 USgpm)
Method of actuation . . . Internally piloted

General Description

Unloading relief valves are primarily used in hydraulic circuits incorporating accumulators where a pressure regulator is required to automatically unload the pump when the pressure reaches the pre-adjusted pressure setting of the valve.

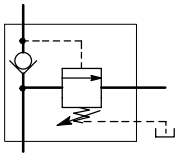
When the pressure has dropped to approximately 85% of the valve setting the valve spool closes, thus diverting the pump delivery to the accumulator.

On the EURG models an integral check valve prevents return flow from the accumulator through the unloading valve; for the EURT model to provide this function a separate right angle check valve, model C2-815 ($^3/_4$″) or C2-825 ($1^1/_4$″) must be provided.

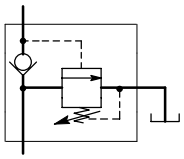
These valves may also be used with a double pump to deliver a large volume of oil to the system at low pressure and a small volume at high pressure, serving the same function as a separate unloading valve and check valve.

Functional Symbols

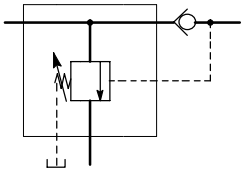
EURG1



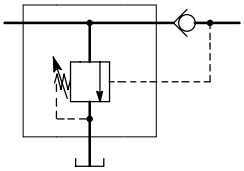
EURG2



EURT1

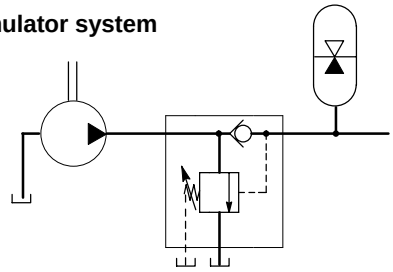


EURT2

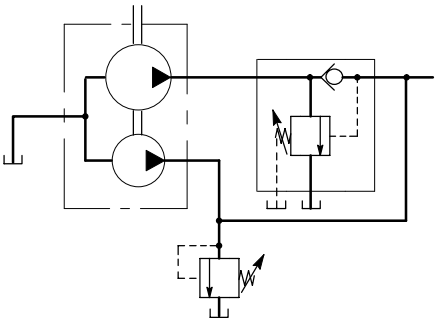


Applications

1. Single pump/accumulator system



2. Double pump system



Note that the EURG1 model shown in both systems can be replaced by the EURG2 or an EURT* plus the external check valve

Model Codes

Valves

(F3) - EUR * * - - * (V) - ** ****

1 2 3 4 5 6 7 8

Subplate

EURG1M - ** - 20 - R

1 2

1 Seals for phosphate ester fluids
(See also the “Hydraulic Fluids” section)
Omit if not required

2 Mounting method
G = Subplate mounted
T = Pipeline mounted

3 Drain
1 = External drain
2 = Internal drain

4 Nominal port size
06 = $^{3}/_{4}''$
10 = $1^{1}/_{4}''$

5 Pressure adjustment range
B = 25 - 69 bar (350 - 1000 psi)
C = 35 - 138 bar (500 - 2000 psi)
F = 104 - 210 bar (1500 - 3000 psi)

6 High venting spring
EURG models only
Omit if not required

7 Design number
12 = EURT model
13 = EURG model
Design numbers are subject to change. Installation dimensions remain the same for design numbers 10 to 19 inclusive.

8 Port tappings/fixing bolts
UB = G (BSPF) port tappings (EURT models)
UG = Accept metric or inch fixing bolts (EURG models)

1 Nominal port size
06 = $^{3}/_{4}''$
10 = $1^{1}/_{4}''$

2 Design number, 20 series
Subject to change. Installation dimensions remain the same for design numbers 20 to 29 inclusive.

Metric Fixing Bolt Kits
(EURG valves)
BKUR-06-682M for EURG-06 valves
E-BKUR-10-683M (Assy. no. 460852) for EURG-10 valves

Operating Data

Max. Pressures

Pressure inlet and system ports . . Up to 210 bar (3000 psi) dependent on model

Tank ports

EUR*1 models . . . . . Up to 85% of inlet pressure

EUR*2 models . . . . . Up to 5% of inlet pressure

Pilot pressure port

EURT* models . . . . . Up to 210 bar (3000 psi) dependent on model

Drain port

EUR*1 models . . . . . Drain must be connected to tank through a surge free line so there will be no back pressure at this port.

Failure to connect the drain can result in infinite system pressures and machine damage.

EURT2 models are internally drained and this port is not used.

Pressure Adjustment Range

See “Model Code”.

Flow Data

Rated flow, L/min (USgpm)

EURT*-06 . . . . . 75 (284)

EURG*-06 . . . . . 95 (360)

EURT*-10 . . . . . 190 (720)

EURG*-10 . . . . . 246 (930)

Hydraulic Fluids

All valves can be used with antiwear hydraulic oils, water-in-oil emulsions and water-glycols. Add prefix “F3” to model designation when phosphate ester (not alkyl-based) or chlorinated hydrocarbons are to be used.

The extreme operating viscosity range is from 860 to 13 cSt (4000 to 70 SUS), but the recommended running range is 54 to 13 cSt (245 to 70 SUS).

For further information about fluids see leaflet 694.

Temperature Limits

Ambient

Min. . . . . –20°C (–4°F)

Max. . . . . +70°C (+158°F)

Fluid Temperature

	Petroleum oil	Water-containing
Min.	–20°C (–4°F)	+10°C (50°F)
Max.*	+80°C (176°F)	+54°C (130°F)

* *To obtain optimum service life from both fluid and hydraulic system 65°C (150°F) normally is the maximum temperature except for water-containing fluids.*

For synthetic fluids consult manufacturer or Vickers representative where limits are outside those for petroleum use.

Whatever the actual temperature range, ensure that viscosities stay within the limits specified in the “Hydraulic Fluids” section.

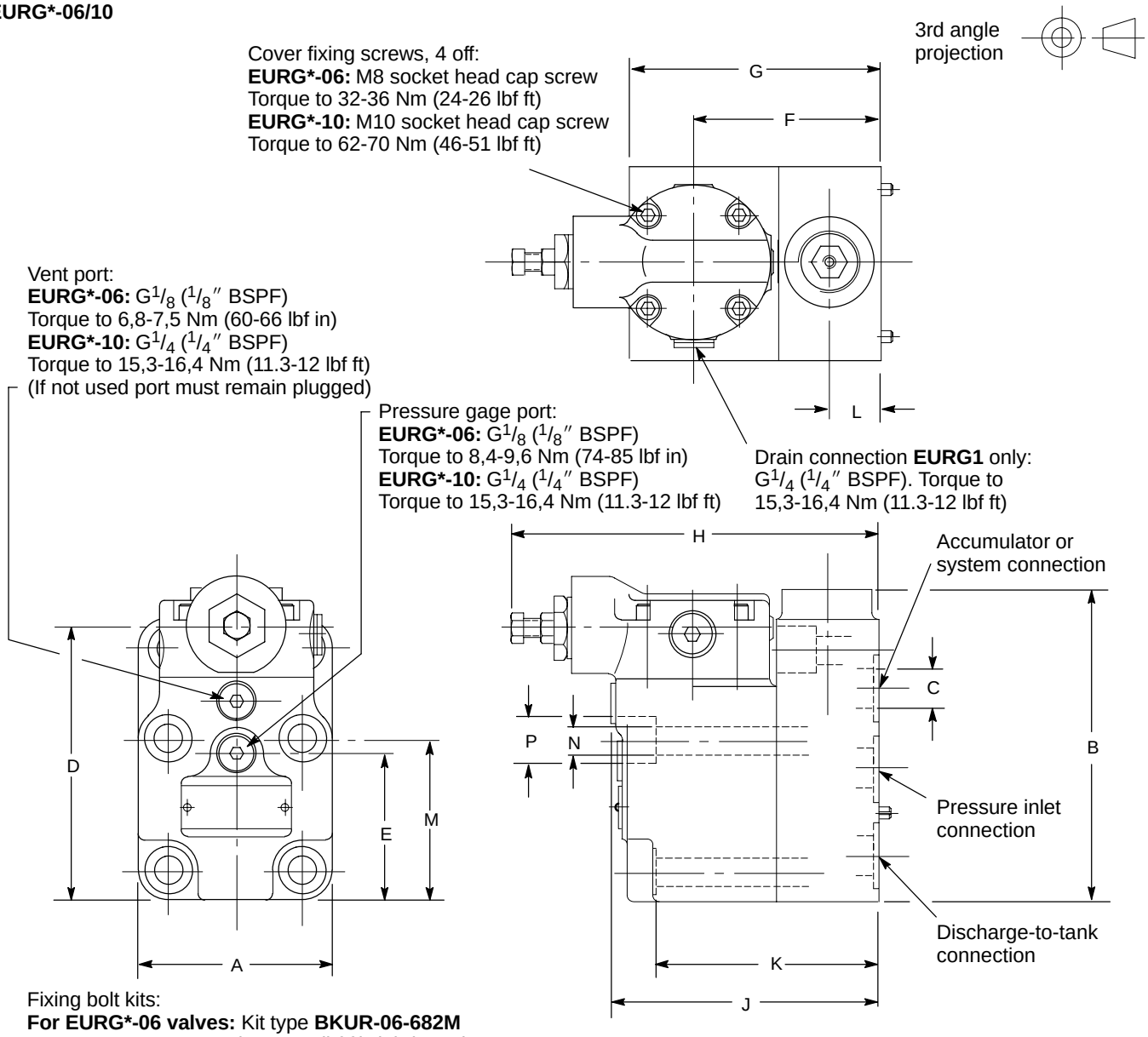
Contamination Control Requirements

Recommendations on contamination control methods and the selection of products to control fluid condition are included in Vickers publication 9132 or 561, “Vickers Guide to Systemic Contamination Control”. The book also includes information on the Vickers concept of “ProActive Maintenance”. The following recommendations are based on ISO cleanliness levels at 2 μm, 5 μm and 15 μm. For products in this catalog the recommended levels are:

Up to 210 bar (3000 psi) 19/**17**/**14**

Installation Dimensions in mm (inches)

EURG*-06/10



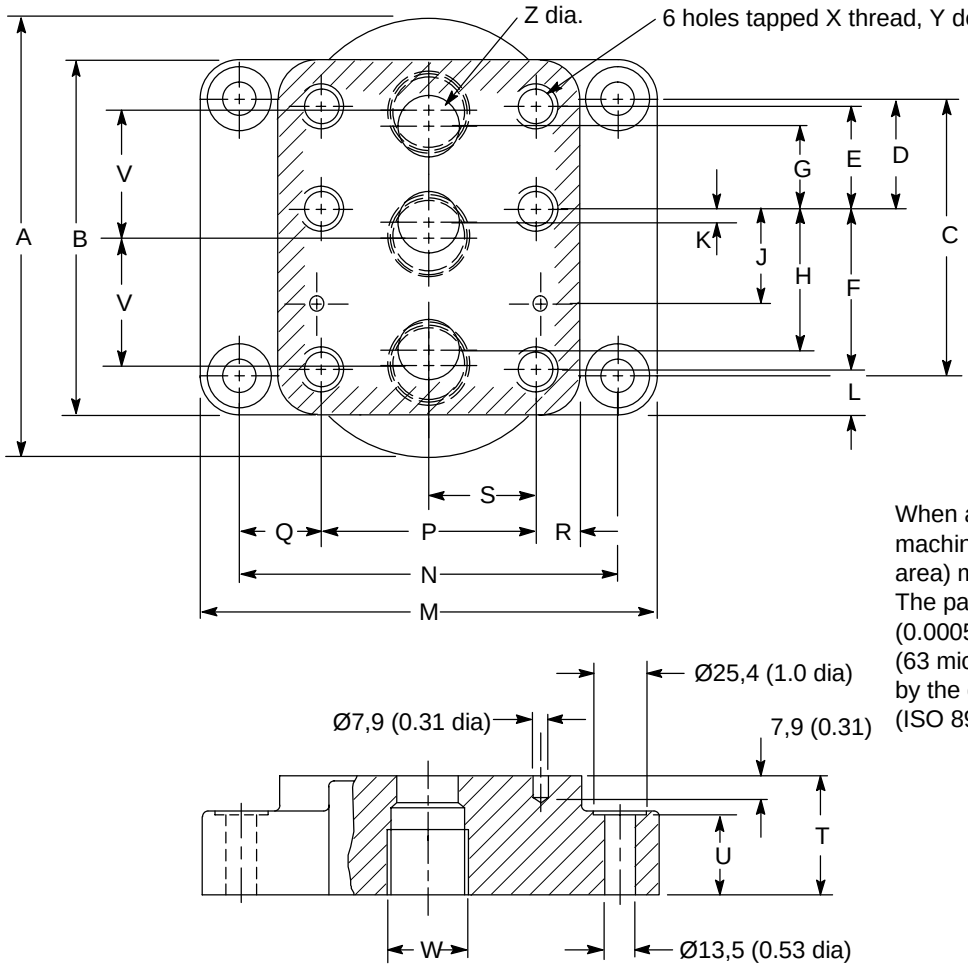
Fixing bolt kits:
For EURG*-06 valves: Kit type **BKUR-06-682M**
Torque to 257-317 Nm (190-233 lbf ft), lubricated
For EURG*-10 valves: Kit type **E-BKUR-10-683M**
Torque to 503-615 Nm (370-453 lbf ft), lubricated

For mounting subplates see next page.

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P
EURG*-06	101,6 (4.0)	160,3 (6.31)	23 (0.91)	139,7 (5.5)	76,2 (3.0)	92,2 (3.63)	124,0 (4.88)	181,0 (7.13)	134,1 (5.28)	108,0 (4.25)	25,4 (1.0)	82,8 (3.26)	17 (0.67)	26 (1.02)
EURG*-10	120,7 (4.75)	217,5 (8.56)	28,6 (1.13)	179,3 (7.06)	95,3 (3.75)	117,6 (4.63)	157,2 (6.19)	206,3 (8.12)	167,6 (6.6)	138,1 (5.44)	33,3 (1.31)	108 (4.25)	21 (0.83)	32 (1.26)

Subplate for EURG*-06/10 Valves

3rd angle projection



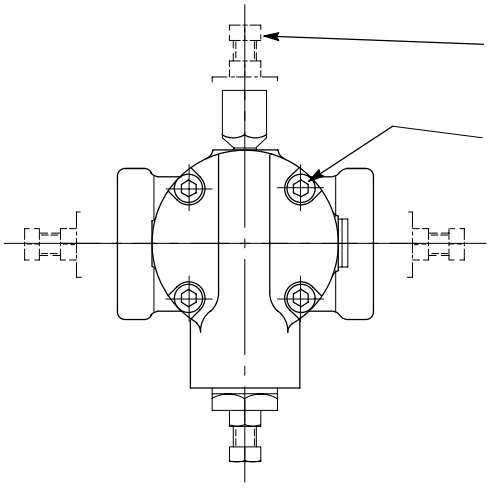
When a subplate is not used, a machined pad (as indicated by shaded area) must be provided for mounting. The pad must be flat within 0,013 mm (0.0005 in) and smooth within 1,6 μm (63 microinch). Mounting bolts provided by the customer should be Class 12,9 (ISO 898) or better.

Model	A	B	C	D	E	F	G	H	J	K	L	M
EURG1M-06	– –	145 (5.71)	113 (4.38)	46 (1.81)	46 (1.81)	66,7 (2.63)	33,3 (1.31)	55,6 (2.19)	33,3 (1.31)	11,1 (0.44)	15,9 (0.63)	162 (6.34)
EURG1M-10	200 (7.87)	178 (7.0)	146,1 (5.75)	54 (2.13)	50,8 (2.0)	88,9 (3.5)	38,1 (1.5)	76,2 (3.0)	44,5 (1.75)	12,7 (0.5)	19,1 (0.75)	184 (7.24)

Model	N	P	Q	R	S	T	U	V	W	X	Y	Z
EURG1M-06	130,2 (5.13)	69,9 (2.75)	30,2 (1.19)	15,9 (0.63)	34,9 (1.37)	39,9 (1.57)	23,9 (0.94)	48,3 (1.9)	$G\,^3/_4''$	M16	Thru' 40 (1.57)	23 (0.91)
EURG1M-10	152,4 (6.0)	82,6 (3.25)	34,9 (1.37)	19,1 (0.75)	41,3 (1.63)	50 (1.97)	30,2 (1.19)	64,3 (2.53)	$G1\,^1/_4''$	M20		28,6 (1.13)

EURT*-06/10

3rd angle projection

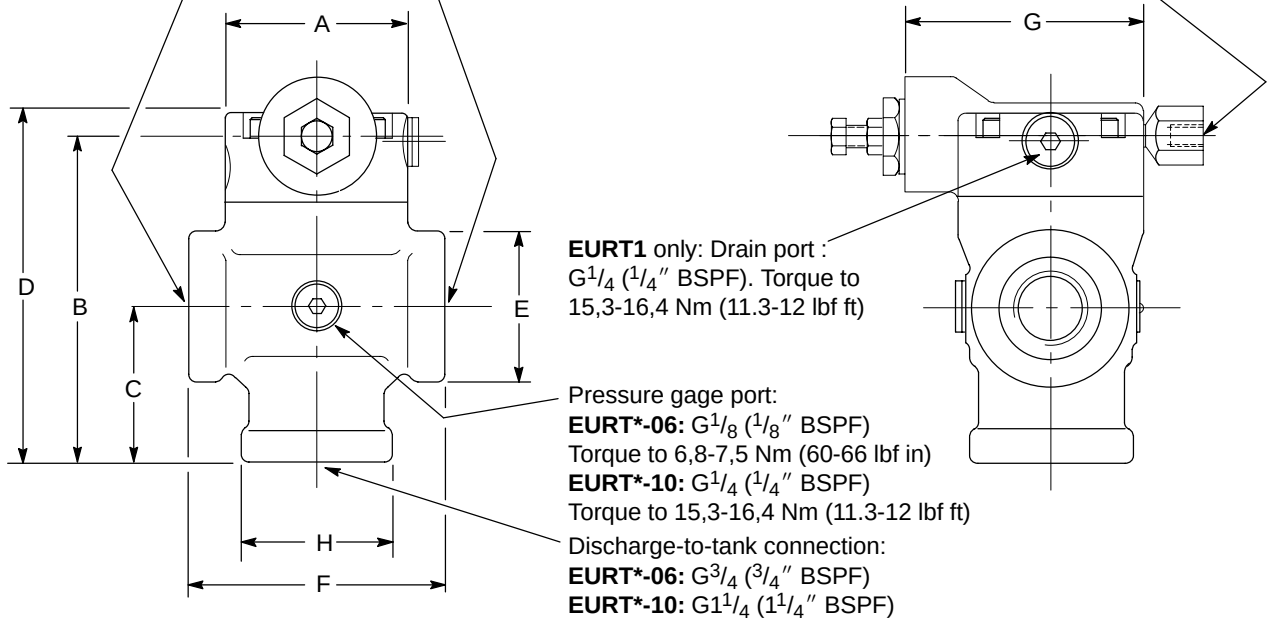


4 optional positions for adjustment control may be obtained by rotating cover to required position

Cover fixing screws, 4 off:
EURT*-06: M8 socket head cap screw
Torque to 32-36 Nm (24-26 lbf ft)
EURT*-10: M10 socket head cap screw
Torque to 62-70 Nm (46-51 lbf ft)

Pressure inlet or outlet connection:
EURT*-06: G$^{3}/_{4}$ ($^{3}/_{4}$″ BSPF)
EURT*-10: G1$^{1}/_{4}$ (1$^{1}/_{4}$″ BSPF)

Pilot pressure connection for unloading pump, G$^{1}/_{4}$ ($^{1}/_{4}$″ BSPF)



EURT1 only: Drain port :
G$^{1}/_{4}$ ($^{1}/_{4}$″ BSPF). Torque to 15,3-16,4 Nm (11.3-12 lbf ft)

Pressure gage port:
EURT*-06: G$^{1}/_{8}$ ($^{1}/_{8}$″ BSPF)
Torque to 6,8-7,5 Nm (60-66 lbf in)
EURT*-10: G$^{1}/_{4}$ ($^{1}/_{4}$″ BSPF)
Torque to 15,3-16,4 Nm (11.3-12 lbf ft)

Discharge-to-tank connection:
EURT*-06: G$^{3}/_{4}$ ($^{3}/_{4}$″ BSPF)
EURT*-10: G1$^{1}/_{4}$ (1$^{1}/_{4}$″ BSPF)

Model	A	B	C	D	E	F	G	H
EURT*-06	77,7 (3.06)	133,4 (5.25)	65 (2.56)	159 (6.26)	57,2 (2.25)	108,0 (4.25)	127,8 (5.03)	63,5 (2.5)
EURT*-10	95,3 (3.76)	165,1 (6.5)	76,2 (3.0)	189 (7.44)	76,2 (3.0)	127,0 (5.0)	137 (5.39)	76, (3.0)

Mass, kg (lb)

EURG*-06 . . . . . 11,4 (25.0)
EURG*-10 . . . . . 22,1 (48.6)
EURT*-06 . . . . . 4,6 (10.1)
EURT*-10 . . . . . 9,1 (20.0)
EURG1M-06 . . . . . 5,7 (12.5)
EURG1M-10 . . . . . 9,3 (20.5)

Mounting Attitude

Optional.

Ordering Procedure

Before ordering check availability with the Vickers representative. Valves, subplates and bolt kits are supplied as separate items and must be ordered as such, e.g.
2 off -EURG1-06-B-13-UG valves
2 off -EURG1M-06-20-R subplates
2 off -BKUR-682M bolt kits

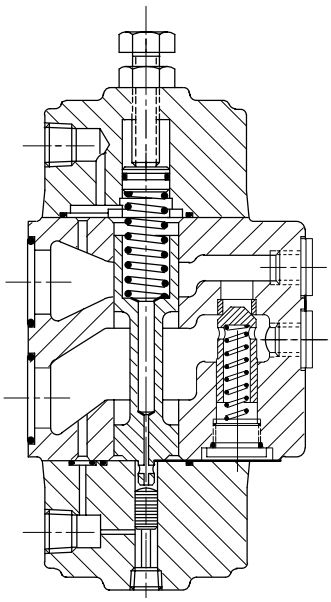
If a EURT valve is required then a check valve is also needed and must be ordered separately. The check valves recommended are C2-815 ($^3/_4$″) or C2-825 ($1^1/_4$″). For further details of these valves refer to leaflet 2334.

Pressure Control Valve

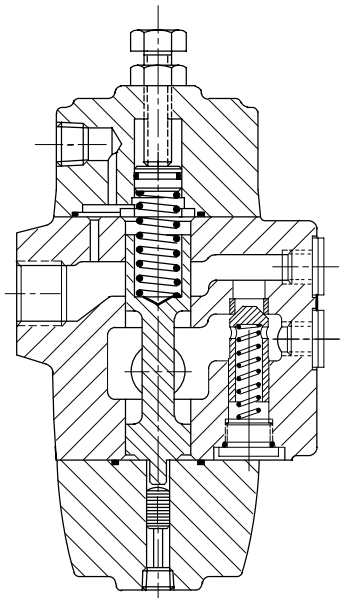
R(C)G(O)-03, 06 and 10; R(C)T(O)-03, 06 and 10

Sectional Illustrations

RCG- Model Shown**



RCT- Model Shown**



Basic Characteristics

Type . . . . . Sliding spool
Mounting . . . . . Subplate or manifold
Pipe mounted
Operating
pressure . . . . . 210 bar (3000 psi) max.
Nominal flow . . . . . Up to 284 L/min
(75 USgpm)

General Description

The R and RC series valves are of the pressure actuated sliding spool type which can be adapted to perform various circuit functions. These functions, depending on assembly build, include relief valve, sequence valve and counterbalance valve.

Normally Closed Models, R(C)* Series

Back Pressure Valve – Type 1
Internal drain, directly operated. Used for creating back pressure or for overload protection in low pressure circuits up to 35 bar when the secondary port is connected directly to tank.

When provided with an integral check it can be used as a counterbalance or brake valve.

Sequence Valve – Type 2
External drain, directly operated. Used to maintain a minimum pressure at the primary port for a holding operation while permitting pressure build-up downstream of the secondary port outlet.

Sequence Valve – Type 3
External drain, remotely operated. Operation is the same as Type 2 except that it is remotely operated. The valve can be used to sequence independently of the primary pressure.

Unloading Valve – Type 4
Internal drain, remotely operated. Here the secondary port must be connected directly to tank; application of external pressure opens the valve fully, independent of the primary pressure.

When provided with an integral check it can be used as a remotely operated counterbalance or brake valve.

Integral Check – Type RC
Allows free reverse flow.

Auxiliary Remote Control – P feature
Available only on certain R(C)G and R(C)T models with pressure ranges A, B, D and F. Here low pressure remote control is achieved via the auxiliary port.

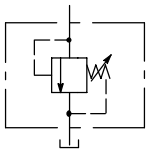
Normally Open – Type R(C)*O
Here the operation is such that pilot pressure closes the valve. It is used in special counterbalance or decompression circuits.

Functional Symbols and Basic Models

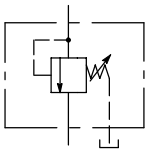
a) Functional Symbols for “Normally Closed” Valves

Surface (Gasket) Mounting RG

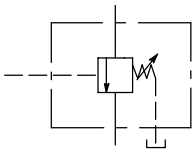
Back pressure valve, directly operated, internal drain, type 1



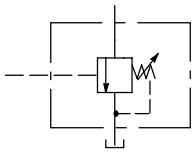
Sequence valve, directly operated, external drain, type 2



Sequence valve, remotely controlled, external drain, type 3

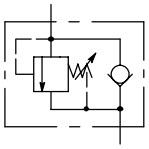


Unloading valve, remotely controlled, internal drain, type 4

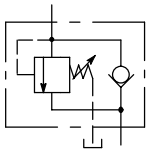


Surface (Gasket) Mounting RCG

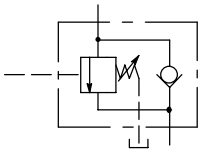
Back pressure valve, directly operated, internal drain, type 1



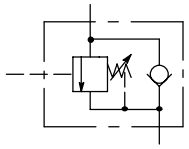
Sequence valve, directly operated, external drain, type 2



Sequence valve, remotely controlled, external drain, type 3

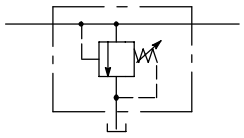


Counterbalance valve, remotely controlled, internal drain, type 4

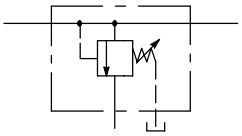


Threaded Port RT

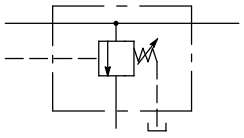
Back pressure valve, directly operated, internal drain, type 1



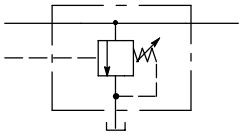
Sequence valve, directly operated, external drain, type 2



Sequence valve, remotely controlled, external drain, type 3

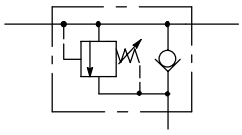


Unloading valve, remotely controlled, internal drain, type 4

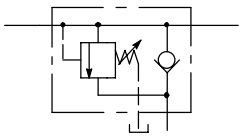


Threaded Port RCT

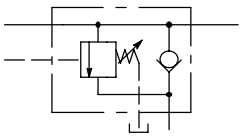
Counterbalance valve, directly operated, internal drain, type 1



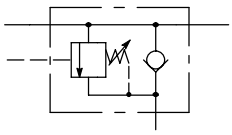
Sequence valve, directly operated, external drain, type 2



Sequence valve, remotely controlled, external drain, type 3



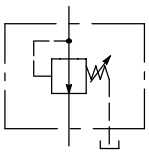
Counterbalance valve, remotely controlled, internal drain, type 4



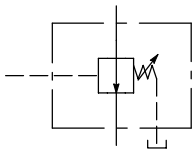
b) Functional Symbols for "Normally Open" Valves

Surface (Gasket) Mounting RGO

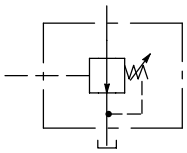
Normally open sequence valve, directly operated, external drain, type 2



Normally open sequence valve, remotely controlled, external drain, type 3

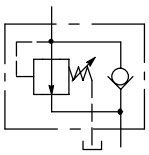


Normally open loading valve, remotely controlled, internal drain, type 4

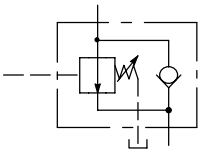


Surface (Gasket) Mounting RCGO

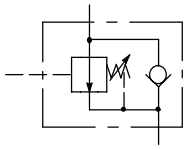
Normally open sequence valve, directly operated, external drain, type 2



Normally open sequence valve, remotely controlled, external drain, type 3

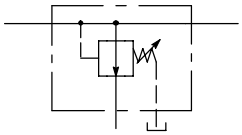


Normally open counterbalance valve, remotely controlled, internal drain, type 4

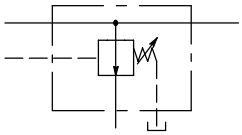


Threaded Port RTO

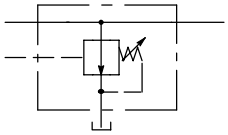
Normally open sequence valve, directly operated, external drain, type 2



Normally open sequence valve, remotely controlled, external drain, type 3

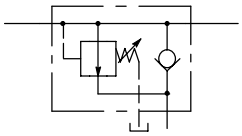


Normally open loading valve, remotely controlled, internal drain, type 4

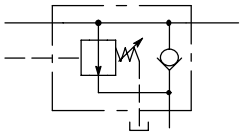


Threaded Port RCTO

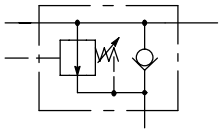
Normally open sequence valve, directly operated, external drain, type 2



Normally open sequence valve, remotely controlled, external drain, type 3



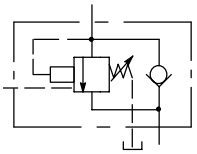
Normally open counterbalance valve, remotely controlled, internal drain, type 4



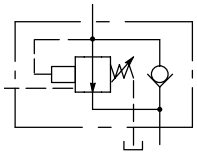
Functional Symbols for Auxiliary Remote Control Connection ("P" Feature)

This option provides a control pressure range of nominally 12.5% of the normally required control pressure range for the A, B and D pressure ranges and at 6.25% for the F pressure range. This feature is only available for certain valves with pressure ranges of A, B, C and F. It is not available for R(C)G(O)-03 models.

"P" Connection



"P" Connection



Model Code

Features in brackets ( ) may be omitted. All other features must be specified.

**F3 - R C * (O) - ** - * (P) * - ** - **

1 2 3 4 5 6 7 8 9 10 11

1 Special seals
See “Hydraulic Fluids” section

2 Pressure control valve

3 Integral check valve
Omit if not required

4 Type of mounting
G = Gasket for subplate or manifold
T = Pipe mounted

5 Normally open valve
Omit if not required
Not available for type 1 valves

6 Nominal valve size
03 = $^{3}/_{8}''$ nominal bore pipe size
06 = $^{3}/_{4}''$ nominal bore pipe size
10 = $1^{1}/_{4}''$ nominal bore pipe size

7 Pressure range
(For availability see table below)
X = 0,7 - 2,1 bar (10 - 30 psi)
Y = 1,4 - 4,1 bar (20 - 60 psi)
Z = 2,4 - 8,6 bar (35 - 125 psi)
A = 5,2 - 17,2 bar (75 - 250 psi)
B = 8,6 - 34,5 bar (125 - 500 psi)
D = 17,3 - 69,0 bar (250 - 1000 psi)
F = 34,5 - 138,0 bar (500 - 2000 psi)

8 Auxiliary low pressure remote control connection
Only available for pressure ranges A, B, D and F.
Not available for R(C)G(O)-03 models.
Omit if not required.

9 Valve type
1 = Internally piloted, internally drained
2 = Internally piloted, externally drained
3 = Externally piloted, externally drained
4 = Externally piloted, internally drained

10 Design number
Currently
22, for R(C)*(O)-10
23, for RT(O)-03, R(C)G(O)-03/06 and R(C)T(O)-06
30, for RCT-03
Subject to change. Installation dimensions remain as shown for design numbers *0 to *9 inclusive.

11 Main port tappings/fixing bolts
UA = NPT pipe threads▲
UB = G pipe threads (BSPF, ISO, 228)
} RT-03 and R(C)T(O)-06/10 models only
UG = Dual metric/inch fixing bolt facility, R(C)G(O) models only
Omit for RCT-03 (NPT main ports)

▲ *Check with your Vickers representative for availability.*

Performance Data

Maximum Pressures
Main ports▲ . . . . . 210 bar (3000 psi)
Remote pressure control ports . . As above, for main ports
Auxiliary remote pressure control port “P” feature . . . . . 140 bar (2000 psi)
Drain port▲ (all models) . . . . . 140 bar (2000 psi)

▲ *The normal outlet of valve types 1 and 4 must be piped to reservoir at atmospheric pressure. The drain port on types 2 and 3 should similarly be piped directly to reservoir at atmospheric pressure. Any pressure at the drain port is additive to the pressure setting of the valve.*

Basic model designation	“P” feature ■	Principal adjustable pressure range (bar) and model code reference letter							
		0,7 - 2,1 = X	1,4 - 4,1 = Y	1,7 - 8,6 = Z	2,4 - 8,6 = Z	5,2 - 17,2 = A	8,6 - 34,5 = B	17,3 - 69 = D	34,5 - 138 = F
R(C)G or R(C)T	Without feature	●	●		●	●	●	●	●
	With feature					●	●	●	●

■ *Adjustable pressure range at ‘P’ feature port is nominally 12.5% of the A, B and D ranges and 6.25% of F range.*

Maximum Recommended Flow Rate

Valve model code	Flow rate L/min (USgpm)
R**-03	45 (12)
R**-06	113 (30)
R**-10	284 (75)

Hydraulic Fluids
Materials and seals used in these valves are compatible with:
Anti-wear petroleum oils . . . . . L-HM
Non-alkyl based
phosphate esters . . . . . L-HFD
The extreme operating range is 13 to 500 cSt (70 to 2300 SUS) but the recommended running range is 13 to 54 cSt (70 to 250 SUS). For further technical information about fluids see Technical Information leaflet B-920 or I-286-S.

Contamination Control Requirements
Recommendations on contamination control methods and the selection of products to control fluid condition are included in Vickers publication 9132 or 561, “Vickers Guide to Systemic Contamination Control”. The book alos includes information on the Vickers concept of “ProActive Maintenance”. The following recommendations are based on ISO cleanliness levels at 2 μm, 5 μm and 15 μm. For products in this catalog the recommended levels are:
0 to 210 bar (3000 psi) 18/**16**/**13**

Temperatures
For petroleum oil:
Min. . . . . –20°C (–4°F)
Max.* . . . . . +70°C (158°F)
* *To obtain optimum service life from both fluid and hydraulic system, 65°C (150°F) normally is the maximum temperature.*

For other fluids where limits are outside those of petroleum oil, consult fluid manufacturer or Vickers representative. Whatever the actual temperaure range, ensure that viscosities stay within those specified under “Hydraulic Fluids”.

Ambient for:
All valves at full performance specification: 0 to +70°C (32 to +158°F).
Storage:
–25 to +85°C (–13 to +185°F)

Pressure Adjustment

Adjust pressure by loosening locknut and turning adjusting screw in appropriate direction, clockwise to increase pressure counter-clockwise to decrease pressure.

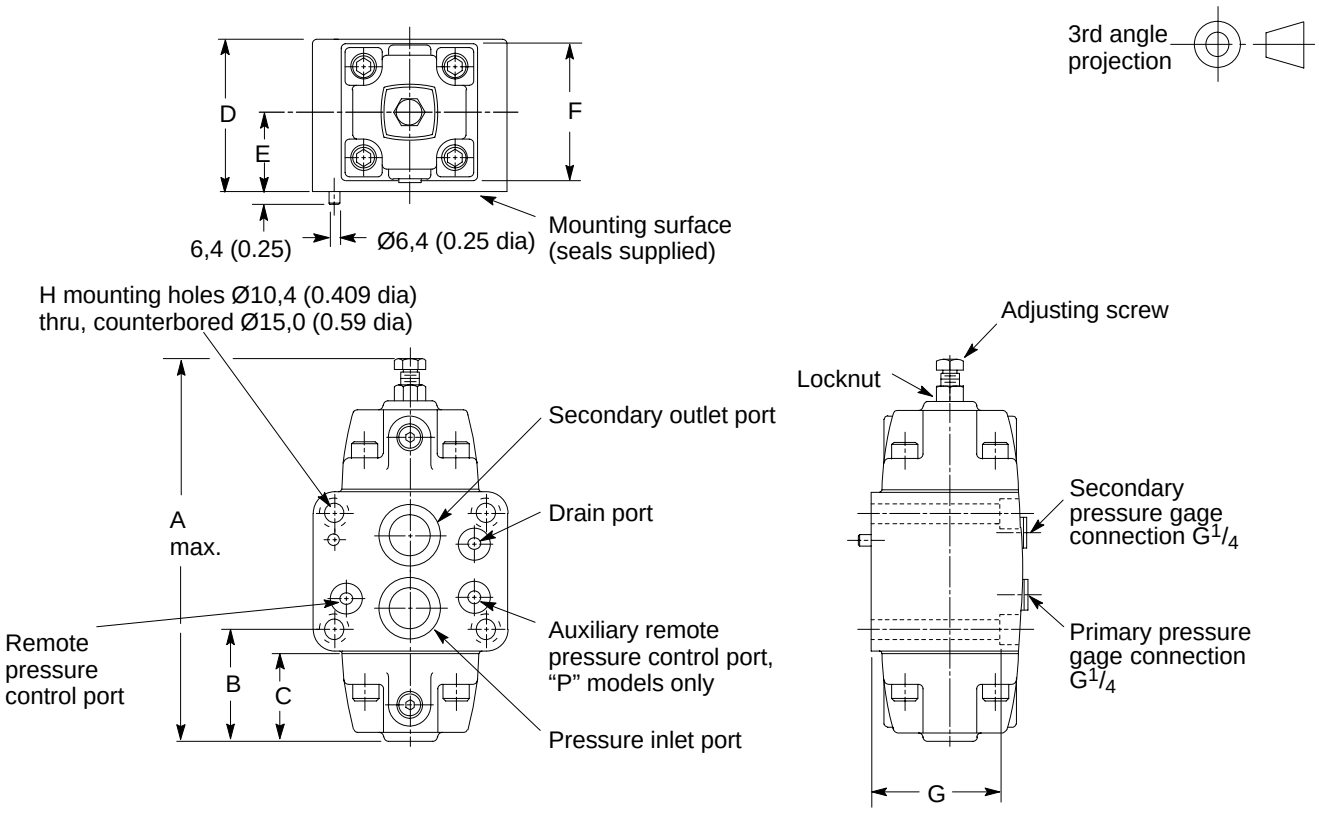
Pressure settings must be at least 17 bar (250 psi) lower than the system relief setting.

The remote pressure control connection on valve types 3 and 4 must be connected to an external pilot pressure source sufficient to operate the valve at the desired pressure and flow conditions.

All models, except those with X, Y or Z pressure range and all R(C)G(O)-03, are available with an auxiliary remote control connection. Required pressure at the auxiliary connection is 6.25% of the normally required control pressure for the F pressure range and 12.5% of the normally required control for the A, B and D pressure range.

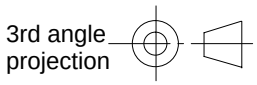
Installation Dimensions in mm (inches)

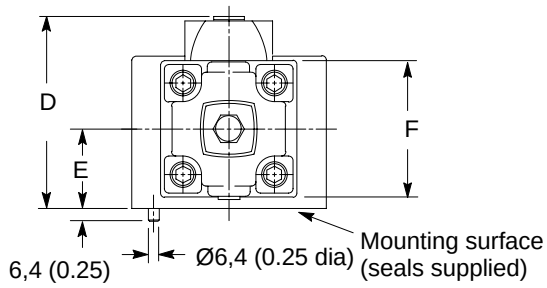
RG(O)-03/06/10

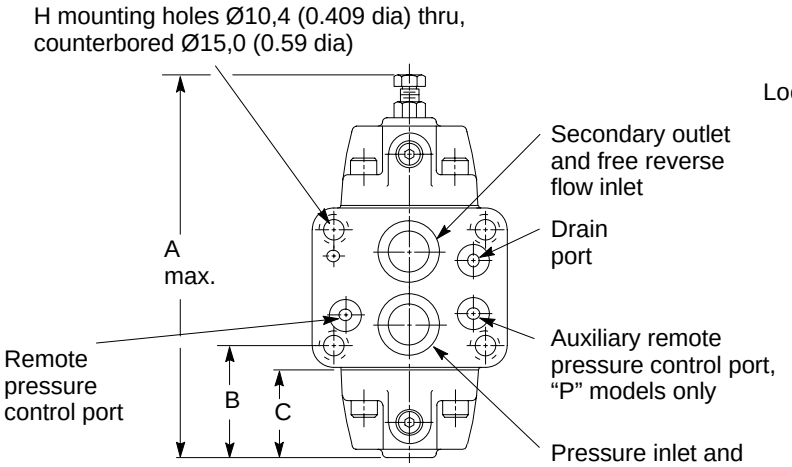


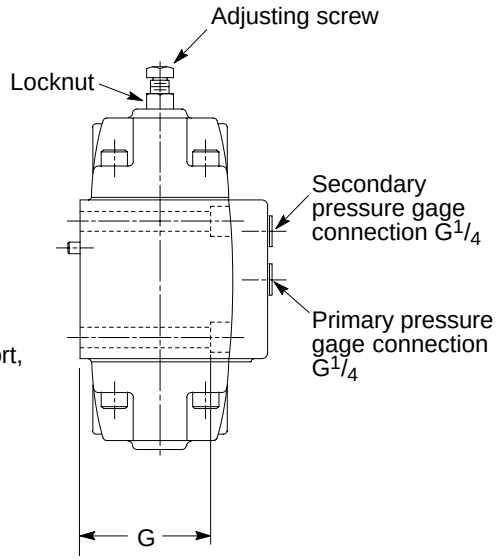
Model	A	B	C	D	E	F	G	H
RG-03	177,8 (7.0)	39,9 (1.57)	29,7 (1.17)	66,5 (2.62)	36,6 (1.44)	57,1 (2.25)	57,0 (2.24)	4
RG-06	200,2 (7.88)	55,7 (2.19)	44,7 (1.76)	79,2 (3.12)	41,1 (1.62)	71,4 (2.81)	69,6 (2.74)	4
RG-10	277,9 (10.94)	54,7 (2.15)	44,7 (1.76)	100,0 (3.94)	50,8 (2.0)	95,3 (3.75)	90,4 (3.56)	6

RCG(O)-03/06/10



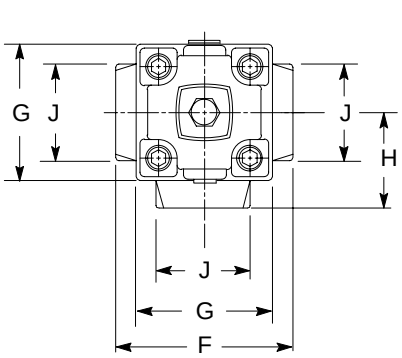




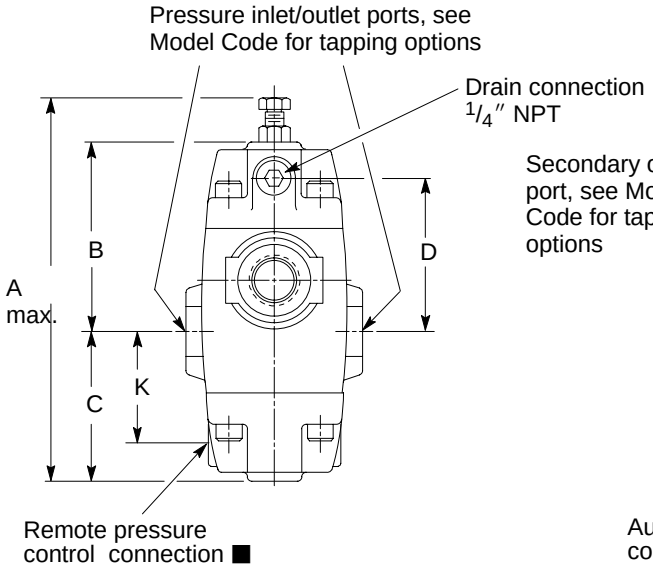


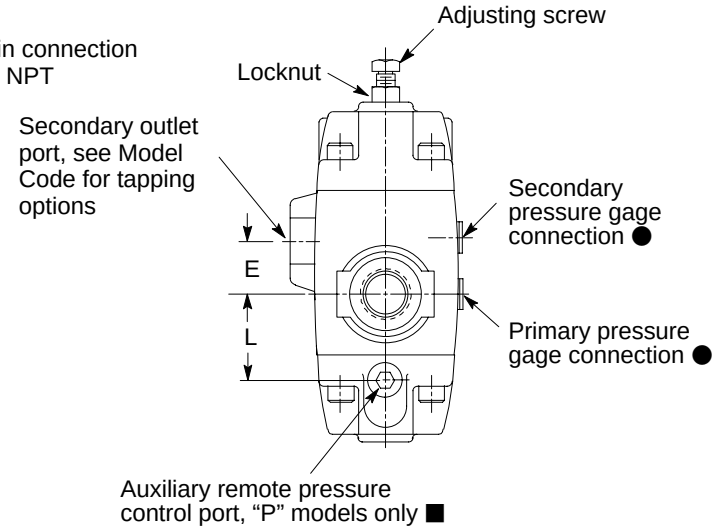
Model	A	B	C	D	E	F	G	H
RCG-03	177,8 (7.0)	39,9 (1.57)	29,7 (1.17)	90,4 (3.56)	36,6 (1.44)	57,1 (2.25)	57,0 (2.24)	4
RCG-06	200,2 (7.88)	55,7 (2.19)	44,7 (1.76)	98,6 (3.88)	41,1 (1.62)	71,4 (2.81)	69,6 (2.74)	4
RCG-10	277,9 (10.94)	54,7 (2.15)	44,7 (1.76)	130,8 (5.15)	50,8 (2.0)	95,3 (3.75)	90,4 (3.56)	6

RT(O)-03/06/10



3rd angle projection

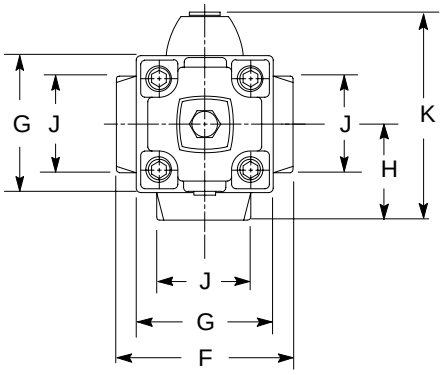




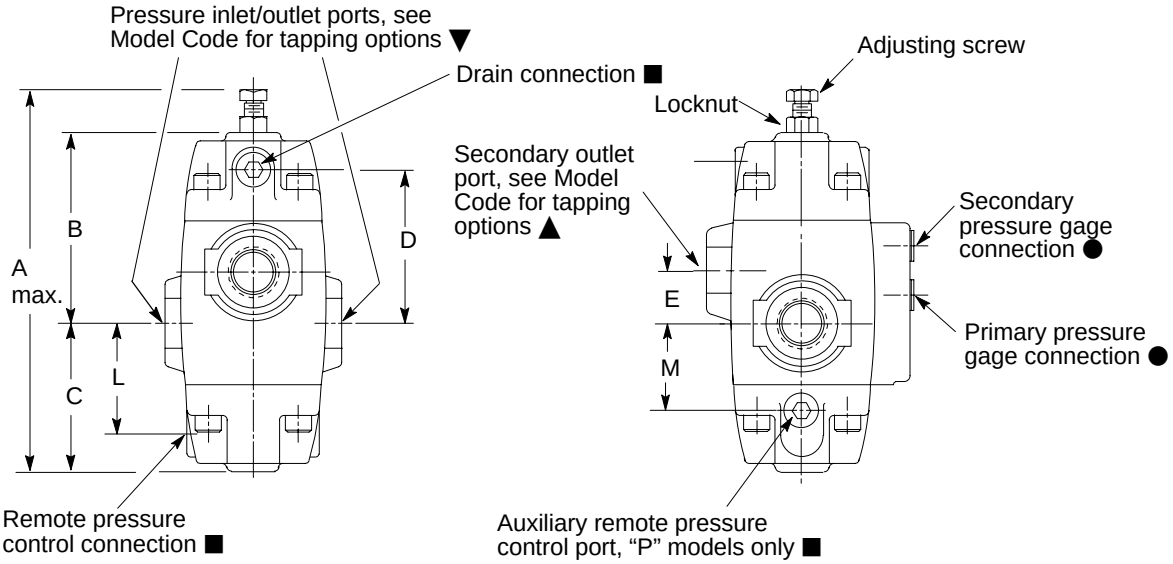
■ *RT-03 . . . . . 9/16″-18 UNF-2B SAE O-ring port*
All others . . . . . 1/4″ NPT
● *RT-03 . . . . . 7/16″-20 UNF-2B SAE O-ring port*
UA- suffix models . . . . . 1/4″ NPT
UB- suffix models G1/4

Model	A	B	C	D	E	F	G	H	J	K	L
RT-03	177,8 (7.0)	97,0 (3.82)	54,0 (2.13)	58,7 (2.31)	23,1 (0.91)	70,0 (2.76)	59,4 (2.34)	39,6 (1.56)	35,1 (1.38)	42,9 (1.69)	37,3 (1.47)
RT-06	200,2 (7.88)	97,0 (3.82)	74,9 (2.95)	79,5 (3.13)	26,9 (1.06)	93,0 (3.66)	76,0 (2.99)	49,3 (1.94)	50,8 (2.0)	57,2 (2.25)	45,2 (1.78)
RT-10	277,9 (10.94)	154,2 (6.07)	84,3 (3.32)	80,5 (3.17)	28,7 (1.13)	118,0 (4.65)	98,6 (3.88)	68,3 (2.69)	86,4 (3.40)	70,9 (2.79)	57,2 (2.25)

RCT(O)-03/06/10



3rd angle projection



■ *RCT-03 . . . . . $^{9}/_{16}$″ -18 UNF-2B SAE O-ring port*
All others . . . . . $^{1}/_{4}$″ NPT
● *RCT-03 . . . . . $^{7}/_{16}$″ -20 UNF-2B SAE O-ring port*
UA- suffix models . . . . . $^{1}/_{4}$″ NPT
UB- suffix models . . . . . G$^{1}/_{4}$
▲ *Also free reverse flow inlet.*
▼ *Also free reverse flow outlets.*

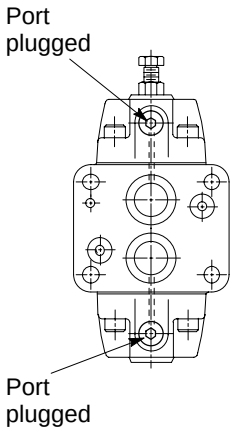
Model	A	B	C	D	E	F	G	H	J	K	L	M
RCT-03	177,8 (7.0)	97,0 (3.82)	54,0 (2.13)	58,7 (2.31)	23,1 (0.91)	70 (2.76)	59,4 (2.34)	39,6 (1.56)	35,1 (1.38)	93,7 (3.69)	42,9 (1.69)	37,3 (1.47)
RCT-06	200,2 (7.88)	97,0 (3.82)	74,9 (2.95)	79,5 (3.13)	26,9 (1.06)	93 (3.66)	76,0 (2.99)	49,3 (1.94)	50,8 (2.0)	107,0 (4.21)	57,2 (2.25)	45,2 (1.78)
RCT-10	277,9 (10.94)	154,2 (6.07)	84,3 (3.32)	80,5 (3.17)	28,7 (1.13)	118 (4.65)	98,6 (3.88)	68,3 (2.69)	86,4 (3.40)	147,6 (5.81)	70,9 (2.79)	57,2 (2.25)

Basic Models

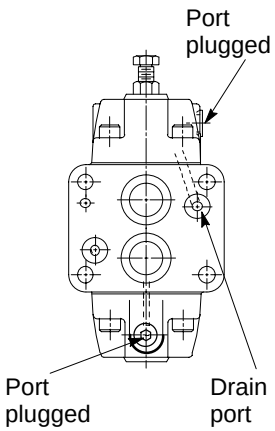
Basic models are distinguished by the relative orientation of top and bottom caps and by the presence or absence of port plugs in the caps.

R(C)G Models

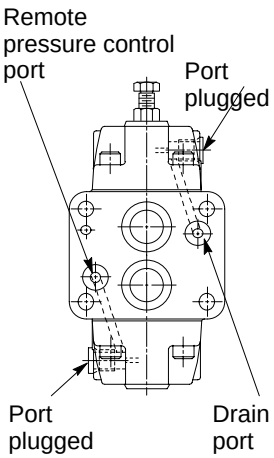
Directly operated, internal drain, type 1



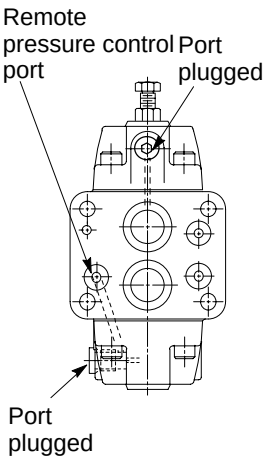
Directly operated, external drain, type 2



Remotely controlled, external drain, type 3

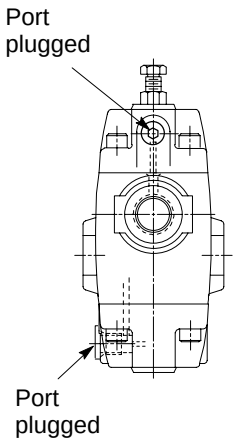


Remotely controlled, internal drain, type 4

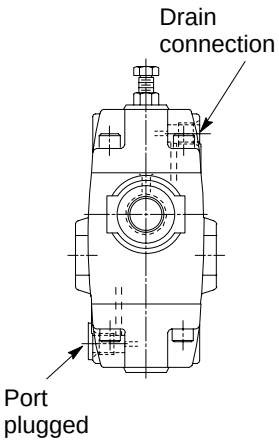


R(C)T models

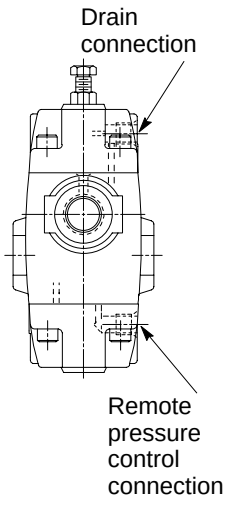
Directly operated, internal drain, type 1



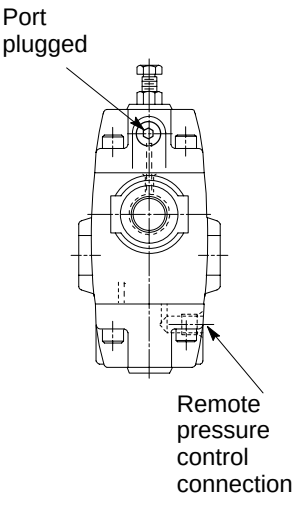
Directly operated, external drain, type 2



Remotely controlled, external drain, type 3



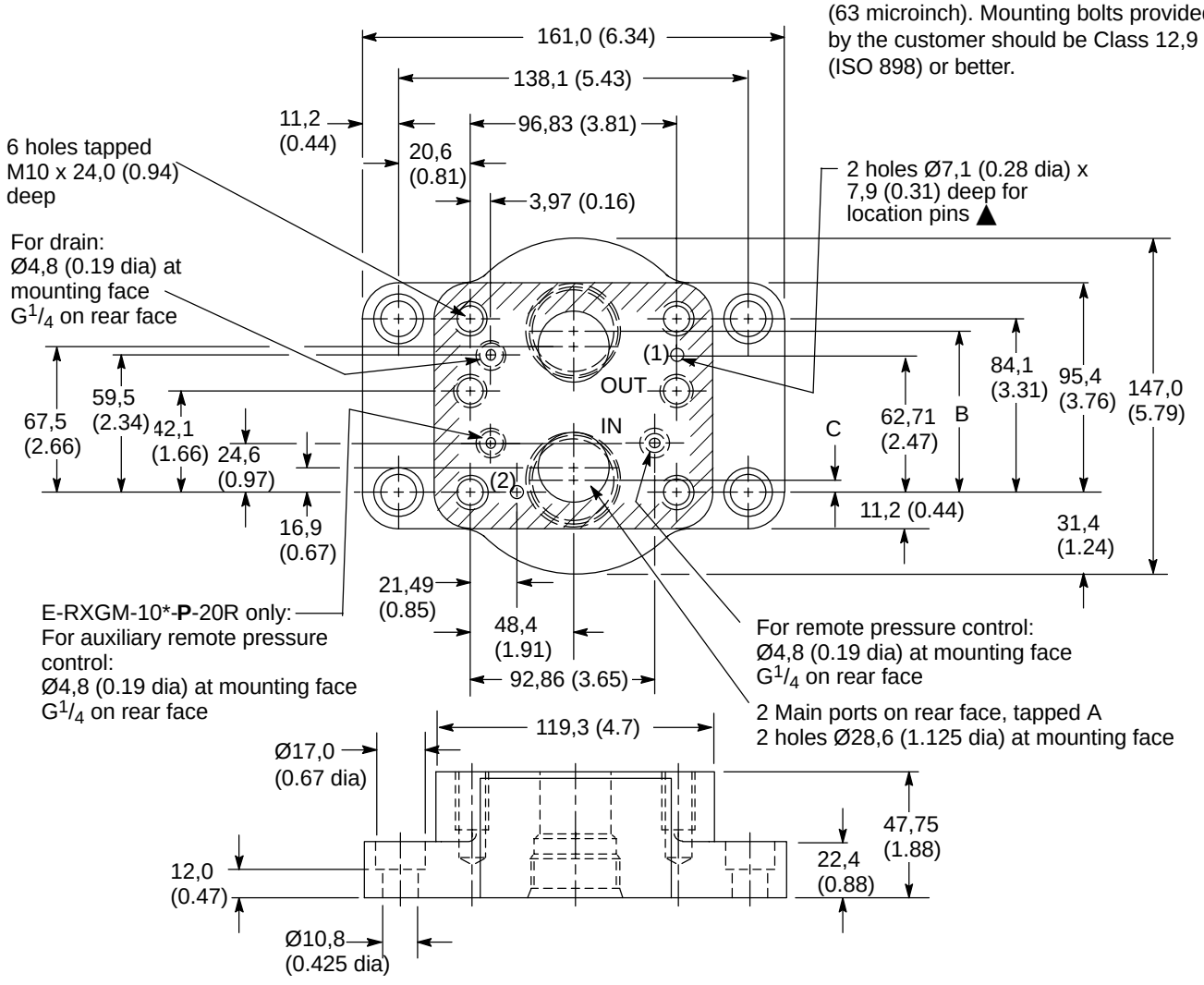
Remotely controlled, internal drain, type 4



Note: Type 2, 3 and 4 illustrations also apply to “normally open” models, available only in the R(C)GO and R(C)TO ranges. Functional symbols.

E-RXGM-10(X) Subplate

When a subplate is not used, a machined pad (as indicated by shaded area) must be provided for mounting. The pad must be flat within 0,013 mm (0.0005 in) and smooth within 1,6 μm (63 microinch). Mounting bolts provided by the customer should be Class 12,9 (ISO 898) or better.

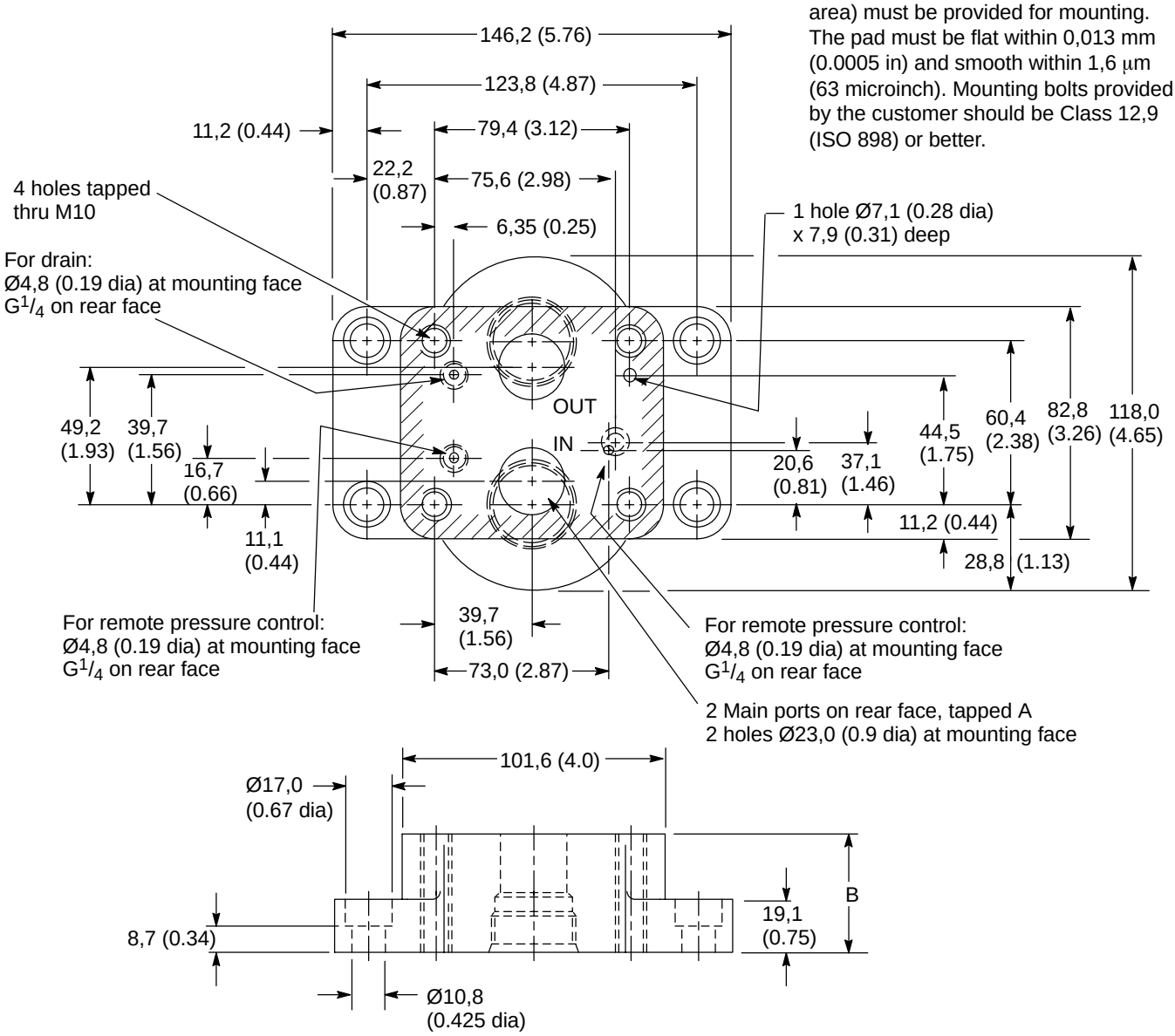


▲ *Pin at location (1) for pilot operated check valves; at location (2) for pressure reducing valves.*

Model	A	B	C
E-RXGM-10-20R	G1 1/4	76,2 (3.0)	7,9 (0.31)
E-RXGM-10X-20R	G1 1/2	78,1 (3.1)	6,0 (0.24)

E-RXGM-06
Subplate

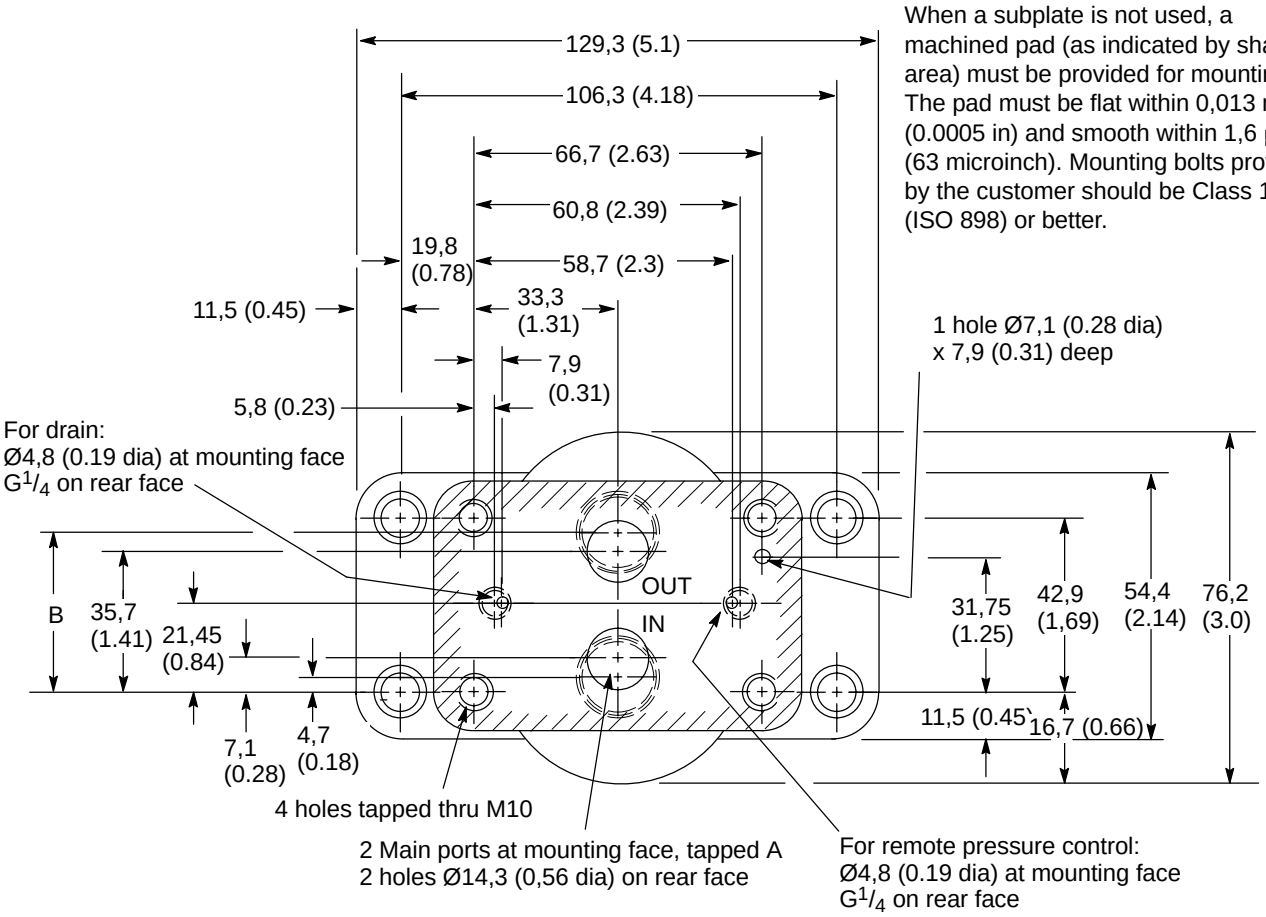
When a subplate is not used, a machined pad (as indicated by shaded area) must be provided for mounting. The pad must be flat within 0,013 mm (0.0005 in) and smooth within 1,6 μm (63 microinch). Mounting bolts provided by the customer should be Class 12,9 (ISO 898) or better.

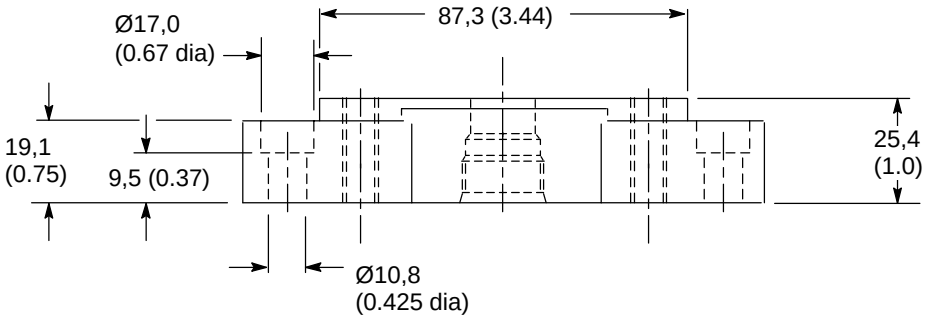


Model	A	B
E-RXGM-06-20R	G3/4	34,9 (1.37)
E-RXGM-06X-20R	G1	41,2 (1.62)

E-RXGM-03
Subplate

When a subplate is not used, a machined pad (as indicated by shaded area) must be provided for mounting. The pad must be flat within 0,013 mm (0.0005 in) and smooth within 1,6 μm (63 microinch). Mounting bolts provided by the customer should be Class 12,9 (ISO 898) or better.





Model	A	B
E-RXGM-03-20R	G3/8	38,1 (1.5)
E-RXGM-03X-20R	G1/2	40,4 (1.59)

Mass

Valve model code	Mass kg (lb)
RG(O)-03	3,7 (1.7)
RG(O)-06	6,4 (2.9)
RG(O)-10	12,0 (5.5)
RCG(O)-03	4,2 (2.0)
RCG(O)-06	7,0 (3.2)
RCG(O)-10	13,0 (5.9)
RT(O)-03	2,8 (1.3)
RT(O)-06	5,7 (2.6)
RT(O)-10	12,1 (5.5)
RCT(O)-03	3,0 (1.4)
RCT(O)-06	5,9 (2.7)
RCT(O)-10	13,0 (5.9)

Mounting Attitude

Optional, horizontal preferred.

Ordering Procedure

When ordering a unit please specify the complete model code which is applicable to your requirements.

Subplates and bolt kits are supplied as separate units and therefore must be ordered as such.

Example
Valve RG-06-A-2-23-UG
Subplate E-RXGM-06X-20R
Bolt kit BKRX-06-661M

Bolt kits available
Model code
BKRX-03-660M . . . . . M10 x 70
BKRX-06-661M . . . . . M10 x 80
BKRX-10-662M . . . . . M10 x 110