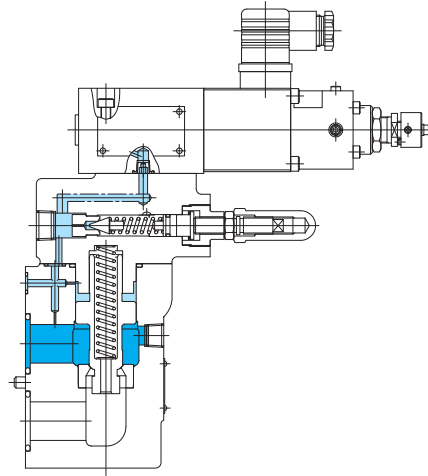
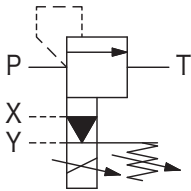


# Proportional solenoid relief valves EPCG2-03/06/10



## Functional Symbol



This valve utilizes a proportional solenoid actuator to provide proportional control of hydraulic circuit pressure.

## Model Code

### EPCG2-06-210-Y-L-13



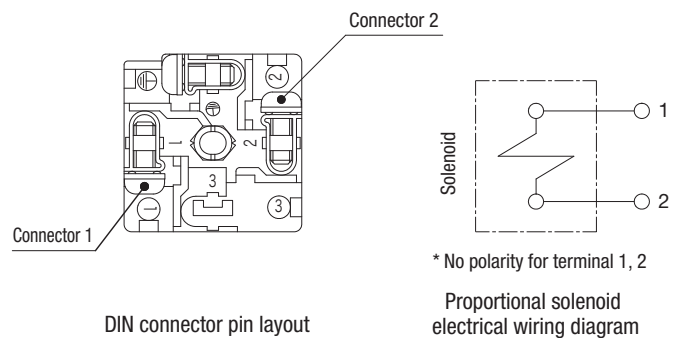
- 1 Proportional solenoid relief valve
- 2 Size
- 3 Pressure adjustment range  
Refer to "Specifications".

- 4 Drain  
Y: external drain (standard)
- 5 Manual adjustment knob  
Omit: front, L: left
- 6 Design no.

## Specifications

Model Code		EPCG2		
Size		03	06	10
Max. working pressure	MPa	21		
Max. flow	L/min	80	200	400
Max. adjustable pressure MPa	Pressure adjustment range code	35	3.5	
		70	7	
		140	14	
		175	17.5	
		210	21	
Rated current	A	1		
Coil resistance	$\Omega$	14		
Hysteresis		Less than 3%*		
Repeatability		Less than 1%*		
Weight	kg	7	10	15

Note: \* indicates the value when using controller P-X-20 or equivalent.



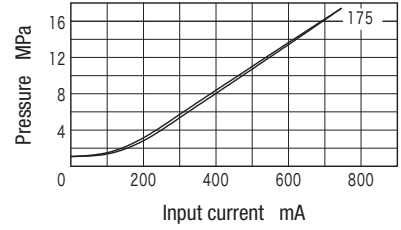
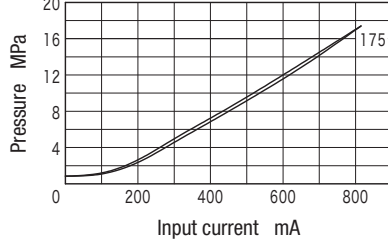
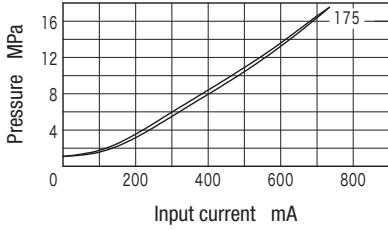
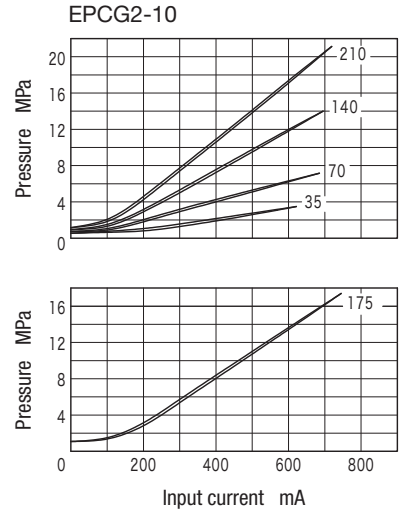
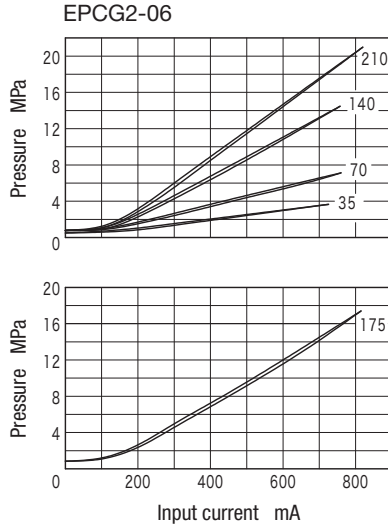
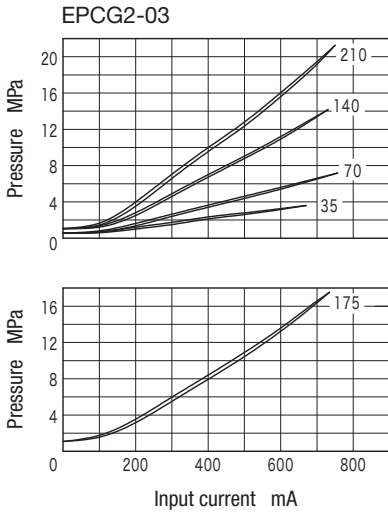
DIN connector pin layout

Proportional solenoid electrical wiring diagram

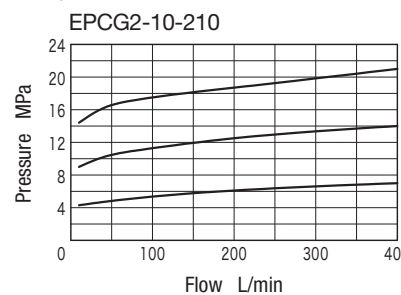
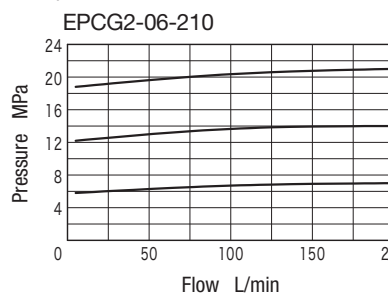
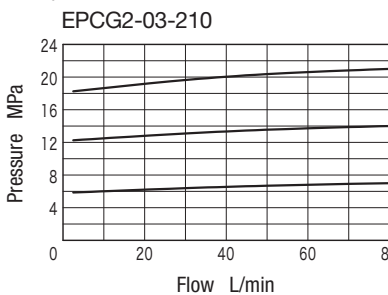
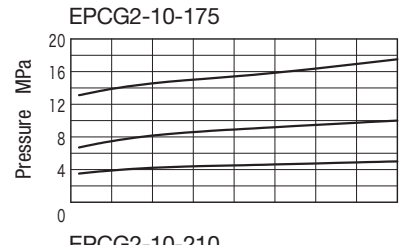
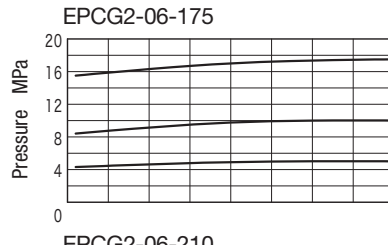
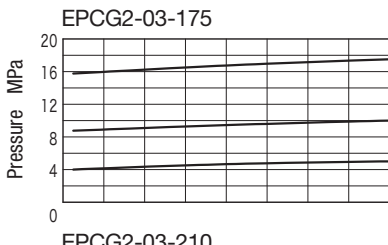
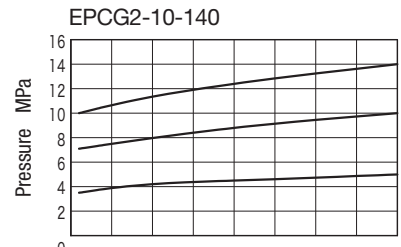
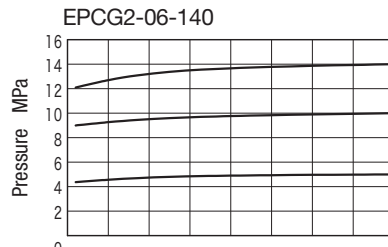
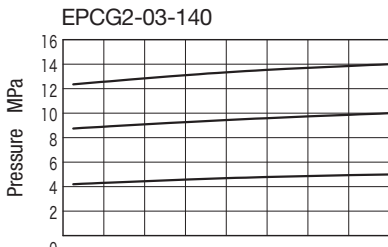
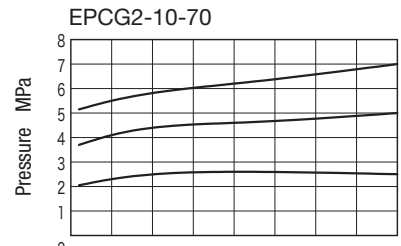
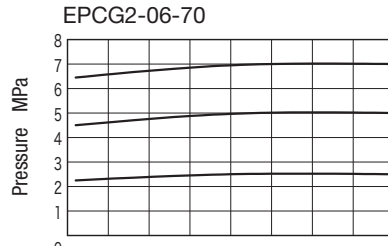
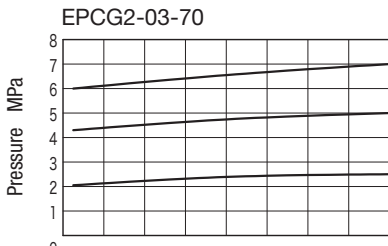
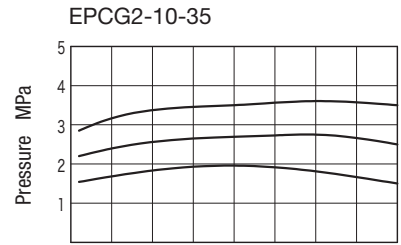
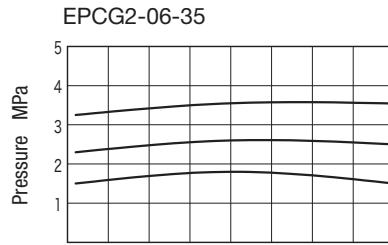
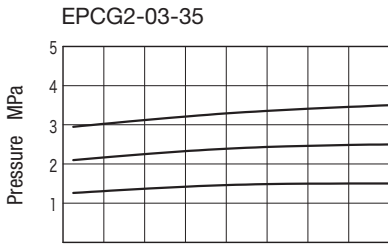
\* No polarity for terminal 1, 2

# Characteristics Curve (at 20 mm<sup>2</sup>/s) (typical examples)

## Input Current–Pressure Characteristics



## Flow–Pressure Characteristics

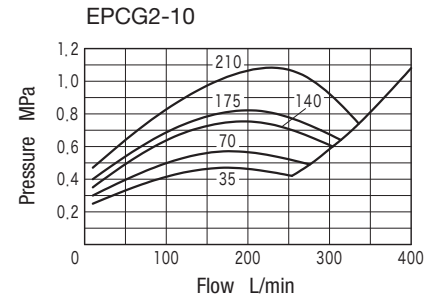
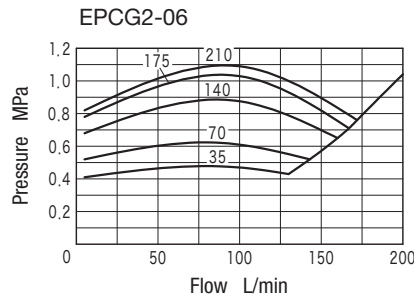
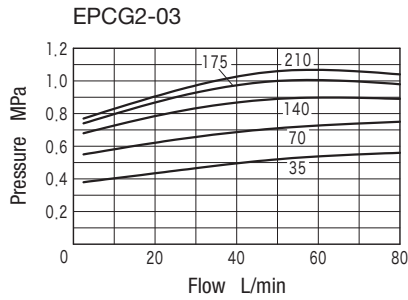


2-2

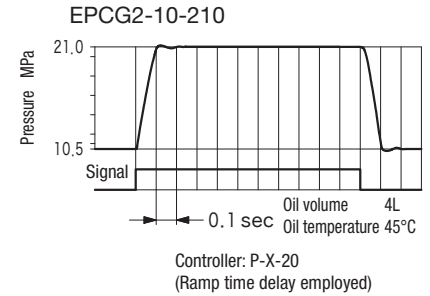
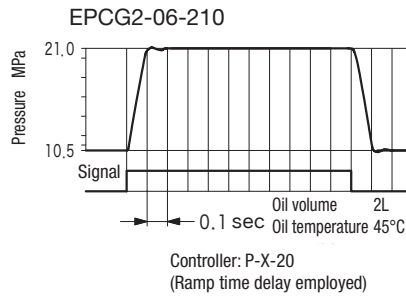
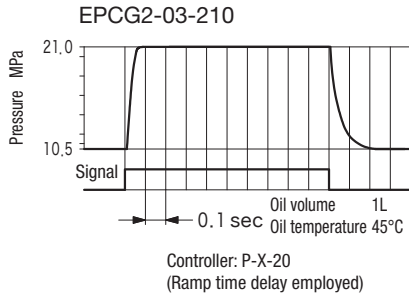
Proportional Solenoid Control Valves

# Characteristics Curve (at 20 mm<sup>2</sup>/s) (typical examples)

## Minimum Control Pressure



## Step Response Characteristics



## Notes on Operation

- Air bleed  
For stable pressure control, loosen the air bleed plug and bleed air completely out of the valve prior to use.
- Manual adjustment  
In case there is no input current to the solenoid during initial adjustment or electric malfunction, pressure may be set manually with the pressure adjustment knob. Return knob to counterclockwise direction upon electro-magnetic control.
- Minimum control flow  
Pressure setting may be unstable in the case of low flow. Maintain minimum flows above values shown in the table below.

Valve Model	Minimum Control Flow L/min
EPCG2-03	2.5
EPCG2-06	5
EPCG2-10	10

- Drain piping  
Y port (drain) allowable back pressure is 0.2 MPa. Drain piping should be directly returned to tank. Ensure that end of the piping is always below the fluid level.
- Tank piping  
Do not connect with piping of other tanks, each should be directly returned to tank. Ensure that end of the piping is always below the fluid level.
- Vent piping  
Care should be paid when the vent line piping is long as the large volume of fluid in the pipes may cause instability in pressure control.
- Zero adjustment  
This is adjusted at factory before shipment. Readjustment is not necessary.
- Main valve setting pressure  
The main valve is set at the maximum adjustable pressure plus 2.5 MPa as safety valve (flow is set at 1/2 of max. flow).
- When using the valve mounted on subplate, connect drain from main valve cover Y-port (Rc 1/4).

## Mounting Bolts (JIS B 1176, Strength Class 12.9)

Valve Model	Hex Socket Bolts		Qty
	Metric Thread	Unified Thread	
EPCG2-03	M12 × 80	1/2-13UNC × 82.5	4
EPCG2-06	M16 × 85	5/8-11UNC × 82.5	4
EPCG2-10	M20 × 100	3/4-10UNC × 101.6	4

- Mounting bolts must be ordered separately.
- Mounting bolt tightening torque  
EPCG2-03: 72 to 88 N·m  
EPCG2-06: 90 to 110 N·m  
EPCG2-10: 180 to 220 N·m

## Subplate

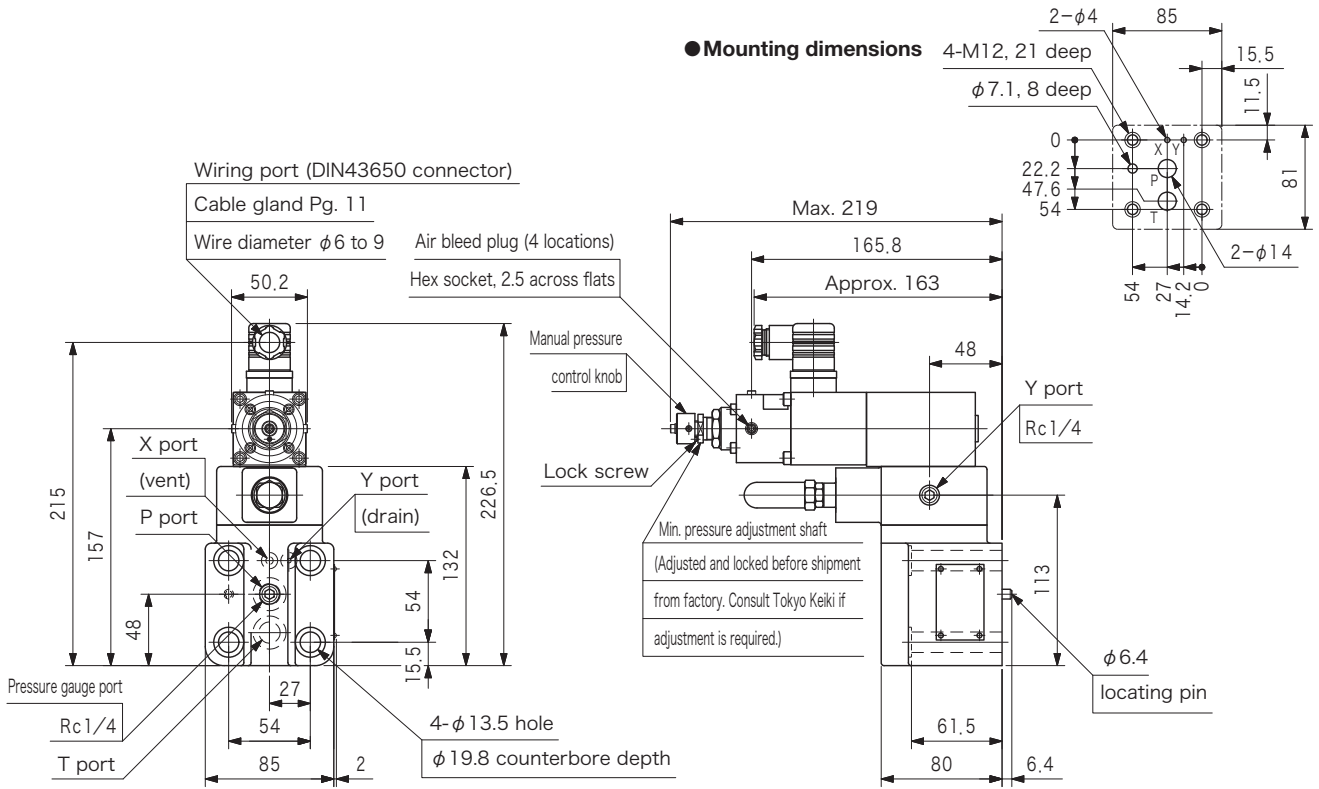
Valve Model	Subplate	Connection Port Dia. Rc
EPCG2-03	TCGMT-03-10-JA-J	3/8
EPCG2-06	CGM-06-10-JA-J	3/4
EPCG2-10	CGM-10-10-JA-J	1-1/4

- Subplate must be ordered separately.
- Hex socket bolts for mounting valve included. (Unified thread)
- See page R6-2 for dimensions.

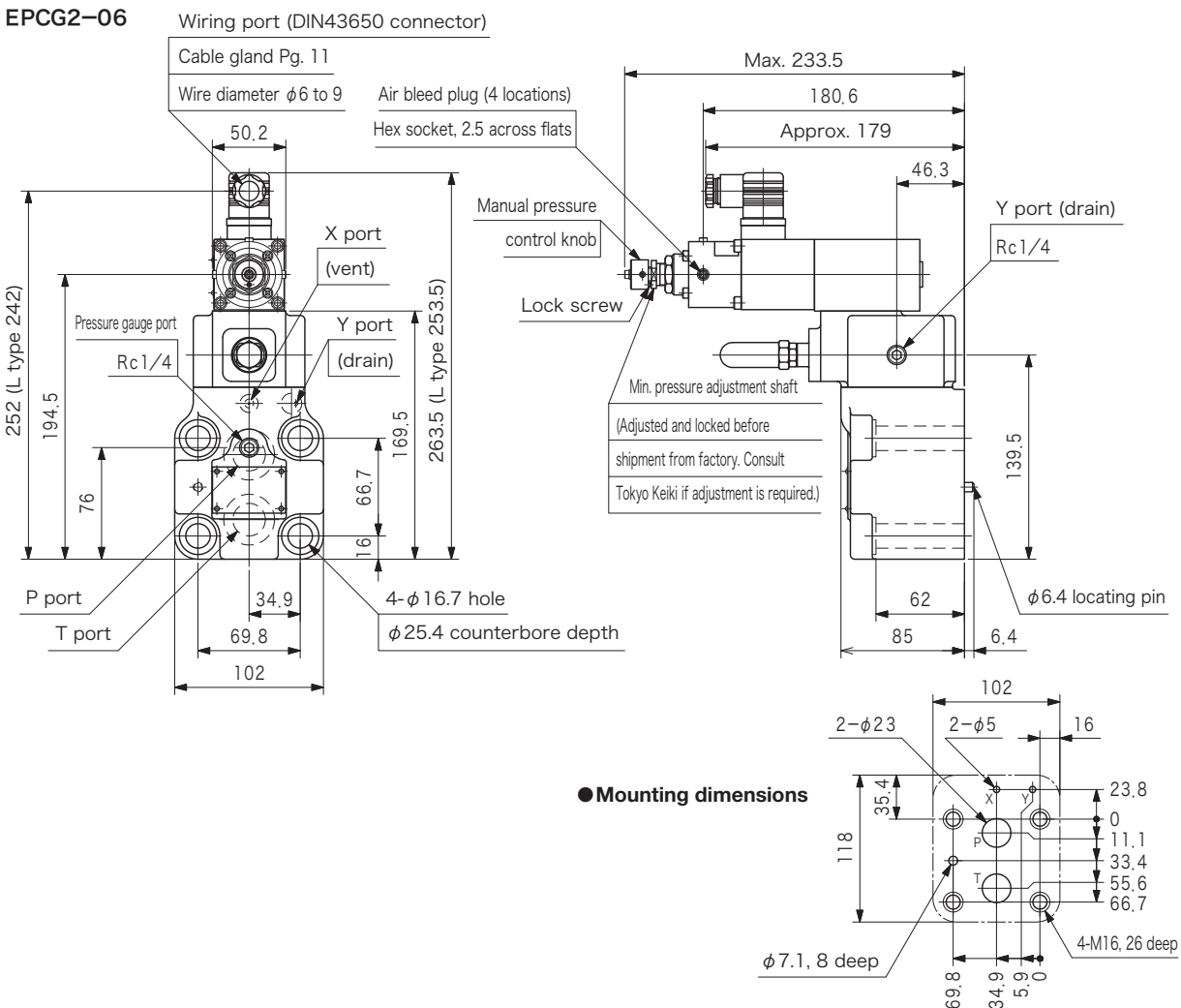
Note: When using subplate, care should be paid to working flow and piping resistance in order to avoid high minimum pressures and poor flow-pressure override characteristics.

# Dimensions

## EPCG2-03

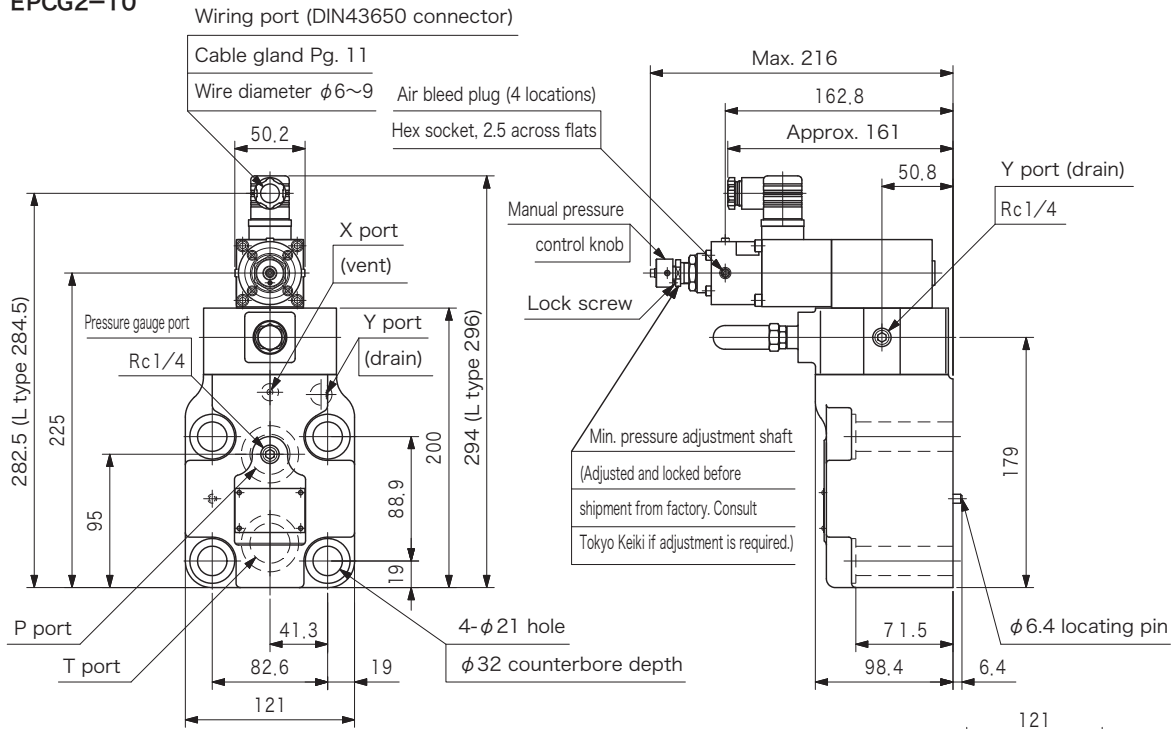


## EPCG2-06

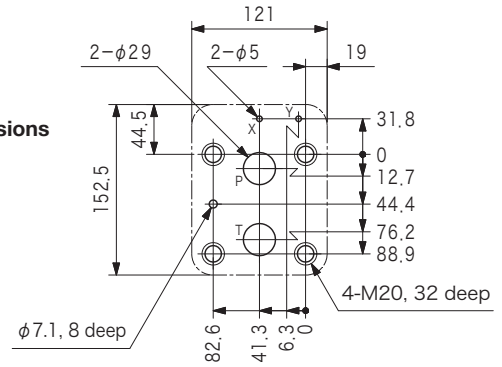


# Dimensions

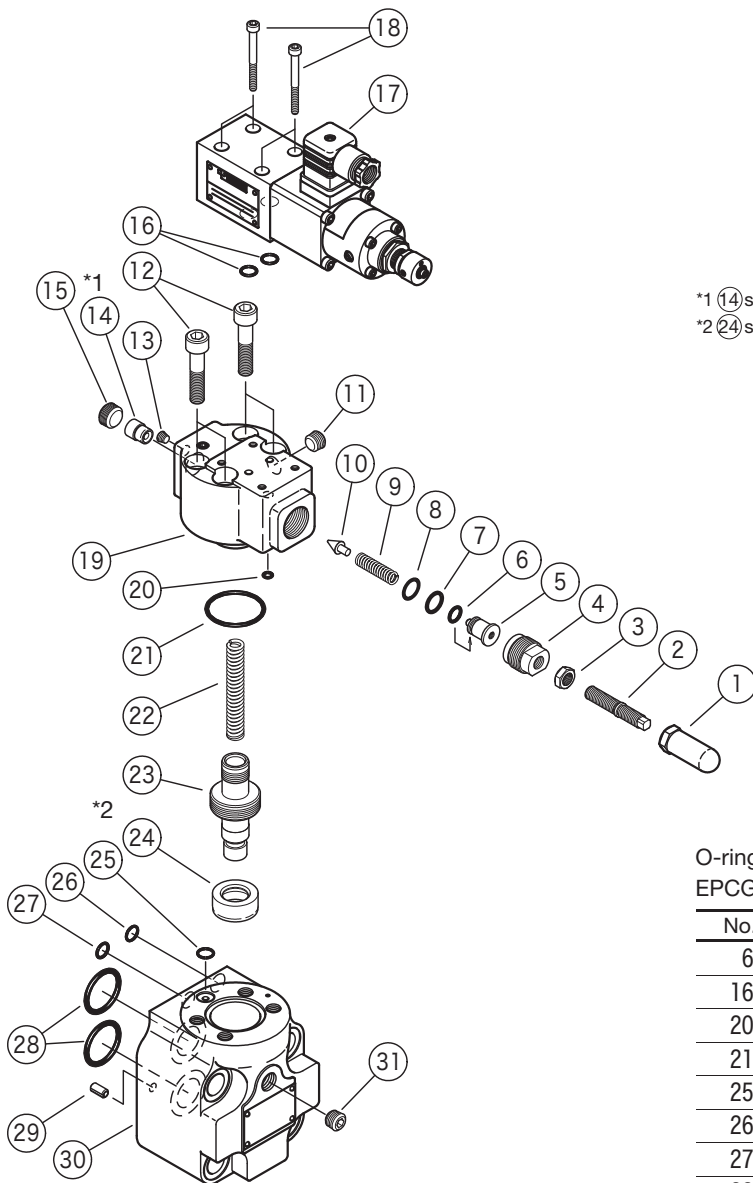
## EPCG2-10



### ● Mounting dimensions



Note: Consult Tokyo Keiki for dimensional details in case of left orientation (L type) manual adjustment knob.



\*1 (14) seat is press-fitted into (19) body.

\*2 (24) seat is press-fitted into (30) body.

J  
2-6

Proportional Solenoid Control Valves

Spring

EPCG2-03

Code	⑨	⑳
35	VP2280	VA24150
70	VA15049	VA15401
140~210	VP2281	VA15401

EPCG2-06

Code	⑨	⑳
35	VP2280	VA29663
70	VA15049	VA14894
140~210	VP2281	VA14894

EPCG2-10

Code	⑨	⑳
35	VP2280	VA28580
70	VA15049	VA15105
140~210	VP2281	VA15105

O-ring  
EPCG2-03

No.	Part No.	Standard	Qty
6	007901217	AS568-012 (NBR, Hs70)	1
16	007901217	AS568-012 (NBR, Hs70)	2
20	007900919	AS568-009 (NBR, Hs90)	1
21	007912219	AS568-122 (NBR, Hs90)	1
25	007900919	AS568-009 (NBR, Hs90)	1
26	007901119	AS568-011 (NBR, Hs90)	1
27	007901119	AS568-011 (NBR, Hs90)	1
28	007911519	AS568-115 (NBR, Hs90)	2

EPCG2-06

No.	Part No.	Standard	Qty
6	007901217	AS568-012 (NBR, Hs70)	1
16	007901217	AS568-012 (NBR, Hs70)	2
20	007900819	AS568-008 (NBR, Hs90)	1
21	VA11168	—	1
25	007901219	AS568-012 (NBR, Hs90)	1
26	007911019	AS568-110 (NBR, Hs90)	1
27	007901219	AS568-012 (NBR, Hs90)	1
28	007921619	AS568-216 (NBR, Hs90)	2

EPCG2-10

No.	Part No.	Standard	Qty
6	007901217	AS568-012 (NBR, Hs70)	1
16	007901217	AS568-012 (NBR, Hs70)	2
20	007901219	AS568-012 (NBR, Hs90)	1
21	007922419	AS568-224 (NBR, Hs90)	1
25	007901219	AS568-012 (NBR, Hs90)	1
26	007901419	AS568-014 (NBR, Hs90)	1
27	007901219	AS568-012 (NBR, Hs90)	1
28	007922019	AS568-220 (NBR, Hs90)	2

Note: For L type, 007901219 used for (26) O-ring.