Electro-hydraulic control valve

# **Electro-hydraulic Proportional Pilot Relief Valve**

1.2ℓ/min 0.3 to 35MPa





### **Features**

This DC solenoid relief valve matches the suction force of a DC solenoid with fluid pressure. When connected to a small-volume hydraulic system or the poppet of a balanced piston type pressure control valve, this valve provides continual pressure control in proportion to input current.

## **Specifications**

Model No.	EPR-G01-*-****-12
Rated Current ℓ/min	1.2
Pressure Control Range MPa{kgf/cm²}	B:0.3 to 2.5{ 3.1 to 25.5} 1:0.7 to 7 { 7.1 to 71 } 2:1.0 to 14 {10 to 143 } 3:1.5 to 21 {15.3 to 214 } 4:1.5 to 28 {15.3 to 286 } 5:2.0 to 35 {20 to 357 }
Rated Current mA	800
Coil Resistance Ω	20 (20°C)
Hysteresis %	3 max. (Note)
Weight kg	1.6

Note) Value when a Nachi-Fujikoshi special amplifier is used (with dithering).

## **Explanation of model No.**

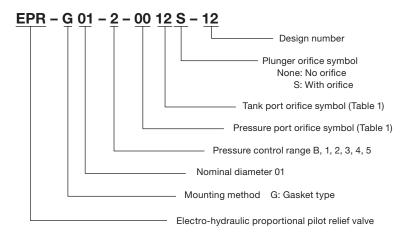


Table 1 Pressure Port and Tank Port Orifice Symbols

Orifice Symbol	00	08	09	10	11	12	13
Orifice Diameter	None	φ 0.8	φ 0.9	φ 1.0	φ 1.1	φ 1.2	φ 1.3

Note) The following are the standards for the orifice auxiliary symbols.

Pressure Control Range	Orifice Auxiliary Symbol
Type B, Type 1	0013S
Type 2, Type 3	0012S
Type 4	1212S
Type 5	11118

#### Handling

1 Air Bleeding

To enable proper pressure control, loosen the air vent when starting up the pump in order to bleed any air from the pump, and fill the inside of the solenoid with hydraulic operating fluid. The position of the air vent can change by loosening the M4 screw and rotating the cover.

2 Mounting Method Mounting on a vertical surface causes minimum pressure to increase by

0.2MPa {2kgf/cm<sup>2</sup>}. 3 Manual Pressure Adjusting Screw For the initial adjustment or when there is no input current to the valve due to an electrical problem or some other reason, valve pressure can be increased by rotating the manual adjustment screw clockwise (rightward). Normally, the manual adjusting screw should be rotated back fully to the left (counterclockwise) and secured with the lock nut.

4 Minimum Relief Flow Rate A small flow rate can cause setting pressure to become unstable. Use a flow rate of at least 0.3l/min.

**5** Load Capacity When using this valve to control direct circuit pressure, make sure the load volume (valve P port side volume) is at least 40cm3.

6 Bundled Accessories (Valve Mounting Bolts) M5 x 45l(four) Tightening torque: 5

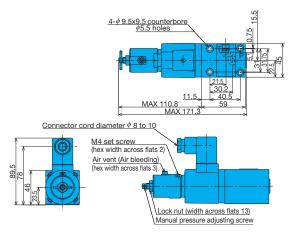
to 7N·m {51 to 71kgf·cm} 7 Sub Plate

When a sub plate is required, order using the following model number. MSA-01Y-10 (See the next page for dimensions.)

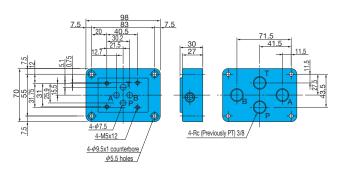
8 Use an operating fluid that conforms to the both of the following. Oil Temperature: -20 to 70°C Kinematic Viscosity: 12 to 400mm<sup>2</sup>/s. The recommended kinematic viscosity range is 15 to 60mm<sup>2</sup>/s.

## **Installation Dimension Drawings**





Sub Plate MSA-01Y-10



Note) Install the sub plate so the valve's P port is aligned with the sub plate's B port.

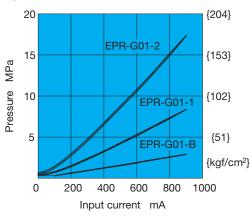
 $\overline{\mbox{Th}}\mbox{e}$  gasket surface dimensions comply with the ISO standard shown below.

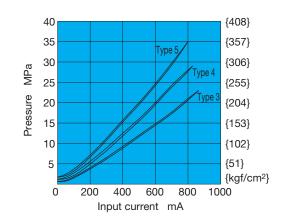
ISO 4401-03-02-0-05

## **Performance Curves**

### Hydraulic Operating Fluid Kinematic Viscosity 32mm<sup>2</sup>/s

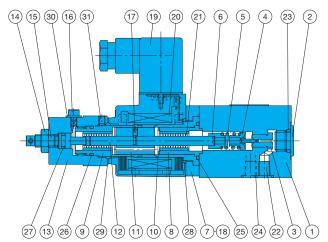
Input Current - Pressure Characteristics





## **Cross-sectional Drawing**

EPR-G01-\*-\*\*\*\*-12



Seal Part List (Kit Model NumberJPS-G01-1A)

Part No.	Part Name	Part Number	Q'ty
23	O-ring	NBR-90 P11	1
24	O-ring	NBR-90 P9	2
25	O-ring	NBR-90 P22	1
26	O-ring	AS 568-016 (NBR-90)	1
27	O-ring	NBR-90 P7	1
28	O-ring	S-25 (NBR-70-1)	1
29	O-ring	NBR-70-1 P20	1
30	Seal	WF-4-7.4-1.0	1

Note) The materials and hardness of the O-ring conforms with JIS B2401.

Part No.	Part Name
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 20 21 223 24 25 26 27 28 29 30 31	Body Plug Seat Poppet Spring Retainer Cover Stopper Guide Shim Plunger Rod Cover Nut Screw Screw Screw Screw Screw Connector Coil Ball bush Choke O-ring O-ring O-ring O-ring O-ring Seal Scew Seat

Note) Coil model number JD64-D2