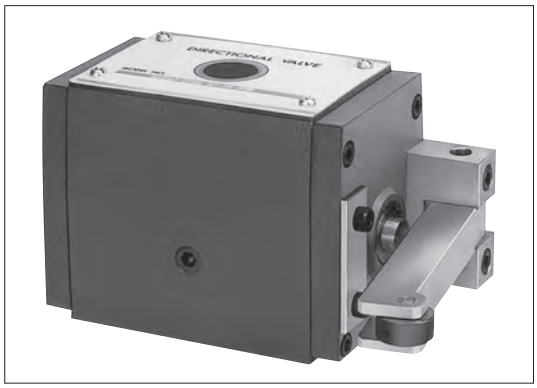
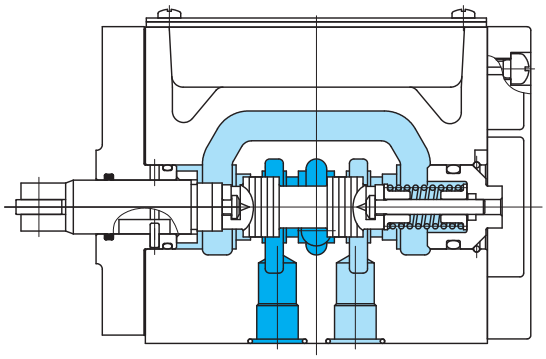
Mechanically operated directional control valves
DG2S2-01/DG2S4-01





Functional Symbols

Model Code

(F3)-DG2S4-012A-51-(LH)-JA-(S15)

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

1 Hydraulic fluid
Omit: mineral oil based fluid, water-glycol based fluid
F3: Phosphate ester

2 Mechanically operated directional control valve (gasket mounting)
Mounting ISO 4401-AC-05-4-A

3 Flow direction
2: 2 way valve
4: 4 way valve

4 Spool type
Refer to “Functional Symbols”.

5 Spring offset

6 Design no.
51: Standard
50: S15 and S16

7 Roller and lever assembly orientation
Omit: standard (when offset, P to A, B to T)
LH: Left hand build (when offset, P to B, A to T)

8 Special suffix
Omit: direct operated roller
S15: Roller lever (roller on P port side)
S16: Roller lever (roller on T port side)

Specifications

Model Code	Size	Max. Working Pressure MPa	Max. Flow L/min		Allowable Tank Line Back Pressure MPa	Weight kg
			7 MPa	21 MPa		
DG2S2-012A	03	21	45	30	0.035	3.5
DG2S4-010A			45	30	7	
DG2S4-012A			76	76		

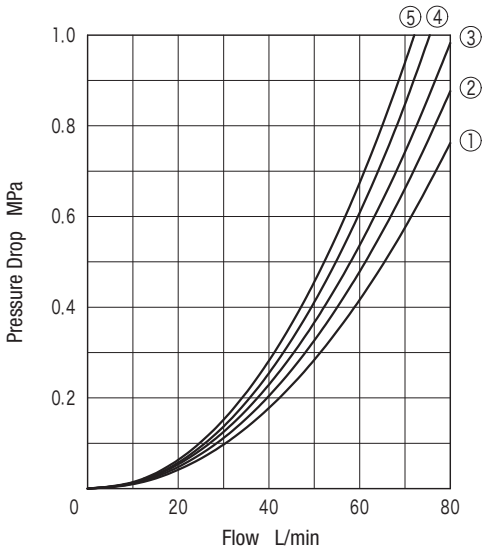
Spool Type	Pressure Drop Curve Number			
	P→A	B→T	P→B	A→T
0	②	①	②	③
2	③	④	③	⑤

Viscosity mm²/s	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Coefficient	0.85	1.00	1.09	1.17	1.24	1.29	1.34	1.38	1.42	1.46	1.49	1.52	1.56	1.59	1.62

1. For pressure drops ($\triangle P_1$) of viscosities other than 20 mm²/s, calculate using multiplier coefficients shown in above table.
2. The formula to calculate pressure drops ($\triangle P_1$) for specific gravities (G_1) other than 0.87 is as follows.
   $\triangle P_1 = \triangle P \cdot G_1 / 0.87$

Characteristics Curve (viscosity 20 mm²/s, specific gravity 0.87) (typical examples)

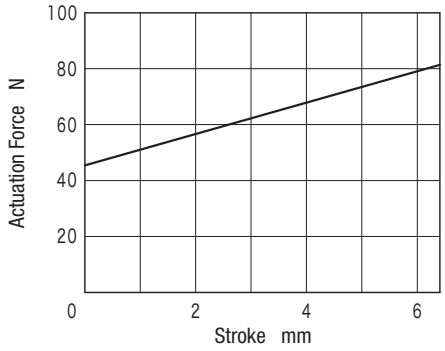
Pressure Drop Characteristics



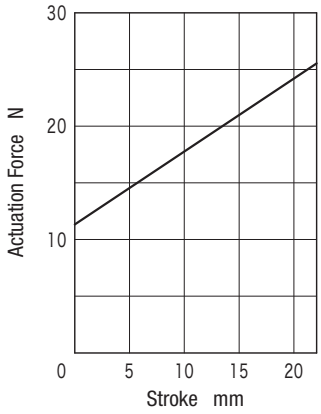
Specifications

Actuation Force

Standard (DG2S*-01*A)



S15 and S16 (DG2S*-01*A-S15/S16)



Note: Switching force of standard type will increase according to tank line back pressure. Above graph is with back pressure 0 MPa.
If back pressure exists, switching force (N) will be value shown in above graph +180 × tank line back pressure (MPa).

Notes on Operation

- Cam slope angle should be less than 35°.
- Do not push the cam beyond max. position.
- Tank port of two way DG2S2 valve is drain and should be connected directly to tank.

Mounting Bolts (JIS B 1176, Strength Class 12.9)

Hex Socket Bolts		Qty
Metric Thread	Unified Thread	
M6 × 40	1/4–20UNC × 38. 1	4

- Mounting bolts must be ordered separately.
- Tightening torque of mounting bolts: 12 to 15 N·m

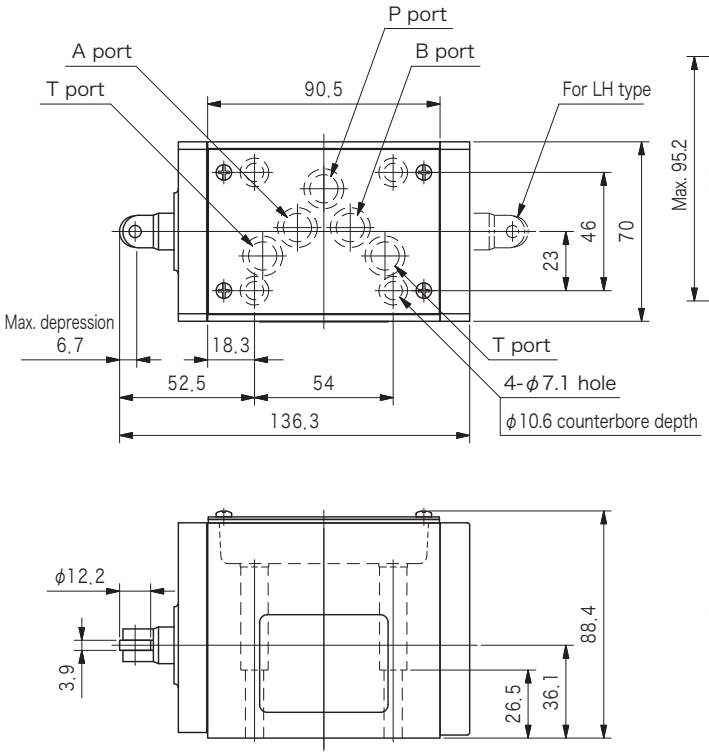
Subplate

Subplate	Mounting Thread	Connection Port Dia. Rc
DGSM-01X-10-JA-M	M6	3/8
DGSM-01X-10-JA-J	1/4-20UNC	
DGSM-01Y-10-JA-M	M6	1/2
DGSM-01Y-10-JA-J	1/4-20UNC	

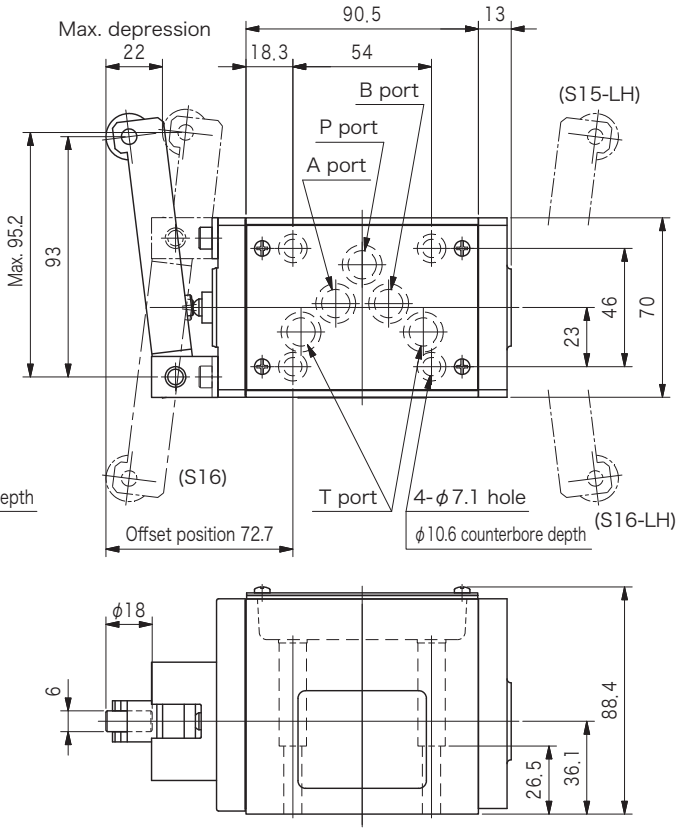
- Subplate must be ordered separately.
- Subplates are supplied with hex socket bolts for mounting valve.
- See page R6-7 for dimensions.

Dimensions

DG2S*-01*A



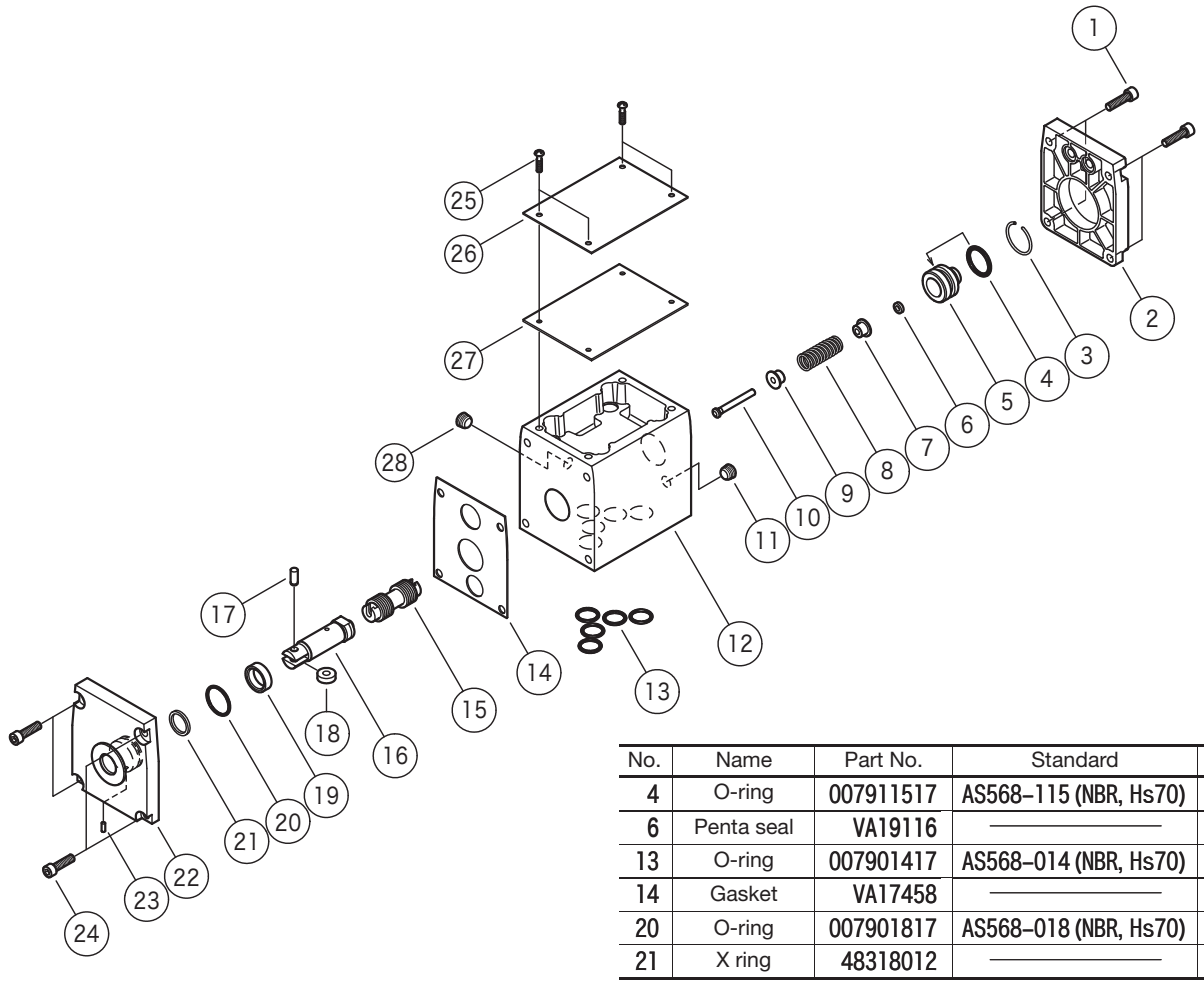
DG2S*-01*A-S15/S16



Note: See page E3-6 (DG4V-5 series) for mounting dimensions.

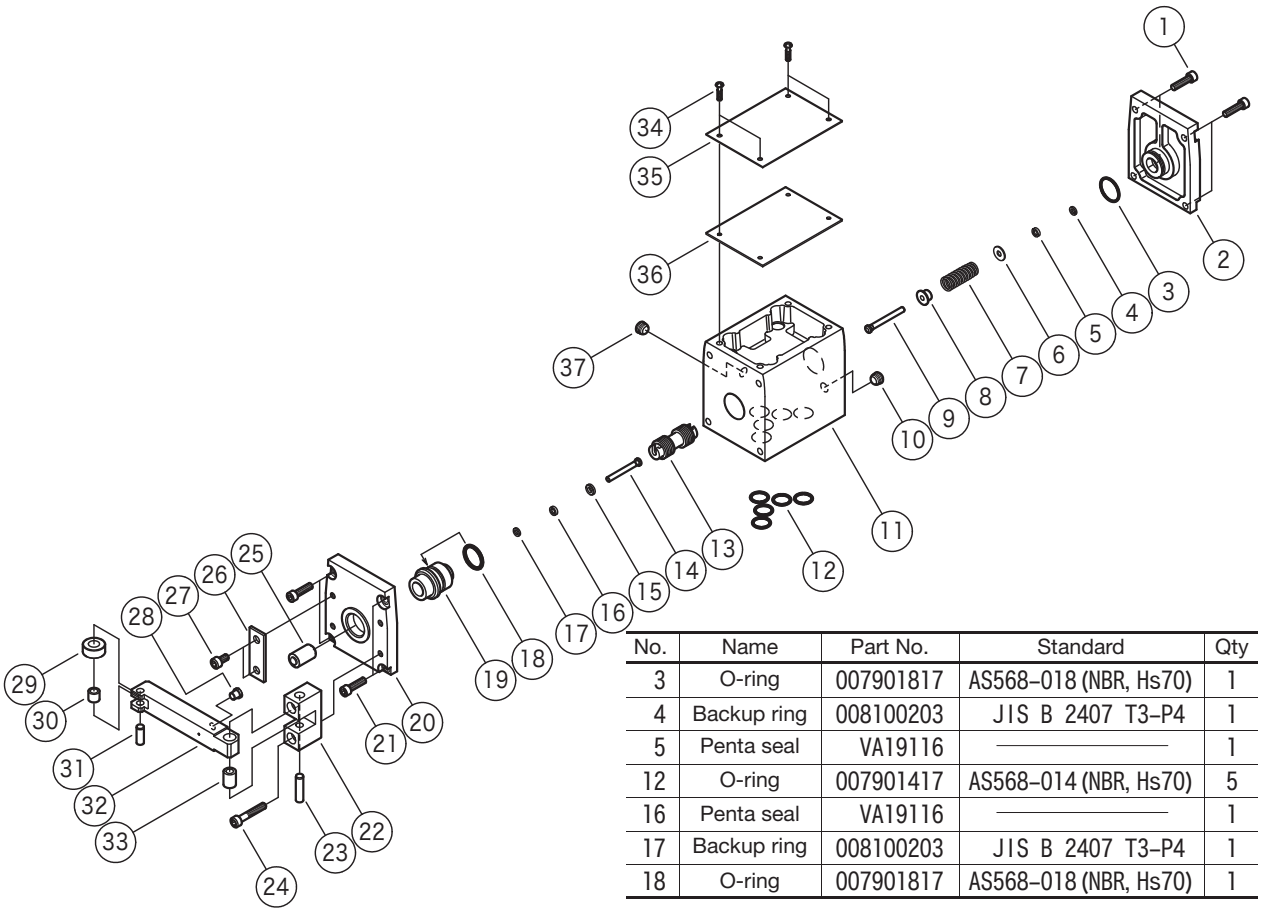
Construction

DG2S*-01*A



No.	Name	Part No.	Standard	Qty
4	O-ring	007911517	AS568-115 (NBR, Hs70)	1
6	Penta seal	VA19116	———	1
13	O-ring	007901417	AS568-014 (NBR, Hs70)	5
14	Gasket	VA17458	———	1
20	O-ring	007901817	AS568-018 (NBR, Hs70)	1
21	X ring	48318012	———	1

DG2S*-01*A-S15/S16



No.	Name	Part No.	Standard	Qty
3	O-ring	007901817	AS568-018 (NBR, Hs70)	1
4	Backup ring	008100203	JIS B 2407 T3-P4	1
5	Penta seal	VA19116	———	1
12	O-ring	007901417	AS568-014 (NBR, Hs70)	5
16	Penta seal	VA19116	———	1
17	Backup ring	008100203	JIS B 2407 T3-P4	1
18	O-ring	007901817	AS568-018 (NBR, Hs70)	1