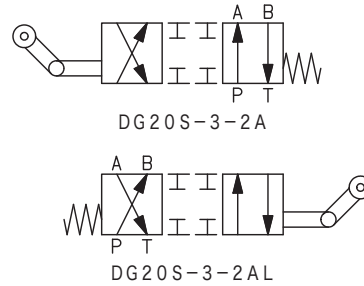


# Mechanically operated directional control valves

## DG20S-3



### Functional Symbols

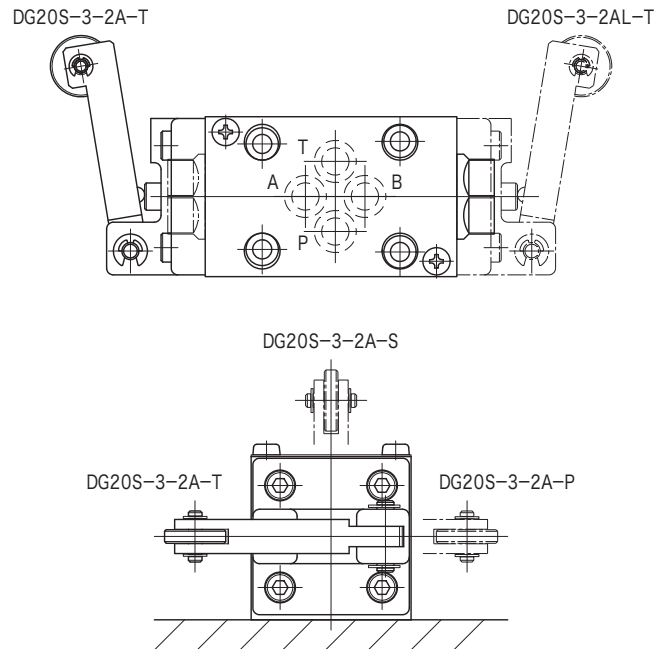


### Model Code

**(F3)-DG20S-3-2A(L)-P-20**

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 (roller lever) directional valve (gasket mounting)
- 3 Mounting dimensions  
3: ISO 4401-03
- 4 Spool type  
2: All ports blocked in neutral (transient switching condition) position
- 5 Spool/spring arrangement  
A: Spring offset
- 6 Lever assembly position  
Omit: offset condition, P to A, B to T  
L: Offset condition, P to B, A to T
- 7 Roller and lever mounting orientation  
P: Roller on P port side  
T: Roller on T port side  
S: Roller opposite gasket surface
- 8 Design no.



### Specifications

Model Code	Max. Working Pressure MPa	Max. Flow L/min	Allowable Tank Port Back Pressure MPa	Weight kg
DG20S-3	21	40	7	1.7

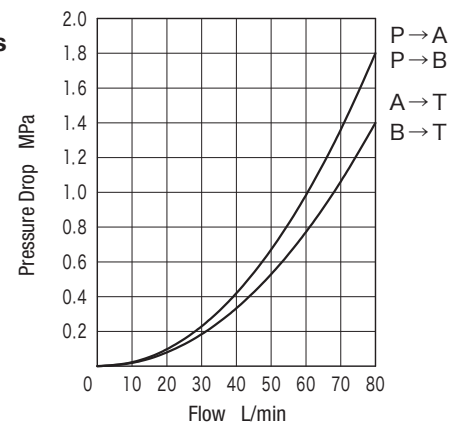
1. For pressure drops ( $\Delta P_1$ ) of viscosities other than 20 mm<sup>2</sup>/s, calculate using multiplier coefficients shown in below table.
2. The formula to calculate pressure drops ( $\Delta P_1$ ) for specific gravities other than 0.87 is as follows.

$$\Delta P_1 = \Delta P \times G_1 / G$$

$\Delta P$  ..... Values according to characteristics curve  
 $G$  ..... 0.87  
 $G_1$  ..... Desired specific gravity value

### Characteristics Curve (viscosity 20 mm<sup>2</sup>/s, specific gravity 0.87) (typical examples)

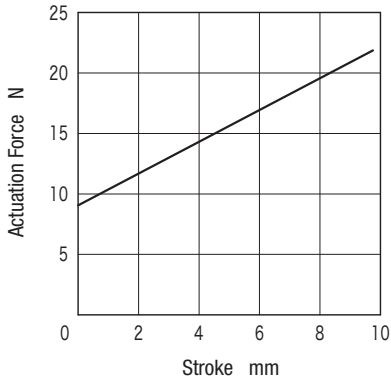
#### Pressure Drop Characteristics



Viscosity mm <sup>2</sup> /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

## Specifications

### Actuation Force (roller tip)



## Notes on Operation

- Cam slope angle should be less than 35°.
- Design system so cam cannot be pushed beyond max. stroke position.

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

Hex Socket Bolts	Qty
M5 × 50	4

- Mounting bolts must be ordered separately.
- Tightening torque of mounting bolts: 7 to 8 N·m

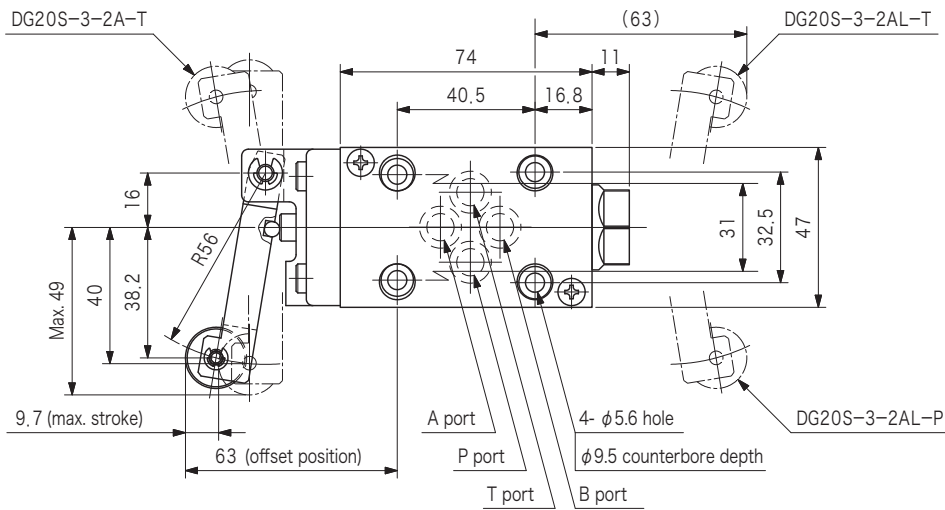
## Subplate

Subplate		Connection Port Dia. Rc
Side Piping	DGMS-3-1E-10-T-JA-J	3/8
Bottom Piping	DGVM-3-10-T-JA-J	

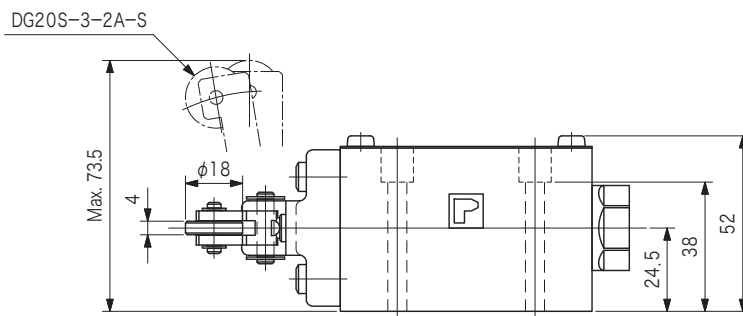
- Subplate must be ordered separately.
- Mounting bolts are not included. Mounting bolts must be ordered separately.
- See page R6-6 for dimensions.

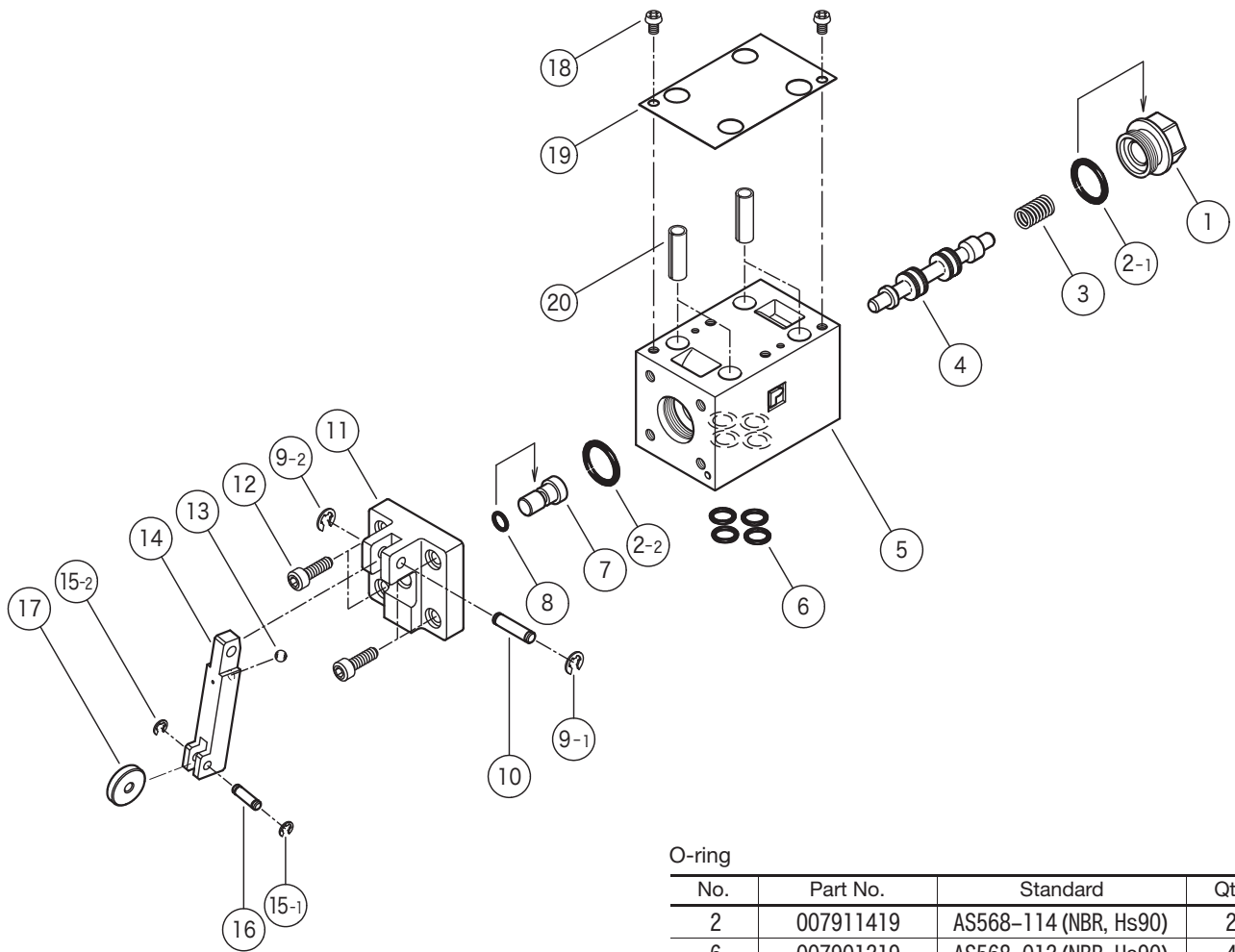
## Dimensions

### DG20S-3-2A-P



Note: See DG4V-3 (page E2-9) for mounting dimensions.





O-ring

No.	Part No.	Standard	Qty
2	007911419	AS568-114 (NBR, Hs90)	2
6	007901219	AS568-012 (NBR, Hs90)	4
8	008000317	JIS B 2401 1A-P5	1