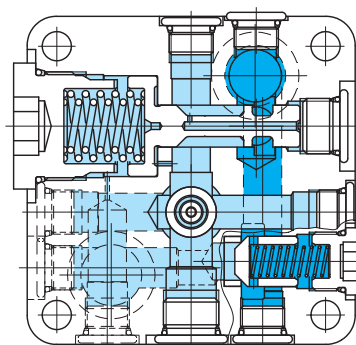


# Pressure-temperature compensated flow control valves (with check valve) F(C)G02/03

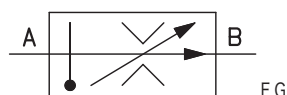
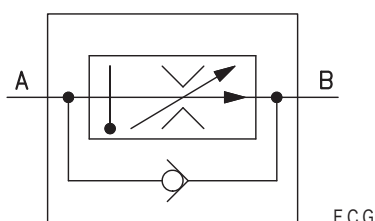
D  
5-1

Flow Control Valves



- Valve is pressure and temperature compensated and flow is maintained at a constant level even over changes in load pressure or fluid temperature. Free flow is provided in the reverse direction.

## Functional Symbols



## Model Code

(F3)-F(C)G-02-1500-41-JA-S20

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|

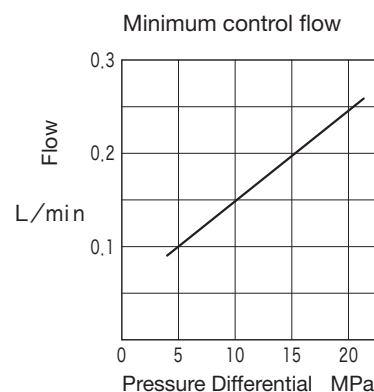
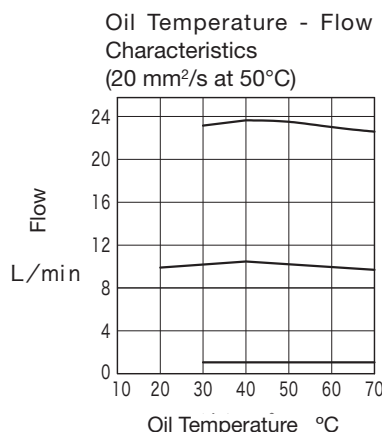
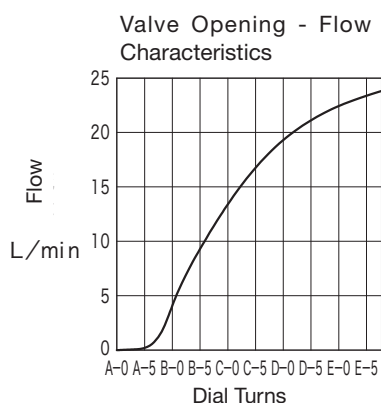
- Hydraulic fluid  
Omit: mineral oil  
F3: phosphate ester
- Temperature compensated flow control  
FCG: w/check valve  
FG: no check valve (03 only)
- Size  
Refer to "Specifications".
- Control no.  
1500: FCG-02  
28: FG-03, FCG-03
- Design no.  
41: FCG-02  
23: FG-03, FCG-03
- Control code  
See "Specifications" (S20: std)

## Specifications

| Model Code | Size | Max. Working Pressure<br>MPa | Max. Control Flow |       | Weight<br>kg |
|------------|------|------------------------------|-------------------|-------|--------------|
|            |      |                              | Code              | L/min |              |
| FCG-02     | 02   | 21                           | S57               | 9     | 4.6          |
|            |      |                              | S40               | 16    |              |
|            |      |                              | S20               | 24.6  |              |
|            |      |                              | S44               | 35    |              |
| F(C)G-03   | 03   | 21                           | S20               | 105   | 9.3          |
|            |      |                              | S38               | 130   |              |

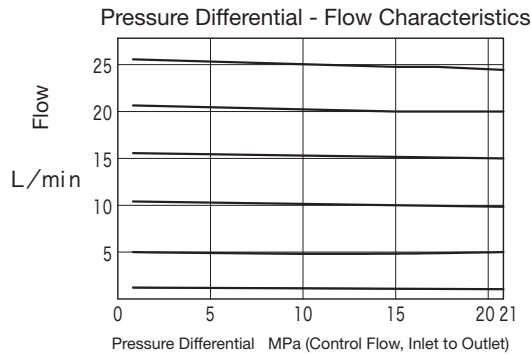
## Characteristics Curve (at 20 mm<sup>2</sup>/s) (typical examples)

### ● FCG-02-S20

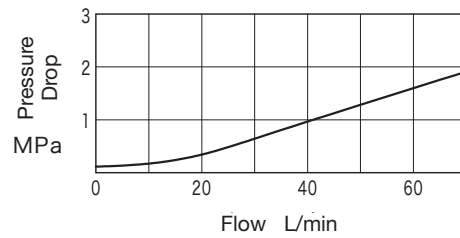


## Characteristics Curve (at 20 mm<sup>2</sup>/s) (typical examples)

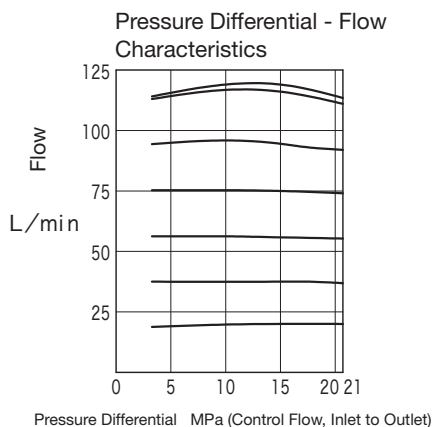
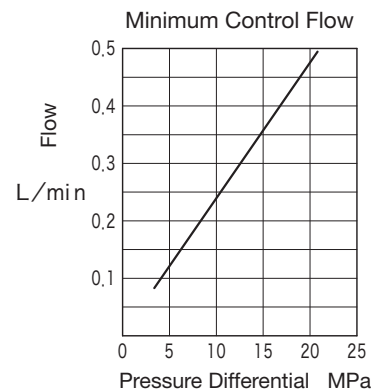
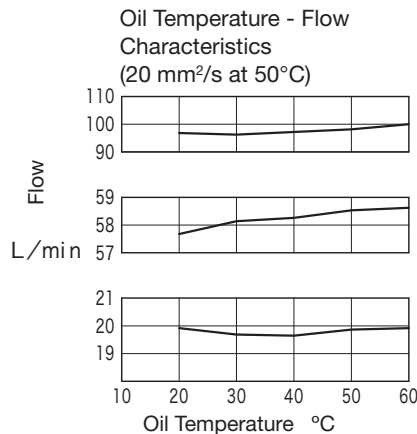
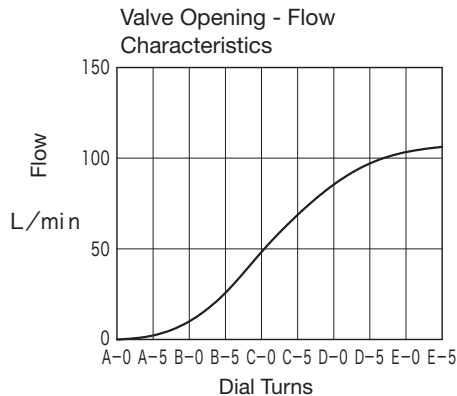
### ● FCG-02-S20



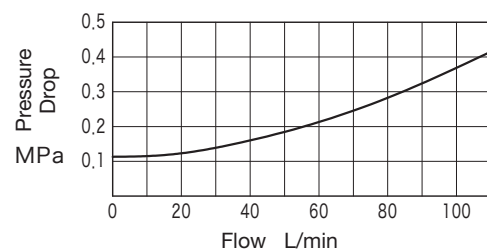
Pressure Drop Characteristics (check valve free flow direction)



### ● FG-03-28-S20 ● FCG-03-28-S20



Pressure Drop Characteristics (check valve free flow direction)



## Notes on Operation

- Turning the flow adjustment dial clockwise will increase flow. Minimum to maximum adjustable flow is approx. 4.5 turns. (Letters A - E will appear with each turn of the dial.)
- After adjustment, make sure to tighten the dial locking screw.
- For optimum flow control, maintain a 1 MPa or greater pressure differential between the A and B ports. See characteristics curves for reference.
- Minimum control flow may vary depending on pressure differential between the A and B ports. See characteristics curves for reference.
- The valves cannot be used for water-glycol based fluids.

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

| Valve Model | Hex Socket Bolts |                   | Qty |
|-------------|------------------|-------------------|-----|
|             | Metric Thread    | Unified Thread    |     |
| FCG-02      | M8 × 65          | 5/16-18UNC × 63.5 | 4   |
| F(C)G-03    | M10 × 90         | 3/8-16UNC × 88.9  | 4   |

- Mounting bolts must be ordered separately.
- Tightening torque of mounting bolts  
FCG-02: 27 to 33 N·m  
F(C)G-03: 54 to 66 N·m

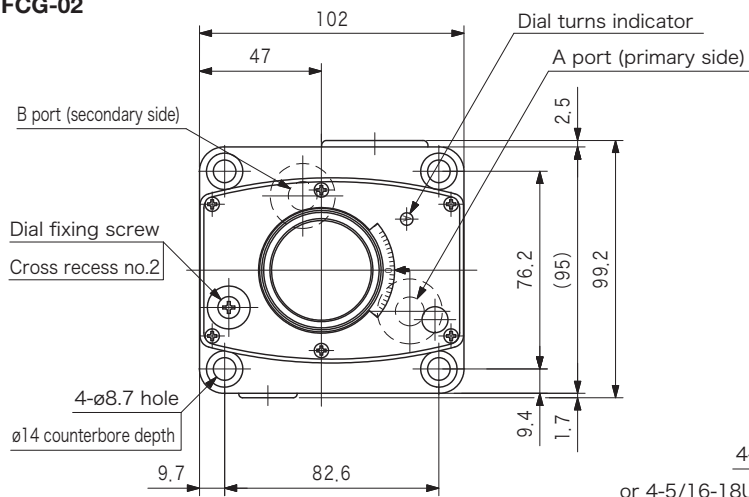
## Subplate

| Valve Model | Subplate        | Connection Port Dia. Rc |
|-------------|-----------------|-------------------------|
| FCG-02      | FGM-02-21-JA-J  | 3/8                     |
|             | FGM-02X-21-JA-J | 1/2                     |
| F(C)G-03    | FGM-03-21-JA-J  | 3/8                     |
|             | FGM-03Y-21-JA-J | 3/4                     |
|             | FGM-03Z-21-JA-J | 1                       |

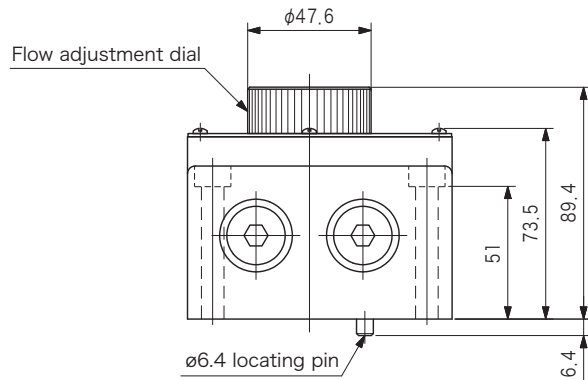
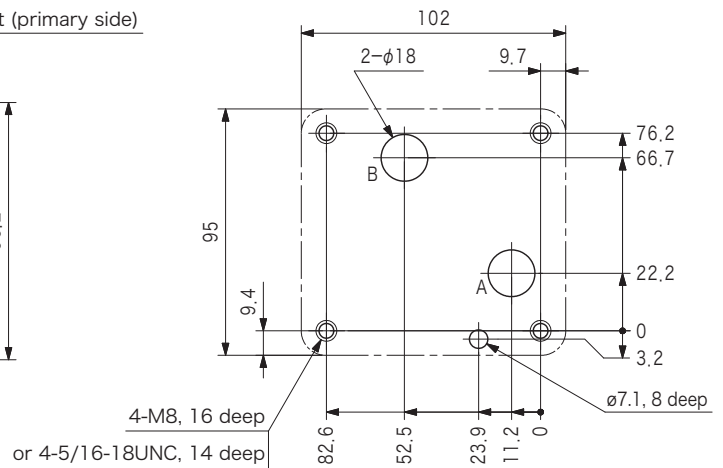
- Subplate must be ordered separately.
- Subplates are supplied with hex socket bolts for mounting valve. (Unified thread)
- See page R6-4 for dimensions.

## Dimensions

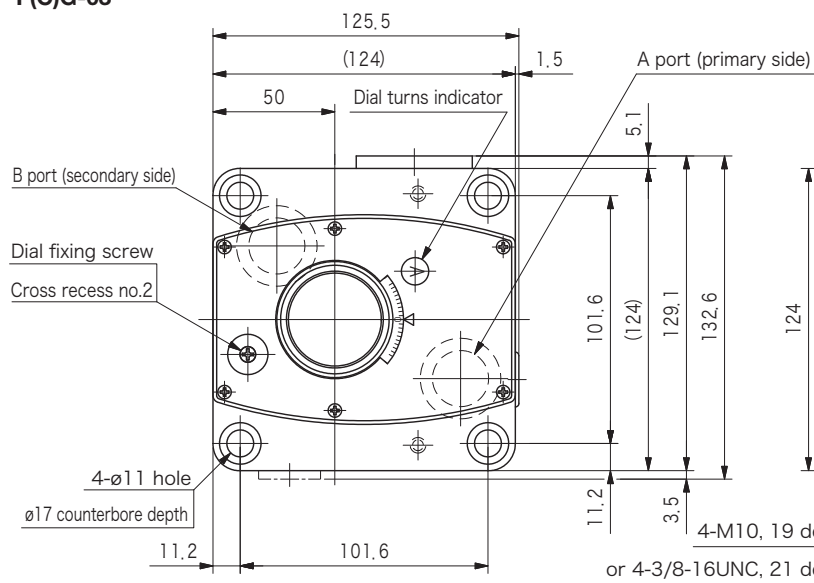
### FCG-02



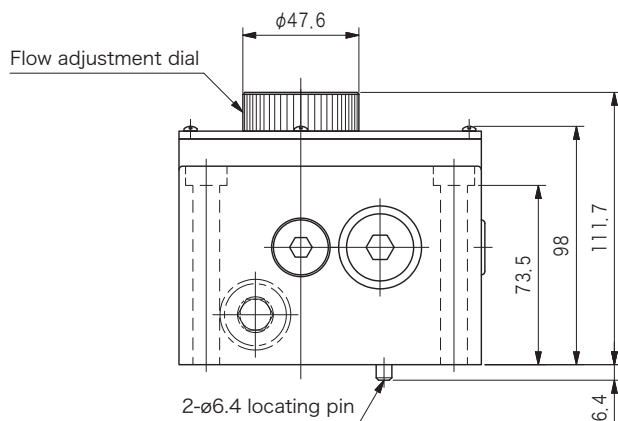
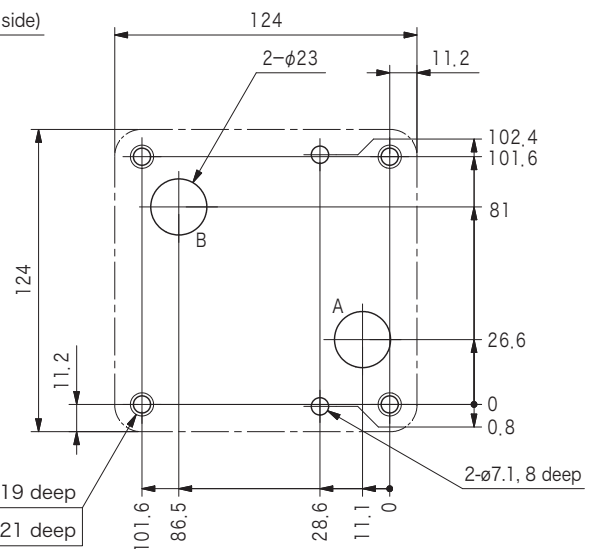
### ●Mounting dimensions



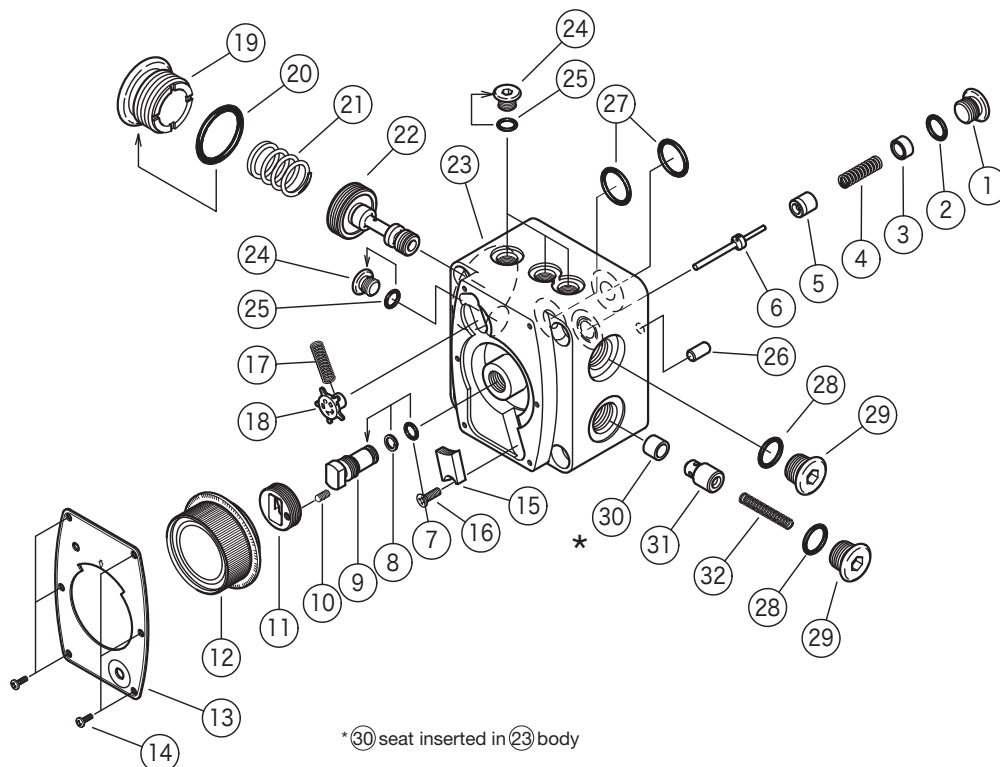
### F(C)G-03



### ●Mounting dimensions



Note: Dashed line for FCG-03



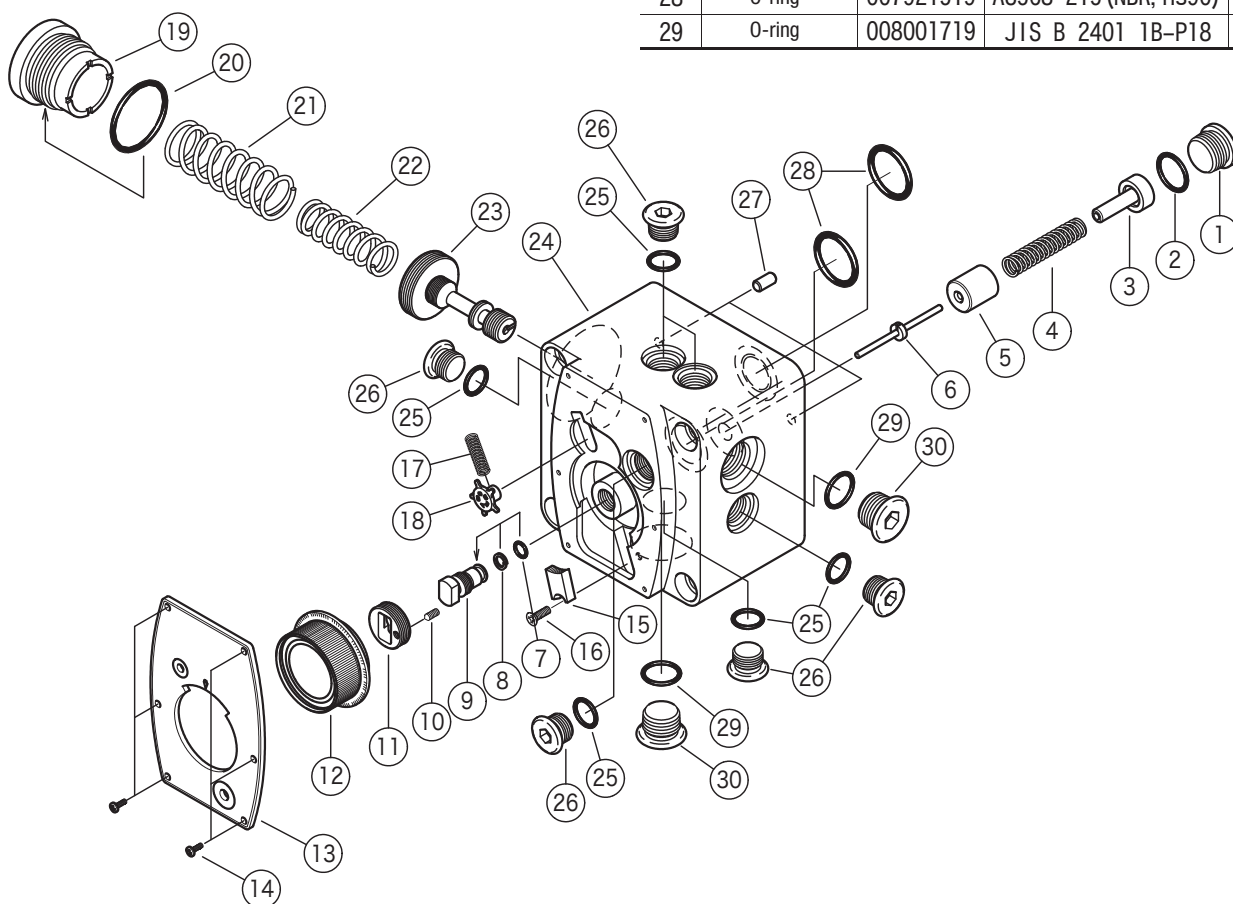
FCG-02-S20

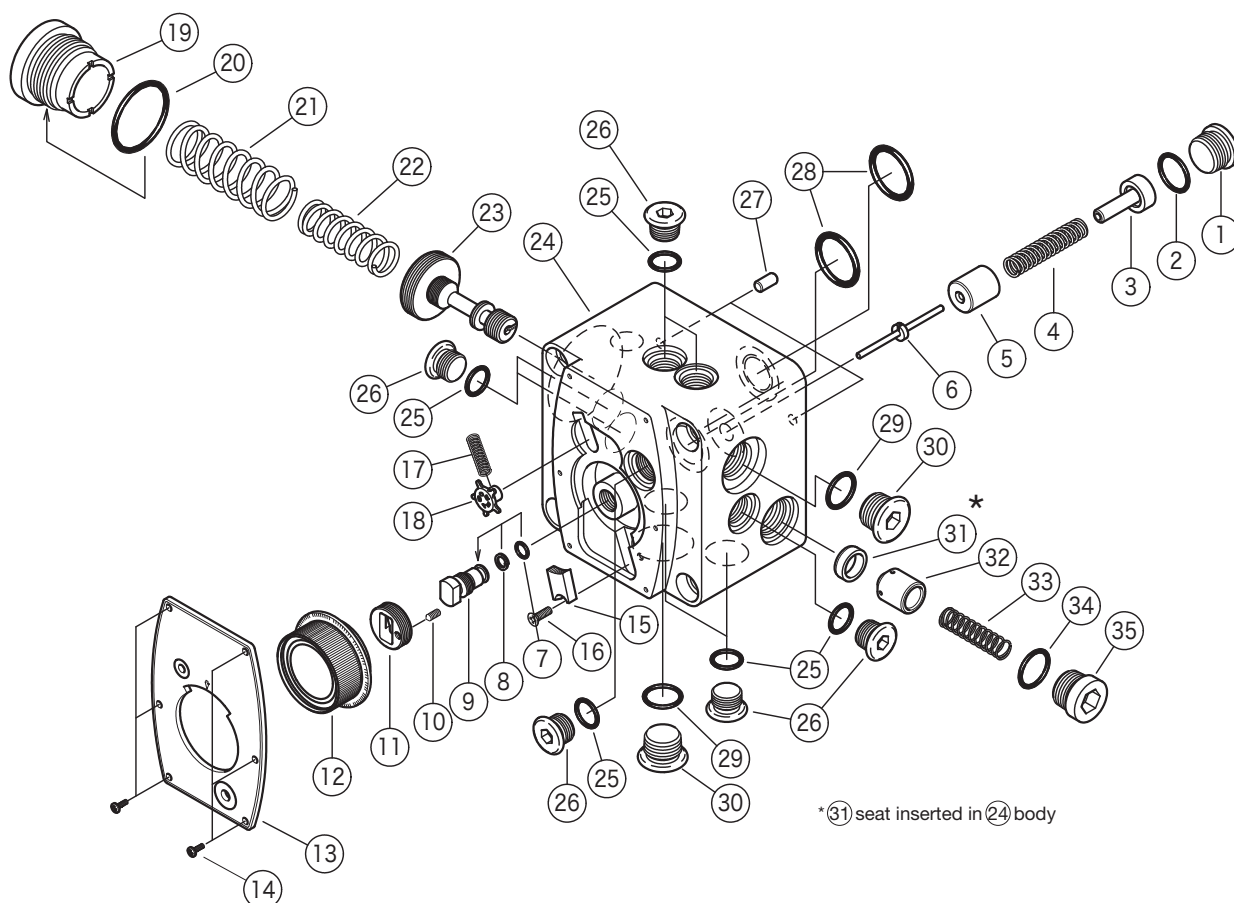
| No. | Name        | Part Number | Standard              | Qty |
|-----|-------------|-------------|-----------------------|-----|
| 2   | O-ring      | 008001019   | JIS B 2401 1B-P11     | 1   |
| 7   | O-ring      | 008000517   | JIS B 2401 1A-P7      | 1   |
| 8   | Backup ring | 40027808    | MS28782-6             | 1   |
| 20  | O-ring      | 008002819   | JIS B 2401 1B-P29     | 1   |
| 25  | O-ring      | 008000619   | JIS B 2401 1B-P8      | 4   |
| 27  | O-ring      | 007911717   | AS568-117 (NBR, Hs70) | 2   |
| 28  | O-ring      | 008001419   | JIS B 2401 1B-P14     | 2   |

FG-03-S20

| No. | Name        | Part Number | Standard              | Qty |
|-----|-------------|-------------|-----------------------|-----|
| 2   | O-ring      | 007991019   | AS568-910 (NBR, Hs90) | 1   |
| 7   | O-ring      | 008000517   | JIS B 2401 1A-P7      | 1   |
| 8   | Backup ring | 40027808    | MS28782-6             | 1   |
| 20  | O-ring      | 007992019   | AS568-920 (NBR, Hs90) | 1   |
| 25  | O-ring      | 008001419   | JIS B 2401 1B-P14     | 6   |
| 28  | O-ring      | 007921519   | AS568-215 (NBR, Hs90) | 2   |
| 29  | O-ring      | 008001719   | JIS B 2401 1B-P18     | 2   |

FG-03





FCG-03-S20

| No. | Name        | Part Number | Standard              | Qty |
|-----|-------------|-------------|-----------------------|-----|
| 2   | O-ring      | 007991019   | AS568-910 (NBR, Hs90) | 1   |
| 7   | O-ring      | 008000517   | JIS B 2401 1A-P7      | 1   |
| 8   | Backup ring | 40027808    | MS28782-6             | 1   |
| 20  | O-ring      | 007992019   | AS568-920 (NBR, Hs90) | 1   |
| 25  | O-ring      | 008001419   | JIS B 2401 1B-P14     | 6   |
| 28  | O-ring      | 007921519   | AS568-215 (NBR, Hs90) | 2   |
| 29  | O-ring      | 008001719   | JIS B 2401 1B-P18     | 2   |
| 34  | O-ring      | 007991019   | AS568-910 (NBR, Hs90) | 1   |