

Contact Details

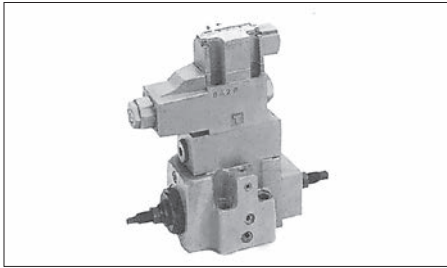
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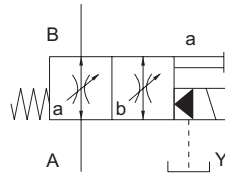
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Type C2 Solenoid Pilot Operated Directional Control Valve (with 2-speed Throttle Function)



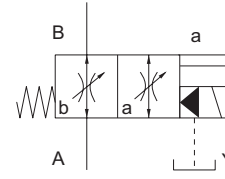
Circuit code: A

a: Low speed
b: High speed



Circuit code: B

a: Low speed
b: High speed



Features

- Enables 2-speed control (acceleration/deceleration control) of an actuator by switching the solenoid pilot valve.

Nomenclature

※ - C2S W - G ※※ - ※ ※※ ※ - 30 - ※ ※
1 2 3 4 5 6 7 8 9 10 11

1 Applicable fluid code

No designation: Petroleum-based hydraulic fluid
 H: Water-glycol hydraulic fluid
 F: Phosphate ester hydraulic fluid

2 Model No.

C2S: Type C2 solenoid pilot valve

3 Compound function

W: With 2-speed throttle function

4 Connections

G: Gasket mount type

5 Nominal diameter

03: 3/8 06: 3/4

6 Circuit code

A: Low speed when not energized, B: High speed when not energized

7 Cracking pressure code

10: 0.1 MPa {1 kgf/cm²} at flow A → B
 0.17 MPa {1.7 kgf/cm²} at flow B → A
 40: 0.4 MPa {4 kgf/cm²} at flow A → B
 0.67 MPa {6.7 kgf/cm²} at flow B → A

8 Voltage code for the solenoid valve

A: AC 100 V (50/60 Hz), AC 110 V (60 Hz)
 B: AC 200 V (50/60 Hz), AC 220 V (60 Hz)
 P: DC 24 V

9 Design No.

(The design No. is subject to change)

10 Option code

No designation: Flow rate adjusting screw type
 D: Digital handle type

11 Solenoid pilot valve option code

See the option code table of KSO-G02 on Page G-16 for the options for solenoid pilot valves.

Specifications

| Model No. | Nominal diameter | Maximum operating pressure MPa {kgf/cm ² } | Maximum flow rate L/min | Permissible back pressure MPa {kgf/cm ² } | Cartridge area ratio *1 | Cartridge drainage volume cm ³ | Mass kg |
|-----------|------------------|--|----------------------------|---|-------------------------|--|------------|
| C2SW-G03 | 3/8 | 25 {250} | 200 | 16 {160} | AA:AF = 1:1.6 | 2 maximum | 6.7 |
| C2SW-G06 | 3/4 | | 500 | | | 5 maximum | 9.8 |

Note: *1 Area at port A (AA) : Area at port F (AF)

Refer to KSO-G02 on Page G-16 for the solenoid specifications.

| Model code | Applicable solenoid valve model code (※: Voltage code) |
|---------------|---|
| C2SW-G※※-A※※※ | KSO-G02-2A※-30 |
| C2SW-G※※-B※※※ | KSO-G02-2A※-30-M |

Accessories

| Model No. | Hexagon socket head cap bolt | Quantity | Tightening torque N·m {kgf·cm} |
|-----------|------------------------------|----------|-----------------------------------|
| C2SW-G03 | M10 × 60 | 4 | 51 to 68 {510 to 680} |
| C2SW-G06 | M10 × 75 | 4 | 51 to 68 {510 to 680} |

Sub-plate model code

- The sub-plate is not provided with the valve. Order it separately if required by specifying the model code given in the table below.

| Model code | Nominal diameter | Connection port diameter | Mass kg |
|------------|------------------|--------------------------|---------|
| JGB-03M | 3/8 | Rc3/8 | 1.6 |
| JGB-03M04 | | Rc1/2 | |
| JGB-06M | 3/4 | Rc3/4 | 3.9 |
| JGB-06M08 | | Rc1 | |

Refer to Page S-7 for the dimensions of the sub-plate.

Handling

● External drain pressure and switching conditions

- When the solenoid with circuit code A is energized and the solenoid with circuit code B is not energized, the valve cannot be switched at an external drain pressure (at port Y) of $\frac{1}{1.6} \times \{\text{Pressure at port A} + 0.6 \times \text{Pressure at port B} - (\text{Spring force with flow A} \rightarrow \text{B})\}$ or greater. Therefore, directly connect the drain piping to the tank without merging it with other tank piping.

● Flow rate adjusting method

- With the high-speed flow rate adjusting screw, counterclockwise turning increases the flow rate. With the low-speed flow rate adjusting screw, clockwise turning increases the flow rate.
- Since a large force will be required to operate the flow rate adjusting screw when the pressures at ports A and B increase, adjust the flow rate at 10 MPa $\{100 \text{ kgf/cm}^2\}$ maximum.

● Adjusting responsiveness at switching

- Adjustment using the fixed throttles

The responsiveness can be adjusted by changing the responsiveness adjusting fixed throttles (NPTF $\frac{1}{16}$).

At shipment, the product is equipped with C2SW-G03 ($\phi 1.0$) and C2SW-G06 ($\phi 1.2$).

If you require fixed throttles other than these, order them separately by referring to the model codes below.

Model code: T1-16- $\times\times$ ($\times\times$: Throttle diameter code) Tightening torque: 6 to 7.5 N·m $\{60 \text{ to } 75 \text{ kgf}\cdot\text{cm}\}$

| | | | | | | | | | | | |
|-------------------------|------------|------------|------------|------------|----------|------------|------------|------------|------------|----------|------------|
| Throttle diameter code | 06 | 07 | 08 | 09 | 10 | 12 | 14 | 16 | 18 | 20 | 25 |
| Fixed throttle diameter | $\phi 0.6$ | $\phi 0.7$ | $\phi 0.8$ | $\phi 0.9$ | $\phi 1$ | $\phi 1.2$ | $\phi 1.4$ | $\phi 1.6$ | $\phi 1.8$ | $\phi 2$ | $\phi 2.5$ |

- Adjustment using the pilot throttle valve

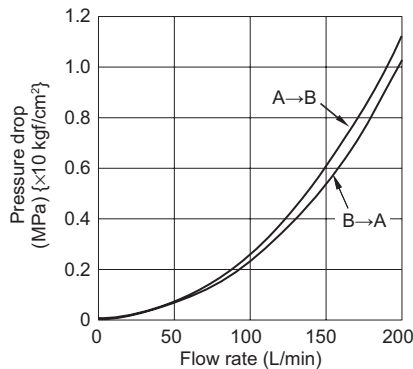
To control the opening speed and closing speed of the valve separately, stack size 02 stack valves below the solenoid pilot valve. When using stack valves, order mounting bolts separately by referring to the table below since the mounting bolts required differ depending on the stacking height.

| | Opening speed adjustment | Closing speed adjustment | Opening/closing speed adjustment |
|--|--------------------------------|--------------------------|----------------------------------|
| Stack valve model code | MT-02B-55 | MT-02Bi-55 | MT-02B-55, MT-02Bi-55 |
| Mounting bolt model code | HB102 | | HB103 |
| Hexagon socket head cap bolt | M5 × 125 | | M5 × 165 |
| Tightening torque N·m $\{\text{kgf}\cdot\text{cm}\}$ | 6 to 8 $\{60 \text{ to } 80\}$ | | |

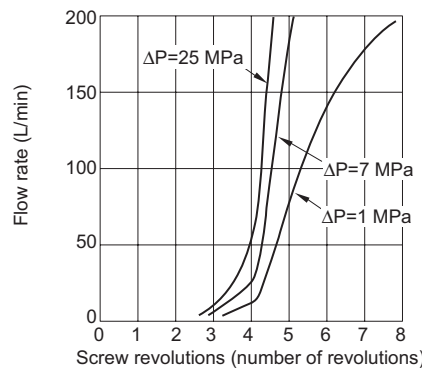
Performance curves (viscosity: 32 mm²/s $\{\text{cSt}\}$)

● C2SW-G03

Pressure drop characteristics

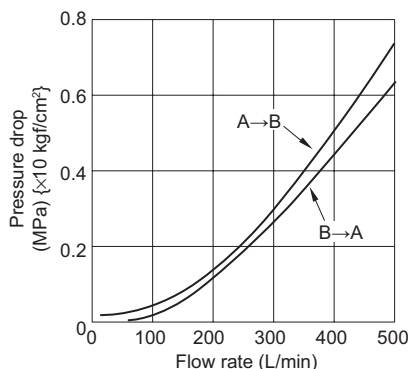


Adjusting screw revolution - Flow rate characteristics

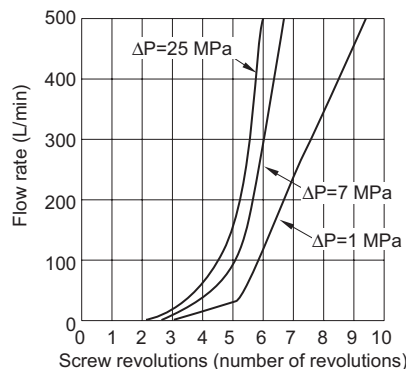


● C2SW-G06

Pressure drop characteristics



Adjusting screw revolution - Flow rate characteristics



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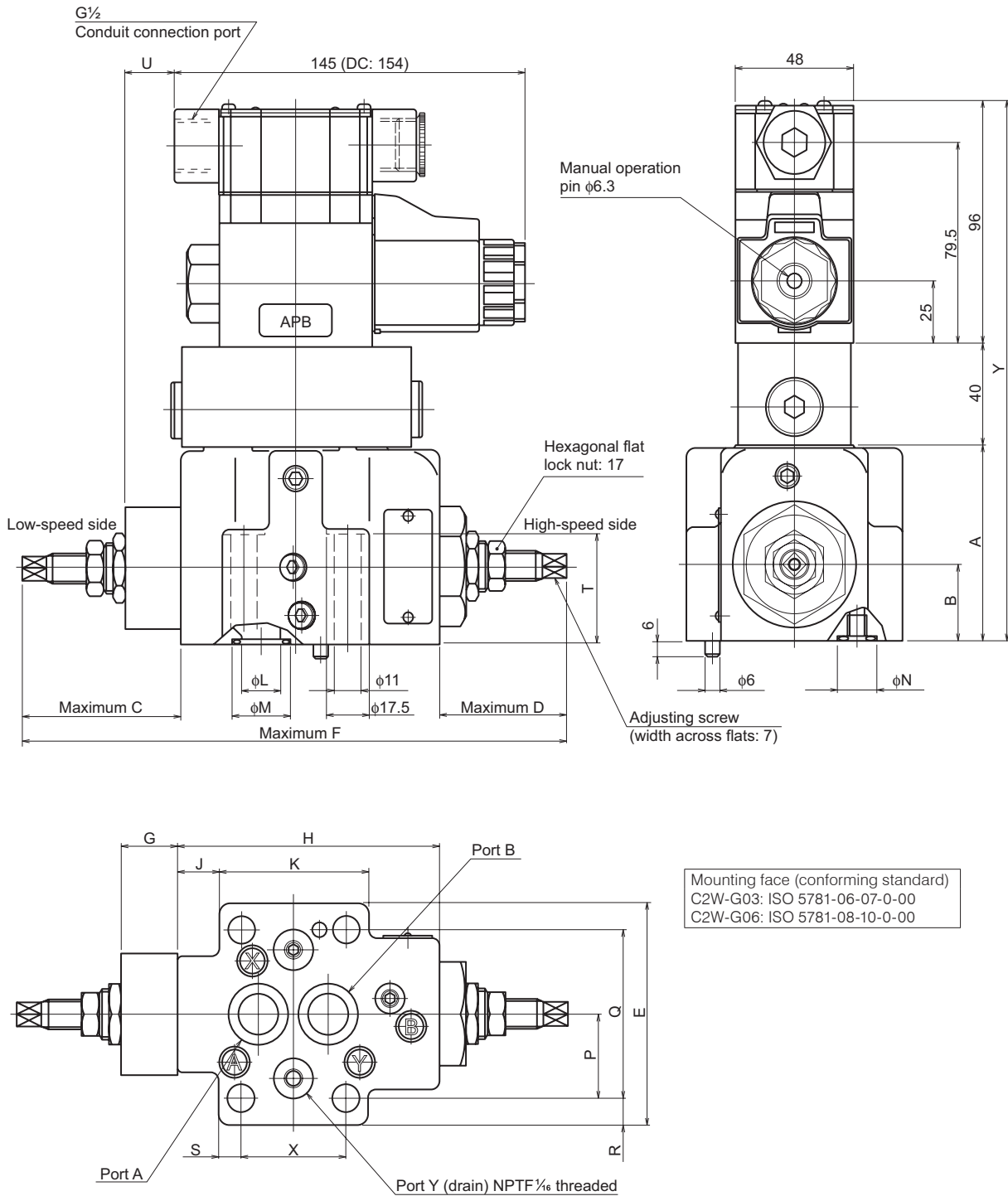
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External dimension diagram

- C2SW-G03, 06



| Model No. | Dimensions | | | | | | | | | | | | | |
|-----------|------------|----|----|------|-----|-------|----|-----|----|----|----|----|----|------|
| | A | B | C | D | E | F | G | H | J | K | L | M | N | P |
| C2SW-G03 | 77 | 30 | 61 | 48 | 88 | 214 | 23 | 105 | 15 | 61 | 16 | 24 | 16 | 33.3 |
| C2SW-G06 | 95 | 40 | 72 | 60.5 | 102 | 257.5 | 27 | 125 | 14 | 82 | 24 | 34 | 16 | 39.7 |

| Model No. | Q | R | S | T | U | X | Y |
|-----------|------|-------|-------|----|------|------|-----|
| C2SW-G03 | 66.7 | 10.65 | 9.05 | 44 | 18.5 | 42.9 | 213 |
| C2SW-G06 | 79.4 | 11.3 | 10.85 | 59 | 32 | 60.3 | 231 |

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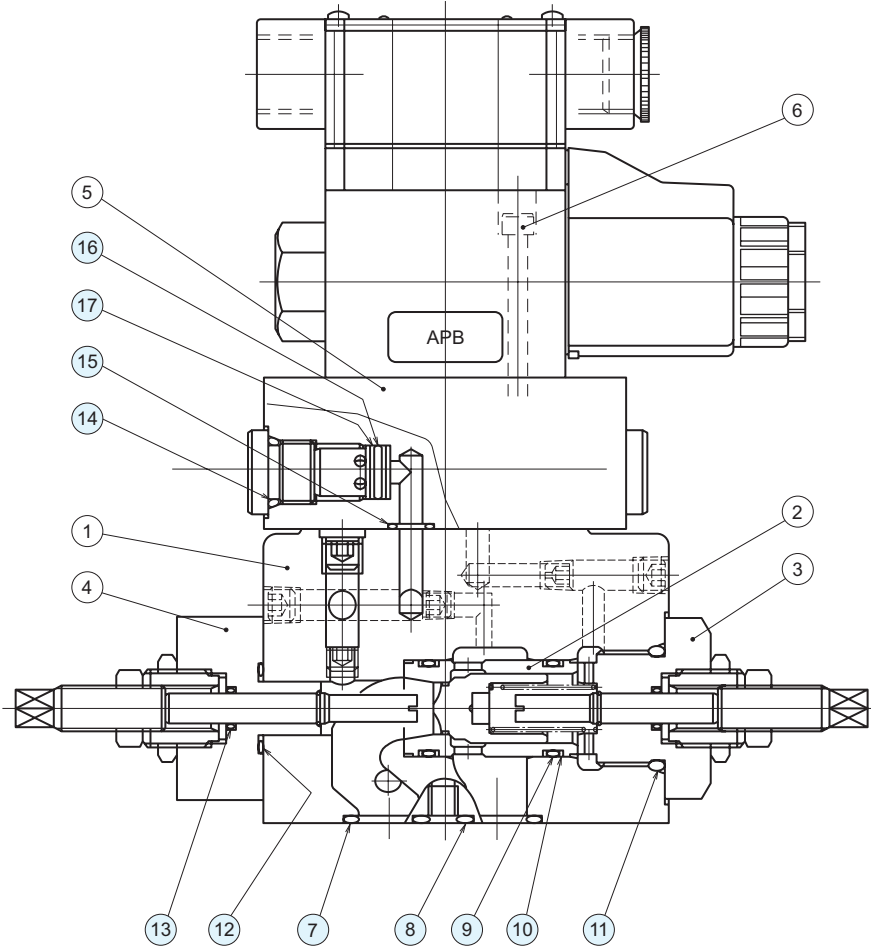
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Sectional structural diagram

- C2SW-G03, 06



Sealing part table

| Part No. | Name | Quantity | Part specifications | |
|----------|-------------|----------|------------------------|------------------------|
| | | | C2SW-G03 | C2SW-G06 |
| 7 | O-ring | 2 | JIS B 2401 1B P20 | JIS B 2401 1B P28 |
| 8 | O-ring | 2 | JIS B 2401 1B P12 | JIS B 2401 1B P12 |
| 9 | O-ring | 2 | AS568-020 (NBR, Hs90) | AS568-122 (NBR, Hs90) |
| 10 | Backup ring | 4 | Bias cut for AS568-020 | Bias cut for AS568-122 |
| 11 | O-ring | 1 | AS568-215 (NBR, Hs90) | AS568-222 (NBR, Hs90) |
| 12 | O-ring | 1 | AS568-019 (NBR, Hs90) | AS568-026 (NBR, Hs90) |
| 13 | O-ring | 2 | AS568-011 (NBR, Hs90) | AS568-011 (NBR, Hs90) |
| 14 | O-ring | 2 | JIS B 2401 1B P14 | JIS B 2401 1B P14 |
| 15 | O-ring | 4 | JIS B 2401 1B P9 | JIS B 2401 1B P9 |
| 16 | O-ring | 2 | AS568-013 (NBR, Hs90) | AS568-013 (NBR, Hs90) |
| 17 | Backup ring | 2 | Bias cut for AS568-013 | Bias cut for AS568-013 |