

## Contact Details

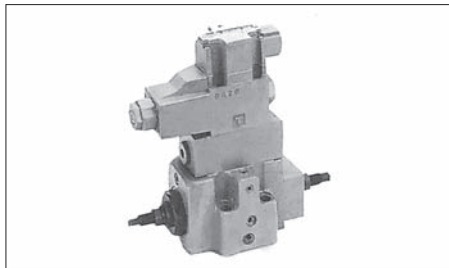
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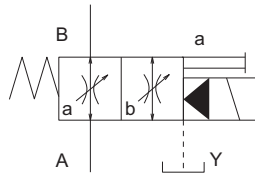
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# Type C2 Solenoid Pilot Operated Directional Control Valve (with 2-speed Throttle Function)



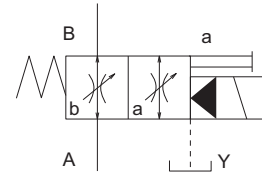
Circuit code: A

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 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:  $\frac{3}{8}$  06:  $\frac{3}{4}$

### 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/cm<sup>2</sup>} at flow A → B  
0.17 MPa {1.7 kgf/cm<sup>2</sup>} at flow B → A  
40: 0.4 MPa {4 kgf/cm<sup>2</sup>} at flow A → B  
0.67 MPa {6.7 kgf/cm<sup>2</sup>} 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-12 for the options for solenoid pilot valves.

## Specifications

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

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

Refer to KSO-G02 on Page G-12 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	$\frac{3}{8}$	Rc $\frac{3}{8}$	1.6
JGB-03M04		Rc $\frac{1}{2}$	
JGB-06M	$\frac{3}{4}$	Rc $\frac{3}{4}$	3.9
JGB-06M08		Rc1	

Refer to Page S-6 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

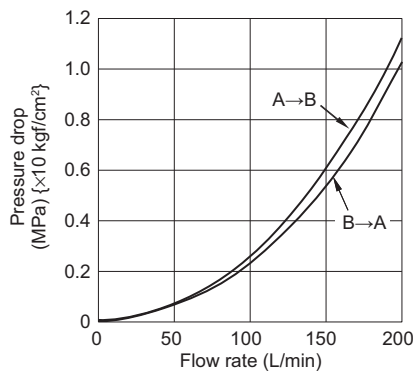
To control the opening speed and closing speed of the valve separately, stack size 02 stack valves below the solenoid pilot valve. When using stack valves, order mounting bolts separately by referring to the table below since the mounting bolts required differ depending on the stacking height.

	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 $\times$ 125		M5 $\times$ 165
Tightening torque N·m $\{\text{kgf}\cdot\text{cm}\}$	6 to 8 $\{60 \text{ to } 80\}$		

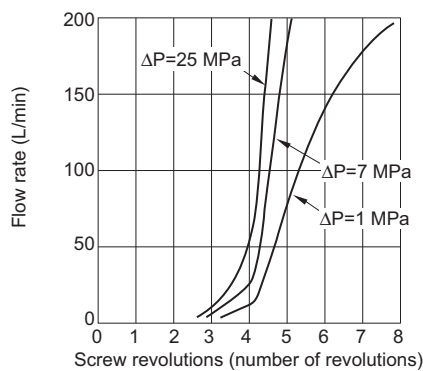
## Performance curves (viscosity: 32 mm<sup>2</sup>/s $\{\text{cSt}\}$ )

### ● C2SW-G03

#### Pressure drop characteristics

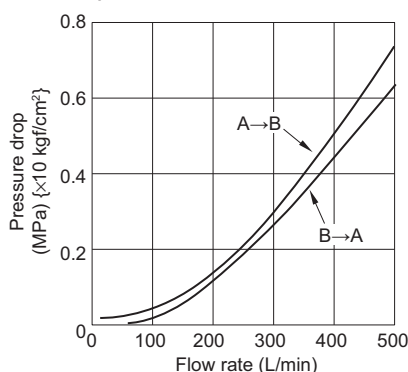


#### Adjusting screw revolution - Flow rate characteristics

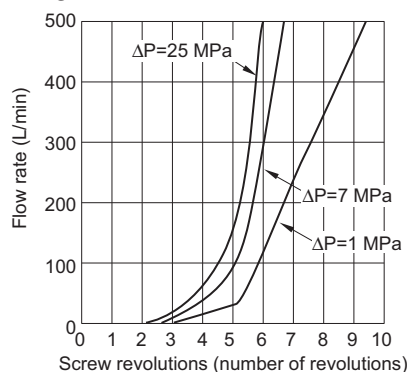


### ● C2SW-G06

#### Pressure drop characteristics



#### Adjusting screw revolution - Flow rate characteristics



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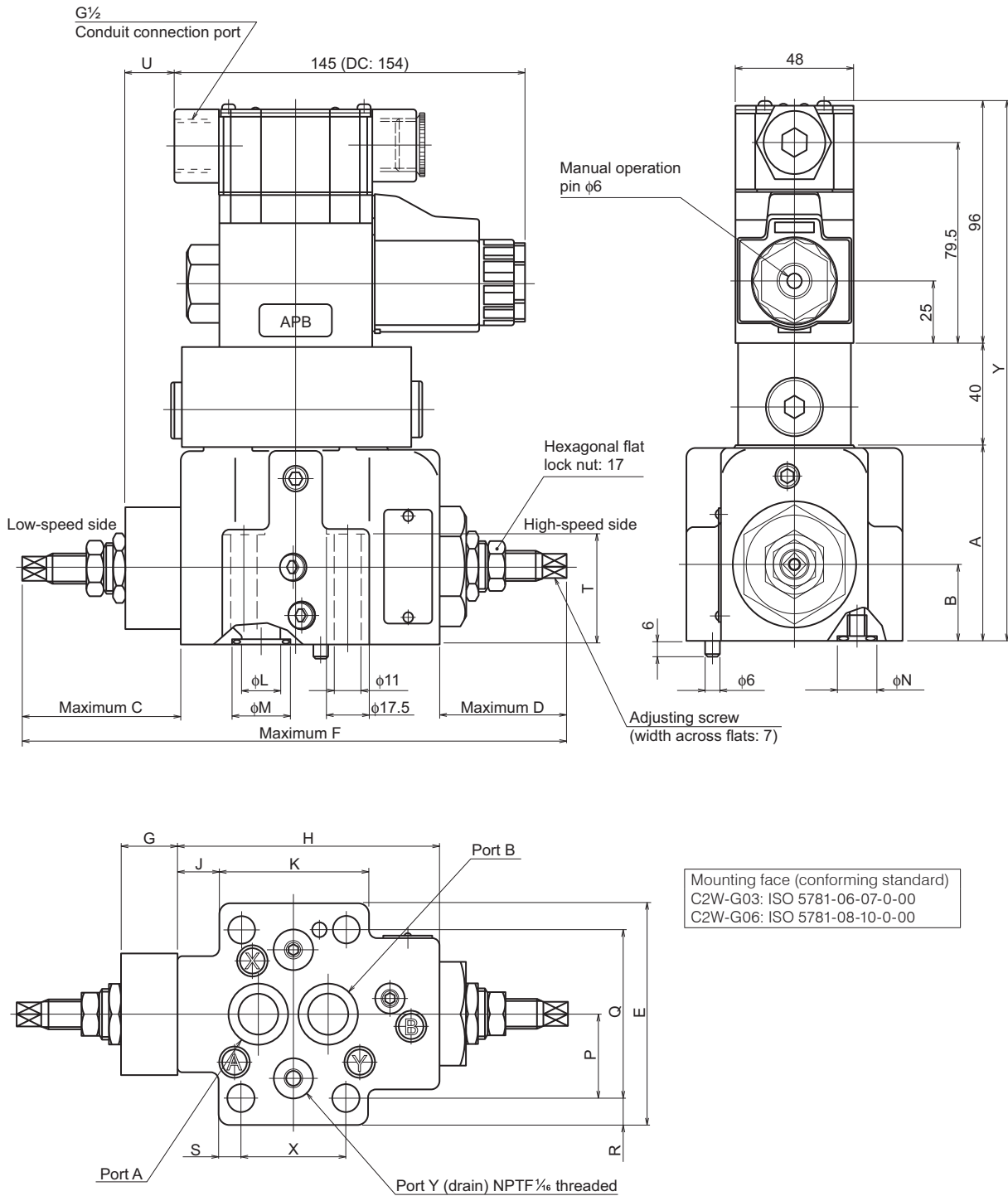
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## External dimension diagram

● C2SW-G03, 06



Mounting face (conforming standard)  
 C2W-G03: ISO 5781-06-07-0-00  
 C2W-G06: ISO 5781-08-10-0-00

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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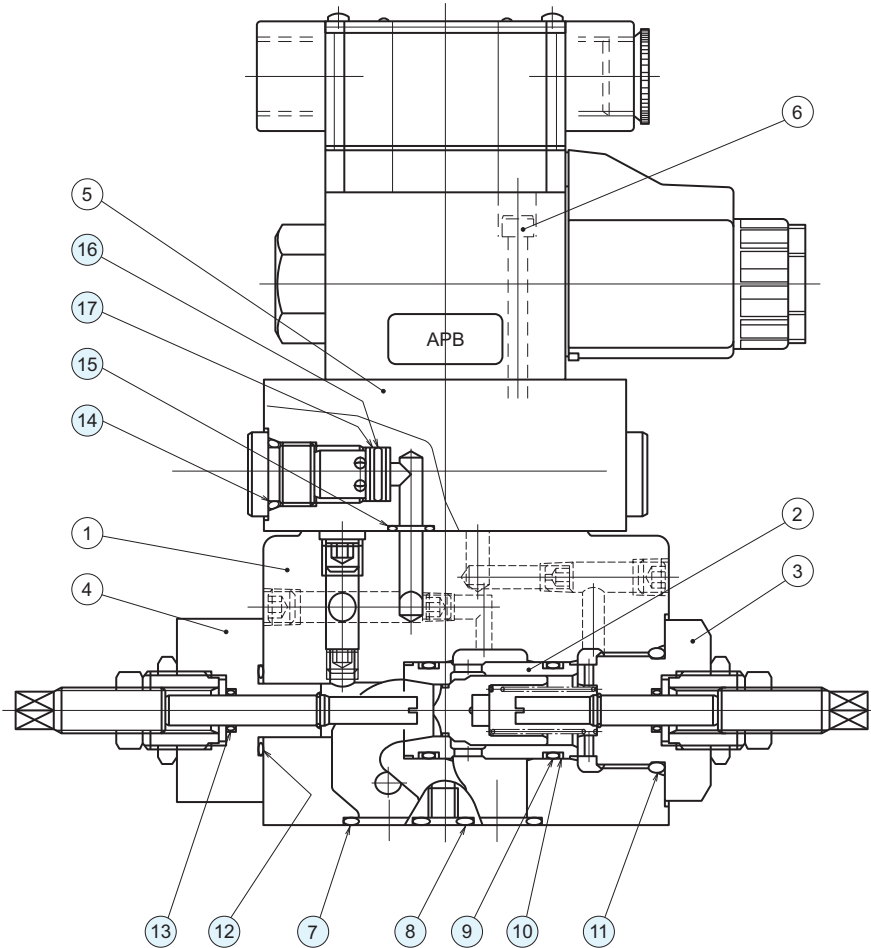
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## Sectional structural diagram

- 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