

## Contact Details

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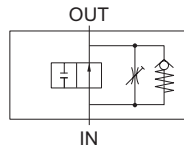
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# Throttle Valve with Rotary Type Deceleration Valve (with Temperature Compensation Control)



JIS graphic symbols for hydraulic system



## Features

- The temperature compensation control maintains the set flow rate regardless of changes in the fluid temperature.
- Available in a variety of configurations according to the moving direction of the table and piping direction.
- Capable of controlling the sequence: rapid forward → slow forward → rapid return.

## Nomenclature

⊗ - **SFD** - ⊗ ⊗ ⊗ ⊗ - **10**

1      2      3      4      5      6

### 1 Applicable fluid code

No designation: Petroleum-based hydraulic fluid, water-glycol hydraulic fluid  
F: Phosphate ester hydraulic fluid

### 2 Model No.

SFD: S series throttle valve with deceleration valve

### 3 Connections

G: Gasket mount type  
T: Screw connection type <Only applicable with the nominal diameter of "02">

### 4 Nominal diameter

02: ¼  
03: ⅜ <Applicable to connection type G only>

### 5 Deceleration operation type

R: Counterclockwise (leftward) rotation to close the rotary valve  
L: Clockwise (rightward) rotation to close the rotary valve

### 6 Design No.

(The design No. is subject to change)

## Specifications

Model code	Nominal diameter	Maximum operating pressure MPa {kgf/cm <sup>2</sup> }	Free flow L/min	Flow rate adjustment range*1 L/min	Check valve Cracking pressure MPa {kgf/cm <sup>2</sup> }	Mass kg
SFD-⊗02⊗-10	¼	5 {50}	12	0.1 to 22	0.1 {1}	1.5
SFD-G03⊗-10	⅜		30	0.1 to 3.5		2.3

Note: \*1 The flow rate adjustment range indicated are the values when the pressure difference between the inlet and outlet ports is 2 MPa {20 kgf/cm<sup>2</sup>}.

## Accessories (gasket mount type)

Model No.	Hexagon socket head cap bolt	Quantity	Tightening torque N·m {kgf·cm}
SFD-G02	M5 × 40	4	5.5 to 7.5 {55 to 75}
SFD-G03	M6 × 50	4	10 to 12.5 {100 to 125}

## Handling

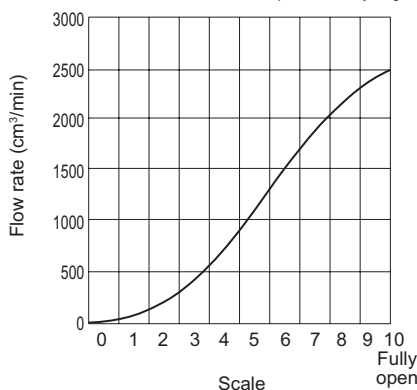
- Use the valve in combination with a line filter with a filtration accuracy of 10 μm or better.
- SFD-⊗02 is equipped with the check valve locking structure. Lock the check valve to throttle the flow in both directions: IN → OUT and OUT → IN. To lock the check valve, loosen the lock nut and fully screw in the spring support (part No. 4 in the sectional structural diagram), then retighten the lock nut.
- The spring support is normally set at a rotational position where it is loosened by one full turn from the fully tightened position.

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

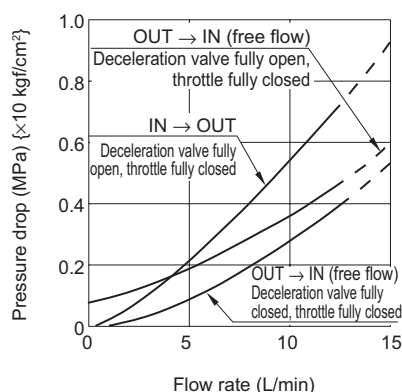
### ● SFD-⊗02

#### Scale - Flow rate characteristics

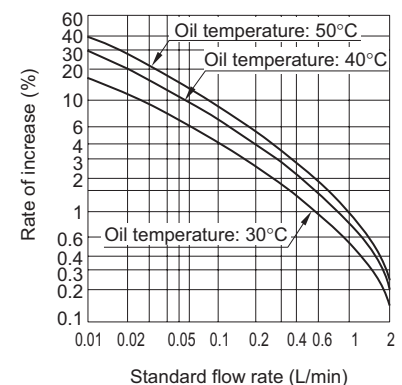
Pressure difference between inlet and outlet ports: 2 MPa {20 kgf/cm<sup>2</sup>}



#### Pressure drop characteristics



#### Fluid temperature - Flow rate characteristics

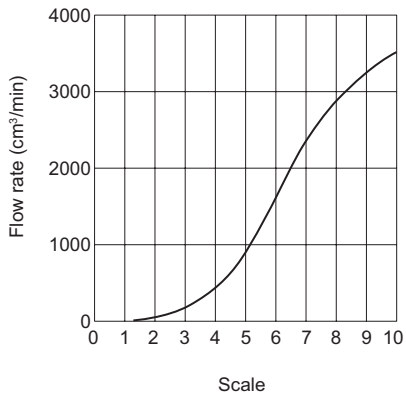


**Performance curves (viscosity: 32 mm<sup>2</sup>/s {cSt})**

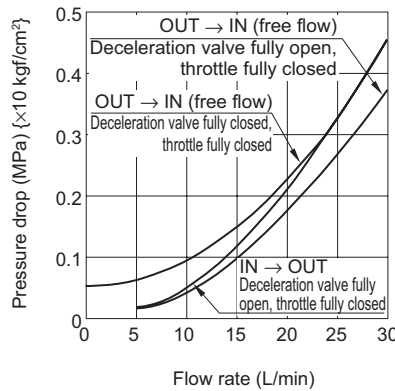
● SFD-G03

**Scale - Flow rate characteristics**

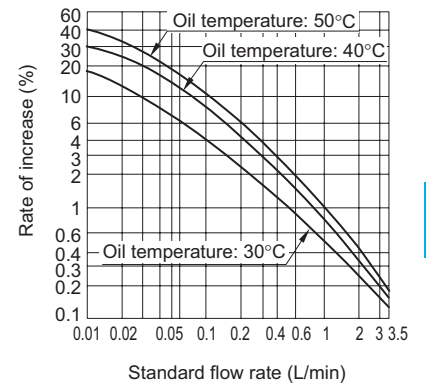
Pressure difference between inlet and outlet ports: 2 MPa {20 kgf/cm<sup>2</sup>}



**Pressure drop characteristics**



**Fluid temperature - Flow rate characteristics**



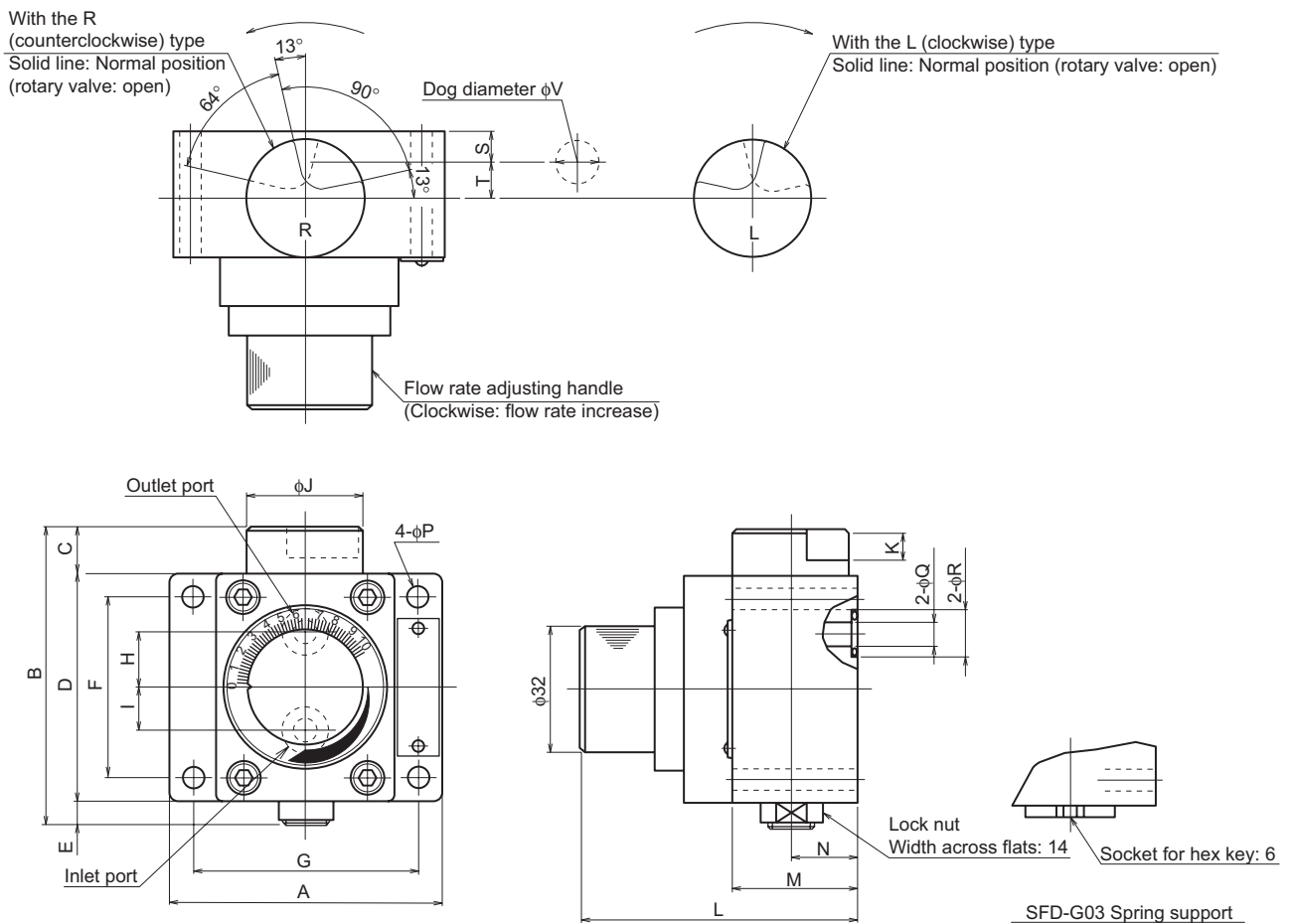
**Conditions for the fluid temperature - Flow rate characteristics curve**

Oil usable	Equivalent to ISO VG32
Pressure difference between inlet and outlet ports	3 MPa {30 kgf/cm <sup>2</sup> }
Standard flow rate	Flow rate at fluid temperature of 20°C

FLOW CONTROL VALVES

**External dimension diagram**

SFD-G\*\*



Model No.	Dimensions																			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	V
SFD-G02	70	76	12	58	6	46	58	14	11	30	8	71	32	17	5.5	6	12	8	9	11
SFD-G03	80	84	13	68	3	55	66	14	14	35	8	81	42	22	6.6	8	16	12	10	12

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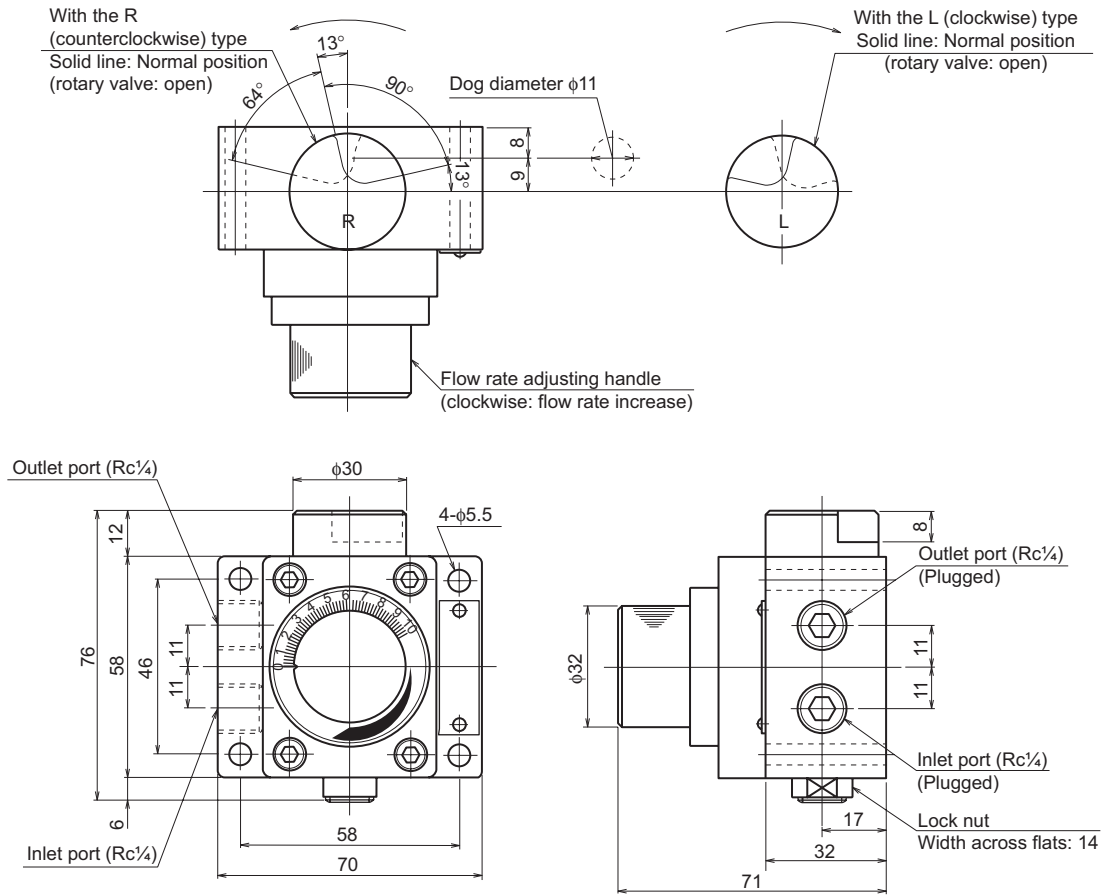
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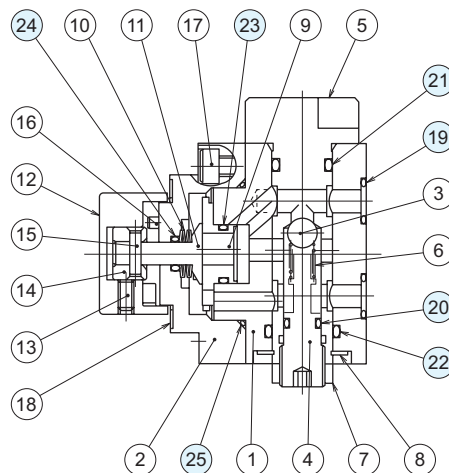
## External dimension diagram

SFD-T02



## Sectional structural diagram

SFD-\*\*\*



Sealing part table

Part No.	Name	Quantity	Part specifications		
			SFD-G02	SFD-G03	SFD-T02
19	O-ring	2	JIS B 2401 1A P9	JIS B 2401 1A P12	-
20	O-ring	1	JIS B 2401 1A P7	JIS B 2401 1A P10	JIS B 2401 1A P7
21	O-ring	1	1130-80 P12 (MITSUBISHI CABLE INDUSTRIES, LTD)	1130-80 P16 (MITSUBISHI CABLE INDUSTRIES, LTD)	1130-80 P12 (MITSUBISHI CABLE INDUSTRIES, LTD)
22	O-ring	1	1130-80 P16 (MITSUBISHI CABLE INDUSTRIES, LTD)	1130-80 P20 (MITSUBISHI CABLE INDUSTRIES, LTD)	1130-80 P16 (MITSUBISHI CABLE INDUSTRIES, LTD)
23	O-ring	1	AS568-014 (NBR,Hs70)	AS568-014 (NBR,Hs70)	AS568-014 (NBR,Hs70)
24	O-ring	1	JIS B 2401 1A P6	JIS B 2401 1A P6	JIS B 2401 1A P6
25	O-ring	1	AS568-028 (NBR,Hs70)	JIS B 2401 1A G40	AS568-028 (NBR,Hs70)