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Throttle Valves/Throttle Valves with Check Valve

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Features

- Well balanced structure for pressure enables easy operation of the handle even at a high pressure.
- The compact design minimizes the installation space.
- Facilitates fine adjustment of the flow rate.

Nomenclature

※ - HDFT ※ - ※ ※ ※
 1 2 3 4 5

1 Applicable fluid code

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

2 Model No.

HDFT: H series throttle valve

3 Check valve code

No designation: Without check valve
 C: With check valve

4 Connections

G: Gasket mount type
 T: Screw connection type
 F: Flange connection type

5 Nominal diameter

03: 3/8
 06: 1/4
 10: 1 1/4
 16: 2

Specifications

| Model code | Nominal diameter | Maximum operating pressure MPa {kgf/cm ² } | Maximum control flow rate L/min | Check valve Cracking pressure MPa {kgf/cm ² } | Mass kg | |
|-------------|------------------|--|------------------------------------|---|------------------|-----|
| HDFT(C)-G03 | 3/8 | 21 {210} | 30 | 0.2 {2} | 2.7 | |
| HDFT(C)-T03 | | | | | 1.5 | |
| HDFT(C)-G06 | 3/4 | | 75 | | 0.15 {1.5} | 4.2 |
| HDFT(C)-T06 | | | | | | 3.6 |
| HDFT(C)-F06 | | | | 9.5 | | |
| HDFT(C)-G10 | 1 1/4 | | 190 | 0.2 {2} | 11 | |
| HDFT(C)-T10 | | | | | 9.4 | |
| HDFT(C)-F10 | | | | | 11 ^{*1} | |
| HDFT(C)-F16 | 2 | 470 | | 21 ^{*1} | | |

Note: ^{*1} The mass of the flange mount type valve includes the mass of the flange and bolts.

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 |
|------------|------------------|--------------------------|---------|
| HDFT-03M | 3/8 | Rc3/8 | 1.7 |
| HDFT-06M | 3/4 | Rc3/4 | 3 |
| HDFT-10M | 1 1/4 | Rc1 1/4 | 8 |

Refer to Page S-8 for the dimensions of the sub-plate.

Accessories

| Connections | Model No. | Hexagon socket head cap bolt | Quantity | Tightening torque Nm {kgfcm} |
|------------------------|--|------------------------------|----------|---------------------------------|
| Gasket mount type | HDFT(C)-G03 | M10 × 70 | 4 | 48 to 63 {480 to 630} |
| | HDFT(C)-G06 | M10 × 80 | 4 | 48 to 63 {480 to 630} |
| | HDFT(C)-G10 | M12 × 45 | 6 | 92 to 122 {920 to 1220} |
| Flange connection type | Flange (JIS B 2291 SSA), O-ring, mounting bolts. | | | |

Handling

- The flow rate will not be zero even when the flow rate adjusting handle is fully tightened due to the spool type configuration.
- The throttle valves can control the flow in both directions. However, with throttle valves with check valve, the flow in the reverse direction will be free flow.

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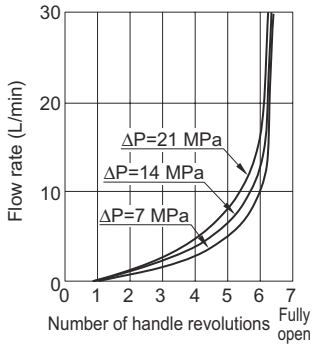
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Performance curves (viscosity: 32 mm²/s {cSt})

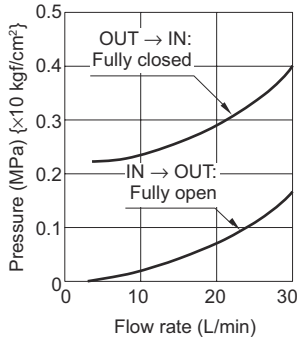
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● HDFT(C)-×03

Handle revolution -
Flow rate characteristics

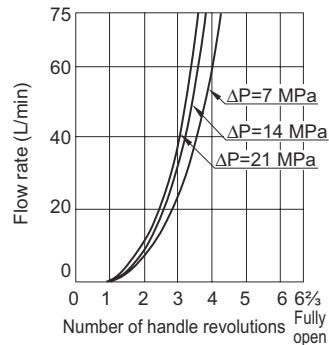


Pressure drop characteristics

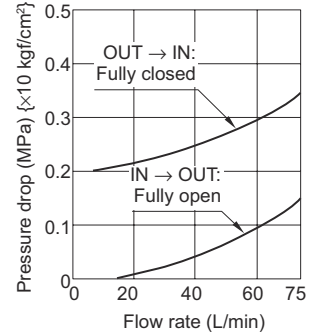


● HDFT(C)-×06

Handle revolution -
Flow rate characteristics

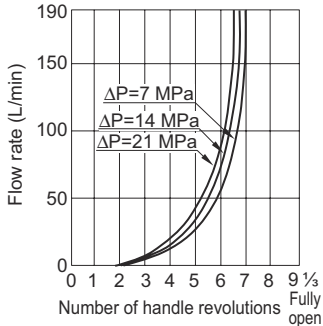


Pressure drop characteristics

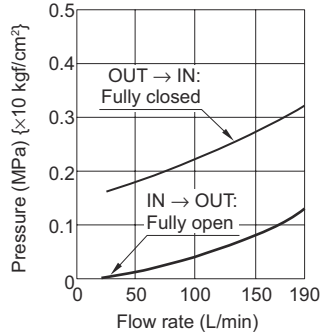


● HDFT(C)-×10

Handle revolution -
Flow rate characteristics

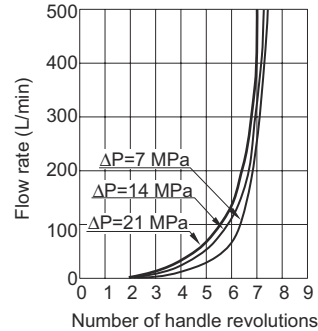


Pressure drop characteristics

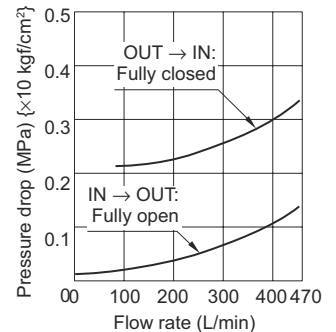


● HDFT(C)-F16

Handle revolution -
Flow rate characteristics

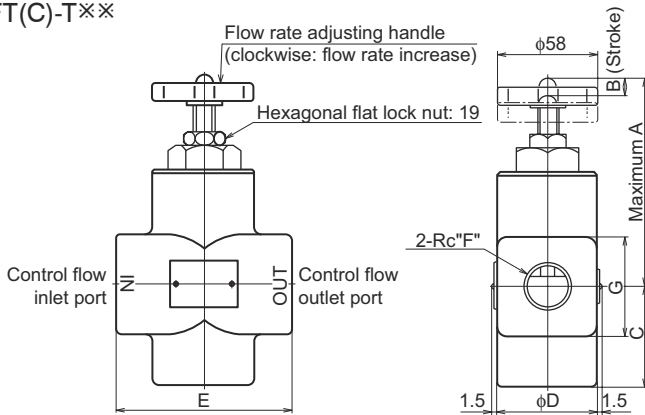


Pressure drop characteristics



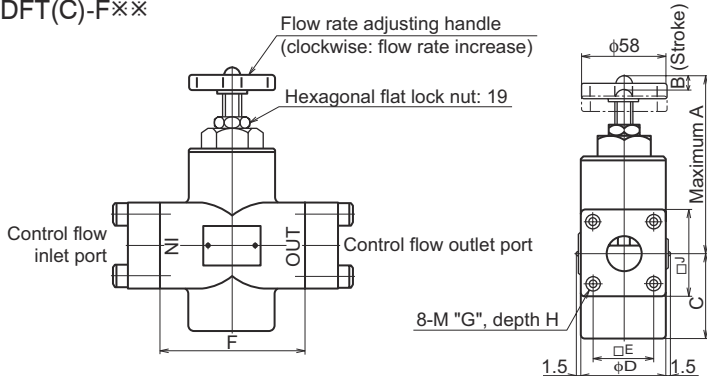
External dimension diagram

HDFT(C)-T××



| Model code | Dimensions | | | | | | |
|-------------|------------|----|----|----|-----|-------|-----|
| | A | B | C | D | E | F | G |
| HDFT(C)-T03 | 103.5 | 7 | 44 | 44 | 72 | 3/8 | φ44 |
| HDFT(C)-T06 | 124.0 | 10 | 58 | 58 | 102 | 1/2 | □60 |
| HDFT(C)-T10 | 148.0 | 14 | 90 | 80 | 140 | 1 1/4 | □80 |

HDFT(C)-F××



| Model code | Dimensions | | | | | | | | |
|-------------|------------|----|-----|----|----|-----|----|----|-----|
| | A | B | C | D | E | F | G | H | J |
| HDFT(C)-F06 | 124 | 10 | 58 | 58 | 40 | 100 | 10 | 15 | 60 |
| HDFT(C)-F10 | 148 | 14 | 90 | 80 | 56 | 137 | 12 | 20 | 80 |
| HDFT(C)-F16 | 170 | 20 | 112 | 90 | 73 | 158 | 16 | 27 | 100 |

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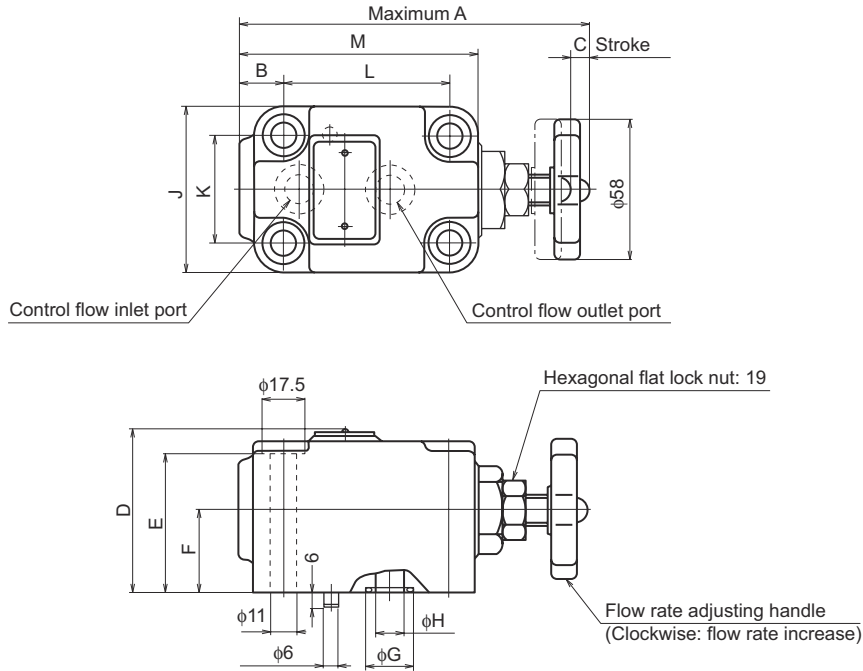
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External dimension diagram

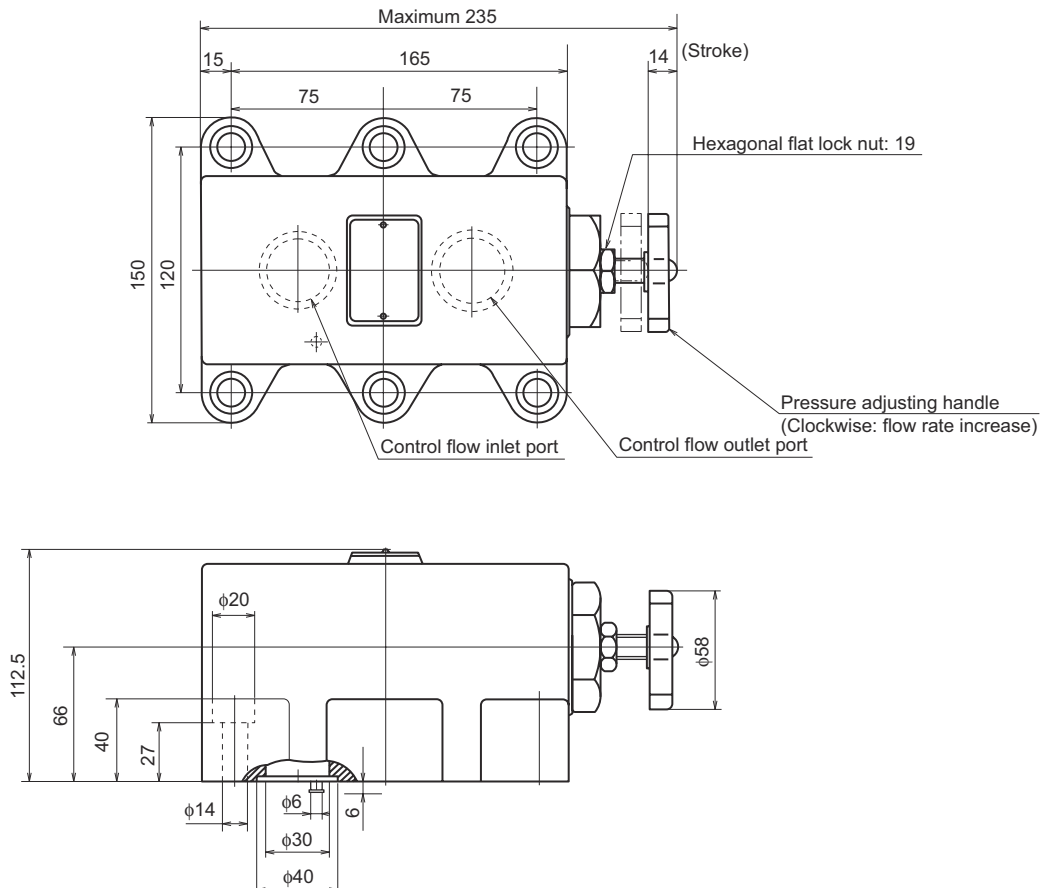
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HDFT(C)-G03,G06



| Model code | Dimensions | | | | | | | | | | | |
|-------------|------------|----|----|------|----|----|----|----|----|----|----|-----|
| | A | B | C | D | E | F | G | H | J | K | L | M |
| HDFT(C)-G03 | 147.5 | 18 | 7 | 66.5 | 55 | 34 | 22 | 14 | 64 | 44 | 70 | 98 |
| HDFT(C)-G06 | 182.5 | 21 | 10 | 76.5 | 65 | 40 | 30 | 20 | 68 | 46 | 90 | 122 |

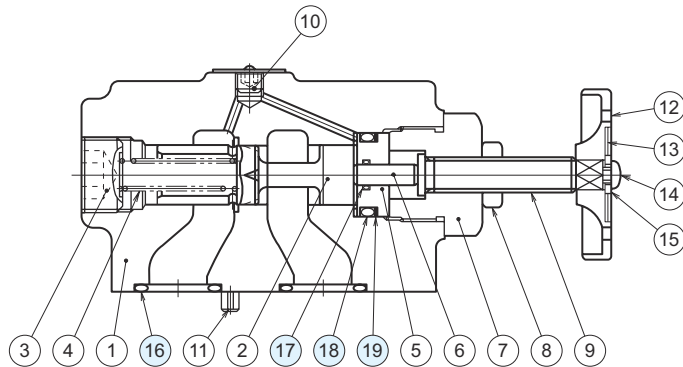
HDFT(C)-G10



Sectional structural diagram

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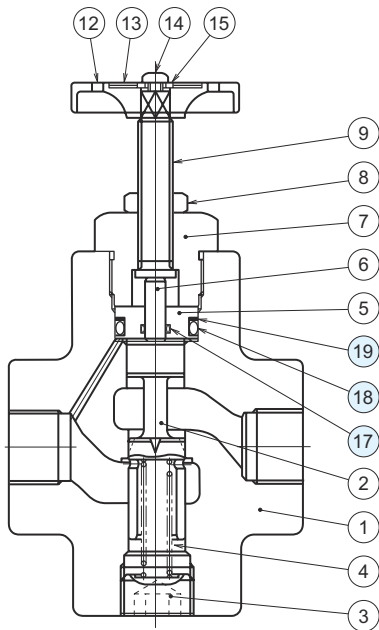
HDFT(C)-G**



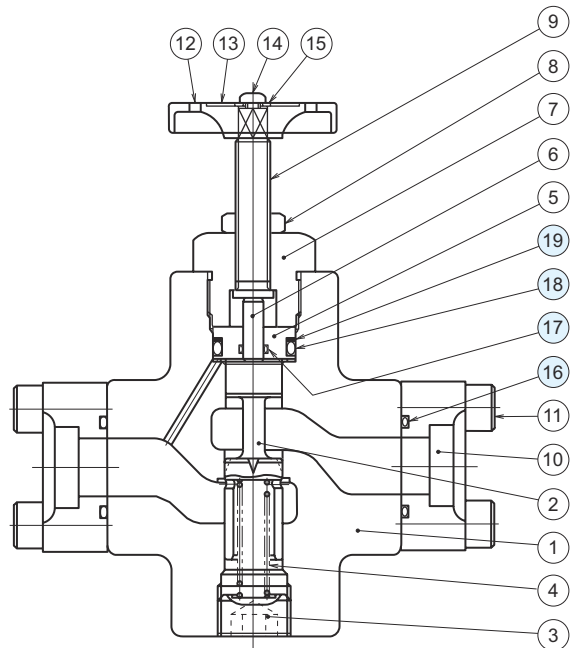
Sealing part table

| Part No. | Name | Quantity | Part specifications | | |
|----------|-------------|----------|-----------------------|-------------------------|-----------------------|
| | | | HDFT(C)-G03 | HDFT(C)-G06 | HDFT(C)-G10 |
| 16 | O-ring | 2 | JIS B 2401 1B P18 | JIS B 2401 1B G25 | JIS B 2401 1B G35 |
| 17 | O-ring | 1 | JIS B 2401 1B P5 | JIS B 2401 1B P7 | JIS B 2401 1B P8 |
| 18 | O-ring | 1 | JIS B 2401 1B P20 | JIS B 2401 1B P22.4 | JIS B 2401 1B P36 |
| 19 | Backup ring | 1 | JIS B 2407 Spiral P20 | JIS B 2407 Spiral P22.4 | JIS B 2407 Spiral P36 |

HDFT(C)-T**



HDFT(C)-F**



Sealing part table

| Part No. | Name | Quantity | Part specifications | | |
|----------|-------------|----------|-----------------------|-------------------------|-----------------------|
| | | | HDFT(C)-T03 | HDFT(C)-T06 | HDFT(C)-T10 |
| 17 | O-ring | 1 | JIS B 2401 1B P5 | JIS B 2401 1B P7 | JIS B 2401 1B P8 |
| 18 | O-ring | 1 | JIS B 2401 1B P20 | JIS B 2401 1B P22.4 | JIS B 2401 1B P36 |
| 19 | Backup ring | 1 | JIS B 2407 Spiral P20 | JIS B 2407 Spiral P22.4 | JIS B 2407 Spiral P36 |

| Part No. | Name | Quantity | Part specifications | | |
|----------|-------------|----------|-------------------------|-----------------------|-----------------------|
| | | | HDFT(C)-F06 | HDFT(C)-F10 | HDFT(C)-F16 |
| 16 | O-ring | 2 | JIS B 2401 1B G30 | JIS B 2401 1B G40 | JIS B 2401 1B G60 |
| 17 | O-ring | 1 | JIS B 2401 1B P7 | JIS B 2401 1B P8 | JIS B 2401 1B P8 |
| 18 | O-ring | 1 | JIS B 2401 1B P22.4 | JIS B 2401 1B P36 | JIS B 2401 1B P48 |
| 19 | Backup ring | 1 | JIS B 2407 Spiral P22.4 | JIS B 2407 Spiral P36 | JIS B 2407 Spiral P48 |