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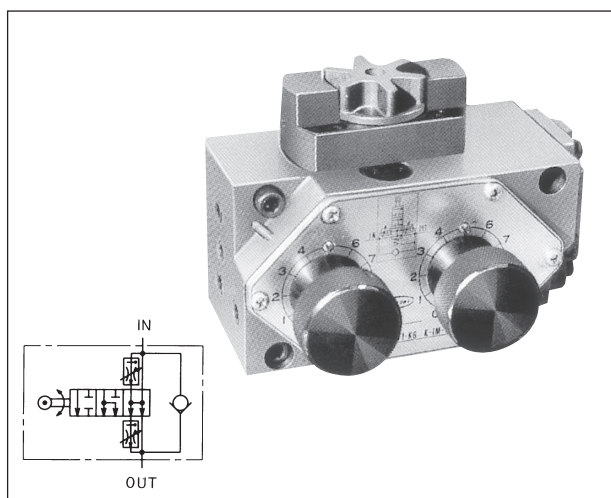
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## 2-STEP FLOW CONTROL VALVE WITH ROTARY TYPE SHUT-OFF VALVE

### 2-STEP FLOW CONTROL VALVE WITH ROTARY TYPE SHUT-OFF VALVE (HFDF) (WITH PRESSURE AND TEMPERATURE COMPENSATION)



This is a compound valve built by assembling a flow control valve with pressure and temperature compensation, a shut off valve and a check valve.

It is used to control the feed operation (rapid feed → slow feed → rapid return) of machine tools, etc.

#### ■Features

1. The switching mechanism for the shut-off valve has been changed from the conventional spool forcing down type to the spool rotation type.
  2. The dog pressing force can be lightened since the spool rotating force does not change even if the OUT port pressure (back pressure) varies.
  3. The valve can also be used for light bed feed control since it can control rapid feed → 1st step feed → 2nd step feed simply.
- To achieve good pressure compensation performance, the pressure difference between the IN and OUT ports must be maintained at 0.6 MPa or larger.
  - The valve mounting face must be finished to the same surface finish  $\sqrt{3.2 \frac{Z}{Z}}$  as the valve face.
  - The dog section pin ( $\phi 9 \pm 0.1$  mm) must have a hardness in the range Hrc34 to Hrc44.

#### ■Description of the model designation

##### HFDF1-KG8K-1R-K1-04

|                                               |                                               |
|-----------------------------------------------|-----------------------------------------------|
| Flow control valve (main valve)               | Nominal size of main valve                    |
| Directional control valve (sub valve)         | Max. control flow of sub valve                |
| Flow control valve (sub valve)                | 1: 1 L/min                                    |
| Max. operating pressure of main valve         | Function category of sub valve                |
| 1: 7 MPa                                      | K: With pressure and temperature compensation |
| Function category                             | Sub valve operating method                    |
| K: With pressure and temperature compensation | R: Rotary type                                |
| Piping method                                 | 1: Normally open internal drain               |
| G: Gasket                                     | Check valve                                   |
|                                               | Max. controllable flow of main valve          |

#### ■Specifications

| Nominal size | Max. operating pressure (MPa) | Free flow (L/min) | Rotating torque (N·m) | Flow adjustment range (L/min) |            | Model               |
|--------------|-------------------------------|-------------------|-----------------------|-------------------------------|------------|---------------------|
|              |                               |                   |                       | No. 1 feed                    | No. 2 feed |                     |
| 03           | 7                             | 30                | 1                     | 0.2 to 2                      | 0.1 to 1   | HFDF1-KG2K-1R-K1-03 |
|              |                               |                   |                       | 0.2 to 8                      |            | HFDF1-KG8K-1R-K1-03 |
| 04           |                               | 50                | 1.3                   | 0.1 to 2                      |            | HFDF1-KG2K-1R-K1-04 |
|              |                               |                   |                       | 0.2 to 8                      |            | HFDF1-KG8K-1R-K1-04 |

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FLOW CONTROL VALVES