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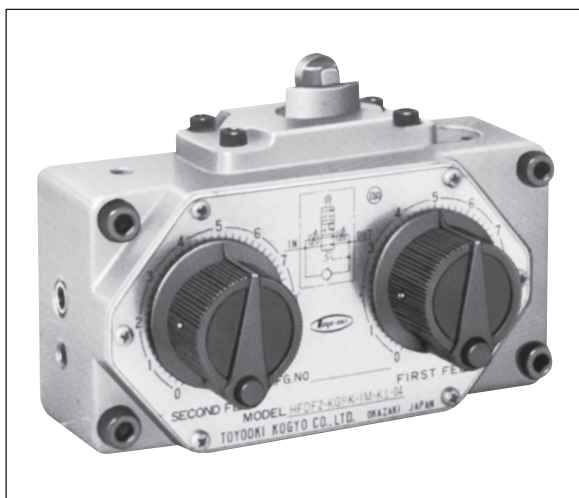
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STEP FLOW CONTROL VALVE WITH SHUT-OFF VALVE (HFDF)

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



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

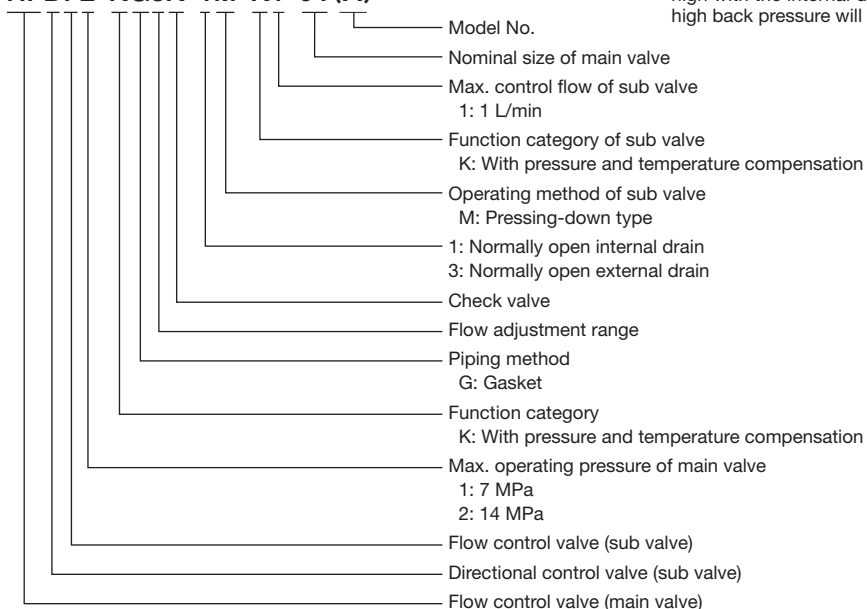
It is used to control the feed operation (rapid feed → slow feed → rapid return) of e.g. a machine tool.

■Features

- The valve is compactly designed and is suitable for feed control of singlepurpose machine tools and automatics.
- Since the valve incorporate a pressure compensation and temperature compensation mechanism, it keeps controlled flow constant regardless of the pressure variation at the IN and OUT port and the viscosity variation due to temperature change.
- The flow is controlled almost in direct proportion to the division on the flow adjusting dial.
 - 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 $\frac{3}{2}Z$ as the valve face.
 - The edge angle of the dog (cam) must be 30 deg. or smaller. The roller must have a hardness in the range HRC48 to HRC52.
 - When controlling slow feed → rapid feed in feed operation, it is necessary to apply a back pressure of approximately 0.35 MPa at the OUT port for the internal drain type or at the DR port for the external drain type.
 - The pressing-down force varies according to the back pressure as shown in the table to the right.
 - If the circuit is configured so that the back pressure (OUT port pressure) becomes high with the internal drain type, the back pressure must be 4 MPa or lower since high back pressure will shorten the life of the roller and the pin.

■Description of the model designation

HFDF2-KG8K-1M-K1-04 (A)

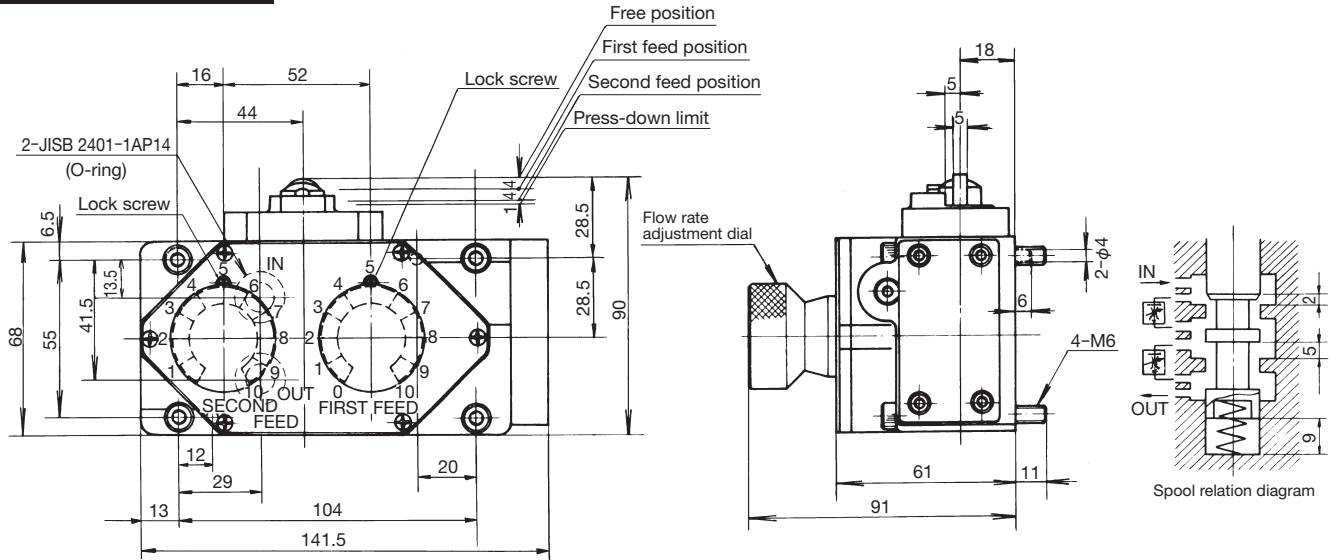


Nominal size	Pressing-down force (N)
03	$250 \times \text{Back pressure (MPa)} + 125$
04	$310 \times \text{Back pressure (MPa)} + 180$

NOTE: The pressing-down force value in the specification table indicates the value when the back pressure is "0".

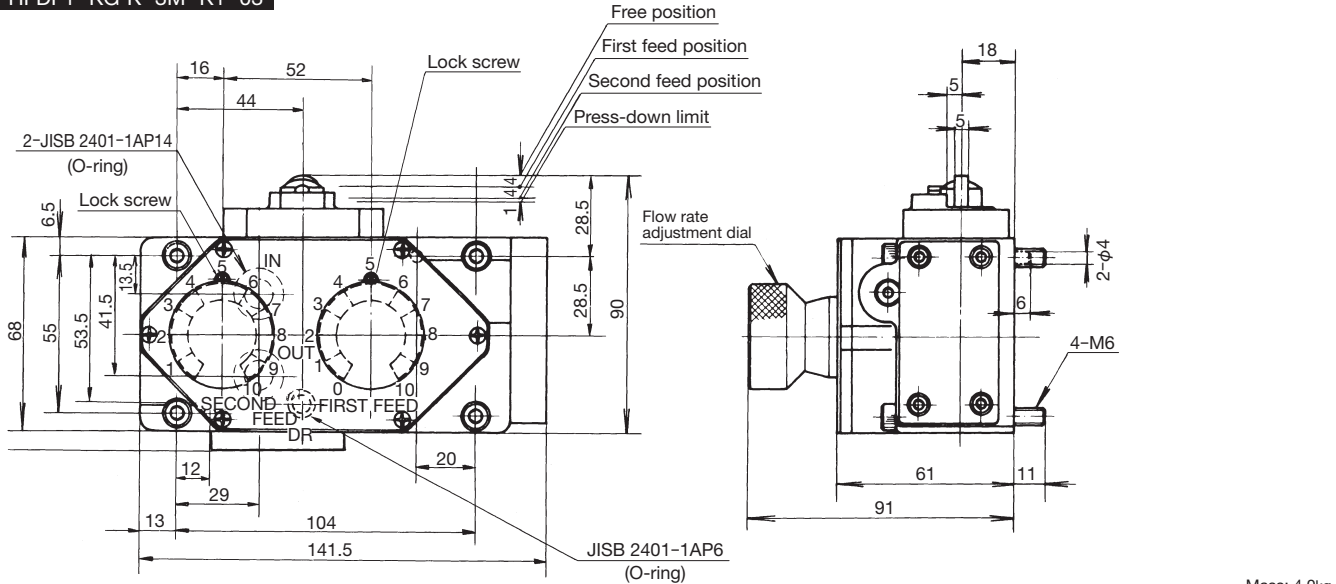
Outside dimensions

HFDF1-KG*K-1M-K1-03



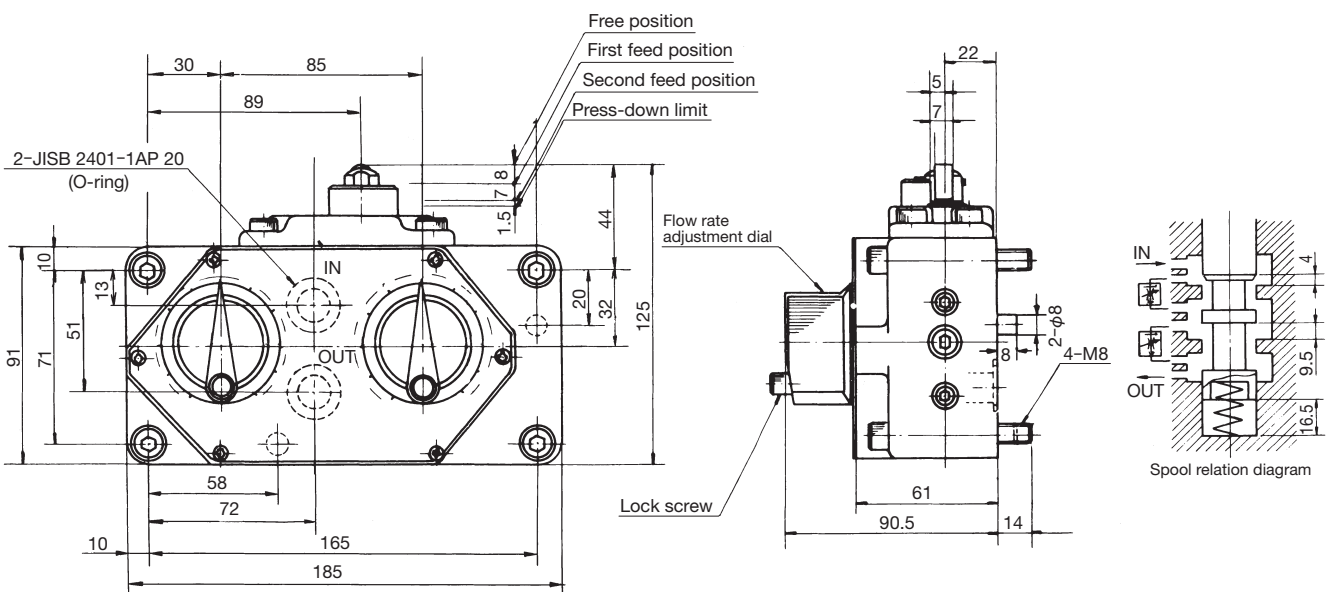
Mass: 4.0kg

HFDF1-KG*K-3M-K1-03



Mass: 4.0kg

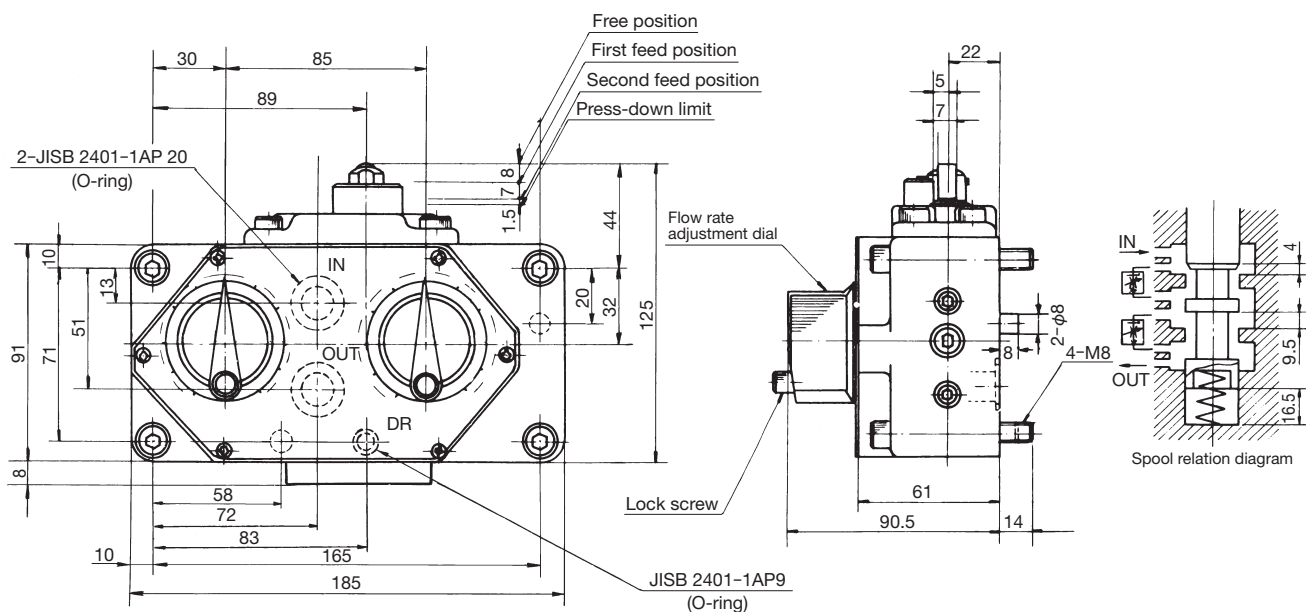
HFDF2-KG*K-1M-K1-04A



Mass: 8.0kg

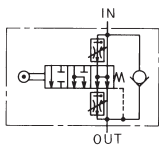
Outside dimensions

HFDF2-KG2K-3M-K1-04A



Mass: 8.0kg

Internal drain type

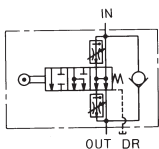


Internal drain type

Nominal size	Max. operating pressure (MPa)	Free flow (L/min)	Pressing-down force (N)	Flow adjustment range (L/min)		Model
				No. 1 feed	No. 2 feed	
03	7	30	125	0.2 to 2	0.1 to 1	HFDF1-KG2K-1M-K1-03
				0.2 to 8	0.1 to 1	HFDF1-KG8K-1M-K1-03
04	14	50	180	0.2 to 2	0.1 to 1	HFDF2-KG2K-1M-K1-04A
				0.2 to 8	0.1 to 1	HFDF2-KG8K-1M-K1-04A

External drain type

External drain type



Nominal size	Max. operating pressure (MPa)	Free flow (L/min)	Pressing-down force (N)	Flow adjustment range (L/min)		Model
				No. 1 feed	No. 2 feed	
03	7	30	125	0.2 to 2	0.1 to 1	HFDF1-KG2K-3M-K1-03
				0.2 to 8	0.1 to 1	HFDF1-KG8K-3M-K1-03
04	14	50	180	0.2 to 2	0.1 to 1	HFDF2-KG2K-3M-K1-04A
				0.2 to 8	0.1 to 1	HFDF2-KG8K-3M-K1-04A

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