

Flow control valves

Variable throttle valves (Series HF ※-C)

This valve serves to control flow by varying the throttle section steplessly.

This valve is available only where the variation in flow with pressure is permitted because of its pressure dependent structure.



Symbol

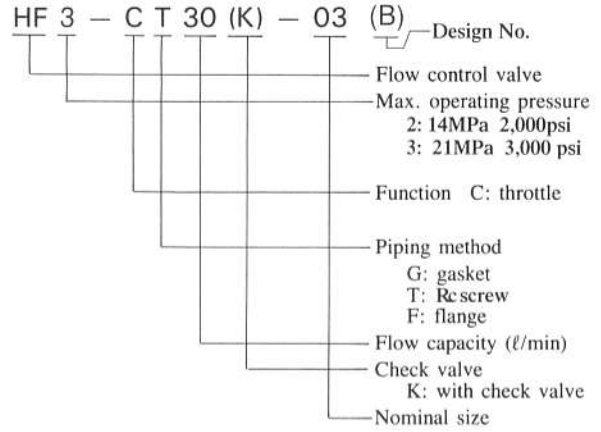


Without check valve



With check valve

• Model coding



• Specifications

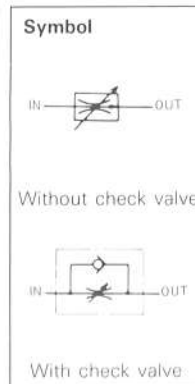
Pipe size	Rated flow		Free. flow		Model		
	ℓ /min	gpm	ℓ /min	gpm	Thread connection type	Gasket connection	Flange connection
1/8	5	1.3	12	3.2		HF2-CG5K-01	
1/4	20	5.3	20	5.3	HF3-CT20(K)-02B		
3/8	30	7.9	30	7.9	HF3-CT30(K)-03B	HF3-CG30K-03	
1/2	50	13.2	50	13.2			HF3-CF50(K)-04
3/4	75	19.8	75	19.8		HF3-CG75K-06	HF3-CF75(K)-06
1 1/4	190	50.3	190	50.3		HF-CG190K-10	HF3-CF190(K)-10
Max. operating pressure				MPa psi	21 3,000	21 (14) 3,000 (2,000)	21 3,000

Sub-plate and piping flange should be separately ordered.

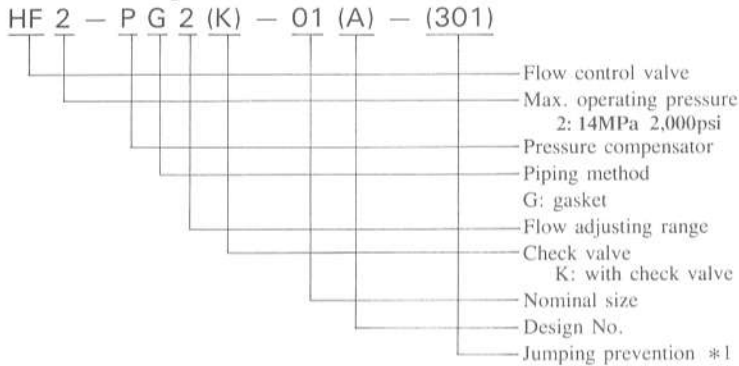
Cracking pressure of check valve is 0.04MPa 5.7 psi, if built-in.

Flow control valves with pressure compensation (Series HF2-P)

This valve serves to control flow by varying the throttle section steplessly with the dial.
 Because of its built-in pressure compensator, this valve can maintain the flow independent of pressure.
 The model with check valve permits free return flow from Out to In port.



● **Model coding**



Note *1: It serves to prevent actuators from jumping to some extent when they start.

● **Specifications**

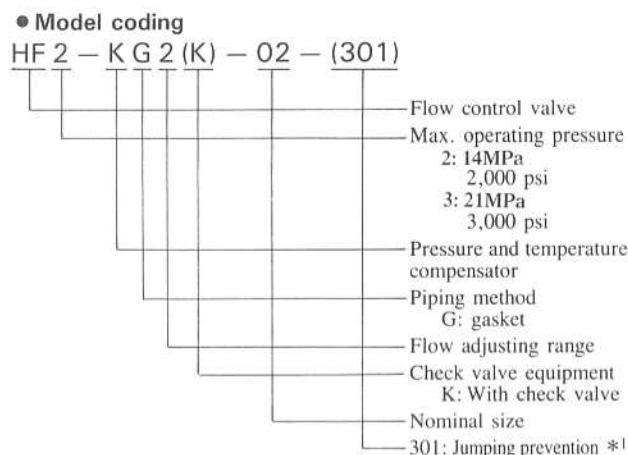
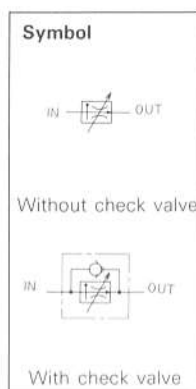
Pipe size	Max. operating pressure		Free flow		Flow adjusting range		Model	
	MPa	psi	ℓ/min	gpm	ℓ/min	gpm	w/o check valve	w/ check valve
1/8	14	2,000	12	3.2	0.1 ~ 1	0.03 ~ 0.26	HF2-PG1-01	HF2-PG1K-01
					0.1 ~ 2	0.03 ~ 0.53	HF2-PG2-01	HF2-PG2K-01
					0.2 ~ 4	0.05 ~ 1.06	HF2-PG4-01	HF2-PG4K-01
1/4	14	2,000	30	5.8	0.1 ~ 1	0.03 ~ 0.26	HF2-PG1-02A	HF2-PG1K-02A
					0.1 ~ 2	0.03 ~ 0.53	HF2-PG2-02A	HF2-PG2K-02A
					0.2 ~ 8	0.05 ~ 2.1	HF2-PG8-02A	HF2-PG8K-02A
					0.3 ~ 16	0.08 ~ 4.2	HF2-PG16-02A	HF2-PG16K-02A

Sub-plate should be separately ordered.

Cracking pressure of check valve is 0.04MPa 5.7 psi, if built-in.

Flow control valves with pressure and temperature compensation (Series HF ※ -K)

This valve serves to throttle an oil flow steplessly by rotating the dial independent of pressure and temperature. The model with check valve permits free return flow from Out to In port.



Note *1: It serves to prevent actuators from jumping to some extent when they start.

● Specifications

● Type 14 MPa. 2,000 psi

Pipe size	Max. operating pressure		Free flow		Flow adjusting range		Model	
	MPa	psi	ℓ/min	gpm	ℓ/min	gpm	w/o check valve	w/ check valve
1/8	14	2,000	12	3.2	0.01 ~ 1	0.003 ~ 0.27	HF2-KG1-01	HF2-KG1K-01
					0.1 ~ 2	0.03 ~ 0.53	HF2-KG2-01	HF2-KG2K-01
					0.1 ~ 6	0.03 ~ 1.6	HF2-KG6-01	HF2-KG6K-01
					0.1 ~ 12	0.03 ~ 3.2	HF2-KG12-01	HF2-KG12K-01
1/4	14	2,000	30	7.9	0.03 ~ 1	0.008 ~ 0.26	*2 HF2-KG1-02	*2 HF2-KG1K-02
					0.1 ~ 2	0.03 ~ 0.5	HF2-KG2-02	HF2-KG2K-02
					0.5 ~ 16	0.13 ~ 4.2	HF2-KG16-02	HF2-KG16K-02
					0.5 ~ 30	0.13 ~ 7.9	HF2-KG30-02	HF2-KG30K-02
3/8	14	2,000	56	14.8	0.5 ~ 30	0.13 ~ 7.9	HF2-KG30-03	HF2-KG30K-03
					0.5 ~ 56	0.13 ~ 14.3	HF2-KG56-03	HF2-KG56K-03

Note *2: Micro flow control valve.

● Type 21 MPa. 3,000 psi

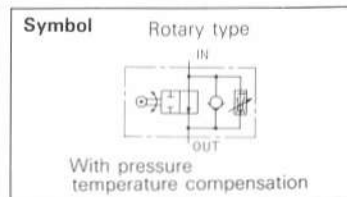
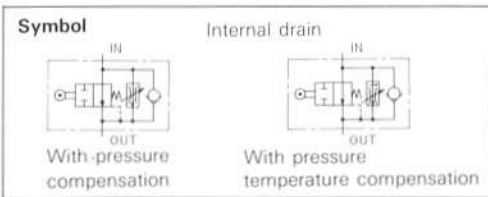
Pipe size	Max. operating pressure		Free flow		Flow adjusting range		Model	
	MPa	psi	ℓ/min	gpm	ℓ/min	gpm	w/o check valve	w/ check valve
1/4	21	3,000	30	5.8	0.1 ~ 2	0.03 ~ 0.5	HF3-KG2-02	HF3-KG2K-02
					0.5 ~ 16	0.13 ~ 4.2	HF3-KG16-02	HF3-KG16K-02
					0.5 ~ 30	0.13 ~ 7.9	HF3-KG30-02	HF3-KG30K-02
3/8	21	3,000	80	14.8	0.5 ~ 40	0.13 ~ 10.6	HF3-KG40-03	HF3-KG40K-03
					1 ~ 80	0.3 ~ 21.2	HF3-KG80-03	HF3-KG80K-03

Sub-plate should be separately ordered.

Cracking pressure of check valve is 0.04MPa 5.7 psi, with built-in.

Single-stage flow control valves with shut-off valve (Series HFD※)

This valve serves to control the feed operation (quick feed→slow feed→quick reverse) of machine tool. There are two types of flow control valve in this model: pressure-compensator type and pressure-temperature compensator type. Push-down type and rotary type are also provided for the feed



● Model coding

HF D 1 - P G 2 K - 1 M - 03 (A)

- (Main valve) flow control valve — HF
- (Sub-valve) directional control valve — D
- Max. operating pressure of main valve — 1: 7MPa 1,000 psi
2: 14MPa 2,000 psi
- Function — P: pressure compensator
K: pressure temperature compensator
- Piping method G: gasket — G
- With check valve — 2
- Internal drain — 1
- Sub-valve operation — M: push-down type R: rotary type
- Normal open internal drain — 1
- Flow adjusting range — 03 (A)
- Design No. — (A)
- Nominal size — 03

● Specifications (Push-down type)

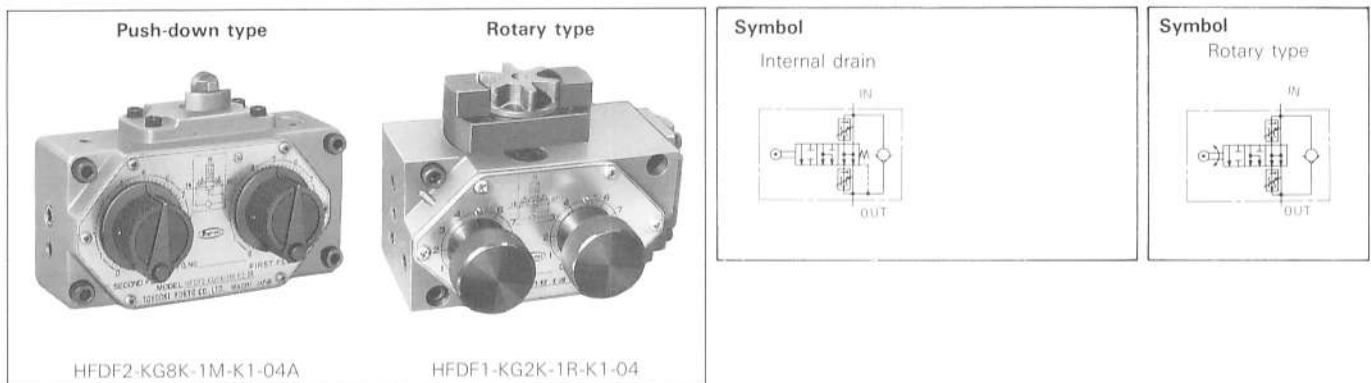
Pipe size	Max. operating pressure		Free flow		Push-down force		Flow adjusting range		Model
	MPa	psi	ℓ/min	gpm	N·m	lb	ℓ/min	gpm	
1/4	7	1,000	12	3.2	110	25	0.1~1	0.03~0.26	HFD1-PG1K-1M-02
							0.1~2	0.03~0.53	HFD1-PG2K-1M-02
							0.2~4	0.05~1.06	HFD1-PG4K-1M-02
							0.1~1	0.03~0.26	HFD1-KG1K-1M-02
							0.1~2	0.03~0.53	HFD1-KG2K-1M-02
							0.2~4	0.05~1.06	HFD1-KG4K-1M-02
3/8	7	1,000	30	7.9	125	28	0.1~1	0.03~0.26	HFD1-PG1K-1M-03A
							0.1~2	0.03~0.53	HFD1-PG1K-1M-03A
							0.2~8	0.05~2.1	HFD1-PG8K-1M-03A
							0.1~2	0.03~0.53	HFD1-KG2K-1M-03
							0.2~8	0.05~2.1	HFD1-KG8K-1M-03
							0.1~1	0.03~0.26	HFD2-KG1K-1M-04A
1/2	14	2,000	50	13.2	180	40	0.1~2	0.03~0.53	HFD2-KG2K-1M-04A
							0.4~16	0.11~4.2	HFD2-KG16K-1M-04A
							0.1~1	0.03~0.26	HFD2-PG1K-1M-06
							0.2~2	0.05~0.53	HFD2-PG2K-1M-06
							0.2~4	0.05~1.06	HFD2-PG4K-1M-06
							0.2~8	0.05~2.1	HFD2-PG8K-1M-06
3/4	14	2,000	75	20	205	45.6	0.3~12	0.09~3.15	HFD2-PG12K-1M-06
							0.3~16	0.09~4.2	HFD2-PG16K-1M-06
							0.1~1	0.03~0.26	HFD2-KG1K-1M-06
							0.1~2	0.03~0.53	HFD2-KG2K-1M-06
							0.2~4	0.05~1.06	HFD2-KG4K-1M-06
							0.2~8	0.05~2.1	HFD2-KG8K-1M-06
							0.3~12	0.09~3.15	HFD2-KG12K-1M-06
							0.3~16	0.09~4.2	HFD2-KG16K-1M-06

(Rotary type)

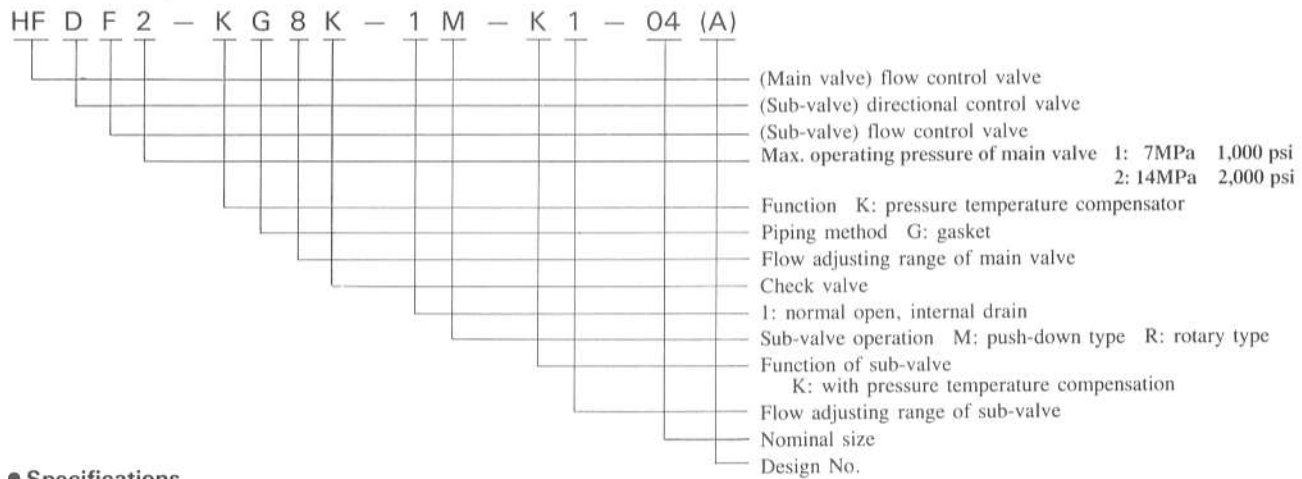
Pipe size	Max. operating pressure		Free flow		Rotary torque		Flow adjusting range		Model
	MPa	psi	ℓ/min	gpm	N·m	lb	ℓ/min	gpm	
3/8	7	1,000	30	7.9	1	0.73	0.2~2	0.05~0.53	HFD1-KG2K-1R-03
							0.2~8	0.05~2.1	HFD1-KG8K-1R-03
1/2			50	13.2	1.3	0.95	0.1~1	0.03~0.26	HFD1-KG1K-1R-04
							0.2~2	0.05~0.53	HFD1-KG2K-1R-04
						0.4~16	0.11~4.2	HFD1-KG16K-1R-04	

Two-stage flow control valves with shut-off valves (Series HFDF)

This valve serves to control the feed operation (quick feed → normal feed → slow feed → quick reverse) of machine tool, equipped with the pressure & temperature compensation mechanism. Push-down type and rotary type are provided for the feed operation (sub-valve).



● Model coding



● Specifications

Push-down type

Pipe size	Max. operating pressure		Free flow		push-down force		Flow adjusting range				Model
	MPa	psi	ℓ/min	gpm	N·m	lb	1st feed		2nd feed		
							ℓ/min	gpm	ℓ/min	gpm	
3/8	7	1,000	30	7.9	125	28	0.2~2	0.05~0.53	0.1~1	0.03~0.26	HFD1-KG2K-1M-K1-03
							0.2~8	0.05~2.1			HFD1-KG8K-1M-K1-03
1/2			50	13.2	180	40	0.2~2	0.05~0.53			HFD1-KG2K-1M-K1-04A
							0.2~8	0.05~2.1			HFD1-KG8K-1M-M1-04A
3/4			75	20	205	45.6	0.2~8	0.05~2.1		HFD1-KG8K-1M-K1-06	

Rotary type

Pipe size	Max. operating pressure		Free flow		Rotary torque		Flow adjusting range				Model
	MPa	psi	ℓ/min	gpm	N·m	lb	1st feed		2nd feed		
							ℓ/min	gpm	ℓ/min	gpm	
3/8	7	1,000	30	7.9	1	0.73	0.2~2	0.05~0.53	0.1~1	0.03~0.26	HFD1-KG2K-1R-K1-03
							0.2~8	0.05~2.1			HFD1-KG8K-1R-K1-03
1/2			50	13.2	1.3	0.95	0.2~2	0.05~0.53			HFD1-KG2K-1R-K1-04
							0.2~8	0.05~2.1			HFD1-KG8K-1R-K1-04