LOWFLOW

8000T Series Three Way Body

Fractional Flow Control Valves

CRN Registration Number Available

FRACTIONAL FLOW CONTROL VALVES

The three-way Mark 8000T can be specified for use on mixing or diverting services. As a mixing valve, it is designed with two inlets to blend two separate flow streams into a common outlet creating a third fluid. For diverting service, the valve features one inlet and two outlets, allowing you to divert the flow from one outlet to the other as required to bypass heat exchangers, coolers, filters or other pieces of process equipment.

The Mark 8000T is a heavy-duty pneumatic control valve developed for standard or low flow industrial process applications. It is recommended for use when service or environmental conditions may be too harsh for traditional three-way control valves.

Features:

- Featuring a three-way body, there are varied uses: *mixing* two separate flow sources into one common line; *diverging* a single flow path into two separate streams; or used as a *bypass* to divert flow from one outlet to another
- For three-way industrial process applications requiring durable construction and precision control of standard or low flows on mixing, diverging, or bypass services
- With barstock construction, specialty alloys are readily available, making the Mark 8000T ideal for corrosive or harsh process applications
- Totally enclosed multi-spring actuators minimize deadband and is field reversible without the use of special tool or extra parts

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MK8000T SERIES THREE WAY BODY SPECIFICATIONS

Sizes: 1/2", 3/4", 1" (DN15, DN20, DN25)

End Connections

- Threaded – NPT, BSPT
- Raised-face flanges (300#, 600#, 900#)
- Ring-type joint flanges (150#, 300#, 600#)
- Socket weld (schedule 40, 80, or 160)

Actuator

- Standard – 35M (35in^2) multi-spring
- Optional – 55M (55 in^2) or 85M (85 in^2). See Maximum Allowable ΔP Ratings Chart

Body/Bonnet Materials

- Carbon Steel
- 316 Stainless Steel
- Brass
- Hastelloy C
- Hastelloy B
- Alloy 20
- Monel

Trim Material

- 316SST
- Monel
- Hastelloy B or C
- Alloy 20
- 17-4 Ph Stainless Steel
- Stellite
- 316SS/Stellite

Actuator Material: Steel

Diaphragm Material: Buna-N/Nylon

Stem Packing Materials:

- Standard – Teflon V-Ring (to 400°F/204°C)
- Optional – Braided (for services above 400°F/204°C)

Service: Water, chemicals, gas, oil, air, steam

Shutoff

- Standard – ANSI Class III (Cv's < 3.5/Kv's < 3,01), ANSI Class IV (Cv's 3.5 and higher/Kv's 3,01 and higher)
- Optional – ANSI Class VI with soft RPTFE seat (consult factory for other soft seat materials options)

Ranges: 3-15 (0,2-1,0); 3-9 (0,2-0,6); 9-15 (0,6-1,0); 6-30 (0,4-2,1) psi (bar). Note: valves using 55M or 85M are not available with 9-15 psi (0,6-1,0 bar) range

Valve Action

- Direct (ATC)
- Reverse (ATO)

Flow Characteristics:

- Linear
- Equal Percentage
- Quick Opening

Cv (Kv) Selection

Valve Size	Standard Cv (Kv)
1/2"/DN15	0.2; 0.5 (0,17; 0,43)
3/4"/DN20	2.0; 3.5 (1,7; 3,0)
1"/DN25	4.0; 4.5; 6.0 (3,4; 3,9; 5,2)

Note: any Cv (Kv) listed can be provided as optional low flow trim in a larger sized valve

Maximum Allowable ΔP Ratings

Act. Size	Cv (Kv)	Air to Open		Air to Close		
		3-15 @ 20 psi	6-30 @ 40 psi*	3-15 @ 20 psi	6-30 @ 40 psi	Pos. @ 40 psi
35M	0.05-0.2 (0,4-0,2)	5000 (345)	5000 (345)	5000 (345)	5000 (345)	N/A
	0.5-1.0 (0,4-0,9)	3030 (209)	5000 (345)	5000 (345)	5000 (345)	N/A
	1.25-2.0 (1,1-1,7)	950 (66)	1900 (131)	1580 (109)	3160 (218)	N/A
	3.5 (3,0)	600 (41)	1300 (90)	1000 (69)	2200 (152)	N/A
	6.0 (5,2)	400 (28)	800 (55)	650 (45)	1400 (97)	3500 (241)
55M	4.0 (3,4)	950 (66)	1900 (131)	1500 (103)	3100 (241)	N/A
	6.0 (5,2)	550 (38)	1100 (76)	900 (62)	1900 (131)	N/A
85M	4.0 (3,4)	1440 (97)	2900 (200)	2400 (165)	4800 (331)	N/A
	6.0 (5,2)	850 (59)	1700 (117)	1400 (97)	2930 (202)	N/A

* ATO with positioner and 40 psi supply has same rating

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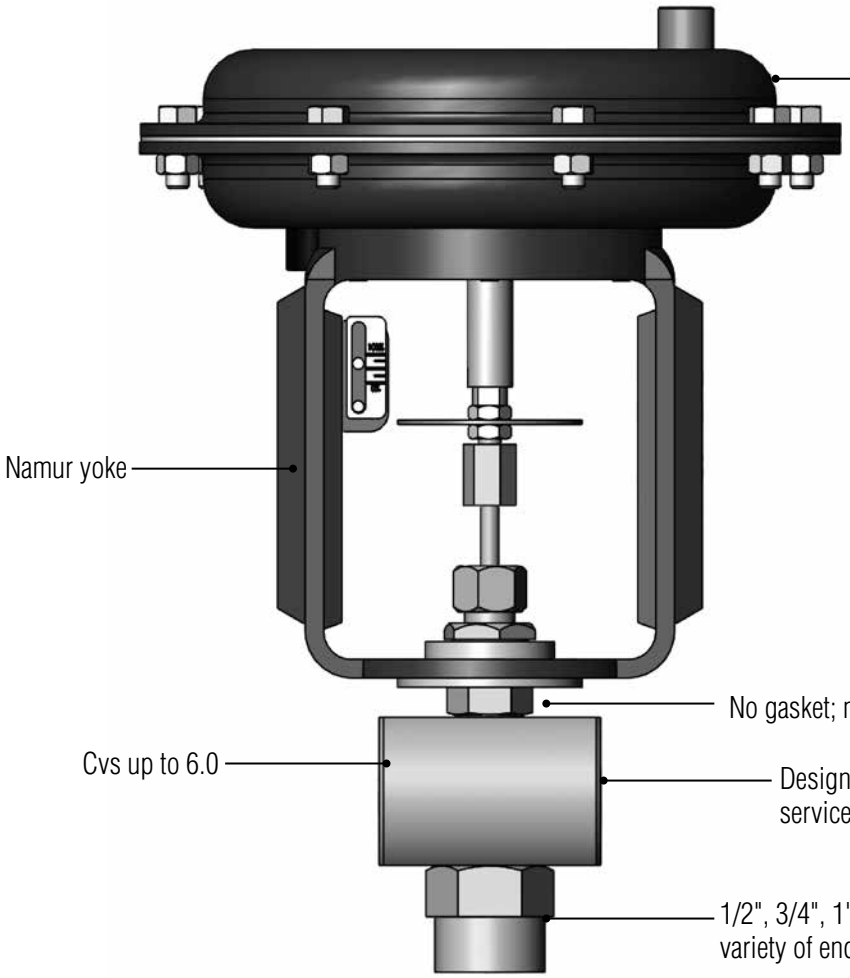
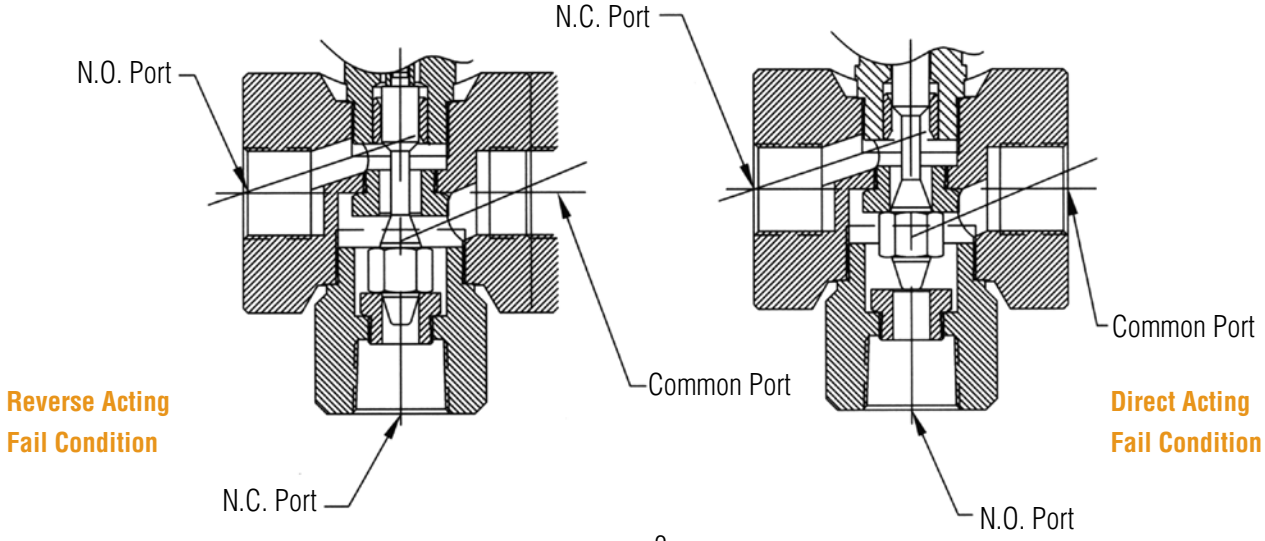
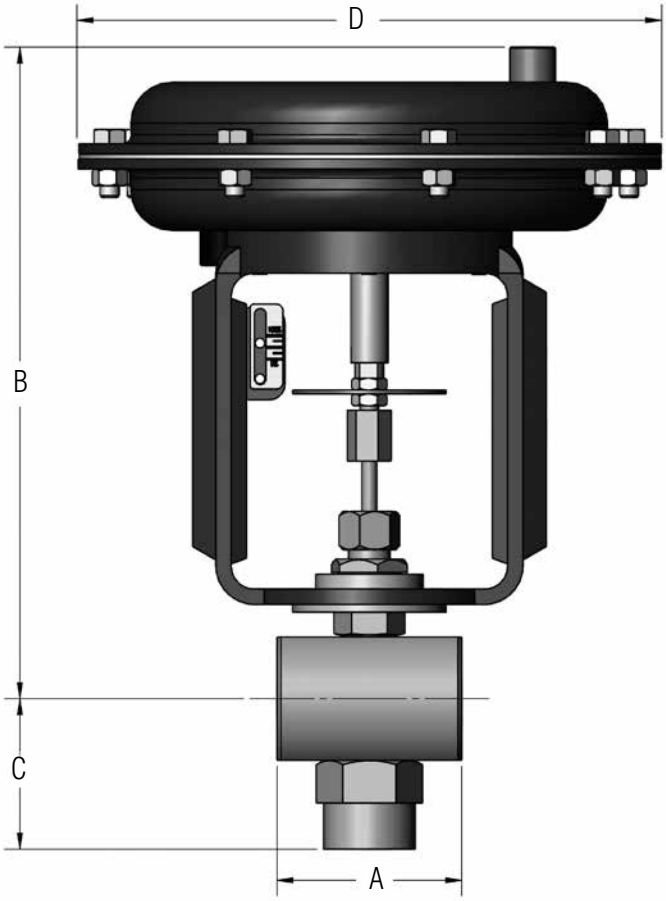
MK8000T SERIES THREE WAY BODY FEATURES & BENEFITS



MK8000T SERIES THREE WAY BODY ACTUATOR FAIL CONDITION



MK8000T SERIES THREE WAY BODY DIMENSIONS



- **Mark 8000T Three Way Body Series**

VALVE SIZE	DIMENSIONS, INCHES A	B	C	D	WEIGHT LBS
1/2"	3.00	11.62	2.44	9.50	19
3/4"	3.75	11.62	2.75	9.50	20
1"	4.25	11.62	3.38	9.50	22

- **Mark 8000T Three Way Body Series, Metric**

VALVE SIZE	295DIMENSIONS295 A	B	C	D	WEIGHT KGS
DN15	76	295	62	241	9
DN20	95	295	70	241	9
DN25	108	295	86	241	10

Note: dimensions shown are for valves with 35M actuator

For 55M, add 1.12" (28mm) to B, 3" (76mm) to D, and 11 pounds (5 kgs) to weight

For 85M, add 2.12" (54mm) to B, 5.50" (140mm) to D, and 16 pounds (7 kgs) to weight

SPECIFICATIONS

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MARK 8000T SERIES ORDERING SCHEMATIC

Model No.	Size	Body Mat'l	/	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

MODEL	
8000T	Three-Way Globe Valve
8000TTP	with Top Mounted Positioner
8000TSP	with Side Mounted Positioner

SIZE	
050	1/2" (DN15)
075	3/4" (DN20)
100	1" (DN25)

BODY MATERIAL	
CB	Carbon Steel
SB	316SS
BR	Brass
MN	Monel
HC	Hastelloy C
A2	Alloy 20

1 & 2	END CONNECTIONS
PT	FNPT
BT	BSPT
BP	BSPP
SW	FSW
R5	150# RF
J5	150# RTJ
R3	300# RF
J3	300# RTJ
R6	600# RF
J6	600# RTJ
R9	900# RF
J9	900# RTJ
R1	1500# RF
J1	1500# RTJ
R2	2500# RF
J2	2500# RTJ
B4	BWE Sch 40
B8	BWE Sch 80
B6	BWE Sch 160
ZZ	Non-standard

3 & 4	BONNET/PACKING
	METAL BODIES
ST	Standard/TFE
SH*	Standard/High Temperature
ET	8" Extended/TFE (Cryogenic)
EH*	8" Extended/High Temperature
BT	Multi-ply Bellows/TFE
BH*	Multi-ply Bellows/High Temperature
ZZ	No-standard

5	PLUG & SEAT
	Stem/Plug/Seat Material
	8000T/TTP/TSP
	Metal Bodies
A	Standard – Linear Hard
B	Standard – =% Hard
C	Standard – Q.O. Hard
D	Standard – Linear Soft (RPTFE)
E	Standard – =% Soft (RPTFE)
F	Standard – Q.O. Soft (RPTFE)
G	316/Stellite/Stell – Linear Hard
H	316/Stellite/Stell – =% Hard
I	316/Stellite/Stell – Q.O. Hard
M	Alloy 20/AL20/AL20 – Linear Hard
N	Alloy 20/AL20/AL20 – % Hard
P	Alloy 20/AL20/AL20 – Q.O. Hard
Q	Alloy 20/AL20/AL20 – Linear Soft (RPTFE)
R	Alloy 20/AL20/AL20 – % Soft (RPTFE)
S	Alloy 20/AL20/AL20 – Q.O. Soft (RPTFE)
T	Monel/Mon/Mon – Linear Hard
U	Monel/Mon/Mon – =% Hard
V	Monel/Mon/Mon – Q.O. Hard
W	Monel/Mon/Mon – Linear Soft (RPTFE)
X	Monel/Mon/Mon – =% Soft (RPTFE)
Y	Monel/Mon/Mon – Q.O. Soft (RPTFE)
1	Hastelloy C/H-C/H-C – Linear Hard
2	Hastelloy C/H-C/H-C =% Hard
3	Hastelloy C/H-C/H-C – Q.O. Hard
4	Hastelloy C/H-C/H-C – Linear Soft (RPTFE)
5	Hastelloy C/H-C/H-C =% Soft (RPTFE)
6	Hastelloy C/H-C/H-C – Q.O. Soft (RPTFE)
Z	Non-standard

* Positioner required for high temperature packing

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ORDERING SCHEMATIC

MARK 8000T SERIES ORDERING SCHEMATIC

6	CV (KV)
C	0.2 (0,17)
D	0.5 (0,43)
E	1.0 (0,86)
F	2.0 (1,72)
G	4.0 (3,44)
M	1.5 (1,3)
P	3.0 (2,6)
Q	3.5 (3,01)

7 & 8	ACTUATOR		
TYPE		SIZE	
ALL VALVES EXCEPT SP			
D	Air-to-Close	3	35M
R	Air-to-Open	5	55M
FOR SP		8	85M
S	W/SMP		
Z	Non-standard		

9 & 10	RANGE		
RANGE		ACTUATOR	
A	3-15 DIR	3	35M
B	3-15 REV	5	55M
G	6-30 DIR	8	85M
H	6-30 REV		
Z	Non-standard		

11 & 12	LIMIT SWITCHES (2LS)		
ACTUATOR		ACTION/TYPE	
3	35M	D	Direct/Standard
5	55M	X	Direct/X-P
8	85M	R	Reverse/Standard
		P	Reverse/X-P
00	None		
ZZ	Non-standard		

13 & 14	SOLENOID & HARDWARE
00	None
SD	Standard Solenoid
WT	Water-Tight Solenoid
XP	X-Proof Solenoid
H3	Handwheel 35M Dir
H5	Handwheel 55M Dir
H8	Handwheel 85M Dir
R3	Handhweel 35M Rev
R5	Handwheel 55MK Rev
R8	Handwheel 85M Rev
ZZ	Non-standard

15	ACCESSORIES
0	None
A	Air Regulator
B	I/P 35M Act. 4-20Ma/3-15 psi
C	I/P 55M Act. 4-20Ma/3-15 psi
D	I/P 85M Act. 4-20Ma/3-15 psi
E	I/P 35M/55M/85M Act. 4-20Ma/6-30 psi
1	1 Gauge for Tmp.
2	2 Gauge for Tmp.
3	3 Gauge for Tmp.
X	Oxygen Clean
Z	Non-standard

16	ACTION
D	Direct A-T-C
R	Reverse A-T-O

17	SMP
0	None
A	SMP Direct/Reverse 3-15
D	SMP-IP Direct/Reverse 4-20
G	SMP 16IQ-S Direct/Reverse
H	SMP 16IQ-B Direct/Reverse
Z	Non-standard