

# Mark 79/79MX Series

## Three-Way Control Valves

The Mark 79 is a pneumatic 3-way control valve for use in either bypass or mixing service. The MK79 utilizes the unique sliding gate trim design to provide excellent control with superior longevity. Each valve contains two sets of sliding gate seats connected to a common valve stem for synchronized movement, whether in bypass or mixing mode.

### OPERATION

The Mark 79 is used for diverting service and is ideal for bypassing fluids around coolers or filters. In this configuration, there is one inlet and two outlets. As one outlet closes, the other outlet opens, diverting flow from one channel to the other in accordance to the air signal to the actuator.

The Mark 79MX is used as a combining or mixing valve with two inlets and one outlet. When used as a mixing valve, optimal performance will be achieved with equal pressures on both inlets. Contact factory for further information.

- Sliding gate seats provide:
  - Straight-through flow for increased seat life, quiet operation and excellent rangeability
  - Short stroke for fast response and accurate control
  - Easily interchangeable Cv's
  - Tight shutoff

### FEATURES

- Totally enclosed multi-spring actuator minimizes deadband
- Multi-spring actuator can be configured to accept a 3-15 psi signal or other control ranges on request.
- Available with a top-mounted or side mounted positioner



### SPECIFICATIONS

**Line Sizes:** 1-1/2" (DN40), 2" (DN50), 3" (DN80)

**End Connections:**

- Sizes 1-1/2" & 2" — NPT, BSPT, BSPP, flanged
- Size 3" — flanged
- For smaller sized 3-way valves, see our MK709 and MK800T Series

**Body Materials:**

- Carbon Steel
- Stainless Steel

**Trim Materials:**

- 303SS for Carbon steel bodied valves
- 316SS for Stainless Steel bodied valves

**Seat Materials:**

- Jorcote on SST — Standard
- Other materials available — Consult factory



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**SPECIFICATIONS (CONT'D)**

**Yoke Material:** Cast Iron

**Actuator:** Steel

**Stem Packing:** Spring loaded Teflon (to 450°F (232°C)) or Braided (above 450°F (232°C))

**Service:** Steam, oil, gas, air, water, chemicals

**Seat Interchangeability:** 1-1/2" with 2"

**Body Rating:** up to 1000 psig (70 bar) and temperatures up to 550°F (288°C) depending upon specific construction. -20°F (-29°C) temperature limit on all materials; for other temperatures, contact Jordan Valve.

**Actuator:**

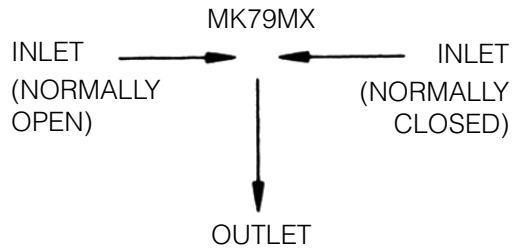
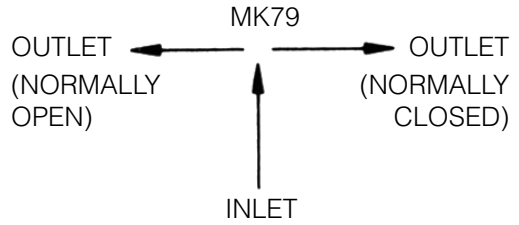
- 1-1/2" & 2" — 35M multi-spring, totally enclosed, field-reversible. Maximum actuator pressure: 50 psi (3,4 bar)
- 3" — 85M multi-spring with or without positioner.

**Positioner:** side or top mounted available

**Shutoff:** ANSI Class IV

**Range:** 3-15 psi (0,2-1 bar); others upon request

**FLOW PATHS**

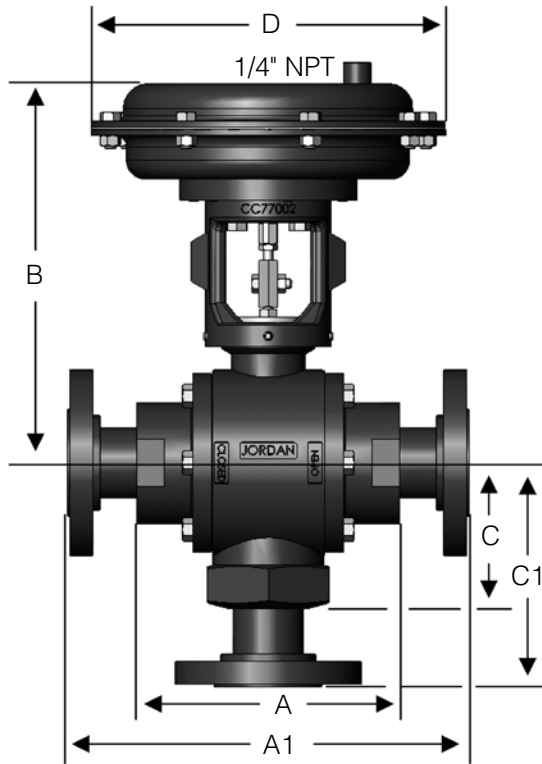


**Maximum Allowable Pressure Reductions - Psi (Bar)**

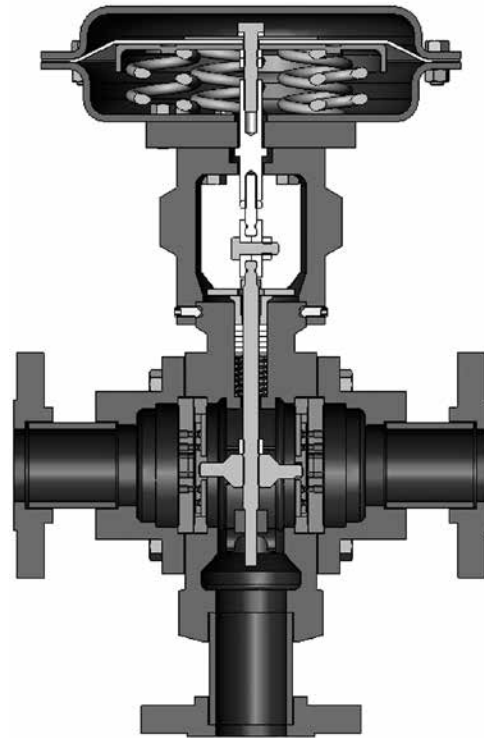
Model	Actuator	Size	Seat Material		
			Stainless Steel	Telfon	Jorcote
79 79MX	35M	1-1/2" - 2"	40 (2,8)	60 (4,1)	70 (4,8)
	55M		75 (5,2)	100 (6,9)	125 (8,6)
	85M		75 (5,2)	175 (12,1)	200 (13,8)
	85M	3"	—	40 (2,8)	—
79SP/TP 79MXSP 79MXTP	35M	1-1/2" - 2"	75 (5,2)	125 (8,6)	150 (10,3)
	55M		75 (5,2)	200 (13,8)	250 (17,2)
	85M		75 (5,2)	250 (17,2)	300 (20,7)
	55M	3"	—	120 (8,3)	120 (8,3)
	85M		—	200 (13,8)	200 (13,8)

Note: Low flow trim available, consult factory for values.

**DIMENSIONS**



**CROSS-SECTION**



• **Flanged Ends**

Size	Actuator Size	ANSI Flange	Dimensions (inches)				Weight (lbs.)
			A1	B	C1	D	
1-1/2"	35M	150#	11.00	10.75	6.00	9.50	48
	35M	300#	11.00	10.75	6.00	9.50	54
	55M	150#	11.00	11.95	6.00	12.50	59
	55M	300#	11.00	11.95	6.00	12.50	65
	85M	150#	11.00	12.75	6.00	15.00	68
	85M	300#	11.00	12.75	6.00	15.00	74
2"	35M	150#	11.00	10.75	6.00	9.50	52
	35M	300#	11.00	10.75	6.00	9.50	56
	55M	150#	11.00	11.95	6.00	12.50	63
	55M	300#	11.00	11.95	6.00	12.50	67
	85M	150#	11.00	12.75	6.00	15.00	72
	85M	300#	11.00	12.75	6.00	15.00	76

• **Flanged Ends, DIN**

Size (DN)	Actuator Size	Flange (PN)	Dimensions (mm)				Weight (kg)
			A1	B	C1	D	
40	35M	10/16	279	273	152	241	22
	35M	25/40	279	273	152	241	24
	55M	10/16	279	304	152	318	27
	55M	25/40	279	304	152	318	29
	85M	10/16	279	324	152	381	31
	85M	25/40	279	324	152	381	34
50	35M	10/16	279	273	152	241	24
	35M	25/40	279	273	152	241	25
	55M	10/16	279	304	152	318	29
	55M	25/40	279	304	152	318	30
	85M	10/16	279	324	152	381	33
	85M	25/40	279	324	152	381	34

• **Threaded Ends**

Size	Actuator Size	Dimensions (inches)				Weight (lbs.)
		A	B	C	D	
1-1/2" & 2"	35M	7.12	10.75	3.75	9.50	42
	55M	7.12	11.95	3.75	12.50	53
	85M	7.12	12.75	3.75	15.00	62

• **Threaded Ends, DIN**

Size (DN)	Actuator Size	Dimensions (mm)				Weight (kg)
		A	B	C	D	
40 & 50	35M	181	273	95	241	19
	55M	181	304	95	318	23
	85M	181	324	95	381	28

Contact factory for 3" dimensions

ORDERING SCHEMATIC

<b>1</b>	—	<b>2</b>	—	<b>3</b>	/	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>

<b>1</b>	<b>Model</b>	
	79	Three-Way Control Valve
	79TP	with Top Positioner
	79SP	with Side Mounted Positioner
	79MX	Mixing Control Valve
	79MXTP	with Top Positioner
	79MXSP	with Side Mounted Positioner

<b>6</b>	<b>Seat Material</b>	
	A	303SST
	B	316SST
	V	303SS / Jorcote
	W	316SS / Jorcote

<b>2</b>	<b>Size</b>		
		<b>Inches</b>	<b>DN</b>
	150	1-1/2"	DN40
	200	2"	DN50

<b>7</b>	<b>Cv (Kv)</b>	
	9	15.0 (12,93)
	A	25.0 (21,55)
	B	30.0 (25,86)

Contact factory for 3" ordering information

<b>3</b>	<b>Material</b>	
	CS	Carbon Steel (WCB)
	S6	Stainless Steel (CF8M)

<b>4</b>	<b>End Connections</b>	
	PT	NPT
	BT	BSPT
	BP	BSPP
	SW	FSW
	F3	300#FE
	F4	PN 40 DIN FE
	F5	150#FE
	F6	PN 16 DIN FE
	F7	PN 10 DIN FE
	F8	PN 25 DIN FE
	ZZ	Non-Standard

<b>8</b>	<b>Actuator</b>							
	A3B3A3	3-15	Dir	35M				
	B3B3A3	3-15	Rev					
	N3Q3N3	3-15	Dir		A8B8A8	3-15	Dir	85M
	Q3Q3N3	3-15	Rev		B8B8A8	3-15	Rev	
	C3B3A3	3-9	Dir		C8B8A8	3-9	Dir	
	D3B3A3	3-9	Rev		D8B8A8	3-9	Rev	
	E3B3A3	9-15	Dir		E8B8A8	9-15	Dir	
	F3B3A3	9-15	Rev		F8B8A8	9-15	Rev	
	G3B3A3	6-30	Dir		G8B8A8	6-30	Dir	
	H3B3A3	6-30	Rev		H8B8A8	6-30	Rev	
	A5B5A5	3-15	Dir	55M	ZZ		Non-Standard	
	B5B5A5	3-15	Rev					
	C5B5A5	3-9	Dir					
	D5B5A5	3-9	Rev					
	E5B5A5	9-15	Dir					
	F5B5A5	9-15	Rev					
	G5B5A5	6-30	Dir					
	H5B5A5	6-30	Rev					

<b>5</b>	<b>Trim</b>	
	T3	303SS / Teflon Packing
	T6	316SS / Teflon Packing
	ZZ	Non-Standard

**ORDERING SCHEMATIC, CONT.**

9	Accessories	
	00	None
	AR	Air Regulator
	H3	Handwheel 35M Actuator
	H5	Handwheel 55M Actuator
	H8	Handwheel 85M Actuator
	S6	316SS Bolting
	TS	Travel Scale
	ZZ	Non-Standard

10	Action	
	0	None

11	I/P	
	0	None
	3	I/P 35M Actuator 4-20Ma/3-15 psi
	5	I/P 55M Actuator 4-20Ma/3-15 psi
	8	I/P 85M Actuator 4-20Ma/3-15 psi
	9	I/P 35M/55M/85M Actuator 4-20Ma/3-15 psi
	Z	Non-Standard

12	SMP	
	0	None
	A	SMP DIR/REV 3-15
	B	SMP DIR/REV 3-9
	C	SMP DIR/REV 9-15
	D	SMP/IP DIR/REV 4-20
	E	SMP/IP DIR/REV 4-12
	F	SMP/IP DIR/REV 12-20
	G	MK16IQ-S DIR/REV 4-20 (Hart & FM-App)
	H	MK16IQ-B DIR/REV 4-20 (with gauges)
	J	MK16IQ-FF DIR/REV 4-20 (Fieldbus w/ gauges)
	Z	Non-Standard



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