

# PNEUMATIC CONTROL VALVES



## Mark 74

### Bellows Seal Control Valve

For compliance with the most stringent requirements of the Clean Air Act, the Mark 74 controls fugitive emissions while reducing the risks associated with toxic, corrosive, explosive, and high temperature fluids.

- Long Bellows life — in actual tests, the Mark 74 exceeded 2 million cycles with no bellows failures.
- Short stroke — the Mark 74 uses a smaller bellows that has minimal movement during operation. With limited movement, the bellows is not subjected to excessive wear and fatigue.
- Fully packed back-up seal — for additional assurance, a secondary chamber of multiple packing rings provides extra leakage protection.
- Detection/monitoring port — a gauge can be mounted to verify bellows performance.

Size	
050	1/2" (DN15)
075	3/4" (DN20)
100	1" (DN25)
125	1-1/4" (DN32)
150	1-1/2" (DN40)
200	2" (DN50)

Body Materials	
DI	Ductile Iron
BR	Bronze
CS	Carbon Steel (WCB)
S6	Stainless Steel (CF8M)

Trim	
B3	303SS/TFE PKG/316 Bellows
B6	316SS/TFE PKG/316 Bellows
BH	H-C/TFE PKG/H-C Bellows

Accessories	
00	None
AR	Air Regulator
S6	316SS Bolting

Seat Material	
A	303 SST
B	316 SST
V	303 SST/Jorcote
W	316 SST/Jorcote
X	303 SST/Jorcote/Jordanic
Y	316 SST/Jorcote/Jordanic

Action	
D	Air-to-Close
R	Air-to-Open

### Ordering Schematic



Model
74
74TP
75SP

Cv	
1	.21
2	.42
3	.84
4	1.6
5	2.5
6	4.4
7	6.4
8	9.5
9	15
A	25
B	30

Actuator					
	Range	Actuator		Range	Actuator
35M	N3Q3N3	3-15 DIR	55M	E5B5A5	9-15 DIR
	Q3Q3N3	3-15 REV		F5B5A5	9-15 REV
	C3B3A3	3-9 DIR		G5B5A5	6-30 DIR
	D3B3A3	3-9 REV		H5B5A5	6-30 REV
	E3B3A3	9-15 DIR		A8B8A8	3-15 DIR
	F3B3A3	9-15 REV		B8B8A8	3-15 REV
55M	G3B3A3	6-30 DIR	85M	C8B8A8	3-9 DIR
	H3B3A3	6-30 REV		D8B8A8	3-9 REV
	A5B5A5	3-15 DIR		E8B8A8	9-15 DIR
	B5B5A5	3-15 REV		F8B8A8	9-15 REV
	C5B5A5	3-9 DIR		G8B8A8	6-30 DIR
	D5B5A5	3-9 REV		H8B8A8	6-30 REV

I/P	
0	None
3	I/P 35M Act
5	I/P 55M Act
8	I/P 85M Act

End Connections			
PT	NPT	I7	IFE PN10
BT	BSPT	I6	IFE PN16
BP	BSPP	I8	IFE PN25
SW	FSW	I4	IFE PN40
I5	150#IFE CS or SST valves	F5	150#FE DI or BR
I3	300#IFE CS or SST valves	F3	300# FE DI or BR

## Description

Using the unique sliding gate valve seat, the Mark 74 provides exceptional bellows life. With a valve stroke that's just a fraction of that of other rising stem valves, we use a smaller formed bellows that has minimal movement during operation. With limited movement, the bellows is not subjected to excessive wear and fatigue — conditions that can quickly lead to failure in other designs. In actual laboratory evaluations, each of the valves being tested exceeded two million throttling cycles in Class 300 service with no failure of the SST bellows.

## Specifications

**Sizes:** 1/2" (DN15), 3/4" (DN20), 1" (DN25), 1-1/4" (DN32), 1-1/2" (DN40), 2" (DN50)

### End Connections:

- Threaded - FNPT, BSPT, BSPP
- ANSI Flanges — 150#, 300#
- DIN Flanges — PN10/16, PN25/40

### Body Materials:

- Ductile iron
- Bronze
- Carbon steel — A216 WCB
- Stainless steel — A351 CF8M

### Trim Materials:

- 303SST — Standard on Ductile Iron, Bronze, or Carbon Steel valves
- 316SST — Standard on Stainless Steel valves

### Seat Materials:

- Jorcote on SST — Standard
- Jorcote/Jordanic on SST — For severe service
- Chrome Plated SST — Economical option for light duty service.

### Bellows:

- 316SS
- Hastelloy C

### Yoke:

- Cast Iron

### Actuator:

- Steel

### Auxiliary Stem Packing:

- Spring-loaded Teflon® (to 500°F)
- Braided (above 500°)

### Body Rating:

- Ductile iron, carbon steel, and stainless steel up to 500 psi and 650°F; bronze up to 500 psi and 500°F depending upon specific construction. Temperature limit of -20°F on all materials. See *Technical Section* in back of catalog.

**Action:** direct (air-to-close) or reverse (air-to-open)

**Shutoff:** ANSI Class IV

**Ranges:** controller-operated: 3-15; 3-9; 6-30; 9-15 psig

**Positioners:** side or top-mounted positioners are available. Specify *Mark 74P*.

## Cv (Kv) Selection / Maximum Allowable ΔP (bar)

Cv* (Kv)	Valve Size	Seat Material	Max. Δ P, psi (bar)	
			Mark 74	Mark 74P
2.5 (2,15) 4.4 (3,78)	1/2" to 3/4"	SST	125 (8,62)	175 (12,07)
	(DN8 to 20)	Jorcote	250 (17,24)	500 (34,47)
6.4 (5,50) 9.5 (8,17)	1" & 1-1/4"	SST	100 (6,89)	150 (10,34)
	(DN25 & 32)	Jorcote	150 (10,34)	300 (20,68)
15 (12,9)	1-1/2" (DN40)	SST	75 (5,17)	125 (8,62)
25/30 (21,5/ 25,8)	2"	Jorcote	125 (8,62)	250 (17,24)
			<b>High Flow</b>	<b>Mark 741</b>
30 (25,8)	1-1/2" & 2" (DN40 & 50)	SST	100 (6,89)	125 (8,62)
		Jorcote	150 (10,34)	175 (12,07)
45 (38,7) 50 (43,0)	1-1/2" (DN40)	SST	100 (6,89)	125 (8,62)
	2" (DN50)	Jorcote	150 (10,34)	175 (12,07)
			<b>Super High Flow</b>	<b>Mark 742</b>
65 (55,9) 70 (60,2)	1-1/2" (DN40)	SST	100 (6,89)	125 (8,62)
	2" (DN50)	Jorcote	150 (10,34)	150 (10,34)

Higher DP's possible with optional larger actuators.

## Cutaway View

