

# Mark 52 Series

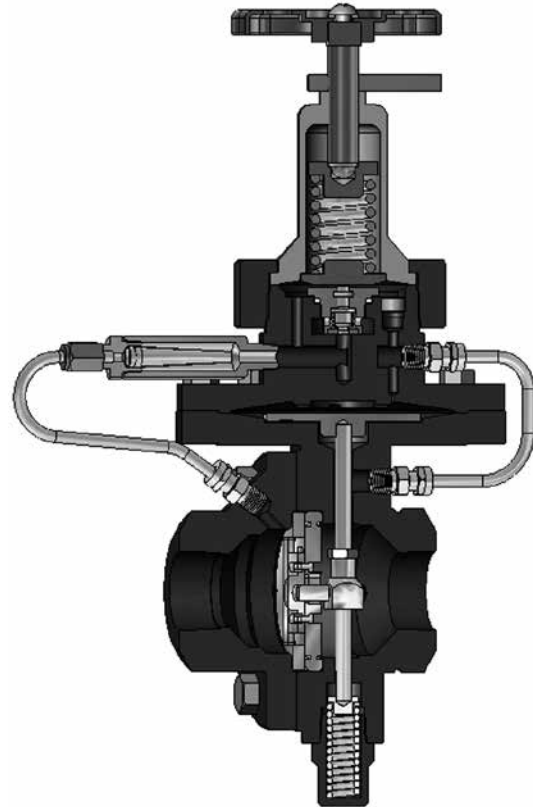
## Back Pressure Internally Piloted Pressure Regulators

The Mark 52 internally piloted back pressure regulator is a specialty valve designed for critical application regulation in locations where space is limited. Small and lightweight in design, the MK52 valve provides the accuracy of a piloted valve with the size, weight and appearance of a single, self-operated valve.

As the Mark 52 is self operating, it is suitable for use in locations where accurate regulation is needed, but air or electric supply may not be readily available. With the compact design, limited space applications is no problem, making it ideal for use on skids, or as an upgraded replacement for smaller regulators. The integral pilot design also means lighter weight, placing less stress on support piping.

The MK52 will accurately control pressure with little deviation from the set point, therefore the MK52 should be considered before other more expensive, sophisticated control instrumentation.

The compact design and simple construction allows fast, simple installation and easy servicing. The high turndown ratios go up to 100:0.



### OPERATION

The operation of the Mark 52 is very similar to that of an externally mounted piloted regulator. The main valve and the pilot are normally closed. The inlet pressure passes through the inlet pilot tubing beneath the pilot diaphragm. When the set point is reached, the force of the adjusting spring is overcome, and the pilot valve opens. This allows the inlet pressure to enter the chamber above the main diaphragm and opens the main valve. When the pressure drops below the set point, the adjusting spring overcomes the force of the pressure beneath the pilot diaphragm and the pilot and main valve closes.

### FEATURES

- Internal pilot — provides higher accurate performance within a compact, lightweight assembly
- Sliding Gate Seats — all of Jordan Valve's differential regulators feature advanced sliding gate seat technology.
  - Straight-through flow for reduced turbulence and quiet operation
  - Short stroke for fast response and accurate regulation.
  - Easily interchangeable Cv's
  - Tight Shutoff



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**SPECIFICATIONS**

**Sizes:** 1/2" through 2" (DN15 to DN50)

**Seat Interchangeability**

- 1/2" with 3/4" (DN15 with DN20)
- 1" with 1-1/4" (DN25 with DN32)

**End Connections**

- Threaded — NPT, BSPT or BSPP
- Flanged

**Body Materials**

- Ductile Iron
- Bronze

**Trim Materials**

- Stainless Steel
- 316SST

**Seat Materials**

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

**Diaphragm Materials:** Stainless Steel

**Spring Housing Materials:** Steel

**Service:** Steam, oil, gas, air, chemicals (not recommended for water service)

**Shutoff:** ANSI Class IV

**Body Rating:** Ductile Iron up to 700 psi (48 bar) and 400°F (204°C); Bronze up to 500 psi (34 bar) and 400°F (204°C) depending upon specific construction. -20°F (-29°C) temperature limit on all materials. For other temperatures, consult factory.

**Reduced Pressure Setpoint Ranges:** 15 - 50 psig (1,03-3,45 bar); 15-200 (1,03 - 13,79).

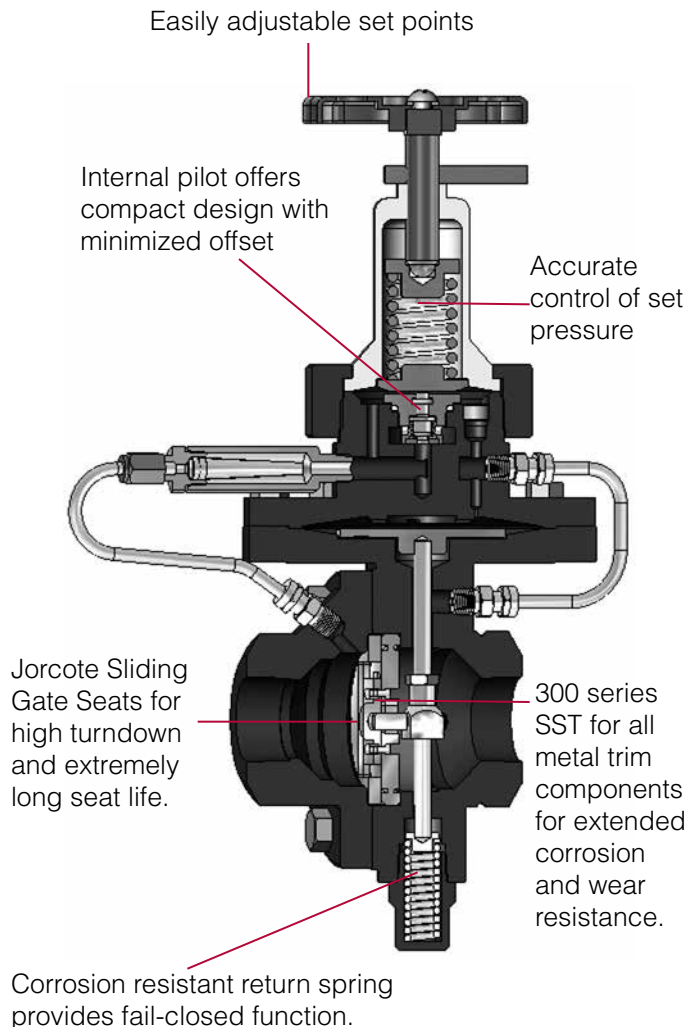
**Note:** a minimum pressure differential from valve inlet to outlet, as outlined below, is required in order for the valve to open properly:

- 1/2" and 3/4" (DN15 & DN20): 15 psig (1,03 bar) minimum pressure differential
- 1" and 1-1/4" (DN25 & DN32): 20 psig (1,38 bar) minimum pressure differential
- 1-1/2" and 2" (DN40 & DN50): 25 psig (1,72 bar) minimum pressure differential

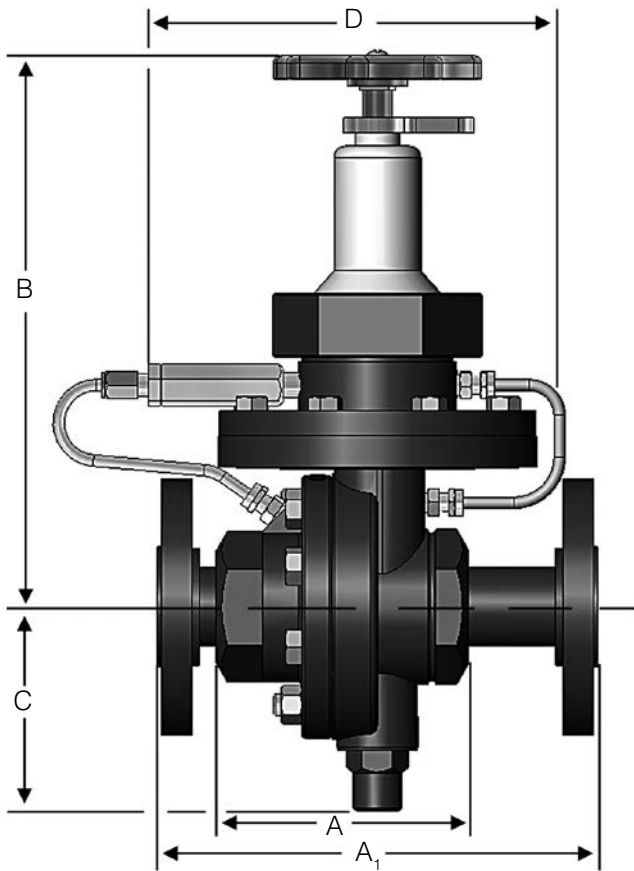
**Cv (Kv) Values & Maximum Differential Pressures**

Cv (Kv)	Valve Size	Seat Material	Max. Δ P, psi (bar)
2.5 (2,15)	1/4" to 3/4" (DN8 to 20)	SST	125 (8,6)
4.4 (3,78)		Jorcote	250 (17,2)
6.4 (5,50)	1" & 1-1/4" (DN25 & 32)	SST	125 (8,6)
9.5 (8,17)		Jorcote	250 (17,2)
15 (12,9)	1-1/2" (DN40)	SST	75 (5,2)
		Jorcote	250 (17,2)
25 (21,5)	2" (DN50)	SST	75 (5,2)
30 (25,9)		Jorcote	250 (17,2)

**Low Flow Trim:** reduced Cv's (Kv's) can be placed in any size valve as long as it is a smaller value than the standard Cv (Kv), with the lowest permissible value being 2.5 (2,15).



**DIMENSIONS**



• **Flanged Ends**

Size	ANSI Flange	Dimensions (Inches)				Weight (lbs.)
		A	B	C	D	
1/2"	150#	7.25	10.37	3.00	5.87	19
	300#	7.50	10.37	3.00	5.87	21
3/4"	150#	7.25	10.37	3.00	5.87	19
	300#	7.62	10.37	3.00	5.87	23
1"	150#	7.25	10.62	3.37	5.87	26
	300#	7.75	10.62	3.37	5.87	28
1-1/4"	150#	7.88	10.62	3.37	5.87	26
	300#	8.37	10.62	3.37	5.87	28
1-1/2"	150#	8.75	11.00	3.50	5.87	31
	300#	9.25	11.00	3.50	5.87	32
2"	150#	10.00	11.12	3.62	5.87	35
	300#	10.50	11.12	3.62	5.87	37

• **Flanged Ends, DIN**

Size (DN)	Flange (PN)	Dimensions (mm)				Weight (kg)
		A	B	C	D	
15	10/16	184	263	76	149	8,6
	25/40	190	263	76	149	9,5
20	10/16	184	263	76	149	8,6
	25/40	194	263	76	149	10,4
25	10/16	184	270	86	149	11,8
	25/40	197	270	86	149	12,7
32	10/16	200	270	86	149	11,8
	25/40	213	270	86	149	12,7
40	10/16	222	279	89	149	14,1
	25/40	235	279	89	149	14,5
50	10/16	254	282	92	149	15,8
	25/40	267	282	92	149	16,8

• **Threaded Ends**

Size	Dimensions (Inches)				Weight (lbs.)
	A	B	C	D	
1/2" & 3/4"	3.75	10.37	3.00	5.87	15
1"	4.12	10.62	3.37	5.87	20
1-1/4"	4.12	10.62	3.37	5.87	20
1-1/2"	4.50	11.00	3.50	5.87	22
2"	4.50	11.12	3.62	5.87	23

• **Threaded Ends, DIN**

Size (DN)	Dimensions (mm)				Weight (kg)
	A	B	C	D	
15 & 20	95	263	76	149	6,8
25	105	270	86	149	9,1
32	105	270	86	149	9,1
40	114	279	89	149	10,0
50	114	282	92	149	10,4

**ORDERING SCHEMATIC**

To specify a MK52 Back Pressure Internally Piloted Pressure Regulator, build a model number by making a selection from each category in the Product Designator Coding System below.

1	2	3	/	4	5	6	7	8	9	10	11

1	Model	
52	Standard	

2	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)	

3	Body Material	
DI	Ductile Iron	
BR	Bronze	

4	End Connections	
PT	NPT	
BT	BSPT	
BP	BSPP	
F5	150#FE	
F3	300#FE	
ZZ	Non-Standard	

5	Trim	
S3	303SS	
S6	316SS	
L1	303SS/LO DP 5-10	
L2	316SS/LO DP 5-10	
L3	303SS/LO DP 10-15	
L4	316SS/LO DP 10-15	
L5	303SS/LO DP 15-20	
L6	316SS/LO DP 15-20	
ZZ	Non-Standard	

6	Seat Material	
A	303SST	
B	316SST	
Q	303SST/Teflon Coated	
R	316SST/Teflon Coated	
V	303SS/Jorcote	
W	316SS/Jorcote	

7	Cv	Kv
5	2.5	2,15
6	4.4	3,78
7	6.4	5,50
8	9.5	8,17
9	15	12,9
A	25	21,5
B	30	25,8

8	Range	
44	15-50	
51	15-200	
ZZ	Non-Standard	

9	Diaphragm	
S6	316SST	
ZZ	Non-Standard	

10	Actuator	
MD	For Metal Diaphragm	
ZZ	Non-Standard	

11	Accessories	
00	None	
S6	316SS Bolting	
B7	Hi Temp Bolt	
ZZ	Non-Standard	

