

Mark 57 Series

CRN Registration Number Available

Externally Piloted Back Pressure Regulators

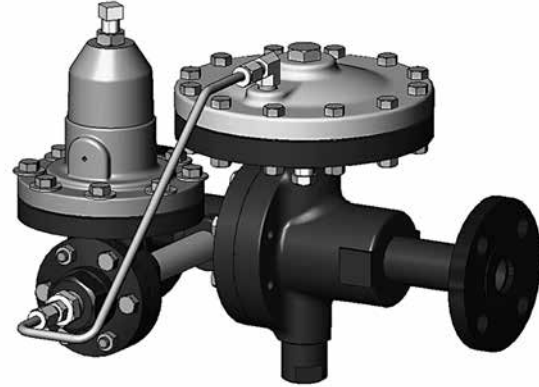
The Mark 57 provides accuracy that approaches that of controller-operated valves and should be considered on most critical applications before other costly, more sophisticated instrumentation.

The Mark 57 is part of the sliding gate regulator offering. As with all sliding gate products, a much shorter stroke than the standard globe or plug style valve is achieved. The shorter stroke combined with the action of the pilot valve creates a faster and more accurate response (less build-up). This allows a shorter travel for the seats to reach optimal positioning, with less diaphragm movement.

OPERATION

The Mark 57 main valve and pilot are normally closed. The inlet pressure passes through the inlet pilot tubing beneath the pilot diaphragm. When the setpoint 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 setpoint, the adjusting spring overcomes the force of the pressure beneath the pilot diaphragm, and the pilot and main valve close.

Due to the piloted sliding gate design, one can expect enhanced control performance in the areas of droop and rangeability. Build-up for this valve will be in the 3 - 5% range. Rangeability can be as high as 50:1.



FEATURES

- High turn-down ratios – up to 50:1
- Sliding gate seats – Jordan Valve's pilot-operated regulators feature advanced sliding gate seat technology:
 - Straight-through flow for reduced turbulence
 - Short stroke for fast response and accurate regulation
 - Easily interchangeable Cv's and trim sets
 - Tight shutoff
- Versatile application – for use on steam, water, air, gas and chemicals



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SPECIFICATIONS

Line Sizes: 1/2" (DN15) through 6" (DN150)

End Connections

- Threaded – FNPT, BSPT, BSPP – 1/2" - 2" (DN15 - 50)
- Companion Flanges – 1/2" - 2" (DN15 - 50)
- Integral Flanges – 2-1/2" - 6" (DN65 - 150)

Body Materials

- Ductile Iron
- Cast Iron
- Carbon Steel – A216 WCB
- Stainless Steel – A351 CF8M

Body Materials

- Ductile Iron
- Cast Iron
- Carbon Steel – A216 WCB
- Stainless Steel – A351 CF8M

Trim Materials

- 303SS – Standard on DI, CI or CS valves
- 316SS – Standard on SS Valves

Seat Materials

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

Diaphragm Material: Stainless Steel – standard

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

Shutoff: ANSI Class IV

Pressure Control Ranges, PSI (BAR)

| | | |
|------------------------|-------------------------|---------------------------|
| 20 - 45 (1,4 - 3,1) | 30 - 135 (2,1 - 9,3) | 80 - 185 (5,52 - 12,8) |
|------------------------|-------------------------|---------------------------|

Note: a minimum pressure differential of 25 psi from valve inlet to outlet is required for proper operation. Consult factory for set points below 25 psi.

Cv (Kv) Values & Maximum Differential Pressures:

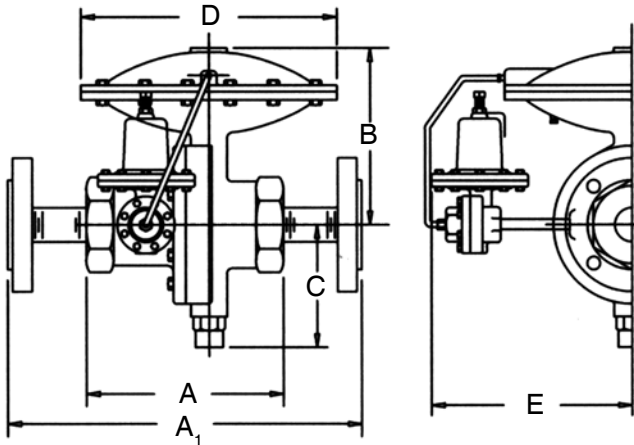
| Flow Coeff. | | Valve Size (DN) | Seat Material | Max ΔP | |
|-------------|------|-----------------|---------------|--------|------|
| Cv | Kv | | | PSI | BAR |
| 5 | 4,3 | 1/2" (DN15) | SST | 125 | 8,6 |
| | | | Jorcote | 300 | 20,7 |
| 9.5 | 8,2 | 3/4" (DN20) | SST | 12 | 8,6 |
| | | | Jorcote | 300 | 20,7 |
| 15 | 12,9 | 1" (DN25) | SST | 75 | 5,2 |
| | | | Jorcote | 275 | 19,0 |
| 25 | 21,5 | 1-1/4" (DN32) | SST | 75 | 5,2 |
| | | | Jorcote | 275 | 19,0 |
| 30 | 25,8 | 1-1/2" (DN40) | SST | 75 | 5,2 |
| | | | Jorcote | 275 | 19,0 |
| 50 | 43 | 2" (DN50) | SST | 75 | 5,2 |
| | | | Jorcote | 275 | 19,0 |
| 55 | 47,3 | 2-1/2" (DN65) | Jorcote | 400 | 27,6 |
| 115 | 98,0 | 3" (DN80) | Jorcote | 400 | 27,6 |
| 200 | 172 | 4" (DN100) | Jorcote | 325 | 22,4 |
| 395 | 340 | 6" (DN150) | Jorcote | 325 | 22,4 |

MAXIMUM WORKING PRESSURE & TEMPERATURE

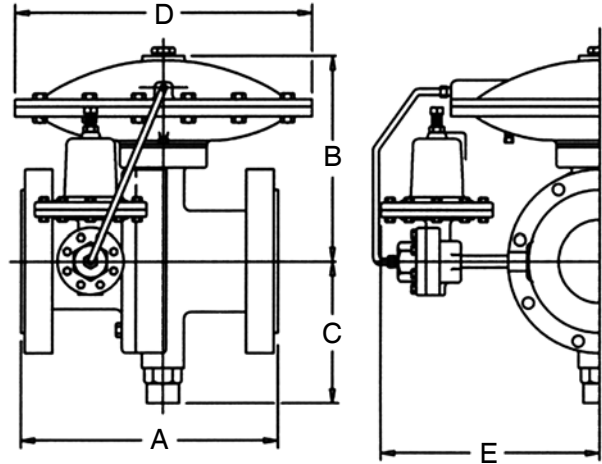
| Maximum Pressure @ 100°F, PSI/°F (Maximum Pressure @ 37,8°C, BAR, °C) | | | | | | | | | | | | | | |
|---|------|--------|------------------|------------------|------------------|-----------------|------------------|------------------|-----------------|------------------|------------------|-----------------|------------------|------------------|
| Size | Bolt | Diaph. | DI Body | | | CI Body | | | CS Body | | | SST Body | | |
| | | | 150# | 300# | TE | 125# | 250# | TE | 150# | 300# | TE | 150# | 300# | TE |
| 1/4"-2" (DN8-50) | Std. | S6 | 250 (17) | 300 (21) | 300 (21) | 200 (14) | 300 (21) | 300 (21) | 285 (20) | 300 (21) | 300 (21) | 275 (19) | 300 (21) | 300 (21) |
| | Dbl. | S6 | 250 (17) | 600 (41) | 600 (41) | 200 (14) | 500 (23) | 500 (34) | 285 (20) | 740 (51) | 950 (66) | 275 (19) | 720 (50) | 950 (66) |
| 2-1/2"-6" (DN65-150) | Std. | S6 | 250 (17) | 300 (21) | — | 200 (14) | 300 (21) | — | 285 (20) | 300 (21) | — | 275 (19) | 300 (21) | — |
| | Dbl. | S6 | 250 (17) | 500 (34) | — | 200 (14) | 500 (34) | — | 285 (20) | 500 (34) | — | 275 (19) | 500 (34) | — |
| Pressure @ Maximum Temperature, PSI/°F (BAR/°C) | | | | | | | | | | | | | | |
| 1/4"-2" (DN8-50) | Std. | S6 | 125/650 (9/343) | 300/650 (21/343) | 300/600 (21/343) | 125/450 (9/232) | 250/450 (17/232) | 250/450 (17/232) | 125/650 (9/343) | 300/650 (21/343) | 301/650 (21/343) | 125/650 (9/343) | 300/650 (21/343) | 300/650 (21/343) |
| | Dbl. | S6 | 125/650 (9/343) | 450/650 (31/343) | 450/650 (31/343) | 125/450 (9/232) | 250/450 (17/232) | 250/450 (17/232) | 125/650 (9/343) | 535/650 (37/343) | 950/650 (66/343) | 125/650 (9/343) | 445/650 (31/343) | 890/650 (61/343) |
| 2-1/2"-6" (DN65-150) | Std. | S6 | 200/400 (14/204) | 300/400 (21/204) | — | 125/450 (9/232) | 250/450 (17/232) | — | 125/650 (9/343) | 300/650 (21/343) | — | 125/650 (9/343) | 300/650 (21/343) | — |
| | Dbl. | S6 | 200/400 (14/204) | 525/400 (36/204) | — | 125/450 (9/232) | 250/450 (17/232) | — | 125/650 (9/343) | 535/650 (37/343) | — | 125/650 (9/343) | 445/650 (31/343) | — |

MARK 57 EXTERNALLY PILOTED BACK PRESSURE REGULATORS

DIMENSIONS



MK57 (1/2" – 2")



MK57 (2-1/2" – 6")

THREADED & FSW ENDS

| Valve Size | Dimensions (inches) | | | | | | Weight Lbs |
|------------|---------------------|-------|------|------|-------|-------|------------|
| | A | | B | C | D | E | |
| | DI | CS/SS | ALL | ALL | ALL | ALL | |
| 1/2" | 5.31 | 5.50 | 5.06 | 3.50 | 7.12 | 11.38 | 31 |
| 3/4" | 5.31 | 5.50 | 5.06 | 3.50 | 7.12 | 11.38 | 37 |
| 1" | 5.69 | 6.50 | 5.25 | 3.62 | 7.12 | 11.50 | 42 |
| 1-1/4" | 5.88 | 6.50 | 5.43 | 3.75 | 7.12 | 11.62 | 42 |
| 1-1/2" | 8.18 | 8.18 | 7.00 | 5.00 | 10.62 | 11.88 | 74 |
| 2" | 8.18 | 8.18 | 7.00 | 5.00 | 10.62 | 11.88 | 76 |

THREADED & FSW ENDS, METRIC

| Valve Size | Dimensions (mm) | | | | | | Weight Kgs |
|------------|-----------------|-------|-----|-----|-----|-----|------------|
| | A | | B | C | D | E | |
| | DI | CS/SS | ALL | ALL | ALL | ALL | |
| DN15 | 135 | 140 | 129 | 89 | 181 | 289 | 14,1 |
| DN20 | 135 | 140 | 129 | 89 | 181 | 289 | 16,8 |
| DN25 | 145 | 165 | 133 | 92 | 181 | 292 | 19,1 |
| DN32 | 149 | 165 | 138 | 95 | 181 | 295 | 19,1 |
| DN40 | 208 | 208 | 178 | 127 | 270 | 302 | 33,6 |
| DN50 | 208 | 208 | 178 | 127 | 270 | 302 | 34,5 |

FLANGED ENDS 150# & 300#

| Valve Size | Dimensions (inches) | | | | | Weight Lbs |
|------------|---------------------|------|------|-------|-------|------------|
| | A | B | C | D | E | |
| 1/2" | 11.50 | 5.06 | 3.50 | 7.12 | 11.38 | 35 |
| 3/4" | 11.50 | 5.06 | 3.50 | 7.12 | 11.38 | 43 |
| 1" | 11.50 | 5.25 | 3.62 | 7.12 | 11.50 | 48 |
| 1-1/4" | 11.50 | 5.43 | 3.75 | 7.12 | 11.62 | 50 |
| 1-1/2" | 14.50 | 7.00 | 5.00 | 10.62 | 11.88 | 86 |
| 2" | 14.50 | 7.00 | 5.00 | 10.62 | 11.88 | 90 |

FLANGED ENDS PN 10/16/25/40, METRIC

| Valve Size | Dimensions (mm) | | | | | Weight Kgs |
|------------|-----------------|-----|-----|-----|-----|------------|
| | A | B | C | D | E | |
| DN15 | 292 | 129 | 89 | 181 | 289 | 15,9 |
| DN20 | 292 | 129 | 89 | 181 | 289 | 19,5 |
| DN25 | 292 | 133 | 92 | 181 | 292 | 21,8 |
| DN32 | 292 | 138 | 95 | 181 | 295 | 22,7 |
| DN40 | 368 | 178 | 127 | 270 | 302 | 39,0 |
| DN50 | 368 | 178 | 127 | 270 | 302 | 40,8 |

| Valve Size | Dimensions (inches) | | | | | | Weight Lbs |
|------------|---------------------|-------|-------|------|-------|-------|------------|
| | Flange Rating | A | B | C | D | E | |
| 2-1/2" | 125-150 | 10.87 | 10.68 | 6.93 | 12.75 | 14.00 | 173 |
| | 250-300 | 11.50 | | | | | |
| 3" | 125-150 | 11.75 | 10.68 | 6.93 | 12.75 | 14.00 | 193 |
| | 250-300 | 12.50 | | | | | |
| 4" | 125-150 | 13.87 | 11.88 | 8.00 | 12.75 | 15.00 | 223 |
| | 250-300 | 14.50 | | | | | |
| 6" | 125-150 | 17.75 | 12.57 | 9.00 | 12.75 | 15.00 | 313 |
| | 250-300 | 18.62 | | | | | |

| Valve Size | Dimensions (mm) | | | | | | Weight Kgs |
|------------|-----------------|-----|-----|-----|-----|-----|------------|
| | Flange PN | A | B | C | D | E | |
| DN65 | 10/16 | 283 | 271 | 176 | 324 | 356 | 78,5 |
| | 25/40 | 283 | | | | | |
| DN80 | 10/16 | 312 | 271 | 176 | 324 | 356 | 87,5 |
| | 25/40 | 312 | | | | | |
| DN100 | 10/16 | 350 | 302 | 203 | 324 | 381 | 101,2 |
| | 25/40 | 350 | | | | | |
| DN150 | 10/16 | 471 | 319 | 229 | 324 | 381 | 142,0 |
| | 25/40 | 471 | | | | | |

MARK 57 EXTERNALLY PILOTED BACK PRESSURE REGULATORS

ORDERING SCHEMATIC

| Model No | Size | Body Mat'l | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|----------|------|------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| | | | | | | | | | | | | | | | | | |

| Model | |
|-------|----------|
| 57 | Standard |

| 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) |
| 250 | 2-1/2" (DN65) |
| 300 | 3" (DN80) |
| 400 | 4" (DN100) |
| 600 | 6" (DN150) |

| Body Material | |
|---------------|------------------------|
| DI | Ductile Iron |
| CS | Carbon Steel (WCB) |
| S6 | Stainless Steel (CF8M) |
| CI | Cast Iron |

| 4 | | End Connections | |
|------------------------|----|-------------------------|--|
| 1/2" - 2" Size Range | | | |
| | PT | NPT | |
| | BP | BSPT | |
| | BP | BSPP | |
| | SW | FSW | |
| | F5 | 150#FE | |
| | F3 | 300#FE | |
| | F1 | 125#FE | |
| | F2 | 250#FE | |
| 2-1/2" - 6" Size Range | | | |
| | I5 | 150#IFE CS, S6, or DI | |
| | I3 | 300#IFE CS, S6, or DI | |
| | I1 | 125#IFE CI | |
| | I2 | 250#IFE CI | |
| | I7 | IFE PN10, all materials | |
| | I6 | IFE PN16, all materials | |
| | I8 | IFE PN25, all materials | |
| | I4 | IFE PN40, all materials | |

| 3 & 4 | | Trim | |
|-------|--------------|------|--|
| S3 | 303SS | | |
| S6 | 316SS | | |
| ZZ | Non-Standard | | |

| 5 | | Seats | |
|---|------------------------|-------|--|
| A | 303SST | | |
| B | 316SST | | |
| V | 303SS/Jorcote | | |
| W | 316SS/Jorcote | | |
| X | 303SS/Jorcote/Jordanic | | |
| Y | 316SS/Jorcote/Jordanic | | |

| 6 | | Cv's (Kv's) | | | |
|---|-----|-------------|---|--------------|-------|
| | Cv | Kv | | Cv | Kv |
| K | 5.0 | 4,3 | C | 50 | 43,1 |
| 8 | 9.5 | 8,2 | D | 55 | 47,4 |
| 9 | 15 | 12,9 | G | 115 | 99,1 |
| A | 25 | 21,6 | I | 200 | 172,4 |
| B | 30 | 25,9 | J | 395 | 340,5 |
| V | 35 | 30,2 | Z | Non-Standard | |

| 7 & 8 | | Range | |
|-------|-----------------------|-------|--|
| 53 | 20 - 45 (0,1 - 3,1) | | |
| 76 | 30 - 135 (2,1 - 9,3) | | |
| A4 | 80 - 185 (5,5 - 12,8) | | |
| ZZ | Non-Standard | | |

| 9 & 10 | | Diaphragm | |
|--------|--------|-----------|--|
| S6 | 316SST | | |

| 11 & 12 | | Actuator | |
|---------|---------------------|----------|--|
| MD | For Metal Diaphragm | | |

