

## Dome Loaded Pressure Maintaining Valve

The M51 is a large capacity 1/2" balanced valve dome loaded pressure maintaining valve, used for quick and accurate control of inlet pressures. Ideal for high flow, low, medium and high pressure applications, It is a stable and noiseless valve for maintaining a set pressure of upstream media, it's heavy duty construction allows it to be installed in the most arduous of environments.



### Standard Features

**Valve Size:**

- 1/2" BALANCED

**Materials of construction:**

- BODY - STAINLESS STEEL - BS EN 10088 1.4401
- DOME - STAINLESS STEEL - BS EN 10088 1.4401
- SEAT - STAINLESS STEEL - BS EN 10088 1.4401
- ELASTOMERS - HIGH NITRILE

**Connections:**

- 1" BSPP

**Maximum Inlet Pressure:**

- 300 BAR (4353 PSI)

**Maximum Outlet Pressure:**

- 300 BAR (4353 PSI)

**Dome loading**

- INTERNAL OR EXTERNAL VIA 1/4" BSP CONNECTION
- DOMES SHOULD BE LOADED WITH AIR OR INERT GAS

**Media:**

- LIQUID AND GASES

**Weight:**

- 9,6 Kg (25,7 lb)

### Additional Features

- MOUNTING ON REQUEST
- WELDED FLANGES ON REQUEST (STAINLESS STEEL BODIES ONLY)
- REMOTE DOME PILOTING, SEE A17 PROPORTIONAL CONTROLLER (see pg 86)

### Options

**Materials of construction:**

- ALTERNATIVE BODY & DOME MATERIALS ON REQUEST
- ELASTOMERS - FLUOROCARBON OR EPDM

## Applications

- Compressors
- Dryer systems
- Filter systems
- Brewery plants
- Gas & liquid sampling
- Pump pressure control
- Research laboratories
- Aerospace ground support

## Ordering Information

| TYPE | MATERIAL OPTION      | ELASTOMER                                   |
|------|----------------------|---|
| M51  | A9 (STAINLESS STEEL) | N (NITRILE)<br>V (FLUOROCARBON)<br>E (EPDM) |

ORDERING INFORMATION EXAMPLE:

M51A9V

## Notes

## Technical Specifications

### Pressure

|                        | PRESSURE           |
|------------------------|--------------------|
| TEST (PROOF) PRESSURE  | 450 BAR (6530 PSI) |
| MAXIMUM INLET PRESSURE | 300 BAR (4353 PSI) |

### Set Pressure Range

0.5 - 300 BAR (7 - 4353 PSI)

### Leakage

|                        |  |
|------------------------|--|
| STANDARD<br>ON REQUEST | BUBBLE TIGHT (TYPICALLY $10^{-6}$ AT $CM^3 SEC^{-1}$ )<br>HELIUM LEAK TESTED TO $10^{-8}$ AT $CM^3 SEC^{-1}$ |
|------------------------|--|

### Temperature Range

-40°C TO +150°C

### Valve Size and Flow Area

|                  |   |
|------------------|---|
| NOMINAL SIZE     | 12.7mm (1/2")                             |
| ORIFICE AREA A1  | 90mm <sup>2</sup> (0.14in <sup>2</sup> )  |
| PORT AREA A2     | 201mm <sup>2</sup> (0.31in <sup>2</sup> ) |
| FLOW COEFFICIENT | Kv = 2.74 (Cv = 3.2)                      |

### Spares Code

| SPARES | ELASTOMER                                   |
|--------|---|
| M51S   | N (NITRILE)<br>V (FLUOROCARBON)<br>E (EPDM) |

### Spares BOM

| ITEM | DESCRIPTION        | MATERIAL               | QTY |
|------|--------------------|------------------------|-----|
| 1    | DOWTY              | St. Stl / Rubber       | 1   |
| 2    | CIRCLIP            | BS 5216-HD 3           | 2   |
| 3    | NEEDLE VALVE       | BS 3S 145 (Normalised) | 2   |
| 4    | 'O' RING           | Rubber                 | 2   |
| 5    | STANDARD DIAPHRAGM | Rubber                 | 1   |
| 6    | 'O' RING           | Rubber                 | 2   |
| 7    | 'O' RING           | Rubber                 | 1   |
| 8    | 'O' RING           | Rubber                 | 1   |
| 9    | VALVE ASSY         | Various                | 1   |
| 10   | 'O' RING           | Rubber                 | 1   |
| 11   | SEAT               | BS EN 10088 1.4401     | 1   |
| 12   | 'O' RING           | Rubber                 | 1   |
| 13   | BACK UP RING       | PTFE                   | 1   |

## Technical Specifications

