

Dome Loaded Regulator

The K40 series is a balanced valve dome loaded pressure regulator with flanged connections and provides a flow of process fluid at controlled pressure. It is a heavy duty construction, ideally suited for arduous conditions and environments. The outlet pressure is set by adjusting the pressure in the dome. A flexible diaphragm separates the gas in the dome from the process fluid. The valve in the regulator is balanced type. It is a fail safe to closed position. The dome must be charged with air or an inert gas such as nitrogen. The outlet pressure is substantially unaffected by flow rate or by changes in the inlet pressure.

For an operational overview, please refer to pages 60 and 61.



Standard Features

| Valve Size (Balanced): | K41 | K42 | K43 |
|---------------------------|------|-----|--------|
| | 1/2" | 1" | 1 1/2" |

Materials of construction:

- BODY - CAST NODULAR IRON - BS EN 1563 400-18LT
- DOME - CAST NODULAR IRON - BS EN 1563 400-18LT
- SEAT - STAINLESS STEEL - BS EN 10088 1.4401
- TRIM - RUBBER
- ELASTOMERS - NITRILE

| Flange Connections: | K41 | K42 | K43 |
|------------------------|-------------------|-------------------|-------------------|
| | DN25 BS EN 1092-2 | DN50 BS EN 1092-2 | DN80 BS EN 1092-2 |

Maximum Inlet Pressures:

- 40 BAR (580 PSI)

Outlet Pressure Ranges:

- 0.5 - 40 BAR (7 - 580 PSI)

Dome Loading:

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

Media:

- LIQUID AND GASES

| Weight: | K41 | K42 | K43 |
|---------|---------------|-----------------|---------------|
| | 6.5 Kg (2 lb) | 18.5 Kg (41 lb) | 37 Kg (82 lb) |

Additional Features

- REMOTE DOME PILOTING
- ANSI VARIANTS, K40 SERIES CAN BE SUPPLIED WITH FLANGE ADAPTORS TO SUIT CUSTOMER SPECIFICATION. PLEASE CONSULT IVP SALES FOR DETAILS

Options

Materials of construction:

- ELASTOMERS - FLUOROCARBON / EPDM

Low Outlet Pressure Option

- 25 BAR (360 PSI) PRESSURE ON ALL MODELS
- 0.1 - 5 BAR (1.5 - 70 PSI) OUTLET ON ALL MODELS

Applications

- Marine industries
- Gas & Oil industries
- Off shore / aggressive environments
- Nitrogen Plants
- Brewery plants
- Pressure test rigs
- Mining Industries
- High flow purge systems
- Steel industries

Ordering Information

| TYPE | MATERIAL OPTION | OUTLET PRESSURE | ELASTOMER |
|-------------------|-------------------|----------------------------------|---|
| K41 K42 K43 | P8 (NODULAR IRON) | S (STANDARD) L (LOW PRESSURE) | N (NITRILE) V (FLUOROCARBON) E (EPDM) |

ORDERING INFORMATION EXAMPLE:

K41P8SN

Notes

Technical Specifications

Pressure

| | K41 | K42 | K43 |
|--------------------------------|------------------------|------------------------|------------------------|
| TEST (PROOF) PRESSURE | 60 BAR (870 PSI) | 60 BAR (870 PSI) | 60 BAR (870 PSI) |
| MAXIMUM INLET PRESSURE | 40 BAR (580 PSI) | 40 BAR (580 PSI) | 40 BAR (580 PSI) |
| REDUCED OUTLET PRESSURE RANGES | 0.5-40 BAR (7-580 PSI) | 0.5-40 BAR (7-580 PSI) | 0.5-40 BAR (7-580 PSI) |

Leakage

| | |
|------------|--|
| STANDARD | BUBBLE TIGHT (TYPICALLY 10^{-6} atm.cm ³ /sec ⁻¹) |
| ON REQUEST | HELIUM LEAK TESTED TO 10^{-8} atm.cm ³ /sec ⁻¹ |

Temperature Range

| | K41 | K42 | K43 |
|----------|-----------------|-----------------|-----------------|
| STANDARD | -20°C TO +150°C | -20°C TO +150°C | -20°C TO +150°C |

Valve Size and flow area

| | K41 | K42 | K43 |
|------------------|---|--|--|
| NOMINAL SIZE | 12.7mm (1/2") | 25.4mm (1") | 38.1mm (1 1/2") |
| ORIFICE AREA A1 | 97mm ² (0.15in ²) | 323mm ² (0.50in ²) | 968mm ² (1.50in ²) |
| PORT AREA A2 | 387mm ² (0.60in ²) | 1503mm ² (2.33in ²) | 2858mm ² (4.43in ²) |
| FLOW COEFFICIENT | Kv=2.9 (Cv=3.4) | Kv = 9.7 (Cv = 11.4) | Kv = 29 (Cv = 34) |

Spares Code

| SPARES | OUTLET PRESSURE | ELASTOMER |
|----------------------|----------------------------------|---|
| K41S K42S K43S | S (STANDARD) L (LOW PRESSURE) | N (NITRILE) V (FLUOROCARBON) E (EPDM) |

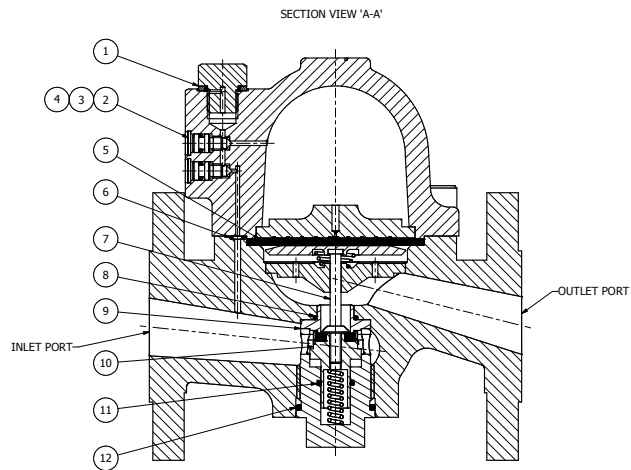
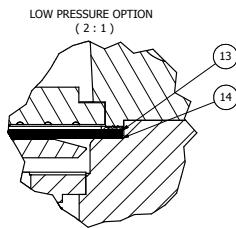
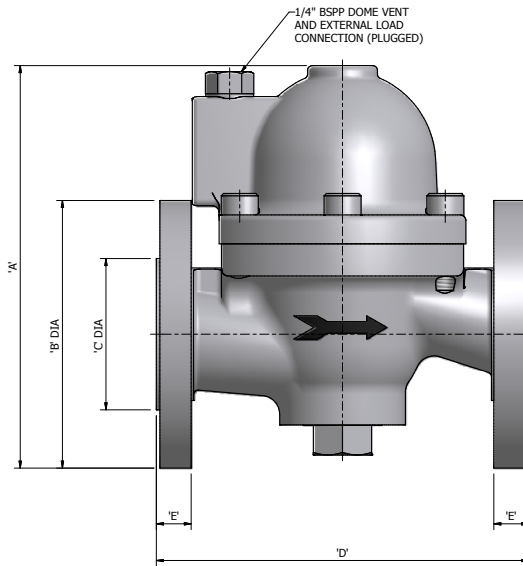
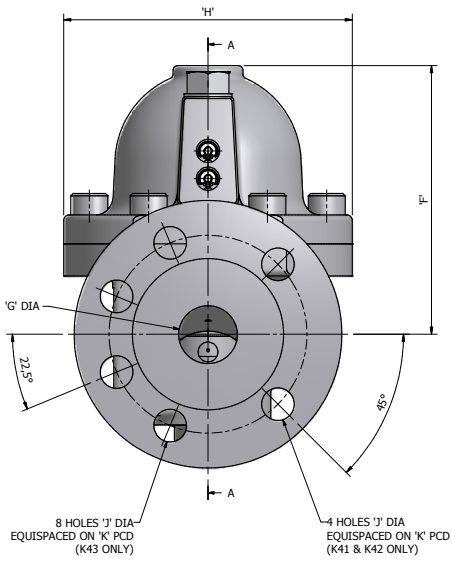
Spares BOM (recommended spares)

| ITEM | DESCRIPTION | MATERIAL | QTY | REQUIRED | |
|------|------------------------|------------------------|-----|----------|---|
| 1 | BONDED SEAL | Steel / 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 | 1 | * | * |
| 7 | PUSH ROD | BS 3S 145 (Normalised) | 1 | * | * |
| 8 | 'O' RING | Rubber | 1 | * | * |
| 9 | SEAT | BS EN 10088 1.4401 | 1 | * | * |
| 10 | VALVE ASSY | Various | 1 | * | * |
| 11 | 'O' RING | Rubber | 1 | * | * |
| 12 | 'O' RING | Rubber | 1 | * | * |
| 13 | GASKET | Rubber | 1 | * | * |
| 14 | LOW PRESSURE DIAPHRAGM | Rubber | 1 | * | * |

STANDARD PRESSURE

LOW PRESSURE

Technical Specifications



Dimensions

| TYPE | 'A' | 'B' | 'C' | 'D' | 'E' | 'F' | 'G' | 'H' | 'J' | 'K' | WEIGHT |
|------|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|---------|
| K41 | 171 | 115 | 65 | 160 | 15 | 114 | 25 | 124 | 14 | 85 | 6.5 Kg |
| K42 | 276 | 165 | 102 | 230 | 20 | 194 | 50 | 165 | 19 | 125 | 18.5 Kg |
| K43 | 317 | 200 | 128.5 | 310 | 33 | 217 | 75 | 229 | 19 | 160 | 37 Kg |