

## Dome Loaded Regulator

The K30 series is a balanced valve dome loaded pressure regulator 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)	K31	K32	K33
	1/2"	1"	1 1/2"
<b>Materials of construction:</b>			
<ul style="list-style-type: none"> <li>BODY - CAST NODULAR IRON - BS EN 1563 400-18LT</li> <li>DOMES - CAST NODULAR IRON - BS EN 1563 400-18LT</li> <li>SEAT - STAINLESS STEEL - BS EN 10088 1.4401</li> <li>TRIM - RUBBER</li> <li>ELASTOMERS - NITRILE</li> </ul>			
Connections:	K31	K32	K33
	1" BSPP	2" BSPP	3" BSPP
Maximum Inlet Pressure:	K31	K32	K33
	70 BAR (1015 PSI)	70 BAR (1015 PSI)	55 BAR (800 PSI)
Outlet Pressure Range:	K31	K32	K33
	0.5 - 70 BAR (7 - 1015 PSI)	0.5 - 70 BAR (7 - 1015 PSI)	0.5 - 42 BAR (7 - 610 PSI)
<b>Dome Loading:</b>			
<ul style="list-style-type: none"> <li>INTERNAL or EXTERNAL VIA 1/4" BSPP CONNECTION</li> <li>DOMES SHOULD BE LOADED WITH AIR OR INERT GAS</li> </ul>			
<b>Media:</b>			
<ul style="list-style-type: none"> <li>LIQUID AND GASES</li> </ul>			
Weight:	K31	K32	K33
	5,5 Kg (12 lb)	18,5 Kg (41 lb)	32 Kg (70 lb)

### Additional Features

- WELDED FLANGES ON REQUEST (STAINLESS STEEL BODIES ONLY)
- REMOTE DOME PILOTING

### Options

#### Materials of construction:

- BODY- STAINLESS STEEL - BS EN 10213-4 1.4408
- DOME - STAINLESS STEEL - BS EN 10213-4 1.4408
- ELASTOMERS - FLUOROCARBON / EPDM

### Low Outlet Pressure Option

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

## 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
- Autoclave charging

## Ordering Information

TYPE	MATERIAL OPTION	OUTLET PRESSURE	ELASTOMER
K31 K32 K33	P8 (NODULAR IRON) 9H (ST/STL)	S (STANDARD) L (LOW PRESSURE)	N (NITRILE) V (FLUOROCARBON) E (EPDM)

ORDERING INFORMATION EXAMPLE:

K31P8SN

## Notes

## Technical Specifications

### Pressure

	K31	K32	K33
TEST (PROOF) PRESSURE	105 BAR (1523 PSI)	105 BAR (1523 PSI)	83 BAR (1200 PSI)
MAXIMUM INLET PRESSURE	70 BAR (1015 PSI)	70 BAR (1015 PSI)	55 BAR (800 PSI)
REDUCED OUTLET PRESSURE RANGES	0.5-70 BAR (7-1015PSI)	0.5-70 BAR (7-1015PSI)	0.5-42 BAR (7-610PSI)

### Leakage

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

### Temperature Range

	K31	K32	K33
NODULAR IRON BODY	-20°C TO +150°C	-20°C TO +150°C	-20°C TO +150°C
STAINLESS STEEL BODY	-40°C TO +150°C	-40°C TO +150°C	-40°C TO +150°C

### Valve Size and Flow Area

	K31	K32	K33
NOMINAL SIZE	12.7mm (1/2")	25.4mm (1")	38.1mm (1 1/2")
ORIFICE AREA A1	97mm <sup>2</sup> (0.15in <sup>2</sup> )	323mm <sup>2</sup> (0.50in <sup>2</sup> )	968mm <sup>2</sup> (1.50in <sup>2</sup> )
PORT AREA A2	387mm <sup>2</sup> (0.60in <sup>2</sup> )	1503mm <sup>2</sup> (2.33in <sup>2</sup> )	2858mm <sup>2</sup> (4.43in <sup>2</sup> )
FLOW COEFFICIENT	Kv = 2.9 (Cv = 3.4)	Kv = 9.7 (Cv = 11.4)	Kv = 29 (Cv = 34)

### Spares Code

SPARES	OUTLET PRESSURE	ELASTOMER
K31S K32S K33S	S (STANDARD) L (LOW PRESSURE)	N (NITRILE) V (FLUOROCARBON) E (EPDM)

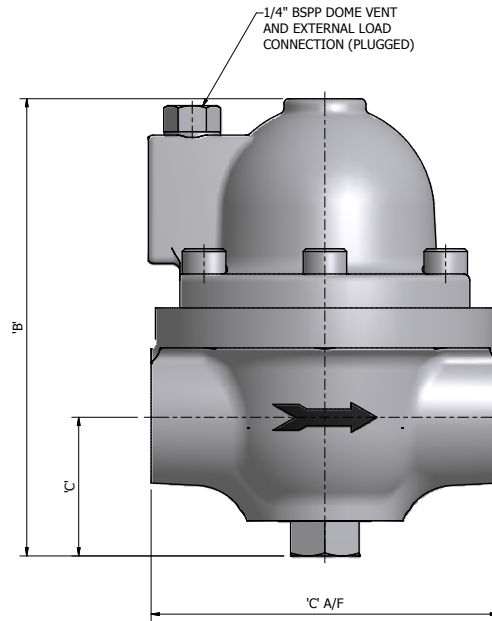
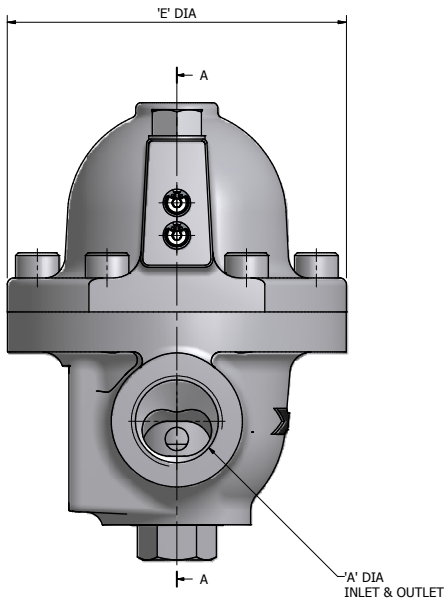
### Spares BOM (recommended spares)

ITEM	DESCRIPTION	MATERIAL	QTY	REQUIRED	
1	BONDED SEAL	Steel	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	*	*

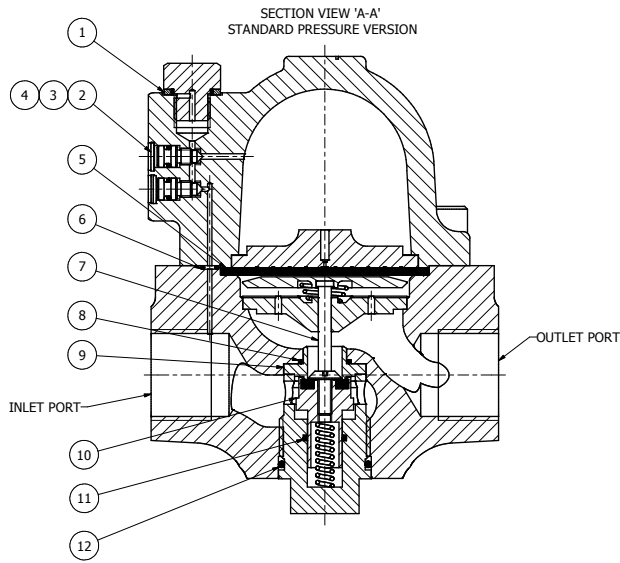
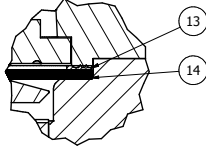
STANDARD PRESSURE

LOW PRESSURE

## Technical Specifications



LOW PRESSURE OPTION  
(2 : 1)



## Dimensions

TYPE	'A'	'B'	'C'	'D'	'E'	WEIGHT
K31	1" BSP	167	51	127	124	5.5Kg (12lb)
K32	2" BSP	266	78	227	197	18.5Kg (42lb)
K33	3" BSP	315	97	254	229	32Kg (70lb)