

## 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 dome can be charged from an external source – this is known as “Mono Loading”. The outlet pressure is substantially unaffected by flow rate or by changes in the inlet pressure.



### 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 – PCTFE
- ELASTOMERS – NITRILE

Flange	K41	K42	K43
Connections:	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 SEE A17 (Pg. 86) PROPORTIONAL REGULATOR
- ANSI VARIANTS, K40 SERIES CAN BE SUPPLIED WITH FLANGE ADAPTORS TO SUIT CUSTOMER SPECIFICATION. PLEASE CONSULT IVP SALES FOR DETAILS

### Options

#### Materials of construction:

- TRIM – PTFE / NYLON / DELRIN
- 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	P8 (NODULAR IRON)	S (STANDARD)	N (NITRILE)
K42		L (LOW PRESSURE)	V (FLUOROCARBON)
K43			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 <sup>-6</sup> AT CM <sup>3</sup> SEC <sup>-1</sup> )
ON REQUEST	HELIUM LEAK TESTED TO 10 <sup>-8</sup> AT CM <sup>3</sup> SEC <sup>-1</sup>

### 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 <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
K41S	S (STANDARD)	N (NITRILE)
K42S	L (LOW PRESSURE)	V (FLUOROCARBON)
K43S		E (EPDM)

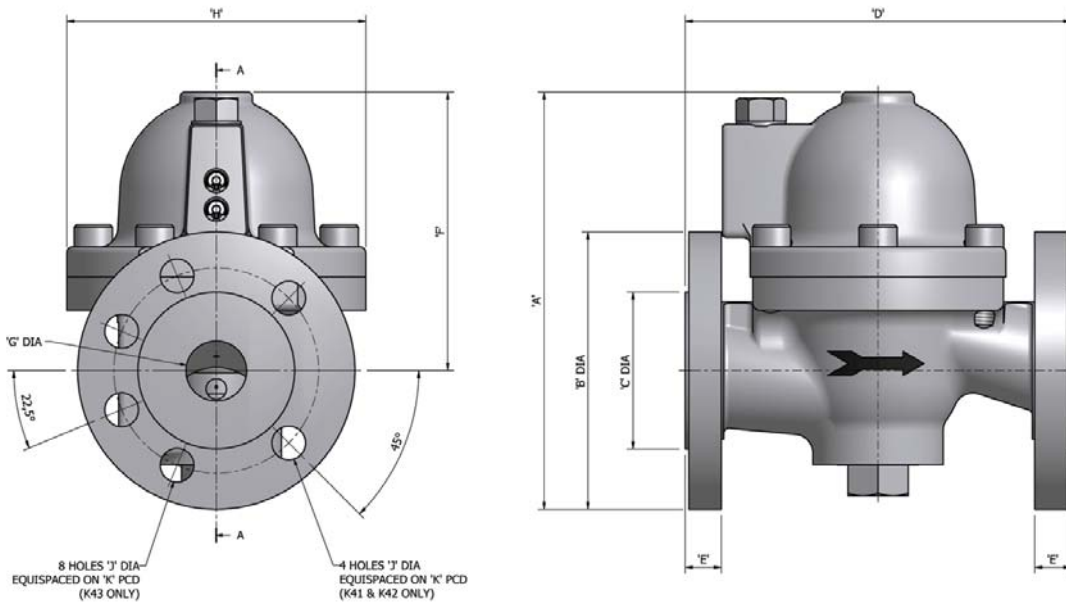
### Spares BOM (recommended spares)

ITEM	DESCRIPTION	MATERIAL	QTY	REQUIRED	
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	1	*	*
7	PUSH ROD	BS 3S 145 (Normalised)	1	*	*
8	PUSH ROD	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

