- **Port size: ISO G1 ... G2 1” NPT**
- **Balanced design ensures a stable delivery pressure, even with a varying inlet pressure**
- **Internal and external dome loading**
  Note: no pilot regulator needed for internal dome loading for gas service

Technical features

The K50 series is a balanced valve, dome loaded pressure regulator which 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 double needle valve design for small pressure adjustments. 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 outlet pressure is substantially unaffected by flow rate or by changes in the inlet pressure.

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

Medium:
Liquid and gases
Maximum inlet pressure:
K51: 420 barg (6092 psig)
K52 & 53: 310 barg (4496 psig)
Outlet pressure range:
K51:
0,5 ... 300 barg (7.3 ... 4351 psig)
K52 & 53:
0,5 ... 172 barg (7.3 ... 2494 psig)
Dome loading:
Internal or external
via G1/4 connection
Domes should be loaded with air or inert gas

Leakage:
Bubble tight (standard, typically 10^{-6} atm.cm^3/sec^{-1})
Helium leak tested to 10^{-8} atm.cm^3/sec^{-1} (on request)
Ambient/Media temperature:
NBR:
-10 ... +100°C (+14 ... 212°F)
FPM:
-20 ... +150°C (-4 ... 302°F)
EPDM:
-30 ... +115°C (-22 ... 239°F)
Stainless Steel
-40 ... +150°C (-40 ... 302°F)

Materials:
Body: stainless steel BS EN 10088 1.4401
Dome: stainless steel BS EN 10088 1.4401
Elastomers: NBR, FPM, EPDM

Technical data

Symbol	Port size	Valve seat size (mm)	(inch)	Seat flow area (mm²)	(inch²)	Port flow area (mm²)	(inch²)	Flow coefficient (Kv)	(Cv)	Model
	1”	6,35	0.25	24	0.037	201	0.31	0,72	0.84	K51
	1”	12,7	0.5	90	0.14	201	0.31	2,74	3.2	K51
	1 1/2”	25,4	1	361	0.56	707	1.1	10,9	12.8	K52
	2”	38,1	1.5	806	1.25	1963	3.04	24,4	28.5	K53

Option selector

K5★A9★★★★

Port size	Substitute
G 1	1
G 1 1/2	2
G 2	3

NPT version	Substitute
1” NPT option (K51 only)	01
Elastomer	**Substitute**
NBR	N
FPM	V
EPDM	E
Valve seat size	**Substitute**
1/4” (K51)	C
1/2” (K51)	G
1” (K52)	K
1 1/2” (K53)	M

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K5★S★★

Valve	Substitute
K51	**1**
K52	**2**
K53	**3**

Elastomer	Substitute
NBR	**N**
FPM	**V**
EPDM	**E**

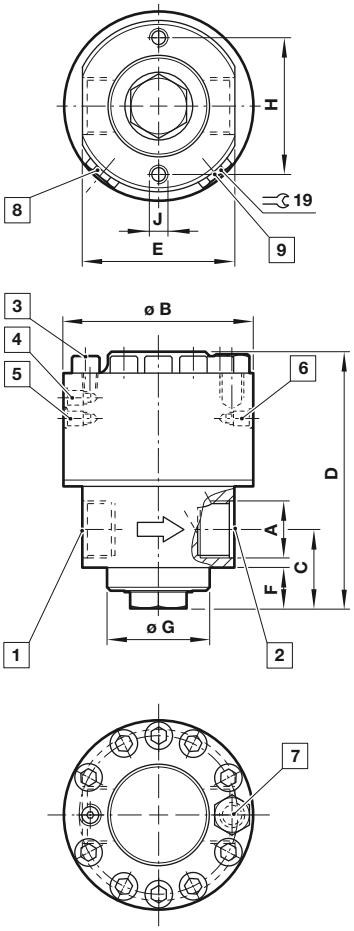
Valve inlet size	Substitute
1/4”	**C**
1/2”	**G**
1”	**K**
1 1/2”	**M**

Spares BOM

Description	Material	QTY	Required K51 (1/4”)	K51, K52, K53’ (standard)
Bonded seal	Steel/ Rubber	1	X	X
Circlip	BS 5216-HD 3	3	X	X
Needle valve	BS 3S 145 (normalised)	3	X	X
‘O’-Ring	Rubber	3	X	X
Standard diaphragm	Rubber	1	X	X
‘O’-Ring	Rubber	1	X	X
‘O’-Ring	Rubber	1	X	X
Seat	BS EN 10088 1.4401	1	X	X
Valve assy	Various	1	X	X
‘O’-Ring	Rubber	1	—	X
‘O’-Ring	Rubber	1	X	X
Back up ring	PTFE	1	X	X
Valve assy (1/4”)	Rubber	1	—	X
Guide ring	Plastic	1	—	—

Dimensions

Dimensions in mm
Projection/First angle



1 Inlet port
2 Outlet port
3 G1/4 dome vent and external load connection (plugged)
4 Load regulation screw for external or internal pressure
5 Load regulation screw for internal pressure
6 Load regulation screw for external pressure
7 G1/4 dome vent and external load connection (plugged)
8 G1/4 inlet gauge port
9 G1/4 outlet gauge port

NOTE:
NPT ported K51, the across port dimension will be per ø B.

A	ø B	C	D	E	F	ø G	ø H	J	Weight (kg)	Model
G 1	111	45	150	89	23	60	80	M8 x 14 deep	7	K51
G 1 1/2	172	67	220	153	34	78	120	M10 x 19 deep	25	K52
G 2	260	117	305	238	72	172	206	M16 x 38 deep	65	K53

Warning

Do not use these products where pressures and temperatures can exceed those listed under »**Technical features/data**«.
Before using these products with fluids other than those specified, for non-industrial applications, life-support systems or other applications not within published specifications, consult
IMI Precision Engineering, Thompson Valves Ltd.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.
System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.
System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.