

INBAL VALVE SERIES 700

711 - Threaded

733 - Flanged

799 - Wafer



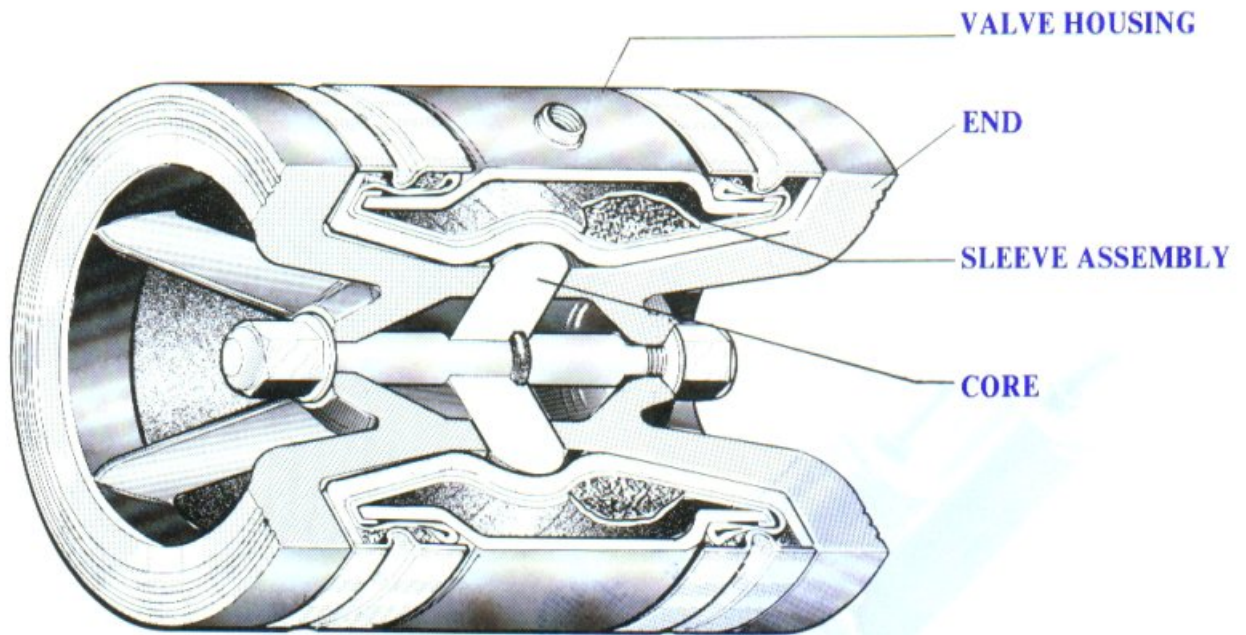
The **Inbal** series 700 is a pressure operated, sleeve actuated, in line, axial valve, designed for heavy duty conditions. It consists of four major components: The valve housing, the sleeve assembly, the core and the ends. The sleeve assembly is the only moving part.

The heavy duty sleeve assembly consists of three layers: A polyester fabric sleeve reinforced with Kevlar and enveloped on both sides by resilient sleeves.

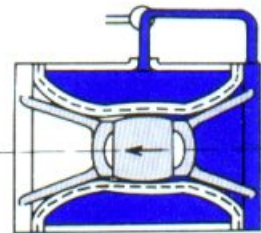
The ends are of four spokes only (six in size 12" -300mm) thus ensuring a streamlined flow with a

minimal pressure loss. A plastic core, completely corrosion resistant, forms a drip tight seal with the resilient sleeve when pressure is applied into the control space.

The **Inbal** Valve series 700 is used as the basic valve in Mil automatic valves for the more demanding conditions of pressure and flow rates. Extremely versatile, the series 700 can operate as a basic on-off valve, remote control, pressure regulation, solenoid operation flow control, level control or check valve operation.

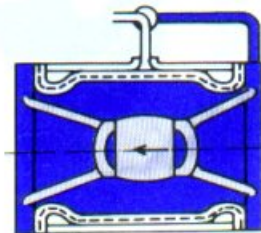


Principle of Operation



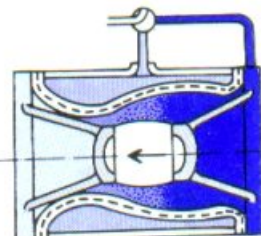
Tight closing operation

When pressure from the Valve inlet (or an equivalent independent operating pressure) is applied to the control space the **Inbal** valve closes bubble tight. The fabric sleeve safely envelopes the resilient sleeve giving full support.



Full open operation

When pressure in the control space is relieved to the atmosphere the **Inbal** Valve opens wide. The sleeve assembly is safely enveloped by the housing.



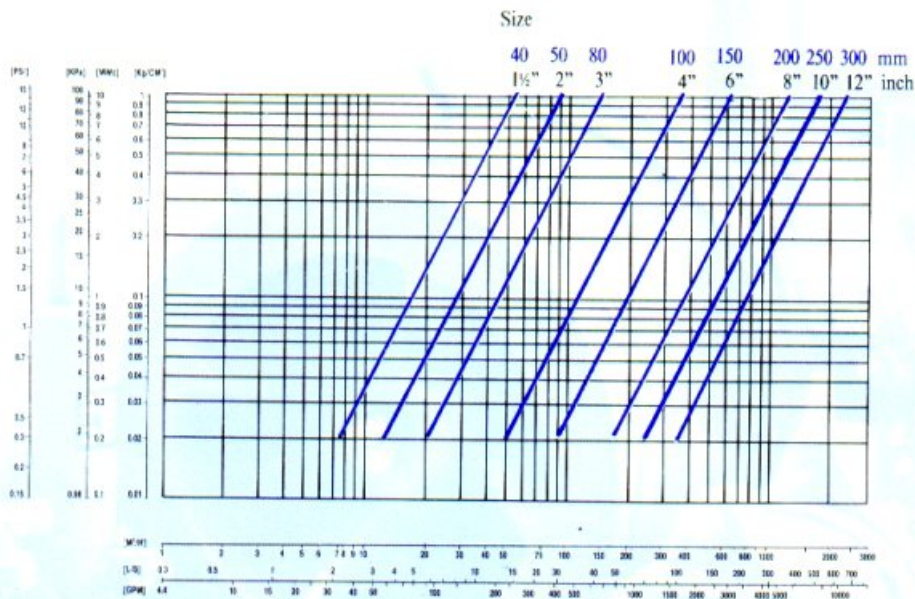
Modulating action

A stable throttling position is obtained when a quantity of pressurized fluid is held in the control space. It is the amount of fluid in the control space that determines the position of the sleeve assembly. The control space can be alternately filled or exhausted to atmosphere to achieve the desired operating condition.

Product Features

- * High performance standards, at a wide range of flow and line pressures.
- * No sticking - even after prolonged periods in the open or closed positions.
- * No clogging - handles turbid fluids and even slurries the valve can be used in the most demanding conditions.
- * Drop-tight-closure - even at very low line and operating pressures and even on entrapped solids.
- * Low pressure drop is assured by hydrodynamic design.
- * Line pressure alone can operate the **Inbal** Valve or it can be operated by external media (hydraulic/ pneumatic).
- * High pressure rating due to rigid standard construction.
- * Excellent resistance to abrasive fluids particularly when fitted with optional rubber coatings.
- * No mechanical moving parts to maintain. Packless construction and simplicity of design assures a long life of dependable operation.
- * Epoxy coating supplied as standard.
- * Compact lightweight and easy to install. It can be mounted in any position.
- * Wide range of materials available to handle various applications and fluids.

Flow Chart



Flow Factors

Valve Size mm	Inch	Kv	Cv
40	1½"	54	63
50	2"	90	104
80	3"	140	162
100	4"	330	383
150	6"	610	708
200	8"	1150	1334
250	10"	1630	1891
300	12"	2365	2743

To define the head loss thru an **Inbal** valve at a specific flow rate use the following equation (for water only):

$$\Delta P = \left(\frac{Q}{Kv}\right)^2 \quad \Delta P = \left(\frac{Q}{Cv}\right)^2$$

ΔP = Pressure drop in kg/cm² ΔP = Pressure drop in psi

Q = Flow rate in m³/h Q = Flow rate in gpm

Kv = Flow factor Cv = Flow factor (use table above)

Purchase Specifications

This valve shall be a pressure operated, sleeve actuated, in line, axial valve. It shall consist of 3 layers of sleeve which are the only moving parts. The sleeves shall form a sealed chamber in the external portion of the valve separating operating pressure from line pressure. When a line pressure (or from external source) is applied to the control chamber the sleeves shall form a tight seal against the core. No stems, diaphragm assembly or spring are permitted at the valve and there are to be no other sealing facilities apart from the sleeves. A self cleaning strainer shall be mounted in the upstream control port to ensure clean fluid to the control system.

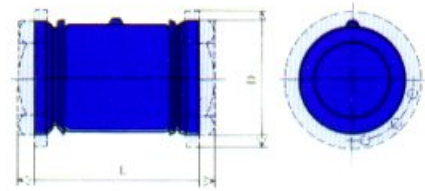
This valve shall be similar in all respects to an **Inbal** Valve series 700 (711, 733, 799) as manufactured by Mil Ltd or approved equal.

Liquid volume displaced from control space when valve opens:

Valve Size mm	Inch	Displacement U.S.	
		Liter	Gallon
40	1½"	0.12	0.03
50	2"	0.12	0.03
80	3"	0.3	0.08
100	4"	0.5	0.13
150	6"	1.7	0.45
200	8"	3.5	0.92
250	10"	8.1	2.1
300	12"	12.7	3.4

Dimensions & Weights

	Valve model	VALVE SIZE															
		40	1½"	50	2"	80	3"	100	4"	150	6"	200	8"	250	10"	300	12"
L mm/inch	711	190	7½	190	7½	200	7¾										
	733					158	6	190	7½	245	9¾	308	12¼	363	14½	451	17¼
	799					155	6½	187	7¼	235	9¼	302	11¾	350	13¼	445	17½
D mm/inch	711	162	6½	162	6½	181	7¼										
	733*					200	7¼	220	8½	285	11¼	340	13¼	405	15½	460	18¼
	799					130	5½	160	6½	218	8¾	272	10½	324	12¾	385	15½
Weight Kg/lb	711	4	9	4½	10	8	18										
	733					10	22	14	31	31	68	51	112	84	185	100	220
	799					6	13	9	20	20	44	37	81	48	106	74	163



* Comply with flange standard dimension. Figures demonstrated comply with DIN PN16 standard. Figures are varied according to the flange standard diameter.

Specifications

Sizes:

40 thru 80 mm (1½"-3") screwed.
50 thru 300 mm (2"-12") flanged.
50 thru 300 mm. (2"-12") wafer

End details:

Threading: B.S.P; N.P.T standards.
Flanged: ANSI B16.1 Class 125 and 250.
DIN PN 10, 16 & 25 (BS 4504).
BS 10 Table D & E.
JIS B 2212, 2213 & 2214.

Wafer:

Mounts between all standard flanges listed above.

Pressure Ratings:

21 Bar (300 psi) max.
1.5 Bar (20 psi) min.

Temperature Range:

Water to +65°C (150°F).

Materials:

Inbal Valve:

Threaded ends: cast Iron ASTM A48-40B (DIN 1691 GG-25) Epoxy coated.
Flanges and Ribs: Cast Iron ASTM A48-40B (DIN 1691 GG-25) Epoxy coated.
Housing: Carbon Steel ASTM G 10200 (DIN C22) Epoxy coated.
Sealing disc: Polypropylene..
Sleeve: SMR 5; EDPM.
Control ports: Stainless Steel 303.
Self cleaning strainers and pressure ports: Brass ASTM B21 (DIN CUZN40).
Self cleaning screen: Stainless Steel 316.

Optional Materials:

Inbal Valve:

Threaded ends: Cast Stainless Steel 303 or 316L.
Flanges and water ends: Carbon Steel ASTM A-216 WCB (DIN GS-45), Epoxy coated; Stainless Steel 303 or 316L;
Cast Bronze ASTM B62;
Cast Aluminium QQ-A-601 (A356-T6);
Al-Mg ASTM C 86300 (DIN 1725-2);
Cast Bronze Aluminum ASTM B148 (CA 955);
Cast Iron Rubber lined.
Housing: Cast Iron ASTM A48-40B (DIN 1691 GG-25) Epoxy coated.
Cast Aluminium QQ-A-601 (A356-T6).
Al-Mg ASTM C 86300 (DIN 1725-2);
Stainless Steel 303 or 316.
Aluminium ASTM C 86300

Installation & Storage

- * Always flush the pipelines to clean before installation of the Valve.
- * Arrow on the valve housing must match the actual flow direction.
- * Tighten bolts to the recommended torque values for the specific size and model of valve. Do not over torque.
- * Tighten bolts alternately 180° apart.
- * Exhaust tube must be free of any back pressure, provide an air gap between the exhaust tube and to drain facility.
- * If the valve is for use in ambient or fluid temperatures below freezing, consult your nearest Inbal distributor. If shut down during cold weather, the valve control space and the control system must be drained.

When ordering please specify:

- 1) Inbal Control Valve Model No.
- 2) Inbal Valve size.
- 3) Working pressures (min; max).
- 4) Flow rates (min; max).
- 5) Fluid specifications.
- 6) Options desired.

MIL LTD reserves the right to make such alterations in design, dimensions, specifications and manufacture as are deemed necessary to ensure continued improvement.

REPRESENTED BY:



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