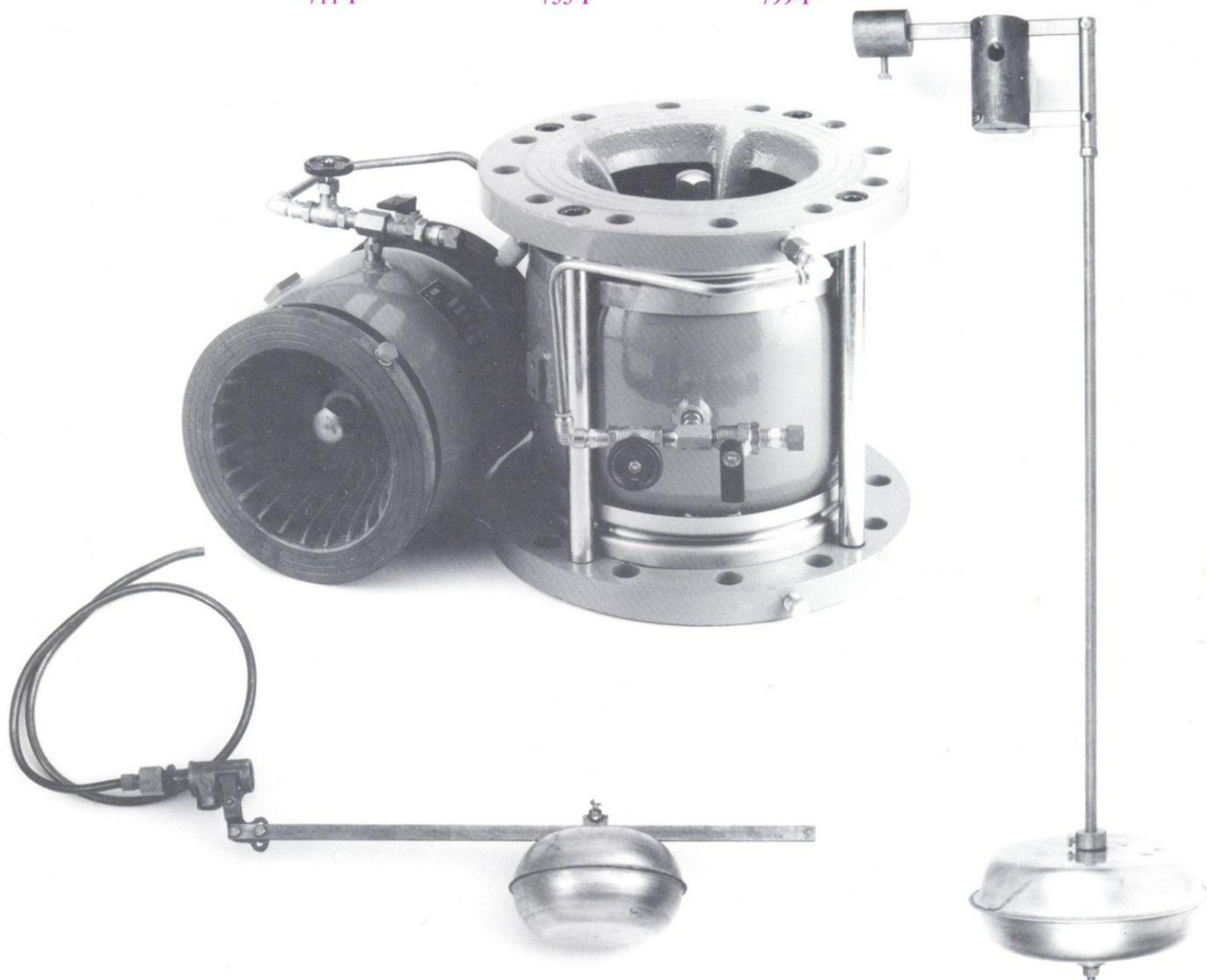


FLOAT INBAL VALVE SERIES 500-F, 600-F, 700-F.

511-F		533-F		599-F	
611-F	Threaded		Flanged	699-F	Wafer
711-F		733-F		799-F	



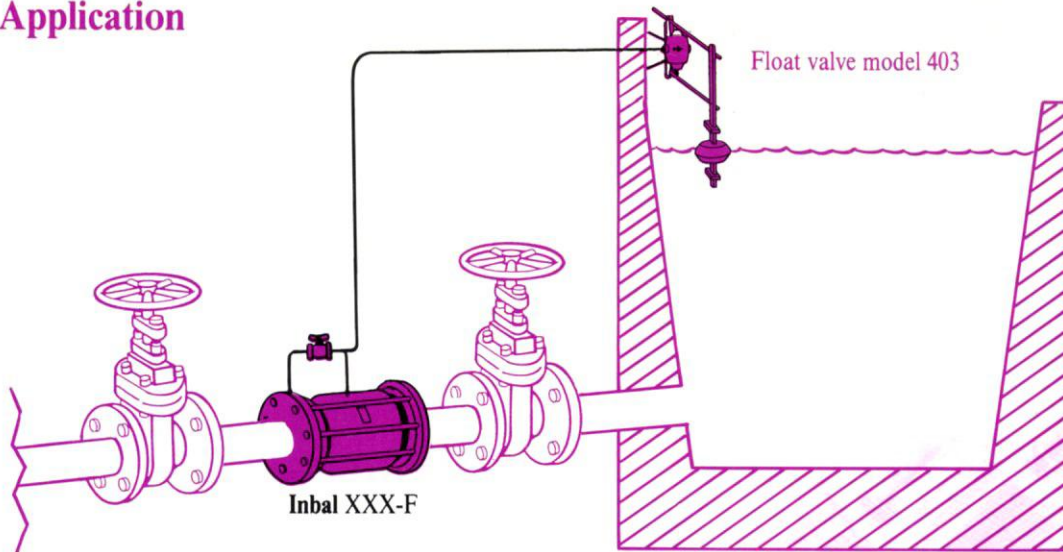
The **Inbal** Float Controlled Valve Model XXX-F, functions automatically to control the level in tanks, towers and reservoirs. The valve opens wide to fill a reservoir when the liquid level reaches a predetermined low point. The valve then closes drop-tight when the liquid level reaches a predetermined higher point. In this manner the liquid level may be controlled to within a relatively close tolerance.

The Float Valve consists of **Inbal** Valve series 500, 600 or 700 and Pilot control system.

The **Inbal** is a line pressure operated, in-line, sleeve type, axial valve. The control system is a float valve mounted remotely on the high level of the reservoir and consists of a float sliding on a rod between upper and lower stops and a 3-way valve, as well as auxiliary accessories.

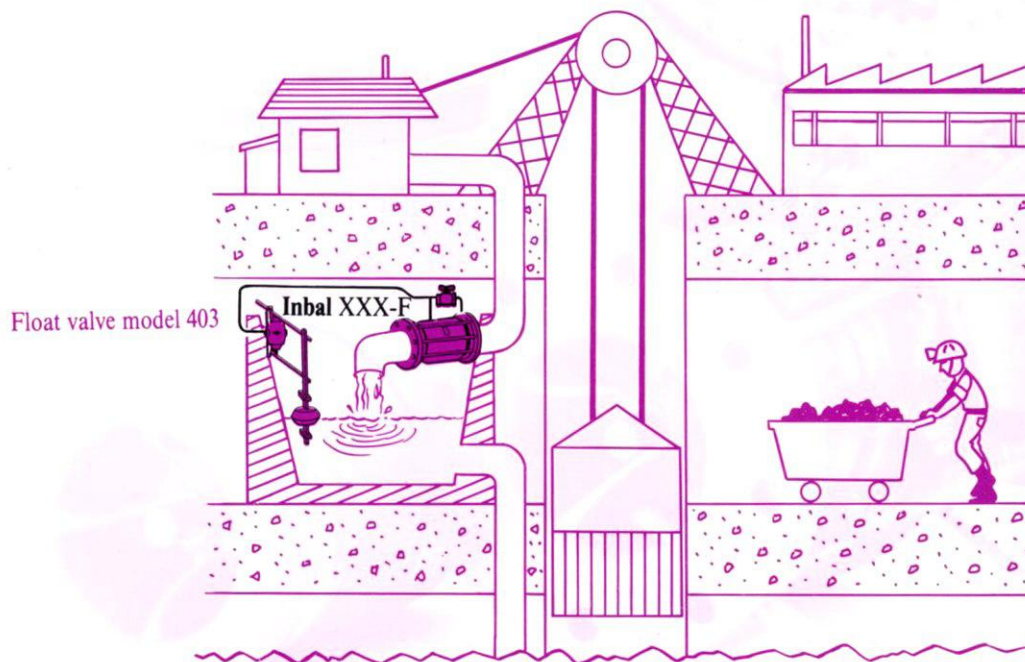
The float positions the pilot control to close the **Inbal** valve when the float contacts the upper stop and to open the **Inbal** valve when the float contacts the lower stop. The adjustment of level differentials is achieved merely by setting these stops on the float road.

Typical Application



The **Inbal** Valve XXX-F assures that the water level in the tank will always be between the predetermined high and low levels. When the water level drops to a preset low point, the **Inbal** XXX-F opens wide and introduces water to the reservoir. When the water

level reaches the preset high point the **Inbal** XXX-F, will then close drop-tight and remain closed until the level drops to the low level again.



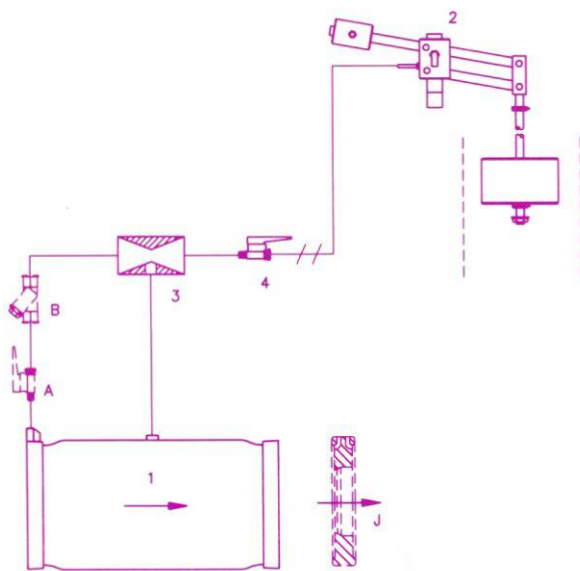
In this mine the open reservoirs are for breaking pressure along supplying water downwards. The **Inbal** Valve XXX-F automatically

controls water level in the reservoir and prevents overflow.

Product Features

- * The **Inbal** Valve contains no mechanical moving parts. It is epoxy coated as standard, compact and lightweight. The Valve can be installed at any angle, without affecting performance.
- * The performance of the valve in either the fully open or drop-tight closed position is not affected by changes in line pressure (within the recommended range for the valve) or surface disturbance.
- * The valve operation is fully hydraulic. There is no mechanical linkage between the valve and the pilot.
- * Various rod lengths offer a wide range of differential level adjustment.
- * The float can easily be adjusted to any point on the float rod.
- * The valve comes complete with self-cleaning strainer as a standard fitting.

Schematic Control Diagram



Item Description

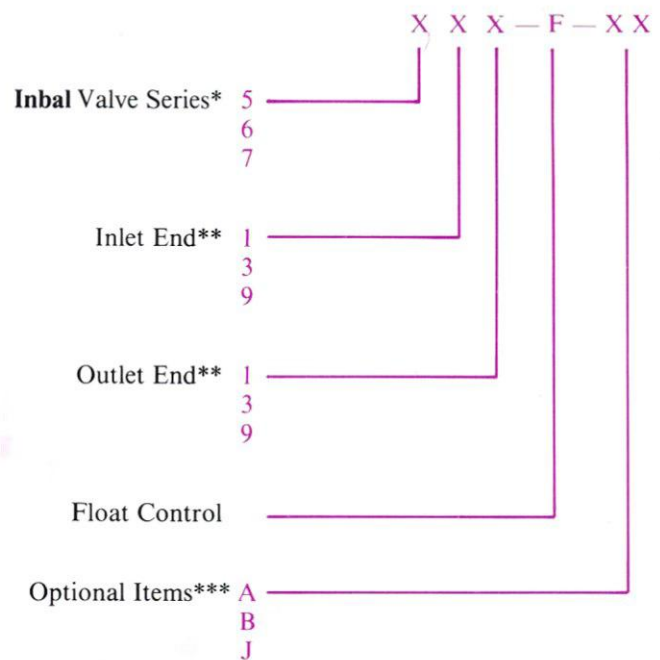
Item	Description	Model
1	Inbal Valve & Self Cleaning strainers	500; 600 or 700
2	Float Valve	401 or 403
3	Ejector	277
4	Shut-off cock	351

Optional Features:

Item	Description	Model
A	Shut-off cock - Isolates Pilot System	351
B	Y Pattern Strainer	31
J	Orifice Plate Assembly*	363

* Recommended when Inbal Valve back pressure is less than 15 meters. See Inbal Orifice Selection in Bulletin 120.

Designation Data



* Request catalog on each series

** Ends: 1-threaded
3-flanged
9-wafer

*** See optional features in the left hand column.

Example: Inbal 599-F-A is a Float controlled series 500 wafer type valve with shut-off cock.

Purchase Specifications

The Float operated valve shall automatically control the level of liquid. The valve shall open wide when the float is at a predetermined high liquid level. It shall be an hydraulically operated, pilot controlled, sleeve type, in-line, axial valve.

The main in-line valve shall have only one moving part, which is the resilient sleeve. No stem, diaphragm assembly or spring is permitted at the main valve. There are to be no other sealing facilities apart from the sleeve itself.

The pilot control shall be float operated 3-way valve with adjustable differential levels. The float shall position the pilot control to close the main valve when the float comes in contact with the upper stop collar and shall open the main valve when the float comes in contact with the lower stop. The levels shall be controlled by setting the stops on the float rod.

This valve shall be similar in all respects to a float Inbal Valve Model XXX-F, as manufactured by Mil Limited or approved equal.

Capacity Chart

Inbal Valve Size		Minimum Flow Rate*						Maximum Normal Flow Rate** X00-F		Maximum Intermittent Flow Rate*** X00-F	
		500-F		600-F		700-F					
mm	inch	m ³ /h	gpm	m ³ /h	gpm	m ³ /h	gpm	m ³ /h	gpm	m ³ /h	gpm
40	1½	1	4.4	0.6	2.7	0.5	2.2	40	175	50	220
50	2	1	4.4	0.6	2.7	0.5	2.2	45	200	60	265
80	3	5	22	3	13	1.5	6.6	105	460	130	570
100	4	10	44	5	22	3	13	180	790	230	1010
150	6	25	110	15	66	10	44	400	1760	560	2460
200	8	40	175	20	88	15	66	700	3080	880	3870
250	10	50	220	-	-	20	88	1100	4840	1350	5940
300	12	80	350	-	-	25	110	1600	7040	1950	8580

* Minimum flow rates are averages which may vary $\pm 30\%$ from tabulated values depending on system characteristics.

** Normal maximum flow rate based on pipe line velocity of 6 m/sec (20 ft/sec).

*** Maximum intermittent flow rate based on pipe line velocity of 8 m/sec (25 ft/sec).

Dimensions & Weights

	Valve model	40	1½"	50	2"	80	3"	VALVE SIZE									
		190	7½	190	7½	200	7⅞	100	4"	150	6"	200	8"	250	10"	300	12"
L mm/inch	5-6-711-F					158	6										
	5-733-F					155	6⅛	190	7½	245	9⅝	308	12⅞	363	14⅞ ₃₂	451	17⅞ ₄
	5-6-799-F					181	7⅞	187	7⅞	235	9⅞	302	11⅞	350	13⅞ ₄	445	17½ ₄
D mm/inch	5-6-711-F	162	6⅜	162	6⅜	181	7⅞										
	5-733-F					200	7⅞	220	8⅞ ₁₆	285	11¼	340	13⅞	405	15⅞ ₁₆	460	18⅞ ₈
	5-6-799-F					130	5⅞	160	6⅞ ₁₆	218	8⅞ ₁₆	272	10⅞ ₁₆	324	12⅞ ₄	385	15⅞ ₁₆
B mm/inch	5-6-711-F	127	5	127	5	135	5⅞ ₁₆										
	5-733-F					135	5⅞ ₁₆	151	6	180	7	211	8⅞ ₁₆	233	9⅞ ₁₆	263	10⅞ ₈
	5-6-799-F					135	5⅞ ₁₆	151	6	180	7	211	8⅞ ₁₆	233	9⅞ ₁₆	263	10⅞ ₈
Weight Kg/lb	711-F	12	26	12	26	13½	30										
	733-F					15½	34	19½	43	36½	43	56½	124	89½	197	105½	232
	799-F					11½	25	14½	32	25½	56	42½	94	53½	118	79½	176
	511-F	11	24	11½	25	13½	30										
	533-F					15	33	17½	38	35½	78	51½	113	75½	166	86½	190
	599-F					10	22	11½	25	21½	56	33½	74	46½	102	59½	131
	699-F					8	18	9¼	20	15¼	34	24	53				

The outside dimensions (D) 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 (1 1/2"-3") screwed.
50 thru 300 mm (2"-12") flanged.
50 thru 300 mm. (2"-12") wafer
(2" — 500 series only)

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 as listed above.

Pressure Ratings:

Grade A Sleeve:

21 Bar (300 psi) max (700 series).

16 Bar (235 psi) max (500, 600 series).

1.5 Bar (20 psi) min.

Grade F Sleeve:

5 bar (75 psi) max.

0.8 bar (12 psi) min.

Minimum line pressure should never be less than the above figures and always equal or greater than (0.1h + 1.5) Bar (for Grade A sleeve) and (0.1h + 0.8) Bar (For Grade F sleeve) where h is the vertical distance in meters from Inbal valve center line to the Float valve body.

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.
- * The Float control is mounted above the high water level in the tank.
- * Use 3/8" cooper tubing to connect Float to Inbal Valve up to size 100 mm (4") and 1/2" cooper tubing to Inbal Valve size 150 mm (6") and larger.
- * A stilling well must be provided around the float if the liquid surface is subject to turbulent ripples or wind.
- * 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.

If line pressure can fall below that required above equation, control configuration "FL" should be used.

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: PP, PVC.

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.

Float Valve:

Body: Brass ASTM B62

Stem: Stainless Steel 303.

Counter Weight: Brass, commercial grade.

Float: Stainless Steel 304.

Float Rod: Brass, commercial grade.

800 mm (31.5") standard length.

Seals: Buna N or Neoprene.

Bracket: Stainless Steel.

Optional Materials:

Inbal Valves:

Threaded ends: Cast Stainless Steel 303 or 316L.

Flanges and Ribs: 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);

Bronze Aluminium 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);

Bronze Aluminium ASTM B148 (CA955);

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);

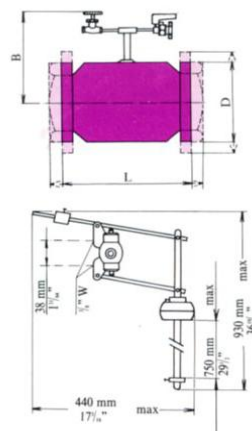
Stainless Steel 303 or 316L.

Float valve:

Body: Stainless Steel 316L;

Al-Mg ASTM C 86300 (DIN 1725-2);

Float: Stainless Steel 316L.



When ordering please specify:

- 1) Inbal Control Valve Model No.
- 2) Inbal Valve Size.
- 3) Static Inlet Pressure (when Inbal is closed)
- 4) Dynamic Pressures (min; max)
- 5) Flow Rates (min; max)
- 6) Height of Float Valve above Inbal Valve center line.
- 7) 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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