

Flush Bottom Valve

Efficient, Reliable Investment for Trouble Free Operation



Micro Pneumatics Private Limited
A member of **KITZ** Group

Reliability • Efficiency • Quality

Company Profile

"MICRO PNEUMATICS PRIVATE LIMITED" founded in 1986 with a clear vision of excellent **quality, reliability, and customer satisfaction**.

MICRO, having a certified Quality Management System as per **ISO 9001:2015** by Bureau Veritas Quality International with UKAS accreditation and Quality Management System implemented as per **API Spec Q1**. "MICRO" Valves are successfully tested accordance with **API – 6FA (Fire Test)** by DET NORSKE VERITAS AS (E), Flow by Fluid Control Research Institute Palakkad, **1 Million Cycle Test** by Projects & Development India Ltd. (PDIL) and have **CE** marking for Ball Valves, Butterfly Valves & Actuators. **SIL – 3** Certification for Ball Valves & Actuators and **IBR Certification** for Ball Valves & Butterfly Valves.

"MICRO PNEUMATICS" Flush Bottom Ball Valves are SIL-3 Certified by EXIDA and Fire tested as per API607 by TUV Rheinland.

Micro Pneumatics Pvt. Ltd is a Member of KITZ Group Japan, which is the 3rd largest manufacturer of Valves & Valves Automation in the world. As of worldwide, the KITZ group has 36 consolidated subsidiaries.

Micro has already been involved in manufacturing quality standard and customized valves and valve automation system as per customer's requirements and we assure to continue with same products with further improved quality and better delivery scheduled for customer's satisfaction.

Our full fledged manufacturing unit at Vasai (W) incorporates various independent departments such as Design, Cost & Estimation, Quality Assurance / Inspection, Purchase / Stores, Production / Planning, Assembly / Service and Despatch.

"Micro" Products are performing to the utmost satisfaction of our customers from various Industries such as Petro – Chemicals, Power, Fertilizer, Pharmaceuticals, Food, Fiber and other Industries resulting in the manufacturing of customized valves.

Micro Pneumatics Pvt. Ltd. is a one-stop solution for Valve and Valve Automation System under one roof branded as "MICRO".

All our valued customers are assured of Micro's Quality.



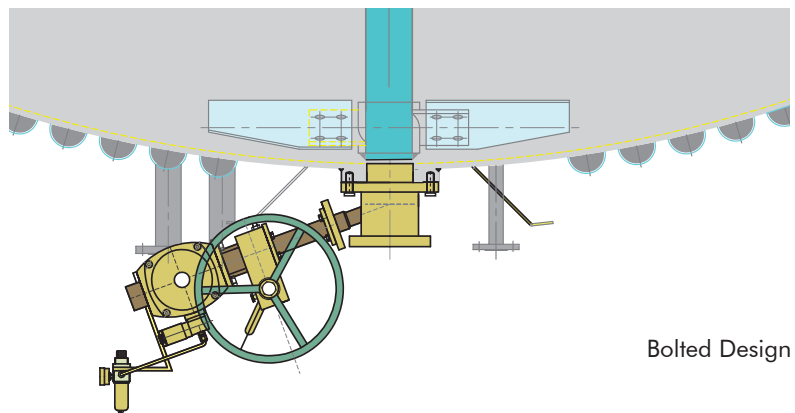
Flush Bottom Valve

Introduction

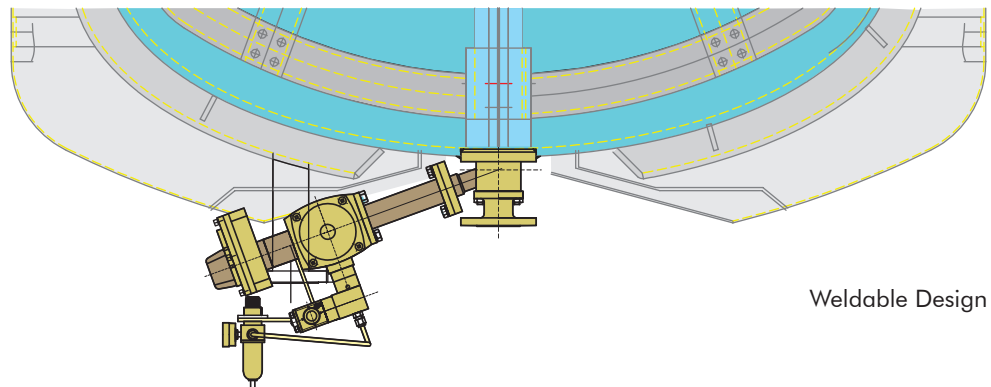
Tank Flushing is becoming real critical in pharmaceutical, biotechnological, micro-bio-technological process industry and sanitary application especially in batch processing reactors, tanking and API industry. For optimum flushing of Tank Bottom, MICRO has designed a state-of-the-art application friendly Flush Bottom Segmented Ball Valve for 100 % flushing and convenient fitment to Tank Bottom, resolving all tank bottom issues and hurdles.

System

The standard Flush Bottom Valves consists of one higher size flange for Tank Bottom Mounting in case of flanged designed and size to size in case of welded design Flush Bottom Valves with Quarter turn Pneumatic Rotary Actuator and accessories optionally selected as Solenoid Valve. Position Indicator for on-off, with 3-position system for coarse and fine filling and system hook-up with E/P positioner for controlled process flushing



Bolted Design



Weldable Design

Mounting

The FlushBottom Valve with system is to be bolted / welded to the tank with ball opening into the tank and the outlet with screwed end / triclover end / flanged / tongue and groove flange-end fitted to outlet pipe for a vertical straight through clear flowing drain.

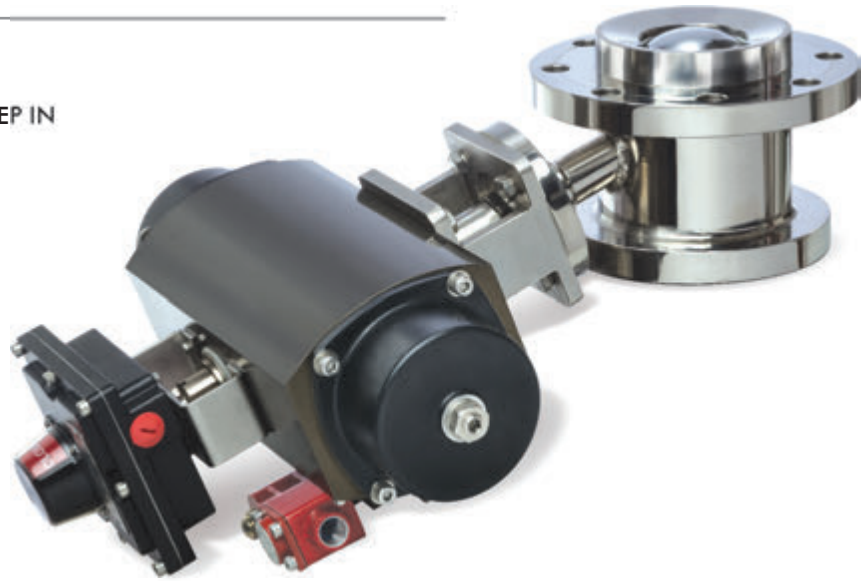
The welded design is ideal and is recommended for Hydrogenators. Designed to fit all tanks namely dished, flat, conical, spherical, jacketed and insulated, ellipsoidal, torispherical, etc

Product Range

M1FBV

1 PIECE CAVITY FILLED FLANGE END STEP IN

Mounting Interface	ISO 5211
MOC of the Body	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)
Trim	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)
Seat / Cavity Filler	PTFE, RPTFE, CFT, Metal (Special on request)
Size	1½" X 1" To 6" X 4"
Rating	150#, 300#



M1FBVJKT

1 PIECE CAVITY FILLED STEP IN JACKED

Mounting Interface	MOC of the Body	Trim	Seat / Cavity Filler	Size	Rating
ISO 5211	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)	PTFE, RPTFE, CFT, Metal (Special on request)	1½" X 1" To 6" X 4"	150# 300#

M1FBV (RTD)

1PIECE CAVITY FILLED FLAT FACE WITH RTD PROVISION

Mounting Interface	MOC of the Body	Trim	Seat / Cavity Filler	Size	Rating
ISO 5211	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)	PTFE, RPTFE, CFT, Metal (Special on request)	1½" X 1" To 6" X 4"	150# 300#



M3FBV

3 PIECE CAVITY FILLED WELDABLE FLANGE END

Mounting Interface	MOC of the Body	Trim	Seat / Cavity Filler	Size	Rating
ISO 5211	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)	PTFE, RPTFE, CFT, Metal (Special on request)	1 To 4"	150#



M2FBV

2 PIECE CAVITY FILLED NAUTA

Mounting Interface	MOC of the Body	Trim	Seat / Cavity Filler	Size	Rating
ISO 5211	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)	PTFE, RPTFE, CFT, Metal (Special on request)	8" X 6" To 14" X 12"	150#

M2FBV (Same Size)

2 PIECE CAVITY FILLED DIRECT REPLACEMENT

Mounting Interface	MOC of the Body	Trim	Seat / Cavity Filler	Size	Rating
ISO 5211	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)	PTFE, RPTFE, CFT, Metal (Special on request)	1 To 4"	150#



M3FBVTC

3 PIECE CAVITY FILLED FLANGE END

Mounting Interface	MOC of the Body	Trim	Seat / Cavity Filler	Size	Rating
ISO 5211	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)	PTFE, RPTFE, CFT, Metal (Special on request)	1 1/2" X 1" To 6" X 4"	150#

M1FBV (Seated)

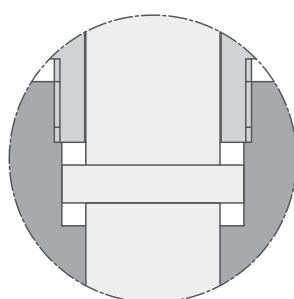
1 PIECE NON-CAVITY FILLED TANK BOTTOM VALVE

Mounting Interface	ISO 5211
MOC of the Body	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)
Trim	CF8, CF8M, CF3, CF3M, Hastalloy (Special on request)
Seat	PTFE, RPTFE, CFT, Metal (Special on request)
Size	1 1/2" X 1" To 6" X 4"
Rating	150#, 300#

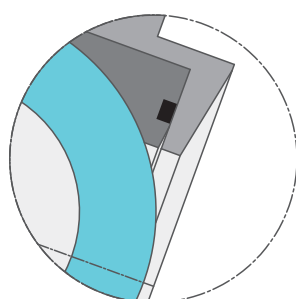


Features

- The valve is compact Ball type designed to open directly in the tank for 100% flushing to the inner surface of tank, reactor. Hence avoiding un-mixed cold zone stagnate pocket which is carefully profiled to fit tank bottom
- Cavity filled with PTFE or application suitable cavity filler to prevents fluid entrapment leading to contamination, hazards and production damage.
- Quarter-Turn operation Flush Bottom Valve has zero gland infiltration ensuring zero gland retention and zero gland restriction flushing and low energy quick response flushing.
- Valve - Actuator Mounting pad interface is designed to ISO 5211.
- Flush Bottom Tank Valve is an efficient, dependable perfect investment for trouble free fit and forget flushing performance.
- Optionally, segmented full bore valves, fully jacketed / non-jacketed gives user the benefit to suit process application.
- Full-Port size segmented ball and cavity filled type flush bottom valve eradicates all internal pockets and puddling of condensate or biological fluid in the ball or the valve internal hence leaving no room for bacteria formation, growth and contamination.



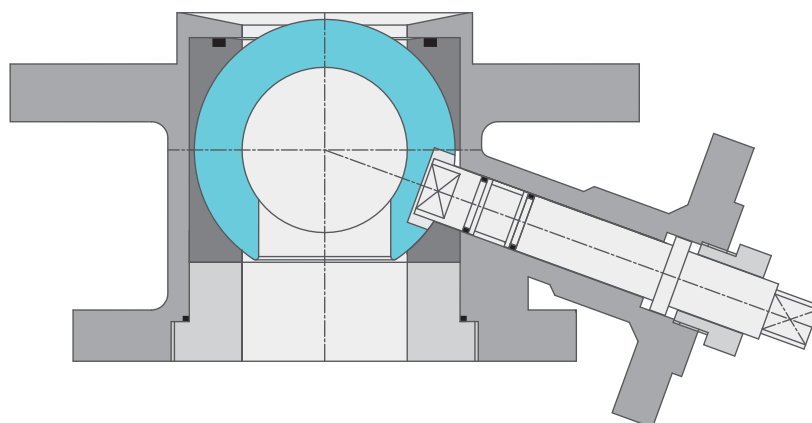
Gland



Cavity Filler-Body Seal

Advantage

- The MPPL Flush Bottom Valves by virtue are ultimate in sealing compared to any other type of flush bottom valves for vacuum holding tanks and process.
- The MPPL Flush Bottom Valve supports in providing zero cavity internals enhancing the sealing to the tune of vacuum, ensured for life of the Flush Bottom Valve, as internals are not allowed to be damaged since there is no space for entrapment which normally causes damage to the ball and the seat. These Flush Bottom Valves are ideal for Hydrogenators.
- TIGHT SHUT-OFF AND VACCUM ENSURED.
- The MPPL Flush Bottom Valve gland is isolated from the flow by the valve cavity filler i.e. GLAND SANITATION AND GMP4 VALIDATION ENSURED.
- The MPPL Flush Bottom Valve supports and ensure clean internals by virtue of its segmented ball and zero cavity arrangement, achieving zero hold up (zero retention) in the cavity and internal of the valve body.
- MPPL Flush Bottom Valves incorporates segmented ball, which ensure zero hold up when valve shuts, the material totally flushed into the drain / discharge holding no material in the I/D of the Ball.
- MPPL Flush Bottom Valve close into the tank bottom disc end leaving no space nor material un-churned during agitation which qualifies the validation of GMP4.
- With MPPL Flush Bottom Valve the agitator can be located just clear off the disc ends which ensure 100% thorough close to the disc-end for thorough mixture.
- With MPPL Flush Bottom Valve the agitation time is reduced since the agitator is not away from the disc-end taking less time than other type of flush bottom valves which need clearance in the disc-end area. Hence the reaction mass in the bottom will not be mixed to that level as in the middle of the reactor.
- Online Sanitation - The MPPL Flush Bottom Valve can be operated couple of times on-line during CIP, SIP and WIP, hence does not need dismantling of the valve from the reactor losing valuable production time.



Replacement of Spares

For replacement of valve spares the retainer / adapter needs to be removed from the valve body. Then remove gland assembly and rotate stem for a couple of times to free the Ball from the seat and cavity filler and pull the stem out. This will freely release the Ball and cavity filler for replacing the same in case required for validation. De-grease and clean the valve internals before fitting new set of spares. Assemble the valve for perfect fit and desired performance.

Flushing

- The MPPL Flush Bottom Valve is a non-restricted segmented / full bore ball type valve, trim moving offline of the flow which ensures 100% flushing or discharge of reaction mass material from the reactor.
- The reacted mass in the reactor is generally a paste, slurry or highly viscous media which will discharge with ease much faster in a full bore ball valve compared to the other conventionally used flush bottom valves restricting the reaction mass material flow, taking longer time and wasting valuable production time.
- The MPPL state-of-the-art segment ball Flush Bottom Valve achieves 100% flushing without holding back any material during discharge thereby allowing no room for any bacterial formation and growth, calling for USFDA disqualification.
- 100% FLUSHING ENSURED.

End Connection

- The MPPL Flush Bottom Valve has a flexibility of end connections to suit applications.
- The end connection could be flanged, welded or tongue and groove fitment to the bottom pad or disc-end and flanged, SMS, triclover. threaded or tongue and groove fitted to the drain.
- Based on the end connections the MPPL Flush Bottom Valve is designed in single piece. two piece and three piece construction to suit tank design.
- The MPPL Flush Bottom Valve has a jacking feature with inbuilt set of tapping on the valve pad flange to free jammed / stuck valve to tank bottom by threaded bolts to release the valve i.e EFFORTLESS TROUBLE FREE VALVE RELEASE IS ENSURED in case needed to be dismantled from the tank.
- The pad flanges are provided with the flanged valve for welding to the reactor bottom i.e BOTTOM PERFECT DIMENSIONAL FITMENT ENSURED.
- The welded three piece valve pad becomes the bottom pad of the reactor. An additional pad not required.



Grounds, Disc-end, Jacket and Insulation Clearance

- The MPPL Flush Bottom Valve has an advantage with minimum ground clearance due to its compact constructional body design.
- The MPPL Flush Bottom Valve featured with an inclined bonnet (optionally straight bonnet with extension for spherical or conical bottom reactors can also be provided) which allow the automation or manual operator to be free or clear from fouling with the disc-end with the jacket, insulation or cladding on the reactor intact without disturbing, interfering or damaging the jacket. Insulation or cladding in cryogenic reactors, not losing precious heating, cooling or chilling temperatures required for reaction i.e (ENERGY CONSERVATION ENSURED). This proves economic operational gain for the company Hence cold zone areas on the jacket are eliminated.

Temperature Sensing

- The high end operational measurement and temperature sensing of the reaction is possible with MPPL Flush Bottom Valve.
- The RTD provision is on the pad flange of the MPPL Flush Bottom Valve.
- The RTD is non-interfering with the agitator and is external which is non-wetted and locating the RTD is a tedious placement task, with the possibility of fouling with the agitator damaging the RTD.
- The RTD is safe and away from the exothermic reaction damage which calls for exotic RTD material i.e LOW VALUE LONG LIFE RTD ENSURED.

Long Life

- The MPPL Flush Bottom Valve does not allow any material to get entrapped in the valve cavity nor in the ID of the ball thereby there is no wear on the ball nor on the cavity filler or seat i.e. CAPITAL EQUIPMENT LIFE OF THE VALVE ENSURED.
- The MPPL Flush Bottom Valve as it does not allow any wear on the trims becomes a fit and forget solution. Thereby all tank bottom problems are resolved.

Flush Bottom Valve

- In view of all above advantages the MPPL Flush Bottom Valve qualifies and certifies and is validated meeting complete 100% requirements of a Flush Bottom Valves sanitization.
- The MPPL Flush Bottom Valve proves that it is not a tank bottom valve, any valve fitted on the bottom of a tank becomes a tank bottom valves and not a flush bottom valve. Irrespective of its qualification and validation.



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