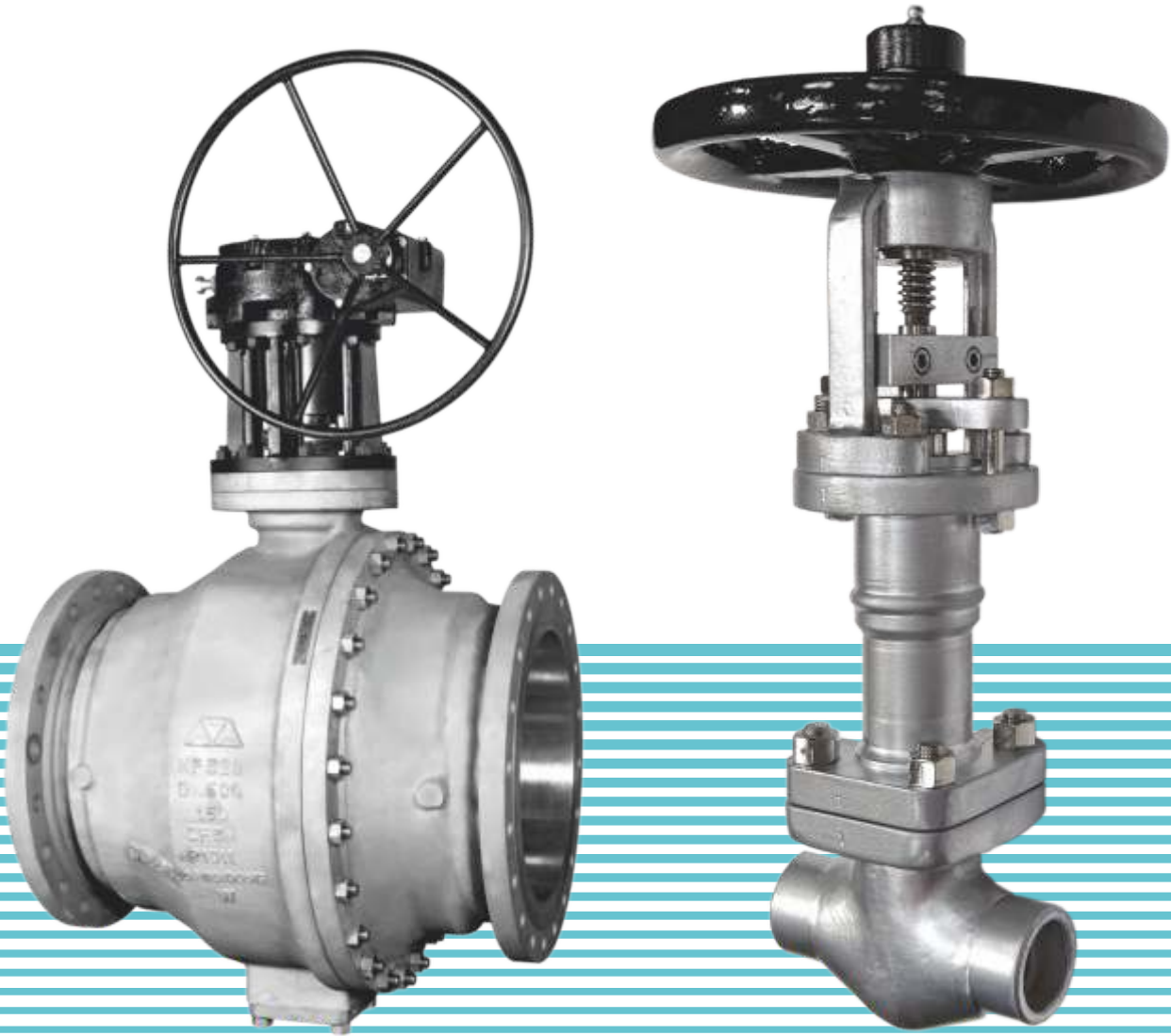




# PROFILE OF MICROFINISH VALVES

FLUID MOTION TECHNOLOGY



6D 0301

0045

SIL 3 IEC 61508

ATEX 94/9/EC



# MICROFINISH



Pumps • Valves • Automation



## THE MICROFINISH WAY

Microfinish group is a privately owned and managed organization specializing in industrial valves, pumps and automation for energy, process, and natural resource industries. The guiding principles of Microfinish are:

- Personal commitment to our customers
- Top quality in everything we do
- Best available technology for all our products and services

## INTRODUCTION

Microfinish group was established in 1971 to manufacture ball valves, bellows sealed globe valves, globe valves for chlorine service, gate globe check valves, and knife edge gate valves. Other valves and pumps were added to the product range in later years. For the last 52 years we have designed, developed, and supplied our products to:

- Oil and gas facilities, hydrocarbon processing, refineries, and petrochemical plants
- Fossil fuel, nuclear, and combined cycle power plants
- Fertilizer, chemical, and pharmaceutical industries
- Food and beverage plants
- Mining, minerals processing, and steel sectors
- Pulp and paper mills

We are recognized as a quality manufacturer of reliable valves for industry. Our wealth of experience has enabled Microfinish to become a prominent supplier of ball valves throughout the world, and of chemical process pumps in India.

Industrial technology is progressing at a remarkable rate, so we have established a research and development department equipped with modern test facilities.

Our new state of art manufacturing facility is located in Itigatti village 10 kms from Hubballi City on the national highway NH 4 between Mumbai and Bengaluru. The industrial area in Hubballi is one of the biggest, and fastest developing manufacturing zones in the state of Karnataka. The city of Hubballi is well served by air, rail, and road connections.

## PRODUCTS

We manufacture the following products in various materials including carbon steel, stainless steel, duplex, and high nickel alloys:

- Ball valves in floating and trunnion mounted designs, with cast and forged construction, including three way and jacketed configurations, and special versions for cryogenic and high temperature services
- Bellows sealed globe valves
- Globe valves for chlorine service
- Knife edge gate valves
- Cast and Forged gate, globe and check valves
- Chemical process pumps in standard and speciality configurations
- Sanitary and slurry pumps

Microfinish is committed to total quality. Stringent and efficient quality assurance and control systems have been implemented in accordance with ISO 9001.

In 1994 our organization was the first in India to receive the prestigious ISO 9001 certificate from RWTÜV in Germany. Microfinish ball valves complies to : API 6D certification since 1999, PED certification since 2002; SIL 3 certification since 2009; ISO 14001 & 45001 since 2017, ATEX since 2010, ISO 15848-1 in 2013, and API 641 since 2020.

In 1988 the International Labour Organization in Geneva gave Microfinish an award for good working conditions and environment as a result of the hard work of every employee and the commitment of management.

## VALVE AUTOMATION

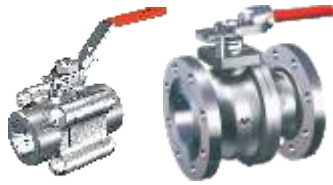
Microfinish has expertise in valve automation technology and can offer complete systems. Our wide range of actuators, controls and accessories enables Microfinish to be a single source for integrated automated valve systems. Microfinish valves are available in a variety of automation packages that include:

- Pneumatic, electric, hydraulic, and electro hydraulic actuated valves and systems
- Gas, and gas over oil automation systems
- On-off remotely operated valves with automation systems
- Emergency shutdown (ESD) valves with automation systems
- Vertical actuators for special applications
- Flame proof enclosures for actuators and accessories

# MAIN PRODUCTS



## FLOATING BALL VALVES



Nominal Diameter(mm)	Pressure Class	Ends Configurations
15 to 50	600, 800, 900 1500, 2500	SE, SWE, WE
65 to 150	300	SE, SWE, WE
15 to 250	150, 300	FE, WE
15 to 100	600	FE, WE
15 to 80	900	FE, WE
15 to 50	1500	FE, WE
15 to 25	2500	FE, WE

## TRUNNION MOUNTED BALL VALVES



Nominal Diameter(mm)	Pressure Class	Ends Configurations
50 to 1200	150, 300, 600	FE, WE
25 to 1050	900, 1500	FE, WE
25 to 400	2500	FE, WE

## BELLOWS SEALED GLOBE VALVES



Nominal Diameter(mm)	Pressure Class	Ends Configurations
15 to 300	600, 800, 900, 1500, 2500	SE, SWE, WE
15 to 300	150, 300	FE, WE

## GLOBE VALVES FOR CHLORINE SERVICE



Nominal Diameter(mm)	Pressure Class	Ends Configurations
15 to 300	300	FE, WE

## KNIFE EDGE GATE VALVES



Nominal Diameter(mm)	Pressure Class	Ends Configurations
50 to 750	125, 150	Wafer
	125, 150	Wafer flange

\* SE: Screwed ends \* SWE: Socket weld ends \* WE: Welding ends \* FE: Flanged ends

**BALL VALVE RANGE ALSO INCLUDES:** Cryogenic, jacketed, three way, metal seated, and high temperature versions. Valves can be supplied with gear, pneumatic, gas over oil, or electric actuators.

**MATERIAL OF CONSTRUCTION:** Castings from ISO 9001 certified foundries in WCB, LCB, CF8, CF8M, CN7M, duplex, nickel and titanium alloys. Forgings in A105, LF2, F316, duplex, nickel and titanium alloys.

**OTHER IN-HOUSE CAPABILITIES:** Stellite overlay by TIG. Welding facility includes SMAW for pup and fully welded valve. Grinding and lapping of balls and seats.



MANUFACTURING PLANT

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TOTAL SURFACE AREA : 100000 square meters  
OFFICE AREA : 1000 square meters  
PLANT AREA : 15000 square meters  
PLANT CAPACITY : 120000 valves per year

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MACHINE SHOP



TESTING FACILITY



BALL GRINDING MACHINE

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## PRINCIPAL MACHINES

- 11 CNC LATHES
  - 7 CNC MACHINING CENTERS
  - 01 BORING MACHINE
  - 20 CENTER LATHE
  - 06 MILLING MACHINES
  - 06 DRILLING MACHINES
  - 01 CNC GRINDING MACHINE
-



CAD CENTER



FIRE SAFE TEST FACILITY



HIGH TEMPERATURE TEST FACILITY



CALIBRATION ROOM



HELIUM LEAK DETECTOR

- Our Research and Development Center has designed and developed a complete range of floating and trunnion mounted ball valves
- Our well qualified and experienced engineers are specially trained in valve design
- Product designs are validated using ANSYS Software
- Design facilities include drafting, 3-D modeling, finite element analysis, and simulated pressure-temperature stress analysis
- Our well stocked technical library includes all relevant international standards

Dedicated engineers implement Microfinish's quality and quality control policies. The QA department is equipped with all required facilities including :

- CALIBRATION ROOM
- RADIOGRAPHY
- DYE PENETRANT TEST SET
- ULTRASONIC TESTING
- HARDNESS TESTER
- HYDRAULIC, PNEUMATIC, AND HIGH PRESSURE GAS TESTING
- TORQUE WRENCHES
- VACUUM TESTING EQUIPMENT
- HELIUM TESTING
- FUGITIVE EMISSION TESTING
- CRYOGENIC TESTING
- CLEAN ROOM FOR OXYGEN SERVICE

Tests for POSITIVE MATERIAL IDENTIFICATION, CHEMICAL COMPOSITION and other MECHANICAL PROPERTIES are outsourced.

## QUALITY ASSURANCE ACTIVITIES

- DOCUMENTED QUALITY SYSTEMS
- APPROVAL AND MONITORING OF SUPPLIERS
- CORRECTIVE AND PREVENTIVE ACTIONS
- STAGewise DESIGN REVIEW AND VERIFICATIONS
- QUALIFICATION AND VALIDATION
- CALIBRATION AND EQUIPMENT CONTROL
- MAINTENANCE AND CAPABILITY STUDIES

## QUALITY CONTROL ACTIVITIES

- ▶ Raw material, semi finished, and bought out component inspection
- ▶ In process inspection of components
- ▶ Final product inspection and performance testing

## PRODUCT PERFORMANCE TESTING

- A. Routine product testing
  - ▶ Hydrostatic shell test
  - ▶ Hydrostatic seat test
  - ▶ Pneumatic seat test
  - ▶ Operating and torque test
- B. Destructive testing
  - ▶ Fire safe testing
  - ▶ Seat life testing
  - ▶ High temperature testing

## PRODUCT VALIDATION AND PROTOTYPE TEST FACILITIES

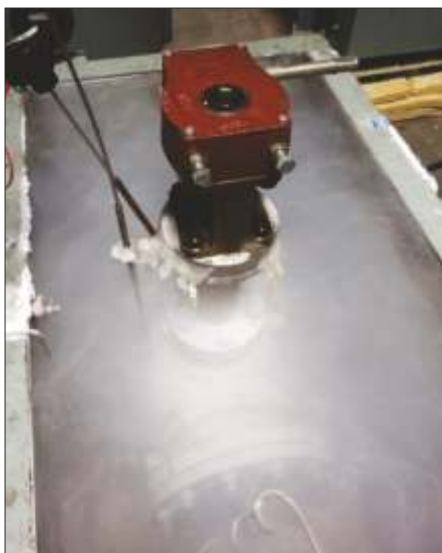
- ▶ FIRE SAFE TEST: All soft seated valves are prototype tested to comply with the requirement of API-607 or API-6FA standard
- ▶ HIGH TEMPERATURE TEST: Valves used for high temperature services are prototype tested using a steam generator up to 15 bar pressure from 200°C to 400°C
- ▶ LOW TEMPERATURE CRYOGENIC TEST: Valves used in cryogenic services are prototype tested at -50°C to -196°C as per ISO 28921.
- ▶ CYCLE TEST: Prototype valves are cycle tested for seat and seal lives
- ▶ TORQUE TEST: Valve torque valves are verified with torque wrenches for compliance with specifications
- ▶ FUGITIVE EMISSION TEST: Leakage between joints and stem seals is measured for compliance with specifications
- ▶ NOISE AND VIBRATION TEST



ULTRASONIC TESTING



RADIOGRAPHIC EXAMINATION



CRYOGENIC TESTING



## SOUR SERVICE

A wide range of materials is available depending on service conditions. These Valves meets the material requirement of NACE MR 0175 or MR 0103 when specified and will have controlled hardness with B7M or B8M fasteners. Xylon coated fasteners are available on request. Carbon Steel comply to HIC and SSCC specification are also available.

## CHLORINE SERVICE

All valves are manufactured to meet the Chlorine Institute Pamphlet-6 and also comply with Euro Chlor standard. Valves are supplied having low emission packing.

The body cavity is positively released to the upstream side through a drilled hole in the ball. Chlorine valves are unidirectional so must be installed as indicated by the arrow on the body. Valves are thoroughly cleaned to chlorine practice and are packed in individual polyethylene bags.

Standard Microfinish valves are suitable for use in vacuum service down to 20 microns. Standard low emission packings are used down to  $1 \times 10^{-2}$  Torr. for high vacuum service special low emission packings are used and all these valves will be tested and certified.

## OXYGEN SERVICE

Flow Passages of these valves are either machined or ground to remove all high spots. Valves are supplied having low emission packing. Valves for oxygen service are unidirectional so must be installed as indicated by the arrow on the body. Valves are Ultrasonically cleaned to oxygen practice, assembled, tested in clean room. They are packed in individual polyethylene bags.

## AMMONIA SERVICE

Ammonia is toxic and flammable. Both carbon steel and stainless steel materials are suitable. Valves are supplied having low emission packing. Valves for ammonia service are cleaned for safe operation and packed in individual polyethylene bags.

## VALVE OPERATORS

Ball valves can be fitted with one of the following operators

- Standard lever for sizes 15mm to 50mm
- Oval handle for sizes 15mm to 50mm
- Lever adapter with pipe for sizes 50mm to 150mm
- Spring return lever (dead man lever) for sizes 15mm to 50mm
- Manual gear operator
- Varieties of pneumatic actuator
- Varieties of electric actuators
- Accessories for pneumatic and electric actuators



ULTRASONIC CLEANING EQUIPMENT



CLEAN ROOM

**Manufacturing plant in Hubballi**  
**10 marketing branch offices in India and Dealers in Overseas**



**THE AMERICAS**

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