

Microfinish Valves: excellence in engineering

With an emphasis on innovation and quality, Microfinish Valves Pvt. Ltd has become an established player in the flow control industry. Over the years they have earned many coveted industry certifications and high-profile contracts, and their focus on research and development is reflected in a varied product line that features ball valves, bellows sealed globe valves, Chlorine globe valves, pneumatic actuators, and a vast array of automated units. Recent milestones include the consolidation of their domestic production in a one-of-a-kind facility at Itigatti and the opening of overseas subsidiary in the United States. In the coming years, Microfinish leadership is looking to expand their catalog of specialized valves and valves for the energy sector, all while preserving their perfected process of quality, on-time product delivery and dedication to the customer.

By Daniel Sweet



Inside the Itigatti one-line facility, where Microfinish valves make their way through carefully laid out

Established in 1971, Microfinish Valves Pvt. Ltd is known globally as a leading manufacturer of valves in India. Their market range is impressive, with participation in oil & gas, fossil fuel, nuclear, and power plants; fertilizers, chemicals, and pharmaceuticals; food, beverage, and bio fuels; mining, minerals processing, and steel; pulp and paper mills; and finally, in water and wastewater. In a recent interview, Microfinish co-founder and CEO Mr. Tilak Vikamshi explained how Microfinish came to enjoy a reputation for excellence in flow control across so many industries. “Customers from every sector recognize our name: for them, Microfinish and its employees are seen as valve specialists. With our 45 years of experience in design and production, customers time and again have come to us with their individual specifications, and they have relied on us to deliver the high-quality valves they need.

We have never let them down.” Mr. Vikamshi went on to explain how Microfinish aimed for quality from the beginning, and he shared some of his own business philosophy that has developed over the years.

Certified success

From day one, Microfinish leadership understood that quality counts. Mr. Vikamshi said, when the company was founded, “Microfinish targeted the growing chemical industry in India by providing quality stainless steel valves that could withstand highly corrosive fluids better than the competition’s offerings. As the chemical market waned, the oil & gas market, which had already experienced growth in the US and Europe, began to expand into India. So we pivoted and began to sell to oil & gas users. As part of this strategy, we went after API certification very early. Our focus

paid off when we were able to break into the emerging Indian oil & gas networks, such as the Jamnagar-Loni Pipeline Project (JLPP). We received a large order from the gas authority of India, and we established ourselves as a certified leader in the industry.”

The early API certification was the first of many. Microfinish is one of the original Indian companies to receive the ISO 9001 certificate. In 2002, Microfinish ball valves were certified to PED 97/23/EC (currently PED 2014/68/EU), a stamp of approval that comes with a CE quality mark for all products and that allows Microfinish to sell ball valves in the EU market. The next certification came in 2009, when the company’s ball valves were certified for use in a SIL 3 loop as per IEC 61508-2.

The strategic focus on certifications continues today. In fact, “to my knowledge,” said Mr. Vikamshi, “we are the only Indian valve manufacturer approved

by the Department of Atomic Energy in India. We recently received one of the largest orders in the company’s history for nuclear valves, and this speaks volumes about our design team and quality production line, simply because of the critical nature of valves in the nuclear industry. Our nuclear valves are subjected to 560 degrees centigrade and 12 kg/cm² pressure, and on top of that, some of them are automated. Its very difficult to fulfill these kinds of orders because of the frequent inspections and other high-level requirements and regulations, but nonetheless we fulfilled the order and the customer was very satisfied with our work.”

Innovation

While market certifications and high-quality output would go on to remain a principle of the Microfinish corporate strategy, Mr. Vikamshi mentioned that certifications alone do not lead

to success. “I like to emphasize for our customers that when they are dealing with Microfinish, they are dealing directly with the manufacturer. It is one thing to sell certified valves—but we are also making them. We are not intermediaries who trade the valves of one company to another. Instead, we design, test, and manufacture each product in-house—this guarantees quality, and it also gives us the freedom to improve valve design through research and development, giving our customers first access to cutting edge technology.”

“For example,” Mr. Vikamshi continued, “our R&D team pays special attention to minimizing fugitive emissions in valve stem dynamic seals. When we introduced an advanced ‘cup-and-cone’ stem seal arrangement, customers understood the benefit of dealing with Microfinish.” The cup-and-cone system—one of the hallmarks of the Microfinish catalog—was certified to TA-Luft in 2010. This was followed by a successful test with the ISO 15848-1 testing protocol in 2014. A test for API 641 certification is upcoming.

US expansion

Always seeking new opportunities for on-the-ground expansion, Microfinish targeted the US market in 2010. “We felt that it would be appropriate to search outside of India for other sources of revenue. The process led us to the conclusion that we should open a US office. Out of this, Microfinish Valves, Inc, a wholly owned subsidiary based out of Houston, Texas, was formed. Using the business contacts I had



An employee uses a FARO measuring device, one of many tools used to ensure valve quality.



An aerial overview of the Itigatti facility.



stages of production.

established over my time in India, I began making inquiries. First we were able to open a testing facility, where we could expose our valves to high temperatures and other adverse conditions, along with a warehouse. Then in 2017, we shifted again and opened a new building in Houston—this site is 26,500 sq. feet and has an even larger warehouse.”

Reflecting on his experience in the United States, Mr. Vikamshi noted that at first, “I traveled between Houston and India to help the new office grow. But even now, when I do not have to travel as much thanks to the leadership in Houston, I try to go at minimum four times a year—

once a quarter. That’s because I’ve learned something important in business: the owner should always show their commitment to the customer in person—it really makes a difference. I go every quarter because I always want to meet my customers, and of course to check in with my Houston employees. An employer should always foster personal relationships, with clients and with employees. It’s one of my keys to success.”

Consolidation

After the expansion of their operation into the US, Microfinish refocused their strategy on India. “We had about 6 different locations,

all within a half kilometer or so of each other, but not connected in one facility. This is because we started as a smaller operation, and at first we did not have a goal to build one large facility—we were concentrated on breaking into the market. When we were ready, we decided it was time to consolidate everything under one roof. This would be better for ourselves and for the customer. We could work on design and testing and manufacturing in one location, and we would have total control over the planning of a new location. Thanks to smart planning, we now have a one-line facility that employs the latest in plant efficiency.”

One-line design

The Microfinish facility in Itigatti, near Hubballi, is one of a kind. Mr. Vikamshi describes it as “a one-line facility, or a manufacturing plant in which the entire life-cycle of valve production takes place in one space. The raw materials arrive at one end of the facility and the final product is shipped out the other. There are a dedicated number of bays, depending on product specifications, for each one of our valves to make its way across the floor, but no matter what valve is being produced, it moves straight down the line of our facility. In this way, we are unique. When people come to visit our plant, customers from France, Italy—all of Europe—and America, they all say they have never seen this kind of facility in valve manufacturing anywhere else in the world.”

“Of course, a lot of planning was required to make the facility as functional as it is. We are producing 110,000-115,000 valves a year, with a full capacity of 130,000, and that kind of output is difficult to achieve in just one location. We tried to follow the Toyota principle, which is all about efficiency. To achieve this, we had a core team working for nearly one and half months just to figure out the layout of the

was only the beginning, because after the layout planning phases, we of course had to build the plant!”

“When the plant was completed—in a record time of around 9 months—productivity rose quite dramatically. The reduction of movement during production was quite well done, and now we can take one piece from one machine with minimum effort. The raw materials work their way through one side of the plant to the other, and step by step, they come out of the finishing stations as production-ready valves.”

Final plans

Though the facility in India has been steadily producing for some time now, Microfinish is still in the final stages of finishing their consolidation. As Mr. Vikamshi said, “right now, the corporate office is still located in the city, away from the plant. We want to move the office by 2020 to the Itigatti facility, which has available space we specifically set aside for this purpose. I should say that by corporate offices, I mean the accounting and finance divisions of Microfinish; every other department, from design to production to sales, is located in the facility. Once the



Workers operate an ultrasonic cleaning system.

plant. They had to ensure we had enough space at every station in the plant so that parts and materials could be moved between stations. They had to determine the location for every machine, walkway, and transit lane within the factory. They had to make sure there was room for testing, painting, and moving the components in and out of each station. Then they went around to make sure the trucks would have enough space to move through the facility. It was difficult work, and it

entire team is located in the facility, it will truly be a one-stop shop.”

“After that,” he continued, “we plan to focus on specialty valves for highly critical and unique applications. Our experience in nuclear here will play into this strategy, and we are confident in our abilities. If our history has taught me anything, its that experience and dedication, along with hard work and the right business plan, always lead to success.”



LNG valves await shipment.

A string of firsts

Microfinish embodies the core values of the men who founded it: innovative thinking, energy, a capacity for hard work, and a spirit of enterprise. The result? A long list of technical achievements in Indian valve production. Microfinish was the first to develop:

- ▶ Top entry ball valves with the assistance of Bhaba Atomic Research Centre (BARC)
- ▶ Digester blow valve for pulp mill application
- ▶ Chlorine globe valve to reduce leakage through gland packing
- ▶ Forged bellows sealed globe valves in exotic materials for nuclear applications with the encouragement of Bharatiya Nabhikiya Vidyut Nigam Ltd. (BHAVINI)
- ▶ Single and two-piece ball valve designs
- ▶ Fire-safe ball valves for oil & gas services
- ▶ Metal to metal seated ball valves for high temperature applications
- ▶ Pipeline ball valve for oil & gas transportation.