



Bainite Machines Private Limited

# High-tech solution provider to tyre industry

**With two dynamic technocrats at the helm, a world-class technology developed in-house and a dedicated team of workforce at all levels who constantly strive for excellence, this Indian rubber processing machinery major, based in Mumbai, has emerged today as a high-tech solution provider to the global tyre, rubber and plastics industries**

**T**he story of Bainite is an inspiring success saga of a rubber processing machinery enterprise based in Mumbai, the commercial capital of India, which, from a humble beginning in 1983, made big strides over the years to emerge as one of the top machinery manufacturing companies in Asia.

Started off initially as a producer of critical spares for the main tyre manufacturing machines, Bainite Machines Private Limited, slowly progressed to the production and supply of sub-assemblies and later to making full-fledged machines, all within a span of five to seven years since its inception. The company today is renowned for its innovative designs, dedication to quality and excellence, consistent supply and excellent after-sales services.

## Main pillars

The credit for Bainite's enviable growth goes primarily to the two main pillars of the company – D.N. Suvarna, the Managing Director and

Firoze J. Sidhwa, the Technical Director.

Himself a qualified and experienced Metallurgist, Suvarna is well-versed in the development of new machines and the maintenance and wear protection of machinery components. A Mechanical Engineer of repute with an impressive career graph, Sidhwa has decades-long association with the Indian rubber industry.

It was their excellent technical acumen and know-how in project management coupled with high degree of dedication and grit as well as sincerity, honesty and commitment to take up ambitious roles that helped the company become what it is today.

With cutting-edge technology developed indigenously, which can be rated on a par with the best in the world, an illustrious duo of industry experts at the helm and a dedicated team of workers, staff and executives at all levels who constantly strive for quality and excellence, the Indian machinery major has today emerged as a trusted industry leader and one of the most

The main pillars of Bainite:  
D.N. Suvarna, Managing Director (sitting) and  
Feroze J. Sidhwa, Technical Director

sought-after solution providers for the tyre, rubber and plastics industries – domestic as well as overseas.

### High-tech departments

The state-of-the-art Engineering Design Department, with all the latest design programming tools and softwares and manned by highly qualified Design Engineers, basically forms the backbone of the company. Emphasis is also given on Systems and Planning, recognising the importance of the Planning Department which acts as the nerve centre of the company.

Says D.N. Suvarna, Bainite's most enterprising and resourceful Managing Director: "Bainite produces machinery products employing cutting-edge and highly user-friendly technology with outstanding features which ensures greater returns on the investment of our customers. The machines are also provided with good aesthetic appeal while emphasising on their quality, reliability and durability." "Bainite owes much of its steady and rapid growth to its capacity to produce high-tech machines, mainly for the tyre companies," he adds.

Soon, with the tyre/rubber industry recognising the potential of Bainite, the demand for its machinery products started rising day by day. And, to meet the ever-growing demand,

Bainite started investing diligently and intelligently in higher-end and precision machine tools as well as in increasing the plant area and plant capacity besides in developing highly skilled man-power and supervising staff. Bainite's latest state-of-the-art facility at Rabale, north of Mumbai, is a symbol of its present enviable growth.

### Unique designing

The company designs machines through extensive field data and feedbacks, continuously focussing on innovation and improvement both in material selection and thermo processing with a view to developing improved properties and user-friendly features. Bainite machinery products, built with components having wear-protective overlays, ever keep their dimensional integrity. This ensures their reliability and durability of functioning in production systems and boosts the machine performance.

Explains the Managing Director: "Combining modern technology with decades-long experience and blending mechanical engineering expertise with thorough understanding of customer needs, Bainite offers the industry quality solutions by supplying new machinery/equipment, rebuilding or upgrading old machinery and supplying spares to match

# We seek tie-up for high-performance machinery: Bainite supremo



D.N. Suvarna

A qualified Metallurgical Engineer from India's premier IIT Powai, D.N. Suvarna, the highly accomplished Managing Director of Bainite Machines, is the strong pillar and guiding force of Bainite Machines. A man who worked for 11 years with the R&D division of Larsen & Toubro (L&T), India's celebrated engineering company, he brings to Bainite a lot of working experience much needed by the company. Also a reputed speaker at important international conferences, he has an illustrious track record of over 20 years in the development of new machines, along with solid experience in the field of maintenance and wear protection of machinery components. It is thanks to his vision and entrepreneurial spirit, the company has currently been able to scale new heights and gain global recognition.

In an interview to *Rubber Asia*, he says that Bainite is keen on working together with some major equipment producers in the world so as to produce more cost-competitive and high-performance machinery products. **Excerpts:**

### What are the factors that contributed to Bainite's emergence as a top rubber machinery manufacturer in Asia?

There are many factors that helped Bainite's growth. These include:

- The dedication and devotion, honesty and sincerity of the workers, staff and executives at all levels and the motivation they get from the people at the helm.
- Recognition of the Design Department as the main backbone, which works very closely with industry experts and users and develop machines considering the inputs and valuable feedback from them.
- The emergence of Asia as world's main production and manufacturing centre, which has created a good amount of demand for our machinery products.
- The stress we put on marketing in the early stages itself to understand the customer needs and manufacturing products to suit their needs.

### How advanced is the technology currently employed by the company?

I would rate the technology of Bainite to be on a par with the best in the world, in terms of mechanics, dynamics, process controls and programmes and their features like online monitoring of the process etc. We are proud to say, all these are done entirely in-house without any support of any foreign corporate entity till date.



Bainite building

However, in future, we would like to be associated with one of the leading corporates engaged in this field so that we can jointly work to give industry even better products and services.

**What are the technical measures adopted to maintain the high quality of the products?**

Bainite believes in complete quality assurance and is proud to say that it is an ISO-Certified as well as a CE-Certified company. Apart from that, Bainite employs different programmes and systems through enterprise resource planning and quality management systems, both during the assembly and on completion. All material inputs are chemically and physically tested for soundness.

All processes are recorded for correctness and a complete record from the beginning to the end, including final assembly Inspection Reports, are generated in Vendor's format for quality assurance. A complete flow chart is given to the Quality Assurance Department by the Design which becomes a guiding manual for them and, as a final step, a Pre-Dispatch Inspection Report (PDIR) is generated before dispatch.

**How do you visualise the growth of your company in the next 10 years' time?**

India is a preferred destination for investment by the European and North American Companies due to the availability of highly intelligent and dedicated technological personnel with whom they can easily and comfortably connect and associate.

Apart from that, the Indian legal system is very transparent and plain. With these advantages, India has become a very important country for establishing various production centres. Bainite sees immense prospects for growth in the next few years, as it has established itself as a trusted supplier of modern, world-class equipment for the tyre companies.

**Could you give details of international tie-ups, if any?**

There has been a lot of talk with various international corporates on working together. It is still going on and, hopefully, we will soon be tying up with one corporate or another.

**What is your vision for the future?**

Our vision for the future is to establish a very close working relationship with any of the main equipment producers for tyre companies in the world so that we can work together to make production cost-competitive and improve on the machines and products bringing them to the highest level of performance. Bainite is definitely looking for increasing its machine tool facilities and widening its product as well as customer base.



**Young man with a vision**

Atish Suvama, son of the Managing Director D.N. Suvama, is the Executive Director (Operations) of Bainite Machines Private Limited since July 3, 2007. Educated in the US and highly experienced, Atish is a qualified Systems Professional and is responsible for all the operations of the company which include: Sales & Marketing, Administration, Finance, EDP, Design, Purchase, Quality Control, Production and Manpower. Atish Suvama's vision is making Bainite's turnover rise four-fold within the next 6 to 8 years.



F.J.Sidhwa, Technical Director

**Seasoned in machinery development**

Feroze J. Sidhwa, the Technical Director and another pillar of Bainite, who ably assists the Managing Director in the company's successful march forward, is an eminent Mechanical Engineer. Sidhwa has over 30 long years' association with the Indian rubber industry and an impressive career graph. He has held key positions at the American, English, Italian, Japanese and Dutch facilities of world's leading machinery manufacturers.

As one who has travelled much, he has visited various markets and tyre manufacturing companies across the world and brings to the company a rich hands-on experience and expertise. Bainite's accomplished Technical Team under him has explored and developed multiple-design machinery for the tyre and polymer industries as well as for the Defence and other core sector industries.



Prakash Garud, AGM (Business Development)



Milind Phalanikar, DGM (Materials)



V.P. Shetty (Finance Controller)



Kiran Kurtadkar, (Head Design and Development)



Abid Mohib (Dy Head Design)



SJ Shetty, Sr VP Works

existing imported equipment." Bainite's growing reputation, however, is based mostly on its competence to tackle many of the crucial problems encountered by leading tyre makers and polymer processors, according to him.

Bainite in its early stages itself understood the difference between sales and marketing. The company laid stress on marketing to understand the need of the customers and manufacture the products to meet these needs. The industry

looks for production machinery which can give higher production levels, at higher quality levels and with very low downtime. Bainite designs and produces machines keeping all these factors in mind, the Managing Director says.

**Service, the buzz-word**

Bainite's guiding principle is: *In Service Lies Success*. Thus, Bainite believes in giving prompt service both in installation and commissioning and provides timely after-sales

service and technical support and also, on customers' requests, audits the machines for preventive maintenance. The main features of the machines are designed primarily keeping in view of high rate of output, low batch cycle-time of process media output and realisation of higher return on investment. Apart from the mechanical features, great attention is also given on material of construction and material technology of the machinery parts.

# Developing high-tech products

The first machines developed by Bainite as sub-assembly are the Internal Mixer Chambers for the tyre companies. Later on, Bainite developed hopper and base for the machine and thus created the complete machine. Similarly, Bainite also started producing screws, barrels, die heads, etc. for the Extruders.

Later on, producing complete Hot Feed Extruder of sizes 3.5

inch to 12.0 inch, the company progressed to producing both Plain and Pin Barrel Cold Feed Extruder of sizes right from 63mm to 300mm. The company developed in-house circuit diagram for the complete Temperature Controller Units for the Cold Feed Extruders which works efficiently and responds quickly.

Bainite simultaneously started developing spares for



Mixing Mills. They started with bearing housings, frames and caps and later moved to manufacturing complete Mixing Mills of size right from 12" x 36" to 30" x 100". Bainite also gradually started supplying Mills with Drilled Rolls, developing in-house

Roll Drilling facility. Gradually, the sophistication in Mills were undertaken with vibromount design so that the Mill could be located easily anywhere in the Direct Drive Systems. The Nip adjustments can be either manual or motorised or hydraulically operated. Nip can be adjusted online while mixing. The hydraulic Nip Adjustment System was provided with LVDT (Linear Variable Displacement Transducer). Similarly the guides could be pneumatically or hydraulically lifted for cleaning.

Bainite has also developed different kinds of Blenders right from Simple Blending Bars to motorized or hydraulically-driven Stock Blenders for all sizes of Mills. The company simultaneously started working on Calenders as



well. Initially they started with simple 2-Roll Calenders and gradually moved on to making 3-Roll and 4-Roll Calenders with various configurations. Bainite also started supplying Calenders with Drilled Rolls both for Cushion and Squeeze applications. A lot of sophistication was developed in Calenders with hydraulic nip adjustments with LVDT and bearing temperature sensor and

monitoring and also designing the Rolls with cambers to maintain parallelity in the Calender to save on rubber. And wherever required, they also incorporated Hydro Bends and Cross Axis as well as splice relief mechanisms.

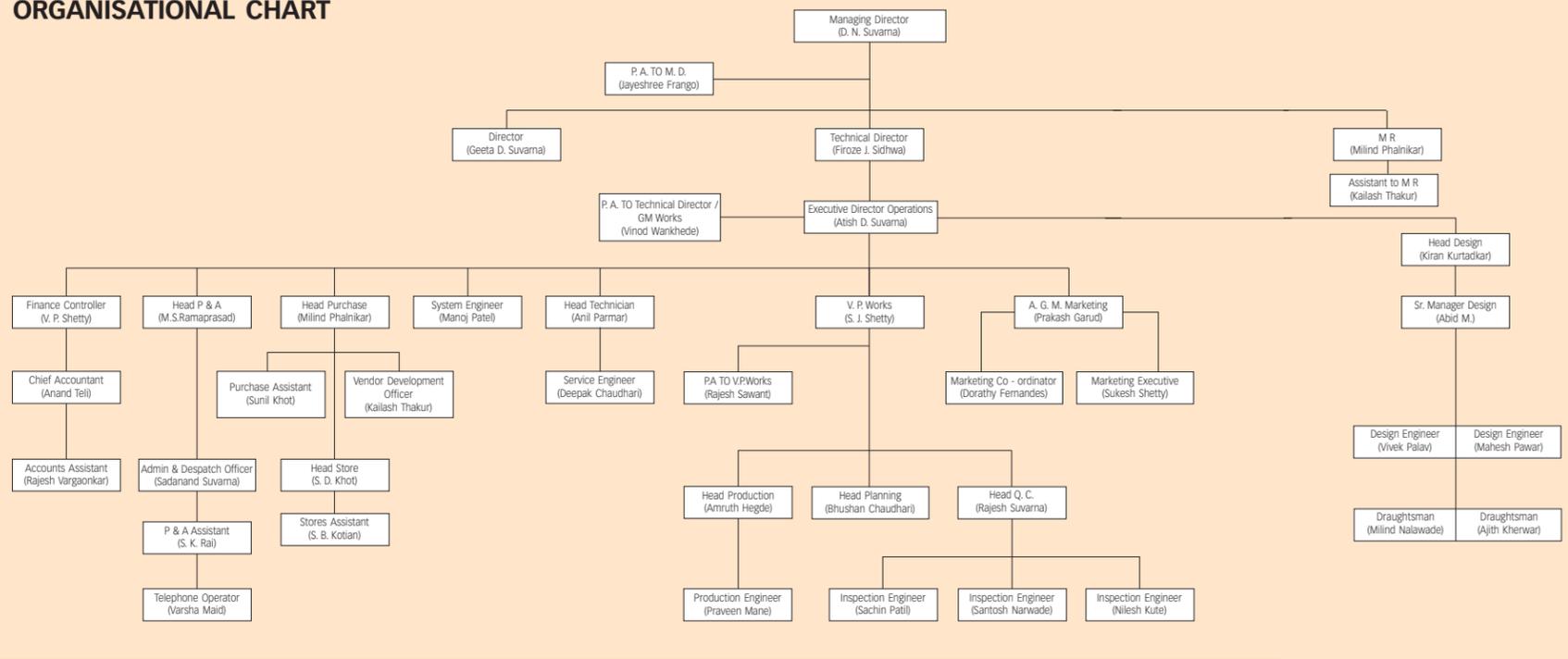
Later on, Bainite focussed on peripheral equipment for the above four main equipment of the tyre companies. They developed Batch-off Systems with full automation, Mill Feeders and Blenders, Mixer Feeding Conveyors with Metal Detectors.

Similarly, the company produced Feeding Conveyors with Metal Detectors for the Extruders as well as for the Pre-Calendering and Post-Calendering Lines. Bainite also produced Service Units for Tyre Building Machines as well as Band Building Machines.



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ORGANISATIONAL CHART



Bainite is engaged continuously in product upgradation, development of new machines with better features, technological modernisation and improvement in aesthetic appeal. "This is all made possible by the continuous visits of our engineers to our customers to understand their needs better so as to ensure them higher benefits," Suvama says.

**Sales and marketing**

The company's Sales and Marketing is headed by Firoze J. Sidhwa, the Technical Director, to whom Prakash Garud, A. G. M.,

Business Development, and Sukesh Shetty, Marketing Executive, report. All the three of them, by turn, visit the various customers at least 10 days a month on the field. Apart from that, the technical personnel from Service, Sales, Design, Production, Quality Control etc. continuously visit customers to get feedbacks as well as to audit the machines. These also keep Bainite in close touch with the customers, according to him.

**Illustrious clients**

Bainite can very well boast of an illustrious

clientele. Basically, all domestic tyre majors such as MRF, Apollo Tyres, J. K. Tyre & Industries, Ceat, Birla Tyres, Bridgestone India, Balkrishna Industries, ATC Tyres, Ralson Industries, Indag Rubber etc. are the company's customers.

The overseas clients include Continental Tyres, Loadstar, Michelin Asia - Pacific, Trelleborg, Elastomers Technologists, Richard Pieris, Hancock Engineering, Ceat Kelani, Amiantit Rubber and Associated Motorways.

"Our clients are all highly impressed by the supreme importance we give for constant innovation, technological upgradation and prompt pre and post-sales services," says a proud Managing Director. Bainite has been growing at 20-25% year on year, he adds. Profits were much better between 1990 and 2003. However, due to various factors such as a rise in raw material input and other costs, the profits are now reduced by 10 - 11% post tax, he adds.

**Consolidating top slot**

Bainite produces roughly around 20-25 Internal Mixers of various sizes per year and about the same number of Mixing Mills, sometimes along with Stock Blenders. The company also produces almost the same number

of Calenders and Extruders — both Cold Feed and Hot Feed.

"Apart from that, we produce peripheral equipment like Batch Off Systems, Mills Feeders, Extruder Cooling Lines, Feeding Lines for Mixers and Pre and Post-Calendering Lines. We also produce a lot of spares for different machines and undertake reconditioning jobs. Roughly about 15-20 Mixers are reconditioned a year," Suvama says.

The number of machines that are produced every year shows Bainite's indomitable position among the top tyre machinery manufacturers in India. Basically, due to heavy order booking from domestic companies, Bainite has not ventured to the global market in right earnest, he adds.

"However, with improvement and enhancement of the production facilities, there are concrete steps to explore the offshore market and rope in big names like Michelin Asia - Pacific Pte Ltd., Good Year, Pirelli, Continental Tyres, etc. We have been visiting various decision making personnel of different tyre companies in the world and our efforts are on to make them accept Bainite's products and thus gradually increase our exports substantially in the years to come," he told *Rubber Asia*.



Bainite Executives and Staff

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