Velocity
Customer Newsletter for Industrial Systems

Bharat Bijlee

Customer Newsletter | Issue 7 | October 2020

Enabling Productivity, Precision and Energy Efficiency

70+ years experience

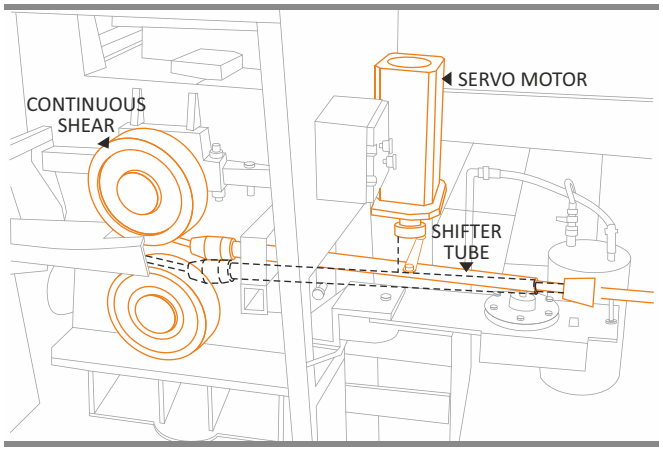
4 million motors

10,000 servo solutions

20,000 gearless machines for elevators

Case Study

Automation Solution with Servo Shifter for TMT Manufacture



Thermo-Mechanically Treated (TMT) metal bars are high-strength reinforcement bars that have a tough outer core and a soft inner core; this provides superior tensile strength, ductility and elongation point. The manufacturing process also improves corrosion-resistance and weldability. With these characteristics, TMT reinforcement bars play an important role in the construction industry, finding use in buildings, roads, and dams.

TMT bar manufacture is a continuous process and involves passing steel rods through a rolling mill stand, and then through a water cooling system. The process comprises a continuous caster/ reheating furnace, rolling stands, TMT line, pinch rollers, continuous (or flying) shears, tail brakes, and an automatic cooling bed. Because of restrictions on cooling bed length, and for ease of transportation, bars are generally cut in-line to 60 meters. High speed bar mills use a continuous rotating shear; this is a low inertia shear driven by an induction motor, and offers higher productivity than start-stop flying shears. The bars are further cut to 12 meters with cold shears.

A shifter diverts the bar from one channel to another to provide consistent cutting support. Conventionally, pneumatic shifters are used for this process; to improve cutting precision at high speeds and to avoid wastage, these can be replaced with servo shifters. As the bar originates continuously from the rolling mill, a diverter tube driven by the servo motor moves it into the path of the blades to cut it to the desired length. Using servo shifters improves consistency and precision in cutting, and provides high holding torque at both park positions that guide the bar in the two channels.

The servo motor is mounted vertically through a cam, which moves the shifter in steps of 90^0 or 180^0 as per the desired position relative to the continuous shear blades. The control system puts the blade motor in position-synchronization with the bar movement. This enables high accuracy.

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By subscribing to our newsletter on this link: **https://www.bit.ly/2EcBohF** you will receive it by e-mail as soon as it's published.

Bharat Bijlee is synonymous with electrical engineering in India. Our key business lines are Power Systems (Power Transformers, EPC Projects) and Industrial Systems (Motors, Drives & Automation, Magnet Technology Machines). Headquartered in Mumbai, we have sales andservice network across India. The company's manufacturing facilities are located in Airoli, Navi Mumbai on a 1,70,000 sqm. campus.

Bharat Bijlee's solution matches a KEB servo drive and a servo motor, and ensures conditions in which the shifter can perform at optimal efficiency. KEB drive and automation solutions are designed to provide high performance in exacting applications that demand high speed of response, precise positioning and torque and speed control. This can also be integrated with a multi-axis controller and touch screen HMI.

The servo motor uses an axial fan (instead of a centrifugal fan), improving ruggedness and reducing maintenance.

This is an accurate and cost-effective solution, field-proven in trials up to 27 m/s.

Our solution fulfills key technical needs of TMT cut to length line control:

- Two positions switching consistency
- High holding torque at park position
- Rolling speeds of 20 to 40 m/s
- Precise positioning accuracy
- Shaft seal protects water ingress in the motor from above

SynchroVERT® IE5 Motors

Precision | Productivity | Energy Efficiency

With our commitment to energy-efficient products and solutions, we continue to work towards extending our range of SynchroVERT® IE5 motors. Field trials of some ratings are already ongoing and, on October 9th 2020, our 45kW motor was successfully tested at ERDA's NABL certified laboratory in Vadodara. SynchroVERT® is our range of Line-Start PMSM motors in both IE4 and IE5 efficiency class in accordance with IS12615 and IEC60034-30-1; they have won the CII's National Awards for "Excellence in Energy Management" and were recognized as "Most Innovative Energy Saving Product" in 2016 and 2018 respectively.

These motors offer unique advantages that include:

- Lower starting current compared to conventional induction motors, which enables retention of existing switchgear, cables etc.
- Lower temperature rise (by upto 30 to 40 K) compared to induction motors.
- Better efficiency, even at partial load.
- Up to 30% continuous overloading capacity.
- The synchronous running enables encoder-less operation of multiple motors at identical speed with a single VFD.

A quick estimate suggests that replacing IE2 motors that run over 4000 hours per annum with IE5 motors could result in annual savings of 434,603 MWh in energy consumption and a reduction of CO_2 emissions by 369,411 tons.

SynchroVERT®

Partner Spotlight

B.C.B. Reddy
M/s Entex Pvt. Ltd.
Chennai

When was Entex incorporated? What was the impetus to start it?

Entex has been in the business of engineering products since 1988, with its customer base in Tamil Nadu, Andhra Pradesh and Telangana.

After working with leading brands and gaining strong industry experience, we ventured on our own in specialized areas of pumps, motors, switch gears, and automation.

What are the focus areas of your business?

We serve our customers with standard and specialized products, which include Johnson pumps, Bharat Bijlee motors, Schneider switchgear, and automation products covering most of the industrial segments.

Can you tell us a bit about the market/industries you cater to?

We cater to all market segments like Pharmaceutical, Chemical, Fertiliser, Cement, Steel, Mining, Paper, Water Treatment, Sewage Treatment, Infrastructure, Building & Construction, as well as the large contractors in the aforementioned three states.

Since when have you been associated with Bharat Bijlee?

We have been working exclusively for BB motors since our inception.

What have been some of the key highlights of this association?

We have added a range of customers and delivered quality products along with prompt service in this very competitive industrial market.

Recognising our long term association and consistent performance, Bharat Bijlee invited us to participate in its International Partner Conference, Malaysia in 2018.

It gave us good exposure to the business fraternity and enhanced our technical know-how.

What do you look forward to going ahead in your journey with Bharat Bijlee?

We wish to grow together with Bharat Bijlee. We have been investing in manpower, infrastructure and stock availability to service the market better.

Ujjal Purkait
M/s Unicon Techno Solutions Pvt. Ltd.
Kolkata

When was Unicon Techno incorporated? What was the impetus to start it?

M/s Unicon was incorporated in 1986. We started the company to support the Power industry, specifically ash slurry and water pumping systems. Gradually, the pump business expanded to include the assembly of pumps with motors as a package.

What are the focus areas of your business?

When entering the business of special pumps, we positioned ourselves as a partner to customers for effective generation of power and production of steel, using our equipment, while ensuring maximum availability.

We have now ventured into the LT motors business with Bharat Bijlee. Our focus was to provide a complete package of pump with drives, which we developed exponentially. This in turn provided us with the force required to penetrate the market of motors.

Can you tell us a bit about the market/industries you cater to?

We are focused on the Power and Steel sectors with customers like NTPC, DVC, WBPDCL, SAIL, NSPCL, TATA Steel, and other process industries in Eastern India.

Since when have you been associated with Bharat Bijlee?

We have been associated with BB since November 2017.

What have been some of the key highlights of this association?

Both BB and we emphasise a) Market knowledge b) Customer relationship c) New project information d) Contacts and reference with higher management of all customers e) Ethically strong and well-managed f) Cash-rich and own assets g) Technical skills and competence.

What do you look forward to going ahead in your journey with Bharat Bijlee?

A huge business prospect, with mutual trust and support. BB's professional approach and cohesive attitude of all employees has given us the confidence of achieving jointly set targets and to complete market coverage.

We also look forward to price support from BB for a healthy strike rate.

BB in the News

INDUSTRY DIALOGUE

Bharat Bijlee

Nakul Mehta (NM), vice chairman and managing director, shares insights with your author (SSP) on the motor manufacturer's emphasis on sustainability, advanced technology and recent developments.

SSP: What is the significance/unique selling proposition of your brand and its offerings for the VT industry?

NM: We have been manufacturers of rotating machines since 1946. From 1973 to 2004, we manufactured and installed elevators under the Olympus brand and had over

Mr Mehta's Interview in the EWI magazine

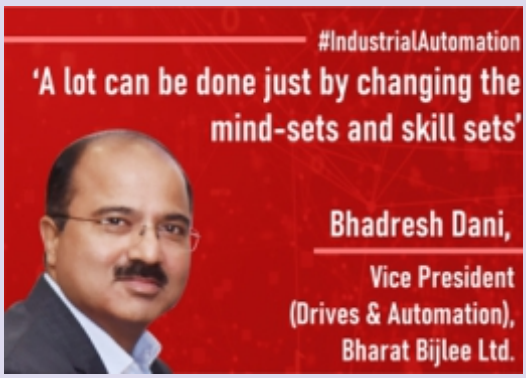
Our Managing Director, Nakul Mehta was interviewed by Elevator World India (EWI) for their Q3 2020 issue. Mr Mehta shared his insights on the trends in vertical-transportation (VT) industry globally and in India, and BB's contribution to the industry. He stressed on uniform regulation of VT in India and how the current pandemic is likely to affect the industry as a whole.

To read the full interview click here.

Our Motors Division has commissioned a modern automatic winding plant at Airoli. The new plant is designed for efficient, high-volume production of IE2 and IE3 motor windings for frame sizes 80 to 112.

Bhadresh Dani, Vice President - Drives & Automation, was featured in the lead story of Industrial Automation Magazine's July 2020 issue. His interview focused on digital transformation in the manufacturing sector, roadmap for Industry 4.0 and whether the current global scenario will act as a catalyst for its implementation.

To read the full interview click here.



We are amongst the first members of the recently formed Elevator & Escalator Component Manufacturers' Association of India (EECMAI), a progressive initiative that aims to make India a self-reliant and dependable global sourcing hub for elevator and escalator components. EECMAI will establish relationships with other E&E associations and appropriate government agencies to promote and protect the interests of the users and the industry.

EECMAI
ELEVATOR & ESCALATOR COMPONENT MANUFACTURERS' ASSOCIATION OF INDIA