KEB Official Partner

Bharat Bijlee

DRIVES & AUTOMATION SOLUTIONS

METAL INDUSTRY

Precision | Productivity | Profitability

A DECADE OF PARTNERSHIP

Since 2007, we have a license agreement with KEB Automation KG of Germany to manufacture and sell their AC Drives in India. We leverage our experience of over 75 years in rotating machines, to offer a wide range of AC Variable Speed Drives and Servo Drive systems.

KEB Drives cater to a variety of challenging applications that demand high performance with superior accuracy and dynamic response. KEB also designs and manufactures high speed multi-axis C6 motion controllers.

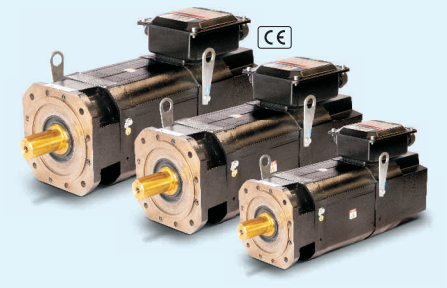
Our modern ISO 9001:2015 certified plant in Airoli conducts assembly and load testing of KEB Servo Drives from 15kW to 450kW. The parts for the Drives are sourced directly from KEB or their approved vendors. Post inward quality control, the Drives are assembled by qualified technicians with the help of appropriate tools in a dust-free environment. All the instruments in the assembly plant are periodically calibrated.

Every Drive is tested for complete functionality and on full load at elevated temperature of 50°C for one hour. The electronic boards of the Drive have Epoxy conformal coating for protection against dust and moisture deposition. This ensures that the customer receives a Drive that is reliable and has undergone stringent quality control checks.

We deliver advanced drive products and intelligent automation solutions tailored for the metal industry. Backed by KEB's deep domain expertise in metal applications, we offer cutting-edge drive and automation systems designed to enhance productivity, optimize performance, and ensure unmatched reliability.

Solutions for metal industry

KEB F6 Drives



Synchronous (PM) and Asynchronous Servo Motor

Applications in metal industry

- **Flying/Rotary Shear**
- **Slitter in Cold Rolling**
- **Stirrup Bending Machine**
- **Cutter on Carriage (COC)**
- **Continuous Shear in TMT Bar Mill**
- **Start Stop Shear in TMT Bar Mill**
- **Servo Shifter for TMT Bar Mill**
- **Servo Operated Twin Channel for TMT Bar Mill**
- **Pilger Mill**
- **Wire Drawing Machine**
- **Auto Changeover Dual Bobbin Winder**
- **Roll Forming Machine**

KEB F6 DRIVES - POWER, PRECISION, PERFORMANCE

Engineered for today's toughest applications, the F6 combines **dynamic control, seamless connectivity, and built-in intelligence** to drive your productivity to the next level.

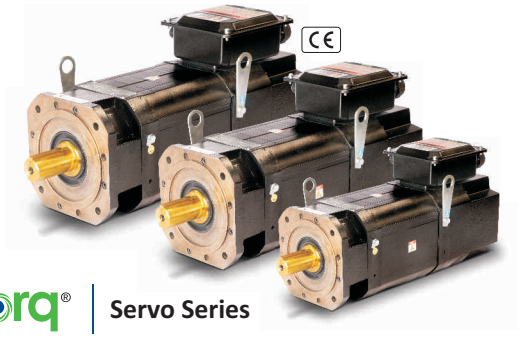
Key Features

- Wide input operating voltage 280VAC-550VAC
- Control for synchronous, asynchronous, IPM or synchronous reluctance motors
- Inbuilt multiple encoder interface
- Extensive range of communication options CAN, Modbus TCP/IP, Profinet, Ethercat, Powerlink, Ethernet IP
- Integrated brake control and brake supply
- Easy interfacing with higher level automation systems
- Optimized drive technology reducing power consumption and operational costs
- Integrated safety functionality
- Flexible cooling: Air cool built-in variant, Air cool push through variant, Liquid cool built-in variant, Liquid cool push through variant
- Drive accessories are EMC Filter, Main choke, output chokes and filters, Harmonic filters, sine wave filters and Ferrite cores

SYNCHRONOUS (PM) AND ASYNCHRONOUS SERVO MOTOR

Key Features

- Operating ambient temperature 45°C
- Insulation class: H
- Protection type: IP54 (optional: IP55 or IP56)
- Certification: CE
- Feedback: Encoder or Resolver



SynchroTorq® | Servo Series

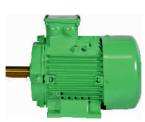
PERMANENT MAGNET SERVO MOTOR

ASYNCHRONOUS INDUCTION MOTOR

Safe Area Motors IE2 & IE3 Series

Type of Motor	Power (kW)	Frame Size
IE2 Efficiency	0.12 to 355	63 to 355
IE3 Efficiency	0.12 to 355	63 to 355

Super Premium Efficiency Motors IE4 & IE5 Series (PMSM)



Motor	IE4 : Safe Area	IE4 : Textile Motor	IE4: FLP ATEX
Frame Size	112 to 225	200	112 to 200
kW Range	2.2 to 45	30	1.5 to 30
Polarity	4	6	4

Special Purpose Motors

Type of Motor	Power (kW)	Frame Size
Crane and Hoist Duty Motor	0.37 to 400	71 to 355
Integral Brake Motor	0.37 to 9.3	71 to 132
External Brake Motor	0.37 to 22	71 to 200
Slip Ring Motor	1.1 to 10	100 to 160
Cane Unloader Motor	11 to 30	160 to 225

AUTOMATION SOLUTION FOR METAL INDUSTRY

Key Features

- Precision motion controller - C6 family
- Seamless integration with drives and industrial network
- Recipe-driven automation for machine setup
- Built in safety, diagnostics and maintenance to reduce machine downtime
- Improves quality by precision cutting
- Improves productivity
- Rapid machine/mill setup

We supply KEB Drives and automation systems for various applications

FLYING/ROTARY SHEAR

A metal flying/rotary shear is used in metal sheet, cut-to-length lines, and tube/pipe mills to cut metal sections on the fly without stopping the moving strip or pipe.

Metal/flying/rotary shear to deliver high cutting accuracy demands high speed synchronization, quick response from drive system, dynamic torque demand and low downtime.

Flying/rotary shear with KEB Drives ensures higher cutting accuracy, productivity, flexibility, and reliability while lowering scrap and maintenance costs.

Flying/Rotary Shear system includes

• Servo Drive • Permanent Magnet Servo Motor • Motion Controller with IO's • HMI/SCADA • Sensors

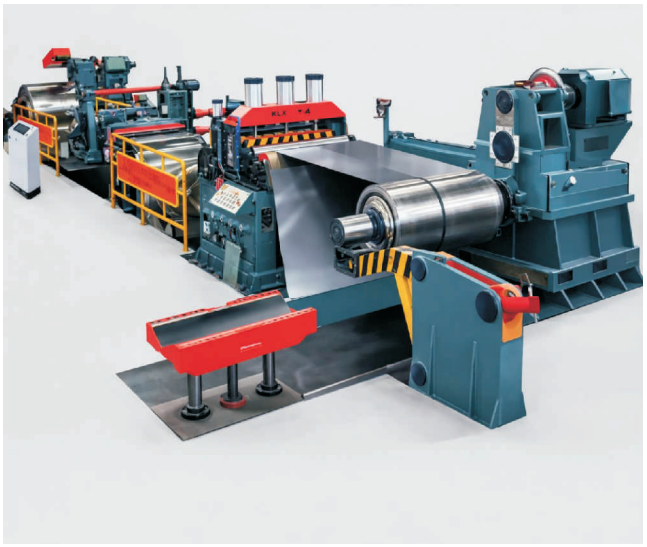
Benefits

- Speed more than 70 MPM
- Accuracy better than +/- 1mm
- Reduced material wastage due to precise synchronization with line speed
- Consistent cutting quality
- Continuous operation without stopping the line

SLITTER IN COLD ROLLING

A slitter in a cold rolling mill is used to cut wide steel coils into narrower strips with precise width tolerance. It ensures uniform edges, minimal burr, and high-speed operation, making the material suitable for further processing.

Slitter applications demand high cutting accuracy and edge quality at high line speeds, along with reliable synchronization and automation to handle different coil widths and thicknesses efficiently.



Slitter system includes

• High Power Drive • Synchronous or Asynchronous Motors • Motion Controller with IO's • HMI/SCADA.

Benefits

- Diameter computation and tension control for re-coiler
- Low maintenance due to total AC solution
- Material: SS sheet
- Sheet thickness up to 12mm

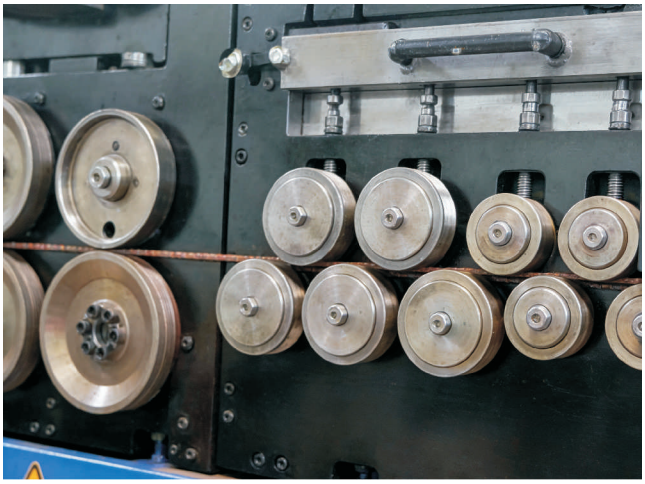
STIRRUP BENDING MACHINE

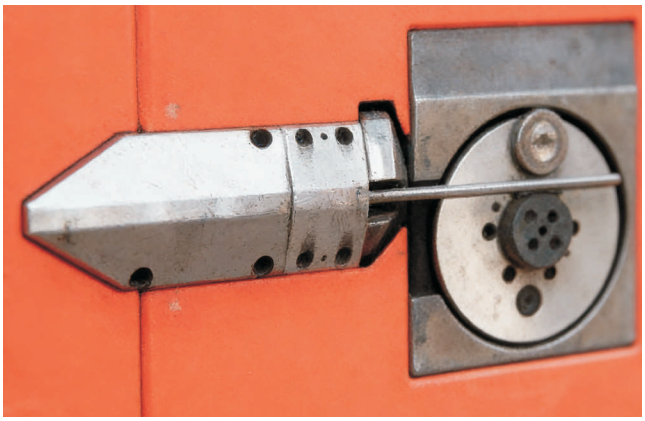
A stirrup bending machine is used in construction to bend steel bars (usually TMT bars) into stirrups-closed-loop shapes like squares, rectangles, or other polygons. These stirrups are commonly used as reinforcement in beams and columns.

Stirrup bending machine automates and standardizes the bending process, increasing speed and accuracy compared to manual methods.

Stirrup Bending machine system includes

• Servo Drive • Synchronous and Asynchronous Servo Motor • Motion Controller with IO's • HMI/SCADA • Sensors





Benefits

- High precision and consistency
- Increased productivity
- Labour cost savings
- Versatility in shapes and sizes saving change over time and simplify operation
- Minimal waste

CUTTER ON CARRIAGE (COC)

Cutter on carriage is used to cut the metal pipe of different diameter into different size. Pipe cutting is a critical process in industries such as Oil & Gas, Construction, Ship-building, and Mechanical Fabrication.

Cutter on carriage demands higher precision, efficiency, and automation.

The 3-axis Servo-controlled pipe cutting machine (COC) is a fully automated cutting system designed for high-accuracy cutting of metal pipes or sections in industrial applications. Using a saw (cold saw or abrasive disc) mounted on a Servo-driven carriage, the system offers precise movement.

COC system includes

• Servo Drive • Permanent Magnet Servo Motor • Motion Controller with IO's • HMI/SCADA • Sensors.

Benefits

- High cutting accuracy: better pipe length repeatability
- Fast cycle times
- Reduced downtime
- Versatility: Handles various pipe/section dimensions and online length change is possible.

CONTINUOUS SHEAR IN TMT BAR MILL

TMT Bar Mill is a Hot Rolling Mill for producing long products. The output product of bar mill commonly referred as "Sariya" is used in construction of bridges and buildings. The ingots or billets are heated in a reheating furnace to a temperature of 900° to 1000°C and passed through number of size reducing stands. The bar mill produces bar of different cross sections viz. 8mm, 10mm, 12mm, 16mm and 32mm dia.

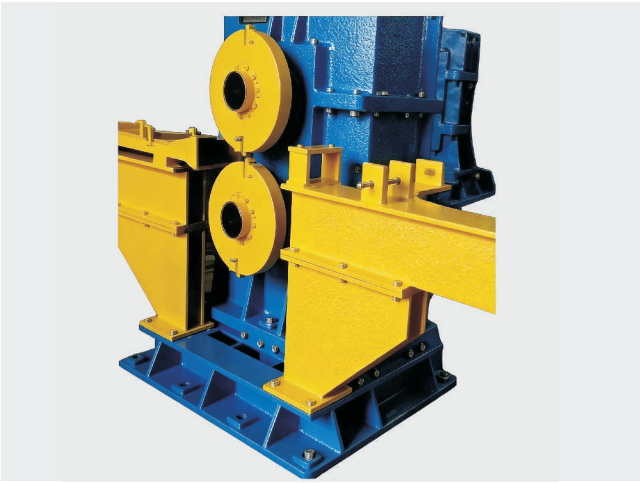
A **Continuous Shear in a TMT bar mill** cuts hot bars of sizes 8, 10, 12, 16, 32mm dia at full rolling speed without stopping the shear. It ensures **high productivity, precise cut lengths, and smooth bar transfer,** supporting continuous and high-speed TMT production.

Continuous Shear includes

• Universal Drives • Asynchronous Motor • PLC with IO's
• HMI/SCADA • Sensors

Benefits

- Line Speed: 25 MPS
- Accuracy: +/-10mm
- Improves productivity
- Quick fault diagnostics and alarms via SCADA/HMI
- Less scrap more saving by
  - No miss roll
  - Front-end cut error elimination
  - Last piece optimization



START STOP SHEAR IN TMT BAR MILL

A **Start-Stop Shear in a TMT Bar Mill** is used for controlled cutting of bars by accelerating at high speed from its parking position and cutting the desired length bar.

It provides **reliable operation, accurate cut lengths, and simple control,** making it ideal for lower-speed of bar.

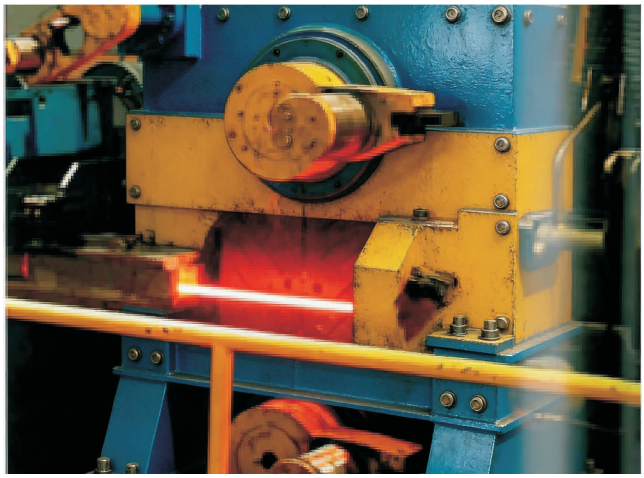
In Start/Stop shear, which is normally at parking position, when length cut command is received from PLC, it accelerates to the line speed and after cutting the bar halts at the parking position. This type of shear uses DC Motor & DC Drive technology. Start/Stop shear because of its large inertia has a limitation in speed and it is generally used for larger bar sections at speed not more than 16-18 MPS.

Start-Stop Shear includes

• DC drives • DC Motor • PLC with IO's • HMI • Sensors

Benefits

- Line Speed: 20 MPS
- High speed counter module for bar actual length feedback for higher accuracy
- Precise cutting and consistent bar lengths



SERVO SHIFTER FOR TMT BAR MILL

Servo Shifter is used in TMT Bar Mill to divert the bar between two channels alternately to provide consistent cutting without cobble.

Servo Shifter demands high holding torque at both extreme park positions, high speed response and precise position control.

Servo Shifter system includes

• Servo Drive • Synchronous and Asynchronous Servo Motor • Sensors

Benefits

- Accurate bar length control at high line speed of 30 MPS
- Blade and shifter synchronization ensuring no missed cut
- Improves productivity

SERVO-OPERATED TWIN CHANNEL FOR TMT BAR MILL

A Servo-operated Twin Channel in a TMT line is used to shift the bar in the right channel on the cooling bed.

Servo-driven control ensures fast, synchronized, and precise bar transfer, improving line efficiency, safety, and overall throughput.

Servo Twin Channel system includes

• Servo Drive • Permanent Magnet Servo Motor • Sensors

Benefits

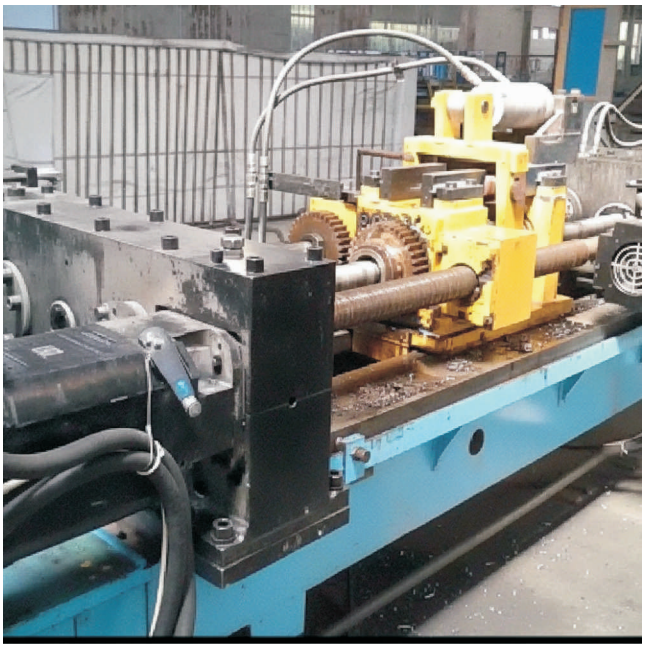
- High speed operation increases productivity
- Precise positioning and reliable operation avoids miss roll
- Every bar is shifted to independent channel thus ensuring proper cooling and quality of bar

PILGER MILL

A cold-rolling process used in the shaping of metal tube and pipe.

A pilger mill application demands very high torque at low speeds, precise synchronization between feed and rolling motion, and robust automation to handle heavy, cyclic loads.

Pilger mill achieves material savings, superior mechanical properties, and consistent quality for critical applications like Oil & Gas, Aerospace, and Power plants.



Pilger Mill includes

- Servo Drive • Permanent Magnet Servo Motor
- Automation

Benefits

- High surface quality pipe
- Perfect synchronization between stations leading to no mark on pipe
- Optimize energy consumption
- Robust Operation

WIRE DRAWING MACHINE

Wire drawing is a metal working process used to reduce the cross section of wire by drawing it through a series of dies.

Wire drawing machine demands fast and accurate control of torque and speed under all operating conditions.

Wire Drawing system includes

- Universal Drive • Synchronous or Asynchronous Motor
- Motion Controller with IO's • HMI/SCADA

Benefits

- No wire breakage during power fluctuations, avoiding downtime and waste
- Increase productivity with machine speed of 25 MPS
- Wire break detection for shorter down time
- Improved quality of wire
- Less variation in speed improves life of die

AUTO CHANGEOVER DUAL BOBBIN WINDER

In wire drawing machine, the auto changeover dual bobbin system is used alternately to ensure continuous operation during the wire-drawing process. The machine setup comprises two wire spools (bobbins) connected to the wire-drawing machine. When one bobbin gets filled, the system automatically switches to the second bobbin without requiring manual intervention.

Auto changeover dual bobbin winder minimizes downtime during the wire-drawing process and ensures smooth and efficient operation by maintaining continuous operation.

Auto Changeover Dual Bobbin includes

• Servo Drive • Permanent Magnet Motor

Benefits

- Smooth and stable operation under highly dynamic load and high inertia condition
- Reliable and consistent start
- Enhanced control accuracy across all operating speeds
- Precision control of tension and position

ROLL FORMING MACHINE

A Roll Forming Machine is widely used in the metal processing and fabrication industry to produce continuous, uniform profiles from steel and aluminium coils.

It is commonly applied in the manufacturing of roofing sheets, structural sections, automotive parts, cable trays, shelving systems, and building components, ensuring high productivity and consistent quality.

A roll forming machine application demands precise speed and torque control to maintain consistent profile accuracy over long production runs.

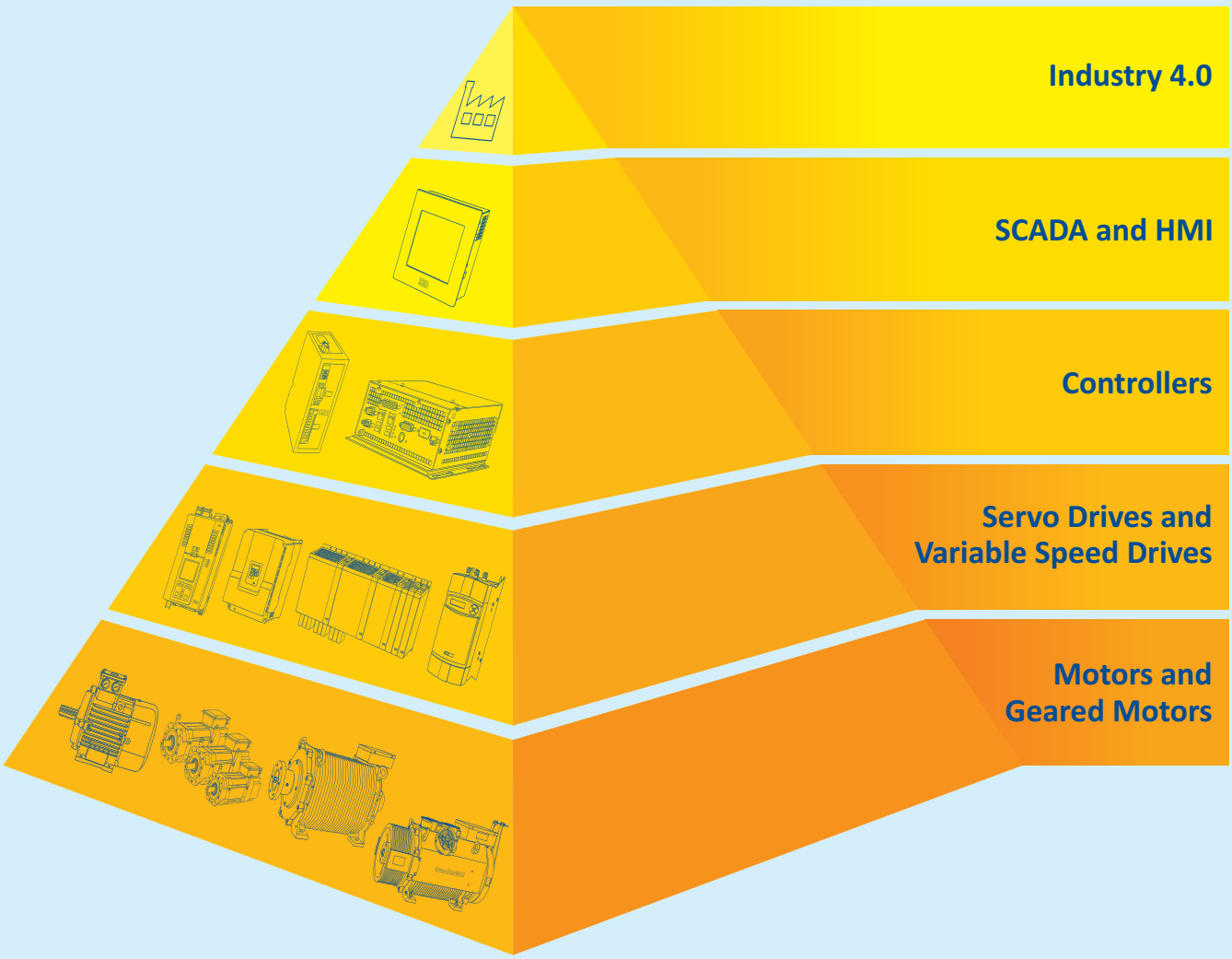
Roll Forming machine includes

• Servo Drives • Servo Motor • PLC with IO's • HMI

Benefits

- Consistent product quality
- Higher productivity
- Quick changeover due to recipe based automation
- Reduce scrap and rework
- Energy efficiency
- Improved reliability and safety

ENABLING PRODUCTIVITY, PRECISION AND ENERGY EFFICIENCY



Bharat Bijlee's Industrial Systems product portfolio caters to a spectrum of applications and spans the machine automation pyramid.

ALL INDIA SERVICE NETWORK

- Regional Offices
- Works
- Service Centre: Drives
- Service Centre: Servo Motors

REGIONAL OFFICES

Mumbai +91 22 61457200
Pune +91 7410011271 / 72
Ahmedabad +91 79 66049200
New Delhi +91 11 25816931 / 32 / 33
Indore +91 731 2524474 / 2514486
Ludhiana +91 161 2775692 / 93
Jaipur +91 141 2377223
Kolkata +91 33 24432383 / 2467 / 40623076 / 77
Bengaluru +91 80 25592646 / 2137 / 2681
Chennai +91 44 2815 4793 / 94
Secunderabad +91 40 27801791 / 27814512
Coimbatore +91 422 4204314

BB ServiceLINE®
Customer Service Helpdesk for Industrial Systems
+91 22 - 2763 7290
+91 22 - 2763 7490
serviceline@bharatbijlee.com

Bharat Bijlee
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REGISTERED OFFICE
Electric Mansion, 6th Floor,
Appasaheb Marathe Marg,
Prabhadevi, Mumbai 400 025
T: +91 22 4614 1414
E: info@bharatbijlee.com
CIN: L31300MH1946PLC005017

WORKS
No. 2, MIDC Thane-Belapur Road, Airoli,
Navi Mumbai 400 708
T: +91 22 2763 7200 / +91 22 2760 0401
E: drivesales@bharatbijlee.com

www.bharatbijlee.com

Follow us on ▶ www.facebook.com/bharatbijleeltd www.linkedin.com/company/bharat-bijlee-ltd

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