

Akshi[®] Engineers Pvt. Ltd.

(Turnkey Projects for TMT Bar & Wire Rod Mills)



Products Spectra

- Mill Stands
- Gear Boxes
- Shears
- Cooling Bed
- Twin Channel
- Bar Handling
- CNC Roll Notching & Branding Machine
- CNC Roll Turning Lathe Machine
- Drives & Automation



www.akshi.co.in

ABOUT THE COMPANY

Akshi
Engineers Pvt. Ltd.

Akshi Engineers is actively involved in Designing & Manufacturing of Equipments and Systems for Steel rolling mills.

Established in 2006 in a modest fashion, company has grown steadily over the years to become a reputed organization in the field of manufacturing high quality capital equipments for steel industry.

Apart from building equipments, we design and implement complete Rolling Mill Projects on turnkey basis to suit every customer's requirement and satisfaction.

Engineering

Our design and planning ensures that every single machine runs accurately and smoothly and they are constantly improved through new innovations and customer feedback.

Manufacturing

Our in-house quality controlled manufacturing, assembly and testing ensures that the machine performs to its designed capacity at the site of installation.

Automation

Our experience in automation will help your mill to run in a complete closed loop synchronization to minimize human intervention.

Commissioning

We strive to achieve Stabilized Production levels with consistent operation in the shortest possible time.

Support, Spares & Consumables

We know that mill down time is critical. Hence, all spares & services are made available at the shortest time possible.



Drives & Automation





HORIZONTAL & VERTICAL MILL STAND

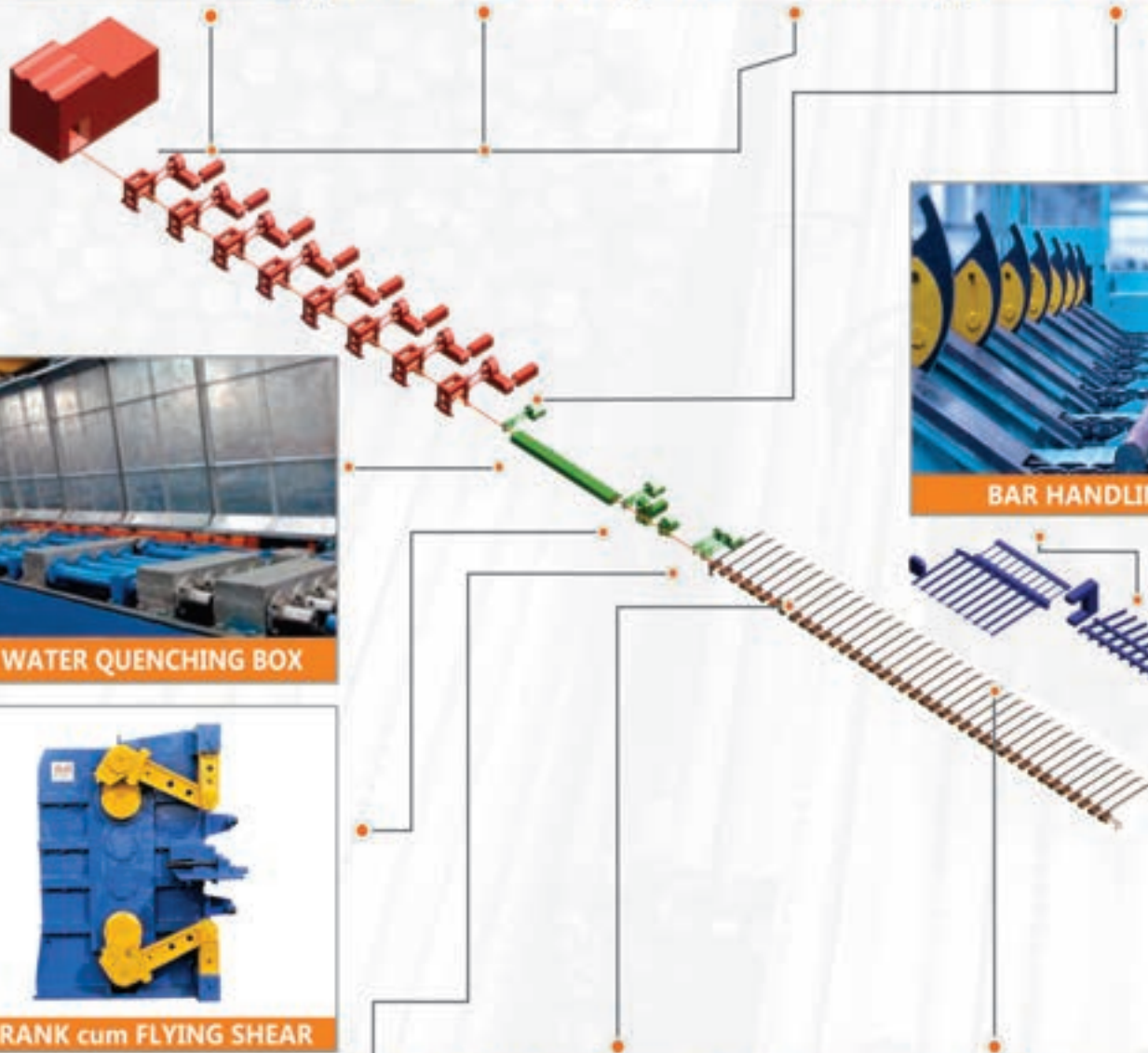
HOUSINGLESS MILL STAND



CANTILEVER MILL STAND



PINCH ROLL



WATER QUENCHING BOX



CRANK cum FLYING SHEAR



TAIL BREAKER



TWIN CHANNEL



AUTOMATIC COOLING BED

MILL STANDS



Housingless Mill Stands

These are designed for producing Bars, Wire Rods, Flats, Angles, Channels, Beams etc. Different versions are Horizontal, Vertical and Convertible Mill Stands which convert a horizontal stand to vertical positions.

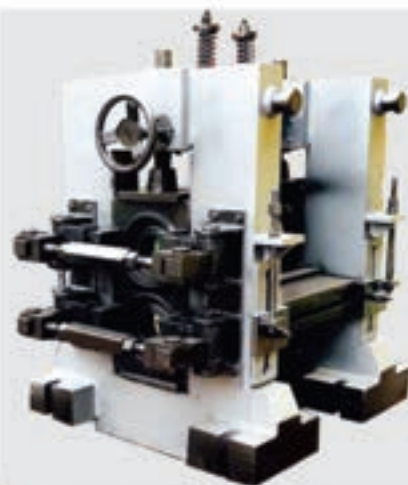
Roll Changing is easy and much quicker with Roll changing device which pulls out the complete roll assembly and replace the cartridge.

Features:

- High Competent rigidity.
- Reduced Stress Path.
- Axial Roll adjustment.
- Long bearing life.
- Quick roll change.
- Possibility for adjustment under load.
- Roll balance system which eliminates backlash.
- Min. wear due to self balancing spindle support.

Prestress Mill Stands

The Pre-stressed universal stands are divided into two parts: i.e., an upper cross beam carrying a top horizontal roll and a lower cross beam carrying a bottom horizontal roll, and these two parts are clamped together by means of tension bars. The tension bars are rotated to simultaneously move the upper and lower cross beams with the same distance in different directions, thereby making it possible to readily adjust the position of the top and bottom horizontal roll and making the construction of the roll stand itself compact and rigid.



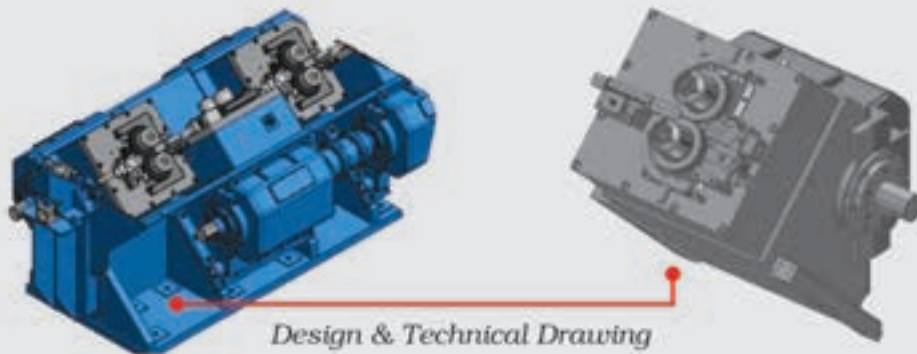
Conventional Mill Stands

The Conventional Stands are traditional stands in the Rolling Mill. These stands are suitable to roll with Spherical Roller bearings at Roughing, beginning & intermediate line.

The entire housing includes the chocks, which are Steel Casted to achieve better life, Rest bar assembly is bolted on the housing at the Entry & Exit side of the material flow. The bolting arrangement of the Rest Bar provides ease in adjusting the guide boxes vertically. Screw down mechanism is used to adjust the position of top chocks vertically.

Cantilever Mill Stands

Cantilever Stands consists of a four Gear link mechanism which Enclosed top and the bottom Rocker arm. These stands & Gear Box are to be arranged in modular type arrangement. The rolls are mounted on roll shaft on a tapered sleeve by hydraulic mounting tools. The bearings and the gear receive adequate lubrication by a centralized lubrication unit. Rolls are cooled by water sprays.



Design & Technical Drawing

Features:

- These Stands are designed based on Cantilever Roll concept for easy mounting and dismounting of rolls.
- Hydraulic tools are provided for roll mounting and dismounting.
- The Rocker Arm is integral Construction for Housing both the Roll side & Driven Side Bearings.
- Reliable Disc Springs are provided for Roll balancing.
- Roll Drafting is done by manually through Worm gear and Worm Wheel Mechanism.

Advantages of Cantilever Stands

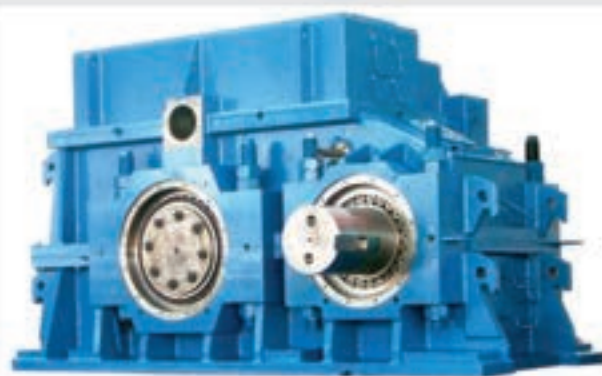
- Reduce Mill down time due to lower maintenance work and simpler roll-changing.
- Lower operating costs and simpler design.
- Better Finish Quality & Shine of TMT Bar because the use of Tungsten Carbide Rings.

GEAR BOXES

"Akshi Engineers" is renowned for design and manufacture of gearing solutions. We work closely with our customer to provide a solution to meet their specific application & parameter needs, Where customer require a custom designed gearbox, be it due to space constraints, environment, or specifications.

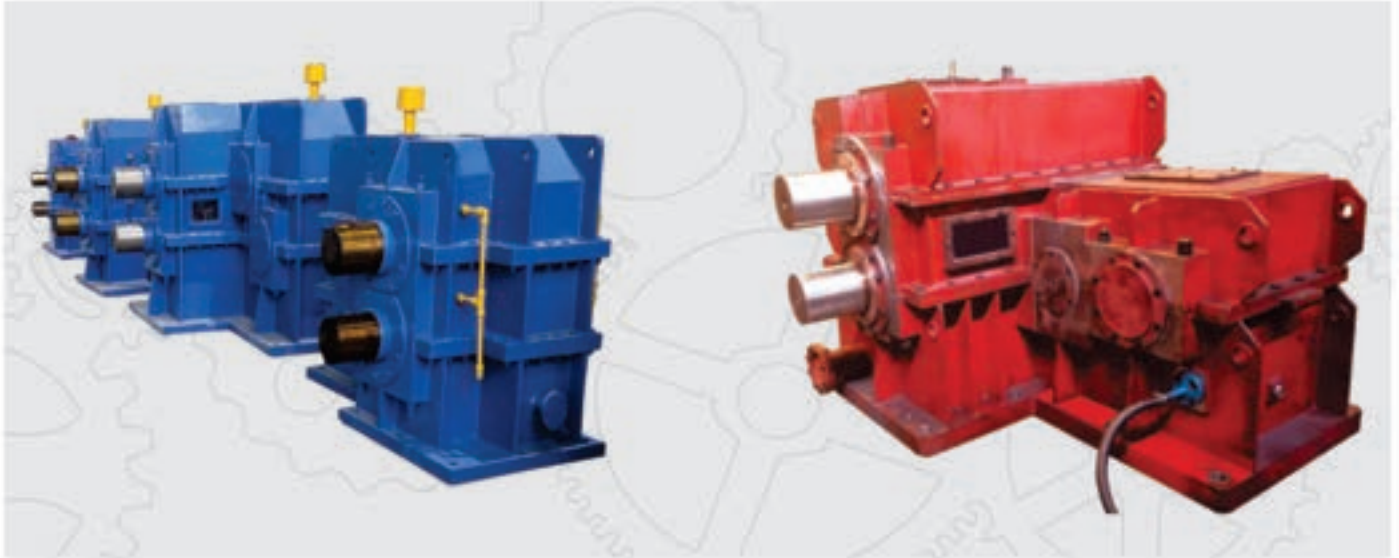
Main Features:

- KISSOFT based gear designs.
- Heavy Duty & Sturdy design.
- Stress relieving and shot blasting.
- Ultrasonic tested.
- Case hardened with surface grinded.
- Dynamic Balanced.
- Precisely Tested for Noise and Vibration.



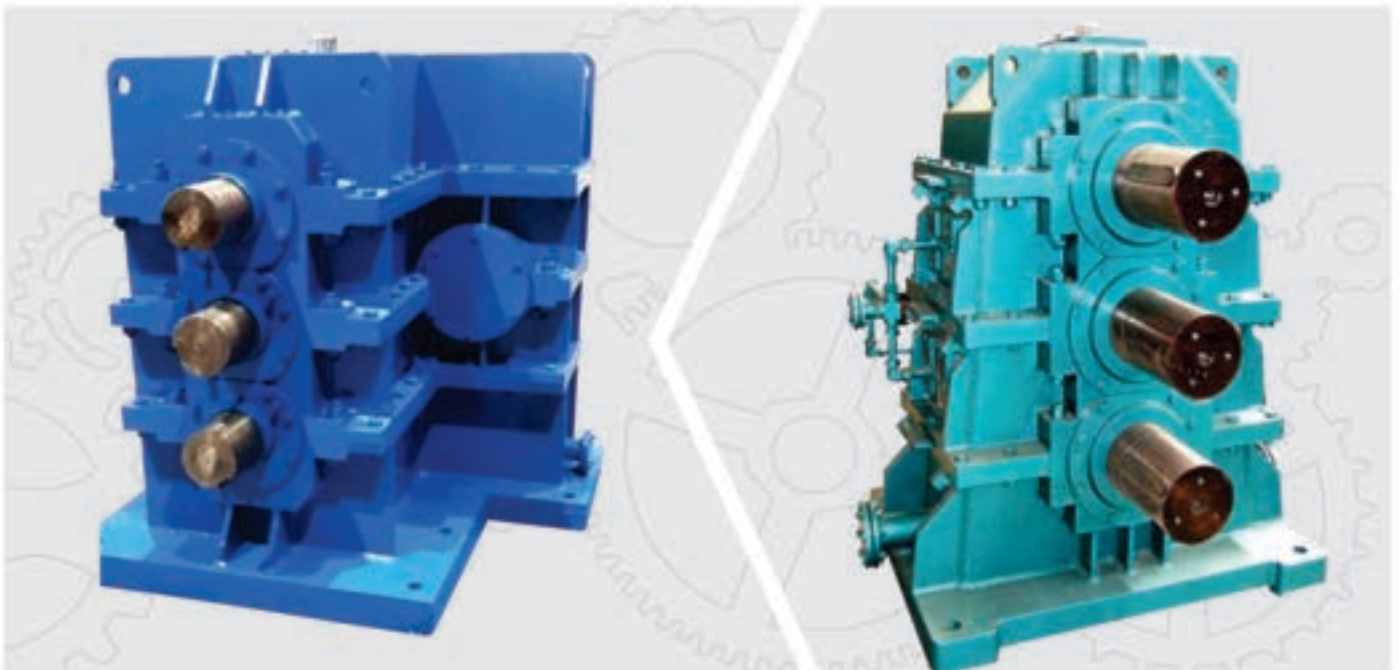
HELICAL REDUCTION GEAR

"Akshi Engineers" Gears are developed with extensive expertise and knowledge across many sectors and can therefore provide a unique design & manufacturing service supported by full project management. Our product range mainly consists of Helical Gears & Bevel Gears.



2-HI REDUCTION CUM PINION GEAR BOX

"Akshi Engineers" developed Gear Boxes are High performance and compact dimensions by using High quality alloy steel due to which they have low noise levels, High efficiency & Longer service life.



3-HI REDUCTION CUM PINION GEAR BOX

3-HI PINION GEAR BOX

SHEARS

At "Akshi Engineers " we manufacture various type of Shears which are used in Hot Steel Rolling Mills. Some of the renowned ones are Crop cum Cobble Shear, Flying Shear, Crank Shear, Continuous Shear and Cold Shear.



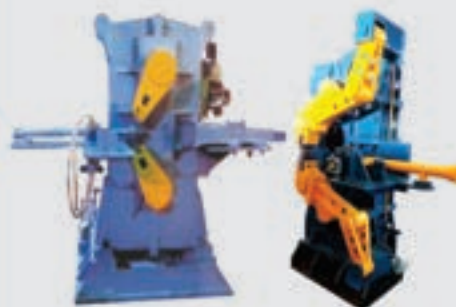
Crop cum Cobble Shear

These Shears are used in Hot Rolling to Crop Front End, Tail End and as well as to Segment Cutting (Cobbling) in case of eventualities. These Shears are start/stop type and are driven by Direct DC Motor. These shears are controlled through PLC System and provide very close tolerance of the cut length.

Flying Shear & Crank Shear

These Shears are used to cut cooling bed lengths. These Shears are generally installed after Quenching line & before entry to Cooling Bed.

These Shears are available up to 1200mm CRS can easily handle the cutting requirement up to 20mtr/Sec.



Continuous Shear

Continuous Shears offered up to 500mm CRS for precise cutting of TMT Bars up to 32 mtr/sec. These Shears are continuous rotating type and shifter manage for moving bars in path of Blade through Servo Motor to provide cutting accuracy at high speed.

Cold Shear

Cold Shears are designed with their high strength capacity to cut metals which are produced in different shapes and sections, and it is located right after the Cooling Bed. Cold Shears are manufactured in 3 different ways.

SL. No.	TYPE	CUTTING SIZE
1	Cold Shear (Clutch & Brake Type)	TMT Bar up to Ø40 mm
2	Cold Shear (Hydraulic)	TMT Bar up to Ø40 mm
3	Billet Shear (Hydraulic)	Billet up to 160 mm



FINISHING EQUIPMENTS



Quenching System

Rebar's are Thermo-mechanically Treated through Quenching Box to obtain the required Mechanical Properties

Features:

- Self-Tempering process that ensures high Weldability.
- TMT bars of Fe415, Fe500, Fe550 & Fe600 Grades

Twin Channel

Twin Channel offers solution for bar collecting at cooling bed on high speeds. Twin channels are available for bar size up to \varnothing 40mm and stock speeds as high as 30 meters per second.

This carries the bar in closed channel until the material comes to stand-still position and discharge it to the bed below automatically.



Ultra-High-Speed Rotary Drum (UHSRD)

- Double Drive Rotary Drum system assures less than half the response time as compared to a Twin Channel, suitable for Mills with capacity of above 30 Tons/hr.
- Multi-channel design gives time to stop the bar before dropping onto the cooling bed.
- UHSRD is suitable for \varnothing 8mm to 40mm/ cycle time of 1.4sec.

Automatic Rake Type Cooling Bed

Cooling beds naturally cool the material as well as cross transfer towards the discharge end. These Rake Type Cooling Beds transfer the material by one pitch for every rake movement controlled by Start/Stop DC Motor automated through PLC to impart straightened material. It helps improve the metallurgical properties as the bars are cooled uniformly.





BAR HANDLING AREA

Bar Handling System includes the automatic stacking, Bundling, Binding, weighing and labelling of Rolled products.



Chain Transfer

We offer the rare combination of innovation and quality, which other wise is quite hard to get from other manufacturers.

Features:

- Almost noise free
- Less transmission efficiency loss
- Long service life
- Simple structure
- Robust chain

Bar Counter

- High counting accuracy.
- High production capacity.
- Simple and fast change of bar diameter.
- Floor standing panel with display for easy settings.
- Built-in kick-off arm for the last counted bar of each bundle.
- Low maintenance requirements.
- High operating availability.



Stacker and Bundling Systems

All stackers have a built-in bundling function. Bundles for round and flat bars available together with bar counting and bundle processing systems. The packing form can be round, square, rectangular and hexagonal.

Binding Systems

Automatic Binding of the packages and bundles is available with wire or strapping.

Weighing & Labeling

All bundles can be automatically weighed and further Labelled for quality assured delivery of the finished products.



CNC MACHINES

Technical Specifications

Specifications	Model : XK9350D
Max. Diameter of Processed Roll	550 mm
Max. Length of Processed Roll	up to 2500 mm
Max. Weight of Processed Roll	up to 1500 kg.
Rib Cutting for Re-Bar Diameter	Ø6 mm - Ø50 mm
Rib Cutting per rolls	Free Choice
Rib Omitting	Free Choice
Min. Feed Rate	0.001 mm/ deg
Spindle Speed of Flying Cutter Head (Rib Cutting)	0 - 600 RPM
Spindle Speed of Milling Head (Marking)	0 - 3000 RPM
Head Stock Spindle Bore	MT#6
Head Stock Chuck Diameter (4 Jaw Chuck)	400 mm
CNC 4- Axis Control System Make : SIEMENS	Siemens CNC Controllers
Servo Motors & Drives Make : SIEMENS	AC Servo Motors & Drives
1.75 KW/ 2000 RPM : 02 No. 2KW/ 2000 RPM : 01 No., 3.5 kw/ 2000 RPM : 01 No. Spindle Motor 2kw/ 8000 RPM : 01 No.	
Overall Dimension (L X W X H) (Approx)	4000 X 1500 X 1900 mm

CNC Roll Notching & Branding Machine



CNC Roll Turning Lathe Machine



Technical Specifications

MODEL No.	TLM 60300	TLM 80350
CAPACITY		
Max. swing over bed	950 - 1000 mm	1000 - 1100 mm
Max. swing over cross slide	600 mm	800 mm
Job Between Centre	900 - 3000 mm	1200 - 3500 mm
SPINDLE		
Steps of spindle	Stepless	Stepless
Spindle nose	Straight nose	Straight nose
Spindle bore	80 - 110 mm	80 - 150 mm
AXIS		
Max Travel of X axis	450 - 480 mm	480 - 600 mm
Max Travel of Z Axis	900 - 2800 mm	900 - 3200 mm
Rapid Travel of X axis	5 m/min	2 - 5 m/min
Rapid Travel of Z Axis	10 m/min	3 - 10 m/min
TAILSTOCK		
Taper Bore	MT 6	MT 6
Quill /Tailstock body movement	Manual	Manual
Max. Quill travel	200 - 230 mm	150 - 200 mm
External diameter	180 - 200 mm	180 - 300 mm

Technical Specifications

MODEL No.	TLM 60300	TLM 80350
AUTOMATIC TOOL POST		
Type of Tool Post	4 Way Automatic	4 Way Automatic
OTHERS		
Guide ways	4 to 4+1	4 to 4+1
Spindle Main Motor (kw)	37Kw - 45 kw	55 Kw - 65 kw
4 jaw independent chuck size	600 to 650 mm	600 to 850 mm
Headstock Spindle Taper	MT6/Metric 100	MT6/Metric 100/Metric 120
Controller System	Siemens	Siemens
Max. Workpiece weight (Kg)	3000 to 6000	3000 to 6000
Bed Length	5000 - 5300 mm	5000 - 7500 mm
Bed Width	850 mm 900 mm	1500 mm 1800 mm
Bed Height	800 - 850 mm	800 - 1100 mm
Net Weight	9000 - 11500 kgs	11000 - 15000 kgs



AKSHI ENGINEERS



SCAN TO GET LOCATION

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