

PRECISION STEEL TUBES

Introduction

Pennar Group, founded in 1988, has over 4000 employees with an annual turnover of more than 3500 crores of Indian Rupees (USD 360 Million).

Pennar Industries has nine manufacturing facilities in India, and its overseas manufacturing facility is located in Portland, USA.

Pennar Industries endeavors to achieve 'Total Customer Satisfaction through Total Quality Management' and is committed to producing and providing steel-based products and associated services of the highest quality to customers all over the world.

Pennar Industries has a dedicated team of well-qualified engineers who employ stringent quality control measures at every stage of the manufacturing process. The end-products are subjected to a battery of quality tests on various parameters to meet our rigorous checks based on customer specification.

USD **360**
Million Turnover

35+
Years of Experience

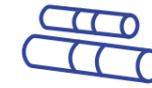
1,500+
Engineered Products

1,000+
Customers Across Industries

8
Manufacturing Plants

2,500+
Employee Base

Quality Assurance



Precision Tubes



Industrial Components



Hydraulics



Solar Panels



Aerospace Machined Components



Automotive / Manufacturing Engineering



Steel Products and Profiles



Railway Sub Assemblies

Services

- Structural Engineering Services
- BIM (Building Information Modelling)
- Plant-Product Engineering Services
- Industrial Automation
- Digital Consultancy (IoT) & Value Added Solutions

Projects

- Pre-Engineered Buildings
- Water Treatment
- Solar Structures

Subsidiaries

- Pennar Global Metals
- Pennar GmbH

Vision

Our vision is to be a globally reputed engineered metal products company. We endeavour to have a strong and enduring relationship with our customers based on quality and service.

Mission

Our mission is to leverage our modern infrastructure, technical expertise and decades of experience to provide high quality and cost effective metal products to our customers. We are committed to ensure rewarding experience to our customers. We work closely with shareholders, suppliers, customers and employees to ensure attractive economic returns for every shareholder.

Pennar Tube Division

Pennar Tube Division, established in 2010, has over 500 employees and an annual turnover of more than INR 350 crores (USD 45 million).

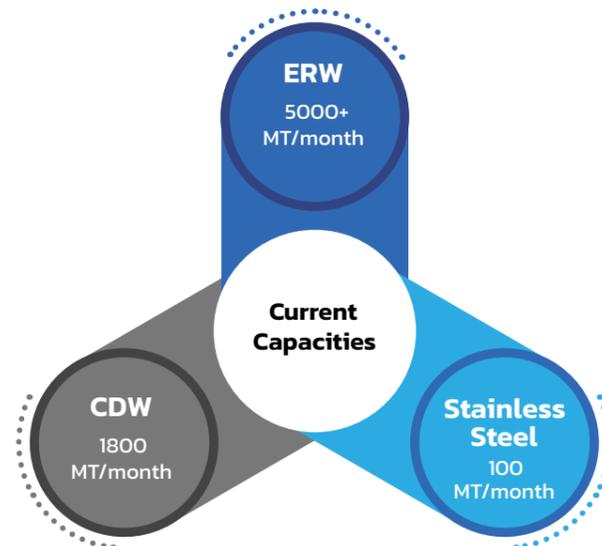
The product categories include Electric Resistance Welded (ERW), Cold Drawn Welded (CEW/CDW/ DOM), and Stainless Steel (SS) Tubes. The tube production capacity is 60,000 MT/Annum.

Pennar Tube Division produces Low Carbon, Medium Carbon, and High-Strength Low-Alloy (HSLA) tubes for various industries, including Automobile, Hydraulic Cylinders, Hydro Expansion, Propeller Shafts, Solar Torque, Axle Tubes, Textiles, Air Pre-Heaters / Boilers, Rolls and Conveyors, among other engineering trade segments.

The **Pennar SS Tube Division** manufactures Ferritic, Martensitic, and Austenitic Stainless Steel tubes for a wide range of applications, such as Condensers, Heat Exchangers, Boilers & Pressure Vessels, Instrumentation, Hydraulic & Pneumatic Systems, Ornamentals & Hardware, Thermal & Nuclear Power Plants, Furniture, Dairies, Sugar Industries, Railways, Textile Machinery, Solvent Plants, Defence, Petroleum and Petrochemicals, Oil & Gas Refineries, Pharmaceutical & Chemical, Fertilizers, Automobile & Locomotive, Chemical Industries, and Steel Plants.

Features

- High Strength (Tensile / Yield / Impact)
- Dimensional Accuracy
- Uniformity in Shape
- Excellent Surface Finish & Roughness, Wear Resistance
- Good Weldability
- Yield Strength upto 800 MPa in ERW Tube



Manufacturing Facilities

- Continuous Steel Strip Pickling (Push Pull Pickling)
- Slitting Machine (HR & CR)
- Cold Rolling Mill
- Bell Annealing Furnace
- Tube Mills – 5 Nos
- Roll Hearth Annealing Furnaces – 3 Nos
- Induction Furnace
- Tube Cold Drawing Benches – 14 Nos
- Straightening Machines – 8 Nos
- Surface Treatment Plant
- Swaging / Push Pointer
- Cutting / Chamfering Machine
- Buffing Machine
- Stenciling / Marking Machine

Tool Room Facilities

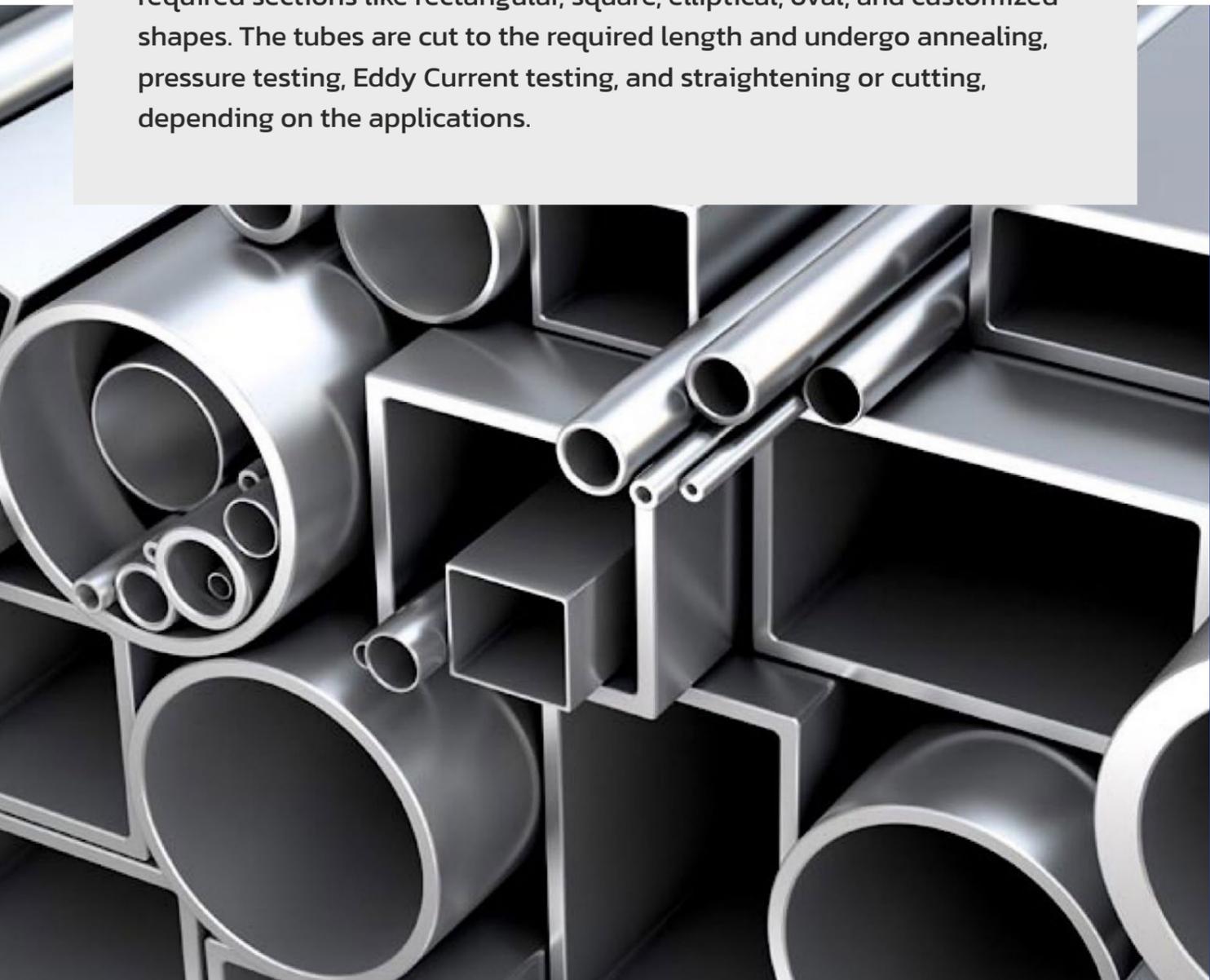
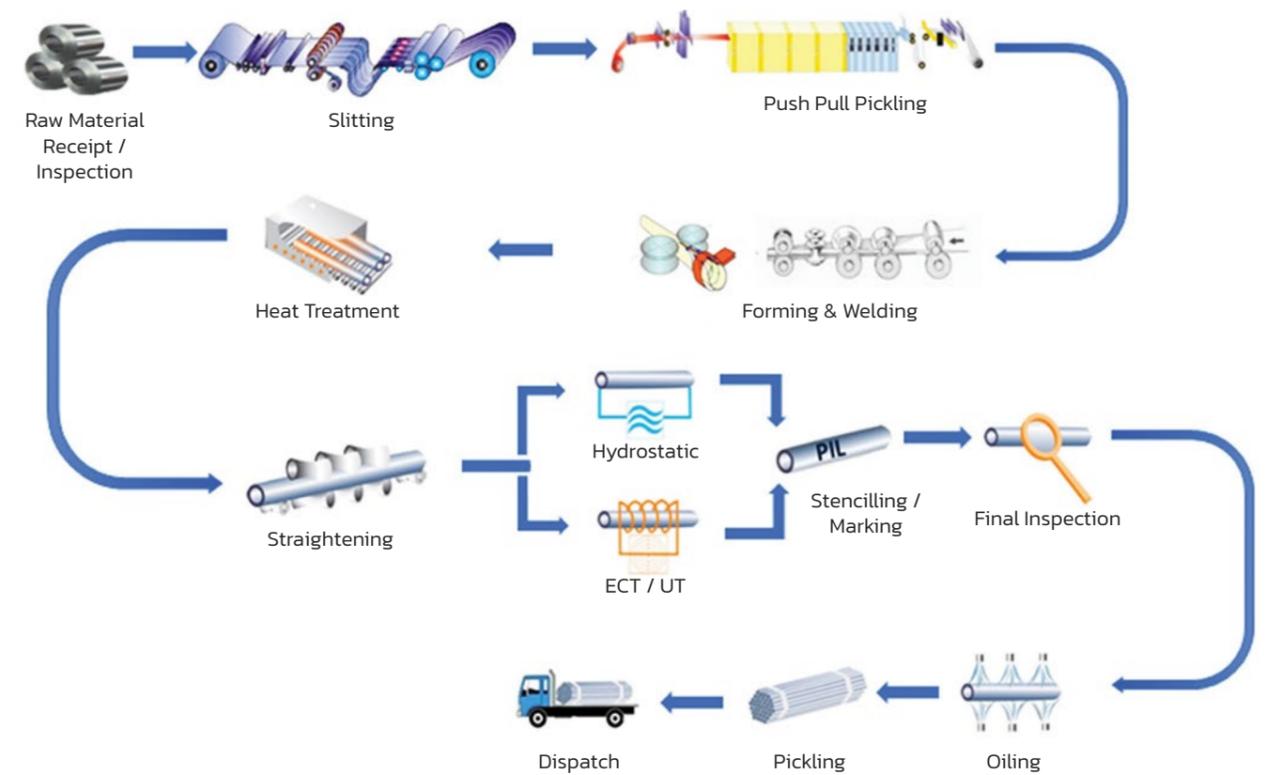
- CNC Lathe
- CNC Milling Machine
- CNC Horizontal Drilling Machine
- Wire Cutting Machine
- Shaping Machine
- Slotting Machine
- Surface Grinding Machine

Testing Facilities

- Eddy Current Testing Machine
- Ultrasonic Testing Machine
- Hydro Pressure Testing
- Spectrometer
- Universal Tensile Machine
- Hardness Tester (Rockwell)
- Micro Vickers Hardness Tester
- Profile Projector
- Surface Roughness Tester
- Metallurgical Microscope
- CMM

Electric Resistance Welding (ERW) Tubes

Electric Resistance Welded (ERW) tubes are made by forming a steel strip into a tubular round section through progressive movement through a set of specially designed rolls. The butted ends of the strip are welded by a high-frequency induction welding process without any filler material. The hot weld-flash formed due to welding is removed internally (fin-cut) and externally by scarfing units. Turks head and sizing rolls, provided at the end of the tube mill, ensure the straightening and sizing of the tubes into required sections like rectangular, square, elliptical, oval, and customized shapes. The tubes are cut to the required length and undergo annealing, pressure testing, Eddy Current testing, and straightening or cutting, depending on the applications.



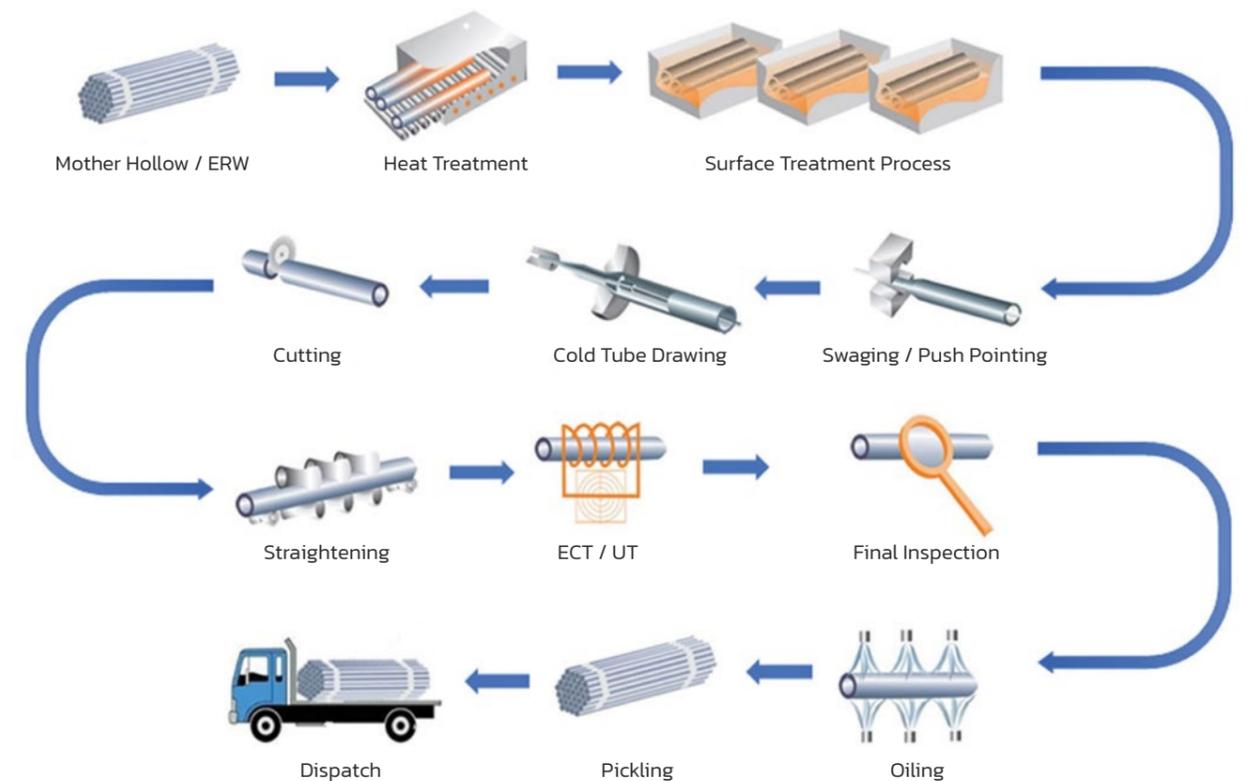
ERW Tube Range

| Outer Diameter in mm (Inch) | | Thickness in mm (Inch) | | Length in mm (Inch) | |
|-----------------------------|-----------------|------------------------|---------------|---------------------|-----------------|
| Min | Max | Min | Max | Min | Max |
| 10.00 (0.394") | 133.00 (5.230") | 0.80 (0.0315") | 7.20 (0.295") | 4000 (157.50") | 15000 (472.44") |

Cold Draw Welded (CDW) Tubes

Tubes requiring high precision dimensional tolerances, higher strength, controlled mechanical properties, and special smooth inner surface finishes are produced by the Cold Drawing process, popularly known as Cold Drawn Welded Tubes (CDW). ERW tubes are annealed and prepared for pointed ends through cold swaging / push pointing operations. End-prepared tubes are drawn through a high-precision, closely machined die which controls the outer diameter, over a plug (placed inside the tube, coaxial with the outer die) that controls the inner diameter of the tube. The tubes are further processed by downstream facilities for a variety of applications. Uniform sectional thickness, close dimensional tolerances, superior inner surface finish, and consistently higher mechanical properties make CDW tubes suitable for a wide variety of applications.

We are supplying SSID/H9 (ready to use) and SRB (ready to hone) for hydraulic cylinder tube applications.



CDW Tube Range

| Outer Diameter in mm (Inch) | | Thickness in mm (Inch) | | Length in mm (Inch) | |
|-----------------------------|-----------------|------------------------|---------------|---------------------|----------------|
| Min | Max | Min | Max | Min | Max |
| 9.00 (0.354") | 120.00 (4.276") | 0.89 (0.035") | 6.50 (0.276") | 400 (15.748") | 9000 (354.33") |

STAINLESS STEEL (SS) TUBES

The first stage of the manufacturing process is roll forming, combined with state-of-the-art welding technology. The TIG welding / HF Welding method uses electricity to achieve fusion. The heat-affected zone following TIG / HF welding maintains good mechanical and corrosion resistance properties.



The solution annealing process eliminates the workhardening effect caused by cold working and also homogenizes the structure of the welded area, enhancing corrosion resistance. The different stages of heat treatment are carried out, and the duration and speed of the tubes are constantly monitored to achieve correct solubilization.

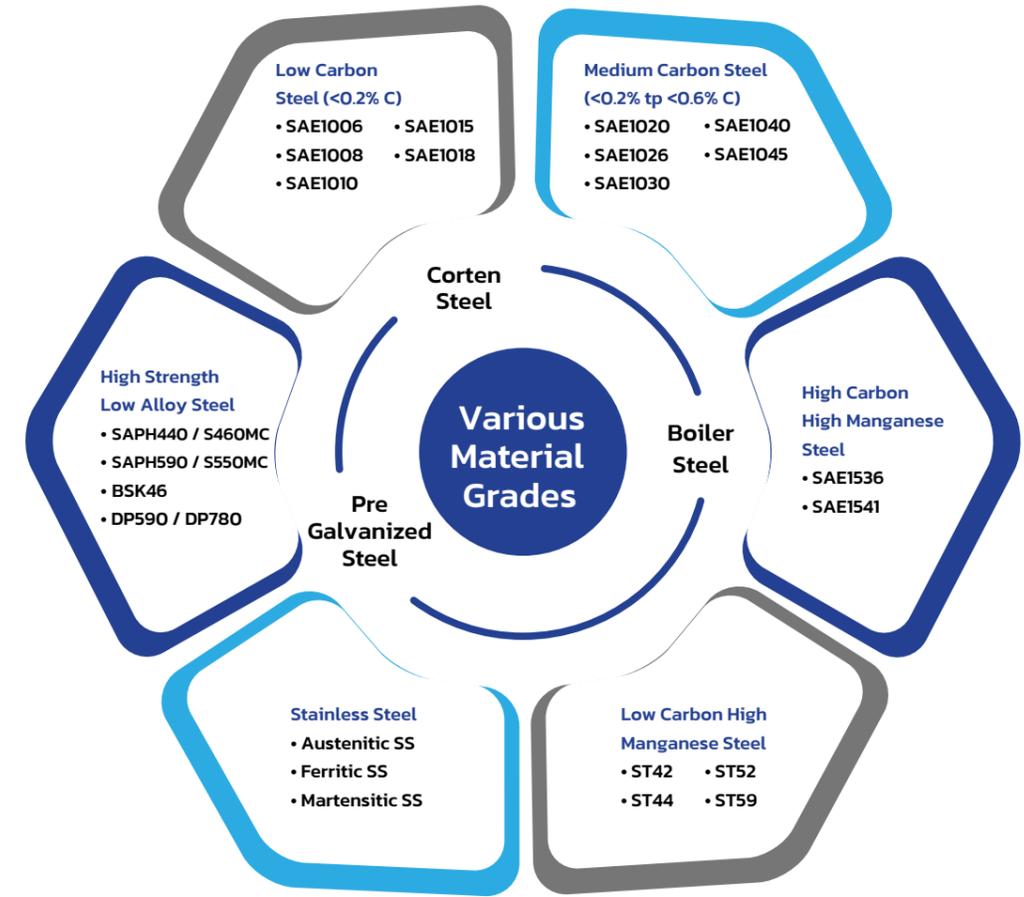
CDW Tube Range

| Outer Diameter in mm (Inch) | | Thickness in mm (Inch) | | Length in mm (Inch) | |
|-----------------------------|----------------|------------------------|---------------|---------------------|-------------|
| Min | Max | Min | Max | Min | Max |
| 17.00 (0.669") | 63.50 (2.500") | 0.70 (0.0275") | 3.60 (0.141") | 400 (15.748") | 6000 (240") |

SS Tube Capability Chart

| PRODUCT | | | | | | | | | | | | | | |
|------------------|-----------|-----------|------|------|------|------|------|------|-----|------|------|------|------|------|
| Shape | Outer DIA | Thickness | | | | | | | | | | | | |
| ROUND | 17.00 | 0.50 | 0.71 | 0.89 | 1.00 | 1.20 | 1.45 | 1.65 | | | | | | |
| ROUND | 19.05 | 0.50 | 0.71 | 0.89 | 1.00 | 1.20 | 1.45 | 1.65 | | | | | | |
| ROUND | 20.00 | 0.50 | 0.71 | 0.89 | 1.00 | 1.20 | 1.45 | 1.65 | | | | | | |
| ROUND | 21.34 | | 0.71 | 0.89 | 1.00 | 1.20 | 1.45 | 1.65 | 2.0 | | | | | |
| ROUND | 25.00 | | 0.71 | 0.89 | 1.00 | 1.20 | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | | | |
| ROUND | 25.40 | | 0.71 | 0.89 | 1.00 | 1.20 | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | | | |
| ROUND | 26.67 | | 0.71 | 0.89 | 1.00 | 1.20 | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | | |
| ROUND | 31.80 | | | 0.89 | 1.00 | 1.20 | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | |
| ROUND | 32.00 | | | 0.89 | 1.00 | 1.20 | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | |
| ROUND | 33.40 | | | | 1.00 | 1.20 | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | |
| ROUND | 38.10 | | | | | 1.20 | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | 3.60 |
| ROUND | 40.00 | | | | | 1.20 | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | 3.60 |
| ROUND | 44.50 | | | | | 1.20 | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | 3.60 |
| ROUND | 48.30 | | | | | | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | 3.60 |
| ROUND | 50.80 | | | | | | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | 3.60 |
| ROUND | 51.00 | | | | | | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | 3.60 |
| ROUND | 60.30 | | | | | | | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | 3.60 |
| ROUND | 63.50 | | | | | | | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | 3.60 |
| Square Thickness | | | | | | | | | | | | | | |
| SQUARE | 20.00 | | 0.71 | 0.89 | 1.00 | 1.20 | 1.45 | 1.65 | 2.0 | 2.11 | | | | |
| SQUARE | 20.00 | | 0.71 | 0.89 | 1.00 | 1.20 | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | |
| SQUARE | 25.00 | | | 0.89 | 1.00 | 1.20 | 1.45 | 1.65 | 2.0 | 2.11 | 2.41 | 2.65 | 3.05 | 3.60 |
| SQUARE | 45.00 | | | | | | | | | | | | | |

All Dimensions are in mm



Equivalent Standards for Products

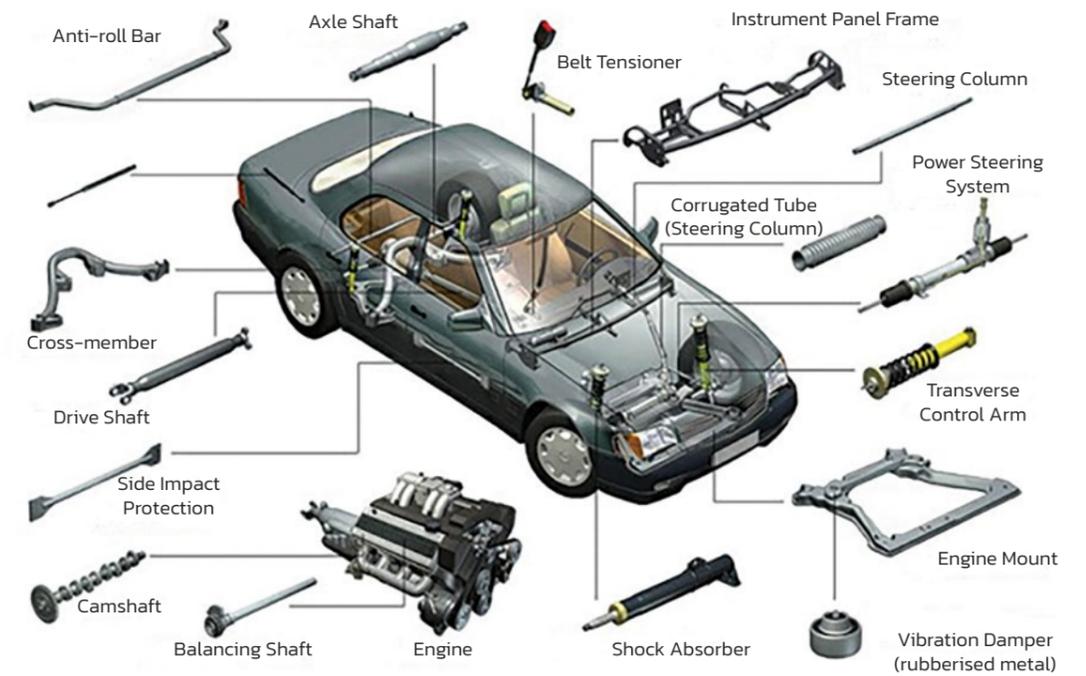
| Application | Indian | British | Japanese | German | American |
|----------------|---------|---------|------------|-----------------|-----------------|
| Automobiles | IS 3074 | BS 6323 | JIS G 3445 | DIN 2393 | ASTM A 513/J525 |
| Boilers | IS 1914 | BS 3059 | JIS G 3461 | - | ASTM A53/A214 |
| Air Heaters | IS 3601 | BS 6323 | JIS G 3461 | DIN 1717 | ASTM A214/A423 |
| Heat Exchanger | - | BS 3606 | JIS G 3461 | DIN 17177 | ASTM A 178/A214 |
| Gen. Engg. | IS 3601 | BS 6323 | JIS G 3445 | DIN 2393 & 2394 | - |
| Bicycles | IS 2039 | BS 1717 | - | - | - |
| Structural | IS 1161 | BS 4360 | JIS G 3444 | - | ASTM A 500 |
| Furniture | IS 7138 | - | JIS G 3445 | - | - |
| Transformer | IS 8036 | - | - | - | - |
| Sectional | IS 4923 | - | JIS G 3466 | - | ASTM A 500 |
| Oil Pipes | IS 1978 | BS 1387 | JIS G 3452 | DIN 17177 | API 5L Gr. A |
| Idler Pipes | IS 9295 | - | - | - | - |

Our Credentials



Applications

4-WHEELERS



Awards and Recognitions



2-WHEELERS



Hydraulic Cylinders



Hydraulic Tube

Safety Critical Applications



Axle Tube



Propeller Shaft



SS Exhaust Tube



Concrete Pump Line Pipes



Oil & Gas Industry



Solar Torque Tube



Borewell Rod



Hydraulic Cylinder Tube

Energy & General Engineering



Conveyor Tubes



Boiler / Air Pre Heater

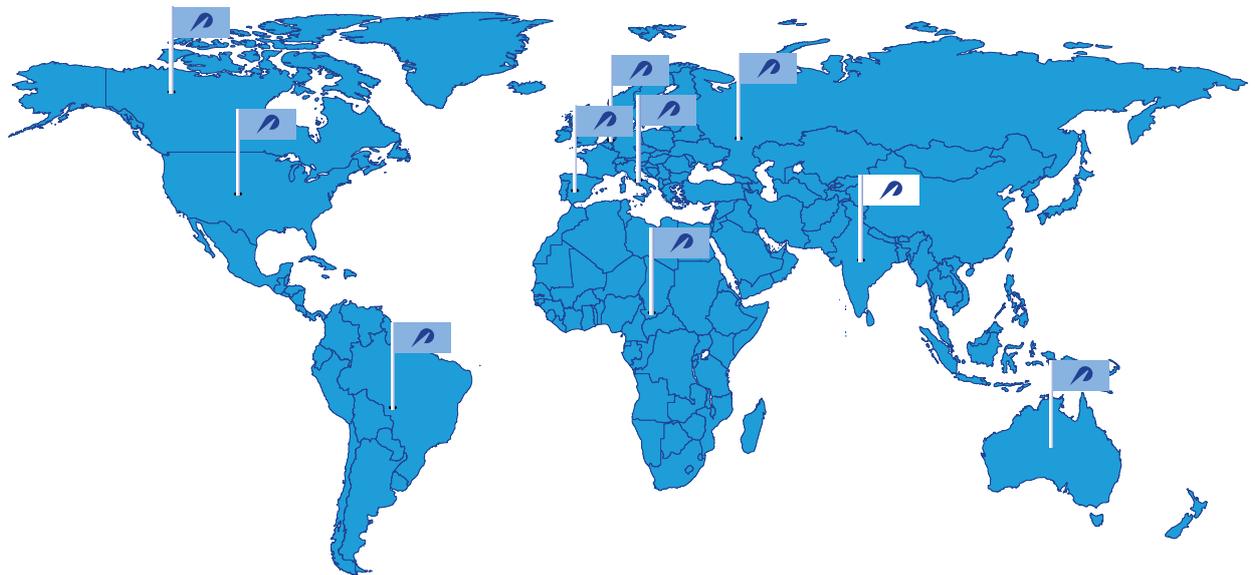


Structural / Pipe Fitting

Our Customers



Global Footprints



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