

**SOUTH INDIA TUBES**



**SOUTH INDIA TUBES**  
**SEAMLESS TUBES MANUFACTURERS**  
**ISO 9001 : 2015 CERTIFIED COMPANY**

[WWW.SOUTHINDIATUBES.COM](http://WWW.SOUTHINDIATUBES.COM)



## Company profile

South India tubes has been set up as the large manufacturing facility for cold drawn seamless tubes products, in India with fully Automatic, semi-Auto, manual.

South India tubes is located at Jalaram Industrial Estate, Morbi Rajkot Highway, Chattar village Rajkot in the state of Gujarat which is about 25 km from Rajkot towards Chattar. The company is an ISO 9001:2015 registered company.

South India tubes is fully managed by skilled and experienced manpower in full strength to achieve the production target and full fill forthcoming and challengeable requirement from the market.

South India tubes are produced by cold drawing precision seamless tubes over a plug through a reducing die to achieve reduction in outside diameter and wall thickness. The tubes are the bright annealed under closely controlled reducing atmosphere in a highly sophisticated LPG heated roller heart annealing furnace so as to ensure bright, scale free and clean tubes, completely free from oxidation, this meeting critical requirements of end users.

## Highlight

- ❖ Catering to major requirements of major vehicles and diesel engine manufacturers their ancillaries.
- ❖ Internally & Externally scale free bright tubes since normalized in bright annealing furnace.
- ❖ Tubes manufactured out of fully aluminum killed steel having resistance to corrosion and high degree of reliability.
- ❖ Reliable & individual quality department having all in house testing facility
- ❖ Quick and on time delivery
- ❖ Good bendability, Flaring, Forming, Flattening, UP setting, Tensile Testing, Hardness Testing Facility as per customer requirements.

# CARBON STEELS SEAMLESS TUBES MANUFACTURER PROCESS:



## Manufacturing Process: Cold Drawn Bench

Before drawing operation the Pipes are coated by Phosphate to avoid metal to metal contact and static for lubrication purpose. Then approx 200 mm of the input end are reduced by using tagging process.

Cold Drawing is the process applied when very precise tolerances are specified for a tube diameter. Besides the improved diameter tolerances, specified mechanical properties can also be attained. In addition, this process is offered in all cases where special requirements are placed on the quality of the surface of the tube bore.

In cold drawing, the tube is pulled through a Tungsten Carbide Die with a fixed floating plug resulting in reduced tube diameter/ thickness and increase in tube length.

## Heat Treatment: Bright Annealing

After each process of manufacturing tubes & pipes are subjected to heat treatment in a continuous annealing furnace at the specified temperature as per specification followed by slow air cooling and fast cooling subsequent annealing process is carried out.

**Full Annealing, Normalising and Tempering ensures**

- ♦ Homogenous structure/ refining grain size.
- ♦ Removal of residual stresses developed during the process
- ♦ Imparts ductility and softness for further process



## Carbon Steel Seamless Precision Tubes: Manufacturing Process

South India Tubes is have specialization of manufacturing cold drawn seamless carbon steel tubes normalized / annealed in controlled atmosphere. These tubes are softer than the tubes annealed in normal annealing and due to controlled atmosphere these tubes are bright finished, semi bright and scale free also.

### Applications

Tubes produced in controlled atmosphere is widely used in application of

- ♦ High Pressure Fuel Injection Tubing
- ♦ Hydraulic Tubing
- ♦ Automobiles Industries
- ♦ Brake Shoe Lines
- ♦ CNG Pipings
- ♦ Fuel Pump Line
- ♦ Precise Engineering etc.,

## Seamless Tubes Acc. To DIN 2391

the technical conditions of delivery as per DIN 2391 part 2 will apply.

The tubes are generally ordered in terms of outside diameter and wall thickness. However tubes may also be ordered in terms of outside and inside diameter. In this case customer must order accordance to DIN 2391 GrA&B

**High Pressure Diesel Fuel Injection Tubes**

**Specifications :** DIN 2391, ST 35 AL, DIN 73000 and diesel engine St. 35 tubes.





## INSPECTION & TESTING

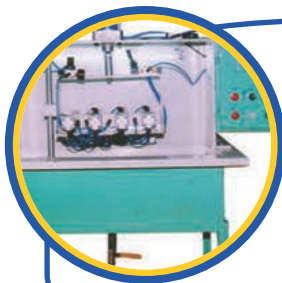


### Eddy Current Test

This is the non destructive test carried out to detect the surface defect/ pin holes on the outside diameter or inside diameter of the tube.

### Hydrostatic Test

100% Hydrostatic Test is carried out on finished tubes/ pipes to check the tube for any leakage under elevated hydraulic by high flash point oil pressure as per specification or customer requirement so as chances of rusting near occurs.

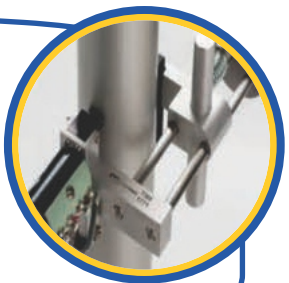


### Air Under Water (Pneumatic) Test

Pneumatic Test is carried out to check any leakage in tube by air pressure under water.

### Tensile Test

This is the destructive test carried out to obtain the mechanical test values of finished products.

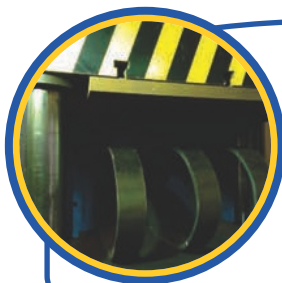
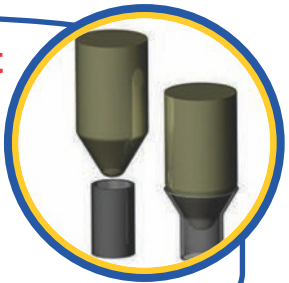


### Hardness Testing

Hardness tester is used for measuring hardness values of Tubes & Pipes.

### Flaring & Flange Test

Flaring test is carried out to check ductility of the material & Flange test is carried out to check the material under deformation.



### Flattening

Flattening test is carried out to check the material under compression.

### Visual & Dimension Inspection

Inspection is carried out to detect any Dents, Surface Defect or Scratch on the surface of Tube. The Dimensional Inspection is carried out with calibrated Measuring Instruments for Product dimensions are within tolerance requirements, ID clean test in millpor test as well as wire roding testing.







# CARBON STEEL SEAMLESS PRECISION TUBES

## CHEMICAL COMPOSITION & MECHANICAL PROPERTIES

Specifications	En10235, DIN 2391, DIN 17175, DIN 1629, DIN 2448 in bright anneals, Zinc coated/ phosphated condition	
Size	3.00 mm to 90 mm & 0.40 mm to 6.00 mm	
Product Strength	1) Bright annealed tubes which give high corrosion resistance strength 3) Reliable for high pressure applications. 2) Supply in close dimension tolerances 4) Having less than 2 microns Ra value on ID	

## CHEMICAL COMPOSITION IN %

Steel Grade	Material Number	"C" Max	Mn.	"Si" Max.	"P" Max.	"S" Max.
St. 35	1.0308	0.17	0.40 Min	0.35	0.025	0.025
St. 35.8	1.0305	0.17	0.40 to 0.80 Min	0.35	0.040	0.040
St. 37	1.0254	0.17	0.40 Min	0.35	0.025	0.025
St. 37.4	1.0255	0.17	0.35 Min	0.35	0.040	0.040
St. 45	1.0408	0.21	0.40 Min	0.35	0.025	0.025
St. 52	1.0580	0.22	1.60 Max	0.35	0.025	0.025

## MECHANICAL PROPERTIES

Steel Grade	BK		NBK		
	Tensile Strength N/mm2	% Elongation	Tensile Strength N/mm2	Yield Stress N/mm2	% Elongation
St. 35	480	8	340 to 470	235	25
St. 35.8	---	---	360 to 480	235	25
St. 37	480	8	340 to 470	235	25
St. 37.4	---	---	350 to 480	235	25
St. 45	580	5	440 to 570	255	25
St. 52	640	4	490 to 630	355	22

NBK	Normalized	Tubes are heated above critical transformation point in a controlled atmosphere furnace.
BK	Cold Drawn (Hard)	No heat treatment is carried out after final cold forming, hence, these tubes cannot be coldworked any further. (e-g. bending, end forming, etc.)
BKW	Cold Drawn (soft)	After final heat treatment these tubes are given a light cold forming pass and hence can be coldworked further to a limited extent.

## PRODUCT HIGHLIGHTS

- ❖ Tubes are annealed in controlled atmosphere hence it will be completely scale free and in bright mirror finish.
- ❖ It gives uniformity in hardness and it will be suitable for precision bending as heat treatment is carried out in controlled atmosphere by uniform heating.
- ❖ Tubes are supplied in closer dimensional tolerances.
- ❖ Having better surface quality on ID and OD both with homogeneous Ra Value.



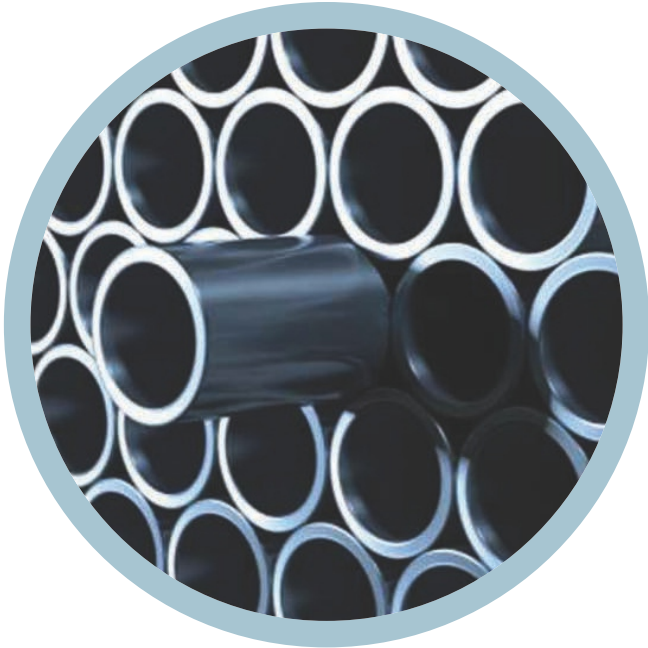
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## **SOUTH INDIA TUBES** **SEAMLESS TUBES MANUFACTURERS**

**Manufacturing Unit ::**

**Sub Plot No. 13+14B Jalaram Industrial Estate**

**Morbi Rajkot Highway Chatar**

**Tal : Tankara, Dist: Morbi At Chhatar**

**Marketing Office ::**

**No. B 354 1st Main Road, Peenya Industrial**

**Estate, 1st stage, Near TVS Cross,**

**Bengaluru - 560058, Karnataka INDIA**