



Furnace Tapping Tools

Catalogue



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Table of contents



Tap hole Drilling System

Product availability of bits

Accessories for Furnace Tapping

Manufacturing facility – Bits

Product availability of drill rods

Manufacturing facility – Rods

Roctool has been providing superior and cost effective solutions in Tap Hole Drilling for new generation Blast furnaces and Corex furnaces for the last 14 years. The team of engineers at Roctool is quality conscious and time conscious. Being a key requirement in steel making process, the tapping tools are made with suitable raw material using latest manufacturing techniques to maintain consistency and reliability. The production process is closely monitored and quality is controlled at every stage of the manufacturing process. Lean manufacturing methods are adopted to keep lead times low and deliveries reliable.

Established in 2000 at Hyderabad, India, the current annual production capacity is 250,000 tapping tools. Roctool has an in-house Seamless Tube mill for the manufacture of drill rods and a CNC facility for producing Tap hole drill bits & accessories.

Roctool caters to international market across different countries including USA, France, South Africa etc. We have a majority market share in India and our prime customers include Tata steel, Jindal Steels, Steel Authority of India, Vizag Steel, JSPL, Essar Steel, Monnet, Gerdau and Bhushan steels.

Tap hole Drilling System

The range of our Drilling System includes:

- Drill Rods with rope threads and wedge connections
- Shank adaptors
- Extension adaptors
- Couplers
- Various drill bits including 3-Lip, Cross type, Offset turbo type, button type, chisel and core bits
- Tap hole face cutters & Trimmers
- Nozzle seat cutters
- Poking Bars

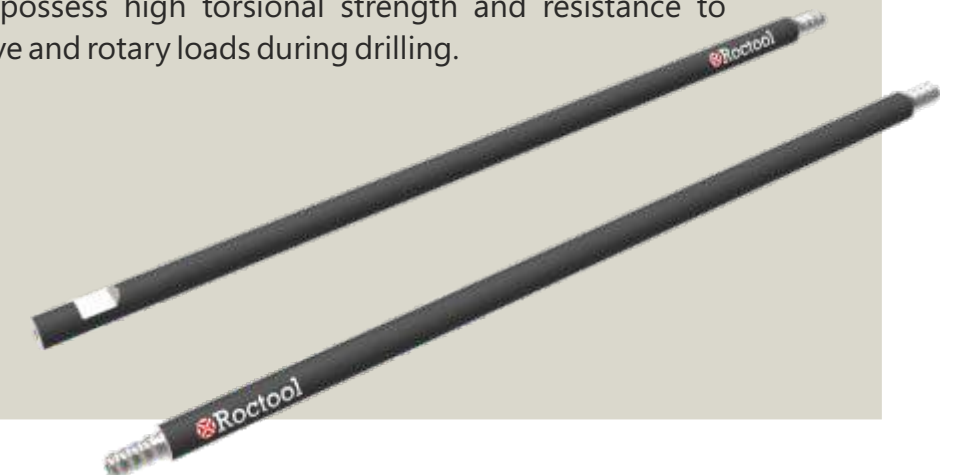
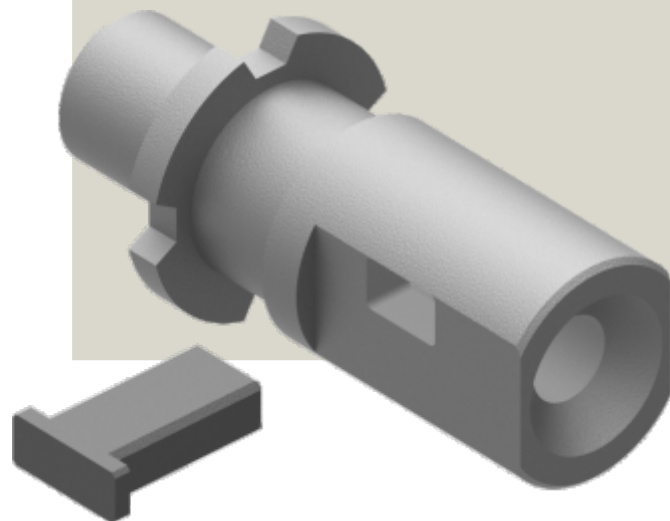
Drill Bit

The drill bit is designed with hard and abrasion resistant carbide which is fused using proprietary brazing alloys to withstand very high temperature and abrasive conditions. The bits are available in both threaded and weld type joints.

Drill Chuck

Drill Chucks are made of case hardened alloy steel which has high fatigue and impact resistance. They are customized to suit the different types drilling equipment.

The drill rods are thick walled hot rolled seamless tubes produced in standard carbon alloy grades. They possess high torsional strength and resistance to bending to take the percussive and rotary loads during drilling.



Drill Bits

The drill bit is designed to efficiently drill with improved performance and extended life hence reducing the drilling costs.

3 Lip bits



Cross bits



Offset turbo Bits



Button bits



Chisel and Core bits



All the above bits are available for welded and threaded connections

Threaded



Welded



Product availability



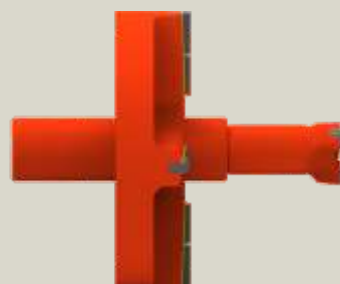
Diameters		Three lip		Cross		Offset Turbo	Button Bit	Chisel	Core
MM	Inch	TC	ST	TC	ST				
35	1 3⁄8"	✓	✓	✓	✓	✓	✓	✓	
40		✓	✓	✓	✓	✓	✓	✓	
45	1 3⁄4"	✓	✓	✓	✓	✓	✓	✓	
50	2"	✓	✓	✓	✓	✓	✓		
52	2"	✓	✓	✓	✓	✓	✓		
55	2 1⁄8"	✓		✓		✓	✓		
57	2 1⁄4"	✓		✓		✓	✓		
60				✓		✓	✓		
63	2 1⁄2"			✓		✓	✓		
65	2 1⁄2"			✓		✓	✓		
67				✓		✓	✓		
70	2 3⁄4"			✓		✓	✓		
80				✓		✓	✓		
90	3 1⁄2"			✓		✓	✓		✓
100	4"			✓		✓	✓		✓
120							✓		✓

The above bits are available in Standard Rope threads and T-Threads as per customer requirement.

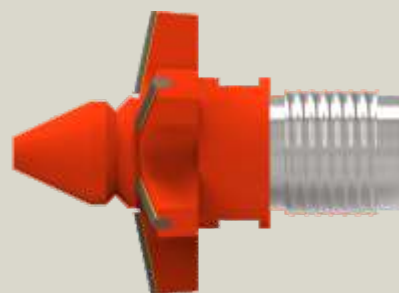
Cutters and Trimmers

The cutters and Trimmers are designed with suitable shape and grades of carbides for removal of deposits from tap hole face. Specialized cutters are used for nozzle seat boring. The cutters and trimmers are available in various sizes ranging from 150 mm to 280 mm.

Face Cutters and Trimmers



Nozzle seat Cutters



Other accessories for furnace tapping

The drill chucks, adaptors and couplers are manufactured with suitable grades of materials such as EN8, EN36 and EN24 to suit the standard equipment like Paulworth, TMT, DMV...etc

Shank Adaptors and couplers



Extension Rods



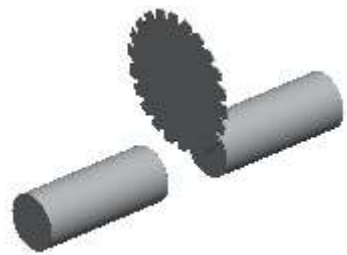
Drill Chucks



Tap hole bit - Manufacturing



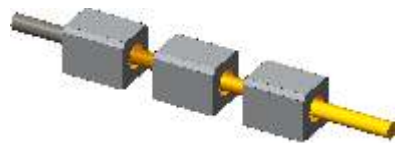
Tube Mill



1

Cutting billets to length

The billets are cut to different lengths depending on the finish size requirement with a band saw. The cut billets are machined with pierce initiating centre and fed into the induction furnace.



2

Heating

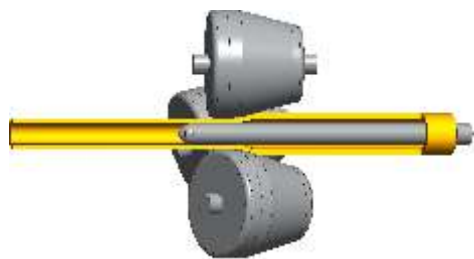
The induction furnace heats a billet up to the temperature of 1050 - 1200 C. By means of automatic transport systems a billet is transferred to the chute with the hydraulic pusher in the entering side of the oblique-roll piercing mill.



3

Piercing

The hot billets are fed by the intake pusher to the rollers of the piercing mill. When billets are caught by working rolls, the loading pusher retracts to the initial position. During the piercing process the mandrel is fixed by the special counter-support. After piercing by the special device the pierced billet (mother tube) is removed from the mandrel and transported to the rolling mill.



4

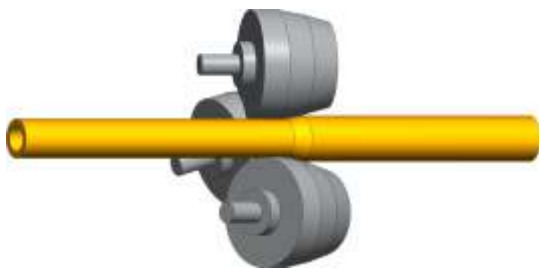
Elongation

The continuous elongator with a fixed mandrel is used to make a rough tube. The rough tube with a mandrel inserted is delivered to the mill stands and then it is reduced. Rolling is made with the mandrel fixed.

Reduction

After elongation the tubes are transferred by the transporting roller conveyor to the stretch- reducing mill. During the reduction process the tube outside diameter and wall thickness are reduced till the sizes stated by the standards subject to the steel thermal expansion coefficient.

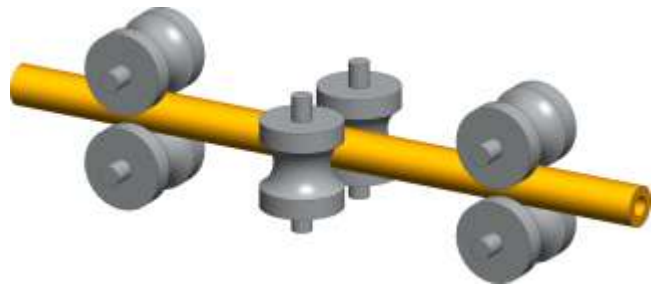
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Straightening

After reduction the tubes are fed into straightening mill where they are straightened in order to rectify curvature.

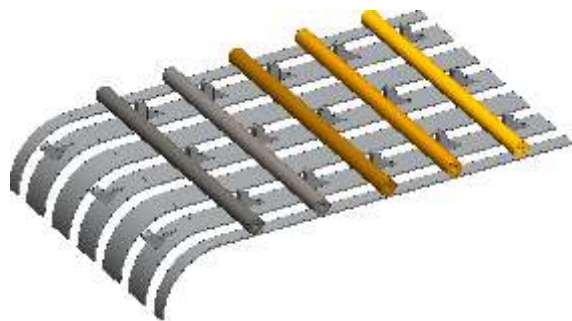
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Cooling

After the straightening mill the tubes are transported by the roller conveyor and then they are ejected sideways to a cooling bed. Here the tubes are air cooled on a special table or hot bed that continuously advances the tubing as additional tubes are finished.

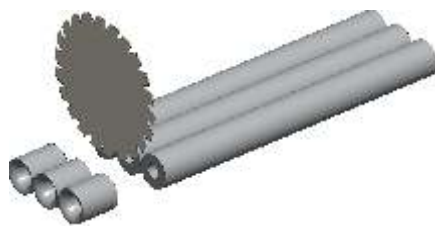
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Tube Cutting

After the tube leaves the cooling bed, a band saw cuts its ends which has the irregular geometrical shape because of the elongator process peculiarities. Later a batch saw cuts the tube package for the required length varying from 4 to 7 m.

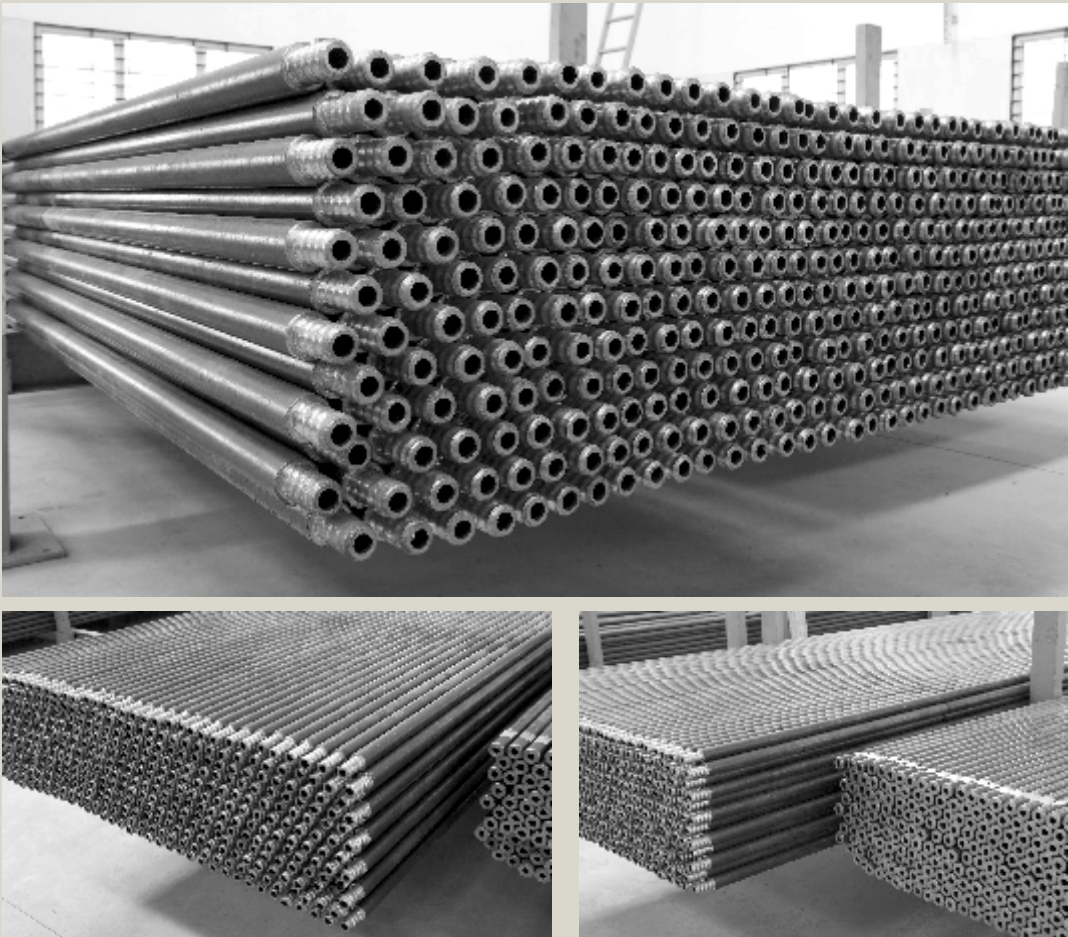
8



Drill rods and poking bars

SAE 1045 steel grade material is used for drill rods and are heat treated as per the specifications.

Poking bars are solid steel rods made out of Low carbon steel. The poking end of the bar is a spear headed or a sharp point as per customer requirement.



Drill rods Availability

Diameter	Standard Wall Thickness
32 mm	10mm
38 mm	12 mm
45 mm	15 mm
51 mm	16 mm

The standard tolerance on outer diameter and wall thickness is +/- 0.5 mm.

The maximum length available is 7.5 meters.

For special applications the drill rods are also manufactured as per customer requirement in non standard dimensions.

Rods and Adaptors - Manufacturing

