



Maruti Industries
Welcomes you.....

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About us.....

Maruti Industries has established in 1997 and begun to work as a technical solution provider to steel and tube industries. While working with our customers we understood the need of tube industry and entered in the business of manufacturing of Special Purpose Machines and material handling systems. We have a team of experienced engineers and skilled operators supported by the quality equipments. Today We cater the demands of tube industry by making SPMs as per their need and provide them technical solution.

Our Objectives

- To achieve the excellence in the services.
- To maintain integrity in thoughts and actions.
- Concerned about safety, health and environment.
- Continuous evaluation with emphasis on final product quality.
- Development of skills and competencies.
- Passion for innovative creations and applications.

Valuable customers....

ISMT Ltd. (Ahmednagar & Baramati plant)

Jindal saw Ltd (Sinnar, Nashik)

Heavy Metals & Tubes Ltd (Ahmedabad)

Lloyds Metals and Engineers Ltd Murbad

Kalyani Hospet steels Ltd (Hospet)

Sankalp forgings Pvt Ltd

Zenith Industrial Rubber products Pvt Ltd.

Larson & Toubro Ltd.

Kishco Cutlery Ltd. (Sinnar)

Machines manufactured by us....

Tube straightening machines.

Pointing Machines.

Bucking units.

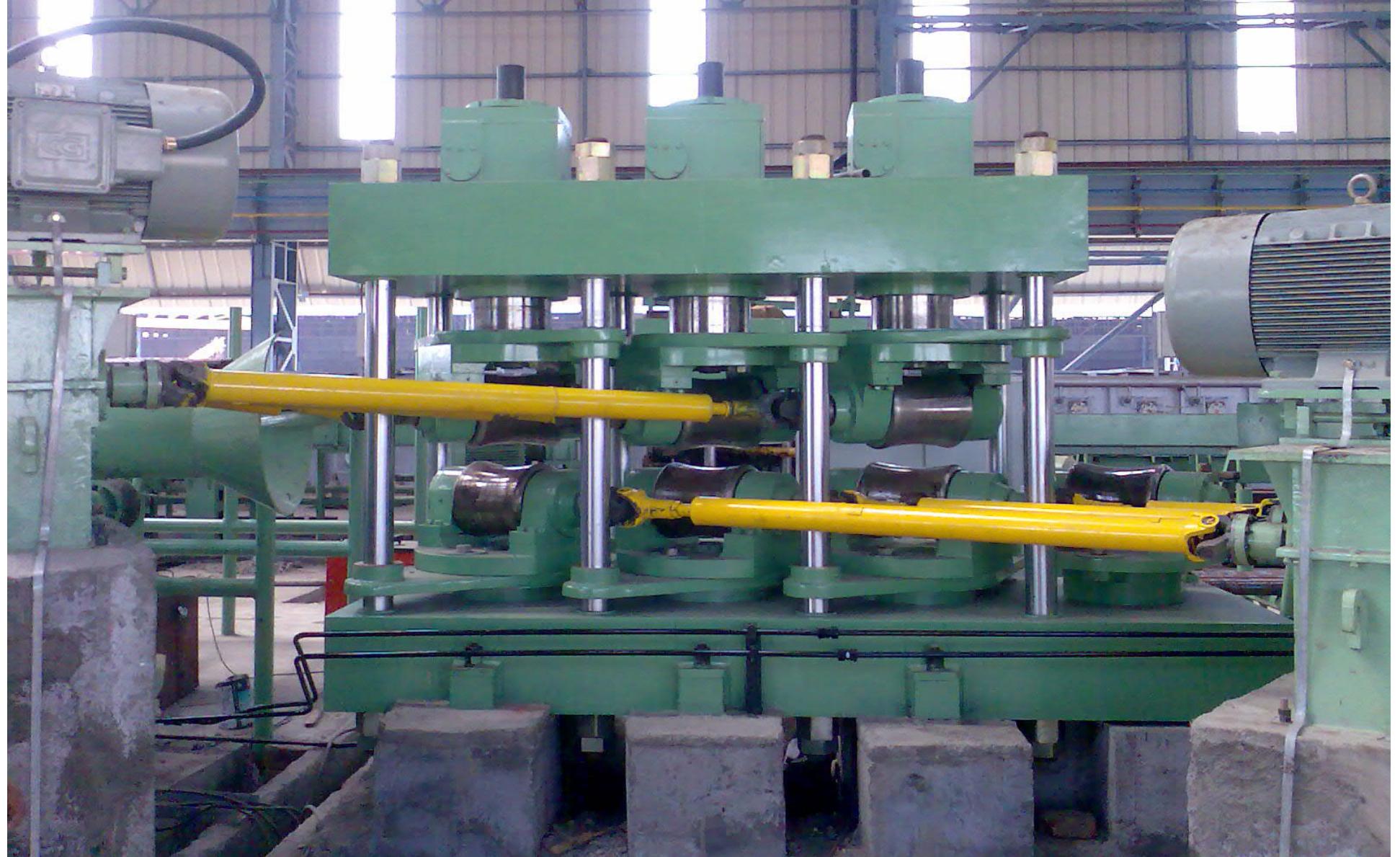
Hot Mill conveyor systems.

Pinch rollers for steel mills.

Hydraulic press.

Hydro Tester.

Tube straightening machine



Machine Specification

- Max Tube Dia: 150 mm
- Max Tube Thk: 32 mm
- Min Tube Dia: 45 mm
- Straightness: 1:1000
- Tube Length: 12 mtrs
- Cycle Time: 30 sec
- Power: 110 kW.

Sailent Features

- Roll width is designed for 1.2 scroll pitch.
- Hyperbolic profile for good contact.
- Rollers are made of D2 Material.
- Hard Chrome plated tie rods are provides better stability.
- All top rollers can be individually adjusted through induction motors and worm gear boxes. Hand Wheels are also provided for manual adjustment.
- VFD is provided for speed adjustment.
- Charging and discharging system is optional.

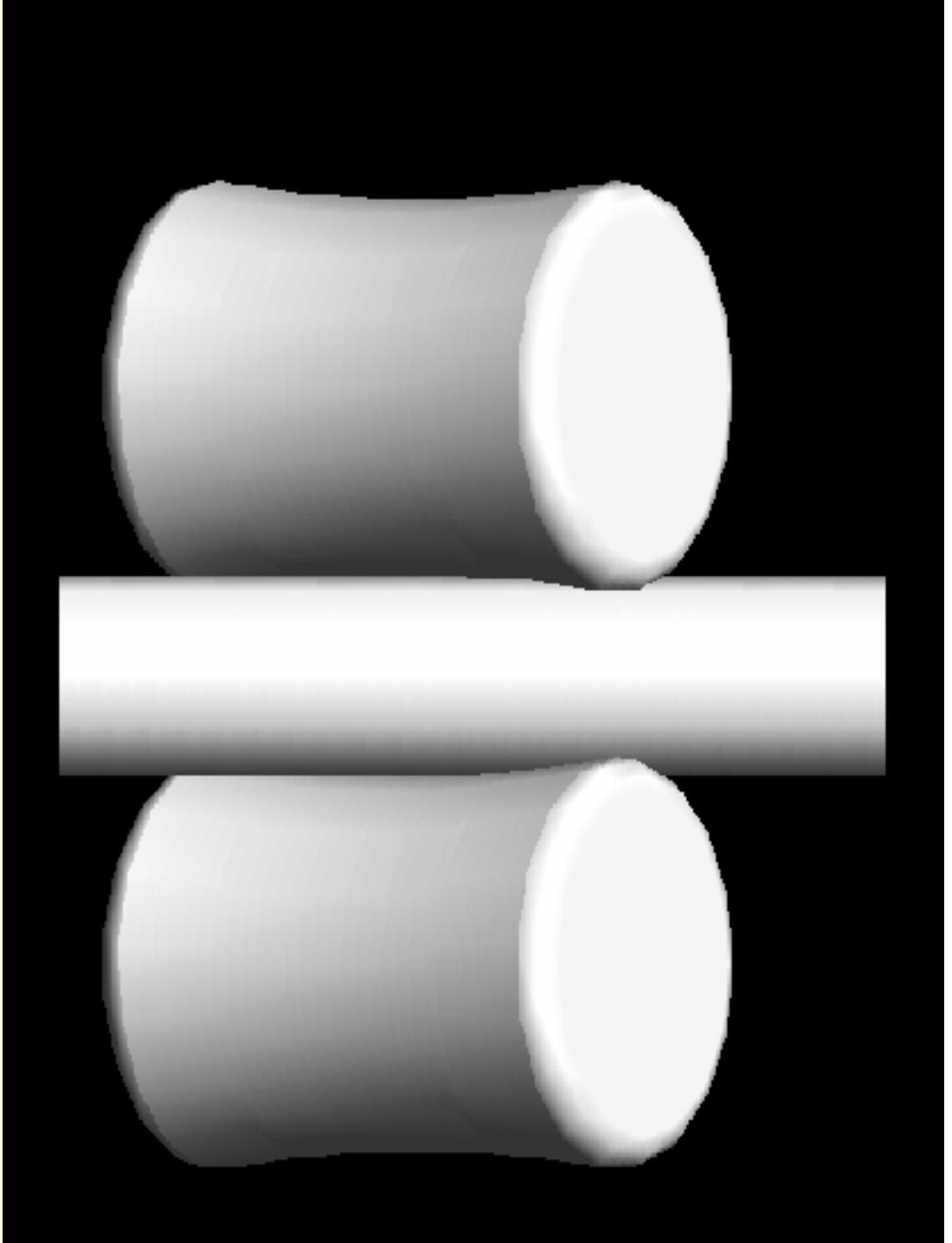
About scroll pitch....

Scroll pitch is the axial distance which tube travels during its one revolution. The effective roll width should be **minimum 1.1 times Scroll pitch** of largest tube size.

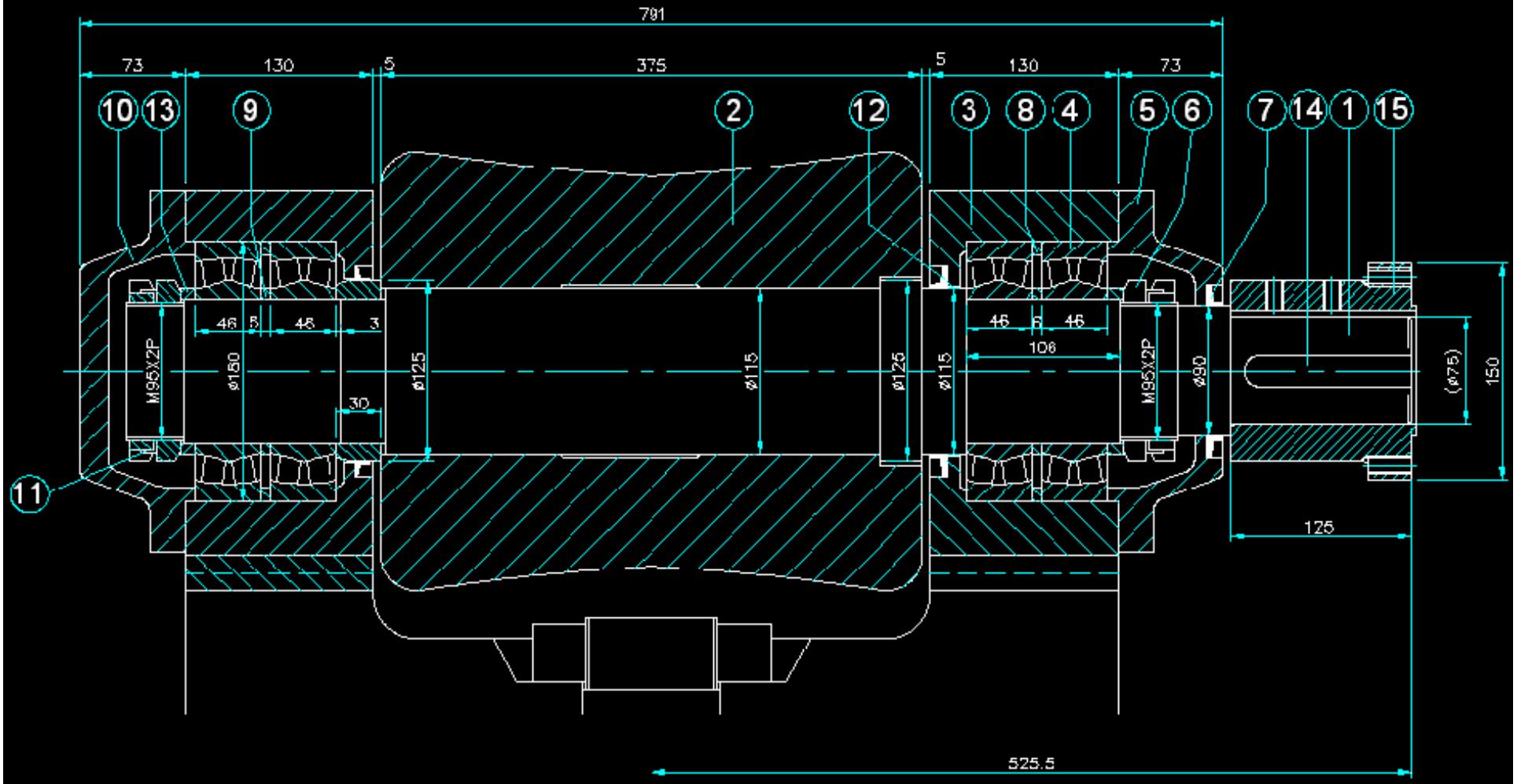


The roll width as mentioned above ensures all points on the tube passes twice thru one roller. This improves performance of machine.

Selection of optimum hyperbola profile provides 100% line contact. This improves performance of machine. This is checked with the 3D simulation soft ware prior to manufacture. Rollers are manufactured on CNC machines as per the coordinates fed.

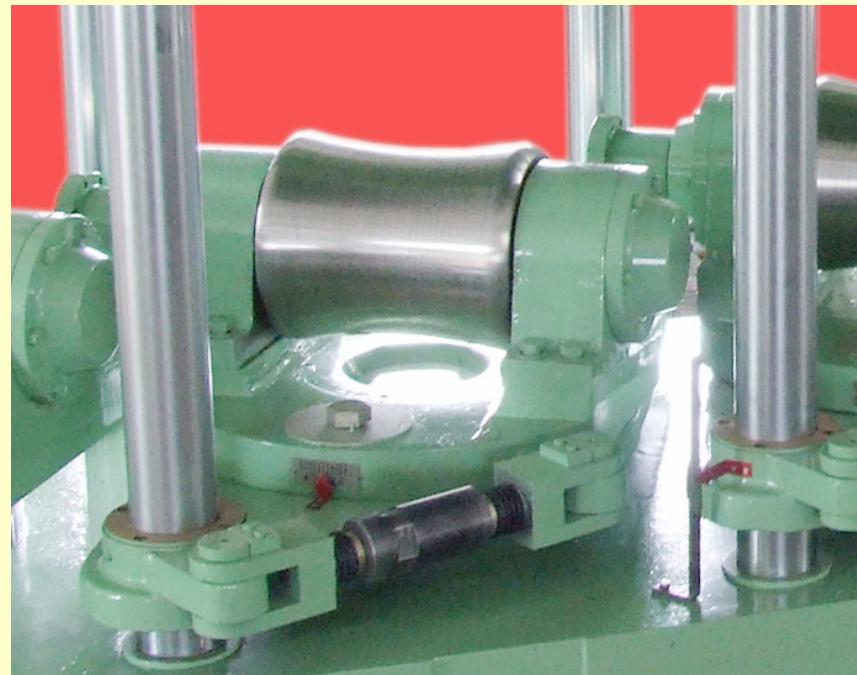


Typical roll assembly



A set of Spherical Roller Bearings are provided on both sides.

Roller assemblies are mounted on Housing. Additional guide for all housings are provided on the plated tie Rods. This unique feature of machine provides better stability to roll assembly and resulting less wear of rolls.



The roll angle position can be set such that the range of tube diameters covered by the machine can be accommodated to provide max line contact along the profile of the roll.

Design considerations based on requirements

STRAIGHTENING MACHINE BASIC DESIGN		
TUBE OD	140	mm
TUBE ID	85	mm
ROLL PITCH	1550	mm
YOUNG'S MODULUS (E)	208000	kN /mm ^ 2
MOMENT OF INERTIA	16295017.72	mm^4
YS OF MATERIAL	588.6	N/mm^2
MIN DEFLECTION (THEORY)	8.09	mm
DEFLECTION MAX	9.71	mm
FORCE	424313	N
	43	TON
ROLL ROOT DIA	270	mm
TUBE LINER SPEED (MAX)	25	m / min
EFFECTIVE ROLL RPM	29.5	
COEFFICIENT OF ROLLING FRICTION	0.30	
AXIAL FORCE ON ROLL	127294	N
TORQUE ON ROLL	17185	N-m
TOTAL POWER	53039	W
	53.04	Kw
SERVICE FACTOR G/BOX	2	RECOMANDED FOR HEAVY SHOCKS
POWER OF ONE G/BOX	53.0	Kw
SERVICE FACTOR MOTOR	1.40	
POWER OF MOTOR	37.0	Kw
MOTOR RPM	750.00	
G/BOX RATIO	25.45	
G/BOX RATING 55 kW, RATIO 1:25, INPUT RPM 750 SINGLE INPUT AND 3 PUTPUT SHAFTS, 2 NOS MAKE ELECON / SHANTI		
INDUCTION MOTOR 40 Kw, 750 RPM, 3 PHASE AC MOTOR QTY 2 NOS.		

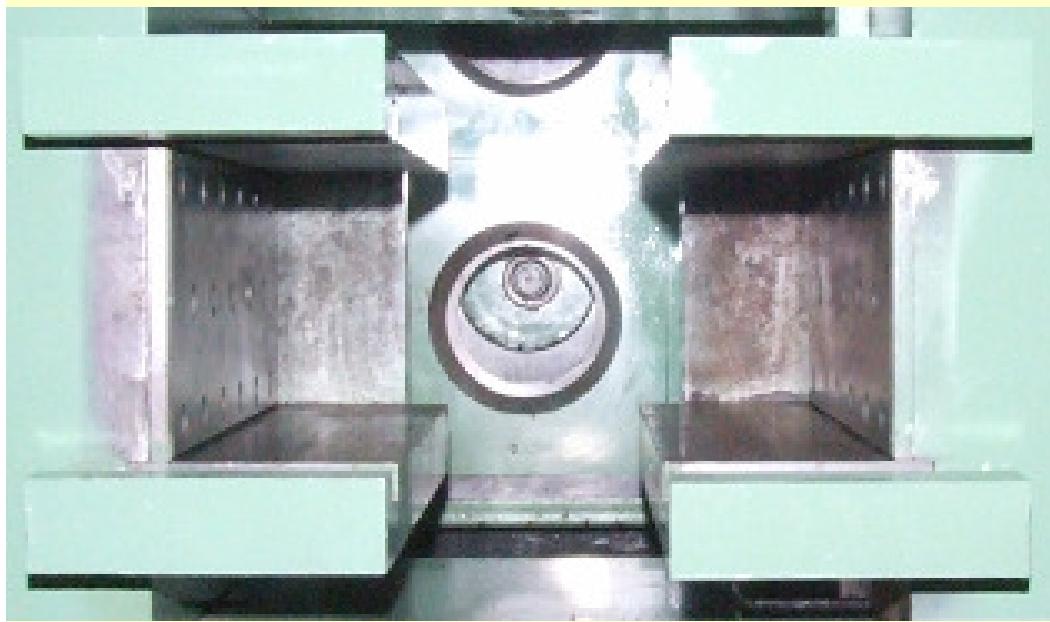
Pointing Machine



Pointing Machine Power pack



Plated guide rod provides additional guide and thus improves gripper and die alignment. This results in straight tag.



600-700 mm long gripper set is mounted on machined blocks. Wear plates are provided to safe guard gripper mounting blocks. Gripper stroke 50 mm.

Tube Samples while testing in house



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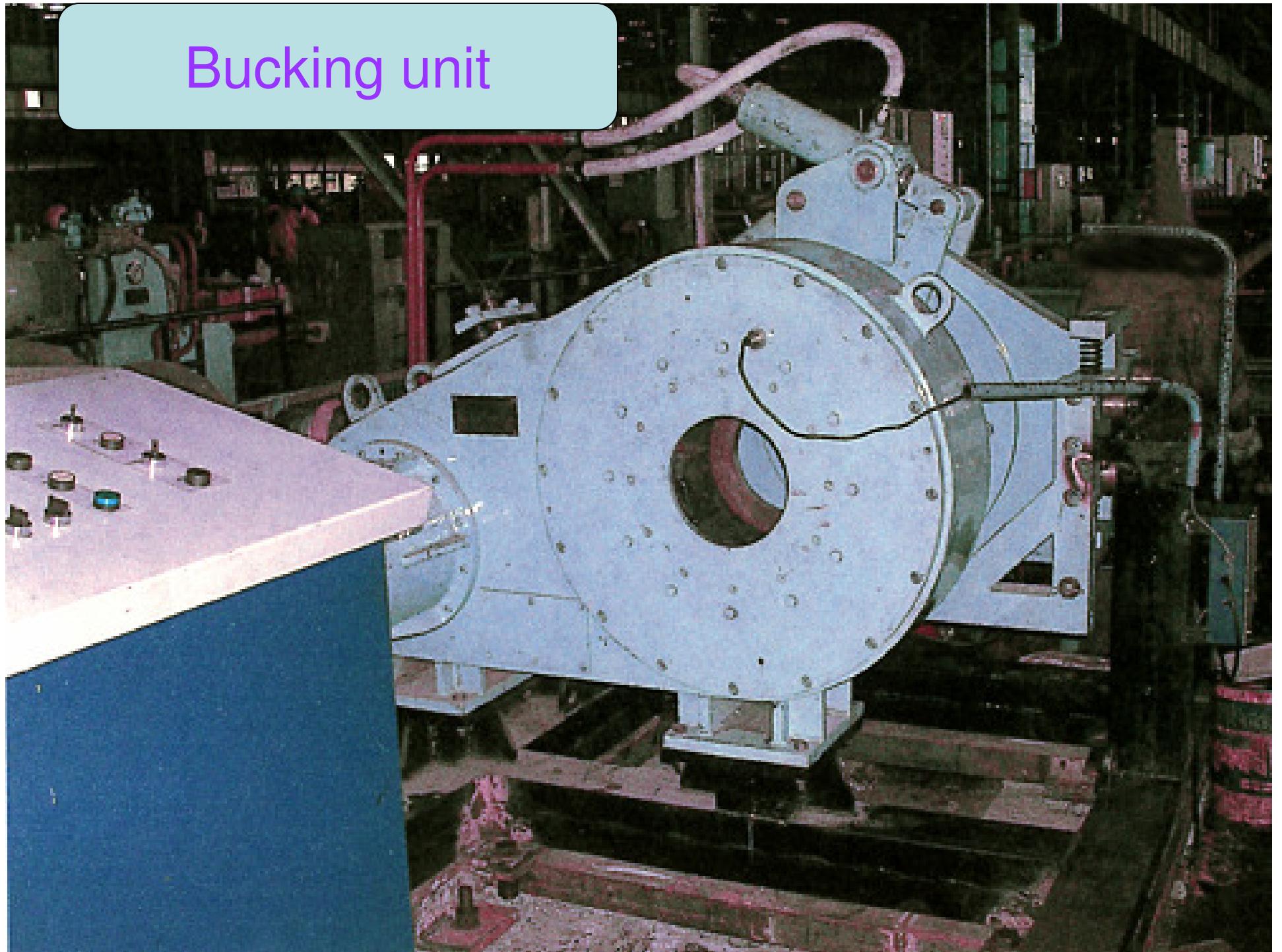
Machine Specification

- Max Tube Dia: 150 mm
- Max Tube Thk: 32 mm
- Min Tube Dia: 60 mm
- Tag length: 200 mm
- Tube Length: 12 mtrs
- Cycle Time: 50 sec
- Power: 55 kW

Sailent Features

- Robust structure.
- Smooth operation.
- Alloy steel for dies and gripper jaws.
- Adequate clamping force.
- PLC control operations.
- Adequate service factor to ensure long life.
- Less maintenance due to simple mechanisms.
- Charging and discharging system is optional

Bucking unit



Bucking unit with Drifter & Walking beam type tube transfer



Machine Specification

Coupling range:	4.5" to 7" casing pipes
Bucking torque:	Max 15000 ft-pounds
Coupling RPM:	Max 20
Cycle time:	50 sec.
Operating Pressure:	125 bars
Clamping pressure:	40 bars
Back-up traverse:	200mm
Max tube Length:	15 meters
Power:	55 kW

BUCON M/C DESIGN FOR 200 mm DIA COUPLING

COUPLING OD (mm)	200	GIVEN DATA
TORQUE (POUND Ft)	15000	
TORQUE (KgM)	2076	
PCD OF INTERNAL GEAR (mm)	480	
INTERNAL GEAR MATERIAL	En24 (HEAT TREATED)	
MODULE (mm)	4	
NO OF TEETH	120	
TENSILE STRENGTH (Kg/sqmm)	70	
FACTOR OF SAFETY	3	
SERVICE FACTOR	2	

CHAIN DESIGN FOR DRIVE MECHANISM

DRIVEN SPROCKET PCD (mm)	606.6	
NO OF TEETH ON DRIVEN SPROCKET	75	
SPROCKET PITCH	1"	
LOAD ON DRIVEN SPROCKET	6844.2	KG
FACTOR OF SAFETY	2.5	
MAX LOAD ON CHAIN	17110.6	KG

CHAIN ROLON TRIPLEX, 1" PITCH (BREAKING LOAD 19500Kg)

NO OF TEETH ON DRIVE SPROCKET	35	
PCD OF DRIVE SPROCKET	283.4	mm
CHAIN TRANSMISSION RATIO	2.14	
COUPLING RPM	20.0	
G/BOX OUT PUT SPEED	42.9	
G/BOX OUT PUT TORQUE	969	
SERVICE FACTOR	1.5	
G/BOX OUT PUT TORQUE REQD	1453	
G/BOX REDUCTION	20	
G/BOX INPUT RPM/HYD MOTOR RPM	857	
HYD MOTOR TORQUE (KgM)	73	

**PLANETARY GEAR BOX OF SHRI VENKATESHWARA GEAR WHEELS REDUCTION
RATIO 20:1, TORQUE 1500 KgM AT 43 OUT PUT RPM**

Sailent Features

- Wide range of product from 2 3/8" to 13" dia.
- Torque range 750 to 40000 ft-pound.
- Catering API requirements.
- PLC controlled operations.
- Hydraulic motor with planetary gear box for drive.
- Pressure transducer for excellent torque control.
- Digital display of torque on control panel.
- Proper interlocks for safe operations.
- Hardened jaws for bucking and back-up assembly.
- Quick jaw change and high speed operation.
- Torque record and printing facility is optional.
- Machine can be operated in auto and manual modes.

Hardened jaws provides better grip with less marking on casings and tube. Simple mechanism for quick change.

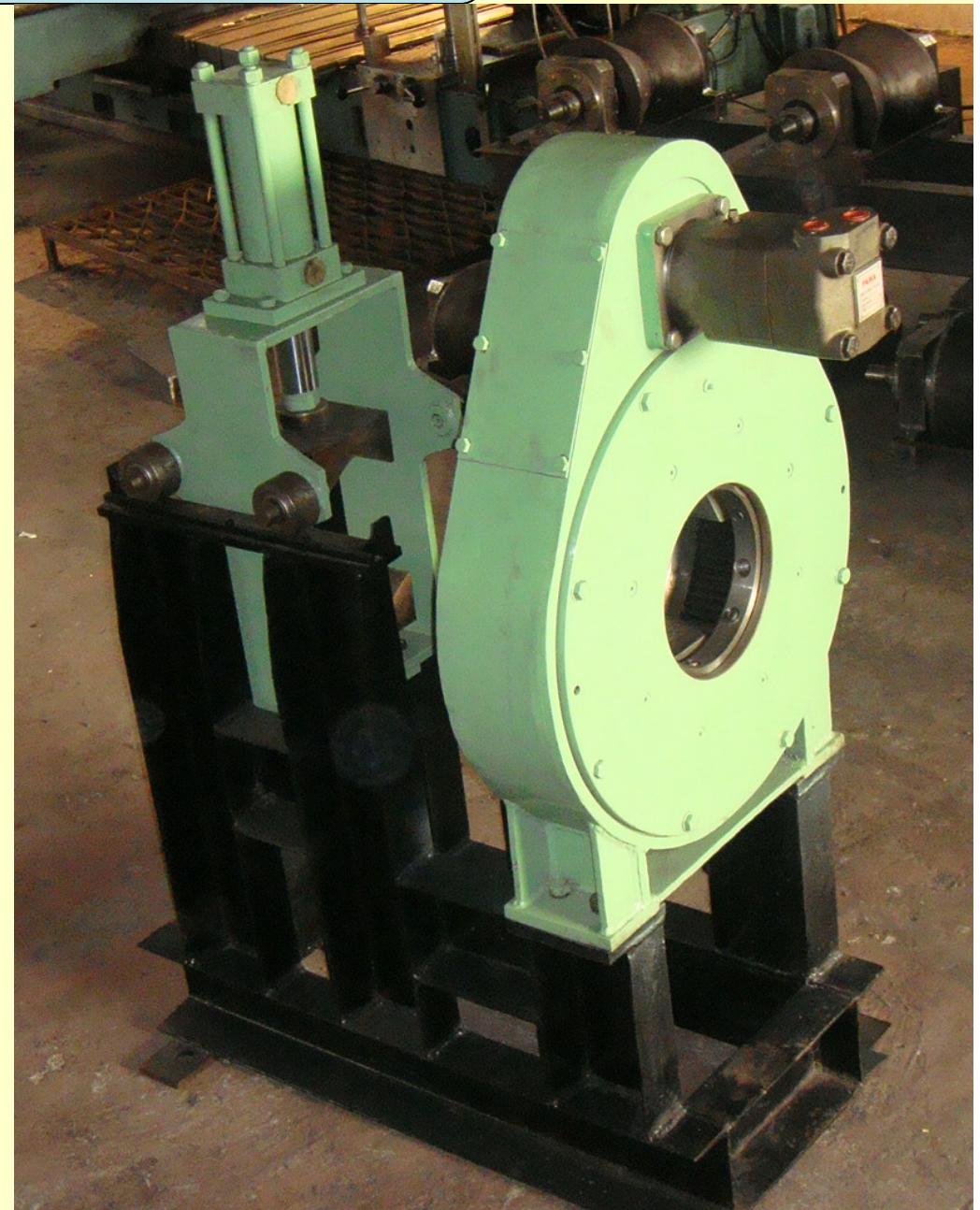


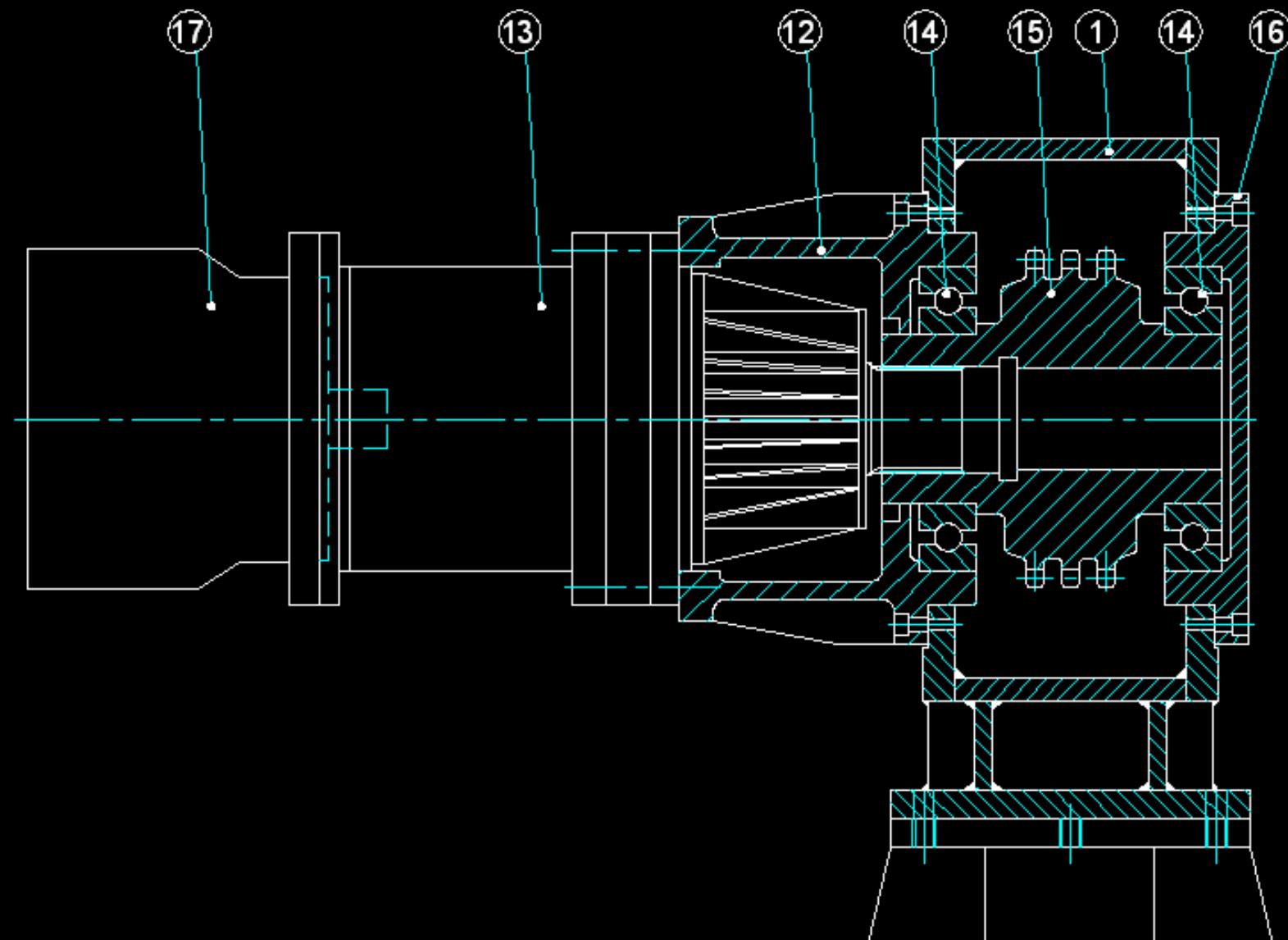
Spring loaded back-up assembly holds tube while bucking operation. After bucking operation home position is retained by compression springs.

Pre-Tightening unit

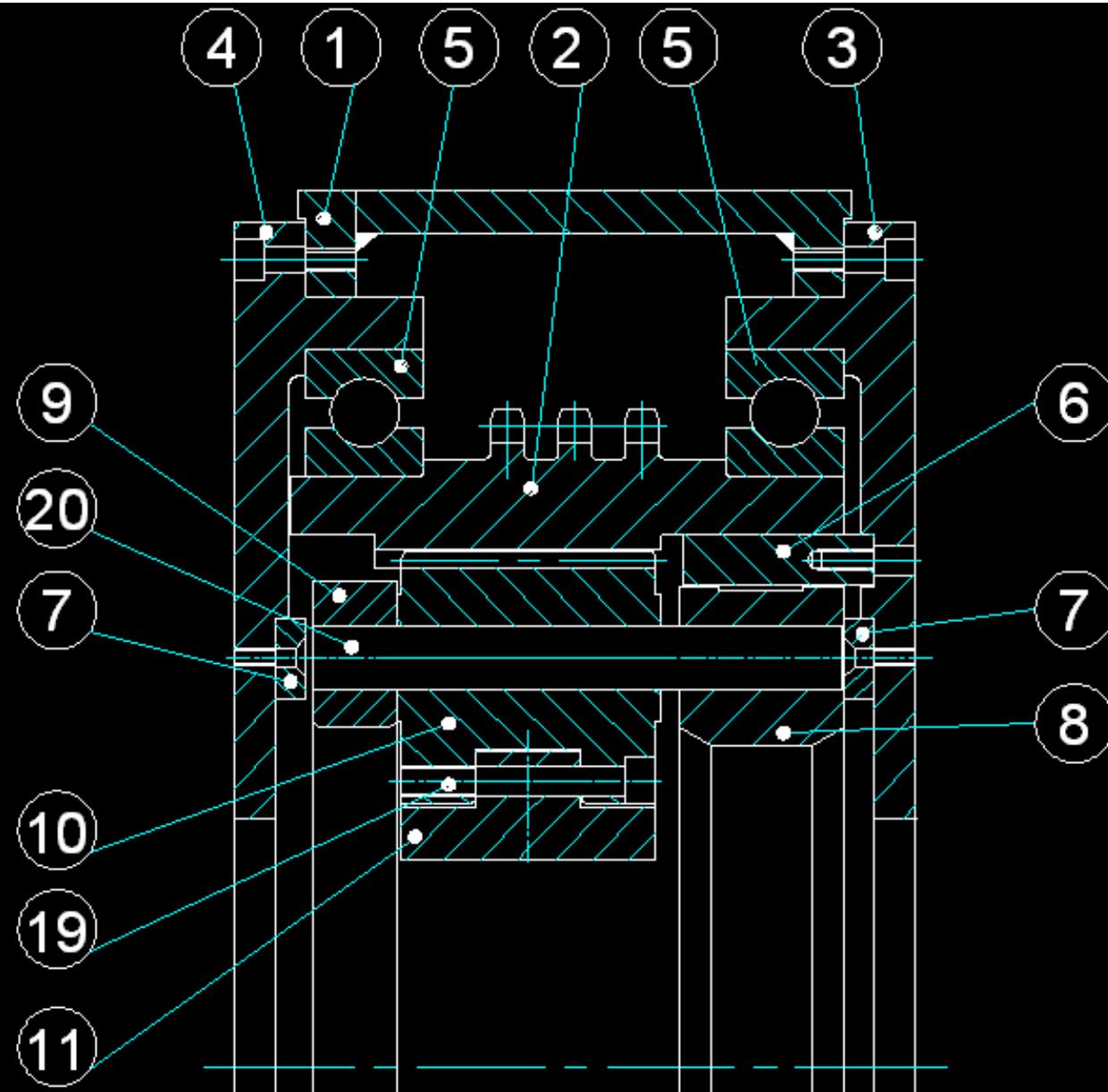
Pre tightening unit can be offered to reduce effective cycle time of bucking unit.

Coupling is initially tighten on the tube by the unit.





Cross section showing drive mechanism of bucking unit.



Cross section bucking unit.

Testing of equipment at full load condition



Walking beam system for multiple Tube handling.

Walking beam mechanism to handle 5 tubes weighing 640 kgs each. (Total wt 3.2 t).
Operation time 2.3 sec.
Max tube Dia 180mm
Min tube Dia 75mm



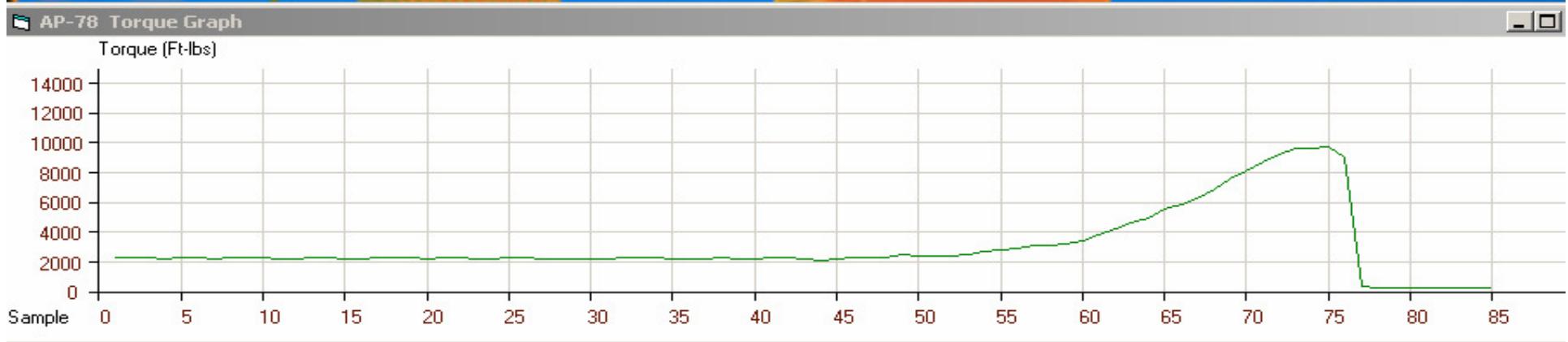
Compact drive mechanism. Hydraulic motor with planetary gear box for smooth operation.

Computerized out-put (Torque turn diagram)

Date	2/23/2008	Shift	1st
Operator	GOLESAR		
Customer	ATLAS		
PO No	X	Size	5.5 INCH
PO Date	2/23/2008	Specs / Grade	P110
SO No		Range	R3
Sr No	Pipe No	Heat No	Remarks
3	AP-78	x	OK
Torque (Ft - lbs)		J Value	
Allowed	15000	114.3	
Observed	9694	114	
<input type="button" value="Start"/>		<input type="button" value="Stop"/>	

No	Reading
1	2312.5
2	2349.5
3	2257
4	2238.5
5	2257
6	2294
7	2238.5
8	2257
9	2312.5
10	2331
11	2220
12	2238.5
13	2257
14	2275.5
15	2238.5
16	2220
17	2294
18	2349.5
19	2257
20	2220
21	2257
22	2257
23	2238.5
24	2238.5

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Billet conveyor for furnace

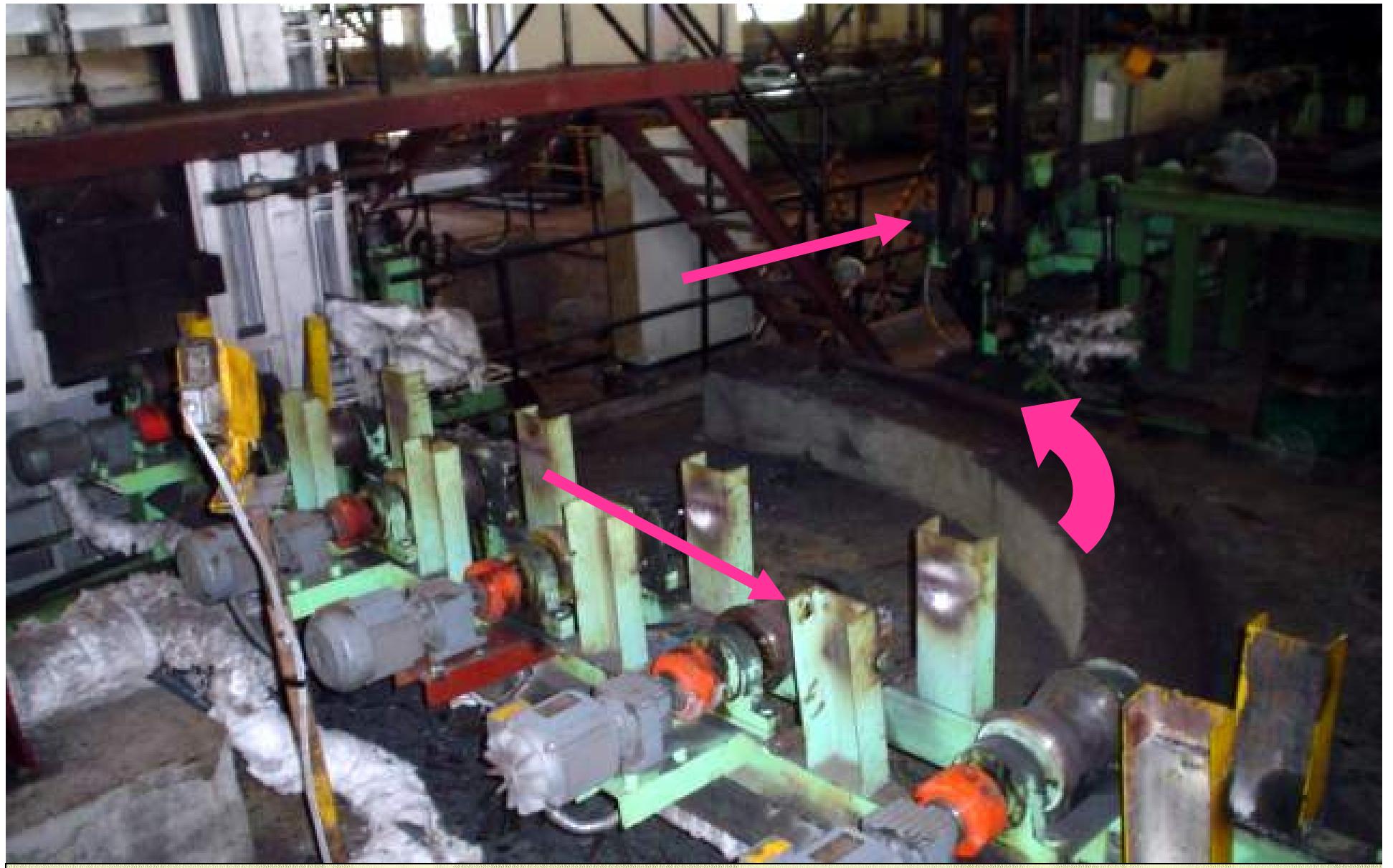
60 meters long billet handling system provided with vanishing stopper mechanism. The system is made to feed the rotary hearth furnace.



Major achievement



Rotating conveyor to feed piercing mill placed 90 deg to furnace outlet.

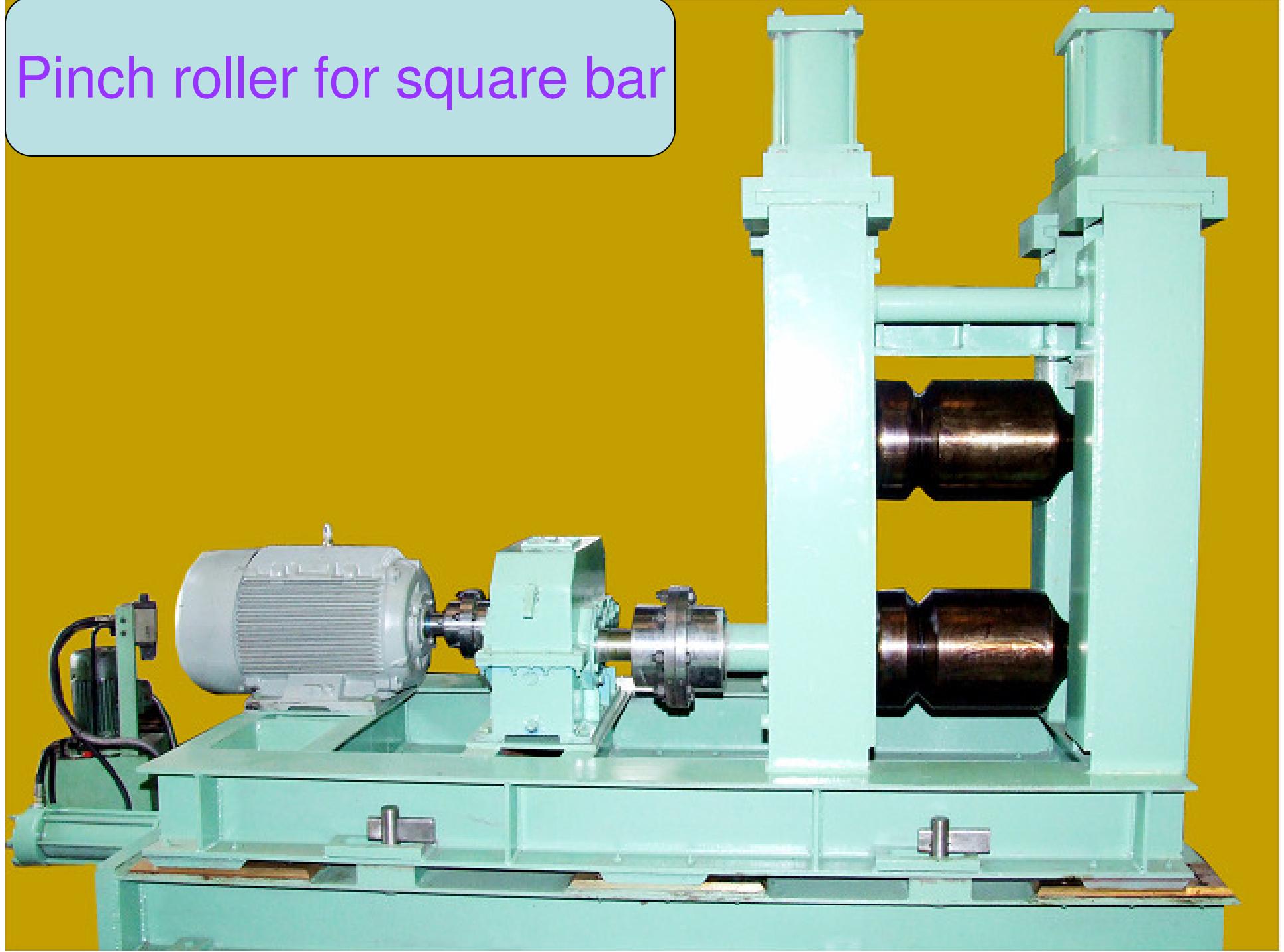


Rotating conveyor to fed piercing mill placed 90 deg to furnace outlet.

Assel Mill Outlet Mechanism



Pinch roller for square bar





Billet cutting Machine

A compact and effective mechanism for billet cutting operation. Billet cutting torch is adjusted suitable to billet diameter.



Billet cutting Machine



AC motor with VFD is provided for variable speed from 10 to 45 rpm according to billet diameters to be cut

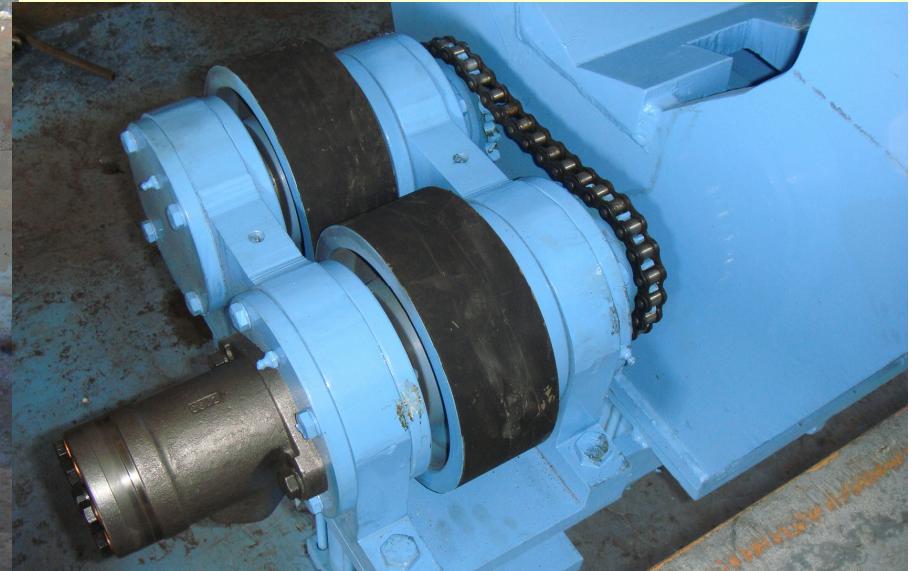
Billet cutting Rate

**75 mm Ø billet 70 cuts/Hr
125mm Ø billet 60 cuts/ Hr
150mm Ø billet 55 cuts/Hr
175mm Ø billet 45 cuts/Hr
200mm Ø billet 35 cuts/Hr**

Few Critical components Machining



Tube clamping mechanism for Hydraulic testing machine suitable for 254 mm dia tube to 100 mm dia tube.



Seam rotator for seam positioning while hydro testing of ERW pipes .

Few Critical components Machining



Facility and skill
developed for critical
machining.



Few Critical components Machining



Cold Pilger shaft.
Dia: 465 mm
Length: 1800mm

Gear box for
10 Roll Straightening M/c.
Power: 55 kW
Ratio: 1:10
Single input and 5 out puts.



Few Critical components Machining

Inspection of critical components to ensure desire performance. Large range of measuring instruments to achieve the quality.



Hardness tester to ensure the hardness of heat treated components.

Facilities available with us....

Shaper machines.

Lathe machines.

Radial drill machine.

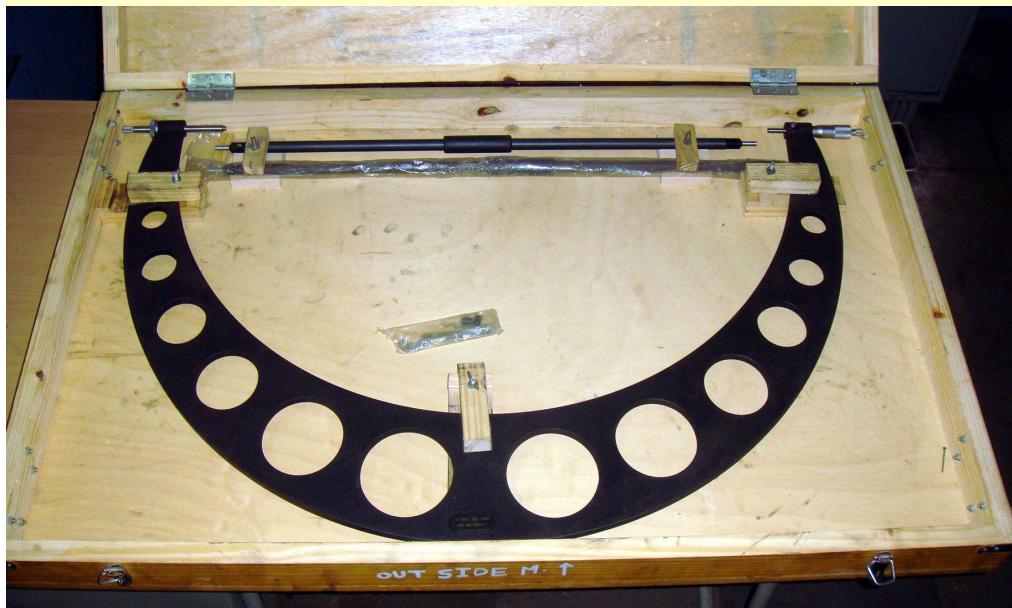
Universal milling machine.

Horizontal boring machine.

Slotting machine.

Hydraulic press.

Over head cranes.



A good range of measuring instruments ensures quality.
Bore gauges,
Micrometers, Vernier
Calipers, Height gauges,
Combination set etc.

Facilities available with us....

Plano Miller



Horizontal boring

Thanks.....



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