

# Billet Casting Technology Specially Designed for Hot Rolling



Electrotherm Continuous Casting Machine



**ELECTROTHERM**  
ENGINEERING & PROJECT DIVISION

**ELECTROTHERM<sup>®</sup> INDIA LIMITED**

HEAD OFFICE & WORKS : 72, Palodia (Via Thaltej)  
Ahmedabad - 382 115, Gujarat (INDIA).

Phone : +91-2717-660550 | Fax : +91-2717-234866

E-mail : [mkt@electrotherm.com](mailto:mkt@electrotherm.com)

[www.electrotherm.com](http://www.electrotherm.com)

Akshar/2000/09-14

ECCM-02



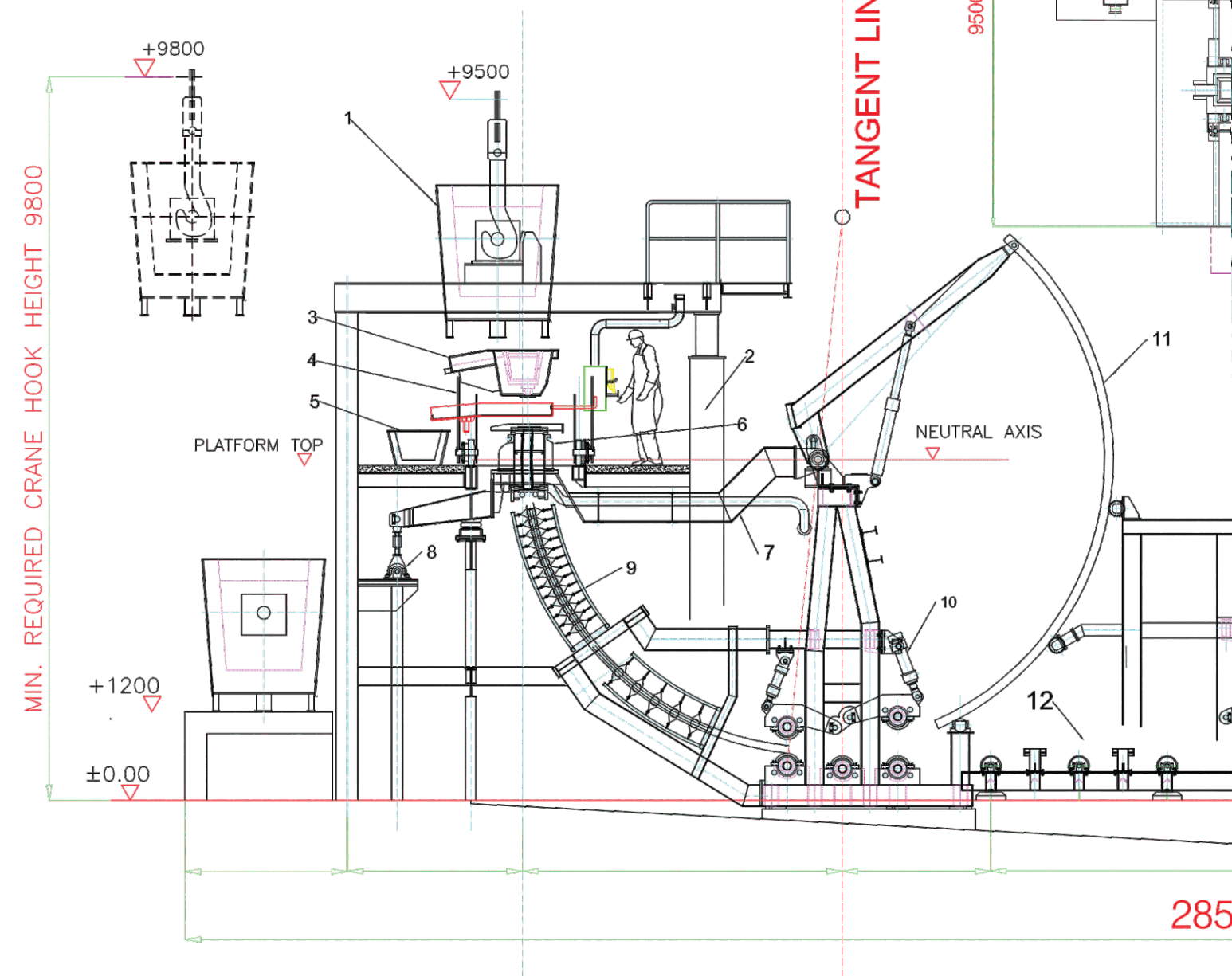
# Caster range from 60 mm x 60 height Ingot Plant Sheds

GA Drawing of Single Strand Modular Caster

ELECTROTHERM

LEGEND

- |                     |                               |
|---------------------|-------------------------------|
| 1. LADLE            | 11. RIGID DUMMY BAR           |
| 2. STRUCTURE        | 12. INTERMEDIATE ROLLER TABLE |
| 3. TUNDISH          | 13. BILLET CUT-OFF AREA       |
| 4. TUNDISH TROLLEY  | 14. AUXIALTRY WITHDRAWAL      |
| 5. SLAG BOX         | 15. DISCHARGE ROLLER TABLE    |
| 6. MOULD JACKET     | 16. END STOP                  |
| 7. RADIUS ARM       | 17. BILLET PUSHER             |
| 8. ECCENTRIC SYSTEM | 18. COOLING BED               |
| 9. SPRAY APRON      | 19. SCALE PIT                 |
| 10. WITHDRAWAL UNIT |                               |



SECTION



## Challenges for Secondary Steel making Industry

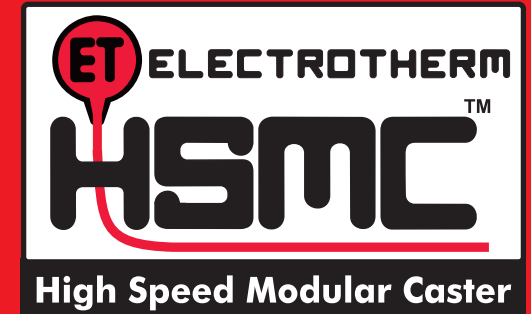
- There are numerous steel melt shops with smaller capacity induction furnace who have been casting ingots due to non-availability of simple and economically viable billet casting technology.
- Such plants need Modular casters which can be installed in reasonably shorter duration without affecting production and without any major alteration in existing infrastructure.
- Steel demand worldwide is set to grow considerably by the year 2015; there are significant number of people who would engage in producing mainly plain carbon steel and low alloy steel grade billets in order to cater to local steel demand.
- The challenge ahead is to provide more flexible and affordable billet casting solution with higher casting speed, reduced operating cost and casters that are simple and safer to operate.

## Electrotherm offers Modular and Compact Billet Casting Technology

- Keeping in view these challenges, Electrotherm, a total solutions providing company, took initiative to develop Modular and Compact Billet Casting Technology to meet needs of existing ingot making units willing to migrate to billet making and new mini steel plants.
- It is suitable for casting heat size as small as 5 ton and modules are available for casting section from 80 mm x 80 mm to 150 mm x 150 mm reduced operating cost and casters that are simple and safer to operate.



# Economical even for small heat sizes



High Speed Modular Caster

# ELECTROTHERM



## Features of Electrotherm Continuous Casting Machine

- Higher reliability and optimum cost of operation
- Modular design with factory assembled and aligned equipment drastically reduces the civil cost, erection and commissioning time
- Modular design with possibility of increasing number of strands in future by adding multiple modules at the same place for capacity expansion
- Modular design offers operational flexibility and minimum time required for size change; enhancing equipment availability and in turn plant productivity
- Rigid Dummy bar for enhanced productivity and quick re-stranding
- Motorized Tundish Trolley for quick change of tundish
- PLC based secondary spray cooling system ensures optimum cooling for minimum scale formation and direct rolling
- Forced mould lubrication ensuring controlled oil flow
- User friendly with low operating and maintenance cost

## Optional Features

- Higher casting speed
- PLC-SCADA based automation for precise and soft operation, data logging and consistency
- Automatic mould level control (Co-60 / eddy current / optical based sensors)
- Auto gas cutting system / hot billet shear
- Aluminium wire feeder
- Twin / two ladle car for sequencing

## Advantages of Electrotherm Continuous Casting Machine

- Complete "Melt to Cast Solutions"
- Minimum transition time from existing ingot making to billet plant making almost without affecting existing plant productivity
- The required casting platform size is 6 m x 9 m for single strand and suitable for existing ingot making plants
- Flexibility of operating each strand independently for optimized caster usage according to availability of molten metal
- Flexible configuration with possibility of up gradation and expansion by adding modules
- Substantial saving due to reduced scale generation
- Complete support for direct rolling



# Specially designed to suit low mm to 400 mm x 400 mm

## ELECTROTHERM

### About the Company

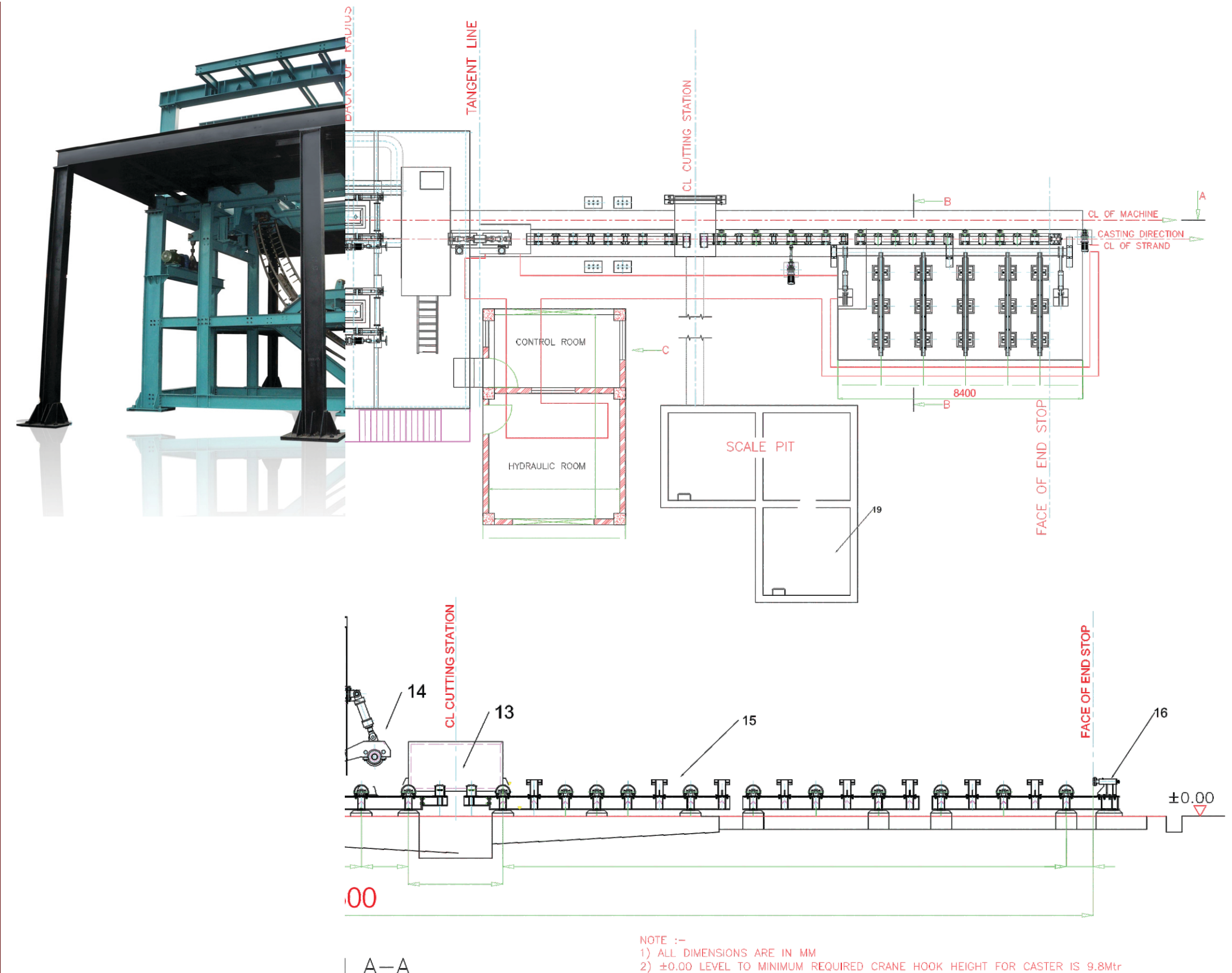
The journey of Electrotherm that began in 1983 was based on openness for ideas, eagerness to innovate, supplemented by in-house research & development and focus on customer-centric product and process development. Electrotherm kept designing and manufacturing larger capacities furnaces, suitable refining equipments like ladle furnaces and metal refining converters, modular continuous casting machine and various gadgets for improving productivity and quality of steel produced. It incorporated mechanized charging system and high-end plant automation for reducing dependency on manpower, introduced proper fume capturing and dedusting system for making steel plant through Induction Furnace route a cleaner affair.

Turnkey projects through Induction Furnace route was another giant leap Electrotherm took as early as in year 2000 when it executed a mini steel plant in Zimbabwe. Since then it has made several turnkey projects for steel making in Turkey, Iran, Iraq, Saudi Arabia, Pakistan, Bangladesh, Nigeria and several other countries around the world. Other manufacturers have again no alternative but to follow the path, sooner or later!

With continuously changing needs of customers and growing needs of alternative raw material for steel making, Electrotherm took upon itself another challenge to make integrated mini steel plants through Direct Reduced Iron (DRI) plants – both through coal based rotary kilns and gas based vertical shaft reactors, coupled with steel making through Induction Furnace – LRF – CCM route.

Today, Electrotherm is an ISO 9001 certified, public limited business conglomerate with interest in Engineering, Steel, Ductile Iron Pipe, Electric Vehicle, Renewable Energy, Education, etc. It is the first company in India to make battery operated two-wheelers in line with company's commitment towards environment. 'No Engine No Pollution' is the philosophy behind it and in order to promote green energy, it established Renewable Energy Division as well.

The Engineering & Projects (E&P) Division of Electrotherm, which handles businesses related with steel making and foundries, is particularly renowned for providing end-to-end solutions for Mini Steel Plants, supplying sturdy and highly efficient plant and machinery supplemented by outstanding after-sales-services to its customers around the world. It has installed its equipment in 38 countries spread over four continents with specific focus on Middle East Asia, African Continent and Indian Sub-continent.



A-A