

Scope of Supply

Bascotecnia Steel was responsible for the complete turnkey electrical project:

Power installed: 9,000 KVA excluding wire rod mill

- Project management
- Basic and detail engineering
- Supply:

Low voltage distribution centre
Main motors – manufactured by **INDAR**
Main DC drives – MOTOCON DC*
Auxiliary AC drives – MOTOCON AC*
AC motor control centre
Field sensors
UPS and voltage distribution
Control desks and local panels
Integrated control equipment (SISTEAM M)*
Control and supervision equipment (OPERATOR MT)*

- Erection supervision
- Commissioning

(* MOTOCON DC, MOTOCON AC, SISTEAM M and OPERATOR MT is equipment designed and manufactured by Ingelectric-Team.



Auxiliary VVVF Cabinet



Reheating Furnace Mask



Thermalprocess Motors



Loop Regulation

After-Sales Services

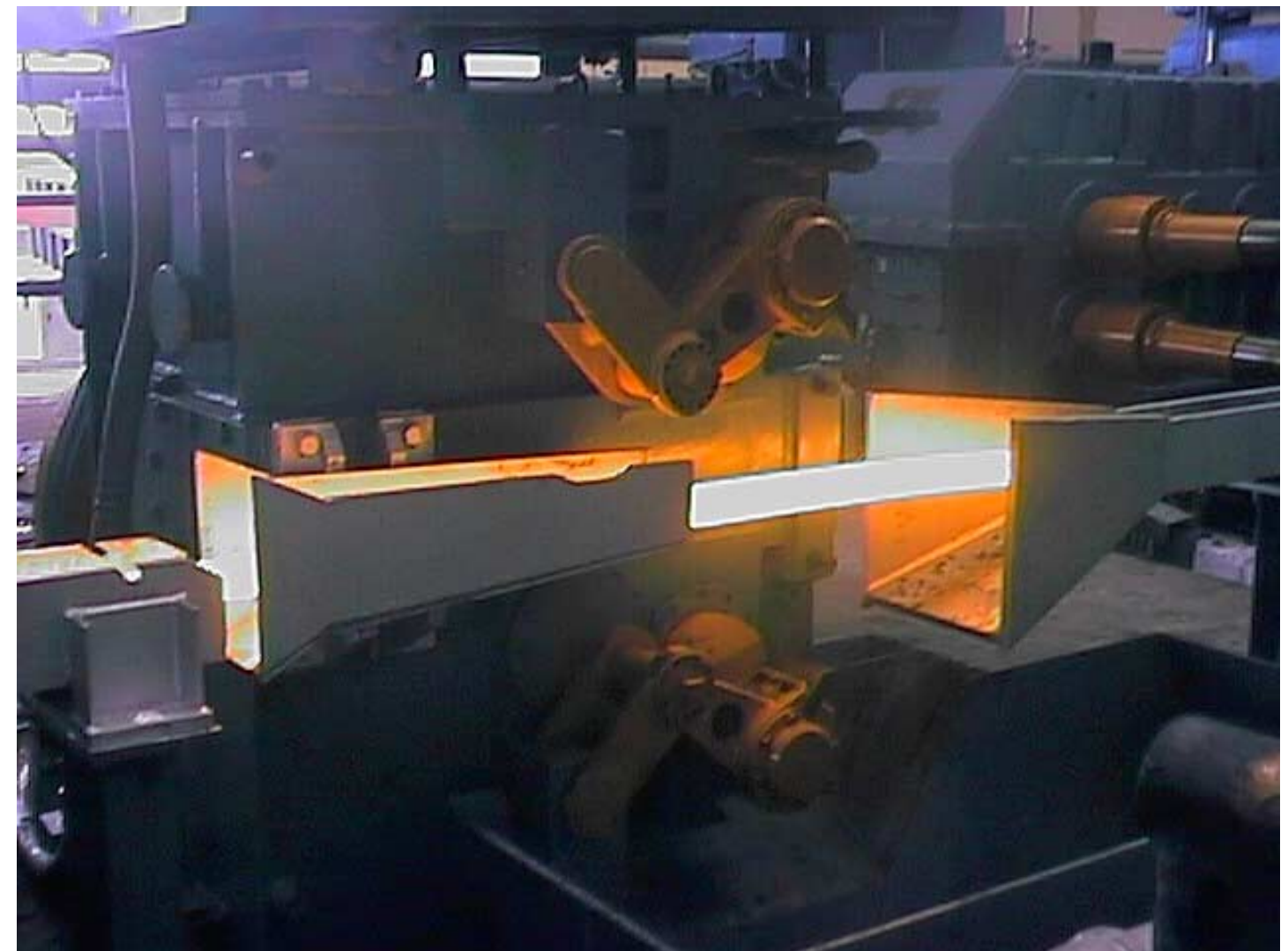
- Hotline
- Spare parts in 24 hours
- Direct line with our technical staff
- Remote communication from our offices to the factory automation network

Industry Division



Light Section and Bar Mill

ANDEC (Ecuador)



The Equipment

In 1998, ANDEC commissioned BASCOTECNIA STEEL to supply a new bar mill with a production capacity of 225,000 tons/year, keeping the wire rod outlet and the existing block, as part of the modernisation of its rolling mill plant in Guayaquil (Ecuador). Bascotecnia Steel has been subcontracted to design and install the state-of-the-art electrical part of the equipment.

The installation is composed of the following:

- 1x 40 ton/h reheating pushing furnace
- 1x continuous mill with 15 stands
- cropping shears No. 1 and 2
- 1x dividing shear
- cooling by tempcore and upgrade of evacuation area

The main functions of the mill's automation and electrical equipment include:

- furnace loading
- regulating and controlling the reheating furnace
- controlling the following:

- * speed/tension/loops of continuous mill
- * crop/chopping shears
- * cooling bed length
- * bar evacuation

The stands are driven by DC motors and controlled by four-quadrant thyristor equipment with digital control. The master control and regulation system is based on PLC systems with several high-speed multiprocessors. Some of the most outstanding control functions are:

- cascade speed control
- minimum tension control
- loop regulation between stands
- material continuity between stands
- crop and chopping shear
- cut-to-length in cooling bed
- cutting optimisation
- emergency logic control

The mill also includes HMIs (Human Machine Interfaces) in the main control pulpit which aid the user in carrying out mill adjustment, control and tracking tasks. The HMIs are arranged in a redundant configuration, in such a way that upon failure of one system, the other maintains full control of the installation. These systems communicate with the PLCs via an industrial Ethernet TCP-IP network.

Technical Features

Mill Type: Continuous Bar Mill with 15 Stands

- 10 horizontal stands
- 3 vertical stands
- 2 H/V convertible stands
- cooling bed
- carrousel
- bar evacuation

* There is an existing wire rod mill outlet

Mechanical Supplier: Bascotecnia Group (Lagun-Artea)

Incoming Material: 6 mx130x130 mm billet

Finished Product:

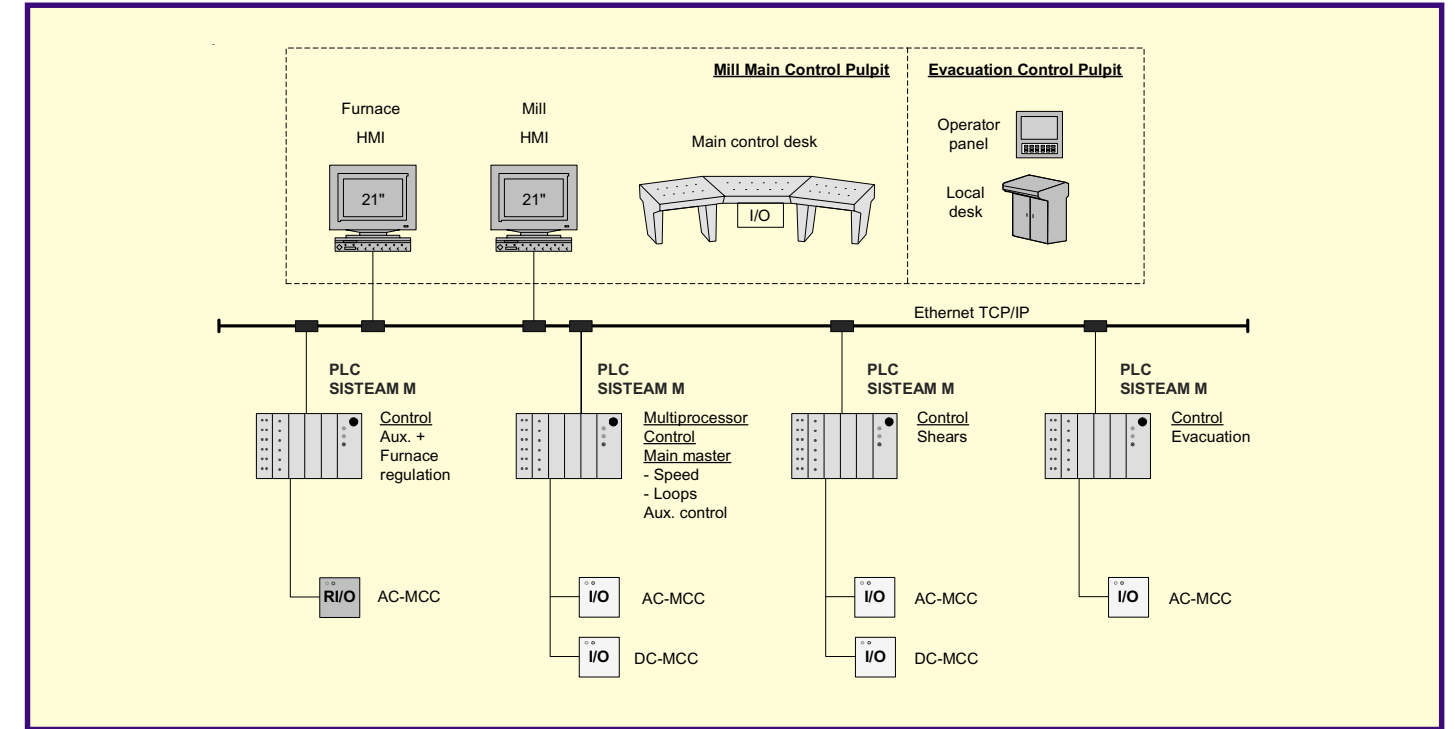
- * Roll: 5.5 - 10 mm (max. 65m/sg)
- * Bars: 2 x 12, 2 x 14 Slitting
16 Ø min/36Ø max
- * Flats: 40 x 5 mm minimum
60 x 6 mm maximum
- * Angles: 30 x 3 mm minimum
50 x 5 mm maximum
- * T Profiles: 16 x 16 mm minimum
30 x 30 mm maximum

Commercial Bar Length: 6, 9, 12 m.

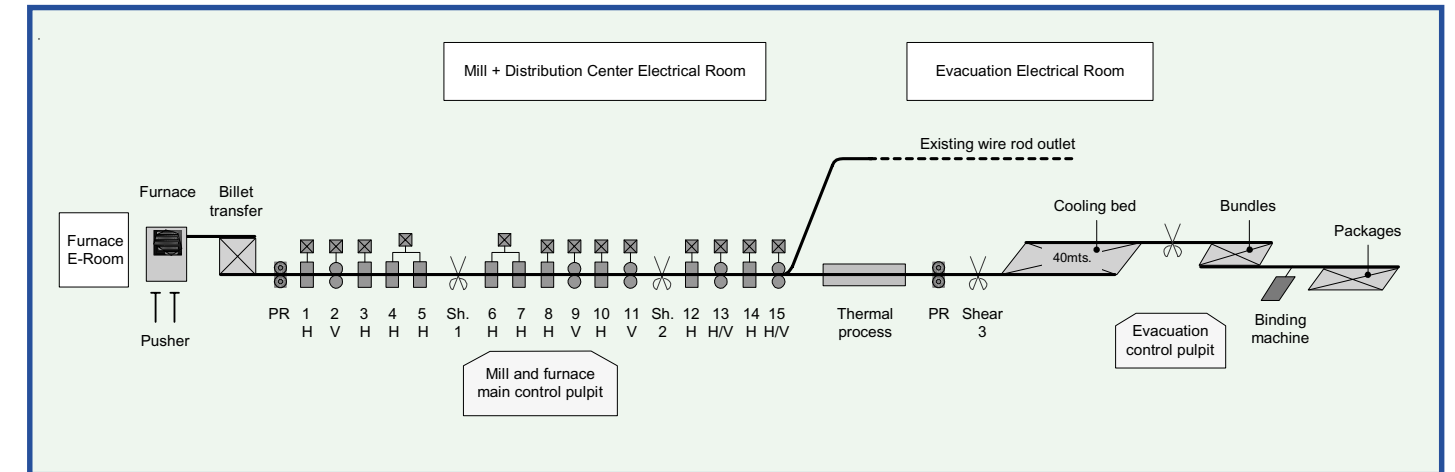


DC Motor Control Center

Automation Control Diagram



Mill Lay-Out



Single Line Diagram

