

## Scope of Supply

Ingeteam Power Technology, S.A. Industrial Systems Division is responsible for complete turnkey of the electrical project:

- ✓ Project Management.
- ✓ Basic and Detail Engineering.
- ✓ Supply of the following equipment:
  - Low voltage distribution at 525 Vac for DC Drives.
  - DC Rectifier & DC Drives (DCS 800) from ABB.
  - Reuse of existing DC motors.
  - AC auxiliary speed motors.
  - AC MCC for fixed speed drives.
  - Uninterruptible power supply.
  - Sensors and peripherals devices.
  - Control desks and local panels.
  - Simatic PCS7 distributed control system from Siemens.
  - Operation and Supervision system in PCS7 from Siemens.
- Spare parts.
- ✓ Erection Supervision.
- ✓ Commissioning.
- ✓ Training.



DCS 800 from ABB



Local Panel



PCS7 from Siemens

## After-Sales Services

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



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# Ingeteam

## Electrical Revamping of Skin Pass Mill N°1 OUTOKUMPU TORNIO (FINLAND)



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## Project Description

Outokumpu Tornio awarded a contract to Ingeleam to modernise the electrical equipment of the Skin Pass Mill (SPM1 - 2 High) in the Cold Rolling Plant (Finland). Due to an aging and obsolete electrical and automation equipment, the company decided to realize the revamping, which also included completely new hydraulics, with the goal of:

- Assuring zero electrical breakdown.
- Automating the mill with updated systems.
- Providing a supervision and monitoring interphase to the operator.
- Implementing the current practises of machine safety.

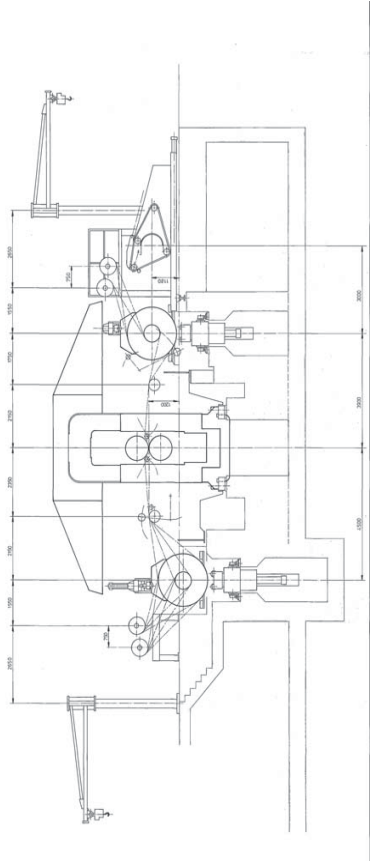
CMI has been awarded as mechanical supplier for the revamping of the SKP Mill and Media systems (Lube, Hydraulic equipment, etc).

The mill features a 2-High Mill stand with 850 mm work roll diameter, providing a roll force of 2 x 8000 kN. Two reversing reels provide the means of uncoiling / coiling operation of coils up to 30 Ton.

Additionally, the mill is also equipped with entry and exit coil conveyor and coil cars, paper coils, guiding tables, belt wrapper and media systems.



2 High Skin Pass Mill Stand

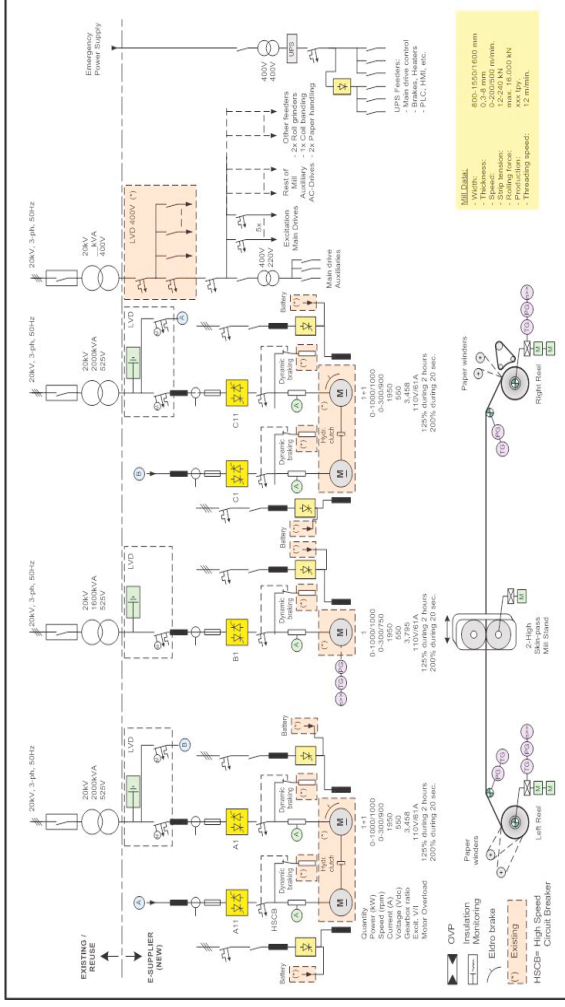


## Main Technical Characteristics

- Mill type:** 2-High Temper rolling (reversing) Mill (Schloeman) 1976
- Material to be rolled:** Coils cold-rolled processed in APL or AL (AISI 300 & 400 series)
- Strip .width max:** 1630 mm (original 1350)
- .width min:** 950 mm
- Strip thickness:** 0,3-0,8 mm
- Yield strength:** 300-850 N/mm<sup>2</sup>
- Rolling speed:** 0-200/500 m/min
- Normal accel/decel rate:** 0,416 m/s<sup>2</sup> (20 sec)
- Quick stop:** 0,7 m/s<sup>2</sup> (10 sec) electrical braking with tension control
- Emergency stop:** 1,67 m/s<sup>2</sup> (4 sec) power off and stop by DB resistor use.
- Strip Tension:** 12-240 kN (for OD 2200 mm with reduced tension)
- Rolling force:** 2 x 8000 kN
- Coil .inside diameter:** 610 mm
- .outside diam. max:** 1800-2200 mm
- Coil weight max.:** 26-30 Ton.
- Work roll diameter .max:** 850 mm
- .min:** 800 mm

Interleaving paper shall be included in all passes.

## Line Diagram



## Control Diagram

