

Case study

Cold rolling mill

Project Summary

Project: 20-high cold rolling mill

Application: Automation and control system design and installation

Nidec's Role

Nidec Industrial Solutions was selected to design and deliver the automation and electrical control system for a top class 20-high cold rolling mill for stainless steel.

Scope of Supply

- Project engineering
- Main & Aux AC Motors from Nidec Factory (CR Series)
- Main & Aux AC Drives from Nidec Factory (GT Series)
- Electrical Distribution
- Level 1 Automation Functions (Speed & Tension Master, Systems Logic, Sequences)
- Safety System
- Sensors and Instrumentation
- Level 2 Platform
- TVCC/Intercom Communication System
- Erection



The challenge:

A state of the art steel mill to produce the world's thinnest and widest stainless-steel coils

To reduce production costs and meet increasing demand for ultrathin stainless steel, one of Italy's largest steel producers sought to have a new 20-high cold rolling mill, the first in the world to produce stainless-steel strips that are as much as 1500 mm wide and as little as .07 mm thick.

The steel company, which produces approximately 10 percent of the world's thin stainless steel, exports most of its production to countries throughout the world. It selected Nidec's metals team, which it had first worked with a decade earlier, to provide the automation and electrical controls for this ambitious new mill project.

The solution:**Automation and control systems**

To transform 3 mm cold strip entry coils into ultrathin strips of stainless steel, the mill would require an automation system and drives that delivered precise torque control. Nidec's advanced technologies and automation capabilities made it possible for the mill to achieve these exacting standards.

Nidec engineered and installed the Level 1 automation and Level 2 platform needed to operate and control the stainless steel-making process, including speed and tension control, sequencing and systems logics. The solution included main and auxiliary motors and drives, sensors, instrumentation and communication systems. In addition to project engineering and system erection, Nidec also provided a safety system adhering to the strictest European regulations that protect steel workers who interact with the automated process.

The new rolling mill is designed to operate at a maximum speed of 800 m/minute, producing as much as 52,000 tons of thin and ultrathin stainless-steel coils per year.