

## Case study

Steel mill annealing line

### Project Summary

**Project:** Bright annealing process line

**Application:** Automation and control system design and installation

### Nidec's Role

Nidec Industrial Solutions was selected as electrical EPC to provide the complete automation and electrical control system on a new annealing line for one of Italy's largest steel producers.

### Scope of Supply

- Automation and electrical engineering
- AC Drives and related panels
- Electrical distribution (metal clad, transformer, power center and MCC)
- Complete Level 1 Automation (including speed and tension master, systems management, logic and sequences)
- Human Machine Interface (HMI)
- Safety System
- Level 2 Automation
- Electrical system erection



### The challenge:

**To automate a new annealing line that treats ultra thin stainless steel coils**

One of Italy's largest steel companies wished to construct a bright annealing processing line to complete the process of its new 20-high cold rolling mill, which produces some of the world's widest and thinnest stainless steel coils (0.07mm) from 3 mm strip coils. The bright annealing heat-treats the steel using a controlled atmosphere furnace, resulting in a more robust stainless steel with a more reflective finish. The steel company exports most of its production to countries around the world for use in the automotive and renewable energy industries.

Having worked successfully with Nidec's metals team on several previous projects, including the new top class 20-high cold rolling mill, the steel company selected Nidec as its automation and electrical system partner on the project.

**The solution:**

**Turnkey Level 1 and Level 2 automation, controls and electrical system**

It takes extreme precision and quality control to evenly heat, cool and treat stainless steel strips that are as much as 1500 mm wide and as little as .07 mm thick. This steel company relies on Nidec's advanced technologies and automation capabilities to meet its exacting standards.

Nidec engineered and installed the Level 1 and 2 automation needed to operate the annealing line. Complex algorithms will control everything from the formula and thickness of the steel, to the quality and speed of the production line with perfect coordination and tension control. Human Machine Interface (HMI) screens are intuitive and easy to use, contributing to plant safety.

This new bright annealing line will work at a speed of 60 m/minute to produce 50,000 tons of thin and ultrathin stainless-steel coils per year.