



Automation of Sheet Metal Shear Line

Gensco is a multi-state distributor and manufacturer of HVAC products serving the Northwestern United States. Gensco began business in 1947 as the General Sales Company and incorporated in 1948 under the name Gensco, Inc. Over the last fifty years, Gensco has grown and currently operates from over twenty locations in Washington, Oregon, Alaska, Montana and Idaho.

Application

The 5-foot shear machine controller is a machine that cuts sheet metal to preprogrammed lengths. The existing machine controller was approaching the end of life, failures were a constant problem and spare parts were not available. The estimated cost of the new replacement controller from the OEM was very high. Gensco decided to go it alone and invest in a PLC solution.

Objective

- Build a modular, expandable system with standard “off-the-shelf components”
- Take ownership of the machine – not rely on third parties to make changes to controller
- Enhance engineers’ and maintenance personnel’s expertise with PLCs
- Low cost/high functionality
- Easy-to-use operator interface
- Product quality enhancements (repeatable dimensional cuts)

Solution

Gensco chose the Telemecanique Twido PLC. The shear system required interfacing to a quadrature encoder and fast (1ms) digital output response. This fast response would ensure 1/64-inch to 1/32-inch variations in the sheet metal cuts. The existing system had a 1/16-inch repeatable accuracy.

INDUSTRY

HVAC

OBJECTIVE

Build a system using “off-the-shelf” components and that can be maintained internally

SOLUTION

Telemecanique® Twido® PLC
Magelis® Operator Interface

BENEFIT

The result was an accurate, reliable system built from “off-the-shelf” components that is easy to install and maintain

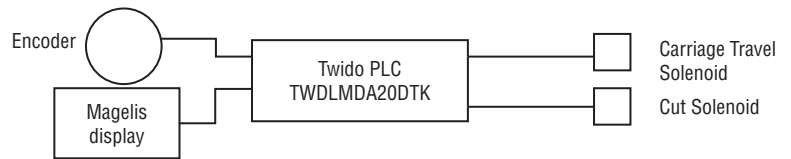
COMPANY PROFILE

Gensco Inc.

Tacoma, Washington 984124



System architecture



The system architecture consists a Telemecanique Twido PLC (TWDLMDA20DTK), a 4 line Magelis operator interface (data entry and system status) and a quadrature encoder.

The PLC takes inputs from a 768-pulse/revolution quadrature encoder, activates the carriage travel solenoid (matches speed of the material) – then cuts the sheet metal to the preprogrammed length.

The results were that the sheet cuts were within 1/64 to 1/32 inch accuracy, better than the current system's 1/16 cut accuracy. The system was programmed and wired by Gensco engineers, which allowed them to make changes if necessary without incurring cost from an OEM. Gensco is so pleased with the results that they are purchasing two additional Telemecanique Twido PLC flying cutoff systems.

Benefits

- High reliability of PLC
- Availability of low cost, “off-the-shelf hardware”
- Easily expandable/replaceable modules
- Ease of installation
- Ease of maintenance
- Accurate repeatable cuts

Schneider Electric - North American Operating Division

1415 S. Roselle Road
Palatine, IL 60067
Tel: 847-397-2600
Fax: 847-925-7500

8000HO04184