



Control Concepts replaced a failing cut-to-length controller with a modern PLC, HMI, encoder, and VFD system in less than one week.

PLC
HMI
VFD

WHAT WE DID

The retrofit recreated the machine's original operating functions using a Beijer HMI, Allen-Bradley Micro850 PLC, encoder feedback, and Yaskawa GA800 VFD - at approximately half the cost quoted by the OEM.

ABOUT THE CLIENT

A custom metals company operates a precision cut-to-length line that simultaneously unwinds two coils of metal and feeds the material into a shear. The line produces sheets to extremely tight dimensional tolerances for electric-vehicle battery pack components.

THE CHALLENGE

The original AMS Controls cut-to-length controller was failing, putting a precision production process at risk. The OEM quoted more than \$40,000 for a retrofit and required a six-month lead time. Wieland needed a faster, more cost-effective replacement that could maintain the line's exact length and sheet-count functions.

THE SOLUTION

Control Concepts engineered and programmed a replacement system using a Beijer HMI, Allen-Bradley Micro850 PLC, encoder feedback, and Yaskawa GA800 VFD.

The HMI recreates the functions of the original LCD keypad. The PLC and encoder measure product length, command the shear, count completed sheets, and stop the system when the programmed quantity is reached.

An analog output card sends speed commands to the VFD, which starts and stops the material-feed rollers and controls fast and slow operating speeds.

Control Concepts completed the retrofit in less than one week at approximately half the cost of the OEM-quoted replacement system.

CONTROL SYSTEM COMPONENTS

CONTROL PLATFORM

Beijer HMI

Allen-Bradley Micro850 PLC

MOTION & FEEDBACK

Yaskawa GA800 VFD Encoder
feedback

THE RETROFIT INCLUDED:

1

Evaluate the failing AMS controller.

2

Recreate the original keypad functions on a Beijer HMI.

3

Program the Micro850 PLC for length and sheet-count logic.

4

Integrate encoder feedback for product-length measurement.

5

Send PLC speed commands to the GA800 VFD.

6

Test shear, counting, and automatic-stop functions.

THE RESULTS



FASTER COMPLETION

The retrofit was completed in less than one week, compared with the six-month lead time quoted by the OEM.



LOWER PROJECT COST

The completed solution cost approximately half of the OEM-quoted retrofit.



PRECISE LENGTH CONTROL

Encoder feedback allows the PLC to measure material length and command the shear at the programmed setpoint.



MODERN OPERATOR INTERFACE

The Beijer HMI recreates the original keypad functions on a modern touchscreen.

PROJECT AT A GLANCE



< 1 WEEK

Retrofit completed

6 MONTHS

OEM lead time

~ 50%

Of OEM quote

2 COILS

Simultaneous feed

PLC + HMI + VFD

Integrated system





Need to replace a failing or obsolete machine control system?

SCHEDULE A CALL

Control Concepts engineers PLC, HMI, encoder, and drive retrofits for cut-to-length lines and other precision industrial equipment - from system design and programming through installation, integration, startup, and commissioning.

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