



CONTROL 
TECHNIQUES

COMMANDER PROVES COST EFFECTIVE

AUTOMATIC TECHNOLOGIES INTERNATIONAL | METALS

DRIVE OBSESSED

SOLUTION FOUND USING THE ON-BOARD PLC

Telford based Automatic Technologies International was given a tight timescale and budget to devise a cost-effective solution for welding the ends of a tubular heat exchanger by client, Sheffield company, Trianco Heating Products Ltd.

The Challenge

Automatic Technologies International required precision control for the production of a heater assembly for a central heating boiler, which entails welding a 22mm pipe to a blank tube end, welding the tube end onto an 80mm tube, then completing the task by welding a flange to the other end of the tube.

When welding the flange and vessel end, the motor speed is 80 Hz, but for welding the smaller 80mm pipe in place, the rotation speed is much slower at 20 Hz to give the same surface speed for welding. With two welding speeds, a variable speed drive was required, as well as overall process control. Yet the extra cost of even a small PLC with its associated power supply and larger control box would have made it prohibitively expensive.

The Solution

An alternative solution was found using the on-board PLC functionality of the 0.25 kW Commander to provide two drive programmes & on/off control of the TIG welding torch.

After selecting the correct programme, the operator simply needs to press one button to initiate the sequence: clamps on the outer plate, fixes the tube base or flange into place and the tube is placed into position in the centre, the plate is reversed to top-dead-centre (detected by a proximity switch), then the TIG welding torch swings into position and the welding sequence starts.

Overview

- Compact drive
- Simple programming
- Cost effective solution

The Benefit

"The Commander simplified the whole design," explained Alex Wilson, Managing Director of Automatic Technologies International.

"And the drive's very compact too, which also helped. All of the turntable routines, the clamp control and sequencing, the position and control of the welding torch, were programmed into the Commander itself, keeping our build costs well within budget. Not only was the budget tight, but we were able to produce the design, build the machine and deliver it all in just a few days – it was up and running the same day it was delivered!"

