YASKAWA

Successful Solution

Stove Knob Tester

December 23, 2008

Issues / Problems / Challenges

- Existing system requires a mechanical setup with fixed position targets
- Need more speed and setpoint flexibility
- Excessive amount of scrapped products due to open-loop stepper operation

Solution

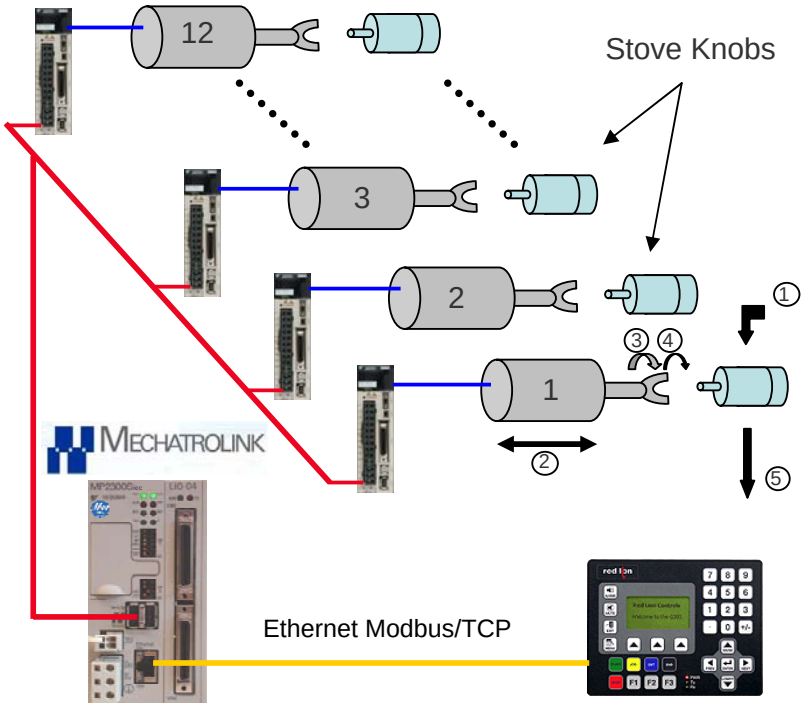
Controller:	MP2300Siec
Controller Software:	MotionWorks IEC
Solution Code:	Custom
Servo:	Sigma-5
Power Level:	200w
Voltage Level:	230 VAC, 1 Ph.

Performance Achieved

Throughput:	2000 parts per hour
Accuracy:	±2 deg placement
Auxillary Functions:	n/a

Customer Information

Industry:	General Motion
Application:	Stove Top Knob Tester



Application Description

The end-user makes electrical ignition knobs for stove tops. This system tests the product at the end of the production line and orients it for shipping. The system tests 12 units at a time by clamping on the knob and turning it 1.5 revolutions. While turning, the motor is looking out for an input signal indicating that a contact inside the knob was made. When received, the motor turns a preset distance, waits for a short period, then goes to zero position and waits for the new test cycle to start.
The machine zero position is established on power up via the 20-bit absolute encoder built in to the motor. The distributed MECHATROLINK servo network allows easy and reliable connection of 12 servo axes, with room for expansion up to 16 axes if necessary - at no additional control cost.

Differentiating Solution Features	Resulting Solution Benefits
- Modbus communication to RedLion HMI - Target positions can be preset and over written by operator	- IEC 61131-3 programming environment allowed a faster implementation and commissioning time
- Absolute position feedback	- No homing process on power up saves time - Greater range and flexibility of product testing
- 16 axis controller in super-compact package	- Unbeatable price/performance combination saved money and justified the project

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