

Tube and Pipe Manufacturing Buckeye Manufacturing

At a Glance

- **Project:** Tube and Pipe shear
- **Company:** Buckeye Manufacturing
- **Location:** East Palestine, Ohio
- **Challenge:** Coordinate speed of tubes with water blast.
- **Solution:** RMC100 motion controller was selected to synch the rotation speed of the hydraulic motors.
- **Benefits:** Easy machine setup and maintenance, smoother power, electronic recipes.



Summary:

Tube and pipe manufacturing is all about maximizing the number of feet per minute. The shears that cut metal tubes to length need to cut very quickly, and burrs and dimples at the tube ends need to be removed or repaired just as quickly to keep up with the shear.

Challenge:

The rotation speed of the hydraulic motor that controls the aggressive water blast that flushes the interior of the tubes had to be coordinated with the speed with which tubes are transferred to the blowout station. The systems needed to process the material at 800 feet per minute, up from 200 feet per minute using older technology.

Solution:

Using an 8-axis version of the Delta Computer Systems' RMC100 to control motion, the rotation speed of the hydraulic motors were able to be synchronized together. To keep all these motors synchronized, the RMC100 motion controller relies on its ability to do "electronic gearing," whereby the rate of motion of one system element is regulated by motion elsewhere in a system.

Benefits:

Use of a smart hydraulic motion controller also makes machine setup and maintenance much easier for tube mill operators. With the new hydraulic systems, the motion elements are synchronized and power is delivered by smoother means. Recipes for processing different types of metal tubing can be stored electronically, and when processing is interrupted, the "smart" hydraulic control system can be restarted without requiring in-process material to be removed from the machine.

"The precision ... available using an electronic motion controller allows us to explore new capabilities."

-Keith Webster, Buckeye Manufacturing