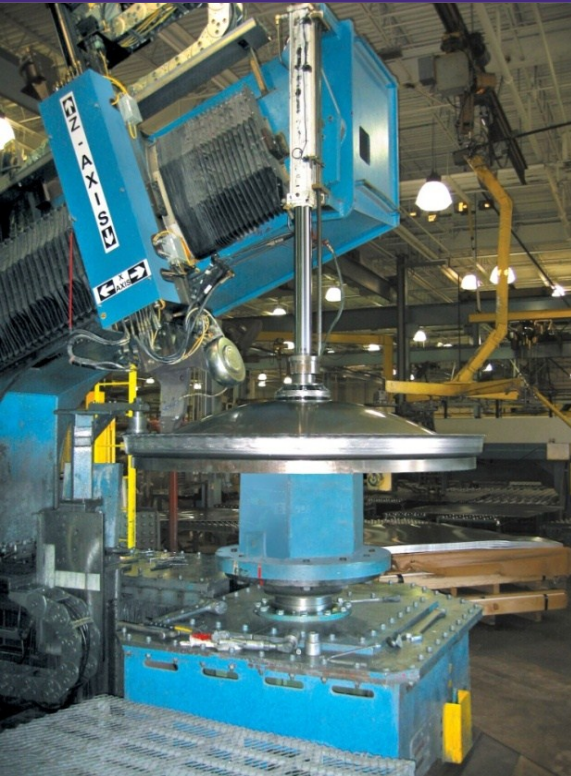


Hybrid System Control Andrew Corporation

At a Glance

- **Project:** Satellite antenna dish press
- **Company:** Andrew Corporation
- **Location:** Denton, Texas
- **Challenge:** Control five axes of motion, some electric, some hydraulic.
- **Solution:** RMC101 motion controller was selected to handle the diverse motion control tasks.
- **Benefits:** Single motion controller, simplified communications.



Summary:

Simultaneous motion and force control presents its own challenges, but throw in a couple axes of electromechanical motion and the likelihood of a clear solution seems remote. Andrew Corporation manufactures satellite antenna dishes ranging in diameter from six to sixteen feet. The dishes are manufactured by press-forming large, aluminum blanks onto hemispherical chucks made of hardened steel. How, they wondered, do we easily control this process?

Challenge:

Five axes of motion needed to be controlled simultaneously: the rotation of the spinning chuck, the vertical position of the spin ball, the horizontal position of the spin ball, and the vertical horizontal motion of the dish lip-forming tool. To complicate matters, some of the axes are powered by electric motors, and some by hydraulic cylinders. On top of that, both the position and the pressure of the vertical axis were critical.

Solution:

The RMC101 from Delta Computer Systems was selected as the motion controller of choice. The RMC101 offers the flexibility to handle a diverse set of motion control tasks, and also handles closed-loop position-pressure control of hydraulic actuators. The ease of setting up multiple, dissimilar axes using tools like Delta's automated Tuning Wizard made it a must-have for this application.

Benefits:

Because the complex multi-axis system was built combining hydraulic and electric power using a single electronic motion controller, the entire system can be easily upgraded and maintained. Furthermore, communications to the PLC and the HMI were simplified using EtherNet/IP, the industry standard.

"The RMC has the ability to mix and match hydraulic and electric actuators, yet remains easy to set up and maintain."