



Application Success Note

Application:
Hydroform Tube Processing Machine

Product:
S-Series SMART Hydraulic Actuators

Industries:
Automotive, Metal-Forming

Hydroform Tube Processing Machine Upgrade with SMART Hydraulic Actuators

Challenge:

A Tier-1 Automotive Chassis System manufacturer had to re-tool a Hydroforming line to accommodate a new model design change. The new line required the flexibility to produce both the current OEM product and the new product at higher volumes.

As a requirement for the new machine design, the manufacturer wanted to eliminate the messy and inefficient hydraulic system used in the old machine and implement new technology that provided better process control, was cleaner, quieter, saved energy and had the flexibility to handle the part variability.

In addition, the new system would need to seamlessly integrate with Rockwell Automation controls and drives.



Previous system, a mess of hydraulic components

Solution:

The manufacturer considered using electro-mechanical actuators but found that the large size and high cost of EMA technology would not meet their project requirements.

16 Kyntronics SMART Hydraulic Actuators (SHA) were selected for the new machine. The SHAs were rated from 6,000 lbf (27kN) to 23,000 lbf (103kN) of force and were provided in both in-line and right-angle configurations to optimally fit the available space envelope.

The SHAs incorporated Rockwell Automation (Allen Bradley) Servo Motors and Drives that met the customers' control specifications.



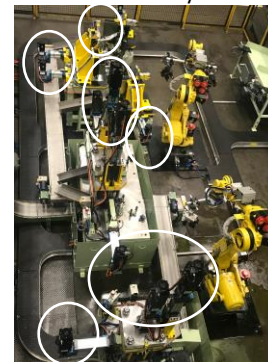
New system: Kyntronics SHAs with "In-Line" and "Rt-Angle" Configurations

Results:

The Kyntronics SHAs implemented on the new Hydroform Tube Processing Machine exceeded the requirements of the machine builder and end customer including the following highlights:

- The SHAs eliminated the space-consuming HPU, manifolds, valves and hoses which helped contribute to the machine footprint being 50% smaller than the previous production line.
- The ability of the SHAs to operate independently with cycle overlap allowed the new machine to produce 25% more parts per shift vs. the previous machine.
- The programmability of the SHAs provides flexibility to handle multiple part variations with improved process control – using position and force control ensuring optimal cycle times.
- Elimination of the hydraulics on the new machine results in an environment that is cleaner, less noisy and more energy efficient.

The Kyntronics SHA combines the power of hydraulics with the precision of servo control resulting in an ideal solution for the Hydroform Tube Processing Machine.



16 Kyntronics SHAs

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