



## Application Success Note

### Application:

Coining and  
Piercing  
Machine

### Product:

S-Series  
SMART  
Hydraulic  
Actuators

### Industries:

Appliance,  
Automotive,  
Aerospace,  
Metal-Forming

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## Coining & Piercing Machine

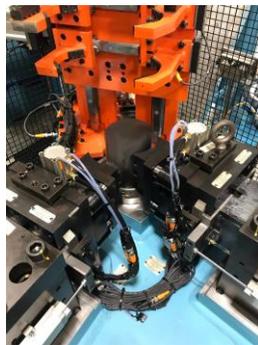
### Challenge:

An Appliance manufacturer had a project to procure an automated manufacturing line for a new product launch from a Special Machine Builder. The new product had stringent process quality requirements for the metal forming operations to be performed on the new line.

In addition, the manufacturer had a requirement to eliminate use of hydraulics in the plant due to the advantages of being environmentally cleaner, providing significant energy savings, reducing floor space required and quieter operation.

The customers' "no hydraulics" mandate created unique challenges for the Machine Builder due to the high forces required in the metal forming stations.

The new system was also required to seamlessly integrate with Rockwell Automation motors and servo drives.



Coining and  
Piercing Station

### Solution:

The Machine Builder considered using electro-mechanical actuators (EMA) but found the large size and high cost of EMA technology was prohibitively expensive and would not meet their project requirements. In addition, there were concerns about EMA screw life due to the "spike loads" the actuators would be subject to during production.

After careful consideration, the Machine Builder selected Kyntronics SMART Hydraulic Actuators (SHA) for the new machine. The SHAs are rated for 58,000 lbf (258kN) of force and were provided in a parallel configuration, which provided the force required in the available space envelope.



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

**Kyntronics SHAs rated at 58,000 lbf (258kN) in a Parallel Configuration**



### Results:

The Kyntronics SHAs implemented on the new Coining and Piercing stations exceeded the requirements of the machine builder and end customer including the following highlights:

- The SHAs eliminated the need for an HPU and hydraulic infrastructure resulting in a clean working environment, quieter operation, and substantial energy savings.
- Part quality exceeded the new product's stringent requirements, even at the high forces required for the metal forming operations.
- The SHA provided very reliable, maintenance-free operation despite the "shock loads" that were present in the metal forming operations.

The Kyntronics All-In-One SHA combines the power of hydraulics with the precision of servo control resulting in an ideal solution for the Coining and Piercing stations on this Appliance manufacturing line.



To find out more about how the advantages of Kyntronics SMART Hydraulic Actuators can improve your company's machines and processes, [contact our Engineering team.](#)