

APPLICATION SOLUTION: Powertrain Assembly**Product Family:** Electric**Product Used:** RSA32, RSA64, & RSX15
Roller Screw Electric Actuators**Product Type:** Standard**Application Requirements****Stroke:** 200 mm (8")**Force Ranges:** 13.3kN-40kN (3,000-9,000lbf)**Orientation:** Vertical-Rod End down**Application Description:**

Assembly of clutch hubs.

Challenge:

An Agricultural Equipment OEM was developing a new assembly line for a variety of powertrain components for their heavy duty off road equipment. A wide range of forces were required for the various assembly operations. Flexibility to control each assembly station and allow for quick product changeover, as well as long life and reliability, were key factors the OEM considered. A high level of force repeatability and positional accuracy were necessary to ensure parts were assembled to the required specifications. The OEM performed a technology evaluation between hydraulic cylinders and electric actuators. Although the hydraulic cylinders could achieve the forces required for the application, they could not deliver the force repeatability and accuracy to achieve a high level of part quality. Additionally, the hydraulic system had limitations with system flexibility for product changeovers which required lengthy manual adjustments.

Tolomatic Solution:

Tolomatic worked closely with the OEM to understand the requirements for each assembly application. A variety of RSA and RSX actuators were selected from Tolomatic's wide electric actuator product portfolio, ensuring that each actuator was right-sized for the application. Electric roller screw actuators were selected to handle the high forces of the pressing/assembly applications and provide a high level of precision during the assembly processes. Additionally, the electric solution provided the OEM complete control over the motion profile, ensuring parts were assembled to correct specifications while achieving a high level of part to part repeatability. The RSA and RSX electric actuators provided quick product changeovers and also eliminated potential downtime due to hydraulic fluid leaks and other unplanned maintenance.

Customer Benefit:

- Increased part quality with accuracy & repeatability of electric actuator system
- Increased productivity with decreased change-over times
- Long, reliable life with roller screw technology
- Clean electric technology eliminated leaks, minimized maintenance and significantly reduced noise found with hydraulic systems