Diakont is a key supplier of advanced electromechanical actuators (EMA) and control systems for steam turbine applications. Diakont’s EMA solutions allow customers to replace hydraulic actuator systems with electro-hydraulic solutions for steam valve control. Diakont actuators and controls increase performance, safety and stability with dual redundant and fail safe features.
Advantages and Benefits

Diakont EMAs incorporate progressive technology including precisely machined roller screws and high-force permanent magnet synchronous motors (PMSM). These components are integrated into a single unit, thus providing exceptional performance in a compact footprint. Diakont actuators provide the following advantages:

1. **Industry leading reliability** from advanced fail safe designs including closure springs, electromagnetic (EM) clutches, and dual redundant control channels and electric motors. If a failure were to occur, the system would switch to a backup channel within milliseconds.

2. **Extremely high accuracy** (0.0004”) which decreases pressure variance and increases power output compared to legacy hydraulic and pneumatic actuation systems.

3. **Long lifetime** (MTBF: 100,000 hours) from incorporating rugged roller-screws. Providing inherently larger cumulative contact surfaces, roller screws have longer working life, and can handle heavier loads at higher speeds than similarly sized units with ball screw designs.

4. **Reduced costs for maintenance and repair** compared to hydraulic actuators. All components with Diakont actuators are mounted and within environmentally sealed enclosures, keeping abrasive particles and contaminants from reaching critical mechanisms.

Proven in the Field

Diakont successfully upgraded dozens of steam turbine control systems that incorporated dual redundant EMAs, leading to impressive results. Diakont’s steam turbine control systems enabled to reduce steady state tracking error of steam generator pressure from roughly 8.7 psi to 1.5 psi, allowing electrical power output to be increased by roughly 0.2%. Diakont actuators are able to complete a full linear stroke in less than 50ms which increases turbine safety and overspeed protection.