

APPLICATION SOLUTION:	Managed Pressure Drilling
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Product Family: Electric
Product Used: ServoChoke®
Product Type: Custom

Application Requirements

Stroke (varies): 2 in. (50.8 mm)

Speed: various up to 0.709 in/s (18 mm/s)

Thrust: varies from 1,000 to 12,000 lbf
(4.4 kN to 53.4 kN)

Application Description

Precision control of the pressure of mud flow back to the surface during both exploratory and extraction drilling of oil and natural gas.

Challenge

During drilling, mud is circulated in through the drill string and out through a choke valve back to the surface fluid handling systems. To ensure rig safety, productivity and process efficiency, the pressure of the mud needs to be altered and controlled with precision and speed.

Hydraulic systems could not reliably provide the precise pressure control necessary for the Managed Pressure Drilling (MPD) drilling process. The required speeds were also very difficult to achieve using a compact hydraulic system. In addition, the solution required the application to be rugged, robust and reliable in diversely challenging outdoor environments.

Tolomatic Solution

Tolomatic developed the fully integrated ServoChoke® SVC Electric Choke Valve Actuator/Operator product line to provide a more reliable, high-speed, precision electric choke operator for performance drilling applications. A 3 mm (0.125") adjustment happens in less than 0.5 second. Roller screws and a robust steel NACE compliant housing provide the ruggedness needed to survive in challenging outdoor environments.

Customer Benefit

- Extreme precision due to the fully integrated design
- Use of roller screws and a robust steel NACE compliant housing provides the ruggedness needed to survive in harsh environments
- Best in class position repeatability
- High dynamic response rates and linear velocities to quickly reach commanded changes in positions