



FOCUS PULSER

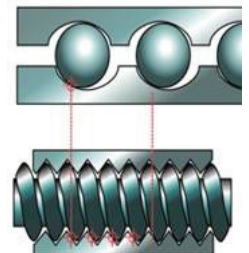
The Pulser can generate a sequence of pressure increases (pulses) in the mud system. The pulses are detected on surface by a transducer, relayed to the surface equipment and decoded. This needs to be done in a volatile and unpredictable environment. With older generations of pulsers, there were limitations with the environments these pulsers could work in. With current advancements, we have been able to calculate the amount of force at various temperatures you can count on. With this information we are able to reduce the output when it's not required and increase it when needed to create the most efficient pulser available. This equates to a higher level of reliability, coupled with improved mounting capabilities, which means that we can run in much harsher environments, with reduced downtime and lower operating costs.

Features and Benefits

- Piston compensated
- Temperature rating of 200°C
- Compact and rugged design with less, more durable components
- Performance and environmental conditions recorded in the high capacity memory
- Pulser screen designed to reduce plugging due to LCM and debris
- 260C Re-buildable Motor with a resolver feedback for more accurate position sensing
- Roller screw replaces the Ball screw
- Simple assembly and service along with quicker oil fill procedure which helps reduce cost by requiring less time to service the pulser

Advantages of Planetary Roller Screw Technology

- High efficiency for longer life: In a roller screw, the planetary rollers are constrained by journals at each end of the roller. Since one roller never touches another, friction is eliminated.
- High speed for increased efficiency and productivity: Planetary roller screw technology is capable of higher rotation speeds and can operate efficiently up to 6,000 rpm.
- Greater load distribution for higher load and longer life: On average, there are 200 contact points in a 1 inch diameter, 1.5 inch long roller screw. Therefore, the load is distributed over approximately 4 times the area which can result in up to 15x longer life and up to 15x greater load carrying capacity. Additionally the roller screw design delivers improved stiffness for greater precision and durability.



--- ENGINEERED TO EXTREMES ---

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Environmental Specifications

Operating Temperature Range	-40°C to +200°C
Survival Temperature	+200 °C
Max Operating Pressure	20,000 psi
Vibration (3-Axis) sweep Freq 50-1000Hz	20 G Rms, 30 - 1000 Hz, Random
LCM	Medium to High LCM Concentrations
Sand Content	< 1% by volume recommended

Performance Specifications

Telemetry	Positive pulse
Max Pilot Valve Force	200 ft/lbs @ ambient temp, 117 ft/lbs @175°C, 80 ft/lbs @200°C
OD	1.875 in
Memory	Large Capacity Memory and Diagnostic

Memory

- Pulse count: Good pulses, bad pulses
- Temperature
- Pulsers efficiency rating which will take into account numerous electrical measurements to rate the pulsers work load vs time
- Plugged in time
- Pulse width setting
- Pulse speed (Time it takes for the pilot valve to unseat and return back to a sealed position)
- Vibration and Shock 3 Axis can be transmitted to surface
- Flow on time