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Motors

Bolt-on single and tandem motor designs for the REDA Maximus ESP system

APPLICATIONS

- ESP systems across all applications and conditions, including extreme weather

BENEFITS

- Improves reliability with reduced risk of installation-related failures and more robust rotor bearings
- Streamlines installation, reducing costly NPT and enabling early ESP startup
- Optimizes production with real-time downhole monitoring capabilities

FEATURES

- Simplified plug-and-play design
- Prefilled and presealed to enable installation in all weather
- Mechanically locked-in rotor bearings with self-lubricating, polymer-lined bushings
- Plug-in pothead connection with MaxLok* ESP quick-plug motor lead extension (MLE) or Trident* extreme-conditions MLE
- Quick and reliable motor and protector connections with MaxJoint* ESP flange connection technology
- Direct measurement of motor-winding temperature
- Gauge-ready base (GRB) fully compatible with any Phoenix* artificial lift downhole monitoring systems sensor
- Variable-rating motor with high efficiency and power through the operating range
- Involute spline shafts to provide maximum torque capacity

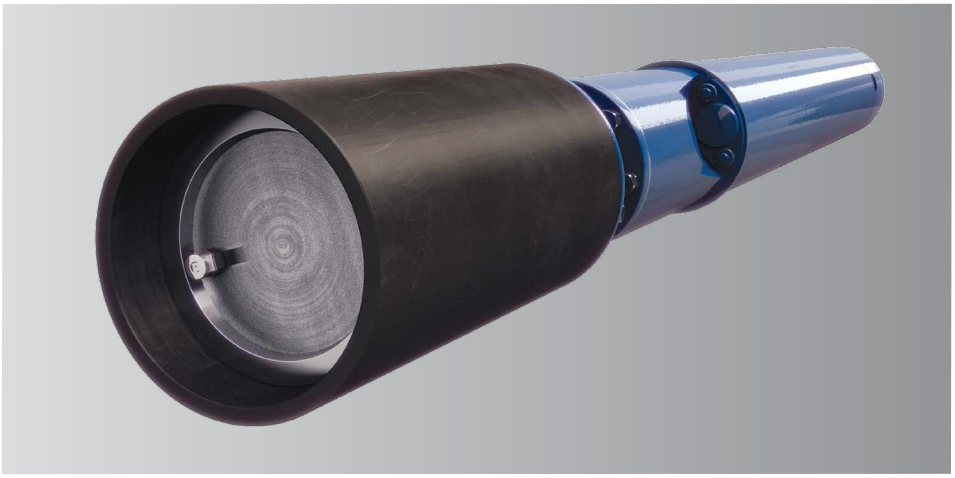
Motors for the REDA Maximus* install-ready ESP motor system embody the latest technological evolution of the Dominator* submersible pump motor. They combine the strength and reliability of the proven REDA* ESP system motor technology with an innovative plug-and-play concept. These motors are handwound, two-pole, three-phase, squirrel-cage induction type. Heat generated by the motors is transferred to the well fluid flowing past the motor housing, and the motor thrust bearing carries the load of the rotors.

Oil filling of the motors is performed in the controlled environment of a Schlumberger manufacturing plant or service center, away from the potentially adverse conditions of the wellsite. The motors are factory vacuum filled with highly refined mineral oil to provide dielectric strength, lubrication for bearings, and thermal conductivity. MaxJoint technology features a leak-tight seal and a compensating shipping cap that ensures the right amount of oil is contained at all times. Making up the pothead to the motor is now a quick and easy plug-and-play connection with the MaxLok MLE, which eliminates the taping process of the pothead terminals at the wellsite.

Along with this streamlined motor design, key internal components have been enhanced for reliable operation in severe conditions. For example, all radial bearings in motors for the Maximus system feature hardened shaft sleeves running in self-lubricating, polymer-lined bushings with high load and temperature capacity under diminished oil lubricity.

Motors that include the GRB offer the highest flexibility because they are compatible with any Phoenix system sensor for real-time monitoring of ESP and reservoir parameters. A temperature-sensing device directly connected to the motor winding enables real-time monitoring of the motor-winding temperature throughout all stages of operation. The GRB allows direct connection (no adapters required) of the downhole gauge to the motor either in the shop or at the wellsite without having to refill the motor. Motors with the GRB can be run without a downhole sensor, if needed.

These motors improve Maximus system run time while reducing installation time. Once at the wellsite, the motors are installed quickly and easily with the Maximus system, allowing earlier release of workover crews and earlier oil production.



Factory-filled motors for the Maximus ESP system incorporate MaxJoint technology sealed with a special compensating shipping cap to maintain the contamination-free oil during transportation and storage.

Motors

Motor Specifications			
Motor Series	**375**	**456**	**562**
Casing OD, in [mm]	3.75 [95.25]	4.56 [115.8]	5.62 [142.7]
Power range, hp at 60 Hz [kW at 50 Hz]			
Single section	14.3 to 71.4 [8.9 to 44.4]	30 to 270 [18.6 to 167.8]	37.5 to 563 [23.3 to 350]
Max. tandem	285.6 [177.5]	540 [335.6]	1,126 [700]
Rotor bearing type	Self-locking (SLK)	Self-locking and self-lubricating with polymer lining (SLK-PL)	SLK-PL
Max. winding operating temperature, degF [degC]	350 to 400 [177 to 204]†	350 to 400 [177 to 204]†	350 to 400 [177 to 204]†
Shipping and storage temperature, degF [degC]	–40 to 176 [–40 to 80]	–40 to 176 [–40 to 80]	–40 to 176 [–40 to 80]
Operating frequency, Hz	30 to 90	30 to 90	30 to 90
Metallurgy	Carbon steel (CS), CS with MONEL® trim (CS M-TRM), Redalloy* high-nickel alloy	CS, CS M-TRM, Redalloy alloy	CS, CS M-TRM, Redalloy alloy
Protector and tandem motor connection	MaxJoint technology	MaxJoint technology	MaxJoint technology
Motor lead extension connection	Tape-in MLE	MaxLok MLE	MaxLok MLE, Trident MLE
Sensor connection options	Adaptor to sensor	GRB with factory-installed motor winding thermocouple or built-in sensor	GRB with factory-installed motor winding thermocouple or built-in sensor
Oil-filling process	Factory vacuum filled with degassed oil specified for the application and sealed with compensating shipping cap (no additional oil-filling required upon installation)	Factory vacuum filled with degassed oil specified for the application and sealed with compensating shipping cap (no additional oil-filling required upon installation)	Factory vacuum filled with degassed oil specified for the application and sealed with compensating shipping cap (no additional oil-filling required upon installation)

†Configurable based on well conditions and application requirements

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