

Advanced Motor Protector

For the REDA Maximus ESP system

APPLICATIONS

- Geothermal
- High viscosity fluids with poor thermal conductivity
- Wells with abrasive fluid
- Gassy wells
- Wells with corrosive fluid, including chemical treatments, H₂S, and CO₂

BENEFITS

- Offers simplified and nonweather-dependent application with plug-and-play design
- Saves rig time and minimizes installation-related risk with factory shimming
- Improves ESP system reliability in severe application
- Increases cash flow with an extended run life
- Extends the application envelope to improve reservoir recovery ratio
- Enhances performance in gassy and abrasive applications
- Lowers total cost of ownership

FEATURES

- MaxJoint* ESP flange connection technology for reduced leaks and contamination-free oil
- Availability in multiple configurations, including metal bellows, elastomeric bags, and labyrinth fluid containment chamber
- Metal bellows option for increased resistance to gas migration
- Dual bearing to reduce vibration and eliminate bushing wear
- Sand diverter system to protect mechanical shaft seal
- High-pressure check valve
- Dual elevated shaft seal for redundancy
- Compatibility with REDA* Maximus* ESP system motor and existing Schlumberger pump, intake, and gas-handling devices

The Maximus system's advanced motor protector is a highly reliable protector with many of the features of the REDA Hotline* high-temperature ESP system's advanced protector and the Maximus system protector. It features metal bellows and an improved shaft seal to enable Maximus ESP systems to operate in even highly corrosive environments, and it improves reliability in sandy environments. Its plug-and-play design reduces the risk of human error and enables fast wellsite deployment, improving ESP run life and well production.

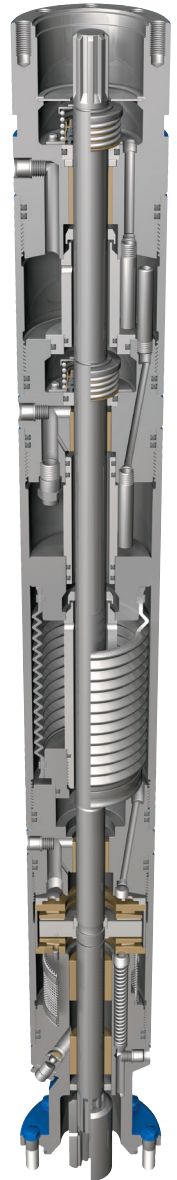
Operation

The protector operates reliably in highly abrasive and corrosive environments, such as those with H₂S and CO₂. It is available with INCONEL® metal bellows, which replace the traditional elastomeric bag or tube and expand the environmental operating envelope of the ESP system to hostile or high-temperature environments. The metal bellows also prevent motor oil displacement when operating in high gas volume fraction applications.

Application in abrasive environments

The advanced motor protector also features elevated shaft seals and a sand diverter system in its head to enhance performance in sandy or solids-producing environments. The head design allows the solids to fall from the intake back into the wellbore through the drainholes. The sand shield protects the top shaft seal from excessive abrasives and also features abrasion-resistant ceramic shaft bearings that reduce wear and enhance shaft stability, minimizing vibration in the ESP system.

The protector is available in two series, 540 series and 400 series. Due to its OD, the 400 series does not feature an option with metal bellows.



Advanced motor protector with metal bellows option.

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Advanced Motor Protector Specifications

Protector Series	540	400
OD, in [mm]	5.13 [130.30]	4.00 [101.6]
Maximum operating temperature, degF [degC]	400 [204.4]	400 [204.4]
Housing material	Carbon steel or Redalloy* high-nickel alloy, high-chrome alloy	Carbon steel or Redalloy alloy, high-chrome alloy
Elastomers	Highly saturated nitrile, Aflas®, or Chemraz®	Highly saturated nitrile, Aflas, or Chemraz
Bellows material	INCONEL	na [†]
Chamber configuration	Metal bellows, bag, and labyrinth	Bag and labyrinth
Bearing configuration	Tungsten carbide	Tungsten carbide
Shaft diameter, in [cm]	1.187 [30.15]	0.875 [22.22]
Compatibility with REDA system components	Fully compatible	Fully compatible

[†]Not available.

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