

# Protector

## Bolt-on modular protectors for the REDA Maximus ESP system

### APPLICATIONS

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

### BENEFITS

- Simplifies installation with plug-and-play design
- Improves performance in abrasive applications
- Reduces operating costs with customizable, modular design
- Minimizes installation-related risks due to factory shimming

### FEATURES

- Leak-tight seal and contamination-free oil with MaxJoint\* ESP flange connection technology
- Combinations of labyrinth and positive seal (bag) chambers for great flexibility
- Compatibility with all existing REDA\* ESP system pumps and accessories
- ARZ\* abrasion-resistant zirconium bearing in protector head
- New self-lubricating polymer-lined bearing design
- High-load thrust bearings to handle severe downthrust
- Extended travel shaft seals with silicon carbide faces
- Higher-strength shaft materials for higher-power applications

REDA Maximus\* ESP system protectors combine proven reliability with innovative, plug-and-play design to streamline installations and enhance production.

Operators can customize the configuration of their modular Maximus system protectors to meet the requirements of their specific application by combining labyrinth and positive seal (bag) chambers, in series or parallel, with thrust bearing types, shaft material, and motor oil types.

Oil-filling and shimming procedures are now performed by experts in the controlled environment of Schlumberger manufacturing and service centers. With efficient assembly, the factory-prepared protectors simplify work at the wellsite, allowing less NPT and leading to faster production.

The protectors feature MaxJoint connection technology, which ensures protectors are seamlessly connected at the wellsite with leak-tight seals.

The shaft seals are designed for extended travel and built with wear-resistant silicon carbide faces. Other high-reliability features include high-load thrust bearings, a zirconia radial bearing in the head, and self-lubricating, polymer-lined radial bearings elsewhere.



*The upper flange connection includes an extended shaft, a shaft lip seal, and an oil communication valve.*

### Protector Specifications

Protector type	Modular, multichamber
Oil-filling process	Factory filled with purified oil; no oil servicing required at wellsite
Protector series	325 (3.25-in housing OD), bolts onto the 375 Maximus system motor 387 (3.87-in housing OD), bolts onto the 456 Maximus system motor 400 (4.00-in housing OD), bolts onto the 456 Maximus system motor 540 (5.13-in housing OD), bolts onto the 562 Maximus system motor 562 (5.62-in housing OD), bolts onto the 562 Maximus system motor
Chamber configurations	Modular design that includes labyrinth- and bag-type chambers that can be connected in series or parallel
Metallurgy	Carbon steel Carbon steel with MONEL* trim Redalloy* high-nickel alloy
Elastomers	Highly saturated nitrile and Aflas*
Compatibility with REDA ESP components	Fully compatible with Maximus system motors and protectors Fully compatible with REDA system intakes, gas separators, advanced gas handlers, and pumps Incompatible with conventional modular protectors; however, conventional REDA system modular protectors can be upgraded to Maximus system design Incompatible with conventional or Dominator* submersible pump motors; however, Dominator motors can be upgraded to Maximus system design
Storage temperature, degF [degC]	−40 to 176 [−40 to 80]

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