

# CENtrilift XP xtreme performance series motors

Reduce lifting costs with the industry's most reliable, efficient motor

## Applications

- Conventional oil wells
- Unconventional oil wells
- Offshore oil wells

## Features and benefits

- Industry's only induction motor with encapsulated windings and end turns
  - Improves motor thermal properties
  - Provides higher temperature operating capabilities
  - Prolongs motor life
  - Improves electrical integrity
- Enhanced bearing system
  - Increases motor efficiency
  - Improves durability and wear resistance with advanced metallurgy
  - Stabilizes motor operation
  - Prevents rotor bearing spinning with T-ring
- High-performance stator and rotor design
  - Reduces power costs
  - Improves electrical and mechanical performance
  - Stabilizes windings
- Optimized motor head design
  - Increases horsepower capacity
  - Improves reliability in hard start applications
  - Allows conductor temperatures up to 400°F (204°C)
- Corrosion-resistant construction options
  - Improves durability

Increasingly complex electrical submersible pumping (ESP) system requirements demand a robust motor that can operate reliably in challenging downhole conditions. Baker Hughes designed its **CENtrilift™ XP xtreme performance series motor** line to meet the need for greater reliability and to optimize lifting costs to improve operators' return on investment. The XP motor design, which is available in 4.50-in and 5.62-in outside diameter sizes, is built on the foundation of Baker Hughes proven motor technology, which is demonstrating unsurpassed reliability in thousands of wells around the world.

Baker Hughes has the industry's only two-pole, three-phase induction motor with fully epoxy-encapsulated windings and end turns. The encapsulated windings and end turns have higher thermal conductivity, which lowers the operating temperature for greater stability and enhanced thermal life. This unique epoxy-encapsulated construction holds the motor windings rigid to prolong motor life and



isolates the windings from debris and contamination for greater electrical integrity. Epoxy encapsulation also protects the internal lead and magnet wire connection in the end fixture during operation and maintenance.

The CENtrilift XP motor bearing system design uses a proprietary non-magnetic, wear resistant, cobalt-based alloy bearing carrier in conjunction with all-steel laminations to optimize motor efficiency and lower bearing operating temperature. The patented anti-rotation elastomer T-ring design improves reliability by preventing bearing spin while at the same time allowing axial movement during thermal cycling. A compliantly-mounted tungsten carbide bushing and sleeve at the motor base provides robust support at this critical location in the motor's construction.

The CENtrilift XP motor features an optimized rotor and stator geometry for the industry's highest efficiency rating, which helps operators reduce power expenses and lower overall lifting costs.

The upgrades include:

- High-performance shaped rotor bars and enhanced rotor lamination geometry for greater efficiency
- Upgraded polyimide magnet wire insulation to increase dielectric and mechanical strength
- Closed-slot stator laminations to fix wires in place for increased operating clearances
- Optimized stator laminations to maximize efficiency and improve thermal life.

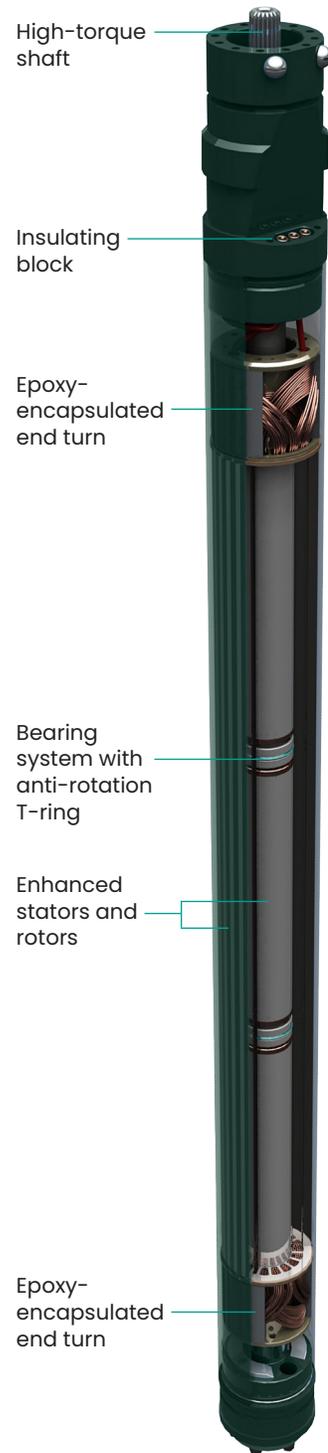
A redesigned motor head enhances the motor's longevity and operational capabilities. The redesign allows for a high torsional strength shaft for greater horsepower ratings and greater strength in hard-start applications. An enhanced insulating block withstands operating temperatures up to 450°F (232°C). The motor head connects seamlessly to the **CentriLink™ 12** or **CentriLink 20 motor lead extension (MLE)**, based on motor horsepower requirements. The CentriLink portfolio of MLEs features the industry's highest temperature and voltage ratings.

The XP motor is available in corrosion-resistant stainless steel metallurgy or

with a metalized flame-spray coating with an epoxy overcoat to improve XP motor reliability in corrosive environments.

The motor design improvements underwent extensive in-house reliability testing at the Baker Hughes Artificial Lift Research and Technology Center (ALRTC).

Contact your Baker Hughes representative today to find out how the CENTrilift XP submersible motor can improve the performance of your ESP systems.



Specifications				
	450SP	450XP	562SP	562XP
<b>Rotor count</b>	2-24 R single	2-26 R single 30-52 R tandem	2-16 R single	2-22 R single 24-32 R tandem
<b>Maximum horsepower rating</b>	264	572	400	800
<b>Available metallurgy</b>	Carbon steel	Carbon steel Corrosion resistant	Carbon steel	Carbon steel Corrosion resistant
<b>MLE type</b>	CentriLink 12	CentriLink 12	CentriLink 12	Singles CentriLink 12 Tandems CentriLink 20
<b>I-Block with debris shield</b>	IB 12 450	IB 12 450	IB 12 562	Singles IB 12 562 Tandems IB 20 562
<b>Stator type</b>	Open winding	Encapsulated winding	Open winding	Encapsulated winding
<b>Voltage rating</b>	4500 V	4500 V	4500 V	4500 V
<b>Splines</b>	6T 2-12R 18T 15-24R	6T 2-12R 18T 15-26R	21 tooth involute	21 tooth involute
<b>Thrust washers</b>	Phenolic	ALR142	Phenolic	ALR142
<b>Thrust bearing</b>	Solid shoe	EHL	Solid shoe	EHL
<b>Base bushing and sleeve</b>	Tungsten carbide 2-12R	Tungsten carbide 2-12R	Tungsten carbide	Tungsten carbide
<b>Magnet wire insulation</b>	Double polyimide wrap	Enhanced polyimide wrap	Double polyimide wrap	Enhanced polyimide wrap