

Tiger Shark® III 400 Series Pumps

FLEXIBLE EXTENDED OPERATING RANGE AND LONGER RUN LIFE IN DEEP HIGH-PRESSURE WELLS

OVERVIEW

Building on the legacy of the Tiger Shark II 400 Series pump features, Summit ESP® – A Halliburton Service is introducing the high-performance Tiger Shark III 400 Series electrical submersible pumps (ESPs).

This next-generation pump has an enhanced threaded connection that eliminates welding and collaring, while it reliably extends operating range and run life in conventional, unconventional, or deep well applications with high discharge pressure – anywhere in the world. Additional features in the bearing system enhance abrasion resistance and provide upthrust protection for a wider operating range.

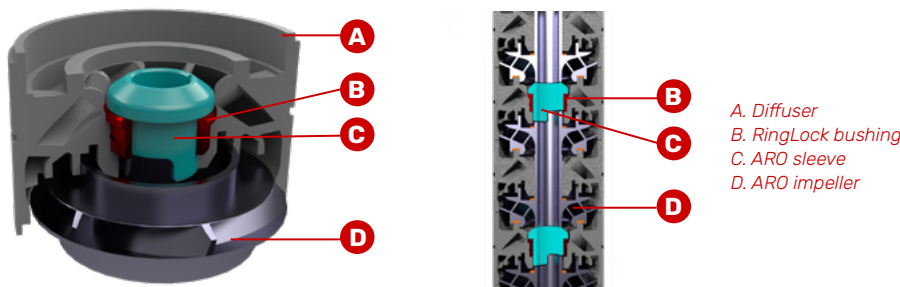
WHAT'S NEW

Tiger Shark III 400 Series pumps boast the following new technological advancements to solve the problem of challenges with both conventional and unconventional wells that have a significant amount of abrasion material that needs to be pumped, along with fluid exceeding the normal pressure operating limit:

- » Enhanced threaded connection eliminates the need to weld or collar, and provides an increase in allowable discharge pressure, and higher reliability in deep wells
- » Abrasion-resistant overlap (ARO) bearings provide additional run life in highly abrasive environments, and guard against cutting the key and the shaft*
- » XRange® Xtreme (XRX) advanced bearing system provides upthrust protection, enabling a wider operating range*

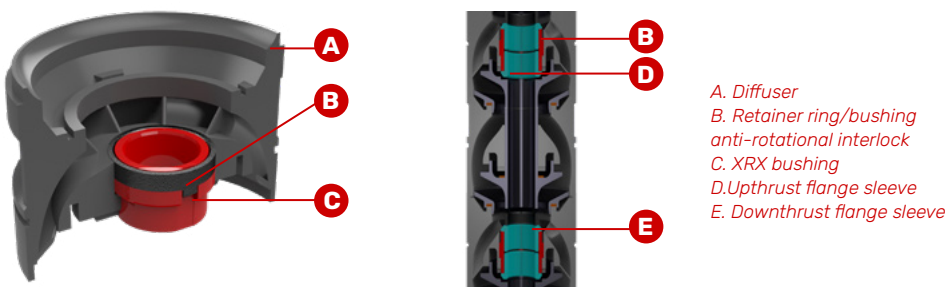
* Application-specific option

ABRASION-RESISTANT OVERLAP (ARO)

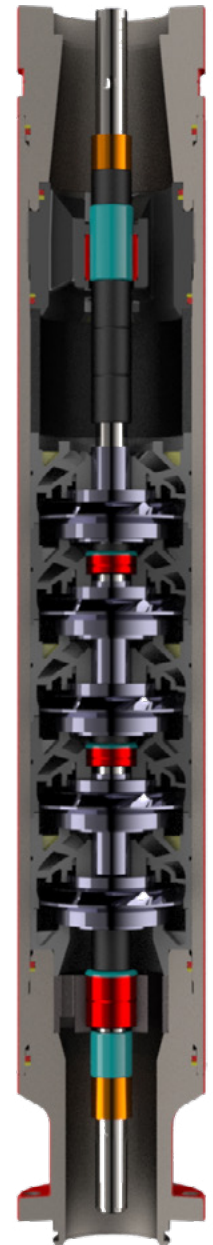


- A. Diffuser
- B. RingLock bushing
- C. ARO sleeve
- D. ARO impeller

XRANGE XTREME (XRX)



- A. Diffuser
- B. Retainer ring/bushing anti-rotational interlock
- C. XRX bushing
- D. Upthrust flange sleeve
- E. Downthrust flange sleeve



TIGER SHARK® 400 SERIES PUMP COMPARISONS

Features and Benefits	Tiger Shark III	Tiger Shark II
Enhanced threaded connection provides increase in allowable discharge pressure without welding or collaring, with the pump capable of up to 6,000 psi	●	
Dual sealing system with back-up rings designed for deep high-pressure wells	●	
Abrasion-resistant overlap (ARO) bearing system provides additional run life in extremely abrasive environments, and allows for secondary torque transfer if the key is eroded away*	●	
Abrasion-resistant XRange® Xtreme (XRX) bearing system allows for the widest operating range, and this additional up thrust protection allows more range to the right side of the curve*	●	
Top snap trap sleeve interlocks shaft and snap ring to provide secondary retention in the running position	●	
Exclusive Erosion Buster® technology provides abrasion resistance to the diffusers and pump housing	●	●
Enhanced and highly reliable abrasion-resistant flange sleeve module design improves run life and increases uptime performance	●	●
Abrasion-resistant RingLock high thermal expansion material (HTEM) bearing system is standard on all 400 series pumps, and this exclusive HTEM ring provides secondary bushing retention	●	●
Coating options for stage metallurgy offer reduced corrosion and erosion while providing chemical protection	●	●
Wide flow range stage designs allow for extended operation in dynamic wells (see pump curves for capacities)	●	●
High-efficiency stages reduce total cost of ownership and operation (see pump curves for efficiency rates)	●	●

* *Applicaton-specific option*

TIGER SHARK® III STANDARD AND OPTIONAL MATERIALS

Typical construction for 400 Series mixed flow pumps

Component	Standard Materials	Optional Materials
Head/Base	Carbon Steel AISI 1045	Stainless Steel 416
Housing	Carbon Steel 1026CS	Stainless Steel 9Cr1Mo
Impellers/Diffusers (Mixed Flow Type)	Ni-Resist Type 1 ASTM A436	
AR Stage Flanged Sleeves and Bushings	Tungsten Carbide (Unique Blend)	
Shaft	K500 MONEL® UNS N05500	Inconel® 718/UNS N007718
Keystock/Shaft Retaining Ring	Inconel® 718/UNS N007718	Inconel® 718/UNS N007718
Compression Bearing	Ni-Resist Type 1 ASTM A436	
Compression Tube	Ni-Resist Type 1 ASTM A436	
Thrust Washers	Cotton Phenolic	Teflon®
Head/Diffuser/Base O-Rings	JB19 (Unique Blend)	Aflas®
Fasteners	K500 MONEL® UNS N0550	
Coupling	304SS	MONEL®

Monel® and Inconel® are registered trademarks of Special Metals Corporation.
Aflas® is a registered trademark of AGC Chemicals.

For more information, contact your local Halliburton representative
or visit us on the web at www.halliburton.com

Sales of Halliburton products and services will be in accord solely with the terms and conditions
contained in the contract between Halliburton and the customer that is applicable to the sale.

H014285 10/22 © 2022 Halliburton. All Rights Reserved.