

# TIW<sup>®</sup> XPak<sup>™</sup> Expandable Liner Hanger Systems

## Improves Wellbore Integrity and Zonal Isolation

The TIW<sup>®</sup> XPak<sup>™</sup> Expandable Liner Hanger System is used anywhere a robust liner top seal is needed or where a slimhole design is required to mitigate ECD issues both onshore and offshore. It features a liner top anchor/sealing device that is unmatched in the industry and is designed to run with standard liner applications.

The system's unique design allows a relatively short expanded section to provide a pressure differential rating equal to the wellbore casing design and a hanging load capacity equal to or greater than conventional liner hangers. The slim profile, with no external parts, allows an increased bypass area in most sizes and the robust running tool design provides high torque capabilities for rotation and/or drilling with liner operations.

The TIW XPak Liner System is manufactured from standard OCTG material and can match most casing grades. The system can also be constructed with corrosion-resistant alloy material.

## Unparalleled Seal Reliability

The expandable section of the hanger generally ranges from 16 to 24 inches in length. Dovetailed slips provide high load capacity and the combination of the metal-to-metal seal with elastomer backup seals after expansion provides a high-pressure, gas-tight seal at the liner top.

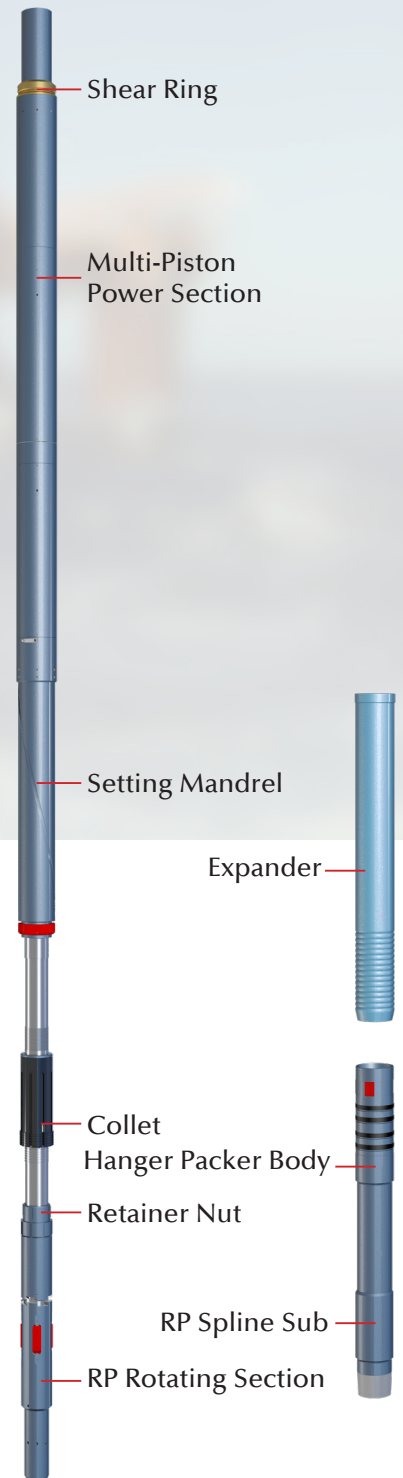
The expander mandrel is left in place after expansion and provides full support across the expanded tube, which eliminates the low collapse rating associated with other expandable systems.

## Benefits

- High torque capabilities for rotation and/or drill-down operations
- Manufactured from standard OCTG material
- High pressure integrity equal to casing design
- High load capability with ability to support long liners

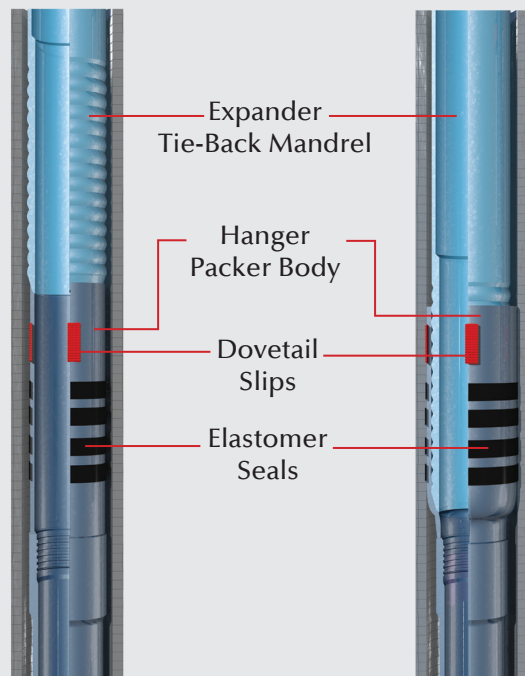
## Applications

- Deepwater
- Extended Reach
- Lost Circulation
- Multistage Cementing
- Drilling with liner
- HP/HT
- Wash/Ream
- Multistage Fracturing



## TIW® XPak™ System Multi-Piston Setting Tool

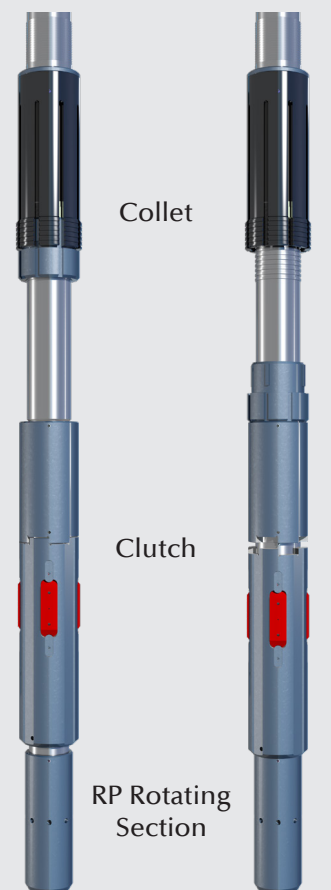
### TIW® XPak™ System Hanger Packer



Pre-Expansion

Post-Expansion

The TIW XPak Liner Hanger Packer is furnished with hardened slips and multiple sealing devices that are expanded into an anchoring and sealing engagement to provide load capacities equal to or greater than conventional hanger systems, and pressure ratings equal to the wellbore casing design. The expander incorporates metal-to-metal ball seals on the lower portion that remain in the hanger body after expansion. The ball seals provide a gas-tight seal between the expanded hanger and the expander mandrel. The upper portion of the expander mandrel features a honed receptacle suitable for a seal nipple with either conventional elastomer seals or a metal-to-metal dynamic ball seal.



Run-in

Release

The TIW XPak Multi-Piston Setting Tool provides the power to drive the expander mandrel into the hanger body. Liner size, percent of expansion and casing design determine the surface pressure, normally ranging from 3,000 to 4,500 psi. Activation of the setting tool is controlled with a shear ring, which allows for the necessary circulating pressures required for cement displacement or drilling operations without concern of premature expansion of the hanger. The setting tool provides dual releasing capabilities for releasing the tool from the hanger after the expansion is completed. The auto-release feature incorporates a lock ring in the upper portion of the collet, which locks the collet in the unsupported position on the mandrel. The RP Rotating Profile Sub, located below the hanger, and the RP Dog Section of the setting tool provides rotation and/or drill-down capability. A hydraulic clutch release feature has been added to disengage the RP Dogs during the hanger expansion process and allow the setting tool to be released with rotational release.