

# Liner hanger systems

## Systems aimed to reduce well construction costs and risks

The portfolio of Baker Hughes liner hanger systems will help you reduce well construction costs and minimize risks in a wide variety of applications, often improving well performance across the lifecycle.

With a comprehensive suite of systems, including both mechanical and hydraulic options with a broad range of ratings and features, Baker Hughes liner hangers deliver the performance you need, whether you are operating on land, or in the world's deepest HP/HT wells.

For applications where you need to install casing across problematic zones, we also offer liner-drilling systems that incorporate our high-performance casing drill bits and drilling fluids. Installing the liner as you drill greatly reduces occurrences of stuck pipe and lost circulation.

Every Baker Hughes technology is carefully engineered and rigorously tested to ensure well integrity, productivity, and pressure control. Our products and services are crafted to tackle specific problems such as technical limitations, pressure requirements, and safety concerns in even the most challenging applications, like deepwater or extended reach wells,

so you can avoid unplanned interventions and achieve a wellbore construction designed for optimal completions and reservoir drainage.

### System solutions

#### **ZXTreme™ HP/HT liner top packer and SlimX HPHT liner hanger combination**

The ZXTreme can withstand extreme HPHT/HPLT conditions to 15k psi at 100 to 450°F temperatures in deep, hostile environments. The ZXTreme incorporates the FLEX-LOCK slip design for superior hold down capabilities, is rotationally locked to prevent component back-offs when liner is rotated to setting depth, and is tested beyond API 1101 VO to accommodate high and low setting temperatures.

The SlimX is best suited for applications where high load capacity is required. The short length of the SlimX makes it the ideal choice when equivalent circulating density (ECD) is a concern. SlimX incorporates patented FLEX-LOCK slip and slip seat design which maximizes liner weight capacity. Distributing load circumferentially around the tool, SlimX prevents collapse loading of the mandrel.

### Applications

- HP/HT environments
- High load capacity requirements
- Low annular clearance requirements
- Low ECD requirements
- Geothermal wells
- Economical mid-tier solutions

### Benefits

- Deliver casing across tough, problematic zones
- Reduce occurrences of stuck pipe, lost circulation, and losing hole sections
- High torsional capabilities allow for long horizontal applications in extended reach wells

## ZXHD™ liner top packer and FLEX-LOCK™ V Mechanical- and hydraulic-set liner hanger combination

Protect well integrity with the superior sealing capabilities of the ZXHD liner top packer, which offers unmatched performance by combining proven ZX seal technology with rugged carbide hold-downs. The ZXHD liner packer maintains a permanent seal, even in wells with excessive upward pressures.

The FLEX-LOCK V hanger system has been optimized for extreme downhole conditions such as heavy drilling fluids, high solids content, and liner rotation to reach the desired setting depth. It can be rotationally locked to prevent component back-off during rotational operations and can be equipped with a bearing to allow for rotating after the hanger is set while cementing. A hydraulically balanced ControlSET version is available to provide the ability for unrestricted circulation pressure without risk of prematurely setting the hanger which is useful for ream-down or drill-down applications.

## ZXP-N™ liner top packer and CMC™ mechanical-set liner hanger or HMC™ hydraulic-set liner hanger combination

The ZXP-N compression set liner packer utilizes a ZX style packing element design. The seal element of HNBR elastomer provides a high pressure rating (10,000 psi) and moderate temperatures (300°F maximum). The packer also provides an effective annular seal between the top of the liner and the casing, preventing possible formation breakdown, loss of cement slurry, and gas migration.

The CMC mechanical set features staggered slip design allowing for maximum bypass flow area. Low profile slips reduce potential for damage during deployment. The system can be configured for left or right-hand set with the open bottom automatic “jay”.

The HMC hydraulic-set hanger is set by pressure within the running string – neither reciprocation nor rotation is required. Staggered slip design provides a large by-pass area for easy

deployment and free circulation, while the large distributed slip contact area reduces stress in the supporting casing.

## INLine™ liner hanger/packer system

The INLine system combines the liner hanger and packer system into one solution. The INLine system was designed for low annular clearance designs, and reduces the size of steps between casing diameters. High performance ratings are achieved by combining several leading edge technologies into a single tool. The INLine system is hydraulically actuated, uses Baker Hughes FLEX-LOCK slips, and includes the compression set ZXP liner top.

Contact your Baker Hughes representative today to learn more about how we can help with your next wellbore construction.

Liner hanger systems specifications				
Packer/hanger combination	Casing size (in.)	Rating (psi)	Temperature range (°F)	Applications
ZXTreme HP/HT liner top packer	9.625 to 13.375	Up to 15,000	100 to 450	<ul style="list-style-type: none"> <li>• High load capacities</li> <li>• Low annular clearances</li> <li>• High pressures</li> <li>• Locked up components standard</li> <li>• ISO rating V0</li> </ul>
SlimX HPHT liner hanger system				
ZXHD liner top packer	7.0 to 14.0	10,000–13,000	150 to 400	<ul style="list-style-type: none"> <li>• Highest load capacity</li> <li>• Can anchor in both directions</li> <li>• Wash/ream to bottom</li> <li>• Locked up components available</li> <li>• ISO rating V0</li> </ul>
FLEX-LOCK V mechanical and hydraulic set liner hanger				
ZXP-N liner top packer	4.50 to 16.0	10,000	100 to 300	<ul style="list-style-type: none"> <li>• Medium length liners</li> <li>• High hanging capacities</li> <li>• Economical mid-tier solution</li> <li>• ISO Rating V3</li> </ul>
CMC mechanical set liner hanger				
HMC hydraulic set liner hanger				
INLine liner hanger/packer system	9.625 to 14.0	10,000	150 to 400	<ul style="list-style-type: none"> <li>• Low annular clearance</li> <li>• High performance ratings</li> <li>• ISO rating V0</li> </ul>

