



# *Premium Hydraulic Static (PHS) Liner Hanger*

Weatherford's premium hydraulic static (PHS) liner hanger is ideally suited for use in deep, highly deviated wells. The cone and slips section are designed to optimize bypass and, in addition to the protected slips, make the PHS hanger an ideal choice for drill-down and reaming liner applications.

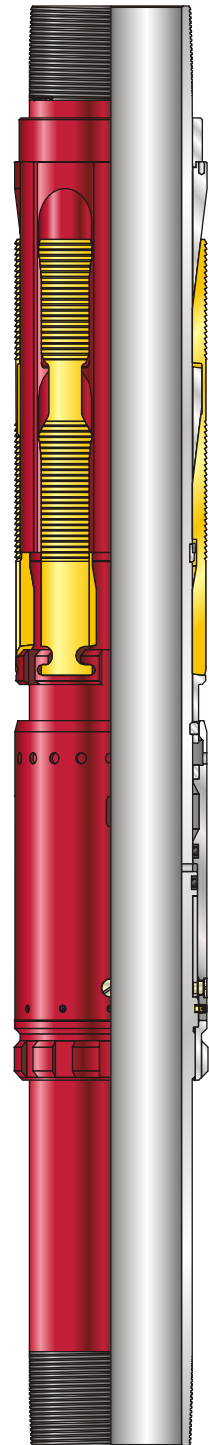
Differential pressure across the hydraulic cylinder activates the PHS hanger. Setting down weight on the PHS hanger then sets it, forcing the slips to bite into the host casing. The PHS features a spacer ring and cannot be rotated after the hanger is set.

## *Applications*

- Liners in deep and/or highly deviated wells
- Extended-reach liners
- Liners at any necessary depth
- Drill-down liners
- Liners that must be reamed down

## *Features, Advantages and Benefits*

- Hydraulic activation removes the need for drillstring manipulation, making it possible to set the PHS liner hanger in deep and/or highly deviated wells.
- Large slip contact area minimizes the stress in the host casing, enabling the PHS hanger to support extreme loads.
- High-torque, one-piece mandrel is equipped with premium connections that meet or exceed the torque of liner connections.
- Mechanical locking mechanism minimizes the risk of prematurely setting the hanger until it is hydraulically activated, reducing the potential for nonproductive time.
- Key screws rotationally lock the hydraulic cylinder to the mandrel. This feature prevents seal damage during rotation, ensuring that the hanger cylinder does not become a possible leak path in later well life.





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### *Features, Advantages and Benefits (continued)*

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- Nitrided slips ensure that the liner hanger can be set in the hardest grades of host casing.
- Non-tortuous bypass channels allow for high circulation rates past the hanger assembly to aid removal of debris during well cleaning and improve the quality of cement displacement.
- Premium designed aluminum shear screws ensure accurate predetermined setting pressures within  $\pm 5$  percent for enhanced reliability; with this advantage, hydraulic events can be planned with a high degree of accuracy and safety.

### *Specifications*

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Contact an authorized Weatherford representative.

### *Options*

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- The standard PHS liner hanger can be converted to a rotating model by replacing the spacer with a roller bearing.
- Standard metallurgies in most sizes are L-80 and P-110 (125 ksi); other metallurgies are available on request.
- Standard connection is VAM<sup>®</sup> TOP<sup>®</sup> HT in most sizes; other connections are available on request.

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