



# *Premium Hydraulic Rotating (PHR) Liner Hanger*

Weatherford's premium hydraulic-set, rotating (PHR) 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 PHR hanger an ideal choice for drill-down and reaming liner applications.

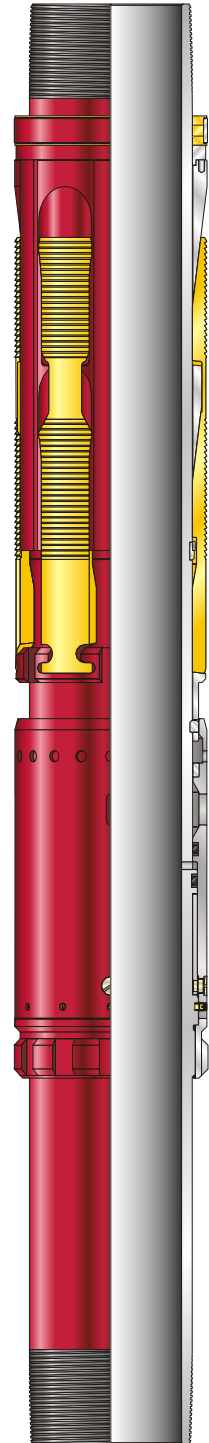
Differential hydraulic pressure across the hydraulic cylinder activates the PHR hanger. Setting down weight on the PHR hanger then sets it, forcing the slips to bite into the host casing. A bearing on the PHR hanger allows rotation after the hanger is set.

## *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 PHR liner hanger in deep and/or highly deviated wells.
- Large slip contact area minimizes stress in the host casing, enabling the PHR hanger to support extreme loads





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

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- High-torque, one-piece mandrel is equipped with premium connections that meet or exceed the torque of liner connections.
- Heavy-duty bearing allows rotation of the liner after the hanger has been set and during cementing operations, improving the quality of the cement bond.
- 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.
- 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. With this advantage, hydraulic events can be planned accurately and with a high degree of safety.

### *Options*

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

### *Specifications*

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- Contact an authorized Weatherford representative.

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