The CHAMP® IV non-rotational packer is ideal for deepwater extended reach situations where getting enough torque down hole to manipulate the toolstring can be a major challenge. This tool has the same basic features as the standard CHAMP IV packer but with the added feature that it does not require rotation to set. The CHAMP IV non-rotational packer consists of a hookwall retrievable packer with a concentric bypass and a continuous indexing J-slot. This J-slot allows the packer to be run in the casing, set, and unset without applying any rotation to the workstring. The packer can cycle from the run-in-hole (RIH) position to the set and pull-out-of-hole (POOH) positions simply by lifting or lowering the drillpipe or tubing in the wellbore.

Each assembly includes an indexing J-slot mechanism, mechanical slips, packer elements, hydraulic slips, and a concentric bypass. Round, piston-type slips are used in the hydraulic holddown mechanism to help prevent the tool from being pumped up the hole.

A J-slot position locking mechanism keeps the packer in the RIH configuration until the desired depth is reached and the locking mechanism is deactivated. The position locking mechanism is deactivated by the use of a rupture disk which is set to rupture at a predetermined pressure. The deactivation pressure can be either wellbore hydrostatic at a certain depth or pump pressure applied to the annulus at surface. The locking mechanism allows the packer to be run on jointed pipe without cycling through the positions in the J-slot as each joint of pipe is being made up at the surface.

The concentric bypass allows fluids to circulate around the bottom of the tool when it is removed from or moved up hole in the wellbore. Therefore, circulation as the packer assembly is passed through tight spots where packer elements may unintentionally achieve a temporary seal, remains interrupted. The bypass valve is also designed to be pressure balanced with applied pressure. This prevents the unintentional opening of the bypass during treatment applications.

### Features and Benefits

- Easily operated in extended reach or highly deviated wellbores
- Requires no rotation to set the packer—picking the packer straight up (no torque required) opens the bypass
- Assembly will not set until the hydrostatic at a pre-determined depth is reached or annulus pressure is applied
- Can be easily relocated to multiple zones during a single trip for treating, testing, or squeezing
- Concentric bypass allows a larger bypass flow area with positive circulation below the packer and tailpipe
- Temperature rating of 400°F (204.4°C)
- Service environment—immersion in various well fluids including hydrocarbons dilute HCL, sour gas, salt water, and CO₂
**Operation**

Run the packer to the desired setting depth. Burst the rupture disk with wellbore hydrostatic pressure or applied annulus pressure. This disengages the locking mechanism and allows the packer assembly to cycle through the different positions in the J-slot.

Pick up 1 to 2 ft at the tool to cycle the lugs through the continuous J-slot from the RIH position to the POOH position.

Lower the workstring back down to set the packer. The downward movement cycles the lugs from the POOH position to the set position in the continuous J-slot. Continue to travel downward to set weight as needed to seal the elements, permitting a minimum of 2 minutes before applying pressure differential across the elements.

If the packer does not take weight, the locking mechanism may not have been disengaged. Apply a safe amount of pressure to the annulus to assist in disengagement of the lock.

To unset the packer, relieve any surface pressure and simply pick up the workstring to open the bypass valve. This equalizes pressure around the packer elements and allows them to relax. Once pressure is equalized, continue to lift the workstring to completely unset the packer assembly. The packer assembly can then be repositioned in the wellbore or pulled out of the hole.

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### CHAMP® IV Non-Rotational Retrievable Packer - Specifications

<table>
<thead>
<tr>
<th>Casing Size in.</th>
<th>Packer OD in. (cm)</th>
<th>Packer ID in. (cm)</th>
<th>End Connections</th>
<th>Nominal Casing Weight lb/ft</th>
<th>Min. Casing ID in. (mm)</th>
<th>Max. Casing ID in. (mm)</th>
<th>Length in. (cm)</th>
<th>Tensile Rating*</th>
<th>Working Pressure* psi (MPa)</th>
<th>Burst Pressure* psi (MPa)</th>
<th>Collapse Rating* psi (MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>5.65 (14.35)</td>
<td>2.37 (6.02)</td>
<td>2 7/8 EUE 3 7/8 CAS</td>
<td>26 - 35</td>
<td>6.004 (152.50)</td>
<td>6.538 (166.06)</td>
<td>96.73 (245.6)</td>
<td>148,600 (67 403)</td>
<td>10,600 (73.08)</td>
<td>12,400 (85.50)</td>
<td>10,600 (73.08)</td>
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<tr>
<td>7</td>
<td>6.00 (15.24)</td>
<td>2.30 (5.84)</td>
<td>3 7/8 CAS Box × Pin</td>
<td>26</td>
<td>6.276 (159.41)</td>
<td>6.276 (159.41)</td>
<td>148.96 (366.9)</td>
<td>131,900 (59 829)</td>
<td>10,000 (68.95)</td>
<td>10,800 (74.45)</td>
<td>10,300 (71.02)</td>
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<tr>
<td>9 5/8</td>
<td>8.25 (20.96)</td>
<td>2.87 (7.28)</td>
<td>4 1/2 IF Box × Pin</td>
<td>36 - 53.5</td>
<td>8.535 (216.78)</td>
<td>8.921 (226.59)</td>
<td>169.52 (430.6)</td>
<td>345,000 (156 489)</td>
<td>8,700 (59.98)</td>
<td>8,700 (59.98)</td>
<td>10,000 (68.95)</td>
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<tr>
<td>9 5/8</td>
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<td>345,000 (156,489)</td>
<td>7,500 (51.71)</td>
<td>10.771 (74.26)</td>
<td>10.181 (70.19)</td>
</tr>
</tbody>
</table>

*The values of tensile, burst, and collapse strength are calculated with new tool conditions, Lame’s formulas with Von-Mise’s Distortion Energy Theory for burst and collapse strength, and stress area calculations for tensile strength. These ratings are guidelines only. For more information, consult your local Halliburton representative.

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For more information on CHAMP® IV non-rotational retrievable packers, please call your local Halliburton representative or email us at service.tools@halliburton.com.