



# *TruForm™ Running and Expansion System*

Weatherford's *TruForm* running and expansion system is used to run and set liners using the *TruForm* expandable, liner-hanger system. The *TruForm* system consists of hydraulic setting cylinders, a balanced junk bonnet, a compliant expansion cone, and a hydraulic-release running tool. The supported collet on the running tool bears the weight of the liner before expansion, and the torque lugs provide torque capability to rotate the liner during running and cementing operations.

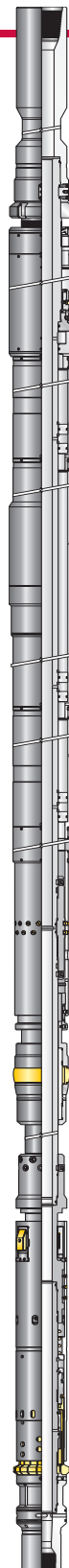
Located above the running tool in the top of the *TruForm* polished-bore receptacle, the balanced junk bonnet is deployed with a cushion of water between it and the cementing packoff to ensure the running tools are in a clean fluid environment. This process prevents debris in the mud system from settling around the running tool, enabling it to operate as designed.

After the liner is in place, integral hydraulic cylinders are used to convert applied pressure into force to activate the expansion cone that expands the *TruForm* liner-hanger body from the top down. Pressure ports in the mandrel communicate directly with the cylinders, minimizing chances of plugging with lost-circulation material or solids in the fluid system.

After expansion, the *TruForm* system is released from the liner by applying weight and pressure to release the collet from the profile in the running sub in the liner-hanger assembly. The *TruForm* running and expansion system also features a secondary mechanical release that is activated by applying left-hand torque at the tool.

## *Applications*

- Liners run with the *TruForm* liner-hanger system
- Liners that must be reamed or drilled down
- Liners requiring reciprocation and/or rotation while cementing



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### *Features, Advantages and Benefits*

- The compliant expansion cone ensures full 360° radial-OD contact of the inserts and packing elements with parent casing, providing uniform expansion with greater reliability at lower pressure and eliminating pressure spikes.
- The force transferred from the cylinder to the cone expands the liner hanger from the top down, facilitating running-tool retrieval.
- Multiple hydraulic cylinders enable force to be applied to the *TruForm* expansion system through the expansion cone, enabling high-setting forces with lower pressure.
- Cylinders have unrestricted pressure paths to minimize the chances of plugging, ensuring cone activation.
- The running and expansion tool provides high-torque capabilities in both tension and compression situations, making it possible to ream and/or drill liners down to the setting depth.
- The field-proven collet mechanism enables the *TruForm* running and expansion system to support the full weight of long, heavy liners before setting the liner hanger.
- Secondary left-hand mechanical release ensures that the running string can be retrieved, saving nonproductive time.
- The balanced junk bonnet isolates the running tools in a clean fluid during installation, providing total debris protection while running in the hole, cementing, rotating, reciprocating, and expanding the *TruForm* body and pulling out of the liner top.

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### *Options*

The *TruForm* running and expansion system is compatible with the conventional retrievable cementing packoffs and single- and dual-plug systems.