



## THE UNDERBALANCE SUB.

The Underbalanced Sub provides an underbalance condition between the annulus and work string for TCP operations. To achieve an underbalance condition, this tool uses a high strength dome disk that is positioned above the flow ports of the sub body. The ports are used for production, pump volumes or to simply act as a tubing drain when pulling out of the well.

The Underbalanced Sub is positioned between the packer and 30' (9.1M) minimum above the perforating gun and the packer. The work string must be filled manually or by using a Self-Fill Sub while running into the well. When sufficient fluid is filled into the work string to achieve the desired underbalance, continue running into the well to perforation depth.

Correlate TCP Bottom Hole Assembly into position and set the packer. Secure the Well.

A drop bar is released from surface which shatters the ceramic disk establishing communication to the annulus through the flow ports.

### *Features and Benefits*

- ✓ *Simple design safe and economical*
- ✓ *10Kpsi differential rating*
- ✓ *Full Flow ID after the disc is shattered*
- ✓ *Used in Horizontal well perforating*
- ✓ *Large flow ports*
- ✓ *Can be easily redressed between runs*