Production-Injection Packers

RITTS (Re-Settable Inflate Test & Treat System)
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Re-Settable Inflate Test and Treat Systems (RITTS) are designed for selective testing and treating zones in vertical, deviated, or horizontal wellbores. The system is re-settable allowing multiple zone isolation in open-hole or casing, with each trip into wells. Large internal bores make the system well suited for high rate pumping. The system may be used with coiled tubing or regular jointed tubing strings.

Applications
- Multi-Zone Fracturing using Sand and Gelled Fluids
- Horizontal Section Evaluation to locate water or oil producing sections
- Open-Hole Formation Evaluation for Exploration Wells Setting Expandable Liners

For Multi-Zone Fracturing operations, treating interval length may be determined and set prior to run-in. Typically this could be anywhere from 10 m. (~30 Feet) to 50 m. (~150 Feet). An expendable ball is released from surface for each zone treated, however it lands into a ball catcher sub and is recovered when tools are retrieved from the well. Inflatable Packer Elements used for isolation ensure positive sealing in open-hole because seal length is 1.26 m. (4 Feet) and packers conform well to irregular or out-of-round wellbores. When treatment is done, tools are recovered, leaving a wide open wellbore for subsequent re-completions.

Tools may be used for Swab Evaluation to determine which sections in a horizontal well are producing water. Once the water bearing zones are located, scab liners may then be installed for water shut-off.

For exploration wells, the RITTS System is commonly used for isolating zones in open-hole sections to determine commercial productivity of formations. This eliminates the need for running casing, cementing, perforating, and squeeze cementing in cases where zones are not commercially productive.

The RITTS System may also be used for setting Expandable Liners in wells. High pressure is applied into intervals between the packers, and this energizes expandable liner material, causing it to conform to wellbore diameters.
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Features and Benefits

- Large Internal Bore
- Sturdy Construction 3-1/2” & 4-1/2” I.F. Connections for Heavy Duty Tools
- Splined Non-Rotating Mandrel
- Automatic Tubing Fill While Running Tools into Well
- Permits Circulation Prior to Setting Packer
- Allows Displacement of Treating Fluids to Tool
- Packer Deflates to the Annulus
- Re-Settable Without Tripping Tool Out of Well
- Available in Single or Straddle Packer Configurations
- No Formation Shock when Tool Opened to Interval
- Evaluation Tool used to determine Water Encroachment Sections in Horizontal Wellbores
- Wellbore Remains Wide Open for Re-Completion after Tools are Retrieved

Operational Sequences

As the RITTS tool is being run in, auto-filling takes place and circulation may be performed at any time to maintain full well control.

Once packers have been positioned at the required setting depth, a ball is released from surface and lands into a seat. Tubing Pressure is applied to set the packers. Weight is then applied to the tool to close packer inflation ports and open the passage to the interval. At the same time, the ball is released and trapped into a ball catcher sub. Testing or treating may then be performed at this point.

Packers are unset by applying a light upward pull to the tool. After waiting ten minutes, packers may be re-positioned across another interval. A ball must be released from surface for each setting.
## Production-Injection Packers

### RITTS Straddle System

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<th>Tool Size</th>
<th>Minimum Tool I.D.</th>
<th>Dart Seating I.D.</th>
<th>Element O.D.</th>
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