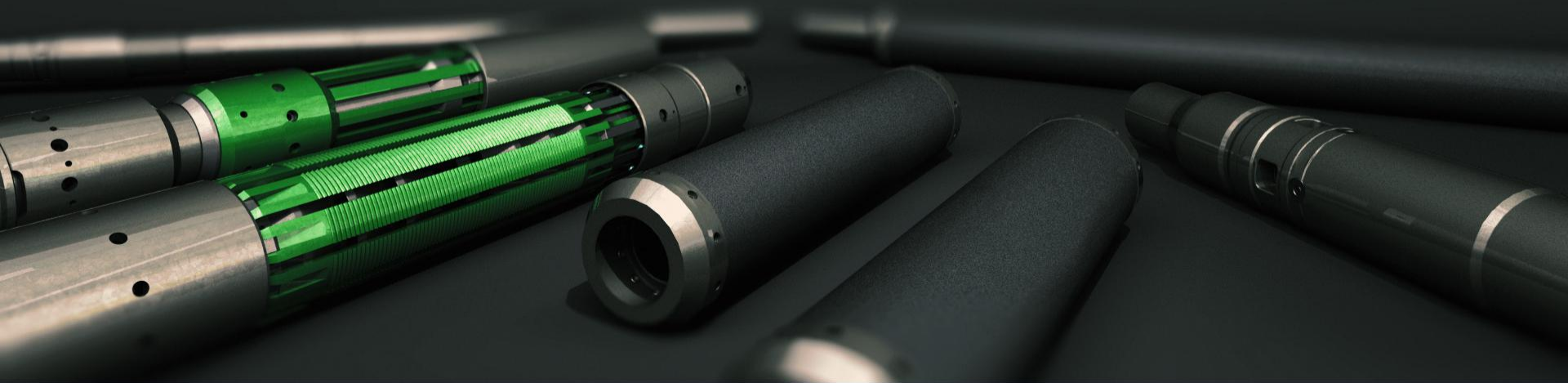


INTRODUCTION TO REFLEX® SWELLABLE ISOLATION PACKERS

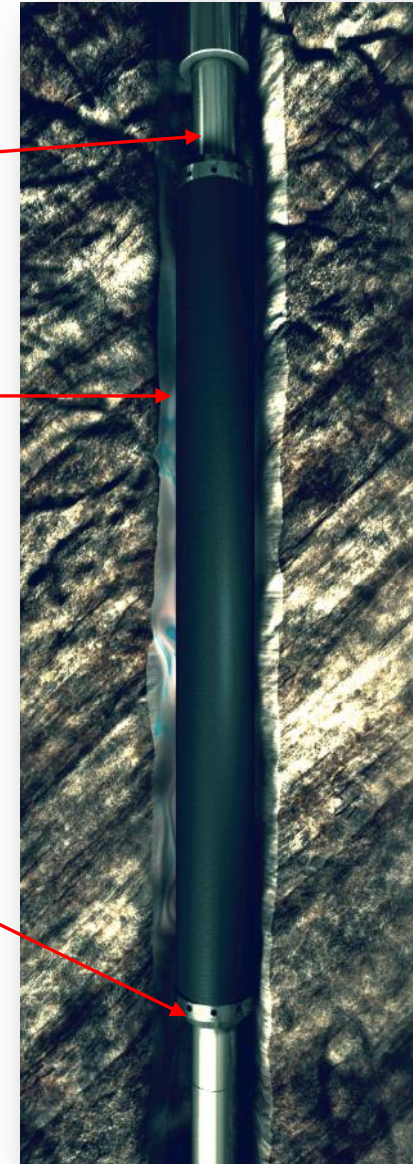
August 2018



WHAT IS A SWELLABLE PACKER?

Reflex[®] HP Swellable Packer

- **Base pipe** – basic tubing or casing joint, to customer spec
 - *Can be supplied by customer or Reactive*
- Swellable elastomer **element**
 - *Can be bonded-to-pipe or slip-on design*
 - *Can be water, oil or combination polymer*
- Protective **end-rings**
 - *Will be made of matching metallurgy to base pipe*
 - *Can be single or multi-ring set-screw*
 - *Gator-Grip™ Non-marking end ring option*



SWELLABLE TECHNOLOGY



Reflex® Swellable Isolation Packers:

Oil, water, combination compounds

Packer types:

- HP - Bonded (High Pressure applications)
- Lite - Slip-on (Low pressure applications)
- Special Applications (screens, expandables, custom mandrels, 'widgets')

Temp, expansion & pressure ratings:

- From normal sea water temps up to 215°C
- 295% Swell Volumes
- Various pressure ratings depending on size/length of packer (up to 15k psi)

The advertisement features a vertical wellbore diagram. At the top, the "REACTIVE DOWNHOLE TOOLS" logo is displayed. Below it, the text "SWELLABLE ISOLATION PACKERS" is prominently shown. Two types of packers are highlighted: "REFLEX® HP" and "REFLEX® LITE".

REFLEX® HP
A mandrel based swellable isolation packer where the element is bonded to any standard API or custom grade pipe. REFLEX® HP is available in oil, water and combination swelling compounds.

REFLEX® LITE
REFLEX® LITE is a slip-on based swellable isolation system for use in lower differential pressure applications. The elements are available in both oil and water swelling versions.

The diagram shows a green pipe with a blue packer element installed in a wellbore. The wellbore is filled with a dark, granular material, likely sand or gravel. The pipe is shown curving at the bottom, with the packer element positioned to isolate a section of the well.

TAILORED DEPLOYMENT TIMES
HIGH SWELL VOLUMES
EXOTIC BRINE COMPATIBILITY
OIL/WATER/COMBINATION ELEMENTS
170 KLB NON-DAMAGING END-RINGS
FRAC/UNCONVENTIONAL APPLICATIONS
UK & US MANUFACTURING

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APPLICATIONS



Well construction

- Aquifer protection
- B/C annulus protection
- Micro-annulus control
- Primary Isolation
- Solid expandable tubulars
- Casing shoe FIT seal/off-bottom cementing

Completions

- ICD/sand screen/expandable screen isolation
- Multi-stage fracturing
- Acid stimulation
- Slotted/pre-drilled liners
- Multi-lateral isolation
- Inflatable/mechanical packer back-up
- ERD & LEL
- Screen protection

REACTIVE
DOWNHOLE TOOLS

SWELLABLE ISOLATION PACKERS

REFLEX® HP

Reflex® HP Swellable Isolation Packers are available with oil, water or hybrid reactive elements, bonded to any standard API or custom-grade pipe.

With a 100% success rate in over 18,000 fracturing installations worldwide, Reflex® HP Swellable Isolation Packers have a field-proven pedigree.

- TAILORED DEPLOYMENT TIMES
- HIGH SWELL VOLUMES
- EXOTIC BRINE COMPATIBILITY
- OIL/WATER/COMBINATION ELEMENTS
- 170 KLB NON-DAMAGING END-RINGS
- FRAC/UNCONVENTIONAL APPLICATIONS
- UK & US MANUFACTURING

WWW.REACTIVETOOLS.COM

APPLICATIONS

Work-over

- Bridge plugs
- Straddle packers
 - *Water shut-off*
 - *ICD*
- Expandable Tubulars (scab liner/casing patch)
 - *Solid*
 - *Screen*
- SSSV insert valve seals / GLV seals
 - Corroded or scratched seal bores
- Sealing in corroded tubing/casing
- Tie-back seals



REACTIVE
DOWNHOLE TOOLS

Reflex® Open Hole Bridge Plug
REACTIVETOOLS.COM

IS WATER PRODUCTION WASHING AWAY YOUR VALUE?

The Reflex® Open Hole Isolation System isolates unwanted water production throughout the wellbore. Utilising Reactive's proprietary swellable packers, the system is suitable for use in high salinity fluids or liquid hydrocarbon. The bi-directional slips allow the packer assembly to be released as soon as at depth, eliminating the requirement to wait until the packer has fully sealed.

- Swells in high salinity fluids
- Large surface area of bi-directional slips minimise impact on formation
- Customisable pressure rating and fluid compatibility
- Can be deployed in bridge plug or straddle packer configurations

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REFLEX® DIFFERENTIATORS



High final swell volumes for wash-outs and eccentric hole

- Up to 295% swell volume
- Allows for much smaller OD deployments
- Can be tailored for very slow swell (ERD)

Swell in up to fully saturated brine

- Includes Cesium Formate
- Swells in low (4c) temperatures

Ultra-fast water swell compound

- Up to 10x faster than osmotic systems

Swell designed to 'stop' rather than swell to dissolve point

- High post-swell strength & integrity

Short lead time response, when required

- Fastest emergency order delivered in 48 hrs
- Small, nimble, fast decision-making



CHALLENGING APPLICATIONS

Cesium Formate

- Project designed for Statoil/Total E&P
- Withstand 50+ days (and swell) in Cesium Formate

High Salinity

- First major challenge prioritized by Reactive R&D
- Fresh waters and Brines with up to 28% Salinity
- Step-change in customers' frac delays

Low Temperature

- Faster swell times
- Installed on sea bed on mid-Atlantic ridge! (BGS)

High Swell Volumes

- Up to 295% swell by volume (covers washout/eccentricity)
- Allows for super slow swell applications (ZADCO ERD)

Breaker Fluids

- Successfully tested with a number of breaker fluids



REACTIVE
DOWNHOLE TOOLS

Still letting your swellable packers call the shots?

Fluid change out cost time and money!

REFLEX[®] HP H₂O gives stable performance in fresh water and brines up to 28% salinity with no loss of performance or final swell volume

5000+ packers deployed in high salinity environments

SALT

HIGH-SALINITY SWELLABLE PACKERS

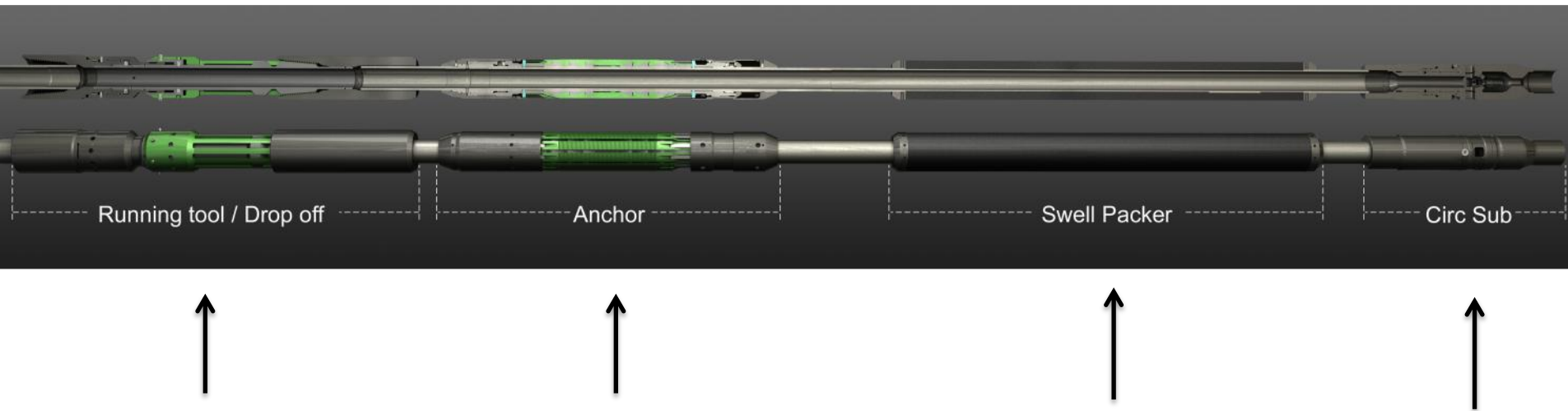
only available from WWW.REACTIVETOOLS.COM

The advertisement features a vertical image of a wellbore on the right side, showing a green and white striped packer stringer being deployed into a dark, salty environment. The background of the ad shows a landscape with green grass and a dark, sandy area.

NEW & SUPPORTING TECHNOLOGIES



Open Hole Bridge Plug / Straddle



- Hydraulic Release Running Tool
- Scotsman™ Open Hole Anchor
- Circ Sub
- Reflex® HP Swellable Packer

SUMMARY OF REACTIVE & REFLEX®



- HQ, manufacturing and testing/R&D/sales in Aberdeen, UK
- 30,000-ft² manufacturing/testing/sales facility in Houston Tx.
- Additional sales offices in Rio, Stavanger, Abu Dhabi
- Tailor-made swellable packers designed for each application
 - Water, Oil and Hybrid swellable packers available
- High-grade compound components
- Manufacture packers on pipe from 1" – 30" OD (>44ft length)
- Up to 295% swell volume
- Low & high temperature applications
- High salinity fluids
- Short lead times
- 25,000+ installations, worldwide



'Thank You'

REACTIVE
DOWNHOLE TOOLS

