

SandRight® Solids Fallback Preventer

SAND MANAGEMENT TOOL

OVERVIEW

The SandRight® solids fallback preventer deters damaging solids from entering the electric submersible pump (ESP) during power shutdown events. Its unique design features preserve the ESP, especially in wells subject to dislodged formation and frac sands. Unlike other solutions in the industry, it maintains the ability to execute through-tubing chemical treatments while also resisting paraffin/scale buildup by using superior materials. Inspired by the experience and observations obtained while executing the LIFTRightSM service and drawing from cross-product line experience in fracking and fluid-proppant transport, the tool was specially designed to be compact and easily integrated into our ESP production system.

HOW IT WORKS

When an ESP is shutdown, solids hovering in the production tubing above the ESP are a major issue, especially in unconventional applications. These solids fall back to the ESP pump(s) and become lodged in the pumps' stages. Restart attempts can overstress motors, accelerate pump wear, overheat cable and/or result in catastrophic failure. The SandRight tool not only protects ESP pumps from permanent damage due to solids fallback, but also significantly increases an ESP's runtime in unconventional applications.

ADVANTAGES

The SandRight tool is compact, is easily deployed, and out-performs all other solutions on the market. Its unique sand fallback prevention capabilities address all known issues with most fallback preventers – such as erosion/corrosion, paraffin buildup, incompatibility with desanders, and jamming issues – while retaining the ability to perform through-tubing chemical treatments. Specifically, it helps:

- » Achieve economical ESP run-times in applications with sand issues
- » Decrease total number of hard start events
- » Decrease severity of hard start conditions (high current, rocking starts, etc.)
- » Extend ESP runtime beyond what is capable with using other sand management tools/techniques
- » Eliminate premature ESP failures when integrated into a total solution (including desander, tubing and casing transducers, and Halliburton monitoring and optimization)
- » Integrate faster and easier into the ESP system

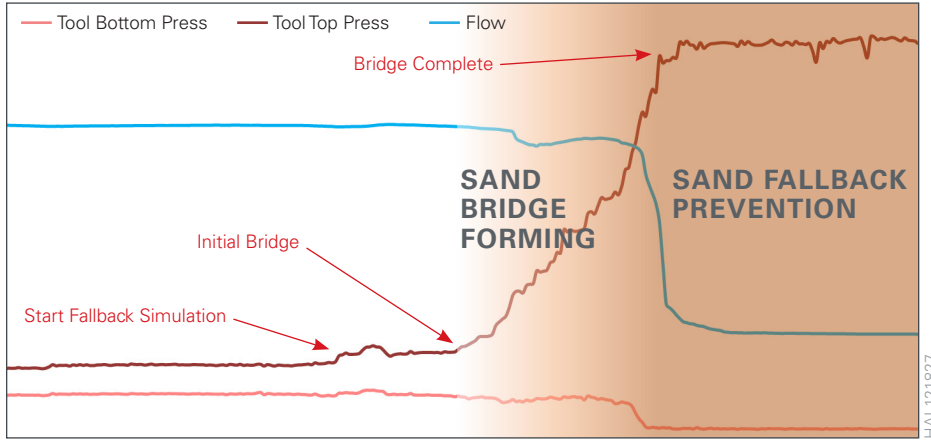


FEATURES

- » Plate-flow design
- » Directional and graduated passageways
- » Hardened and corrosion-resistant metallurgy
- » Inert coatings on all wetted surfaces
- » Poppet design in protective valve body
- » Continuous fluid communication passageways
- » Two different models for max. flow rates up to 2,500 or 4,000

BENEFITS

- » Stops sand from flowing in reverse direction
- » Creates a 'leak-off' effect for wide range of sand concentration and flowrates
- » Provides higher abrasion resistance for long wear
- » Resists paraffin and scale build-up
- » Prevents tool from jamming
- » Supports gas management and through-tubing treatments



Lab tests show sand fallback simulation and bridge forming validation.



Field tests show continuous restarts with low stress on the ESP.

BASIC OPERATION:

1. Shutdown occurs and sand falls back towards the ESP.
2. Sand bridging forms in the SandRight tool, thereby restricting passage of sand.
3. Pumps are successfully restarted.
4. Sand column above the SandRight tool is re-fluidized and pushed/flowed toward the surface.

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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