

Thru-Tubing ESP (TT ESP™)

Meeting standards



Advantages

- No need for a rig
- Assembly through an available wellhead
- No need to kill well or clog bottom-hole area
- Quick and easy to install with minimal downtime
- Short and slim equipment design
- High tolerance for free gas, solids, high temperature, and corrosive fluids
- Increases drawdown and production gain
- Power saving and reduced OPEX

Applications

- Offshore fields and remote wells
- Wells with harsh environments
- Small-size wells less than 3.5" (89 mm)

We have developed the upgraded Lex Thru-Tubing ESP (TT ESP™) that is cable deployed through the 3.5" (89 mm) tubing. The system can quickly resume production in non-operating wells caused by upcoming maintenance or pump failure.

Compact TT ESP™ is riglessly cable-deployed into the tubing through the wellhead. The technology successfully replaces an expensive workover and prevents clogging of the bottom-hole area without killing fluid. The high nameplate operating speed (12,000 rpm) of the ESP and the permanent magnet motor ensure a compact design and easier installation.

Downtime of wells caused by pump failure results in multimillion losses for oil-producing companies. The workover can take from one week till six months due to waiting for the workover crew, disassembly and replacement of the submersible equipment and, commissioning.

We have developed an advanced solution that is especially applicable for offshore, difficult access, or remote fields. A compact TT ESP™ system (up to 12,000 rpm) 29.5 ft (9 m) long is cable-deployed through the wellhead lubricator. The system can reduce downtime by 80% and quickly resume production a few hours later required for installation.

The cable deployed **Thru-Tubing ESP (TT ESP™)** technology is essentially a system where the components are inverted in comparison with standard ESP: control station – motor – seal section – gas separator – pump – packer.

Figure 1. Pump performance curve, stage, SG=1

