

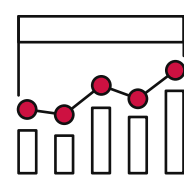


# TOPS<sup>®</sup>

## TOP-INTAKE, PACKERLESS DOWNHOLE SEPARATOR

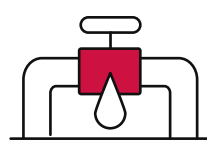
### Reduce Equipment Wear and Extend Runlife

The Weatherford Turbulent Oil and Particulate Separator (TOPS) revolutionizes production optimization and equipment performance by harnessing advanced fluid dynamics to effectively remove gas and solids from production fluids. Installed below the downhole pump as part of the bottomhole assembly, TOPS leverages its top-intake, packerless design to create reverse-flow turbulence to force gas downward then up again through the annulus while causing solids to settle over weir plates and into optional mud joints below. The result: cleaner fluids and smoother operations that help protect pumps and surface equipment from abrasive damage—providing longer equipment life and enhanced production.



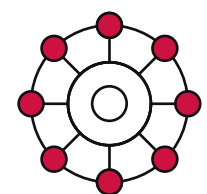
#### BOOST PUMP FILLAGE AND PRODUCTION

Separate gas and solids downhole for more stabilized liquid columns and reduced production interruptions.



#### REDUCE PUMP FAILURES AND WORKOVERS

Limit abrasive, gas-laden fluids from entering critical components for extended meantime between failures (MTBFs).



#### STABILIZE HIGH-GOR, HIGH-SOLIDS WELLS

Control velocity and multiphase flow regimes for wider operating envelopes with rod lift, PCP, and ESP systems.

### FIELD-PROVEN TECHNOLOGY

#### CANADA

**30%** Production Increase

**40%** Casing-Gas Recovery Increase

**~70%** Extension in PCP Runlife

#### PERMIAN

**13-19%** Production Increase

**99%** Pump Fillage

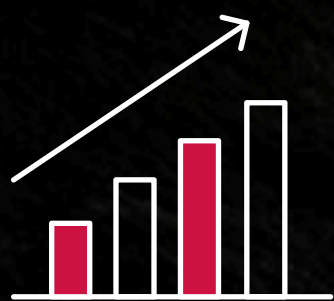
**17%** GOR Increase



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## Production Simplicity, Consistent Reliability



### Maximize Production Efficiency

Increase pump fillage capacity by effectively separating gas and solids from production fluids to prevent slugging and improve fluid consistency.

#### Prevent Pump Ingress

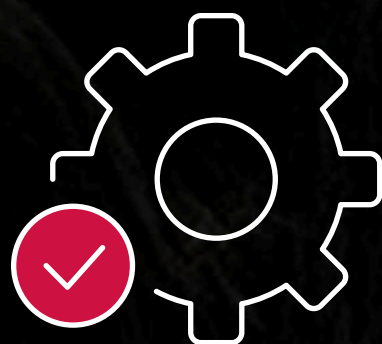
Remove large gas slugs and entrained bubbles before they reach the pump, ensuring steady liquid flow, higher pump fillage, and uninterrupted production.

#### Multiphase Flow-Regime Control

Manage velocity across gas and solids phases within the casing, stabilizing flow and maintaining optimal lift performance under high-GOR conditions.

#### Reliable Performance Across Inclined Wells

Operate effectively in challenging well geometries, featuring a max inclination of 65° with prevalent solids and up to 80° when minimal, ensuring consistent separation in deviated applications.



### Reduce Equipment Wear

Prevent abrasive solids from entering pumps and equipment—minimizing wear for greater uptime and lower operations costs.

#### Eliminate Excessive Pump Wear

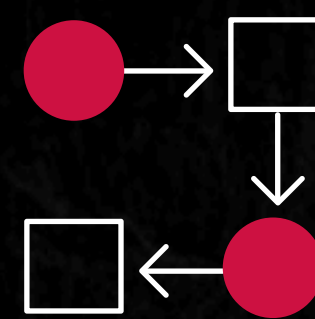
Protect critical components from trapped gas while stabilizing downhole flows to prevent fluid pound, erosion, and vibration—extending runlife and meantime between failures (MTBFs).

#### Optimal Operation Conditions

Prevent gas lock and excessive heat buildup by maintaining consistent liquid flow around pumps and motors, minimizing rod fatigue and motor stress.

#### Corrosion-Resistant Design

Withstand corrosive environments with high-grade pipe and plating, plus protective coating options, to reduce maintenance and enhance downhole performance.



### Streamline Functionality

Simplify operations with a modular design featuring an ideal downhole assembly with no mechanized parts or seals for reduced maintenance and improved serviceability.

#### Optimize Results and Safety

Leverage a packerless, simplified design that eliminates seals and scaling, while streamlining installation and retrieval for easier servicing and greater adaptability across ALS systems.

#### Flexible System Compatibility

Integrate seamlessly with ESP, PCP, and rod-lift systems, as well as high-flow anchors and custom BHAs, for complete downhole production optimization.

#### Four Flow-Capacity Models

Provide effective application flexibility across diverse well conditions, production rates, and gas-to-oil ratios.