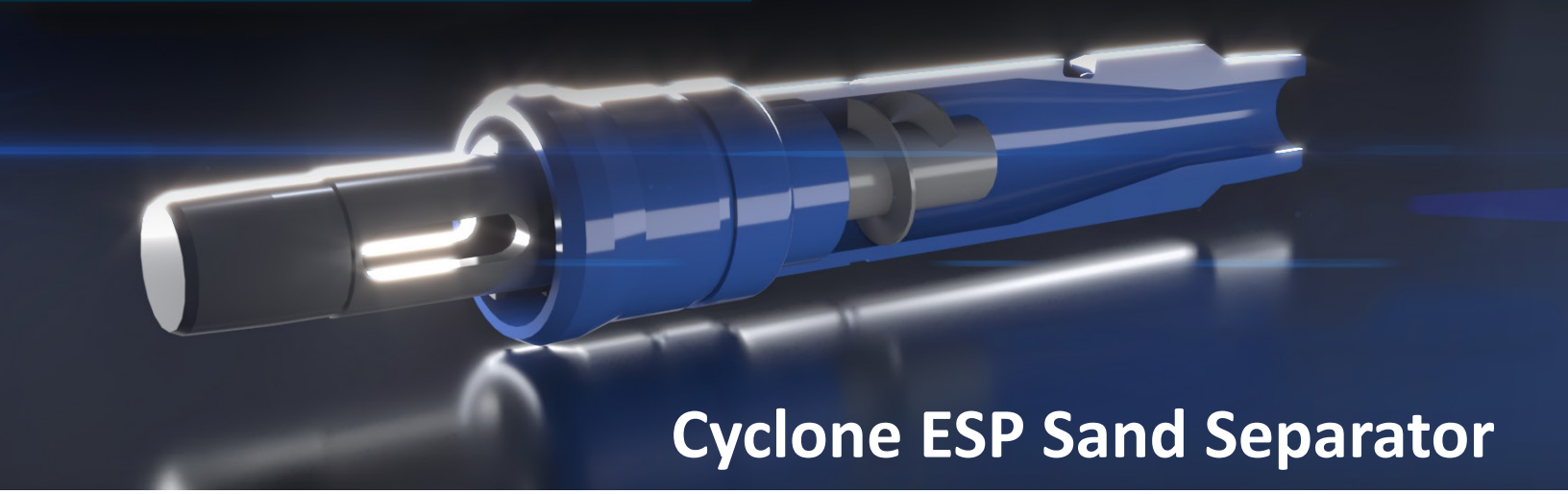
ARTIFICIAL LIFT

FET | Multilift Solutions



# Cyclone ESP Sand Separator

## Fail-Safe Sand Management for Maximum ESP Performance

Sand, solids, and abrasives are among the leading causes of failure in artificial lift systems. With the Cyclone™ Sand Separator from Multilift Solutions, you can now eliminate these threats and extend the life of your ESP systems, even in the harshest environments. Engineered with upgraded components and proven in the field, Cyclone delivers unmatched protection, operational efficiency, and peace of mind.

### Why Cyclone?

**Protect Your ESP Investment**

- Prevents erosional damage caused by sand and solids, reducing costly downtime and equipment replacement.
- Extends ESP run life, even in high-solids production environments.

**Proven Performance**

- Backed by years of artificial lift expertise and thousands of successful installations worldwide.
- Trusted by operators to deliver consistent results in challenging well conditions.

**Lower Total Cost of Ownership**

- Reduces workover frequency and component replacement costs.
- Enables longer, more efficient production cycles with fewer interruptions.

### APPLICATIONS

- High-solids production wells
- Vertical, deviated, and horizontal wells
- SAGD (Steam Assisted Gravity Drainage) wells
- Geothermal wells
- Offshore and subsea operations

### Achieve More with Cyclone Sand Management

**Separates solids and sand** before they reach production equipment

**Significantly extends the run life** of artificial lift and downhole components

**Reduces or eliminates workover costs**

**Minimizes equipment replacement expenses**

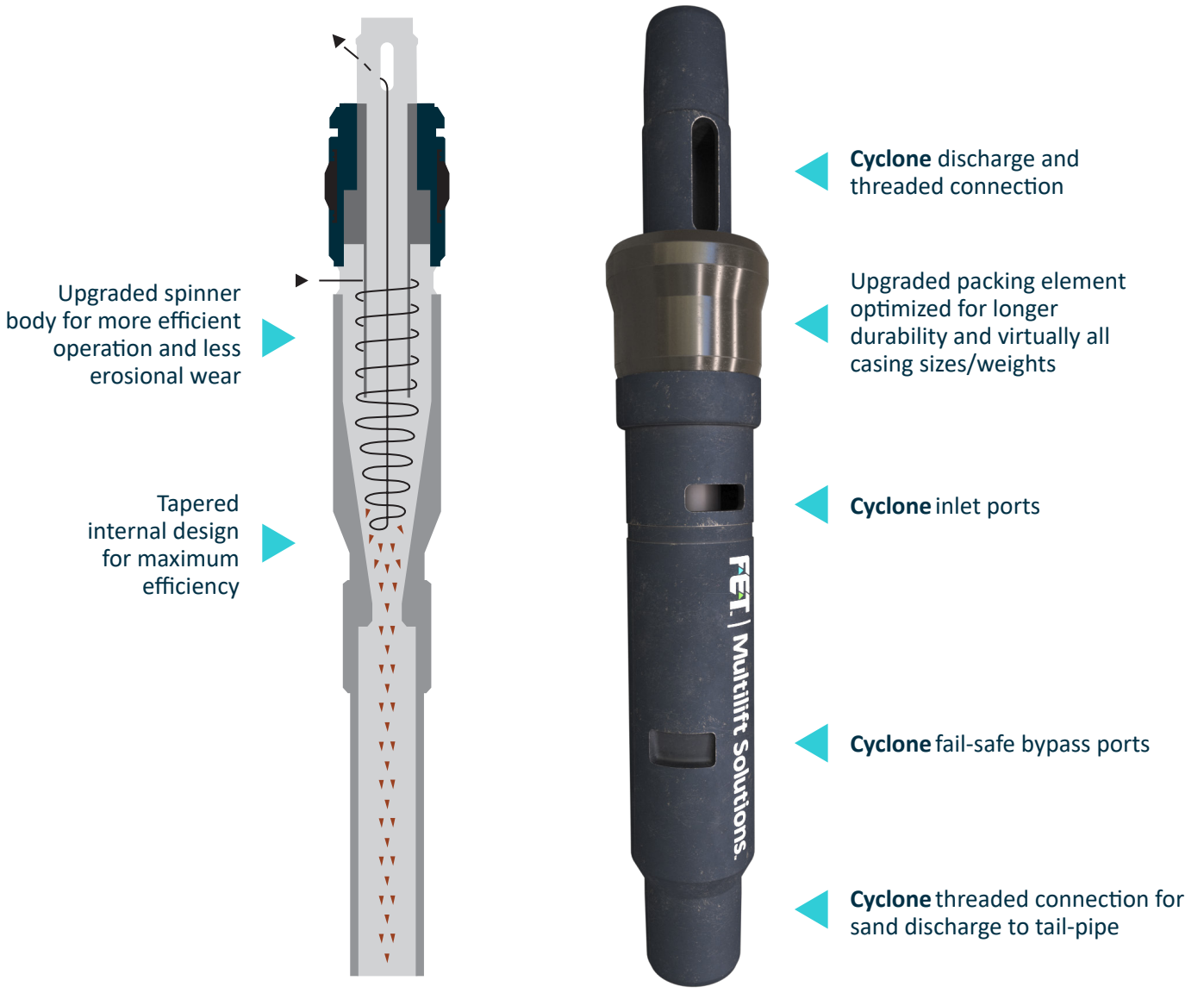
**Maximizes uptime and production efficiency**

| | **Cyclone** (one size fits all) | Other De-Sanders |
|---|---|---|
| Flow Rates | ✓ | ✗ |
| Casing Weight | ✓ | ✗ |
| Multiple Reuse | ✓ | ✗ |
| Easy to Install | ✓ | ✗ |

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## KEY FEATURES

- **Dual-Stage Centrifugal Separation:** Utilizes two methods of imparting centrifugal force for industry-leading solids separation efficiency.
- **Upgraded Packing Element:** Enhanced durability during installation and retrieval for longer service life.
- **Fail-Safe Design:** Built-in safeguards prevent erosional failure, ensuring continuous protection.
- **No Moving Parts:** Increases reliability and minimizes maintenance.
- **Multiple Run Capability:** Designed for repeated installations and retrievals without performance loss.
- **Simple Installation & Redress:** Easy to deploy, easy to maintain. No special tools or training are required.




**Cyclone** is more than a sand separator. It's a performance enabler. By eliminating one of the most common causes of ESP failure, operators can push boundaries, reduce costs, and maximize uptime. Whether you're producing in sand-laden formations or extreme well conditions, Cyclone delivers the protection your artificial lift system needs to thrive.

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ARTIFICIAL LIFT

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# PumpDown SandGuard™

## Pump harder. Pump faster. Keep the sand where it belongs.

You already know the SandGuard name. It's proven, with over 20,000 installations worldwide. The PumpDown SandGuard doesn't replace that legacy. It builds on it. This is the next step forward when you need to move faster, pump harder, and still stay in control of sand.

### What Sets It Apart

Let's get right to it. This tool changes what you can do during pumpdown operations.

- » **Up to 3X higher pumpdown rates** without sacrificing control
- » **~1/3 the back pressure** in comparison to conventional designs
- » **Improved treatment efficiency through tubing**
- » **Same proven sand management performance you trust**

In the field, that means fewer limitations, smoother operations, and more flexibility to execute the job the way you need to.

### Where It Fits

This tool was built for operators who need more out of their pumpdown operations, whether that's:

- Higher-rate chemical treatments
- Through-tubing interventions
- Wells where pressure constraints restrict performance
- Sand-sensitive environments in which control still matters

### Designed for the Field (Based on Legacy Design)

- » **No changes to procedures or work instructions**
- » **Run and pull methods stay the same**

You won't need to relearn anything to run it. It drops right into your existing operations—perfect for desired results.

### The Difference, Plain and Simple

Other tools make you choose between flow and filtration. This one doesn't. You get:

- ✓ **Flow capacity to pump faster**
- ✓ **Filtrations to protect your system**
- ✓ **Reliability of a proven SandGuard platform**

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# Features That Deliver Real Value

## HIGHER FLOW. LOWER RESISTANCE.

- Expanded flow area reduces hydraulic restriction
- Enables faster, more efficient pumpdown operations
- Minimizes pressure buildup at surface

## ENHANCED FILTRATION PERFORMANCE

- Captures finer formation solids
- Optimized slot sizing for 100 mesh sand control
- Tailored to flow requirements

## PROVEN MATERIALS & DURABILITY

- Corrosion-resistant 304 stainless steel construction
- Available in **L80 and 13Cr**
- Butt-welded fittings for strength and stability

## FLEXIBLE CONNECTIONS

- Standard connections available from stock
- Premium connections available on request

The PumpDown SandGuard is ready when you are. Built to expand your operating window while preserving the performance you already trust.




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FET | Multilift Solutions™

# SandGuard™

## Protect Your ESP Investment. Maximize Uptime.

**FET's Multilift Solutions SandGuard is the industry's most effective defense against solids fallback—one of the leading causes of ESP failures.** Building on the original solids fallback preventer, SandGuard's patented design captures and isolates sand and solids before they can damage your pump, dramatically reducing downtime, workovers, and replacement costs.

### Why SandGuard?

Electric Submersible Pumps (ESPs) are critical to oil production but are vulnerable to sand and solids fallback during shutdowns. SandGuard solves this problem at the source, extending ESP life and improving operational efficiency.

### KEY BENEFITS

- **Avoid Costly Workovers & Replacements** — Prevents damage from solids fallback, saving time and money on ESP repairs and replacements.
- **Maximize ESP Runtime** — Keeps pumps running longer in sand-laden well, reducing unplanned downtime.
- **Protect Production** — Minimizes lost production by preventing ESP locking and performance degradation.

### HOW IT WORKS

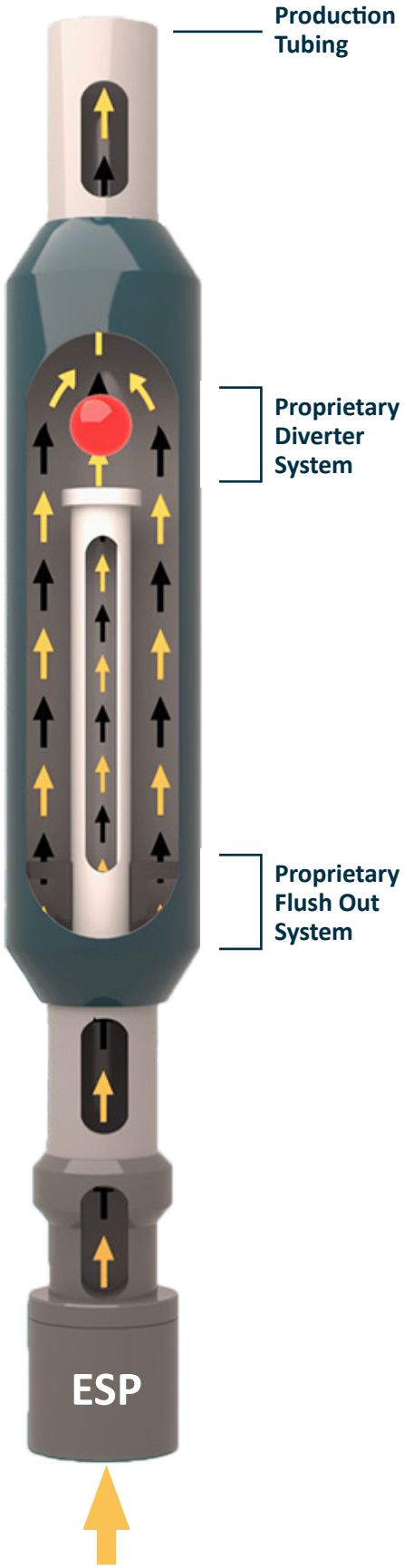
- **Captures and Quarantines Solids** — A dedicated chamber traps sand and solids away from the pump.
- **Self-Cleaning on Restart** — Dynamic flow ports agitate and flush out trapped solids to the surface during EXP restart.
- **Smart Flow Control** — A ball seat mechanism diverts fallback sand away from the pump intake.

### FEATURES-AT-A-GLANCE

- Cleanable and reusable design
- Multiple configurations for nearly any casing size
- Effective across a wide range of particle sizes
- Ideal for onshore, offshore, deviated, and horizontal wells

### APPLICATIONS

- ESP installations
- Onshore and offshore wells
- Horizontal and deviated oil wells




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