

# Well Flow Management

## Well Testing | Solids management system

### 4 Phase Separator

**The Expro 4 phase well test separator is designed to separate gas, water, oil, and produced or returned solids.**

The solids phase process optimizes the 3-phase capability of the vessel by additionally removing accumulated sands that will reduce oil, water retention time, while also reducing the risk of damage to liquid flow meters and downstream equipment.

The primary role of the 4 phase separator is to allow well testing to commence earlier in the clean-up cycle, thereby shortening the time before testing can start.

An integral Cyclonic inlet device promotes gas / liquids separation and assists in solids drop out. The sand/solids removal is by a 'sparging' line for lifting, agitating sand/solids and then flushing out via a drain line. The 'sparging' (Tore) system uses the inlet effluent as a motive fluid to eliminate the requirement for a high pressure flushing pump.

The Separator's adjustable weir/oil outlet allows the oil / water separation and oil off take height to be varied, enabling more of the separator volume to be utilized.

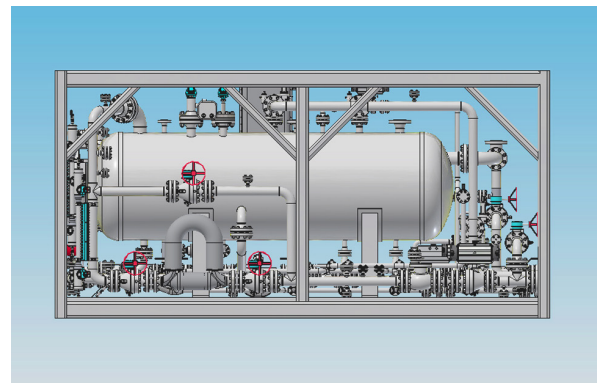
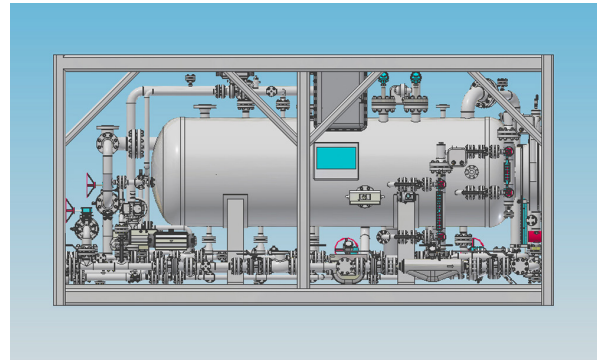
The separator provides flexibility as it can also be used in conventional well testing mode (3 Phase) and integrated into an Expro flow-back / clean-up package for new completions or stimulated wells.

#### Applications

- Well test
- Well clean-up
- Frac flow back
- Pipeline cleaning

#### Features and benefits

- Online removal of solids using the Tore system
- Accurately determines oil, gas, water and solids volumes
- Can be used in a wide range of applications
- Third-party certified
- Meters include connection for easy DAQ hook-up
- Coriolis meters for gas and liquids, no moving parts and the meter covers full fluid flow rate envelope
- Modular design, box beam container conforms to ISO specifications for improved portability
- Eliminate shutdowns by allowing more bypass





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## 4 Phase Separator

Technical specifications	
Vessel size inches x ft (mm x m)	48 x 15 (1,219 x 4,572)
Working pressure psi (bar)	1,440 (100)
Temperature rating °F (°C)	-50 to 200 (-46 to 93)
Maximum gas rate MMscfd (MM m <sup>3</sup> / day)	90 (2,543)
Maximum oil rate bpd (m <sup>3</sup> / day)	15,000 (2,384)
Maximum solid rate (based on trials) lbs (kgs)	94.8 / 5 mins – 27,302 / day (43 / 5 mins – 12,384 / day)
Relief valve (full flow)	2 x 3" x 4" – L orifice
Gas meter	4" Micro motion ELITE Coriolis
Oil meter	3" Micro motion F-series Coriolis
Water meter	2" Micro motion F-series Coriolis
Vessel capacity bbl (m <sup>3</sup> )	33.5 (5.33)
Weight (dry) lbs (kgs)	44,092 (20,000)
Dimensions (L x W x H) ft. (m)	19.7 x 8.5 x 8 (6.01 x 2.59 x 2.44)

Note: Design codes for construction are DNV 2.7-1, ANSI B31.3, NACE MR-01-075, E101

Other sizes, configurations and pressure ratings are available to meet most applications, for more information contact your local Expro representative or email [welltesting@expro.com](mailto:welltesting@expro.com)