

ENGINEERED FOR STEAM-ASSISTED GRAVITY DRAINAGE (SAGD)

High-pressure steam separators purpose-built for high-entrainment, high-volume SAGD injection systems in oil sands thermal recovery.

PEERLESS SEPARATION & FILTRATION + HOOPER WELDING

An integrated process and fabrication solution.

BUILT FOR REAL SAGD CONDITIONS

Unlike conventional moisture separators designed for steady-state industrial service, Peerless + Hooper systems are engineered specifically for SAGD's severe operating environment:

- Extreme liquid-to-steam ratios
- Bitumen solids loading
- Severe and variable slugging
- Continuous 24/7 operation

WHY STEAM QUALITY MATTERS?

Steam quality directly affects:

- Reservoir heating efficiency
- Water cut and surface handling volumes
- Overall facility reliability
- Oil production performance
- Erosion and corrosion of injection piping

Effective steam separation protects both production performance and downstream assets.

INTEGRATED ENGINEERING & FABRICATION

Peerless Separation & Filtration:

- SAGD-focused separation process design
- Designed for simplified lifetime maintenance and future performance upgrades
- Decades of successful SAGD operation
- Proprietary multi-stage internals

HOOPER WELDING

- ASME Section VIII fabrication
- CRN registration
- Robust welding qualifications across material grades
- Canadian national content and sourcing

One coordinated solution - from process design through vessel fabrication - reducing risk and improving execution efficiency.

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PERFORMANCE OVERVIEW

Guaranteed Separation Efficiency:

- 100% removal of liquid droplets ≥ 8 microns
- High-efficiency liquid slug removal
- Stable performance during load changes and transients
- Optimized pressure drop

OPERATIONAL IMPACT

- Consistent, low-moisture injection steam
- Reduced erosion and corrosion in piping and valves
- Improved system reliability and reduced topsides produced water



ENGINEERED FOR YOUR SAGD CONDITIONS

Each unit is configured based on:

- Steam flow rate and pressure
- Liquid loading and solids content
- 100% turndown requirements
- Allowable pressure drop
- Footprint constraints
- Project-specific P&ID requirements

Designed to maintain stable separation during slugging events and continuous operation.

MECHANICAL & COMPLIANCE HIGHLIGHTS

Design Features:

- Vertical or horizontal configurations
- High-performance inlet diffuser
- Removable vane systems within permanent framework
- Sealed internal drains to prevent re-entrainment

Standards & Materials

- ASME Section VIII Div. 1 (Div. 2 available)
- CRN registration
- Canadian regulatory compliance
- NACE compliance where required
- Carbon steel, stainless steel, cladding, and specialty alloys

TYPICAL APPLICATIONS

- SAGD central processing facilities
- Once-through steam generators (OTSG)
- Steam drum systems
- Thermal recovery steam networks
- Separator upgrades and debottlenecking projects



WHY NOT USE CONVENTIONAL STEAM SEPARATORS?

Conventional units are typically designed using volumetric “K-factor” methods suited for steady-state service.

SAGD requires multi-stage separation engineered specifically for high water volumes, slugging, and bitumen contamination to ensure reliable performance.

Peerless + Hooper SAGD Steam Separators.

Reliable, high-quality steam delivery for demanding SAGD operations.

Systems are sized based on site-specific operating conditions and performance requirements.