

## Oil Production

# Production and Test Separator



### Definition

Well fluid streams originating from wellheads consist of crude gas, oil, condensate, associated produced water and several other contaminants. The primary purpose of the Production Separators is to facilitate the bulk separation of gas and produced water from the crude oil prior to further processing. Production Separators are critical for any upstream oil and gas processing facility as they have a significant impact on the operation of downstream equipment.

### Product Application:

- Offshore – Process Platforms/Wellheads/ FPSOs for high, medium and low-pressure Oil and Gas Separation, Test Separators, Slug Catchers, Gas/Condensate Separators
- Onshore – Free water Knock Out Drum (FWKOD), Slug Catchers

### Process Description

Production Separators are used for bulk separation of the gas from the crude and water in the incoming well fluid stream for production. These are high efficiency gas/liquid or gas/liquid/liquid removal units designed to handle a wide range of flow rates, including liquid slugs. Depending upon the GLR (Gas to Liquid ratio), available space and transportation limitations, the separators can be designed with vertical or horizontal configuration. In general, horizontal and vertical separators are preferred for low and high GLR respectively.

Production separators are designed for retention times of 1 to 10 minutes in the separation compartment depending upon the crude oil properties. CECO Peerless can design separators to achieve gas outlet performance of 0.1 USGal/ MMSCFD (99.9% removal of liquid droplets of sizes  $> 8\mu\text{m}$ ), water in oil of 2-5% PPM and oil in water of 500-1000 PPM. However, this can be customised based on specific customer requirements.

Test Separators are used to facilitate the periodic testing of one or more wells by separation of gas, crude oil and water from well fluid stream for detailed flow measurement and analysis.

The CECO Peerless Separator package includes an end to end solution with following equipment:

- Separator Pressure Vessel
- Process Internals
- Piping and manual valves
- Control and Monitoring system
- Electrical/Instrumentation including Local Control Panel
- Structural skid/Frame



**Features:**

- Compact and High Efficiency Design of Separator vessel and Internals
- Robust and Reliable design with proven track record
- Modular design for Onshore/Offshore and FPSO application
- Designed to handle wide range of process conditions
- Meet Stringent Performance Guarantee
- Overall low CAPEX and OPEX for customers

**Ceco Peerless Process Internals:**

- Inlet Device - Vane Inlet Deflector/Cyclonic Inlet Device for high performance
- Liquid Distribution Baffles
- Demister - Vane P5TM/Mesh/Cyclonic device for 99.9% removal of liquid droplets of sizes  $>8\mu\text{m}$
- Defoamer pack
- Coalescer pack
- Sand Jetting - Offline and Online Desander

**Capability:**

- Over 20+ years of experience in providing solutions for Oil & Gas separation systems
- Rich industry expertise for fast track delivery of units
- Custom-made designs to meet customer specific requirements

**Our Services:**

- Design and supply of Process Internals
- Process and Mechanical guarantee for Separators
- In-house CFD study to further verify the design and optimise the vessel size
- Complete engineering, 3D modelling, Fabrication & testing of Separator assembly
- Supply of Spare Parts Interchangeability
- Refurbishment and Retrofit option for existing units to meet the new requirement
- Post Sales Service, Site visit, Troubleshooting & Optimisation of existing units
- Specific case studies/Recommendations
- Commitment to meet the customer requirements

