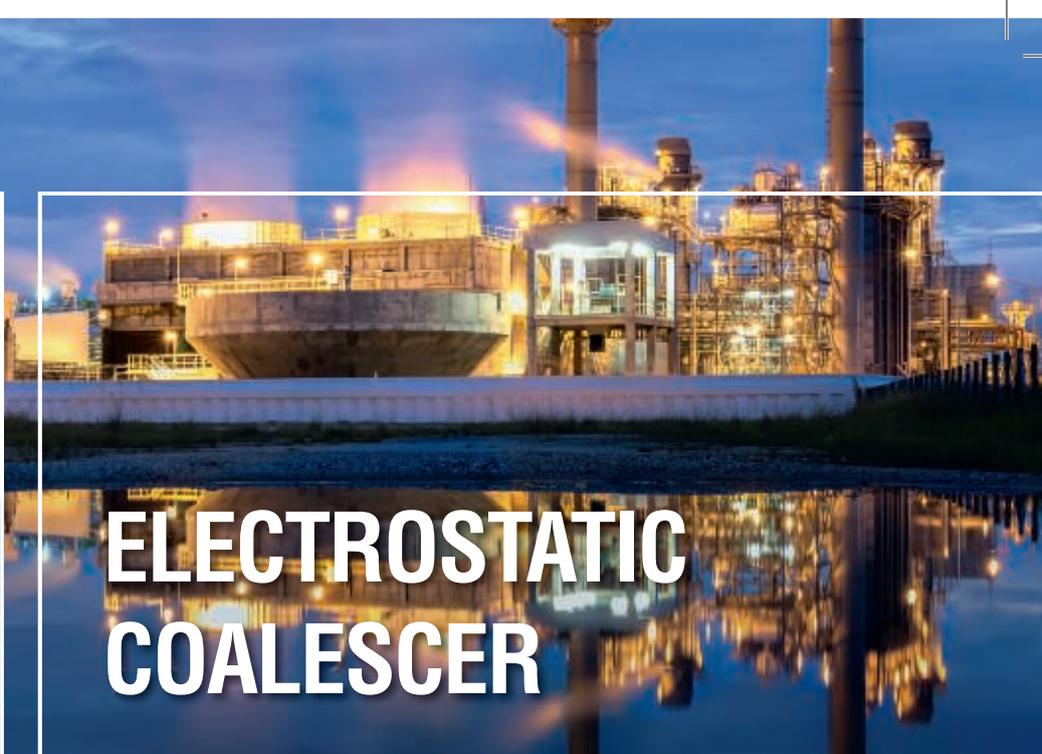


# Peerless

A CECO Environmental Brand



# ELECTROSTATIC COALESCER

With over 80 years experience, Peerless is a global leader in separation technologies for the Oil, Gas and Petrochemical markets. Peerless offers systems for for both onshore and offshore applications.

Peerless Desalters/Dehydrators are designed to meet the desired performance requirement in crude oil processing units or refineries. These units can meet performance guarantee's of 0.1 to 0.5 BS&W and salt guarantee of upto 5 to 10 PTB. Depending on the process requirement Peerless can offer Dehydrator/ Desalter units in various configuration including two grid or three grid design, using single or multiple power units.

## THE PRINCIPLE

Peerless Desalter/Dehydrator employs the proven AC voltage 3 grid system. The principle behind desalting is that an electric field is used to enhance coalescence of the droplets of water present in the continuous oil phase. The droplets collide with each other and grow into larger droplets and finally separate under gravity. The Peerless TRIPLEX inlet distributor ensures equal flow distribution over the full length and diameter of the vessel and consequently over the electrode grid system. The electrically coalesced water droplets are removed from the bottom and the oil is removed at the top of the treater. The oil outlet header ensures equal flow distribution of clean oil downstream of the grid system. The header is as equally important as the inlet distributor.

## DEHYDRATOR

As illustrated in Figure 1, the crude oil water emulsion enters the dehydrator unit through the Peerless TRIPLEX Inlet Diffuser which ensures even distribution of crude between the grids. The emulsion gets induced either below or between the grids depending upon the selected design to avoid any short circuiting and hassle-free operation of the unit. The grids are charged with high voltage power supply from power transformers which are specially selected for the application. High voltage excites water

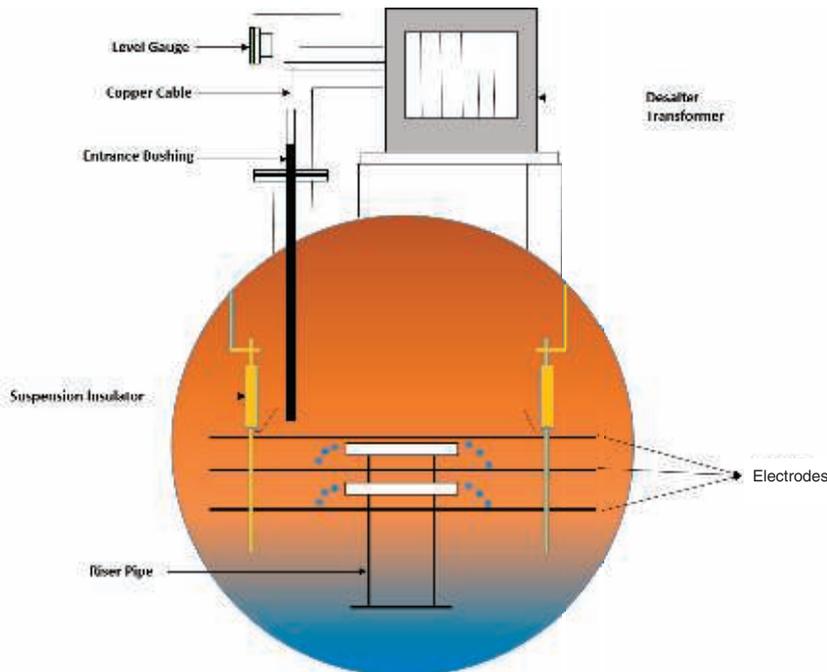


Figure 1: Side view of Peerless treater

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particles to collide and coalesce to form bigger droplets and thus achieves much higher degree of separation than pure gravity separation. The separated oil is collected from oil collection header in top and water from the bottom header.

## DESALTER

Desalting is an extension of dehydration process where fresh water is mixed with crude via a mixing valve to create a diluted emulsion with a reduced concentration of salt in the water phase. The water oil separation in the unit removes the salt which has been dissolved in the water. Based on the specific process requirement either single stage or two stage configuration can be offered. In a two stage desalter, fresh water is injected in crude oil upstream of the second stage desalter. The treated oil is pumped to upstream of the mixing valve on the 1st stage Desalter. The brine leaving the 1st stage desalter process passes through the wash water heat exchanger where it loses heat to the incoming wash water from the source. The crude from the 1st stage flows to the 2nd stage desalter.

The Peerless Electrostatic Coalescer will include following internals/equipment:

Pressure Vessel	Transformer
Electrode Grids(In CS/ SS316L)	Suspension Insulator
Spring Contactor	Entrance Bushing (for transformer)
Copper Cable (for transformer)	Level Gauge (for transformer)
Inlet & Outlet Header	Sand Washing Header (Optional)
Mixing Valve	Local Control Panel
Piping and Valves	Wash water Pumps and Heat exchanger

Visit our website or contact one of our local technical sales staff to see the full range of Peerless oil and gas processing technologies and how they can be combined to meet your complete processing needs.

## ADDITIONAL SERVICES

- + Supply of internals and Process Design/ Complete packaged assembly
- + CFD studies
- + FEED Study Services
- + Custom Built/ Standard design
- + Fast Track Delivery
- + Rental Services

## PRODUCT BENEFITS

- + 20+ years field performance
- + Compact Foot print
- + Simple and Robust design
- + Meet Stringent Performance Guarantee
- + Design to handle High water Cut
- + Modular Solution for Offshore and FPSO

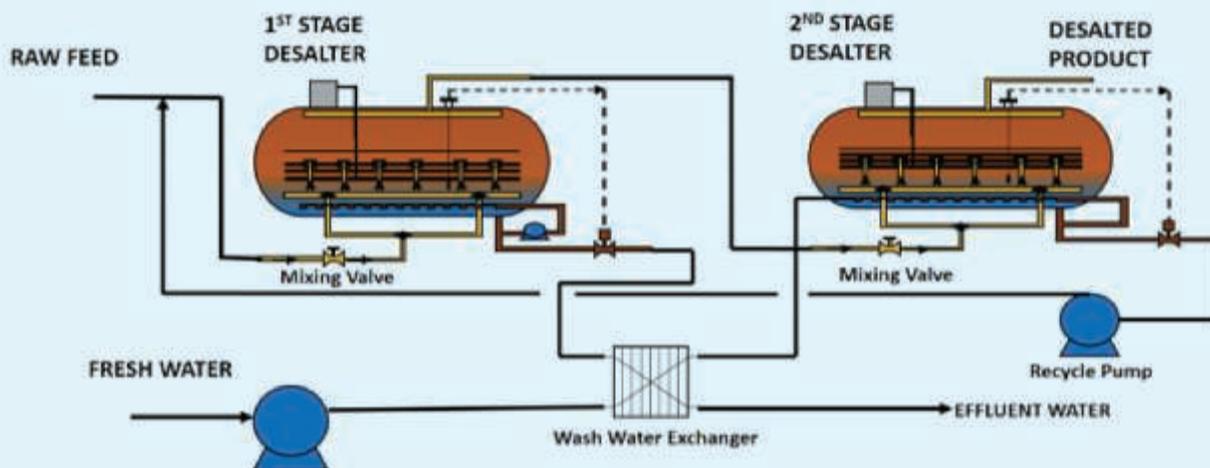
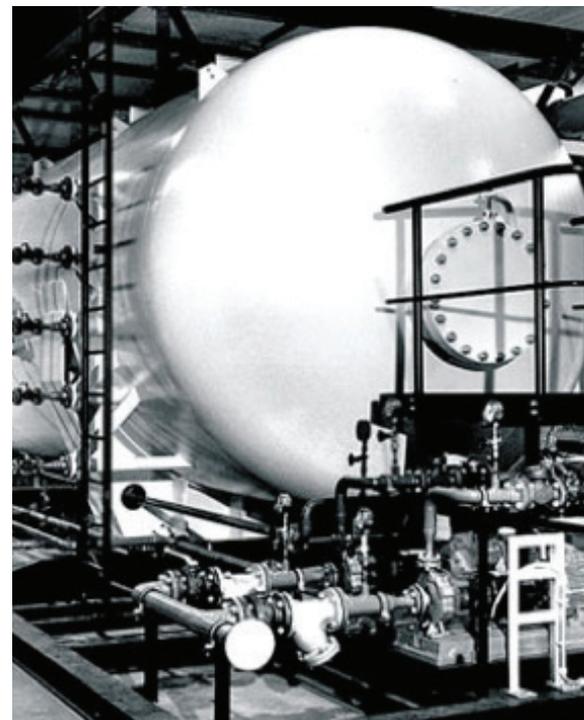


Figure 2: Typical Flow Scheme of Desalter/Dehydrator package

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For more information visit our website at

[WWW.CECOENVIRO.COM/PEERLESS](http://WWW.CECOENVIRO.COM/PEERLESS)

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