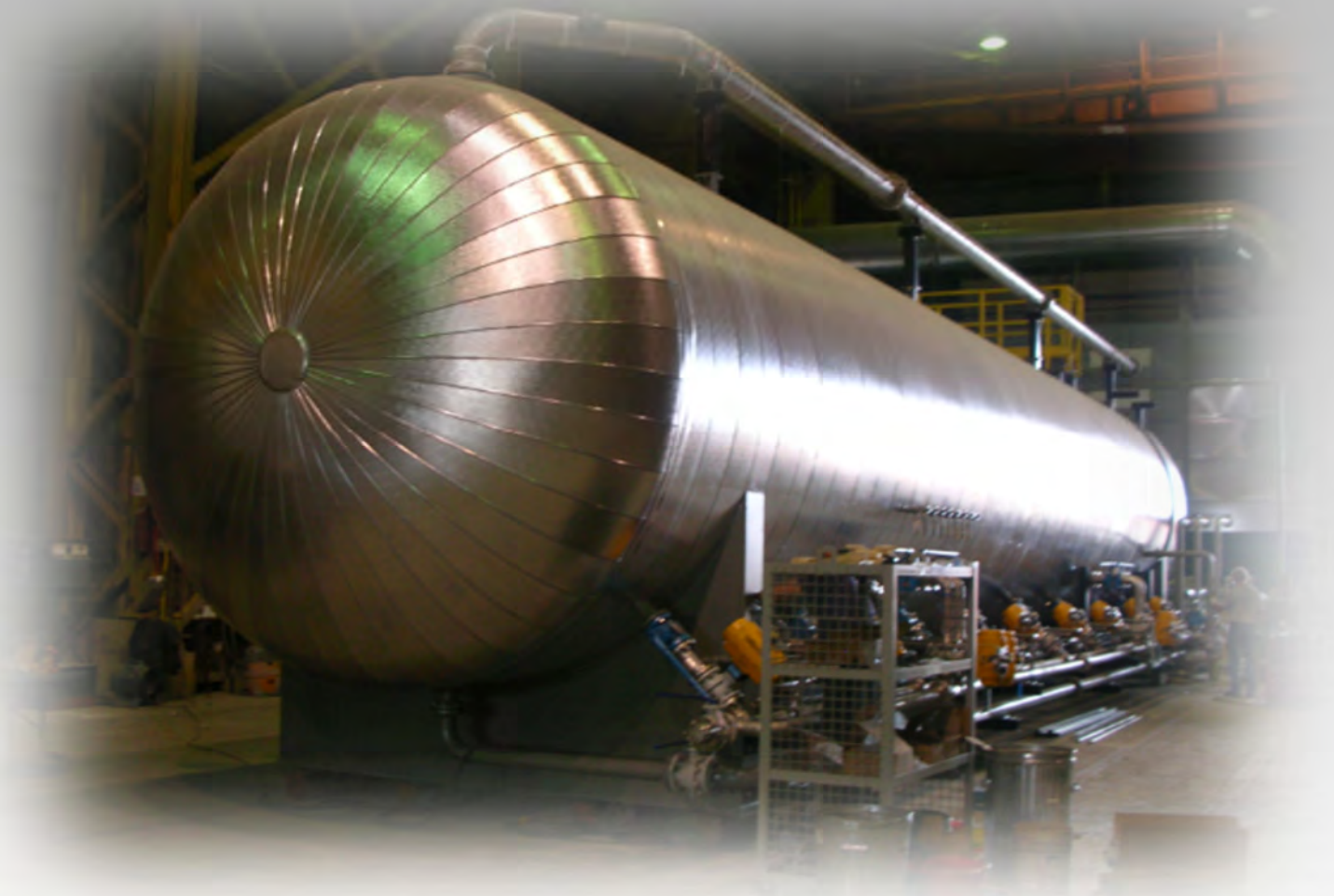


# KOCKEN

SISTEMAS DE ENERGIA INC.

## ELECTROSTATIC TREATERS



KOCKEN Sistemas de Energia Inc. “Electrostatic Treaters” are a blend of rugged oilfield type construction and high separation and combustion efficiency.

The heavy gauge treater shell has seven distinct chambers/components to facilitate each of the following stages of oil treatment:

- Emulsion Preheat
- Emulsion Heating
- Outlet Gas Cooling
- Crude Settling
- Free Water Removal
- Outlet Gas Scrubbing
- Electrostatic Coalescing Grid w/ Transformer

All KOCKEN Electrostatic Treaters are constructed according to the API 12L Specification for Vertical and Horizontal Emulsion Treaters and applicable Industry Codes and Standards.



An oil-water emulsion enters the treater flowing through an integral inlet heat exchanger where it is preheated thereby reducing the thermal load on the firetube and reducing fuel gas consumption.

The emulsion then flows into the KOCKEN S-Cone<sup>®</sup> inlet device. Centrifugal force creates a vortex and accentuates the separation effect. Here the free gas is spun upwards out the center of the vortex and the liquid emulsion flows downward and exits below the fire-tube in the free-water knock-out section of the treater. The free water is drawn off below the firetube for additional reductions in thermal load and subsequent fuel gas requirements.

The oil-water emulsion then flows into the heating section of the treater. The oil-water emulsion is heated to 120°F to 180°F as required to ensure that the viscosity of the emulsion is maintained below 150 SSU. The firetube is protected by a heat shroud to ensure that no free-water comes into contact with it, thereby reducing fouling and extending the firetube life.

The heated oil-water emulsion then flows through the coalescing section of the Treater and into the water settling zone for the final stage of oil-water separation. The electrostatic grid polarizes the conductive water molecules thereby forcing them to coalesce into larger particles and settle out of the crude. Adequate retention time is provided to ensure that the water settles and that the gas breaks out of the oil. The clean treated oil then exits the treater having a BS&W as low as 0.1%.

The inherent design features of the treater facilitate easy and reliable sand removal in both the horizontal and vertical configurations.

## OPTIONS

- ⇒ AC or DC Electrostatic Grid
- ⇒ Integral Free Water KO
- ⇒ De-Sanding System
- ⇒ Firetube Economizers
- ⇒ Firetube Turbulators
- ⇒ Forced Draft Burners
- ⇒ Chimney Dampers
- ⇒ Burner Management Systems
- ⇒ ASME Section VIII Construction
- ⇒ Fuel Gas Scrubbers
- ⇒ Ladders & Platforms

## DESIGN PARAMETERS

Oil Flow Rate	
Oil Gravity	
Water Rate or Percentage	
Average GOR	
Emulsion Inlet Temperature	
Emulsion Inlet Pressure	
H <sub>2</sub> S / CO <sub>2</sub> Content	
Sand / Salt / Solids Content	
Maximum BS&W of Clean Oil	
Fuel Source & Heating Value	

# APPLYING WORLD CLASS TECHNOLOGIES IN PURSUIT OF SUPERIOR EFFICIENCY

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