

HYDROCYCLONES

ProSep designs and engineers liquid/liquid hydrocyclone separation systems to meet our customer's requirements for efficient separation in a small footprint. Whether for primary free oil separation, secondary produced water treatment, or in conjunction with our patented CTour™ process, ProSep's experts can provide cost effective solutions to meet your produced water specifications.



HYDROCYCLONE

Due to its small footprint and high OIW removal efficiency, this primary and secondary separation solution is used in offshore applications where sufficient process pressure is available.

HOW IT WORKS

Using the existing process pressure or booster bumps to supply the motive force, hydrocyclones mechanically separate oil from water via enhanced gravity separation. The tangential

inlets mechanically treat oily water to meet target specifications. The tangential inlets create a swirling motion that gradually moves through a reducing section toward the water outlet, or underflow. The fluid travels through this narrowing cone, developing the centrifugal forces needed to effectively separate oil from water.

The denser water moves to the outer walls of the hydrocyclone and out the underflow discharge. The less dense oil is displaced to the low-pressure core and, by controlling back

pressure at the oil outlet, flows towards the overflow oil outlet.

TREATMENT LEVELS

ProSep's hydrocyclone systems are unaffected by vessel or platform motion, delivering removal efficiencies of 85-95% of oil droplets >12-15 micron, with an effluent quality of 25-100 mg/l OIW.

BENEFITS

- + Reduced footprint
- + No moving parts
- + Minimal maintenance
- + No additional chemicals
- + Excellent turndown ratio
- + Simple controls

APPLICATION METHODS

Upstream:

- + Primary bulk oil removal
- + Secondary produced water treatment for re-injection, discharge, or disposal
- + Mechanical separation upstream of flotation units

Downstream:

- + Wash water processing from desalting units
- + Reduced footprint replacement for API separators
- + Ethylene quench water treatment