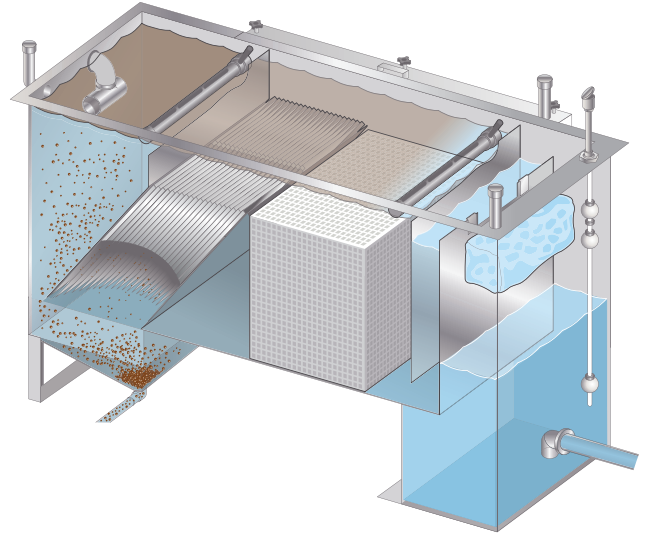




Clarification Separator

A HIGH-EFFICIENCY OIL WATER SEPARATOR

- Reduces coalescing media failure
- Reduces pretreatment needs
- Reduces posttreatment needs
- Lowers total cost of ownership



HQI Clarification Separator is recommended for any application that has oil and a high concentration of settleable and suspended solids.

DESIGN

The HQI Clarification Separator is a horizontal gravity flow pretreatment solution designed to separate settleable solids (specific gravity greater than water), suspended solids (specific gravity the same as water), and free and dispersed (non-emulsified) oil.

Units are built out of stainless steel or carbon steel. We offer several coating solutions for your specific application, such as brine water or frac water.

For a full list of options, such as pump packages and control panels, see: www.hydroquipinc.com/HQI-CS

Our Clarification Separator, when used in conjunction with

posttreatment filtration, such as reverse osmosis (RO), dissolved air flotation (DAF) or electrocoagulation (EC), treats wastewater so it can be recycled or discharged.

This unit lowers the total cost of ownership of the entire water treatment system by:

- preventing large amounts of solids from entering coalescing chamber, reducing coalescing media failure.
- eliminating need of inefficient settling basins or frac tanks prior to treatment process.
- decreasing amount of carry-over entering into posttreatment process.

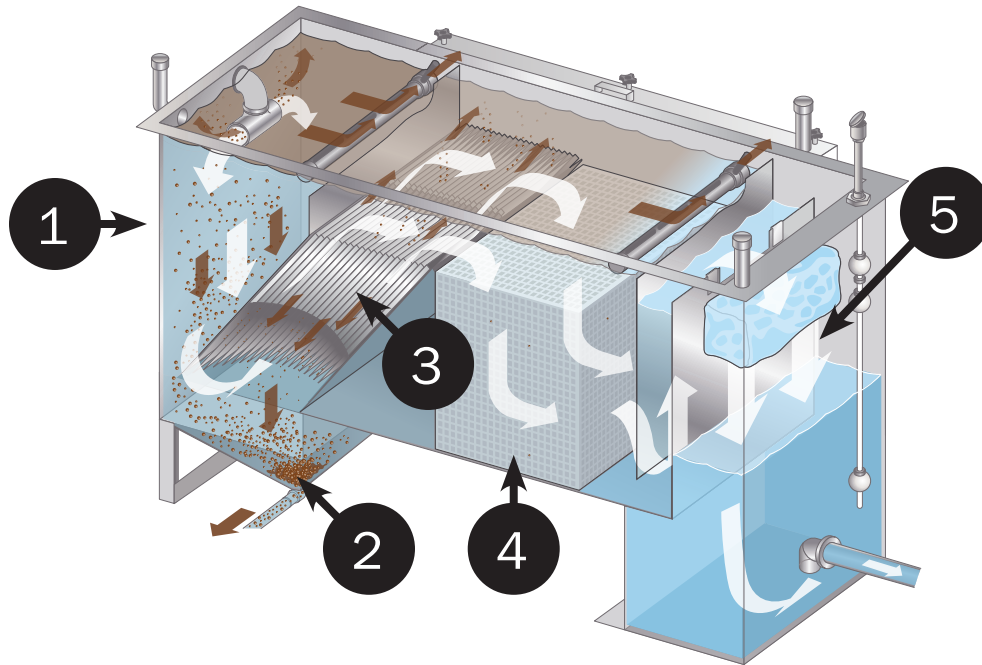
OIL & GAS APPLICATIONS

- Onshore and Offshore Drilling Operations
- Oil Refineries
- Flowback Water from Hydraulic Fracturing
- Produced Water
- Waste Oil Processing Facilities
- Frac Water

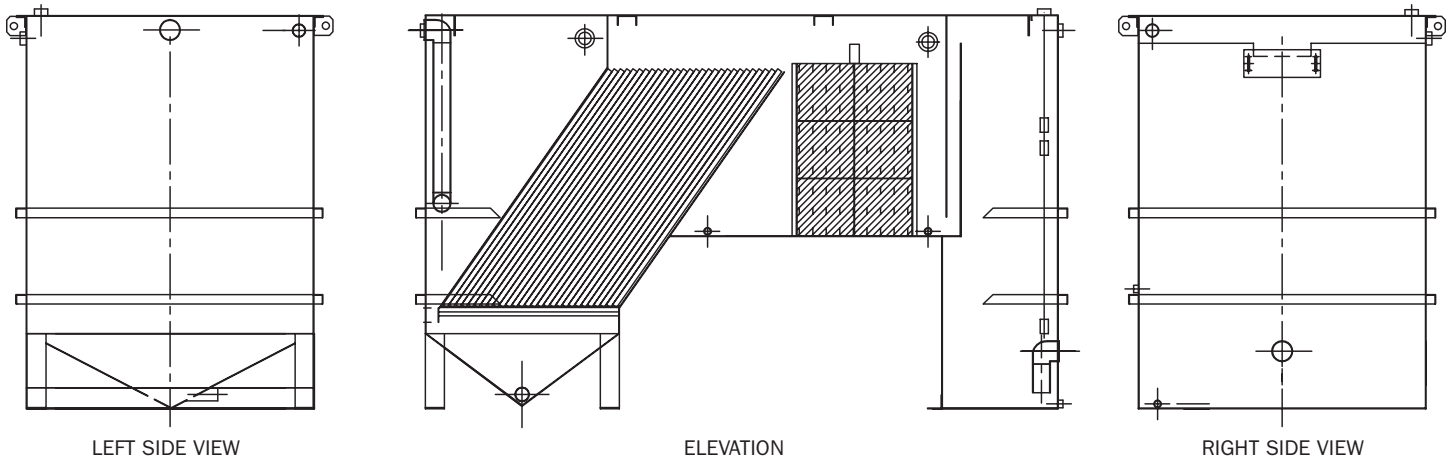
OTHER APPLICATIONS

- Washing Applications
- Industrial Applications

5 STAGES OF SEPARATION



1. The **free oil** (150 micron in size or greater) is separated in the inlet quiescent zone. (Pipe skimmer provided to decant oil.)
2. The **settleable solids** will flow downward into the hopper section for removal.
3. The **suspended solids** and dispersed oil will flow upward through the inclined plates section, where most of the suspended solids will slide down the plates into the hopper (based on a design of .25 gpm per square foot of projected plate surface area).
4. The **remaining suspended solids** and **dispersed oil** will flow into the separation compartment where the coalescing plates will separate the oil 30 micron or greater to the surface for removal and the remaining suspended solids will be captured in the coalescing plates. The amount of solids in the plates will determine the frequency of plate cleaning. (Pipe skimmer for removal of separated oil.)
5. The flow of water will go over the overflow weir plate into the **clean water** compartment where absorption bags will prevent any carryover from being discharged. (Optional float switch shown.)



SPECIFICATIONS FOR SMALLER UNITS (SINGLE-HOPPER)

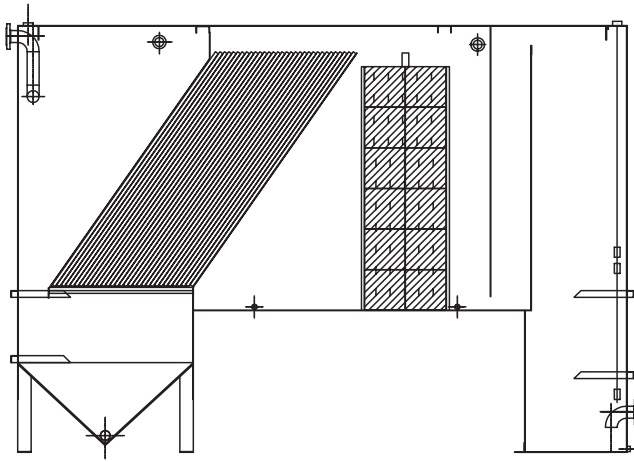
*Dimensions are approximate and may vary depending on your application.

Model	BPD (BARRELS PER DAY)	Inlet Outlet Dia.	Width	Height	Length	Clarifier Projected Plate (FT ²)	Separator Coalescing Media (FT ³)	Flow Rate (GPM)	Sludge Volume (GAL)	Capacity (GAL)
HQI-CS-10	342	2"	2' 4"	4' 10"	7' 0"	40	4	10	27	300
HQI-CS-20	685	2"	3' 4"	5' 10"	8' 0"	80	6	20	32	652
HQI-CS-30	1,028	2"	3' 4"	5' 10"	9' 2"	120	12	30	45	645
HQI-CS-50	1,714	3"	4' 4"	5' 10"	9' 8"	200	24	50	85	968
HQI-CS-75	2,571	3"	4' 4"	7' 10"	10' 6"	300	24	75	85	1,766
HQI-CS-100	3,428	4"	5' 4"	7' 10"	11' 0"	400	30	100	107	1,931
HQI-CS-150	5,142	6"	6' 6"	8' 4"	12' 0"	600	64	150	300	3,483

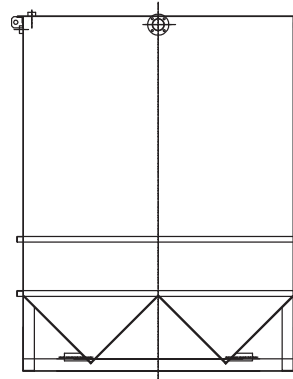
Oil Removal of 20 Micron Based on Flow Rates

Clarifier Projected Plate based on .25 gpm per sq. ft.

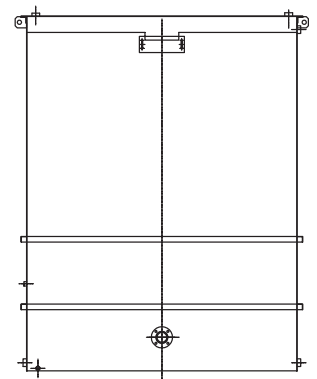
Design Temperature 40° F (5° C)



ELEVATION



LEFT SIDE VIEW



RIGHT SIDE VIEW

SPECIFICATIONS FOR LARGER UNITS (DOUBLE-HOPPER)

*Dimensions are approximate and may vary depending on your application.

Model	BPD (BARRELS PER DAY)	Inlet Outlet Dia.	Width (FT)	Height (FT)	Length (FT)	Clarifier Projected Plate (FT ²)	Separator Coalescing Media (FT ³)	Flow Rate (GPM)	Sludge Volume (GAL)	Capacity (GAL)
HQI-CS-200	6,857	6"	7' 6"	9' 6"	14' 0"	800	80	200	300	5,496
HQI-CS-250	8,571	8"	8' 6"	10' 6"	15' 0"	1,000	96	250	350	6,986
HQI-CS-300	10,285	8"	8' 6"	10' 6"	16' 0"	1,200	120	300	400	6,846
HQI-CS-350	12,000	8"	8' 6"	10' 6"	18' 0"	1,400	144	350	425	7,633
HQI-CS-400	13,714	8"	8' 6"	10' 6"	19' 0"	1,600	150	400	500	8,138
HQI-CS-450	15,428	8"	8' 6"	10' 6"	20' 0"	1,800	168	450	525	8,612
HQI-CS-500	17,142	8"	8' 6"	10' 6"	21' 4"	2,000	210	500	550	9,220
HQI-CS-550	18,857	8"	8' 6"	10' 6"	22' 6"	2,200	210	550	675	9,765
HQI-CS-600	20,570	10"	9' 6"	10' 6"	22' 0"	2,400	252	600	700	12,285
HQI-CS-700	24,000	10"	10' 6"	11' 6"	25' 0"	2,800	280	700	750	15,440
HQI-CS-800	27,428	10"	10' 6"	11' 6"	26' 0"	3,200	315	800	775	16,077
HQI-CS-900	30,850	12"	10' 6"	11' 6"	27' 0"	3,600	350	900	800	16,717

Oil Removal of 30 Micron Based on Flow Rates
 Clarifier Projected Plate based on .25 gpm per sq. ft.
 Design Temperature 40° F (5° C)



Whether an off-the-shelf unit or customized equipment, we'll help you determine the best solution for your application and site-specific needs.

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