

Highland HT/HTC UL-2215 Oil/Water Separators



Highland Tank

Model HT or HTC	Total Volume Gallons	Total Spill Capacity Gallons	Inlet/ Outlet Diameter	Flow Rate gpm	Dimensions Diameter	Length	Approx. Wt.* (lbs.)
**350	350	175	4"	35	3'6"	6'0"	1,590
550	550	275	4"	55	3'6"	7'9"	2,024
1,000	1,000	500	6"	100	4'0"	10'9"	3,001
2,000	2,000	1,000	6"	200	5'4"	12'0"	4,122
3,000	3,000	1,500	8"	300	5'4"	18'0"	5,001
4,000	4,000	2,000	8"	400	5'4"	24'0"	5,760
5,000	5,000	2,500	8"	500	6'0"	23'10"	8,082
6,000	6,000	3,000	10"	600	6'0"	28'8"	9,484
7,000	7,000	3,500	10"	700	7'0"	24'4"	11,124
8,000	8,000	4,000	10"	800	7'0"	28'0"	11,959
9,000	9,000	4,500	12"	900	8'0"	24'0"	11,983
10,000	10,000	5,000	12"	1,000	8'0"	26'8"	12,696
12,000	12,000	6,000	12"	1,200	8'0"	32'0"	14,131
15,000	15,000	7,500	14"	1,500	10'0"	25'6"	19,567
20,000	20,000	10,000	16"	2,000	10'6"	31'0"	23,316
25,000	25,000	12,500	18"	2,500	10'6"	38'9"	30,456
30,000	30,000	15,000	20"	3,000	10'6"	46'6"	35,586
40,000	40,000	20,000	24"	4,000	12'0"	47'3"	44,389
50,000	50,000	25,000	24"	5,000	12'0"	59'0"	51,511

*Weights shown are for Model HTC Single-wall Separators. Contact Highland for all other weights. Plate spacing and orientation may vary depending on site conditions.

** One access manway in separations chamber.

Cylindrical Design

Highland Oil/Water Separators are used specifically for the removal of free floating oil, grease, and settleable oily coated solids from oil/water discharges associated with many types of industrial facilities. Designed to remove oils with a specific gravity less than .95, high performance separators from 15 ppm oil/grease discharge (Model HT) down to 10 ppm discharge (Model HTC) are available.

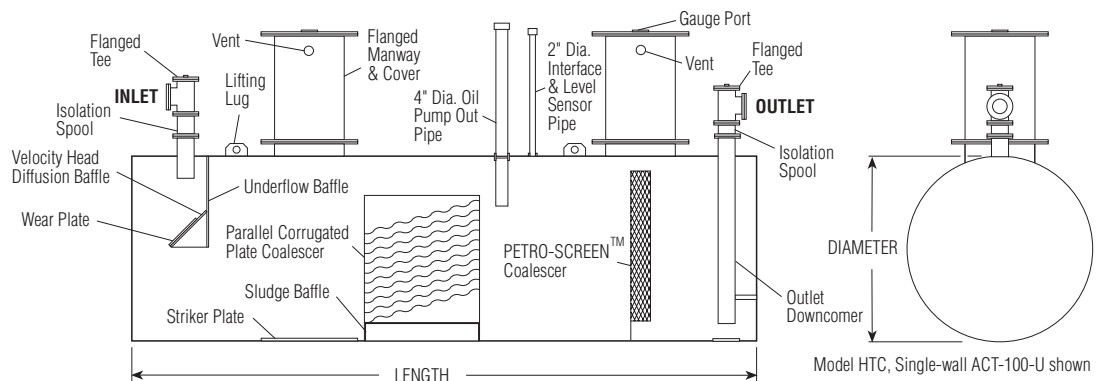
All separators are of the highest quality — constructed to American Petroleum Institute (API), Underwriters Laboratories (UL), and Steel Tank Institute (STI) ACT-100-U® or STI-P3® specifications.

Patents and approvals:

U.S. Patent # 4,722,800
 Canadian Patent # 1,296,263
 City of New York, Board of Standards and Appeals
 Under Calendar Number 1215-88-SA
 Massachusetts Board of State Examiners of Plumber
 and Gas Fitters Approval Code P1-0594-25
 Passed DIN Parts 4 & 5; DIN 38-409 Part 18
 Testing and Analysis

General Arrangement

Model HTC
 ACT-100-U®
 Single-wall shown



Model HTC, Single-wall ACT-100-U shown

Recommended Guideline Specifications

HTC Double-wall Type I Oil/Water Separator
Provide and install _____ Highland Tank Underground Model HTC- _____ UL-58 Double-wall Type I, Parallel Corrugated Plate, Gravity Displacement, Oil/Water Separator. Separator(s) shall be _____ diameter x _____ long, having a total volume of _____ gallons. A Separator of smaller volume is not permissible.

Application

The separator shall be designed for gravity separation of free oils (hydrocarbons and other petroleum products) along with some settleable solids from wastewater. The source of the influent to the separator shall be gravity flow from storm water runoff, hydrocarbon spills, and/or cleaning/maintenance operations.

Performance

Influent Characteristics

Provide Separator designed for intermittent and variable flows of water, oil, or any combination of non-emulsified oil/water mixtures ranging from zero to _____ GPM. Operating temperatures of the influent oil/water mixture shall range from 40°F to 120° F. The specific gravity of the oils at operating temperatures shall range from 0.68 to 0.95 and the petroleum hydrocarbon concentration less than or equal to 200,000 mg/l (20%). The specific gravity of the fresh water at operating temperatures shall range from 1.00 to 1.03.

Effluent Characteristics

The free oil and grease concentration in the effluent from the separator shall not exceed 10mg/l (10 ppm). To achieve this goal, it will be necessary to remove all free oil droplets equal to and greater than 20 microns.

Design Criteria

Separator shall be designed in accordance with Stokes Law and the American Petroleum Institute Publication 421, "Monographs on Refinery Environmental Control - Management of Water Discharges; Design and Operation of Oil/Water Separators."

Oil/water separator construction shall comply with requirements of National Fire Protection association NFPA 30 Flammable and Combustible Liquids Code, 1996 Edition.

Separator shall be cylindrical, horizontal, atmospheric-type steel vessel intended for the separation and storage of flammable and combustible liquids. Separator capacities, dimensions, construction, and thickness shall be in strict accordance with Underwriters Laboratories Subject UL-58 Standard for Safety, Steel Underground Tanks for Flammable and Combustible Liquid, Type I Double-wall construction with 360° steel secondary containment. The inner steel tank shall be completely contained within the outer steel tank, enclosing 100% of the tank's volume. The UL-58 Type I constructed tank must have a double steel wall. The space between the inner and outer steel walls shall be monitored for leaks with an approved electronic leak detection device.

The separator shall have the structural strength to withstand static and dynamic hydraulic loading while empty and during operating conditions.

Separator Corrosion Control System shall be in strict accordance with ACT-100-U® specifications as applied by a licensee of the Steel Tank Institute (STI). Manufacturer must be a licensee of STI. No assigning or subcontracting of STI licensing shall be permitted.

Separator shall be the standard product of a steel tank manufacturer regularly engaged in the production of such equipment, having at least 5 years experience in manufacturing similar units for identical applications.

Separator shall be fabricated, inspected, and tested for leakage before shipment from the factory by manufacturer as a completely assembled vessel ready for installation.

Separator shall have an oil storage capacity equal to about 43% of the total vessel volume and an emergency oil spill capacity equal to 80% of the total vessel volume.

General Description

Separator shall be a standard pre-packaged, pre-engineered ready to install unit consisting of:

An influent connection _____ inch, flanged.

An internal influent nozzle at the inlet end of the separator, located at the furthest diagonal point from the effluent discharge opening.

- A velocity head diffusion baffle at the inlet end that:
- Reduces horizontal velocity and flow turbulence
 - Distributes the flow evenly over the separator's cross sectional area.
 - Directs the flow in a serpentine path to enhance hydraulic characteristics and fully utilize entire separator volume.
 - Completely isolates all inlet turbulence from the separation chamber.

A sediment chamber to disperse flow and collect oily solids and sediments.

A sludge baffle to retain settleable solids and sediment to prevent them from entering the separation chamber.

- An Oil/Water Separation Chamber containing an inclined plate coalescer with removable, corrugated, protected steel plates, sloped toward the sediment chamber that:
- Shortens the vertical distance an oil globule has to rise for effective removal.
 - Enhances coalescence by generating a slight sinusoidal (wave like) flow pattern causing smaller, slow rising, oil globules to coalesce together on the undersides of the plates forming larger, rapidly rising sheets of oil.
 - Directs the paths of the separated oil to the surface of the separator.

A sectionalized removable "Petro-Screen" polypropylene impingement coalescer designed to intercept oil globules of less than 20 microns in diameter.

An internal effluent downcomer at the outlet end of the separator, to allow for discharge from the bottom of the separation chamber only.

An effluent connection _____ inch, flanged.

Fittings for vent, interface/level sensor, leak detection, and waste oil pump-out, sampling, and gauge.

Two 24" diameter manholes, U.L. approved, complete with _____ extensions, cover, gasket, and bolts. One manway shall be placed between the inlet and the parallel corrugated plate coalescer to facilitate access into sediment chamber for solids removal from above. One manway shall be placed between the parallel corrugated plate coalescer and outlet to facilitate access into the oil/water separation chamber for oil removal, parallel corrugated plate and "Petro-Screen" coalescer maintenance and removal.

Lifting lugs at balancing points for handling and installation.

Identification plates: Plates to be affixed in prominent location and be durable and legible throughout equipment life.

Corrosion Protection System consisting of:

- Isolation spool pieces
- Di-electric isolation gaskets and bushings
- External surfaces commercial blast, coated 70 mils DFT polyurethane coating (ATC-100-U®)
- 30-year Limited Warranty

Internal surfaces commercial blast, coated 10 mils DFT polyurethane.

Accessories and Options

An audible and visual oil level and leak detection alarm system with silence control.

Hold down straps nylon or steel with turnbuckles and di-electric liners.

Consult Highland Tank for:

- "EZ-Access" Option: Separator furnished with large rectangular accessway with removable coalescers to allow for total, unconfined, unrestricted, OSHA recommended top access for observation and maintenance.
- Special coatings (interior or exterior)
- Integral sand, oil or effluent compartments
- Level controls and automatic pump-out systems
- Heating systems, electric or steam
- Internal ladders
- Storage tanks and accessories
- STI-P3® corrosion protection system

Please visit us at www.highlandtank.com.



One Highland Road
Stoystown, PA 15563
814-893-5701
FAX 893-6126

99 West Elizabethtown Road
Manheim, PA 17545
717-664-0600
FAX 664-0617

958 19th Street
Watervliet, NY 12189
518-273-0801
FAX 273-1365

2700 Patterson Street
Greensboro, NC 27407
336-218-0801
FAX 218-1292

2225 Chestnut Street
Lebanon, PA 17042
717-664-0602
FAX 664-0631

1510 Stoystown Road
Friedens, PA 15541
814-443-6800
FAX 444-8662