

Hydro-Skimmer™
GEOTECHNICAL SERVICES
THE EQUIPMENT SOURCE SINCE 1984

Operational Instructions

For

Hydro-Skimmer

U.S. Patent No. 5,322,388

REV 1-2011

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Hydro-Skimmer™

The Hydro-Skimmer passive recovery device is a patented one piece counterbalanced skimmer used to recover light floating hydrocarbons down to a sheen. The Hydro-Skimmer was designed to provide faster servicing of the hydrophobic element, higher product recovery rates, larger collection volumes which extend the time between servicing, greater ability to operate in wells with large water table fluctuations (entire device follows the water/product interface) or wells with little water. The Hydro-Skimmer design offers a specially designed chamber which prevents hydrostatic forces from forcing water through the hydrophobic element. This vent chamber also has replaced the requirement for an external vent tube. Our skimmers contain no contaminating glues of any kind.

Features:

- No power source required: Uses canister collection method
- Hydrophobic filtration element: 10 inch recovery zone, recovers down to a sheen
- One piece counterbalance design: No moving parts, tracks water/product interface up to 48"
- Internal vent chamber prevents hydrostatic forces from forcing water through skimmer element, eliminates external vent tube
- Choice of skimmer housing material: Clear or Opaque
- 30 Day Warranty for manufacture defects. (Excluding Hydrophobic Element)

Specifications:

<i>Well Diameter</i>	<i>Model #</i>	<i>Collection Capacity</i>	<i>Overall Length</i>	<i>Actual Diameter</i>	<i>Minimum Water Depth</i>	<i>Dry Weight</i>
2"	200/200-C	.100 gal	34"	1.66"	22"	2 lbs
2"	201/201-C	.261 gal	66"	1.66"	51"	5 lbs
2"	202/202-C	.430 gal	96"	1.66"	80"	8 lbs
4"	400/400-C	.500 gal	36"	3.50"	22"	5 lbs
4"	401/401-C	1.147 gal	64"	3.50"	46"	16 lbs
4"	402/402-C	2.157 gal	96"	3.50"	80"	24 lbs

Note: Please add a "C" after the model number to designate clear housing.

RULES FOR SAFE OPERATION

1. Slowly lower skimmer into well.
2. Do not squeeze or smash hydrophobic element.
3. Remove separator only when necessary.

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Installation Procedure

Please refer to Figure 1 on page 4 for more detail.

1. Take placement measurements:

- A. Total well depth to top of well casing**
- B. Depth to Water**
- C. Depth to hydrocarbon product**

Taking the above measurements is important because when installing the Hydro-Skimmer, the displacement of water may create a false water table and cause the Hydro-Skimmer to be installed at an improper height, impeding collection.

1.2 Attach safety cord to eye bolt at top of Hydro-Skimmer.

1.3 Installation can be accomplished more easily with the use of an interface meter to determine that the water/hydrocarbon interface comes within three inches of the lower slotted area of the Hydro-Skimmer. If interface meter is not available, SLOWLY lower Hydro-Skimmer into well, allowing it to locate its own buoyancy.

1.4 Remove Hydro-Skimmer from well. The Hydro-Skimmer is preweighted to be buoyant with the water/hydrocarbon interface, ideally within three inches of the lower slotted area of the skimmer. If the Hydro-Skimmer is not resting in this position, the following conditions should be considered:

- A. If the hydrocarbon thickness as measured in Step 1 exceeds 12”, the Hydro-Skimmer will ride above the suggested level but will function properly as it will weight itself when collection of hydrocarbon product begins.**
- B. If the hydrocarbon product is in excess of 6”, the Hydro-Skimmer may collect to capacity in approximately 1 hour, thus requiring the collection chamber to be emptied.**
- C. If water salinity does not allow the Hydro-Skimmer to rest within the recommended water/hydrocarbon area, galvanized washers (included in shipment) may need to be threaded onto the safety connector to weight the unit so that EFFECTIVE collection may take place.**

1.5 After above adjustments have been made, reinsert the Hydro-Skimmer into well allowing 4” to 6” of slack in safety cord between the two eye bolts when the well cap is in its installed position.

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1.6 Removal and collection procedures:

- A. Remove Hydro-Skimmer from well.
- B. Hold unit upright over recommended hydrocarbon collection container and open valve at base, allowing product to drain into container.
- C. Close valve and reinsert Hydro-Skimmer into well following installation procedures as outlined on page 1.

1.7 Maintenance of skimmer element:

The Hydro-Skimmer is designed with a removable hydrophobic element, thus allowing it to be cleaned. Remove hydrophobic element only when necessary. Replacement elements are available if the element becomes damaged.

- A. Remove upper vent chamber cap from Hydro-Skimmer. With your fingers, carefully pull up on the inner aluminum tube. This will disengage the hydrophobic element from an O-ring seal in the lower housing.
- B. The element may be sprayed or immersed in any EPA approved hydrocarbon cleaning solution, such as Liquinox. If immersed in a solution, use a gentle rotation action to facilitate cleaning. DO NOT squeeze or mash on the plastic webbing area.
- C. To re-install the hydrophobic element, place petroleum jelly or a water-based lubricant on the lower two inches of the aluminum tubing. Check bevel on lower edge of tubing to insure it is free of burrs that might cut O-ring in lower housing.

Place element in Hydro-Skimmer and align with hole in lower housing. Gently push down on element (approximately one inch) until it is fully engaged in the lower housing. The element is held in place when the upper vent chamber cap is fully screwed onto the top of the Hydro-Skimmer.

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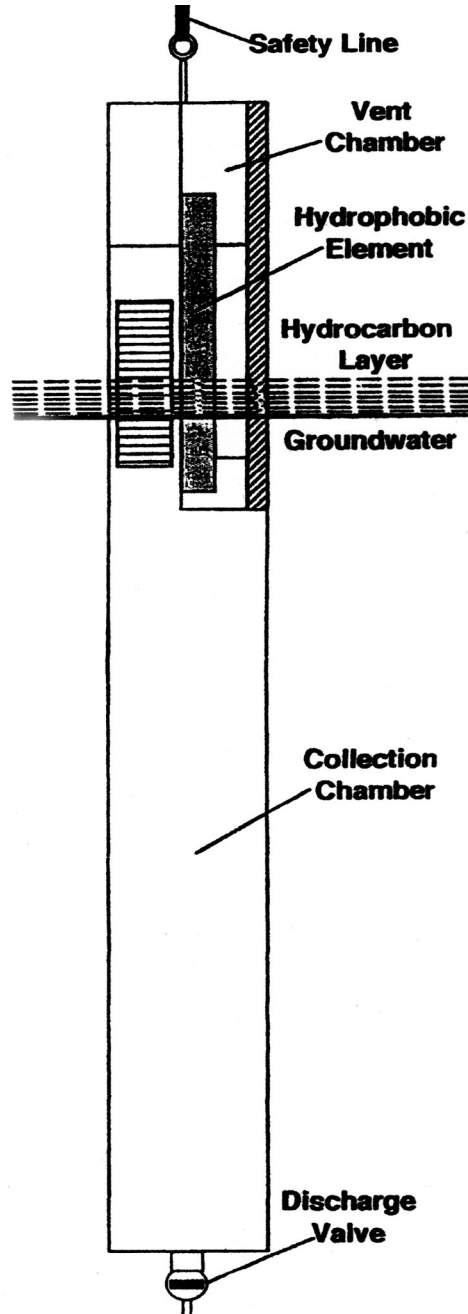
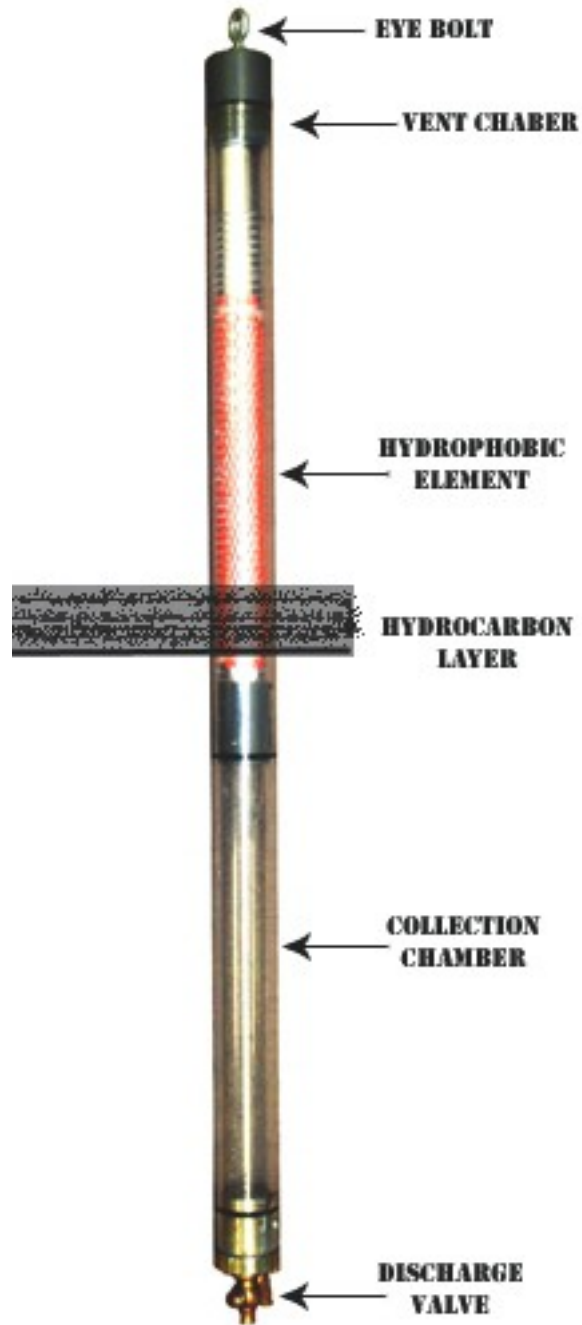


Figure 1

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Notes: