



THERE IS A WORLD TO WIN

Your contribution to a cleaner world

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Welcome a new passenger on-board: Sea Trophy, Green and Easy Oil Recovery. The first complete mobile pump system that enables the controlled, contained, fast (fuel-) oil recovery after incorrect or off-spec fuelling and in the event of grounding or calamity at sea.

Let's make one thing clear, an oil spill spells disaster for all involved. Ship owners, the ship's crew, salvors, the coast guard, emergency responders, oil companies, insurance brokers and last but not least, our precious environment. The irreversible damage spreads like 'oil on water'.

The economic aftermath of an oil spill at sea or in harbour, as a result of loss of time or capital damages and even the loss of the oil itself are often immeasurable. These damages do not weigh up when compared to the ecological damage caused above and under water. Local economies, fishing and tourism all suffer when the unthinkable occurs.

Now we have introduced the problem, let us introduce the solution, the Sea Trophy. This remarkable submersible oil pump is the first of its kind. Designed, built and patented for green and easy oil recovery by the pump experts from the Netherlands, Van Heck.

This brochure introduces you to this easy, affordable system and how it will willingly work for you, when the odds are not.

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SALVAGE FRIENDLY SHIPPING AND 'PREPAREDNESS'

Salvage friendly shipping and 'preparedness' is a worldwide initiative in the maritime sector for safer, environmentally friendly ships. Van Heck, internationally renowned in the offshore and dredging industry, willingly makes her innovative contribution to this noble cause.

HERE'S HOW IT WORKS

Not the cargo, but the ship's fuel is the biggest risk when a casualty at sea occurs. The fuel tanks are vulnerable, whether that is due to collision or the forces of nature.

Current fast oil recovery systems rely on the injection of water into these tanks to force the oil out. The oil is removed, however the fouled water remains. A breached tank renders this principle useless.

The Sea Trophy approaches the problem from a different angle. The submersible oil recovery pump is inserted, along with an inner pipe seal, into the adapted sounding or vent pipe. This enables the contained, controlled transfer of the fuel to the required collection point.

The result being a speedy reduction in weight for re-floatation when grounded, wreck removal, decommissioning or the removal of oil to reduce or eliminate an ecological disaster. Incorrect, or off-spec fuel can be removed without the use of the ship's internal systems. The fuel, removed for whatever reason, remains uncontaminated and can be used again.

Spilling oil attracts media attention. Company images, not only of the ship owner but also that of the oil company and insurance brokers, are at risk. Being able to respond more than adequately, at very short notice, proves that you have an unequivocal eye for the world around you.

Reasons enough to have the Sea Trophy at the ready, just in case.

SEA TROPHY IS AVAILABLE FOR SALES AND RENTAL

The sea Trophy is patented and has a Bureau Veritas Certification

SEATROPHY



 [WATCH THE DEMO AT SEATROPHY.COM](http://SEATROPHY.COM)

SEA TROPHY SUBMERSIBLE SOLUTIONS

The Sea Trophy can prove its value in many ways, at sea or quayside. The simplified removal of off-spec fuel, the efficient lightening of stranded or beached ships and the swift removal of oil from (breached) tanks on stricken vessels or in case of wreck removal. It can also be of aid should valves, or built-in piping fail. Oil remnants left in tanks before decommissioning can be removed. The possibilities are almost endless.

OFF-SPEC OIL RECOVERY

The occurrence of off-spec oil loading has seen a significant increase. Such incidents are costly for the ship owner as he needs to immobilize the ship to unload it and then reload it with the proper (fuel) oil.

Using the ship's own pumping system means pumping the oil through the internal pipe work and manifolds, fouling the entire system, which in turn needs to be purged resulting in more costly 'waste'.

The Sea Trophy enables the quick and efficient recovery of the off-spec oil from the tank in question without use of the ship's systems. Significantly reducing time and costs.

CLASSIFICATION

The Sea Trophy can be used to quickly empty tanks for inspection or classification purposes.

GROUNDING AND WRECK REMOVAL

The grounding or beaching of a ship can often be resolved by lightening the vessel. Oil trapped in shipwrecks, be they above or underwater, has the potential to become the next big headline oil spill.

If the ship is damaged, removal of the (fuel) oil is the highest priority, thus removing the environmental threat of an oil spill. Time is of the essence. With the Sea Trophy system at hand you have a wide variety of options for quick, direct action with a minimal amount of equipment. Current available solutions require the use of non-specific equipment, long discussions, planning and transportation. All of which delay the actual removal of the threat.

BREACH

A hull breach above the waterline will result in the loss of fuel oil and possibly cargo, the crippled ship however can sail on to port for repair. A breach below the waterline gives an additional problem. Water will flood into the damaged hull and the oil will float on the water rendering the ship's internal pumps ineffective as they are positioned at, or draw from, the bottom of the tank. Once again the Sea Trophy system offers a manageable solution, direct at hand, to resolve the situation. This flexible system allows the Sea Trophy to be hung at the required depth in the tank to remove the oil layer floating on top of the water.

VALVE, DROP LINE, PUMP FAILURE

A pump, manifold, valve or piping failure can disable a ship's operation making it impossible to move or discharge oil. The Sea Trophy system can temporarily replace or bypass the fault, enabling operations to continue while the fault is repaired.

DISMANTLING

Decommissioning and dismantling of ships is a dangerous, difficult and costly process. The removal of oil remnants can be hampered if the ship's systems are dead or pumps have been removed. The self-supporting Sea Trophy system can remove these potential hazardous oils in a simplified, controlled manner.

MAIN SPECIFICATIONS AND PUMP PERFORMANCE

The Sea Trophy is a hydraulically driven submersible screw spindle pump. The pump has a unique, patented three spindle configuration. A compact pump with an impressive capacity.



The Sea Trophy

Main specifications of the patented pump are:

- A hydraulic driven submersible three spindle pump with one master and two slave spindles and a top bearing,
- Compact design: $\varnothing 150$ mm, length 610 mm,
- Flow with 100 cSt oil at 30°C: 70 m³/h at a 3 bar discharge head,
- Oil viscosities: 15 to 900 cSt,
- Weight: 55 kg.

The main advantages of the patented Sea Trophy are its weight and compact design in combination with its capacity in comparison to the currently available (submersible) portable oil pumps.

The Sea Trophy is designed for use in combination with the FOR© system. It can be inserted into this specially adapted DN200 or DN250 sounding pipe system. The sounding pipe is also the discharge pipe. Breather holes in the sounding pipe are sealed with the inner pipe seal.

The pump will pass through two 45° bends with a 1 meter radius in piping (DN200) and for DN 250 one 70° bend with a 1 meter radius in piping. Access is via the special T-piece. Insertion and retrieval of the pump is done with a hand winch, even under extreme heel or trim angles. The pump can be hung-off at the required height in the tank. In addition, to these applications, the Sea Trophy can be inserted in other access pipes of $\varnothing 200$ mm and larger.

Oil retrieval from cargo tanks can be done with the Milkcan, which can be inserted through access points as small as $\varnothing 200$ mm.



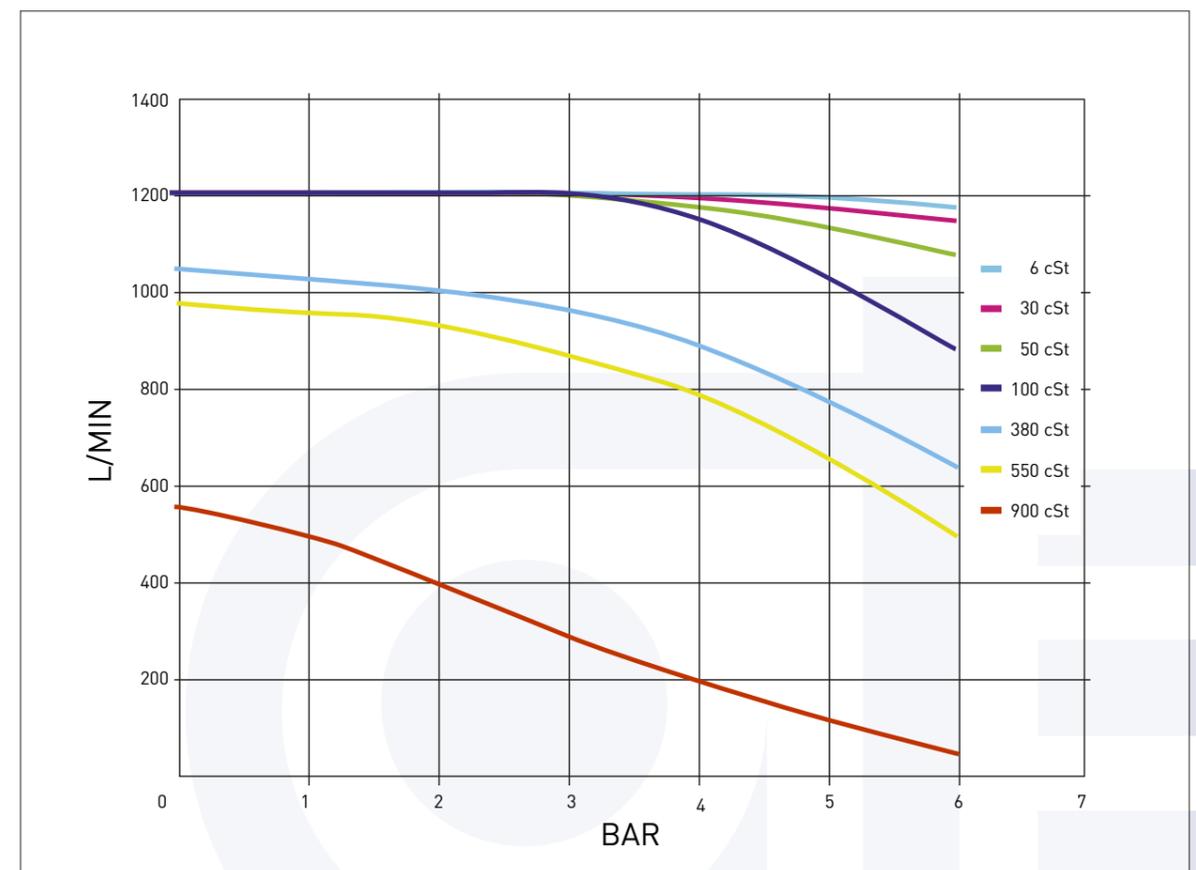
The Milkcan

The Sea Trophy, when installed in the Milkcan, can be lowered into a tank directly attached to a flexible discharge hose. The Sea Trophy is compatible with special adaptors for the industrial/maritime standard connections.



The Manifold

The Sea Trophy hydraulic manifold has been developed to accompany the pump. This manifold ensures the correct hydraulic flow and pressure are delivered to the Sea Trophy and allows you to vary the pump speed. The pump rotation direction can be reversed, to empty the inner seal or discharge hoses after pumping is completed. The manifold has a modular design. They can be connected in series when a larger hydraulic power source is available. This allows you to run more pumps from one source whilst retaining individual pump operation. The Van Heck standard (rental) power packs, for instance, can drive two Sea Trophy's simultaneously.



Pump Performances

SEA TROPHY COMBINATION

The FOR© system (Fast Oil Recovery System also known as FORS) is an adaption of sounding and vent pipes in fuel tanks and all other pipes according to Rule Note NR 553 DT R00 E (§ 2.4.1) of Bureau Veritas. The Sea Trophy is inserted into the pipe, using the hand operated winch, guiding it to where it should be and is also suitable for other access pipes Ø200 mm and larger. The pipework remains in place if the pump needs to be retracted.



PROCEDURES



1 Removal of the blind flange gives access to the sounding or vent pipe.



2 The T-piece with discharge hose connection is connected to the flange.



3 The winch is bolted onto the T-piece top flange.



4 The pump (with seal) is hung in the hoisting cable and inserted through the T-piece into the pipe.



5 Once the required depth is reached the hoisting cable is firmly anchored using cleats and the winch is removed.



6 The specially adapted cover, which incorporates the seal for the hydraulic hoses, is then bolted in place. The discharge hose is attached to the T-piece side connection.



7 The Sea Trophy is driven by a Power Pack. This Power Pack is hydraulically connected to the manifold which is then connected to the Sea Trophy.



8 After assuring the discharge hose is connected to the designated reception point, pumping can start.

SEA TROPHY AND MORE

MEET THE VAN HECK EXPERTS

The Sea Trophy, special T-piece and inner pipe seal were designed for use in combination with the FOR© system. The innovation however did not stop there. Our R&D department continued looking for ways to exploit this new innovation.

Van Heck developed a special manifold that ensures the correct hydraulic flow and pressure are delivered to the Sea Trophy and allows you to vary the pump speed.

Van Heck chose a modular design, enabling connection in series when a larger hydraulic power source is available but retaining individual pump operation. For instance the Van Heck standard (rental) power packs can drive two Sea Trophy's simultaneously. Next, Van Heck developed the Milkcan, which allows the pump to be used in cargo tanks and allows the pump to be used as a standalone. Attached directly to a discharge hose and hung in a winch it can be lowered into cargo holds, adapting the Sea Trophy for uses more comparable to traditional pump design. Furthermore, special adaptor pieces allow the Milkcan to be installed in existing or temporary pipe work.

The manifold makes it possible to use the Sea Trophy with hydraulic power packs that are currently available but some situations call for a compact, lightweight solution. Van Heck's plans involve the development of such a power source. Dedicated to this application, designed to meet the highest of demands and to work in the most demanding conditions, as is all Van Heck's equipment.

Test facilities in Noordwolde



TESTING AND DEMONSTRATION

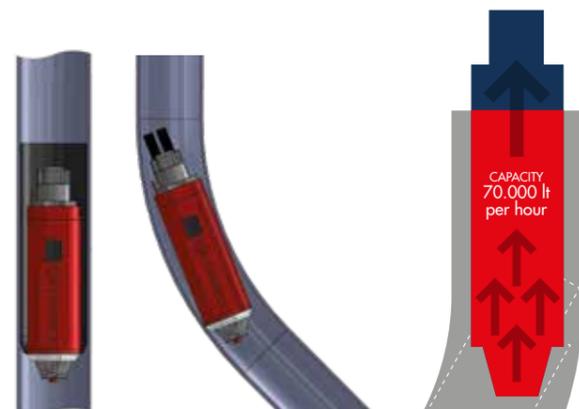
Van Heck has done extensive testing to ensure that the Sea Trophy does what it should. Tests designed to challenge the theory, proved that these innovations work in practice. The Sea Trophy has also proved in field tests that it is up to the job and also holds a Bureau Veritas certification.

Never satisfied, Van Heck will continue to innovate and test, so that when and where it is needed, the Sea Trophy system will perform, thus giving salvors, ships crews, first emergency responders and many others a solution they can rely upon, should the unthinkable happen.



Tests have been carried out to check the insertion of the pump into pipes with the minimal tolerance characteristics of the FOR© system, diameters and bend radius. These test pipes were constructed from angular sections welded together to recreate a real situation.

The Sea Trophy's capabilities can be demonstrated in full at our test facilities in Noordwolde (the Netherlands).



Sea Trophy in Sound Pipe DN200/DN250

Pump going through a 45° bend

Over the years Van Heck has acquired a reputation of reliability and expertise to move water "any way you want it". Using this expertise a new innovative system, the Sea Trophy, the submersible green and easy oil recovery pump was designed and developed.

Sea Trophy offers a fast, easy and well controlled solution for the removal of (fuel-) oil in any unforeseen situation, be it off-spec fuel recovery, salvage, wreck removal, decommissioning or breakdown.

The Sea Trophy system is available for sales and rental. Our trademark: smart technology in compact equipment to be transported to anywhere in the World.

GLOBAL AVAILABILITY

Besides in The Netherlands, the emergency response kits are available from Miami (FL), USA and Singapore. By distributing the kits globally, they can be on site very quickly. Every station has its own logistic services and can facilitate the mobilisation and operation of the Sea Trophy adequately.

EMERGENCY RESPONSE KITS

Van Heck has prepared Sea Trophy response kits for immediate mobilisation. Each Sea Trophy emergency response kit consists of a complete operational set. These emergency response kits are packed into standard pallet boxes for direct dispatch by road, ship or air freight.



FOR© system parts



Milkcan system parts



▶ WATCH THE DEMO AT SEATROPHY.COM

INTERESTED? Convince yourself of the many advantages the Sea Trophy can offer you. Watch the pump in action at seatrophy.com or at our facility in Noordwolde. For more information you can contact Van Heck directly, ask for the detailed technical brochure or if you prefer, request a meeting in person.



SEA TROPHY

- Oil spill prevention or restriction
- Green and easy oil recovery
- Fast oil transfer. Suitable for a wide range of oil viscosities
- Revolutionary design can be inserted into adapted sounding/venting pipes, or be used with the Milkcan
- 'Preparedness' for emergencies or simple removal of off-spec fuel
- Save time and money as well as your company's image
- Your contribution to a cleaner World

**SEA TROPHY
IS AVAILABLE
FOR SALES
AND RENTAL**