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## **Salaroll Pumping**

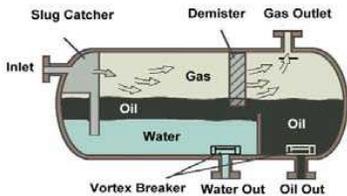
### **Our approach to common problems and our solution**



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**Cargo tanks in oil tankers**

Problem	Solution
<p>Sludge and heavy deposits builds up in bottom of tank resulting in increased “remaining on board” (ROB) and decreased load capacity. The sludge gets trapped between the frames and cannot freely flow to the ships cargo pumps.</p>	<p>A small team with Salaroll super suction pump system will enter the cargo tank to suck sludge from between the frames to the ships cargo pump suction well, or onto main deck containers. By shifting sludge to the ships pump suction pump the product can be pumped out and sold at next offloading. Depending on the ROB nature straight nozzle or mechanical/ hydraulic nozzle may be used with or without cargo degreaser F-1110. This process can take place at sea on voyages when tanks are empty (return voyage) and cause no delays in operations. An example of a oil tanker with 12 cargo tanks 15x20 m with aaverage sludge depth of 30 cm results in 1080 m3 of wasted space.</p> <p><b>Salaroll super suction pump 3” has been tested on bunker C (high viscous oil) in close to freezing temperatures successfully and it allows foreign matters of size up to 40mm to pass through without stoppage or damage</b></p>



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**Storage tank cleaning**

**Problem**

During cleaning of storage tanks, heavy sludge can build up, this may contain debris such as stones, rocks etc. Screw pumps may have problems pumping high viscosity debris laden media and sludge needs to be fed to screw pump location manually.

**Solution**

Salaroll supersuction pump can offer a stand alone solution to tank cleaning or a compliment to traditional pumps to deal with high viscosity media. Salaroll sludge nozzle utilizing mechanical beater arms to stir the media by hydraulic force before feeding to suction nozzle. The nozzle is moved around to where sludge is.

The Salaroll hose management system allows the heavy hose to “float in the air” suspended above the media allowing only one man to move the hose inside the tank. Minimizing personnel inside the tank and entire job, increased safety and cost efficiency.

Salaroll can be connected to drain nozzles to pump high viscosity sludge that way before opening tank allowing minimal shut down period. **Salaroll super suction pump 3” has been tested on bunker C (high viscous oil) in close to freezing temperatures successfully and it allows foreign matters of size up to 40mm to pass through without stoppage or damage**

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**Reduced bore pipe**

**Problem**

Media such as hydrocarbons, oils, wax etc builds up internally in the pipe decreasing the ID bore and subsequently the flowrate.

**Solution**

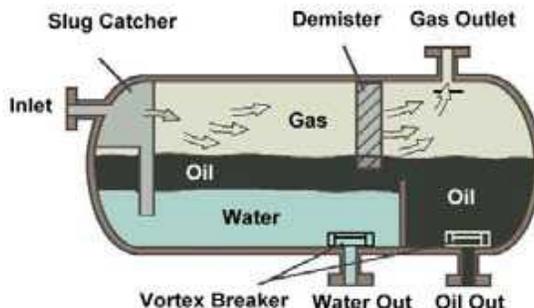
Salaroll's slow and steady pumping rate avoids oil and water-based degreaser to emulsify, the two medias flows in a slit phase. By circulating Eurolube F-1110 water-based degreaser through a by hydrocarbon reduced bore pipe the degreaser will degrease the pipe internally and transport hydrocarbon out to a static separator where oil can be skimmed off and degreaser re-used and re-injected into the system continuously until oil has been satisfactory removed from the pipe and standard flow rate achieved.



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**Pressure vessel cleaning**

Problem	Solution
Debris such as sand and rocks, sludge build up.	<p>Salaroll supersuction pump allows debris up to 40 mm to be pumped through its system, bigger debris do not damage the pump and can be ejected by reversing pump direction.</p> <p>This allows cleaning of pressure vessels such as slug catchers, drain tanks, separators etc.</p> <p>Sludge on oil side is treated similar as to storage tank explained above.</p> <p>The cleaning process can be initiated without opening man hole by sucking free media out and flushing system with degreaser or water to prepare for man-entry cleaning thus saving time.</p> <p><b>Salaroll super suction pump 3” has been tested on bunker C (high viscous oil) in close to freezing temperatures successfully and it allows foreign matters of size up to 40mm to pass through without stoppage or damage</b></p>



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**Heat exchanger cleaning**

<b>Problem</b>	<b>Solution</b>
Oil build up on oil side/ rust or scale build up on water side resulting in reduced flow and efficiency.	Similar method as described in reduced bore pipe above.  Oil deposits can be flushed out by circulating Eurolube F-1110 water-based degreaser, rust and scale build up can be removed by circulating Eurolube F-1000 safe acid descaler.  Re-circulation after passing static separator tanks externally allows best economy and environmental responsibility.



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**Drain and gutter cleaning**

Problem	Solution
<p>Deposits build up in drains and gutters blocking flow and causing flooding.</p>	<p>Salarolls modular system allows it access in most tight spaces and it can reach areas where vaccum tracks cannot. It is efficient in cleaning drains and gutters from sand, oils, garbage etc and this can be an add-on to other jobs at the same site.</p> <p>The closed system is more clean, safe and efficient compared to the traditional spade and bucket cleaning. Waste goes directly into containers without spillage.</p> <p><b>Salaroll super suction pump 3” has been tested on bunker C (high viscous oil) in close to freezing temperatures successfully and it allows foreign matters of size up to 40mm to pass through without stoppage or damage</b></p>



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**Oil spill clean up**

Problem	Solution
<p>Oilspill on water or land. Primarily in remote and hard to reach areas such as shallow seas, beaches, rivers, bays and islands where larger vessels or trucks cannot access.</p>	<p>Salaroll is the result of the Swedish costguards call for solution to hard to reach area oil spill response systems. Salaroll won that tender and has since been used and standardized in Europe, north and south America, Russia, Asia, Africa.</p> <p>Salaroll can be walked into the spill location as it is built on off-road friendly chassis, it can also be rafted into shallow waters where large vessels cannot access.</p> <p>The Salaroll system is modular and has successfully been adapted to be fitted onto small work boats, ATV's, terrain vehicles and even swimming platforms!</p> <p><b>Salaroll super suction pump weighs only a little over 100 kg and is chassis mounted allowing access to hard to reach areas out of reach for other systems.</b></p>



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**Decontamination for decommissioning**

<b>Problem</b>	<b>Solution</b>
<p>Piping and vessels on systems that shall be decontaminated must be freed from any contamination to be safely send for scrap.</p>	<p>By using the same concept as described in the heat exchanger and vessel cleaning above, A larger batch of Eurolube F-1110 degreaser can be circulated from inlet to outlet, with a static separator removing hydrocarbons by skimming. Other contamination will follow oil and degreaser out.</p> <p>This system allows decontamination of large systems to be done on a 24 hour basis with minimal personnel involved, this can be done simultaneous to other preparation work minimized time and money spend on decontamination process.</p>



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**Production waste pumping**

<b>Problem</b>	<b>Solution</b>
Waste media from production build up in processing plants for sugar, paper, etc.	<p>Salarolls ability to pump high viscosity media allows pumping of the toughest wastes. Adding water can reduce friction and increase pumping speed. Dry powder has been pumped by adding about 50% water. (dust sensitive media)</p> <p><b>Salaroll super suction pump 3” has been tested on bunker C (high viscous oil) in close to freezing temperatures successfully and it allows foreign matters of size up to 40mm to pass through without stoppage or damage</b></p>