June 8, 2005

Deister Machine Company, Inc.
Heavy Duty System Saver
Operating Instructions

Equipment Description- The Deister System Saver is a portable hand held oil pumping and filtration unit designed to extend oil life and improve oil quality. Filtering out the debris that causes premature bearing failures and reusing the oil does this. The system is designed to be used on all Deister Vibrating equipment. However, if your screen or feeder was not ordered specifically from the factory with a filtration system, a conversion kit will need to be installed prior to use.

Deister Conversion Kit- Modifications will be required if your unit was not originally ordered from the factory to accept the System Saver. If you have not already done so, please consult Deister with your equipment serial number so that the proper conversion kit can be supplied for your screen or feeder.

Oil Filtration Time- In order to determine the oil filtration time, the Deister mechanism oil quantity will need to be known in advance. If you do not know the oil quantity or do not have the original Operating and Parts Manual, please contact us with your serial number and we can determine the oil quantity.

Testing has shown that for best results the oil should pass the filters a minimum of ten (10) times. The pump displaces an average of one (1) gallon per minute (GPM).

Example: Ten (10) passes @ 1 gpm x 3 gallons of oil = 30-minute filter time required.

Power Requirements - 120 VAC Outlet.

Gauges- The Deister System Saver was designed with pressure differential gauges that allow the user to know when to change filters. The gauges are marked with green, yellow and red backgrounds; if the filter is good it will register in the green when pumping oil. If the gauge is in the yellow the filter is at approximately 80-90 percent capacity and should be scheduled for replacement. If the gauge is in the red the oil is being bypassed around the filter and no filtering is being done, the filter should be checked (see note below) and/or changed before proceeding.

Note: During cool temperatures the gauges may spike (yellow or red on the gauge) and take a minute to reset. This is due to the oil being very viscous or thick and is normal. Allow the systems' gauges to reset prior to changing a filter.

Filters- The System Saver operates with two filters that are connected in series. The first filter or the coarse filter is intended to remove the large particles from the oil. The fine filter (second filter) will then polish the oil by removing the smallest of contaminants. If water contamination is a problem, a water-absorbing filter is available. This filter may be interchanged with the coarse filter. The oil may then be de-watered and filtered.

Note: The water filter will remove some coarse particles but does not have the dirt holding capacity of the normal coarse filter and should only be used if water is in the oil, or at intermittent filtration intervals. Failure to do so will greatly reduced filter life. Use only Genuine Deister Machine replacement filters! Failure to do so may cause equipment damage and void all equipment bearing warranties.

Filter Replacement- After removing the old filter element, wipe the metal filter head surface with a clean cloth to remove any dirt or excess oil. Apply a think film of clean oil to the rubber seal gasket on the face of the new filter. Spin the filter on the threaded stud until the gasket makes contact. Tighten the filter an additional 1/4 turn.

EQUIPMENT SET-UP AND FILTERING

Warning! The Deister vibrating screen should be turned off and locked out prior to setting up for the oil filtration process. Failure to do so could result in injury.

Warning! For best results change or filter oil while the oil is warm. Always use the proper protective equipment when working with hot liquids.

Warning! Do not operate (energize) the vibrating equipment while filtering oil. The System Saver was designed to be used only during equipment downtime.

Warning! Be sure the System Saver unit is in the off position and unplugged from a power source prior to hook-up.

Best results are realized if filtration is performed immediately after shutdown while the oil is warm and contaminants are suspended.

1) Prior to loosening any fittings, clean dust or dirt away from the work area to reduce the chance of contaminants being introduced into the oil system. Clean quick disconnect (QD) ends with a clean rag prior to each use.

2) Place the System Saver on the non-drive side base platform of the Deister vibrating screen, close to the mechanism tube to be filtered. *Note: It does not matter which tube is filtered first on a multi-tube screen, but the pressure and suction hoses must be connected correctly to ensure the filtered oil is returning to the proper tube. Failure to do so could result in both feed end and discharge end oil in one tube.*

3) Never allow exposed hose ends to touch the floor.

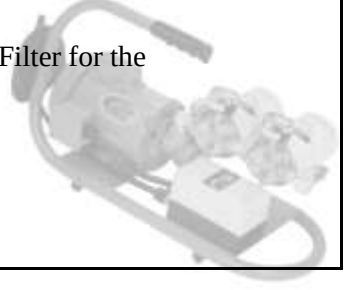
4) Remove the dust cap from the suction side QD coupler (short hose) on the System Saver and snap it onto the QD nipple on the no-drive side of the screen.

5) Close the ¼ turn valve located on top of the oil sight gauge block before filtering. Failure to close this valve will result in air being pulled into the pump, causing cavitation and damage.

6) Run the pressure hose from the filter unit on the non-drive to the drive side of the screen.

7) Remove the dust cap from the pressure side QD coupler (long hose) on the System Saver and snap it onto the QD nipple on the drive side of the same mechanism tube.

8) Plug the System Saver into a 120 VAC outlet and turn the power switch on. Filter for the predetermined time.



9) An oil sample can be pulled at any time during the filtration procedure by placing a sample bottle under the sampling valve on the pressure side of the System Saver. Simply depress the spring-loaded button while the pump is running.

10) When the filtering is finished in the mechanism tube turn the filter system power off. If the Deister unit has a single tube mechanism, filtration is complete. For dual mechanisms, disconnect the QD couplers on each side of the screen and reconnect it to the other mechanism tube QD nipples. Repeat the above procedure.

11) Disconnect the QD coupler from the QD nipple on each side and replace all four dust caps.

12) Open the ¼ turn valves above the oil sight gauge blocks and recheck oil level. Top off oil, if necessary.

When the filtering is complete, turn the power off and unplug the unit. Disconnect all hook-up hoses and return the Deister vibrating screen to its original configuration. Make sure all fittings are tight and there are no leaks. To keep the suction and pressure hoses on the System Saver clean apply the dust caps to the QD couplers. Check for proper oil levels and return to normal screen operation.

Warning! All fittings should be tightened and checked for leaks prior to equipment start-up. Deister is not responsible for damaged or failed equipment due to lack of proper lubrication. Always check oil levels in the site gauge prior to start-up of vibrating equipment.

COMMON QUESTIONS

How long should the oil be filtered for the best results?

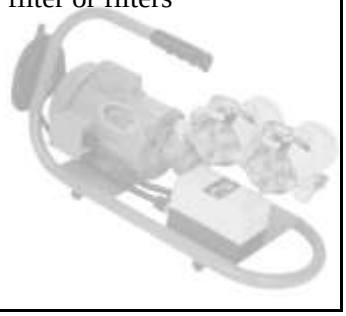
Tests show the best results when the oil passed over the filters a minimum of ten (10) times. The system was designed to pump approximately one (1) gallon per minute of ISO 320 grade oil at 50 degrees Fahrenheit or 10,000 SUS. (Note: Flow rates will fluctuate with ambient temperature differences; actual tests show flow rates from 0.75 gpm to 1.25 gpm).

If your Deister screen has an oil quantity of four (4) gallons, the oil should pass the filters ten (10) times at one (1) gallon per minute (average). If you are unsure of your Deister Vibrating Screen oil quantity please refer to the manual that was shipped with your unit or consult Deister Machine.

EXAMPLE: 10 passes (@ 1 GPM) x 4 gallons = 40-minute filter run time

How long will the filters last?

Filter life will depend on how dirty the filtered oil is, and on the number of Deister vibrating screen reservoirs being filtered. Always monitor the filtration gauges to determine when the filter or filters should be replaced.



How often should I filter the oil?

Without a filtration program, we recommend the oil be changed in your Deister screen every 500 operating hours. With the filtration system we would recommend that the oil be filtered every 500 hours of operation. It is likely that more frequent oil filtration can further extend bearing life.

Should I have oil samples tested in addition to filtration?

We highly recommend that the oil be tested on a regular basis. This will provide valuable insights for scheduling maintenance downtime and avoiding expensive catastrophic failure. A sampling valve is positioned on the pressure side of the filters on the System Saver. If you do not currently have an oil analysis lab or would like to check your labs results against another please contact Deister and we can provide information on a reputable lab.

Should I have an ISO cleanliness test performed on my oil samples?

It is not required, but the ISO cleanliness test can also prove to be a great value to help determine how clean the oil is and how well the oil filter system is working. The ISO test will show the size and amount of particles that are in the oil. Roller bearings are designed to ride on a film of oil between the rollers and the races, thus preventing metal-to-metal contact. If the oil viscosity is too thin the oil gets pushed out, allowing metal-to-metal contact. If the oil is too thick the roller will skid rather than turn, resulting in metal-to-metal contact. The same is true when the particles in the oil are too big and get sandwiched between the rollers and race, which results in particle-to-steel contact and causes pitting and eventually premature bearing failure. The harder the particle, the more severe the damage.

What is my oil change interval if I use a filtration system every 500 hours?

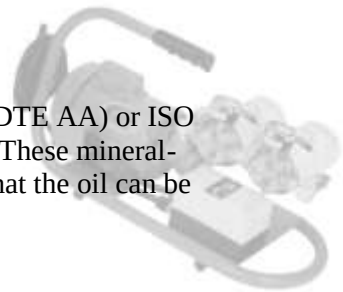
Mobile SHC 632 is a high quality synthetic oil that can be used up to 2,500 hours between change outs. Equivalent synthetic oils can be used, but must be tested periodically for their viscosity range, total acid number (TAN), the additive package condition and overall parts per million levels. <u>If any of these are questionable, change the oil.</u> Our testing shows we extended oil life conservatively to 2-3 times the normal 500 hour limit. Your results may vary.

How often should I filter with the coarse water-absorbing element 141851?

Wash screens may require more frequent use of the 141851 water-absorbing element than dry screen or feeder applications. If oil samples show traces of water at 500-hour intervals, then it is necessary to filter at all times with the 141851 water-absorbing element in place of the 141849

coarse filter element. Dry screens and feeders may still require the water-absorbing element due to the condensation forming in the mechanism tube. Deister recommends that, after 1500 hours, the oil be filtered through the water-absorbing element. If ongoing sampling determines that moisture is never present during the 2500-hour operating life of the oil, then it is not necessary to use the water-absorbing element.

Should I use synthetic or mineral based oil?



In the past, Deister has recommend, depending on the season, an ISO 320 (Mobil DTE AA) or ISO 220 grade (Mobile DTE BB) or equivalent mineral oil in most Deister equipment. These mineral-based oils work well, and are cost efficient in a 500-hour change out cycle. Now that the oil can be

filtered and reused, synthetics become a better alternative. Due to the molecular make-up, synthetics may run 10-20 degrees cooler than most mineral based oils. Synthetics have a better viscosity-to-temperature ratio, thus allowing the recommended ISO 320 grade oil to be used year round. This eliminates seasonal oil grade change outs and cuts back on the oil inventory. Due to the better viscosity ranges, the synthetic oil will be thinner during the cool months for easier start-ups and the oil will be thicker during the warmer months providing a better film protection between the bearing races and rollers. The synthetic oils also have a significantly lower pour point and will flow faster for those winter oil changes.

WARRANTY: One year limited warranty from date of shipment on motor and pump. Attempting to use filter elements that are not supplied by Deister Machine Company will immediately void any and all warranties on the System Saver and the vibrating mechanism. Consult Deister for additional details.

REPLACEMENT PARTS: For any replacement parts consult the Deister Parts & Service Department at (260) 424-0393.

TROUBLE SHOOTING:

Problem	**Things to Check**
Unit will not pump	Does the unit have power? Are all of the connections correct and tight? (Refer to set-up in manual) Are the hoses kinked? Are there restrictions in the oil lines or oil pathways? Is oil too cold to pump?
Gauge is reading in the red area	Is oil cold and causing the unit to bypass? Does the filter need to be changed? If gauge remains in the red even when the unit is turned off, the gauge is damaged and may need to be replaced.