KNOWLEDGE BASE

Article Type: Instructions

Lube Pump and Filter Inspection

Description:

Instructions on "How to" properly clean oil tank reservoir, replace oil and oil filters, and procedure to inspect (removed) oil filters. Lube Pump Vibration system used on: 22HF, 16HF, 1600 block machines, and 30, 40 50 and 60 CPM style machines.

WARNING

Never work on, clean or service this unit, control panel or any machine or open or remove any protective cover, guard, grate, door, or maintenance panel until the power or energy sources has been turned off, locked out / tagged out, and all moving parts have come to a complete stop and or blocked to prevent movement. Machinery is dangerous – avoid personal injury and or death by following manufacture, Local, and OHSA safety procedures. Contact Columbia Machine for safety decals, guards, horns and beacons.

LUBE PUMP AND FILTER INSPECTION INSTRUCTIONS

Proper steps to clean oil tank reservoir, replace oil and oil filters, and procedure to inspect (removed) oil filters.

Servicing the lube pump system.

1. Lock-out and tag-out all machine systems.

2. Clean off entire pump unit with compressed air.

3. Drain old oil from the reservoir.

4. Remove all bolts holding top/lid to reservoir.

5. With bolts removed, you will find silicone sealing the top/lid.
   It will be necessary to use a hammer and chisel between reservoir and top/lid to break seal. Once the seal starts to give-way use a long knife or hacksaw blade to cut the silicone as the top/lid is pried off.

6. Once the top/lid is free from the reservoir, move the reservoir to a suitable place for cleaning. The reservoir needs to be clean of all foreign materials such as: sand, dust, or brass. If you see brass, this is a sign of bearing cage wear. Dust and sand can come in through the reservoir breather filter, bad boots, or loose hoses.

Servicing the lube pump system (continued).

7. When the reservoir is clean place it back into its original location and cover with a clean towel or tape on butcher paper.

8. Remove suction strainer filter from bottom side of top/lid and discard.

9. Using a spare hose with ½" pipe fitting on one end, screw it into the suction tube where the suction strainer was removed. This hose should be 24" or longer.

10. At the machine, disconnect the pressure and suction lines. Using a union fitting size #12, reduce one end by using a #6 to #12 reducer and join the different hose sizes together. Joining these hoses together will flush out any debris from the existing hoses, heat exchanger, and pumps on the top/lid.

11. Use two (2) CLEAN five (5) gallon buckets, one empty and the other filled 2/3 with new filtered oil, place the empty bucket under the return tube. This is a 3/8" pipe (extending from bottom of top/lid) to catch the returning oil. Now place the temporary suction hose in the bucket filled with oil. Begin flushing the system.

Servicing the lube pump system (continued)

12. With disconnects locked-out on all other pumps, push pump start button, this will allow power ONLY to the lube pump to start flushing. With pump running, the oil will be sucked up and pushed through the lube system flushing out any loose materials. Repeat this process twice; if on the second time the oil is still dirty replace the filters and get new clean oil and repeat pumping until clean oil appears in return bucket.

13. Remove the temporary hose from suction tube and install new suction strainer. Don’t reuse old filters or oils.

14. Remove the fitting joining the suction and pressure hoses together and reconnect them back to original location on machine and tighten.

15. Use RTV silicone (gasket maker) to seal the top/lid to the reservoir, put a bead around the top lip of the reservoir.

Servicing the lube pump system (continued)

16. Place lid onto reservoir, cover stand-offs, reinstall and tighten all bolts.

17. Change all filters: (1) breather, (1) return, (1) pressure - located on lube pump, and (2) breather – located on block machine.

18. Inspect vibrator boots for holes, cracks, loose springs, and clamps.
    Inspect the injectors of the vibrator for clogs before starting pump.

19. Fill reservoir with clean filtered AW46 oil or equivalent.

20. When starting pump, check pressure, it should be set at 50 PSI with cold oil.

21. Allow the pump to run for about 3-5 minutes before putting machine into production.

22. Verify oil level; examine for leaks, if everything checks out the machine is ready for production.

SPIN-ON FILTER INSPECTION INSTRUCTIONS

1. Before removing filter, mark them for location.
2. Remove spin on filters from filter housing mount.
3. Place the filter in the cutting tool to cut off top (as shown).

SPIN-ON FILTER INSPECTION INSTRUCTIONS (continued)

3. Once the top is cut remove it and remove filter element (as shown below).

4. Inspect the filter can inside for foreign materials. Inspect closer if foreign materials are found. Recycle filter can when done.

5. Inspect the removed filter element for foreign materials like brass, metal or plastic. If found, the vibrators or pump should be completely inspected for internal damage, however, you might find a small amount of brass associated with normal wear. This type of inspection will help prolong the life of your vibration system.

VIBRATOR LUBE PUMP SYSTEM SERVICE AND PUMP USING SPIN-ON FILTERS

The vibrator lube pump is a vital part of the vibration system. When working correctly the lube pump is cleaning (filtering) and cooling the oil being supplied to the vibrators. Oil returning to the reservoir is also filtered before entering the reservoir.

When should the lube pump system be serviced?

When the machine is operated 24 hours, five (5) or more days a week the lube system needs to have a complete servicing every six (6) months. Plants that are running 8-12 hours, five (5) days a week will need to be serviced once a year.

Parts required for servicing

FLOOR LEVEL MACHINES *require; (6) FILTERS:* (2) Vibrator breather, (1) Pressure, (1) Return - *(part # 301127 Spin-on). (1) Suction strainer - (in reservoir, part # 301075)*

C.P.M SERIES MACHINES require; (7 FILTERS): (3) breather, (1) pressure, (3) return - *(part # 301127 Spin-on),* (1) Suction strainer - (in reservoir - p*art # 301078)*

BOTH PUMP TYPES (listed above) use the same breather filter/assembly: Top of tank/lid (Filter and Strainer - p*art # 362319) or* (Filter only - *part # 362839)*