



## Lubrimist<sup>®</sup> Oil Mist System Inspection Checklist

### I. Routine Checks At Mist Generator

Whenever equipment is provided with pure (dry sump) oil mist lubrication, it is important to insure constant, uninterrupted operation of the oil mist lubrication systems. If a malfunction occurs, early detection and corrections are important. The daily operation of the oil mist system for the process operator has been reduced to checks of the oil mist generator and lubricated equipment and to emergency procedures in the event of a major malfunction. Except for emergencies, routine adjustment of the oil mist generator is not required. Each oil mist system, once installed and balanced, supplies a constant amount of oil mist to a number of lubrication points. Any change in the oil mist pressure or in the regulated air pressure (load pressure) from the initial set points is an indication that some component has failed. Minor adjustments that might offset the failure symptoms may lead to more serious problems before detection and corrections can be made. Keeping system adjustments to a minimum is intended to make the oil mist systems more reliable and to insure proper operation. It is not meant to discourage the natural troubleshooting initiative of the process technician. Operators should be familiar with the oil mist generator's "Operating Guide", knowing how to read gauge values and alarm settings before attempting these procedures.

#### 1) Daily Oil Mist Generator Checks

- a) Check mist header pressure setting @ 20 inches WC / 50 mBAR.
- b) Check low mist pressure alarm setting (Factory setting: 10 inches WC / 25 mBAR).
- c) Check high mist pressure alarm setting (Factory setting: 30 inches WC / 75 mBAR).

Low pressure may indicate a leak in system, reclassifiers removed from the system or broken lines.

High pressure may indicate plugged mist reclassifiers.

Surging pressure may indicate an oil pocket in the distribution header or inlet air pressure not constant.

- d) Check regulated air pressure and the supply air pressure. This regulated air pressure is preset and should not be adjusted to regulate mist header pressure.

Generator will not operate properly below 10 PSIG / 0.7 BAR regulated air pressure.

Supply air pressure should be approximately 20 PSIG / 1.5 BAR above the regulated air pressure.

- e) Check for proper air temperature setting (Factory setting is 120° F / 49° C).
- f) Check oil level in the main generator reservoir.
- g) Check general unit condition for leaks, broken gauges, etc. and repair as needed.

#### 2) Weekly Checks

- a) Check all control and alarm set points.
- b) Clean inside of generator console and correct any leaks.

#### 3) Maintenance Checks

The following maintenance procedures should be performed at least on a semi-annual basis to help insure proper system operation. If the oil mist generator is installed in an



extremely dusty or humid environment or the quality of compressed air supply is a concern, the maintenance schedule should be accelerated.

- a) Change oil filter element.
- b) Inspect and clean the oil suction screen.
- c) Replace air filter element.
- d) Inspect and thoroughly clean the interior of the oil mist generator reservoirs.
- e) Check and verify operation of the high and low set points of all alarms.
- f) Check the operation of the remote alarm circuit if one has been installed.
- g) Make an overall assessment of the oil mist generator and mist distribution system and correct obvious deficiencies and problems.

## **II. Routine Checks At Equipment Slab**

- 1) Check proper reclassifier type/size servicing each bearing.
- 2) Check for plugged reclassifiers. Remove and clean if needed.
- 3) Check and replace broken or cracked sight glass on mist manifold.
- 4) Drain coalesced oil from mist manifold. Do not allow oil to rise and block the flow of mist to reclassifiers. Depress the drain button on bottom of mist manifold to drain the oil to the collection container.
- 5) Check supply tubing (1/4OD) condition for kinks, sags, or broken. Replace tubing as needed.
- 6) Check vent/drain tubing (3/8OD) condition for kinks, sags, or broken. Replace tubing as needed.
- 7) Check and replace broken or cracked vent collection assembly.
- 8) Check and replace broken or cracked purge mist oil level sight assembly.
- 9) Use Mobil Oil Collection System (MOCS) cart to empty oil from the collection container once a month or as needed.
- 10) Check and repair oil leaks surrounding collection container and equipment slab.

## **III. Routine Checks At Main Header/Drop Piping**

- 1) Check for low spots or pockets that can collect oil and obstruct mist flow. Remove traps in header/drop piping. Mist pipe blockages will result in a surging mist pressure.
- 2) Adjust bracings and pipe supports as needed.
- 3) Ensure minimum slope (1:240) is maintained in the header piping system. Slope ratio is equivalent to 25 mm every 6000 mm or 1 inch every 20 ft. Ensure slope direction is toward mist generator so that coalesced oil in the header piping system is able to drain back continuously.
- 4) Check that valves are not installed in oil mist supply system.
- 5) Ensure branch headers are connected to top of main header so that coalesced oil in the branch headers is able to drain back continuously.
- 6) Ensure equipment drop piping is sloped toward the main header.



#### **IV. Routine Checks At Auto Drain Leg**

- 1) Check and replace broken or cracked sight glass on drain leg manifold.
- 2) Verify drain leg manifold and drain line are not plugged. There should not be any oil collected in the return manifold.
- 3) Verify pump operation by raising the pneumatic level switch (float) manually.
- 4) Oil level should not be visible at the top of oil level gauge. Ensure block valves are open and there is no blockage in the oil return line.
- 5) Check and replace air filter element once every 6 months.

#### **V. Recommended Wet-Out Period Prior To Equipment Start-Up**

- 1) The oil mist generator is to operate at least 24 hours prior to final tubing connections to the equipment.
- 2) In order to avoid bearing temperature rise and possibly pre-mature bearing failure, one of the following steps must be taken prior to equipment start-up:
  - a) When new bearings are installed in a piece of equipment using pure mist application method, the bearings must be pre-lubed with oil for immediate or prior to equipment start-up.
  - b) Alternatively, oil mist must be properly applied to the equipment for at least 12 hours prior equipment start-up.

**NOTE:** Equipment can continue to operate without oil mist for a maximum of four (4) hours with minimal impact on bearing temperature, provided that the equipment has been lubricated by oil mist for a period of time.

#### **VI. Steps Taken During Equipment Overhaul**

- 1) Disconnect supply and drain tubing from equipment. Plug tubing lines with caps so mist would not vent to atmosphere. Will need to decrease the regulated air pressure at the mist generator in order to maintain 20 inches WC or 50 mBar.
- 2) Do not remove reclassifiers from mist manifold.
- 3) Once equipment is ready for oil mist again, ensure the correct supply line is connected back to each bearing inlet. Check to make sure the correct reclassifier type/size is servicing the corresponding bearing. Ensure tubing is sloped properly. Follow recommendation on Wet-Out period prior to equipment start-up.
- 4) If the entire process unit is to be shut down, it is recommended to leave the oil mist generator continues to operate so that the equipment can be preserved using oil mist.



## VII. Oil Collection Frequency

- The estimated consumption rate by the oil mist generators is approx. 1-2 gallons (3.8-7.6 liter) a day.
- Collection container should be drained once a month or as needed when it is full.
- Mobile oil collection cart should be drained after each usage.