
Air Compressor Tank Condensate Disposal (Oily) - Preventative Maintenance SOP

1.0 Maintenance Objective & Frequency

The objective of this procedure is to safely and environmentally compliantly remove accumulated oily condensate from the air compressor receiver tank and any downstream filtration or drying equipment. Regular disposal prevents water carryover into the compressed air system, reduces corrosion, and ensures compliance with local wastewater regulations. This PM is to be performed daily or at the end of each shift, depending on ambient humidity and compressor runtime.

2.0 Lockout/Tagout (LOTO) & Safety

- **Electrical Isolation:** Disconnect and lock out the main disconnect switch for the air compressor unit. Verify zero energy state with a voltmeter.
- **Pneumatic Isolation:** Close the isolation valve between the compressor and the receiver tank. Bleed any residual pressure from the tank using the manual drain valve until the pressure gauge reads 0 psi.
- **Mandatory PPE:** Safety glasses, chemical-resistant gloves (nitrile), steel-toed boots, and a face shield when handling condensate.
- **Environmental Safety:** Ensure the collection container is properly labeled and stored in a secondary containment bin to prevent spills.

3.0 Required Tools, Parts & Lubricants

- Approved oily water collection container (e.g., 20L HDPE drum with lid)
- Oily water separator or filter (if equipped) – replacement cartridge (if applicable)
- Manual drain valve key or T-handle (if applicable)
- Absorbent pads or spill kit (for any drips)
- Permanent marker and label for container (date, source, contents)
- Disposable gloves (nitrile)
- Shop rags or paper towels

4.0 Step-by-Step Maintenance Procedure

1. Perform full LOTO as described in Section 2.0. Verify the tank pressure gauge reads 0 psi before proceeding.
2. Position the approved collection container directly under the tank drain valve. Place absorbent pads beneath the valve to catch any drips.
3. Slowly open the manual drain valve (or actuate the automatic drain valve manually if equipped) to allow condensate to flow into the container. Do not open fully – control the flow to avoid splashing.
4. Allow the condensate to drain until a steady stream of air is observed, indicating the tank is empty of liquid. Close the drain valve securely.

5. If the system includes an oily water separator, inspect the separator for saturation. If the separator is full or the filter element is discolored, replace the cartridge per OEM instructions.
6. Wipe down the drain valve and surrounding area with a shop rag to remove any residual oil or moisture.
7. Label the collection container with the date, source (e.g., Compressor #1), and contents (Oily Water Condensate). Seal the lid tightly.
8. Transport the sealed container to the designated hazardous waste storage area. Record the volume disposed in the PM log or CMMS.
9. If the automatic drain valve is equipped with a timer or level sensor, verify its operation by observing one full cycle after re-pressurization.
10. Remove LOTO tags and locks. Restore power to the compressor and allow it to build pressure to normal operating range.

5.0 Verification & Return to Service

1. Monitor the compressor for one full cycle to ensure the automatic drain valve (if equipped) cycles correctly and no leaks are present at the drain valve.
2. Check the tank pressure gauge to confirm the system reaches and maintains normal operating pressure (typically 100-125 psi).
3. Inspect the area for any signs of condensate leakage or oil sheen on the floor. Clean up any spills immediately.
4. Sign off on the PM work order in ServiceGrid, noting the volume of condensate disposed and any observations (e.g., separator condition, drain valve operation).
5. If the condensate volume exceeds normal levels, flag the compressor for a more detailed inspection (e.g., check for excessive oil carryover, worn piston rings, or failed separator).

Regulatory Disclaimer: This document is a generic maintenance template provided for educational and informational purposes only. It does not constitute professional engineering or reliability advice. The end-user assumes all liability for validating all step sequences, torque specs, and LOTO protocols against specific machinery OEM manuals before deployment to a live production floor.