

Standard Operation Procedure:

Mixing COAT Oil Reference Drums

Purpose: Mixing of the drum oil ensures the oil remains homogeneous and doesn't allow the user to sample oil from different zones in the drum.

- 1) Supplies: Dayton Open Drum Mixer, Model 32V122; Pressure regulator; Air hose; Pressure/Flow Control Valve. *The Dayton Mixer models have been found to be suitable and the Model number listed is merely a recommendation.*
- 2) For Model 32V122, one blade must be bent in order to fit the 3" impeller into the 2" bung on top of the drum. *Other blade models are available which are hinged.*
- 3) For Model 32V122, the supplied 35" shaft length will be too long for the 30-gallon drum, so a riser or mounting bracket will need to be built to suspend the Air Motor Mixer over the 2" bung. As an alternative, the shaft could be shorted to fit the smaller drum(s). *Any replacement shafts should be stainless steel.*
- 4) Thoroughly wipe the shaft and impeller prior to installing them into the drum to mitigate contamination. Other cleaning may be necessary on inspection. Once the mixing shaft and impeller are set in the oil and the rod/impeller will not impact the bottom or sidewall of the drum, connect the air motor to the Flow control valve. Then connect the pressure regulator and set it to **50 psi**.
- 5) Begin mixing the oil and set a timer for **20 minutes**. The Pressure/Flow control valve can be used to slow or speed up the mixer paddle. Care should be taken to ensure the mixer blade does not vibrate or shift during mixing and strike the side wall of the drum or bung threads.
- 6) After 20 minutes has elapsed, remove the mixer from the drum. Mixing of the drum only needs to be done once per day for the Reference Drum providing the two flushes and final charged are all poured in the same day.
- 7) Pull/Drain/Transfer the amount from the drum needed for the first flush. Run the flush procedure in D8047. Repeat for the second flush.
- 8) Pull/Drain/Transfer the amount needed for the Final Test Charge.
- 9) The oil sample for the New Oil analyses will be pulled from the remainder of the drum volume and submitted to the lab for Oil Analyses as outlined in D8047.
- 10) The CAT oil aeration test may be started the same day, the next day, or within the week of performing the Oil Density Calibration(s). The lab has full discretion for the formal start, but the engine's final test charge should have been performed the same day as mixing occurred.

