DyneSystems, Inc.
Midwest & Dynamatic Dynamometers

PRESSURIZED RE-CIRCULATING OIL SYSTEM

OPERATING INSTRUCTIONS

Pressurized re-circulating oil systems are primarily used on high speed dynamometer installations.

NOTE: *The system is designed for a specific lubricant viscosity. Changing lubricants will affect the amount of oil fed to each bearing. Do NOT mix brands or types of lubricants unless the manufacturer guarantees compatibility.*

Initial Startup

The oil reservoir is generally filled at the factory, but if needed, fill reservoir with a high grade mineral oil, free of water, sediment, resin, and other substances not derived from petroleum products. The oil should be resistant to rust, oxidation, gumming, and evaporation. Dyne Systems provides and recommends Exxon Nuto H 32 with all pressurized re-circulating oil systems.

Run the re-circulating oil system for 15 minutes prior to initial start-up of dynamometer.

Check that oil is flowing at the bearings.

Normal Operation

High speed and some special dynamometers have a pressurized re-circulating oil system. Fill reservoir with a high grade mineral oil, free of water, sediment, resin, and other substances not derived from petroleum products. The oil should be resistant to rust, oxidation, gumming, and evaporation. Refer to Section 7 – Lubrication.

NOTE: *The system is designed for a specific lubricant viscosity. Changing lubricants will affect the amount of oil fed to each bearing.*

By-Pass Adjustment

When the system is in operation, observe the oil pressure gauge mounted in the system. The operating pressure should be 10–15 PSI. If pressure does not fall within this range adjust the by-pass valve adjusting screw located on top of the lubricator. Turn screw counterclockwise to lower pressure, or clockwise to increase the pressure. The oil will be visible in the sight glass. The frequency should be in the range of 20 to 30 drips per minute.

Low Pressure Oil Switch

Failure to follow these guidelines and procedures invalidates the DS warranty.

A low pressure cut-off switch, included in the system and is set to trip on falling pressure at 6-8 PSI. Check switch operation to determine if the contacts are wired into control circuit to

shut down the prime mover if oil pressure fails. Check the actual contact used to shut down the prime mover.

1. Once the contact is monitored, unscrew the lubricator by-pass valve adjusting screw until the pressure drops to 6 PSI.

2. The contact should open. If not, adjust the pressure switch by turning slotted adjusting screw until it trips.

3. Increase pressure and repeat test until the contact observed trips at falling pressure of 6-8 PSI.

4. Reset the operating pressure to 10-15 PSI range described under “By-Pass Adjustment” paragraph above.

MAINTENANCE SCHEDULE GUIDELINES

The following are only guidelines, if the dynamometer is used extensively or in a harsh environment, the maintenance schedule will need to be adjusted accordingly.

DAILY

Check Oil Level

1. Oil should be between ½ and ¾ full. Do **NOT** over fill.

2. Remove oil reservoir cap.

3. Fill to appropriate level, using Exxon Nuto H 32 lubrication oil or other similar oil.

4. Replace oil reservoir cap.

MONTHLY

Check the system for oil leaks, loose or broken tubing, worn hoses, loose fittings and connections. Repair as required.

EVERY SIX MONTHS

Filter Replacement

An inlet filter provides primary protection for the lubricating system. Inspect the filter, if not clean replace it. To replace the filter, remove the snap ring which releases the clamp ring, filter disc ring and screens. Insert new screens, coarse screen first and then filter disc ring. Reassemble clamp and snap rings.

ANNUAL

Change Oil

Drain oil and replace with new, using Exxon Nuto H 32 lubrication oil or other similar oil.