

# TECHNICAL BULLETIN

**TB NO. 1046**

**Rev. 0**

**Subject: Procedures for Shop Testing Overhauls**

**Problem: Proper break-in of freshly overhauled units**

**A. Installation**

The engine shall be aligned and connected to the test dynamometer. All required service lines shall be connected. Hydrostatically test the water system. Prime and fill the lubrication system with filtered lubricating oil.

**B. Break-in and Test**

1. Start engine and set idle speed. Run no load for 15 to 30 minutes. Check ignition timing with timing light. Inspect for leaks and repair as required. Observe temperatures and pressures for abnormal performance and investigate if required.
2. Run idle speed @  $\frac{1}{2}$  torque for 1 hour – log data.
3. Run  $\frac{3}{4}$  speed @  $\frac{3}{4}$  torque for 1 hour – log data.
4. Run full speed @ full torque for 2 hours. Adjust carburetor / linkage as required – log data.
5. Run full speed @  $\frac{3}{4}$  torque for  $\frac{1}{2}$  to 1 hour (turbocharged unit only) – log data.
6. Run full speed @  $\frac{1}{2}$  torque for  $\frac{1}{2}$  to 1 hour (turbocharged unit only) – log data.
7. Run 600 RPM @  $\frac{1}{2}$  torque for  $\frac{1}{2}$  to 1 hour (turbocharged unit only)– log data.
8. Run 600 RPM @ full torque for  $\frac{1}{2}$  to 1 hour (turbocharged unit only)– log data.
9. Set governor stops and safety devices.
10. Shut down.

**A. Mechanical Inspection**

1. Retorque rocker stanchion.
2. Reset valve clearance.
3. Check drive chain tension.
4. Remove auxiliary lube oil strainers.

5. Inspect liners with borescope.
6. Complete any repairs as necessary.
7. Restart engine and make final check for leaks.
8. Shut down – drain oil filters and sump – drain water system and intercooler.
9. Pin all control linkage.

A. Data to be logged.

1. Intake air temp. - °F
2. Brake load – Lbs.
3. Gas supply pressure – in. hg.
4. Gas header pressure – in. hg. (turbocharged unit)
5. Gas regulator pressure – in. H<sub>2</sub>O (naturally aspirated unit)
6. Exhaust duct temp. - °F (turbocharged unit)
7. Lube oil pressure – psi
8. Lube oil temp. out of engine - °F
9. Water temp. out of engine - °F
10. Intake manifold temp. - °F (turbocharged unit)
11. Air and gas quadrant readings – Deg. (turbocharged unit)
12. crankcase vacuum – in. H<sub>2</sub>O
13. Barometric pressure – in. hg.
14. Engine speed – RPM
15. Gas supply temp. - °F
16. Final exhaust temp - °F
17. Cylinder exhaust temps. - °F (turbocharged unit)
18. Lube oil temp. into engine - °F
19. Water temp. into engine - °F
20. Intake manifold pressure – in. hg. (turbocharged unit)
21. Intake manifold vacuum – in. hg. (naturally aspirated unit)
22. Fuel consumption will be measured at rated speed and load.

If you need additional copies, have any questions or require additional information, please contact **EnDyn's** Technical Service Department or your local **PowerParts**® Distributor or **EnDyn** Field Sales Representative.

04/2006

Technical Service Dept.  
300 West First  
Alice, Texas 78332 USA  
361.668.8311  
800.723.6396  
fax 361.668.3906