

PHOENIXENGINE.COM® PHOENIX ENGINE REBUILDERS®

21632 N. 7th Ave, Suite 1, Phoenix, AZ 85027 (602) 866-8044

RECOMMENDED BREAK-IN PROCEDURES FOR CRATE ENGINES (SIDE A)

(NOTE: This is only if Fast Track was NOT DONE!)

**PROTECT THE INVESTMENT YOU HAVE IN YOUR ENGINE!
TAKE THE TIME TO READ AND FOLLOW THESE RECOMMENDATIONS,
OR ANY WARRANTY WILL BE VOIDED.**

BEFORE STARTING THE ENGINE FOR THE FIRST TIME:

Before starting engine for the first time, be sure it is pressure lubricated, which means to *prime the oil pump*. THEN YOU MUST turn the engine over with the starter but without spark plugs so there is NO LOAD on the new engine bearings until you get oil pressure. You must also install the distributor to have oil pressure because this will oil the hydraulic lifters to set preload and oil the entire lower end and top end so that when you start the engine normally there will be no dry areas. RUN starter 5 to 10 seconds if needed. Oil pressure will come up. **Do this 1 to 2 times ONLY. Reason:** We do not want to wipe off the cam lube from the cam; this will cause cam failure.

1. Any vehicle with electric fuel pump, injectors, or direct injection: the electric relays and/or fuses **MUST BE DISCONNECTED** so that as you are priming the engine you will not flood the engine with fuel. Flooding will cause severe damage to the cylinders because gas will wash out the oil and break-in lubricant that we had put in the cylinders to protect it during startup. These relays/fuses must be disconnected, no exceptions. If you have any questions, CALL US.
2. When you start your engine, the engine must run at a fast idle. Minimum is 1,800 rpm, maximum is 2,000 rpm. Check oil level before starting, and coolant level before starting. We highly recommend that there be a minimum of two people involved when starting a new engine. That way someone is sitting in the driver's seat to watch oil pressure and water temperature. The engine must be run for 30 minutes, even though the coolant may rise to operating temperature. If during the break-in period the coolant overflows or "boils over," stop the engine and allow the engine to cool down for 45 minutes. NO EXCEPTIONS! Then you may add more coolant and water and restart to continue the break-in process.
3. If break-in procedure for 30 minutes is successful, the next step is to shut the engine down and let it sit for one hour. This allows all the new engine parts to cool down and break in properly. NO EXCEPTIONS.
4. Re-start the engine. Adjust carburetor and ignition timing. You **MUST** jet carburetor. If your engine is throttle-body injected or direct injected, then you **MUST** set your base timing as prescribed in your owner's manual. If you do not have an owner's manual available, you need to purchase one to know how to set base timing so that your engine will run at the proper advancement with your on-board computer.
5. Stop the engine and re-torque the manifold. If necessary, re-torque the heads to engine manufacturer's specifications in proper sequence. Re-adjust hydraulic lifters if needed. NOTE: If you have a solid cam then you must re-adjust the rockers to the proper spec as prescribed in your packet.
6. (This paragraph is for **Computer Engines ONLY**.) If any codes come up after your break-in process, refer to your manual or take your vehicle to a qualified mechanic to read the codes, to eliminate any bad accessory parts concerning your computer-driven engine that must be replaced (for example; oxygen sensors, coolant temperature sensors, etc.)

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Start engine again and make a test run on the road at 30 M.P.H. in "drive" range or select proper gears for standard transmission. After reaching 30 M.P.H., open the throttle and accelerate to 50 M.P.H. and then decelerate by removing your foot from the accelerator pedal. Repeat this procedure at least 4 or 5 times. **DO NOT RACE THE ENGINE.**

8. NOTE: Applying light loads to the engine for short periods of time causes increased ring pressure against the cylinder walls and helps to seat the rings. This is especially important because you are "Breaking In" the engine with heavy duty oils. The rapid deceleration increases vacuum and gives extra lubrication to the pistons and ring assemblies, and also helps lubricate the whole engine.

9. Please note you **MUST** use Joe Gibbs Break In Oil for the first 500 miles in order to maintain your warranty. A copy of your receipts must be emailed to Phoenix Engine: phxengine@aol.com as proof of purchase. **NO EXCEPTIONS!!**

***** NOTE: YOU MUST USE CONVENTIONAL OIL. NO SYNTHETICS. NO BLENDS.**

10. After 500 miles of service, the oil must be changed. The intake manifold, hose clamps, heater hoses, and the whole cooling system needs to be checked for leaks. If you have a high performance application, then you must re-torque cylinder heads to proper cam, then you must re-adjust the rockers. We suggest that this be done again at the 2,500 or 3,000 mile mark maximum. We realize this means extra work, but it assures long and satisfactory engine performance. This is especially true on any high performance application.

11. Please refer to the Warranty Contract for all other questions.

ENGINE NUMBER _____

CUSTOMER NAME/SIGNATURE:

DATE: _____

ENGINE INSTALLER NAME/SIGNATURE:

DATE: _____