



Beck Racing Engines would like to thank you for your purchase of our turn-key, dyno-proven engine package. Our craftsmen have assembled this engine to our strict guidelines and specifications to provide many miles of enjoyable driving.

We both share a common interest in the success and longevity of your engine and would like to share these helpful hints with you to make the installation easier.

Please contact us with any questions you may have during the installation process. Remember, there are no dumb questions.

HELPFUL HINTS FROM BECK RACING ENGINES

Replace all hoses and clamps.

Replace radiator with largest available or have your current radiator rodded out and inspected by a competent radiator shop.

Replace radiator cap with a higher pressure unit.

Replace water pump with a Howard Stewart Hi-Flo Pump.

Replace all belts.

Check or replace motor mounts with solid or urethane type.

Check all pulleys for straightness, wear and alignment.

DO NOT USE UNDER DRIVE UNITS. BRE recommends the use of a March Billet Aluminum Bracket and Pulley Kit Std.

Ratio Check all wiring for fraying and cracks.

Check all brackets for cracks. BRE recommends the use of a March Billet Aluminum Bracket and Pulley Kit Std. Ratio

Clean all external oil lines and coolers. If previous engine had a bearing failure the oil cooler **MUST BE REPLACED!!!**

If the vehicle has not run for more than three (3) months, the gas tank should be drained and cleaned out and all gas lines should be flushed out.

Gas will turn to varnish and gum up all your new parts.

The BRE fuel system kit is highly RECOMMENDED!!

Install harmonic balancer bolt using red Loctite.

PRE-INSTALLATION/PRE-LUBE INSTRUCTIONS

If using a used flywheel or flexplate check for tooth wear and cracks. Flywheels are critical on hi-performance engines. Make sure the bolts are not too long and torqued to proper specs using red Loctite.

When using an automatic transmission, be sure you install the torque converter correctly. When mounting the transmission to engine you should have at least 1/2 inch between the converter and flexplate. Once the transmission is bolted to the engine, slide the converter forward and bolt it to the flexplate. Make sure that any new or used flexplates, flywheels and pressure plates are balanced.

Install new hi-performance oil filter and fill with oil before installing. This will decrease priming times.

Fill engine with proper amount of oil and check with proper dipstick and tube. Recommended oil is Valvoline 20W/50 Racing Oil. **DO NOT USE ADDITIVES OR SYNTHETIC OILS!**

Remove spark plugs so as not to damage them during the installation of the engine.

Dry starts are the leading cause of premature engine failure. We recommend priming the engine by actually spinning the oil pump with a proper priming tool and drill motor while slowly turning the engine with a wrench at the front of pulley or the flywheel. Continue with this procedure until oil pressure is indicated on the oil pressure gauge and oil is present at all the rocker arms. **Dry starting an engine can cause damage in as little as 20 seconds.** Check for oil leaks at this time.

If unable to pre-oil engine properly and mechanical experience prevents you from removing and reinstalling the distributor properly, then following these procedures can be used to pre-oil the engine.

- a. Remove coil wire and spark plugs, if not already removed.
- b. Keeping an eye on the oil pressure gauge, crank the engine with spark plugs out and ignition disabled for 45 seconds!!

Oil pressure should climb after 10-15 seconds. If there is no oil pressure after 15 seconds stop and check the gauge, fittings, lines, etc.

After adequate oil pressure is attained reinstall spark plugs and coil wire. You are now ready to start and break in your new engine.

INSTALLED BREAK IN INSTRUCTIONS

After installing engine, fill radiator with Distilled water (no antifreeze) and re-check oil level. This eliminates a big mess should any leaks occur during start-up. Do not use additives or synthetic oils.

Fill carburetor with gasoline through vent tubes to ensure a quick start.

Turn on heater and leave radiator cap off until thermostat opens, then seal system. This will help prevent an air lock in the system.

Immediately after starting engine, bring the RPM up to 2000 and check the oil pressure. **Shut off the engine immediately if you have no pressure.** Check the fittings, lines and gauges.

Set total timing at (**ask BRE Tech**) degrees at 3000 RPM, or wherever all mechanical advance is in, with vacuum advance (if equipped) disconnected. Then idle engine at 2000-2500RPMs to break in the camshaft for 30 minutes.

Once the camshaft break in has been completed, bring idle down to approximately 800-1000 RPMs (depending on the model of the engine).

Adjust carburetor, set floats, idle and idle mixture. Jetting may need to be adjusted up or down slightly due to weather, altitude, etc. **Please read carburetor instructions prior to start-up.**

Break in, run normally without holding engine at a steady speed for long periods of time. Loading the engine for short bursts will help seat the rings.

Change oil and filter after 200-300 miles. Cut oil filter apart and inspect for foreign particles.

Be sure to add 50% antifreeze or RedLine Water Wetter (climate permitting) at this time.

Re-tighten header and intake bolts once cooled down.

RECOMMENDED GUIDELINES & MAINTENANCE INTERVALS FOR BECK RACING ENGINES

Water temperature should never exceed 230 degrees in a worst case scenario.

Oil Pressure Parameters - 20 PSI at hot idle, 55-65 PSI at WOT. **Oil temperature gauges are recommended (AutoMeter gauges highly recommended).**

Thermostats should be Hi-flow design, either 160 degree or 180 degree depending on application and climate.

Replacement spark plugs must be of the same heat range and style.

Adjustable vacuum advance should be no more than 10 degrees total. If pinging occurs during part throttle driving, reduce vacuum advance timing not initial or total timing.

During initial break in, check for oil, water, fuel and vacuum leaks.

OIL AND FILTER CHANGE INTERVALS

Street driven vehicles should be changed every 1500-2000 miles.

Race engines should have oil and filter changes every one to two race weekends depending on the number of passes.

Shift points for Beck Racing Engines should not exceed 500RPM past peak horsepower RPM. Rev limiter should be set slightly above shift RPM.

Please do not alter this combination as it has been dyno-proven. Any changes may drastically effect the performance and may void any warranty.

Should you have any questions during or after installation, please call us at 602-477-1700.

Once again, thank you for your purchase of a Beck Racing Engine & Happy Motoring!