

GASKET INSTALLATION TIPS

Care should be taken when installing any gasket since the performance and longevity of your engine depends on having the optimum seal. Below are some installation tips that will help you obtain the best seal on various parts of your engine.

BASIC GUIDELINES

Keep in mind one of the most important requirements of building an engine is to keep everything as clean as possible; this applies to gaskets and gasket mating surfaces also. Every surface a gasket comes in contact with must be free of dirt, water, oil, grease, etc. The surface must also be flat. Warp age should not exceed .0025" in any direction. Take special care to clean the surface of old gasket material that may have stuck to either the part (oil pan, intake manifold, etc.) or the cylinder heads and block. One point often overlooked is keeping the gaskets themselves clean. This is one reason Mr. Gasket skin packages gaskets. The gaskets should not be taken out of the package until you are ready to install them.

HEAD GASKETS

After all gasket mating surfaces have been carefully cleaned, place a straight edge across the cylinder head and engine block gasket surfaces. Flatness should not vary more than .0025". If a variance of more than .0025" is measured, we recommend correcting this situation before installing the head gasket. Re-tap and thoroughly clean all head bolt/stud threaded holes. If existing bolts or studs are being reused, clean threads and lightly lubricate to insure accurate torque readings.

NOTE: *Torque specs will vary with the type of lubricant used.*

- Use fresh 10W30 weight motor oil and follow bolt/stud manufacturer's recommendation.
- Use a thread sealer or silicone on bolt holes that enter into cooling passages.
- Do not use any type of adhesive or sealer on Mr. Gasket/Ultra-Seal® head gaskets. The special coatings used on the gaskets are more than adequate to properly seal all fluid passages and minor surface imperfections.

Applying proper clamp load is one of the most important steps to a successful seal. After installing head gasket and cylinder head, tighten bolts/studs following engine manufacturer's recommended torque sequence. Tighten in at least three equal steps moving the torque wrench in a smooth, even pull, which will yield the most accurate torque readings. The use of Mr. Gasket hardened washers will further reduce friction and increase torque accuracy.

INTAKE GASKETS

Many performance engines have machined surfaces that cause non-parallel alignment. Before assembly, insure head and manifold mounting surfaces are parallel and head ports properly match intake ports. We offer a wide variety of port sizes to match many different port configurations. If necessary, our performance intake gaskets can be easily cut to match most modified cylinder head and intake ports. Inspect original gasket (if available) to determine if: mounting surfaces are parallel; ports are properly matched to head and if manifold is warped.

- Clean all mounting surfaces before installing new gasket.
- Be careful not to damage mounting surface when using a scraper or wire brush.
- Use gasket remover to ease clean-up.
- Cover exposed internal areas (lifter galley and ports) so debris will not get into and damage critical engine components.

IMPORTANT: *If engine is equipped with a valley pan type gasket, do not discard. On most engines, this pan will need to be reused to insure proper oil drain-back to crankcase. Clean valley pan and apply a thin bead of Mr. Gasket #7808 silicone around ports on cylinder head side of valley pan. Place in position on engine and continue to install the Mr. Gasket intake set.*

Use adhesive around water and intake ports on cylinder head side of gasket to insure a tight seal and keep the gasket from moving during manifold installation.

NOTE: On large port applications, the gasket wall between ports is very narrow. Be sure adhesive has cured adequately before installing intake manifold to avoid gasket shift.

WARNING: For long term sealing, do not use any type of copper gasket sealer on intake gaskets. Do NOT use any sealants on o-ringed ports!

END SEAL INSTALLATION (IF APPLICABLE)

Manifold front and rear end seals are supplied with most kits, in many performance applications; the manifold end gap has been reduced due to machine work on block and cylinder heads.

- If light machining has been done, discard the rubber seals (if supplied) and use the cork seals (apply a 1/8" bead of Mr. Gasket #7808 silicone sealer at side rail/seal intersection).
- If gap is smaller than 3/32", discard cork seals and use Mr. Gasket #7808 sealer. Apply a 1/4" bead across block surface then install intake manifold.

Install bolts finger tight. Using a torque wrench, tighten to factory torque specifications. Follow proper tightening sequence. (On most V8 engines, start with center bolts and work outward in an "X" pattern).

EXHAUST GASKETS

A unique feature on many of our exhaust gasket applications is the slotted end holes. They allow you to easily slide the gasket between the cylinder head and header flange after the end bolts have been started. An alternate method on gaskets without the slotted end holes is to use starter studs or Ultra-Seal header studs to temporarily hold the gasket in place. Slide the header flange onto the studs and, if using starter studs, replace with the proper type of header bolts.

CAUTION: Use care not to over-tighten headers as this can warp the flanges causing an exhaust leak. It does not matter which side of the exhaust gasket is placed against the cylinder head or header flange.

NOTE: No gasket sealer is needed with the installation of Mr. Gasket Performance, Ultra-Seal, and CopperSeal, Layered Aluminum or MLS Embossed exhaust gaskets.

VALVE COVER AND OIL PAN GASKETS

If existing valve covers or oil pan are being reused, clean and degrease before installing. Use gasket remover to aid in the removal of old gasket material. Check for warped or bent flanges and straighten as necessary (this is very important to insure a leak-proof seal).

- Clean any oil residue off valve cover or oil pan flange surfaces apply a thin coat of Mr. Gasket #7808 silicone to hold gaskets in place during installation.
- Install mounting bolts and tighten evenly in a crisscross pattern. Use care not to over-tighten as this will cause the flanges to bend.