

To effectively seal this sophisticated engine application, FEL-PRO has included PERMA-DRY® molded rubber gasket(s) in this set.

**ATTACH AND ALIGN GASKET.**

**IMPORTANT:** This molded rubber silicone gasket must be installed DRY without any chemical adhesive.

**INTAKE MANIFOLD GASKET**

**INSTALL END SEALS.** Use nibs to locate seals.

**IMPORTANT:** These end seals must be installed DRY without any chemical adhesive.

**GENERAL INSTRUCTIONS**

**CLEAN MATING SURFACES** of all foreign material. Use a degreaser.

**CLEAN THREADS** of all bolts/studs using a wire brush; all nuts/threaded holes use a bottoming tap.

Determine which bolts extend into the coolant passages. Those entering the coolant passages require a pliable non-hardening sealer on the bolt threads and the underside of the bolt head. Those not entering the coolant passages require oil on the bolt threads and the underside of the bolt head.

Exhaust Assembly: Apply a high temperature anti-seize lubricant to the threadings.

**CHECK ALL CASTINGS** for flatness; straighten, resurface or replace if out of flat conditions exists.

**CYLINDER HEAD AND BLOCK:** refer to OEM manual to determine flatness tolerances and resurfacing limitations.

Attach and align gasket(s) following any directional markings shown on the gasket. If no markings exist, simply install the gasket by matching the gasket to engine deck surface.

**Fiber Faced Gasket(s)** are to be installed dry. **Metal Faced Gasket(s)** require a thin even coat of sealer to be applied to the metal side(s) of the gasket.

**FINAL ASSEMBLY** always requires torquing of fasteners according to OEM specifications. For certain assemblies we have provided specific torquing specifications.

NOTE: CYLINDER HEAD torquing procedures are critical and therefore we recommend to double-check with OEM.

Some procedures may be repeated with additional specific information for your application.

**VALVE STEM SEALS**

**REMOVE SPRING ASSEMBLIES, KEEPERS** and the old valve stem seals.

**REMOVE BURRS (IF ANY) FROM VALVE STEMS.** Use a fine stone or crocus cloth. Clean stems thoroughly to remove all abrasives or dust particles. Lubricate lightly.

**POSITIVE GUIDE SEAL:** Use the plastic installation sleeve(s), included in this set, to prevent damage to the lip of the seal. Trim the plastic sleeve so it extends 1/16" below the keeper groove. Place the sleeve on the stem.

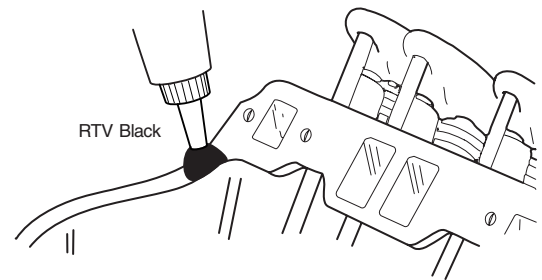
Carefully start valve stem seal over sleeve.

Remove plastic installation sleeve and reuse for installing remaining seals.

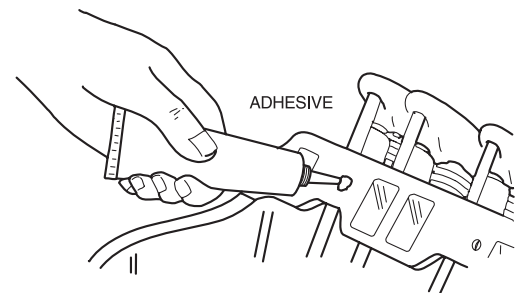
**FOR RUBBER JACKET SEALS:** Push seal down over valve guide until it bottoms.

**FOR SOLID OR METAL JACKET SEALS:** The use of an OEM service tool is recommended. If tool is unavailable, use a deep socket or rigid tube of appropriate diameter. Center tool (or socket) over the shoulder of the seal and tap the seal down over the guide until it bottoms.

**REPLACE VALVE SPRING ASSEMBLIES.** Compress springs just enough to install keepers. **IMPORTANT:** Excessive compression can result in spring retainer damaging valve stem seal. Release spring carefully.



**PRIOR TO INSTALLING INTAKE MANIFOLD GASKET** apply a small dab of silicone sealer, such as RTV Black, to the 4 lower corners where the ends of the block meet with the cylinder heads.



**ATTACH AND ALIGN GASKET(S) TO CYLINDER HEAD(S).** Apply quick-drying adhesive sparingly in several places on the cylinder heads. Mount gasket(s) on cylinder head(s). Allow time for adhesive to set. Test for slippage with light pressure. If gasket moves, allow more time.

**MISCELLANEOUS FLUID SEALING GASKET(S)/SEAL(S)**

**ATTACH AND ALIGN GASKET(S)/SEAL(S):** If supplementary sealer is desired, apply a thin coat of gasket sealer to both sides of gasket(s). However, molded rubber gasket(s) or those with colored Printoseal® sealing beads, install DRY.

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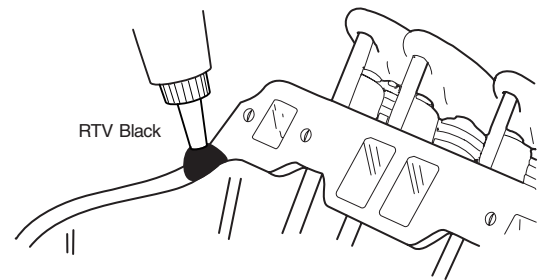
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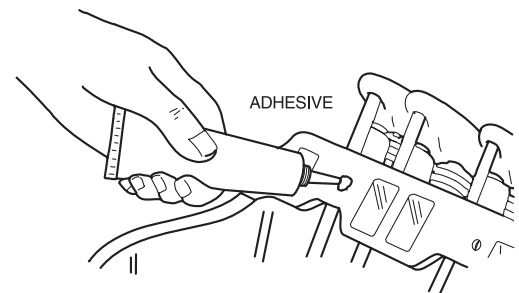
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