FEL-PRO INSTALLATION TIPS

GENERAL INSTRUCTIONS

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

CLEAN THREADS of bolts/studs; for nuts/threaded holes use a bottoming tap.

BOLT PREPARATION: Those **entering** the coolant passages require a pliable non-hardening sealer on the bolt threads and the underside of bolt head. Those **not entering** the coolant passages require oil on the bolt threads and 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 needed. **CYLINDER HEAD AND BLOCK**: Refer to OEM manual to determine flatness tolerances and resurfacing limitations.

FINAL ASSEMBLY: Torque all fasteners according to OEM specifications unless noted. CYLINDER HEAD torquing is critical; we recommend that you confirm with OEM

HEAD GASKET

The head gasket(s) included in this set effectively seal all applications as cataloged.

PRIOR TO INSTALLING GASKET, check block for surface corrosion. If visible corrosions exists resurface or replace.

After cylinder sleever is seated, cylinder liners must protrude .0004" to .0031" above the block.

The height of the adjacent liners must be within .002" of each other.

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.

VALVE STEM SEALS

INSTALL NEW SEALS.

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 enought to install keepers. **IMPORTANT**: Excessive compression can result in spring retainer damaging valve stem seal. Release spring carefully.

VALVE COVER GASKET

Perma-Dry™

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

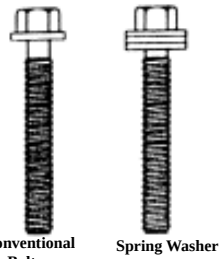
ATTACH AND ALIGN GASKET.

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

INTAKE MANIFOLD GASKET

IMPORTANT:

For 1982 Engines **DO NOT INSTALL** center restrictor.
For 1983 and later engines **INSTALL** center restrictor to the right hand side of engine.

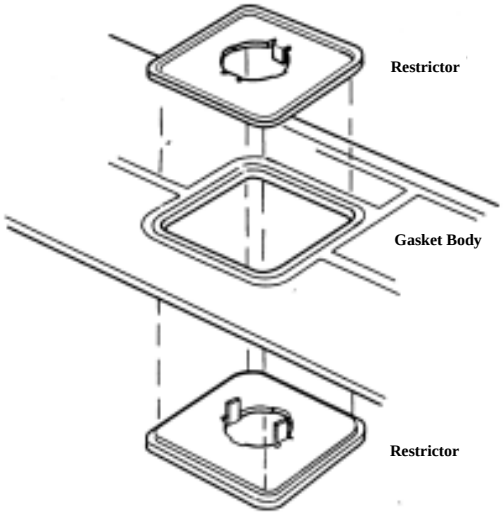


Conventional Bolt **Spring Washer Bolt**

The gasket(s) included in this set will function with manifolds having either "Conventional" or "Spring Washer" style bolts.

Conventional Bolts - Do Not torque beyond 22 ft. lbs.
Spring Washer Bolts - Do Not torque beyond 12 ft. lbs.

RESTRICTED PORT GASKET

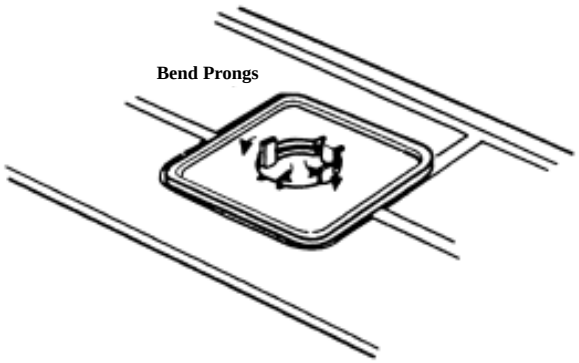


PLACE 1 RESTRICTOR HALF - with prongs up - on the workbench

POSITION THE CENTER PORT OF THE MANIFOLD GASKET over the restrictor half.

PLACE THE OTHER RESTRICTOR HALF OVER the gasket's center port.

-Continued-



BEND THE 2 PRONGS OF THE LOWER RESTRICTOR HALF OUTWARD over the outer edge of the upper restrictor half using a blunt tool. Make certain the prongs are pressed down tightly so that the restrictor assembly is held securely in the gasket body. Turn the gasket over and repeat the prong bending operation with the other restrictor half.

IMPORTANT: When properly installed, the outer edge of the upper and lower restrictor halves will overlap the gasket body around the center port. Failure to do so may cause restrictor to slide out of position.

IMPORTANT: The intake manifold end seals supplied in this set will only function with an intake manifold-to-cylinder block end gap measurement between .120”- .140”.

DETERMINE END SEAL GAP

ATTACH AND ALIGN GASKET(S) TO CYLINDER HEAD(S) by fitting dowel pins of the gaskets into corresponding holes in the heads. **NOW ATTACH INTAKE MANIFOLD TO ENGINE.** Slightly tighten 4 corner bolts.

CHECK END GAP MEASUREMENT: Using a feeler gauge, measure the gap between the manifold and cylinder block at both ends.

REMOVE INTAKE MANIFOLD.

IF PRE-MEASURED END GAP is less than .120” or greater than .140” molded silicone end seals CANNOT be installed. Instead create end seals by applying a continuous 1/4” bead of silicone sealer, across the front and rear ends of the cylinder block, from one cylinder head to the other.

IF PRE-MEASURED END GAP is between .120” - .140” Install the molded silicone rubber end seals. These end seals must be installed DRY without any chemical adhesive.

PRIOR TO INSTALLING INTAKE MANIFOLD apply a small dab of silicone sealer where all gaskets and seal(s) meet.

REINSTALL INTAKE MANIFOLD TO ENGINE. Torque securely to OEM specifications.

EXHAUST PIPE FLANGE AND E.G.R. VALVE BOLTS
ATTACH AND ALIGN GASKET

MISCELLANEOUS FLUID SEALING GASKETS

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

TEST RUN ENGINE. Check all mating areas thoroughly to determine that all seals hold during operation.

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