



FEL-PRO INSTALLATION TIPS

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

INSERT VALVES INTO GUIDES of cylinder head assembly. Place assembly on a flat covered surface to prevent damage to valve heads and cylinder head gasket surface.

SUPPORT OR PROP UP EACH VALVE HEAD with a wood block or other resilient material prior to installing seals.

NYLON TYPE SEAL: Place directly on valve stem seal.

TAP SEAL DOWN gently using provided plastic tube placed over stem. Move seal down approximately halfway on stem. The seal will find its proper position on the stem once the engine starts.

VALVE COVER/PUSH ROD COVER

ATTACH AND ALIGN GASKET(S): Use quick-drying adhesive, applied sparingly. If gasket has installation tabs, adhesive is not required. **IMPORTANT:** If gasket is rubber, install dry.

INTAKE MANIFOLD GASKET

V-TYPE ENGINES - FIBER SIDE GASKET(S) ALONG WITH FRONT AND REAR END SEAL(S): Attach and align gasket(s) and end seal(s) using a quick-drying adhesive sparingly. **PRIOR TO INSTALLING INTAKE MANIFOLD** apply a dab of RTV Black silicone sealer where all gaskets and seal meet.

INLINE ENGINES: Attach and align gaskets to cylinder heads.

IMPORTANT: WHEN INSTALLING STEEL SHIM GASKET(S):

Apply sealer around intake ports on both sides. If gasket(s) have water ports, apply a 1/8" continuous bead of RTV Black silicone sealer around each water port on both sides. While RTV is wet, install intake manifold.

EXHAUST MANIFOLD GASKET

ATTACH AND ALIGN GASKET(S). If gasket has only one steel faced side, install steel side towards manifolds.

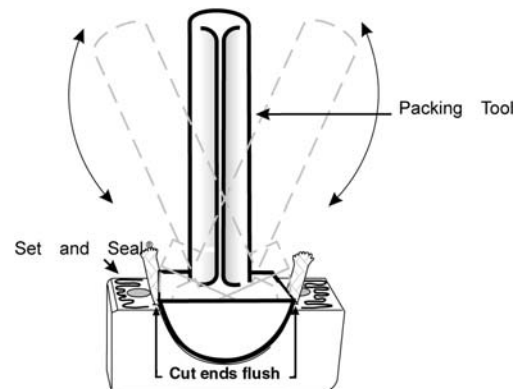
MISCELLANEOUS FLUID SEALING GASKETS

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 sealing beads, install **DRY**.

REAR MAIN BEARING SEAL

To properly install the rear main bearing seal, it is necessary to remove the crankshaft and install both seal halves as a pair.

PRIOR TO INSTALLING ROPE SEALS apply an instant bonding adhesive into the grooves of the cap and block.



ROPE SEALS: Install the seals into the grooves of the cap and block by firmly pressing the packing into the grooves using a "packing tool".

Make certain that the ends of the seals protrude above the face of the cap and block.

IMPORTANT: The final interference of the rope packing seals against the crankshaft is critical. In order to achieve this proper interference, it is strongly recommended to install the packings using the correct "Packing Tool" for your specific engine.

With "packing tool" in position, cut the protruded ends of the seals flush with the cap and block using a sharp cutting tool.

LUBRICATE SURFACE of seal lip and crankshaft by applying a thin coat of motor oil or grease. If engine will not be started within several days, grease is recommended.

IMPORTANT: Never install any seal without break-in lubricant protection.

REINSTALL CAP TO CYLINDER BLOCK. Torque to OEM specifications.

OIL PAN GASKET

ATTACH AND ALIGN GASKET(S). Apply a quick-drying adhesive sparingly. Mount gasket and/or seals. **PRIOR TO INSTALLING OIL PAN** apply a dab of RTV Black silicone sealer where all gaskets and seals meet.



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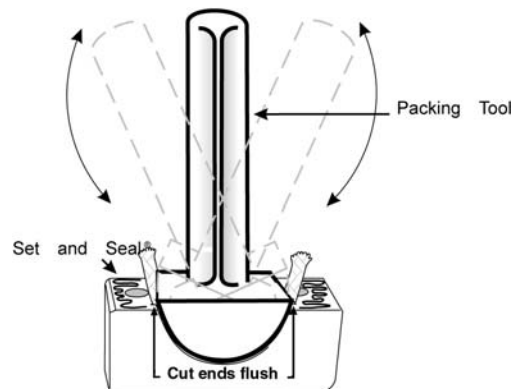
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