



## FEL-PRO INSTALLATION TIPS

### GENERAL INSTRUCTIONS

**CLEAN MATING SURFACES.** Use a degreaser.

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

**BOLT PREPARATION:** Those **entering** coolant passages require a pliable non-hardening sealer on threads and underside of bolt heads. Those **not entering** coolant passages require oil on threads and underside of bolt heads. **Exhaust Assembly:** Apply a high temperature anti-seize lubricant to threadings.

**CHECK 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 to OEM specifications unless noted. **CYLINDER HEAD** torquing is critical; we recommend that you confirm with OEM.

### HEAD GASKET

**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.

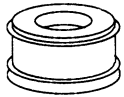
**FIBER-FACED GASKET(S)** are to be installed dry. **METAL FACED GASKET(S)** require a thin even coat of sealer to be applied to the metal side(s) of the gasket.

**TORQUE SPECIFICATIONS:** The **CORRECT** cylinder head bolt torque for this engine is 80-90 ft. lbs Disregard lower torque figures that appear in some service and technical manuals. Incorrect torque will result in early gasket failure.

### VALVE STEM SEALS



Positive Intake



Positive Exhaust

Use the valve stem seals included in this set for the applications indicated.

**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.

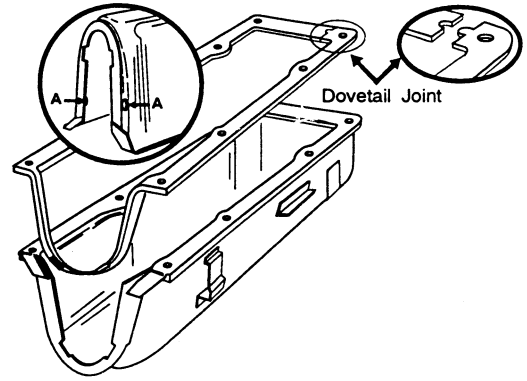
Remove plastic installation sleeve and reuse for installing remaining seals.

**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.

### VALVE COVER GASKET

**ATTACH AND ALIGN GASKET:** Apply quick-drying adhesive sparingly in several places on the mating surface of cover. If gasket has installation tabs, adhesive is **not** required. Mount gasket on cover. **Allow time for adhesive to set.** Test for slippage with light pressure. If gasket moves, allow more time.



**REINSTALL COVER TO ENGINE.** Press down firmly.

**INSTALL AND TIGHTEN ALL CAP SCREWS** in side rails and rear end. Securely tighten cap screws at "A" if present. **CAUTION:** Over-torquing can distort cover and cause leakage.

**START CAP SCREWS.** If 2 slotted holes are present (see "A" in drawing) do not tighten down.

### 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 seals using a quick-drying adhesive sparingly. **PRIOR TO INSTALLING INTAKE MANIFOLD** apply a dab of silicone sealer where all gaskets and seals meet.

**INLINE ENGINES:** Attach and align gaskets to cylinder heads.

**IMPORTANT: WHEN INSTALLING STEEL SHIM GASKETS(S):** Apply sealer around intake ports on both sides. If gasket(s) have water ports, apply a 1/8" continuous bead of silicone sealer around each water port on both sides. While sealer 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 manifold.

### WATER OUTLET, WATER PUMP, FUEL PUMP AND TIMING COVER GASKETS

If a supplementary sealer is desired, apply a thin coat of gasket sealer to both sides of gasket(s).



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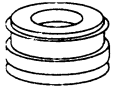
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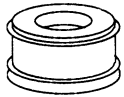
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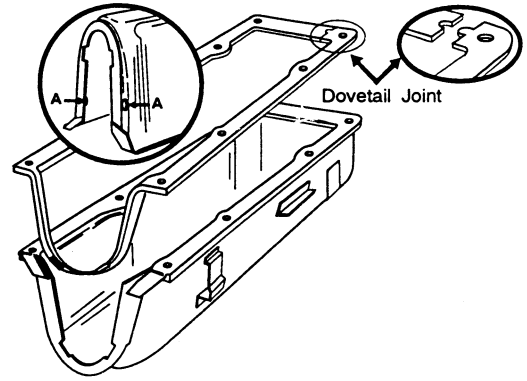
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