

VALVE COVER GASKET

Be sure to retain the load spreader washers when you remove the valve cover.

ATTACH AND ALIGN GASKET(S): 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.

PRIOR TO REINSTALLING VALVE COVER, place a load spreader washer under each bolt head.

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 quick-drying adhesive sparingly. **PRIOR TO INSTALLING INTAKE MANIFOLD** apply a dab of 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 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 manifold.

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**.

ROTATING SHAFT SEALS

RUBBER SEAL(S): Install seal with its **largest raised sealing lip toward the engine.** Two-piece rubber seals may be installed using a "shoehorn" installation aid placed underneath seals to protect them from sharp edges.

ROPE SEALS: Install seals into grooves of cap and block by firmly pressing packing into grooves with a "packing tool." Ensure that the ends of seals protrude above face of cap and block.

IMPORTANT: Final interference of rope packing seals against crankshaft is critical. To achieve proper interference, it is best to install packings using correct **Packing Tool** for your engine. With "packing tool" in position, cut protruded ends of seals flush with cap and block.

LUBRICATE SEALING LIPS AND CRANKSHAFT with 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.

REAR MAIN BEARING CAP: Prior to installation, apply anaerobic sealant to mating surfaces of cap or block. **AVOID** sealant on ends of seals.

OIL PAN GASKET

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



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 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 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

Follow any directional markings shown on gasket(s). If no markings exist, install gasket(s). **Fiber Faced Gasket(s):** Install dry. **Metal Faced Gasket(s):** Requires a thin even coat of sealer applied to the metal side(s) of gasket.

VALVE STEM SEALS



Positive Intake



Umbrella Exhaust



"O" Ring Intake & Exhaust

For 1981 and later applications use **Positive Intake** and **Umbrella Exhaust** in addition to the "O" Ring. Prior to 1981 use "O" Ring **Intake & Exhaust Only**.

POSITIVE GUIDE SEAL:

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

Carefully start valve stem seal over sleeve.

Remove plastic installation sleeve and reuse for installing remaining seals.

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

FOR SOLID/METAL JACKET SEALS: 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 shoulder of seal and tap seal down over guide until it bottoms.

UMBRELLA TYPE SEAL: Start valve stem seal over valve stem and push seal down on seal body until it touches top of valve stem guide or "boss". The seal will find its proper position on the stem once the engine starts.

REPLACE VALVE SPRING ASSEMBLIES AND INSTALL "O" RINGS. Compress springs just enough to install "O" Ring seal in second groove. **IMPORTANT:** If other types of seals are also being used, excessive compression can result in spring retainer damaging the seals. Install "O" Ring seal, then install keepers in first groove. Release spring carefully.

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