

GENERAL INSTRUCTIONS

CLEAN MATING SURFACES Use a degreaser.

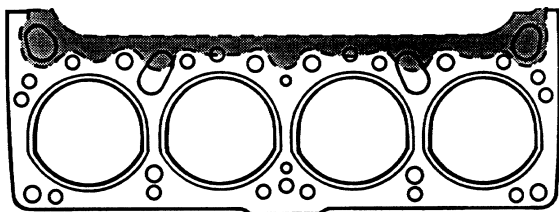
CLEAN THREADS of all bolts/studs; for nuts/threads holes use a bottoming tap.

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 threading.

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



IMPORTANT: On 1967 and later engines, the head gasket may hang over the edge of the engine casting (see shaded area of illustration). This will not alter engine performance.

On 1966 and later engines, oil drain back holes no longer exists. Therefore, the partial gasket openings may be visible beyond the edge of the engine casting (see illustration). This will not alter engine performance.

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.

VALVE STEM SEALS



Positive Intake
1967-76



"O" Ring
Intake & Exhaust

POSITIVE GUIDE SEAL: Use plastic installation sleeve(s), to prevent damage to lip of seal. Trim plastic sleeve so it extends 1/16" below keeper groove. Place 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: 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 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.

VALVE COVER/PUSH ROD COVER

ATTACH AND ALIGN GASKET(S): Use a 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 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 a sealer around intake ports on both sides. If gasket(s) have water port, apply a 1/8" continuous bead of silicone sealer around each water port on both sides. While silicone 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).

ROTATING SHAFT SEALS

PRIOR TO INSTALLING THE ROTATING SHAFT AND/OR SEAL apply a thin coat of lubricant, such as grease, on the sealing lip and shaft.

IMPORTANT: Do not install any seal without break-in lubricant protection.

The Seal included in this set may vary in width from the seal being removed. The sealing lip of the replacement seal will position itself on a different area of the shaft in order to avoid seal leakage problems commonly associated with groove worn shafts.

REAR MAIN BEARING SEAL

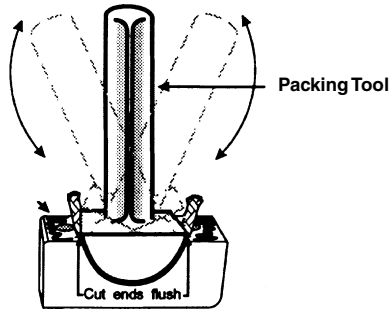
This set contains 2 pairs of rope seals. Identify and install as indicated.

The 6" rope seal is to be installed on the following engines:

301, 326, 389, 400 all years; 265 - 1980-81;
350 - 1968-77 and 428 - 1967.

The 7" rope seal is to be installed on the following engines:

421, 425 all years; 428 - 1968-69 and
455 - 1970-76.



ROPE SEALS: Install seals into 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 rope packing seals against crankshaft is critical. In order to achieve this proper interference, it is strongly recommended to install the packing using the correct "**Packing Tool**" for your specific engine.

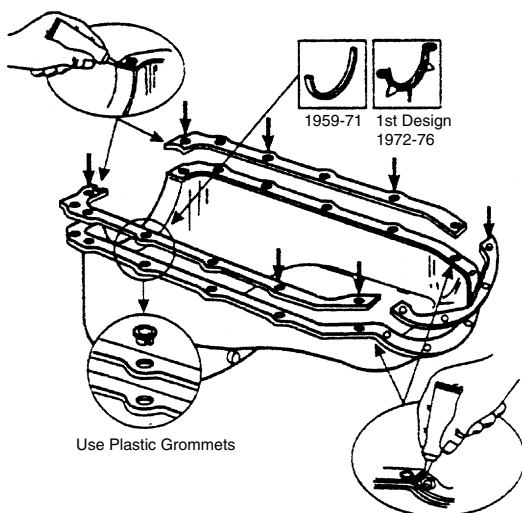
With "packing tool" in position, cut the protrude ends of the seals flush with the cap and block using a sharp cutting tool.

LUBRICATE SURFACE 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. Mount gasket on pan. Insert plastic grommets in corresponding holes (see drawing).

PRIOR TO INSTALLING OIL PAN apply a small dab of silicone sealer, where all gaskets and seal(s) meet. **IMMEDIATELY PROCEED** to the next step, as silicone sealer normally sets up in 10-15 minutes.

ATTACH AND ALIGN ENDS SEALS: Nibs of rear seal fit into holes of oil pan.

For 1959-1971 applications without nibs, apply a quick-drying adhesive, sparingly in several places on the engine casting or oil pan (depending upon engine model). Mount ends seal on surface where adhesive was applied. **Allow time for adhesive to set.** Test for slippage with light pressure. If seal moves, allow more time.

REINSTALL OIL PANTO ENGINE. Install cap screws, finger tight. Torque cap screws to OEM specifications, Over-torquing can distort pan and cause leakage.