

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.

INSTALL SEAL HALVES into the grooves of the cap and block. The seals are properly installed when its largest raised sealing lip is toward the front of the engine. Make certain that the ends of the seals are flush with the face of the cap and block.

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.

PRIOR TO INSTALLING THE REAR MAIN BEARING CAP apply an anaerobic sealant to either the rear main bearing cap or cylinder block mating surfaces. **Never** apply sealant on the ends of the seals.

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 silicone sealer where all gaskets and seals meet.

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

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):** require a thin even coat of general purpose gasket sealer applied to the metal side(s) of gasket.

VALVE STEM SEALS

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 and reuse plastic sleeve. **FOR RUBBER JACKET SEALS:** Push seal over valve guide until it bottoms. **FOR SOLID/METAL JACKET SEALS:** Use of OEM service tool is recommended. If tool is unavailable, use deep socket or rigid tube of appropriate diameter. Center tool 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.

INTAKE MANIFOLD GASKET

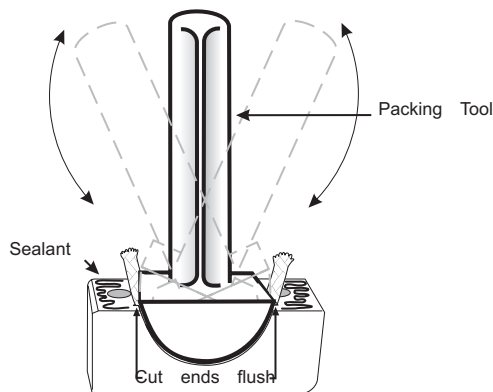
V-TYPE ENGINES - FIBER SIDE GASKET(S) ALONG WITH FRONT AND REAR END SEAL(S): Attach and align gasket(s) and end seal(s) using a quick-drying adhesive sparingly. **PRIOR TO INSTALLING INTAKE MANIFOLD** apply a dab of silicone sealer where all gaskets and seal meet.

INLINE ENGINES: Attach and align gaskets to cylinder heads.

IMPORTANT: WHEN INSTALLING STEEL SHIM GASKET(S): Apply a general purpose gasket 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.



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