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.

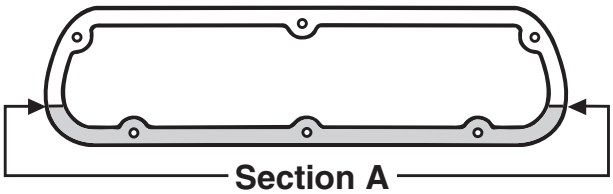
VALVE STEM SEALS

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; push seal down on seal body until it touches top of valve stem guide. Seal will find its proper position on stem once engine starts.

VALVE COVER GASKET



Section A
High Temperature

The valve cover gaskets in this set includes sections (see "A" in drawing) that are comprised of an exceptionally heat resistant cork rubber fiber.

It meets or exceeds OEM specifications for superior performance where extreme heat is encountered. Other brands of gaskets, labeled "high temperature" but not constructed of this superior material, may not withstand extreme heat.

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.

HEAD GASKET

SPECIAL TORQUE SPECIFICATIONS

IMPORTANT: For all Ford Passenger and Truck V8, 260, 289 and 302 (5.0L) engines. Two types of cylinder head bolts have been used on these engines, Torque-To-Yield bolts with integrated washers or standard bolts without integrated washers. These bolts cannot be intermixed and each bolt style has specific torque specifications.

IMPORTANT: Consult latest OEM torque specifications as changes may have taken place since this printing.

TORQUE-TO-YIELD BOLTS WITH INTEGRATED WASHER TORQUE SPECIFICATIONS:

Following sequence shown in illustration torque all bolts/studs in the following steps:

Torque all bolts to 25-35 ft. lbs. (34-47 Nm.).
Torque all bolts to 45-55 ft. lbs. (61-75 Nm.).
Finally, tighten all bolts and studs an additional 1/4 turn (85-95°).
Torque all intake manifold bolts to 23-25 ft. lbs. (31-34 Nm.).

STANDARD BOLTS WITHOUT INTEGRATED WASHER TORQUE SPECIFICATIONS:

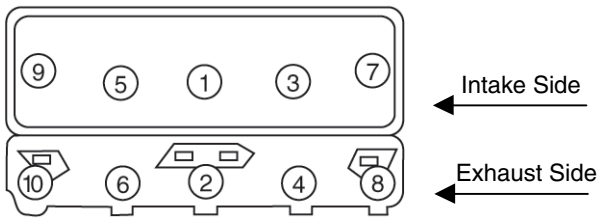
The following torque specifications for the cylinder head and the intake manifold must be followed. Failure to do so can lead to excessive cylinder head "lift", resulting in combustion gas and coolant leakage. Although these specifications may differ from those previously issued by Ford Motor Company, they are the result of extensive research and testing.

Following sequence shown in illustration torque all bolts in the following steps:

Torque intake side (long, odd numbered bolts) to 80 ft. lbs. (109 Nm.).

Torque exhaust side (short, even numbered bolts) to 70 ft. lbs. (95 Nm.).

Torque all intake manifold bolts to 23-25 ft. lbs. (31-34 Nm.).



Intake Manifold: Using a torque wrench, torque all bolts to 23-25 ft. lbs. **DO NOT EXCEED** torque specifications.

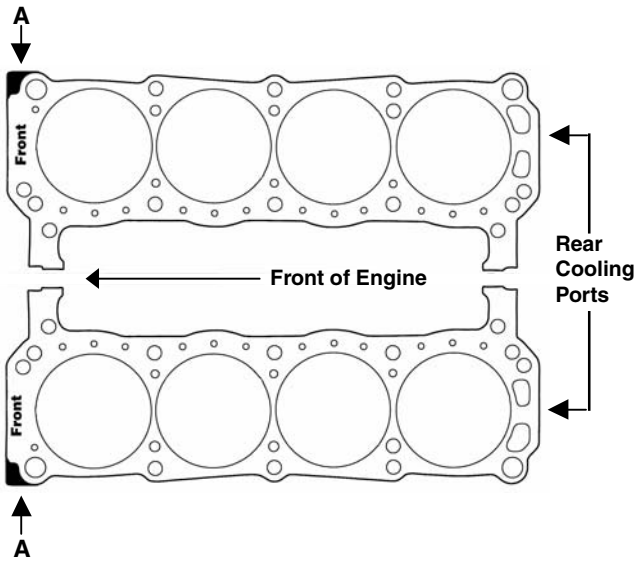
IMPORTANT: For 351W engines, these torque procedures **DO NOT** apply. Torque securely following OEM specifications.

CLEAN ALL BOLT THREADS by using a wire brush.

IMPORTANT: DO NOT use an anti-seize product on any of the bolt threads.

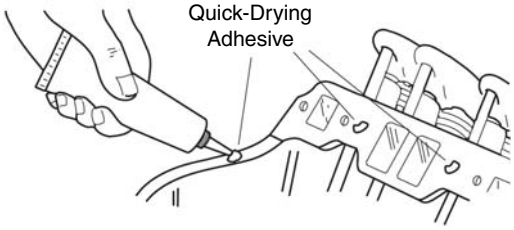
Determine which bolts extend into the coolant passages. Those bolts **entering** the coolant passages require a pliable non-hardening sealer on the threads. Those bolts **not entering** the coolant passages require oil on the threads. Lubricate the underside of **every** bolt head with oil.

-Continued-



TO INSURE PROPER COOLANT CIRCULATION, the word FRONT is stamped on both sides of the head gasket and must allways be installed towards the front of the engine.
After engine assembly, the head gaskets are properly installed when corner “A” of the each head gasket protrudes from under the FRONT of each cylinder head (see shaded area of illustration).

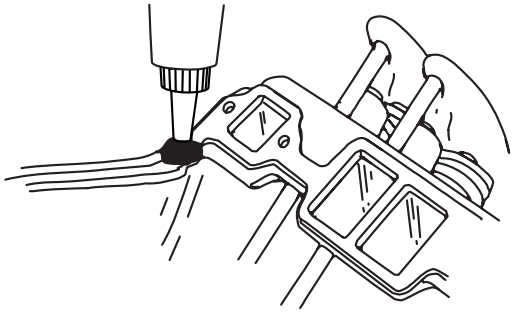
INTAKE MANIFOLD GASKET



ATTACH AND ALIGN GASKET(S) TO CYLINDER HEAD(S). Apply quick-drying adhesive sparingly in several places on the cylinder heads. Mount gasket(s) on cylinder heads. Mount gasket(s) on cylinder head(s). **Allow time for adhesive to set.** Test for slippage with light pressure. If gasket moves, allow more time.

ATTACH AND ALIGN SEALS.

IMPORTANT: These molded rubber silicone seals must be installed **DRY** without any chemical adhesive.



PRIOR TO INSTALLING INTAKE MANIFOLD apply a small dab of RTV Black silicone sealer where all gaskets and seals meet.

Never apply RTV completely across gaskets or seals.

REINSTALL INTAKE MANIFOLD TO ENGINE. Using a torque wrench, torque all bolts to 23-25 ft. lbs. **DO NOT EXCEED** torque specifications.

IMPORTANT: For 351W engines, these torque procedures **DO NOT** apply. Torque secuerly following OEM specifications.

EXHAUST MANIFOLD GASKET

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

MISCELLANEOUS FLUID SEALING GASKET(S)/SEAL(S)

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**.

Form No. I-1870 (Rev. 7/01)

Printed in U.S.A.