



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.

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 Printoseal® sealing beads, install **DRY**.

FLYWHEEL BOLTS

DISTRIBUTOR SHAFT SEAL

The seal contained in this set has a preinstalled plastic installation tool. The tool protects the seal at time of installation and must be removed after the seal is installed.

Fel-Pro does not recommended the use of a repair sleeve with this seal.

INSTALL SEAL into the recessed cavity of the seal retainer or into the cylinder block (depending upon engine model).

IMPORTANT: This (PTFE) seal must be installed **DRY**.
Do not lubricate seal lip or the sealing surface.

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 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



To effectively seal this sophisticated engine application, FEL-PRO has included a PERMA-DRY® molded rubber gasket(s) in this set.
ATTACH AND ALIGN GASKET TO PAN.

IMPORTANT: This molded rubber silicone gasket must be installed **DRY** without any chemical adhesive.



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.

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 Printoseal® sealing beads, install **DRY**.

FLYWHEEL BOLTS

DISTRIBUTOR SHAFT SEAL

The seal contained in this set has a preinstalled plastic installation tool. The tool protects the seal at time of installation and must be removed after the seal is installed.

Fel-Pro does not recommended the use of a repair sleeve with this seal.

INSTALL SEAL into the recessed cavity of the seal retainer or into the cylinder block (depending upon engine model).

IMPORTANT: This (PTFE) seal must be installed **DRY**.
Do not lubricate seal lip or the sealing surface.

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 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



To effectively seal this sophisticated engine application, FEL-PRO has included a PERMA-DRY® molded rubber gasket(s) in this set.
ATTACH AND ALIGN GASKET TO PAN.

IMPORTANT: This molded rubber silicone gasket must be installed **DRY** without any chemical adhesive.
