



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 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



No holes in cylinder block or with 1 end hole, use 8180 PT-2



Holes in cylinder block, use 8523 PT

IMPORTANT: There are 2 series of coolant configurations for the 427 and 454 C.I.D. engines. Only use head gasket 8523 PT on the engine blocks **having** the 3 additional coolant holes. Engine blocks not having the extra coolant holes can only use head gasket 8180 PT-2.

ATTACH AND ALIGN GASKET(S) FOLLOWING ANY DIRECTIONAL MARKINGS SHOWN ON THE GASKET. If not 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 GUIDE SEAL:

Use plastic installation sleeve(s), to prevent damage to lip of seal. Trim the plastic sleeve so it extends 1/16" below keeper groove. Place the sleeve on the 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 OR METAL JACKET SEALS:** Use of OEM service tool is recommended. If tool is unavailable, use a deep socket or rigid tube of appropriate diameter. Center tool over shoulder of seal and tap seal down over the 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

PRIOR TO INSTALLATION of covers check fit of gasket. If necessary, remove gasket tabs. Cut tabs using a sharp blade.

ATTACH AND ALIGN GASKET(S): Use a 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.

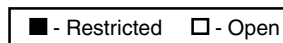
INTAKE MANIFOLD GASKET



Open Center Port

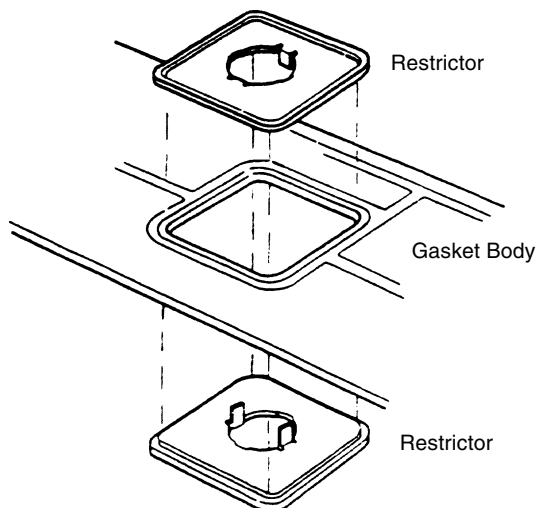
This set contains 2 manifold gaskets with the center port open, and 1 stainless steel restrictor assembly attached to one of these gaskets. Install open center port gasket on the left side and install the restricted center port gasket on the right side.

Use manifold gasket(s) with open center port(s) as supplied in this set or with restrictor assemblies in place as noted.



Passenger Car	Center Ports:		Right	Left
	Restricted	Open		
396 Eng.				
1965-70 Exc. Special Hi-Perf. and Heavy Duty			<input type="checkbox"/>	<input type="checkbox"/>
400 Eng.				
1970-72 4 Barrel, Big Block			<input type="checkbox"/>	<input type="checkbox"/>
427 Eng.				
1966-69 Exc. Special Hi-Perf. and Heavy Duty			<input type="checkbox"/>	<input type="checkbox"/>
454 Eng.				
1975-76 Exc. Heavy Duty			<input type="checkbox"/>	<input type="checkbox"/>
1973-74 Exc. Heavy Duty			<input checked="" type="checkbox"/>	<input type="checkbox"/>
1970-72 Exc. Special Hi-Perf. and Heavy Duty			<input type="checkbox"/>	<input type="checkbox"/>
Truck				
366, 396, 427 Eng.				
1966-85			<input type="checkbox"/>	<input type="checkbox"/>
400 Eng.				
1971-72 4 Barrel, Big Block			<input type="checkbox"/>	<input type="checkbox"/>
454 Eng.				
1979			<input type="checkbox"/>	<input type="checkbox"/>
1975-78 Exc. California			<input checked="" type="checkbox"/>	<input type="checkbox"/>
California			<input type="checkbox"/>	<input type="checkbox"/>
1973-74 Exc. EGR			<input type="checkbox"/>	<input type="checkbox"/>
EGR			<input checked="" type="checkbox"/>	<input type="checkbox"/>
1971-72			<input type="checkbox"/>	<input type="checkbox"/>

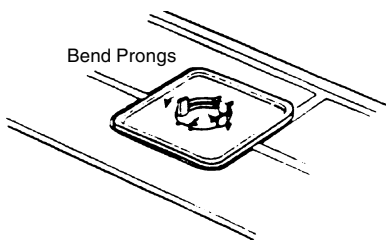
RESTRICTED PORT GASKET:



PLACE 1 RESTRICTOR HALF - with prongs up - on the workbench.

POSITION THE CENTER PORT OF THE MANIFOLD GASKET over the restrictor half.

PLACE THE OTHER RESTRICTOR HALF OVER the gasket's center port.



BEND THE 2 PRONGS OF THE LOWER RESTRICTOR HALF OUTWARD over the outer edge of the upper restrictor half using a blunt tool. Make certain the prongs are pressed down tightly so that the restrictor assembly is held securely in the gasket body. Turn the gasket over and repeat the prong bending operation with the other restrictor half.

IMPORTANT: When properly installed, the outer edge of the upper and lower restrictor halves will overlap the gasket body around the center port. Failure to do so may cause restrictor to slide out of position.

ATTACH AND ALIGN END SEALS. Apply quick-drying adhesive sparingly to cylinder block. Mount end seals. Allow time adhesive to set. Test for slippage with light pressure. If seals move, allow more time.

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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.

EXHAUST MANIFOLD GASKET

ATTACH AND ALIGN END SEALS. 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 Printoseal® sealing beads, install **DRY**.

ROTATING SHAFT SEALS

RUBBER SEAL(S): Install seal with its **largest raised sealing lip** toward 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 packing 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 SET "N" SEAL® 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 RTV Black silicone sealer where all gaskets and seals meet.