368" V8

IDENTIFICATION CODING

ENGINE IDENTIFICATION

Engines may be identified by fifth digit of Vehicle Identification Number (VIN) located on upper left side of instrument panel and visible from outside windshield. Fleetwood Brougham and DeVille engine codes are stamped behind intake manifold; Eldorado and Seville engine codes are stamped on left front side of block below cylinder head. VIN Codes are as follows:

Application	VIN Code
368" (6.0L) 4-Bbl.	6
368" (6.0L) DEFI①	9

① — Digital Electronic Fuel Injection

SPECIAL ENGINE MARKS

Information identifying oversize components are stamped in following locations:

Oversize Valve Guides — On cylinder head gasket surface in line with oversize valves. Number indicates amount guide is oversize ("3" indicates .003" oversize).

Oversize Cylinder Bore — On cylinder head face of block. Letter indicates cylinder and piston sizes. See chart. Double letters indicate cylinder has been bored .010" over diameter indicated by single letter in chart.

Cylinder and Piston Relationship

Letter	Cylinder Size	Piston Size
A	4.0820-4.0824"	4.0810-4.0814"
B	4.0824-4.0828"	4.0814-4.0818"
C	4.0828-4.0832"	4.0818-4.0822"
D	4.0832-4.0836"	4.0822-4.0826"
E	4.0836-4.0840"	4.0826-4.0830"

ENGINE REMOVAL

See Engine Removal at end of ENGINE Section.

CYLINDER HEAD & MANIFOLDS

INTAKE MANIFOLD

Removal — 1) Disconnect negative battery cable, all hoses at air cleaner and remove air cleaner. Disconnect HEI connector. Disconnect throttle and cruise control linkage at throttle adapter plate. Disconnect throttle valve (TV) cable on DEFI engine. Disconnect wiring harness connections necessary to lay harness aside.

2) Remove throttle return spring and bracket. Disconnect power brake vacuum line and vacuum modulator line from rear of carburetor or throttle body. Position brake line out of way. Disconnect rear air conditioning compressor bracket and all vacuum hoses from manifold. Disconnect fuel line at carburetor and position out of way, except DEFI.

3) Disconnect canister hoses and distributor vacuum advance hose at intake manifold. Drain radiator and remove upper radiator hose from thermostat housing. Disconnect A.I.R. hoses and position out of way. Remove manifold bolts and manifold. Remove sheet metal manifold shield and gasket. Remove front and rear manifold to cylinder block rubber seals.

Installation — Coat ends of rubber seals with gasket cement and place over rails at front and rear of cylinder block. Tabs on seals should be positioned in holes in rails; beveled ends of gasket tucked under edge of cylinder head. Coat upper and lower port surface area of sheet metal gasket (do not coat ends) and position on engine. Complete installation by reversing removal procedure.

NOTE — *Holes in gasket should engage dowel pins on cylinder heads.*

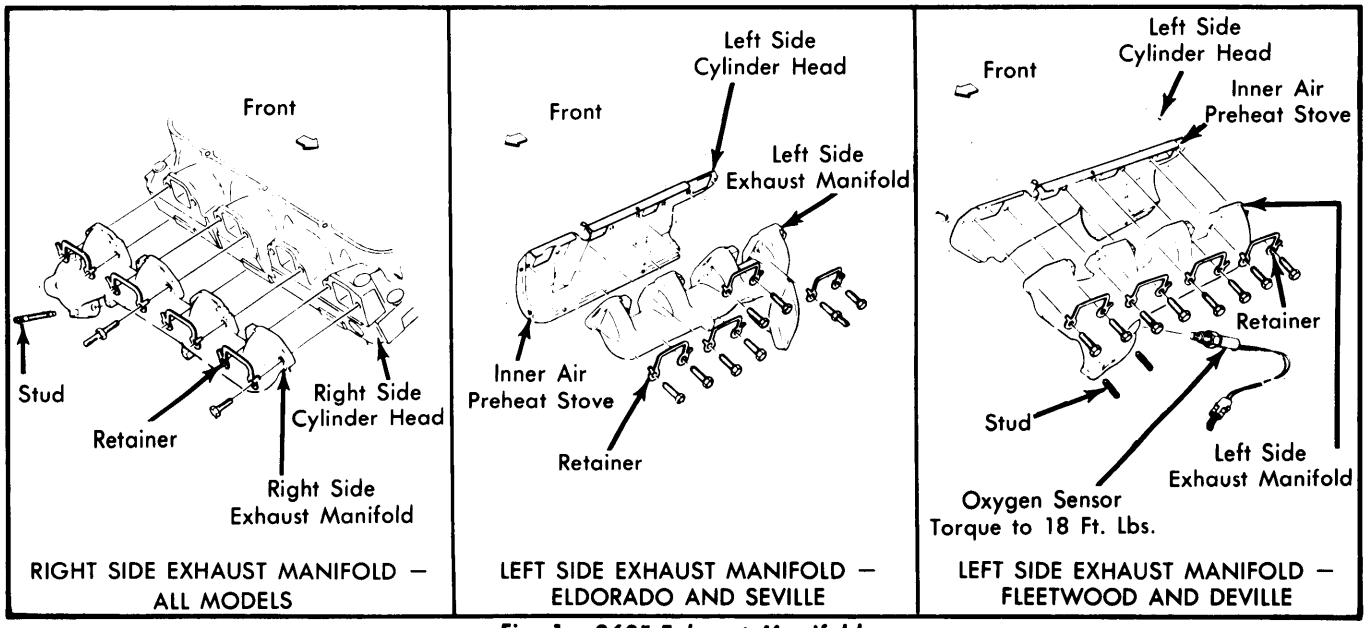


Fig. 1 368" Exhaust Manifold

368" V8 (Cont.)

EXHAUST MANIFOLDS

Removal (Left Side) – 1) Remove air cleaner and tube assembly from air preheat stove. Remove nuts securing support bracket for shift linkage, if equipped, position out of way. Remove bolts securing air preheat stove and remove stove.

2) Remove oxygen sensor, if equipped. Disconnect exhaust pipe from manifold. Bend lock tabs from bolt heads and remove bolts. Remove exhaust manifold.

Removal (Right Side) – 1) Remove rear altenator brace and A.I.R. hoses, if equipped. Disconnect exhaust pipe from manifold and remove EFE valve.

2) Bend lock tabs from bolt heads and remove bolts. Remove exhaust manifold.

Installation – Apply thin coat of graphite lubricant to cylinder head mounting surfaces. Position manifold on cylinder head and tighten bolts. Bend lock tabs on bolt heads. To complete installation, reverse removal procedure.

CYLINDER HEAD

Removal – 1) Drain cooling system and remove intake and exhaust manifolds. Remove rocker arm covers. Disconnect electrical and ground connections from cylinder heads. Partially remove power steering pump from left cylinder head.

2) Disconnect heater hose from rear of right cylinder head. Remove alternator and A.I.R. pump. Identify rocker arm assemblies before removal for reinstallation in original positions. Remove rocker arm assemblies and push rods.

3) Install two 7/16"–14 x 6" bolts in two rocker arm support bolt holes as lifting handles. Remove cylinder head bolts and lift head from block.

Bolt Location	Length
A (Bolt)	4.36" (Medium)
B (Bolt)	4.77" (Long)
C (Bolt)	3.02" (Short)
D (Bolt/Stud)	4.77" (Long)

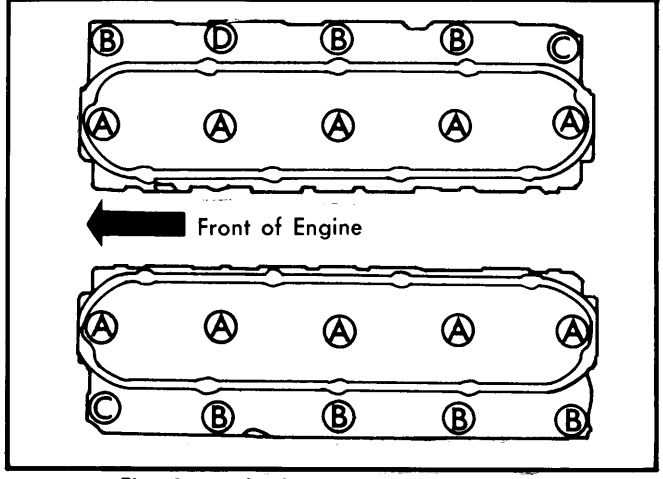


Fig. 2 Cylinder Head Bolt Location

NOTE – *Bottom rear bolt is trapped due to clearance. Suspend bolt to ease removal. Also, this bolt must be installed and suspended prior to positioning head on block.*

Installation – 1) Clean all gasket surfaces and position cylinder head and gasket over dowels on block. Install head bolts finger tight in locations as indicated in *Fig. 2*. Tighten bolts starting from center of cylinder head and working toward both ends.

2) Remove two bolts used as lifting handles and complete installation by reversing removal procedure.

VALVES

VALVE ARRANGEMENT

E-I-E-I-E-I-E-I (Right Bank, front to rear).
I-E-I-E-I-E-I-E (Left Bank, front to rear).

HYDRAULIC VALVE LIFTER LEAKDOWN RATE

Use valve lifter leakdown rate tester, J-3074, to check for faulty lifters without removal from engine. Tool uses a feeler gauge of specific thickness placed between rocker arm and valve stem, causing valve spring pressure to force oil out of lifter. A spring, attached to tool and compressed against the valve spring retainer, ejects the feeler gauge when lifter has leaked down enough to allow valve to seat. Faulty lifter(s) can be easily located by observing length of time required for each lifter to leakdown thickness of feeler gauge. Run engine to allow lifters to fill with oil and check lifters as follows.

1) Remove distributor cap and align rotor to No. 1 firing position. Remove air cleaner. Disconnect negative battery cable, spark plug wires at plugs and remove wiring from tabs on rocker arm covers.

2) Remove rocker arm covers and check cylinder Nos. 1, 2, 5, 7 and 8 intake valves and Nos. 1, 3, 5, 6 and 8 exhaust valves.

3) Insert feeler gauge of tool between valve stem and at same time compress tool "popout" spring to tool stock against valve spring retainer.

NOTE – *Install tool as quickly as possible to avoid unnecessary lifter leakdown.*

4) Note interval that tool is held in place by valve spring pressure. Noisy lifter(s) will have shortest leakdown time.

5) Install components previously removed and start engine to fill lifters with oil. Repeat removal of components in step 1).

6) With distributor rotor in No. 4 firing position, check Nos. 3, 4 and 6 intake valves and Nos. 2, 4 and 7 exhaust valves, observing time.

7) Install components by reversing removal procedure.

VALVE LIFTER

Removal – 1) Remove intake manifold, rocker arm covers, rocker arm support bolts and rocker arm assemblies. Remove push rods.

368" V8 (Cont.)

NOTE – *Identify rocker arm assemblies for reinstallation in original positions.*

2) Using small screwdriver, or pointed tool, remove lifters from engine.

3) Any lifters that are stuck can be removed by using valve lifter remover (J-3049). Rotate lifter back and forth while pulling out.

NOTE – *Valve plungers and bodies are matched in pairs and are not interchangeable. In order to fit properly, parts must be reassembled to original matching pairs or lifter problems could result.*

Disassembly – **1)** Press down on center of valve lifter push rod cup, using pointed tool remove lock ring from groove.

2) Invert lifter and slide out internal components. *See Fig. 3.*

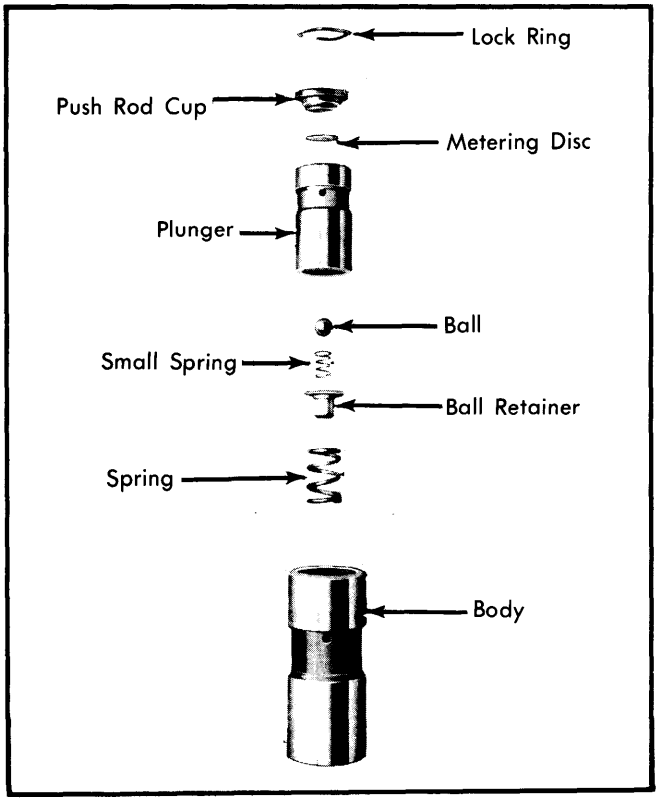


Fig. 3 Hydraulic Valve Lifter Exploded View

3) If plunger is stuck in lifter body, place lifter push rod end down in valve lifter plunger remover (J-4160). With tool firmly held in hand with thumb over lifter body, strike tool sharply on block of wood until plunger falls out of body.

Reassembly – **1)** Hold plunger upside down and install ball on seat and place small spring on top of ball.

2) Position ball retainer over small spring and ball, snap retainer into plunger recess. Install spring over ball retainer.

3) Lower lifter body over plunger at an angle to seat spring. Turn assembly right side up and fill with clean engine oil. "Jiggle" ball with small piece of wire until oil drains from plunger into body and trapped air is released from body, refill plunger with oil. Place oil metering disc and push rod cup on plunger and position lock ring over cup using tool J-2730.

Installation – Apply small amount of rear axle lubricant to foot of each lifter and install lifters into original bore. Reverse removal procedure to complete installation.

VALVE SPRINGS

Wear Check (Hole Gauge Method) – With valve removed, measure top and bottom of guide with hole gauge. Measure gauge each time with outside micrometer. Standard valve guide is .343" diameter. Measure valve stem and subtract from greater guide measurement to obtain clearance. If greater than .005", ream guide to next oversize.

Wear Check (Alternate Method) – Use 1/16" wide strip of .005" brass shim stock on "no-go" basis. Bend one end of shim. Insert shim into valve guide no more than 1/4" with tip facing push rod side of head. If valve stem will enter guide, clearance is excessive and guide must be reamed to next oversize.

Servicing – Service valves are available in standard and .003", .006" and .013" oversize. If clearance is found to be excessive, guide should be reamed to next oversize using appropriate reamer and valve having corresponding oversize stem should be installed. When installing oversize valves and guides, stamp oversize on cylinder head gasket surface.

VALVE SEAT

Wear Check – Roundness of valve seat should not exceed .004" as measured with dial indicator and tapered pilot, which has slight bind in valve guide.

NOTE – *Pilot of correct size must be used, do not attempt to drive pilot into guide. Pilots with adjustable diameters for various size guides are not recommended.*

Service – Grind valve seat to within .002" indicator reading when installing new valve or if roundness, seat width or full contact of valve is not as specified. Valve seat should have a width of 3/64" to 1/16". Valve seats should be cut on 45° angle so seat is 1/16" smaller in diameter than valve head. New and reconditioned valves must have face angle of 44°.

NOTE – *Service valves should not have more than 1/16" wide contact with valve seat and should not be ground. Service valves are ready to use as received. Grinding of valves by hand with grinding compound or lapping to seat valves is not recommended.*

PISTONS, PINS & RINGS

OIL PAN

See Oil Pan Removal at end of ENGINE Section.

PISTON AND ROD ASSEMBLY

Removal – **1)** Disconnect negative battery cable and remove cylinder heads. With piston covered and at bottom of stroke, remove ridges or deposits on upper end of cylinder bore.

368" V8 (Cont.)

2) Remove oil pan, oil pickup tube and strainer assembly, discarding "O" ring. Remove rod cap. Install rubber hoses over connecting rod bolts to protect crankshaft and bore. Push piston and rod assembly out top of block and reinstall caps to connecting rods, matching stamped numbers.

Ring Installation – Install only replacement ring sets with molybdenum filler upper compression ring and multi-piece oil rings. Compression rings have locating dimples near ends on top side for easy identification. Install ring with top side dimple facing up. Piston ring gaps should be staggered 120°.

Piston Installation – **1)** Lightly coat pistons, rings and cylinder walls with engine oil. Install bearing inserts making sure bearing tangs are positioned in cap locating notches.

2) Install rubber hoses over connecting rod bolts. Using a ring compressor, position capless rod and piston in cylinder bore with notch toward front of engine (letter "R" on piston toward rear).

3) Guide connecting rod onto crankshaft journal, while tapping piston head with wooden hammer handle to seat connecting rod on journal. Remove rubber hoses from connecting rod bolts and install mating rod cap. Cap and rod numbers must align. Install rod cap nuts and tighten.

NOTE – *Numbered sides of connecting rods on Nos. 1, 3, 5 and 7 must be on right side of engine and Nos. 2, 4, 6 and 8 on left side.*

FITTING PISTONS

Measure pistons 3/16" below cross slot or 1/4" below oil ring groove. Measure cylinders 1 1/8" from top and perpendicular to centerline of face. Cylinder bores must not be reconditioned to more than .010" oversize.

PISTON PINS

Removal – **1)** Position support fork of tool (J-24086-11) between connecting rod and piston. Install removal arbor (J-24086-8) through alignment hole in tool base.

2) Center piston, rod and pin assembly with removal arbor centered in tool arch (J-24086.10). Press piston pin out of connecting rod.

Installation – **1)** Install pin guide (J-24086-4) through piston and into connecting rod. Hand tap pin guide into position for proper retention.

NOTE – *Pin guide centers connecting rod in piston. When piston and components are positioned on fork of tool, pin guide will center assembly in tool. Using too small a pin guide will not center piston assembly in tool and damage may occur.*

2) Install piston assembly into fork assembly of tool. Tool will support connecting rod at piston pin. Piston assembly must slide onto fork until pin guide contacts fork.

3) Adjust installing arbor (J-24086-9) to "G8" by turning numbered sleeve on lettered shaft. Turn knurled nut to lock numbered sleeve. *See Fig. 4.*

4) Insert installing arbor through hole in tool arch. Press piston pin into connecting rod until sleeve on installing arbor contacts top of tool arch. Pin guide will fall out of connecting rod as piston pin is pressed in.

NOTE – *Do not exceed 5000 Lbs. force when seating arbor sleeve against arch.*

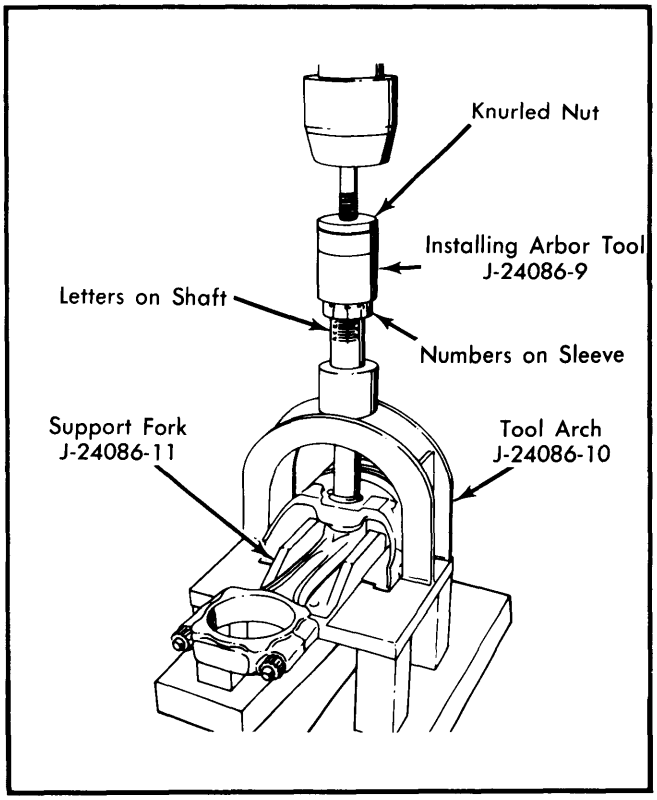


Fig. 4 Piston Pin Installation Tools

CRANKSHAFT & ROD BEARINGS

MAIN AND CONNECTING ROD BEARINGS

Main Bearings – **1)** Check main bearing clearances one at a time using Plastigage method. If bearings are being checked with engine in vehicle, crankshaft must be supported to take up clearance between upper bearing half and crankshaft.

2) Place strip of .005" brass shim stock between lower bearing half and crankshaft bearing journal in bearing caps adjacent to bearing being check.

NOTE – *When reinstalling bearing caps with shims, lightly tighten attaching bolts to avoid damaging bearing caps.*

3) If clearance is not within specifications, replace bearings. If new bearings do not bring clearance within specifications, replace crankshaft.

4) No. 1 upper and lower bearings are interchangeable. No. 2 and 4 upper bearings are interchangeable; No. 2 and 4 lower bearings are interchangeable. No. 3 and 5 upper and lower bearings are not interchangeable and must be installed in original positions. *See Fig. 5.*

368" V8 (Cont.)

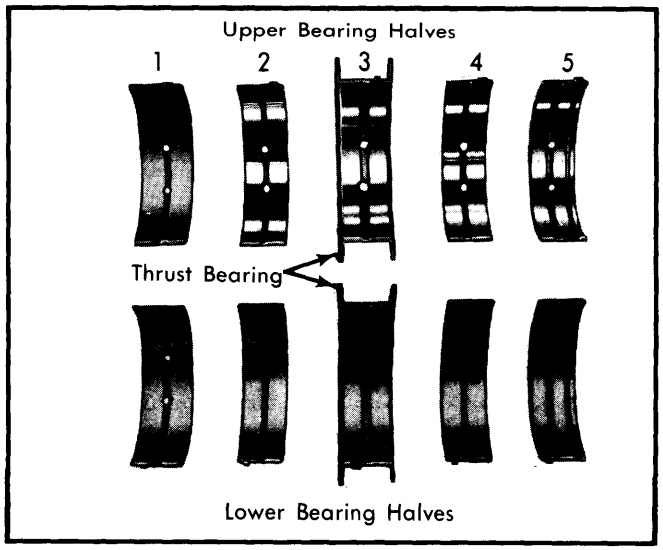


Fig. 5 Main Bearing Identification

Connecting Rod Bearings – After ensuring rod caps are marked for cylinder identification, remove rod caps. Use Plastigage for checking proper bearing clearances. If clearance is not within specifications, replace bearings. If new bearings do not bring clearance within specifications, replace crankshaft.

NOTE – *When installing bearings, tangs on bearings must match notches in rod and cap.*

THRUST BEARING ALIGNMENT

With all main bearing cap bolts finger tight, tap crankshaft forward, then rearward several times to align thrust bearings. Tighten all main bearing cap bolts.

REAR MAIN BEARING OIL SEAL

Removal – Remove engine oil pan and rear main bearing cap, discarding lower seal half removed from bearing cap. Rotate upper seal half by pushing on one end with sharp object and remove upper seal half from cylinder block. Inspect grooves in bearing cap and cylinder block to ensure both are clean, dry and free from burrs.

NOTE – *Seal halves are identical and pre-lubricated with a film of wax for break-in. Do not remove or damage film.*

Installation – 1) To install lower half of seal, slide either end into position at one end of bearing cap and place oil seal tool made from shim stock in groove at other end of bearing cap. Lip of seal must face front of engine. Install seal half using tool as a shoehorn ensuring seal is flush on each side. See *Fig. 6*.

NOTE – *Make sure seal is pressed down firmly and is flush on each side to avoid possibility of leak at seal split line. Avoid pressing on lip as damage to sealing edge could result.*

2) To install upper half of seal, position tool in groove of block. Lubricate seal and start into groove with lip facing forward. Rotate seal into position using care not to distort it.

3) Do not press on lip or sealing edge may be damaged. Also, both ends of seal should be flush at seal split line to avoid leaks. Install bearing cap bolts and tighten. Complete installation by reversing removal procedure.

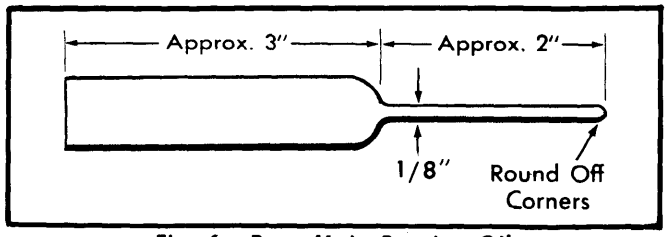


Fig. 6 Rear Main Bearing Oil Seal Installing Tool

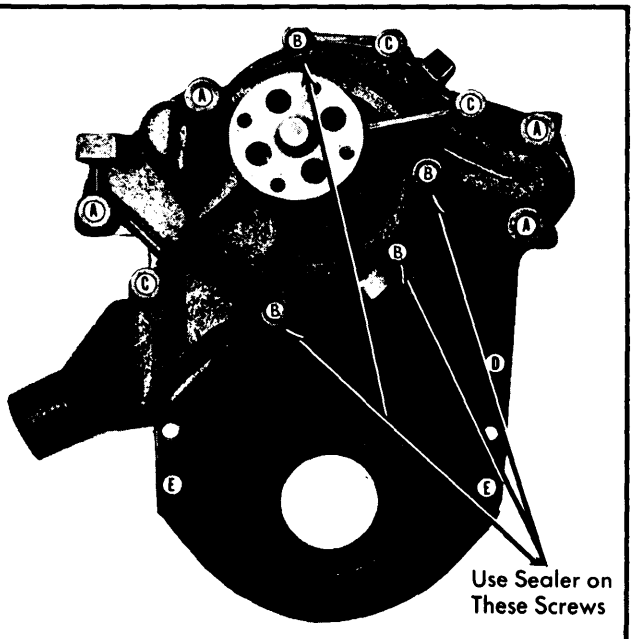
CAMSHAFT

FRONT COVER OIL SEAL

Removal and Installation – Remove crankshaft pulley and hub. Using a thin-bladed screwdriver, pryout front cover oil seal and discard. Lubricate new oil seal, filling cavity with wheel bearing grease. Position seal on end of crankshaft with spring side toward engine. Using suitable tool, drive seal into front cover until it bottoms.

ENGINE FRONT COVER

Removal – Remove crankshaft pulley and hub. Loosen starter enough to gain access to oil pan bolts. Loosen oil pan bolts and lower front of oil pan. Remove lower radiator hose from water pump. Remove bolts securing front cover and lift off front cover and water pump as an assembly. Discard gasket.



Key	(No.)	Size
A	4	3/8-16 x 1 3/8
B	4	1/4-20 x 1 1/8
C	3	5/16-18 x 1 1/4
D	1	5/16-18 x 5/8
E	2	3/8-16 x 5/8

Fig. 7 Engine Front Cover Bolt Locations

368" V8 (Cont.)

Installation – Clean all gasket surfaces and install new front cover gasket over locating dowels on block. Use small amount of sealer to hold gasket in place. Install front cover and water pump assembly over end of crankshaft, aligning dowel holes in cover with dowels on block. Install bolts and tighten. *See Fig. 7* for location of bolts.

NOTE – *Be sure oil pan seal has not been damaged during front cover removal. Use gasket cement on seal areas.*

TIMING CHAIN

Removal – Remove radiator, front cover, distributor, oil pump and fuel pump. Remove oil slinger from crankshaft. Remove bolts securing fuel pump eccentric to camshaft and remove eccentric. Remove bolts from camshaft sprocket and remove camshaft sprocket with chain attached.

Installation – 1) Install camshaft sprocket in timing chain with timing mark toward front. Place chain over crankshaft sprocket, aligning timing marks on both sprockets. *See Fig. 8.*

2) Hold camshaft sprocket in position and press sprocket on camshaft by hand, being sure index hole in camshaft is aligned with index hole in sprocket.

3) Install and tighten bolts securing camshaft sprocket to camshaft. Install and tighten fuel pump eccentric. Reverse removal procedure to complete installation.

NOTE – *Engine was timed for No. 4 cylinder. Adjust distributor rotor for No. 4 firing position or turn crankshaft 360° and set ignition timing for No. 1 cylinder.*

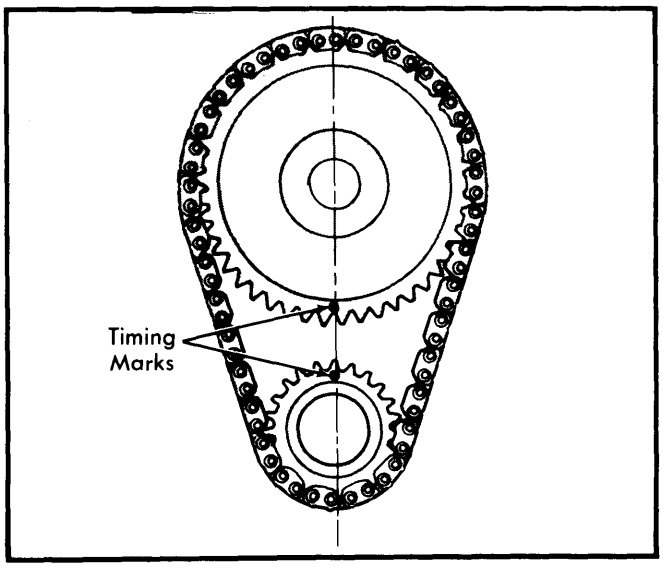


Fig. 8 Timing Chain Sprocket Alignment

CAMSHAFT

Removal – With timing chain and gears removed, remove valve lifters and slide camshaft forward out of engine using care to prevent damage to bearing bores.

Installation – 1) Apply a thin coat of rear axle lubricant to all camshaft lobes and bearing journals. Guide camshaft carefully into cylinder block.

NOTE – *Extreme care must be used to prevent nicking or scratching camshaft bearings.*

2) Install valve lifters. Insert camshaft sprocket in timing chain with timing mark toward front. Place chain over crankshaft sprocket and align timing marks on both sprockets. *See Fig. 8.* Install timing chain and gears, making sure index hole in camshaft lines up with index hole in sprocket.

CAMSHAFT BEARINGS

Removal – 1) With camshaft removed, place arbor (J-21054-2) on driver (J-25262-7) and position arbor shoulder against face of No. 1 bearing. Drive out bearing through rear of bearing bore with hammer. Discard bearing.

2) Install pilot (J-25262-6) in No. 1 bearing bore. Place arbor against No. 2 bearing and force bearing out rear.

3) Remove remaining bearings in same manner. Drive out rear cup plug behind No. 5 bearing, with No. 5 bearing.

Installation – 1) Install new cup plug in rear of No. 5 bearing bore and seal plug with permanent type sealer. Scribe reference mark on front face of each bore to indicate center oil passage position.

2) Slide arbor and driver through first four bearing bores until arbor is positioned between No. 4 and 5 bores. Position pilot in No. 1 cam bearing bore.

3) Place new bearing on arbor, position in No. 5 bore, aligning oil hole in bearing with scribe mark.

4) Install bearing in bore until last white line on driver is flush with front face of pilot. Use only line labeled "500". Repeat procedure to install Nos. 4, 3 and 2, using white lines labeled "500" as stopping points.

5) Install No. 1 bearing using only arbor and driver. Check alignment of oil holes.

ENGINE OILING

Crankcase Capacity – 368" with carburetor; 5 quarts. 368" with DEFI; 4 quarts. Add 1 quart with filter change.

Oil Filter – Replace at every oil change.

Normal Oil Pressure – 35 psi minimum at 30 MPH. Average pressure at idle is 10 psi.

Pressure Regulator Valve – Not adjustable.

ENGINE OILING SYSTEM

Right longitudinal header is fed through angular passage from oil filter and pump. *See Fig. 9.* Oil crosses to left longitudinal header through intersecting vertical passages above No. 2 camshaft bearing, continuing through left longitudinal header to oil pressure signal switch.

Crankshaft, Camshaft and Connecting Rods – Main bearings No. 2, 3 and 4 are lubricated from right longitudinal header through holes drilled in block. Main bearings No. 1 and 5 are lubricated in same manner from left header. Camshaft bearings are lubricated from corresponding main bearings through holes in block. Connecting rod bearings are lubricated from adjacent main bearing through holes in crankshaft.

368" V8 (Cont.)

Lifters, Rocker Arms, Pistons and Pins – Longitudinal headers feed hydraulic valve lifters under pressure through drilled passages. From lifters, oil flows through hollow push rods to rocker arm pivot points, push rod tips and valve tips. Pistons, pins and cylinder walls are lubricated by oil splashed up from crankcase. Oil drains from cylinder heads into valve lifter compartment, returns to crankcase through hole in bottom of compartment.

OIL PUMP

Removal and Installation – Oil pump is mounted on right side near front of engine. Remove oil filter. Remove bolts securing pump to engine, leaving bolt nearest pressure regulator until last. Clean and inspect all parts. See *Oil Pump Specifications*. Before reinstalling pump, pack with petroleum jelly. To install, tighten bolt nearest regulator, allowing oil pump to ride up with bolt. Tighten remaining bolts and install filter.

Oil Pump Specifications

Application	Specification
Gear Backlash	.001-.013"
Gear-to-Body Clearance	①.001-.004"
Reg. Valve-to-Bore Clearance	①.0020-.0035"
Reg. Valve Spring	
Free Length	2.57-2.69"
Pressure@1.460"	9.3-10.5 lbs.

① – Wear limit .005".

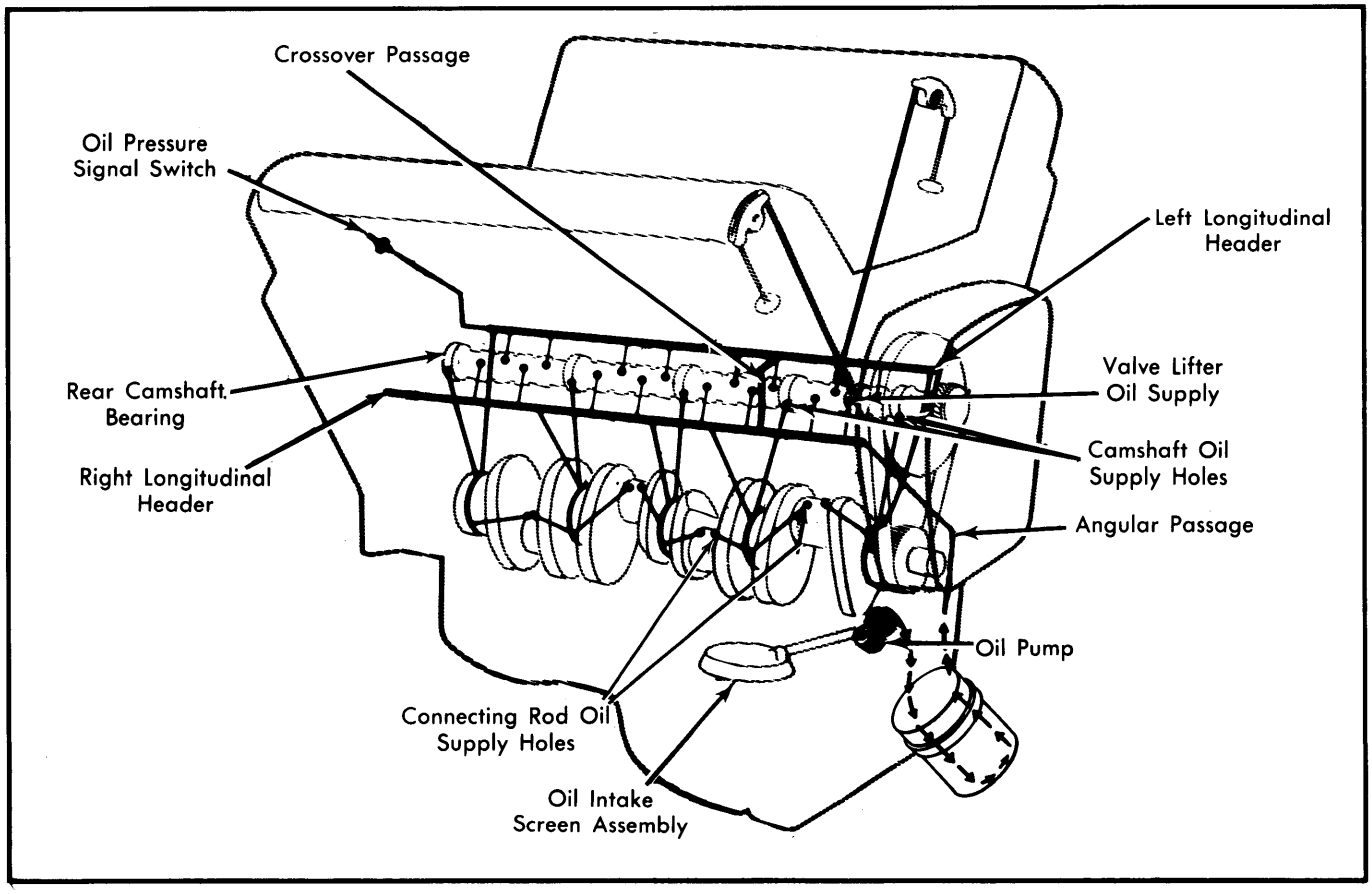


Fig. 9 Engine Oiling System

ENGINE SPECIFICATIONS

GENERAL SPECIFICATIONS

Engine	Net HP At RPM	Torque (Ft. Lbs. at RPM)	Compr. Ratio	Bore	Stroke	Displ. Cu. Ins.
368" (Carb. Models)	150@3800	265@1600	8.2:1	3.800"	4.060"	368
368" (DEFI Models)	145@3600	270@2000	8.2:1	3.800"	4.060"	368

368" V8 (Cont.)

ENGINE SPECIFICATIONS (Cont.)

VALVES

Engine & Valve	Head Diam.	Face Angle	Seat Angle	Seat Width	Stem Diameter	Stem Clearance	Valve Lift
368"							
Int.	1.75"	44°	45°	.047-.063"	.3413-.3420"	①.0010-.0027"	.457"
Exh.	1.50"	44°	45°	.047-.063"	.3413-.3420"	①.0010-.0027"	.473"

① — Wear limit .005"

PISTONS, PINS, RINGS

Engine	PISTONS	PINS		RINGS		
	Clearance	Piston Fit	Rod Fit	Rings	End Gap	Side Clearance
368"	①.0006-.0014"	.0002-.0004"	Press Fit	Comp Oil	.013-.023" .015-.055"	.0017-.0040" None

① — Measured at top of skirt.

CRANKSHAFT MAIN & CONNECTING ROD BEARINGS

Engine	MAIN BEARINGS				CONNECTING ROD BEARINGS		
	Journal Diam.	Clearance	Thrust Bearing	Crankshaft End Play	Journal Diam.	Clearance	Side Play
368"	3.25"	①.0001-.0026"	No. 3	②.002-.012"	2.50"	③.0050-.0028"	.008-.020"

① — Wear limit .0045" ② — Wear limit .015" ③ — Wear limit .0035"

CAMSHAFT

Engine	Journal Diam.	Clearance	Lobe Lift
368"	.....	①.0010-.0022"	Int. .277" Exh. .287"

① — Wear limit .004"

VALVE SPRINGS

Engine	Free Length	PRESSURE (LBS.)	
		Valve Closed	Valve Open
368"			
Int.	2.250"	60-65@1.946"	155-165@1.496"
Exh.	2.250"	60-65@1.946"	155-165@1.496"

VALVE TIMING

Engine	INTAKE		EXHAUST	
	Open (BTDC)	Close (ABDC)	Open (BBDC)	Close (ATDC)
368"	21°	111°	73°	55°

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Camshaft Sprocket	18
Connecting Rod	40
Cylinder Head (Special — Oiled)	95
Distributor Clamp	15
Exhaust Manifold	
Long Bolt	35
Short Bolt	12
Flywheel-to-Converter Housing	30
Flywheel-to-Crankshaft	75
Front Cover	
3/8" Bolts	22
5/16" Bolts	10
Fuel Pump	12
Fuel Pump Eccentric	35
Main Bearing	90
Oil Pan	10
Oil Pump	15
Rocker Arm Support Bolt	70
Thermostat Housing	10
Transmission Housing-to-Block	35
Water Pump-to-Front Cover	70 INCH Lbs.