

Ford Motor Co. 6 Engines

300" 6 CYL. ENGINE

GENERAL SPECIFICATIONS							
Year	Displ. Cu. Ins.	Carburetor	HP at RPM	Torque (Ft. Lbs. at RPM)	Compr. Ratio	Bore	Stroke
1975	300"	1-Bbl.	....	....	....	4.00"	3.98"

ENGINE IDENTIFICATION

Rating plate carries information concerning vehicle model, series, point of manufacture, and unit number. Plate is located on cowl surface under hood. Number code is as follows:

F10BLQ00000

- First Digit - Truck Series Letter.
- Second & Third Digits - Truck Series Number.
- Fourth Digit - Engine Code.
- Fifth Digit - Assembly Plant.
- Remaining Digits - Consecutive Unit Number.

6 Cylinder Engine Identification Codes

Engine	Low Compression	Standard
300" (1975).....	2	B

ENGINE REMOVAL

See *Engine Removal at end of ENGINE Section.*

INTAKE MANIFOLD

Removal - 1) Remove air cleaner, disconnect choke cable and accelerator cable or rod at carburetor. Remove accelerator retracting spring.

2) Remove kick-down rod retracting spring (vehicles with automatic transmission), remove accelerator rod bellcrank assembly.

3) Disconnect fuel inlet line and distributor vacuum line from carburetor, disconnect muffler inlet pipe from exhaust manifold, and disconnect power brake vacuum line if equipped.

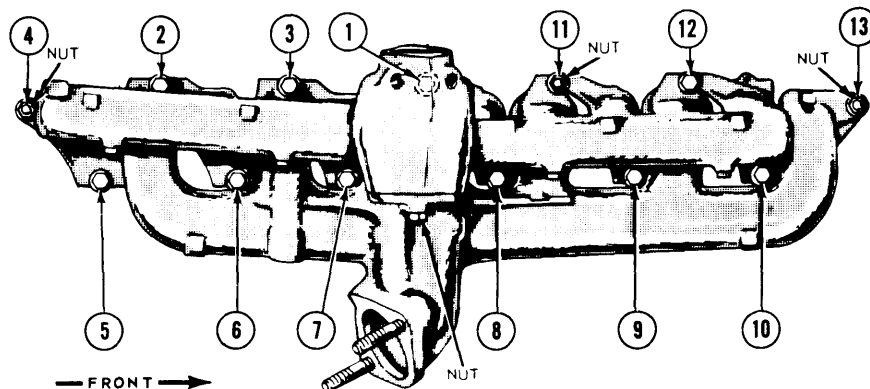
4) Remove bolts and nuts retaining both manifolds to cylinder head. Lift manifold assemblies from engine, remove and discard gaskets. Separate manifolds by removing nuts joining both pieces, discard gaskets between manifolds.

Installation - 1) Clean joining surfaces of cylinder head and manifolds. If one of the manifolds is to be replaced, remove tube fittings from discarded part and install on new part as required, also install new studs in replacement part.

2) If intake manifold and exhaust manifold have been separated, position new gasket on intake manifold and place exhaust manifold over studs on intake part. Install lock washers and nuts and tighten fingertight. Install new intake manifold gasket.

3) Coat mating surfaces lightly with graphite grease, place manifold assemblies in position against cylinder head. Make sure gaskets have not become dislodged. Install attaching washers, bolts, and nuts. Torque bolts and nuts to specifications using sequence shown in this section. If intake and exhaust manifolds were separated, tighten nuts joining both parts.

4) Position new gasket on muffler inlet pipe and connect inlet pipe to exhaust manifold. Torque nuts to specifications. Connect crankcase vent hose to intake manifold inlet tube, and position hose clamp.



INTAKE AND EXHAUST MANIFOLD TIGHTENING SEQUENCE

1F002

300" 6 CYL. ENGINE (Cont.)

- 5) Connect accelerator cable to carburetor and install retracting spring. Connect choke cable to carburetor.
- 6) On vehicles with automatic transmission, install bellcrank assembly and kickdown rod retracting spring. Adjust transmission control linkage as necessary.
- 7) Install air cleaner, adjust engine idle speed and idle fuel mixture.

CYLINDER HEAD

Removal - 1) If cylinder head is to be replaced, disassemble and transfer all valves, springs, rocker arms, etc. to new cylinder head. Clean and inspect all parts, reface valves and check valve guide clearances before assembling used parts to new head. Drain cooling system, remove air cleaner.

2) Remove PCV valve from rocker cover, disconnect vent tube at intake manifold inlet tube.

3) Disconnect and remove carburetor fuel inlet line and distributor vacuum line. Disconnect choke cable at carburetor and position choke cable and housing out of way for removal of head.

4) Remove accelerator cable retracting spring, disconnect accelerator cable from carburetor. On vehicles with automatic transmission, disconnect kickdown rod at carburetor.

5) Disconnect upper radiator hose and heater hose at coolant outlet elbow. Remove coil bracket retaining bolt and position coil away from head assembly.

6) Disconnect muffler inlet pipe from exhaust manifold and throw away inlet pipe gasket.

7) Remove valve rocker arm cover, loosen rocker arm stud nuts so that rocker arms can be rotated to one side. Remove and identify valve push rods in sequence to allow reinstallation in original positions. Disconnect spark plug wires at spark plugs.

8) Remove cylinder head bolts. Install cylinder head lifting eyes (if used) in positions shown in Cylinder Head Torque Sequence illustration.

9) Position a floor crane or other suitable elevating device and attach hoist and lifting sling to lifting eyes. Raise cylinder head and manifold assembly off engine. **CAUTION** - Do not pry between cylinder head and block when freeing head assembly as gasket surface may be damaged.

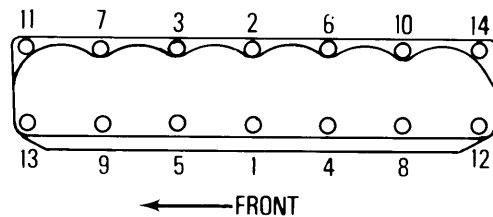
Installation - 1) Clean cylinder head and cylinder block gasket surfaces. Clean gasket surfaces on exhaust manifold and muffler inlet pipe.

2) If cylinder head was removed for head gasket replacement, check flatness of block and head gasket surfaces, then position new gasket over dowel pins on cylinder block.

3) Install lifting eyes on cylinder head in previous locations used to detach head assembly. Use suitable hoist to lift cylinder head over block, lowering carefully until head assembly is properly positioned on block and dowel pins. Remove hoist and lifting eyes.

4) Coat threads of head bolts with engine oil and install bolts. Tighten cylinder head bolts in sequence shown in applicable illustration to specified torque. Once head bolts have been tightened following sequence shown, it should not be necessary to retorque head bolts after extended operation unless desired.

5) Reverse removal procedure to complete installation of all head assembly pieces.



3FO004

CYLINDER HEAD TORQUE SEQUENCE

VALVES							
Engine & Valve	Head Diam.	Face Angle	Seat Angle	Seat Width	Stem Diameter	Stem Clearance	Valve Lift
300"							
Int.	1.772-1.790"	44°	45°	.060-.080"	.3416-.3423"	.0010-.0027"	.403"
Exh.	1.551-1.569"	44°	45°	.070-.090"	.3416-.3423"	.0010-.0027"	.403"

VALVE ARRANGEMENT

E-I-E-I-E-I-E-I-E-I (Front to rear).

VALVE GUIDE SERVICING

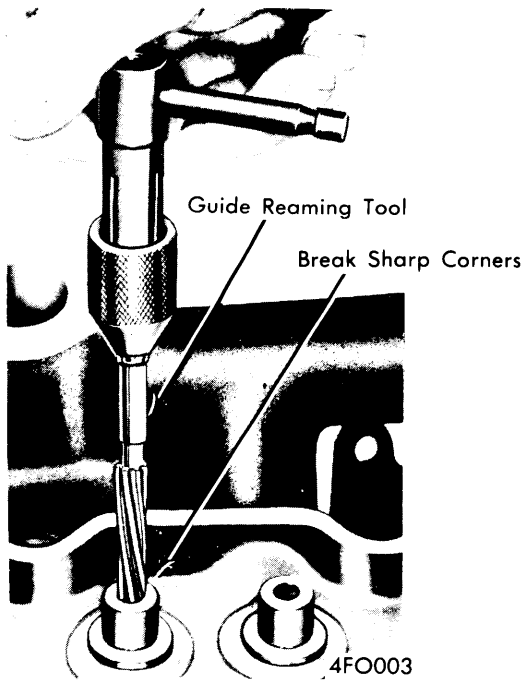
To ream valve guides for installation of valves with oversize stems, always use reamers in sequence and reface valve seat after valve guide is reamed. Reamers are available .003" over-

size with standard diameter pilots; .015" oversize with .003" oversize pilot; .030" oversize with .015" oversize pilot. **NOTE** - Always break sharp corner (ID) at top of valve guide after reaming.

VALVE STEM OIL SEALS

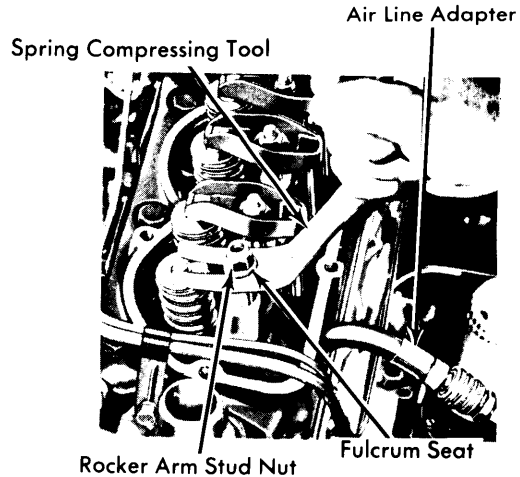
Cup type used on all valves. Install cupped side down, below upper spring retainer.

300" 6 CYL. ENGINE (Cont.)



VALVE GUIDE REAMING PROCEDURE

2) Apply Lubriplate or equivalent to both ends of push rod, valve, and push rod ends of rocker arm, and to valve stem tip. Install push rods ensuring lower end is positioned in valve lifter push rod cup. Reinstall rocker arm assembly.



VALVE SPRING COMPRESSION (IN CHASSIS)

3) Secure rocker arm assemblies. Turn off compressed air and remove air line and adapter. Replace spark plug(s) and wire(s). Place new rocker cover gasket on cover and secure over rocker arm assembly. Install PCV valve and air cleaner.

VALVE SPRINGS			
Engine	Free Length	PRESSURE (LBS.)	
		Valve Closed	Valve Open
300"			
Int.	1.99"	76-85@1.700"	187-207@1.300"
Exh.	1.87"	77-85@1.580"	182-202@1.180"

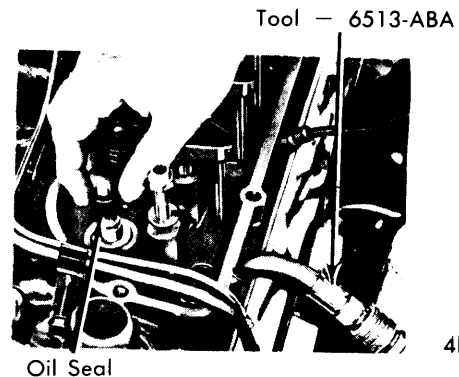
VALVE SPRINGS

Removal — 1) Remove air cleaner, remove PCV valve from rocker arm cover, remove cover. Remove spark plug(s) from cylinder(s) to be serviced.

2) Remove rocker arm stud nut, fulcrum seat, and rocker arm. Inspect all parts for undue wear or fatigue.

3) Using valve spring compressing tool (T65P-6513-A or equivalent), compress valve and remove retainer locks, sleeve, spring retainer and valve spring. *NOTE* — If compressed air pressure fails to hold valve closed during this operation, remove cylinder head for inspection. Remove valve stem seal. Do not remove air pressure as this may allow valve to fall into cylinder if piston has been forced down to bottom of cylinder, a rubber band, tape, or string wrapped around end of valve will prevent droppage of valve, yet still allow enough movement to check for valve binding.

Installation — 1) Install new valve stem seal. Place spring over valve and position spring retainer and sleeve. Compress valve spring and insert valve spring retainer locks.



REMOVING OR INSTALLING VALVE STEM SEAL

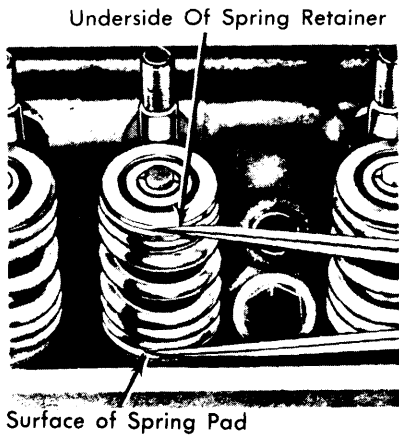
VALVE SPRING INSTALLED HEIGHT

1) Check valve springs for squareness using steel square and surface plate. Stand spring against edge of square and rotate spring slowly observing space between top coil of spring and square. If spring is out of square more than 3/4", spring must be replaced.

2) Measure assembled height of valve spring from surface of cylinder head spring pad to underside of spring retainer using dividers. Check divider against scale, if assembled height of spring is greater than specified height, install necessary .030" spacers between cylinder head spring pad and valve spring to bring assembled height to recommended dimensions.

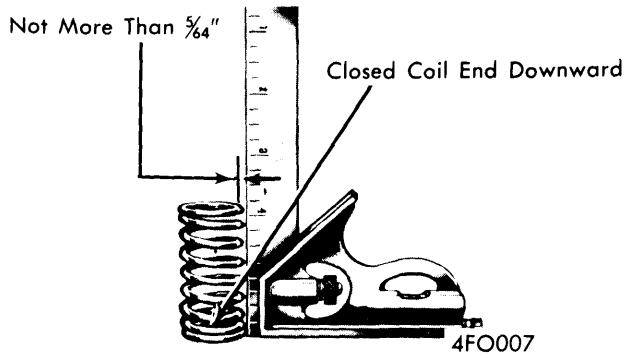
CAUTION — Do not install spacers unless necessary to meet specifications. Excess use of spacers will result in overstressing of valve spring assembly, and will overload camshaft lobes, causing possible spring breakage and/or camshaft wear.

300" 6 CYL. ENGINE (Cont.)



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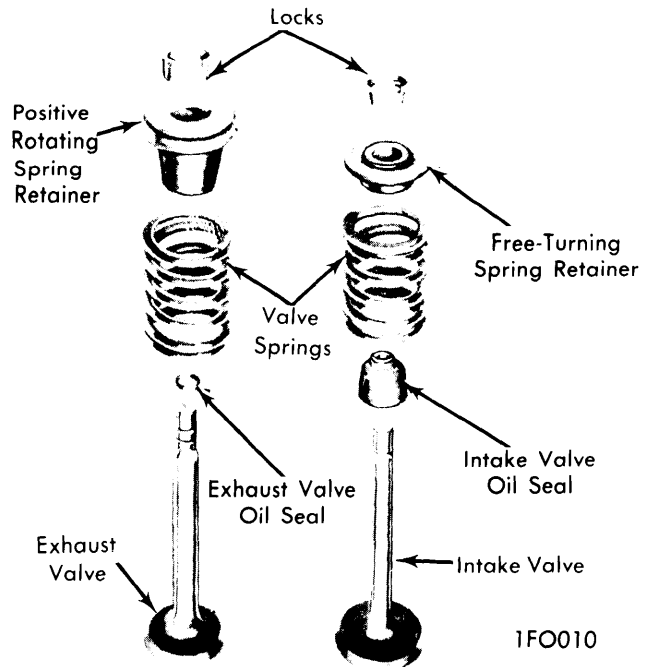
CHECKING ASSEMBLED VALVE SPRING HEIGHT



VALVE SPRING SQUARENESS CHECK PROCEDURE

Valve Spring Installed Height Specifications

Application	Intake Valve	Exhaust Valve
300"	$1\frac{1}{16}$ - $1\frac{23}{64}$ "	$1\frac{1}{16}$ - $1\frac{1}{32}$ "



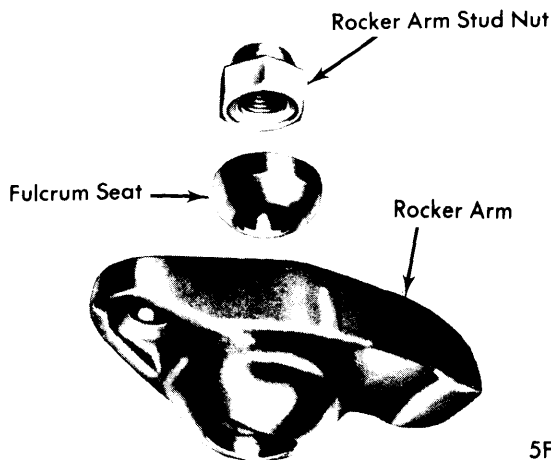
300" VALVE ASSEMBLIES

ROCKER ARM STUDS

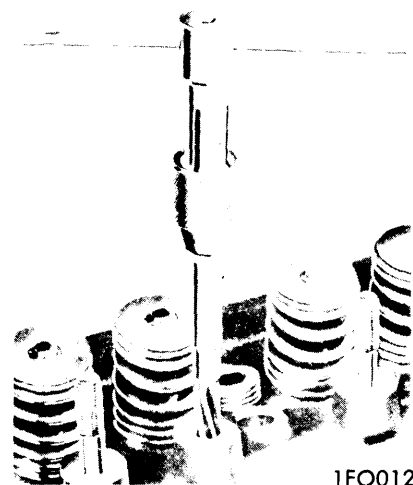
Removal - 1) Use suitable stud pulling tool kit (T62F-6A527-B) to facilitate removal of faulty studs. Follow instructions of manufacturer for proper use.

2) If rocker arm stud was broken off flush with stud boss, use suitable screw extractor to remove broken stud.

Installation - 1) Replacement studs may be pressed into head using suitable stud replacement tool (T69P6049D). Align stud and replacement tool with stud bore and tap sliding driver on tool until tool contacts stud boss, indicating stud is installed to proper height.



VALVE ROCKER ARM ASSEMBLY



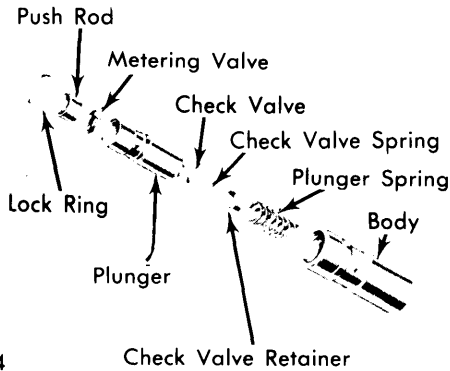
ROCKER ARM STUD OVERSIZE REAMING TOOL (TYPICAL)

300" 6 CYL. ENGINE (Cont.)

2) If rocker arm stud being replaced was loose, ream stud bore using proper reamer (or reamers in sequence) for selected oversize stud. Studs are available in oversizes of .006", .010", and .015". **CAUTION** — Make sure metal particles from reaming process of stud bore do not enter valve area. Install rocker arm stud using same replacement tool as for standard size stud.

HYDRAULIC VALVE LIFTER ASSEMBLY

Lifters should be serviced as assemblies only. Parts should not be interchanged from unit to unit. Leak down rate on all lifters is 5-50 seconds at $\frac{1}{16}$ " plunger travel using suitable lifter leak down testing device. Replace lifter assembly if any sign of malfunction is noticed.



HYDRAULIC VALVE LIFTER ASSEMBLY

HYDRAULIC VALVE LIFTER ADJUSTMENT

1) Make two chalk marks on crankshaft pulley spaced approximately 120° apart, which together with timing marks, will divide damper pulley into three equal parts. Rotate crankshaft until number one piston is on TDC at end of compression stroke.

2) Adjust intake and exhaust valve clearance for number one cylinder by loosening rocker arm stud nut until there is end clearance in push rod, then tighten nut to just remove all push rod to rocker arm clearance (determined by rotating or moving push rod with fingers as nut is tightened).

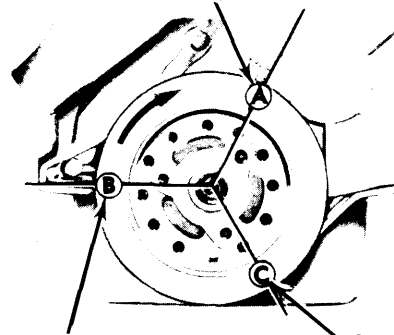
3) When push rod to rocker arm clearance has been eliminated, tighten stud nut an additional one turn to place hydraulic lifter piston in desired range.

4) Repeat procedure for remaining set of valves, turning engine with auxiliary starter switch 1/3 turn at a time, in direction of rotation, while adjusting valves in firing order sequence of 1-5-3-6-2-4.

5) Start engine and check for rough engine idle or noisy lifters. Valve clearance set too tight will cause rough idle and valve clearance set too loose will cause noisy lifters. Readjust if necessary.

Step 1 — Set No. 1 Piston on TDC at End of Compression Stroke, Adjust No. 1 Intake and Exhaust

Step 4 — Adjust No. 6 Intake and Exhaust



Step 2 — Adjust No. 5 Intake and Exhaust

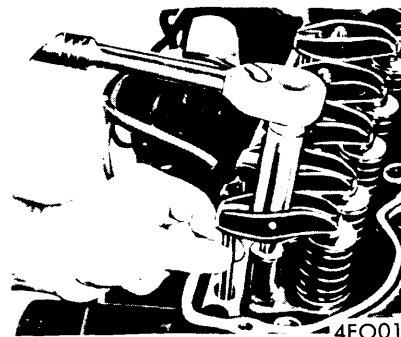
Step 3 — Adjust No. 3 Intake and Exhaust

Step 5 — Adjust No. 2 Intake and Exhaust

Step 6 — Adjust No. 4 Intake and Exhaust

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CRANKSHAFT PULLEY MARKING FOR VALVE CLEARANCE ADJUSTMENT



4FO018

HYDRAULIC VALVE CLEARANCE ADJUSTMENT

PISTONS, PINS, RINGS						
Engine	PISTONS		PINS		RINGS	
	Clearance	Piston Fit	Rod Fit	Rings	End Gap	Side Clearance
300"	.0014-.0022"	.0002-.0004"	Press Fit	1	.010-.020"	.002-.004"
				2	.010-.020"	.002-.004"
				3	.015-.55"	Snug

300" 6 CYL. ENGINE (Cont.)

OIL PAN

See Oil Pan Removal at end of ENGINE Section.

PISTON & ROD ASSEMBLY

Removal - 1) Turn crankshaft until piston to be removed is at bottom of stroke. Place cloth or shop towel lightly soaked with oil on head of piston to collect metal cutting from cylinder ridge.

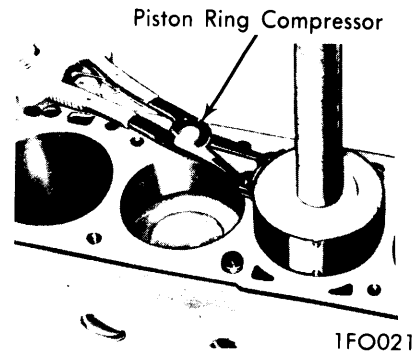
2) Remove any ridge and deposits from upper end of cylinder bore using suitable ridge cutter. Follow instructions furnished by tool manufacturer. **CAUTION** - Never cut into ring travel area in excess of $\frac{1}{32}$ " when removing ridges.

3) Make sure all connecting rod caps are marked to the appropriate pistons to ensure installation in original locations. Remove connecting rod cap.

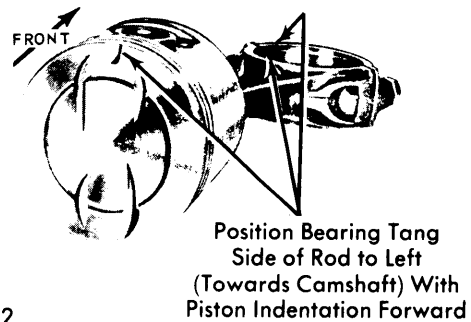
4) Push connecting rod and piston out of top of cylinder using handle end of a hammer. Avoid damage to crankshaft journal or cylinder wall when removing piston and rod.

Installation - 1) Oil piston rings, piston, and cylinder wall with light engine oil. Install piston into original cylinder making sure that ring gaps are spaced properly on piston (see illustration), and install suitable ring compressor on piston.

cylinder bore using wooden handle tool until rod seats on crankshaft journal, install and tighten rod cap. Repeat procedure for each piston removed.



PISTON INSTALLATION (TYPICAL)



PISTON & CONNECTING ROD ASSEMBLY

FITTING PISTONS

1) Calculate size of piston to be used by measuring cylinder bore at right angles to centerline of crankshaft below ring travel.

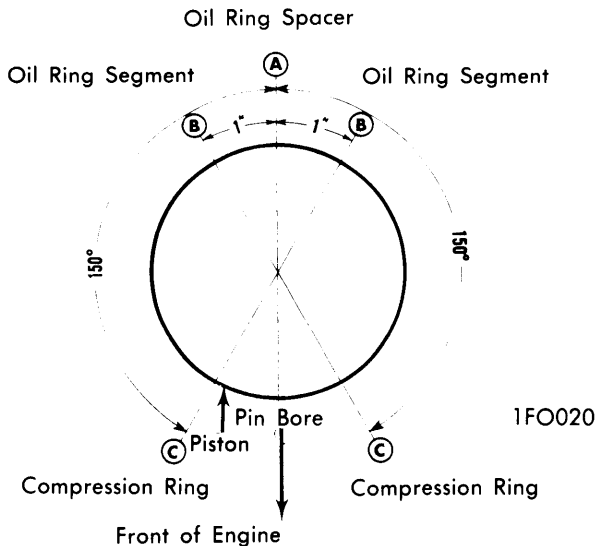
2) Measure piston diameter in line with centerline of piston pin and at 90° to piston pin axis.

3) Make sure that both piston and cylinder block are at normal room temperature (70°F) when fitting.

PISTON PINS

Removal - Using arbor press and suitable tool (T65L-6135-C), press piston pin from piston and connecting rod.

Installation - Start piston pin in piston and connecting rod. Using arbor press and suitable tool (T65L-6135-C), press piston pin through piston and connecting rod until pin is centered in connecting rod.



PISTON RING SPACING

2) Insert rod and piston assembly into cylinder bore and guide rod over crankshaft journal. **NOTE** - Arrow on piston top should point towards front of engine. Tap piston into

CRANKSHAFT MAIN & CONNECTING ROD BEARINGS

Engine	MAIN BEARINGS				CONNECTING ROD BEARINGS		
	Journal Diam.	Clearance	Thrust Bearing	Crankshaft End Play	Journal Diam.	Clearance	Side Play
300"	2.3982-2.3990"	.0008-.0015"	...	.004-.008"	2.1228-2.1236"	①.0008-.0015"	.006-.013"

① - Allowable clearance is .0009-.0027".

300" 6 CYL. ENGINE (Cont.)

MAIN & CONNECTING ROD BEARINGS

Removal — Remove oil pan as previously outlined and proceed as follows:

1) To change connecting rod bearings, remove and inspect connecting rod caps for cylinder identification to ensure correct position for replacement. With crankshaft lined up in center of cylinder bore, push piston upwards into block enough to allow removal of upper half of bearing.

2) Mark main bearing caps for identification purposes before removal. Remove main bearing cap. Remove upper half of main bearing by inserting suitable tool (6331-B) in oil hole of crankshaft, and slowly rotate crankshaft in direction of engine rotation to force out upper half of main bearing. **NOTE** — Replace only one bearing at a time, leaving other bearings secured until ready to be changed.

Installation — Thoroughly clean all bearing surfaces and proceed as follows:

1) Determine crankshaft bearing journal clearance using Plastigage method. When checking main bearings, place a jack under counterweight adjoining bearing being gauged to avoid weight of crankshaft compressing Plastigage and giving erroneous readings. Place Plastigage on bearing surface over full width of bearing cap and about 1/4" off center. Fit main cap or rod cap and torque to specified tightness. Remove cap and check width of Plastigage using scale provided with Plastigage.

2) If bearing clearance is excessive, a .001" or .002" undersize bearing half may be used in combination with a standard size bearing half. If .002" undersize main bearings are used on more than one journal, they may be positioned in engine block rather than in bearing cap. If standard and .002" undersize combination did not bring bearing clearance within specified limits, crankshaft will have to be refinished and undersized bearings installed.

3) After rod bearings have been fitted, apply light coat of engine oil to journals and bearings. With crankshaft throw to bottom of stroke and upper half of rod bearing installed, move piston down until connecting rod bearing seats on journal. Install connecting rod cap and tighten. Check connecting rod side clearance.

4) To install upper main bearing, lubricate bearing with engine oil and place plain end of bearing over shaft on locking tang side of block. Partially insert bearing to allow suitable tool (6331-E) to be inserted into oil hole in crankshaft journal. Rotate crankshaft in opposite direction of engine rotation until bearing tang is seated. Remove bearing tool, install bearing cap and tighten.

THRUST BEARING ALIGNMENT

Install thrust bearing cap after all other main caps have been tightened. Install thrust bearing cap with bolts finger tight. Pry crankshaft forward against thrust surface of upper half of bearing. Hold crankshaft forward and pry thrust bearing cap to rear. This will align thrust surfaces of both halves of bearing. Retain forward pressure on crankshaft and torque cap bolts to specifications.

REAR MAIN BEARING OIL SEAL

Removal — 1) **NOTE** — If oil seal is being replaced at same time as rear main bearing replacement, engine must be removed from vehicle. Remove transmission, flywheel assembly, and engine rear cover plate.

2) Use an awl or other suitable tool to punch two holes in crankshaft rear oil seal. Punch holes on opposite sides of crankshaft and just above bearing cap-to-cylinder block split line.

3) Install sheet metal screw in each hole and pry out rear oil seal using two large screwdrivers or small pry bars. Avoid scratching or damaging crankshaft oil seal surface.

Installation — 1) Coat new oil seal and crankshaft with light film of engine oil. Start seal in recess with seal lip facing forward.

2) Install seal using suitable tool (T65L-6701-A or equivalent) to pressure seal into place until tool contacts cylinder block surface. Inspect seal for any possible damage.

3) Replace engine rear cover plate, flywheel, and transmission.

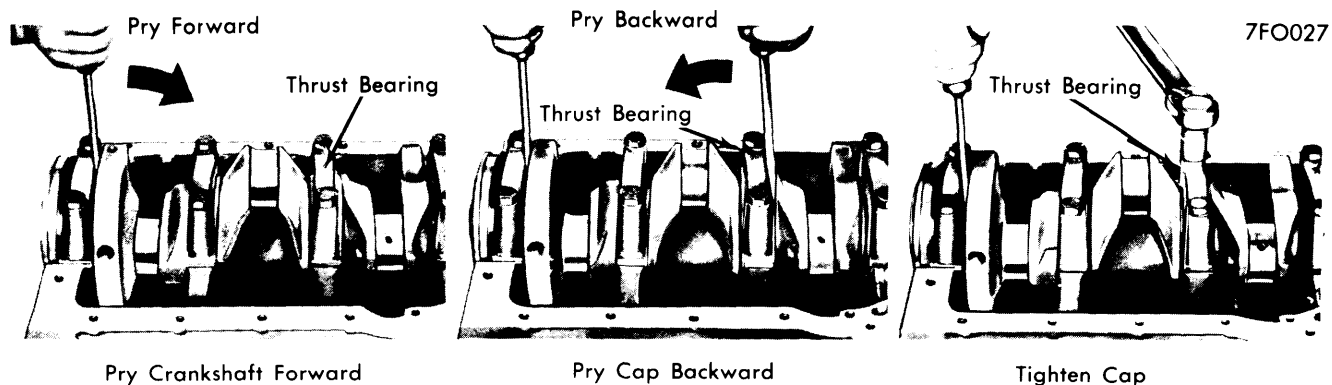
ENGINE FRONT COVER

Removal — 1) Remove any front end sheet metal which may interfere with front cover removal. Disconnect, drain and remove radiator, drive belt, fan and pulley.

2) Using suitable tool (T58P-6316-B or equivalent), remove crankshaft damper. Remove front cover and gasket.

Installation — 1) Oil seal should be replaced before cover is reinstalled. Clean off gasket surfaces, position and secure front cover.

2) Install fan and pulley, all drive belts, radiator, and all other parts or front end sheet metal.

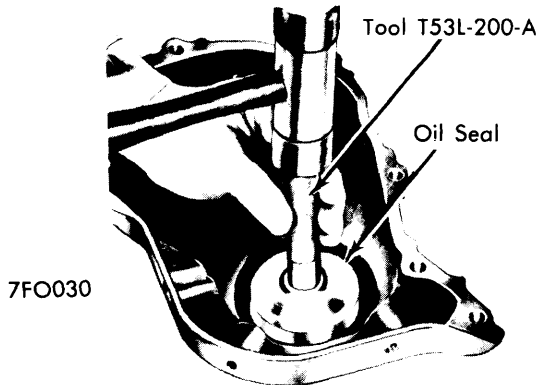


THRUST BEARING ALIGNMENT (TYPICAL)

300" 6 CYL. ENGINE (Cont.)

FRONT COVER OIL SEAL

Removal & Installation — With front cover removed from engine, drive oil seal out of cover using suitable pin punch. Clean out recess in cover. Coat new seal with grease and drive in seal until seal is fully seated in front cover recess. Check seal after installation to see that spring is properly positioned in seal.



FRONT COVER OIL SEAL INSTALLATION (TYPICAL)

CAMSHAFT			
Engine	Journal Diam.	Clearance	Lobe Lift
300"	2.017-2.018"	.001-.003"	⓪ .2490"

⓪ — Intake and exhaust have same lift.

TIMING GEAR

Removal & Installation, Metal Gear — 1) Drain cooling system and crankcase, follow procedure for Front Cover Removal. Crank engine until timing marks are aligned (see illustration). Using suitable gear puller, remove camshaft gear and crankshaft gear.

2) Ensure that key and spacer are properly installed. Align gear keyway with key and install timing gear on camshaft. Be sure that timing marks line up on camshaft and crankshaft gears. Install front cover and related parts.

Removal & Installation, Fiber Gear — 1) Camshaft must be removed in order to change timing gear. Follow procedures under Camshaft Removal. Press camshaft gear off camshaft using suitable arbor press, remove thrust plate, spacer, and key.

2) Install camshaft in engine and place spacer and thrust plate on camshaft. Position camshaft gear on camshaft with timing marks aligned (see illustration). Using suitable tool (T65L-6306-A or equivalent), tighten camshaft gear to camshaft. **NOTE** — Ensure that gear and spacer are tight against shoulder on camshaft and that thrust plate can be moved freely. Install thrust plate screws and tighten. Install front cover and related parts.

CAMSHAFT

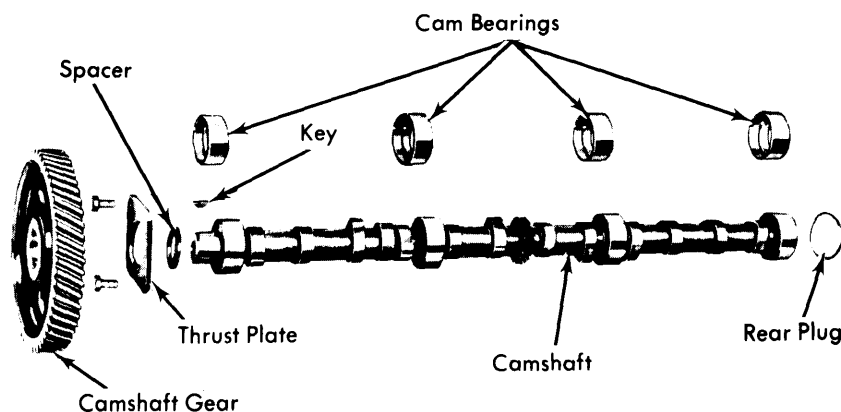
Removal — 1) Drain cooling system and crankcase. Remove radiator and grille assemblies. Remove condenser attaching bolts and position to one side. **NOTE** — Do not disconnect refrigerant lines from condenser. Remove distributor, fuel pump, and oil filter. Remove cylinder head and valve lifters. Remove drive belt, fan and pulley.

2) Remove crankshaft damper, remove front cover and timing chain. Remove oil dipstick, oil pump, and inlet tube. Remove camshaft thrust plate and carefully remove camshaft by pulling toward front of engine. **CAUTION** — Exercise care to avoid damaging camshaft bearings, journals, or lobes while removing camshaft.

Installation — Clean oil passage at rear of cylinder block, which feeds rocker arm shaft, by blowing compressed air into opening in block. Coat camshaft lobes with Lubriplate and coat journals with engine oil. Carefully slide camshaft through bearings and install thrust plate with oil groove toward rear of engine and tighten bolts. Replace front oil seal in front cover. Reverse removal procedure.

CAMSHAFT BEARINGS

Removal & Installation — Remove engine from vehicle and remove flywheel. Remove camshaft and rear bearing bore plug. Using suitable driver-puller tool (T65L-6250-A or equivalent), remove camshaft bearings. Position new bearings at bearing bores and press into place while noting the following: Oil holes in bearings must be aligned with oil holes in cylinder block. Front bearing must be installed below front face of cylinder block at a distance of .030-.050".



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CAMSHAFT & RELATED PARTS

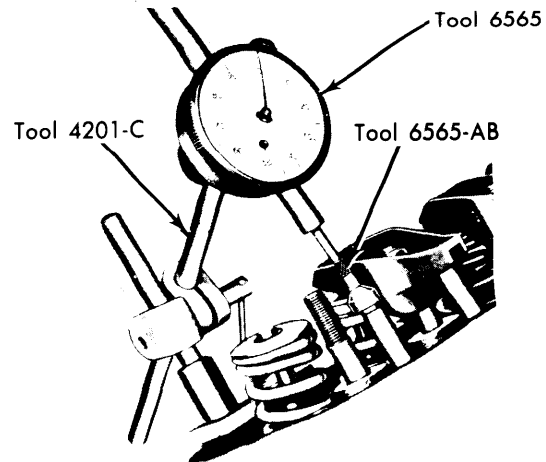
300" 6 CYL. ENGINE (Cont.)

CAMSHAFT END THRUST

With engine front cover removed, push camshaft toward rear of engine and install dial indicator so indicator point is on camshaft sprocket cap screw. Zero the dial indicator. Position large screwdriver between camshaft sprocket and block. Pull camshaft forward and then release. If dial indicator reading is not within specifications, replace thrust plate.

CAM LOBE LIFT

With rocker arm shaft removed, check lift of each lobe in consecutive order. Using a suitable dial indicator, position point on end of push rod and in same plane as push rod movement. Rotate crankshaft until lifter and push rod are at lowest position and zero the indicator. Rotate crankshaft slowly until push rod is in fully raised position. Check that total lift recorded with indicator is within specifications. If lift on any lobe is below specifications, camshaft and valve lifter(s) operating on worn lobe(s) must be replaced.



7FO033

CHECKING CAMSHAFT LOBE LIFT

ENGINE OILING

Crankcase Capacity — Capacity is 5 quarts. Add one quart with filter change.

Oil Filter — Replace filter at first oil change, then every second oil change after.

Normal Oil Pressure — Oil pressure at 2000 RPM should be 50-70 psi.

Pressure Regulator Valve — Located in pump body. Nonadjustable.

pressure relief spring valve chamber cap, insert self-threading sheet metal screw into cap and pull from chamber. Remove spring and plunger.

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ENGINE OILING SYSTEM

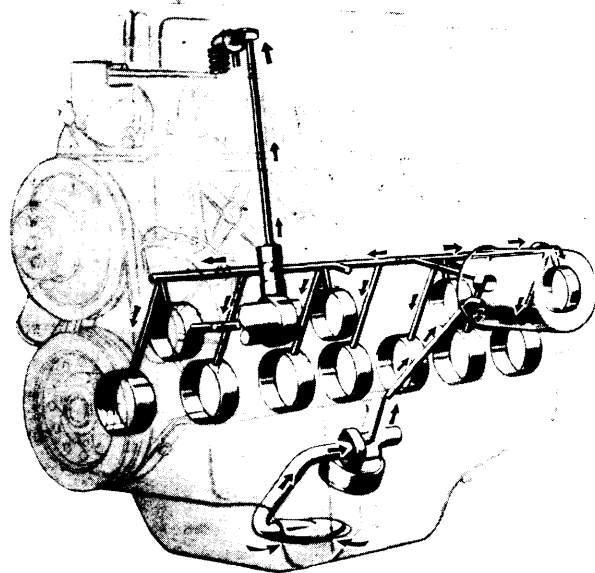
Oil supply is picked up from pan by oil pump which routes oil through filter element to passages in block supplying crankshaft bearings, camshaft bearings, and lifters. Oil is moved up to top of engine by means of push rods from the lifters. Rocker arms are lubricated in this fashion. Oil is returned to pan through drain holes in head assembly which lead back down to oil pan.

Timing Gears — Lubricated by splash method from oil pan.

Oil Filter — Full flow externally mounted type located on left side of engine. Filter has integral by-pass valve and anti-drain back diaphragm. Filter is disposable, throw-away type.

OIL PUMP

Removal & Disassembly — Remove oil pan, remove attaching bolts and oil pump from engine. Remove oil inlet tube, cover attaching screws and cover. Remove inner rotor and shaft assembly, remove outer race. Drill small hole into oil



ENGINE OILING SYSTEM

Inspection and Reassembly — Clean, inspect, and oil all parts thoroughly. Install outer race and inner rotor and shaft assembly (see specifications for clearances). **NOTE** — Identification mark on rotor and on outer race both are to face bottom of pump. Inner rotor and shaft, and outer race are serviced as an assembly. Install cover and tighten cover bolts.

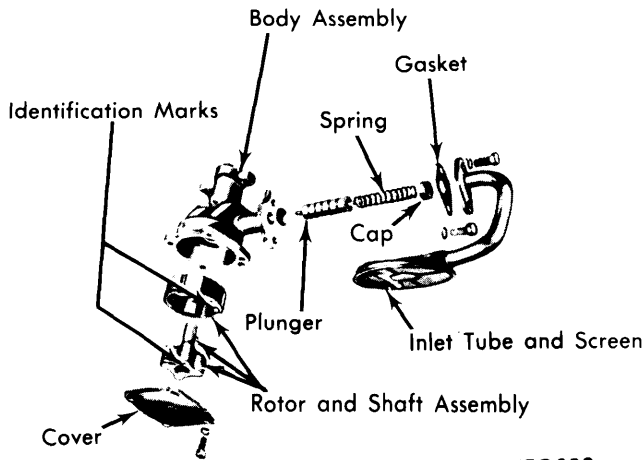
Position oil inlet tube on oil pump, install new gasket, and tighten attaching bolts. Prime oil pump by submerging inlet port in oil and rotating shaft until oil flows from outer port.

300" 6 CYL. ENGINE (Cont.)

ENGINE OILING (Cont.)

Oil Pump Specifications

Application	Specification
Relief Valve Spring Tension	20.6-22.6 lbs. @2.490"
Shaft-to-Housing Clearance.....	.0015-.0029"
Relief Valve Clearance.....	.0015-.0029"
Rotor Assembly End Clearance .....	.0010-.0040"
Outer Race-to-Housing Clearance.....	.001-.013"



4FO038

OIL PUMP ASSEMBLY

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Cylinder Head ①	70-85
Manifold-to-Cylinder Head.....	23-28
Intake Manifold-to-Exhaust Manifold.....	28-33
Oil Pan	10-15
Main Bearing Caps.....	60-70
Connecting Rod Caps	40-45
Vibration Damper.....	130-150
Camshaft Sprocket	
Camshaft Thrust Plate	
Flywheel	75-85
Rocker Arm Nut	
Engine Front Cover	
Rocker Arm Cover.....	4-7
Oil Pan-to-Block.....	10-15
Water Pump	15-20
Oil Pump.....	10-15
① - Tighten cylinder head bolts in three steps as follows: Step One - 55 ft. lbs., Step Two - 65 ft. lbs., Step Three - 70-85 ft. lbs.	