260Z 6 CYLINDER

GENERAL SPECIFICATIONS										
Year	Displ.		Carburetor	HP at RPM	Torque (Ft. Lbs. at RPM)	Compr. Ratio	Bore		Stroke	
	cu. ins.	cc					in.	mm	in.	mm
1974	156.5	2565	2x1 Bbl.	....	....	8.8-1	3.268	83	3.110	79

ENGINE IDENTIFICATION

Engine serial number is stamped on right rear side of cylinder block where cylinder head contacts block. Number is preceeded by engine model designation, L26.

ENGINE REMOVAL

NOTE – It is recommended that engine and transmission be removed as a unit. Engine can then be separated from transmission assembly.

1) Scribe alignment marks on hood around hood hinges and remove hood. Drain cooling system, engine crankcase, and transmission. Disconnect battery. Remove radiator hoses, disconnect transmission cooler lines (automatic transmission models), and remove radiator.

2) Disconnect fuel line from fuel pump, remove heater hoses, and disconnect vacuum hoses, accelerator linkage, throttle control wire and choke control wire at carburetor side. Disconnect wiring from starter, alternator, ignition coil, oil pressure switch and thermal transmitter.

3) Disconnect the following wires: Throttle opener solenoid (manual transmission models), choke heater, wire for EGR solenoid valve, vacuum solenoid cutting valve, and canister purge hoses.

4) Remove clutch slave cylinder and return spring, disconnect speedometer cable, back-up light switch. Disconnect transmission control lever from control lever bracket and remove lever. Disconnect front exhaust pipe from exhaust manifold and disconnect center pipe from main muffler. Remove front pipe, pre-muffler, and center pipe assembly.

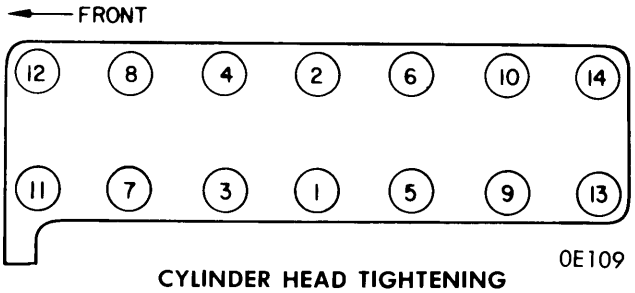
5) Disconnect propeller shaft from companion flange of housing. Jack transmission up a little and remove rear engine mounting crossmember. Remove bolts holding front engine mount brackets to engine mount insulators.

6) Attach engine hoist to hooks installed on engine cylinder head front and rear. As you begin to raise engine with hoist, gradually lower jack under transmission. Make sure engine tilts in order to clear body. Remove engine from vehicle. To install, reverse removal procedure.

CYLINDER HEAD REMOVAL

1) Drain cooling system and disconnect upper radiator hose. Remove spark plug wires and spark plugs. Remove fuel pump and disconnect fuel lines. Remove heater hoses.

2) Remove heat shield, disconnect vacuum hoses, accelerator linkage, and carburetor controls. Disconnect exhaust pipe from exhaust manifold. Remove intake manifold complete with carburetors, remove exhaust manifold. Remove thermostat housing.



CYLINDER HEAD TIGHTENING

3) Remove rocker cover. Remove fuel pump drive cam and camshaft sprocket. Remove oil pipe. Loosen cylinder head bolts and remove cylinder head.

NOTE – Special Tool ST17420001 may be used to support timing chain so that timing marks on crankshaft sprocket and timing chain will remain unchanged. This simplifies timing mark alignment.

VALVES							
Engine & Valve	Head Diam. In. (mm)	Face Angle	Seat Angle	Seat Width In. (mm)	Stem Diameter In. (mm)	Stem Clearance In. (mm)	Valve Lift In. (mm)
L26							
Int.	1.65 (42.0)	45.5°	45°	.055-.063 (1.4-1.6)	.3136-.3142 (7.965-7.980)	.0008-.0021 (.020-.053)	.433 (11)
Exh.	1.30 (35.0)	45.5°	45°	.071-.087 (1.8-2.2)	.3128-.3134 (7.945-7.960)	.0016-.0029 (.040-.073)	.433 (11)

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VALVE ARRANGEMENT

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

VALVE SPRING FREE LENGTH

Measure free length of each spring. Outer spring should have length of 1.97" and inner spring should have length of 1.76".

VALVE SPRING INSTALLED HEIGHT

With valves closed inner spring should have a height of 1.38" and outer spring should have a height of 1.57". See specifications for pressures with valves open and closed.

VALVE SPRINGS

Engine	Free Length In. (mm)	PRESSURE Lbs. @ In. (kg @ mm)	
		Valve Closed	Valve Open
L26			
Inner	1.76 (44.85)	27.12 @ 1.38 (12.3 @ 35.0)	56.22 @ .965 (25.5 @ 24.5)
Outer	1.97 (49.98)	46.96 @ 1.57 (21.3 @ 40.0)	108.03 @ 1.16 (49.0 @ 29.5)

VALVE GUIDES CHECKING

1) Measure clearance between valve stem and valve guide with aid of micrometer and hole gauge. Check diameter of valve stem in three places: top, center and bottom.

2) Insert hole gauge in valve guide bore and measure at center. Subtract highest reading of valve stem diameter from valve guide bore to obtain clearance.

NOTE — As a quick check, a valve may be inserted into valve guide and moved either left or right (parallel with rocker arm). If its tip moves about .0079" or more, the clearance is beyond maximum limit of .0039".

VALVE GUIDE REPLACEMENT

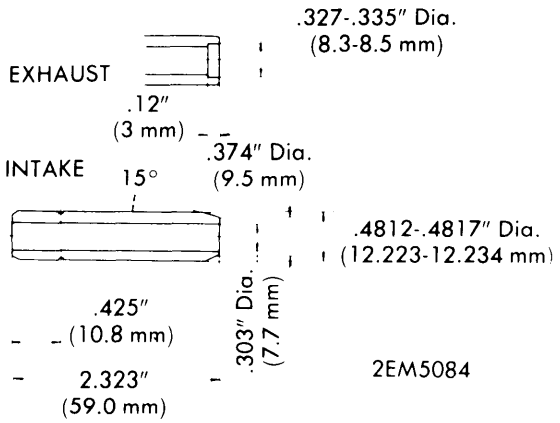
1) Using a press and drift pin, force worn guide from cylinder head working from combustion cylinder side. Although this procedure may be carried out at room temperature, higher temperatures will aid removal.

2) Ream cylinder head side guide hole to provide interference fit of .0011-.0019" (.027-.049 mm). Press new valve guide into cylinder head so that it will fit smoothly when cylinder head is heated to 302-392°F (150-200°C).

3) Ream bore of valve guides to .3150-.3157" (8.000-8.018 mm). Correct valve seat surface using new valve guide as axis.

VALVE SEAT INSERTS

Check valve seats for pitting at valve contact surface. Valve seat inserts of .020" (.5 mm) oversize are available if necessary.



VALVE GUIDES

VALVE ADJUSTMENT

Loosen pivot locking nut and turn pivot screw until specified clearance is obtained with engine cold. Tighten pivot locking nut after adjustment and recheck clearance. Warm up engine. With engine stopped, measure valve clearance and reset to hot clearances if necessary.

Valve	Hot	Cold
Intake	.010"	.008"
Exhaust	.012"	.010"

PISTONS, PINS, RINGS

Engine	PISTONS	PINS		RINGS		
	Clearance In. (mm)	Piston Fit In. (mm)	Rod Fit In. (mm)	Rings	End Gap In. (mm)	Side Clearance In. (mm)
L26	.0010-.0018 (.025-.045)	.0002-.0051 (.006-.013)	① .0006-.0013 (.015-.033)	No. 1	.009-.015 (.23-.38)	.0018-.0031 (.045-.080)
				No. 2	.006-.012 (.15-.30)	.0012-.0028 (.030-.070)
				Oil	.006-.012 (.15-.30)	.....

① — Interference fit.

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OIL PAN REMOVAL

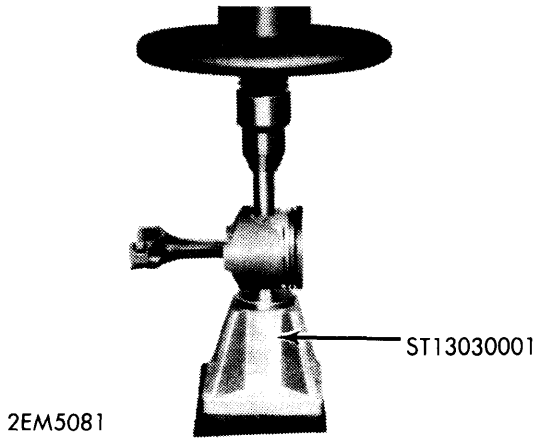
Drain oil, remove oil pan bolts and remove oil pan. Use new gasket when replacing oil pan.

PISTON & ROD REMOVAL

With oil pan and cylinder head removed, remove connecting rod caps making sure to keep them in proper order. Remove piston and rod assembly from top side of cylinder. Upon reinstallation make sure connecting rod oil jet is facing right side of cylinder block and "F" mark on piston is facing forward. To install, reverse removal procedure.

PISTON PIN REPLACEMENT

Using suitable press and related adaptors, remove piston pin from piston and connecting rod. Measure pin bore diameter in piston and connecting rod. If wear exceeds specifications, replace both piston and pin. Pin must fit piston with light thumb pressure at room temperature. Piston pin is a press fit (interference) in connecting rod using one to three tons pressure.



INSTALLING PISTON PIN

FITTING PISTONS

1) Visually inspect cylinder block for cracks or flaws. Using a suitable bore gauge, measure cylinder for out-of-round or taper. If cylinder bore is out-of-round or taper exceeds .0006" (.015 mm), refinish cylinder bore. When any one cylinder is bored, all cylinders must be bored.

2) Determine piston oversize according to amount of wear in cylinder (see specifications). By measuring piston at thrust face and adding mean of piston-to-cylinder clearance, finish hone of cylinder may be determined.

3) After honing cylinder to final fit, measure piston-to-cylinder clearance using pull scale and feeler gauge. Extracting force to pull scale should be .44-3.31 lbs. (.2-1.5 kg) using a .0016" (.04 mm) feeler gauge. If cylinder bores are worn beyond limits, undersize cylinder liners are available. Liners should have an interference fit of .0031-.0035" (.08-.09 mm) in cylinder block.

Piston Specifications

Piston Size In. (mm)	Piston Diameter In. (mm)
Standard	3.2671-3.2691 (82.985-83.035)
.020 (.50)	3.2860-3.2880 (83.465-83.515)
.040 (1.00)	3.3057-3.077 (83.965-84.015)

PISTONS RINGS

Using suitable ring remover, remove piston rings. Square ring in cylinder bore by pushing into position with piston head. Measure ring end gap at bottom of traveled part of cylinder bore. Measure side clearance of rings in grooves as each ring is fitted to piston. Oversize rings are available in the following sizes: .020" (.5 mm) and .040" (1.0 mm).

CRANKSHAFT MAIN & CONNECTING ROD BEARINGS

Engine	MAIN BEARINGS				CONNECTING ROD BEARINGS		
	Journal Diam. In. (mm)	Clearance In. (mm)	Thrust Bearing	Crankshaft End Play In. (mm)	Journal Diam. In. (mm)	Clearance In. (mm)	Side Play In. (mm)
L26	2.1631-2.1636 (54.942-54.955)	.0008-.0028 (.020-.072)	Center	.002-.007 (.05-.18)	1.9670-1.9675 (49.961-49.974)	.0010-.0022 (.025-.055)	.0079-.0118 (.20-.30)

CRANKSHAFT REMOVAL

With engine removed from vehicle, cylinder head and oil pan removed, remove flywheel and end plate. Remove oil pump and its drive gear. Remove engine front cover, timing chain, chain tensioner and guide. Remove oil thrower, crankshaft worm gear and chain drive sprocket. Remove pistons and connecting rods and main bearing caps. Remove crankshaft.

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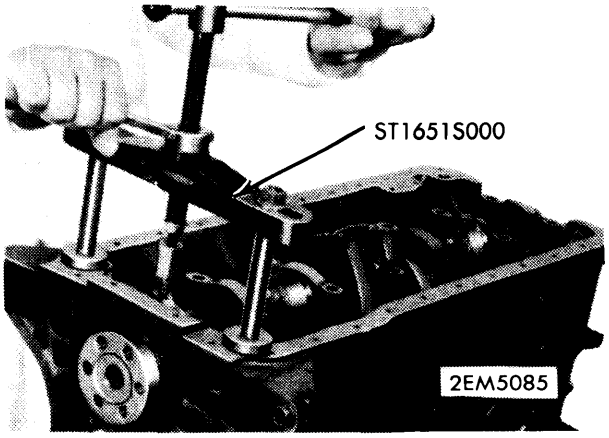
NOTE — It is recommended that special tool ST1651S000 be used for removal of rear main bearing cap.



REAR MAIN BEARING CAP REMOVAL

CHECKING CRANKSHAFT

1) Check shaft journals and crankpins for scars, wear or cracks. Taper and out of round of crank journals and crank pins should not exceed .0012".

2) Check crankshaft for bend. If bend exceeds .002" repair or replace. For measuring bend, use a dial indicator. Values are half as much as readings obtained when crankshaft is given a turn with gauge applied to center journal.

3) After regrinding crankshaft, finish to appropriate undersize as follows:

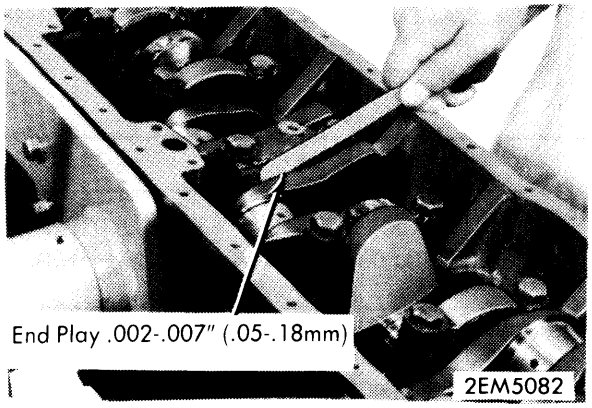
Main Bearings

Bearing Size In. (mm)	Bearing Top Thickness In. (mm)	Journal Diameter In. (mm)
Standard	.0717-.0722	2.1631-2.1636
	(1.822-1.835)	(54.942-54.955)
.010	.0767-.0772	2.1532-2.1537
(.25)	(1.947-1.960)	(54.692-54.705)
.020	.0816-.0821	2.1434-2.1439
(.50)	(2.072-2.085)	(54.442-54.455)
.030	.0865-.0870	2.1335-2.1341
(.75)	(2.197-2.210)	(54.192-54.205)
.040	.0914-.0919	2.1237-2.1242
(1.00)	(2.322-2.335)	(53.942-53.955)

Connecting Rod Bearings

Bearing Size In. (mm)	Bearing Top Thickness In. (mm)	Journal Diameter In. (mm)
Standard	.0588-.0593	1.9670-1.9675
	(1.493-1.506)	(49.961-49.974)
.0024	.0600-.0605	1.9646-1.9651
(.06)	(1.523-1.536)	(49.901-49.914)
.0047	.0611-.0617	1.9622-1.9628
(.12)	(1.553-1.566)	(49.841-49.854)
.010	.0637-.0642	1.9571-1.9576
(.25)	(1.618-1.631)	(49.711-49.724)
.020	.0686-.0691	1.9473-1.9478
(.50)	(1.743-1.756)	(49.461-49.474)
.030	.0735-.0741	1.9374-1.9379
(.75)	(1.868-1.881)	(49.211-49.224)
.040	.0785-.0790	1.9726-1.9281
(.1000)	(1.993-2.006)	(48.961-48.974)

4) Install crankshaft in block and measure end play. If it exceeds .0020-.0071", replace center main bearings. Check main drive shaft pilot bearing at rear of crankshaft for wear or damage. Replace if any defects are found.



CRANKSHAFT END PLAY

MAIN BEARING CLEARANCE

1) Check all bearings and bushings for wear or damage. Replace bushings if defects are found. Wipe off oil and dust and set main bearing on cap block.

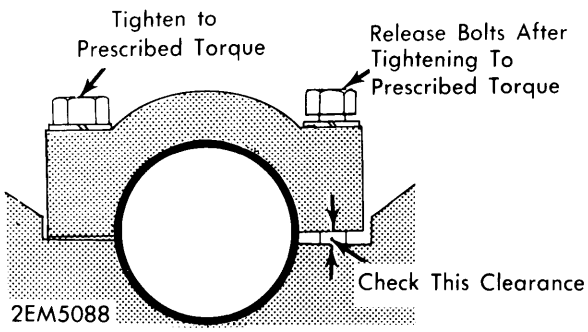
2) Cut a strip of Plastigage the width of bearing and place in parallel with crankshaft journal. Do not block oil hole. Install cap on assembly and tighten to 32-39 ft. lbs. (4.4-5.5 mkg).

NOTE — Do not turn crankshaft while Plastigage is inserted.

3) Remove cap and measure width of Plastigage at widest point using gauge provided with Plastigage envelope. If clearance not to specification, replace bearings.

4) If clearance is correct, set bushings on main bearing cap and cylinder block recess and install bearing cap. Tighten cap bolts to 32-39 ft. lbs. (4.4-5.5 mkg).

5) Loosen cap bolt on one side and measure clearance between cap and block. Clearance should be .0012" (.03 mm). If clearance is not as specified, replace bearing. Retighten cap bolt.



BEARING CRUSH CHECK

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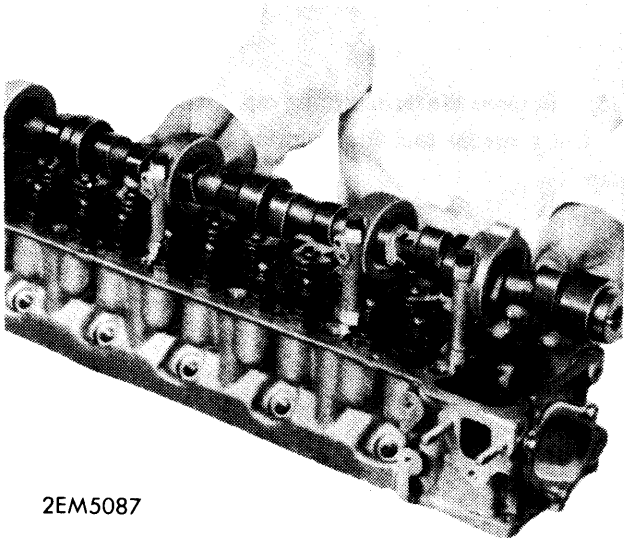
CONNECTING ROD BEARING CLEARANCE

Measure clearance in same manner as outlined for main bearings. If clearance is not as specified, replace bearing with an appropriate undersize and refinish crankshaft journal. Tighten cap bolts to 19-24 ft. lbs. (2.6-3.3 mkg). Check clearance with one cap bolt loosened using same procedure as for main bearings. Clearance should be .0006-.0018" (.015-.045 mm).

CAMSHAFT			
Engine	Journal Diam. In. (mm)	Clearance In. (mm)	Lobe Lift In. (mm)
L26	1.8877-1.8883 (49.949-47.962)	.0015-.0026 (.038-.067)	.275 (7.0)

CAMSHAFT REMOVAL

Remove cylinder head. Remove valve rocker spring. Loosen valve rocker pivot lock nut and remove rocker arm by pressing down on spring. Use care not to lose valve rocker guide. Remove camshaft. Do not let camshaft scratch cam bushing during removal.



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CAMSHAFT REMOVAL

NOTE — Do not remove camshaft bearings. If bearings are removed, bearing centers will be out of alignment and proper reassembly will be difficult without center borings.

CAMSHAFT BEARINGS

Measure inner diameter of camshaft bearing and outer diameter of camshaft journal. If wear or damage is found inside bracket, replace cylinder head assembly.

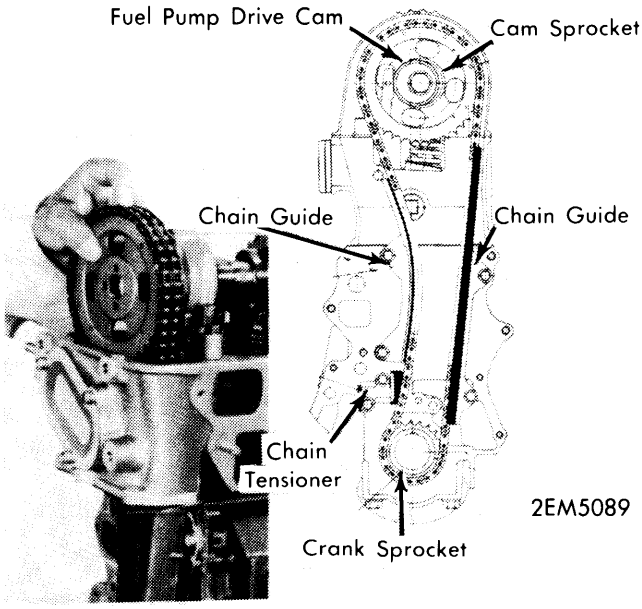
ENGINE FRONT COVER

1) Drain cooling system, disconnect hoses and remove radiator from vehicle. Remove fan belt, fan, air pump belt and air pump. Remove wiring from distributor and remove distributor.

2) Remove fuel pump and thermostat housing. Using suitable puller, remove crank pulley. Remove front cover attaching bolts and remove engine front cover. To install, reverse removal procedure.

TIMING CHAIN & GEARS

Remove engine front cover and camshaft drive sprocket and fuel pump cam. Remove timing chain, tensioner and chain guide. Remove oil thrower, crankshaft worm gear and crankshaft chain drive gear. To install, reverse removal procedure.



TIMING CHAIN & SPROCKET

NOTE — When installing timing chain, camshaft gear or crankshaft gear, make sure camshaft and crankshaft keys point upward. Set timing chain so that its mating marks match marks on crankshaft and camshaft sprockets on right-hand side. There are 42 chain links between the two timing chain marks. Factory setting of camshaft sprocket is number one hole, if chain is excessively stretched use number two or three hole to achieve correct valve timing.

ENGINE OILING

ENGINE OILING SYSTEM

Oil drawn from oil pan passes through a screen to oil pump. Oil is delivered to full flow oil filter and to main oil gallery. Main oil gallery supplies oil to crankshaft main bearings and drilled passages in crankshaft. Oil sprayed from jet holes on connecting rods lubricates cylinders and piston pins. Oil from main gallery lubricates chain tensioner and timing chain. A center oil hole in the crankshaft center bearing feeds camshaft bearings on cylinder head. Valve rocker mechanism is lubricated through oil gallery in camshaft and through a small channel at base circle portion of each cam. Rocker arms and valves are lubricated intermittenly through small holes or oil pipe.

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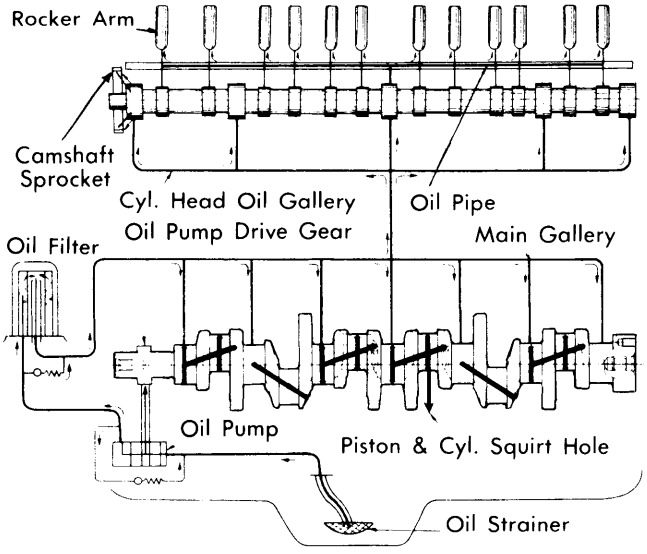
ENGINE OILING (Cont.)

Crankcase Capacity – 5 qts. including filter change.

Oil Filter – Full-flow, with disposable cartridge.

Oil Pressure – 11-40 psi (.8-2.8 kg/cm²) @idle: 50-57 psi (3.5-4.0 kg/cm²) @2000 RPM.



OILING SYSTEM

OIL PUMP

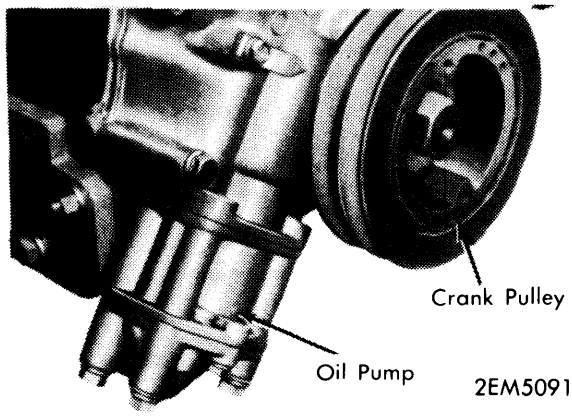
Oil pump assembly is installed to bottom of front cover by four bolts. Pump is driven by distributor drive shaft. Pump is rotor type. To remove, first remove distributor. Drain engine oil and remove splash shield board. Remove oil pump body together with drive spindle. To disassembly, proceed as follows:

1) Separate body cover from oil pump body by unscrewing one attaching bolt. Take out pump drive and driver gears from pump body.

2) Clean parts with cleaning solvent, and inspect for wear or damage. Make sure the following clearances are to specification.

Oil Pump Specifications

Application	Clearance In. (mm)
Inner-to-Outer Rotor Side Clearance	.0016.0032 (.04-.08)
Rotor Tip Clearance	Less Than .0047 (.12)
Outer Rotor-to-Body	.0059-.0083 (.15-.21)
Rotor-to-Cover	.0012-.0051 (.03-.13)

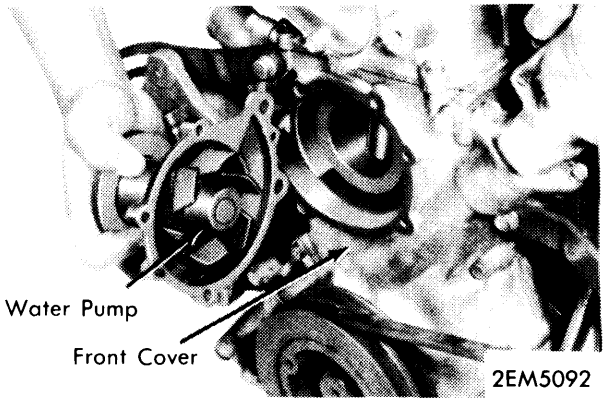


OIL PUMP INSTALLATION

ENGINE COOLING

WATER PUMP

Centrifugal type pump with aluminum body. To remove, drain cooling system and remove fan belt, fan, and pulley. Remove pump attaching bolts and remove waterpump.



WATER PUMP & FRONT COVER

Thermostat – Opens at 180°F (82°C).

Cooling System Capacity – 10 qts.

Radiator Cap – 13 psi.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Cylinder Head	
Step One	29 (4.0)
Step Two	43.4 (6.0)
Step Three	54-61 (7.5-8.5)
Connecting Rod	27-31 (3.7-4.3)
Flywheel	94-108 (13.0-15.0)
Camshaft Gear	94-108 (13.0-15.0)
Oil Pan	4.3-7.2 (.6-1.0)
Oil Pump	8-15 (1.1-2.1)
Crankshaft Pulley	94-108 (13.0-15.0)
Main Bearing Cap	33-40 (4.5-5.5)
Intake & Exhaust Manifolds	5.8-8.7 (.8-1.2)