1968-73 302", 351"W V8 ENGINES

GENERAL SPECIFICATIONS							
Year	Displ. Cu. Ins.	Carburetor	HP at RPM	Torque (Ft. Lbs. at RPM)	Compr. Ratio	Bore	Stroke
1968	302"	2-Bbl.	210@4600	300@2600	9.0-1	4.00"	3.00"
		4-Bbl.	230@4800	310@2800	10.0-1	4.00"	3.00"
1969	302"	2-Bbl.	210@4400	295@2400	9.5-1	4.00"	3.00"
		4-Bbl. HO	290@5800	290@4300	10.5-1	4.00"	3.00"
	351"	2-Bbl.	250@4600	335@2400	9.5-1	4.00"	3.50"
		4-Bbl.	290@4800	385@3200	10.7-1	4.00"	3.50"
1970	302"	2-Bbl.	210@4400	295@2400	9.5-1	4.00"	3.00"
		4-Bbl.	290@5800	290@4300	10.5-1	4.00"	3.00"
	351"	2-Bbl.	250@4600	355@2600	9.5-1	4.00"	3.50"
1971	302"	2-Bbl.	210@4600	296@2600	9.0-1	4.00"	3.00"
		4-Bbl. (Boss)	290@5800	290@4300	9.4-1	4.00"	3.00"
	351"	2-Bbl.	240@4600	350@2600	9.0-1	4.00"	3.50"
1972	302"	2.-Bbl.	141@4000	242@2000	8.5-1	4.00"	3.00"
	351"	2-Bbl.	177@4000	284@2000	8.6-1	4.00"	3.50"
1973	302"	2-Bbl.	.....	.....	.....	4.00"	3.00"
	351"	2-Bbl.	.....	.....	.....	4.00"	3.50"

►*NET HORSEPOWER & TORQUE NOTE: Horsepower and Torque figures given for 1972 are NET. NET Horsepower and Torque represent power at the flywheel when the engine is installed in vehicle, with wide open throttle and all systems operating such as; air cleaner, exhaust system, water pump, generator, oil pump and air conditioning.*

ENGINE IDENTIFICATION

Engine may be identified by the fifth digit of the Vehicle Warranty Plate identification number, attached to rear face of left front door. On 1970 and later models, engine may be identified by the Vehicle Identification Number stamped on a metal tab fastened to instrument panel close to windshield on drivers side of car and visible from outside. The fifth digit establishes engine identification.

1968-69

Engine	Code Letter
302" 2-Bbl.	F
Low Compression	6
4-Bbl.	J
Police – Taxi	D
351" W 2-Bbl.	H
4-Bbl.	M

1970-71

Engine	Code Letter
302" 2-Bbl.	F
Low Compression	6
Police & Taxi	D
4-Bbl.	G
351" W 2-Bbl.	H

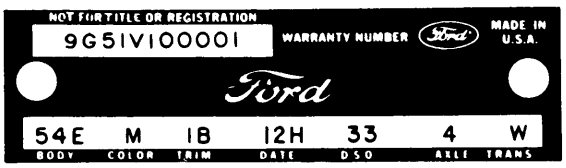
1972

Engine	Code Letter
302" 2-Bbl.	F
Low Compression	6
Taxi	D
351" W 2-Bbl.	H

1973

Engine	Code Letter
302" 2-Bbl.	F
351" W 2-Bbl.	H

NOTE – On the 351" W 2-Bbl. engine, further identification must be made to determine if the engine is a "C" (Cleveland) or "W" (Windsor) built engine. The identification can be made at the fuel pump. The "C" engine has top and bottom (vertical) fuel pump mounting bolts. The "W" engine has front and rear (horizontal) fuel pump mounting bolts.

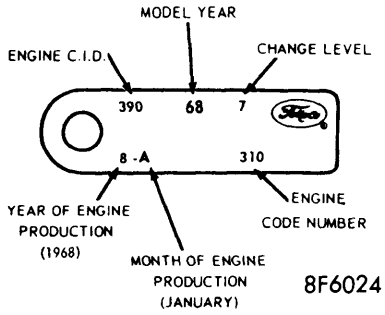


9F3097

VEHICLE WARRANTY PLATE (TYPICAL)

1968-73 302", 351"W V8 ENGINES (Cont.)

Engine Identification Tag – Attached to engine. Identifies engine year model, cubic inch displacement, and manufacturing plant. *See illustration below.*



ENGINE IDENTIFICATION TAG

ENGINE REMOVAL

See Engine Removal at end of ENGINE Section.

OIL PAN REMOVAL

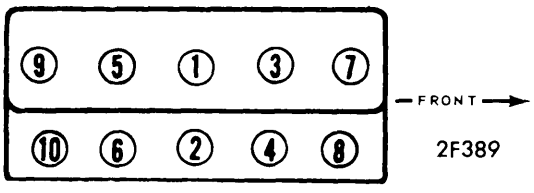
See Oil Pan Removal at end of ENGINE Section.

CYLINDER HEAD REPLACEMENT

On 351" engines it is necessary to remove the exhaust manifolds to gain access to the lower head bolts. On all others, disconnect exhaust pipes at manifolds. When installing, do not use a sealer on composition gaskets. Tighten bolts three times around in sequence shown in diagram to specified torques shown in table below. Do not disturb bolts after final step is completed.

Cylinder Head Tightening Specifications

Engine	Ft. Lbs. Step 1	Ft. Lbs. Step 2	Ft. Lbs. Step 3
1968-73 302"	50	60	65-72
1969-71 351"W	55	65	95-100
1972-73 351"W	85	95	105-112

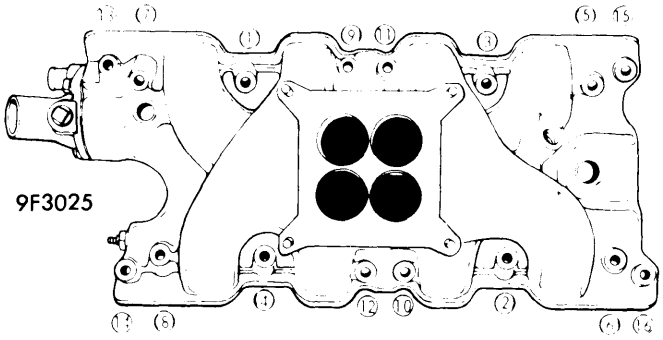


CYLINDER HEAD TIGHTENING SEQUENCE

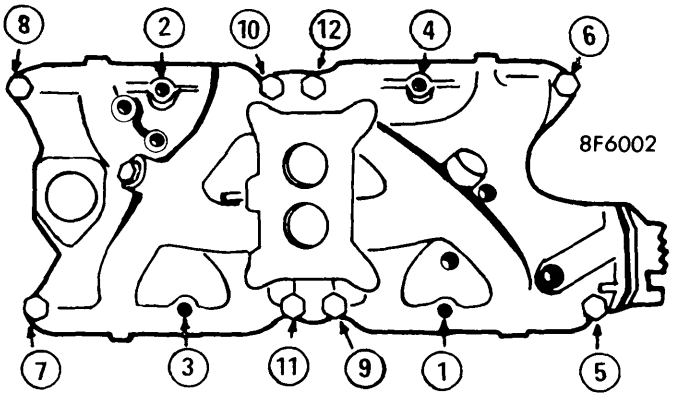
INTAKE MANIFOLD

Removal – Drain cooling system. Remove air and intake duct assembly. Disconnect radiator upper hoses at engine, heater hoses at intake manifold and water pump and positive crankcase ventilation valve and hose at right valve rocker arm cover. Disconnect all vacuum lines and all wires *(remove distributor cap and wires as an assembly)* then remove distributor *(remove distributor and vacuum lines as an assembly).* Disconnect and remove coil, fuel line, accelerator linkage and speed control linkage bracket, if so equipped. Remove manifold and carburetor as an assembly. Use lifting sling and hoist to remove manifold from engine.

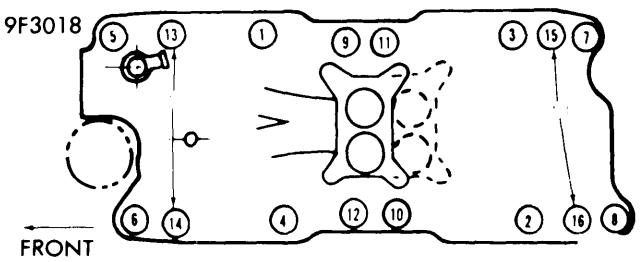
Installation – Coat intake manifold and block seal surfaces with oil resistant sealer. Position front and rear seals on cylinder block and new gaskets on heads. Make sure that holes in gaskets are aligned with holes in cylinder head. Position gaskets in slots with end tabs over ribs on seals. Lower manifold on engine and check for correct positioning of gaskets and seals before installing attaching bolts. Install bolts and tighten in three steps to specification in sequence shown in illustration. Run engine until normal operating temperature is reached then retorque all bolts.



302"
4-Bbl. INTAKE MANIFOLD TIGHTENING SEQUENCE



302"
2-Bbl. INTAKE MANIFOLD TIGHTENING SEQUENCE

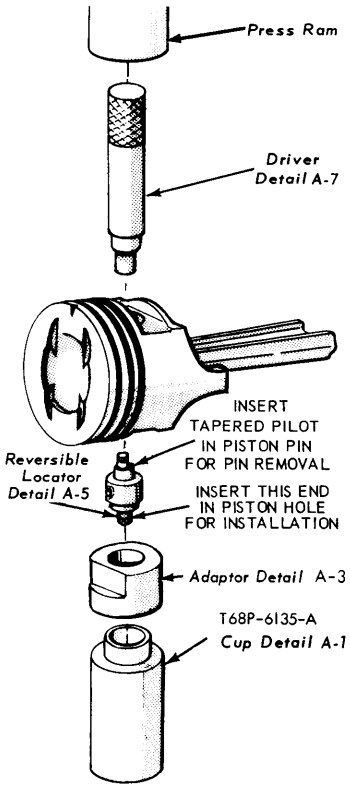


351"
ENGINE INTAKE MANIFOLD TIGHTENING SEQUENCE

1968-73 302", 351"W V8 ENGINES (Cont.)

PISTONS, PINS, RINGS						
	PISTONS	PINS			RINGS	
Engine	Clearance	Piston Fit	Rod Fit	Rings	End Gap	Side Clearance
302" & 351" 1968-69	.0018-.0026"	.0002-.0004"	Press Fit	1 & 2 3	.010-.020" .015-.069"	.001-.003" Snug
302" 1970-71	.0018-.0026"	.0002-.0004"	Press Fit	1 & 2 3	.010-.020" .015-.069"	.002-.004" Snug
1972-73	.0018-.0026"	.0002-.0004"	Press Fit	1 & 2 3	.010-.020" .015-.055"	.002-.004" Snug
302" BOSS 1970-71	.0034-.0042"	.0006-.0008"	Press Fit	1 & 2 3	.010-.020" .015-.069"	002-.004" Snug
351" 1971	.0018-.0026"	.0003-.0005"	Press Fit	1 & 2 3	.010-.020" .015-.069"	.002-.004" Snug
1972-73	.0018-.0026"	.0003-.0005"	Press Fit	1 & 2 3	.010-.020" .015-.055"	.002-.004" Snug

9F3017

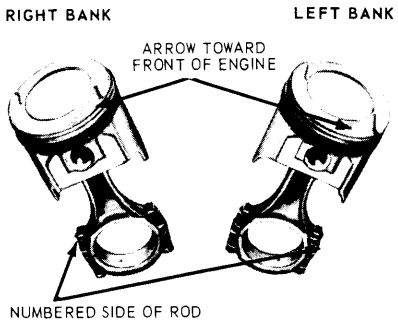


PISTON PIN REMOVAL

PISTON PINS

Piston pins are replaced using an arbor press and suitable pilots and drivers, (see illustration).

8F6005



PISTON & ROD INSTALLATION

FITTING PISTONS

Measure piston at centerline of piston pin bore 90° to pin bore axis. Measure cylinder bore at right angles to centerline of crankshaft, below ring travel. Piston clearance should be as shown in table.

1968-73 302", 351"W V8 ENGINES (Cont.)

CRANKSHAFT MAIN & CONNECTING ROD BEARINGS

Engine	MAIN BEARINGS				CONNECTING ROD BEARINGS		
	Journal Diam.	Clearance	Thrust Bearing	Crankshaft Endplay	Journal Diam.	Clearance	Sideplay
1968-69							
302"	2.248-2.249"	.0005-.0015"	No. 3	.004-.008"	2.1228-2.1236"	.0008-.0015"	.010-.020"
351"	2.9994-3.0002"	.0013-.0025"	No. 3	.004-.008"	2.3103-2.3111"	.0008-.0015"	.010-.020"
1970-71							
302"	2.248-2.249"	.0005-.0015"	No. 3	.004-.008"	2.1228-2.1236"	.0008-.0026"	.010-.020"
302" BOSS	2.248-2.249"	.0005-.0015"	No. 3	.004-.008"	2.1222-2.1230"	.0010-.0028"	.013-.025"
351"	2.9994-3.0002"	.0005-.0015"	No. 3	.004-.008"	2.3103-2.3111"	.0008-.0026"	.010-.020"
1972							
302"	2.248-2.249"	.0010-.0015"	No. 3	.004-.008"	2.1228-2.1236"	.0008-.0026"	.010-.020"
351"	2.9994-3.0002"	.0010-.0015"	No. 3	.004-.008"	2.3103-2.3111"	.0008-.0026"	.010-.020"
1973							
302"	2.2482-2.2490"	.0001-.0015 ①	No. 3	.004-.008"	2.1228-2.1236"	.0008-.0015"	.010-.020"
351"	2.9994-3.0002"	.0008-.0015"	No. 3	.004-.008"	2.3103-2.3111"	.0008-.0015"	.010-.020"

① – No. 1 Bearing only, all others are .0005-.0015".

MAIN BEARING INSTALLATION

Main bearings may be selective fit using undersize bearing halves. Determine clearance of standard bearing inserts by use of Plastigage. If clearance exceeds specification (see table above), a .001" or .002" U/S bearing half may be used in combination with a standard bearing half. If specified clearance cannot be obtained with a combination of a .002" U/S bearing half and a standard bearing half, the crankshaft journal must be refinished and undersized bearings used. Always install the smaller bearing half in the cylinder block.

REAR MAIN BEARING OIL SEAL

1) Remove main bearing cap. Loosen remaining bearing caps allowing crankshaft to drop down slightly.

2) Remove old seals and clean seal groove in cylinder block and cap.

NOTE – Prior to installing new type seal, the crankshaft rear oil seal pin must be removed from bearing cap and discarded.

3) Dip halves into clean oil. Install upper seal in groove with undercut side of seal towards front of engine. Allow approximately 3/8" to protrude below the parting surface.

CAUTION – Make sure that no rubber is shaved from outside of seal.

4) Apply sealer on parting faces of cap and block.

5) Install lower seal in bearing cap with undercut side toward front of engine. Allow approximately 3/8" to protrude above the parting surface.

6) Install cap and tighten to specified torque.

ENGINE FRONT COVER

Removal – Remove front cover and water pump as an assembly. It is not necessary to remove radiator or fuel pump flex line. If equipped with power steering, disconnect pump and lay to one side. Remove front cover attaching bolts and remove front cover.

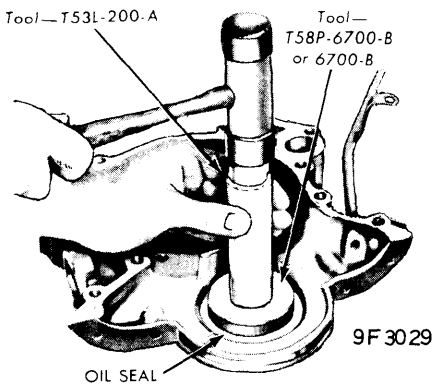
Installation – Use suitable driver tool to center front cover on crankshaft. Push in on tool and tighten bolts to specification.

THRUST BEARING ALIGNMENT

Install all bearing caps except thrust bearing cap and torque to specifications. Install thrust bearing cap with bolts finger tight. Pry crankshaft to front of engine, then pry thrust cap to rear of engine. While holding crankshaft forward, tighten thrust bearing cap bolts to specifications. Check crankshaft endplay.

ENGINE FRONT COVER OIL SEAL

Remove old seal with punch and clean recess in cover. Drive new seal into cover with tool T58P-6700-B or 6700-B until seal is fully seated and make sure spring is positioned properly in seal.



FRONT OIL SEAL INSTALLATION

1968-73 302", 351"W V8 ENGINES (Cont.)

VALVES								
Engine & Valve		Head Diam.	Face Angle	Seat Angle	Seat Width	Stem Diameter	Stem Clearance	Valve Lift
302"								
1968-69	Int.	1.778"	44°	45°	.060-.080"	.3416-.3423"	.0010-.0027"	.368"
	Exh.	1.450"	44°	45°	.060-.080"	.3411-.3418"	.0015-.0032"	.381"
1970	Int.	1.778"	44°	45°	.060-.080"	.3416-.3423"	.0010-.0027"	.368"
	Exh.	1.450"	44°	45°	.070-.090"	.3411-.3418"	.0010-.0027"	.381"
BOSS	Int.	2.231"	44°	45°	.060-.080"	.3416-.3423"	.0010-.0027"	.477"
	Exh.	1.711"	44°	45°	.070-.090"	.3411-.3418"	.0015-.0032"	.477"
1971	Int.	1.778"	44°	45°	.060-.080"	.3416-.3423"	.0010-.0027"	.386"
	Exh.	1.450"	44°	45°	.070-.090"	.3411-.3418"	.0015-.0032"	.381"
BOSS	Int.	2.190"	44°	45°	.060-.080"	.3416-.3423"	.0010-.0027"	.477"
	Exh.	1.710"	44°	45°	.070-.090"	.3411-.3418"	.0015-.0032"	.477"
1972-73	Int.	1.782"	44°	45°	.060-.080"	.3416-.3423"	.0010-.0027"	.368" ①
	Exh.	1.451"	44°	45°	.060-.080"	.3411-.3418"	.0015-.0032"	.381" ②
351"								
1969	Int.	1.910"	44°	45°	.060-.080"	.3416-.3423"	.0010-.0027"	.418"
	Exh.	1.541"	44°	45°	.060-.080"	.3411-.3418"	.0015-.0032"	.448"
1970	Int.	1.843"	44°	45°	.060-.080"	.3416-.3423"	.0010-.0027"	.418"
	Exh.	1.541"	44°	45°	.070-.090"	.3411-.3418"	.0010-.0027"	.448"
1971	Int.	1.843"	44°	45°	.060-.080"	.3416-.3423"	.0010-.0027"	.418"
	Exh.	1.541"	44°	45°	.070-.090"	.3411-.3418"	.0015-.0032"	.448"
1972-73	Int.	1.843"	44°	45°	.060-.080"	.3416-.3423"	.0010-.0027"	.418"
	Exh.	1.541"	44°	45°	.060-.080"	.3411-.3418"	.0015-.0032"	.448"

① – 1973 .371"

② – 1973 .382"

VALVE ARRANGEMENT

302", 351" – E-I-E-I-E-I-E-I (Left bank, front to rear). I-E-I-E-I-E-I-E (Right bank, front to rear).

VALVE GUIDE SERVICING

To ream guides for installation of valves with oversize stems, always use reamers in sequence and reface valve seat after valve guide is reamed. Reamers are furnished .003" oversize with standard pilot; .015" oversize reamer with .003" pilot; and .030" oversize reamer with .015" oversize pilot.

VALVE STEM SEALS

Cup or umbrella type seals used on all valves. Install seals with cup side down over valve guide.

VALVE SPRINGS			
Engine	Free Length	PRESSURE (LBS.)	
		Valve Closed	Valve Open
302"			
1968-71	1.97"	71-79 @ 1.66"	171-189 @ 1.23"
1972-73	1.94"	76-84 @ 1.69"	190-210 @ 1.31"
302" BOSS			
1970-71	2.03"	88-96 @ 1.82"	299-331 @ 1.32"
351"			
1969-71	2.07"	79-87 @ 1.79"	204-226 @ 1.34"
1972-73	2.07"	71-79 @ 1.79"	190-210 @ 1.34"

VALVE SPRING INSTALLATION

Spring ends must be square within 1/16". Install springs with damper (closed) coil end down toward cylinder head. If damper spring used, end of damper spring coil must be 135° counterclockwise from coil end of valve spring.

VALVE SPRING INSTALLED HEIGHT

Installed height (length) of spring must not exceed specifications listed in table below. Measure height from surface of cylinder head pad to underside of spring retainer. If spring length is greater than specified, install .030" spacer on head under spring to bring spring length within limits. *CAUTION – Install spacers only if necessary. Do not use more than two spacers. Additional spacers will overstress springs and cause rapid camshaft lobe wear.*

Valve Spring Height Specifications

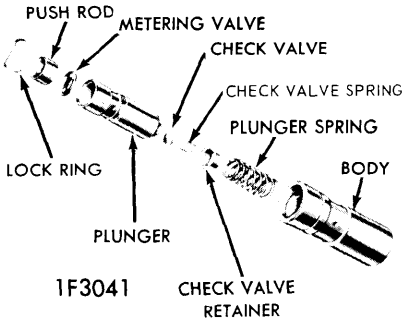
Application		Installed Height
1968-69	302"	1 5/8-1 11/16"
	351"	1 25/32-1 13/16"
1970-71	302"	1 5/8-1 21/32"
	302" BOSS	1 13/16-1 27/32"
1972	302"	1 21/32-1 23/32"
	351"	1 3/4-1 13/16"
1973	302"	1 43/64-1 45/64"
	351"	1 49/64-1 13/16"

1968-73 302", 351"W V8 ENGINES (Cont.)

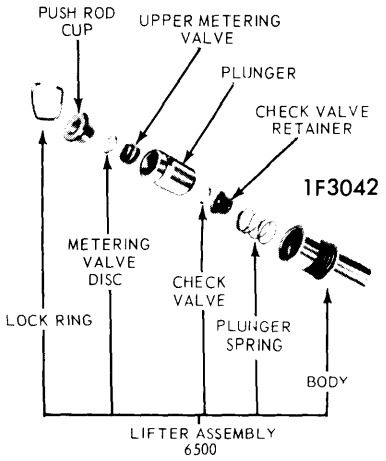
HYDRAULIC LIFTERS

NOTE – The 302" BOSS is equipped with solid tappets.

302", 351" Engines – Two different types of lifters are used (Type I & Type II). They may be interchanged in any one engine, but their parts must not be mixed and they must be serviced as assemblies only.



TYPE I LIFTER ASSEMBLY



TYPE II LIFTER ASSEMBLY

1968-69

302" Engines – Position #1 piston on TDC after compression stroke. Collapse lifter and hold down while checking clearance between rocker arm and valve stem tip on the following valves:

INTAKE – 1, 3, 7, 8 EXHAUST – 1, 4, 5, 8

Rotate crankshaft 360° until #6 piston is on TDC after compression stroke and check clearance on the following valves:

INTAKE – 2, 4, 5, 6 EXHAUST – 2, 3, 6, 7

Clearance should be .117" ± .050". Adjust as necessary

351" Engines – Positive Stop rocker arm stud eliminates necessity or possibility of adjustment. However, all valve components must be in good condition, properly installed and torqued. Procedure to check for proper operating range of lifters is as follows:

1) Position #1 piston at TDC on compression stroke using TDC timing mark and pointer on crankshaft damper as reference point "A".

2) Make three chalk marks on damper circumference so that damper is marked at increments of 90° from point "A". This gives four reference points on the damper with points "B", "C", and "D" in counterclockwise sequence from point "A".

3) With damper at "A" back stud nut off two turns on intake and exhaust valves of #1 cylinder. Then torque stud nuts to specification.

4) Rotate crankshaft clockwise in successive ¼ turn increments stopping at points "B", "C", "D" and performing stud nut operation described in 3). Check all stud nuts as follows (two complete turns of crankshaft required).

First Turn	Second Turn
Point A check #1 Cylinder	Point A check #6 Cylinder
Point B check #3 Cylinder	Point B check #5 Cylinder
Point C check #7 Cylinder	Point C check #4 Cylinder
Point D check #2 Cylinder	Point D check #8 Cylinder

1970-73

302" & 351" Engines – Rotate crankshsft until No. 1 piston is at TDC after compression stroke as indicated by timing mark on crankshaft damper and pointer. Make a chalk mark on the damper 180° from TDC mark. Make a chalk mark on the damper 90° clockwise from TDC mark. With No. 1 piston at TDC check the following valves:

302"

Intake – 1-7-8 Exhaust – 1-5-4

351"

Intake – 1-4-8 Exhaust – 1-3-7

Rotate crankshaft 180° to second chalk mark and check the following valves;

302"

Intake – 5-4 Exhaust – 2-6

351"

Intake – 3-7 Exhaust – 2-6

Rotate crankshaft 270° to third chalk mark and check the following valves;

302"

Intake – 2-3-6 Exhaust – 7-3-8

351"

Intake – 2-5-6 Exhaust – 4-5-8

MECHANICAL TAPPET CLEARANCE

If valve system has been disassembled or some components replaced, it will be necessary to make a preliminary "cold"

1968-73 302", 351"W V8 ENGINES (Cont.)

adjustment before starting engine. Make adjustment to specifications (see Tappet Clearance table below) as follows;

302" BOSS – Rotate crankshaft until No. 1 piston is at TDC after compression stroke as indicated by timing mark on crankshaft damper and pointer. Make a chalk mark on damper 180° from TDC mark. Make a chalk mark on the damper 90° clockwise from TDC mark. With No. 1 piston at TDC check the following valves;

Intake – 1-7-8 Exhaust – 1-5-4

Rotate crankshaft 180° clockwise to second chalk mark and check the following valves;

Intake – 4-5 Exhaust – 2-6

Rotate crankshaft 270° clockwise to thrid chalk mark and check the following valves;

Intake – 2-3-6 Exhaust – 7-3-8

After making preliminary "cold" tappet adjustment, start engine and allow to run at least fifteen minutes at full and normal operating temperature.

With engine running set final valve lash using a step type feeler gauge only. The final tappet clearances are listed in the tappet clearance table below.

Hydraulic Valve Lifter Clearance

Application	Clearance
302" 1968-69	.067-.167"
1970	.093-.193"
1971-73	.090-.190"
351" 1969-70	.083-.183"
1971-73	.106-206"

Mechanical Tappet Clearance

Application	Clearance
302"	(Hot) .025"

ROCKER ARM STUD REPLACEMENT

302", 351" Engines – Remove old stud. If necessary to install oversize stud use reamers in sequence. Finish ream before installing new stud. Align stud and installer tool with stud bore and tap sliding driver. Stud is installed to correct height when driver contacts stud boss. Use Tool T65P-6A527-A on 302" engine. For 351" engine use Tool T69P-6049-D.

CAMSHAFT			
Engine	**Journal Diam.**	**Clearance**	**Lobe Lift**
All	2.0805-2.0815" 2.0655-2.0665" 2.0505-2.0515" 2.0355-2.0365" 2.0205-2.0215"	.001-.003	①

① – 1968-73 302" Int. .230" – Exh. .237".
302" BOSS Int. & Exh. .290".
351" Int. .260" – Exh. .278".

CAMSHAFT REMOVAL

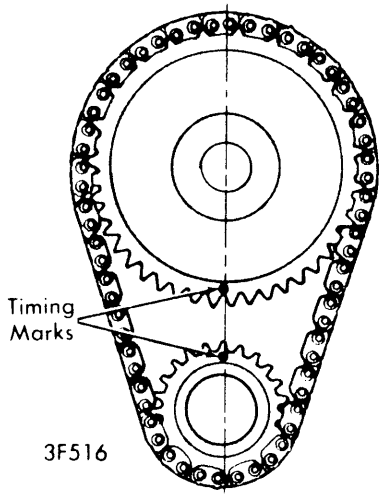
Remove grille, radiator, engine front cover, sprockets and timing chain, distributor, pushrods, intake manifold, lifters, oil pan and screen, and camshaft thrust plate. Remove camshaft.

CAMSHAFT BEARING REPLACEMENT

No. 1 bearing is installed with the front edge .005-.020" inward from front face of cylinder block.

CAMSHAFT END THRUST

Taken by thrust plate. Install thrust plate with oil groove up and facing front. If end thrust excessive, replace thrust plate. Use oversize thrust plate if necessary. *CAUTION – Do not pry on camshaft sprocket to check endplay. Nylon sprocket may be broken.* Loosen rocker arms to take load off camshaft. Move shaft back and forth by hand.



VALVE TIMING MARKS

CAM LOBE LIFT

1) Remove rocker arm shaft assembly, making sure each push rod is in the valve lifter socket. Install dial indicator so that ball socket adapter of indicator rests on end of push rod and in same plane as the push rod movement.

1968-73 302", 351"W V8 ENGINES (Cont.)

2) With an auxilliary starter switch connected to the starter solenoid and the ignition switch OFF, bump crankshaft until tappet is on base circle of camshaft lobe. This will be the push rods lowest point.

3) Zero dial indicator and continue to rotate the crankshaft until push rod is in fully raised position (highest indicator reading). Compare total lift from indicator readings with specifications.

4) To check accuracy of dial indicator readings, continue to rotate crankshaft until indicator reads zero. If the lift on any lobe is .005" less than specification, valve lifters are operating on worn lobes.

ENGINE NOTES

➤*302" ENGINE OIL SEEPAGE AT LOWER REAR OF CYLINDER BLOCK:* Rear engine plate is coated with heavy oil to prevent paint from adhering to plate causing an oil leak when plate becomes hot. To correct, remove inspection plate and squirt a suitable solvent onto rear engine plate to remove oil coating. Dry thoroughly and check for further seepage.

TIGHTENING SPECIFICATION

Application	302"	351"
	Ft. Lbs.	
Cylinder Head		
(1968-71)	65-72	95-100
(1972-73)	65-72	105-112
Intake Manifold	23-25	23-25
Exhaust Manifold	12-16	18-24
Oil Pan	① 9-11	① 9-11
Main Bearing Caps	60-70	95-105
Connecting Rod Caps	19-24	40-45
Vibration Damper		
(1968-71)	70-90	70-90
(1972-73)	70-90	100-130
Camshaft Sprocket	40-45	40-45
Thrust Plate	9-12	9-12
Flywheel-to-Crankshaft	75-85	75-85
Rocker Arm Cover	3-5	3-5
Rocker Arm Stud Nut		18-22
Engine Front Cover	12-15	12-15
Water Outlet Housing	12-15	12-15
Water Pump	12-15	20-25
Oil Pump-to-Block		
(1968-71)	23-28	23-28
(1972-73)	22-32	22-32

① – 1/4" Bolts 7-9.

ENGINE OILING

Crankcase Capacity – 4 qts. Add 1 qt. with filter change.

Oil Pressure – 35-60 psi @ 2000 RPM for the 302". 50-70 psi @ 2000 RPM for the 351".

Pressure Regulator Valve – In pump body, not adjustable.

Oil Filter – Replace oil filter every 4000 to 6000 miles. To install, coat gasket face of filter with oil. Thread filter on bracket by hand until gasket contacts adapter surface, then tighten filter an additional 1/2 turn. Run engine and check for leaks.

ENGINE OILING SYSTEM
302", 351"

Force feed type with rotor type oil pump. *Note the following:*

Connecting Rod Bearings – Crankshaft is drilled. Each connecting rod bearing lubricated from adjacent main bearing.

Crankshaft & Camshaft Bearings – Oil from filter flows through passages in block to #1 main and camshaft bearings, and to main oil gallery in right bank side of block. Oil from main gallery is delivered to #2, 3, 4, 5 main bearings, and from each main bearing to each camshaft bearing by passages in main bearing webs.

Pistons & Pins – Lubricated by oil spray thrown on cylinder walls from drilled hole in each connecting rod lower end when this hole lines up with oil hole in crankshaft.

Valve Lifters – Oil passes from main oil gallery to passages at rear of block leading to lifter galleries.

Distributor – Lower end of drive shaft is lubricated through passage from No. 1 camshaft bearing bore.

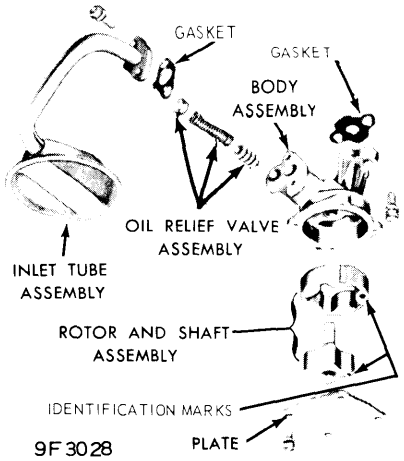
Rocker Arms, Pushrods, & Valves – Lubricated by oil passing through metered hole in upper end of valve lifter, through hollow pushrods, to friction areas of rocker arms. Oil drains back through holes in both ends of cylinder heads and block.

Oil filter – Full flow type mounted on left front side of engine. Has integral bypass valve and anti drain-back diaphragm.

Distributor Drive Gears, Timing Chain & Sprockets, & Fuel Pump Eccentric – Lubricated by oil deflected from front camshaft bearing by oil drip trough on cylinder front cover.

1968-73 302", 351"W V8 ENGINES (Cont.)

ENGINE OILING (Cont.)



OIL PUMP ASSEMBLY (TYPICAL)

OIL PUMP

Rotor type. See illustration for arrangement. Cover plate screw torque is 6-9 ft. lbs. Observe the following specifications:

Oil Pump Specifications

Item	Specification
Outer race-to-Housing	.006-.012"
Rotor Endplay	.0011-.0041"
Shaft-to-Housing	.0015-.0029"
Relief Valve-to-Bore	.0015-.0029"

Relief Valve Spring Specifications

Engine	Lbs. Pressure	Length
302"	11.15-11.75	1.704"
351"	18.2-20.2	2.49"