

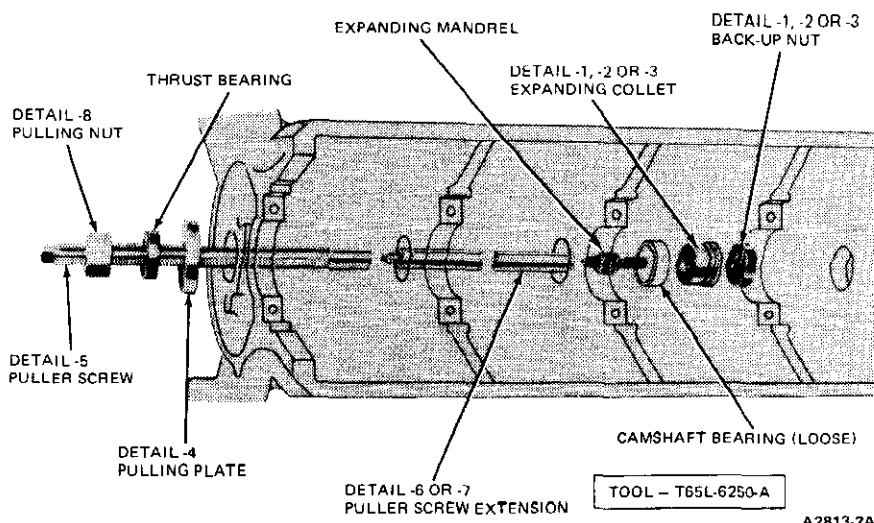


FIG. 32 Typical Camshaft Bearing Replacement

bearings with the oil holes in the cylinder block when the bearings are installed. **Be sure the front bearing is installed below the front face of the cylinder block to specifications. The rear has two oil holes and must be installed 24-3/4 inches from the face of the camshaft thrust plate surface. Check the oil passage that feeds the rocker arm shaft for obstructions by squirting oil into the opening in the cylinder block and observing the flow through the oil hole at the rear camshaft bearing.**

2. Install a new bearing bore plug as detailed in Part 21-01.
3. Install the camshaft, crankshaft, flywheel and related parts, following the appropriate procedures. Do not check connecting rod and main bearing clearances as a part of Camshaft Bearing Replacement. Install the engine in the vehicle.

OIL FILTER

Removal

1. Place a drip pan under the filter. Unscrew the filter from the adapter fitting. Clean the adapter filter recess.

Installation

1. Add one quart of the proper type and grade of oil to the crankcase. *Coat the gasket on the replacement filter with oil.* Position the filter on the adapter fitting. Hand tighten the filter until the gasket contacts the adapter face, then advance it 1/2 turn.
2. Operate the engine at fast idle, and check for oil leaks. If oil leaks are evident, perform the necessary repairs to correct the leakage. Check the oil level and fill the crankcase if necessary.

DISASSEMBLY AND ASSEMBLY

When installing nuts or bolts that must be torqued (refer to the Specification at the end of this Part for torque specifications), oil the threads with light weight engine oil. **Do not oil threads that require oil-resistant or water-resistant sealer. Refer to Part 21-01, for cleaning and inspection procedures.**

VALVE ROCKER ARM SHAFT ASSEMBLY

Disassembly

1. Remove the pin and spring washer from each end of the valve rocker arm shaft.

2. Slide the valve rocker arms, springs, and supports off the shaft. Be sure to identify the parts.
3. If it is necessary to remove the plugs from each end of the shaft, drill or pierce the plug on one end. Use a steel rod to knock out the plug on the opposite end. *Working from the open end, knock out the remaining plug.*

Assembly

1. All rocker arms and rocker arm shafts are to be lubricated with heavy oil SE before assembly.

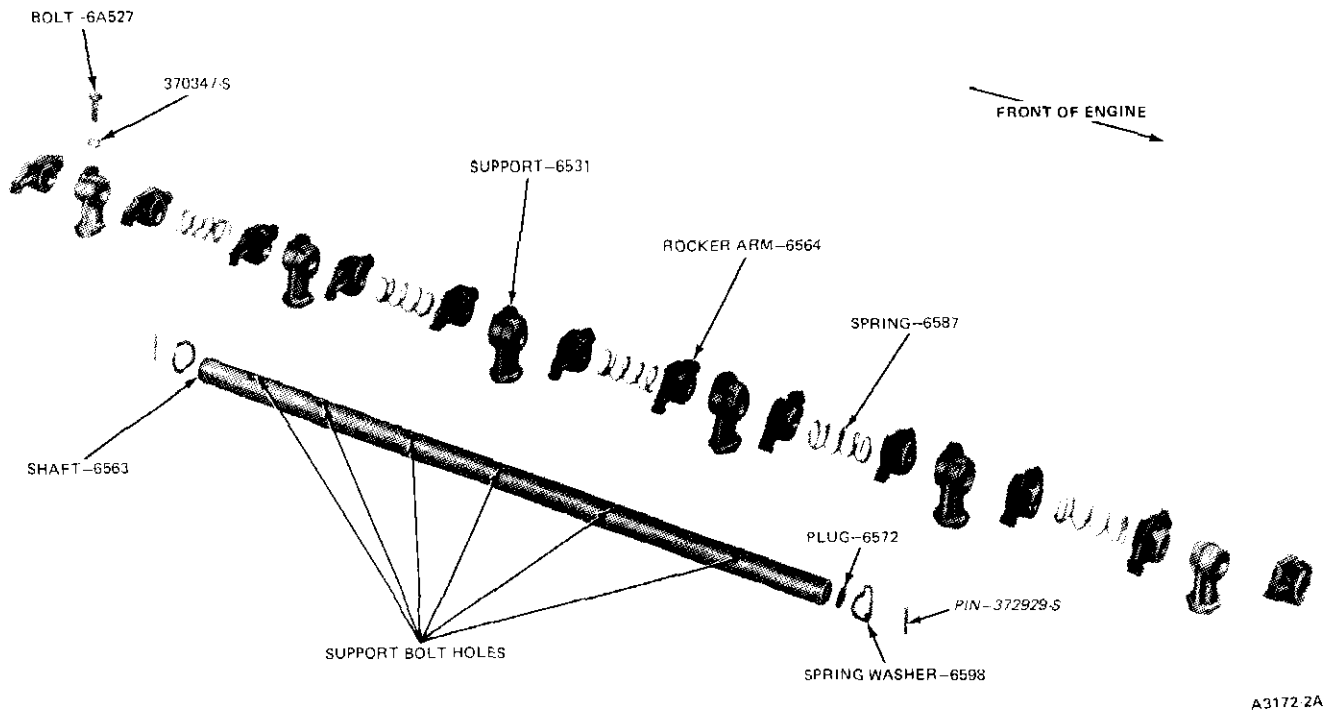


FIG. 33 Valve Rocker Arm Shaft Assembly

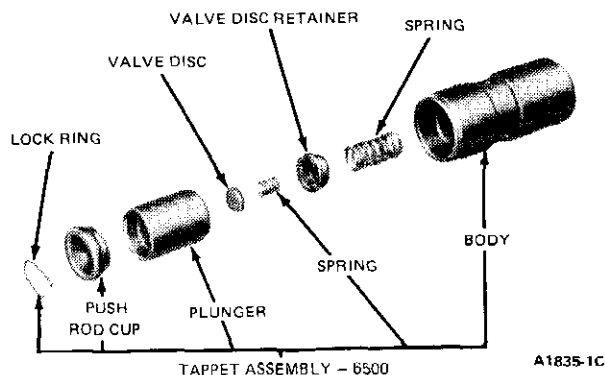


FIG. 34 Typical Tappet Assembly

2. If the plugs were removed from the ends of the shaft, use a blunt tool or large diameter pin punch and install a plug, cup side out, in each end of the shaft.
3. Install the spring washer and pin on one end of the shaft.
4. Install the valve rocker arms, supports, and springs in the order shown in Fig. 33. **Be sure the oil holes in the shaft are facing downward. Complete the assembly by installing the remaining spring washer and pin.**

HYDRAULIC TAPPETS

Disassembly

Each tappet is a matched assembly; therefore, the parts are not interchangeable. Disassemble and assemble each tappet carefully, keeping the assemblies in proper sequence so they will be installed in the original bores.

1. Grasp the lock ring with needle nose pliers to release it from the groove. It may be necessary to depress the plunger to fully release the lock ring.
2. Remove the push rod cup, plunger and spring.
3. Invert the plunger assembly and remove the check valve retainer by carefully prying up on it with a screw driver. Remove the check valve and spring. Refer to Part 21-01 for Cleaning, Inspection and Testing Procedures.

Assembly

A typical hydraulic tappet assembly is shown in Fig. 34.

- 34.
1. Place the plunger in the inverted position on a clean work bench.
2. Place the check valve in position over the oil hole on the bottom of the plunger. Set the check valve spring on top of the check valve.
3. Position the check valve retainer over the check valve and spring and push the retainer down into place on the plunger.
4. Place the plunger spring and then the plunger (open end up) into the tappet body.
5. Place the push rod seat in the plunger.
6. Depress the plunger and position the closed end of the lock ring in the tappet body groove. Release the plunger; then depress it again to fully seat the lock ring.

CYLINDER HEAD

Disassembly

1. Remove deposits from the combustion chambers and valve heads with a scraper and a wire brush

before removing the valves. **Be careful not to scratch the cylinder head gasket surfaces.**

2. Compress the valve springs (Fig. 35). Remove the valve retainer locks and release the spring. If the valve locks are stuck, place a piece of steel tubing (3/4 inch OD, 1/2 inch ID and 3 inches long) over the end of the valve stem squarely against the sleeve surface. Tap the tube with a steel hammer to disengage the locks.
3. Remove the sleeve, spring retainer, stem seal, and valve. Discard the valve stem seals. Identify all valve parts. If the cylinder head is to be replaced, remove the manifold assembly.

Assembly

1. Clean, inspect and repair all parts before assembly. If the cylinder head is being replaced, install the manifold assembly. Lubricate the valve guides and valve stems with heavy engine oil SE. Apply Lubriplate or equivalent to the tips of the valve stems.
2. Install each valve (Fig. 36) in the valve guide from which it was removed or to which it was fitted. Install a new stem seal on the valve.
3. Install the valve spring assembly over the valve. Install the spring retainer and sleeve.
4. Compress the spring and install the retainer locks (Fig. 35).
5. Measure the assembled height of the valve spring from the surface of the cylinder head spring pad to the underside of the spring retainer with dividers (Fig. 37).
6. Check the dividers against a scale. If the assembled height is greater than specifications, install the necessary 0.030 inch thick spacer(s) between the cylinder head spring pad and the valve spring to bring the assembled height to the recommended dimension. **Do not install spacers unless necessary. Use of excess spacers will result in overstressing the valve springs and overloading the camshaft lobes which would lead to spring breakage and worn camshaft lobes.**

PISTON AND CONNECTING ROD

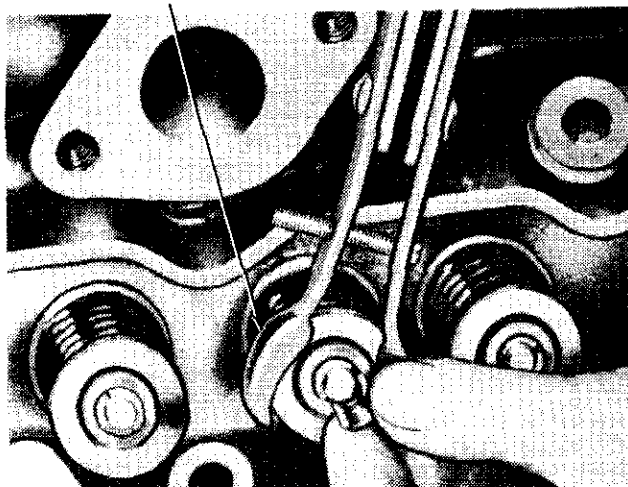
Disassembly

1. Remove the bearing inserts from the connecting rod and cap.
2. Mark the pistons and pins to assure assembly with the same rod and installation in the same cylinders from which they were removed.
3. Using an arbor press and the tool shown in Fig. 38, press the piston pin from the piston and connecting rod. Remove the piston rings.

Assembly

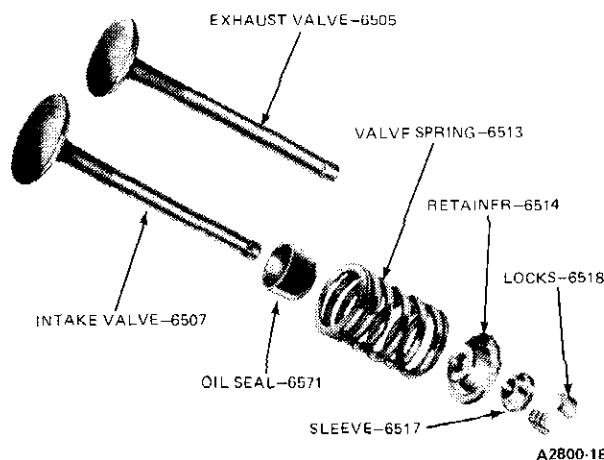
The piston, connecting rod and related parts are shown in Fig. 39. Check the fit of a new piston in the cylinder bore before assembling the piston and piston pin to the connecting rod. Refer to Part 21-01 for fitting pistons procedure.

VALVE SPRING COMPRESSOR



A2799-1A

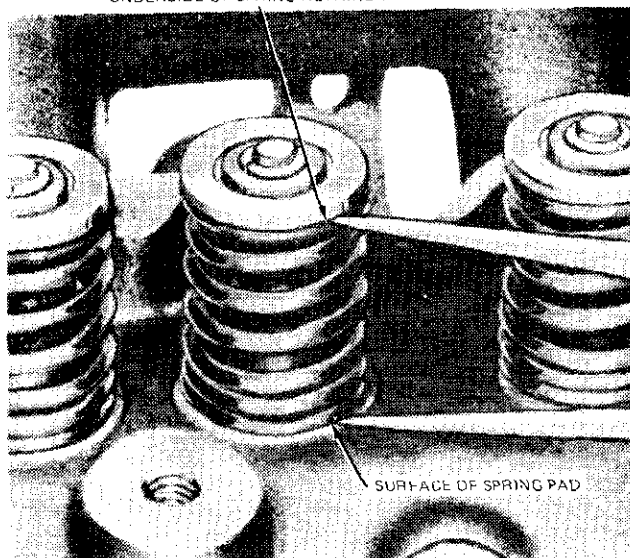
FIG. 35 Compressing Valve Spring—On Bench



A2800-1B

FIG. 36 Typical Valve Assembly

UNDERSIDE OF SPRING RETAINER



SURFACE OF SPRING PAD

A2801-1A

FIG. 37 Checking Valve Spring Assembled Height

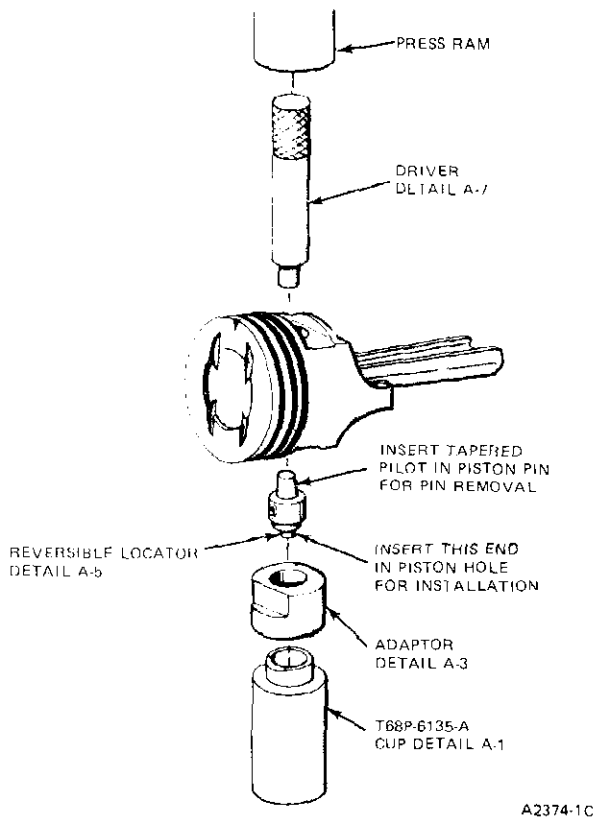


FIG. 38 Removing or Installing Piston Pin

The piston pin bore of a connecting rod and the diameter of the piston pin must be within specifications. Refer to specification at the end Section of this part.

1. Apply a light coat of engine oil to all parts. **Assemble the piston to the connecting rod with the oil squirt hole in the connecting rod and the indentation in the piston dome positioned as shown in Fig. 30.**
2. Start the piston pin in the piston and connecting rod (this may require a very light tap with a mallet). Using an arbor press, press the piston pin through the piston and connecting rod until the pin is centered in the piston (Fig. 38).
3. Check the end gap and spacing (Fig. 27) of all piston rings. They must be within specifications.
4. Follow the manufacturer's instructions (included with the piston ring package) and install the piston rings.
5. Check the ring side clearance of the compression rings with a feeler gauge inserted between the ring and the lower land (Part 21-01). The gauge should slide freely around the entire ring circumference without binding. Any wear that occurs will form a step at the inner portion of the lower land. **If the lower lands have high steps, the piston should be replaced.**
6. Be sure the bearing inserts and the bearing bore in the connecting rod and cap are clean. Foreign material under the inserts will distort the bearing and cause a failure. Install the bearing inserts in the connecting rod and cap with the tangs fitting in the slots provided.

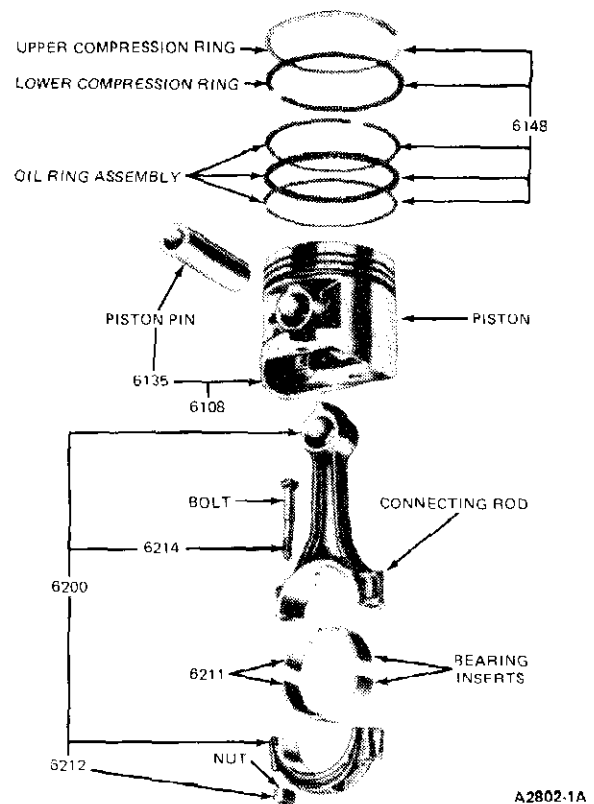


FIG. 39 Typical Piston, Connecting Rod and Related Parts

CYLINDER ASSEMBLY

Disassembly

1. Mount the old engine on a work stand and remove all parts not furnished with the new cylinder assembly, following the procedures given in the Removal and Installation Section of this Part.
2. Remove the old cylinder assembly from the work stand.

Assembly

1. Clean the gasket and seal surfaces of all serviceable parts and assemblies.
2. Position the new cylinder assembly on a work stand and transfer all serviceable parts removed from the old cylinder assembly, following the procedures given in the Removal and Installation Section of this Part.
3. Check all assembly clearances and correct as necessary.

CYLINDER BLOCK

Before replacing a cylinder block, determine if it is repairable. If so, make the necessary repairs, following the procedures given in Part 21-01.

Disassembly

1. Mount on a work stand and completely disassemble the old engine, following the procedures given in the Removal and Installation Section of this Part.
2. Remember to ridge-ream the cylinder bores before removing piston assemblies.



Assembly

1. Clean the gasket and seal surfaces of all serviceable parts and assemblies.
2. Position the new cylinder block in the work stand and transfer all serviceable parts removed from the

- old cylinder block, following the instructions given in the Removal and Installation Section of this Part.
3. Check all assembly clearances and correct as necessary.

SPECIFICATIONS

GENERAL SPECIFICATIONS	
DISPLACEMENT	3.3L/4.1L (200 CID/250 CID)
NUMBER OF CYLINDERS	6
BORE AND STROKE	3.68 x 3.13 3.3L (200 CID) 3.68 x 3.91 4.1L (250 CID)
FIRING ORDER	1-5-3-6-2-4
OIL PRESSURE (Hot @ 2000 RPM)	30-50 3.3L (200 CID) 40-60 4.1L (250 CID)
DRIVE BELT TENSION	①
COMPRESSION PRESSURE	②
CYLINDER HEAD AND VALVE TRAIN	
COMBUSTION CHAMBER VOLUME (cc)	57.25-60.25
VALVE GUIDE BORE DIAMETER	0.3115-0.3125
VALVE SEATS	
Width - Intake	0.060-0.080
Width Exhaust	0.070-0.090
Angle	45°
Runout Limit (T.I.R. Max)	0.002
VALVE ARRANGEMENT (Front to Rear)	E-I-I-E-I-E-E-I-E-I-E
VALVE STEM-TO-GUIDE CLEARANCE	
Intake	0.0008-0.0025
Exhaust	0.0010-0.0027
Service Clearance	0.0055
VALVE HEAD DIAMETER	
Intake	1.760-1.742
Exhaust	1.381-1.399
VALVE FACE RUNOUT LIMIT	0.002 Max.
VALVE FACE ANGLE	44°
VALVE STEM DIAMETER (Std.)	
Intake	0.3100-0.3107
Exhaust	0.3098-0.3105
(0.003 Oversize)	
Intake	0.3130-0.3137
Exhaust	0.3128-0.3135
(0.015 Oversize)	
Intake	0.3250-0.3257
Exhaust	0.3248-0.3255
(0.030 Oversize)	
Intake	0.3400-0.3407
Exhaust	0.3398-0.3405
VALVE SPRINGS	
Compression Pressure (Lb. @ Spec. Length)	51-57 @ 1.59 142-158 @ 1.22
Free Length (Approximate)	1.79
Assembled Height	1.9/16-1.19/32
Service Limit	10% Pressure Loss @ Spec. Length
Out-Of-Square Limit	5/64 (0.078)
ROCKER ARM	
Shaft Diameter	0.7797-0.7807
Bore Diameter	0.7830-0.7845
Ratio	1.52:1
PUSH ROD RUNOUT (T.I.R. Max)	0.020
GASKET SURFACE FLATNESS	③
Surface Finish (RMS)	60-150
VALVE TAPPET, LIFTER OR ADJUSTER	
Diameter (Std.)	0.8740-0.8745
Clearance To Bore	0.0007-0.0027
Service Limit	0.0005
Hydraulic Leakdown Rate	5-50 Seconds④
Collapsed Tappet Gap - Allowable	0.085-0.185 3.3L (200 CID) 0.071-0.209 4.1L (250 CID)
Collapsed Tappet Gap - Desired	0.110-0.160 3.3L (200 CID) 0.096-0.184 4.1L (250 CID)
CAMSHAFT	
LOBE LIFT	
Intake	0.245
Exhaust	0.245
Allowable Lobe Lift Loss	0.005 Max.
THEORETICAL VALVE LIFT @ ZERO LASH	
Intake	0.372
Exhaust	0.372
END PLAY	0.001-0.007
Service Limit	0.009
JOURNAL-TO-BEARING CLEARANCE	0.001-0.003
Service Limit	0.006
CAMSHAFT GEAR BACKLASH	0.006-0.010

CAMSHAFT (Continued)	
JOURNAL DIAMETER	
# 1	1.8095-1.8105
# 2	1.8095-1.8105
# 3	1.8095-1.8105
# 4	1.8095-1.8105
Runout Limit	0.008
Out-Of-Round Limit	0.005 (Max. T.I.R.)
FRONT BEARING LOCATION⑤	0.030-0.050
CYLINDER BLOCK	
HEAD GASKET SURFACE FLATNESS	③
HEAD GASKET SURFACE FINISH (RMS)	60-150
CYLINDER BORE	
Diameter	3.6800-3.6848
Surface Finish (RMS)	18-38
Out-Of-Round Limit	0.0015
Out-Of-Round Service Limit	0.005
Taper Service Limit	0.010
TAPPET BORE DIAMETER	0.8752-0.8767
MAIN BEARING BORE DIAMETER	2.4012-2.5020 3.3L (200 CID) 2.5902-2.6910 4.1L (250 CID)
DISTRIBUTOR SHAFT BEARING BORE DIAMETER	0.5155-0.5170
CRANKSHAFT AND FLYWHEEL	
MAIN BEARING JOURNAL DIAMETER	2.2482-2.2490 3.3L (200 CID) 2.3982-2.3990 4.1L (250 CID)
Out-Of-Round Limit	0.0006 Max.
Taper Limit	0.0006 Per Inch
Journal Runout Limit	0.002 Max.
Surface Finish (RMS)	12 Max.
Runout Service Limit	0.005
THRUST BEARING JOURNAL	
Length	1.275-1.277 3.3L (200 CID) 1.199-1.201 4.1L (250 CID)
CONNECTING ROD JOURNAL	
Diameter	2.1232-2.1240
Out-Of-Round Limit	0.0006 Max.
Taper Limit	0.0008 Per Inch
Surface Finish (RMS)	12 Max.
MAIN BEARING THRUST FACE	
Surface Finish (RMS)	35 Front - 25 Rear
Runout Limit	0.001 Max.
FLYWHEEL CLUTCH FACE	
Runout Limit (T.I.R.)	0.010
FLYWHEEL RING GEAR LATERAL RUNOUT (T.I.R.)	
Standard Transmission	0.030
Automatic Transmission	0.060
CRANKSHAFT FREE END PLAY	0.004-0.008
Service Limit	0.012
CONNECTING ROD BEARINGS	
Clearance To Crankshaft - Desired	0.0008-0.0015
- Allowable	0.0008-0.0026
Bearing Wall Thickness (Std.)⑥	0.0569-0.0574
MAIN BEARINGS	
Clearance To Crankshaft - Desired	0.0008-0.0015
- Allowable	0.0008-0.0024
Bearing Wall Thickness (Std.)⑥	0.0954-0.0957

Drive Belt Tension (Lbs.)			
Size	Newly Installed (A)	Used	
		Up to 10 Min.	Over 10 Min.
1/4"	60-80	40-80 (B)	40-60 (B)
Exc. 1/4"	120-160	90-160 (C)	75-120 (D)

Read tension immediately after belt is installed, before it stretches or seats in pulley (A) grooves.

(B) If less than 40 pounds, readjust to 40-60 pounds.

(C) If less than 90 pounds, readjust to 90-120 pounds.

(D) If less than 75 pounds, readjust to 90-120 pounds.

② To be within specifications, lowest cylinder (PSI) must be within 75% of pressure (PSI) of highest cylinder. See Part 21-01.

③ 0.003 in any 6 inches; 0.006 overall.

④ Time required for plunger to leak down, 48" with 50 lb. load and leakdown fluid in lifter.

⑤ Distance in inches that front edge of bearing is installed below front face of block.

⑥ 0.002 Undersize = Add 0.001 to Standard Thickness.

CONNECTING ROD, PISTON AND RINGS

CONNECTING ROD

Piston Pin Bore Diameter	0.9104-0.9112
Crankshaft Bearing Bore Diameter	2.2390-2.2398
Out-Of-Round Limit	0.0004 Max.
Taper Limit	0.0004 Max.
Length (Center-to-Center)	4.7135-4.7165 3.3L (200 CID) 5.8785-5.8815 4.1L (250 CID)
Alignment (Bore-to-Bore Max. Oil ^⑦)	
Twist	0.024
Bend	0.012
Side Clearance (Assembled to Crank)	
Standard	0.0035-0.0105
Service Limit	0.0140

PISTON

Diameter ^⑧	
Coded Red	3.6784-3.6790
Coded Blue	3.6796-3.6802
0.003 Oversize	3.6808-3.6814
Piston-To-Bore Clearance	0.0013-0.0021
Pin Bore Diameter	0.9124-0.9127
Ring Groove Width	
Compression (Top)	0.080-0.081
Compression (Bottom)	0.080-0.081
Oil	0.188-0.189

PISTON PIN

Length	3.010-3.040
Diameter	
Standard	0.9119-0.9124
0.001 Oversize	0.9130-0.9133
0.002 Oversize	0.9140-0.9143
Pin-To-Piston Clearance	0.0003-0.0005
Pin-To-Rod Clearance	Interference Fit

PISTON RINGS

Ring Width	
Compression (Top)	0.077-0.078
Compression (Bottom)	0.077-0.078
Side Clearance	
Compression (Top)	0.002-0.004
Compression (Bottom)	0.002-0.004
Oil Ring	Snug Fit
Service Limit	0.006
Ring Gap	
Compression (Top)	0.008-0.016
Compression (Bottom)	0.008-0.016
Oil Ring (Steel Rail)	0.015-0.055

LUBRICATING SYSTEM

OIL PUMP

Relief Valve Spring Tension (Lbs. @ Spec. Length)	9.0-10.1 @ 1.078 3.3L (200 CID) 20.6-22.6 @ 2.49 4.1L (250 CID)
Drive Shaft-To-Housing Bearing Clearance	0.0015-0.0030
Relief Valve-To-Bore Clearance	0.0015-0.0030
Rotor Assembly End Clearance (Assembled)	0.004 Max.
Outer Race-To-Housing Clearance	0.001-0.013
OIL CAPACITY (Quarts U.S.)	4 ^⑨

FUEL PUMP

STATIC PRESSURE (P.S.I.) ^⑩	5.0-7.0
MINIMUM VOLUME FLOW ^⑩ (1 ^⑪)	1 Pt. in 2R Sec.
ECCENTRIC TOTAL LIFT (Inches)	0.290-0.310

TORQUE SPECIFICATIONS

CAMSHAFT SPROCKET TO CAMSHAFT	35-45
CAMSHAFT THRUST PLATE TO BLOCK	12-18
CONNECTING ROD NUTS OR BOLTS	21-26
CYLINDER FRONT COVER BOLTS	6-9
CYLINDER HEAD BOLTS	12 ^⑬
DAMPER OR PULLEY TO CRANKSHAFT	85-100
DISTRIBUTOR VACUUM CONTROL VALVE	15-18
EGR VALVE TO CARBURETOR SPACER OR INT MANIFOLD	12-18
FUEL PUMP TO CYLINDER BLOCK OR FRONT COVER	12-18
FLYWHEEL TO CRANKSHAFT	75-85
MAIN BEARING CAP BOLTS	60-70
MANIFOLD TO CYLINDER HEAD (Exhaust)	18-24

TORQUE SPECIFICATIONS (Continued)

OIL FILTER INSERT TO CYLINDER BLOCK	10-15
OIL FILTER TO BLOCK OR ADAPTER	13 ^⑬
OIL INLET TUBE TO OIL PUMP	10-15
OIL PAN DRAIN PLUG	15-25
OIL PAN TO CYLINDER BLOCK	7-9
OIL PUMP TO CYLINDER BLOCK	10-15
PULLEY TO DAMPER (Bolt)	35-50
ROCKER ARM SUPPORT SHAFT TO CYLINDER HEAD	30-35
SPARK PLUG TO CYLINDER HEAD	10-15
VALVE ROCKER ARM COVER	3-5
ALTERNATOR BRACKET TO CYLINDER BLOCK (Bolt)	35-50
ALTERNATOR ADJUSTING ARM TO CYLINDER BLOCK	15-20 3.3L (200 CID) 35-50 4.1L (250 CID)
ALTERNATOR ADJUSTING ARM TO ALTERNATOR	24-40
THERMACTOR PUMP BRACKET TO CYLINDER BLOCK	12-18 3.3L (200 CID) 22-32 4.1L (250 CID)
THERMACTOR PUMP PIVOT BOLT	22-32 3.3L (200 CID) 30-45 4.1L (250 CID)
THERMACTOR PUMP ADJUSTING ARM TO PUMP	12-18
THERMACTOR PUMP ADJUSTING ARM TO CYLINDER BLOCK	20-28
THERMACTOR PUMP PULLEY TO SHAFT	130-118 In.-Lb.
POWER STEERING PUMP PULLEY TO DAMPER (Bolt)	35-50
FAN TO WATER PUMP HUB (Bolt)	12-18
CARBURETOR MOUNTING NUTS	12-15
CARBURETOR SPACER TO INTAKE MANIFOLD	12-15
CARBURETOR MOUNTING STUD	15 Max.
FUEL FILTER TO CARBURETOR	80-100 In.-Lb.

TORQUE SPECIFICATIONS — General Applications

U.S. THREAD SIZES TORQUE

1/4-20	6-9
5/16-18	12-18
5/16-24	14-20
3/8-16	22-32
3/8-24	27-38
7/16-14	40-55
7/16-20	40-60
1/2-13	55-80

METRIC THREAD SIZES TORQUE

M-6	6-9
M-8	14-21
M-10	28-40
M-12	50-71
M-14	80-114

PIPE THREAD SIZES TORQUE

1/8	5-8
1/4	12-18
3/8	22-33
1/2	25-35

- ① All values are in ft.-lb. unless otherwise noted.
- ② Oil threads with engine oil unless fasteners require sealers.

⑦ Pin bore and crank bearing bore must be parallel and in same vertical plane within the specified total difference when measured at the ends of an 8" bar—4" on each side of rod centerline.

⑧ Measured at the pin bore centerline at 90° to the pin.

⑨ Add 1 quart with filter change.

⑩ On engine, normal temperature, curb idle, in neutral.

⑪ Inside diameter of smallest orifice not less than 0.220".

⑫ In sequence: Step 1 = 50-55; Step 2 = 60-65; Step 3 = 70-75.

⑬ 1/2 turn after gasket contacts sealing surface — with oiled gasket.

2.8L V-6 Engine

PART
21-12

Pinto, Bobcat and Mustang II

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CA4286-2B

DESCRIPTION

ENGINE

The compact Ford 60-degree 2.8L V-6 engine (Figs. 1 and 2) is of modern lightweight cast-iron construction. It has precision-molded cast iron crankshaft, supported on four replaceable copper alloy bearings. Camshaft and connecting rod bearings are also replaceable. The connecting rods are made of forged steel.

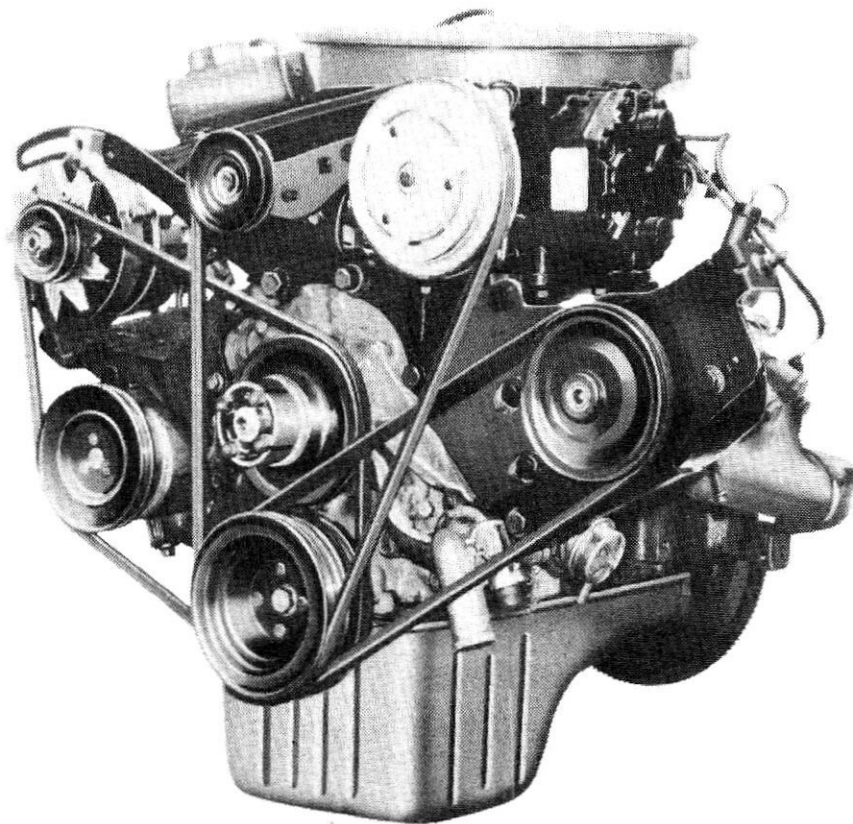
Except for the 60-degree block inclination, it is similar to a V-8 in construction and service accessibility.

EXHAUST EMISSION CONTROL SYSTEM

Operation and required maintenance of the exhaust emission control devices used on this engine are covered in Groups 29 and 50 of this Manual.

CRANKCASE VENTILATION SYSTEM

The engine is equipped with a positive, closed-type crankcase ventilation system re-cycling the crankcase vapors to the intake manifold.



A3717-2C

FIG. 1 2.8L V-6 Engine—With Thermactor and A/C—Left Front View

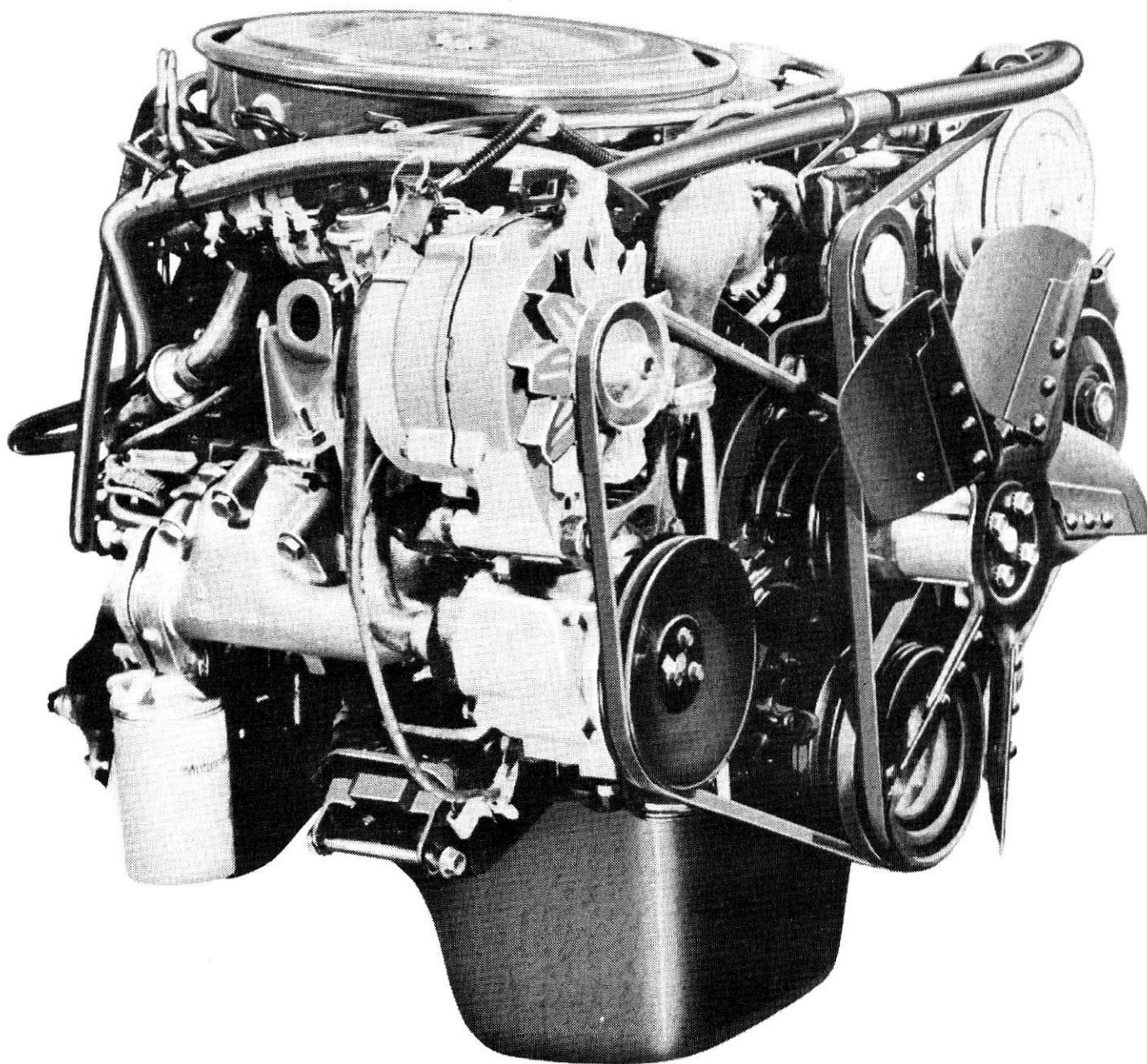
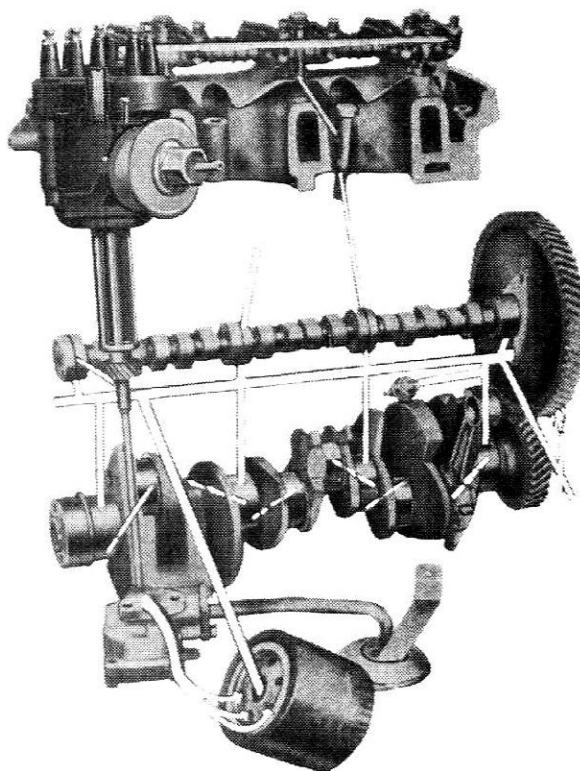


FIG. 2 2.8L V-6 Engine—With Thermactor and A/C—Right Front View

A3718-2B



A3541-2B

FIG. 3 V-6 Engine Full Pressure Lubrication System

ADJUSTMENTS

CAUTION: Do not operate the engine with the hood open until the fan has been first examined for possible cracks and separation.

VALVE CLEARANCE

If some component of the valve train is replaced, i.e., rocker arm, push rod, camshaft, etc., it will be necessary to make a valve lash adjustment **before starting the engine**.

Cold Adjustment

1. Remove air cleaner assembly.
2. Disconnect negative battery cable from battery.
3. Disconnect hose between thermactor bypass valve and check valve at check valve.
4. Disconnect hose between thermactor air pump and bypass valve at bypass valve.
5. Disconnect thermactor bypass valve mounting bracket from engine and remove thermactor bypass valve, mounting bracket and hose to check valve.
6. Remove and discard both lifting eyes.
7. Remove alternator drive belt from alternator and rotate alternator outward toward fender.
8. Disconnect spark plug wires from spark plugs and rocker arm covers.
9. Remove electric assist choke wire from choke cap.
10. Remove wiring harnesses from attaching brackets on rocker arm covers as required and reposition to facilitate rocker arm cover removal.
11. Remove PCV valve from rocker arm cover.

12. Reposition vacuum hoses as required to facilitate rocker arm cover removal.
13. Remove rocker arm cover attaching screws.
14. Remove rocker arm covers.
15. Torque rocker arm support bolts to specification.
16. Reconnect battery cable.
17. Make sure transmission is in Neutral (manual transmission), or in Park (P) (automatic transmission), and that parking brake is applied.
18. **ADJUST VALVE LASH AS FOLLOWS:**
 - a. Place a finger on adjusting screw of intake valve rocker arm for cylinder No. 5. The slightest motion of the rocker arm can be detected in this way.
 - b. Using a remote starter button or equivalent, "bump" the engine over until the intake valve for cylinder No. 5 just begins to open. The camshaft is now in the correct position to adjust the valves on No. 1 cylinder.
 - c. Adjust the No. 1 intake valve so that a 0.016" feeler has a light to moderate drag and a 0.017" feeler is very tight. (Turn adjusting screw clockwise to decrease lash and counterclockwise to increase lash). See Fig. 4. Adjusting screws are self-locking and will stay in set position.

NOTE: Do not use step-type "go/no-go" feeler gages.

CAUTION: When checking lash, insert feeler between rocker arm and valve tip at front (or rear) edge of valve tip and move toward opposite edge