

SERVICE REPAIR

MANUAL

Hyster K005 (H100XM, H110XM, H120XM,
H70XM, H80XM, H90XM) Forklift

HYSTER

GM ENGINES

4.3 LITER V-6

H3.50-5.00XL (H70-110XL) [G005];

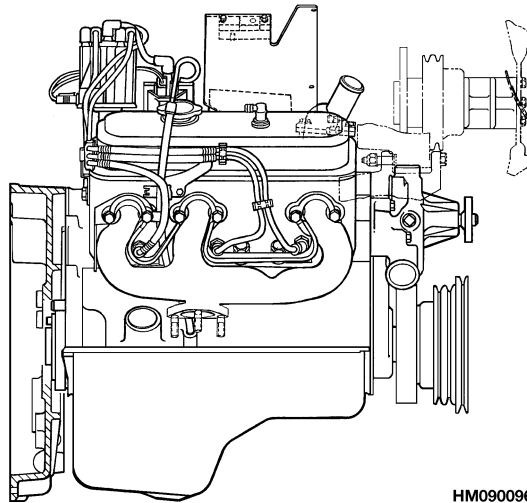
S3.50-5.50XL (S70-120XL) [D004];

H6.00-7.00XL (H135-155XL) [F006, G006];

S6.00-7.00XL (S135-155XL) [B024, C024];

H3.50-5.50XM (H70-120XM) [K005, L005];

S3.50-5.50XM (S70-120XM) [E004, F004]



HM090096

HYSTER

SAFETY PRECAUTIONS

MAINTENANCE AND REPAIR

- When lifting parts or assemblies, make sure all slings, chains, or cables are correctly fastened, and that the load being lifted is balanced. Make sure the crane, cables, and chains have the capacity to support the weight of the load.
- Do not lift heavy parts by hand, use a lifting mechanism.
- Wear safety glasses.
- **DISCONNECT THE BATTERY CONNECTOR** before doing any maintenance or repair on electric lift trucks.
- Disconnect the battery ground cable on internal combustion lift trucks.
- Always use correct blocks to prevent the unit from rolling or falling. See **HOW TO PUT THE LIFT TRUCK ON BLOCKS** in the **Operating Manual** or the **Periodic Maintenance** section.
- Keep the unit clean and the working area clean and orderly.
- Use the correct tools for the job.
- Keep the tools clean and in good condition.
- Always use **HYSTER APPROVED** parts when making repairs. Replacement parts must meet or exceed the specifications of the original equipment manufacturer.
- Make sure all nuts, bolts, snap rings, and other fastening devices are removed before using force to remove parts.
- Always fasten a **DO NOT OPERATE** tag to the controls of the unit when making repairs, or if the unit needs repairs.
- Be sure to follow the **WARNING** and **CAUTION** notes in the instructions.
- Gasoline, Liquid Petroleum Gas (LPG), Compressed Natural Gas (CNG), and Diesel fuel are flammable. Be sure to follow the necessary safety precautions when handling these fuels and when working on these fuel systems.
- Batteries generate flammable gas when they are being charged. Keep fire and sparks away from the area. Make sure the area is well ventilated.

NOTE: The following symbols and words indicate safety information in this manual:



WARNING

Indicates a condition that can cause immediate death or injury!



CAUTION

Indicates a condition that can cause property damage!

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manual**

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admin@servicemanualperfect.com**

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This section is for the following models:

H3.50-5.00XL (H70-110XL) [G005];
 S3.50-5.50XL (S70-120XL) [D004];
 H6.00-7.00XL (H135-155XL) [F006, G006];
 S6.00-7.00XL (S135-155XL) [B024, C024];
 H3.50-5.50XM (H70-120XM) [K005, L005];
 S3.50-5.50XM (S70-120XM) [E004, F004]

General

NOTE: This SRM applies to different model years of the GM 4.3 liter V-6 engine. While there can be physical differences in the parts, many of the procedures will apply to all of the models. If the different parts require separate procedures, all the procedures will be given.



CAUTION

Changes to the engines have occurred at each model year. Do not install parts from one model year engine into another model year engine. Installation of the wrong parts will cause poor performance, wear, and failure of the engine.



CAUTION

Disconnect the battery cables before doing any disassembly and repair of the engine or parts of the electrical system.

The diodes and resistors in the electrical system can be damaged if the following cautions are not followed:

- **Do not disconnect the battery when the engine is running. The voltage surge can damage the diodes and resistors.**
- **Do not disconnect an electric wire before the engine is stopped and the switches are OFF.**
- **Do not cause a short circuit by connection of the electric wires to the wrong terminals. Make sure a correct identification of the wire is made before it is connected.**
- **Make sure a battery is the correct voltage and polarity before it is connected.**
- **Do not check for current flow by making a spark because the electronic components can be damaged.**

This SRM has the description and the repair instructions for the GM 4.3 liter V-6 engine. Checks and Adjustments, Troubleshooting procedures, and Specifications are also included.

Description

The cylinder block is made of cast iron. The arrangement of the cylinders is in a V shape, with three cylinders on each bank. From the front, cylinders on the right bank are numbered 1, 3, and 5 and cylinders on the left bank are numbered 2, 4, and 6.

The cylinder heads are cast iron and have one intake valve and one exhaust valve for each cylinder. A spark plug is located between the valves in the side of the cylinder head. The valve guides and seats are integral to the cylinder head.

The crankshaft is supported by four main bearings. The number four bearing at the rear of the engine is the end thrust bearing. The bearings are retained by bearing caps that are matched with the block for proper alignment and clearances.

The camshaft is steel and is supported by four bearings pressed into the engine block. The camshaft is driven by a chain from the crankshaft. A spiral gear machined into the camshaft near the rear journal drives a shaft assembly which operates the oil pump drive shaft assembly.

The pistons are made of cast aluminum and have two compression rings and one oil control ring assembly.

The piston is a low-friction, lightweight design with a flat top and barrel-shaped skirt. The piston pins are offset to reduce piston slap. They have a floating fit in the piston and are retained by a press fit in the connecting rod. The connecting rods are forged steel and are machined with the rod cap installed for proper clearances and alignment.

The balance shaft is cast iron and mounted in the crankcase above and in-line with the camshaft. The balance shaft is driven by a gear from the camshaft.

The valve mechanism is actuated by push rods and rocker arms from the camshaft. The rocker arm pivots on a ball to open the valve. Later model engines have hydraulic valve lifters that keep all parts of the valve train in constant contact. Each lifter acts as an automatic adjuster and maintains zero lash in the valve train, eliminating the need for periodic valve adjustment.

When the engine has a gasoline fuel system, it has electronic fuel injection with an electronic engine control system. When the engine has a LPG fuel system, it uses an LPG carburetor with the Micro-processor Spark Timing System (MSTS).

Engine Removal and Installation

The Removal and Installation procedures for the engine is in the **Frame** section for each model of lift truck. See the **Transmission** sections to separate the transmission from the engine.

Cylinder Head Repair

REMOVE AND DISASSEMBLE



WARNING

Disconnect the battery cables before making repairs to the engine.

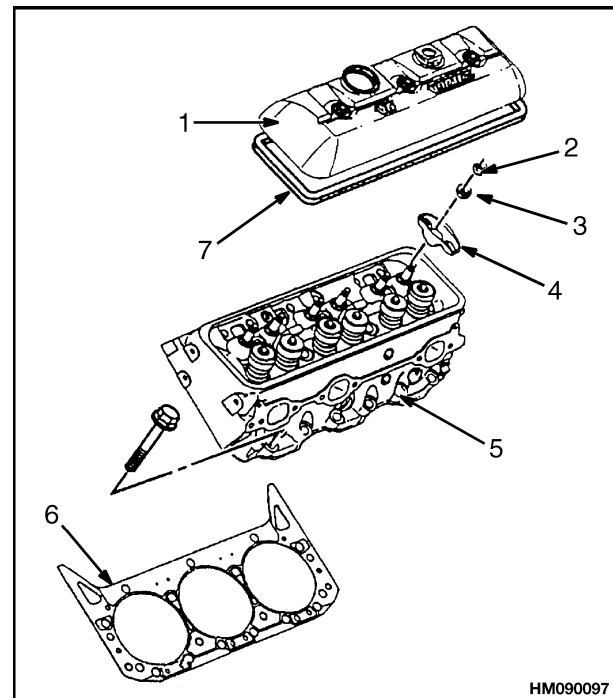
1. Drain cooling system.
2. Disconnect and remove coolant hose from housing for thermostat.
3. Remove air cleaner, distributor, throttle body, intake manifold, and exhaust manifolds. Remove drive belt(s) and remove brackets for drive belt tensioner and alternator.
4. Remove spark plugs.
5. Remove rocker arm cover. See Figure 1.

NOTE: For year 2002 or later model engines, go to Step 10.

6. Remove nuts and balls for rocker arms. Remove rocker arms and push rods. Keep parts for each rocker arm assembly together. Mark assemblies so they can be installed in their original positions.
7. Remove rocker arm studs.
8. Remove capscrews that hold cylinder head to block. Remove capscrews in the reverse order of the tightening sequence shown in Figure 12. Remove cylinder head and gasket.
9. Use a valve spring compressor and remove valve stem keys, caps, springs, and oil seals. Discard oil seals. Remove valves. Organize valves and springs so they can be installed in their original positions.
10. Remove valve rocker arms. See Figure 2.
11. Remove valve rocker arm supports.
12. Remove valve push rods.

CLEAN AND INSPECT

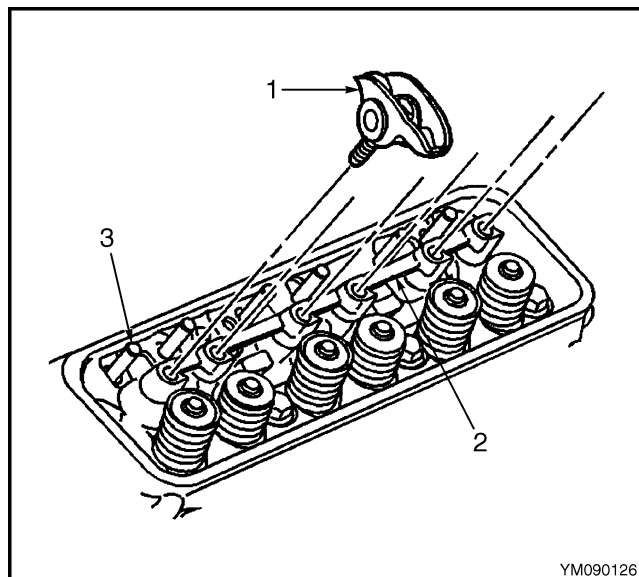
1. Clean carbon from valve ports and combustion chambers in cylinder head.
2. Clean carbon and oil from valves, push rods, and rocker arms.
3. Clean valve guides.
4. Clean surfaces of cylinder head where gaskets fit.
5. Inspect cylinder head for cracks in ports, combustion chambers, and external surfaces.
6. Measure cylinder head for warping with a straight edge and feeler gauge. Refer to Engine Specifications for tolerances.



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- | | |
|-----------------|------------------|
| 1. ROCKER COVER | 5. CYLINDER HEAD |
| 2. NUT | 6. HEAD GASKET |
| 3. BALL | 7. GASKET |
| 4. ROCKER ARM | |

Figure 1. Cylinder Head



1. VALVE ROCKER ARM
2. VALVE ROCKER ARM SUPPORT
3. PUSH ROD

Figure 2. Remove Valve Rocker Arm and Push Rod (Year 2002 or Later Engine Models)

7. Inspect valves for burned or damaged areas in seat surfaces. Inspect for cracks and damaged or worn valve stems. Valve stems with excessive guide clearance must be repaired or replaced. Refer to Engine Specifications.

VALVE GUIDES AND SEATS, REPAIRS

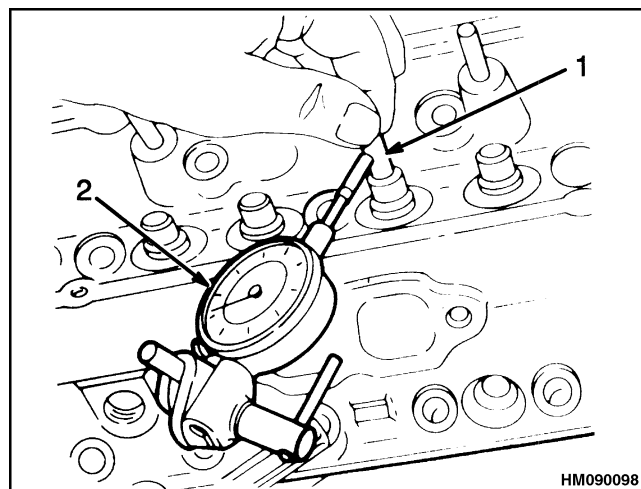
Measure the clearance between the valve stem and the guide as shown in Figure 3. See Engine Specifications for maximum clearances. If the clearance is more than the maximum amount, oversize valves or new valve guides must be installed. Use a reamer of the correct size when installing new valve guides. Use normal service procedures when grinding the valve seats. See the Engine Specifications for dimensions.

VALVES, REPAIR

NOTE: Before any work is performed on the valve faces and seats, make sure the clearance of the valve stems in their valve guides is within specifications.

A correction for minimum wear and damage to the valve and seat can be done by a process called lapping. When the valve seats are lapped, keep the

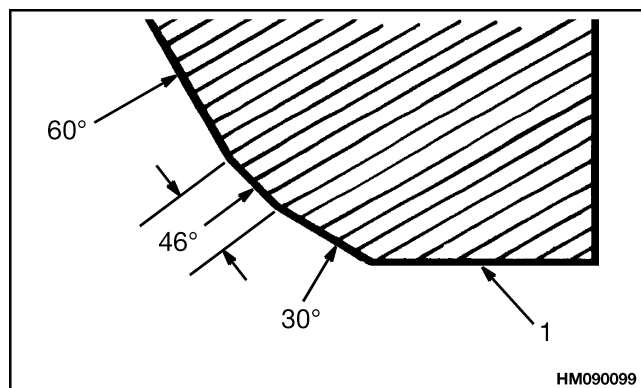
valve faces and seats within the specifications. Make sure all of the lapping compound is removed from the valve and valve seat when the process is completed.



1. VALVE STEM
2. DIAL INDICATOR

Figure 3. Valve Stem Clearance

Valves with minor pits in the valve faces can be machined to the proper angle. There are many different types of equipment for repairing valve faces. Follow the instructions of the manufacturer of the equipment that you are using. Valves must be machined to the proper specifications. See Figure 4.



NOTE: SEAT WIDTH DIMENSION APPLIES TO THE 46° FACE ONLY.

1. CYLINDER HEAD

Figure 4. Valve Seat Specifications for Inlet and Exhaust Valves

Replace a valve if any of the following conditions are present:

- The valve stem is worn below specifications.
- The valve stem is bent.
- The valve face is warped.
- Any part of the valve is cracked.
- Any wear or damage to the valve face cannot be removed by resurfacing and still meet the specifications shown in Figure 5.

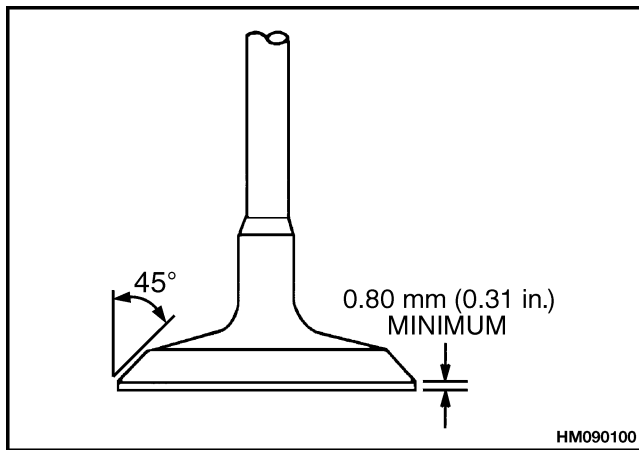


Figure 5. Valve Head Measurements

VALVE SEATS, REPAIR

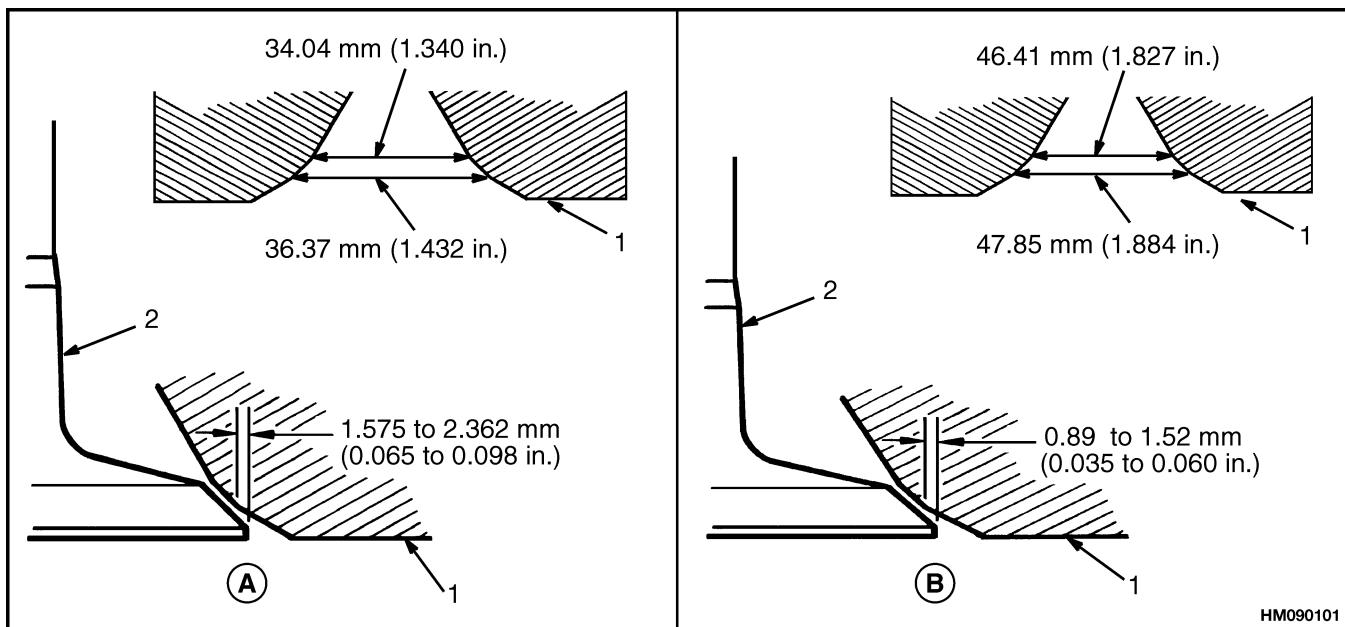
NOTE: Before any work is done on the valve faces and seats, make sure the clearance of the valve stems in their valve guides is within specifications.

CAUTION

The exhaust valve seats in these cylinder heads are induction-hardened. Removal of too much valve seat material will damage the valve seats which will require replacement of the cylinder head.

Damaged valve seats can be resurfaced with a tool that is designed to repair valve seats. There are many different types of equipment for repairing valve seats. Follow the instructions of the manufacturer of the equipment that you are using.

The valve seats are ground at three different angles: 30°, 46°, and 60°. This method makes a valve seat that is the proper width and produces the correct contact line between the valve and valve seat.



- A. EXHAUST VALVE
1. CYLINDER HEAD

- B. INLET VALVE
2. VALVE

Figure 6. Valve Seat Widths and Valve/Valve Seat Overlap

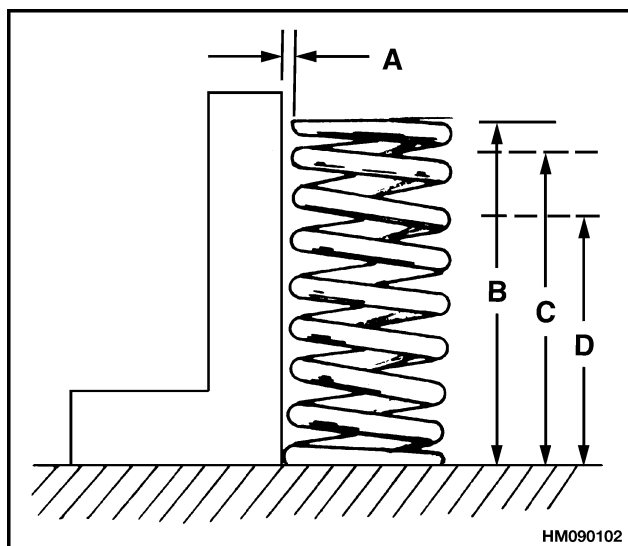
The specifications for the valve seats are shown in the Engine Specifications section and in Figure 4.

- If the contact line is too high, it can be made lower by using a 30° stone.
- If the contact line is too low, it can be raised using the 46° stone.
- If the seat is too narrow, it can be made wider using a 46° stone.
- If the seat is too wide, it can be made narrower using a 60° stone.

The correct dimensions for the valve seat widths and valve/valve seat overlap are shown in Figure 6. The valve seat widths are the dimensions of the 46° face only. The valve/valve seat overlap is the distance from the edge of the seat to the outside edge of the valve.

VALVE SPRINGS

Measure the length of the valve springs. The correct length is 51.6 mm (2.03 in.).



- A. VARIATION FROM VERTICAL: LESS THAN 1.6 mm (0.063 in.)
- B. FREE LENGTH: 51.6 mm (2.03 in.)
- C. SPRING COMPRESSED TO 338 to 374 N (76 to 84 lbf) AT 43 mm (1.69 in.)
- D. INSTALLED HEIGHT
 EARLY MODELS : 42.92 to 43.43 mm (1.690 to 1.710 in.)
 LATE MODELS:
 INTAKE: 45.2 mm (1.78 in.)
 EXHAUST: 45.2 to 43.43 mm (1.780 to 1.710 in.)

Figure 7. Valve Spring Specifications

⚠ WARNING

Be careful when testing the valve springs. These springs can come loose with enough force to cause an injury. Always use equipment that was designed to test springs. Always wear eye and face protection while testing valve springs.

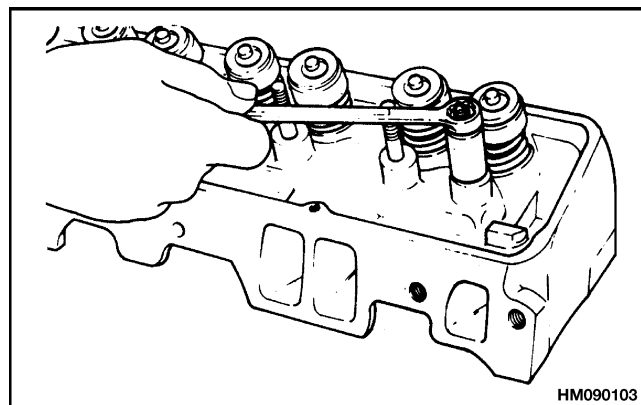
Use a special tool to check the tension of the valve springs. Compress the spring to the correct height and check the tension. For the correct specifications, see Figure 7. Replace valve springs that are not within specifications.

ROCKER ARM STUDS (EARLY MODELS)

These studs are pressed into the head.

Replace a stud that has damaged threads or is loose in the cylinder head. New studs are available in the following oversizes: 0.003 in. and 0.013 in.

1. To remove old stud, install spacer, flat washer, and nut to damaged stud. Use a wrench to remove damaged stud. See Figure 8.



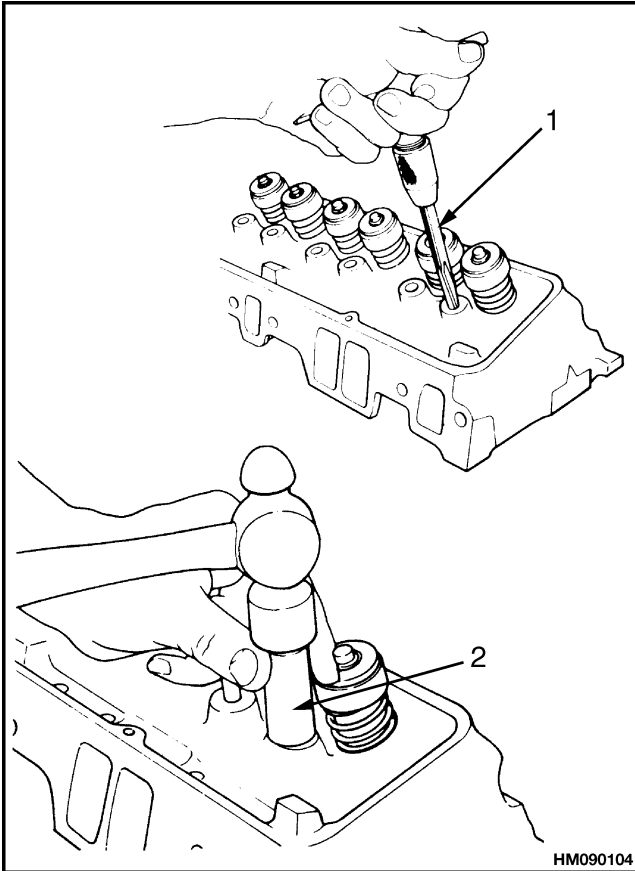
NOTE: EARLY MODELS ONLY.

Figure 8. Rocker Arm Stud Removal

⚠ CAUTION

Do not attempt to install an oversized stud without reaming the stud hole to the new size. Installation of an oversized stud without reaming the stud hole can cause cracks in the cylinder head.

2. Use a reamer of the correct size for new oversized stud. Apply SAE 90 lubricant to new stud during installation. Install new stud as shown in Figure 9.



NOTE: EARLY MODELS ONLY.

- 1. REAMER
- 2. INSTALLATION TOOL

Figure 9. Rocker Arm Stud Installation

ROCKER ARM STUDS (LATE MODELS)

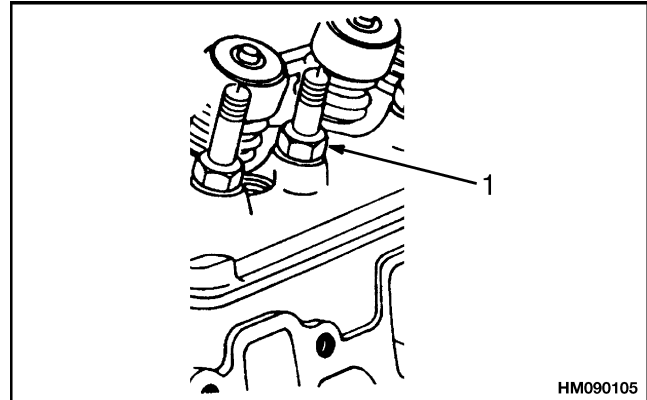
⚠ WARNING

DO NOT remove a stud from the cylinder head when the engine is hot. Some of the studs fit into coolant passages and can release pressure and hot coolant when removed. The steam and boiling coolant can cause burns.

⚠ CAUTION

Disposal of lubricants and fluids must meet local environmental regulations.

Drain the cooling system before replacing the studs. The studs for late model engines have threads that hold them to the cylinder head. See Figure 10. A stud that has damaged threads must be replaced with a new stud. If the threads in the head are damaged, a thread repair kit can be used. If the damaged threads cannot be repaired with a thread repair kit, then the head must be replaced.



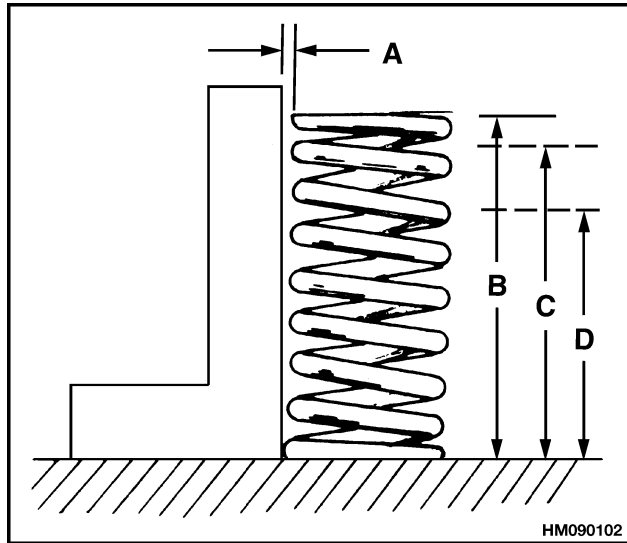
NOTE: LATE MODELS ONLY.

- 1. STUD

Figure 10. Studs With Threads

ASSEMBLE AND INSTALL

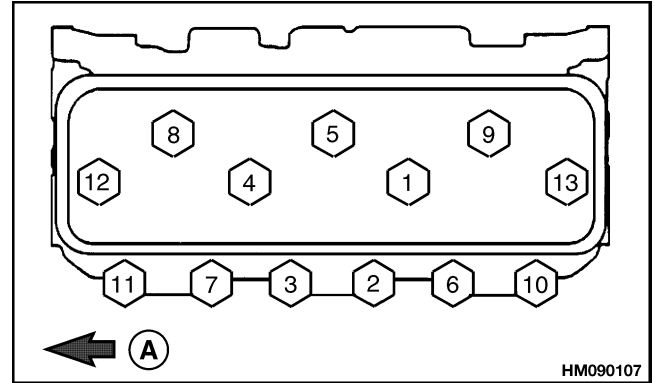
1. Install each valve in correct port. Install oil seal in lower groove. Install shim, damper, spring, shield, and cap or rotator. Using a spring compressor, compress assembly and install retainers. Measure height of valve spring as shown in Figure 11. Measure from top of shim to top of retainer cap. Install shims to get correct height shown in Figure 11. The installed height of valve spring must not be less than minimum height.
2. Clean surface of cylinder head and top of cylinder block. Make sure threads in block are clean.
3. Install cylinder head gasket and cylinder head. Make sure cylinder head is aligned with pins in block.



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Figure 11. Valve Spring Specifications

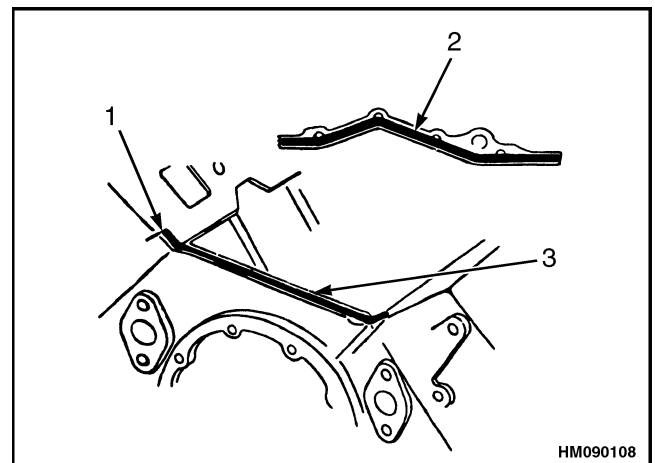
4. Use a sealant on threads of capscrews for cylinder head. Install capscrews as follows:
 - a. On 1995 and earlier engines, tighten capscrews in three steps. Tighten all capscrews to one torque specification, then use the next specification: 34 N•m (25 lbf ft), 61 N•m (45 lbf ft), and 90 N•m (65 lbf ft). Use sequence shown in Figure 12.
 - b. On 1996 model and later engines, tighten all capscrews to 30 N•m (22 lbf ft). Use sequence shown in Figure 12. Next, tighten capscrews 11, 7, 3, 2, 6, 10 an additional 55 degrees. Tighten capscrews 12 and 13 an additional 65 degrees. Tighten capscrews 1, 4, 8, 5, 9 an additional 75 degrees.



A. FAN END

Figure 12. Cylinder Head Tightening Sequence

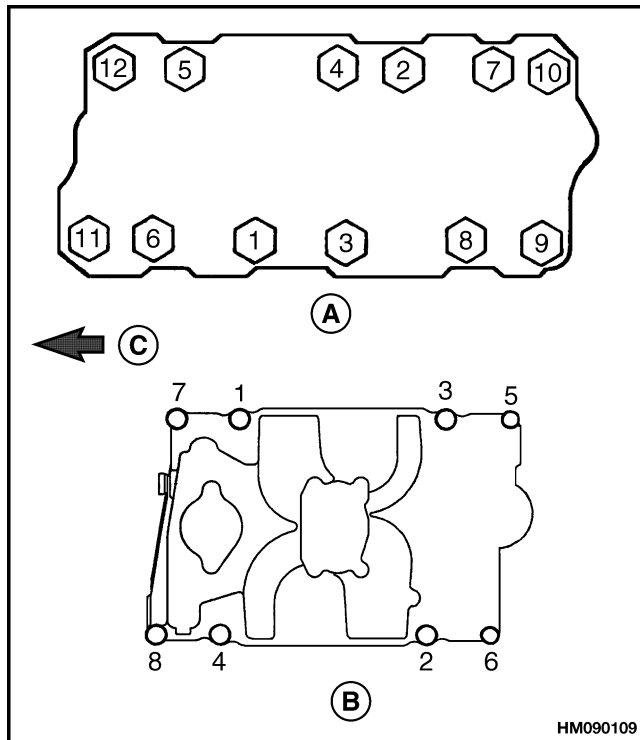
5. Apply RTV sealant (Hyster part number 280472) to front and rear surfaces between intake manifold and engine block. See Figure 13. The bead of sealant must be 5 mm (0.2 in.) thick and extend up sides of heads 13 mm (0.5 in.) to seal and retain gaskets.



1. EXTEND BEAD 13 mm (0.5 in.) UP HEADS (FRONT AND REAR).
2. REAR
3. FRONT

Figure 13. Intake Manifold Sealant Locations

- Install gaskets and intake manifold. Tighten capscrews in sequence shown in Figure 14. Tighten capscrews on early models to 48 N•m (35 lbf ft). On later models tighten capscrews on first pass to 3 N•m (27 lbf in). Tighten capscrews on second pass to 12 N•m (106 lbf in). Tighten capscrews on final pass to 15 N•m (133 lbf in).



- A. EARLY MODELS
- B. LATE MODELS
- C. FAN END

Figure 14. Inlet Manifold Tightening Sequence

NOTE: For year 2002 or later model engines, perform Step 8 through Step 18. For 2001 and earlier model engines, perform Step 7 and Step 14 through Step 18.

NOTE: Install parts as marked during removal.

- Install push rods, making sure they are in the seat of the valve lifter. Lubricate rocker arms and rocker arm balls with a molybdenum grease. Install rocker arms, balls, and nuts. The earlier and later models have different procedures to tighten rocker arms and adjust valves. The procedures are described in Valve Clearance Adjustment (Early Models) and Valve Clearance Adjustment (New Models).

- Install valve push rods. See Figure 15.

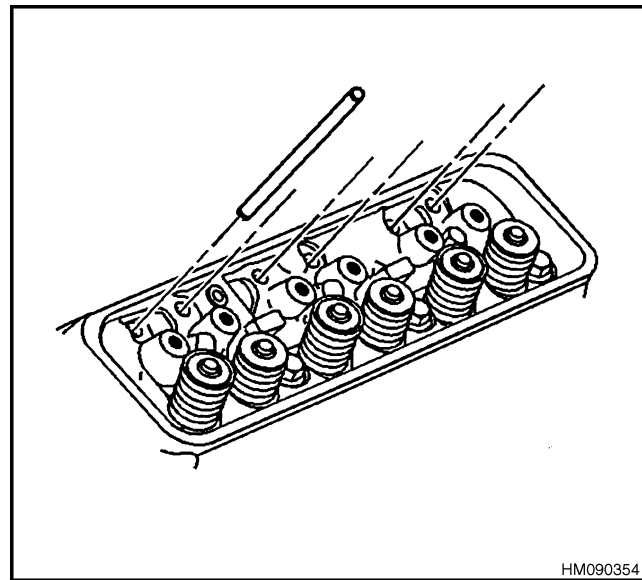


Figure 15. Install Valve Push Rod

CAUTION

Be sure that the arrow on the valve rocker arm support is in the up position. See Figure 16.

- Install valve rocker arm supports.

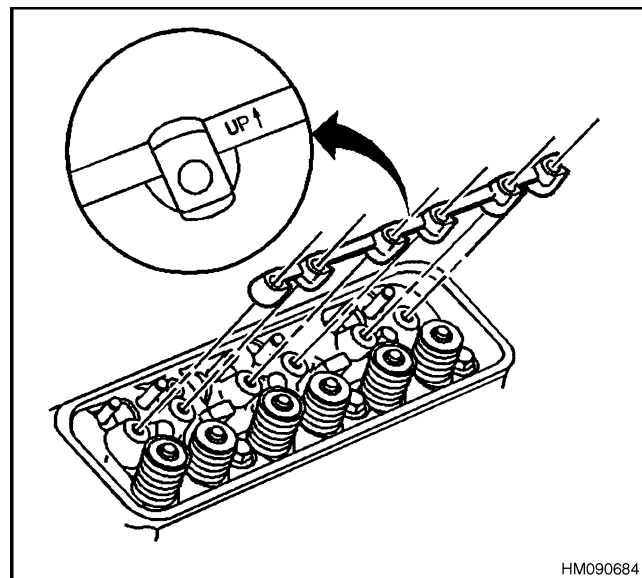
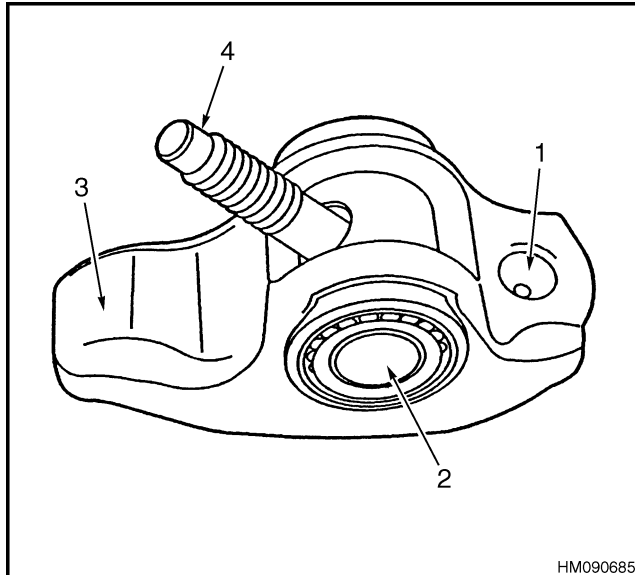


Figure 16. Install Valve Rocker Arm Supports

10. Apply a molybdenum grease or equivalent to the following valve rocker arm contact surfaces: See Figure 17.

- Valve push rod socket
- Roller pivot
- Valve stem tip



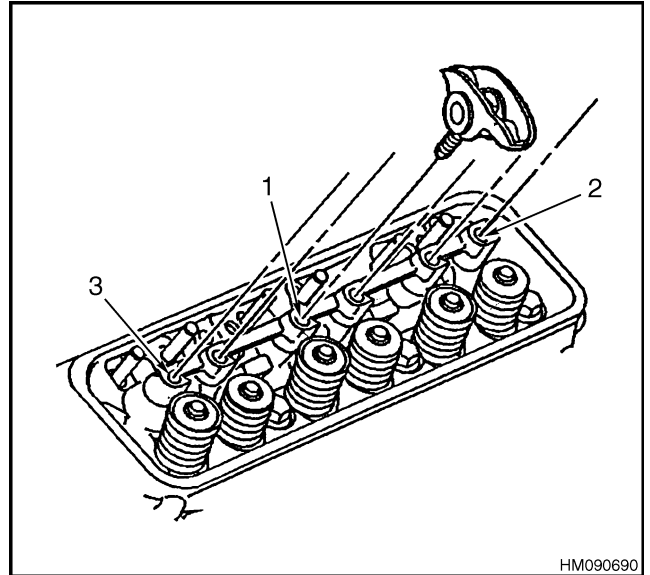
1. VALVE PUSH ROD SOCKET
2. ROLLER PIVOT
3. VALVE STEM TIP
4. ROCKER ARM BOLT

Figure 17. Lubricate Valve Rocker Arm Surfaces

11. See Figure 18. Install the valve rocker arm assemblies as follows:

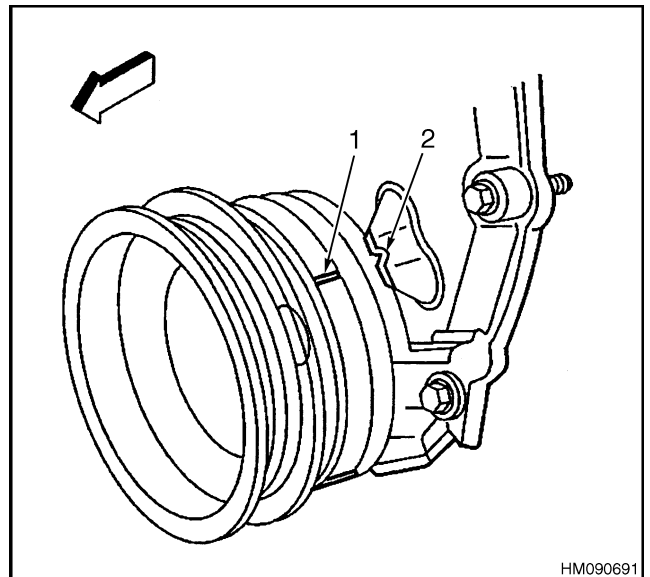
- a. Finger start the rocker arm bolt at location 1 in Figure 18.
- b. Finger start the rocker arm bolt at location 2 in Figure 18.
- c. Finger start the rocker arm bolt at location 3 in Figure 18.
- d. Finger start the remaining three valve rocker arm bolts.

12. Rotate the crankshaft balancer to position the crankshaft balancer alignment mark 57 to 63 degrees clockwise or counterclockwise from the engine front cover alignment tab. See Figure 19.



1. BOLT AT LOCATION 1
2. BOLT AT LOCATION 2
3. BOLT AT LOCATION 3

Figure 18. Install Valve Rocker Arm Assemblies



1. CRANKSHAFT BALANCER ALIGNMENT MARK
2. ENGINE FRONT COVER ALIGNMENT TAB

Figure 19. Rotate Crankshaft Balancer

NOTE: Once the valve rocker arm assemblies are installed and properly torqued, no additional valve lash adjustment is required.

- 13. Tighten the valve rocker arm bolts to 30 N•m (22 lbf ft). See Figure 17.
- 14. Use new gasket and install valve covers. Tighten capscrews to 12 N•m (107 lbf in).
- 15. Install spark plugs.

- 16. Install throttle body, air cleaner, and distributor. Install brackets for drive belt tensioner and alternator. Install drive belt(s).
- 17. Install exhaust manifolds. Tighten capscrews in two steps; first to 15 N•m (133 lbf in), then to 31 N•m (274 lbf in). If used, bend lock tabs against heads of capscrews.
- 18. Install coolant hose to housing for thermostat. Fill coolant system with coolant. See the **Periodic Maintenance** section for your lift truck.

Cylinder Block Cleaning and Inspection

 **WARNING**

Cleaning solvents can be flammable and toxic and can cause skin irritation. When using cleaning solvents, always follow the solvent manufacturer’s recommended safety procedures.

 **WARNING**

Compressed air can move particles so they cause injury to the user or to other personnel. Make sure the path of the compressed air is

away from all personnel. Wear protective goggles or a face shield to prevent injury to the eyes.

After the engine is disassembled, clean cylinder block in solvent and dry with compressed air. Make sure all oil passages are clean. Remove gaskets from surface of block.

Inspect bores for pistons for wear or damage. Measure bores and check dimensions shown in Engine Specifications. Repair cylinder block as necessary.

Piston Bore Preparation

NOTE: It is important that the piston bores are prepared correctly before new piston rings are installed. Incorrect preparation can cause the parts to wear quickly.

Use a hone in the piston bores when installing new rings. Use the hone as follows:

- 1. Use a hone with a 280-grit stone. Make sure stone is clean and will not damage bore.

- 2. Move hone quickly (approximately 60 times per minute) up and down in bore. Make sure hone makes a cross pattern of 45 to 60 degrees. Use hone until entire length of bore has this pattern.
- 3. After using the hone, clean cylinder block with hot water and detergent. Make sure all metal particles are removed from block. Dry bores and lubricate them with engine oil.

Engine Mounts Installation

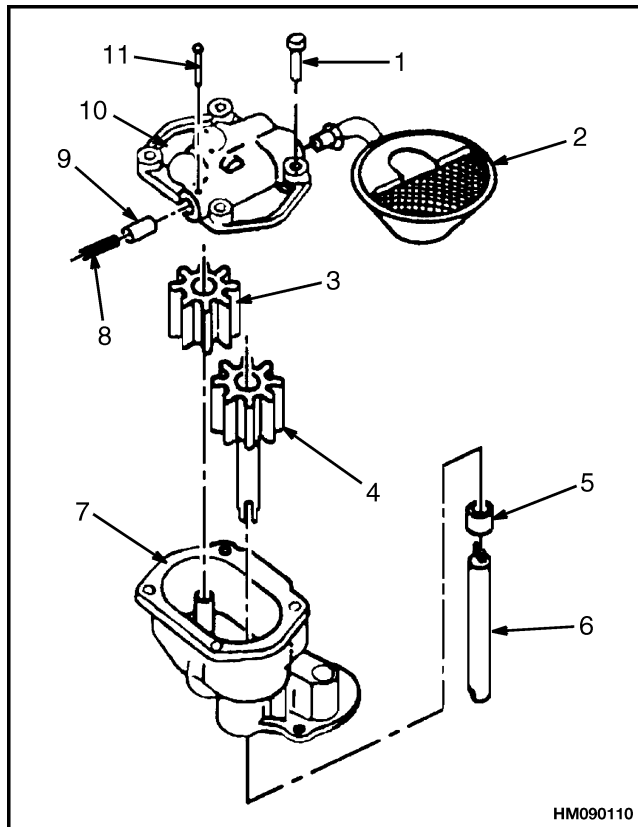
If the engine mount was removed from the cylinder block, install and tighten capscrews for mount as follows.

S/H3.50-5.00XL (S/H70-110XL)	31 N•m (23 lbf ft)
S/H6.00-7.00XL (S/H135-155XL)	50 N•m (37 lbf ft)
H3.50-5.50XM (H70-120XM)	52 N•m (38 lbf ft)

Lubrication System Repair

OIL PUMP, REMOVE AND DISASSEMBLE

1. Remove oil sump.
2. Remove capscrew at mount for pump. Remove oil pump and shaft. See Figure 20.
3. Remove cover for oil pump. Put marks on gear teeth to show their correct location during assembly.
4. Do not remove tube and screen assembly unless it is damaged. The tube and screen must be replaced as an assembly.
5. Remove retaining pin, pressure regulator spring, and pressure regulator valve from pump cover.



- | | |
|----------------|-----------------|
| 1. CAPSCREW | 7. HOUSING |
| 2. SCREEN | 8. SPRING |
| 3. DRIVEN GEAR | 9. RELIEF VALVE |
| 4. DRIVE GEAR | 10. COVER |
| 5. RETAINER | 11. PIN |
| 6. SHAFT | |

Figure 20. Oil Pump

CLEAN AND INSPECT

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Clean parts of oil pump in solvent and dry with compressed air. Inspect gears, shaft, and body of pump for wear or damage.

OIL PUMP, ASSEMBLE AND INSTALL

NOTE: There are some variations in the oil pumps installed during the years of manufacture of these engines, but the design is the same. The repair procedures are the same. See the **Parts Manual** for each oil pump.

1. Install NEW pressure regulator valve and spring into pump cover. Install retaining pin.
2. Install gears in body of pump. Make sure to align identification marks. Install cover for oil pump and tighten capscrews to 12 N•m (106 lbf in). Turn shaft for oil pump and check for smooth operation.
3. Use a sealant when replacement of tube and screen assembly is necessary. The tube and screen assembly must have a good press fit into the oil pump body. Do not damage tube during installation. Make sure surface of screen assembly is parallel to bottom surface of cylinder block. See Figure 21.

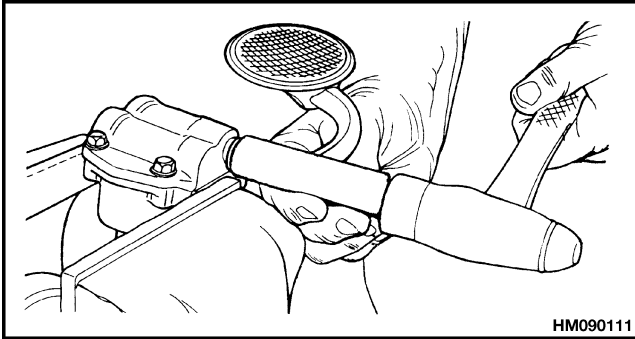


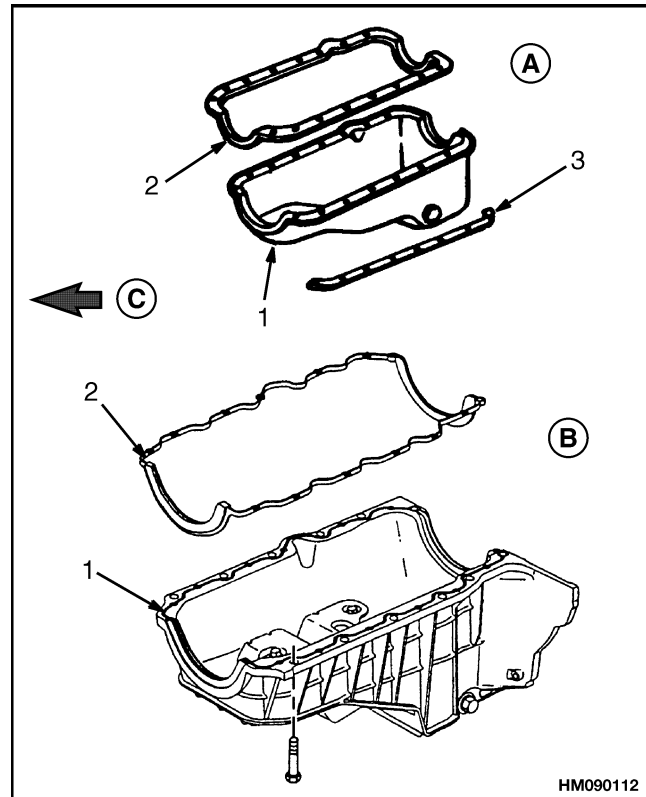
Figure 21. Oil Pump Tube and Screen Installation

4. Install oil pump shaft and NEW retainer.
5. Install oil pump assembly to engine. Make sure shaft is aligned with slot in distributor shaft. On early models (1995 and older engines), tighten capscrew at mount to 47 N•m (35 lbf ft). On late models (1996 and later), tighten capscrew to 90 N•m (66 lbf ft).

OIL SUMP, INSTALL

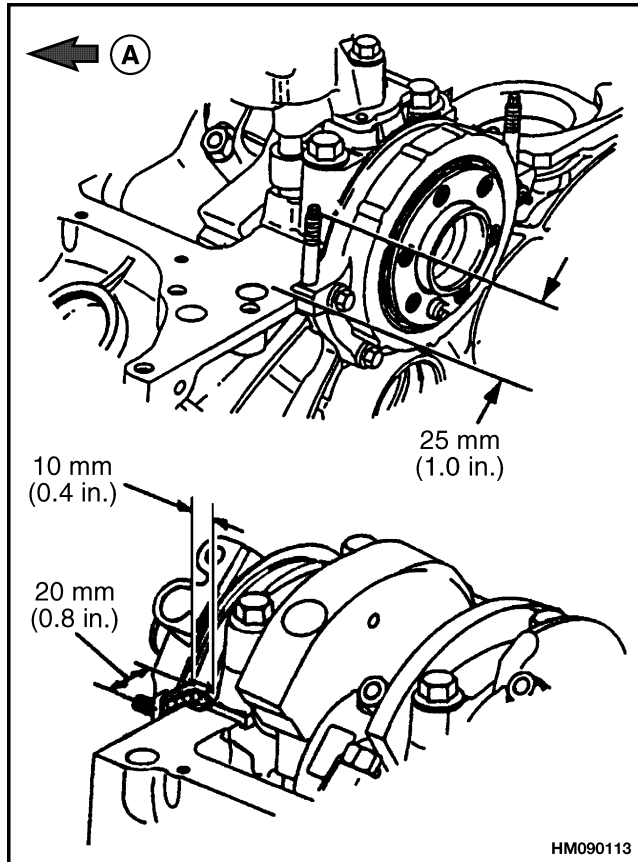
1. Install oil sump on early models (1995 and earlier engines) as follows:
 - a. Install new gasket(s) and oil sump. See Figure 22. Use a sealant on gasket(s) in the following locations: at front cover to block joint and rear seal retainer to block joint. The sealant must extend 25 mm (1 in.) in both directions at each of the four corners.
 - b. Tighten capscrews for oil sump as follows: 1/4-20 capscrews, 10 N•m (89 lbf in); 5/16-18 capscrews, 19 N•m (168 lbf in).
2. Install oil sump on late models (1996 and later engines) as follows:
 - a. Apply an RTV sealant to surfaces of engine block as shown in Figure 23.

- b. Install gasket and oil sump. Make sure vertical surfaces at back of engine block and oil sump are even.
- c. Tighten capscrews and nuts for oil sump in sequence shown in Figure 24 to 25 N•m (221 lbf in).



- | | |
|------------------------|-------------------|
| A. EARLY MODELS | C. FAN END |
| B. LATE MODELS | |
| 1. OIL SUMP | 3. PLATE |
| 2. GASKET | |

Figure 22. Oil Sump



A. FAN END

Figure 23. Oil Sump Installation

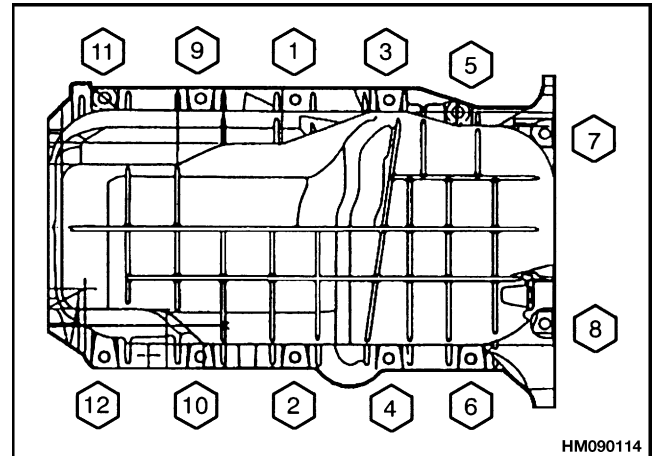


Figure 24. Oil Sump Installation

Timing Cover, Timing Sprockets, Camshaft, and Valve Lifters

TIMING COVER

Remove

NOTE: For model H3.50-5.50XM (H70-120XM), refer to **Cooling System** 700 SRM 740.

1. Remove fan assembly and belts.
2. Remove crankshaft pulley and vibration damper. See Figure 25. Use a tool that pulls on center of vibration damper. Do not pull on outside diameter of vibration damper.
3. Remove crankshaft position sensor from timing cover. See Figure 26.
4. Remove capscrews and stud for timing cover. Remove timing cover from engine. See Figure 27.
5. Remove crankshaft position sensor reluctor ring from crankshaft. See Figure 28.