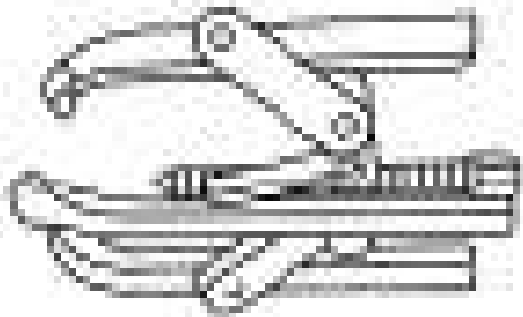


DISASSEMBLY

ENGINE

Special Tool(s)

SPECIAL TOOL CHART



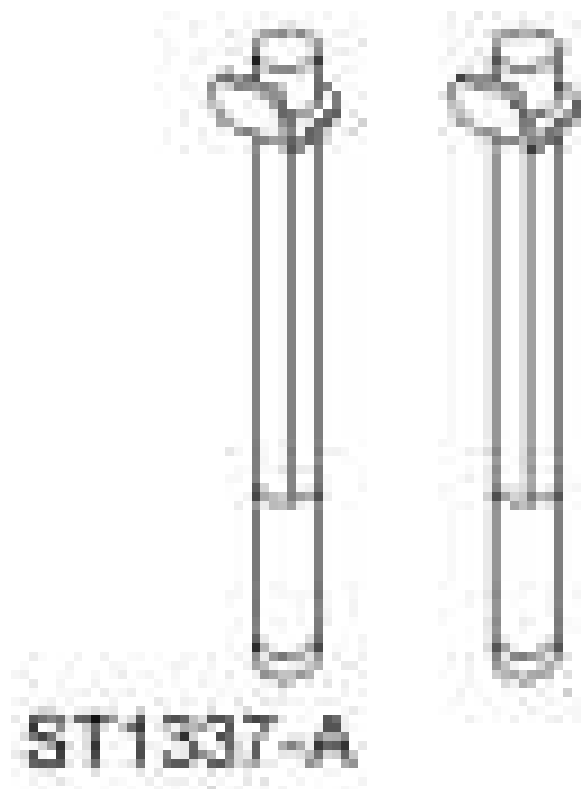
3 Jaw Puller
303-D121

ST1184-A

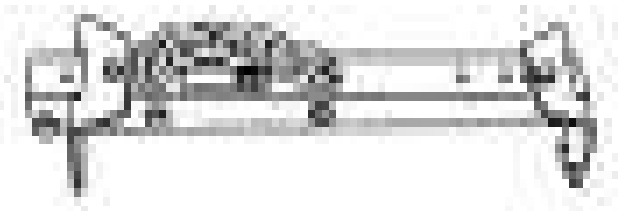


Compressor, Valve Spring
303-1039

ST2804-A

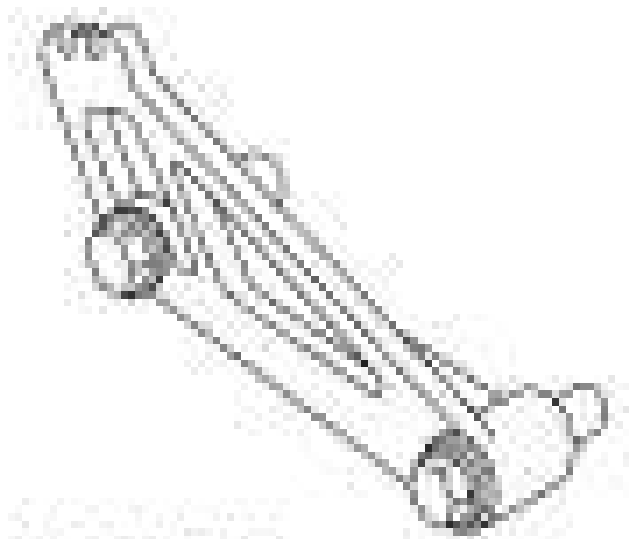


Installer, Connecting Rod
303-442 (T93P-6136-A)



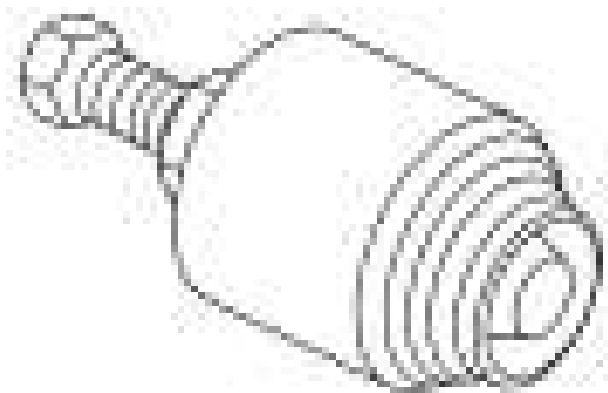
Lifting Bracket, Engine
303-F047 (014-00073)

ST1377-A



ST2807-A

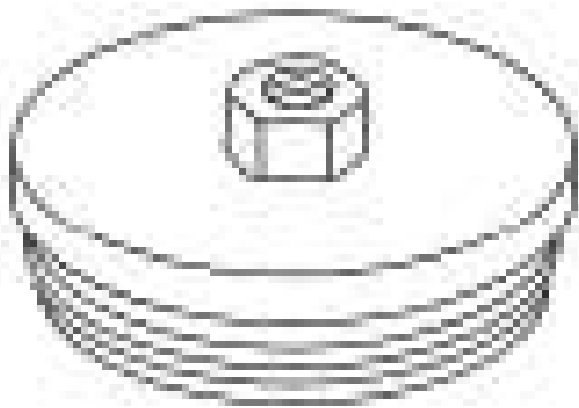
Locking Tool, Cam Phaser
303-1046



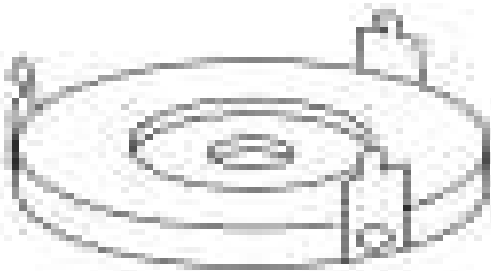
ST1730-A

Remover, Crankshaft Front Seal
303-107 (T74P-6700-A)

Remover, Crankshaft Rear Seal
303-519 (T95P-6701-EH)



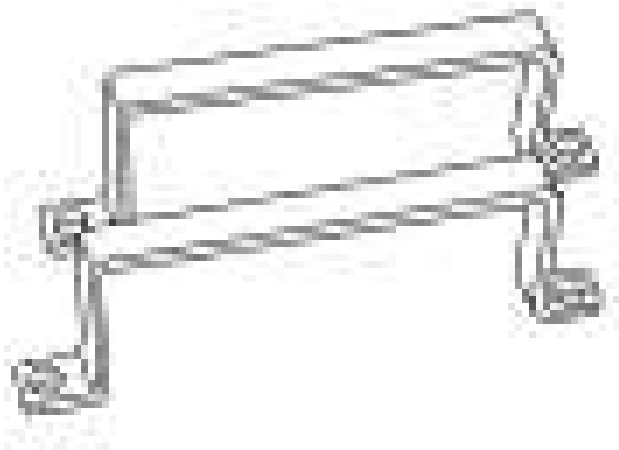
ST1382-A



303-514 (T95P-6701-AH)

Remover, Crankshaft Rear Slinger
303-514 (T95P-6701-AH)

Remover/Installer, Cylinder Head
303-572 (T97T-6000-A)



ST1658-A



ST1185-A

Slide Hammer
100-001 (T50T-100-A)

Material

MATERIAL SPECIFICATIONS

Item	Specification
Motorcraft® Metal Surface Prep ZC-31-A	-
Silicone Gasket Remover ZC-30	-

NOTE: Remove the cylinder heads before removing the crankshaft. Failure to do so may result in engine damage.

NOTE: During engine repair procedures, cleanliness is extremely important. Any foreign material, including any material created while cleaning gasket

surfaces that enters the oil passages, coolant passages or the oil pan, may cause engine failure.

NOTE: The flexplate, the spacer plate, the crankshaft rear seal, the crankshaft rear oil slinger and the rear seal retainer plate must be removed before mounting the engine on the engine stand.

NOTE: For additional information, refer to the exploded view under the ASSEMBLY procedure.

1. Remove the 6 bolts and the flexplate.

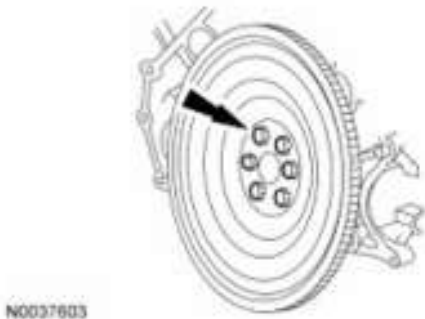


Fig. 359: Locating Flexplate Bolts
Courtesy of FORD MOTOR CO.

2. Remove the spacer plate.

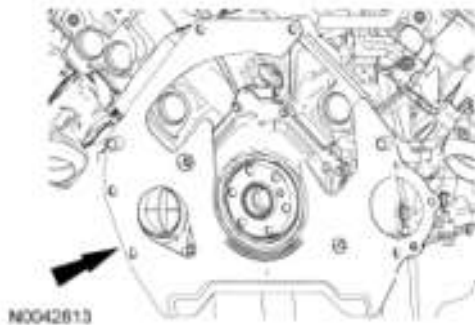


Fig. 360: Locating Spacer Plate
Courtesy of FORD MOTOR CO.

3. Using the Crankshaft Rear Slinger Remover and the Slide Hammer, remove the crankshaft rear oil slinger.

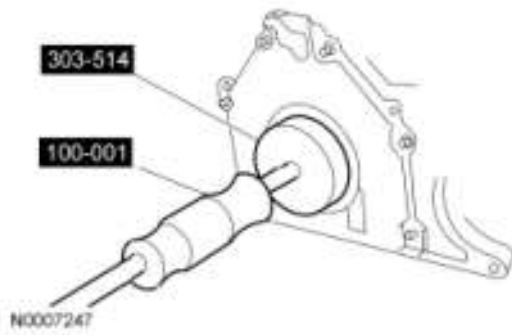


Fig. 361: Identifying Slide Hammer And Crankshaft Rear Oil Slinger Remover
 Courtesy of FORD MOTOR CO.

4. Using the Crankshaft Rear Seal Remover and the Slide Hammer, remove the crankshaft rear seal.

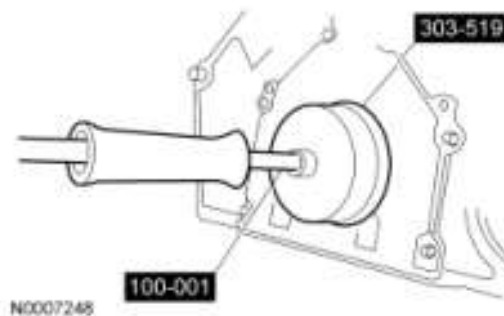


Fig. 362: Identifying Slide Hammer And Crankshaft Rear Seal Remover
 Courtesy of FORD MOTOR CO.

5. Remove the 8 bolts and the crankshaft rear seal retainer plate.

NOTE: Do not use metal scrapers, wire brushes, power abrasive discs or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges which make leak paths. Use a plastic scraping tool to remove all traces of old sealant.

Clean and inspect the sealing surfaces.

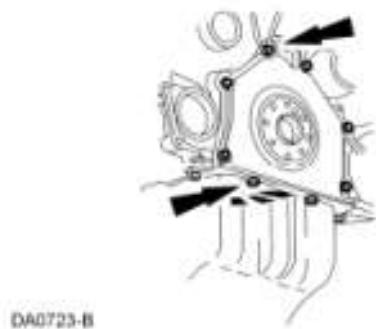


Fig. 363: Locating Bolts And Crankshaft Rear Seal Retainer Plate
 Courtesy of FORD MOTOR CO.

6. Mount the engine on a suitable work stand.

7. Remove the Engine Lifting Bracket.



Fig. 364: Identifying Engine Lifting Bracket (303-F047)
Courtesy of FORD MOTOR CO.

8. Remove the 3 bolts, the RH engine support insulator and the RH engine support insulator bracket.



Fig. 365: Locating Engine Support Insulator Bolts
Courtesy of FORD MOTOR CO.

9. **NOTE:** LH shown in illustration, RH similar.

If equipped, remove the 2 cylinder block drain plugs and drain the coolant into a suitable container. Install the drain plugs when finished.

- Tighten to 24 Nm (18 lb-ft).

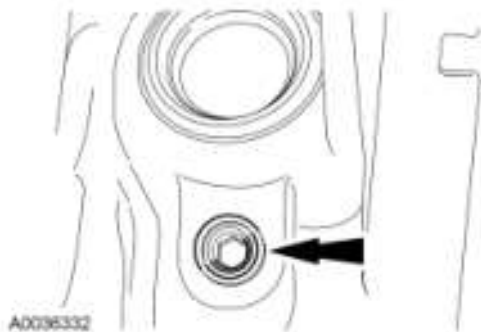


Fig. 366: Locating Cylinder Block Drain Plugs
Courtesy of FORD MOTOR CO.

10. Release the clamp and remove the lower radiator hose.

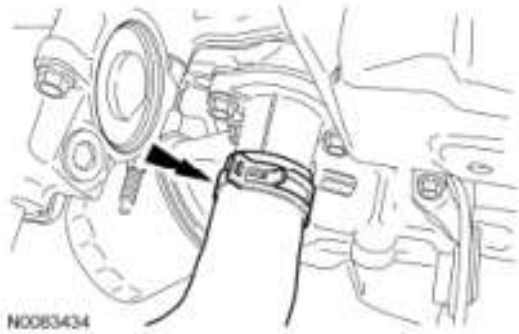


Fig. 367: Locating Lower Radiator Hose
Courtesy of FORD MOTOR CO.

NOTE: When reusing liquid or vapor tube connectors, make sure to use compressed air to remove any foreign material from the connector retaining clip area before separating from the tube.

11.

Remove the breather tube from the RH valve cover.

- Disconnect the quick connect fitting.
 - Push the connector toward the valve cover to release pressure.
 - Push the release tab clockwise.
 - Disconnect the quick connect fitting.

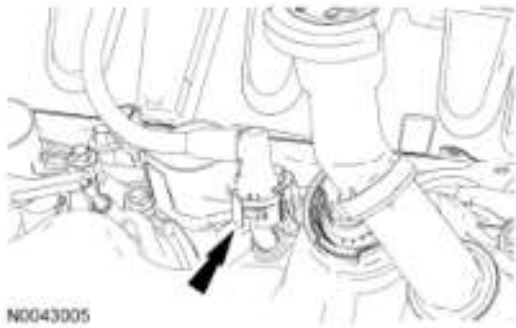


Fig. 368: Locating Quick Connect Fitting
Courtesy of FORD MOTOR CO.

12. Remove the nut and the RH radio ignition interference capacitor.

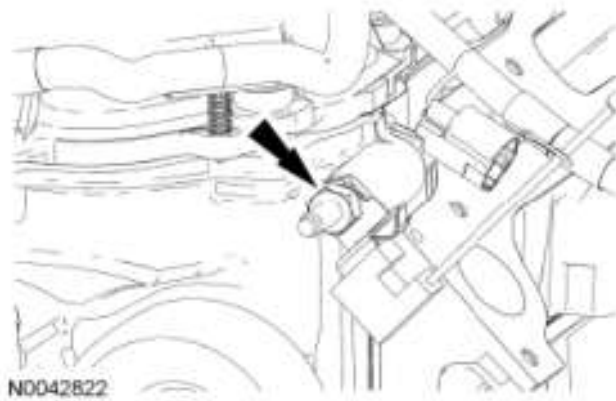


Fig. 369: Locating Nut And RH Radio Ignition Interference Capacitor
Courtesy of FORD MOTOR CO.

13. Remove the nut and detach the LH radio interference capacitor.

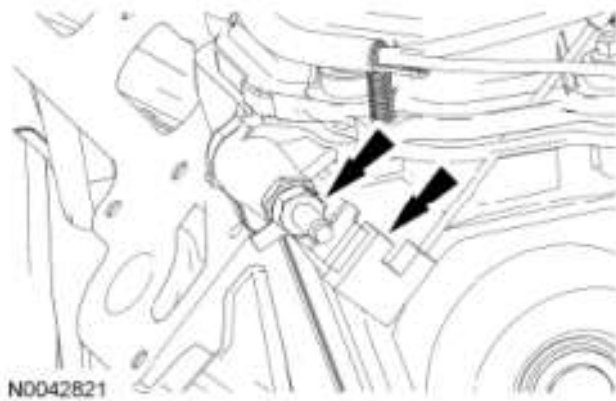


Fig. 370: Locating Nut And LH Radio Interference Capacitor
Courtesy of FORD MOTOR CO.

14. Disconnect the Cylinder Head Temperature (CHT) sensor electrical connector.

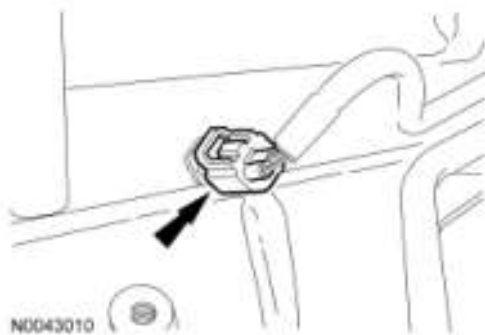


Fig. 371: Locating Cylinder Head Temperature (CHT) Sensor Electrical Connector
Courtesy of FORD MOTOR CO.

15. Detach the CHT sensor jumper wire retainer from the heater supply tube and remove the CHT jumper wire.

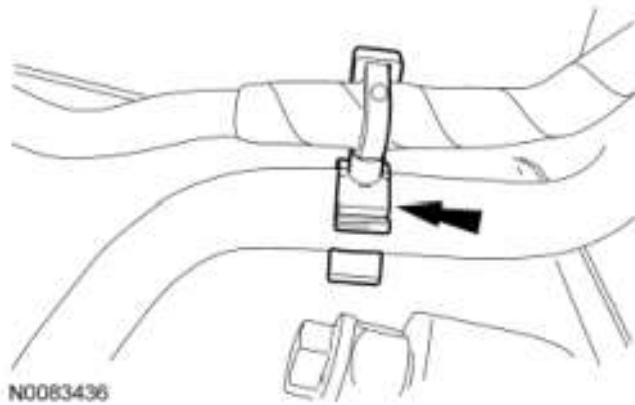


Fig. 372: Locating CHT Sensor Jumper Wire Retainer
Courtesy of FORD MOTOR CO.

16. Detach the Knock Sensor (KS) electrical connector from the heater supply tube.

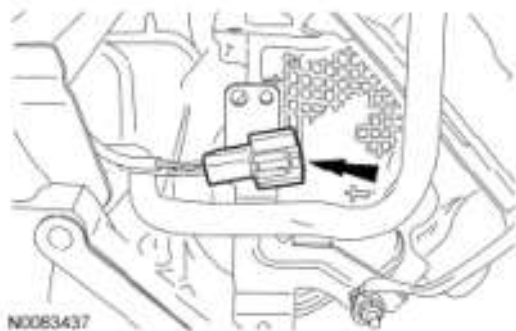


Fig. 373: Locating Knock Sensor (KS) Electrical Connector
Courtesy of FORD MOTOR CO.

17. Remove the nut and the ground strap.

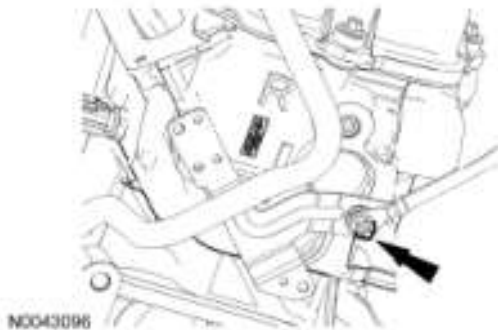


Fig. 374: Locating Ground Strap Nut
Courtesy of FORD MOTOR CO.

18. Remove the stud bolt, the heater supply tube and hose as an assembly.
 - Discard the 2 O-ring seals.

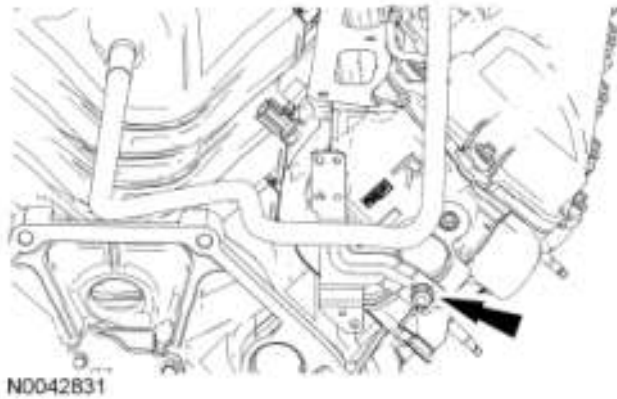


Fig. 375: Locating Stud Bolt And Heater Supply Tube
 Courtesy of FORD MOTOR CO.

19. **NOTE:** LH shown in illustration, RH similar.

Remove the 8 bolts and the 8 ignition coils.

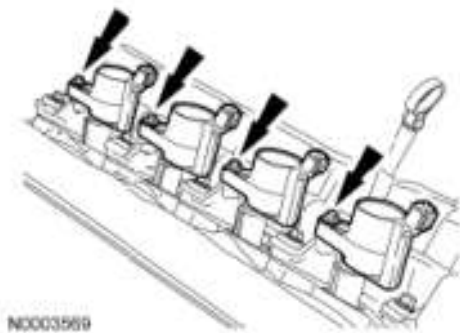


Fig. 376: Locating Ignition Coils And Bolts
 Courtesy of FORD MOTOR CO.

20. Remove the 3 bolts and the LH exhaust manifold heat shield.

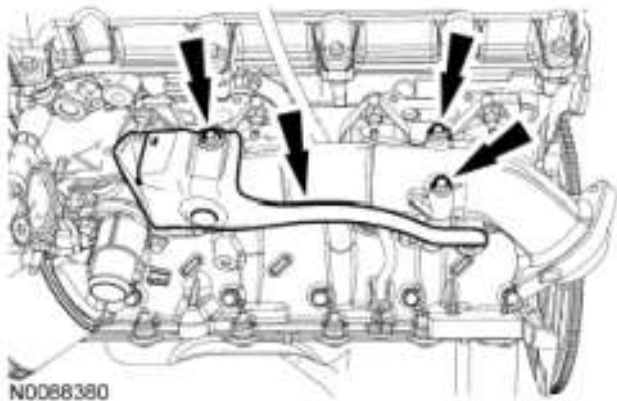


Fig. 377: Locating Bolts And LH Exhaust Manifold Heat Shield
 Courtesy of FORD MOTOR CO.

21. Remove the 8 nuts, the LH exhaust manifold and the gaskets.

- Discard the nuts and the gaskets.

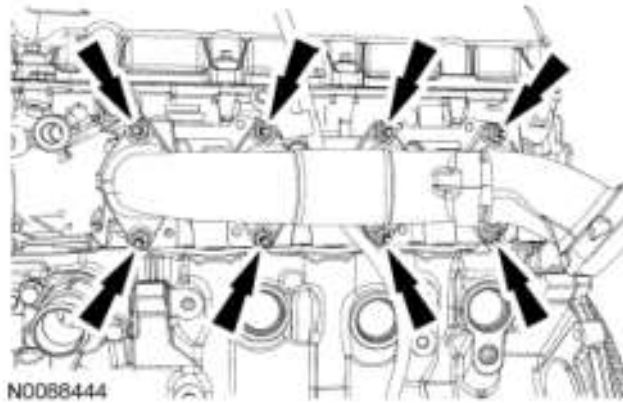


Fig. 378: Locating Nuts And LH Exhaust Manifold
Courtesy of FORD MOTOR CO.

22. Remove and discard the 8 LH exhaust manifold studs.
23. Remove the bolt and the oil level indicator tube.

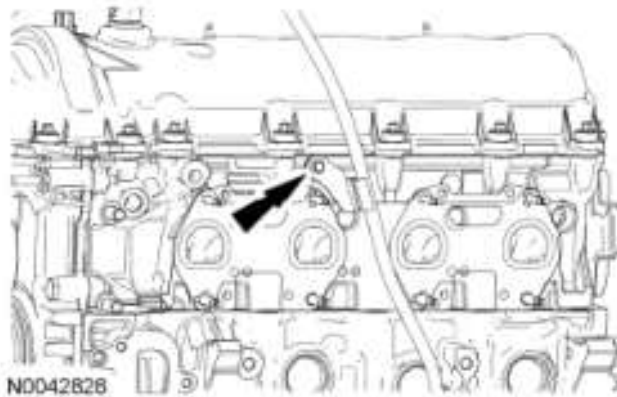


Fig. 379: Locating Bolt And Oil Level Indicator Tube
Courtesy of FORD MOTOR CO.

24. Remove the 3 bolts and the LH engine support insulator bracket.

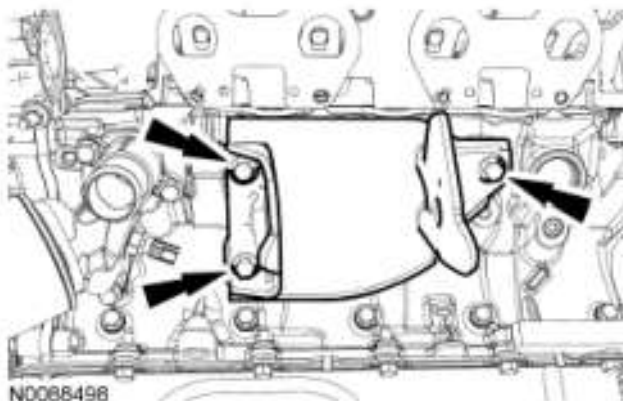


Fig. 380: Locating Bolts And LH Engine Support Insulator Bracket

Courtesy of FORD MOTOR CO.

25. Remove and discard the oil filter. Remove the 4 bolts and the oil filter adapter.

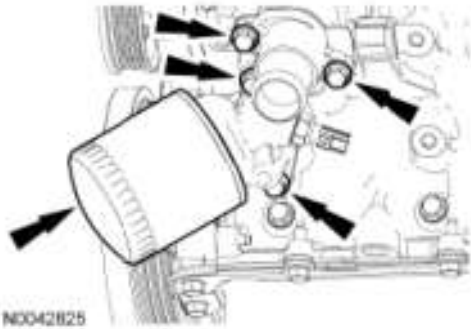


Fig. 381: Locating Oil Filter Adapter And Bolts
Courtesy of FORD MOTOR CO.

26. Remove the 3 bolts and the RH exhaust manifold heat shield.

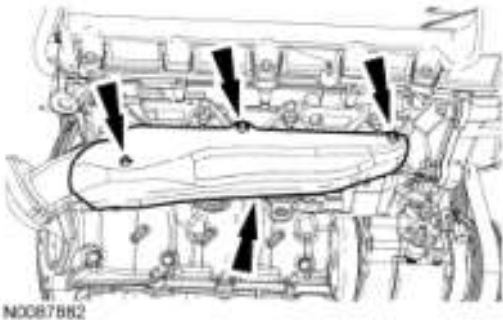


Fig. 382: Locating RH Exhaust Manifold Heat Shield And Bolts
Courtesy of FORD MOTOR CO.

27. Remove the 8 nuts, the RH exhaust manifold and the gaskets.
- Discard the nuts and the gaskets.

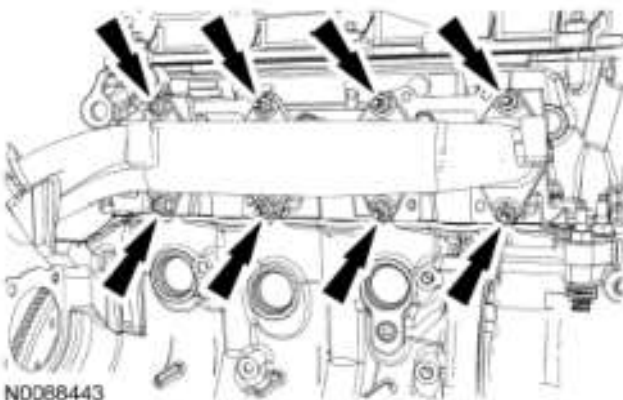


Fig. 383: Locating Nuts And RH Exhaust Manifold
Courtesy of FORD MOTOR CO.

28. Remove and discard the 8 RH exhaust manifold studs.

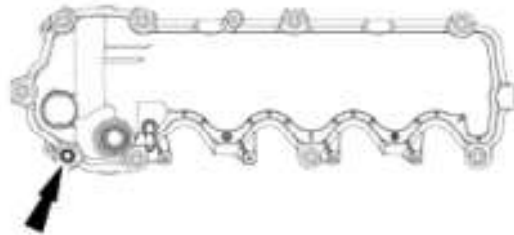
29. **NOTE:** Do not use metal scrapers, wire brushes, power abrasive discs or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges which make leak paths. Use a plastic scraping tool to remove all traces of old sealant.

NOTE: Remove the valve covers carefully, or the Variable Camshaft Timing (VCT) solenoid may be damaged.

NOTE: The bolts are part of the valve cover and should not be removed.

Loosen the 9 bolts and remove the RH valve cover.

- Clean the valve cover mating surface of the cylinder head with silicone gasket remover and metal surface prep. Follow the directions on the packaging.
- Inspect the valve cover gasket. If the gasket is damaged, remove and discard the gasket. Clean the valve cover gasket groove with soap and water or a suitable solvent.



N0074178

Fig. 384: Locating Valve Cover Bolt
Courtesy of FORD MOTOR CO.

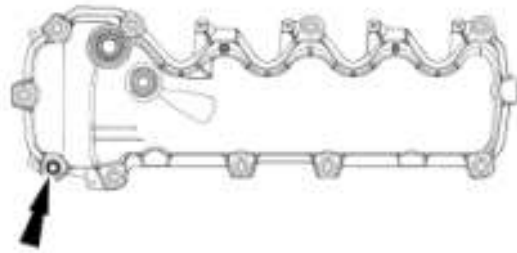
30. **NOTE:** Do not use metal scrapers, wire brushes, power abrasive discs or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges which make leak paths. Use a plastic scraping tool to remove all traces of old sealant.

NOTE: Remove the valve covers carefully, or the Variable Camshaft Timing (VCT) solenoid may be damaged.

NOTE: The bolts are part of the valve cover and should not be removed.

Loosen the 10 bolts and remove the LH valve cover.

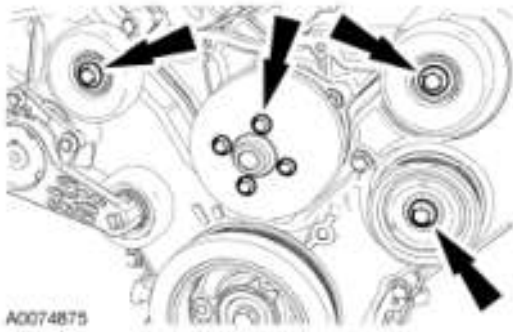
- Clean the valve cover mating surface of the cylinder head with silicone gasket remover and metal surface prep. Follow the directions on the packaging.
- Inspect the valve cover gasket. If the gasket is damaged, remove and discard the gasket. Clean the valve cover gasket groove with soap and water or a suitable solvent.



N0074177

Fig. 385: Locating Valve Cover Bolt
Courtesy of FORD MOTOR CO.

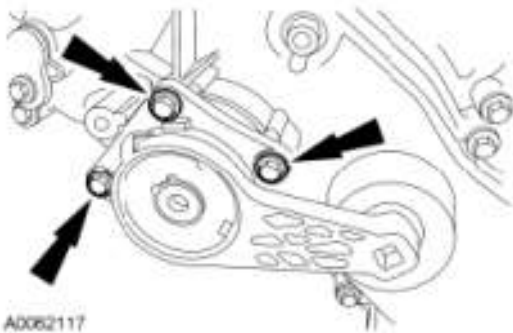
31. Remove the 7 bolts, the coolant pump pulley and the 3 accessory drive belt idler pulleys.



A0074875

Fig. 386: Locating Bolts And Coolant Pump Pulley
Courtesy of FORD MOTOR CO.

32. Remove the 3 bolts and the accessory drive belt tensioner.



A0062117

Fig. 387: Locating Accessory Drive Belt Tensioner Bolts
Courtesy of FORD MOTOR CO.

33. Remove the 4 coolant pump bolts.

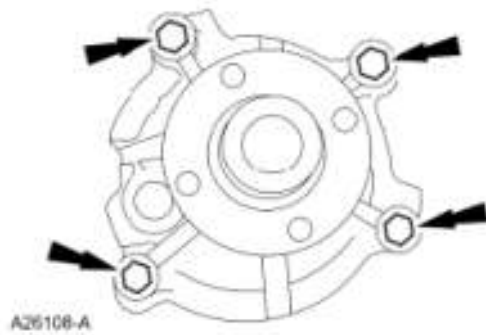


Fig. 388: Locating Coolant Pump Bolts
Courtesy of FORD MOTOR CO.

34. Remove the coolant pump from the cylinder block.
 - Discard the O-ring seal.

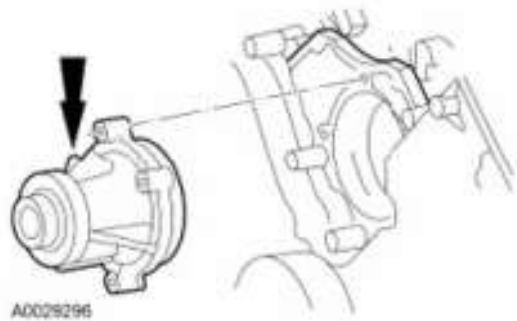


Fig. 389: Locating Coolant Pump
Courtesy of FORD MOTOR CO.

35. Remove and discard the crankshaft pulley bolt. Using the 3 Jaw Puller, remove the crankshaft pulley.



Fig. 390: Identifying Jaw Puller
Courtesy of FORD MOTOR CO.

36. Using the Crankshaft Front Seal Remover, remove the crankshaft front seal.

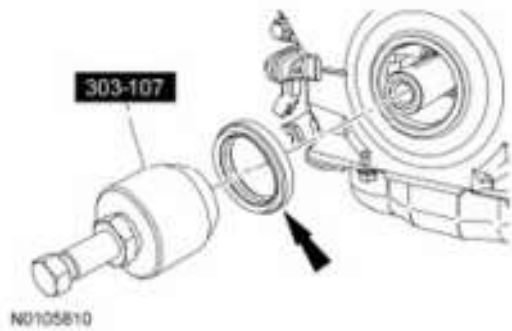


Fig. 391: Locating Crankshaft Front Seal
 Courtesy of FORD MOTOR CO.

37. Remove the 14 bolts, the oil pan and the oil pan gasket.

NOTE: Do not use metal scrapers, wire brushes, power abrasive discs or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges which make leak paths. Use a plastic scraping tool to remove all traces of old sealant.

Clean and inspect the sealing surfaces with silicone gasket remover and metal surface prep. Follow the directions on the packaging.

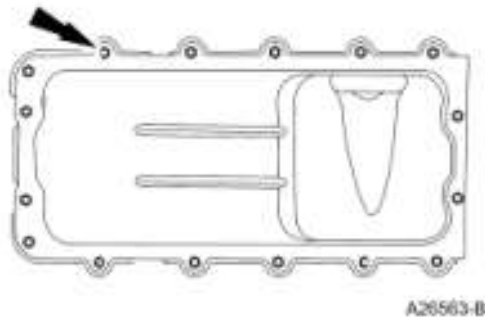


Fig. 392: Locating Oil Pan Bolts
 Courtesy of FORD MOTOR CO.

NOTE: Correct fastener location is essential for the assembly procedure. Record fastener location.

38.

Remove the 9 bolts and 6 stud bolts.

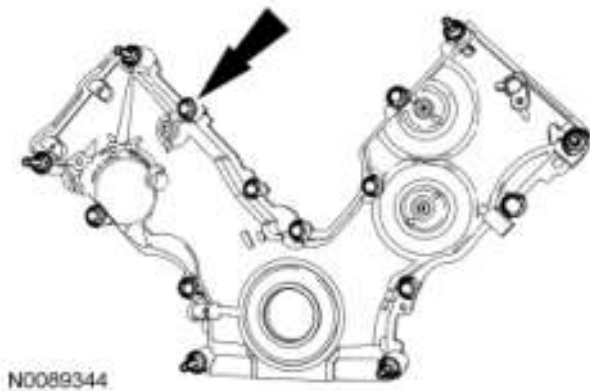


Fig. 393: Locating Engine Front Cover Fasteners
 Courtesy of FORD MOTOR CO.

39. Remove the engine front cover from the cylinder block.

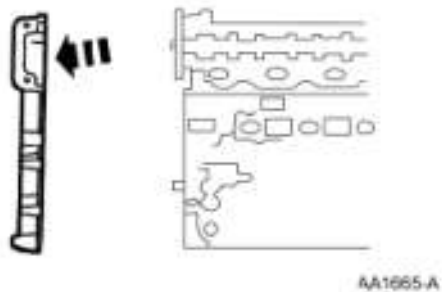


Fig. 394: Removing Engine Front Cover
 Courtesy of FORD MOTOR CO.

40. Remove the crankshaft sensor ring from the crankshaft.

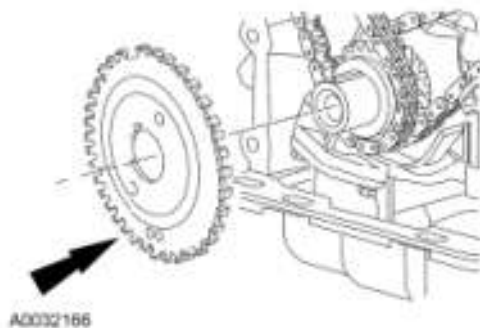


Fig. 395: Locating Crankshaft Sensor Ring
 Courtesy of FORD MOTOR CO.

41. Position the crankshaft keyway at the 12 o'clock position.

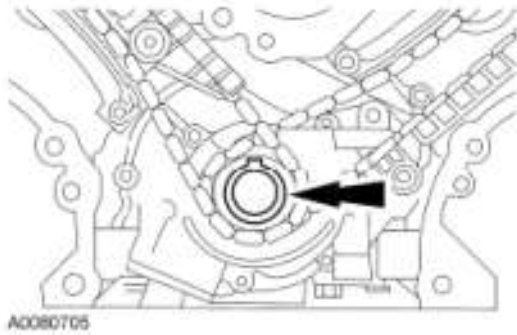


Fig. 396: Locating Crankshaft Keyway
 Courtesy of FORD MOTOR CO.

42. **NOTE:** If the camshaft lobes are not exactly positioned as shown in illustration, the crankshaft will require one full additional rotation to the 12 o'clock position.

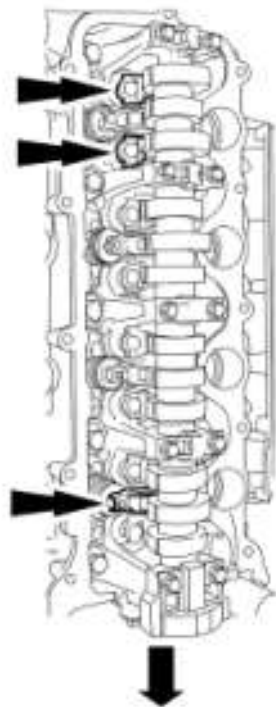
The No. 1 cylinder camshaft exhaust lobe must be coming up on the exhaust stroke. Verify by noting the position of the 2 intake lobes and the exhaust lobe on the No. 1 cylinder.



Fig. 397: Identifying Camshaft Lobes
 Courtesy of FORD MOTOR CO.

43. **NOTE:** If the components are to be reinstalled, they must be installed in the same positions. Mark the components for installation into their original locations.

Remove only the 3 roller followers shown in the illustration from the RH cylinder head.



A0083248

Fig. 398: Locating Roller Followers
 Courtesy of FORD MOTOR CO.

44. **NOTE:** Do not allow the valve keepers to fall off the valve or the valve may drop into the cylinder.

NOTE: It may be necessary to push the valve down while compressing the spring.

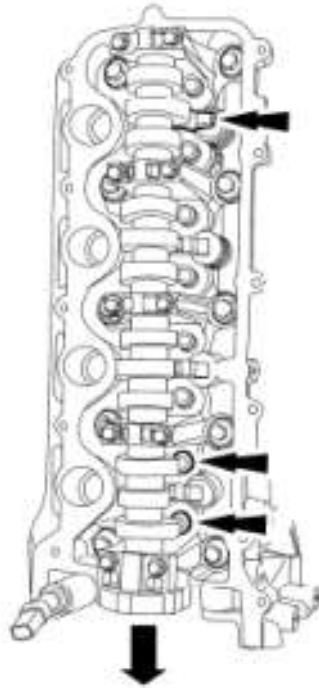
Using the Valve Spring Compressor, remove the 3 roller followers designated in the previous step from the RH cylinder head.



Fig. 399: Identifying Valve Spring Compressor (303-1039)
 Courtesy of FORD MOTOR CO.

45. **NOTE:** If the components are to be reinstalled, they must be installed in the same positions. Mark the components for installation into their original locations.

Remove only the 3 roller followers shown in the illustration from the LH cylinder head.



A0084479

Fig. 400: Locating Roller Followers
Courtesy of FORD MOTOR CO.

46. **NOTE:** Do not allow the valve keepers to fall off the valve or the valve may drop into the cylinder.

NOTE: It may be necessary to push the valve down while compressing the spring.

Using the Valve Spring Compressor, remove the 3 roller followers designated in the previous step from the LH cylinder head.

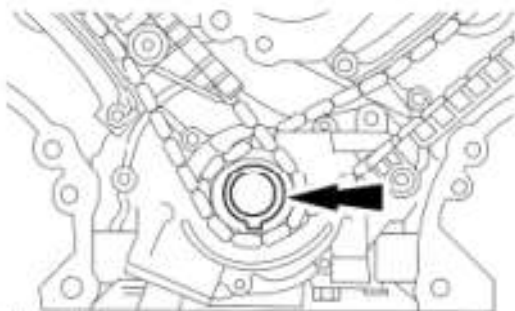


N0010191

Fig. 401: Identifying Valve Spring Compressor (303-1039)
Courtesy of FORD MOTOR CO.

47. **NOTE:** The crankshaft cannot be moved past the 6 o'clock position once set, or the engine may be damaged.

Rotate the crankshaft clockwise and position the crankshaft keyway at the 6 o'clock position.



N0006305

Fig. 402: Locating Crankshaft Keyway
Courtesy of FORD MOTOR CO.

48. Remove the 2 bolts, the LH timing chain tensioner and tensioner arm.

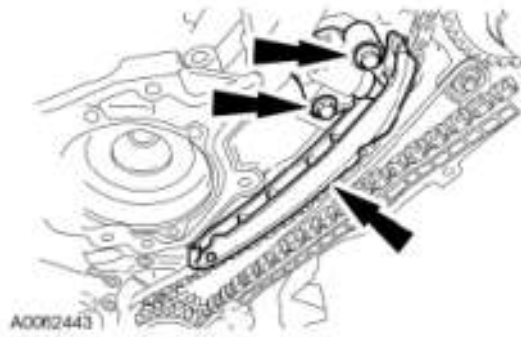


Fig. 403: Locating Bolts And LH Timing Chain Tensioner
Courtesy of FORD MOTOR CO.

49. Remove the 2 bolts, the RH timing chain tensioner and tensioner arm.

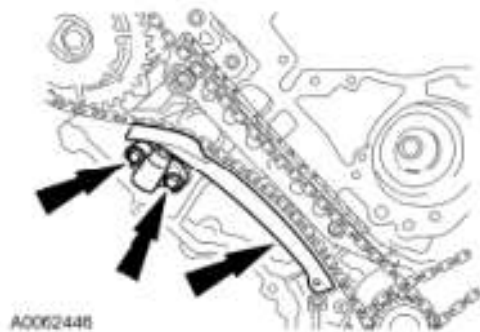


Fig. 404: Locating RH Timing Chain Tensioner And Bolts
Courtesy of FORD MOTOR CO.

50. Remove the RH and LH timing chains and the crankshaft sprocket.
- Remove the RH timing chain from the camshaft sprocket.
 - Remove the RH timing chain from the crankshaft sprocket.
 - Remove the LH timing chain from the camshaft sprocket.
 - Remove the LH timing chain and the crankshaft sprocket.

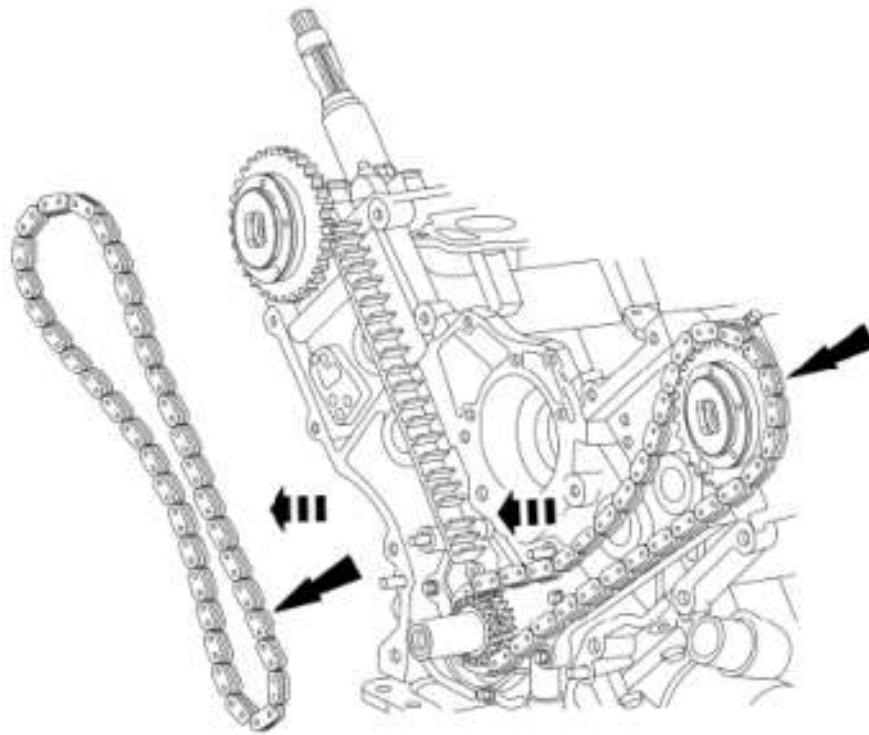


Fig. 405: Removing Timing Chains And Crankshaft Sprocket
 Courtesy of FORD MOTOR CO.

51. **NOTE:** RH shown in illustration, LH similar.

Remove the 4 bolts and the LH and RH timing chain guides.

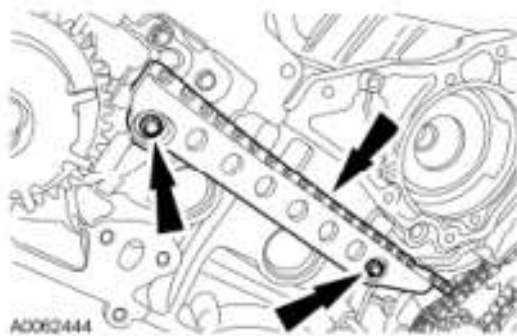


Fig. 406: Locating Timing Chain Guide And Bolts
 Courtesy of FORD MOTOR CO.

52. **NOTE:** Damage to the camshaft phaser sprocket assembly will occur if mishandled or used as a lifting or leveraging device.

NOTE: Only use hand tools to remove the camshaft phaser sprocket assembly or damage may occur to the camshaft or camshaft phaser unit.

NOTE: Damage to the camshaft phaser sprocket assembly will occur if mishandled or used as a lifting or leveraging device.

Using the Cam Phaser Locking Tool, remove the bolt and the RH camshaft phaser sprocket assembly.

- Discard the camshaft phaser sprocket bolt.

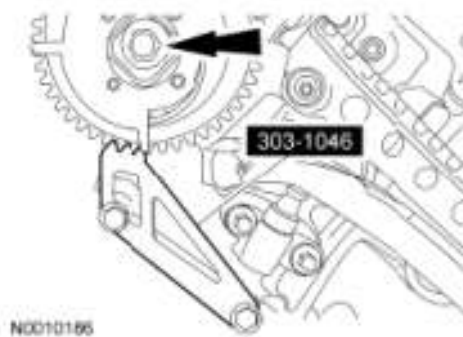


Fig. 407: Identifying Cam Phaser Locking Tool (303-1046)
Courtesy of FORD MOTOR CO.

53. **NOTE:** Damage to the camshaft phaser sprocket assembly will occur if mishandled or used as a lifting or leveraging device.

NOTE: Only use hand tools to remove the camshaft phaser sprocket assembly or damage may occur to the camshaft or camshaft phaser unit.

NOTE: Damage to the camshaft phaser sprocket assembly will occur if mishandled or used as a lifting or leveraging device.

Using the Cam Phaser Holding Tool, remove the bolt and the LH camshaft phaser sprocket assembly.

- Discard the camshaft phaser sprocket bolt.

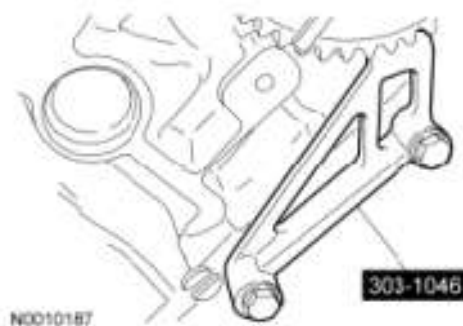


Fig. 408: Identifying Cam Phaser Locking Tool (303-1046)
Courtesy of FORD MOTOR CO.

54. Install the Cylinder Head Remover/Installer onto the LH cylinder head.



Fig. 409: Identifying Cylinder Head Remover/Installer (303-572)
 Courtesy of FORD MOTOR CO.

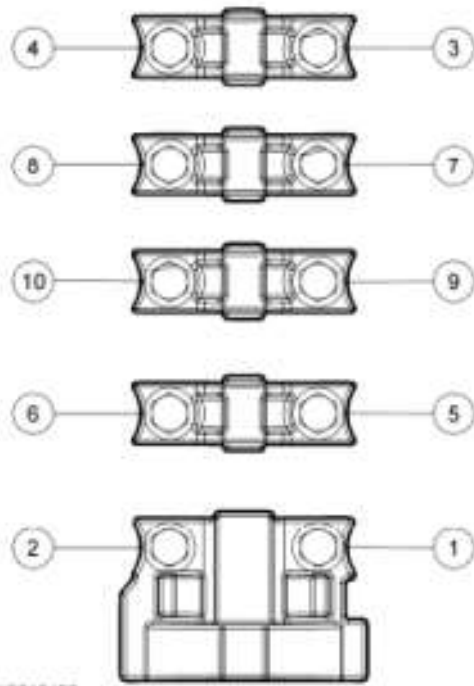
55. Install the Cylinder Head Remover/Installer onto the RH cylinder head.



Fig. 410: Identifying Cylinder Head Remover/Installer (303-572)
 Courtesy of FORD MOTOR CO.

56. **NOTE:** Remove the front thrust camshaft bearing cap straight upward from the bearing towers, or the bearing cap may be damaged from side loading.
- NOTE:** The camshaft bearing caps must be installed in their original locations. Record camshaft bearing cap locations.

Remove the 10 bolts in the sequence shown in illustration. Remove the RH cylinder head front camshaft bearing cap, then the remaining bearing caps.

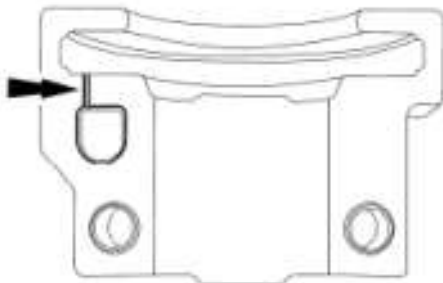


N0010190

Fig. 411: Identifying Camshaft Bearing Caps Bolts In Sequence
 Courtesy of FORD MOTOR CO.

57. Clean and inspect the RH camshaft bearing caps.

- The camshaft front thrust bearing cap contains an oil metering groove. Make sure the groove is free of foreign material.



N0010448

Fig. 412: Locating Thrust Bearing Cap Oil Metering Groove
 Courtesy of FORD MOTOR CO.

58. Remove the RH camshaft.

NOTE: If the components are to be reinstalled, they must be installed in the same positions. Mark the components for installation into their original locations.

59.

Remove the remaining roller followers from the RH cylinder head.

NOTE: If the components are to be reinstalled, they must be installed in the same positions. Mark the components for installation into their original

60.

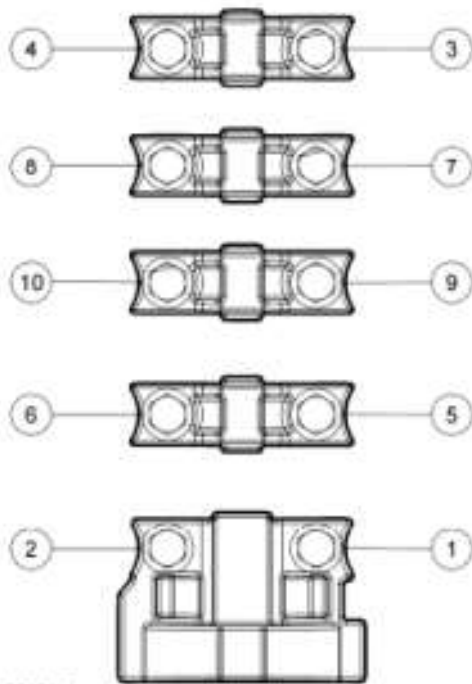
60. **locations.**

Remove the hydraulic lash adjusters from the RH cylinder head.

61. **NOTE:** Remove the front thrust camshaft bearing cap straight upward from the bearing towers, or the bearing cap may be damaged from side loading.

NOTE: The camshaft bearing caps must be installed in their original locations. Record camshaft bearing cap locations.

Remove the 10 bolts in the sequence shown in illustration. Remove the LH cylinder head front camshaft bearing cap, then the remaining bearing caps.

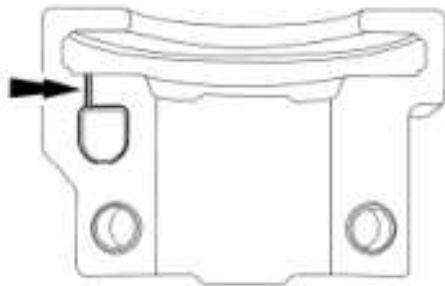


N0010190

Fig. 413: Identifying Camshaft Bearing Caps Bolts In Sequence
Courtesy of FORD MOTOR CO.

62. Clean and inspect the LH camshaft bearing caps.

- The camshaft front thrust bearing cap contains an oil metering groove. Make sure the groove is free of foreign material.



N0010448

Fig. 414: Locating Thrust Bearing Cap Oil Metering Groove
Courtesy of FORD MOTOR CO.

63. Remove the LH camshaft.

NOTE: If the components are to be reinstalled, they must be installed in the same positions. Mark the components for installation into their original locations.

64.

Remove the remaining roller followers from the LH cylinder head.

NOTE: If the components are to be reinstalled, they must be installed in the same positions. Mark the components for installation into their original locations.

65.

Remove the hydraulic lash adjusters from the LH cylinder head.

NOTE: The cylinder head must be cool before removing it from the engine. Cylinder head warpage may result if a warm or hot cylinder head is removed.

66.

NOTE: Place clean shop towels over exposed engine cavities. Carefully remove the towels so foreign material is not dropped into the engine. Failure to follow these instructions may result in engine damage.

NOTE: Do not use metal scrapers, wire brushes, power abrasive discs or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges that make leak paths. Use a plastic scraping tool to remove all traces of the head gasket.

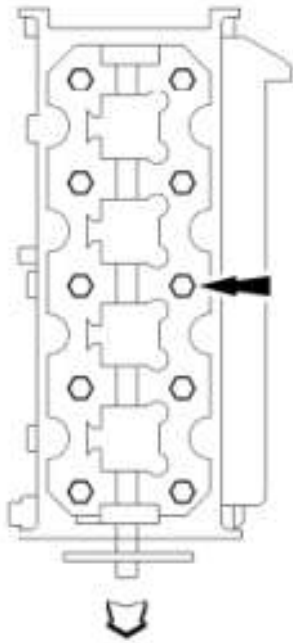
NOTE: Aluminum surfaces are soft and can be scratched easily. Never place the cylinder head gasket surface, unprotected, on a bench surface, or the cylinder head may be damaged.

NOTE: RH shown in illustration, LH similar.

Remove the 20 bolts and the cylinder heads.

- Discard the cylinder head gaskets.

- Discard the cylinder head bolts.



A26253-A

Fig. 415: Locating Cylinder Head Bolts
Courtesy of FORD MOTOR CO.

67.

NOTE: Do not use metal scrapers, wire brushes, power abrasive discs or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges that make leak paths. Use a plastic scraping tool to remove all traces of the head gasket.

NOTE: Observe all warnings or cautions and follow all application directions contained on the packaging of the silicone gasket remover and the metal surface prep.

NOTE: If there is no residual gasket material present, metal surface prep can be used to clean and prepare the surfaces.

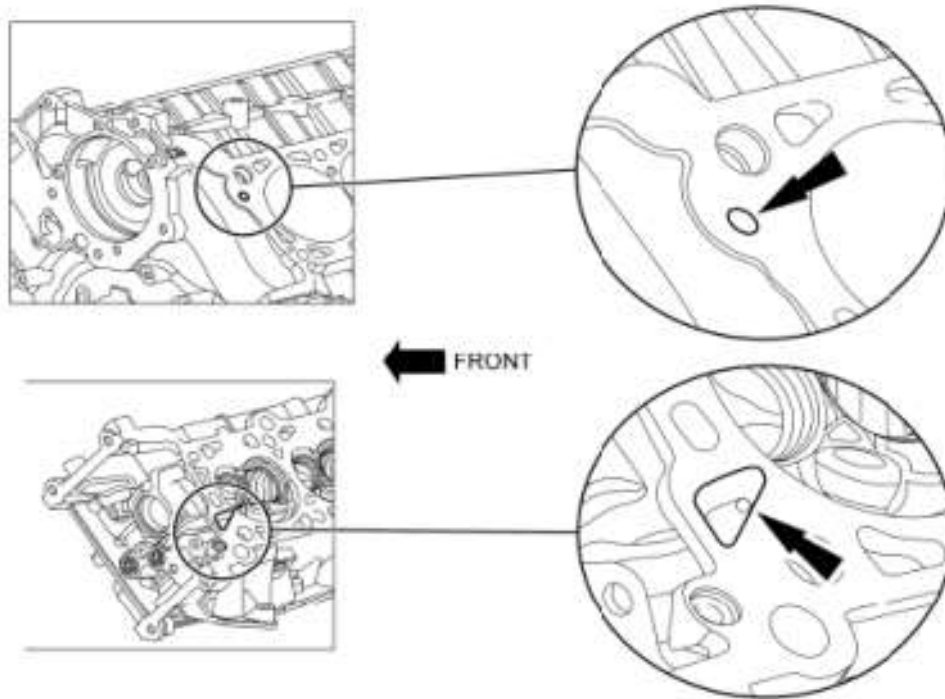
Clean the cylinder head-to-cylinder block mating surfaces of both the cylinder head and the cylinder block in the following sequence.

1. Remove any large deposits of silicone or gasket material with a plastic scraper.
2. Apply silicone gasket remover, following package directions and allow to set for several minutes.
3. Remove the silicone gasket remover with a plastic scraper. A second application of silicone gasket remover may be required if residual traces of silicone or gasket material remain.
4. Apply metal surface prep, following package directions, to remove any remaining traces of oil or coolant and to prepare the surfaces to bond with the new gasket. Do not attempt to make the metal shiny. Some staining of the metal surfaces is normal.

68.

68. **NOTE:** LH shown in illustration, RH similar.

Support the cylinder heads on a bench with the head gasket side up. Check the cylinder head distortion and the cylinder block distortion, paying particular attention to the oil pressure feed area. For additional information, refer to ENGINE SYSTEM - GENERAL INFORMATION .



A0079834

Fig. 416: Locating Oil Pressure Feed Area
Courtesy of FORD MOTOR CO.

69. Remove the 3 bolts, the oil pump screen and pickup tube and the spacer.

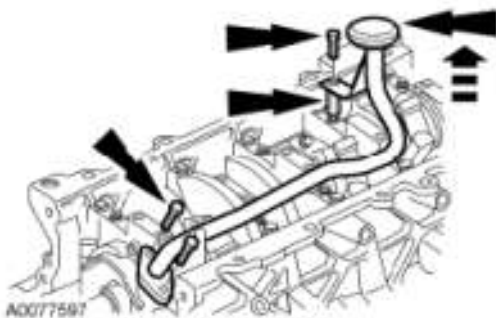


Fig. 417: Locating Bolts, Oil Pump Screen, Pickup Tube And Spacer
Courtesy of FORD MOTOR CO.

70. Remove the 3 bolts and the oil pump.



Fig. 418: Locating Oil Pump And Bolts
 Courtesy of FORD MOTOR CO.

71. Before removing the pistons, inspect the top of the cylinder bores. If necessary, remove the ridge or carbon deposits from each cylinder using an abrasive pad or equivalent, following the manufacturer's instructions.

NOTE: Verify that the connecting rods and rod caps have orientation numbers cast into them. If not, number the connecting rods and rod caps for correct orientation. If the connecting rods and caps are assembled incorrectly, the engine may be damaged.

72.

Remove the 16 bolts and the connecting rod caps. Discard the bolts.

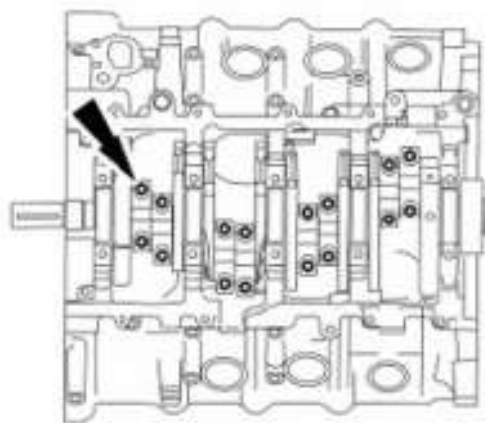
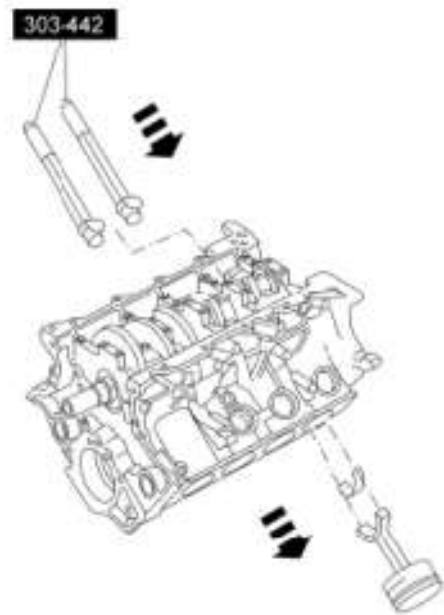


Fig. 419: Locating Bolts And Connecting Rod Caps
 Courtesy of FORD MOTOR CO.

- NOTE:** Remove the piston and connecting rod assemblies carefully, or the cylinder walls or crankshaft journals may be damaged.
- 73.

Use the Connecting Rod Installer to push the piston through the top of the cylinder block.



NO010189

Fig. 420: Pushing Piston Of Cylinder Block
Courtesy of FORD MOTOR CO.

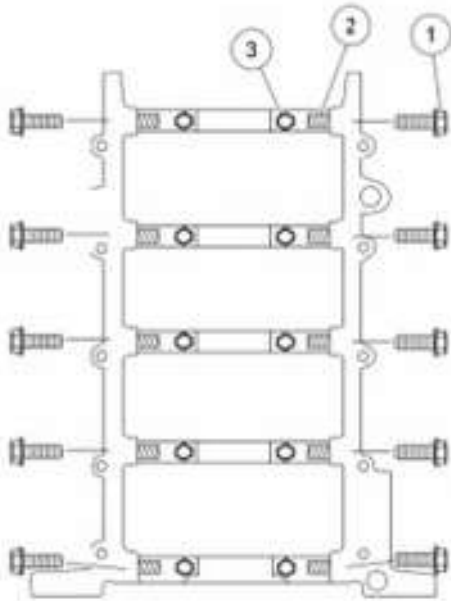
74. Disassemble the 8 pistons. For additional information, refer to **PISTON**.

NOTE: Note the location of the main bearing cap stud bolt for assembly reference.

75.

Remove the 20 fasteners.

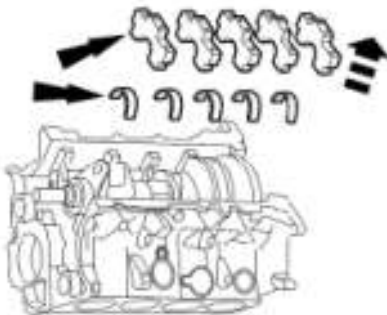
1. Remove and discard the 10 cross-mounted main cap bolts.
2. Loosen the 10 jack screws.
3. Remove and discard the 9 main bearing cap bolts and the stud bolt.



N0015130

Fig. 421: Identifying Main Bearing Cap Bolts
 Courtesy of FORD MOTOR CO.

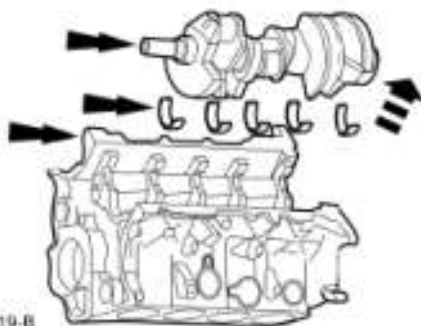
76. Remove the 5 main bearing caps, the lower crankshaft main bearings and the lower thrust washer.



DA0518-B

Fig. 422: Locating Main Bearing Caps And Lower Crankshaft Main Bearings
 Courtesy of FORD MOTOR CO.

77. Remove the crankshaft, the upper crankshaft main bearings and the upper thrust washers from the cylinder block.



DA0519-B

**Fig. 423: Locating Crankshaft, Upper Crankshaft Main Bearings And Upper Thrust Washers From
Cylinder Block**

Courtesy of FORD MOTOR CO.