



DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES

CYLINDER HEAD

	Compressor, Valve Spring 303-581 (T97T-6565-A)
	Installer, Valve Stem Oil Seal 303-370 (T90T-6571-A)

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Fig. 413: Identifying Special Tool(s)

Courtesy of FORD MOTOR CO.

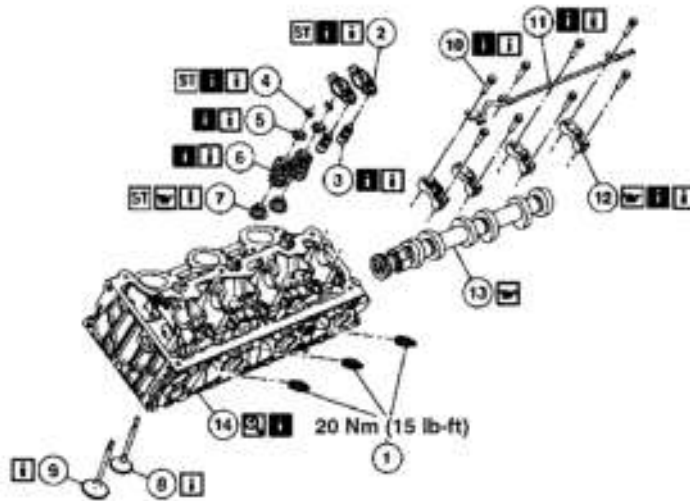
MATERIALS

Item	Specification
SAE 5W-30 Super Premium Motor Oil XO-5W30-QSP or equivalent	WSS-M2C153-G

Disassembly and Assembly

NOTE: Prior to assembly, coat all of the valve train components with clean engine oil.

NOTE: LH cylinder head shown, RH cylinder head similar.



Item	Part Number	Description
1	12405	Spark plugs
2	6529	Camshaft roller follower Disassembly Note Assembly Note
3	6C501	Hydraulic lash adjuster Disassembly Note Assembly Note
4	6518	Valve spring retainer keys (12 req'd) Disassembly Note Assembly Note
5	6A536	Valve spring retainers Disassembly Note Assembly Note
6	6513	Valve springs (6 req'd) Disassembly Note Assembly Note
7	6571	Valve seals (8 req'd) Assembly Note
8	6505	Exhaust valve Assembly Note
9	6507	Intake valve Assembly Note
10	W702341	Camshaft bearing cap mounting bolts (8 req'd) Disassembly Note Assembly Note
11	6578	Oil supply tube Disassembly Note Assembly Note
12	6A528	Camshaft bearing caps (4 req'd) Disassembly Note Assembly Note
13	6A274	LH camshaft
14	6050	Cylinder head Disassembly Note

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Fig. 414: Disassembling LH Cylinder Head RH Cylinder Head
 Courtesy of FORD MOTOR CO.

1. Disassemble the parts in the order listed in the following illustration and table.

NOTE: Install the camshaft roller followers only after the cylinder head is installed in the vehicle and the timing procedure has been carried out.

2. To assemble, reverse the disassembly procedure.

Items 2: Camshaft Roller Follower Disassembly Note

NOTE: Mark each roller follower to make sure it is installed in its original position.

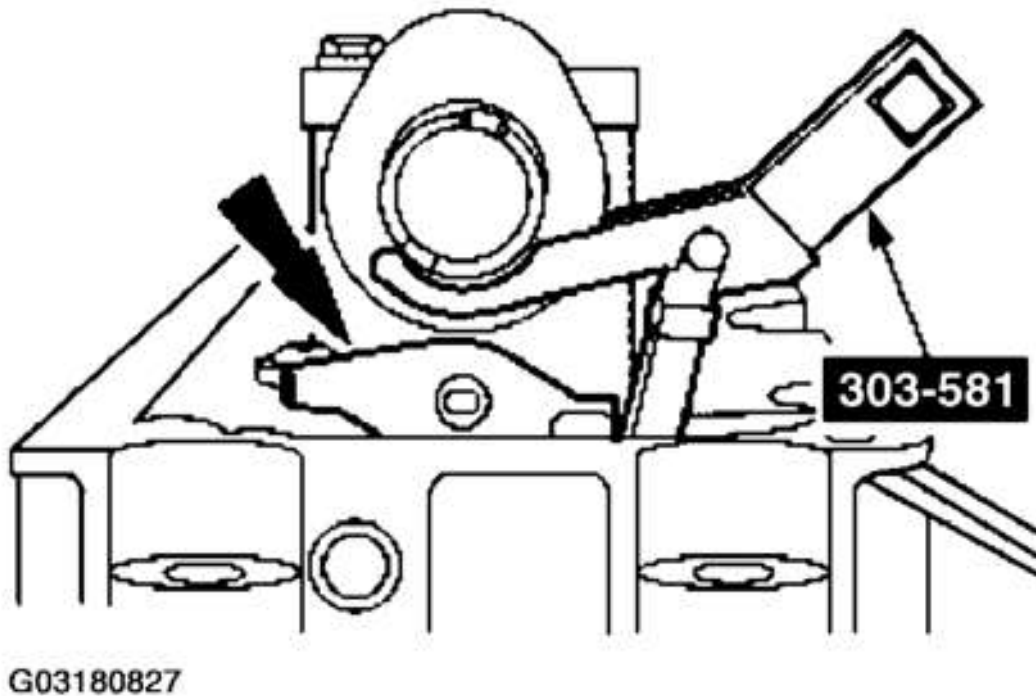
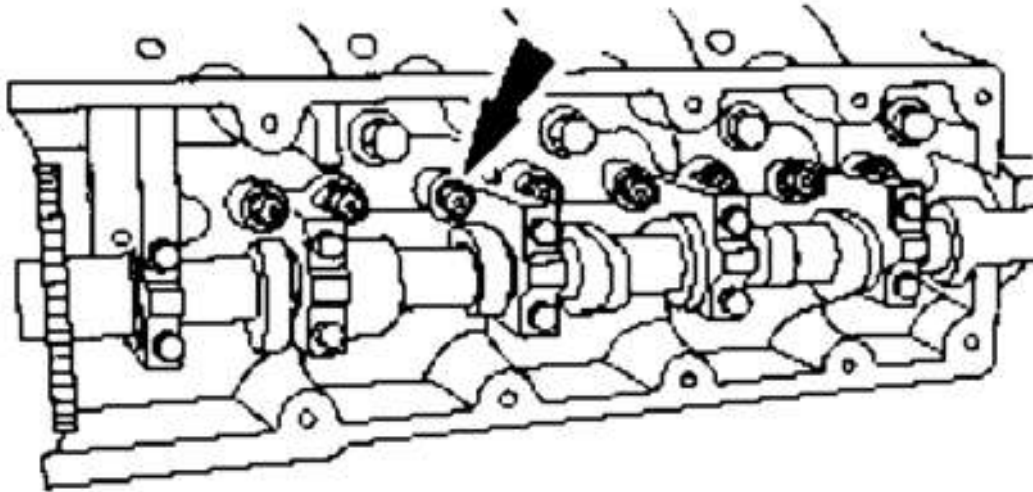


Fig. 415: Removing Camshaft Roller
Courtesy of FORD MOTOR CO.

1. Using the special tool, remove the camshaft roller followers.

Item 3: Hydraulic Lash Adjuster Disassembly Note

NOTE: Mark each hydraulic lash adjuster to make sure it is installed in its original position.



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Fig. 416: Removing Hydraulic Lash
Courtesy of FORD MOTOR CO.

1. Remove the hydraulic lash adjusters.

Items: 4, 5 and 6: Valve Spring Retainer Keys, Valve Spring Retainers and Valve Springs Disassembly Note

1. Using the special tool, remove the valve spring retainer keys, the valve spring and the retainer.

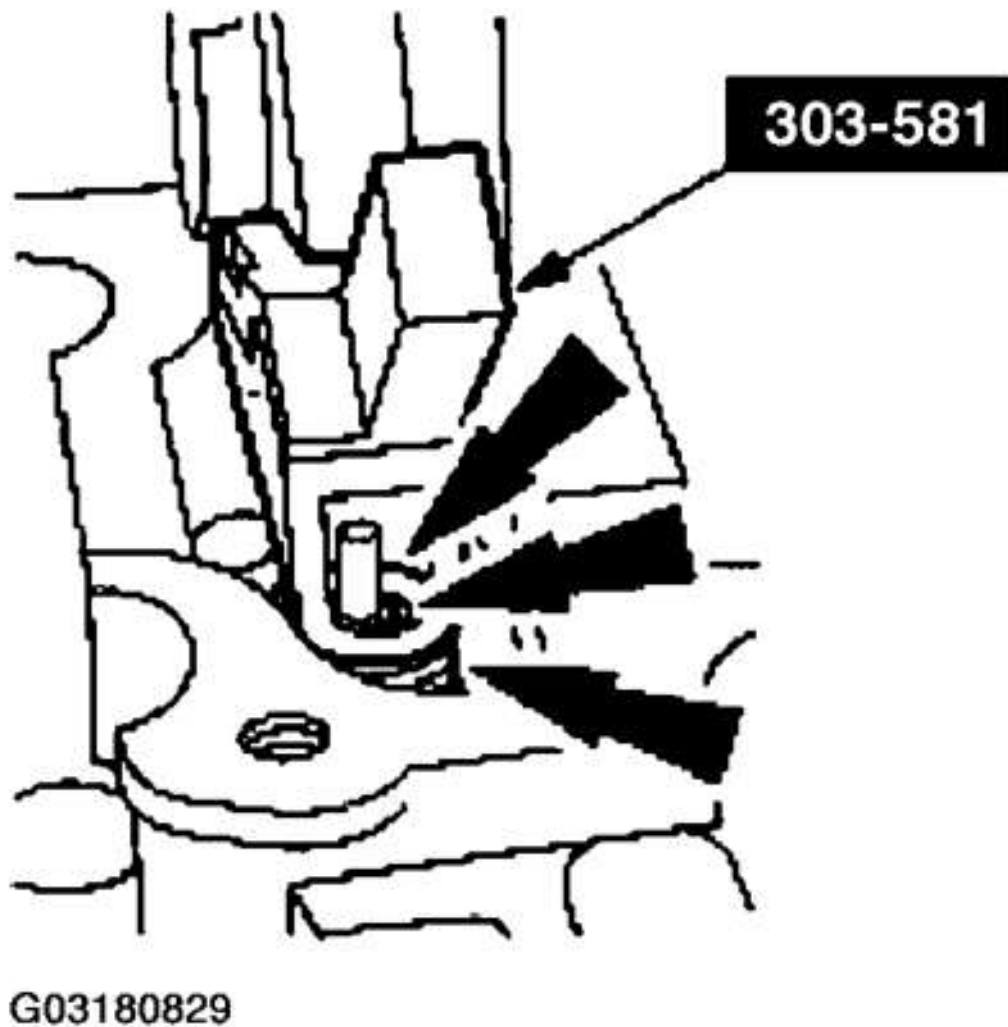
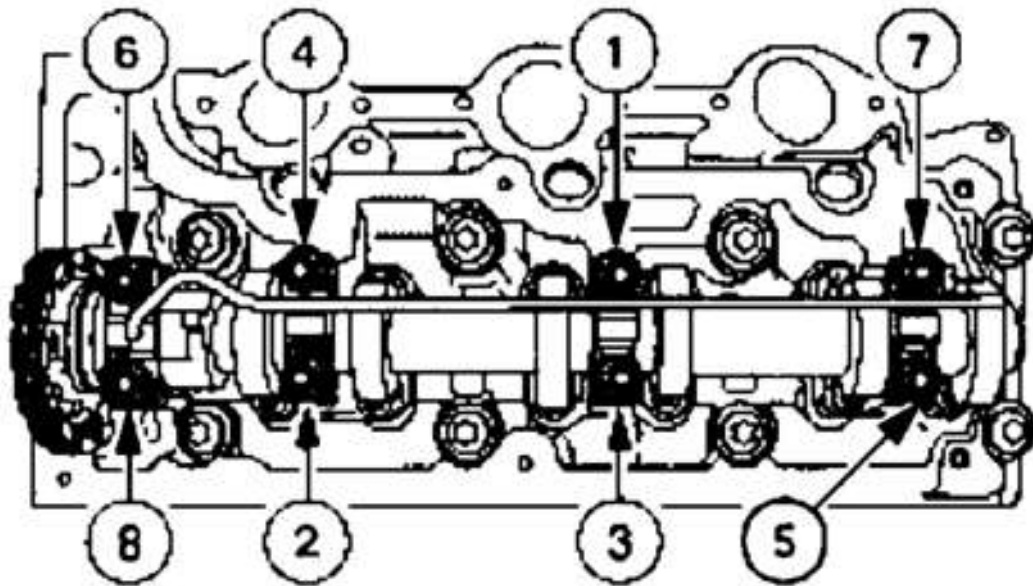


Fig. 417: Removing Valve Spring Retainer Keys Valve Spring
Courtesy of FORD MOTOR CO.

2. Repeat the procedure until all of the valves are removed.

Items 10, 11 and 12: Camshaft Bearing Cap Mounting Bolts, Oil Supply Tube and Camshaft Bearing Caps Disassembly Note

NOTE: Mark the position of the camshaft bearing caps so they can be installed in the original position.



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Fig. 418: Removing Camshaft Bearing Caps

Courtesy of FORD MOTOR CO.

1. Remove the bolts in the sequence shown and remove the camshaft bearing caps.

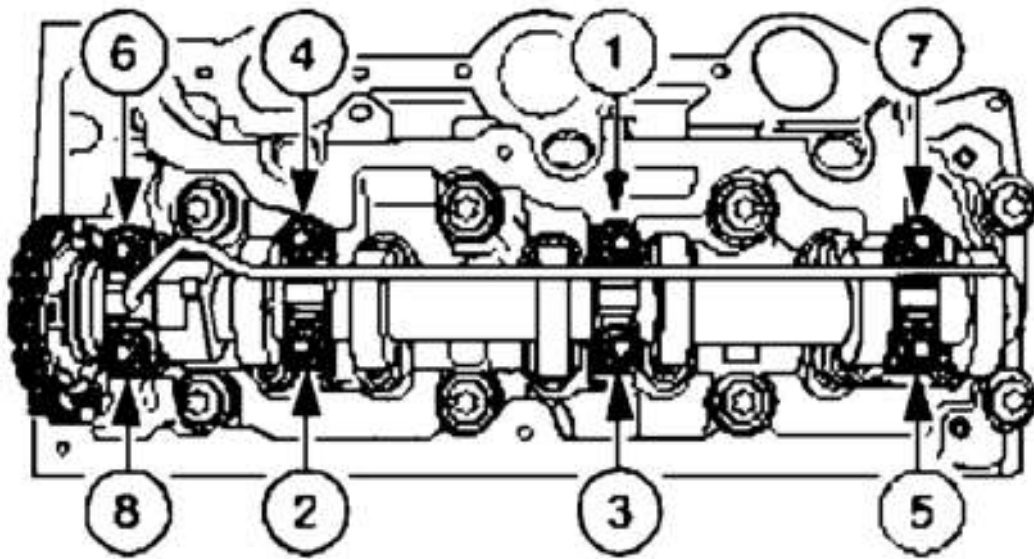
Item 14: Cylinder Head Disassembly Note

1. Inspect the cylinder head. For additional information, refer to ENGINE SYSTEM-GENERAL INFORMATION.

Items 12, 11 and 10: Camshaft Bearing Caps, Oil Supply Tube and Camshaft Bearing Cap Mounting Bolts Assembly Note

NOTE: The camshaft bearing caps must be installed in the original position.

NOTE: After installing the bolts, check the camshaft for free rotation.



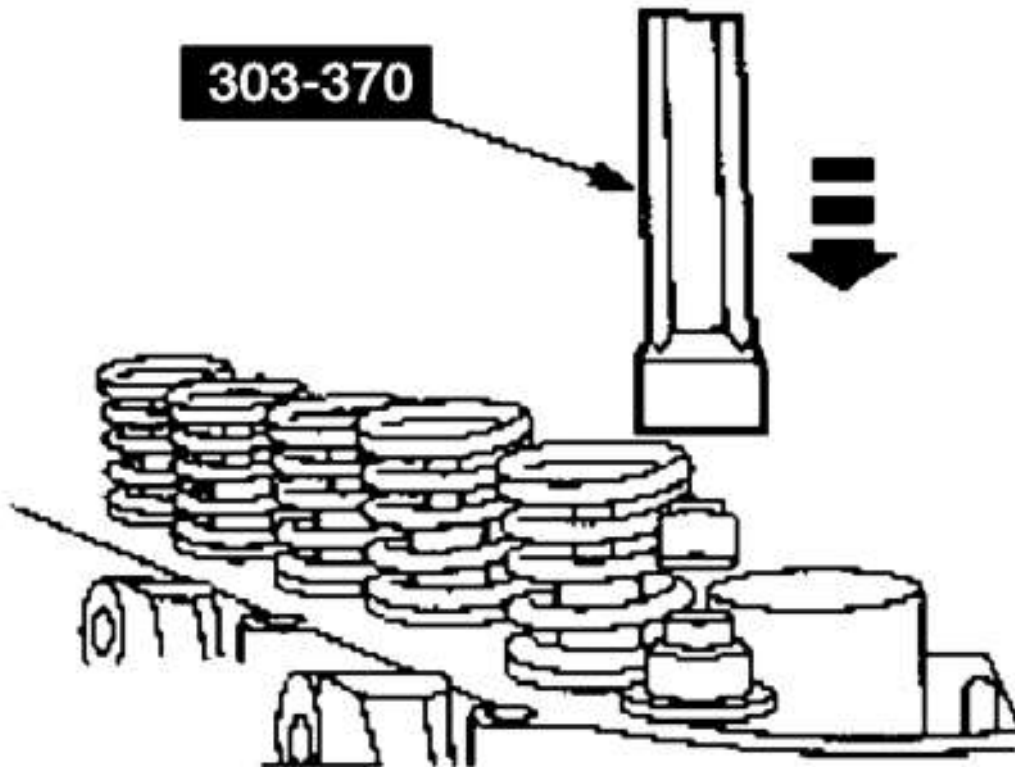
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Fig. 419: Positioning Oil Supply Tube Camshaft Bearing Caps
Courtesy of FORD MOTOR CO.

1. Position the oil supply tube, the camshaft bearing caps and the bolts.
 - Tighten in the sequence shown in two stages:
 - Stage 1: Tighten to 6 Nm (53 lb-in).
 - Stage 2: Tighten to 16 Nm (12 lb-ft).

Items 9, 8 and 7: Valve and Valve Seals Assembly Note

1. Install the valve.
2. Using the special tool, install the valve stem seals.



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Fig. 420: Installing Valve Stem Seals
Courtesy of FORD MOTOR CO.

Items 6, 5 and 4: Valve Springs, Valve Spring Retainers and Valve Spring Retainer Keys Assembly Note

1. Using the special tool, install the valve spring, the retainer and the retainer keys.

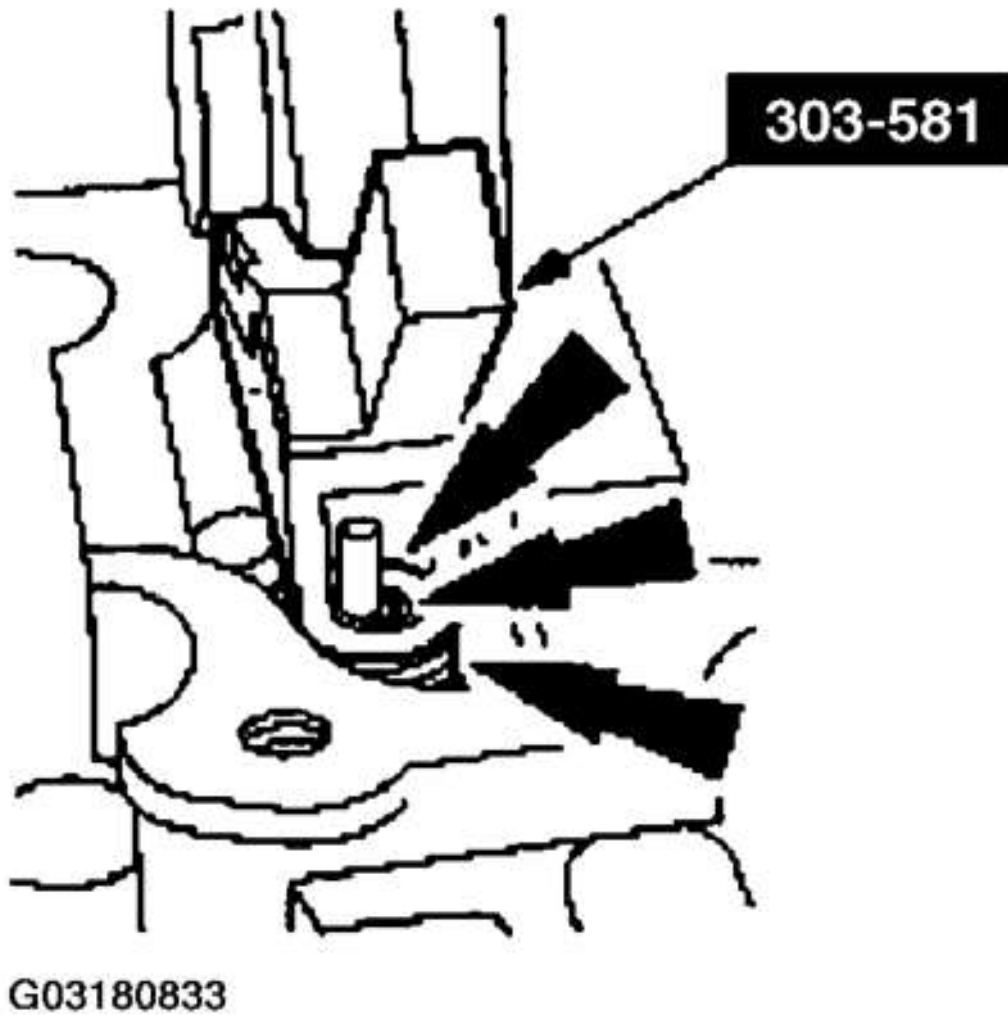
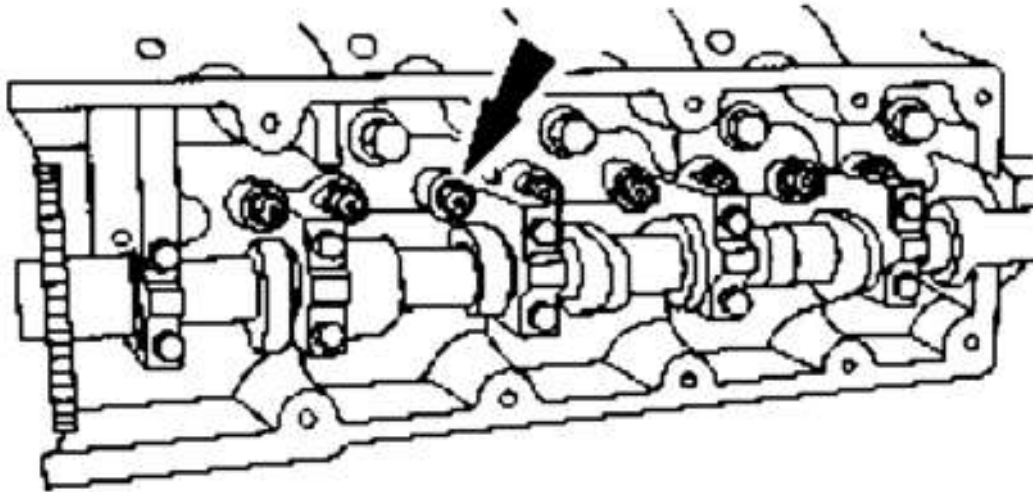


Fig. 421: Installing Valve Spring Retainer And Retainer Keys
Courtesy of FORD MOTOR CO.

Item 3: Hydraulic Lash Adjuster Assembly Note

1. Install the hydraulic lash adjusters.



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Fig. 422: Installing Hydraulic Lash Adjusters
 Courtesy of FORD MOTOR CO.

Item 2: Camshaft Roller Follower Assembly Note

1. Install the camshaft roller followers only after the cylinder head is installed in the vehicle and the timing procedure has been carried out.

PISTON



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Fig. 423: Identifying Special Tool(s)
 Courtesy of FORD MOTOR CO.

Material

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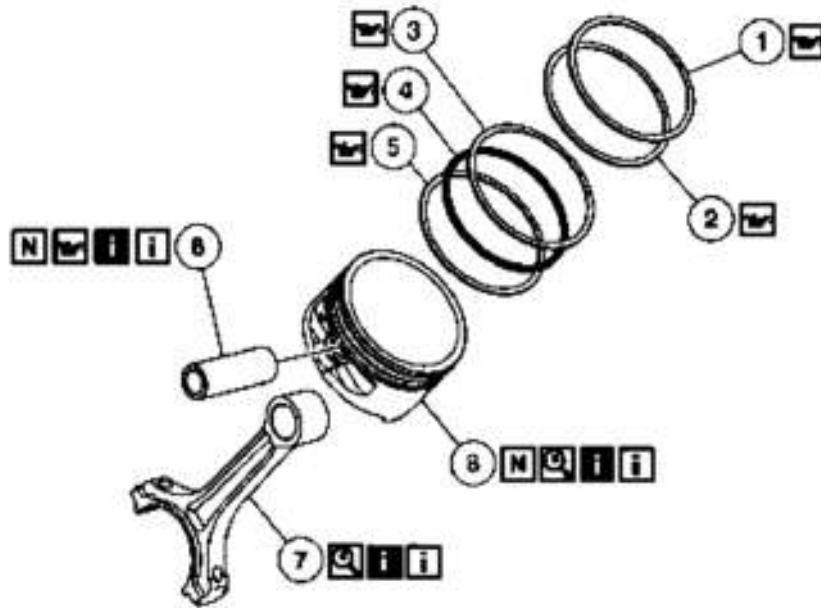
Item	Specification
SAE 5W-30 Super Premium Motor Oil XO-5W30-QSP or equivalent	WSS-M2C205-A

Disassembly and Assembly

NOTE: The connecting rod bolts and nuts cannot be reused.

NOTE: Mark the position of the parts, so they can be installed in their original position.

1. Remove the connecting rod bearings from the connecting rod and caps.
2. Disassemble the parts in the order listed in the following illustration and table.



Item	Part Number	Description
1	6150	Piston compression upper ring
2	6152	Piston compression lower ring
3	6159	Piston oil control upper segment ring
4	6161	Piston oil control spacer
5	6159	Piston oil control lower segment ring
6	6135	Piston pin Disassembly Note Assembly Note
7	6200	Connecting rod Disassembly Note Assembly Note
8	6110	Piston Disassembly Note Assembly Note

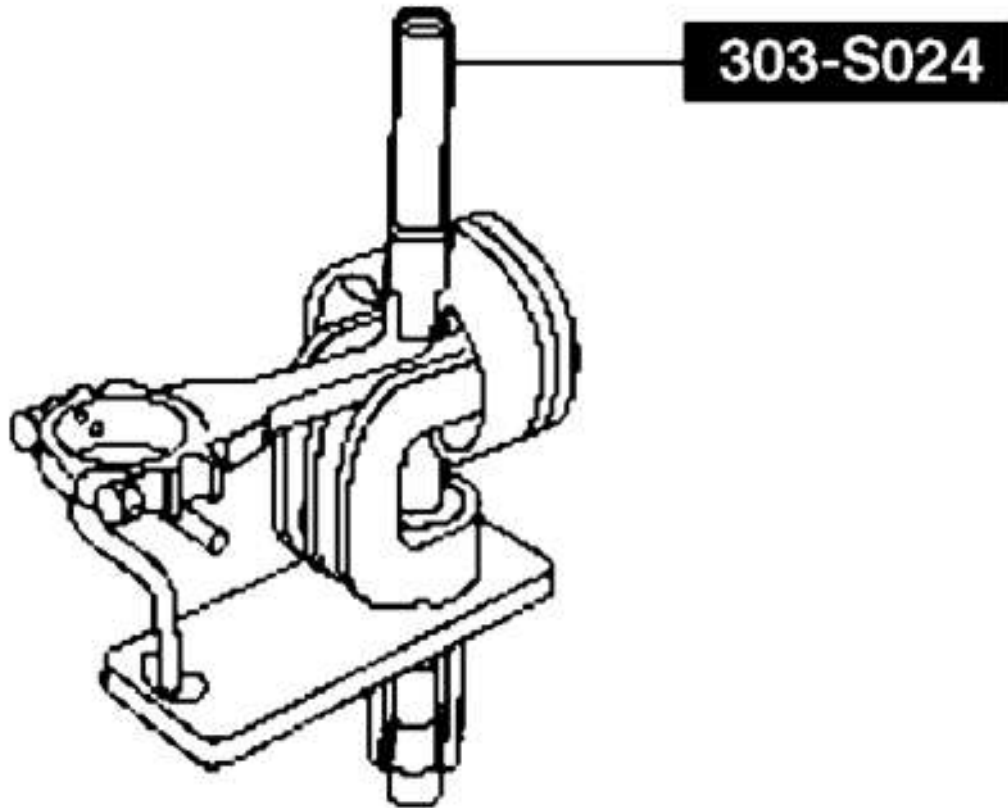
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Fig. 424: Identifying Piston Assembly
 Courtesy of FORD MOTOR CO.

3. To assemble, reverse the disassembly procedure.

Items 6, 7, and 8: Piston Pin, Piston and Connecting Rod Disassembly Note

1. Using the special tool, press the piston pin out of the connecting rod and piston assembly.



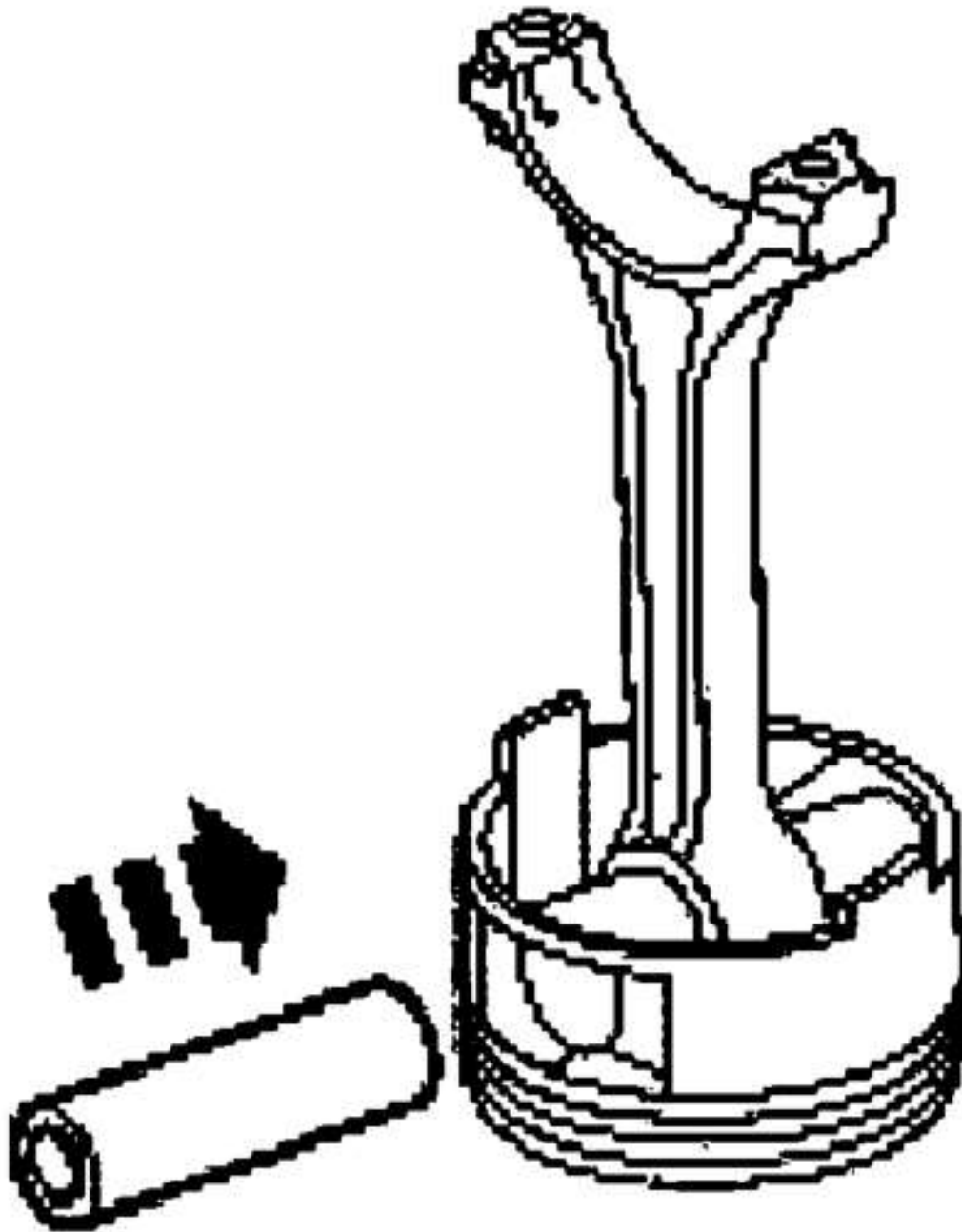
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Fig. 425: Pressing Piston Pin Out Of Connecting Rod And Piston Assembly
Courtesy of FORD MOTOR CO.

Items 6, 7 and 8: Piston Pin, Piston and Connecting Rod Assembly Note

NOTE: Apply a light coat of clean engine oil to all parts. Install the piston in the connecting rod with the cylinder number side of the rod and the indentation notch in the piston on the same side.

NOTE: The oil hole in the connecting rod must face the RH side of the cylinder block and the arrow on the piston must face the front of the engine block.



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Fig. 426: Positioning Piston Pin In Bore
Courtesy of FORD MOTOR CO.

1. Position the piston pin in the bore, aligned with the connecting rod bore.

NOTE: If the piston pin is removed from the piston, a new piston and piston

pin must be used. Do not reuse the piston or the piston pin.

2. Gradually heat the pin bore side of the connecting rod to approximately 232°C-316°C (467°F-626°F) and immediately install the piston pin.
3. Using the special tool, press the piston pin into the piston and connecting rod assembly.

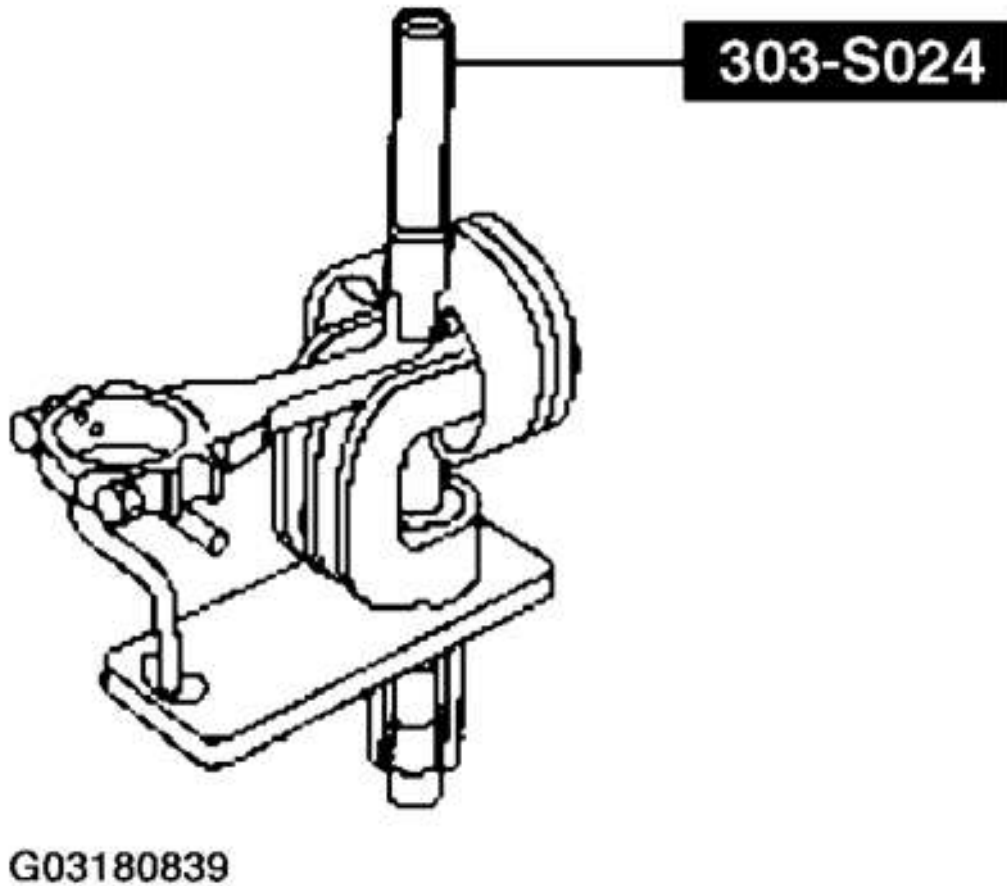


Fig. 427: Pressing Piston Pin Into Piston And Connecting Rod Assembly
Courtesy of FORD MOTOR CO.