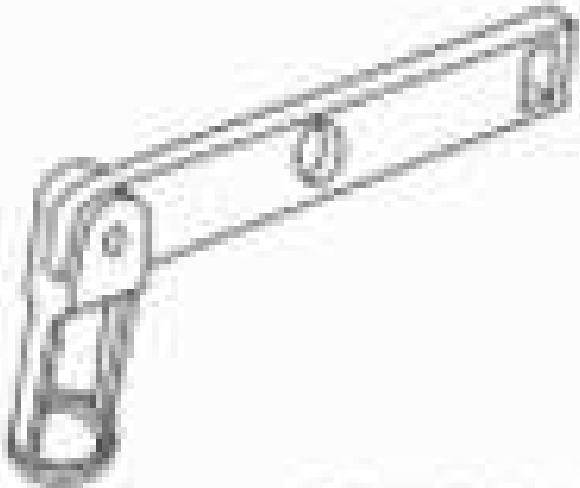
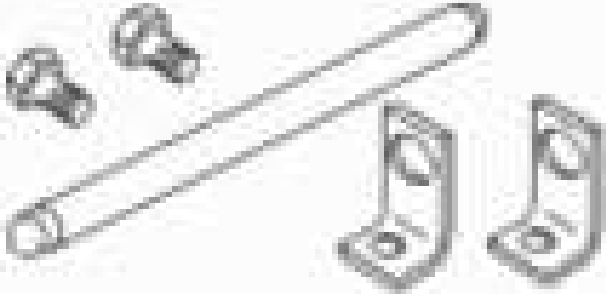


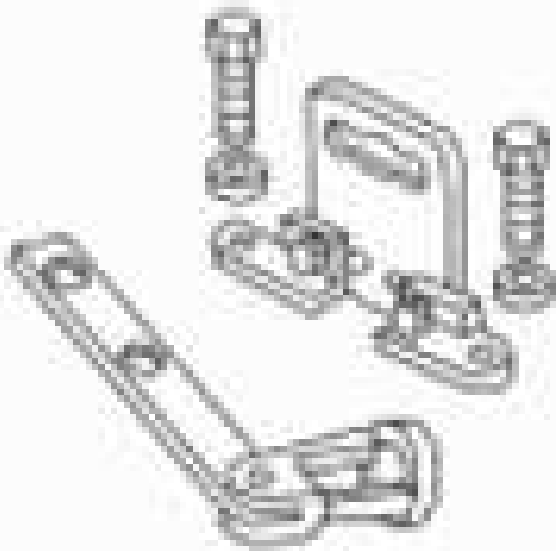
DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES

CYLINDER HEAD

Special Tool(s)

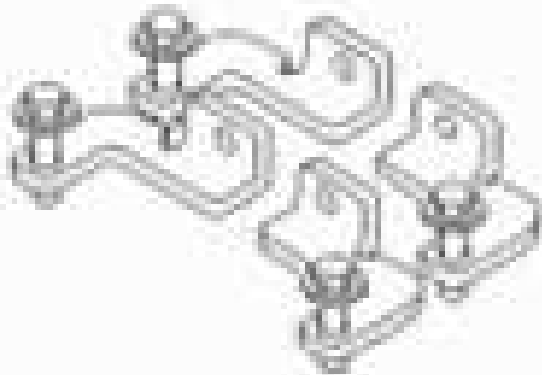
CYLINDER HEAD SPECIAL TOOL REFERENCE CHART

 <p>ST1902-A</p>	<p>Compressor, Valve Spring 303-1418</p>
 <p>ST1981-A</p>	<p>Compressor, Valve Spring 303-300 (T87C-6565-A)</p>



ST1907-A

Compressor, Valve Spring 303-350 (T89P-6565-A)



ST3028-A

Compressor, Valve Spring 303-1249

Material

CYLINDER HEAD MATERIAL SPECIFICATIONS CHART

Item	Specification
Motorcraft® SAE 5W-20 Premium Synthetic Blend Motor Oil (US); Motorcraft® SAE 5W-20 Super Premium Motor Oil (Canada) XO-5W20-QSP (US); CXO-5W20-LSP12 (Canada)	WSS-M2C945-A

NOTE: LH cylinder head shown in the figure below, RH cylinder head similar.

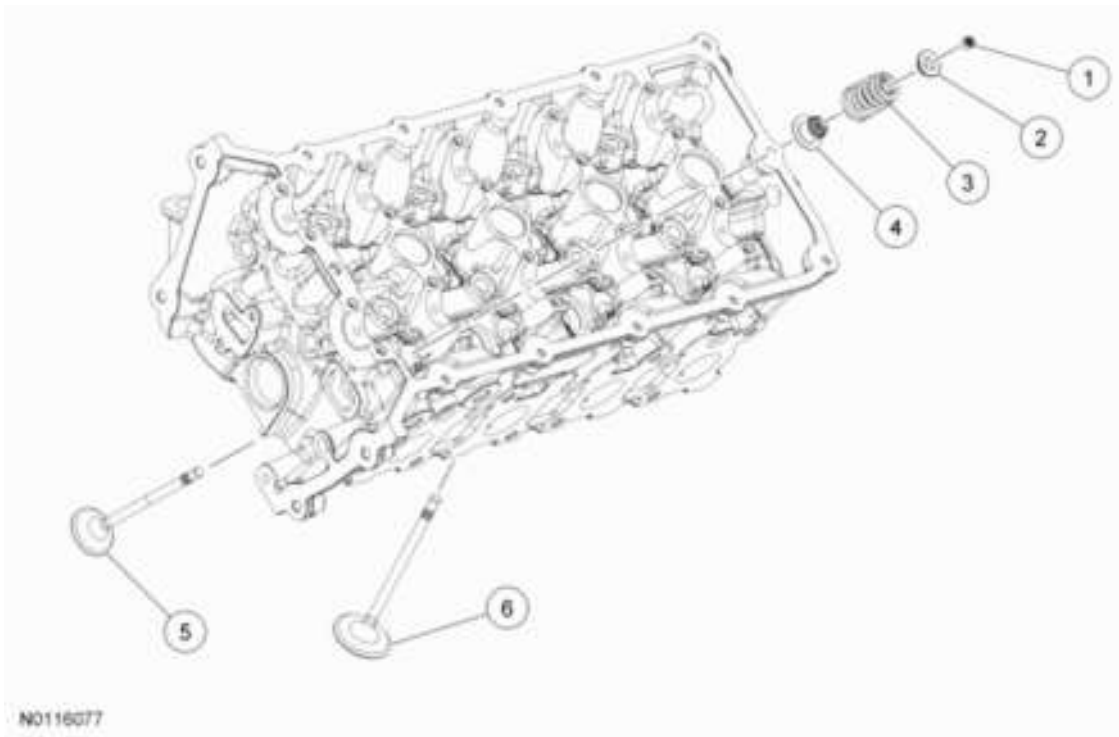


Fig. 604: Exploded View Of Cylinder Head
 Courtesy of FORD MOTOR CO.

CYLINDER HEAD ITEM DESCRIPTION CHART

Item	Part Number	Description
1	6518	Valve spring retainer key (32 required)
2	6514	Valve spring retainer (16 required)
3	6513	Valve spring (16 required)
4	6571	Valve seal (16 required)
5	6507	Intake valve (8 required)
6	6505	Exhaust valve (8 required)

Disassembly

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, can cause engine failure.

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

1. Using the Valve Spring Compressors, remove the keys, retainer and spring.

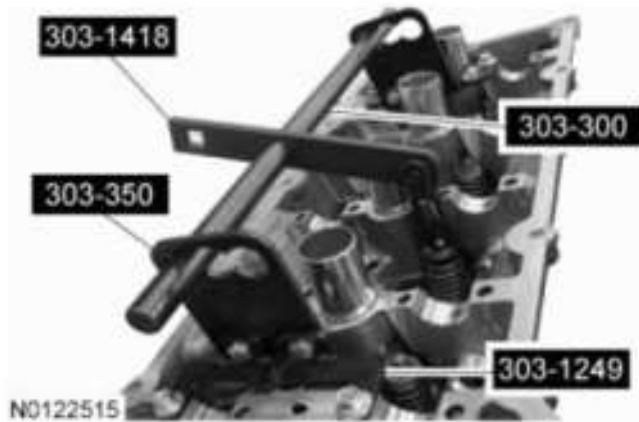


Fig. 605: Removing Keys, Retainer And Spring Using Valve Spring Compressors
 Courtesy of FORD MOTOR CO.

2. Remove and discard the valve seal.

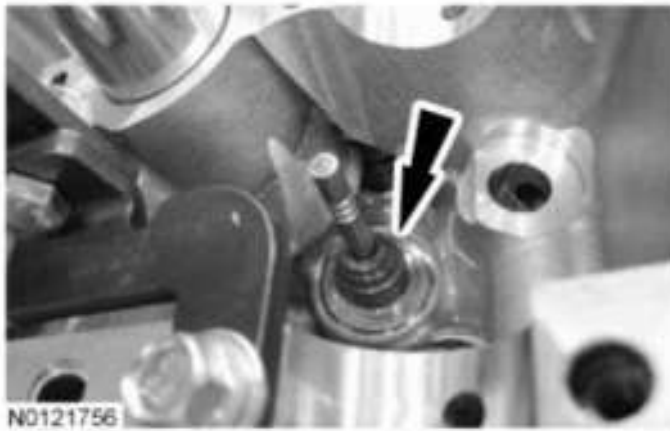


Fig. 606: Locating Valve Seal
 Courtesy of FORD MOTOR CO.

3. Remove the valve from the cylinder head.
4. Repeat the previous steps for each of the remaining valves.

Assembly

NOTE: Apply clean engine oil to the valve seals and the inside diameter of the valve guides prior to assembling the cylinder head components.

NOTE: The valve seal must be bottomed out on the cylinder head spring seat.

1. Install the valve seal.
2. Install the valve into the cylinder head.
3. Using the Valve Spring Compressors, install the spring, retainer and keys.

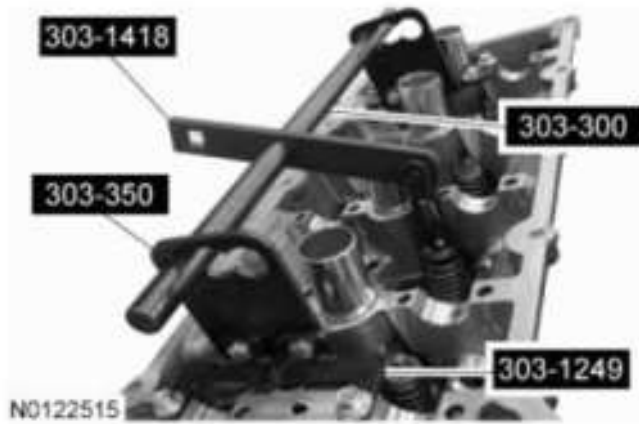


Fig. 607: Installing Keys, Retainer And Spring Using Valve Spring Compressors
 Courtesy of FORD MOTOR CO.

- Repeat the previous steps for each of the remaining valves.

PISTON

Material

PISTON MATERIAL SPECIFICATIONS CHART

Item	Specification
Motorcraft® SAE 5W-20 Premium Synthetic Blend Motor Oil (US); Motorcraft® SAE 5W-20 Super Premium Motor Oil (Canada) XO-5W20-QSP (US); CXO-5W20-LSP12 (Canada)	WSS-M2C945-A

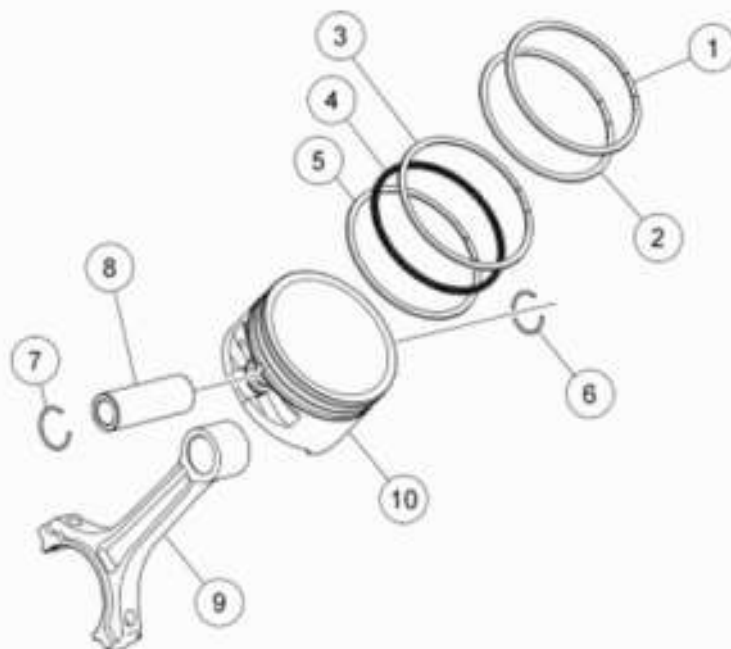


Fig. 608: Exploded View Of Piston
Courtesy of FORD MOTOR CO.

PISTON ITEM DESCRIPTION CHART

Item	Part Number	Description
1	-	Piston compression upper ring (part of 6148)
2	-	Piston compression lower ring (part of 6148)
3	-	Piston oil control upper segment ring (part of 6148)
4	-	Piston oil control spacer (part of 6148)
5	-	Piston oil control lower segment ring (part of 6148)
6	6140	Piston pin retainer
7	6140	Piston pin retainer
8	6135	Piston pin
9	6200	Connecting rod
10	6110	Piston

Disassembly

WARNING: Since the retainer ring has a tendency to spring out, cover the end of the pin bore with a hand or shop rag when removing the ring. Wear eye protection. Failure to follow these instructions may result in serious personal injury.

1. Remove the piston rings from the piston.
 - Discard the piston rings.
2. Mark the piston and the connecting rod on the same side for assembly reference.

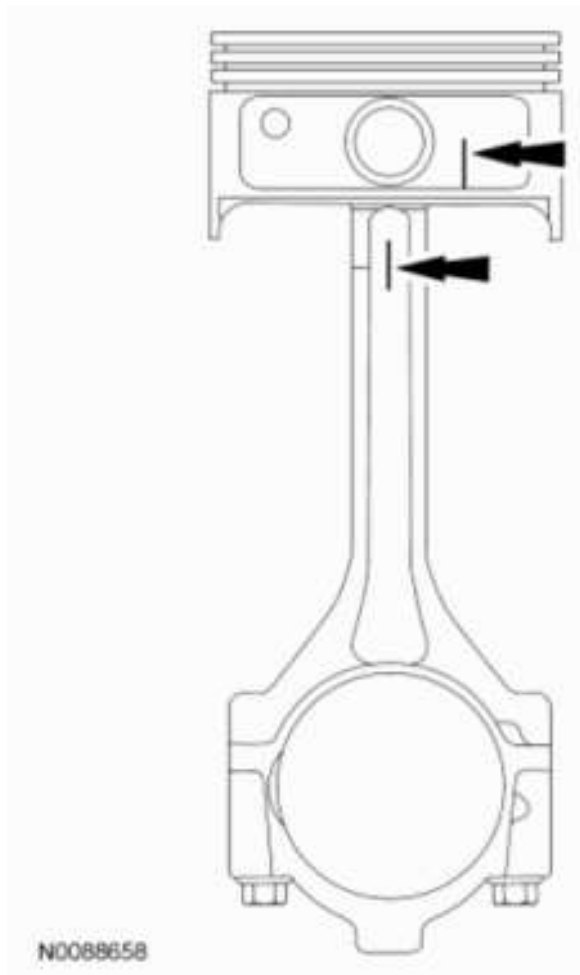


Fig. 609: Identifying Mark On Piston And Connecting Rod
Courtesy of FORD MOTOR CO.

3. Remove the piston pin retainers and the piston pin.
4. Separate the piston from the connecting rod.
5. Clean and inspect the piston and connecting rod. For additional information, refer to **ENGINE SYSTEM - GENERAL INFORMATION** .

Assembly

NOTE: The connecting rod must be installed into the piston with the marks made during disassembly on the same side. If a new piston or connecting rod is being installed, it can be installed in either direction.

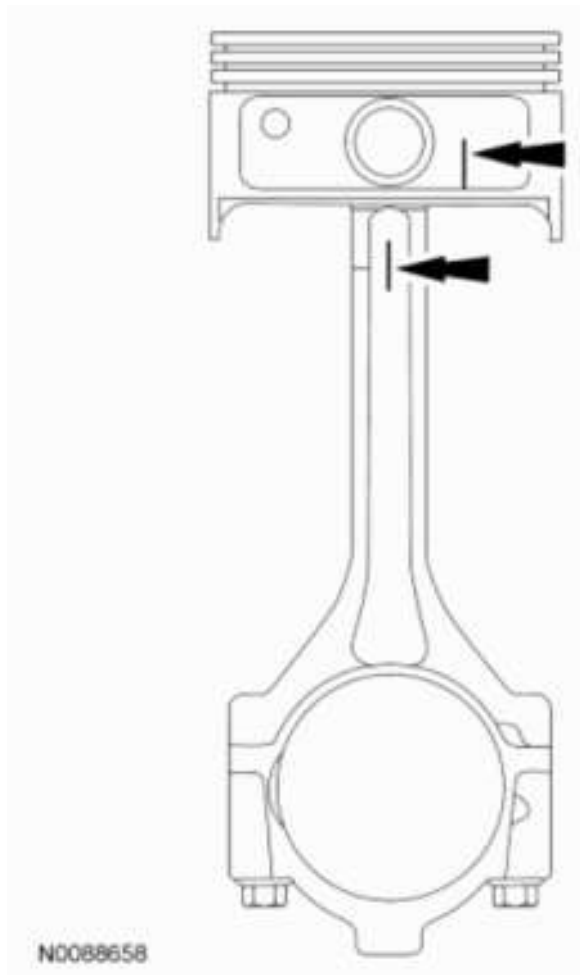


Fig. 610: Identifying Mark On Piston And Connecting Rod
Courtesy of FORD MOTOR CO.

1. Position the connecting rod in the piston.
2. Lubricate the piston pin and pin bore with clean engine oil.
3. Install the piston pin in the piston and connecting rod assembly.
4. Install the piston pin retaining clips in the piston.
5. Lubricate the piston and the new piston rings with clean engine oil.
6. Install the piston rings onto the piston.