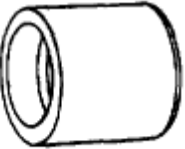




Cylinder Heads

[Notes](#)

Cylinder Head

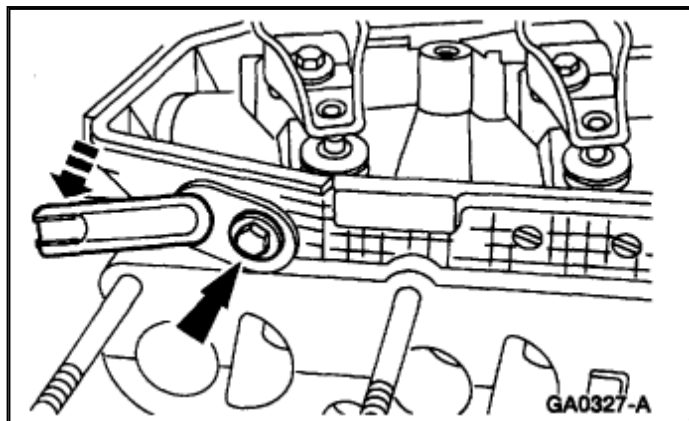
Special Tools	
 ST1508-A	Camshaft Seal Replacer 303-160 (T81P-6292-A)
 ST1383-A	Valve Spring Compressor 303-163 (T81P-6513-A)
 ST1385-A	Seal Remover 303-409 (T92C-6700-CH)

Zoom

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Special Tool(s)

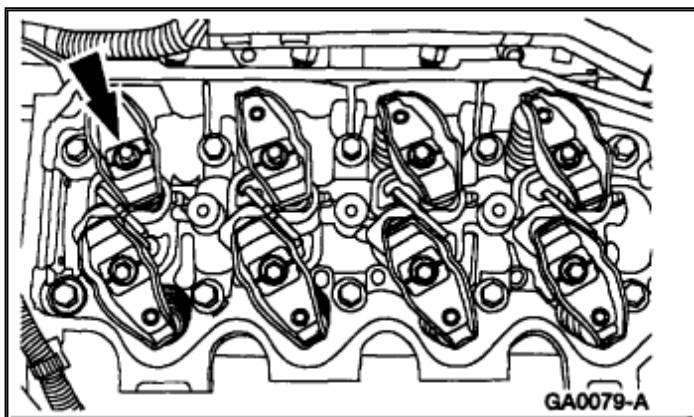
Disassembly



Zoom

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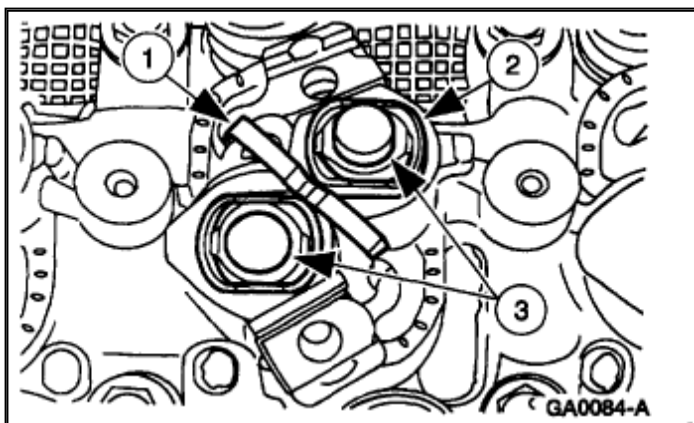
1. Remove the bolt and the [camshaft](#) position (CMP) sensor.



Zoom

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2. Remove the bolts, the rocker arm seats, and the rocker arms.



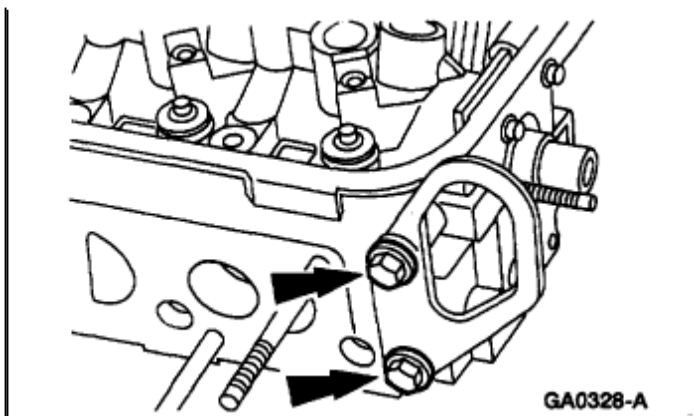
Zoom

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3. **NOTE:** Always return the valve tappets to their original tappet bores unless they are being replaced. Remove the valve tappet(s).

1. Remove the valve tappet guide plate retainers.
2. Remove the valve tappet guide plates.
3. Remove the valve tappets.

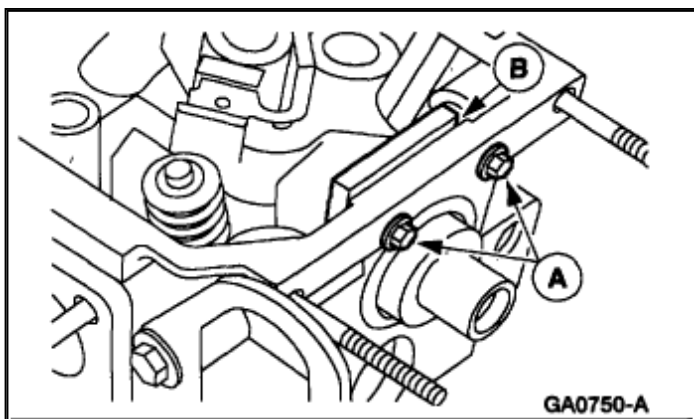




Zoom

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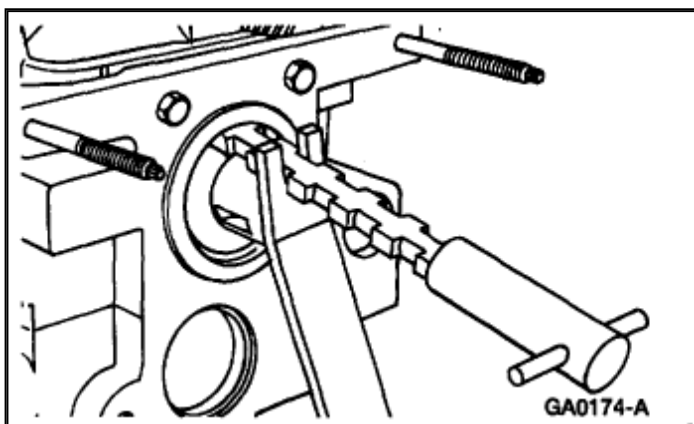
4. Remove the bolts and the engine lifting eye.



Zoom

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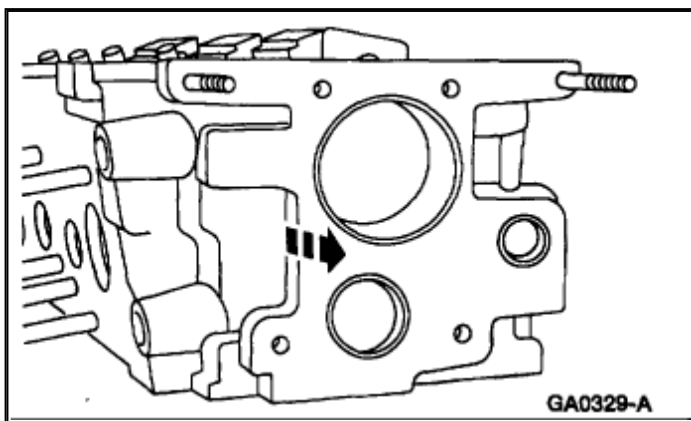
5. Remove the (A) bolts and the (B) camshaft thrust plate.



Zoom

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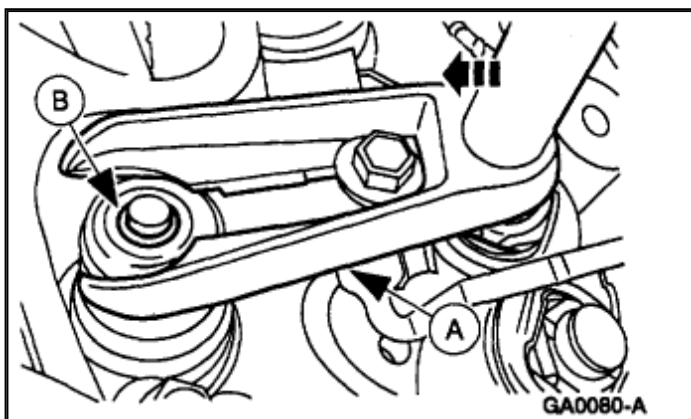
- Use Oil Seal Remover to remove the [camshaft](#) front seal.



Zoom

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- NOTE:** The [camshaft](#) can be removed in either direction. Remove the [camshaft](#).

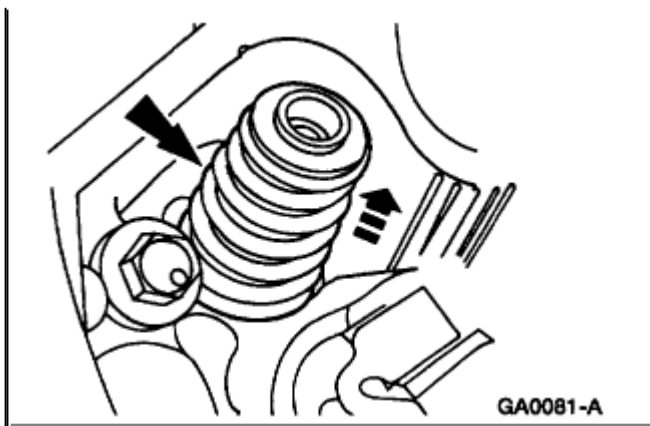


Zoom

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- NOTE:** Identify all parts with respect to the cylinder from which they were removed and whether the valve is an intake valve or an exhaust valve. Use (A) [Valve Spring](#) Compressor to compress the valve springs. While the valve spring is compressed, remove the (B) valve spanner retainer key.
- Slowly remove the [valve spring](#) compressor tool.

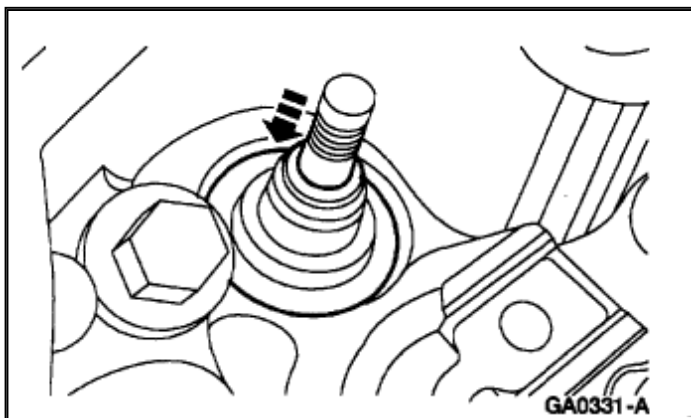




Zoom

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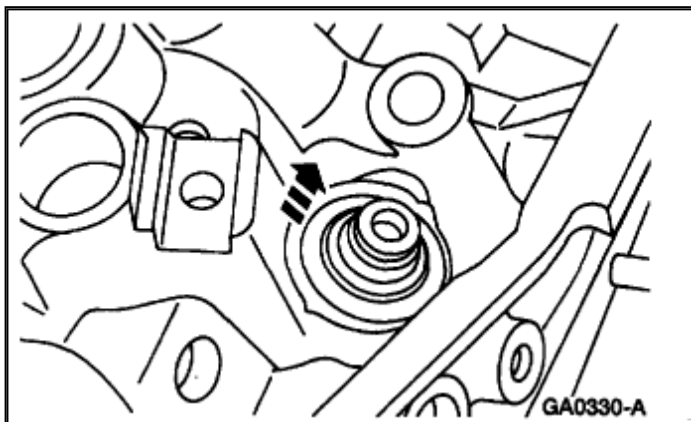
10. Remove the valves [valve spring retainer](#) and the [valve spring](#).



Zoom

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11. Remove the valves.

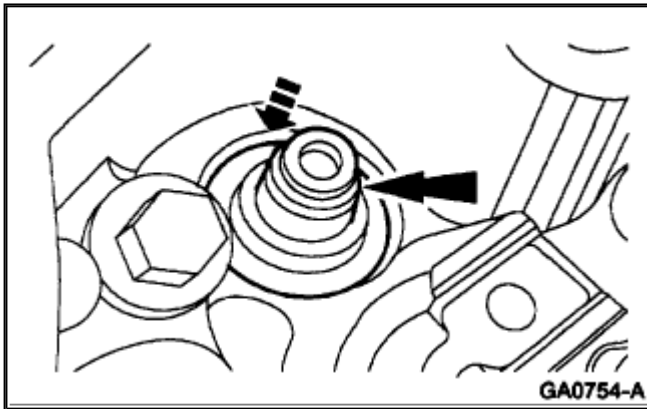


Zoom

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12. Remove and discard the valve stem seals.

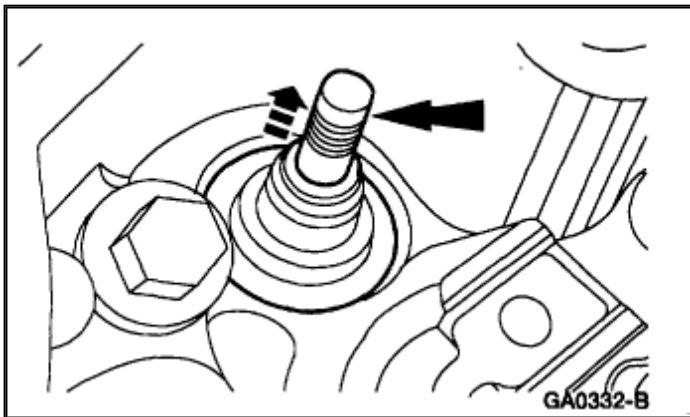
Assembly



Zoom

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1. **NOTE:** Use the seal protector provided with the replacement kit to prevent damage to the valve stem seals. Install the valve stem seals.

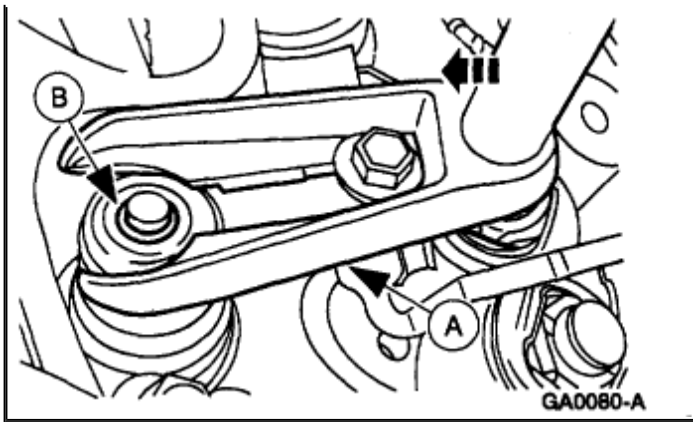


Zoom

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2. **NOTE:** If installing the original valves, make sure that the valves are installed in the position from which they were removed. Coat the valve stems with clean engine oil before installation. Install the exhaust and intake valves.

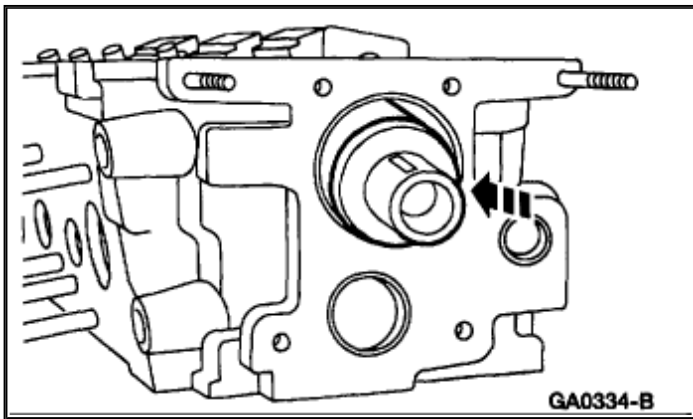




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3. Use (A) [Valve Spring](#) Compressor to install the valve springs, [valve spring retainers](#), and the (B) valve spring retainer keys.

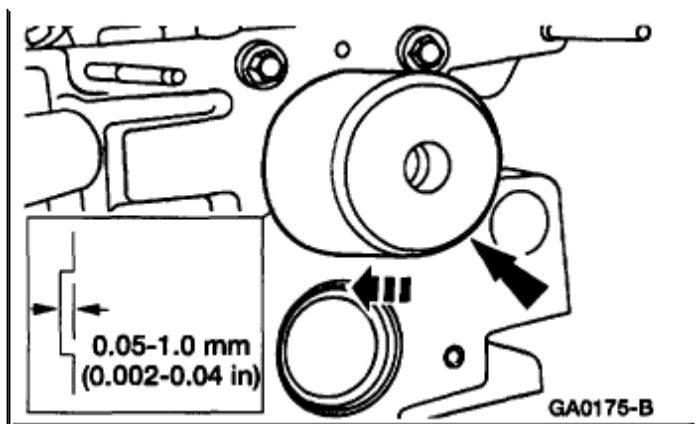


Zoom

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4. **NOTE:** Lubricate the [camshaft](#) lobes and bearing surfaces with clean engine oil. **NOTE:** Inspect for the presence of a clogged oil gallery. Verify that the [camshaft](#) contains the camshaft oil flow control rod and the rear end has a cup plug installed prior to the installation of the camshaft. Install the [camshaft](#).
5. Apply a thin film of clean engine oil to the lip of the [camshaft](#) front seal.

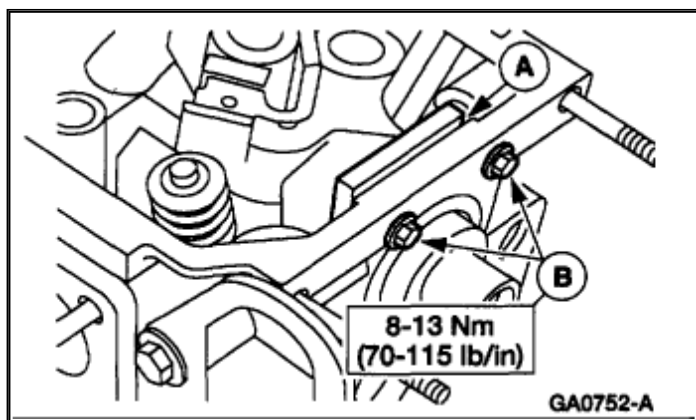




Zoom

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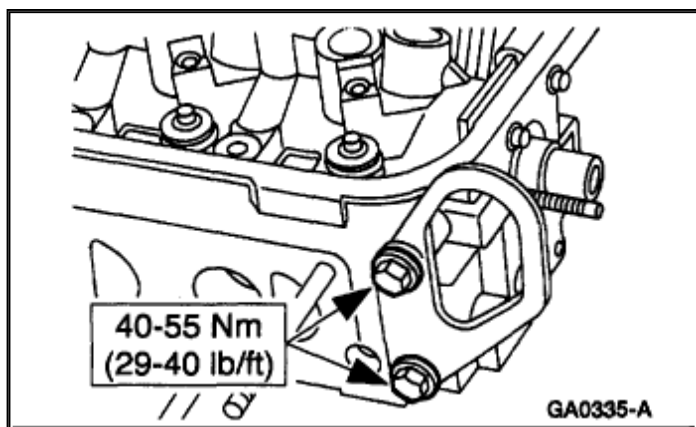
6. **NOTE:** The seal depth should be 0.05-1.0 mm (0.002-0.04 in) below flush with the cylinder head front face. Use [Camshaft Oil Seal](#) Installer to install the [camshaft](#) front seal.



Zoom

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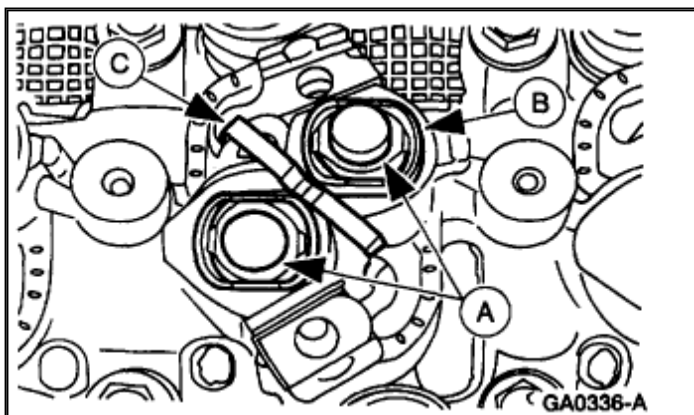
7. Install the (A) camshaft thrust plate and the (B) camshaft thrust plate bolts.



Zoom

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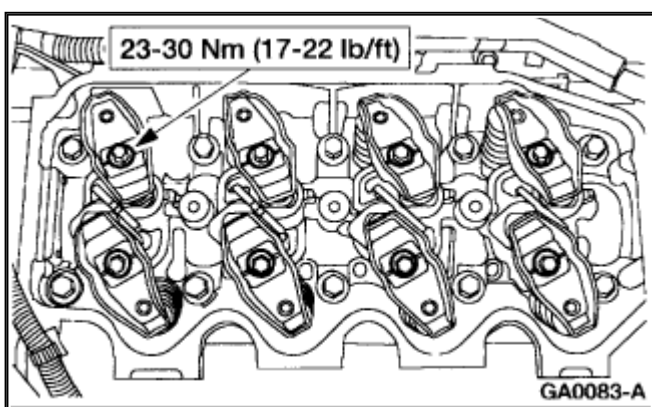
8. Install the engine lifting eye.



Zoom

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9. **NOTE:** Lubricate the valve tappets with engine oil before installing. **NOTE:** Always return the valve tappets to their original tappet bores unless they are being replaced. **NOTE:** The oil feed hole in the valve tappets must face away from the oil feed hole in the cylinder head. **NOTE:** Be certain the valve tappet guide plate retainer tabs are toward the rear of the cylinder head and the valve tappet guide plate tabs are toward the front of the cylinder head. Install the (A) valve tappets, the (B) valve tappet guide plates, and the (C) valve tappet guide plate retainers.

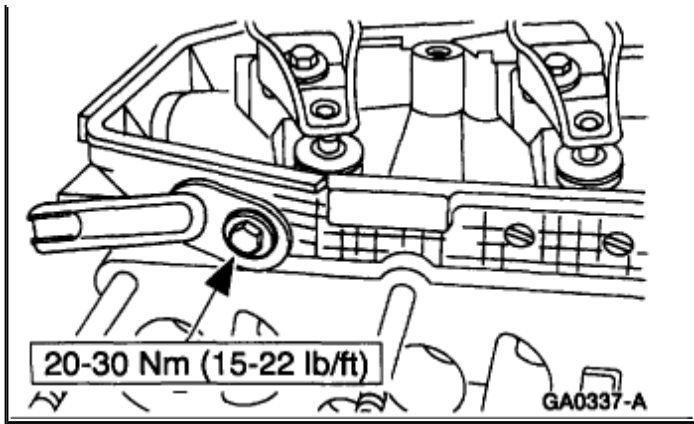


Zoom

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10. Install the rocker arms.





Zoom

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11. Install the CMP sensor.