

Rocker Arm

Material

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
Silicone Brake Caliper Grease and Dielectric Compound XG-3-A	ESE-M1C171-A

Removal

LH cylinder head rocker arm shafts

NOTICE: If the components are to be reinstalled, they must be installed in the same positions. Mark the components for installation into their original locations. Failure to follow these instructions may result in engine damage.

1. Remove the LH valve cover. For additional information, refer to [Valve Cover — LH](#) in this section.
2. Disconnect the 4 LH ignition wires from the LH cylinder head 4 lower spark plugs.
3. **NOTICE:** Only use hand tools when removing or installing the spark plugs or damage can occur to the cylinder head or spark plug.

NOTE: Use compressed air to remove any foreign material from the spark plug well before removing the spark plugs.

Remove the 4 lower spark plugs from the LH cylinder head.

4. Rotate the engine clockwise until the No. 6 cylinder camshaft intake valve is open.
5. Remove the 10 bolts and the LH intake rocker arm shaft assembly.
6. Rotate the engine clockwise until the No. 6 cylinder camshaft exhaust valve is open.
7. Remove the 10 bolts and the LH exhaust rocker arm shaft assembly.

RH cylinder head rocker arm shafts

8. Remove the RH valve cover. For additional information, refer to [Valve Cover — RH](#) in this section.
9. Disconnect the 4 LH ignition wires from the RH cylinder head 4 lower spark plugs.

10. **NOTICE:** Only use hand tools when removing or installing the spark plugs or damage can occur to the cylinder head or spark plug.

NOTE: Use compressed air to remove any foreign material from the spark plug well before removing the spark plugs.

Remove the 4 lower spark plugs from the RH cylinder head.

11. Rotate the engine clockwise until the No. 1 cylinder camshaft lobe intake valve is closed.
12. Remove the 10 bolts and the RH intake rocker arm shaft assembly.
13. Rotate the engine clockwise until the No. 1 cylinder camshaft lobe exhaust valve is closed.
14. Remove the 10 bolts and the RH exhaust rocker arm shaft assembly.

Installation

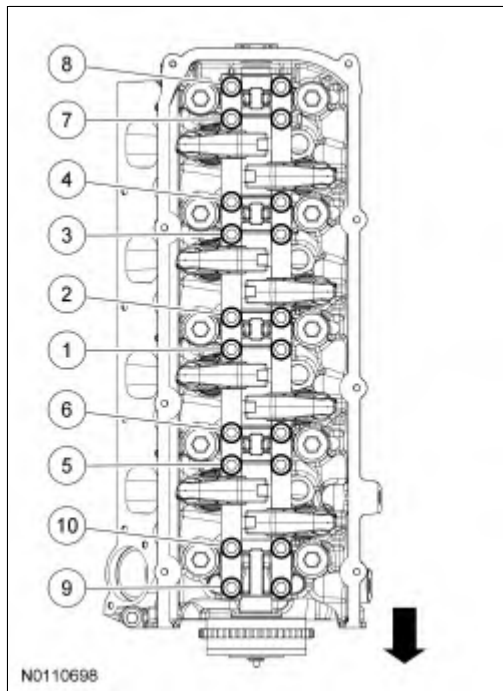
NOTICE: If the components are to be reinstalled, they must be installed in the same positions. Failure to follow this instruction may result in engine damage.

All rocker arm shafts

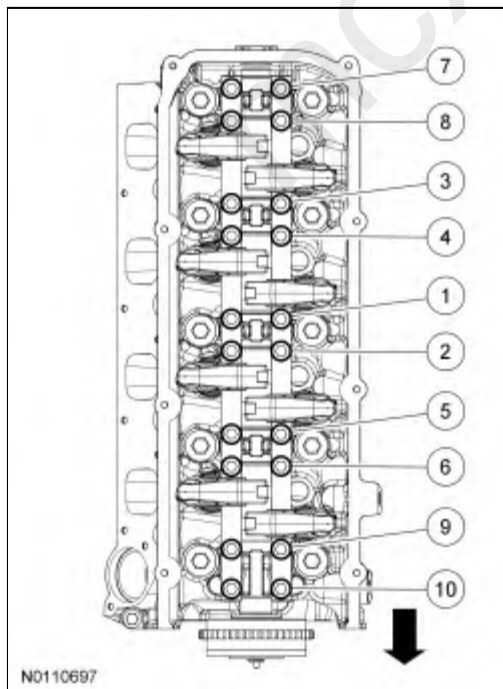
1. Lubricate the rocker arm shaft-to-valve tip and rocker arm-to-camshaft lobe contact area with clean engine oil prior to installation.

LH cylinder head rocker arm shafts

2. Rotate the engine clockwise until the No. 6 cylinder camshaft intake lobe is positioned so that the intake valve would be fully opened.
3. Position the LH intake rocker arm shaft assembly and install the bolts finger-tight.
4. Tighten the 10 LH intake rocker arm shaft assembly bolts in the sequence shown, in 3 stages.
 - Stage 1: Tighten to 10 Nm (89 lb-in).
 - Stage 2: Tighten to 20 Nm (177 lb-in).
 - Stage 3: Tighten an additional 60 degrees.



5. Rotate the engine clockwise until the No. 6 cylinder camshaft exhaust lobe is positioned so that the exhaust valve would be fully opened.
6. Position the LH exhaust rocker arm shaft assembly and install the bolts finger-tight.
7. Tighten the 10 LH exhaust rocker arm shaft assembly bolts in the sequence shown, in 3 stages.
 - Stage 1: Tighten to 10 Nm (89 lb-in).
 - Stage 2: Tighten to 20 Nm (177 lb-in).
 - Stage 3: Tighten an additional 60 degrees.



8. **NOTICE:** Only use hand tools when removing or installing the spark plugs or damage can occur to the cylinder head or spark plug.

Install the LH cylinder head lower 4 spark plugs.

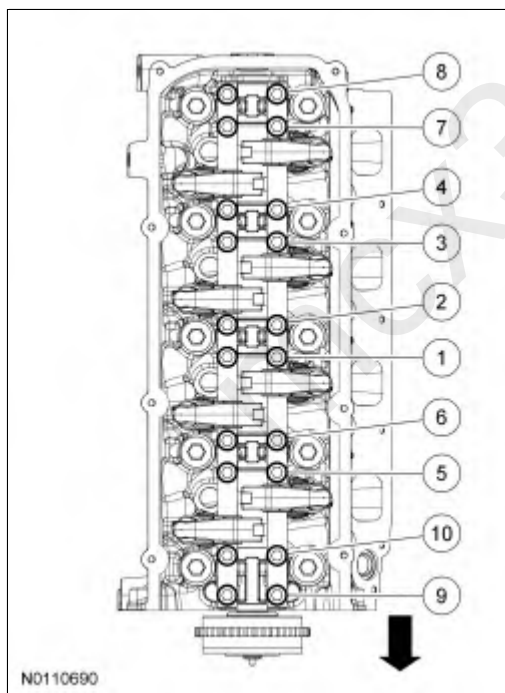
- Tighten to 18 Nm (159 lb-in).

9. Connect the 4 LH cylinder head ignition wires to the LH cylinder head lower 4 spark plugs.
- Apply a light coat of dielectric compound to the inside of the ignition wire boots prior to installation.

10. Install the LH valve cover. For additional information, refer to [Valve Cover — LH](#) in this section.

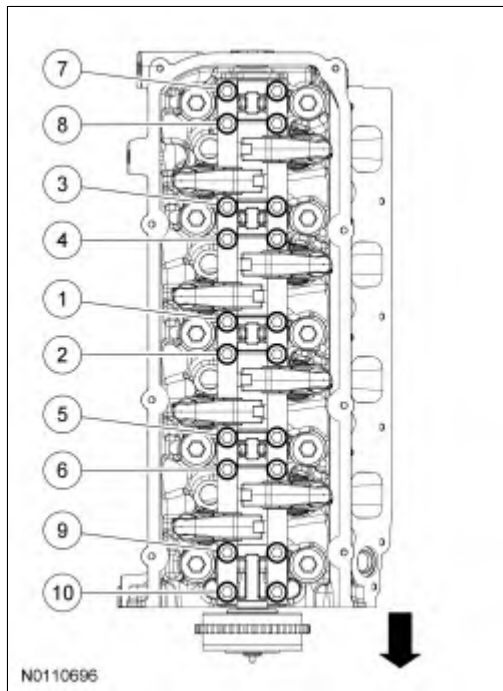
RH cylinder head rocker arm shafts

11. Rotate the engine clockwise until the No. 1 cylinder camshaft intake lobe is positioned so that the intake valve would be fully closed.
12. Position the RH intake rocker arm shaft assembly and install the bolts finger-tight.
13. Tighten the 10 RH intake rocker arm shaft assembly bolts in the sequence shown, in 3 stages.
- Stage 1: Tighten to 10 Nm (89 lb-in).
 - Stage 2: Tighten to 20 Nm (177 lb-in).
 - Stage 3: Tighten an additional 60 degrees.



14. Rotate the engine clockwise until the No. 1 cylinder camshaft exhaust lobe is positioned so that the exhaust valve would be fully closed.
15. Position the RH exhaust rocker arm shaft assembly and install the bolts finger-tight.
16. Tighten the 10 RH exhaust rocker arm shaft assembly bolts in the sequence shown, in 3 stages.
- Stage 1: Tighten to 10 Nm (89 lb-in).

- Stage 2: Tighten to 20 Nm (177 lb-in).
- Stage 3: Tighten an additional 60 degrees.



17. **NOTICE:** Only use hand tools when removing or installing the spark plugs or damage can occur to the cylinder head or spark plug.

Install the RH cylinder head lower 4 spark plugs.

- Tighten to 18 Nm (159 lb-in).
18. Connect the 4 RH cylinder head ignition wires to the RH cylinder head lower 4 spark plugs.
- Apply a light coat of dielectric compound to the inside of the ignition wire boots prior to installation.
19. Install the RH valve cover. For additional information, refer to [Valve Cover — RH](#) in this section.

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