

SECTION 303-01B: Engine — 3.7L
IN-VEHICLE REPAIR

2014 F-150 Workshop Manual
Procedure revision date: 10/25/2013

Valve Cover — LH

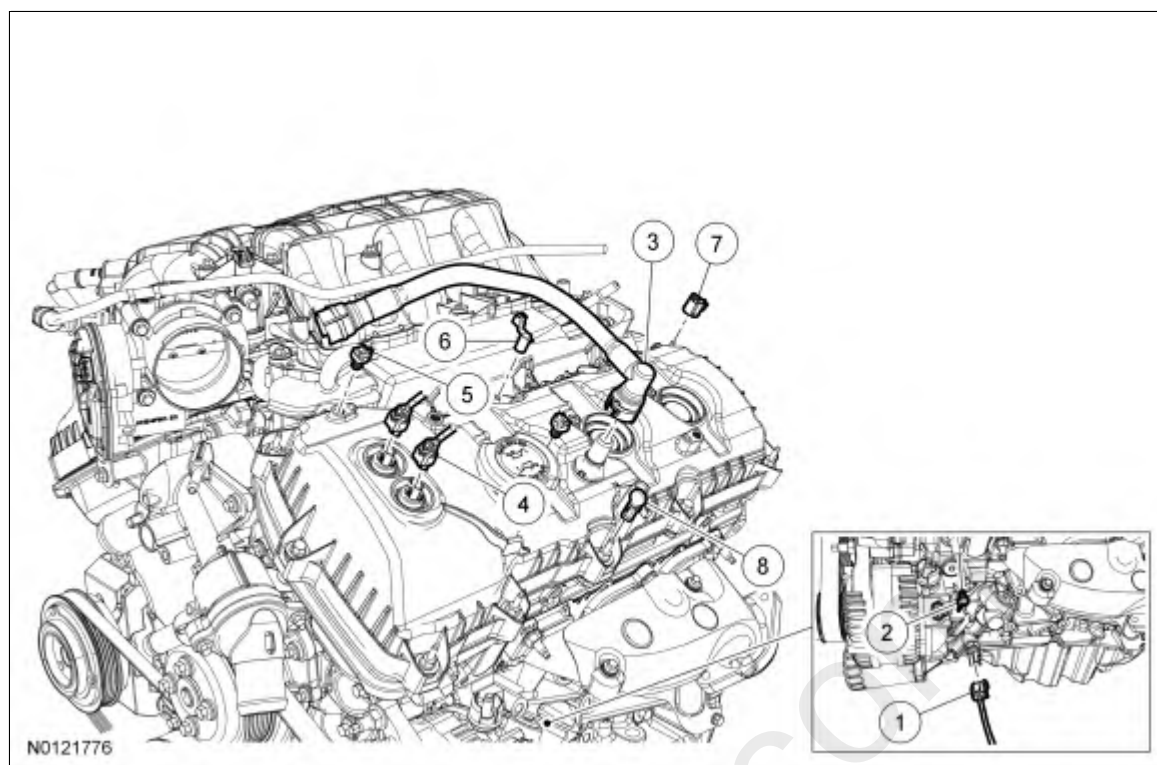
Special Tool(s)

 ST1326-A	Handle 205-153 (T80T-4000-W)
 ST2212-A	Installer, Differential Bearing Cone 205-142 (T80T-4000-J)
 ST2983-A	Installer, Spark Plug Tube Seal 303-1247/2
 ST2982-A	Remover, Spark Plug Tube Seal 303-1247/1

Material

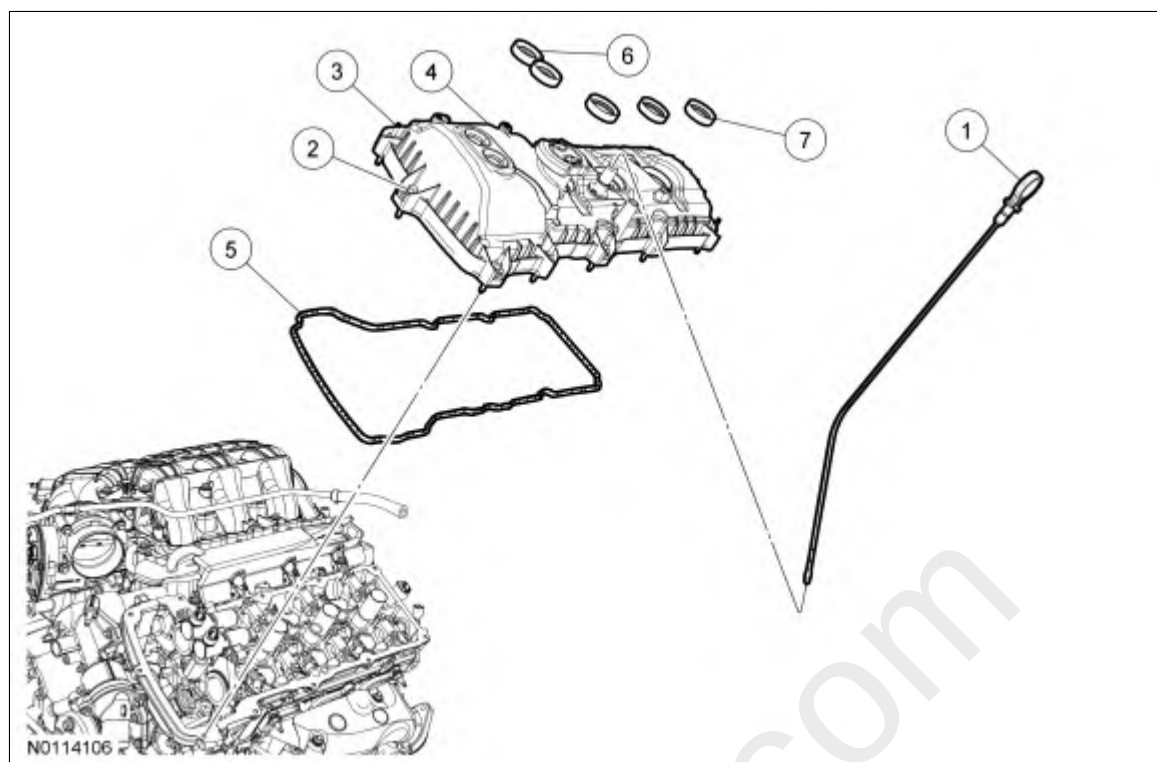
Item	Specification
Motorcraft® High Performance Engine RTV Silicone TA-357	WSE-M4G323-A6
Motorcraft® Metal Surface Prep ZC-31-A	—
Motorcraft® Silicone Gasket Remover ZC-30	—

Valve Cover — LH (View 1 of 2)



Item	Part Number	Description
1	—	Engine Oil Pressure (EOP) switch electrical connector (part of 14A411)
2	—	<u>EOP</u> switch electrical connector wiring harness pin-type retainer (part of 14A411)
3	6758	Crankcase ventilation tube
4	—	LH Variable Camshaft Timing (VCT) electrical connector (part of 14A411) (2 required)
5	—	LH valve cover wiring harness pin-type retainer (part of 14A411) (2 required)
6	—	LH valve cover stud bolt wiring harness retainer (part of 14A411)
7	—	LH valve cover stud bolt wiring harness retainer (part of 14A411)
8	—	LH valve cover stud bolt wiring harness retainer (part of 14A411)

Valve Cover — LH (View 2 of 2)



Item	Part Number	Description
1	6750	Oil level indicator
2	6C519	Valve cover bolt (4 required)
3	6C519	Valve cover stud bolt (7 required)
4	6582	LH valve cover
5	6584	LH valve cover gasket
6	6C535	Variable Camshaft Timing (VCT) solenoid seal (2 required)
7	6C535	Spark plug tube seal (3 required)

Removal

NOTICE: 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.

1. Remove the Air Cleaner (ACL) outlet tube and the ACL upper tray. For additional information, refer to Intake Air System Components — Exploded View, 3.7L in [Section 303-12](#).
2. Disconnect and remove the crankcase ventilation tube quick connect coupling from the LH valve cover. For additional information, refer to [Section 310-00](#).
3. Remove the oil level indicator.
4. Remove the LH ignition coils. For additional information, refer to [Section 303-07A](#).
5. Disconnect the 2 LH Variable Camshaft Timing (VCT) solenoid electrical connectors.

6. Disconnect the Engine Oil Pressure (EOP) switch electrical connector.
 - Detach the EOP switch wiring harness retainer from the cylinder head.
7. Detach all of the wiring harness retainers from the LH valve cover and stud bolts.
8. **NOTICE:** While removing the valve cover do not apply excessive force to the Variable Camshaft Timing (VCT) oil control solenoid or damage may occur.

NOTICE: If the Variable Camshaft Timing (VCT) oil control solenoid sticks to the VCT seal, carefully wiggle the valve cover until the bond breaks free or damage to the VCT seal and VCT oil control solenoid may occur.

NOTE: The plastic electrical connector on the VCT oil control solenoid will rotate approximately 12 degrees inside the steel housing, which is normal.

Loosen the 7 stud bolts, 4 bolts and remove the LH valve cover.

- Discard the gasket.
9. Inspect the 2 VCT solenoid seals. Remove any damaged seals.
 - Using the Differential Bearing Cone Installer and Handle, remove the seal(s).



10. Inspect the spark plug tube seals. Remove any damaged seals.
 - Using the VCT Spark Plug Tube Seal Remover and Handle, remove the seal(s).



11. Clean the valve cover, cylinder head and engine front cover sealing surfaces with metal surface prep.

Installation

1. **NOTE:** Installation of new seals is only required if damaged seals were removed.

Using the VCT Spark Plug Tube Seal Installer and Handle, install new spark plug tube seals.



2. **NOTE:** Installation of new seals is only required if damaged seals were removed.

Using the Differential Bearing Cone Installer and Handle, install new VCT solenoid seal(s).



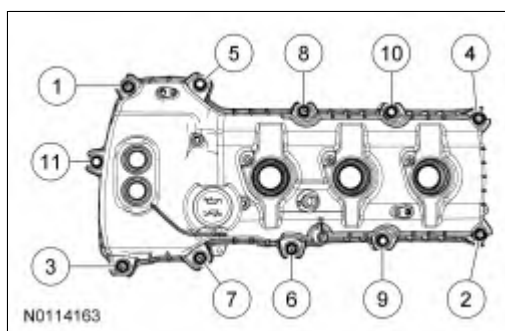
3. **NOTICE:** Failure to use the correct Motorcraft® High Performance Engine RTV Silicone may cause the engine oil to foam excessively and result in serious engine damage.

NOTE: If the valve cover is not installed and the fasteners tightened within 4 minutes, the sealant must be removed and the sealing area cleaned. To clean the sealing area, use silicone gasket remover and metal surface prep. Failure to follow this procedure can cause future oil leakage.

Apply an 8 mm (0.31 in) bead of Motorcraft® High Performance Engine RTV Silicone to the engine front cover-to-LH cylinder head joints.



4. Using a new gasket, install the LH valve cover and tighten the 4 bolts and 7 stud bolts in the sequence shown.
- Tighten to 10 Nm (89 lb-in).



5. Ensure the VCT seals in the valve cover are below the top of the VCT oil control solenoid electrical connector or the VCT seal may leak oil.



6. Attach all of the wiring harness retainers to the LH valve cover and stud bolts.
7. Connect the EOP switch electrical connector.
 - Attach the EOP switch wiring harness retainer to the cylinder head.
8. Connect the 2 LH VCT solenoid electrical connectors.
9. Install the LH ignition coils. For additional information, refer to [Section 303-07A](#).
10. Install the oil level indicator.
11. Connect the crankcase ventilation tube quick connect coupling to the LH valve cover. For additional information, refer to [Section 310-00](#).
12. Install the ACL outlet tube and the ACL upper tray. For additional information, refer to Intake Air System Components — Exploded View, 3.7L in [Section 303-12](#).

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