Output Shaft Speed (OSS) Sensor

Material

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
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<tbody>
<tr>
<td>MERCON® V Automatic Transmission Fluid</td>
<td>MERCON® V</td>
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<tr>
<td>XT-5-QM (or XT-5-QMC) (US); CXT-5-LM12 (Canada)</td>
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Removal

1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to Section 100-02.

2. Disconnect the Mass Air Flow (MAF) sensor electrical connector and the wiring harness fastener from the Air Cleaner (ACL) assembly.

3. Disconnect the brake booster vacuum hose from the ACL outlet pipe.

4. Disconnect the engine breather from the ACL assembly.
5. Remove the ACL assembly bracket bolt.

6. Loosen the ACL outlet pipe clamp at the Throttle Body (TB) and remove the ACL and ACL outlet pipe assembly.

7. Remove the transmission fluid drain plug and allow the transmission fluid to drain.

8. Install the transmission fluid drain plug.
   - Tighten to 9 Nm (80 lb-in).
9. Disconnect the selector lever cable end from the manual control lever.

10. **NOTE:** The coolant hoses do not need to be removed from the engine.

   Remove the coolant hoses from the transmission fluid filler tube and position aside.

11. **NOTE:** The coolant hoses have been removed for clarity.

   Remove the transmission fluid level indicator.

12. **NOTE:** The coolant hoses have been removed for clarity.
Remove the nut, rotate the transmission fluid filler tube counterclockwise 90 degrees and remove the transmission fluid filler tube.

13. Loosen the transmission fluid cooler tube fitting from the thermal bypass valve.

14. Remove and discard the transmission fluid cooler tube bolt and remove the transmission fluid cooler tube.

15. Inspect the transaxle case to make sure that the transmission fluid cooler tube seal and backing ring were removed with the transmission fluid cooler tube and are not stuck in the transaxle case. If the transmission fluid cooler tube seal or backing ring are stuck in the transaxle case, remove the seal and backing ring.
16. Remove the nut and the manual control lever.

17. Disconnect the transaxle electrical connector.

18. Remove the 2 nuts, pull the transmission fluid cooler thermal bypass valve straight up and position it aside.

19. **NOTE:** Note the location of the stud bolts for assembly.

   Remove the 14 bolts and the main control cover.
20. Disconnect the Transmission Range (TR) sensor electrical connector.
   1. Slide the lock over.
   2. Press the tab and disconnect the connector.

21. Disconnect the Turbine Shaft Speed (TSS) and Output Shaft Speed (OSS) sensor electrical connectors.

22. **NOTICE:** The solenoid body should be handled with care or damage to the solenoid body may occur.
NOTE: Note the location of the different length bolts for assembly.

Remove the 11 bolts and the solenoid body.

23. **NOTICE:** Do not handle the solenoid body in the leadframe area or by the screens of the solenoid body filter or damage to the solenoid body can occur.

**NOTICE:** Use care not to break the alignment tabs when removing the solenoid body filter. Damage to the transaxle will occur if the solenoid body is not correctly aligned.

Remove the solenoid body filter assembly by pulling it straight up from the alignment tabs. Discard the filter.

24. Remove the 10 bolts, the TR sensor detent spring and the main control valve body.
25. Remove the bolt and the OSS sensor.

Installation

1. Install the OSS sensor and the bolt.
   - Tighten to 12 Nm (106 lb-in).

2. **NOTE:** Make sure that the manual pin (part of the TR sensor) is correctly installed in the manual valve.

   Position the TSS, OSS and TR sensor wiring harnesses aside and install the main control valve body.
3. Inspect the manual pin to make sure it is correctly installed in the manual valve. If it is not, pull the valve body off the transaxle case. Correctly install the manual pin in the manual valve and position the valve body in place.

4. Install the TR sensor detent spring and the 10 bolts. Tighten the bolts in the sequence shown.
   - Tighten to 12 Nm (106 lb-in).
5. **NOTICE:** Do not handle the solenoid body in the leadframe area or by the screens of the solenoid body filter or damage to the solenoid body can occur.

**NOTICE:** Use care not to break the alignment tabs when installing the solenoid body filter. Damage to the transaxle will occur if the solenoid body is not correctly aligned.

**NOTICE:** Make sure that the filter passage areas are clean of foreign material before installing the filter. Damage to the transaxle will occur if the filter passages are not clean.

Install a new solenoid body filter assembly by pushing it straight down on to the alignment tabs.

6. **NOTICE:** Make sure not to pinch the Turbine Shaft Speed (TSS), Output Shaft Speed (OSS) or Transmission Range (TR) sensor wiring harnesses when installing the solenoid body. Damage to the wiring harness will occur.

**NOTE:** Install the different length bolts in the locations noted during disassembly.

Install the solenoid body and the 11 bolts.

1. 42 mm (1.65 in) bolt
2. 63 mm (2.48 in) bolts
3. 80 mm (3.14 in) bolts
4. 95 mm (3.74 in) bolts

7. Tighten the solenoid body bolts in the sequence shown.
   - Tighten to 12 Nm (106 lb-in).

8. Route the OSS sensor wiring harness and connect the electrical connector.
9. Connect the TR sensor electrical connector.
   1. Connect the electrical connector.
   2. Slide the locking tab over.

10. Connect the TSS sensor electrical connector.

11. Inspect the transaxle side cover seal for damage and install new if necessary.

12. **NOTICE:** Inspect the 20-pin solenoid body connector seal to make sure that the seal is on the inside of the main control cover or a transmission fluid leak will occur.
NOTE: Install the studbolts in the locations noted during disassembly.

Install the main control cover and loosely install the 14 bolts.

1. Bolt location
2. Studbolt location

13. Tighten the main control cover bolts in the sequence shown.
   - Tighten to 12 Nm (106 lb-in).
14. Position the transmission fluid cooler thermal bypass valve and transmission fluid cooler tube assembly in place and install the 2 transmission fluid cooler tube bracket nuts.
   - Tighten to 9 Nm (80 lb-in).

15. Connect the transaxle electrical connector.

16. **NOTICE:** Make sure that when installing the manual control lever it is fully seated onto the manual control lever shaft or damage to the manual control lever shaft will occur and the lever will come loose.

   **NOTICE:** Make sure to hold the manual control lever while tightening the manual control lever nut or damage to the manual control lever and park components will occur.

   Install the manual control lever and the nut.
   - Tighten to 18 Nm (159 lb-in).

17. Inspect the transmission fluid cooler tube backing ring and seal for damage and install a new backing ring or seal if necessary. Lubricate the transmission fluid cooler tube seal with clean transmission fluid and install the backing ring and seal on the transmission fluid cooler tube.
18. Position the transmission fluid cooler tube in place and install a new bolt.
   - Tighten to 9 Nm (80 lb-in).

19. Tighten the transmission fluid cooler tube fitting.
   - Tighten to 25 Nm (18 lb-ft).

20. Install the transmission fluid filler tube and the nut.
   - Tighten to 11 Nm (97 lb-in).
21. Install the transmission fluid level indicator.

22. Route the coolant hoses in the transmission fluid filler tube.

23. Place the manual control lever in DRIVE.
   1. Rotate the manual control lever clockwise until it stops.
   2. Rotate the manual control lever counterclockwise one detent until it stops.

24. Unlock the selector lever cable adjuster by sliding the locking tab over.
25. Slide the cable end forward or backward to align it with the manual control lever.

26. With the adjuster locking tab released, connect the selector lever cable end to the manual control lever.

27. Slide the release tab back to lock the adjuster.

28. Position the ACL assembly in place and install the bolt.
   - Tighten to 11 Nm (97 lb-in).
29. Tighten the ACL outlet pipe clamp at the TB.
   - Tighten to 5 Nm (44 lb-in).

30. Connect the engine breather to the ACL assembly.

31. Connect the brake booster vacuum hose to the ACL assembly.

32. Connect the MAF sensor electrical connector and connect the electrical harness fastener.
33. Fill with clean transmission fluid to the correct level.