Vehicles with non-touchscreen

Good Satellite Reception

Vehicles with non-touchscreen

Poor Satellite Reception

- Observe the satellite indication in the graphs in illustrations.
- **Are there at least 3 columns (indicating 3 satellites) shown with good signal strength?**

Yes	No
Go to A18.	Go to A16

A16 : CHECK THE GPS FUNCTION IN AN OUTDOORS LOCATION
- Ignition ON, engine running.

 NOTE: With the vehicle is running, wait 1 minute to acquire the satellites.

 NOTE: Make sure there is a relatively clear sky and the vehicle is an open area clear of buildings that could obstruct the satellite signals before beginning this test step.

- Enter the bezel diagnostics. Refer to the appropriate Bezel Diagnostics general procedure in appropriate Information and Entertainment System article.
- Select APIM Diagnostics>Location Information>Satellite Signal.

 NOTE: Each column in the graph represents an identified satellite and the strength of the signal is indicated by the height of the fill in eachh column.

- Observe the satellite indication in the graph.
- **Are there at least 3 column (indicating 3 satellites shown with good signal strength?**

Yes	No
Go to **A18**	If GPS input to the APIM was not previously diagnosed. DIAGNOSE the GPS input to the APIM. REFER to appropriate Information and Entertainment System article. If the GPS input to the APIM was previously diagnosed and referenced to this test, Go to A17.

A17 : CLEAR ALL APIM DIAGNOSTIC TROUBLE CODES AND RE-CHECK THE APIM OPERATION
- Ignition ON, engine OFF.

| **Yes** | GO to F9 |

| **No** | REPAIR the circuit. |

F9 CHECK FOR CORRECT DDM (DRIVER DOOR MODULE) OPERATION

- Disconnect and inspect all DDM connectors.

- Repair:

  - corrosion (install new connector or terminals - clean module pins)
  - damaged or bent pins - install new terminals/pins
  - pushed-out pins - install new pins as necessary

- Reconnect the DDM connectors and all previously disconnected illumination system connectors. Make sure all connectors seat and latch correctly.

- Operate the system to determine if the concern is still present.

Is the concern still present?

| **Yes** | CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new DDM. REFER to: **Driver Door Module (DDM)** . |

| **No** | The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues. |

Refer to **Power Windows** for schematic and connector information.

Normal Operation and Fault Conditions

Based on messages received from the BCM, the PDM supplies voltage to the illuminate the RH front door lock switch and window control switch. The RH door lock and window control switch illumination shares a common power circuit.

DTC	Description	Fault trigger conditions
U2010:00	Switch Illumination: No Sub Type Information	This DTC sets on-demand and in continuous memory when the PDM detects a short to ground or open on the switch illumination output circuit.

Possible Sources

- Communication network concern
- Wiring, terminals or connectors
- RH door lock switch
- RH window control switch
- PDM

G1 PERFORM A NETWORK TEST

- Ignition ON.

- Using a diagnostic scan tool, perform a network test.

Does the PDM pass the network test?

| **Yes** | If the door lock **and** window control switch illumination is inoperative, GO to G6
If the door lock control switch illumination is inoperative, GO to G10
If the window control switch illumination is inoperative, GO to G13
If the door lock **and** window control switch illumination is always on, GO to G2 |

| **No** | DIAGNOSE a concern with the network. REFER to: **Communications Network** . |

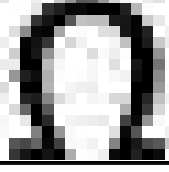| Positive Lead	Measurement / Action	Negative Lead
C4357-4		Ground

Is any voltage present?

Yes REPAIR the circuit in question.

No GO to A13

A13 CHECK THE VIDEO SIGNAL CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C4357-3		Ground
C4357-4		Ground

Are the resistances greater than 10, 000 ohms?
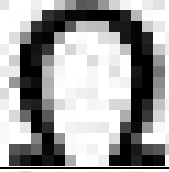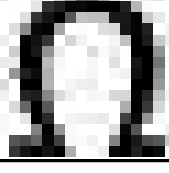
Yes GO to A14

No REPAIR the circuit in question.

A14 CHECK THE VIDEO SIGNAL CIRCUITS FOR A SHORT TO VIDEO SHIELD

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C4357-3		C4357-5
C4357-4		C4357-5

Are the resistances greater than 10, 000 ohms?

Yes GO to A15

No REPAIR the circuit in question.

E175301
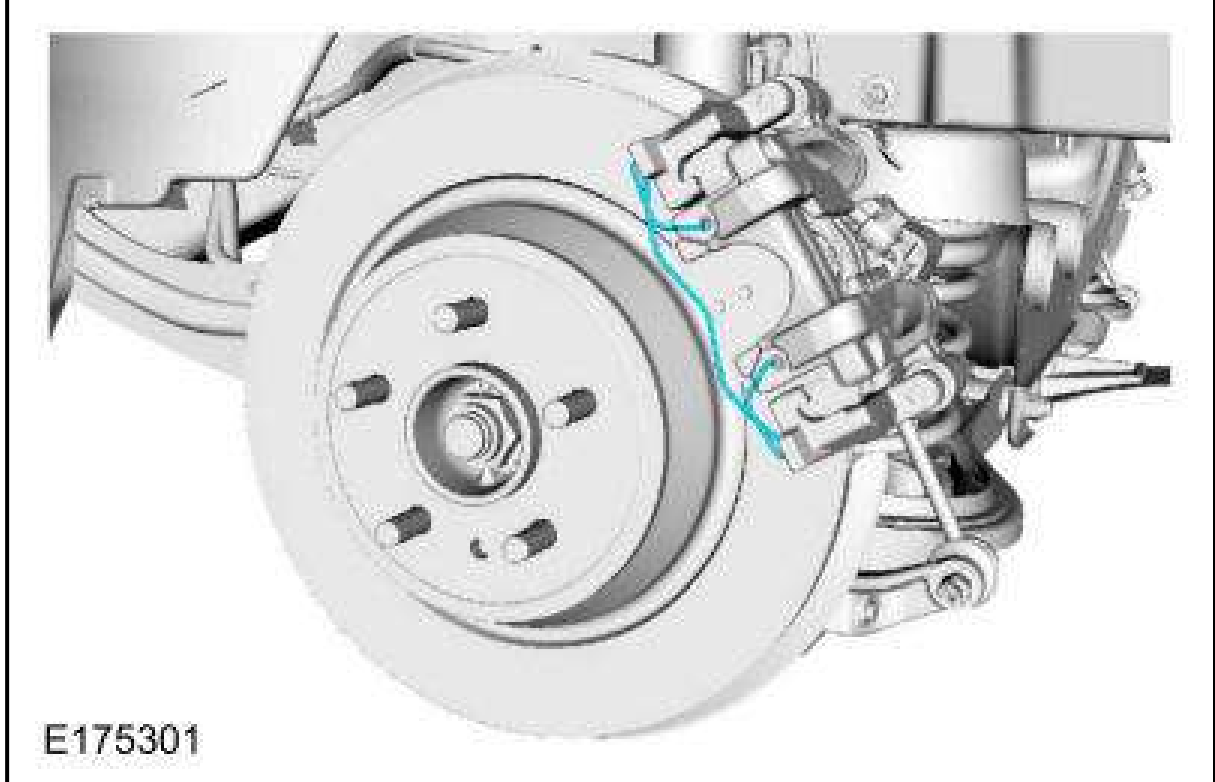
4. **NOTE:** Do not pry in the caliper sight hole to retract the pistons as this can damage the pistons and boots.

   NOTE: Do not allow the brake caliper and anchor plate assembly to hang from the brake hose or damage to the hose can occur.

   NOTE: Align the center pin of the inboard brake pad with the brake caliper piston pocket or damage to the brake pad or caliper piston may occur. If necessary, only rotate the piston counter clockwise to align with the pin.

   Remove the caps, the guide pins and position the brake caliper aside.

   Torque: 21 lb.ft (28 Nm)

E175296

5.
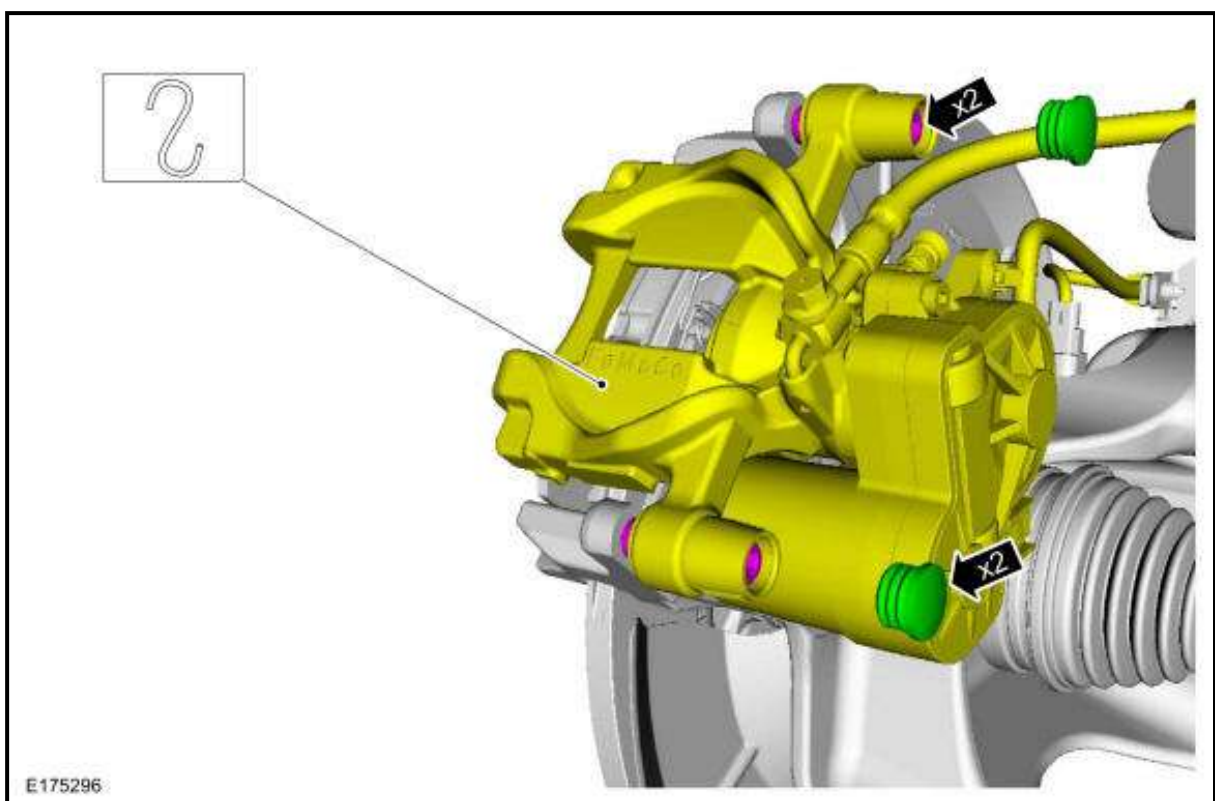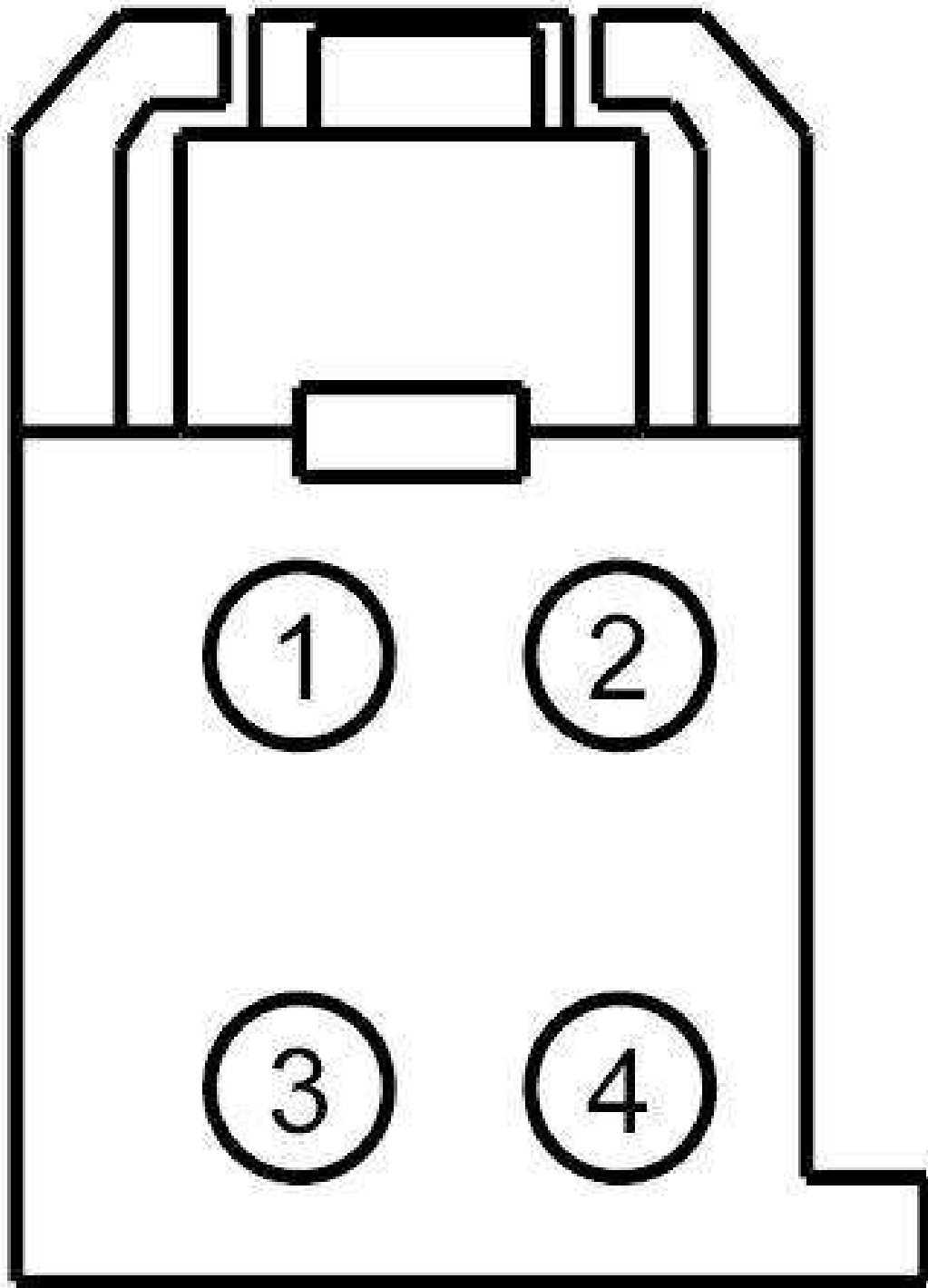
Check for Terminal Part Numbers

Pin	Circuit	Gauge	Circuit Function	Qualifier
1	CPS01 (GN-BU)	14	CTRL MOD. - DRIVER SEAT SLIDE FORWARD	
2	RPS12 (GN-OG)	20	CTRL MOD. - DRIVER SEAT SENSORS RECLINE -	
3	CPS06 (GN-WH)	14	CTRL MOD. - DRIVER SEAT SLIDE REARWARD	
4	VPS09 (BN-BU)	20	SENSOR - DRIVER SEAT SLIDE FORWARD/REARWARD	

Available Pigtail Kits	
Pigtail Kit Part Number	Service Part Number:
WPT-1350	**DU2Z-14S411-UA**

Pin	Circuit	Gauge	Circuit Function	Qualifier
1	*	*	Not Used	
2	CPR62 (WH-BU)	20	CTRL MOD. - POWER LIFTGATE # UNCINCH	
3	CPR63 (GY-YE)	20	SWITCH - POWER LIFTGATE/DECKLID # OPEN/CLOSE	
4	*	*	Not Used	
5	CPR67 (VT)	20	LATCH - LIFTGATE # SECTOR GEAR SWITCH 1	
6	*	*	Not Used	
7	VPR53 (BU-WH)	22	SENSOR - POWER LIFTGATE # OPTICAL/HALL 1	
8	VPR54 (BU-BN)	22	SENSOR - POWER LIFTGATE # OPTICAL/HALL 2	
9	*	*	Not Used	
10	*	*	Not Used	
11	CPR89 (BN-BU)	22	SWITCH - POWER LIFTGATE/DECKLID # OPEN/CLOSE #2 (REAR)	
12	CPR52 (YE-VT)	20	SWITCH - POWER LIFTGATE # OBSTACLE DETECT - LEFT	
13	*	*	Not Used	
14	CPR51 (YE-OG)	20	SWITCH - POWER LIFTGATE # OBSTACLE DETECT - RIGHT	
15	CPL44 (YE-OG)	20	SWITCH - LIFTGATE/DECKLID/CARGO # AJAR	
16	CPR66 (GY-YE)	20	LATCH - LIFTGATE # RATCHET SWITCH	
17	CPR65 (BU-GN)	20	LATCH - LIFTGATE # LATCH SWITCH FULL	
18	CPR64 (VT-OG)	20	LATCH - LIFTGATE # LATCH SWITCH HALF	
19	CPR55 (GN-BU)	22	CTRL MOD. - POWER LIFTGATE # SENSOR POWER	
20	RPR55 (WH-BU)	22	CTRL MOD. - POWER LIFTGATE # SENSOR RETURN	
21	RPR52 (VT-GY)	20	SWITCH - POWER LIFTGATE # OBSTACLE DETECT -	
22	*	*	Not Used	
23	VDB07 (VT-OG)	20	CONNECTOR - DIAGNOSTIC # CAN BUS MEDIUM SPEED LOW	
24	VDB06 (GY-OG)	20	CONNECTOR - DIAGNOSTIC # CAN BUS MEDIUM SPEED HIGH	
25	CPL45 (BN)	20	SWITCH - LIFTGATE/DECKLID RELEASE	
26	*	*	Not Used	

CONNECTOR END VIEW C4216 - LIFTGATE/LUGGAGE COMPARTMENT LID RELEASE SWITCH

Connector: C4216

Description

LIFTGATE/LUGGAGE COMPARTMENT LID RELEASE SWITCH

Color

BK

Harness

N0152570
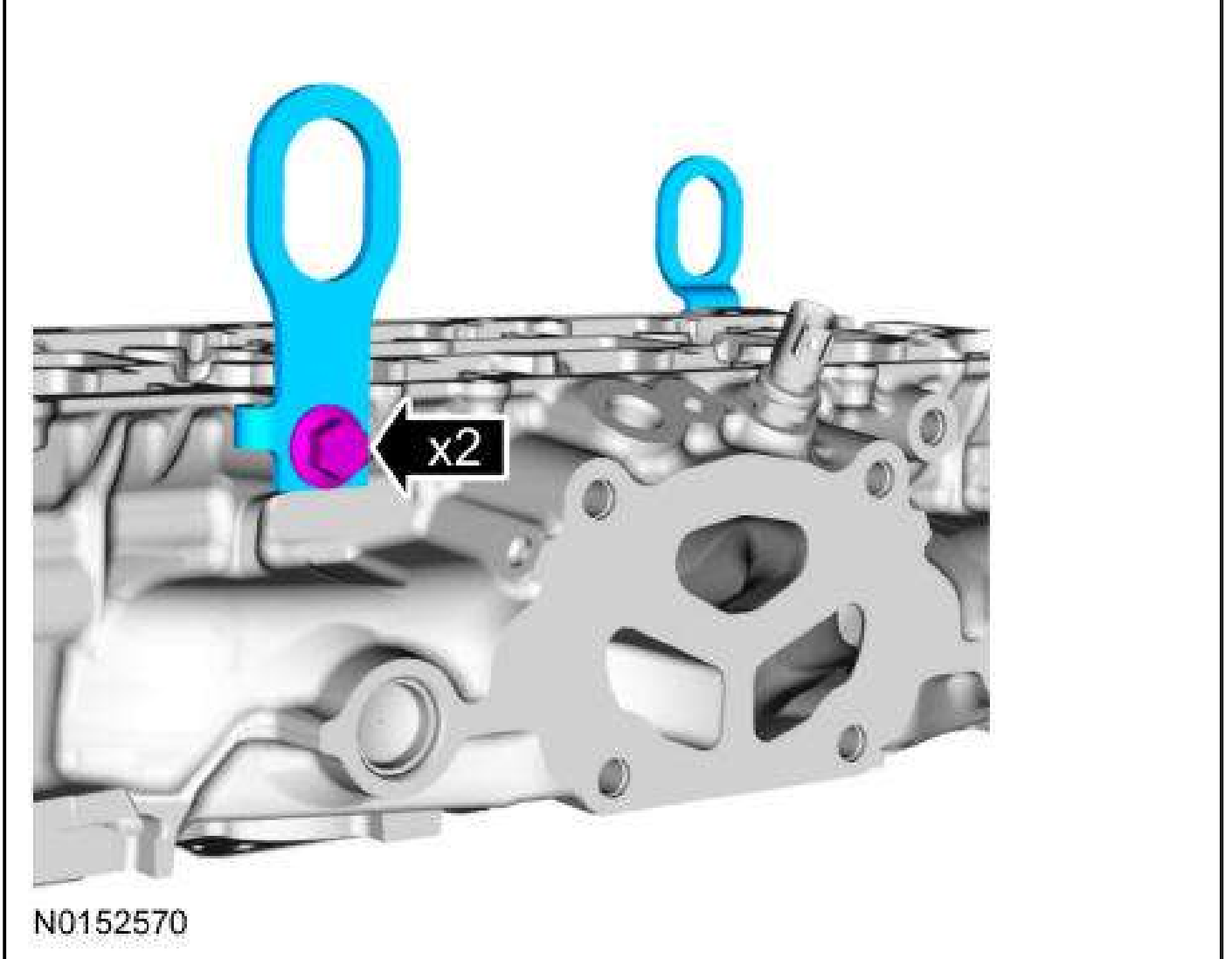
PISTON

For information on Ford Color Coded Illustrations refer to **OEM Color Coding** .

Materials

Name	Specification
Motorcraft Â® SAE 5W-30 Synthetic Blend Motor Oil XO-5W30-QSP	WSS-M2C946-A

Disassembly

NOTE: **If the piston and connecting rod are to be reinstalled, they must be assembled in the same orientation. Mark the piston orientation to the connecting rod reassembly.**

1. Remove and discard the piston rings.

vehicles use an alternative method of a single run of 5 tests to determine the presence of a leak. If a leak is still suspected after 2 consecutive runs of 4 tests, (8 total tests) or one run of 5 tests, a DTC sets and the MIL is illuminated.

5. The EONV EVAP leak check monitor is controlled by a separate low power consuming microprocessor inside the PCM. The fuel level input, fuel tank pressure, and battery voltage are inputs to the microprocessor. The microprocessor outputs are the EVAP canister vent valve and the stored test 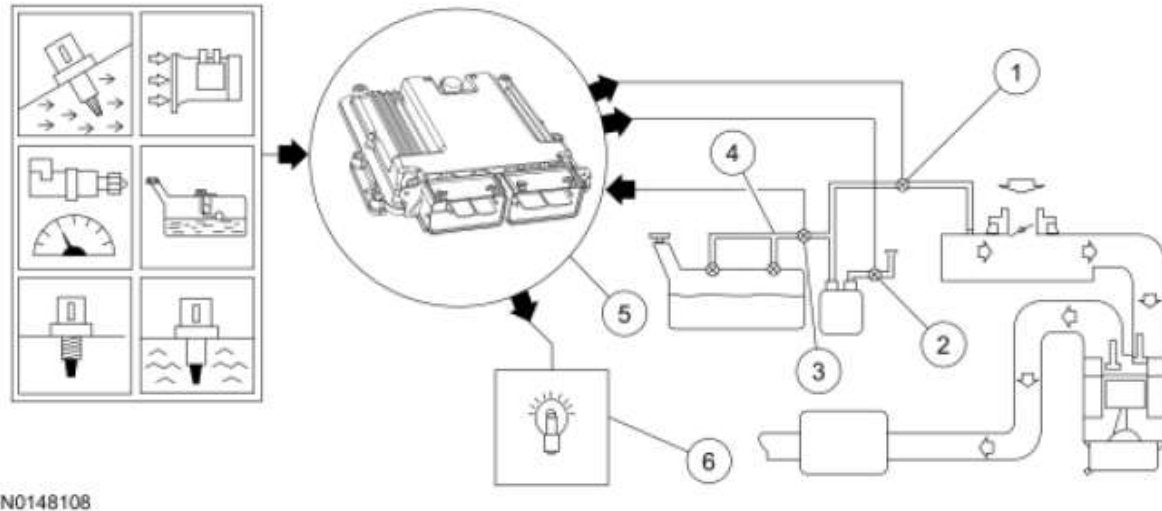information. If the separate microprocessor is unable to control the EVAP canister vent valve or communicate with other processors a DTC sets.

6. The MIL is activated for any enhanced EVAP system component DTCs.

N0148108

Fig. 124: EONV EVAP Leak Check Monitor System Flow Diagram
Courtesy of FORD MOTOR CO.

EXHAUST GAS RECIRCULATION (EGR) SYSTEM MONITOR

The EGR system monitor is an on board strategy designed to test the integrity and flow characteristics of the EGR system. The EGR system monitor consists of an electrical and functional test that checks the electric EGR valve and the EGR system components for correct operation.

After the vehicle has warmed up and normal EGR rates are being commanded by the PCM, the low flow check and the high flow check is carried out. The EGR flow diagnostics execute once per driving cycle and are designed to set a DTC when the total mass flow error results in an emissions increase above a calibrated level.

1. The EGR system uses inputs from the engine coolant temperature (ECT) sensor or cylinder head temperature (CHT) sensor, the intake air temperature (IAT) sensor, the crankshaft position (CKP) sensor, the manifold absolute pressure (MAP) sensor, exhaust gas reciculation temperature bank 1, sensor 2 (EGRT12), exhaust pressure (EP) sensor, differential pressure feedback EGR sensor and vehicle speed to provide information about engine operating conditions to the PCM.

2. The PCM uses the sensor inputs to determine the desired amount of EGR gas flow and controls the EGR valve to achieve the desired EGR flow rate.

3. The EP sensor (if equipped) measures the exhaust pressure by comparing the EP sensor calibrated value to the actual EP sensor value. The EP sensor is used primarily to determine EGR cooler effectiveness and is also used for converting EGR flow to EGR valve position.

4. The EGRT12 sensor (if equipped) measures the exhaust gas temperature downstream of the EGR cooler and is monitored by comparing the EGRT12 sensor calibrated value to the actual EGRT12 sensor value. The EGRT12 sensor is primarily used for EGR flow caluculation and is also used for EGR cooler diagnostics.

5. The monitor checks the electric EGR valve circuits for opens and shorts. The monitor compares the differential pressure feedback EGR sensor to a calibrated value and the electric EGR valve commanded position to determine if EGR flow is present.

6. The monitor checks for the differential pressure feedback EGR sensor for opens and shorts. The differential pressure feedback EGR sensor hoses are tested for connection and restriction at idle. The PCM commands the EGR valve closed and the monitor tests for the differential pressure

Vehicle	Connector	Pin	Circuit
Continental 3.7L, E-Series, Edge 3.5L, Explorer TiVCT 3.5L, Explorer 3.7L, F-650/F-750, F-Series Super Duty, Flex TiVCT 3.5L, MKT 3.7L, MKX 3.7L, Motorhome/Stripped Chassis/Step Van, Taurus TiVCT 3.5L, Taurus 3.7L, Transit 3.7L	198 PIN	E70 E69	CKP+ CKP-
EcoSport 1.0L Manual Transmission, Fiesta 1.0L, Fiesta GTDI 1.6L	198 PIN	E49	CKP
EcoSport 1.5L Automatic Transmission	198 PIN	E60	CKP
EcoSport 1.5L Manual Transmission	112 PIN	E35	CKP
Escape/Kuga 1.5L	198 PIN	E38	CKP
Escape/Kuga 2.5L, Fusion 2.5L, Transit Connect	198 PIN	E60 E59	CKP+ CKP-
Expedition, F-150 3.5L, Navigator	198 PIN	E27	CKP
F-150 2.7L, F-150 3.3L, F-150 5.0L, Mustang 5.0L	306 PIN	E78	CKP
Fiesta TiVCT 1.6L, Ranger	128 PIN	T6 T14	CKP+ CKP-
Focus GDI 2.0L	154 PIN	E45	CKP
KA 1.0L	128 PIN	E37	CKP
KA 1.5L	128 PIN	E38 E37	CKP+ CKP-
Mustang 2.3L	198 PIN	E23	CKP
Mustang 5.2L	198 PIN	E70 E60	CKP+ CKP-
All other vehicles	198 PIN	E11	CKP

TEST PROCEDURE

JD1 CHECK THE CKP SENSOR SIGNAL SENT TO THE PCM

NOTE: **The battery should be fully charged and the starting system should be functioning correctly.**

- Remove the fuel pump fuse to disable the fuel pump.
- Ignition ON, engine OFF.
- Access the PCM and monitor the RPM (RPM) PID.
- Crank the engine.

Is the RPM greater than 150 RPM?

Yes	No

Description:	The heated oxygen sensor monitor measures the response rate of the rear heated oxygen sensor (HO2S) to a rich to lean transition. This DTC sets when the measured response rate is slower than the threshold value.		
Possible Causes:	• Exhaust leaks before or near the HO2S12		
Diagnostic Aids:	This monitor is highly sensitive to exhaust leaks near the rear HO2S. Check for leaks in the exhaust system.		
Application	**Key On Engine Off**	**Key On Engine Running**	**Continuous Memory**
All	GO to **PINPOINT TEST DW** .		

DTC P013B - O2 SENSOR SLOW RESPONSE - LEAN TO RICH (BANK 1 SENSOR 2)

P013B - O2 SENSOR SLOW RESPONSE - LEAN TO RICH (BANK 1 SENSOR 2)

Description:	During a deceleration fuel shut-off (DFSO) event, the PCM monitors how quickly the heated oxygen sensor bank 1, sensor 2 (HO2S12) switches from lean to rich. The measured rate of the lean to rich switch is compared to a calibrated fault threshold value. The measured rate of the lean to rich switch is compared to a calibrated fault threshold value. This DTC sets when the measured value is slower than the threshold value.		
Possible Causes:	• Exhaust leaks before or near the HO2S12 • Damaged HO2S12		
Diagnostic Aids:	Check for leaks in the exhaust system.		
Application	**Key On Engine Off**	**Key On Engine Running**	**Continuous Memory**
All	GO to **PINPOINT TEST DW** .		

DTC P013C - O2 SENSOR SLOW RESPONSE - RICH TO LEAN (BANK 2 SENSOR 2)

P013C - O2 SENSOR SLOW RESPONSE - RICH TO LEAN (BANK 2 SENSOR 2)

Description:	The heated oxygen sensor monitor measures the response rate of the rear heated oxygen sensor (HO2S) to a rich to lean transition. This DTC sets when the measured response rate is slower than the threshold value.		
Possible Causes:	• Exhaust leaks before or near the HO2S22		
Diagnostic Aids:	This monitor is highly sensitive to exhaust leaks near the rear HO2S. Check for leaks in the exhaust system.		
Application	**Key On Engine Off**	**Key On Engine Running**	**Continuous Memory**
All	GO to **PINPOINT TEST DW** .		

DTC P013E - O2 SENSOR DELAYED RESPONSE - RICH TO LEAN (BANK 1 SENSOR 2)

P013E - O2 SENSOR DELAYED RESPONSE - RICH TO LEAN (BANK 1 SENSOR 2)

Description:	During a deceleration fuel shut-off (DFSO) event, the PCM monitors the heated oxygen sensor bank 1, sensor 2 (HO2S12) signal to determine if the signal is stuck in range. The PCM expects the signal to exceed a calibrated rich or lean value within a calibrated amount of time. If the signal voltage remains less than the rich value after a number of occurrences, the PCM intrusively controls the fuel system rich over increasing time periods in an attempt to force the signal to greater than the calibrated rich value. This DTC sets when, after three consecutive intrusive attempts, the signal cannot be forced greater than the calibrated rich value. Also, if the signal voltage remains greater than the lean value after a calibrated amount of time with the fuel injectors off, a counter is incremented. This DTC sets when after three consecutive occurrences the signal is not less than the calibrated lean value.		
Possible Causes:	• Exhaust leaks before or near the HO2S12		

Inputs	Component/PID Only	Measured/PID Values				Units Measured/PID
		KOEO	Hot Idle	48 KM/H (30 MPH)	89 KM/H (55 MPH)	
FPM	PID	41	40.99	39.98	39.99	%
FTP	FTP Sensor	2.62/12 (0)	2.66/72 (0.01)	2.13/-856 (-0.12)	2.52/-168 (-0.02)	VOLTS/Pa (PSI)
HTRCM12	HO2S12 Sensor	0	0	0	0	mA
HTRCM22	HO2S22 Sensor	0	0	0	0	mA
IAT	IAT Sensor	2.04/33 (91.4)	2.07/33 (91.4)	1.84/38 (100.4)	1.76/39 (102.2)	VOLTS/DEG C (DEG F)
INJPWR_M	PID	11.99	14.24	14.24	14.17	VOLTS
KEYST	Ignition Switch	ON	ON	ON	ON	ON/OFF
KNOCK_1	KS1 Sensor	0	103	182	246	COUNT
KNOCK_2	KS2 Sensor	0	78	149	166	COUNT
LOAD	PID	0.00 (I)	38.82	25.88	43.52	%
LONGFT1	PID	(I)	-20 TO +20	-20 TO +20	-20 TO +20	%
LONGFT2	PID	(I)	-20 TO +20	-20 TO +20	-20 TO +20	%
MAP	MAP Sensor	99 (14.36)	42 (6.09)	29 (4.21)	48 (6.96)	kPa (PSI)
MAP_GAUGE	MAP Sensor	2 (0.29)	59 (8.56)	72 (10.44)	53 (7.69)	kPa (PSI)
MAP_V	MAP Sensor	3.96	1.62	1.09	1.87	VOLTS
MIL_DIS	PID	0 (0)	0 (0)	0 (0)	0 (0)	KM (MILES)
MISFIRE	PID	NO	NO	NO	NO	YES/NO
MP_LRN	PID	YES	YES	YES	YES	YES/NO
NUM_MISFIRE	PID	0	0	3	3	COUNT
O2S11_CUR	HO2S11 Sensor	(I)	switching	switching	switching	mA/uA
O2S11_IMPED	HO2S11 Sensor	5	0.08	0.09	0.09	VOLTS
O2S11_READY	HO2S11 Sensor	NO	NO	YES	YES	YES/NO
O2S11_TR	HO2S11 Sensor	0	0	0	0	Kohm
O2S12	HO2S12 Sensor	(I)	switching (D)	switching (D)	switching (D)	VOLTS
O2S21_CUR	HO2S21 Sensor	(I)	switching	switching	switching	mA/uA
O2S21_IMPED	HO2S21 Sensor	5	0.09	0.09	0.09	VOLTS
O2S21_READY	HO2S21 Sensor	NO	NO	YES	YES	YES/NO
O2S21_TR	HO2S21 Sensor	0	0	0	0	Kohm
O2S22	HO2S22 Sensor	(I)	switching (D)	switching (D)	switching (D)	VOLTS
RO2FT1	PID	0	0	0	1.31	%
RO2FT2	PID	0	-0.79	0	-0.57	%
RPM	CKP Sensor	0	594.75	1183.25	1183.25	RPM
SHRTFT1	PID	(I)	-10 TO +10	-10 TO +10	-10 TO +10	%
SHRTFT2	PID	(I)	-10 TO +10	-10 TO +10	-10 TO +10	%
SYNC	PID	NO	YES	YES	YES	YES/NO
TP1	ETBTPS	4.10/17.64	4.30/13.72	4.20/15.68	4.18/16.07	VOLTS/%
TP1_LRN_TRIM	ETBTPS	15.25	15.25	15.25	15.25	DEG
TP2	ETBTPS	1.21/23.92	0.81/16.07	1.02/20.39	1.06/21.17	VOLTS/%
TP2_LRN_TRIM	ETBTPS	7.87	7.87	7.87	7.87	DEG
TP_MAXDIFF	PID	-0.06	0	0	0	%
TQ_CNTRL	PID	NONE REQUESTED	IDLE SPEED CONTROL	NONE REQUESTED	NONE REQUESTED	STATUS
VCTSYS	PID	OPEN LOOP	CLOSED LOOP	CLOSED LOOP	CLOSED LOOP	OPEN LOOP/CLOSED LOOP
VCT_EXH_ACT1	PID	0	0	0.06	25.06	DEG
VCT_EXH_ACT2	PID	0	-0.25	0	25.06	DEG
VCT_EXH_DIF1	PID	0	0	-0.06	0.06	DEG
VCT_EXH_DIF2	PID	0	0.25	0	0.06	DEG
VCT_INT_ACT1	PID	0	-0. 12	-18.12	-9.87	DEG
VCT_INT_ACT2	PID	0	-0.18	-17.68	-9.87	DEG
VCT_INT_DIF1	PID	0	0.12	48.64	0	DEG
VCT_INT_DIF2	PID	0	0.31	50.88	-0.06	DEG
VSS	PID	0	0	48 KM/H (30 MPH)	89 KM/H (55 MPH)	km/h/MPH

Outputs	Component/PID Only	Measured/PID Values				Units Measured/PID
		KOEO	Hot Idle	48 KM/H (30 MPH)	89 KM/H (55 MPH)	
CYL 1-6_ACCL	PID	(I)	-1 TO +1	-1 TO +1	-1 TO +1	NUMERIC VALUE
ETC [TAC_PCT]	PID	9.41	2.74	5.09	7.45	%
EVAP020C	PID	NO	NO	NO	NO	YES/NO
EVAPCP	EVAPCP Valve	0	12.29	89.27	47.35	%
EVAPCV	CANV Valve	0/OFF	0/OFF	0/OFF	0/OFF	%/ON-OFF
EVAPSOAK	PID	YES	YES	YES	YES	YES/NO
EVAPSTA	PID	NOT RUNNING	NOT RUNNING	6-MONITOR COMPL	6-MONITOR COMPL	STATUS
FP	Fuel Pump Control Module	75/OFF	35.54/ON	35.49/ON	39.99/ON	%/ON/OFF

REMOVAL AND INSTALLATION

CAMSHAFT POSITION (CMP) SENSOR LH

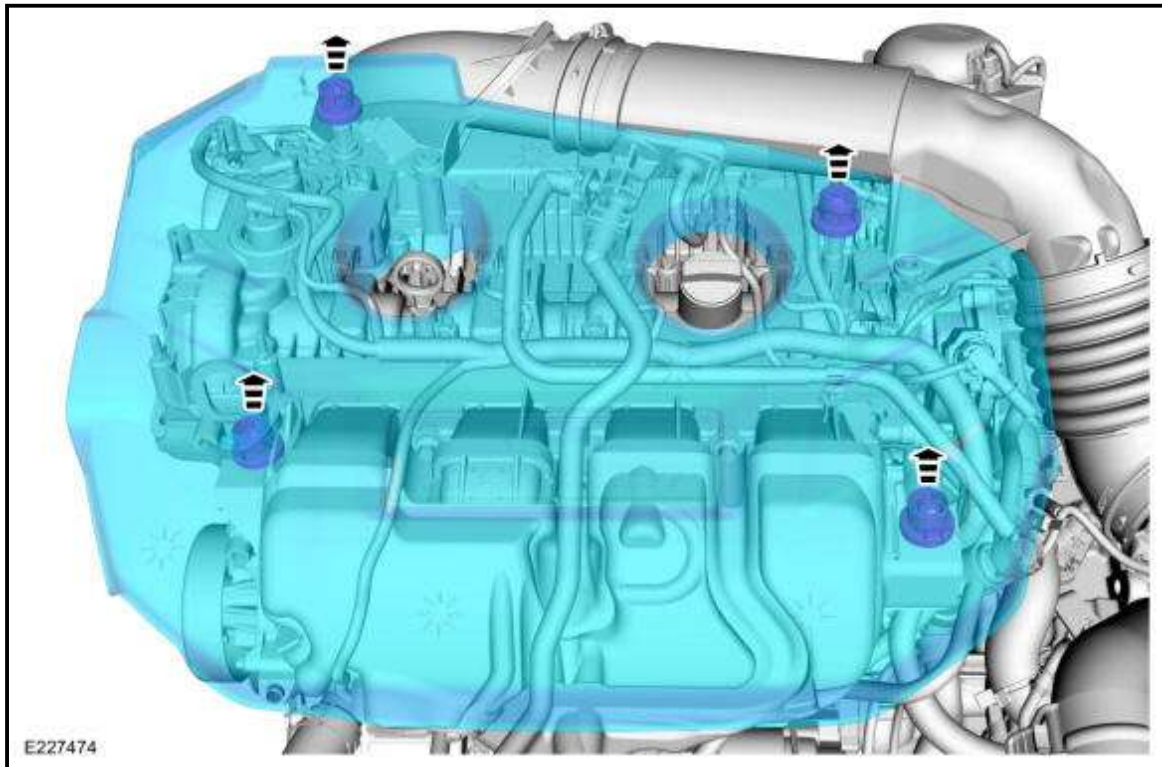For information on Ford Color Coded Illustrations refer to **OEM Color Coding**

Materials

Name	Specification
Motorcraft Ã‚Â® Silicone Brake Caliper Grease and Dielectric Compound XG-3-A	ESE-M1C171-A

REMOVAL

NOTE: Removal steps in this procedure may contain installation details.

1. **NOTE:** Do not pull the engine appearance cover forward or sideways to remove. Failure to press straight upward on the underside of the cover at the attachment points may result in damage to the cover or engine components.

   1. Place your hand under the engine appearance cover at each grommet location and push straight up to release each grommet from the studs.
   2. After all of the grommets have been released from the studs, remove the appearance cover from the engine.


2. Torque: 62 lb.in (7 Nm)

For information on Ford Color Coded Illustrations refer to **OEM Color Coding**

Materials

Name	Specification
Motorcraft Ã‚Â® Silicone Brake Caliper Grease and Dielectric Compound XG-3-A	ESE-M1C171-A

**NOTE:** Removal steps in this procedure may contain installation details.

1. **NOTE:** Do not pull the engine appearance cover forward or sideways to remove. Failure to press straight upward on the underside of the cover at the attachment points may result in damage to the cover or engine components.

   1. Place your hand under the engine appearance cover at each grommet location and push straight up to release each grommet from the studs.
   2. After all of the grommets have been released from the studs, remove the appearance cover from the engine.

E227474
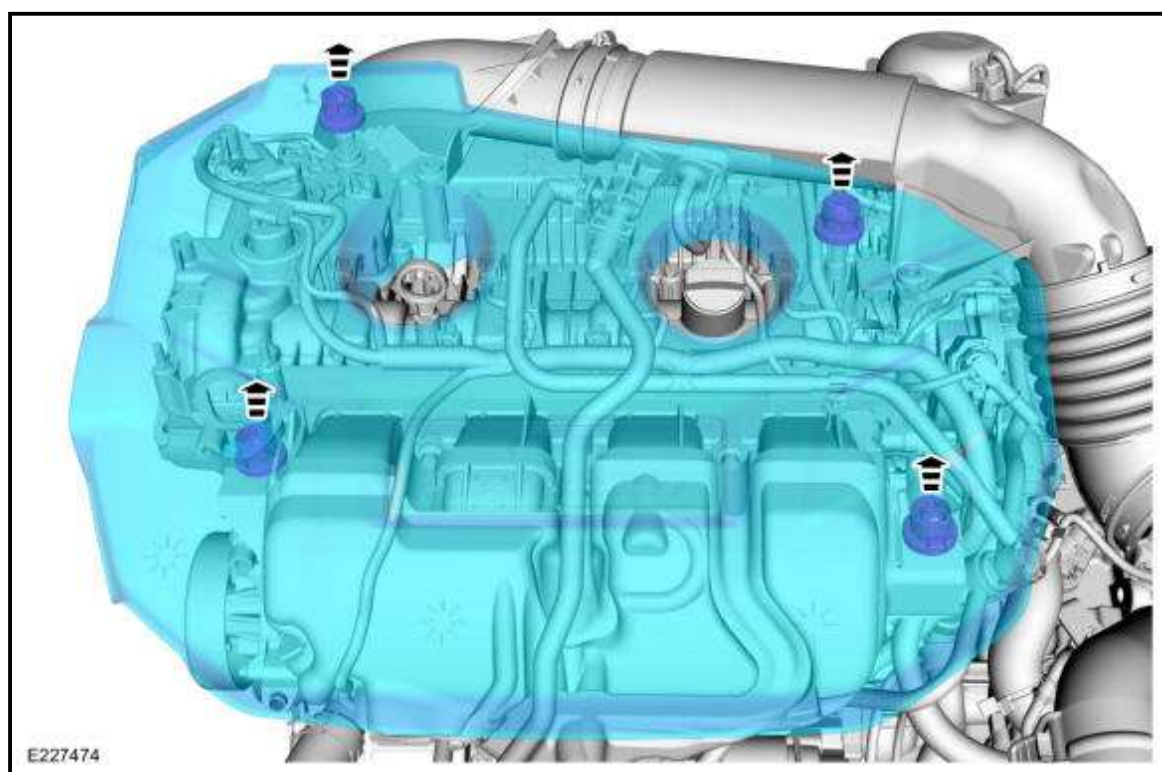
2. Remove the air cleaner outlet pipe. Refer to: **Air Cleaner Outlet Pipe** .
3. Disconnect the crankcase pressure sensor electrical connector and remove the crankcase vent tube.

E167264
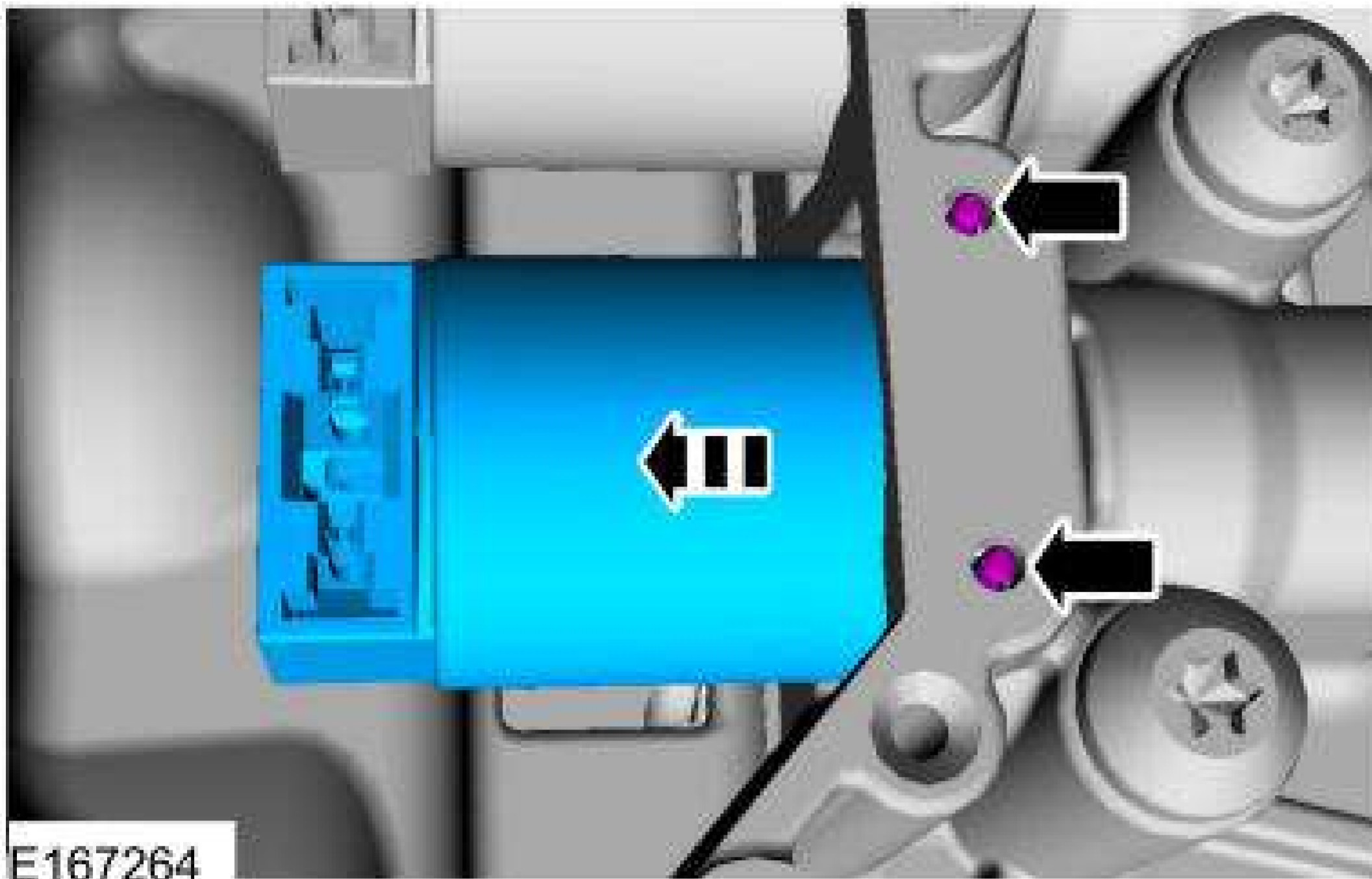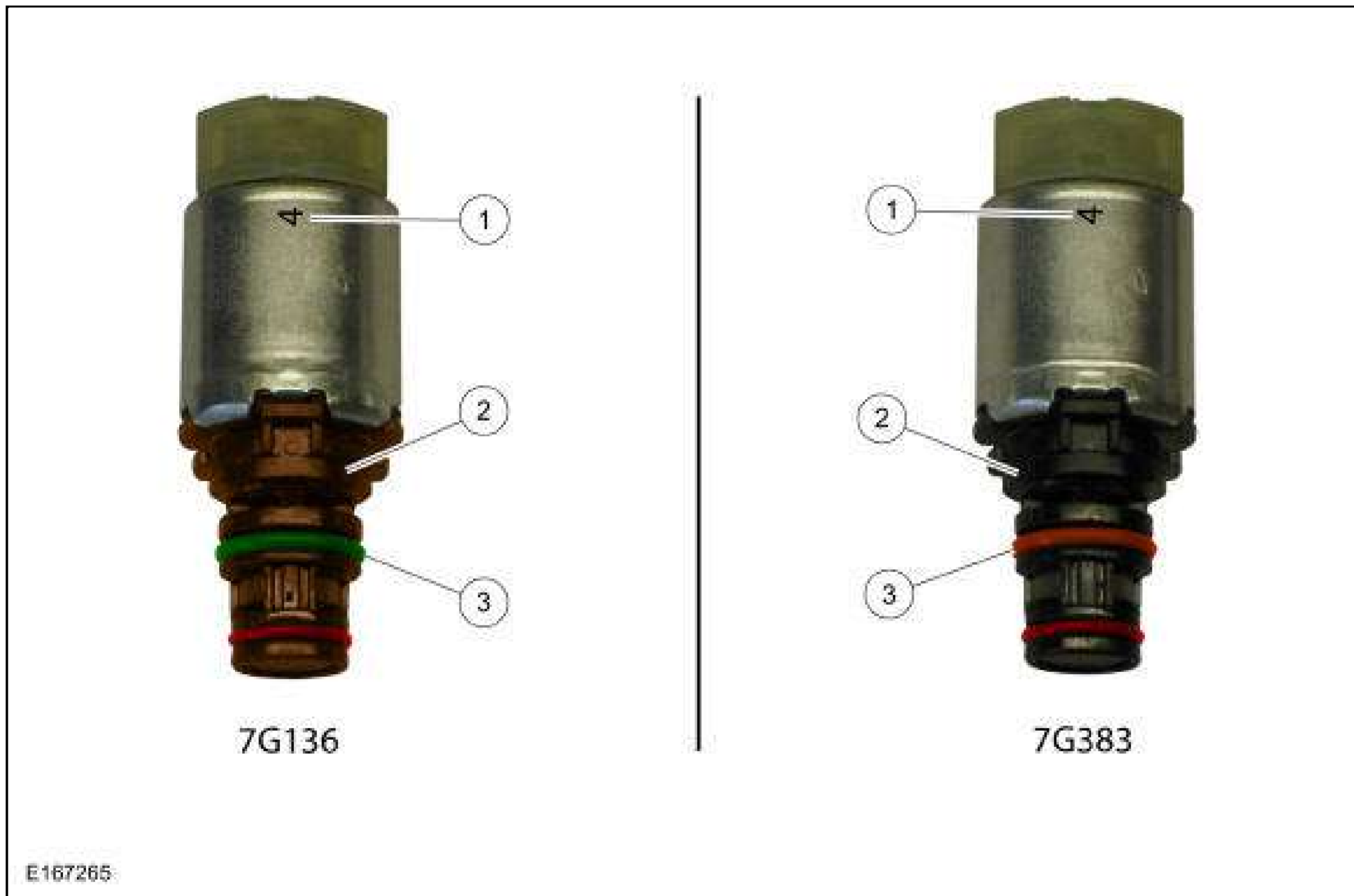
INSTALLATION

1. **NOTE:**   Verify replacement component matches original component:

   1. Number
   2. Color
   3. Color

7G136   7G383

E167265

2. **NOTE:**   Make sure the component is installed in the position noted before removal.

   Install the solenoid(s) in the solenoid body.

Condition	Code	Procedure
Attaching hardware missing	C	Require replacement of hardware
Attaching hardware not functioning	A	Require repair or replacement of hardware
Bearing worn	1	Suggest replacement
Belt tension incorrect	B	Require adjustment or repair
Bracket cracked	A	Require repair or replacement
Housing cracked	A	Require repair or replacement
Missing	C	Require replacement
Noisy	2	Suggest replacement
Pulley damaged, affecting belt life	A	Require replacement
Seized	A	Require repair or replacement

IN-LINE FILTERS

Condition	Code	Procedure
Connection leaking	A	Require repair or replacement
Leaking	B	Require repair or replacement
Restricted	A	Require replacement
Threads damaged	A	Require repair or replacement
Threads stripped (threads missing)	A	Require replacement

METAL FITTINGS

Condition	Code	Procedure
Abrasion damage, affecting structural integrity	A	Require repair or replacement
Abrasion damage, not affecting structural integrity	Â	No service suggested or required
Application incorrect	B	Require replacement
Attaching hardware broken	A	Require repair or replacement of hardware
Attaching hardware missing	C	Require replacement of hardware
Attaching hardware not functioning	A	Require repair or replacement of hardware
Clamp corroded, not reusable	1	Suggest replacement
Connected incorrectly	A	Require replacement
Corroded, affecting structural integrity	A	Require replacement
Corroded, not affecting structural integrity	Â	No service suggested or required
Cracked	B	Require repair or replacement
Fitting type incorrect (such as compression fitting)	B	Require replacement
Flange leaking	A	Require repair or replacement
Insufficient clamping force, allowing hose to leak	A	Require repair or replacement
Leaking	B	Require repair or replacement
Melted	1	Suggest repair or replacement
Missing	C	Require replacement
Outer covering damaged to the extent that the inner fabric is visible	A	Require replacement
Protective sleeves damaged	2	Suggest replacement of sleeves
Protective sleeves missing	C	Require replacement of sleeves
Restricted, affecting performance	A	Require repair or replacement
Routed incorrectly	B	Require repair
Swollen	1	Suggest replacement
Threads damaged	A	Require repair or replacement
Threads stripped (threads missing)	A	Require replacement
Type incorrect	2	Suggest repair or replacement