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2008 FORD Mondeo Sedan OEM Service and Repair Workshop Manual

Go to manual page

- CONNECT the vehicle included electric vehicle supply equipment (EVSE) and wall outlet connector to a known good 120V or 240V wall outlet and wait 1 minute.

Is the Amber fault indicator - OFF, Blue status indicator - OFF, Red trouble indicator - ON (BLINKING) when connected to power outlet?

Yes	If the amber indicator is illuminated and the blue and red indicators are not illuminated disconnect the EVSE from the wall outlet and connect to another wall outlet. If the concern is still present swap the EVSE cord connector from the 120V or 220V (use the 240V connector if using 120V or vise versa) and re-connect to another known good corresponding wall outlet. If the concern is corrected replaced the faulty EVSE wall plug connector. If the concern is still present replace the customers Electric Vehicle Supply Equipment (EVSE).

No	The concern is not at this time. Consult with customer to determine when the concern occurred. If concern occurred within 1 minute after connecting the EVSE to a wall plug advise customer they may have used a faulty wall outlet.

PINPOINT TEST BV : ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) DISPLAYS FOLLOWING FAULT: AMBER FAULT INDICATOR - OFF, BLUE STATUS INDICATOR - OFF, RED TROUBLE INDICATOR - ON (SOLID)

Refer to Wiring Diagrams Cell 12for schematic and connector information.

Normal Operation and Fault Conditions The Electric Vehicle Supply Equipment (EVSE) is supplied with the vehicle when purchased and used to charge the high voltage battery. The Electric Vehicle Supply Equipment (EVSE) monitors for faults. The blue status indicator indicates the Electric Vehicle Supply Equipment (EVSE) is receiving power from the wall outlet and during normal operation it will illuminate solid or flash every two seconds during charging. The reason the Electric Vehicle Supply Equipment (EVSE) does illuminates a Amber fault indicator - OFF, Blue status indicator - OFF, Red trouble indicator - ON (SOLID) is the EVSE detects AC (alternating current) ground current >17.5mA or DC (direct current) ground current >6.0mA. **Possible Sources**

- Wall power outlet - Ground Fault Interrupter (GFI) or Residual-Current Device (RCD) trip
- Moisture in the wall outlet
- 120V or 220V wall outlet connector
- Electric Vehicle Supply Equipment (EVSE)

Visual Inspection and Pre-checks

- Inspect the wall outlet for signs of moisture.

NOTE

Equipment (EVSE) is receiving power from the wall outlet and during normal operation it will illuminate solid or flash every two seconds during charging. The reasons the Electric Vehicle Supply Equipment (EVSE) does illuminates a Amber fault indicator - ON, Blue status indicator - ON, Red trouble indicator - ON (SOLID) is an out of range pilot voltage or the EVSE detects an internal error. **Possible Sources**

- Pilot voltage out of range
- Electric Vehicle Supply Equipment (EVSE)

NOTE

When the vehicle equipped EVSE is first plugged into a wall outlet the AMBER, BLUE and RED indicators blink once. Then the BLUE indicator turns on, followed by a blink of the RED indicator, and finally followed by the BLUE indicator turning off then back on. This cycle occurs twice if switching the connector adapter from a previous charge.

BW1 RETRIEVE THE SOBDM (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, perform SOBDM (secondary on-board diagnostic control module A) self-test.

Are DTC (diagnostic trouble code) s P0CF4:29, P0CF4:77, P0CF5:00, P0CF7:00, P0CF7:66 and/or P0D2B:38 present?

Yes	GO to Pinpoint Test C
No	GO to BW2

BW2 CONNECT THE VEHICLE INCLUDED ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) OPERATION CONNECTED TO A KNOWN GOOD WALL OUTLET AND THE VEHICLE

NOTE

Be sure the power outlet is a known good outlet.

- CONNECT the customer owned electric vehicle supply equipment (EVSE) and connector to a known good 120V or 220V wall outlet and the vehicle charge port.
- Wait 1 minute.

Yes	If the LED (light emitting diode) segments are inoperative, GO to BX2 If the CSI (Charge Status Indicator) LED (light emitting diode) segments indicate a charge status fault, GO to BX3

No	The concern is not present at this time and may be related to a faulty EVSE being used.

BX2 VERIFY THE CHARGE STATUS INDICATOR (CSI) IS TURNED ON

- • From the touchscreen display Select "Settings" then "Vehicle"

Is the charge port light toggle set to ON?

Yes	Change the charge port light toggle to ON. CHECK for normal operation. If the concern is still present, GO to BX3

No	GO to BX3

BX3 CHECK SOBDM (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, perform SOBDM (secondary on-board diagnostic control module A) self-test.

Are any DTC (diagnostic trouble code) s present?

Yes	ADDRESS the DTC (diagnostic trouble code) s. Refer to the DTC (diagnostic trouble code) chart in this section. INSTALL a new Charge Status Indicator (CSI) if there is an inoperative LED (light emitting diode) segment. REFER to: Charge Status Indicator (CSI) - Electric (414-03B High Voltage Battery Charging System, Removal and Installation).

No	VERIFY correct EVSE (Electric Vehicle Supply Equipment) operation. REFER to the symptom chart in this section.

	(414-03A High Voltage Battery, Mounting and Cables, Diagnosis and Testing).

No	Consult with customer about the different factors that affect charging times. Suggestions to reduce charge times: 1. Keep ignition turned OFF while charging. 2. Use only a dedicated wall power outlet. 3. Use cabin pre-conditioning only when necessary. 4. Use of level 2 charging (240V) wall outlet or level 3 DC (direct current) fast charge station.

PINPOINT TEST BZ : VEHICLE NOT CHARGING WITH ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) CONNECTED WITHOUT DIAGNOSTIC TROUBLE CODES (DTCS)

Refer to Wiring Diagrams Cell 12for schematic and connector information.

Normal Operation and Fault Conditions

The amount of time required to fully charge the high voltage battery depends on many different factors, including:

- Type of Electrical Vehicle Supply Equipment (EVSE) - Different EVSE's support different charge rates.
- Temperature of high voltage battery - Extreme ambient temperatures reduces the charge rate of the high voltage battery.
- Cabin Pre-conditioning (remote start) - When requested the vehicle preconditions the cabin temperature prior to vehicle use. The electricity that would normally be used to charge the battery is used for operating the cabin coolant heater and blower motor to warm the interior, or the ACCM (air conditioning control module) and blower motor to keep the interior cool.
- Initial high voltage battery SOC (State of Charge) - If the high voltage battery state of charge is depleted to 10%, it takes longer to charge to 100% than it takes to charge a high voltage battery from 50% to 100%.
- Electrical loads - Any electrical load placed on the vehicle requires energy from the high voltage battery, via the DCDC (direct current/direct current converter control module)

Possible Sources

- 12-volt Battery
- Electric Vehicle Supply Equipment (EVSE)
- Vehicle in CHARGE LATER or VALUE CHARGE time window
- Pilot circuit open/shorted
- SOBDM (secondary on-board diagnostic control module A)

BZ1 VERIFY THE VEHICLE IS IN CHARGE NOW STATUS

- • From the touchscreen display Select Settings; Swipe to "Charge Settings"

BZ4 CHECK FOR SOBDM (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, perform SOBDM (secondary on-board diagnostic control module A) self-test.

Are any SOBDM (secondary on-board diagnostic control module A) DTCs present?

Yes	DIAGNOSE and REPAIR the SOBDM (secondary on-board diagnostic control module A) DTCs. Refer to the DTC (diagnostic trouble code) chart in this section.

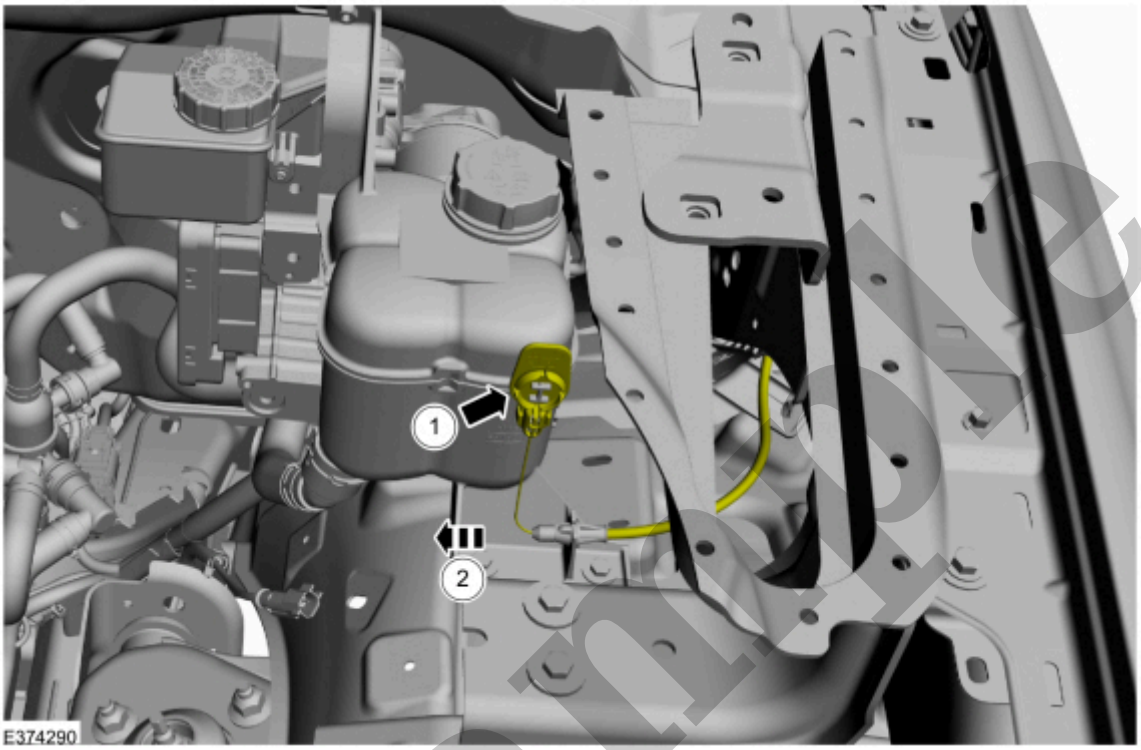
No	Perform pinpoint test steps **C2 - C5** . GO to Pinpoint Test C

4. Disconnect the 12V battery.

   Refer to: Battery Disconnect and Connect - Electric(414-01 Battery, Mounting and Cables, General Procedures).

5. 1. Detach the manual charge cord release cable tab from the degas bottle.

   2. Pull the manual charge cord lock actuator release cable tab.



Click here to learn about symbols, color coding, and icons used in this manual.

6. Disconnect the EVSE charge cord from the vehicle.

Charge Port - Electric

414-03B High Voltage Battery Charging System	***2022 F-150***
Removal and Installation	***Procedure revision date: 05/24/2022***

Charge Port - Electric

Removal

WARNING

To prevent the risk of high-voltage shock, always follow precisely all warnings and service instructions including instructions to depower the system. The high-voltage system utilizes high-voltage cables to its components and modules. The high-voltage cables and wiring are identified by orange harness tape or orange wire covering. All high-voltage components are marked with high-voltage warning labels with a high-voltage symbol. Failure to follow these instructions may result in serious personal injury or death.

NOTE

The external high voltage battery charger must be disconnected before performing the following steps.

NOTE

Removal steps in this procedure may contain installation details.

1. Refer to: High Voltage System Health and Safety Precautions - Overview(100-00 General Information, Description and Operation).

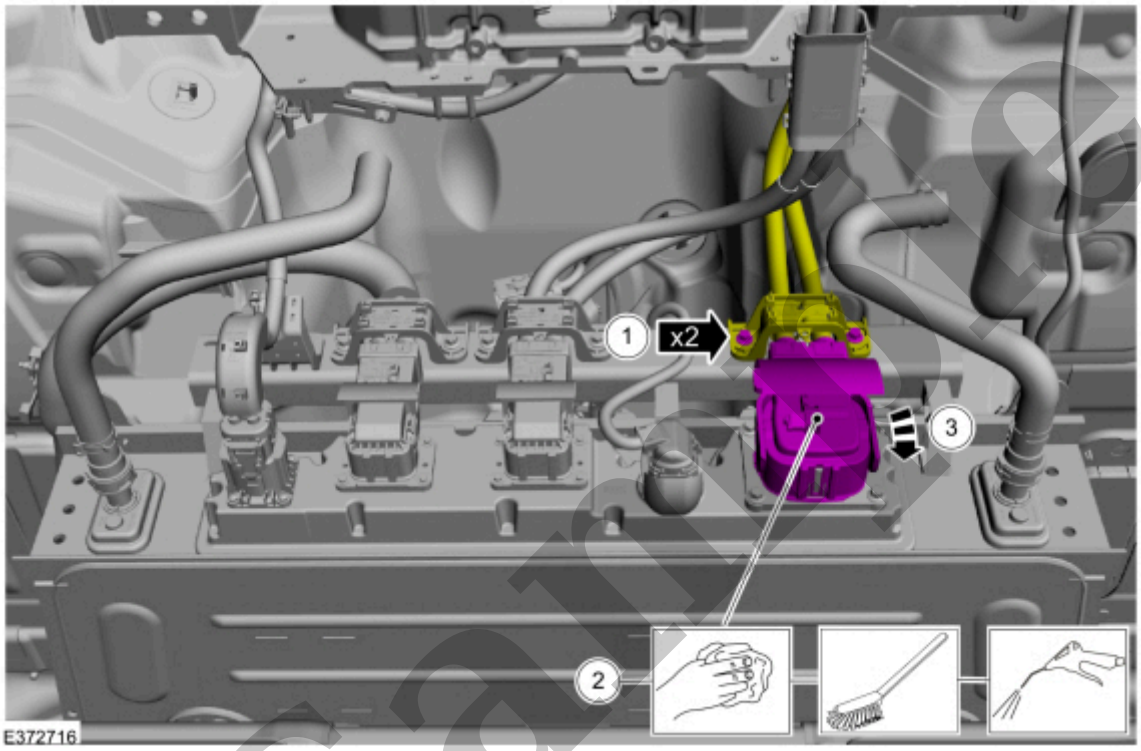
2. De-energize the high voltage system.

2. Clean the high voltage battery electrical connector with a nylon brush. Blow any dirt or debris from the electrical connector with compressed air.

3. **NOTE**

   To aid in disconnecting the high voltage battery electrical connector, gently pull the base of the connector while releasing the lock lever.

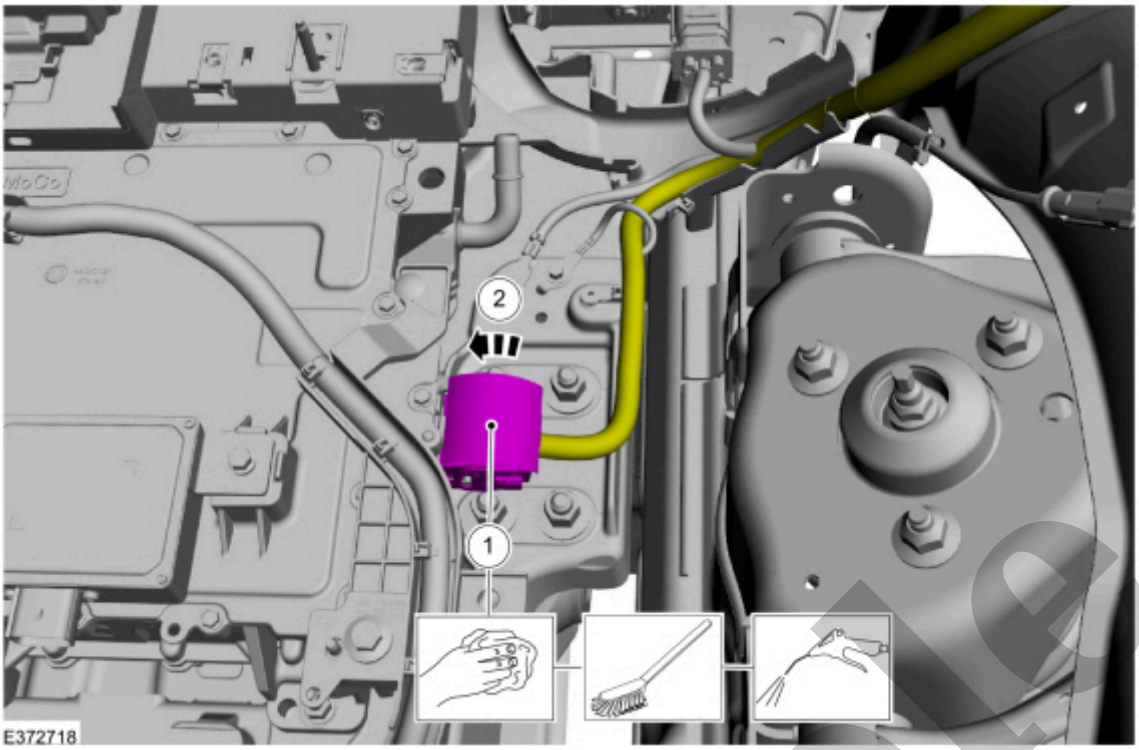
   Release the lock lever and disconnect the high voltage battery electrical connector.



7. **NOTICE**

   When installing the charge port cables, each cable must be placed in the channel of the cable shield that it was removed from. Incorrectly installing the cables into the cable shield may cause component damage.

   1. Using a marker, place a mark at the location of the cable and zip tie securing the charge port cable to the cable shield.
   2. Cut the zip ties and position the wire harness aside.
   3. The charge port cable must be installed in the channel of the cable shield that it was removed from.



Click here to learn about symbols, color coding, and icons used in this manual.

9. 1. Remove the wire harness bolt.

   Torque : 93 lb.in (10.5 Nm)

   2. Remove the wire harness bolt.

   Torque : 71 lb.in (8 Nm)

   3. Detach the retainer and position the wire harness aside.