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2006 FORD Mondeo Hatchback OEM Service and Repair Workshop Manual

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No	INSTALL a new high voltage cable. REFER to: High Voltage Battery Cables - Electric (414-03A High Voltage Battery, Mounting and Cables, Removal and Installation). Repower the high voltage system. Operate the system performing at least 2 ignition cycles.

Z6 CHECK THE HIGH VOLTAGE BATTERY CABLE TO REAR SOBDMC (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE C) FOR BEING SHORTED

- Disconnect High Voltage Battery C293 .
- Disconnect GFM2 (generic function module 2) (if equipped) C3003C .
- Disconnect GFM3 (generic function module 3) (if equipped) C4631C .
- Disconnect DCACA (Direct Current/Alternating Current Converter Module A) C4632C .
- Disconnect ACCMB (Air Conditioning Control Module B) (max trailer tow vehicles ONLY) C1039B .
- Disconnect SOBDMC (secondary on-board diagnostic control module C) C3471B .
- Take measurements while performing a wiggle test of the high-voltage cable assembly.
  High Voltage Battery

Positive Lead	Measurement / Action	Negative Lead
C293-1	Ω	C293-2

Are the resistances greater than 400,000 ohms?

Yes	For vehicles with max trailer tow ONLY, GO to Z7 For vehicles without max trailer tow and equipped with dual chargers and inverters ONLY, GO to Z8 For vehicles without max trailer tow and not eqiupped with dual chargers and inverters ONLY, GO to Z10

Z8 TEST THE SYSTEM WITH THE GFM2 (GENERIC FUNCTION MODULE 2) ISOLATED

NOTICE

Cover the high voltage connectors with electrical tape to prevent accidental exposure to high voltage.

- Ignition OFF.
- Depower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Disconnect GFM2 (generic function module 2) C3003C .
- Connect High Voltage Battery C293 (if not previously connected) .
- Connect GFM3 (generic function module 3) C4631C (vehicles equipped with dual inverters ONLY) .
- Connect DCACA (Direct Current/Alternating Current Converter Module A) (if not previously connected) C4632C .
- Connect SOBDMC (secondary on-board diagnostic control module C) (if not previously connected) C3471B .
- Repower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Operate the system performing at least 2 ignition cycles.
- Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).
- Using a diagnostic scan tool, perform BECM (battery energy control module) self-test.

Is DTC (diagnostic trouble code) P0C78:00 and/or P2C89:00 present?

Yes	GO to Z9

No	INSTALL a new ACCMB (Air Conditioining Compressor Control Module B) . REFER to: Refrigerant Compressor (302-03B Electrified Drivetrain Cooling - High Voltage Battery Refrigerant Cooling, Removal and Installation).

Z9 TEST THE SYSTEM WITH THE GFM3 (GENERIC FUNCTION MODULE 3) ISOLATED

NOTICE

- Connect High Voltage Battery C293 (if not previously connected) .
- Repower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Operate the system performing at least 2 ignition cycles.
- Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).
- Using a diagnostic scan tool, perform BECM (battery energy control module) self-test.

Is DTC (diagnostic trouble code) P0C78:00 and/or P2C89:00 present?

Yes	GO to Z15

No	INSTALL a new 2.4kW DCACA (Direct Current/Alternating Current Converter Module A) . REFER to: Direct Current/Alternating Current (DC/AC) Inverter - Electric, Vehicles With: Pickup Bed Power Outlet (414-05 Voltage Converter/Inverter, Removal and Installation).

Z11 TEST THE SYSTEM WITH THE AUXILIARY COMPONENTS ISOLATED

NOTICE

Cover the high voltage connectors with electrical tape to prevent accidental exposure to high voltage.

- Ignition OFF
- Depower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Disconnect Cabin Coolant Heater C1815B .
- Disconnect DC/DC Converter Control Module C1457A .
- Disconnect ACCM (air conditioning control module) C1832B .
- Disconnect SOBDM (secondary on-board diagnostic control module A) C1821C .
- Connect High Voltage Battery C295 .
- Repower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Operate the system performing at least 2 ignition cycles.
- Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).

NOTICE

Cover the high voltage connectors with electrical tape to prevent accidental exposure to high voltage.

- Ignition OFF.
- Depower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Connect Cabin Coolant Heater C1815B .
- Connect DC/DC Converter Control Module C1457A .
- Repower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Operate the system performing at least 2 ignition cycles.
- Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).
- Using a diagnostic scan tool, perform BECM (battery energy control module) self-test.

Is DTC (diagnostic trouble code) P0C78:00 and/or P2C89:00 present?

Yes	GO to Z13

No	GO to Z14

Z13 TEST THE SYSTEM WITH THE CABIN COOLANT HEATER ISOLATED

- Ignition OFF.
- Depower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Disconnect Cabin Coolant Heater C1815B .
- Repower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Operate the system performing at least 2 ignition cycles.
- Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).
- Using a diagnostic scan tool, perform BECM (battery energy control module) self-test.

Z15 CHECK THE SOBDMC (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE C) FOR A SHORT

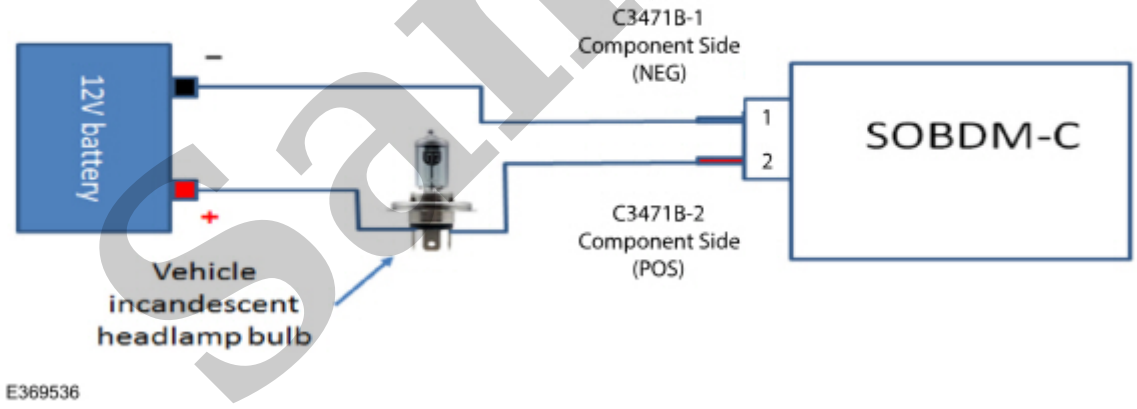
- Ignition OFF.
- Depower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Disconnect SOBDMC (secondary on-board diagnostic control module C) C3471B .
- **NOTE**

  This test is polarity dependent. If the polarity is reversed the light bulb will remain illuminated and lead to incorrect diagnoses.

  NOTE

  The use of a 1157 bulb or equivalent incandescent test lamp rated for 1A of current is required for this test.

  Make the connections as shown:



When circuit is connected, does the light bulb turn on initially and then turns off completely or does the light bulb fail to illuminate at all?

Yes	GO to Z16

No	If the light bulb remains illuminated continuously for both polarities INSTALL a new SOBDMC (secondary on-board diagnostic control module C) .

No	If the light bulb remains illuminated continuously for both polarities INSTALL a new SOBDMB (Secondary On-Board Diagnostic Control Module B (SOBDMB)) . REFER to: Inverter System Controller [SOBDMB] (302-01 Front Electric Drive Assembly, Removal and Installation).

Z17 CHECK FOR NORMAL BECM (BATTERY ENERGY CONTROL MODULE) OPERATION

- RECONNECT all connectors verifying they are fully seated.
- INSTALL a new BECM (battery energy control module) .
  REFER to: Battery Energy Control Module (BECM) - Electric(414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).
- Repower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Operate the system performing at least 2 ignition cycles.
- Using a diagnostic scan tool, perform BECM (battery energy control module) self-test.

Is DTC (diagnostic trouble code) P2C89:00 and/or P0C78:00 retrieved?

Yes	INSTALL a new high voltage battery junction box - positive. REFER to: High Voltage Battery Junction Box - Electric (414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).

No	The concern may have been caused by connections. Address the root cause of any connector or pin issues.

PINPOINT TEST AA : P0AE4:00, P0AE6:00, P0AE7:00

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

Normal Operation and Fault Conditions When the ignition is turned on, the BECM (battery energy control module) makes various vehicle checks. If these checks are normal, the BECM (battery energy control module) sends a signal to the contactor to close, which will supply high-voltage power to the vehicle. The BECM (battery energy control module) monitors the precharge contactor control circuits for overcurrent, undercurrent, and open circuit faults. The BECM (battery energy control module) will illuminate the powertrain malfunction (wrench) indicator and MIL (malfunction indicator lamp) when the fault condition is

NOTE

If SOBDMC DTC P1A10:00 is present the ignition must be turned OFF for a minimum for 5 minutes after clearing all continuous DTC's to reset it prior to performing the next pinpoint test step.

AA1 RETRIEVE ALL BECM (BATTERY ENERGY CONTROL MODULE) DTCS

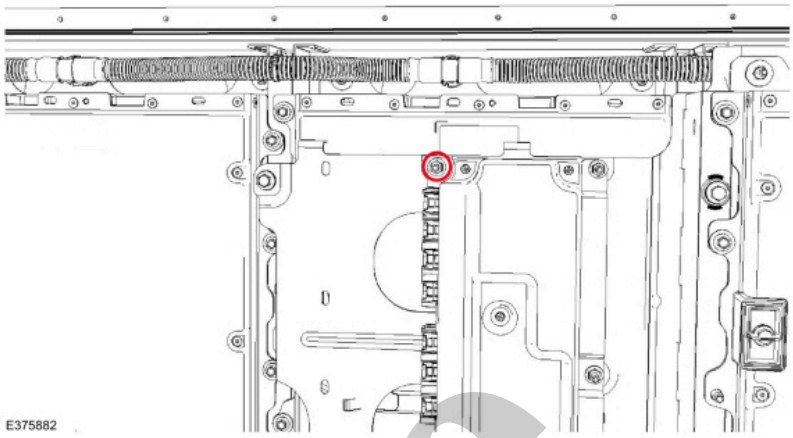
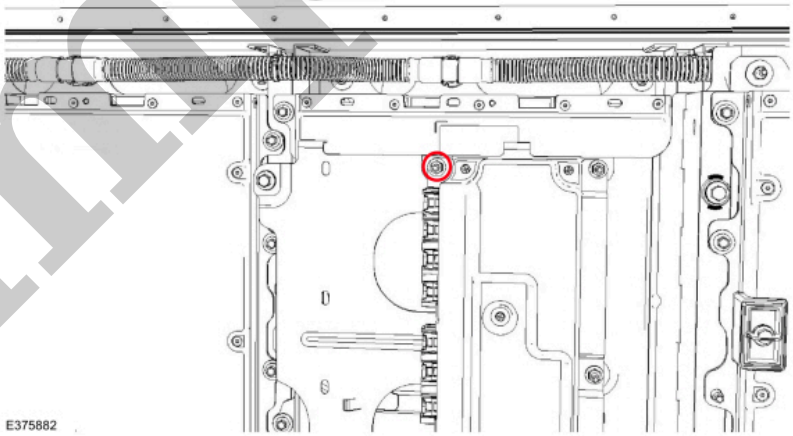
- Ignition ON.
- Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).
- Operate the system performing at least 2 ignition cycles.
- Using a diagnostic scan tool, perform BECM (battery energy control module) self-test and record the Diagnostic Trouble Codes (DTCs).

Is DTC (diagnostic trouble code) P0AE4:00, P0AE6:00, and/or P0AE7:00?

Yes	If DTC (diagnostic trouble code) U3012:00 is present, REFER to the BECM (battery energy control module) DTC (diagnostic trouble code) chart and diagnose the DTC (diagnostic trouble code) first. If U3012:00 DTC (diagnostic trouble code) is NOT present, GO to AA2
No	The concern is not present at this time.

AA2 CHECK CONTACTOR CIRCUITS FOR A SHORT TO CASE GROUND

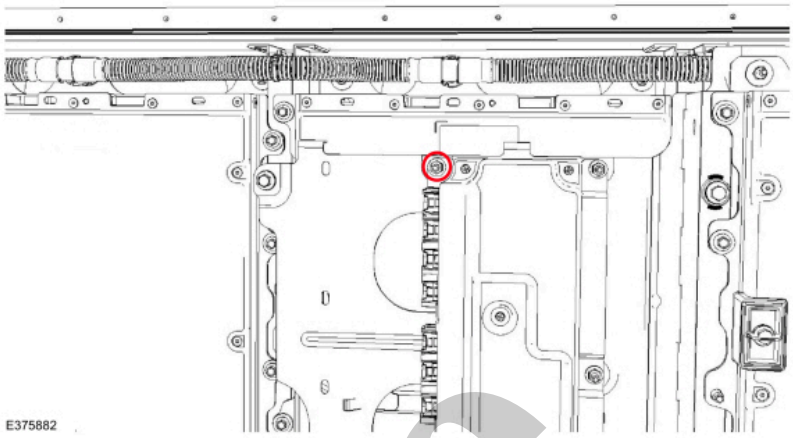
- Ignition OFF.
- Depower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Remove the high voltage battery.
  REFER to: High Voltage Battery - Electric(414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).
- Remove the high voltage battery cover.
  REFER to: High Voltage Battery Cover - Electric(414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).
- Disconnect all the BECM (battery energy control module) connectors in sequence.
  REFER to: Battery Energy Control Module (BECM) - Electric(414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).

	C4815G-4	Ω	 CASE GROUND
	C4815G-2	Ω	 CASE GROUND

Is the resistance greater than 10,000 ohms?

Yes	GO to AA5

No	GO to AA3

	C4815G-2	Ω	 CASE GROUND

Is the resistance greater than 10,000 ohms?

Yes	INSTALL a new high voltage battery connector assembly. REFER to: High Voltage Battery Connector Assembly - Electric (414-03A High Voltage Battery, Mounting and Cables, Removal and Installation). Re-install the high voltage battery cover and the high voltage battery. Repower the high voltage system. REFER to: High Voltage System De-energizing - Electric (414-03A High Voltage Battery, Mounting and Cables, General Procedures). Clear the BECM (battery energy control module) DTC's. Repeat the self-test

No	GO to AA4

AA4 CONFIRM THE LOCATION OF THE GROUNDED CIRCUIT

- Disconnect high voltage battery junction box low voltage inline C4240 .
- Measure:

NOTE

Any of the BECM (battery energy control module) bracket mounting nuts or high voltage battery pack case can be utilized for case ground.