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2006 FORD S-Max OEM Service and Repair Workshop Manual

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Yes	CONNECT the module. GO to Pinpoint Test AO

No	CONNECT the module. GO to Pinpoint Test AC

B19 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE ABS (ANTI-LOCK BRAKE SYSTEM) MODULE DISABLED

NOTE

When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCMC (body control module C) [BJB (battery junction box)] fuses 23 (10A), 28 (50A) and 29 (50A).
- Using a diagnostic scan tool, carry out the network test.

Do all other FD-CAN (Flexible Data Rate Controller Area Network) modules pass the network test?

Yes	INSTALL the removed fuses. GO to Pinpoint Test H

No	INSTALL the removed fuses. GO to B20

B20 VERIFY VEHICLE EQUIPMENT - CMR (CAMERA MODULE - REAR)

- Inspect the vehicle for a CMR (Camera Module - Rear) .

Is the vehicle equipped with a CMR (Camera Module - Rear) ?

Yes	GO to B21

No	GO to B22

B21 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE CMR (CAMERA MODULE - REAR) DISABLED

No	INSTALL the removed fuses. GO to B24

B24 VERIFY VEHICLE EQUIPMENT - VDM (VEHICLE DYNAMICS CONTROL MODULE)

- Inspect the vehicle for a VDM (vehicle dynamics control module) .

Is the vehicle equipped with a VDM (vehicle dynamics control module) ?

Yes	GO to B25

No	GO to B26

B25 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE VDM (VEHICLE DYNAMICS CONTROL MODULE) DISCONNECTED

NOTE

When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: VDM (vehicle dynamics control module) C4396.
- Using a diagnostic scan tool, carry out the network test.

Do all other FD-CAN (Flexible Data Rate Controller Area Network) modules pass the network test?

Yes	CONNECT the module. GO to Pinpoint Test AR

No	CONNECT the module. GO to B26

B26 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE IPMA (IMAGE PROCESSING MODULE A) DISABLED

NOTE

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.

B28 CHECK FOR CORRECT CMR (CAMERA MODULE - REAR) OPERATION

- Ignition OFF.
- Disconnect and inspect the CMR (Camera Module - Rear) connector.
- 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 CMR (Camera Module - Rear) connector. Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) If a service article exists for this concern, DISCONTINUE this test and FOLLOW service article instructions. If no service articles address this concern, INSTALL a new CMR (Camera Module - Rear) . REFER to: Driver Status Monitor Camera Module [CMR] (419-04B Interior Camera System, Removal and Installation).

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.

B29 CHECK FOR CORRECT GWM (GATEWAY MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM (gateway module A) connector.
- 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 GWM (gateway module A) connector. Make sure it seats and latches correctly.

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.

B31 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the PCM (powertrain control module) 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 PCM (powertrain control module) connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern,  Guided Routine available in the on-line Workshop Manual.

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.

B32 CHECK FOR CORRECT PSCM (POWER STEERING CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the PSCM (power steering control module) connectors and related in-line connectors.
- Repair:
  - corrosion (install new connector or terminals - clean module pins)

	(303-14F Electric Powertrain Control - 3.5L V6 PowerBoost (CN), Removal and Installation).

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.

B34 CHECK FOR CORRECT TCCM (TRANSFER CASE CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the TCCM (transfer case control module) 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 TCCM (transfer case control module) connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . 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 TCCM (transfer case control module) . REFER to: Transfer Case Control Module (TCCM) (307-07A Four-Wheel Drive Systems, Removal and Installation).

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.

B35 CHECK FOR CORRECT TCM (TRANSMISSION CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the TCM (transmission control module) connector.
- Repair:
  - corrosion (install new connector or terminals - clean module pins)

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.

PINPOINT TEST C : NO HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) COMMUNICATION, ALL MODULES ARE NOT RESPONDING

NOTE

Failure to disconnect the battery when instructed will result in false resistance readings.

Refer to Wiring Diagrams Cell 14for schematic and connector information.

Normal Operation and Fault Conditions The HS-CAN1 (high-speed controller area network 1) modules communicate with the diagnostic scan tool through the remote DLC (data link connector) DIAG 1 circuits.

REFER to: Controller Area Network (CAN) Module Communications Network - System Operation and Component Description

(418-00A Controller Area Network (CAN) Module Communications Network, Description and Operation).

Possible Sources

- Fuse
- Wiring, terminals or connectors
- Remote DLC (data link connector)
- ACCM (air conditioning control module) (hybrid)
- BCM (body control module)
- BCMC (body control module C) [BJB (battery junction box)]
- BECM (battery energy control module) (hybrid)
- DCACA (Direct Current/Alternating Current Converter Module A) (if equipped)
- DCDC (direct current/direct current converter control module) (hybrid)
- GWM (gateway module A)
- PACM (pedestrian alert control module) (hybrid)

NOTE

Various modules set network DTCs during this test procedure. Clear DTCs from all modules after completing the diagnostic procedure.

C1 CHECK THE REMOTE DLC (DATA LINK CONNECTOR) PINS FOR DAMAGE

- Ignition OFF.

- Ignition OFF.
- Disconnect the negative battery cable.
- Disconnect: GWM (gateway module A) C2431A.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2431A-7	Ω	C2431A-20

Is the resistance between 108 and 132 ohms?

Yes	GO to C3

No	If the resistance is greater than 132 ohms, GO to C6 If the resistance is less than 108 ohms, GO to C7

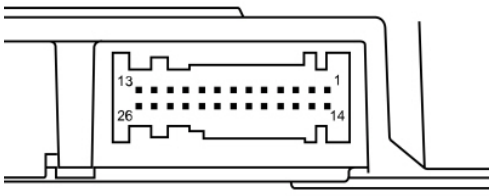
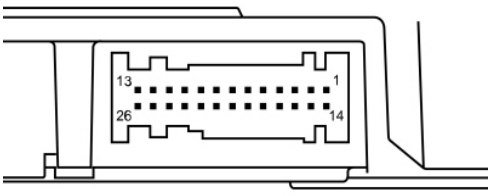
C3 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) (+) AND HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) (-) CIRCUITS FOR A SHORT TO GROUND

- Connect the negative battery cable.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2431A-7	Ω	Ground
C2431A-20	Ω	Ground

Are the resistances greater than 1,000 ohms?

Yes	GO to C4

 E342878 C2431A-7 (Component Side)	Ω	 E342878 C2431A-20 (Component Side)

Is the resistance between 108 ohms and 132 ohms?

Yes	GO to C27

No	INSTALL a new GWM (gateway module A) . REFER to: Gateway Module A (GWM) (418-00A Controller Area Network (CAN) Module Communications Network, Removal and Installation).

C6 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE BCMC (BODY CONTROL MODULE C) [BJB (BATTERY JUNCTION BOX)] AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect BCMC (body control module C) [BJB (battery junction box)] C1035E .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1035E-2	Ω	C2431A-7
C1035E-6	Ω	C2431A-20

Are the resistances less than 3 ohms?

No	REPAIR the circuit in question. CONNECT all modules.

C8 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) (+) AND HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) (-) CIRCUITS FOR A SHORT TO GROUND WITH THE MODULES DISCONNECTED

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2431-7	Ω	Ground
C2431-20	Ω	Ground

- Disconnect modules one at a time until the resistance to ground is greater than 1,000 ohms.
  - ACCM (air conditioning control module) C1803A (hybrid)
  - BCM (body control module) C2280G
  - BCMC (body control module C) [BJB (battery junction box)] C1035E
  - High Voltage Battery C4238 (hybrid)
  - DCACA (Direct Current/Alternating Current Converter Module A) C3501C (2.0kW) or C4630A (2.4kW/7.2kW) (if equipped)
  - DCDC (direct current/direct current converter control module) C1457B (hybrid)
  - PACM (pedestrian alert control module) C2828 (hybrid)

Did the resistance change to greater than 1,000 ohms with one of the modules disconnected?

Yes	CONNECT the GWM (gateway module A) . For the ACCM (air conditioning control module) , GO to C21 For the BCM (body control module) , GO to C22 For the BCMC (body control module C) [BJB (battery junction box)], GO to C23 For the High Voltage Battery, GO to C24 For the DCACA (Direct Current/Alternating Current Converter Module A) , GO to C25 For the DCDC (direct current/direct current converter control module) , GO to C26 For the PACM (pedestrian alert control module) , GO to C28