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2004 FORD Focus ST 3 Doors OEM Service and Repair Workshop Manual

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No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

Q3 REVIEW THE RECORDED DIAGNOSTIC TROUBLE CODES (DTCS) FROM THE VDM (VEHICLE DYNAMICS CONTROL MODULE) SELF-TEST

- Check the recorded Diagnostic Trouble Codes (DTCs) from the VDM (vehicle dynamics control module) self-test.

Is DTC (diagnostic trouble code) U3003:16 or U3003:17 present in the VDM (vehicle dynamics control module) ?

Yes	If DTC (diagnostic trouble code) U3003:16 is present, GO to Pinpoint Test A If DTC (diagnostic trouble code) U3003:17 is present, GO to Pinpoint Test B

No	GO to Q4

Q4 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS) IN THE ABS (ANTI-LOCK BRAKE SYSTEM) MODULE

- Using a diagnostic scan tool, carry out the ABS (anti-lock brake system) module self-test.

Is DTC (diagnostic trouble code) U3003:16 or U3003:17 present in the ABS (anti-lock brake system) module?

Yes	DIAGNOSE the ABS (anti-lock brake system) module Diagnostic Trouble Codes (DTCs). REFER to: Anti-Lock Brake System (ABS) and Stability Control (206-09 Anti-Lock Brake System (ABS) and Stability Control, Diagnosis and Testing).

No	GO to Q5

Q5 CHECK FOR OTHER CAUSES OF COMMUNICATION NETWORK CONCERN

NOTE

	Refer to Wiring Diagrams Cell 5for schematic and connector information.

Q7 CHECK FOR CORRECT VDM (VEHICLE DYNAMICS CONTROL MODULE) OPERATION

- Connect all ABS (anti-lock brake system) 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 exist for this concern, INSTALL a new ABS (anti-lock brake system) module. REFER to: Electric Brake Booster (EBB) (206-09 Anti-Lock Brake System (ABS) and Stability Control, Removal and Installation).

No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST R : U0140:87

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

Normal Operation and Fault Conditions

With the ignition ON, the BCM (body control module) sends messages to the GWM (gateway module A) over the FD-CAN (Flexible Data Rate Controller Area Network) . The GWM (gateway module A) sends these messages to the VDM (vehicle dynamics control module) over the FD-CAN (Flexible Data Rate Controller Area Network) . If the VDM (vehicle dynamics control module) does not receive these messages within a 5 second time frame, the module sets Diagnostic Trouble Codes (DTCs). After setting the DTC (diagnostic trouble code) the VDM (vehicle dynamics control module) deactivates the dynamic suspension system resulting in a firm suspension feel but will not cause the IPC (instrument panel cluster)

R2 CHECK THE VDM (VEHICLE DYNAMICS CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the VDM (vehicle dynamics control module) self-test.
- Clear the Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Open and Close drivers door.
- Wait 2 1/2 minutes.
- Ignition ON.
- Using a diagnostic scan tool, carry out the VDM (vehicle dynamics control module) self-test.
- Record the VDM (vehicle dynamics control module) Diagnostic Trouble Codes (DTCs).

Is DTC (diagnostic trouble code) U0140:87 retrieved again?

Yes	GO to R3

No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

R3 REVIEW THE RECORDED DIAGNOSTIC TROUBLE CODES (DTCS) FROM THE VDM (VEHICLE DYNAMICS CONTROL MODULE) SELF-TEST

- Check the recorded Diagnostic Trouble Codes (DTCs) from the VDM (vehicle dynamics control module) self-test.

Is DTC (diagnostic trouble code) U3003:16 or U3003:17 present in the VDM (vehicle dynamics control module) ?

Yes	If DTC (diagnostic trouble code) U3003:16 is present, GO to Pinpoint Test A If DTC (diagnostic trouble code) U3003:17 is present, GO to Pinpoint Test B

No	GO to R4

R4 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS) IN THE GWM (GATEWAY MODULE A)

- Using a diagnostic scan tool, carry out the GWM (gateway module A) self-test.

Are any Diagnostic Trouble Codes (DTCs) present in the GWM (gateway module A) ?

Yes	DIAGNOSE the GWM (gateway module A) Diagnostic Trouble Codes (DTCs).

Is the observable symptom still present?

Yes	GO to R7

No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

R7 VERIFY ALL WIRING CONNECTIONS

- Ignition OFF.
- Disconnect all BCM (body control module) connectors.
- Using a good light source, inspect all disconnected electrical connectors for the following:
  - corrosion - install new connector or terminal and clean the module pins
  - damaged or bent pins - install new terminals or pins
  - pushed-out pins - install new pins as necessary
  - spread terminals - install new terminals as necessary

Are the connectors free of corrosion, damaged pins, bent pins, pushed-out pins and spread terminals?

Yes	GO to R8

No	REPAIR the connector or terminals. Refer to Wiring Diagrams Cell 5for schematic and connector information.

R8 CHECK FOR CORRECT VDM (VEHICLE DYNAMICS CONTROL MODULE) OPERATION

- Connect all BCM (body 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 exist for this concern, INSTALL a new BCM (body control module) module.

- Wiring, terminals or connectors
- Network communication concern
- Vehicle battery
- Charging system concern
- RCM (restraints control module)
- GWM (gateway module A)

S1 CHECK THE COMMUNICATION NETWORK

- Ignition ON.
- Using a diagnostic scan tool, carry out the Network Test.

Does the RCM (restraints control module) pass the Network Test?

Yes	GO to S2

No	DIAGNOSE the RCM (restraints control module) does not respond to the diagnostic scan tool. REFER to: Controller Area Network (CAN) Module Communications Network (418-00A Controller Area Network (CAN) Module Communications Network, Diagnosis and Testing).

S2 CHECK THE VDM (VEHICLE DYNAMICS CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the VDM (vehicle dynamics control module) self-test.
- Clear the Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Open and Close drivers door.
- Wait 2 1/2 minutes.
- Ignition ON.
- Using a diagnostic scan tool, carry out the VDM (vehicle dynamics control module) self-test.
- Record the VDM (vehicle dynamics control module) Diagnostic Trouble Codes (DTCs).

Is DTC (diagnostic trouble code) U0151:87 retrieved again?

Yes	GO to S3

(programmable module installation) may not have been carried out.

- Check the vehicle service history for recent service actions related to the RCM (restraints control module) or VDM (vehicle dynamics control module) . If recent service history is found:
  - verify the correct replacement module was installed.
    - HVBOM may be used to verify correct part fitment.
  - verify the configuration of replacement module was correct.
    - re-configure the module by reprogramming if prior configuration is suspect.
  - verify the module was not obtained from a like vehicle and installed into customer vehicle.
    - return the swapped module to source vehicle and obtain new replacement module.
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to S6

No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

S6 VERIFY ALL WIRING CONNECTIONS

- Ignition OFF.
- Disconnect all RCM (restraints control module) connectors.
- Using a good light source, inspect all disconnected electrical connectors for the following:
  - corrosion - install new connector or terminal and clean the module pins
  - damaged or bent pins - install new terminals or pins
  - pushed-out pins - install new pins as necessary
  - spread terminals - install new terminals as necessary

Are the connectors free of corrosion, damaged pins, bent pins, pushed-out pins and spread terminals?

Yes	GO to S7

No	REPAIR the connector or terminals. Refer to Wiring Diagrams Cell 5for schematic and connector information.

VDM (vehicle dynamics control module) U2024:4A	Control Module Cal-Config Data: Incorrect Component Installed	Sets as a continuous memory DTC (diagnostic trouble code) due to incomplete or improper VDM (vehicle dynamics control module) programming.
VDM (vehicle dynamics control module) U2024:51	Control Module Cal-Config Data: Not Programmed	Sets as a continuous memory DTC (diagnostic trouble code) due to incomplete or improper VDM (vehicle dynamics control module) programming.
VDM (vehicle dynamics control module) U2024:57	Control Module Cal-Config Data: Invalid/Incompatible Software Component	Sets as a continuous memory DTC (diagnostic trouble code) due to incomplete or improper VDM (vehicle dynamics control module) programming.
VDM (vehicle dynamics control module) U2100:00	Initial Configuration Not Complete: No Sub Type Information	Sets as a continuous memory DTC (diagnostic trouble code) due to incomplete or improper VDM (vehicle dynamics control module) programming.
VDM (vehicle dynamics control module) U3000:04	Control Module: System Internal Failures	Sets as a continuous memory DTC (diagnostic trouble code) due to incomplete or improper VDM (vehicle dynamics control module) programming.

Possible Sources

- VDM (vehicle dynamics control module) configuration
- VDM (vehicle dynamics control module)

T1 CHECK FOR OTHER VDM (VEHICLE DYNAMICS CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, check the VDM (vehicle dynamics control module) Diagnostic Trouble Codes (DTCs).

Are any Diagnostic Trouble Codes (DTCs) other than U2012:56, U2016:61, U2024:4A, U2024:51, U2024:57, U2100:00 or U3000:04 present in the VDM (vehicle dynamics control module) ?

Yes	DIAGNOSE all other VDM (vehicle dynamics control module) Diagnostic Trouble Codes (DTCs) before continuing this test. REFER to the VDM (vehicle dynamics control module) DTC (diagnostic

PINPOINT TEST U : HEIGHT SENSOR PLAUSIBILITY FAILURE CONCERN

Normal Operation and Fault Conditions

With the Ignition ON, the VDM (vehicle dynamics control module) runs a series of internal checks. If the VDM (vehicle dynamics control module) was not configured or inproperly configured Diagnostic Trouble Codes (DTCs) will be set. After setting the DTC (diagnostic trouble code) the VDM (vehicle dynamics control module) deactivates the dynamic suspension system resulting in a firm/harsh suspension feel and send a message to the IPC (instrument panel cluster) to display a dynamic suspension system warning message.

REFER to: Vehicle Dynamic Suspension (204-05 Vehicle Dynamic Suspension) .

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
VDM (vehicle dynamics control module) C1A03:64	Left Front Height Sensor: Signal Plausibility Failure	Sets as a continuous memory and on-demand DTC (diagnostic trouble code) due to incomplete or improper VDM (vehicle dynamics control module) programming.
VDM (vehicle dynamics control module) C1A04:64	Right Front Height Sensor: Signal Plausibility Failure	Sets as a continuous memory and on-demand DTC (diagnostic trouble code) due to incomplete or improper VDM (vehicle dynamics control module) programming.
VDM (vehicle dynamics control module) C1A05:64	Left Rear Height Sensor: Signal Plausibility Failure	Sets as a continuous memory and on-demand DTC (diagnostic trouble code) due to incomplete or improper VDM (vehicle dynamics control module) programming.
VDM (vehicle dynamics control module) C1A06:64	Right Rear Height Sensor: Signal Plausibility Failure	Sets as a continuous memory and on-demand DTC (diagnostic trouble code) due to incomplete or improper VDM (vehicle dynamics control module) programming.

Possible Sources

- VDM (vehicle dynamics control module) configuration
- VDM (vehicle dynamics control module)

U1 CHECK THE VEHICLE SERVICE HISTORY

- Check the vehicle service history for recent service actions related to the VDM (vehicle dynamics control module) .

Are any recent service actions related to the VDM (vehicle dynamics control module) found?

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
VDM (vehicle dynamics control module) C1124:55	Height Sensor(s): Not Configured	This DTC (diagnostic trouble code) is automatically set in a new VDM (vehicle dynamics control module) and indicates that the system requires height sensor calibration. Once the system is calibrated, the DTC (diagnostic trouble code) can be cleared.
VDM (vehicle dynamics control module) C1124:56	Height Sensor(s): Invalid/Incompatible Configuration	This DTC (diagnostic trouble code) sets when the height sensor voltage is out of range during VDM (vehicle dynamics control module) system height sensor calibration. Once the system is calibrated, the DTC (diagnostic trouble code) can be cleared.

Possible Sources

- VDM (vehicle dynamics control module) calibration
- Height sensor(s) damaged or improperly installed

Visual Inspection and Pre-checks

- Make sure the height sensor harness is routed correctly and is undamaged
- Make sure the height sensor electrical connector is free from any corrosion or other contaminates
- Make sure the height sensor brackets and not damaged or bent

V1 CHECK THE VDM (VEHICLE DYNAMICS CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the VDM (vehicle dynamics control module) Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 30 seconds.
- Using a diagnostic scan tool, carry out the VDM (vehicle dynamics control module) self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) other than C1124:55 or C1124:56 present in the VDM (vehicle dynamics control module) ?

Yes	DIAGNOSE all other non-network VDM (vehicle dynamics control module) Diagnostic Trouble Codes (DTCs) before continuing this test. REFER to the VDM (vehicle dynamics control module) DTC (diagnostic trouble code) Chart in this section.