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2008 FORD Focus ST 5 Doors OEM Service and Repair Workshop Manual

Go to manual page

- Check for recorded Diagnostic Trouble Codes (DTCs).

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	For 2-speed torque-on-demand transfer case, REFER to: Four-Wheel Drive Systems - Vehicles With: 2-Speed Torque On Demand Transfer Case (307-07A Four-Wheel Drive Systems, Diagnosis and Testing). For electronic shift transfer case, REFER to: Four-Wheel Drive Systems - Vehicles With: Electronic Shift Transfer Case (307-07A Four-Wheel Drive Systems, Diagnosis and Testing).
No	GO to BO3

BO3 PERFORM THE ABS (ANTI-LOCK BRAKE SYSTEM) MODULE SELF-TEST

- Using a diagnostic scan tool, perform the ABS (anti-lock brake system) module self-test.
- Check for recorded Diagnostic Trouble Codes (DTCs).

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	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 BO4

BO4 PERFORM THE PSCM (POWER STEERING CONTROL MODULE) SELF-TEST

- Using a diagnostic scan tool, perform the PSCM (power steering control module) self-test.
- Check for recorded Diagnostic Trouble Codes (DTCs).

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to: Power Steering(211-02 Power Steering, Diagnosis and Testing).
No	GO to BO5

PINPOINT TEST BP : THE OUTSIDE AIR TEMPERATURE DISPLAY IS INOPERATIVE OR INCORRECT

Normal Operation and Fault Conditions

See Outside Air Temperature. REFER to: Message Center - System Operation and Component Description(413-01 Instrumentation, Message Center and Warning Chimes, Description and Operation).

If the outside air temperature status message is missing or invalid for less than 5 seconds, the IPC (instrument panel cluster) defaults the outside air temperature display to the last temperature reading, based upon the last message received.

If the outside air temperature status message is missing or invalid for 5 seconds or longer from the HVAC (heating, ventilation and air conditioning) module, the IPC (instrument panel cluster) displays all dashes (- - - -) in the outside air temperature display area.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P0071:00	Ambient Air Temperature Sensor Circuit 'A' Range/Performance: No Sub Type Information	Sets when the PCM (powertrain control module) detects the ambient air temperature sensor reading does not correlate with the other temperature sensor readings at ignition ON. The PCM (powertrain control module) runs this logic after an engine off and a calibrated soak period, typically 6 to 8 hours. This soak period allows the ambient air temperature sensor and the other temperature sensors to stabilize and not differ by greater than a calibrated value, typically 18° C (32.4° F).
PCM (powertrain control module) P0072:00	Ambient Air Temperature Sensor Circuit 'A' Low: No Sub Type Information	Sets when the PCM (powertrain control module) detects the ambient air temperature sensor signal is less than the self-test minimum.
PCM (powertrain control module) P0073:00	Ambient Air Temperature Sensor Circuit 'A' High: No Sub Type Information	Sets when the PCM (powertrain control module) detects the ambient air temperature sensor signal is greater than the self-test maximum.

Possible Sources

- Using a diagnostic scan tool, check the GWM (gateway module A) Continuous Memory Diagnostic Trouble Codes (DTCs).

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to: Controller Area Network (CAN) Module Communications Network(418-00A Controller Area Network (CAN) Module Communications Network, Diagnosis and Testing).
No	GO to BP4

BP4 PERFORM THE PCM (POWERTRAIN CONTROL MODULE) SELF-TEST

- Using a diagnostic scan tool, perform the PCM (powertrain control module) self-test.

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to the Master DTC (diagnostic trouble code) Chart.
No	GO to BP5

BP5 CHECK THE AMBIENT AIR TEMPERATURE INPUT TO THE PCM (POWERTRAIN CONTROL MODULE)

- Allow the vehicle to sit out of the sun with the engine off, for approximately 6 hours to remove any potential heat soak at the ambient air temperature sensor.
- Using a diagnostic scan tool, view the PCM (powertrain control module) Parameter Identifications (PIDs).
- Access the PCM (powertrain control module) and monitor the AAT (Ambient Air Temperature) (Deg C) PID (parameter identification)
- Monitor the ambient air temperature PID (parameter identification) and compare the PID (parameter identification) value with the actual outside air temperature.

Does the ambient air temperature match the actual outside air temperature?

Yes	GO to BP6

C1232B-36	Ω	C1232B-40

3.0L Diesel

Positive Lead	Measurement / Action	Negative Lead
C1233B-86	Ω	C1233B-85

3.3L Engine

Positive Lead	Measurement / Action	Negative Lead
C1551B-36	Ω	C1551B-40

3.5L Engine

Positive Lead	Measurement / Action	Negative Lead
C175B-36	Ω	C175B-40

5.0L Engine

Positive Lead	Measurement / Action	Negative Lead
C1381B-36	Ω	C1381B-40

- Compare the ambient temperature sensor resistances using the table below.

Outside Air Temperature	Ambient Air Temperature Sensor Value

Positive Lead	Measurement / Action	Negative Lead
C660-1 Component Side	Ω	C660-3 Component Side

Without Power Mirrors

Positive Lead	Measurement / Action	Negative Lead
C650-1 Component Side	Ω	C650-2 Component Side

- Compare the ambient temperature sensor resistances using the table below.

Outside Air Temperature		Ambient Air Temperature Sensor Value
Celcius	**Fahrenheit**	**Resistance (K ohms)**
-1.1° to 4.4°	30° to 40°	27.49 to 33.47
4.4° to 10°	40° to 50°	22.06 to 28.86
10° to 15.6°	50° to 60°	16.63 to 23.10
15.6° to 21.1°	60° to 70°	11.74 to 17.32
21.1° to 26.7°	70° to 80°	9.34 to 12.14
26.7° to 32.2°	80° to 90°	8.49 to 9.62
32.2° to 37.8°	90° to 100°	5.93 to 7.87
37.8° to 43.3°	100° to 110°	4.78 to 6.11

Does the resistance match the table specifications above?

Yes	The ambient air temperature sensor is operating correctly. REPAIR the circuits for high circuit resistance.

PINPOINT TEST BQ : THE POWER DISTRIBUTION DISPLAY IS INOPERATIVE

Normal Operation and Fault Conditions

See Power Distribtuion Display. REFER to: Message Center - System Operation and Component Description(413-01 Instrumentation, Message Center and Warning Chimes, Description and Operation).

If the 4WD range status, wheel torque, vehicle speed or gear lever position message is missing for less than 5 seconds, the IPC (instrument panel cluster) defaults the display fill area in front of the front wheels and behind the rear wheels to the last display based on the last data received.

If the 4WD range status, wheel torque, vehicle speed or gear lever position messge is missing for 5 seconds or longer, the IPC (instrument panel cluster) sets a lost communication DTC (diagnostic trouble code) for the module in question and defaults the display fill area in front of the front wheels and behind the rear wheels off.

Possible Sources

- Communication concern
- GWM (gateway module A) concern
- PCM (powertrain control module) concern
- TCM (transmission control module) (diesel)
- TCCM (transfer case control module) concern
- IPC (instrument panel cluster)

BQ1 VERIFY THE IPC (INSTRUMENT PANEL CLUSTER) IS SET TO THE POWER DISTRIBUTION DISPLAY SCREEN

- Ignition ON.
- **NOTE**

  The IPC (instrument panel cluster) and message center navigation can be found in the Owner's Literature.

  Using the message center controls, make sure the IPC (instrument panel cluster) is set to the power distribution display screen.

Is the IPC (instrument panel cluster) set to the power distribution display screen?

Yes	GO to BQ2

No	The off road display is operating correctly. The IPC (instrument panel cluster) was not set to the correct display screen.

- Using a diagnostic scan tool, perform the TCM (transmission control module) self-test.
- Check for recorded Diagnostic Trouble Codes (DTCs).

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to the appropriate 307-01 section.

No	GO to BQ5

BQ5 CHECK THE GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, check the GWM (gateway module A) Continuous Memory Diagnostic Trouble Codes (CMDTCs).

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to: Controller Area Network (CAN) Module Communications Network(418-00A Controller Area Network (CAN) Module Communications Network, Diagnosis and Testing).

No	GO to BQ6

BQ6 CHECK FOR CORRECT IPC (INSTRUMENT PANEL CLUSTER) OPERATION

- Ignition OFF.
- Disconnect and inspect the IPC (instrument panel cluster) 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 IPC (instrument panel cluster) 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

No	GO to Pinpoint Test A

BR2 PERFORM THE IPC (INSTRUMENT PANEL CLUSTER) SELF-TEST

- Ignition ON.
- Using a diagnostic scan tool, perform the IPC (instrument panel cluster) self-test.

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to the IPC (instrument panel cluster) DTC (diagnostic trouble code) Chart in this section.
No	GO to BR3

BR3 PERFORM THE IPMA (IMAGE PROCESSING MODULE A) SELF-TEST

- Using a diagnostic scan tool, perform the IPMA (image processing module A) self-test.

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to the Master DTC (diagnostic trouble code) Chart.
No	GO to BR4

BR4 CHECK THE GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, check the GWM (gateway module A) Continuous Memory Diagnostic Trouble Codes (DTCs).

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to: Controller Area Network (CAN) Module Communications Network(418-00A Controller Area Network (CAN) Module Communications Network, Diagnosis and Testing).
No	DIAGNOSE the front camera. REFER to: Lane Keeping System

If the gear lever position, vehicle speed, ignition status, trailer setup, trailer reverse message request, BLIS (blind spot information system) trailer tow left or BLIS (blind spot information system) trailer tow right messages are missing for 5 seconds or longer, the IPC (instrument panel cluster) sets a DTC (diagnostic trouble code) for the module in question and defaults the associated display element off or blank.

Possible Sources

- Communication concern
- BCM (body control module) concern
- GWM (gateway module A) concern
- PCM (powertrain control module) concern
- TCM (transmission control module) concern (diesel)
- IPMA (image processing module A) concern
- IPC (instrument panel cluster)

BT1 VERIFY THE IPC (INSTRUMENT PANEL CLUSTER) IS SET TO THE TRAILER INFORMATION DISPLAY SCREEN

- Ignition ON.
- **NOTE**

  The IPC (instrument panel cluster) and message center navigation can be found in the Owner's Literature.

  Using the message center controls, make sure the IPC (instrument panel cluster) is set to the trailer information display screen.

Is the IPC (instrument panel cluster) set to the trailer information display screen?

Yes	GO to BT2

No	The trailer information display is operating correctly. The IPC (instrument panel cluster) was not set to the correct display screen.

BT2 PERFORM THE PCM (POWERTRAIN CONTROL MODULE) KOEO (KEY ON, ENGINE OFF) SELF-TEST

- Using a diagnostic scan tool, perform the PCM (powertrain control module) KOEO (key on, engine off) self-test.
- Check for recorded Diagnostic Trouble Codes (DTCs).

Are any Diagnostic Trouble Codes (DTCs) recorded?