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1998 FORD Focus 3 Doors OEM Service and Repair Workshop Manual

Go to manual page

- One or more TPMS (tire pressure monitoring system) sensors not trained
- TPMS (tire pressure monitoring system) sensor

Visual Inspection and Pre-checks

- Inspect for Non-Original Equipment Manufacturer (OEM) wheels or run-flat tires.
- Verify horn operation

C1 TRAIN THE TPMS (TIRE PRESSURE MONITORING SYSTEM) SENSORS TO DETERMINE THE INOPERATIVE SENSOR

- Train all 4 tire pressure sensors.
  REFER to: Tire Pressure Monitoring System (TPMS) Sensor Location Calibration(204-04B Tire Pressure Monitoring System (TPMS), General Procedures).

Did all of the TPMS (tire pressure monitoring system) sensors train and did the horn sound when each sensor was trained?

Yes	The system is operating correctly at this time.

No	**Before installing a new sensor(s):** If a sensor does not respond, MOVE the vehicle to rotate the wheels at least one-fourth of a turn and ATTEMPT to activate the same sensor again. If the sensor still does not respond, ATTEMPT to activate the same sensor again. If the sensor still fails to train, ATTEMPT to train the sensor with the vehicle doors open. If the sensor(s) fails to train a second time, VERIFY the correct sensors are installed. REFER to: Wheel and Tire (204-04A Wheels and Tires, Removal and Installation). If the correct sensors are installed and do not train, INSTALL a new TPMS (tire pressure monitoring system) sensor(s). REFER to: Tire Pressure Monitoring System (TPMS) Sensor (204-04B Tire Pressure Monitoring System (TPMS), Removal and Installation).

PINPOINT TEST D : UNABLE TO TRAIN TPMS SENSORS

NOTE

Make sure that all aftermarket electronic equipment has been disconnected (if possible) and the customer has been questioned about the electronic equipment they may have been using in the vehicle

D2 CHECK FOR RTM (RADIO TRANSCEIVER MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the RTM (radio transceiver module) self-test.

Are there any Diagnostic Trouble Codes (DTCs) present in the RTM (radio transceiver module) ?

Yes	DIAGNOSE all RTM (radio transceiver module) Diagnostic Trouble Codes (DTCs). REFER to the DTC (diagnostic trouble code) Chart: RTM (radio transceiver module) .
No	GO to D3

D3 VIEW THE BCM (BODY CONTROL MODULE) TPMS (TIRE PRESSURE MONITORING SYSTEM) STATUS (TPMS_STATUS) PID (PARAMETER IDENTIFICATION)

- Ignition ON.
- Access the BCM (body control module) and monitor the TPMS_STATUS (Tire Pressure Monitoring System Status) PID (parameter identification)

Does the TPMS_STATUS PID (parameter identification) display SYSTEM FAULT?

Yes	GO to D4
No	GO to D7

D4 CARRY OUT THE TPMS (TIRE PRESSURE MONITORING SYSTEM) SENSOR TRAINING PROCEDURE

NOTE

Before beginning TPMS (tire pressure monitoring system) sensor training, make sure the vehicle is away from other vehicles or devices that might cause RFI (radio frequency interference) such as electric motors or radio transmitters.

- Train all 4 TPMS (tire pressure monitoring system) sensors.
  REFER to: Tire Pressure Monitoring System (TPMS) Sensor Location Calibration(204-04B Tire Pressure Monitoring System (TPMS), General Procedures).

Did all of the TPMS (tire pressure monitoring system) sensors train and did the horn sound when each sensor was trained?

	If the concern is still present, GO to D6

D6 VERIFY ALL WIRING CONNECTIONS

- Ignition OFF.
- Disconnect all BCM (body control module) connectors and related in-line connectors.
- Using a good light source, inspect the 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 D7

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

D7 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Connect the BCM (body control module) connectors and related in-line 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	If all the sensors are present and of the correct type, CHECK OASIS (Online Automotive Service Information System) for any applicable Technical Service Bulletins (TSBs), 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 BCM (body control module) . REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Removal and Installation).

No	The system is operating correctly at this time. The concern may have been caused by module

- Using a diagnostic scan tool, carry out the BCM (body control module) self-test.

Is DTC (diagnostic trouble code) B124D:02 present?

Yes	GO to Pinpoint Test B

No	For all other BCM (body control module) Diagnostic Trouble Codes (DTCs), GO to the DTC (diagnostic trouble code) Chart: BCM (body control module) . If there are no Diagnostic Trouble Codes (DTCs) present in the BCM (body control module) , GO to E3

E3 CHECK FOR SPARE TIRE IN USE

- **NOTE**

  A spare tire cannot be programmed to the vehicle. If a damaged road wheel is located in the vehicle and the RTM (radio transceiver module) cannot communicate with it, or if the damaged wheel has been dropped off at a repair facility, the BCM (body control module) sets a TPMS (tire pressure monitoring system) sensor fault. Repair and remount the road wheel as necessary to restore system operation.

  Check the spare tire location.

Is the spare tire in use?

Yes	REPAIR and REMOUNT the wheel to the vehicle. REFER to: Wheel and Tire (204-04A Wheels and Tires, Removal and Installation). ADJUST tire pressures to the required pressure as defined on the VC (vehicle certification) label.

No	GO to E4

E4 TRAIN ALL 4 TPMS (TIRE PRESSURE MONITORING SYSTEM) SENSORS

- Train all 4 TPMS (tire pressure monitoring system) sensors.
  REFER to: Tire Pressure Monitoring System (TPMS) Sensor Location Calibration(204-04B Tire Pressure Monitoring System (TPMS), General Procedures).

PINPOINT TEST F : THE BCM (BODY CONTROL MODULE) WILL NOT ENTER TPMS (TIRE PRESSURE MONITORING SYSTEM) SENSOR TRAINING MODE

Normal Operation and Fault Conditions

The training (calibration) can be carried out manually or by using a diagnostic scan tool, REFER to: Tire Pressure Monitoring System (TPMS) - System Operation and Component Description(204-04B Tire Pressure Monitoring System (TPMS), Description and Operation).

When one or more new TPMS (tire pressure monitoring system) sensors are installed or a new BCM (body control module) is installed, the sensors must be trained (calibrated) to the BCM (body control module) . For the manual training procedure, the BCM (body control module) must receive a valid ignition signal, a valid brake pedal position signal and a valid vehicle speed signal. The ignition switch or start-stop switch signal and the brake pedal position signal are both direct inputs to the BCM (body control module) , the vehicle speed signal is sent to the BCM (body control module) from the PCM (powertrain control module) over the HS-CAN1 (high-speed controller area network 1) .

If the vehicle has been stationary for more than 30 minutes, the TPMS (tire pressure monitoring system) sensors enter a "sleep mode" to conserve battery power. It becomes necessary to wake them up so they transmit the latest tire pressure information to the RTM (radio transceiver module) . REFER to: Tire Pressure Monitoring System (TPMS) Sensor Activation(204-04B Tire Pressure Monitoring System (TPMS), General Procedures).

Possible Sources

- Network communication concern
- Stoplamp switch concern
- Ignition switch concern (if equipped)
- Start-stop switch concern
- PCM (powertrain control module) concern
- BCM (body control module)

Visual Inspection and Pre-checks

- Inspect for customer electronic devices, such as a cell phone charger or GPS (global positioning system) unit.
- Inspect for non-Original Equipment Manufacturer (OEM) wheel or run-flat tires.

F1 CHECK THE BCM (BODY CONTROL MODULE) FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, carry out the BCM (body control module) self-test.

Are there any Diagnostic Trouble Codes (DTCs) present in the BCM (body control module) ?

Yes	DIAGNOSE all BCM (body control module) Diagnostic Trouble Codes (DTCs). REFER to: Tire Pressure Monitoring System (TPMS) (204-04B Tire Pressure Monitoring System (TPMS), Diagnosis and Testing).

- Using a diagnostic scan tool, carry out the PCM (powertrain control module) KOEO (key on, engine off) self-test.

Are there any Diagnostic Trouble Codes (DTCs) present in the PCM (powertrain control module) ?

Yes	DIAGNOSE the PCM (powertrain control module) DTC (diagnostic trouble code) . REFER to: Electronic Engine Controls (303-14A Electronic Engine Controls - 2.7L EcoBoost (238kW/324PS), Diagnosis and Testing). REFER to: Electronic Engine Controls (303-14B Electronic Engine Controls - 3.3L Duratec-V6, Diagnosis and Testing). REFER to: Electronic Engine Controls (303-14E Electronic Engine Controls - 3.5L V6 PowerBoost (CN), Diagnosis and Testing). REFER to: Electronic Engine Controls (303-14D Electronic Engine Controls - 5.0L 32V Ti-VCT, Diagnosis and Testing).

No	GO to F5

F5 CHECK THE STOPLAMP OPERATION

- Ignition ON.
- Press and release the brake pedal while monitoring the stoplamps.

Do the stoplamps operate correctly?

Yes	GO to F6

No	DIAGNOSE the stoplamp switch and stoplamps. REFER to: Spot Lamps (417-01 Exterior Lighting, Diagnosis and Testing).

F6 VERIFY ALL WIRING CONNECTIONS

- Ignition OFF.
- Disconnect all BCM (body control module) connectors and related in-line connectors.
- Using a good light source, inspect the connectors for the following:
  - corrosion - install new connector or terminal and clean the module pins
  - damaged or bent pins - install new terminals or pins

If the vehicle has been stationary for more than 30 minutes, the TPMS (tire pressure monitoring system) sensors enter a "sleep mode" to conserve battery power. It becomes necessary to wake them up so they transmit the latest tire pressure information to the RTM (radio transceiver module) . REFER to: Tire Pressure Monitoring System (TPMS) Sensor Activation(204-04B Tire Pressure Monitoring System (TPMS), General Procedures).

Possible Sources

- TPMS (tire pressure monitoring system) sensors
- RFI (radio frequency interference)

Visual Inspection and Pre-checks

- Inspect for customer electronic devices, such as a cell phone charger or GPS (global positioning system) unit.
- Inspect for non-Original Equipment Manufacturer (OEM) wheel or run-flat tires.
- Verify horn operation.

G1 ATTEMPT TO TRAIN THE TPMS (TIRE PRESSURE MONITORING SYSTEM) SENSORS

NOTE

The BCM (body control module) has a 2-minute time limit between sensor responses. If the BCM (body control module) does not recognize any of the 4 TPMS (tire pressure monitoring system) sensors during this time limit, the horn sounds twice and the message center displays TIRE NOT TRAINED REPEAT. The entire procedure must be repeated.

- TRAIN all 4 TPMS (tire pressure monitoring system) sensors.
  REFER to: Tire Pressure Monitoring System (TPMS) Sensor Location Calibration(204-04B Tire Pressure Monitoring System (TPMS), General Procedures).

Did all of the TPMS (tire pressure monitoring system) sensors train and did the horn sound when each sensor was trained?

Yes	The system is operating correctly at this time. The concern may have been caused by RFI (radio frequency interference) . For information on locating sources of RFI (radio frequency interference) , REFER to: Tire Pressure Monitoring System (TPMS) - System Operation and Component Description (204-04B Tire Pressure Monitoring System (TPMS), Description and Operation).
No	If one or more TPMS (tire pressure monitoring system) sensors trained, GO to G2 If none of the TPMS (tire pressure monitoring system) sensors trained, GO to Pinpoint Test D

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
RTM (radio transceiver module) U0146:00	Lost Communication With Serial Data Gateway 'A': No Sub Type Information	This DTC (diagnostic trouble code) sets in continuous memory if any of the following messages is missing from the GWM (gateway module A) or contain invalid information; vehicle operation modes, TPMS (tire pressure monitoring system) status or engine data.

Possible Sources

- Network communication concern
- GWM (gateway module A)
- RTM (radio transceiver module)

H1 CHECK THE COMMUNICATION NETWORK

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

Does the GWM (gateway module A) pass the Network Test?

Yes	GO to H2

No	DIAGNOSE the GWM (gateway module A) does not respond to the scan tool. REFER to: Gateway Module A (GWM) (418-00A Controller Area Network (CAN) Module Communications Network, Removal and Installation).

H2 RECHECK THE RTM (RADIO TRANSCEIVER MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, clear the RTM (radio transceiver module) Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Using a diagnostic scan tool, carry out the RTM (radio transceiver module) self-test.

Is DTC (diagnostic trouble code) U0146:00 retrieved again?

Yes	GO to H3

	If no service articles address this concern, INSTALL a new RTM (radio transceiver module) . REFER to: Radio Transceiver Module (RTM) (419-10 Multifunction Electronic Modules, Removal and Installation).

PINPOINT TEST I : U1A00:00

Normal Operation and Fault Conditions

With the ignition ON, the BCM (body control module) and the RTM (radio transceiver module) communicate using a LIN (local interconnect network) . If the RTM (radio transceiver module) is unable to communicate with the BCM (body control module) using the LIN (local interconnect network) , the RTM (radio transceiver module) sets a DTC (diagnostic trouble code) .

REFER to: Tire Pressure Monitoring System (TPMS) - System Operation and Component Description(204-04B Tire Pressure Monitoring System (TPMS), Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
RTM (radio transceiver module) U1A00:00	Private Communication Network: No Sub Type Information	This DTC (diagnostic trouble code) sets in continuous memory if the RTM (radio transceiver module) communication bus reset counter reaches zero. This is most likely due to a circuit failure in the LIN (local interconnect network) , an internal failure of the BCM (body control module) or an internal failure of the RTM (radio transceiver module) .

Possible Sources

- Fuse
- Wiring, terminals or connectors
- RTM (radio transceiver module)
- BCM (body control module)

Visual Inspection and Pre-checks

- Make sure BCM (body control module) fuse 31 (10A) is OK.

NOTICE