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1999 FORD Focus 3 Doors OEM Service and Repair Workshop Manual

Go to manual page

frequency interference) all the time. This depends on the state of charge of the cell phone battery. The phone battery must be almost completely discharged in some cases.

- Power supplies and DC (direct current) / AC (alternating current) inverters typically create a lot of RFI (radio frequency interference) . Most consumer grade equipment has very little filtering or shielding.

Using Hit Rate Parameter Identifiers (PIDs) to Determine the Presence of RFI (radio frequency interference)

If an intermittent RFI (radio frequency interference) issue is suspected, the information contained in the last 5 TPMS (tire pressure monitoring system) warning event Parameter Identifiers (PIDs) can be combined with specific Parameter Identifiers (PIDs) from the BCM (body control module) to determine which TPMS (tire pressure monitoring system) sensors are being affected and if a RFI (radio frequency interference) source is currently present in the vehicle.

The BCM (body control module) module contains Parameter Identifiers (PIDs) that keep track of the number of TPMS (tire pressure monitoring system) messages received from the 4 trained TPMS (tire pressure monitoring system) sensors. These Parameter Identifiers (PIDs) can provide insight on the performance of the TPMS (tire pressure monitoring system) , and can help establish the presence of an Frequency Interference (RFI) source.

- TPM_HITS_LF (Tire Pressure Monitor Hit Rate Left Front) – The number of TPMS (tire pressure monitoring system) messages received by the BCM (body control module) module from the LH (left-hand) front sensor
- TPM_HITS_RF (Tire Pressure Monitor Hit Rate Right Front) – The number of TPMS (tire pressure monitoring system) messages received by the BCM (body control module) module from the RH (right-hand) front sensor.
- TPM_HITS_LRO (Tire Pressure Monitor Hit Rate Left Rear Outer) – The number of TPMS (tire pressure monitoring system) messages received by the BCM (body control module) module from the LH (left-hand) rear sensor
- TPM_HITS_RRO (Tire Pressure Monitor Hit Rate Right Rear Outer) – The number of TPMS (tire pressure monitoring system) messages received by the BCM (body control module) module from the RH (right-hand) rear sensor.

Method for determining if a RFI (radio frequency interference) issue has been affecting the TPMS (tire pressure monitoring system) :

1. Collect the last 5 TPMS (tire pressure monitoring system) events and determine if they were due to system faults or low tire air pressure.
2. Collect the TPMS (tire pressure monitoring system) Hit Rate PID (parameter identification) counters and compare them to the last 5 TPMS (tire pressure monitoring system) events.

Tire pressures fluctuate with temperature changes. For this reason, tire pressures must be set to specification when tires are at outdoor ambient temperatures. If the vehicle is allowed to warm up to shop temperatures, and the outside temperature is less than shop temperature, the tire inflation pressure must be adjusted accordingly.

If the tires are inflated to specification at shop temperatures, and the vehicle is moved outdoors when the outdoor ambient temperature is significantly lower, the tire pressure may drop enough to be detected by the TPMS (tire pressure monitoring system) and illuminate the TPMS (tire pressure monitoring system) warning indicator.

As the ambient temperature decreases by -12.2° C (10° F), tire pressure decreases 6.9 kPa (1 psi). Adjust the tire pressure by 6.9 kPa (1 psi) for each -12.2° C (10° F) of ambient temperature drop as necessary to keep the tire at the specified VC (vehicle certification) label pressure. To adjust the tire pressure indoors for colder outside temperatures, refer to the following table.

NOTE

Table is based on a garage temperature of 21°C (70°F). Max Pressure Adjustment is 50 kPa (7 psi).

	Tire Placard Pressure				
	29.7 psi (205 kPa)	31.9 psi (220 kPa)	34.1 psi (235 kPa)	34.8 psi (240 kPa)	37.7 psi (260 kPa)
Outside Temperature	**Tire Target Pressure**				
69.8 °F (21 °C)	29.7 psi (205 kPa)	31.9 psi (220 kPa)	34.1 psi (235 kPa)	34.8 psi (240 kPa)	37.7 psi (260 kPa)
60.8 °F (16 °C)	31.2 psi (215 kPa)	33.4 psi (230 kPa)	34.8 psi (240 kPa)	36.3 psi (250 kPa)	39.2 psi (270 kPa)
50.0 °F (10 °C)	31.9 psi (220 kPa)	34.1 psi (235 kPa)	36.3 psi (250 kPa)	37.0 psi (255 kPa)	42.1 psi (290 kPa)
39.2 °F (4 °C)	33.4 psi (230 kPa)	34.8 psi (240 kPa)	37.0 psi (255 kPa)	37.7 psi (260 kPa)	42.8 psi (295 kPa)
30.2 °F (-1 °C)	34.1 psi (235 kPa)	36.3 psi (250 kPa)	37.7 psi (260 kPa)	39.2 psi (270 kPa)	44.2 psi (305 kPa)

Tire Pressure Monitoring System (TPMS)

204-04B Tire Pressure Monitoring System (TPMS)	***2022 F-150***
Diagnosis and Testing	***Procedure revision date: 08/16/2022***

Tire Pressure Monitoring System (TPMS)

Diagnostic Trouble Code (DTC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: Diagnostic Methods

(100-00 General Information, Description and Operation).

Diagnostic Trouble Code Chart

Module	DTC (diagnostic trouble code)	Description	Action
BCM (body control module)	B1182:00	Tire Pressure Monitoring System: No Sub Type Information	GO to Pinpoint Test A
BCM (body control module)	B1182:55	Tire Pressure Monitoring System: Not Configured	GO to Pinpoint Test L
BCM (body control module)	B124D:02	Tire Pressure Sensor: General Signal Failure	GO to Pinpoint Test B
BCM (body control module)	B1251:00	Tire Pressure Sensor Low Battery: No Sub Type Information	GO to Pinpoint Test C

RTM (radio transceiver module)	U3000:04	Control Module: System Internal Failures	GO to Pinpoint Test K

Global Customer Symptom Code (GCSC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: Diagnostic Methods

(100-00 General Information, Description and Operation).

Global Customer Symptom Code Chart

Customer Symptom	Action
Driver Aides & Information > Warning Indicators/Messages/Chimes > Tire > Stays On	GO to Pinpoint Test D
Driver Aides & Information > Warning Indicators/Messages/Chimes > Tire > Stays On	GO to Pinpoint Test E

Symptom Chart(s)

Symptom Chart: Tire Pressure Monitoring System

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: Diagnostic Methods

(100-00 General Information, Description and Operation).

Symptom Chart

Condition	Actions
TPMS (tire pressure monitoring system) warning indicator is on continuously and the message center displays LOW TIRE PRESSURE	GO to Pinpoint Test E
The BCM (body control module) will not enter TPMS (tire pressure monitoring system) sensor training mode	GO to Pinpoint Test F
The TPMS (tire pressure monitoring system) warning indicator is never or always on	REFER to: Instrumentation, Message Center and Warning Chimes(413-01 Instrumentation, Message Center and

- RFI (radio frequency interference)
- RTM (radio transceiver module) communication concern
- TPMS (tire pressure monitoring system) sensor(s)
- GWM (gateway module A)
- BCM (body control module)

Visual Inspection and Pre-checks

- Inspect for cell phone chargers or GPS (global positioning system) units.
- Inspect for Non-Original Equipment Manufacturer (OEM) wheels or run-flat tires.
- Verify horn operation.
- Verify spare tire is not in use.

A1 CHECK FOR COMMUNICATION WITH THE GWM (GATEWAY MODULE A) , THE BCM (BODY CONTROL MODULE) AND THE RTM (RADIO TRANSCEIVER MODULE)

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

Do the GWM (gateway module A) , the BCM (body control module) and the RTM (radio transceiver module) pass the Network Test?

Yes	GO to A2

No	DIAGNOSE the GWM (gateway module A) , BCM (body control module) or RTM (radio transceiver module) does not respond to the scan tool.

A2 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 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 A3

A3 CHECK THE LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR AN OPEN

A5 CHECK THE BCM (BODY CONTROL MODULE) TPMS (TIRE PRESSURE MONITORING SYSTEM) STATUS (TPMS_STATUS) PID (PARAMETER IDENTIFICATION)

- Connect RTM (radio transceiver module) C9026.
- Connect BCM (body control module) C2280B.
- 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 A6

No	GO to A9

A6 CARRY OUT THE TPMS (TIRE PRESSURE MONITORING SYSTEM) SENSOR TRAINING PROCEDURE

- 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	GO to A7

A7 REPEAT THE TPMS (TIRE PRESSURE MONITORING SYSTEM) TRAINING

- **NOTE**

- 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 A9

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

A9 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Connect all BCM (body control module) connectors, the RTM (radio transceiver module) connector 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	The sensors may not be present. DISMOUNT the tires and VERIFY the correct sensors are present and mounted to the wheels. REFER to: Wheel and Tire (204-04A Wheels and Tires, Removal and Installation). If the sensors are missing, INSTALL new sensors. REFER to: Tire Pressure Monitoring System (TPMS) Sensor (204-04B Tire Pressure Monitoring System (TPMS), Removal and Installation). 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).

- Verify horn operation.
- Verify spare tire is not in use.

B1 CHECK THE BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

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

Is DTC (diagnostic trouble code) B1182:00 present?

Yes	GO to Pinpoint Test A

No	GO to B2

B2 CHECK THE BCM (BODY CONTROL MODULE) TPMS (TIRE PRESSURE MONITORING SYSTEM) STATUS (TPMS_STATUS) PID (PARAMETER IDENTIFICATION) AND SENSOR IDENTIFIERS

- Access the BCM (body control module) and monitor the TPM_S_ID_LF ((TPMS) Tire Sensor ID Left Front) PID (parameter identification)
- Access the BCM (body control module) and monitor the TPM_S_ID_RF ((TPMS) Tire Sensor ID Right Front) PID (parameter identification)
- Access the BCM (body control module) and monitor the TPM_S_ID_LRO ((TPMS) Tire Sensor ID Left Rear Outer) PID (parameter identification)
- Access the BCM (body control module) and monitor the TPM_S_ID_RRO ((TPMS) Tire Sensor ID Right Rear Outer) PID (parameter identification)
- View the BCM (body control module) TPMS_STATUS PID (parameter identification) .

Does the BCM (body control module) TPMS_STATUS PID (parameter identification) display SENSOR FAULT?

Yes	GO to B3

No	If the TPMS_STATUS PID (parameter identification) displays SYSTEM FAULT, GO to Pinpoint Test A Otherwise GO to B3

B3 CARRY OUT THE TPMS (TIRE PRESSURE MONITORING SYSTEM) SENSOR TRAINING PROCEDURE

- Train all 4 TPMS (tire pressure monitoring system) sensors.

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

No	GO to B5

B5 VERIFY ALL WIRING CONNECTIONS

- Ignition OFF.
- Disconnect all BCM (body control module) connectors, the RTM (radio transceiver module) connector 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 B6

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

B6 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Connect the BCM (body control module) connectors, the RTM (radio transceiver module) connector 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	The sensors may not be present. DISMOUNT the tires and VERIFY the correct sensors are present and mounted to the wheels. REFER to: Wheel and Tire (204-04A Wheels and Tires, Removal and Installation). If the sensors are missing, INSTALL new sensors.