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## 2007 FORD Focus 5 Doors OEM Service and Repair Workshop Manual

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| | |
|---|---|
| **No** | GO to H3 |

**H3 PERFORM THE TACHOMETER ACTIVE COMMAND USING THE DIAGNOSTIC SCAN TOOL**

- Using a diagnostic scan tool, view the IPC (instrument panel cluster) Parameter Identifications (PIDs).
- Access the IPC (instrument panel cluster) and control the TACH_IND (Tachometer Gauge Indicator Control) (%) PID (parameter identification)
- **NOTE**

  Make sure to set the diagnostic scan tool to 0 rpm before beginning this step.

  Command the tachometer on and off while monitoring the tachometer.

**Does the tachometer increase to approximately 8,000 rpm (4-inch display IPC (instrument panel cluster) ) or 7,000 rpm (8-inch display IPC (instrument panel cluster) ) when commanded on and return to 0 rpm when commanded off?**

| | |
|---|---|
| **Yes** | DIAGNOSE all PCM (powertrain control module) Diagnostic Trouble Codes (DTCs). REFER to the Master DTC (diagnostic trouble code) Chart. |

| | |
|---|---|
| **No** | GO to H4 |

**H4 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 |

| | |
|---|---|
| **No** | GO to I2 |

**I2 PERFORM THE IPC (INSTRUMENT PANEL CLUSTER) SELF-TEST**

- Using a diagnostic scan tool, perform the IPC (instrument panel cluster) self-test.
- Check for recorded Diagnostic Trouble Codes (DTCs) from the IPC (instrument panel cluster) self-test.

**Are any Diagnostic Trouble Codes (DTCs) recorded?**

| | |
|---|---|
| **Yes** | REFER to DTC (diagnostic trouble code) Chart: IPC (instrument panel cluster) in this section. |

| | |
|---|---|
| **No** | GO to I3 |

**I3 PERFORM THE TACHOMETER ACTIVE COMMAND USING THE DIAGNOSTIC SCAN TOOL**

- Using a diagnostic scan tool, view the IPC (instrument panel cluster) Parameter Identifications (PIDs).
- Access the IPC (instrument panel cluster) and control the TACH_IND (Tachometer Gauge Indicator Control) (%) PID (parameter identification)
- **NOTE**

  Make sure to set the diagnostic scan tool to 0 rpm before beginning this step.

  Command the tachometer in 10% increments while monitoring the tachometer.

**Does the tachometer increase approximately 800 rpm (4-inch display IPC (instrument panel cluster) ) or 700 rpm (8-inch display IPC (instrument panel cluster) ) with each 10% increment?**

| | |
|---|---|
| **Yes** | GO to I4 |

| | |
|---|---|
| **No** | GO to I5 |

**I4 CHECK THE PCM (POWERTRAIN CONTROL MODULE) RPM PID (PARAMETER IDENTIFICATION)**

- Using a diagnostic scan tool, view the PCM (powertrain control module) Parameter Identifications (PIDs).

**Normal Operation and Fault Conditions**

See Temperature Gauge. REFER to: Instrument Panel Cluster (IPC) - System Operation and Component Description(413-01 Instrumentation, Message Center and Warning Chimes, Description and Operation).

If the IPC (instrument panel cluster) does not receive the engine coolant temperature message or if the engine coolant temperature message is deemed invalid from the PCM (powertrain control module) for 5 seconds or longer, the IPC (instrument panel cluster) defaults the temperature gauge to cold (C).

**Possible Sources**

- Communication concern
- PCM (powertrain control module) concern
- GWM (gateway module A) concern
- IPC (instrument panel cluster)

**J1 PERFORM THE IPC (INSTRUMENT PANEL CLUSTER) SELF-TEST**

- Using a diagnostic scan tool, perform the IPC (instrument panel cluster) self-test.
- Check for recorded Diagnostic Trouble Codes (DTCs) from the IPC (instrument panel cluster) self-test.

**Are any Diagnostic Trouble Codes (DTCs) recorded?**

| | |
|---|---|
| **Yes** | REFER to DTC (diagnostic trouble code) Chart: IPC (instrument panel cluster) in this section. |

| | |
|---|---|
| **No** | GO to J2 |

**J2 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 J3 |

**J3 PERFORM THE TEMPERATURE GAUGE ACTIVE COMMAND USING THE DIAGNOSTIC SCAN TOOL**

- Using a diagnostic scan tool, view the IPC (instrument panel cluster) Parameter Identifications (PIDs).

- 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 FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new IPC (instrument panel cluster) .<br>REFER to: Instrument Panel Cluster (IPC)<br>(413-01 Instrumentation, Message Center and Warning Chimes, 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. |

**PINPOINT TEST K : INCORRECT ANALOG TEMPERATURE GAUGE INDICATION**

**Normal Operation and Fault Conditions**

See Temperature Gauge. REFER to: Instrument Panel Cluster (IPC) - System Operation and Component Description(413-01 Instrumentation, Message Center and Warning Chimes, Description and Operation).

If the engine coolant temperature message is missing for less than 5 seconds or if the IPC (instrument panel cluster) receives invalid engine temperature data for less than 5 seconds, the IPC (instrument panel cluster) defaults the temperature gauge to the last setting, based upon the last temperature message received.

**Possible Sources**

- Engine cooling system concern
- PCM (powertrain control module) concern
- IPC (instrument panel cluster)

**K1 CHECK FOR CORRECT OPERATION OF THE COOLING SYSTEM**

- Access the IPC (instrument panel cluster)  and control the ENGCOOLNT (Temperature Gauge) (%) PID (parameter identification)
- **NOTE**

  Make sure to set the diagnostic scan tool to 0 or full cold before beginning this step.

  Command the temperature gauge as follows:

| Command | Indication Range |
|---|---|
| 0% | Full cold (C) |
| 50% | Center of the gauge |
| 100% | Full hot (H) (red line) |

**Does the temperature gauge operate according to the above specifications?**

| | |
|---|---|
| **Yes** | GO to K5 |

| | |
|---|---|
| **No** | GO to K6 |

**K5 CHECK THE PCM (POWERTRAIN CONTROL MODULE) TEMPERATURE PID (PARAMETER IDENTIFICATION)**

- Using a diagnostic scan tool, view the PCM (powertrain control module)  Parameter Identifications (PIDs).
- Start the engine.
- Access the PCM (powertrain control module)  and monitor the CHT (Cylinder Head Temperature) (Deg C) PID (parameter identification)
- With the engine running and temperature increasing, monitor the PCM (powertrain control module) temperature PID (parameter identification) .

| Engine Temperature | Indication Range |
|---|---|
| under 38° C (100° F) | Full cold (C) |
| • For gasoline engines, 82° C (180° F) - 110° C (230° F) | Center of the gauge |

## PINPOINT TEST L : THE ANALOG TRANSMISSION TEMPERATURE GAUGE IS INOPERATIVE

**Normal Operation and Fault Conditions**

See Transmission Temperature Gauge. REFER to: Instrument Panel Cluster (IPC) - System Operation and Component Description(413-01 Instrumentation, Message Center and Warning Chimes, Description and Operation).

If the IPC (instrument panel cluster) does not receive the transmission fluid temperature data message or if the transmission fluid temperature data message is deemed invalid from the PCM (powertrain control module) for 5 seconds or longer, the IPC (instrument panel cluster) defaults the transmission temperature gauge to cold (C).

**Possible Sources**

- Communication concern
- PCM (powertrain control module) concern
- GWM (gateway module A) concern
- IPC (instrument panel cluster)

### L1 PERFORM THE IPC (INSTRUMENT PANEL CLUSTER) SELF-TEST

- Using a diagnostic scan tool, perform the IPC (instrument panel cluster) self-test.
- Check for recorded Diagnostic Trouble Codes (DTCs) from the IPC (instrument panel cluster) self-test.

**Are any Diagnostic Trouble Codes (DTCs) recorded?**

| | |
|---|---|
| **Yes** | REFER to DTC (diagnostic trouble code) Chart: IPC (instrument panel cluster) in this section. |
| **No** | GO to L2 |

### L2 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). |

| | |
|---|---|
| | 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 IPC (instrument panel cluster) .<br>REFER to: Instrument Panel Cluster (IPC)<br>(413-01 Instrumentation, Message Center and Warning Chimes, 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. |

**PINPOINT TEST M : INCORRECT TRANSMISSION TEMPERATURE GAUGE INDICATION**

**Normal Operation and Fault Conditions**

See Transmission Temperature Gauge. REFER to: Instrument Panel Cluster (IPC) - System Operation and Component Description(413-01 Instrumentation, Message Center and Warning Chimes, Description and Operation).

If the transmission temperature data message is missing for less than 5 seconds, the IPC (instrument panel cluster) defaults the transmission temperature gauge to the last setting, based upon the last message received.

If either (or both) the engine off status or the engine rpm data messages are missing, the IPC (instrument panel cluster) changes the method of filtering the data and the transmission temperature gauge may not respond to temperature changes as accurately.

**Possible Sources**

- Communication concern
- PCM (powertrain control module) concern
- IPC (instrument panel cluster)

**M1 RETRIEVE THE RECORDED DIAGNOSTIC TROUBLE CODES (DTCS) FROM THE PCM (POWERTRAIN CONTROL MODULE) SELF-TEST**

| | |
|---|---|
| 50% | Center of the gauge |
| 100% | Hot (H) (red line) |

**Does the transmission temperature gauge operate according to the above specifications?**

| | |
|---|---|
| **Yes** | GO to M4 |

| | |
|---|---|
| **No** | GO to M5 |

**M4 CHECK THE PCM (POWERTRAIN CONTROL MODULE) TRANSMISSION TEMPERATURE PID (PARAMETER IDENTIFICATION)**

- Using a diagnostic scan tool, view the PCM (powertrain control module) Parameter Identifications (PIDs).
- Start the engine.
- Access the PCM (powertrain control module) and monitor the TFT (Transmission Fluid Temperature) (Deg C) PID (parameter identification)
- With the engine running and the transmission temperature increasing, monitor the PCM (powertrain control module) transmission temperature PID (parameter identification) .

| Command | Indication Range |
|---|---|
| under 32° - 49° C (under 0° - 120° F) | Cold (C) (beginning of the normal range and below) |
| 64°-107° C (137°-225° F) | Center of the gauge |
| 135°-193° C (275°-379° F) | Hot (H) (end of the normal range and up) |

**Does the PCM (powertrain control module) PID (parameter identification) agree with the temperature gauge indication?**

| | |
|---|---|
| **Yes** | The transmission temperature gauge is operating correctly at this time. |

(reconfigurable telltale) warning indicator to its last indication state (on or off), based upon the last message received.
If the ABS (anti-lock brake system) warning indicator request message is missing for 5 seconds or longer, the IPC (instrument panel cluster) defaults the ABS (anti-lock brake system) warning indicator or RTT (reconfigurable telltale) warning indicator on.

**Possible Sources**

- Communication concern
- ABS (anti-lock brake system)
- GWM (gateway module A)
- IPC (instrument panel cluster)

**N1 IDENTIFY THE IPC (INSTRUMENT PANEL CLUSTER) LEVEL**

- Determine if the vehicle is equipped with a 4-inch display IPC (instrument panel cluster) .
  REFER to: Instrument Panel Cluster (IPC) - Overview(413-01 Instrumentation, Message Center and Warning Chimes, Description and Operation).

**Is the vehicle equipped with a 4-inch display IPC (instrument panel cluster) ?**

| | |
|---|---|
| **Yes** | GO to N3 |

| | |
|---|---|
| **No** | GO to N2 |

**N2 CHECK THE MESSAGE CENTER OPERATION**