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2003 FORD F-150 Super Crew OEM Service and Repair Workshop Manual

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- Using a diagnostic scan tool, perform the BCM (body control module) self-test.
- Record the results from the BCM (body control module) self-test.
- Using a diagnostic scan tool, clear the BCM (body control module) Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Insert the customer's second key.
- Ignition ON.
- Using a diagnostic scan tool, perform the BCM (body control module) self-test.
- Record the results from the BCM (body control module) self-test.

Is DTC (diagnostic trouble code) B10D7:87 present for both keys?

Yes	INSTALL a new PATS (passive anti-theft system) transceiver. REFER to: Passive Anti-Theft System (PATS) Transceiver (419-01B Passive Anti-Theft System (PATS) - Vehicles With: Keyed Ignition, Removal and Installation).

No	DISCARD the key in question and PROGRAM a new key. REFER to: Anti-Theft Key Programming - Scan Tool (419-01B Passive Anti-Theft System (PATS) - Vehicles With: Keyed Ignition, General Procedures).

PINPOINT TEST D : B10D7:8F

Normal Operation and Fault Conditions

When the ignition transitions to RUN or START, the BCM (body control module) activates the PATS (passive anti-theft system) transceiver to read the key in the ignition lock cylinder. If the BCM (body control module) does not receive a PATS (passive anti-theft system) key code or if the code is invalid, the PATS (passive anti-theft system) prevents the vehicle from starting.

REFER to: Passive Anti-Theft System (PATS) - System Operation and Component Description(419-01B Passive Anti-Theft System (PATS) - Vehicles With: Keyed Ignition, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
BCM (body control module) B10D7:8F	PATS Key: Erratic	Sets when the BCM (body control module) reads a partial or corrupt PATS (passive anti-theft system) key read.

Possible Sources

No	GO to D3

D3 ISOLATE THE PATS (PASSIVE ANTI-THEFT SYSTEM) KEYS

- Place the first PATS (passive anti-theft system) key in the ignition lock cylinder.
- Ignition ON.
- Using a diagnostic scan tool, clear the BCM (body control module) Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Using a diagnostic scan tool, perform the BCM (body control module) self-test. Record the results.
- Record the results from the BCM (body control module) self-test.
- Using a diagnostic scan tool, clear the BCM (body control module) Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Insert the customer's second key.
- Ignition ON.
- Using a diagnostic scan tool, perform the BCM (body control module) self-test. Record the results.
- Record the results from the BCM (body control module) self-test.

Is DTC (diagnostic trouble code) B10D7:8F retrieved for both keys?

Yes	INSTALL a new PATS (passive anti-theft system) transceiver. REFER to: Passive Anti-Theft System (PATS) Transceiver (419-01B Passive Anti-Theft System (PATS) - Vehicles With: Keyed Ignition, Removal and Installation).

No	DISCARD the key in question and PROGRAM a new key. REFER to: Anti-Theft Key Programming - Scan Tool (419-01B Passive Anti-Theft System (PATS) - Vehicles With: Keyed Ignition, General Procedures).

PINPOINT TEST E : B10D9:87

Refer to Wiring Diagrams Cell 112for schematic and connector information.

Normal Operation and Fault Conditions REFER to: Passive Anti-Theft System (PATS) - System Operation and Component Description

(419-01B Passive Anti-Theft System (PATS) - Vehicles With: Keyed Ignition, Description and Operation).

DTC Fault Trigger Conditions

C252-1	V	Ground

Is the voltage greater than 11 volts?

Yes	GO to E4

No	GO to E3

E3 CHECK THE PATS (PASSIVE ANTI-THEFT SYSTEM) TRANSCEIVER VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: BCM (body control module) C2280B.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C252-1	Ω	C2280B-47

Is the resistance less than 3 ohms?

Yes	GO to E8

No	REPAIR the circuit.

E4 CHECK THE PATS (PASSIVE ANTI-THEFT SYSTEM) TRANSCEIVER GROUND CIRCUIT FOR AN OPEN

- Measure:

Positive Lead	Measurement / Action	Negative Lead

C252-3	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to E7

No	REPAIR the circuit.

E7 CHECK THE LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR AN OPEN

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C252-3	Ω	C2280B-52

Is the resistance less than 3 ohms?

Yes	INSTALL a new PATS (passive anti-theft system) transceiver. REFER to: Passive Anti-Theft System (PATS) Transceiver (419-01B Passive Anti-Theft System (PATS) - Vehicles With: Keyed Ignition, Removal and Installation). CLEAR the Diagnostic Trouble Codes (DTCs) and repeat the BCM (body control module) self-test. If DTC (diagnostic trouble code) B10D9:87 is retrieved again, GO to E8

No	REPAIR the circuit.

E8 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all of the BCM (body control module) connectors.
- Repair:
  - corrosion (install new connectors or terminals, clean module pins)

- Wiring, terminals or connectors
- PATS (passive anti-theft system) transceiver
- BCM (body control module)
- PCM (powertrain control module)
- SOBDMC (secondary on-board diagnostic control module C) (if equipped)

NOTICE

Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

F1 REVIEW THE BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS) FROM THE SELF-TEST

- Review the Diagnostic Trouble Codes (DTCs) from the BCM (body control module) self-test.

Is DTC (diagnostic trouble code) C113A:11 present?

Yes	GO to F2

No	GO to F5

F2 ISOLATE THE PCM (POWERTRAIN CONTROL MODULE) / SOBDMC (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE C) (IF EQUIPPED) AS THE CAUSE FOR A SHORT TO GROUND ON THE WAKEUP CONTROL OUTPUT CIRCUIT

- Ignition OFF.
- Disconnect: PCM (powertrain control module) B-connector .
- Disconnect SOBDMC (secondary on-board diagnostic control module C) C1458A (if equipped).
- Ignition ON.
- Using a diagnostic scan tool, clear the BCM (body control module) Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Using a diagnostic scan tool, perform the BCM (body control module) self-test.

Is DTC (diagnostic trouble code) C113A:11 still present?

Yes	GO to F3

C2280B-47	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to F11

No	REPAIR the circuit in question.

F5 CHECK THE WAKEUP CONTROL CIRCUIT FOR AN OPEN OR SHORT TO VOLTAGE

- Attempt to start the vehicle.

Does the vehicle start?

Yes	GO to F7

No	GO to F6

F6 CHECK THE WAKEUP CONTROL CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: PATS (passive anti-theft system) Transceiver C252.
- Disconnect: BCM (body control module) C2280B
- Disconnect: BCM (body control module) C2280F
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C252-1	V	C2280B-47

Is the resistance less than 3 ohms?

Yes	GO to F11

Positive Lead	Measurement / Action	Negative Lead
C2280B-47	V⎓	Ground

Is any voltage present?

Yes	REPAIR the circuit.

No	GO to F9

F9 CHECK THE PATS (PASSIVE ANTI-THEFT SYSTEM) TRANSCEIVER WAKEUP CONTROL CIRCUIT AS THE CAUSE FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: BCM (body control module) C2280B.
- Disconnect: BCM (body control module) C2280F.
- Disconnect: PATS (passive anti-theft system) Transceiver C252.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2280F-18	V⎓	Ground

Positive Lead	Measurement / Action	Negative Lead
C2280B-47	V⎓	Ground

Is any voltage present?

- Repair:
  - corrosion (install new connectors or terminals, clean module pins)
  - damaged or bent pins - install new terminals/pins
  - pushed-out pins - install new pins as necessary
- Reconnect all the BCM (body control module) connectors and 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 address this concern, Install a new BCM (body control module) . REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing).

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 G : DTC (DIAGNOSTIC TROUBLE CODE) B10D5:13

Normal Operation and Fault Conditions

REFER to: Passive Anti-Theft System (PATS) - System Operation and Component Description(419-01B Passive Anti-Theft System (PATS) - Vehicles With: Keyed Ignition, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
BCM (body control module) B10D5:13	PATS Antenna: Circuit Open	Sets when the when there is an internal antenna circuit open.

Possible Sources

- PATS (passive anti-theft system) transceiver

G1 CHECK BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

No	PROGRAM the suspect key. REFER to: Anti-Theft Key Programming - Scan Tool (419-01B Passive Anti-Theft System (PATS) - Vehicles With: Keyed Ignition, General Procedures).

PINPOINT TEST I : DTC (DIAGNOSTIC TROUBLE CODE) B10D7:55

Normal Operation and Fault Conditions

REFER to: Passive Anti-Theft System (PATS) - System Operation and Component Description(419-01B Passive Anti-Theft System (PATS) - Vehicles With: Keyed Ignition, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
BCM (body control module) B10D7:55	PATS Key: Not Configured	Sets when the BCM (body control module) detects a fault with the CEI (configurable engine immobilizer) is not configured as part of the PMI (programmable module installation) .

Possible Sources

- CEI (configurable engine immobilizer) lock configuration not completed during PMI (programmable module installation) procedure.

I1 CHECK BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

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

Are there any other Diagnostic Trouble Codes (DTCs) Present?

Yes	DIAGNOSE all other Diagnostic Trouble Codes (DTCs) first. Refer to DTC (diagnostic trouble code) chart in this section. Chart. REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing).