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1989 FORD Fiesta 5 Doors OEM Service and Repair Workshop Manual

Go to manual page

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable Technical Service Bulletins (TSBs). If a TSB (Technical Service Bulletin) exists for this concern, DISCONTINUE this test and FOLLOW TSB (Technical Service Bulletin) instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SCCM (steering column control module) . Vehicles without adaptive steering, REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). Vehicles with adaptive steering, REFER to: Steering Column Control Module (SCCM) - Vehicles With: Adaptive Steering (211-05 Steering Wheel and Column Electrical Components, 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.

E9 CHECK FOR CORRECT HCM (HEADLAMP CONTROL MODULE) OPERATION

- Disconnect and inspect all HCM (headlamp control module) and all related in-line connectors.
- 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 HCM (headlamp control module) and all 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	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 HCM (headlamp control module) . REFER to: Headlamp Control Module (HCM) (417-01 Exterior Lighting, Removal and Installation).

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

Does the PID (parameter identification) value agree with the LH (left-hand) steering column multifunction switch position?

Yes	GO to F4

No	INSTALL a new LH (left-hand) steering column multifunction switch. REFER to: Steering Column Multifunction Switch LH (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). TEST the system for normal operation. If the concern still exists, GO to F3

F3 CHECK FOR CORRECT SCCM (STEERING COLUMN CONTROL MODULE) OPERATION

- Disconnect and inspect all SCCM (steering column control module) and all related in-line connectors.
- 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 SCCM (steering column control module) and all 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	CHECK OASIS (Online Automotive Service Information System) for any applicable Technical Service Bulletins (TSBs). If a TSB (Technical Service Bulletin) exists for this concern, DISCONTINUE this test and FOLLOW TSB (Technical Service Bulletin) instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SCCM (steering column control module) . Vehicles without adaptive steering, REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). Vehicles with adaptive steering, REFER to: Steering Column Control Module (SCCM) - Vehicles With: Adaptive Steering (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).

- The headlamp switch is in the AUTOLAMPS position and the autolamps feature has turned the exterior lamps on
- The vehicle speed is greater than 51 km/h (32 mph)
- The IPMA (image processing module A) determines the ambient lighting conditions are dark enough
- The IPMA (image processing module A) does not detect any light source that can be interpreted as an illuminated vehicle lamp

The IPMA (image processing module A) turns the high beams off if any of the following occur:

- The IPMA (image processing module A) detects any light source that can be interpreted as an illuminated vehicle lamp
- The IPMA (image processing module A) determines the ambient lighting conditions are not dark enough
- The vehicle speed falls below 44 km/h (27 mph)
- The autolamps are turned off
- The IPMA (image processing module A) determines the view is blocked

Possible Sources

- Windshield debris
- IPMA (image processing module A) (part of the interior rear view mirror)

NOTE

In cold weather conditions (4°C [40°F] or less), the auto high beams are inhibited for 10 minutes to allow the camera windshield defrost heater to clear the windshield in front of the auto high beam camera.

G1 VERIFY THE HIGH BEAM HEADLAMP OPERATION

- Place the headlamp switch in the HEADLAMPS ON position.
- Place the LH (left-hand) steering column multifunction switch in the HIGH BEAM position while observing the headlamps.

Do the high beam headlamps illuminate?

Yes	GO to G2
No	For halogen headlamps, GO to Pinpoint Test C For low series LED (light emitting diode) headlamps, GO to Pinpoint Test D For high series LED (light emitting diode) headlamps, GO to Pinpoint Test E

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
HCM (headlamp control module) B1437:87	Left Levelling Actuator: Missing Message	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) does not receive a left leveling actuator message from the LED (light emitting diode) control module on the LH (left-hand) headlamp LIN (local interconnect network) circuit.
HCM (headlamp control module) B1439:87	Right Levelling Actuator: Missing Message	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) does not receive a left leveling actuator message from the LED (light emitting diode) control module on the RH (right-hand) headlamp LIN (local interconnect network) circuit.
HCM (headlamp control module) B1D64:87	Left Headlamp Swiveling Motor: Missing Message	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) does not receive a headlamp swiveling motor message from the LED (light emitting diode) control module on the RH (right-hand) headlamp LIN (local interconnect network) circuit.
HCM (headlamp control module) B1D65:87	Right Headlamp Swiveling Motor: Missing Message	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) does not receive a headlamp swiveling motor message from the LED (light emitting diode) control module on the RH (right-hand) headlamp LIN (local interconnect network) circuit.

Possible Sources

- Fuse
- Wiring, terminals or connectors
- Headlamp assembly
- LED (light emitting diode) control module
- HCM (headlamp control module)

Visual Inspection and Pre-checks

- Inspect the headlamp for damage.

H1 VERIFY THE HIGH BEAM HEADLAMP OPERATION

- Place the headlamp switch in the HEADLAMPS ON position.

- Place the LH (left-hand) steering column multifunction switch in the LOW BEAM position and the headlamp switch in the OFF position.
- Ignition OFF.
- Substitute the known good headlamp assembly from the opposite side of the vehicle.
- Ignition ON.
- Using a diagnostic scan tool, perform the BCM (body control module) Local Interconnect Network (LIN) New Module Initialization routine.
- CLEAR the Diagnostic Trouble Codes (DTCs), REPEAT the self-test (required to enable the lamp output driver) and cycle the ignition OFF and ON. REPEAT the self-test.
- Place the headlamp switch in the HEADLAMPS position and the LH (left-hand) steering column multifunction switch in the HIGH BEAM position.
- Observe the system and determine if the concern is still present.

Is the concern still present or do the Diagnostic Trouble Codes (DTCs) return?

Yes	GO to H6

No	GO to H5

H5 CHECK THE LED (LIGHT EMITTING DIODE) CONTROL MODULE

- Place the LH (left-hand) steering column multifunction switch in the LOW BEAM position and the headlamp switch in the OFF position.
- Ignition OFF.
- Reinstall the original headlamp assembly for the inoperative side of the vehicle.
- **NOTE**

  Before using known good LED (light emitting diode) control module, make sure the part label exactly matches the suspect LED (light emitting diode) control module. If any differences are noted, do not use the module from the opposite side of the vehicle, INSTALL a new LED (light emitting diode) control module on the suspect headlamp.

  Substitute the known good LED (light emitting diode) control module from the opposite headlamp.
- Ignition ON.
- Using a diagnostic scan tool, perform the BCM (body control module) Local Interconnect Network (LIN) New Module Initialization routine.
- CLEAR the Diagnostic Trouble Codes (DTCs), REPEAT the self-test (required to enable the lamp output driver) and cycle the ignition OFF and ON. REPEAT the self-test.

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 I : FRONT OR REAR HEIGHT SENSOR CIRCUIT FAULTS - MULTIPLE DIAGNOSTIC TROUBLE CODES (DTCS)

Refer to Wiring Diagrams Cell 85for schematic and connector information.

Normal Operation and Fault Conditions REFER to: Exterior Lighting - Overview (417-01 Exterior Lighting, Description and Operation).

REFER to: Exterior Lighting - System Operation and Component Description (417-01 Exterior Lighting, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
HCM (headlamp control module) B1041:04	Levelling Control: System Internal Failures	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) detects an invalid input from the left rear height sensor.
HCM (headlamp control module) B1041:54	Levelling Control: Missing Calibration	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) detects an invalid input from the left rear height sensor.
HCM (headlamp control module) B1A59:1C	Sensor 5 Volt Supply: Circuit Voltage Out Of Range	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) detects that the 5 volt reference to the height sensors is lower than 4.75 volts or greater than 5.25 volts.
HCM (headlamp control module) C1A03:12	Left Front Height Sensor: Circuit Short To Battery	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) detects an invalid input from the left front height sensor.
HCM (headlamp control module)	Left Front Height Sensor: Circuit Short	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control

I1 CHECK HEADLAMP LEVELING SENSORS

- Place the headlamp switch in the OFF position.
- Ignition OFF.
- INSPECT the front and rear headlamp leveling sensors for damage connection to suspension.

Are the headlamp leveling sensors properly connected and free of damage?

Yes	GO to I2

No	CONNECT or replace the leveling sensor as needed.

I2 CHECK FOR SUPPLY VOLTAGE TO THE HEADLAMP LEVELING SENSOR

- Ignition OFF.
- Disconnect: LH (left-hand) Front Height Sensor C1153 and LH (left-hand) Rear Height Sensor C4092.
- Ignition ON.
- Measure:

  LH (left-hand) Front Height Sensor

Positive Lead	Measurement / Action	Negative Lead
C1153-3	V⎓	Ground

  LH (left-hand) Rear Height Sensor

Positive Lead	Measurement / Action	Negative Lead
C4092-3	V⎓	Ground

Is the voltage approximately 5 volts?

Yes	GO to I6

C1153-3	Ω	C2129-9

LH (left-hand) Rear Height Sensor

Positive Lead	Measurement / Action	Negative Lead
C4092-3	Ω	C2129-8

Is the resistance less than 3 ohms?

Yes	GO to I12

No	REPAIR the circuit.

I5 CHECK THE HEADLAMP LEVELING SENSOR VOLTAGE SUPPLY CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: HCM (headlamp control module) C2129.
- Ignition ON.
- Measure:

  LH (left-hand) Front Height Sensor

Positive Lead	Measurement / Action	Negative Lead
C1153-3	V	Ground

LH (left-hand) Rear Height Sensor

Positive Lead	Measurement / Action	Negative Lead

I7 CHECK THE HEADLAMP LEVELING SENSOR GROUND CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: HCM (headlamp control module) C2129.
- Ignition ON.
- Measure:
  LH (left-hand) Front Height Sensor

Positive Lead	Measurement / Action	Negative Lead
C1153-2	V⎓	Ground

LH (left-hand) Rear Height Sensor

Positive Lead	Measurement / Action	Negative Lead
C4092-2	V⎓	Ground

Is any voltage present?

Yes	REPAIR the circuit.

No	GO to I8

I8 CHECK THE HEADLAMP LEVELING SENSOR GROUND CIRCUIT FOR AN OPEN

- Measure:
  LH (left-hand) Front Height Sensor

Positive Lead	Measurement / Action	Negative Lead
C1153-2	Ω	C2129-15