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2013 FORD Ranger Regular Cab OEM Service and Repair Workshop Manual

Go to manual page

No	GO to Pinpoint Test A

C2 CHECK THE EXTERIOR MIRROR CONTROL SWITCH PARAMETER IDENTIFICATIONS (PIDS)

- Using a diagnostic scan tool, view the DDM (driver door module) Parameter Identifications (PIDs).
- Using a diagnostic scan tool, view the following DDM (driver door module) mirror control switch Parameter Identifications (PIDs):
  - L_MIR_SEL
  - R_MIR_SEL
  - MIR_SW_DOWN
  - MIR_SW_UP
  - MIR_SW_L
  - MIR_SW_R
- While monitoring the Parameter Identifications (PIDs), press the left mirror selection switch and press each directional control switch.
- While monitoring the Parameter Identifications (PIDs), press the right mirror selection switch and press each directional control switch.

Do the Parameter Identifications (PIDs) agree with the mirror control switch presses?

Yes	GO to C3

No	INSTALL a new LH (left-hand) front door window control switch. REFER to: Driver Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).

C3 CHECK THE VOLTAGE OUTPUT TO THE SUSPECT EXTERIOR MIRROR

NOTICE

The following step uses a test lamp to simulate normal circuit loads. Use only a Rotunda Test Lamp (SGT27000) or 250-300mA incandescent bulb test lamp. To avoid connector terminal damage, use the Rotunda Flex Probe kit for the test lamp probe connection to the vehicle. Do not use the test lamp probe directly on any connector.

- Ignition OFF.

C521-4		Ground

RH (right-hand)

Lead 1	Measurement / Action	Lead 2
C622-3		Ground
C622-4		Ground

- Press the exterior mirror control switch in the up/down directions and monitor the test lamp.

Does the test lamp illuminate only when the exterior mirror control switch is pressed in each direction?

Yes	GO to C4

No	GO to C5

C4 CHECK THE EXTERIOR MIRROR JUMPER HARNESS

- Inspect the exterior mirror jumper harness between the vehicle harness and the mirror motors for:
  - Open or short circuits
  - Damaged or pushed out pins
  - Corrosion

Is the harness OK?

Yes	INSTALL a new exterior mirror motor in question. REFER to: Exterior Mirror - Vehicles With: Long Arm Mirrors (501-09 Rear View Mirrors, Removal and Installation). REFER to: Exterior Mirror - Vehicles With: Short Arm Mirrors (501-09 Rear View Mirrors, Removal and Installation).

C622-4	V	Ground
C622-3	V	Ground

Is any voltage present?

Yes	REPAIR the circuit in question.

No	GO to C6

C6 CHECK THE SUSPECT EXTERIOR MIRROR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:
  LH (left-hand)

Positive Lead	Measurement / Action	Negative Lead
C521-5	Ω	Ground
C521-4	Ω	Ground
C521-3	Ω	Ground

RH (right-hand)

Positive Lead	Measurement / Action	Negative Lead

Positive Lead	Measurement / Action	Negative Lead
C622-5	Ω	C652B-10
C622-4	Ω	C652B-21
C622-3	Ω	C652B-9

Are the resistances less than 3 ohms?

Yes	GO to C8

No	REPAIR the circuit in question.

C8 CHECK FOR CORRECT DDM (DRIVER DOOR MODULE) / PDM (PASSENGER DOOR MODULE) OPERATION

- Disconnect and inspect all DDM (driver door module) / PDM (passenger door module) connectors and 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 DDM (driver door module) / PDM (passenger door module) connectors and related in-line connectors. Make sure they seat and latch correctly.
- Operate the system to 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 the TSB (Technical Service Bulletin) instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new DDM (driver door module) / PDM (passenger door module) .

D1 CHECK THE MIRROR MOVEMENT

- Ignition ON.
- Operate the suspect exterior mirror in the up, down, left and right directions.

Does the suspect exterior mirror operate in any direction?

Yes	GO to D2

No	GO to Pinpoint Test A

D2 CHECK THE VOLTAGE OUTPUT TO THE SUSPECT EXTERIOR MIRROR

NOTICE

The following step uses a test lamp to simulate normal circuit loads. Use only a Rotunda Test Lamp (SGT27000) or 250-300mA incandescent bulb test lamp. To avoid connector terminal damage, use the Rotunda Flex Probe kit for the test lamp probe connection to the vehicle. Do not use the test lamp probe directly on any connector.

- Ignition OFF.
- Disconnect: Suspect Exterior Mirror C521 (LH (left-hand) concern) or C622 (RH (right-hand) concern).
- Ignition ON.
- Select the suspect exterior mirror by pressing the appropriate exterior mirror selection switch.
- Connect:

LH (left-hand)

Lead 1	Measurement / Action	Lead 2
C521-5		Ground
C521-4		Ground

RH (right-hand)

Yes	GO to D3

No	GO to D4

D3 CHECK THE EXTERIOR MIRROR JUMPER HARNESS

- Inspect the exterior mirror jumper harness between the vehicle harness and the mirror motors for:
  - Open or short circuits
  - Damaged or pushed out pins
  - Corrosion

Is the harness OK?

Yes	INSTALL a new exterior mirror motor in question. REFER to: Exterior Mirror - Vehicles With: Long Arm Mirrors (501-09 Rear View Mirrors, Removal and Installation). REFER to: Exterior Mirror - Vehicles With: Short Arm Mirrors (501-09 Rear View Mirrors, Removal and Installation).

No	REPAIR the harness as necessary. If the harness cannot be repaired, INSTALL a new exterior mirror. REFER to: Exterior Mirror - Vehicles With: Long Arm Mirrors (501-09 Rear View Mirrors, Removal and Installation). REFER to: Exterior Mirror - Vehicles With: Short Arm Mirrors (501-09 Rear View Mirrors, Removal and Installation).

D4 CHECK THE SUSPECT EXTERIOR MIRROR CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: Driver door window control swtich C5006A.
- Ignition ON.
- Measure:

  LH (left-hand)

Positive Lead	Measurement / Action	Negative Lead

Positive Lead	Measurement / Action	Negative Lead
C521-5	Ω	Ground
C521-4	Ω	Ground
C521-3	Ω	Ground

RH (right-hand)

Positive Lead	Measurement / Action	Negative Lead
C622-5	Ω	Ground
C622-4	Ω	Ground
C622-3	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to D6

No	REPAIR the circuit in question.

D6 CHECK THE SUSPECT EXTERIOR MIRROR CIRCUITS FOR AN OPEN

- Measure:

- Disconnect and inspect all driver door window control switch connectors and 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 driver door window control switch connectors and related in-line connectors. Make sure they seat and latch correctly.
- Operate the system to determine if the concern is still present.

Is the concern still present?

Yes	VERIFY that all power windows can be operated normally from the LH (left-hand) front door window control switch. If all power windows operate normally from the LH (left-hand) front door window control switch, INSTALL a new driver door window control switch. REFER to: Driver Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, 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 E : THE EXTERIOR MIRROR MEMORY RECALL FEATURE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY - FOR VEHICLE WITH DDM / PDM

NOTE

Clean the entire mirror assembly and glass to assist in verification of the customer concern and/or impact damage. Do not clean any mirror glass or housing with an ice scraper, razor blade, abrasive pad, harsh chemicals or petroleum based cleaning products, as these may damage the mirror glass and/or housing.

NOTE

If the DDM (driver door module) or PDM (passenger door module) detects a mirror motor feedback circuit fault, a timeout strategy disables the memory operations for 30 seconds to prevent system damage. After the 30 seconds timeout, normal operation resumes.

PDM (passenger door module) B1C15:11	Passenger Up/Down Mirror Motor Feedback: Circuit Short To Ground	A continuous and on-demand DTC (diagnostic trouble code) that sets in the PDM (passenger door module) if the PDM (passenger door module) detects a short to ground from the vertical position feedback circuit.
PDM (passenger door module) B1C15:15	Passenger Up/Down Mirror Motor Feedback: Circuit Short To Battery Or Open	A continuous and on-demand DTC (diagnostic trouble code) that sets in the PDM (passenger door module) if the PDM (passenger door module) detects a short to voltage or open from the vertical position feedback circuit.
PDM (passenger door module) B1C16:11	Passenger Left/Right Mirror Motor Feedback: Circuit Short To Ground	A continuous and on-demand DTC (diagnostic trouble code) that sets in the PDM (passenger door module) if the PDM (passenger door module) detects a short to ground from the horizontal position feedback circuit.
PDM (passenger door module) B1C16:15	Passenger Left/Right Mirror Motor Feedback: Circuit Short To Battery Or Open	A continuous and on-demand DTC (diagnostic trouble code) that sets in the PDM (passenger door module) if the PDM (passenger door module) detects a short to voltage or open from the horizontal position feedback circuit.
PDM (passenger door module) C1B15:11	Sensor Supply Voltage B: Circuit Short To Ground	A continuous and on-demand DTC (diagnostic trouble code) that sets in the DDM (driver door module) / PDM (passenger door module) if the DDM (driver door module) / PDM (passenger door module) detects a short to ground from the exterior mirror position sensor voltage supply circuit.
PDM (passenger door module) C1B15:15	Sensor Supply Voltage B: Circuit Short To Battery Or Open	A continuous and on-demand DTC (diagnostic trouble code) that sets in the DDM (driver door module) / PDM (passenger door module) if the DDM (driver door module) / PDM (passenger door module) detects a short to voltage or open from the exterior mirror position sensor voltage supply circuit.

Possible Sources

- Wiring, terminals or connectors
- Memory seat system concern
- Power mirror system concern
- Exterior mirror motor
- Exterior mirror
- DDM (driver door module)