Seatbelt Systems - Seatbelt Systems

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Diagnosis and Testing

Refer to Wiring Diagrams Cell 046-1, for schematic and connector information.

General Equipment

Ford diagnostic equipment

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Safety belt retractor(s) • Safety belt buckle(s) • Safety belt retractor and pretensioner(s) • Safety belt shoulder height adjuster(s)	• Relay(s) • Electrical connector(s) • Wiring harness • Driver safety belt buckle switch • Driver safety belt retractor pretensioner • Driver safety belt anchor pretensioner • Driver seat position sensor • Passenger safety belt buckle switch • Rear safety belt buckle switch assembly • Passenger safety belt retractor pretensioner • Rear safety belt inflator(s) • Restraints control module (RCM)

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next stop.
4. If the cause is not visually evident, verify the symptom and refer to the Symptom Chart.

Symptom Chart

Symptom	Possible Sources	Action
Normal mode - occupant restraint system inoperative.	* Safety belt retractor.	* CARRY OUT the Safety Belt Retractor Component Test in this section.

Component Test - Safety Belt Buckle and Tongue

NOTE: Make sure that the safety belt buckle and tongue assembly operate freely during the latching and unlatching function. Fasten the safety belt by inserting the tongue into the buckle.

1. Verify the following during the latching sequence:

- Tongue insertion does not require excessive effort.
- A click is heard when the safety belt buckle latches the tongue.

2. Verify the system integrity by forcefully pulling on the safety belt webbing.
3. Unlatch the safety belt by fully pressing the safety belt buckle release button and allowing the safety belt to release and retract.
4. Verify the following during the unlatching process:

- Pressing the push button does not require excessive effort.
- The tongue can be removed easily from the buckle.

5. Repeat the above steps 3 times.
6. If the test reveals a concern(s), install a new safety belt buckle or safety belt retractor as required.

Component Test - Safety Belt Retractor

NOTE: Make sure that the safety belt retractor is freely operational for extraction and retraction of the safety belt webbing between full extension and in-vehicle stowed positions.

1. Extract and retract the safety belt between the full extension and stowed positions.
2. Verify the safety belt retractor operates without excessive effort or binding.

3. Install a new safety belt retractor if any concern is found.

Component Test - Safety Belt Retractor, Road Test Inspection

NOTE: Make sure that there is no excessive slack in the safety belt webbing across the torso during testing.
NOTE: Do not jerk on the safety belt webbing when carrying out this test.

1. Fasten the safety belts and proceed to a safe area.
2. Reach a speed of 24 km/h (14.9 mph).
3.  WARNING: Apply maximum brake force only on dry concrete or equivalent hard surface, never on wet pavement or gravel. Failure to follow this instruction may result in serious personal injury.
   Grasp the shoulder harness, lean forward and apply the brakes, making a maximum braking application without a skid.
4. The safety belts should lock up with minimum webbing extension.
5. If there is a lockup of all safety belt retractors being tested, the safety belt retractors are functioning correctly. If any safety belt retractor fails to lock up, install a new safety belt retractor(s).

Component Test - Safety Belt Retractor, Road Test Inspection, Inflatable Safety Belt

NOTE: Make sure that there is no excessive slack in the safety belt webbing across the torso during testing.
NOTE: Do not jerk on the safety belt webbing when carrying out this test.

1. Move the seat in front of the seating position being tested as far forward as is safely possible.
2. Fasten the safety belts and proceed to a safe area.
3. Reach a speed of 24 km/h (14.9 mph).
4.  WARNING: Apply maximum brake force only on dry concrete or equivalent hard surface, never on wet pavement or gravel. Failure to follow this instruction may result in serious personal injury.
   Grasp the shoulder harness, lean forward and apply the brakes, making a maximum braking application without a skid.
5. The inflatable safety belt shoulder harness should lock up with minimum webbing extension.
6. Safely bring the vehicle to a stop.
7. Pull about 152.4 mm (6 in) of inflatable safety belt lap belt webbing off of the lap. Hold the belt off of the lap.
8. Reach a speed of 24 km/h (14.9 mph).
9.  WARNING: Apply maximum brake force only on dry concrete or equivalent hard surface, never on wet pavement or gravel. Failure to follow this instruction may result in serious personal injury.
   While holding the inflatable safety belt lap belt, apply the brakes, making a maximum braking application without a skid.
10. The inflatable safety belt lap belt should lock up with minimum webbing extension.
11. If there is a lockup of all inflatable safety belt retractors being tested, the inflatable safety belt retractors are functioning correctly. If any inflatable safety belt retractor fails to lock up, install a new inflatable safety belt retractor(s).

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