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2001 FORD Mondeo Wagon OEM Service and Repair Workshop Manual

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- Ignition OFF.
- Depower the SRS (supplemental restraint system) .
  REFER to: Supplemental Restraint System (SRS) Depowering(501-20B Supplemental Restraint System, General Procedures).
- Disconnect Second Row Driver Side Seatbelt Retractor Pretensioner C3646 .
- Repower the SRS (supplemental restraint system) .
  Do not
  prove out the SRS (supplemental restraint system) at this time.
  REFER to: Supplemental Restraint System (SRS) Repowering(501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- Attempt to recreate the fault by wiggling connectors (including any inline connectors) and flexing the wire harness frequently.
- Using a diagnostic scan tool, perform RCM (restraints control module) self-test.

Was DTC (diagnostic trouble code) B1410:12 retrieved on-demand during self-test?

Yes	DEPOWER the SRS (supplemental restraint system) and REPAIR as necessary. REFER to: Supplemental Restraint System (SRS) Depowering (501-20B Supplemental Restraint System, General Procedures). Refer to Wiring Diagrams Cell 5for schematic and connector information. GO to AE17

No	The fault is not present and cannot be recreated at this time. Do not install any new SRS (supplemental restraint system) components at this time. Install SRS (supplemental restraint system) components only when directed to do so in the pinpoint test. GO to AE16

AE16 CHECK THE HARNESS AND CONNECTORS

- Ignition OFF.
- Depower the SRS (supplemental restraint system) .
  REFER to: Supplemental Restraint System (SRS) Depowering(501-20B Supplemental Restraint System, General Procedures).
- Disconnect Second Row Driver Side Seatbelt Retractor Pretensioner C3646 .
  - Inspect connector(s) (including any inline connectors) for corrosion, loose or spread terminals and loose or frayed wire connections at terminals.
  - Inspect wire harness for any damage, pinched, cut or pierced wires.

Yes	Do not clear any Diagnostic Trouble Codes (DTCs) until **all** Diagnostic Trouble Codes (DTCs) have been resolved. DIAGNOSE and REPAIR the SRS (supplemental restraint system) Diagnostic Trouble Codes (DTCs). REFER to the DTC (diagnostic trouble code) Chart in this section.

No	The repair is complete. RETURN the vehicle to the customer.

PINPOINT TEST AF : B1412:11, B1412:12, B1412:13, B1412:1A

Refer to Wiring Diagrams Cell 46for schematic and connector information.
Normal Operation and Fault Conditions REFER to: Airbag and Seatbelt Pretensioner Supplemental Restraint System (SRS) - System Operation and Component Description (501-20B Supplemental Restraint System, Description and Operation).
The RCM (restraints control module) continuously monitors the second row passenger side seatbelt retractor pretensioner circuits for the following faults:

- Resistance out of range
- Unexpected voltage
- Short to ground
- Faulted second row passenger side seatbelt retractor pretensioner

If a fault is detected, the RCM (restraints control module) stores DTC (diagnostic trouble code) B1412:11, B1412:12, B1412:13 or B1412:1A in memory and sends a message to the IPC (instrument panel cluster) to illuminate the airbag warning indicator.
The RCM (restraints control module) analyzes the deployment loop resistance to determine if a fault exists. The value displayed in the PID (parameter identification) is the deployment loop resistance measured by the RCM (restraints control module). If the value displayed is lower or higher than the desired range (refer to diagram below), the RCM (restraints control module) can set a DTC (diagnostic trouble code). As the deployment loop resistance drifts farther outside the desired range, the chance for a DTC (diagnostic trouble code) increases. Small variations in resistance can occur due to the effect of road vibrations on terminal fit. Crimps and terminals can be affected by stress and harness movement and can cause an increase in

RCM (restraints control module) B1412:13	Second Row Passenger Side Seatbelt Pretensioner Deployment Control: Circuit Open	A fault is indicated when the RCM (restraints control module) measures more than the desired resistance between the second row passenger side seatbelt retractor pretensioner circuits for more than 6 seconds.
RCM (restraints control module) B1412:1A	Second Row Passenger Side Seatbelt Pretensioner Deployment Control: Circuit Resistance Below Threshold	A fault is indicated when the RCM (restraints control module) measures less than the desired resistance between the second row passenger side seatbelt retractor pretensioner circuits for more than 6 seconds.

Possible Sources

- Wiring, terminals or connectors
- Second row passenger side seatbelt retractor pretensioner
- RCM (restraints control module)

WARNING

Incorrect repair techniques or actions can cause an accidental Supplemental Restraint System (SRS) deployment. Never compromise or depart from these instructions. Failure to precisely follow all instructions could result in serious personal injury from an accidental deployment.

NOTICE

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

NOTE

Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

NOTE

	For DTC (diagnostic trouble code) B1412:13 or B1412:1A, GO to AF2 For DTC (diagnostic trouble code) B1412:11, GO to AF8 For DTC (diagnostic trouble code) B1412:12, GO to AF10

No	This is an intermittent fault when present as a CMDTC (continuous memory diagnostic trouble code) only. If DTC (diagnostic trouble code) U3003:16 or U3003:17 is also retrieved on-demand, GO to Pinpoint Test BD If DTC (diagnostic trouble code) U3003:16 or U3003:17 is not retrieved on-demand during self-test, DIAGNOSE the second row passenger side seatbelt retractor pretensioner Continuous Memory Diagnostic Trouble Codes (CMDTCs). For DTC (diagnostic trouble code) B1412:13 or B1412:1A, GO to AF13 For DTC (diagnostic trouble code) B1412:11, GO to AF14 For DTC (diagnostic trouble code) B1412:12, GO to AF15

AF2 CHECK THE SECOND ROW PASSENGER SIDE SEATBELT RETRACTOR PRETENSIONER DEPLOYMENT CONTROL (DEPLOY_22_R) PID (PARAMETER IDENTIFICATION)

- Using the diagnostic scan tool,
  Access the RCM (restraints control module) and monitor the DEPLOY_22_R (Second Row Passenger Side Seatbelt Pretensioner Deployment Control) (mOhm) PID (parameter identification)
- Monitor and record the value of the PID (parameter identification) .

Does the PID (parameter identification) value read between 1.7 and 2.98 ohms?

Yes	GO to AF12

No	GO to AF3

AF3 CHECK THE SECOND ROW PASSENGER SIDE SEATBELT RETRACTOR PRETENSIONER DEPLOYMENT CONTROL (DEPLOY_22_R) PID (PARAMETER IDENTIFICATION) WHILE CARRYING OUT THE HARNESS TEST

- Using the diagnostic scan tool,
  Access the RCM (restraints control module) and monitor the DEPLOY_22_R (Second Row Passenger Side Seatbelt Pretensioner Deployment Control) (mOhm) PID (parameter identification)
- While monitoring the PID (parameter identification) , carry out the harness test of the second row passenger side seatbelt retractor pretensioner circuits and accessible connectors (including any inline connectors) by wiggling and flexing the wire harness and connectors frequently.

Did the on-demand DTC (diagnostic trouble code) change from B1412:1A to B1412:13?

Yes	GO to AF11

No	GO to AF5

AF5 CHECK FOR A SHORT BETWEEN THE SECOND ROW PASSENGER SIDE SEATBELT RETRACTOR PRETENSIONER CIRCUITS

- Ignition OFF.
- Depower the SRS (supplemental restraint system) .
  REFER to: Supplemental Restraint System (SRS) Depowering(501-20B Supplemental Restraint System, General Procedures).
- Disconnect RCM (restraints control module) C310A and C310B .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3647-1	Ω	C3647-2

Is the resistance greater than 10,000 ohms?

Yes	GO to AF12

No	REPAIR the circuit(s). Refer to Wiring Diagrams Cell 5for schematic and connector information. GO to AF17

AF6 CHECK THE SECOND ROW PASSENGER SIDE SEATBELT RETRACTOR PRETENSIONER CIRCUITS FOR AN OPEN

- Ignition OFF.
- Depower the SRS (supplemental restraint system) .

C3647-1		C3647-2

- Repower the SRS (supplemental restraint system) .
  Do not
  prove out the SRS (supplemental restraint system) at this time.
  REFER to: Supplemental Restraint System (SRS) Repowering(501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- Using a diagnostic scan tool, perform RCM (restraints control module) self-test.
- **DIAGNOSTIC TIP:**
  When viewing Diagnostic Trouble Codes (DTCs) with the second row passenger side seatbelt retractor pretensioner circuits shorted together, a low resistance fault is normally retrieved.

Did the on-demand DTC (diagnostic trouble code) change from B1412:13 to B1412:1A?

Yes	REMOVE the fused jumper wire and GO to AF11

No	REMOVE the fused jumper wire and GO to AF12

AF8 CHECK THE SECOND ROW PASSENGER SIDE SEATBELT RETRACTOR PRETENSIONER DEPLOYMENT CONTROL DTC (DIAGNOSTIC TROUBLE CODE) FOR A FAULT STATUS CHANGE (SHORT TO GROUND INDICATED)

NOTE

This pinpoint test step attempts to change the fault reported by the RCM (restraints control module) by inducing a different fault condition. If the reported fault changes, this indicates the RCM (restraints control module) is functioning correctly and is not the source of the fault.

- Ignition OFF.
- Depower the SRS (supplemental restraint system) .
  REFER to: Supplemental Restraint System (SRS) Depowering(501-20B Supplemental Restraint System, General Procedures).
- Disconnect Second Row Passenger Side Seatbelt Retractor Pretensioner C3647 .
- Repower the SRS (supplemental restraint system) .
  Do not
  prove out the SRS (supplemental restraint system) at this time.

No	REPAIR the circuit(s). Refer to Wiring Diagrams Cell 5for schematic and connector information. GO to AF17

AF10 CHECK THE SECOND ROW PASSENGER SIDE SEATBELT RETRACTOR PRETENSIONER CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Depower the SRS (supplemental restraint system) .
  REFER to: Supplemental Restraint System (SRS) Depowering(501-20B Supplemental Restraint System, General Procedures).
- Disconnect Second Row Passenger Side Seatbelt Retractor Pretensioner C3647 .
- Disconnect RCM (restraints control module) C310A and C310B .
- Repower the SRS (supplemental restraint system) .
  Do not
  prove out the SRS (supplemental restraint system) at this time.
  REFER to: Supplemental Restraint System (SRS) Repowering(501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3647-1	V	Ground
C3647-2	V	Ground

Is any voltage present?

Yes	REPAIR the circuit(s). Refer to Wiring Diagrams Cell 5for schematic and connector information. GO to AF17

	(501-20A Seatbelt Systems, Removal and Installation). GO to AF17

No	In the process of diagnosing the fault, the fault condition has become intermittent. Do not install any new SRS (supplemental restraint system) components at this time. Install SRS (supplemental restraint system) components only when directed to do so in the pinpoint test. For DTC (diagnostic trouble code) B1412:13 or B1412:1A, GO to AF13 For DTC (diagnostic trouble code) B1412:11, GO to AF14 For DTC (diagnostic trouble code) B1412:12, GO to AF15

AF12 CONFIRM THE RCM (RESTRAINTS CONTROL MODULE) FAULT

NOTE

Make sure all SRS (supplemental restraint system) components and the RCM (restraints control module) electrical connectors are connected before carrying out the self-test. If not, Diagnostic Trouble Codes (DTCs) will be recorded.

- Ignition OFF.
- Depower the SRS (supplemental restraint system) .
  REFER to: Supplemental Restraint System (SRS) Depowering(501-20B Supplemental Restraint System, General Procedures).
- Prior to reconnecting any previously disconnected SRS (supplemental restraint system) component:
  - Inspect connector(s) (including any inline connectors) for pushed-out, loose or spread terminals and loose or frayed wire connections at terminals.
  - Inspect wire harness for any damaged, pinched, cut or pierced wires.
  - Inspect RCM (restraints control module) C310A and C310B Connector Position Assurance (CPA) lever/lock for correct operation.
  - Repair any concerns found.
    Refer to Wiring Diagrams Cell 5for schematic and connector information.
- Connect Second Row Passenger Side Seatbelt Retractor Pretensioner C3647 (if previously disconnected).
- Connect RCM (restraints control module) C310A and C310B (if previously disconnected).
- Repower the SRS (supplemental restraint system) .
  Do not
  prove out the SRS (supplemental restraint system) at this time.
  REFER to: Supplemental Restraint System (SRS) Repowering(501-20B Supplemental Restraint System, General Procedures).

	(501-20B Supplemental Restraint System, General Procedures). REPAIR as necessary. Refer to Wiring Diagrams Cell 5for schematic and connector information. GO to AF17

AF14 CHECK THE SECOND ROW PASSENGER SIDE SEATBELT RETRACTOR PRETENSIONER DEPLOYMENT CONTROL CIRCUITS FOR AN INTERMITTENT SHORT TO GROUND FAULT

- Attempt to recreate the fault by wiggling connectors (including any inline connectors) and flexing the wire harness frequently.
- Using a diagnostic scan tool, perform RCM (restraints control module) self-test.

Was DTC (diagnostic trouble code) B1412:11 retrieved on-demand during self-test?

Yes	DEPOWER the SRS (supplemental restraint system) and REPAIR as necessary. REFER to: Supplemental Restraint System (SRS) Depowering (501-20B Supplemental Restraint System, General Procedures). Refer to Wiring Diagrams Cell 5for schematic and connector information. GO to AF17

No	The fault is not present and cannot be recreated at this time. Do not install any new SRS (supplemental restraint system) components at this time. Install SRS (supplemental restraint system) components only when directed to do so in the pinpoint test. GO to AF16

AF15 CHECK THE SECOND ROW PASSENGER SIDE SEATBELT RETRACTOR PRETENSIONER DEPLOYMENT CONTROL CIRCUITS FOR AN INTERMITTENT SHORT TO BATTERY FAULT

- Ignition OFF.
- Depower the SRS (supplemental restraint system) .
  REFER to: Supplemental Restraint System (SRS) Depowering(501-20B Supplemental Restraint System, General Procedures).
- Disconnect Second Row Passenger Side Seatbelt Retractor Pretensioner C3647 .
- Repower the SRS (supplemental restraint system) .
  Do not
  prove out the SRS (supplemental restraint system) at this time.
  REFER to: Supplemental Restraint System (SRS) Repowering(501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.