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## 2004 FORD Tourneo Connect OEM Service and Repair Workshop Manual

[Go to manual page](#)

Refer to: [Pyrotechnic Device Health and Safety Precautions](#)(100-00 General Information, Description and Operation).

2. Lower the headliner.

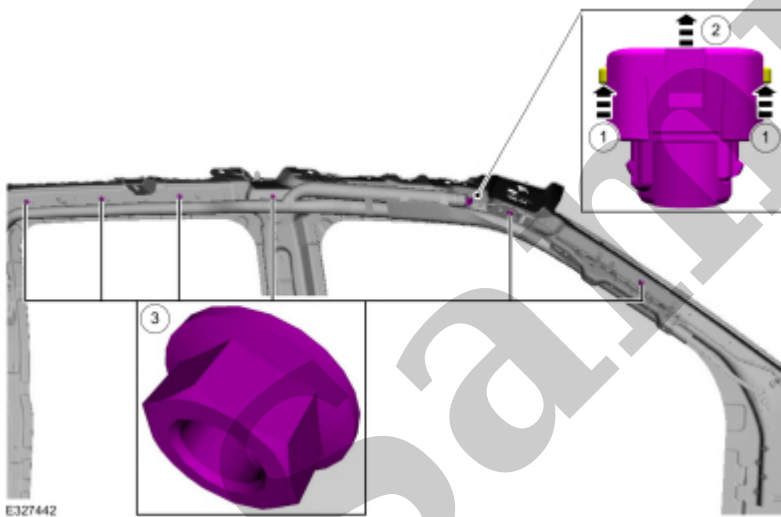
Refer to: [Headliner - Lowering - SuperCrew](#)(501-05 Interior Trim and Ornamentation, Removal and Installation).

3. Depower the SRS (supplemental restraint system) .

Refer to: [Supplemental Restraint System \(SRS\) Depowering](#)(501-20B Supplemental Restraint System, General Procedures).

4.
  1. Raise the locking tabs of the side curtain airbag electrical connector.
  2. Disconnect the side curtain airbag electrical connector.
  3. Remove the side curtain airbag nuts.

***Torque*** : 133 lb.in (15 Nm)

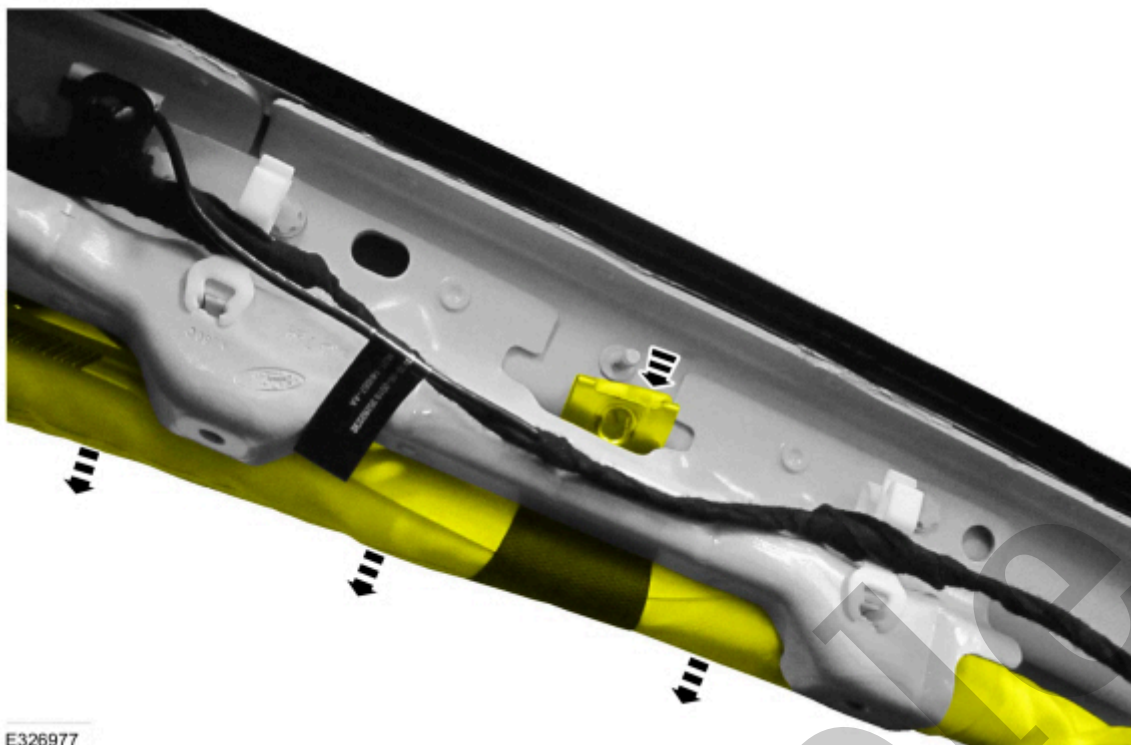


[Click here to learn about symbols, color coding, and icons used in this manual.](#)

5.
  1. Remove the side curtain airbag bolts.

***Torque*** : 133 lb.in (15 Nm)

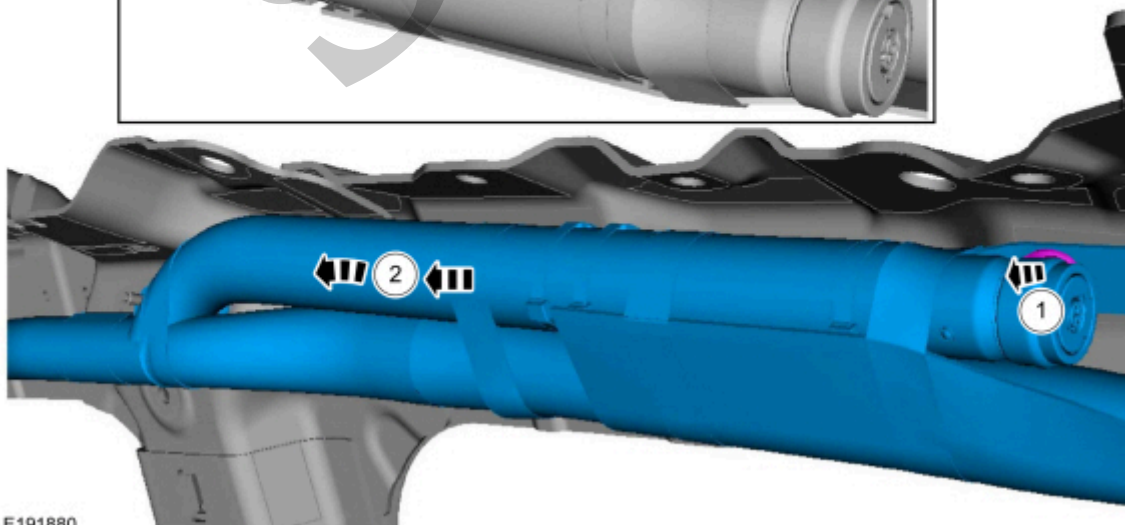
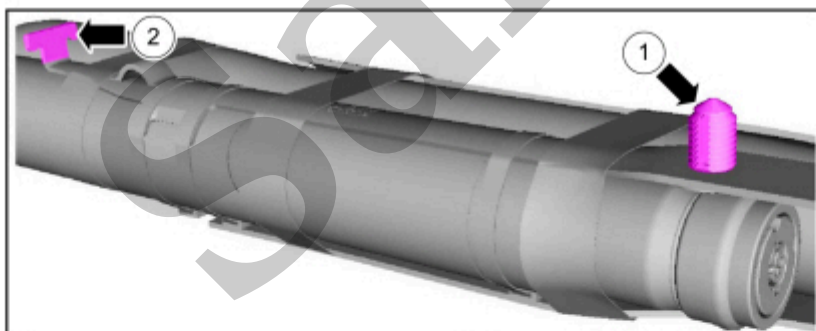
2. Separate the front and rear tether clip.



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8. 1. Detach the retainer.
2. Slide the side curtain airbag rearward and out, disengaging the T-tab from the sheet metal and remove the side curtain airbag.



E191880

## Wipers and Washers - Overview

<b>501-16 Wipers and Washers</b>	<b>2022 F-150</b>
<b>Description and Operation</b>	<b>Procedure revision date: 10/1/2020</b>

### Wipers and Washers - Overview

#### Overview

The windshield wiper/washer system is activated by the wiper/washer switch. The following functions/features of the windshield wiper/washer system are:

- Windshield wash (includes camera wash, if equipped)
- Courtesy wipe
- Windshield wipers (low/high speed)
- Intermittent wipers
- Speed dependent wipers
- Wiper activated exterior lamps
- Rain sensitive wipers (if equipped)

There are 5 intermittent/sensitivity settings to choose from for the intermittent/rain sensitive wipers.

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1	Washer Motor
2	Wiper Switch
3	BCM (body control module)
4	Wiper Motor
5	Rain Sensor
6	Wiper Relay
7	BCMC (body control module C)
8	SCCM (steering column control module)
9	PCM (powertrain control module)
10	IPC (instrument panel cluster)
11	GWM (gateway module A)

## Network Message Chart

### SCCM (steering column control module) Network Input Messages

Broadcast Message	Originating Module	Message Purpose
Vehicle speed	PCM (powertrain control module)	The SCCM (steering column control module) uses vehicle speed information for the operation of the speed sensitive wiper function.
Message center feature configuration	IPC (instrument panel cluster)	The SCCM (steering column control module) uses the message center feature configuration to enable/disable the courtesy wipe and the rain sensitive wiper features.

### BCM (body control module) Network Input Messages

Broadcast	Originating Module	Message Purpose

When the wiper/washer switch is in an intermittent setting, the windshield wiper motor activates at timed intervals. The lower the setting, the longer the interval between wipes.

### **Speed Dependent Wipers**

When the wiper/washer switch is in an intermittent setting, the speed dependent feature increases the frequency of wiping as the vehicle speed increases to compensate for the extra moisture that accumulates on the windshield.

The SCCM (steering column control module) receives the vehicle speed from the PCM (powertrain control module). The SCCM (steering column control module) then sends the vehicle speed data to the windshield wiper motor through the LIN (local interconnect network).

### **Rain Sensitive Wipers (if equipped)**

When equipped, the rain sensitive wiper feature replaces the intermittent wiper feature. The rain sensitive feature is active when the wiper/washer switch is in any of the 4 auto/intermittent sensitivity settings. The setting closest to OFF is the least sensitive to moisture, the highest setting being the most sensitive to moisture.

The rain sensor sends data through the LIN (local interconnect network) to the windshield wiper motor. Based on the data received from the rain sensor and the auto/intermittent setting from the wiper/washer switch, the system automatically activates and adjusts the wiper speed and frequency when moisture is detected on the windshield.

If a fault is detected with the rain sensitive feature, the windshield wipers change to a default intermittent mode. The timing of the wipers correspond to a standard intermittent setting based on the auto/intermittent sensitivity setting on the wiper/washer switch.

### **Wiper Activated Exterior Lamps**

When the headlamp switch is set to AUTO, the BCM (body control module) turns the exterior lamps on within 10 seconds of the windshield wipers being activated by the wiper/washer switch. Approximately 60 seconds after the windshield wipers turn off, the BCM (body control module) turns the exterior lamps off.

If the rain sensitive wipers are activated by moisture detected on the windshield when the headlamp switch is in the AUTO position, the BCM (body control module) turns the exterior lamps on after a time delay. Shortly after the rain sensitive wipers are deactivated (moisture no longer detected on the windshield), the BCM (body control module) turns the exterior lamps off after a time delay.

### **Component Description**

#### **Wiper/Washer Switch**

The wiper/washer switch is part of the multifunction switch which is mounted directly to the SCCM (steering column control module). The windshield wiper/washer inputs to the SCCM (steering column control module) are:

## Wipers and Washers

<b>501-16 Wipers and Washers</b>	<b>2022 F-150</b>
<b>Diagnosis and Testing</b>	<b>Procedure revision date: 08/29/2022</b>

### Wipers and Washers

#### Diagnostic Trouble Code (DTC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#)

(100-00 General Information, Description and Operation).

#### Diagnostic Trouble Code Chart

Module	DTC (diagnostic trouble code)	Description	Action
BCM (body control module)	B130F:12	Run Accessory Control: Circuit Short To Battery	<a href="#">GO to Pinpoint Test A</a>
BCM (body control module)	B130F:14	Run Accessory Control: Circuit Short To Ground or Open	<a href="#">GO to Pinpoint Test A</a>
BCM (body control module)	B130F:14	Run Accessory Control: Circuit Short To Ground or Open	<a href="#">GO to Pinpoint Test D</a>
SCCM (steering column control module)	B10AD:02	Rain Sensor: General Signal Failure	<a href="#">GO to Pinpoint Test F</a>
SCCM (steering column control module)	B10AD:08	Rain Sensor: Bus Signal / Message Failure	<a href="#">GO to Pinpoint Test F</a>

Start/Run/Move > Noise > Running/Standing > Always	<a href="#">GO to Pinpoint Test R</a>
Lighting/Glass/Vision > Windows/Glass > Windshield > Appearance	<a href="#">GO to Pinpoint Test P</a>
Lighting/Glass/Vision > Windows/Glass > Windshield > Appearance	<a href="#">GO to Pinpoint Test Q</a>
Lighting/Glass/Vision > Wipers/Washers > Windshield Wiper > Alignment	<a href="#">GO to Pinpoint Test G</a>
Lighting/Glass/Vision > Wipers/Washers > Windshield Wiper > Inoperative	<a href="#">GO to Pinpoint Test C</a>
Lighting/Glass/Vision > Wipers/Washers > Windshield Wiper > Inoperative	<a href="#">GO to Pinpoint Test E</a>
Lighting/Glass/Vision > Wipers/Washers > Windshield Washer > Inoperative	<a href="#">GO to Pinpoint Test H</a>
Lighting/Glass/Vision > Wipers/Washers > Windshield Washer > Inoperative	<a href="#">GO to Pinpoint Test J</a>
Lighting/Glass/Vision > Wipers/Washers > Windshield Washer > Stays On	<a href="#">GO to Pinpoint Test I</a>

## Symptom Chart

### Symptom Chart: Wiper and Washer

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#)

(100-00 General Information, Description and Operation).

## Symptom Chart

Condition	Actions
Wiper blade performance concerns - poor cleaning, streaking, or chatter	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test P</a></li> </ul>
All windshield wiper modes are inoperative	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a></li> </ul>
The intermittent and/or low speed windshield wipers are inoperative	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test B</a></li> </ul>
The high speed windshield wipers are inoperative	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test C</a></li> </ul>
The windshield wipers stay on continuously	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test D</a></li> </ul>
The windshield wipers do not operate correctly in the intermittent mode	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test E</a></li> </ul>



SCCM (steering column control module) B1131:02	Wiper motor module: General Signal Failure	Sets when the input to the windshield wiper motor from the fail-safe circuit does not match the requested input from the SCCM (steering column control module) .
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#### Possible Sources

- Fuse
- Wiring, terminals or connectors
- Wiper/washer switch
- BCMC (body control module C)
- Windshield wiper motor
- SCCM (steering column control module)
- BCM (body control module)

#### Visual Inspection and Pre-checks

- Inspect BCMC (body control module C) fuses 69 (30A) and 124 (5A)

#### NOTICE

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

#### A1 CHECK FOR BCM (BODY CONTROL MODULE) DTC (DIAGNOSTIC TROUBLE CODE) B130F:12, B130F:14 OR SCCM (STEERING COLUMN CONTROL MODULE) DTC (DIAGNOSTIC TROUBLE CODE) B1131:02

- Ignition ON.
- Using a diagnostic scan tool, carry out the BCM (body control module) self-test.
- Using a diagnostic scan tool, carry out the SCCM (steering column control module) self-test.

#### Is DTC (diagnostic trouble code) B130F:12, B130F:14 or B1131:02 present?

<b>Yes</b>	For DTC (diagnostic trouble code) B130F:12, GO to <a href="#">A2</a> For DTC (diagnostic trouble code) B130F:14, GO to <a href="#">A4</a> For DTC (diagnostic trouble code) B1131:02, GO to <a href="#">A11</a>
<b>No</b>	GO to <a href="#">A7</a>

#### A2 CHECK THE BCMC (BODY CONTROL MODULE C) WIPER RELAY CONTROL CIRCUIT FOR A SHORT TO VOLTAGE

**No** GO to [A15](#)

#### A4 CHECK THE WIPER RELAY CONTROL CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect BCM (body control module) C2280F .
- Disconnect: negative battery cable.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2280F-24	$\Omega$	Ground

**Is the resistance greater than 10,000 ohms?**

**Yes** GO to [A6](#)

**No** GO to [A5](#)

#### A5 ISOLATE THE WINDSHIELD WIPER RELAY CONTROL SUPPLY CIRCUIT SHORT TO GROUND

- Disconnect BCMC (body control module C) C1035B .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2280F-24	$\Omega$	Ground

**Is the resistance greater than 10,000 ohms?**

**Yes** INSTALL a new BCMC (body control module C)