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## 2016 Ford E-350 Super Duty Service and Repair Manual

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## Accessory Drive Belt

<b>303-05D Accessory Drive - 3.5L V6 PowerBoost (CN)</b>	<b>2022 F-150</b>
<b>Removal and Installation</b>	<b>Procedure revision date: 09/1/2020</b>

### Accessory Drive Belt

#### Removal

##### WARNING

Vehicles with engine auto start-stop technology may start automatically with the ignition on. Make sure the ignition is off when servicing or working in close proximity to rotating engine parts. Failure to follow this instruction could result in serious personal injury.

##### NOTICE

Under no circumstances should the accessory drive belt, tensioner or pulleys be lubricated as potential damage to the belt material and tensioner damping mechanism will occur. Do not apply any fluids or belt dressing to the accessory drive belt or pulleys.

##### NOTE

Removal steps in this procedure may contain installation details.

1. Disconnect the battery.

Refer to: [Battery Disconnect and Connect](#)(414-01 Battery, Mounting and Cables, General Procedures).

2. Remove the coolant pump belt.

Install the following items:

1. Using 14 mm lug feature, rotate the lower tensioner arm counter clockwise (downward).

2. Pin the lower tensioner arm to the backing plate using a suitable tool.

Use the General Equipment: Dowel with a Diameter of 5 mm

3. Using 14 mm lift lug feature, rotate the upper tensioner arm clockwise (upward).

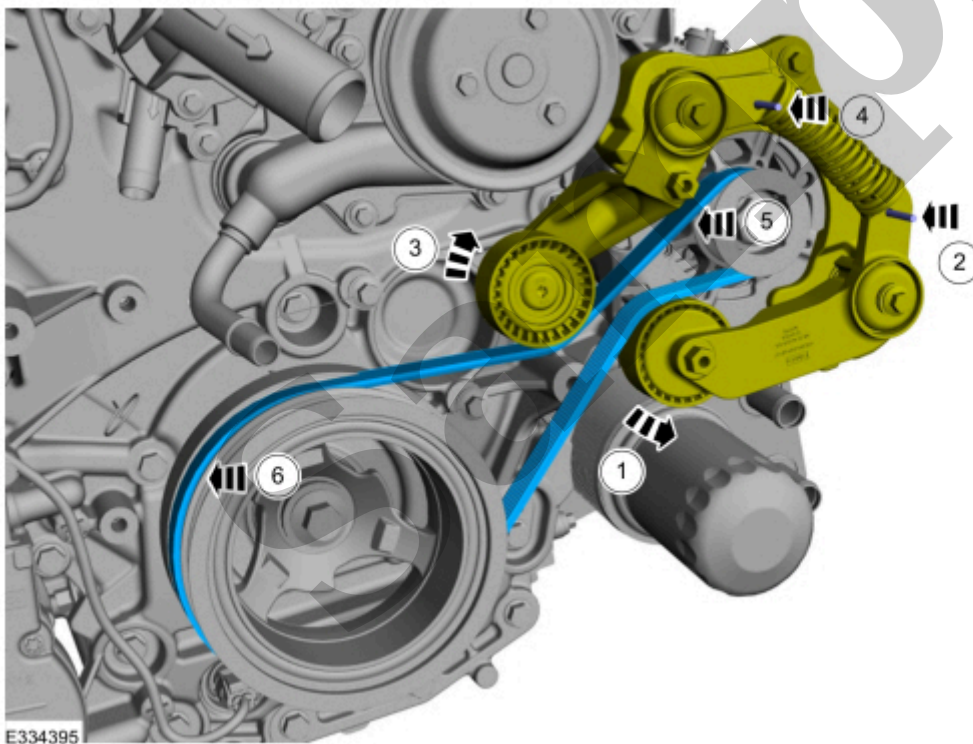
4. Pin the upper tensioner arm to the backing plate using a suitable tool.

Use the General Equipment: Dowel with a Diameter of 5 mm

5. Install the accessory drive belt under the tensioner arm pulleys and around the grooved alternator (BiSG) pulley.

6. Install the accessory drive belt over the grooved crankshaft pulley.

7. Remove the dowels and release the tensioner arms.



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

## 2. NOTE

Check for lumps in the accessory drive belt surface that may indicate ribs are out of pulley grooves



# Coolant Pump Belt

303-05D Accessory Drive - 3.5L V6 PowerBoost (CN)	2022 F-150
Removal and Installation	Procedure revision date: 09/1/2020

## Coolant Pump Belt

### Removal

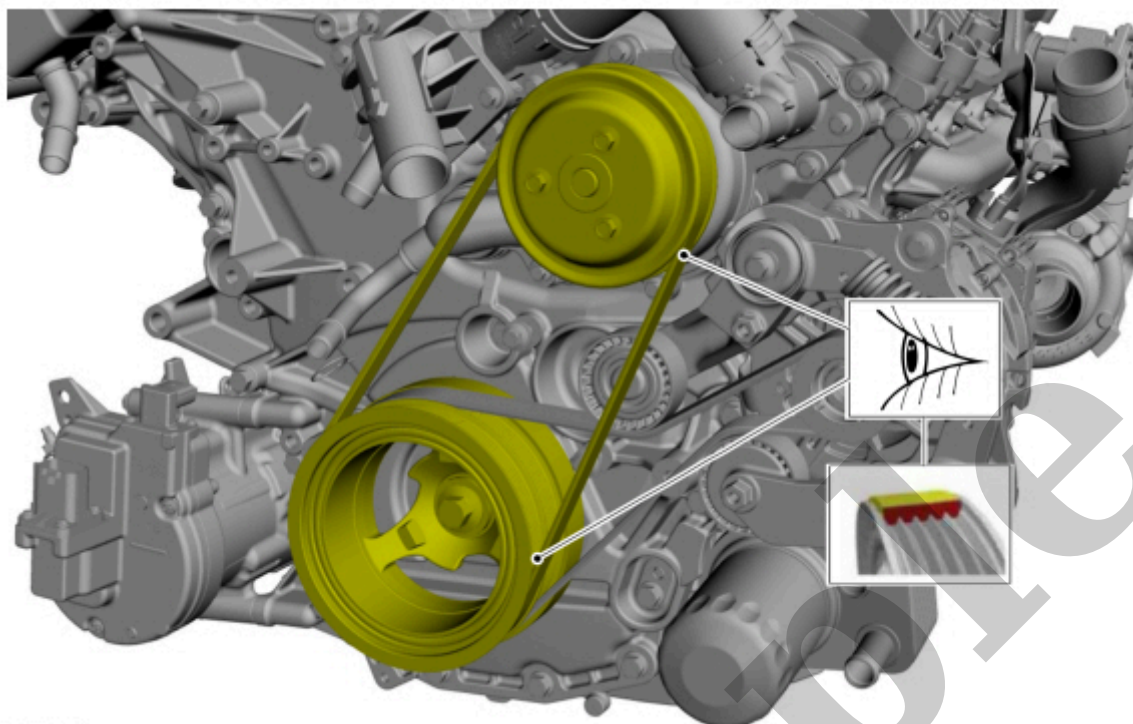
#### NOTICE

Serious injury may occur if the engine is accidentally started by another person during service work. Remove the key from the vehicle to prevent unauthorized starts. Failure to follow this instruction may result in serious personal injury.

1. With the vehicle in NEUTRAL, position it on a hoist.  
Refer to: [Jacking and Lifting - Overview](#)(100-02 Jacking and Lifting, Description and Operation).
2. Cut the coolant pump belt.  
Use the General Equipment: Knife

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

2. Make sure the accessory drive belt is correctly seated on all the pulleys.



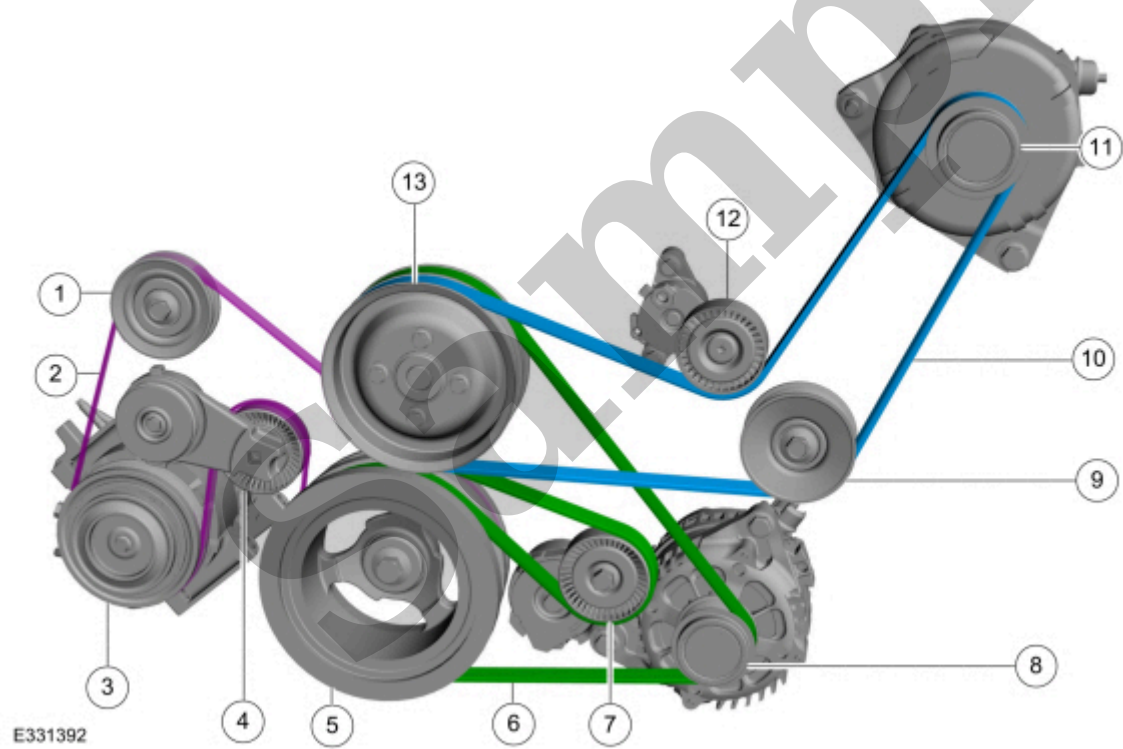
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3	Pulley - A/C compressor
4	A/C compressor belt tensioner
5	Crankshaft pulley
6	Accessory drive belt tensioner
7	Coolant pump pulley
8	Accessory drive belt
9	Generator pulley

Accessory Drive Belt Routing — With Dual generators



Item	Description
1	A/C compressor belt idler pulley
2	Belt - A/C compressor
3	Pulley - A/C compressor

## Accessory Drive

<b>303-05E Accessory Drive - 5.0L 32V Ti-VCT</b>	<b>2022 F-150</b>
<b>Diagnosis and Testing</b>	<b>Procedure revision date: 08/18/2020</b>

### Accessory Drive

#### Symptom Chart(s)

#### Symptom Chart: Accessory Drive

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
Accessory drive belt noise	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a></li> </ul>
Accessory drive belt chirp	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test B</a></li> </ul>
Accessory drive rattle	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test C</a></li> </ul>

#### Pinpoint Tests

##### NOTICE

Do not lubricate the accessory drive belt as potential damage to the accessory drive belt material construction may occur.

REFER to: [Accessory Drive Belt - Vehicles With: Dual Generators](#)  
(303-05E Accessory Drive - 5.0L 32V Ti-VCT, Removal and Installation).  
or a/c compressor belt REFER to: [Air Conditioning \(A/C\) Compressor Belt](#)  
(303-05E Accessory Drive - 5.0L 32V Ti-VCT, Removal and Installation).

No

GO to [A3](#)

### A3 CHECK THE ACCESSORY DRIVE BELT AND A/C COMPRESSOR BELT FOR CHUNKING

#### NOTE

Chunking describes the condition where long lengths of rubber become detached from the ribs of the accessory drive belt. This is considered to be a failure of the accessory drive belt.

- Check the accessory drive and a/c compressor belts for chunking.

#### Do the drive belts show signs of chunking?

Yes

INSTALL a new accessory drive belt.  
REFER to: [Accessory Drive Belt](#)  
(303-05E Accessory Drive - 5.0L 32V Ti-VCT, Removal and Installation).  
REFER to: [Accessory Drive Belt - Vehicles With: Dual Generators](#)  
(303-05E Accessory Drive - 5.0L 32V Ti-VCT, Removal and Installation).  
or a/c compressor belt REFER to: [Air Conditioning \(A/C\) Compressor Belt](#)  
(303-05E Accessory Drive - 5.0L 32V Ti-VCT, Removal and Installation).

No

GO to [A6](#)

### A4 CHECK THE ACCESSORY DRIVE BELT AND A/C COMPRESSOR BELT FOR PILLING

#### NOTE

Pilling is dust that forms in between the ribs of the accessory drive belt from rubber that is worn off the accessory drive belt when it is new. There may also be loose particles left on the accessory drive belt during the manufacturing process. These are worn off and form into small balls of rubber that then get



<b>Yes</b>	RECTIFY the source of the leak if necessary and INSTALL a new a/c compressor drive belt. REFER to: <a href="#">Air Conditioning (A/C) Compressor Belt</a> (303-05E Accessory Drive - 5.0L 32V Ti-VCT, Removal and Installation).
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<b>No</b>	GO to <a href="#">A7</a>
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## A7 CHECK THE ACCESSORY DRIVE BELT FOR INCORRECT FITMENT

### NOTE

Accessory drive belt noise can be generated by the accessory drive belt being incorrectly fitted on the pulley. Make sure that all the V grooves on the accessory drive belt contact correctly with the pulley.

- Check the accessory drive belt for incorrect fitment.

### Does the accessory drive belt show signs of incorrect fitment?

<b>Yes</b>	INSTALL the accessory drive belt correctly and retest. REFER to: <a href="#">Air Conditioning (A/C) Compressor Belt</a> (303-05E Accessory Drive - 5.0L 32V Ti-VCT, Removal and Installation).
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## A8 CHECK THE A/C COMPRESSOR DRIVE BELT FOR INCORRECT FITMENT

### NOTE

A/C compressor drive belt noise can be generated by the accessory drive belt being incorrectly fitted on the pulley. Make sure that all the V grooves on the accessory drive belt contact correctly with the pulley.

- Check the a/c compressor drive belt for incorrect fitment.

### Does the a/c compressor drive belt show signs of incorrect fitment?

<b>Yes</b>	INSTALL a new a/c compressor drive belt correctly and retest. REFER to: <a href="#">Air Conditioning (A/C) Compressor Belt</a> (303-05E Accessory Drive - 5.0L 32V Ti-VCT, Removal and Installation).
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**Does the accessory drive belt or a/c compressor drive belt show signs of incorrectness, damage or contamination?**

**Yes**

[GO to Pinpoint Test A](#)

**No**

GO to [B3](#)

### **B3 CHECK FOR PULLEY MISALIGNMENT**

- Engine RUNNING.

**Are the accessory drive belts running centrally on the flat pulleys?**

**Yes**

With the engine running at idle, use a stethoscope to identify the source of the noise. INSTALL new components as necessary.

**No**

CHECK the pulleys for excessive end float and bent flanges and replace as necessary

### **PINPOINT TEST C : ACCESSORY DRIVE BELT RATTLE**

#### **NOTE**

Rattle is defined as a metallic knocking noise

#### **Normal Operation and Fault Conditions**

REFER to: [Accessory Drive - Component Location](#)(303-05B Accessory Drive - 3.3L Duratec-V6, Description and Operation).

#### **Possible Sources**

- Generator
- Air conditioning (A/C) compressor
- Pulley(s)
- Loose hardware
- Loose components

**Diagnostic steps are not provided for this symptom or DTC. REFER to: Diagnostic Methods (100-00**