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2016 Ford F-150 Service and Repair Manual

Go to manual page

3	Upper accessory drive belt idler pulley
4	A/C compressor pulley
5	Accessory drive belt tensioner
6	Secondary generator pulley (If equipped)
7	Secondary generator drive belt (If equipped)
8	Crankshaft belt pulley
9	Lower accessory drive belt idler pulley
10	Coolant pump pulley

PINPOINT TEST A : ACCESSORY DRIVE BELT NOISE

Normal Operation and Fault Conditions

REFER to: Accessory Drive - Component Location(303-05A Accessory Drive - 2.7L EcoBoost (238kW/324PS), Description and Operation).

Possible Sources

- Damaged or contaminated accessory drive belt
- Damaged or contaminated pulley(s)
- Incorrect accessory drive belt
- Incorrect fitment of the accessory drive belt

Visual Inspection and Pre-checks

- Inspect for loose, damaged, contaminated or incorrect components.

A1 CHECK FOR THE SOURCE OF THE NOISE.

- Use a stethoscope or other listening device to determine the source of the noise.

Can the source of the noise be identified?

Yes	INSTALL a new component as necessary.

No	GO to A2

A2 CHECK FOR ACCESSORY DRIVE BELT AND A/C COMPRESSOR BELT FOR CRACKING

NOTE

Accessory drive belts are made from rubber which hardens with time and can develop cracks. As the accessory drive belt runs on the back of some of the pulleys, the cracks are opened up. Small cracks are not considered to be a failure of the accessory drive belt. Only if the crack is deep enough to reach the bottom of the groove to expose the cord or any chunks are found to be missing from the accessory drive belt, is the accessory drive belt condition considered to be unacceptable.

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

Do the drive belts show signs of cracking?

Yes	INSTALL a new accessory drive belt. REFER to: Accessory Drive Belt (303-05B Accessory Drive - 3.3L Duratec-V6, Removal and Installation).

No	GO to A6

A5 CHECK FOR INCORRECT, DAMAGED OR CONTAMINATED ACCESSORY DRIVE BELT

- Check the accessory drive belt for incorrect belt, damage or contamination.

Does the accessory drive belt show signs of incorrectness, damage or contamination?

Yes	RECTIFY the source of the leak if necessary and INSTALL a new accessory drive belt. REFER to: Accessory Drive Belt (303-05B Accessory Drive - 3.3L Duratec-V6, Removal and Installation).

No	GO to A6

A6 CHECK FOR INCORRECT, DAMAGED OR CONTAMINATED A/C COMPRESSOR DRIVE BELT

- Check the a/c compressor drive belt for incorrect belt, damage or contamination.

Does the a/c compressor drive belt show signs of incorrectness, damage or contamination?

Yes	RECTIFY the source of the leak if necessary and INSTALL a new a/c compressor drive belt. REFER to: Accessory Drive Belt (303-05B Accessory Drive - 3.3L Duratec-V6, Removal and Installation).

No	GO to A7

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?

- Damaged or contaminated pulley(s)
- Incorrect fitment of the accessory drive belt
- Pulley misalignment

Visual Inspection and Pre-checks

- Inspect for loose, damaged, contaminated or incorrect components.

B1 CHECK FOR THE SOURCE OF THE NOISE.

- Use a stethoscope or other listening device to determine the source of the noise.

Can the source of the noise be identified?

Yes	INSTALL a new component as necessary.

No	GO to B2

B2 CHECK FOR INCORRECT, DAMAGED OR CONTAMINATED ACCESSORY OR A/C COMPRESSOR DRIVE BELT

- Check the accessory or a/c compressor drive belt for incorrect belt, damage or contamination.

Does the accessory or a/c compressordrive belt show signs of incorrectness, damage or contamination?

Yes	GO to Pinpoint Test A

No	GO to B3

B3 CHECK FOR PULLEY MISALIGNMENT

2. Detach the accessory drive belt in the area of the accessory drive belt tensioner.
3. **NOTE**

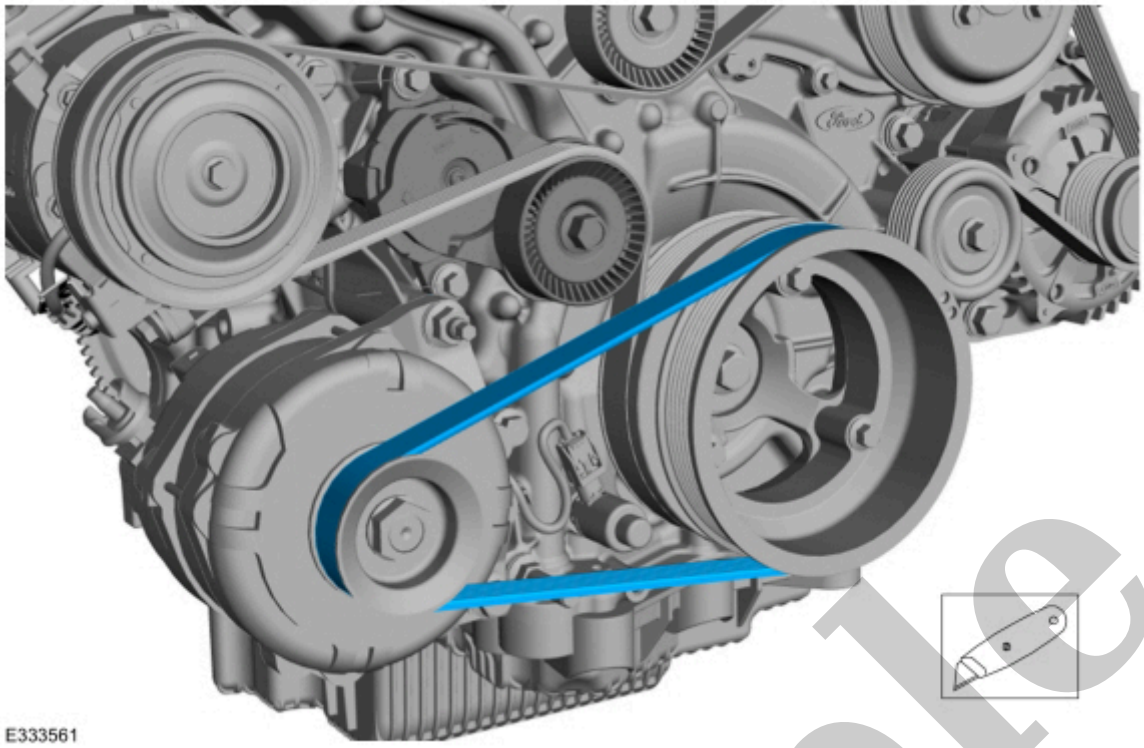
   The accessory drive belt tensioner has a damping feature, which is usually a friction device, therefore some friction within the system is normal.

   Using the correct tool, move the accessory drive belt tensioner from its relaxed position through its full stroke and back to the relaxed position to make sure there is no excessive stick, grab or bind, and to make sure there is tension on the accessory drive belt tensioner spring.
4. Rotate the accessory drive belt tensioner pulley and check for damage, freedom of rotation and alignment.
5. If the accessory drive belt tensioner meets the above criteria, proceed to test the accessory drive belt tensioner dynamically. If the accessory drive belt tensioner does not meet the above criteria, REFER to the Symptom Chart in this section.

Accessory Drive Belt Tensioner - Dynamic Check

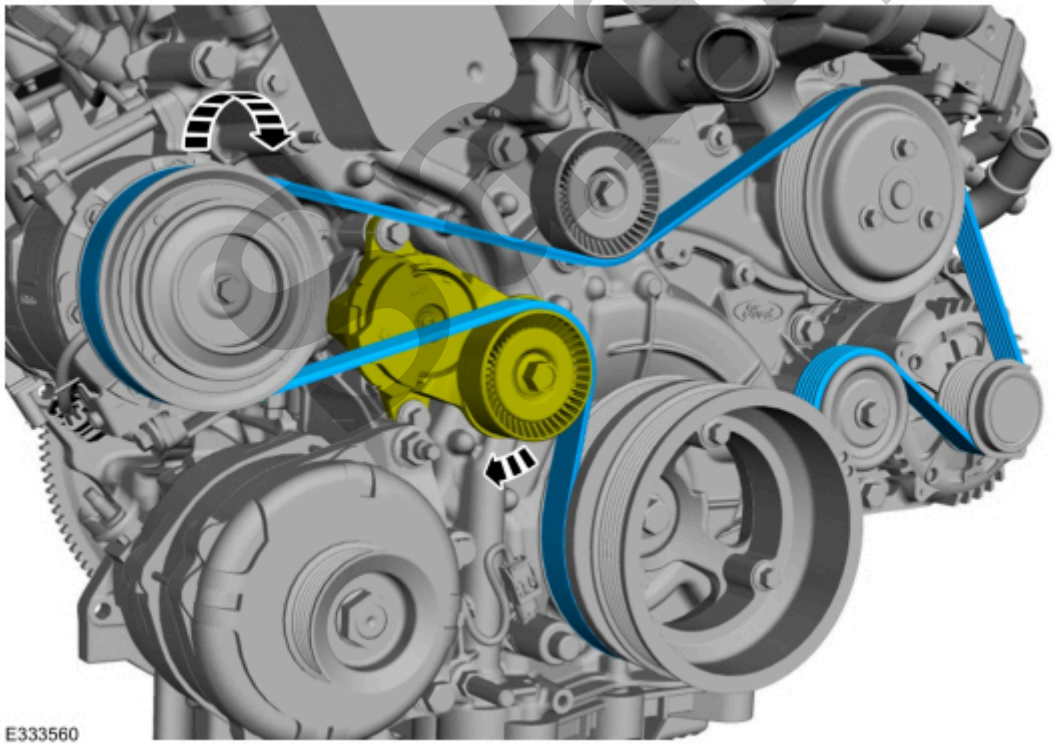
The accessory drive belt tensioner may be checked dynamically as follows:

1. With the engine running, observe the accessory drive belt tensioner movement. The accessory drive belt tensioner should move (respond) when the engine is accelerated rapidly or when the A/C clutch cycles ON and OFF (the degree of movement can be up to 4 mm). If the accessory drive belt tensioner movement is not constant without engine acceleration or A/C clutch cycling, a pulley or shaft is possibly bent, out of round, or the damping mechanism inside the accessory drive belt tensioner may be damaged.
2. Excessive accessory drive belt rideout (uneven depth of grooves in the accessory drive belt) may cause excessive accessory drive belt tensioner movement. REFER to the Symptom Chart in this section.



Click here to learn about symbols, color coding, and icons used in this manual.

3. Rotate the accessory drive belt tensioner clockwise and remove the accessory drive belt.



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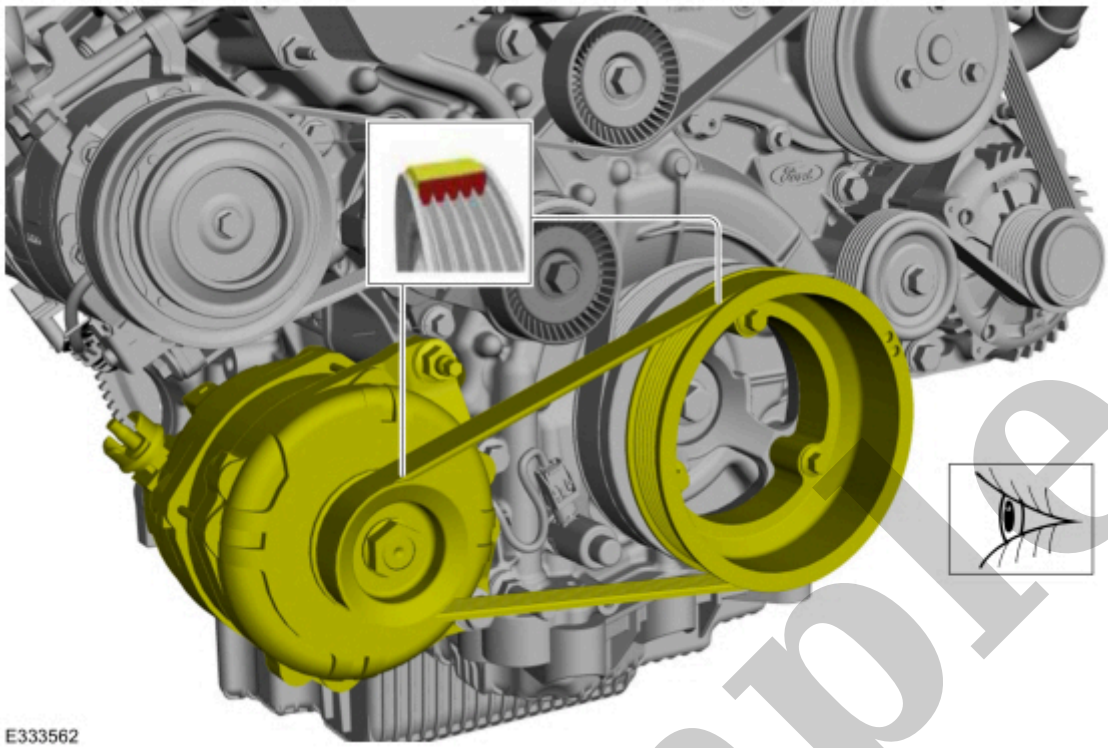
Installation

Click here to learn about symbols, color coding, and icons used in this manual.

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



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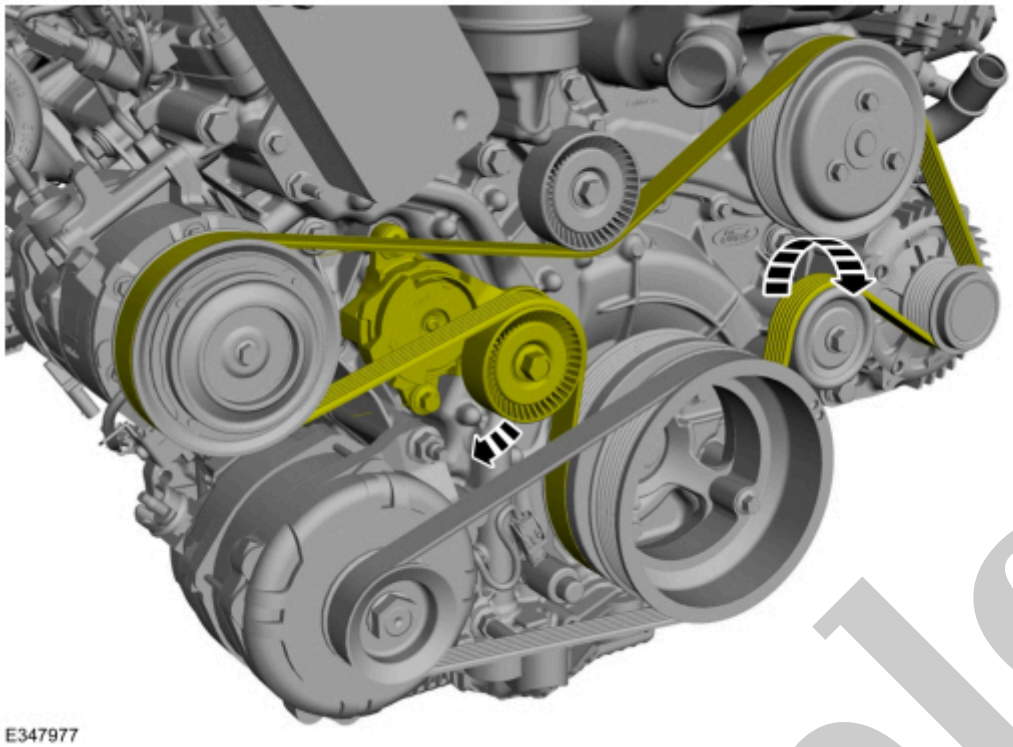
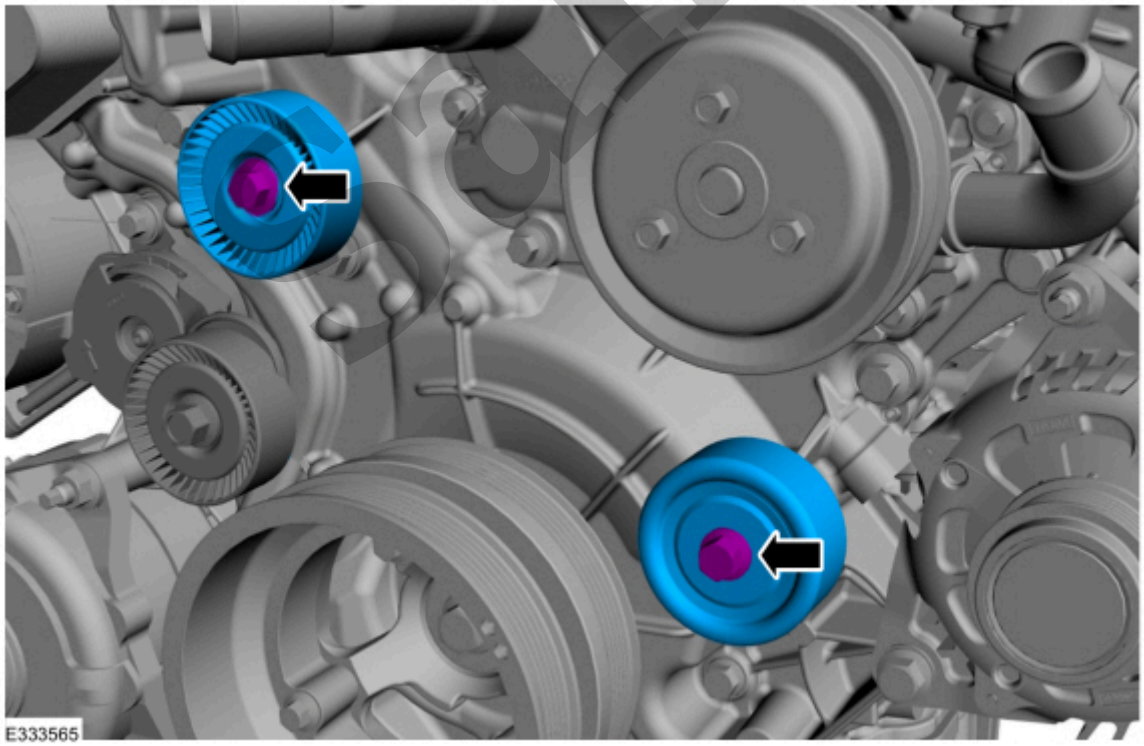


3. Remove the bolts and the accessory drive belt idler pulleys.

   Torque : 18 lb.ft (25 Nm)



Accessory Drive Belt Tensioner - Vehicles With: Dual Generators

303-05A Accessory Drive - 2.7L EcoBoost (238kW/324PS)	***2022 F-150***
Removal and Installation	***Procedure revision date: 08/5/2021***

Accessory Drive Belt Tensioner - Vehicles With: Dual Generators

Removal

NOTE

Removal steps in this procedure may contain installation details.

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. Rotate the accessory drive belt tensioner clockwise and position aside the accessory drive belt.