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2017 FORD Expedition Max OEM Service and Repair Workshop Manual

Go to manual page

No	Inspect the vehicle for any other symptoms related to the halfshafts.

Driveline clunk (Front Wheel Drive (FWD) vehicles) — occurs during acceleration or from cruise to coast/deceleration	GO to Pinpoint Test C
Driveline clunk — occurs as the vehicle starts to move forward following a stop	GO to Pinpoint Test D
Clicking, popping or grinding - occurs while the vehicle is turning	GO to Pinpoint Test E
Grunting — normally associated with a shudder experienced during acceleration from a complete stop	GO to Pinpoint Test F
Driveline vibration - occurs at cruising speeds	GO to Pinpoint Test G

Pinpoint Tests

PINPOINT TEST A : AXLE HOWLING OR WHINE – FRONT OR REAR AXLE

Normal Operation and Fault Conditions

Halfshafts transmit rotary motion through constant velocity joints in a uniform manner. The outer CV (constant velocity) joints use balls, have no length compensation and engage in the wheel hubs. The intermediate shaft (right side) is correctly positioned and secured in the differential by the intermediate shaft center bearing. The left CV joint is locked in the differential by a snap-ring.

Possible Sources

- Damaged or worn wheel hub bearings

A1 INSPECT WHEEL HUB BEARINGS

- Inspect wheel hub bearings

Was any wheel hub bearing play or damage found?

Yes	Install a new wheel hub bearing. REFER to: Front Wheel Bearing and Wheel Hub (204-01A Front Suspension - LHD RWD, Removal and Installation). REFER to: Front Wheel Bearing and Wheel Hub - Vehicles With: Integrated Wheel End (IWE) (204-01B Front Suspension - LHD 4WD, Removal and Installation).

PINPOINT TEST C : DRIVELINE CLUNK (FRONT WHEEL DRIVE (FWD) VEHICLES) — OCCURS DURING ACCELERATION OR FROM CRUISE TO COAST/DECELERATION

Normal Operation and Fault Conditions

Halfshafts transmit rotary motion through constant velocity joints in a uniform manner. The outer CV (constant velocity) joints use balls, have no length compensation and engage in the wheel hubs. The intermediate shaft (right side) is correctly positioned and secured in the differential by the intermediate shaft center bearing. The left CV joint is locked in the differential by a snap-ring.

Possible Sources

- Damaged or worn Constant Velocity (CV) joints
- Loose hub nut

C1 CHECK THE HUB NUT TORQUE

- Check the hub nut torque

Is the hub nut loose?

Yes	Tighten the hub nut to specification.
No	GO to C2

C2 CHECK THE CONSTANT VELOCITY (CV) BOOTS AND JOINTS FOR WEAR OR DAMAGE

- Check the constant velocity (cv) boots and joints for wear or damage

Was damage found?

Yes	Inspect the CV (constant velocity) joints and halfshaft. Replace components as necessary.
No	Inspect the vehicle for any other symptoms related to the halfshafts.

PINPOINT TEST D : DRIVELINE CLUNK — OCCURS AS THE VEHICLE STARTS TO MOVE FORWARD FOLLOWING A STOP

Normal Operation and Fault Conditions

- Check the constant velocity (cv) boots and joints for wear or damage.

Was wear or damage found?

Yes	Inspect the CV (constant velocity) joints and halfshaft. Replace components as necessary.
No	GO to E2

E2 CHECK THE HALFSHAFTS FOR CONTACT WITH ANOTHER COMPONENT

- Check the halfshafts for contact with another component.

Is there contact between other components with the halfshaft?

Yes	Repair as necessary.
No	GO to E3

E3 INSPECT THE HALFSHAFT OR HALFSHAFT CIRCLIP

- Inspect the halfshaft or halfshaft circlip.

Was any damage found?

Yes	Install halfshaft or halfshaft circlip as necessary.
No	Inspect the vehicle for any other symptoms related to the halfshafts.

PINPOINT TEST F : GRUNTING — NORMALLY ASSOCIATED WITH A SHUDDER EXPERIENCED DURING ACCELERATION FROM A COMPLETE STOP

Normal Operation and Fault Conditions

Halfshafts transmit rotary motion through constant velocity joints in a uniform manner. The outer CV (constant velocity) joints use balls, have no length compensation and engage in the wheel hubs. The

Front Halfshaft LH - Electric

205-04 Front Drive Halfshafts	***2022 F-150***
Removal and Installation	***Procedure revision date: 11/18/2022***

Front Halfshaft LH - Electric

Removal

NOTE

Removal steps in this procedure may contain installation details.

1. Remove the wheel and tire.

   Refer to: Wheel and Tire(204-04A Wheels and Tires, Removal and Installation).

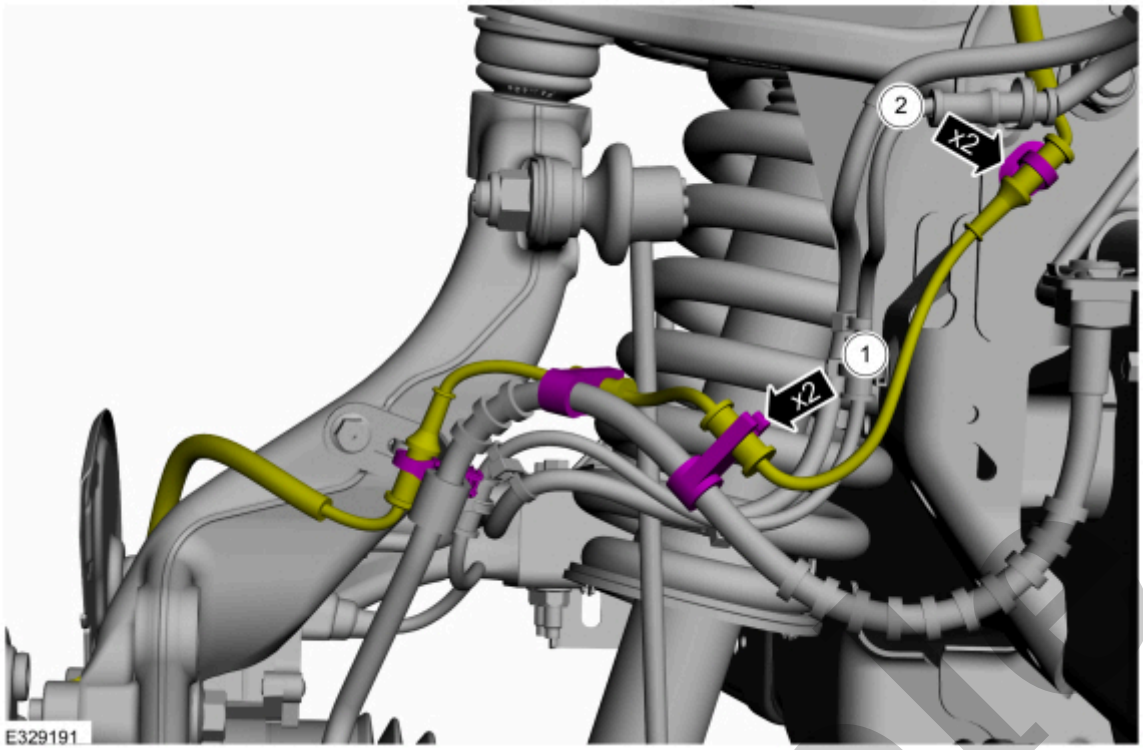
2. Remove the front undershield.

   Refer to: Engine Front Undershield - Electric(501-02 Front End Body Panels, Removal and Installation).

3. **NOTE**

   This step requires the aid of another technician.

   Remove and discard the wheel hub nut.



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

6. **NOTICE**

   Do not use a hammer to separate the tie rod end from the wheel knuckle or damage to the wheel knuckle may result.

   NOTICE

   Use care when installing the tie rod separator or damage to the tie rod end boot may occur.

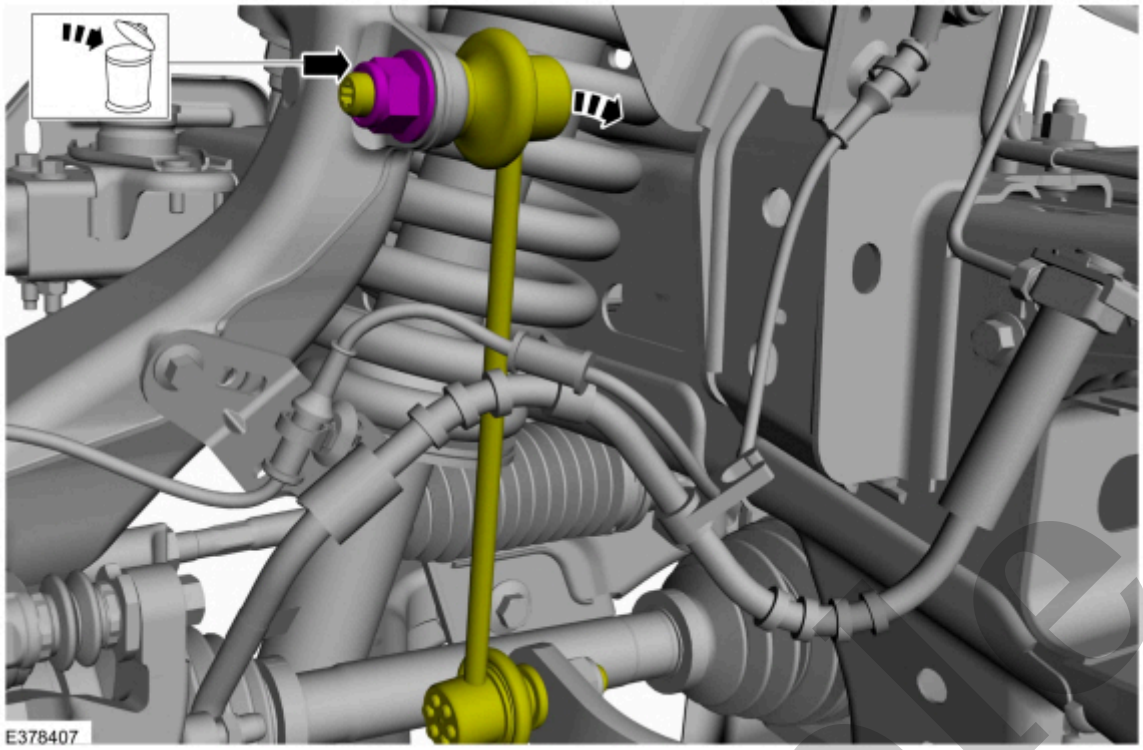
   NOTE

   Use the hex-holding feature to prevent turning of the stud while removing the tie rod end nut.

   Remove and discard the tie rod end nut and separate the tie rod end from the wheel knuckle.

   Use the General Equipment: Tie Rod End Remover

   Torque : 111 lb.ft (150 Nm)



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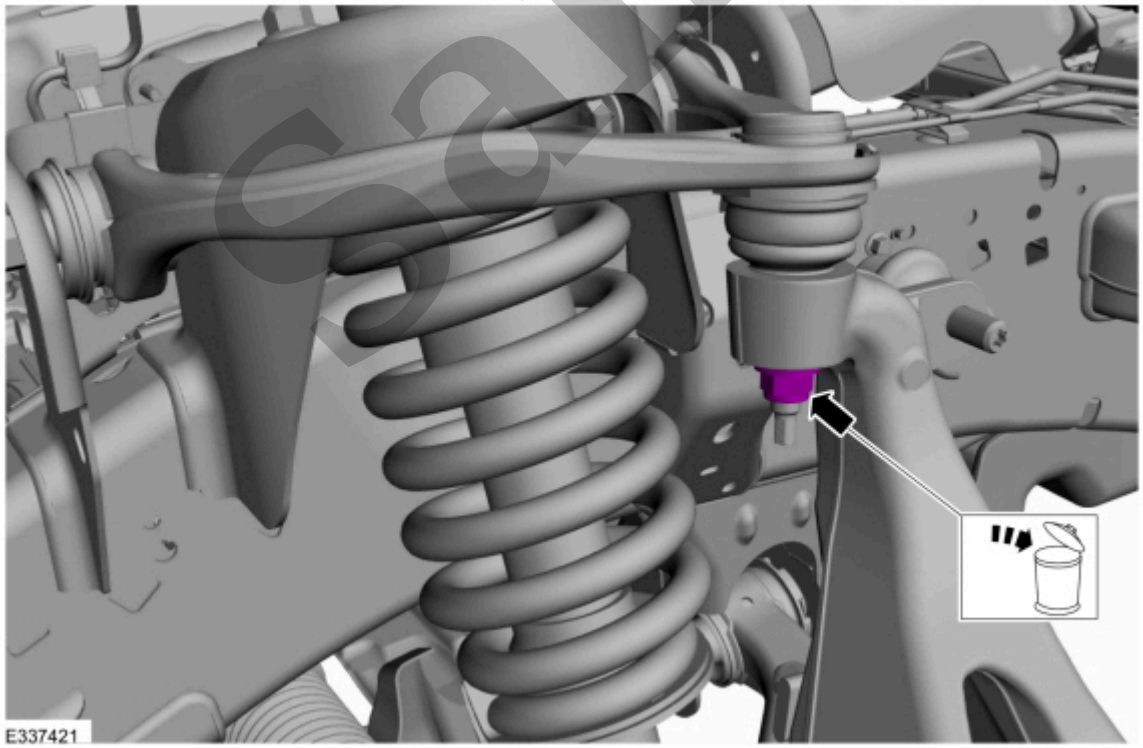
8. Remove and discard the upper ball joint nut.

Torque : 46 lb.ft (63 Nm)



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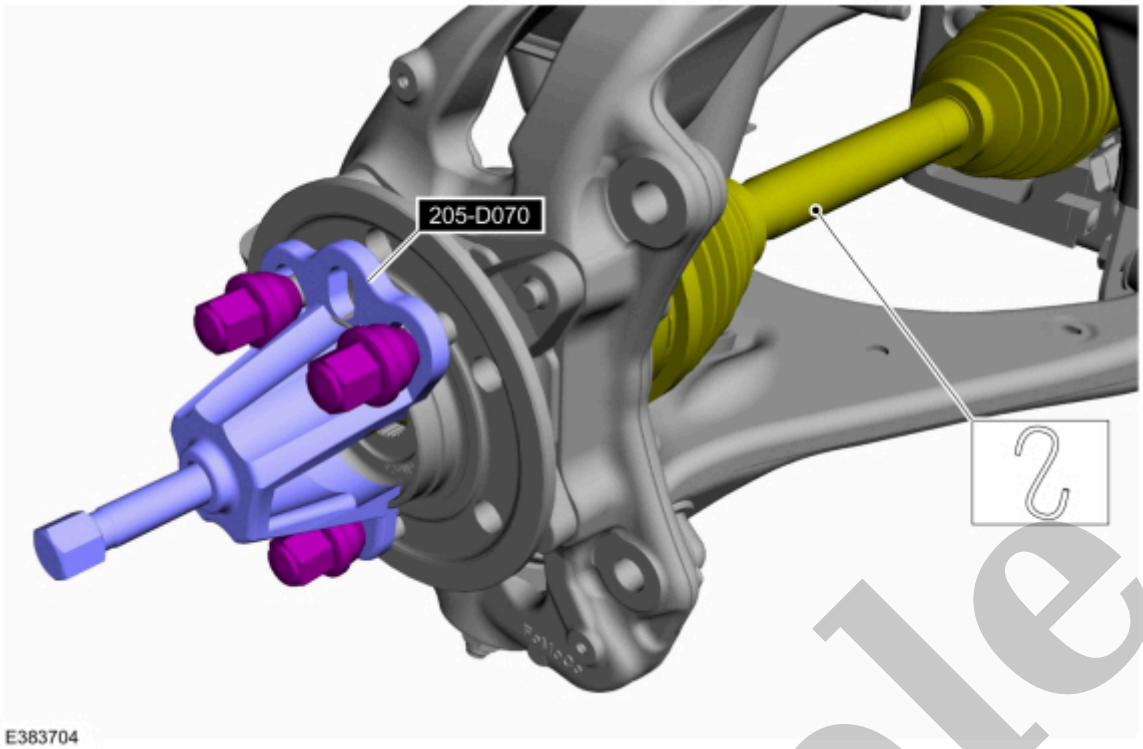

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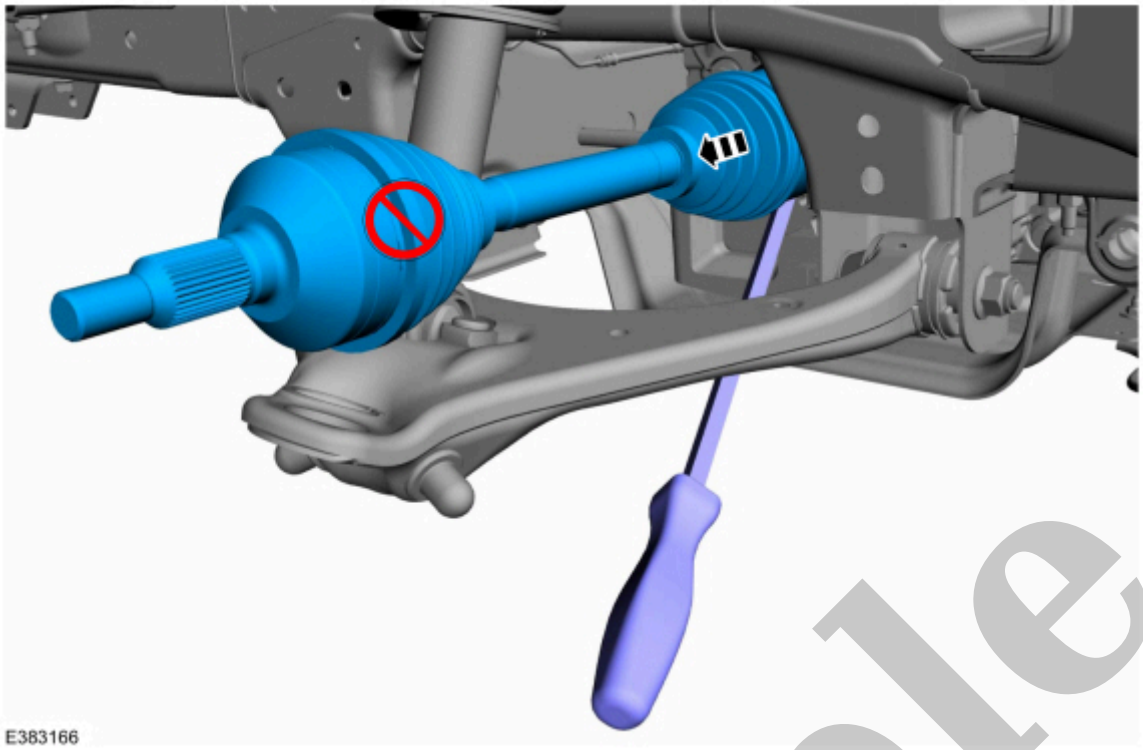
11. **NOTICE**

    Make sure that no load is placed on the brake hose.

    NOTICE

    Never allow the knuckle to hang from the upper and lower control arms or damage to the ball joints can occur.

    1. Position the wheel knuckle to gain access.
    2. Remove the CV (constant velocity) shaft joint outboard end.



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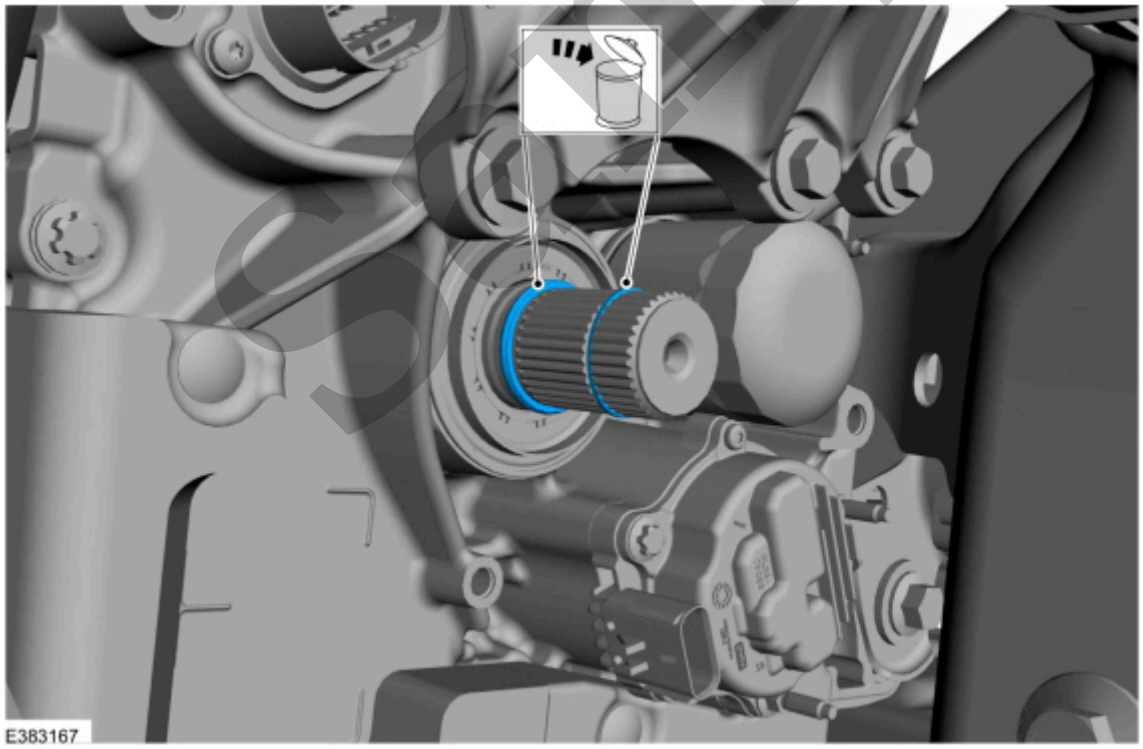
13. Remove and discard the intermediate shaft circlip and the seal.



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Installation