

2018 DRIVELINE/AXLE

Propeller Shaft - Equinox & Terrain

SPECIFICATIONS

FASTENER SPECIFICATIONS

Single Use Non-Threaded Fasteners/Components

NOTE: <i>All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.</i>	
Application	
O-Ring at PTU Output Shaft	
O-Ring at Rear Differential Input Shaft	
Retaining Ring at PTU Output Shaft	
Retaining Ring at Rear Differential Input Shaft	

Reusable Threaded Fastener Tightening Specifications

NOTE: <i>All fasteners listed in this table can be reused after removal.</i>	
Application	Specification
	Metric (English)
Support Bearing Mounting Bolt	58 N.m (43 lb ft)

DIAGNOSTIC INFORMATION AND PROCEDURES

SYMPTOMS - PROPELLER SHAFT

Strategy Based Diagnostics

Review the system operations in order to familiarize yourself with the system functions. Refer to [Propeller Shaft Description and Operation](#), [Power Transfer Unit Case Description and Operation](#), and [Rear Drive Axle Description and Operation](#), in this service information. All diagnosis on a vehicle should follow a logical process. Strategy based diagnostics is a uniform approach for repairing all systems. The diagnostic flow may always be used in order to resolve a system problem. The diagnostic flow is the place to start when repairs are necessary. For a detailed explanation, refer to [Strategy Based Diagnosis](#).

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the vehicle. [Checking Aftermarket Accessories](#)

NOTE: The constant velocity (CV) joint is not serviceable. If the boot is torn or the joint is worn or damaged, replace the propeller shaft as an assembly.

- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom:
 - Inspect the CV joint boot for rips or cracks.
 - Rotate the CV joint to inspect for binding.
 - Inspect the CV joint for grease or oil leakage.
- Verify the exact operating conditions under which the concern exists. Note factors such as speed, road conditions, ambient temperature, and other specifics.

- Compare the driving characteristics or sounds, if applicable, to a known good vehicle and make sure you are not trying to correct a normal condition.

Intermittent

Test the vehicle under the same conditions that the customer reported in order to verify the system is operating properly.

Symptom List

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- [Ping, Snap, or Click Noise](#)
- [Knock or Clunk Noise](#)
- [Scraping Noise](#)
- [Squeak Noise](#)
- [Shudder on Acceleration at Low Speed](#)

PING, SNAP, OR CLICK NOISE

Checks	Action
DEFINITION: A ping, snap or click is usually heard on initial load after the transmission is in gear, either in forward or reverse.	
A loose pinion yoke or companion flange	Tighten the bolts and the pinion nut to specified torque. Refer to Fastener Specifications .
Loose rubber coupling	Tighten the bolts to specified torque. Refer to Fastener Specifications .
One or more of the universal joints are worn or damaged	Replace the propeller shaft assembly.
Heat shield interference	Eliminate interference.

KNOCK OR CLUNK NOISE

Cause	Correction
Knocking or clunking noise occurs when operating the vehicle in high gear or coasting in neutral at 16 km/h (10 mph).	
A worn or damaged universal joint	Replace the worn or damaged universal joint. Refer to Two-Piece Propeller Shaft Replacement .
The side hub counterbore in the differential is worn oversize.	Replace the differential case and/or side gears.

SCRAPING NOISE

Checks	Action
DEFINITION: A scraping noise occurs when driving the vehicle at various speeds.	
The pinion flange deflector or the center bearing is rubbing.	Correct the interference as necessary.
Center bearing heat shield	Correct the interference as necessary.
Exhaust pipe contact	Correct the interference as necessary.

SQUEAK NOISE

Checks	Action
DEFINITION: When driving the vehicle at various speeds a squeaking sound occurs.	
One or more of the universal joints have lost lubricant.	Replace the driveshaft complete.
C/V boot worn or torn	Replace the driveshaft complete.

SHUDDER ON ACCELERATION AT LOW SPEED

Cause	Correction

Cause	Correction
When accelerating the vehicle at low speed a shudder occurs.	
Bolts are loose or missing at the flanges.	Replace and/or tighten bolts to specified torque. Refer to Fastener Specifications .
A universal joint is worn.	Replace the propeller shaft. Refer to Two-Piece Propeller Shaft Replacement .

REPAIR INSTRUCTIONS

TWO-PIECE PROPELLER SHAFT REPLACEMENT

Special Tools

- **DT-51329** Remover
- **J-2619 - 01** Slide Hammer

Equivalent regional tools: [Special Tools](#)

Removal Procedure

1. Raise and support the vehicle. [Lifting and Jacking the Vehicle](#)
2. Mark the relationship of the propeller shaft to spline interface at the rear differential and front power transfer unit using a paint pen.
3. Loosen the center bearing bolts but do not remove.

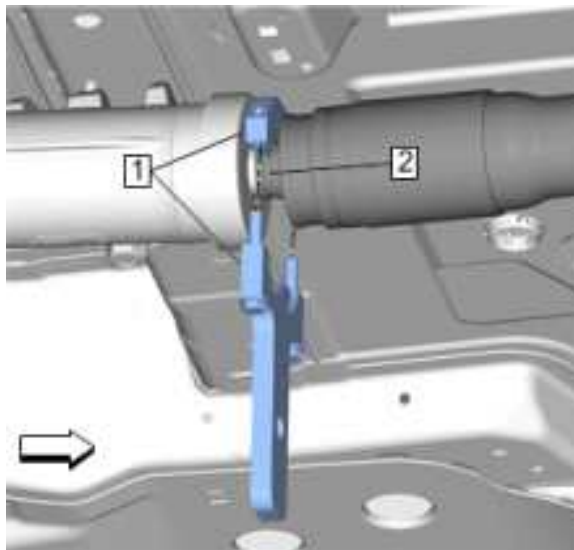


Fig. 1: Service Groove

Courtesy of GENERAL MOTORS COMPANY

4. Install the **DT-51329** Remover (1) in the service groove (2) of the propeller shaft at the rear differential.

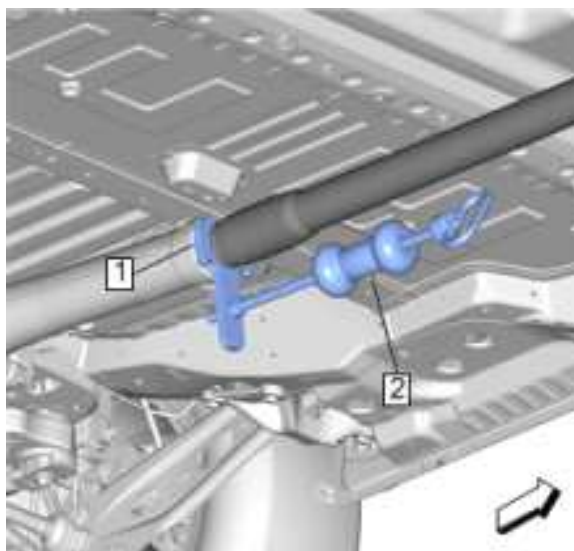


Fig. 2: Slide Hammer And Remover
Courtesy of GENERAL MOTORS COMPANY

5. Install the **J-2619 - 01** Slide Hammer (2) onto the **DT-51329** Remover (1).
6. Using the **DT-51329** Remover (1) and the **J-2619 - 01** Slide Hammer (2) disengage the propeller shaft from the rear differential but do not completely remove it from the splines for support.
7. Support the propeller shaft using a suitable jack stand.

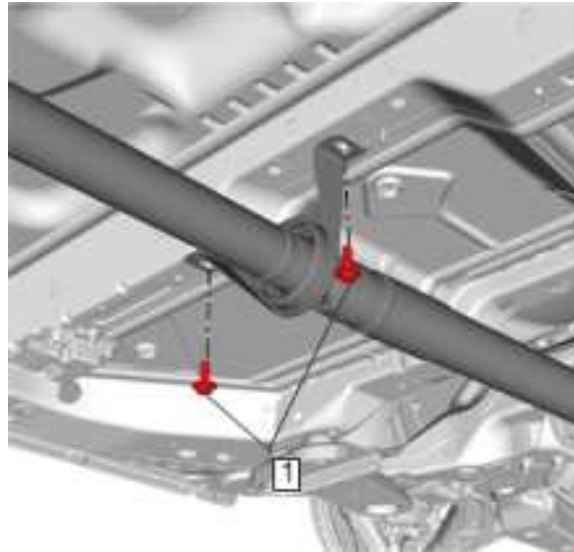


Fig. 3: Center Bearing Bolts
Courtesy of GENERAL MOTORS COMPANY

8. Remove the center bearing bolts (1).

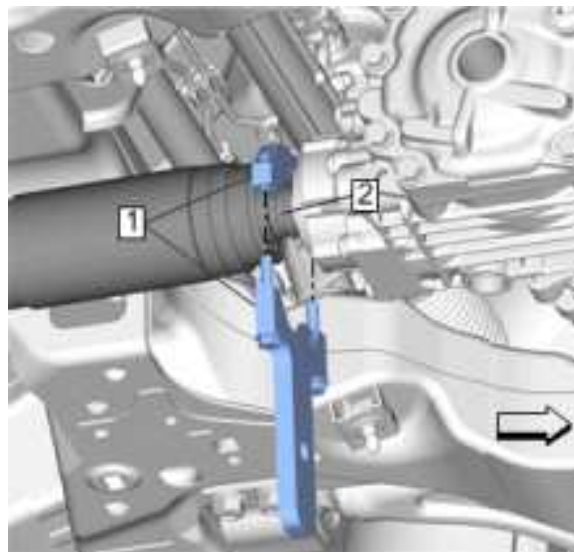


Fig. 4: Service Groove
Courtesy of GENERAL MOTORS COMPANY

9. Install the **DT-51329** Remover (1) in the service groove (2) of the propeller shaft at the front power transfer unit.

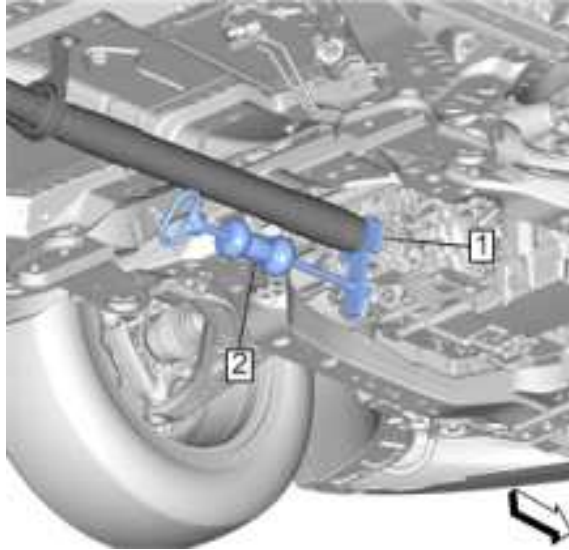


Fig. 5: Slide Hammer And Remover

Courtesy of GENERAL MOTORS COMPANY

10. Install the **J-2619 - 01** Slide Hammer (2) onto the **DT-51329** Remover (1).
11. Using the **DT-51329** Remover (1) and the **J-2619 - 01** Slide Hammer (2) separate and remove the propeller shaft from the power transfer unit.

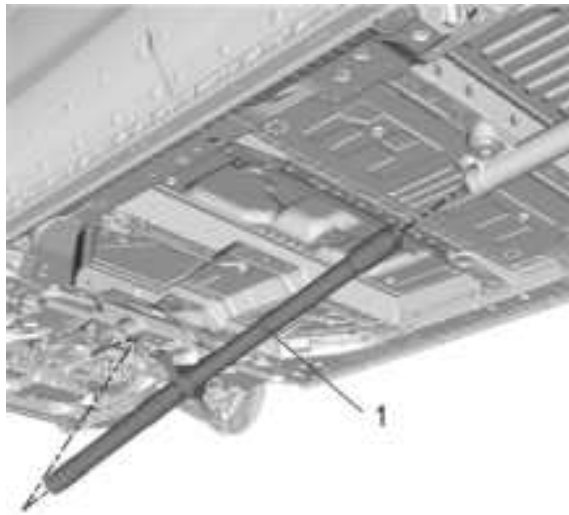


Fig. 6: Propeller Shaft

Courtesy of GENERAL MOTORS COMPANY

12. Remove Propeller Shaft (1).

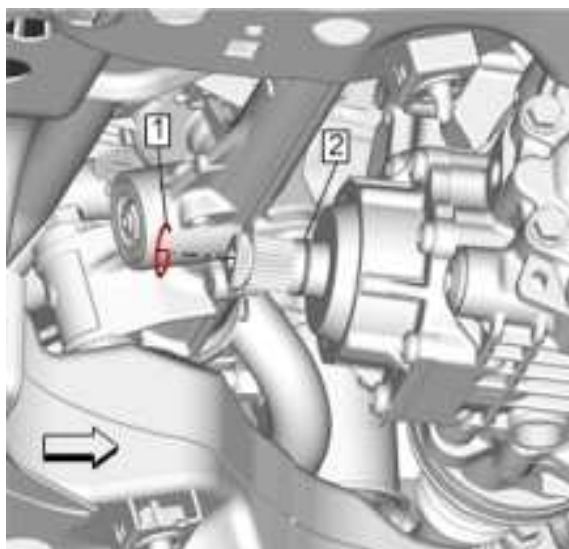


Fig. 7: Retaining Ring And O-Ring

Courtesy of GENERAL MOTORS COMPANY

13. Remove Retaining Ring (1) @Power Transfer Unit Rear Output Shaft and DISCARD
14. Remove O-Ring (2) @Power Transfer Unit Rear Output Shaft and DISCARD

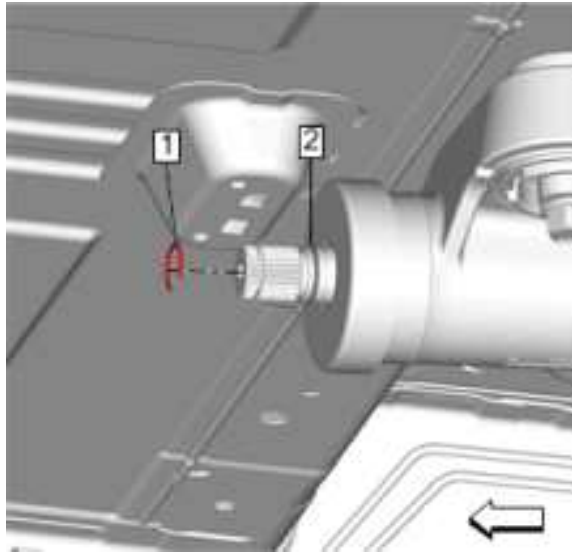


Fig. 8: Retaining Ring

Courtesy of GENERAL MOTORS COMPANY

15. Remove Retaining Ring (1) @Rear Differential and DISCARD
16. Remove O-Ring (2) @Rear Differential and DISCARD

Installation Procedure

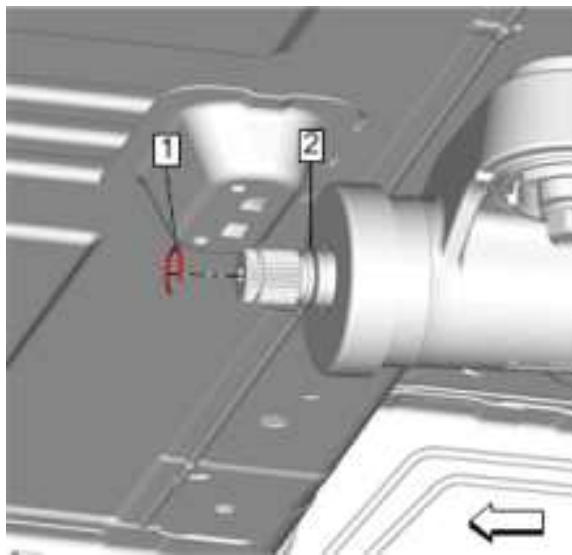


Fig. 9: Retaining Ring

Courtesy of GENERAL MOTORS COMPANY

NOTE: Care must be taken when installing the O-ring correctly. Ensure it is not twisted or distorted and is sitting correctly in the machined groove of the rear differential.

1. Install a NEW O-Ring (2) @Rear Differential - O-ring seal.
2. Install a NEW Retaining Ring (1) @Rear Differential.

NOTE: Walk on the retaining ring to avoid distortion.

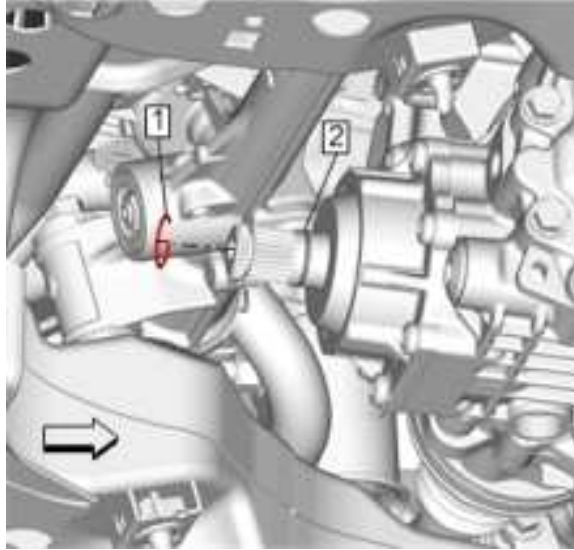


Fig. 10: Retaining Ring And O-Ring

Courtesy of GENERAL MOTORS COMPANY

NOTE: Care must be taken when installing the O-ring correctly. Ensure it is not twisted or distorted and is sitting correctly in the machined groove of the power transfer unit.

3. Install a NEW O-Ring (2) @Power Transfer Unit Rear Output Shaft.
4. Install a NEW Retaining Ring (1) @Power Transfer Unit Rear Output Shaft.

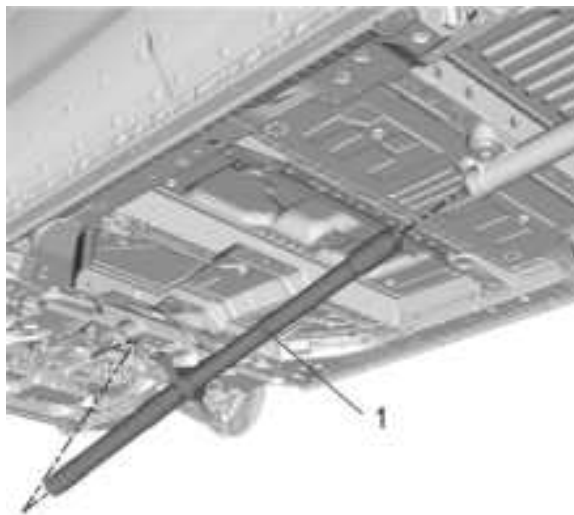


Fig. 11: Propeller Shaft

Courtesy of GENERAL MOTORS COMPANY

NOTE: Install the rear first by aligning the reference marks and ensure that the rear shaft is fully engaged into the rear differential. Align the reference marks to the front shaft and the power transfer unit.

5. Install Propeller Shaft (1) @Power Transfer Unit Rear Output Shaft.
 1. Install the front of the propeller shaft to the power transfer unit referencing the marks, an audible click will be heard from the retaining ring.
 2. Ensure that the propeller shaft is fully engaged by firmly pulling rearward on the front propeller shaft tube.
 3. Install the rear of the propeller shaft to the differential carrier assembly referencing the marks, an audible click will be heard from the retaining ring.
 4. Ensure that the propeller shaft is fully engaged by firmly pulling frontward on the rear propeller shaft tube.

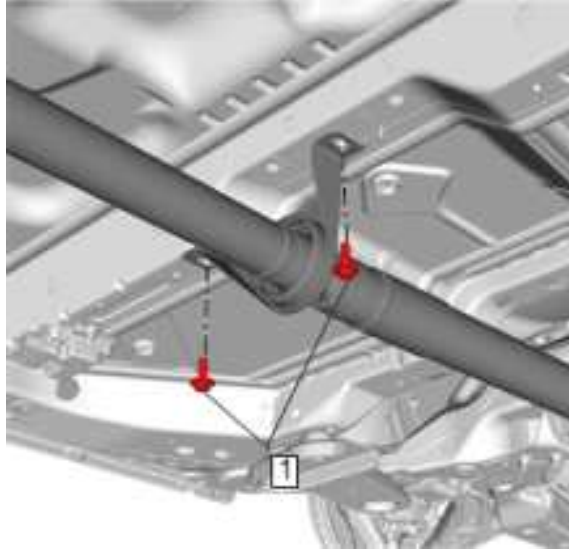


Fig. 12: Center Bearing Bolts

Courtesy of GENERAL MOTORS COMPANY

6. Install the center bearing bolts (1) finger tight at this time.
7. Remove the jack stand.

CAUTION: Refer to **Fastener Caution** .

- 8.
9. Tighten the center support bearing bolts to: 58 N.m (43 lb ft)
10. Conduct a retention check on the propeller shaft front and rear interface.
 1. Place hands around the propeller shaft tube just behind the power transfer unit and pull on the propeller shaft tube to see if it stays in place.
 2. Verify the O-ring is still seated in the groove and the paint marks are aligned correctly.
 3. Place hands around the propeller shaft tube just in front of the rear differential and pull on the propeller shaft tube to see if it stays in place.
 4. Verify the O-ring is still seated in the groove and the paint marks are aligned correctly.
11. Remove the support and lower the vehicle.

DESCRIPTION AND OPERATION

PROPELLER SHAFT DESCRIPTION AND OPERATION

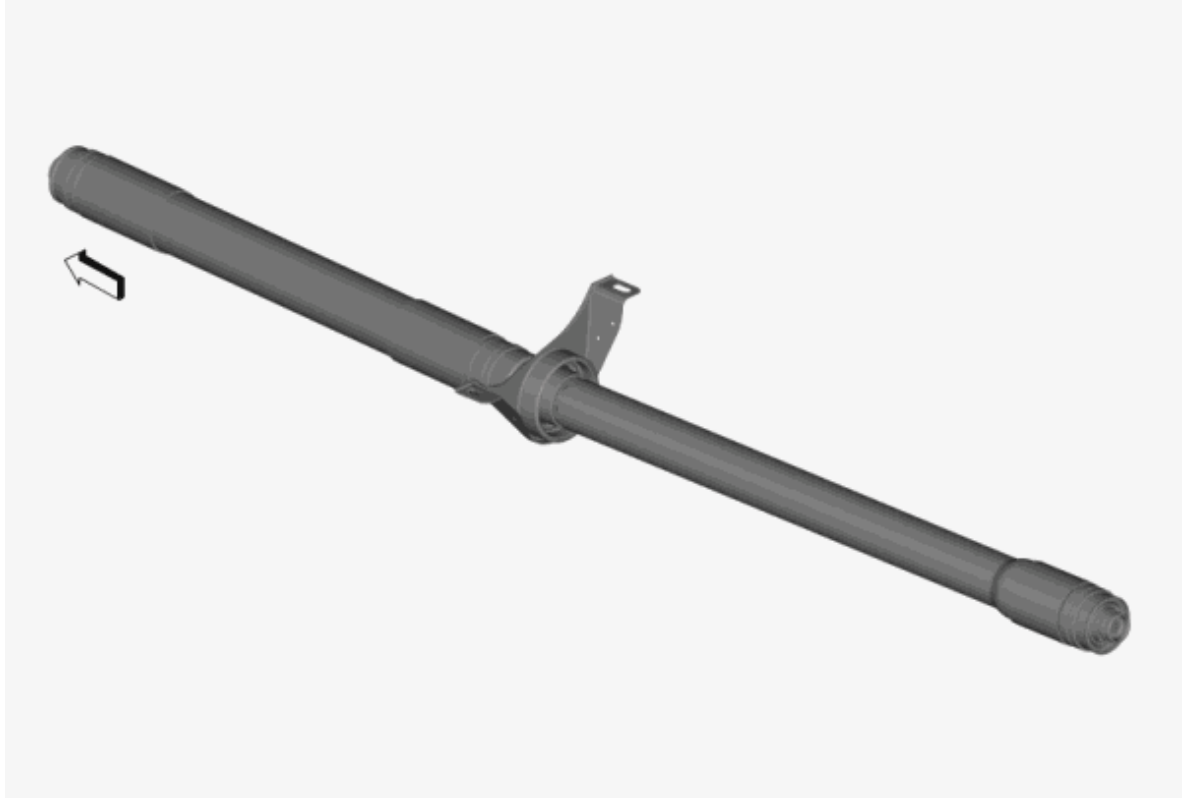


Fig. 13: Propeller Shaft

Courtesy of GENERAL MOTORS COMPANY

The propeller shaft assembly is a 2-piece design. The front shaft consists of a plunging constant velocity joint at the front and the rear.

The front and rear shafts are joined together at the center support bearing and are coupled with barreled snap rings. The center bearing provides support where the front and rear shafts mate and is bolted to the underbody.

The front female splines are retained to the male splines of the output shaft on the power take-off unit (PTU). This interface is retained by a barreled snap ring.

The rear female splines are retained to the male splines of the input shaft on the rear drive axle. This interface is retained by a barreled snap ring.

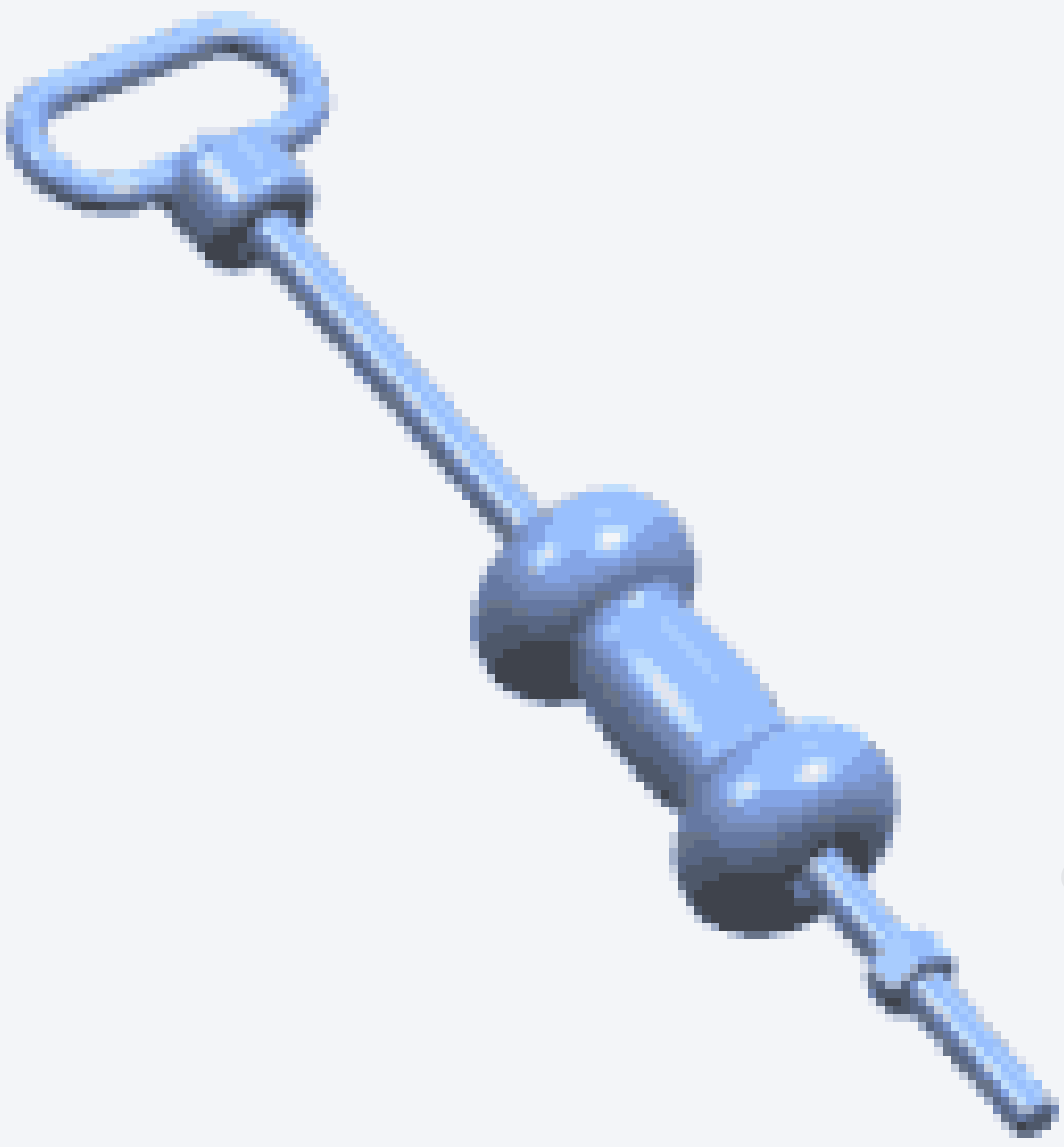
SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Illustration	Tool Number/Description

Illustration	Tool Number/Description
 The illustration shows a blue metal driveshaft remover adapter. It has a long, vertical handle with a circular hole near the top. The bottom of the handle is connected to a horizontal base that features a large, circular opening in the center. To the left of the handle, there are two long, threaded bolts, one positioned above the other.	DT-51329 Driveshaft Remover Adapter



Illustration	Tool Number/Description
	J-2619 - A Slide Hammer cardiagn.com