

2007-08 DRIVELINE/AXLES

Propeller Shaft - Repair Instructions - X5

11 PROPELLER SHAFT ASSEMBLY

26 11 ... OVERVIEW (INSERTED PROPELLER SHAFT)

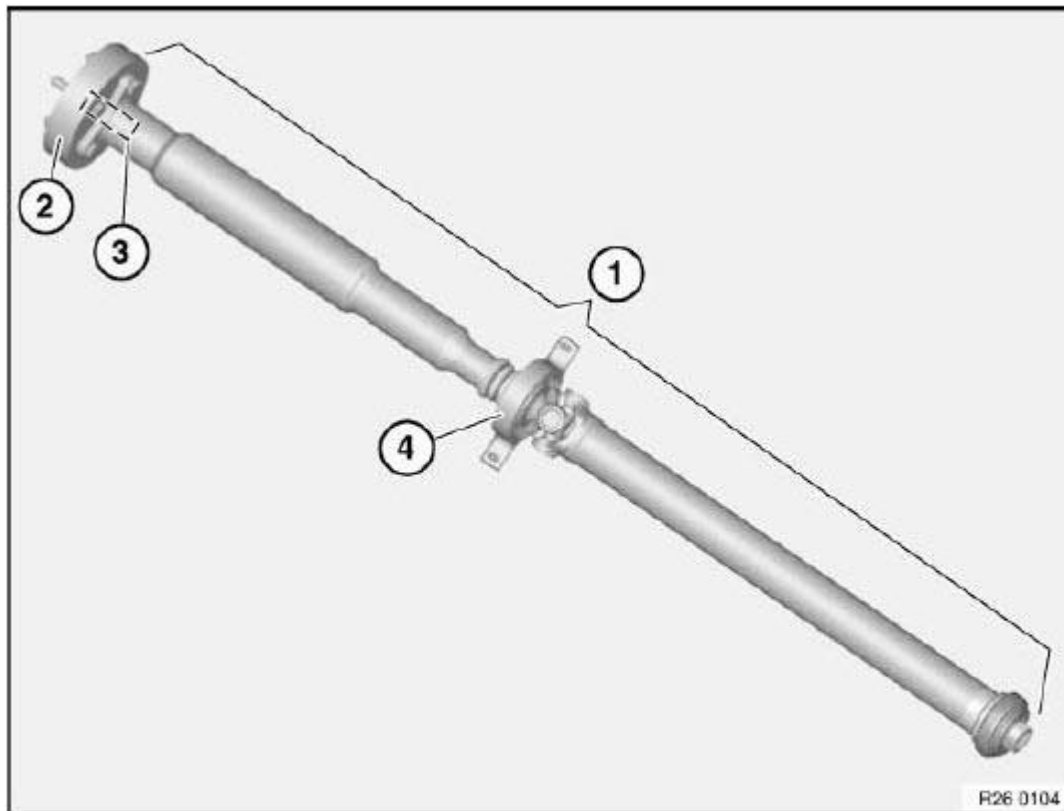
1 Complete propeller shaft3 Centering mount2 Flexible disk4 Centre mount

Fig. 1: Overview Of Inserted Propeller Shaft
 Courtesy of BMW OF NORTH AMERICA, INC.

1. Complete propeller shaft. Refer to **26 11 000 Removing and Installing Propeller Shaft (Inserted) Completely**
2. Flexible disk. Refer to **26 11 051 Replacing Flexible Disk for Front Propeller Shaft**
3. Centering mount. Refer to **26 11 090 Removing and Installing/Replacing Centering Mount for Propeller Shaft**
4. Centre mount. Refer to **26 12 001 Replacing Complete Propeller Shaft Centre Mount**

Special tools required:

- 00 9 120. Refer to **00 9 120 TORQUE ANGLE MEASURING DIAL**
- 00 9 130. Refer to **00 9 130 MAGNET WITH 1/2" CONNECTION**
- 33 5 040. Refer to **33 5 040 OPEN-END WRENCH 50 MM WITH LOCKING CLIP**
- 33 5 070. Refer to **33 5 070 EXTENSION PIECE (2)**

Necessary preliminary tasks:

- Remove complete exhaust system.
- Remove assembly underside protection with brackets
- Remove heat shields

Release screws.

Installation:

- Replace ZNS bolts and self-locking nuts.
- Grip mounting bolts of flexible disk at nuts and tighten down by way of bolts.

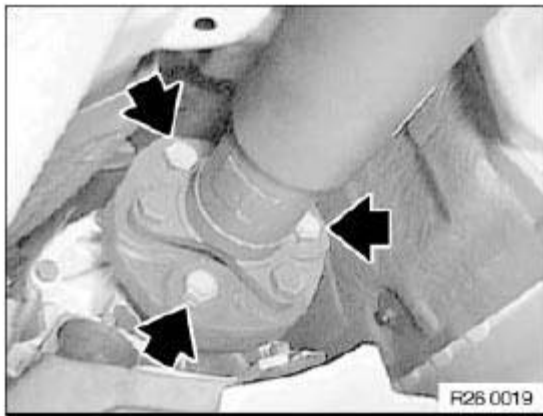


Fig. 2: Locating Mounting Bolts

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check centring mount.

If necessary, replace damaged centring mount. Refer to **26 11 090 Removing and Installing/Replacing Centering Mount for Propeller Shaft**

Grease centring mount.

- Grease: BMW Service Operating Fluids.

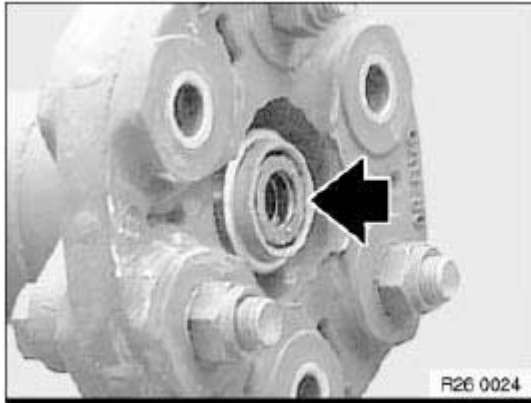


Fig. 3: Locating Centering Mount
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Tighten down screws/bolts to specified torque.

Secure special tool angle of rotation 00 9 120 **00 9 120 TORQUE ANGLE MEASURING DIAL** with magnet 00 9 130 **00 9 130 MAGNET WITH 1/2" CONNECTION** to underbody and continue bolting according to angle of rotation.

Tightening torque 26 11 1AZ **26 11 PROPELLER SHAFT COMPLETE** .

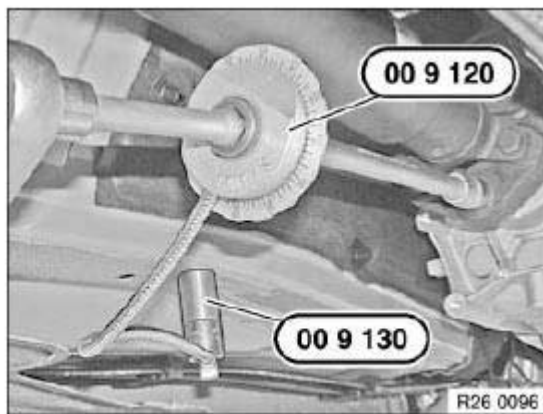


Fig. 4: Identifying Special Tool (00 9 120 And 00 9 130)
Courtesy of BMW OF NORTH AMERICA, INC.

Slacken screws (1)

Tightening torque 26 11 6AZ **26 11 PROPELLER SHAFT COMPLETE** .

Using a suitable tool (2), secure propeller shaft at center universal joint against turning.

Remove screws of centre mount fully only after opening insert nut.

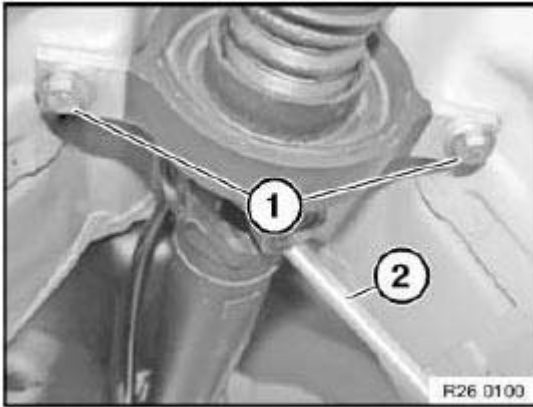


Fig. 5: Identifying Screws

Courtesy of BMW OF NORTH AMERICA, INC.

Release insert nut against direction of travel **in clockwise direction** with special tools 33 5 040 **33 5 040 OPEN-END WRENCH WAF 50 MM WITH LOCKING CLIP** and 33 5 070 **33 5 070 EXTENSION PIECE (2)** .

Tightening torque 26 11 15AZ **26 11 PROPELLER SHAFT COMPLETE** .

IMPORTANT: The bihexagonal flange nut must not be used for bracing.

Failure to comply with this instruction may result in serious damage to the rear differential.

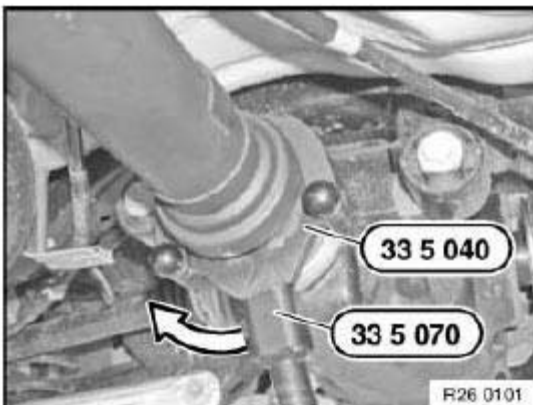


Fig. 6: Identifying Special Tool (33 5 040 And 33 5 070)

Courtesy of BMW OF NORTH AMERICA, INC.

Remove retaining clip (1) and seal (2).

Installation:

Retaining clip and seal must be replaced.

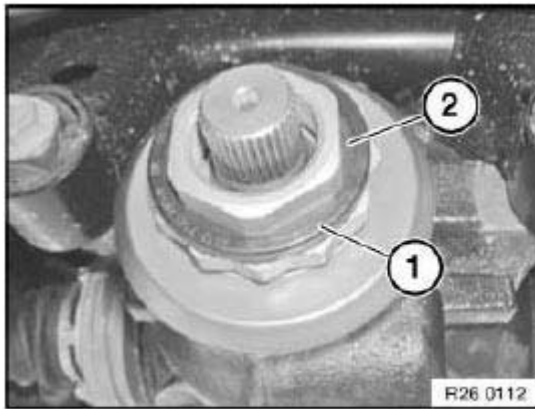


Fig. 7: Identifying Retaining Clip And Seal
Courtesy of BMW OF NORTH AMERICA, INC.

Remove insert nut (1).

Installation:

Insert nut must be replaced.

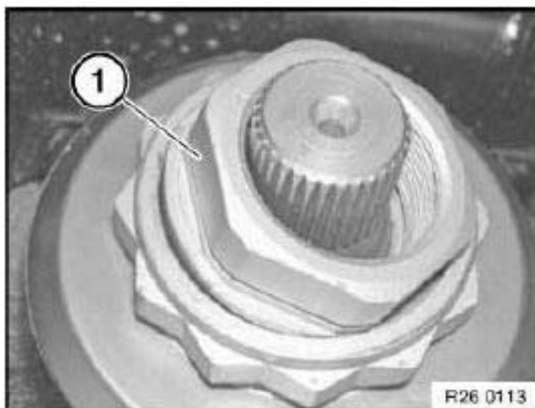


Fig. 8: Identifying Nut
Courtesy of BMW OF NORTH AMERICA, INC.

Before installing propeller shaft:

Clean insert collar (1) on flange nut and spline teeth on bevel pinion (2).

Fill insert collar (1) with grease.

Grease: BMW Service Operating Fluids.

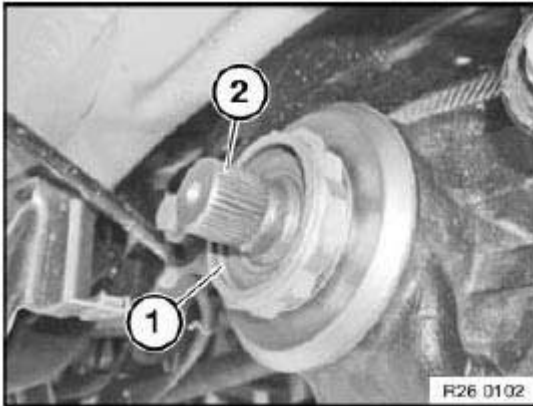


Fig. 9: Identifying Collar And Spline Teeth On Bevel Pinion
Courtesy of BMW OF NORTH AMERICA, INC.

Clean thread (1) of joint hub to remove adhesive residues.

Clean hub teeth (2), then coat with grease.

Grease: BMW Service Operating Fluids.

IMPORTANT: Thread of joint hub must not be fouled with grease.

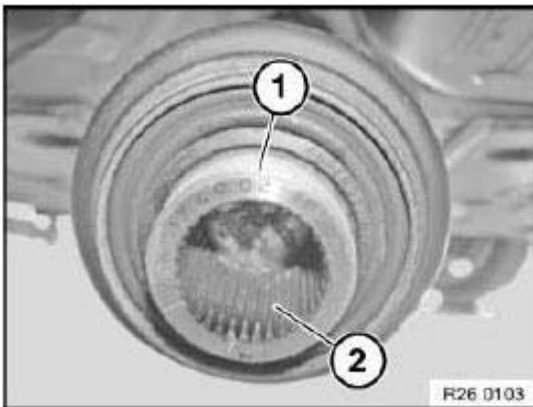


Fig. 10: Identifying Thread And Hub Teeth
Courtesy of BMW OF NORTH AMERICA, INC.

Place insert nut (1) with seal in insert collar of flange nut.

Install retaining clip (2).

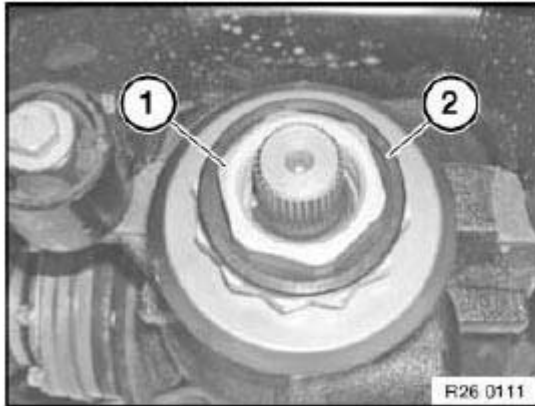


Fig. 11: Identifying Nut And Retaining Clip

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Adhere without fail to installation and screw-fastening sequence.
Installation sequence:

1. Join propeller shaft to transmission
2. Join propeller shaft to rear differential
3. Join centre mount

Screw-fastening sequence:

1. Insert nut
2. Flexible disc to transmission
3. Centre mount

Slide propeller shaft (1) as far as it will go onto insert nut and secure.

Secure propeller shaft at centre universal joint against turning with a tire iron.

IMPORTANT: The bihexagonal flange nut (2) must not be used for bracing.
Failure to comply with this instruction may result in serious damage to the rear differential.

Insert nut must be screwed into place **within 5 minutes** .

Tightening torque 26 11 15AZ **26 11 PROPELLER SHAFT COMPLETE** .

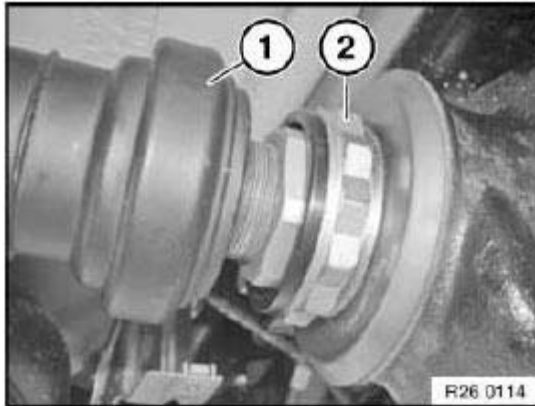


Fig. 12: Identifying Propeller Shaft And Flange Nut
 Courtesy of BMW OF NORTH AMERICA, INC.

26 11 020 REPLACING CENTRE MOUNT GAITER

Necessary preliminary tasks:

- Remove propeller shaft. Refer to **26 11 000 Removing and Installing Propeller Shaft (Inserted) Completely**

NOTE: The propeller shaft is balanced. The front and rear propeller shafts must be reassembled in the same position.
 Detach gaiter (1) from groove (2).

Mark front propeller shaft (3) and rear propeller shaft (4) in one plane.

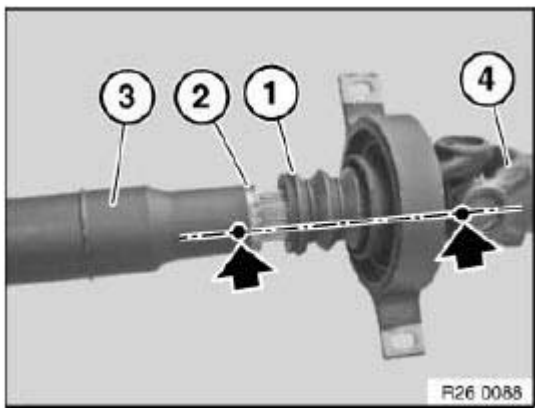


Fig. 13: Identifying Gaiter, Groove, Front Propeller Shaft And Rear Propeller Shaft
 Courtesy of BMW OF NORTH AMERICA, INC.

Pull propeller shaft apart.

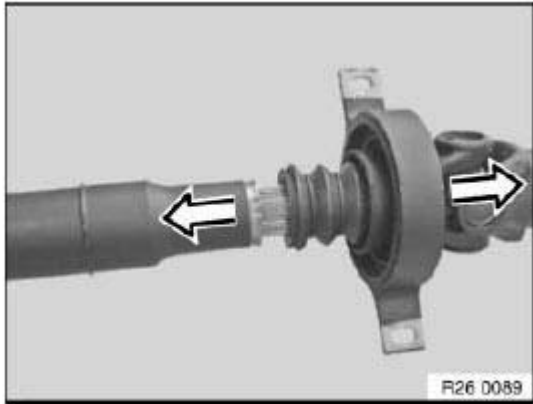


Fig. 14: Pulling Propeller Shaft

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

If necessary, insert new clamping ring (1) into front propeller shaft (2).

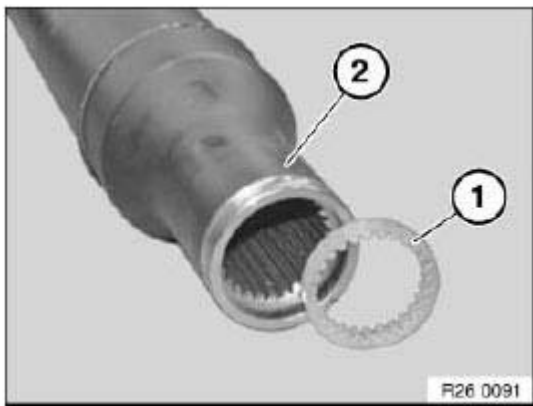


Fig. 15: Identifying Clamping Ring And Front Propeller Shaft

Courtesy of BMW OF NORTH AMERICA, INC.

Release gaiter (1) with screwdriver from groove (2) and pull off over longitudinal splines.

Installation:

Apply an even coating of grease to longitudinal splines on shaft.

Grease, refer to BMW Service Operating Fluids.

Observe markings and force front propeller shaft onto longitudinal splines (markings must be flush).

Push gaiter (1) during installation into groove (2) ~~230mm (9.1 in.)~~ ^{230mm (9.1 in.)} before it is firmly seated.

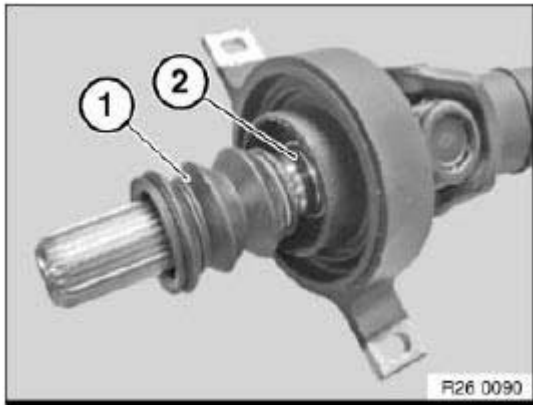


Fig. 16: Identifying Gaiter And Groove
 Courtesy of BMW OF NORTH AMERICA, INC.

26 11 051 REPLACING FLEXIBLE DISK FOR FRONT PROPELLER SHAFT

Necessary preliminary tasks:

- Remove propeller shaft **26 11 000 Removing and Installing Propeller Shaft (Inserted) Completely** from transmission and centre mount

NOTE: To protect universal joints, tie back propeller shaft in area of centre mount.

Release screws and remove flexible disk (1) from propeller shaft.

IMPORTANT: Replace shiny ZNS bolts and self-locking nuts.

Tightening torque and angle of rotation: 26 11 1AZ **26 11 PROPELLER SHAFT COMPLETE** .

Installation:

- Arrows (3) on circumference of flexible disk must point to flange arms (2).
- Grip mounting bolts of flexible disk at propeller shaft flange at nuts and tighten down at bolt heads.

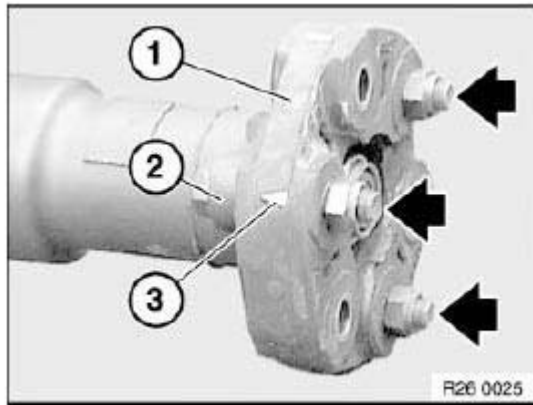


Fig. 17: Locating Self-Locking Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check centring mount.

Replace damaged centring mount **26 11 090 Removing and Installing/Replacing Centering Mount for Propeller Shaft.**

Grease centring mount .

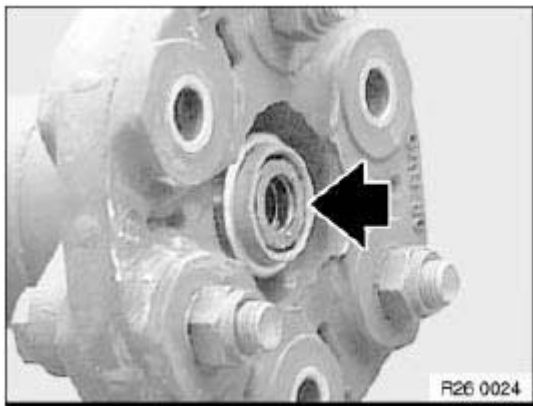


Fig. 18: Locating Centering Mount
Courtesy of BMW OF NORTH AMERICA, INC.

26 11 090 REMOVING AND INSTALLING/REPLACING CENTERING MOUNT FOR PROPELLER SHAFT

Special tools required:

- 00 5 500 **00 5 500 HANDLE FOR DRIFTS**
- 11 1 310 **11 1 310 DRIFT**

- 11 2 030 **11 2 030 DRIFT**

Necessary preliminary tasks:

- Remove propeller shaft. **26 11 000 Removing and Installing Propeller Shaft (Inserted) Completely**

Fill centering bore (1) completely with viscous grease.

Drive special tool 11 1 310 **11 1 310 DRIFT** with a plastic hammer into centering bore.

The centering mount (1) is forced out of the propeller shaft by the pressure on the grease filling.

If necessary, top up grease repeatedly.

NOTE: To drive out the mount, you can also fill the centering bore with water instead of grease.

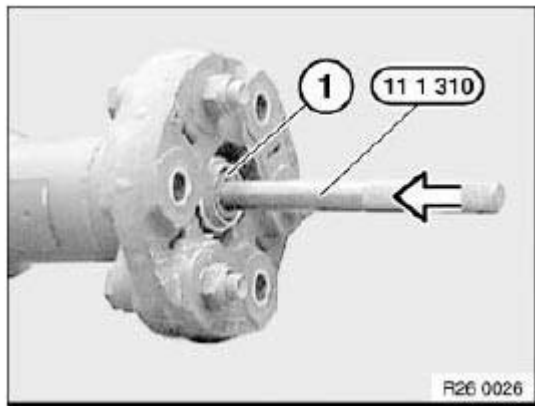


Fig. 19: Identifying Centering Bore And Special Tool (11 1 310)
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Remove grease/water from mount bore.

Drive in centering (1) with special tools 11 2 030, refer to **11 1 310 DRIFT** and 00 5 500 **00 5 500 HANDLE FOR DRIFTS** into propeller shaft (observe protrusion).

Grease centering mount.

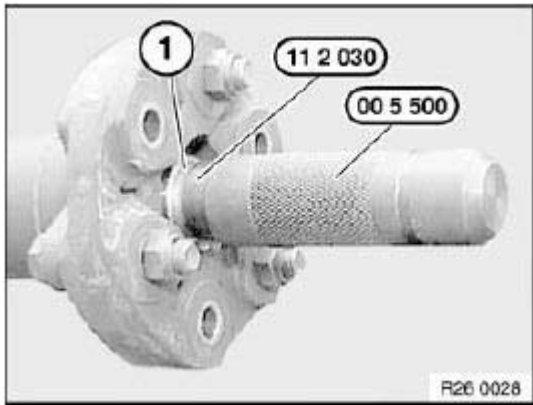


Fig. 20: Identifying Centering And Special Tool (11 2 030 And 00 5 500)
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Observe protrusion A = 4^{+2} mm of centering (1).

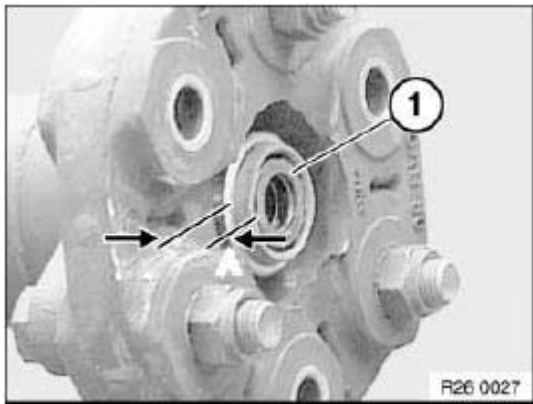


Fig. 21: Protrusion Dimensions Of Centering
Courtesy of BMW OF NORTH AMERICA, INC.

12 CENTRE CONSOLE ASSEMBLY

26 11 020 REPLACING CENTRE MOUNT GAITER

Necessary preliminary tasks:

- Remove propeller shaft. Refer to **26 11 000 Removing and Installing Propeller Shaft (Inserted) Completely**

NOTE: The propeller shaft is balanced. The front and rear propeller shafts must be reassembled in the same position.

Detach gaiter (1) from groove (2).

Mark front propeller shaft (3) and rear propeller shaft (4) in one plane.

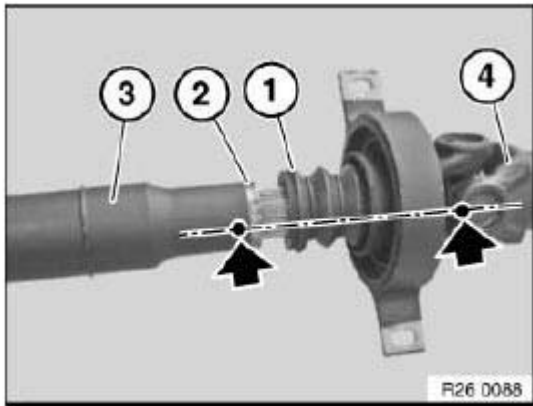


Fig. 22: Identifying Gaiter, Groove, Front Propeller Shaft And Rear Propeller Shaft
Courtesy of BMW OF NORTH AMERICA, INC.

Pull propeller shaft apart.

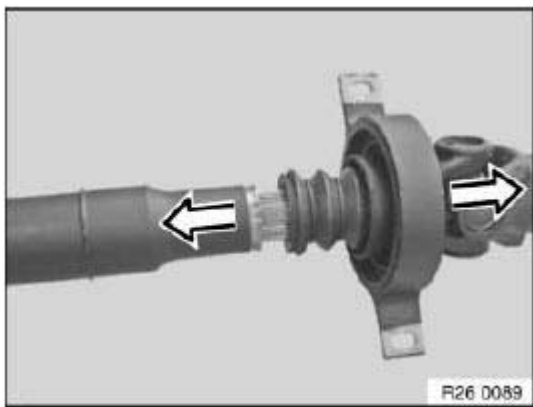


Fig. 23: Pulling Propeller Shaft
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

If necessary, insert new clamping ring (1) into front propeller shaft (2).

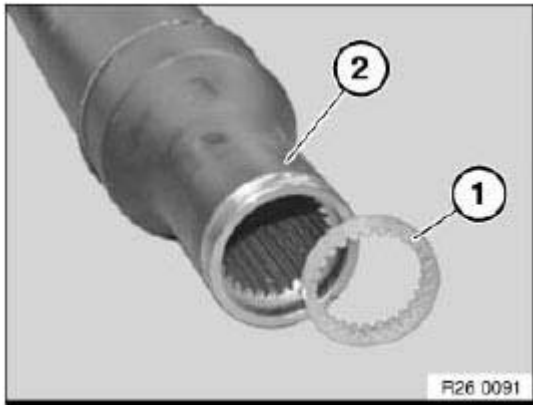


Fig. 24: Identifying Clamping Ring And Front Propeller Shaft
 Courtesy of BMW OF NORTH AMERICA, INC.

Release gaiter (1) with screwdriver from groove (2) and pull off over longitudinal splines.

Installation:

Apply an even coating of grease to longitudinal splines on shaft.

Grease, refer to BMW Service Operating Fluids.

Observe markings and force front propeller shaft onto longitudinal splines (markings must be flush).

Push gaiter (1) during installation into groove (2) and make sure it is firmly seated.

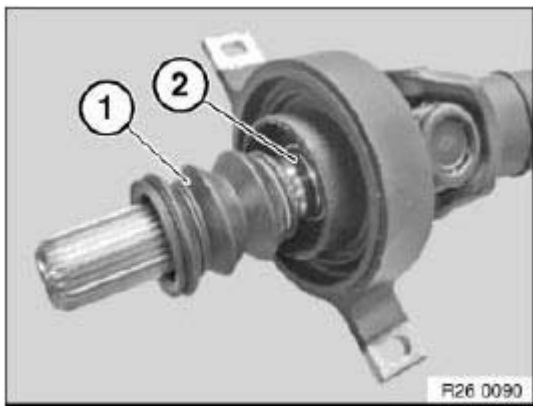


Fig. 25: Identifying Gaiter And Groove
 Courtesy of BMW OF NORTH AMERICA, INC.

26 12 001 REPLACING COMPLETE PROPELLER SHAFT CENTRE MOUNT

Special tools required:

- 00 7 50000 **7 500 UNIVERSAL PULLER KUKKO 17/K**
- 23 1 160 **27 1 460 DRIFT**

Necessary preliminary tasks:

- Remove propeller shaft. Refer to **26 11 000 Removing and Installing Propeller Shaft (Inserted) Completely**

NOTE: The propeller shaft is balanced. The front and rear propeller shafts must be reassembled in the same position.

Detach gaiter (1) from groove (2).

Mark front propeller shaft (3) and rear propeller shaft (4) in one plane.

Installation:

Make sure gaiter (1) is securely seated in groove (2).

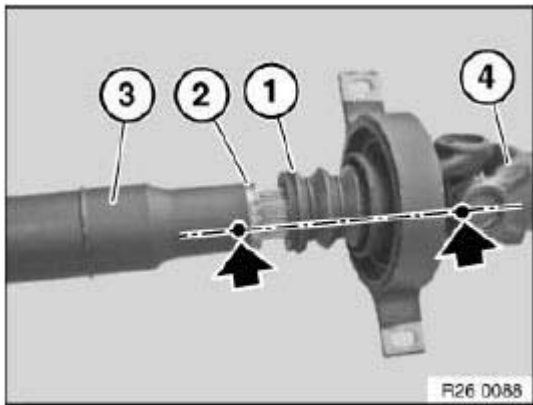


Fig. 26: Identifying Gaiter, Groove, Front Propeller Shaft And Rear Propeller Shaft
Courtesy of BMW OF NORTH AMERICA, INC.

Pull propeller shaft apart.

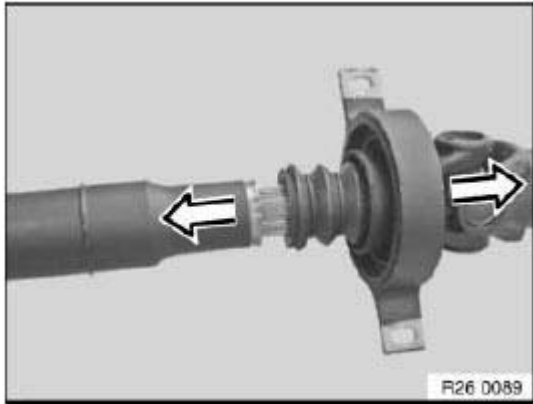


Fig. 27: Pulling Propeller Shaft

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

If necessary, insert new clamping ring (1) into front propeller shaft (2).

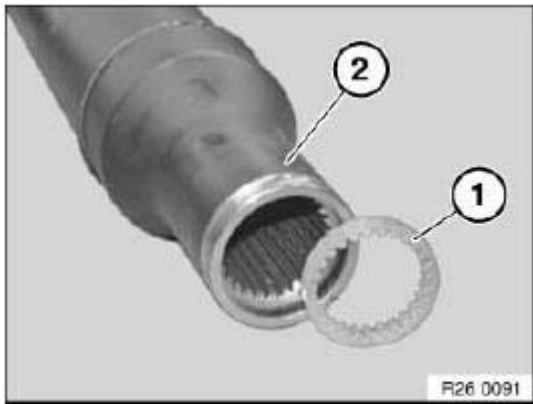


Fig. 28: Identifying Clamping Ring And Front Propeller Shaft

Courtesy of BMW OF NORTH AMERICA, INC.

Release gaiter (1) with screwdriver from groove (2) and pull off over longitudinal splines.

Installation:

Apply a coating of grease to longitudinal splines on shaft.

Push gaiter (1) during installation into groove (2) and make sure it is firmly seated.

Observe markings and force front propeller shaft onto longitudinal splines (markings must be flush).

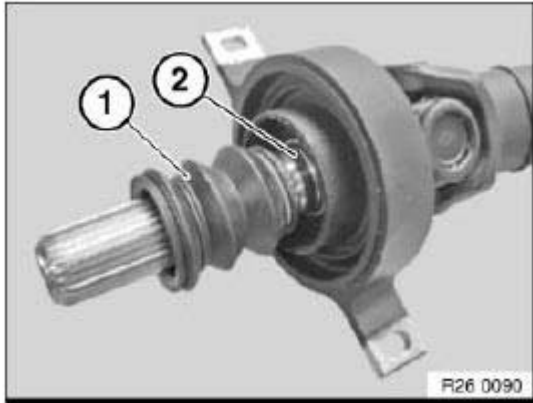


Fig. 29: Identifying Gaiter And Groove
Courtesy of BMW OF NORTH AMERICA, INC.

Install special tool 00 7 50000 7 500 **UNIVERSAL PULLER KUKKO 17/K** between centre mount (1) and universal joint (2).

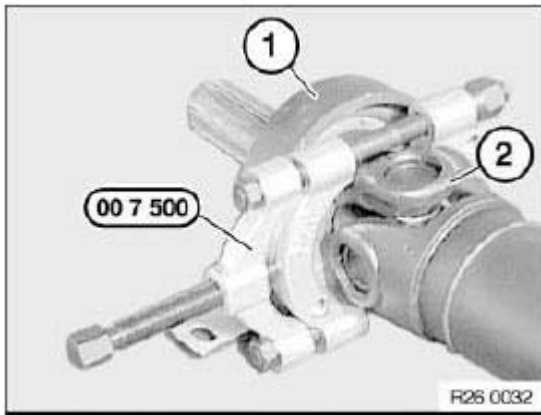


Fig. 30: Identifying Special Tool (00 7 500), Center Bearing And Universal Joint
Courtesy of BMW OF NORTH AMERICA, INC.

Using a hydraulic press, force centre mount (1) off propeller shaft (2).

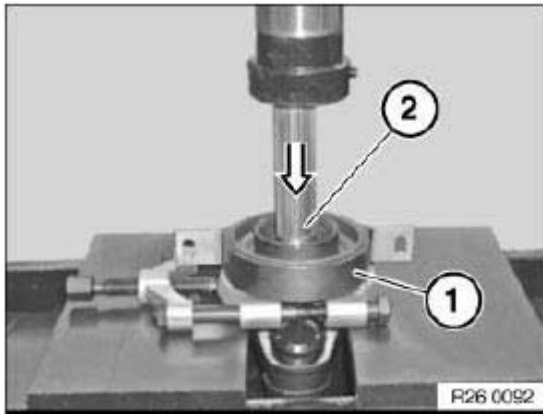


Fig. 31: Removing Centre Mount Off Propeller Shaft
 Courtesy of BMW OF NORTH AMERICA, INC.

Force new centre mount (1) onto propeller shaft. Collar (2) must point in direction of travel towards front propeller shaft. Drive centre mount firmly home with special tool 23 1 160 **27 1 460 DRIFT** .

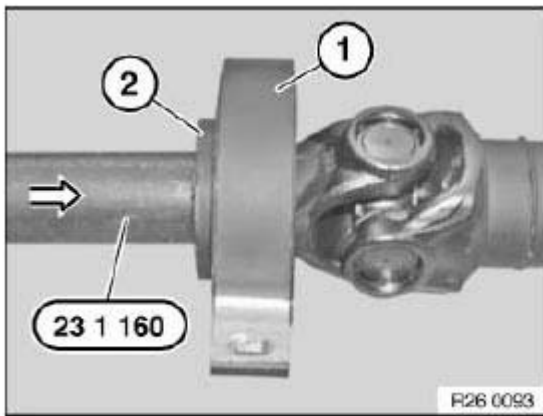


Fig. 32: Installing Centre Mount Onto Propeller Shaft With Special Tools
 Courtesy of BMW OF NORTH AMERICA, INC.

26 12 011 REPLACING GROOVED BALL BEARING IN CENTRE MOUNT OF PROPELLER SHAFT

Special tools required:

- 23 1 160 **27 1 460 DRIFT**
- 33 3 202
- 33 3 203

Necessary preliminary tasks:

- Remove propeller shaft. Refer to **26 11 000 Removing and Installing Propeller Shaft (Inserted) Completely**

- Replace propeller shaft centre mount. Refer to **26 12 001 Replacing Complete Propeller Shaft Centre Mount**

Press grooved ball bearing using special tool 23 1 160 **27 1 460 DRIFT** out of centre mount (1).

NOTE: Illustration shows E46.

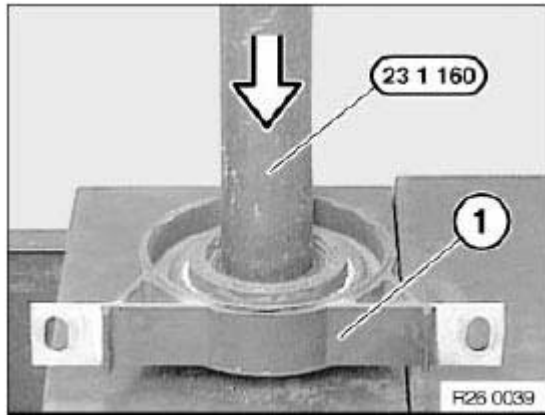


Fig. 33: Pressing Grooved Ball Bearing Out Of Centre Mount With Special Tool
Courtesy of BMW OF NORTH AMERICA, INC.

Coat rubber-coated bearing seat of centre mount (2) with Circolight.

Circolight

Using special tools 33 3 202 / 33 3 203, press new grooved ball bearing (1) into centre mount (2).

NOTE: Illustration shows E46.

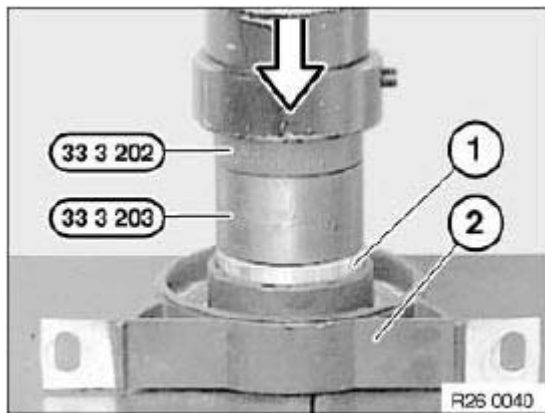


Fig. 34: Pressing Grooved Ball Bearing Into Centre Mount With Special Tool
Courtesy of BMW OF NORTH AMERICA, INC.