

DRIVELINE/AXLES

Propeller Shaft - Operating Fluids

1.0 GENERAL INFORMATION

The locating tabs of the drive shaft to the transmission output flange may be lubricated with any high temperature resistant, long-term grease (available locally).

DRIVELINE/AXLES

Propeller Shaft - Repair Instructions - X6

PROPELLER SHAFT, GENERAL

26 00 ... PROPELLER SHAFT DEFLECTION ANGLES

IMPORTANT: Specifications on propeller shaft deflection angles

Only possible on request with the vehicle identification number of the problem vehicle via PuMA.

26 20 000 REMOVING AND INSTALLING FRONT PROPELLER SHAFT (N52K, M57T2, N54)

IMPORTANT: Do not move vehicle with drive power once propeller shaft has been removed.

Necessary preliminary tasks:

- Remove **underbody protection** . See 51 47 490 REMOVING AND INSTALLING/REPLACING FRONT UNDERBODY PROTECTION or 51 47 491 REMOVING AND INSTALLING/REPLACING REAR UNDERBODY PROTECTION .
- Remove **reinforcement plate** . See 31 10 010 REMOVING AND INSTALLING/REPLACING REINFORCEMENT PLATE .

Release screws.

Installation:

Replace screws and nuts.

Slide propeller shaft towards rear and remove flexible disc with centering flange.

Tightening torque **26 11 9AZ** , see 26 11 PROPELLER SHAFT COMPLETE

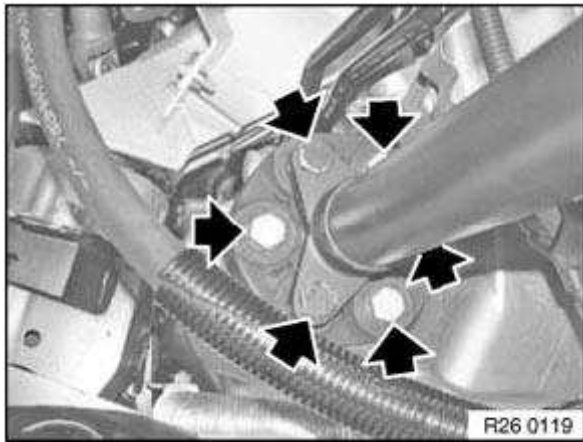


Fig. 1: Locating Screws And Nuts

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Slide propeller shaft fully towards rear.

Cup seal (1) must snap audibly into place and rest entirely on dust guard (2).

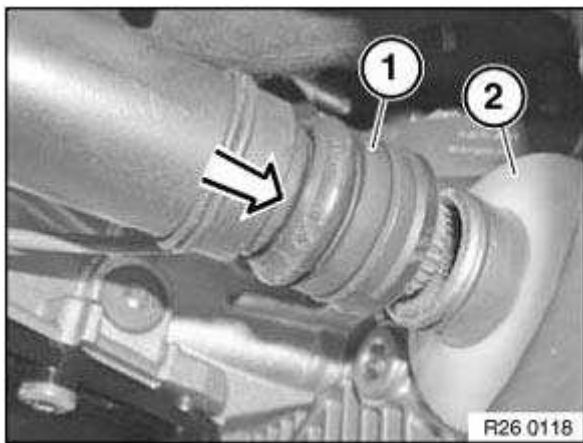


Fig. 2: Sliding Propeller Shaft Towards Rear

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: During installation arrows (1) on circumference of flexible disc must point to flange arms ().

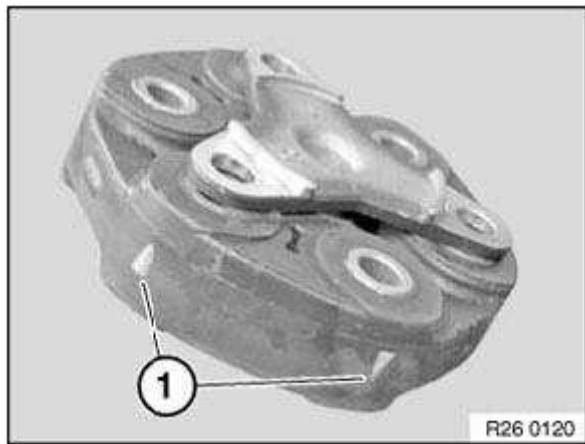
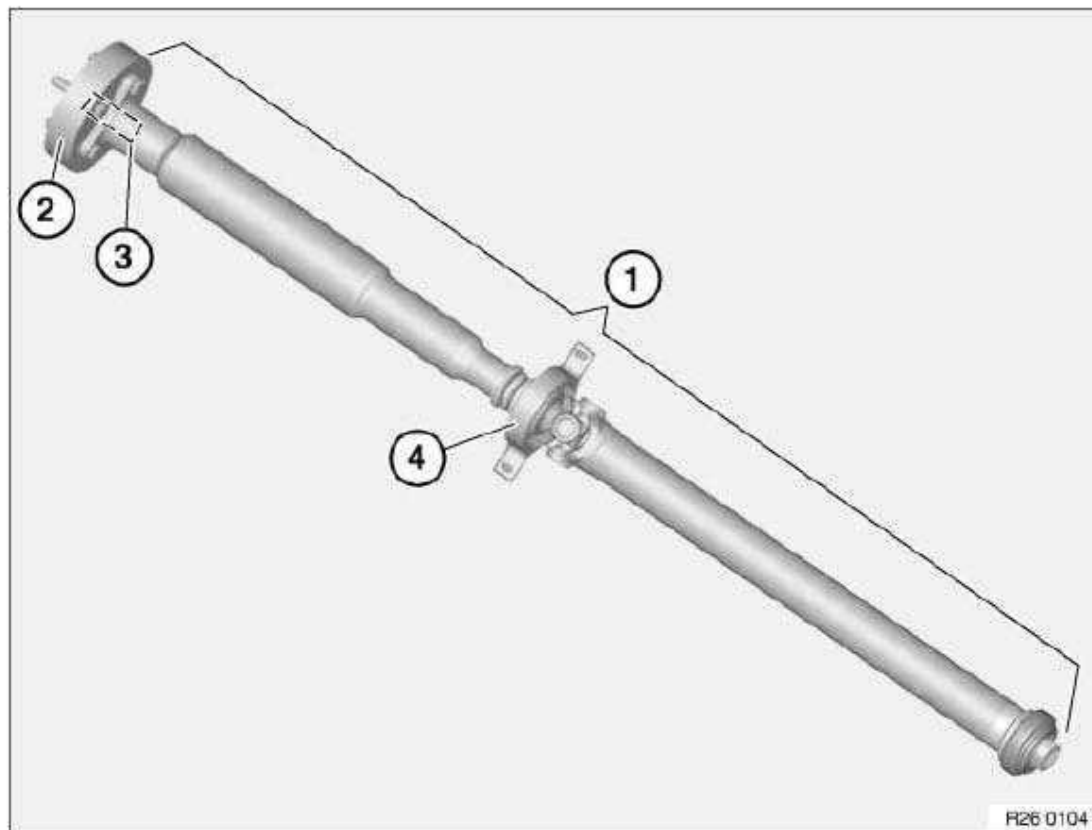


Fig. 3: Identifying Installation Arrows On Circumference Of Flexible Disc
 Courtesy of BMW OF NORTH AMERICA, INC.

PROPELLER SHAFT ASSEMBLY

26 11 ... OVERVIEW (INSERTED PROPELLER SHAFT)



- | | |
|-----------------------------------|--------------------------|
| 1 <u>Complete propeller shaft</u> | 3 <u>Centering mount</u> |
| 2 <u>Flexible disk</u> | 4 <u>Centre mount</u> |

Fig. 4: Overview Of Propeller Shaft
Courtesy of BMW OF NORTH AMERICA, INC.

26 11 000 REMOVING AND INSTALLING PROPELLER SHAFT (INSERTED) COMPLETELY

Special tools required:

- 00 9 120
- 00 9 130
- 33 5 040
- 33 5 070

See **MAINTENANCE AND GENERAL INFORMATION - SPECIAL TOOLS** .

See **STEERING AND WHEEL ALIGNMENT - SPECIAL TOOLS** .

Necessary preliminary tasks:

- Remove complete **exhaust system** . See **EXHAUST SYSTEM COMPLETE** .
- Remove assembly underside protection with brackets
- Remove heat shields

Release screws.

Installation:

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

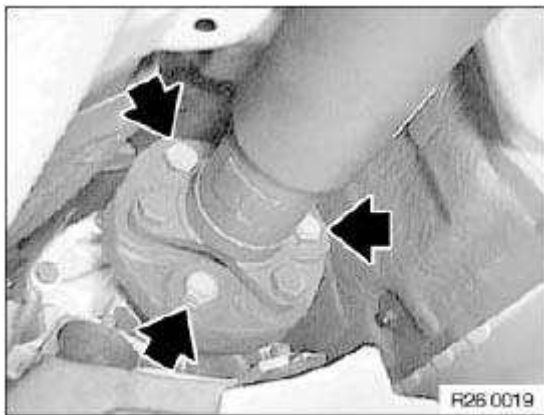


Fig. 5: Locating Mounting Bolts Of Flexible Disc
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check centering mount.

If necessary, replace damaged **centering mount** .

Grease centering mount.

- Grease: BMW Service **Operating Fluids** . See **PROPELLER SHAFT - OPERATING FLUIDS** .

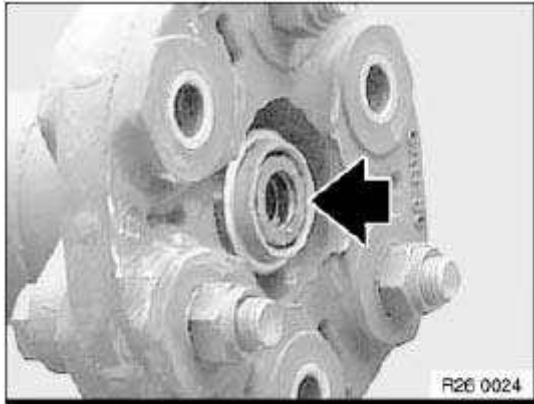


Fig. 6: Locating Centering Mount
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Tighten down screws/bolts to specified torque.

Secure special tool angle of rotation **00 9 120** with magnet **00 9 130** to underbody and continue bolting according to angle of rotation.

Tightening torque **26 11 1AZ** , see **26 11 PROPELLER SHAFT COMPLETE**

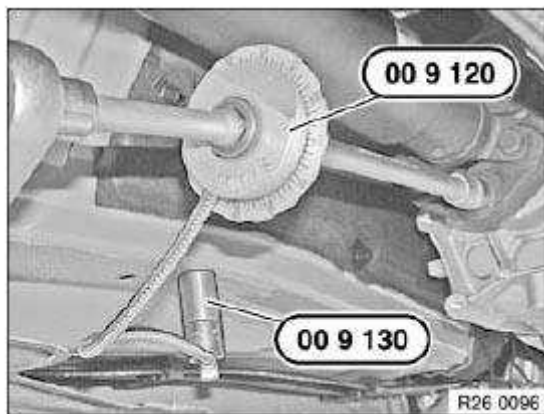


Fig. 7: Securing Special Tool Angle Of Rotation 00 9 120 Using Magnet 00 9 130
Courtesy of BMW OF NORTH AMERICA, INC.

Slacken screws (1)

Tightening torque **26 11 6AZ** , see **26 11 PROPELLER SHAFT COMPLETE**

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

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

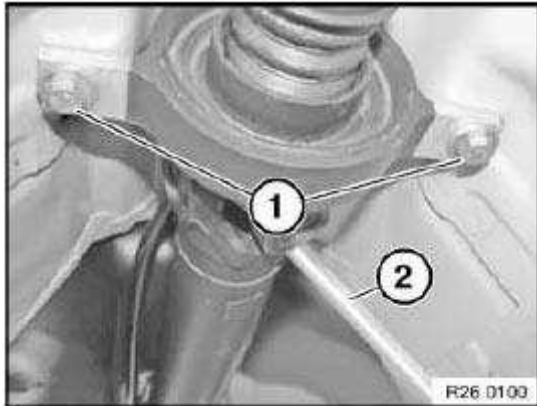


Fig. 8: Securing Propeller Shaft Using Suitable Tool
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Check installation location.

Part number and date of manufacture must be visible from below.

Installation:

The bolt fastening points of the center bearing are off-center.

Part (A) of the propeller shaft center bearing must be installed upwards into the propeller shaft tunnel.

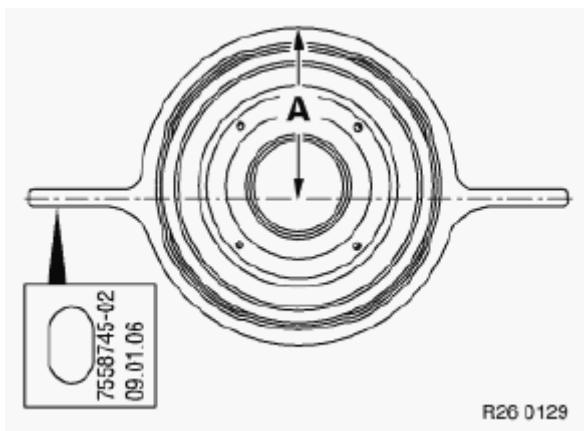


Fig. 9: Position Of Installing Propeller Shaft Centre Bearing
Courtesy of BMW OF NORTH AMERICA, INC.

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.

Release insert nut against direction of travel **in clockwise direction** with special tools 33 5 040 and 33 5 070 .

Tightening torque **26 11 1AZ** , see **26 11 PROPELLER SHAFT COMPLETE**

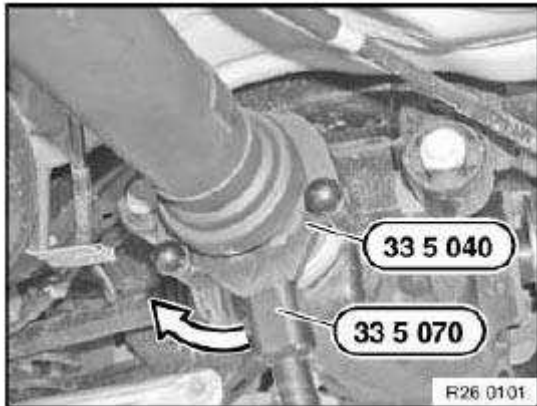


Fig. 10: Releasing Insert Nut Using Special Tools 33 5 040 And 33 5 070
Courtesy of BMW OF NORTH AMERICA, INC.

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

Installation:

Retaining clip and seal must be replaced.

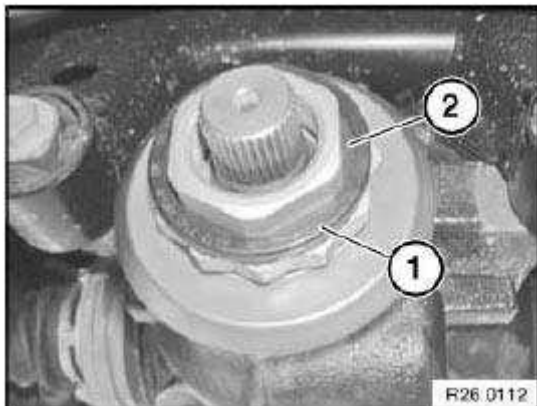


Fig. 11: Identifying Retaining Clip And Seal
Courtesy of BMW OF NORTH AMERICA, INC.

Remove insert nut (1).

Installation:

Insert nut must be replaced.

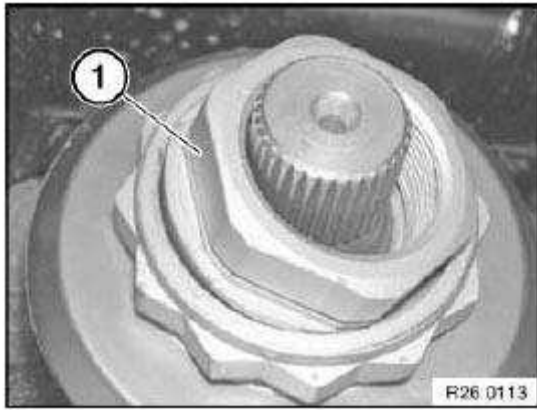


Fig. 12: Identifying Nut

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** . See **PROPELLER SHAFT - OPERATING FLUIDS** .

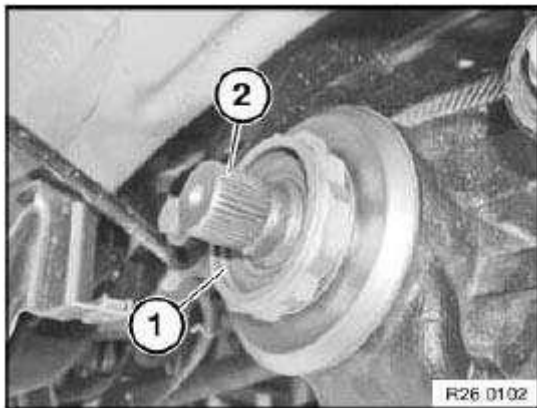


Fig. 13: Identifying Collar And Bevel Pinion Teeth

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** . See **PROPELLER SHAFT - OPERATING FLUIDS** .

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

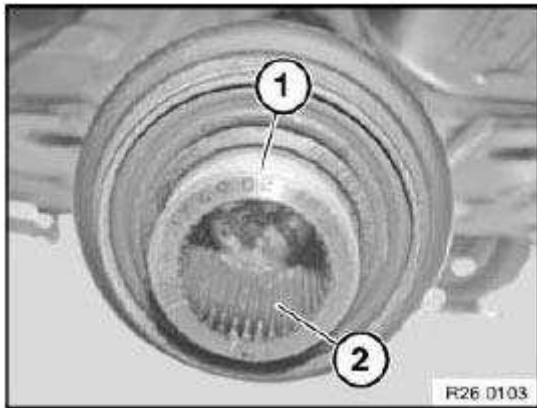


Fig. 14: Identifying Thread And Hub Teeth
Courtesy of BMW OF NORTH AMERICA, INC.

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

Install retaining clip (2).

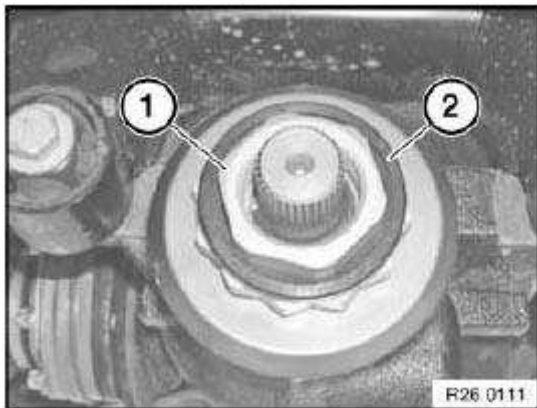


Fig. 15: Identifying Nut And Retaining Clip
Courtesy of BMW OF NORTH AMERICA, INC.

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 center mount

Screw-fastening sequence:

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

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 .

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

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

Tightening torque **26 11 1AZ** , see **26 11 PROPELLER SHAFT COMPLETE**

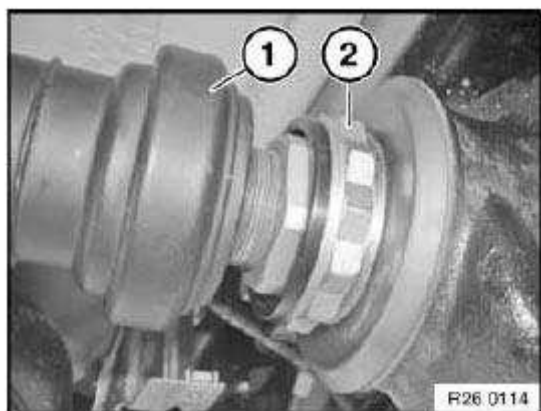


Fig. 16: Identifying Propeller Shaft And Bihexagonal Flange Nut
Courtesy of BMW OF NORTH AMERICA, INC.

26 11 020 REPLACING CENTER MOUNT GAITER

Necessary preliminary tasks:

- Remove **propeller shaft** .

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.

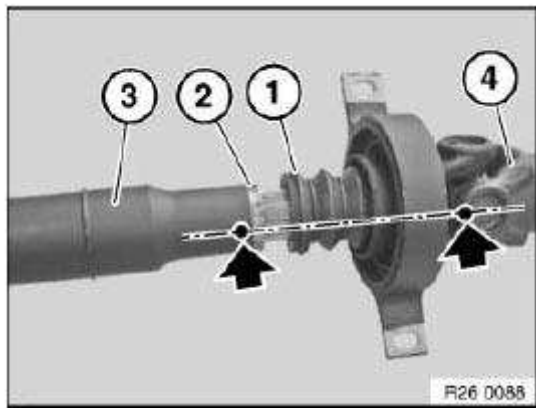


Fig. 17: Locating Front And Rear Propeller Shaft Position
 Courtesy of BMW OF NORTH AMERICA, INC.

Pull propeller shaft apart.

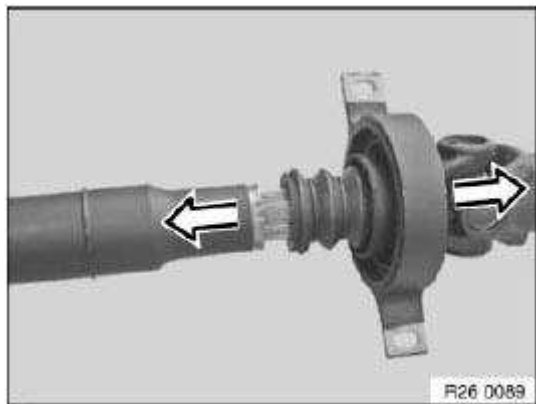


Fig. 18: Pulling Propeller Shaft
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

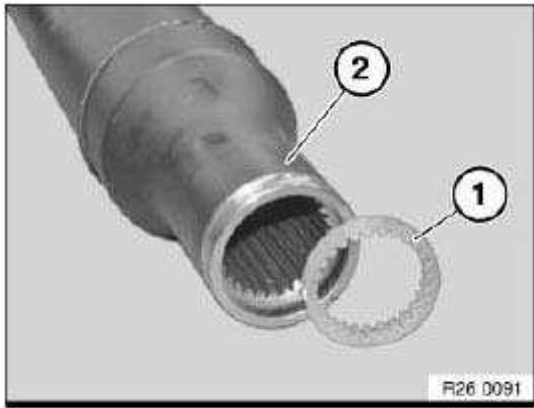


Fig. 19: Identifying Front Propeller Shaft Clamping Ring
Courtesy of BMW OF NORTH AMERICA, INC.

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.

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.

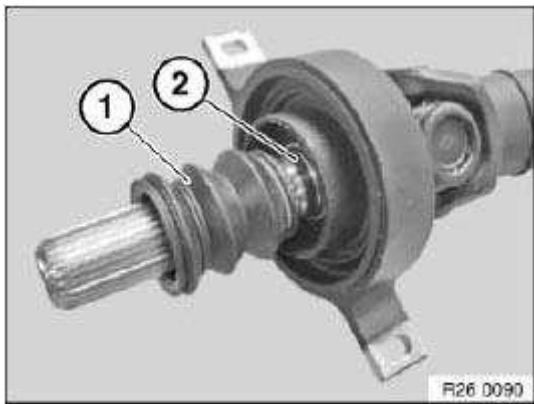


Fig. 20: Identifying Gaiter And Groove
Courtesy of BMW OF NORTH AMERICA, INC.

26 11 051 REPLACING FLEXIBLE DISK FOR FRONT PROPELLER SHAFT

Necessary preliminary tasks:

- Remove **propeller shaft** from transmission and center bearing.

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

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

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

Tightening torque and angle of rotation: See 26 11 1AZ in 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.

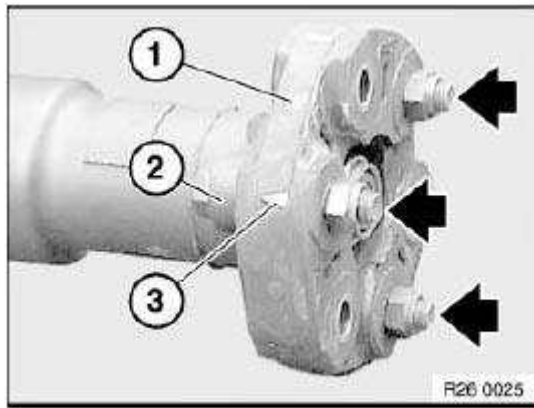


Fig. 21: Locating Flexible Disc Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check centering mount.

Replace damaged centering mount .

Grease centering mount.

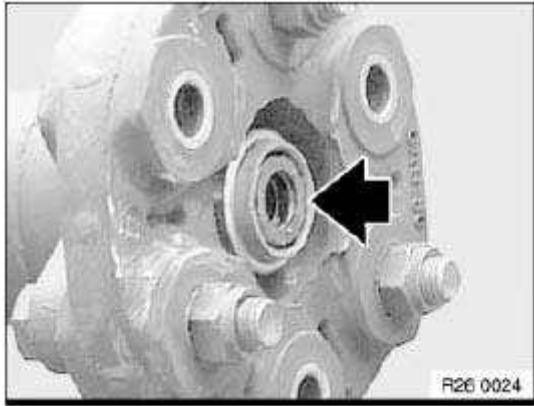


Fig. 22: Locating Centering Mount
Courtesy of BMW OF NORTH AMERICA, INC.

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

Special tools required:

- **00 5 500**
- **11 1 310**
- **11 2 030**

See **MAINTENANCE AND GENERAL INFORMATION - SPECIAL TOOLS** .

See **ENGINE - SPECIAL TOOLS (N54, N63)** .

Necessary preliminary tasks:

- **Remove propeller shaft** .

Completely fill centering bore (1) with viscous grease.

Drive special tool **11 1 310** 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.**

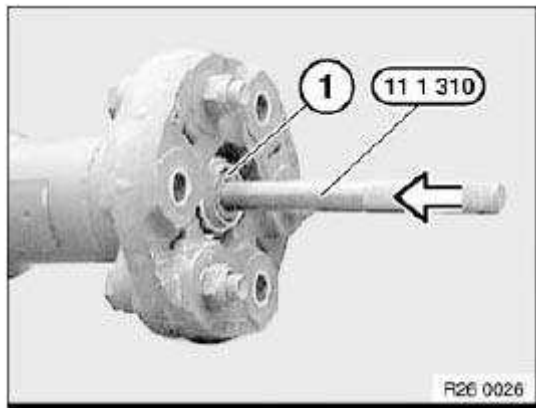


Fig. 23: Driving Special Tool 11 1 310 Into Centering Bore
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Remove grease/water from mount bore.

Drive in centering mount (1) with special tools **11 2 030** and **00 5 500** into propeller shaft (observe protrusion).

Grease centering mount.

- Grease: BMW Service **Operating Fluids** . See **PROPELLER SHAFT - OPERATING FLUIDS** .

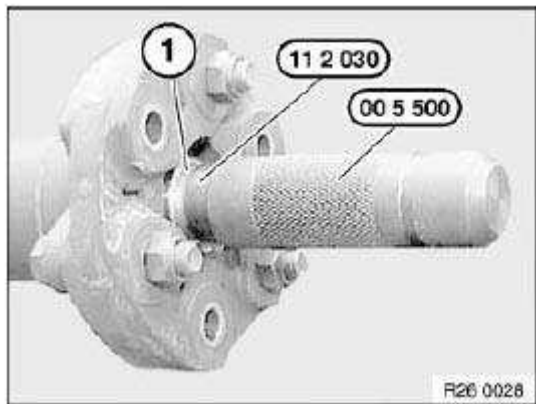


Fig. 24: Driving Centering Mount Using Special Tools 11 2 030 And 00 5 500
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

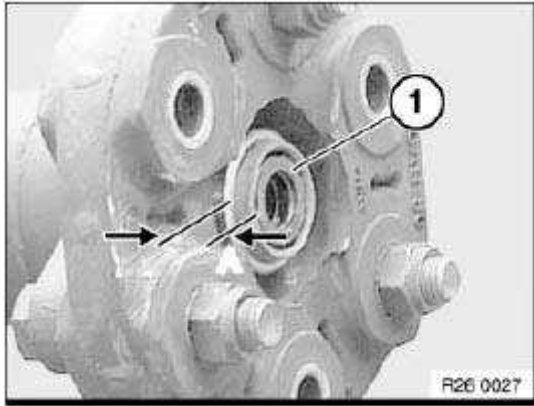


Fig. 25: Identifying Protrusion

Courtesy of BMW OF NORTH AMERICA, INC.

26 20 000 REMOVING AND INSTALLING FRONT PROPELLER SHAFT (N52K, M57T2, N54)

IMPORTANT: Do not move vehicle with drive power once propeller shaft has been removed.

Necessary preliminary tasks:

- Remove **underbody protection** . See **51 47 490 REMOVING AND INSTALLING/REPLACING FRONT UNDERBODY PROTECTION** or **51 47 491 REMOVING AND INSTALLING/REPLACING REAR UNDERBODY PROTECTION** .
- Remove **reinforcement plate** . See **31 10 010 REMOVING AND INSTALLING/REPLACING REINFORCEMENT PLATE** .

Release screws.

Installation:

Replace screws and nuts.

Slide propeller shaft towards rear and remove flexible disc with centering flange.

Tightening torque **26 11 9AZ** , see **26 11 PROPELLER SHAFT COMPLETE**

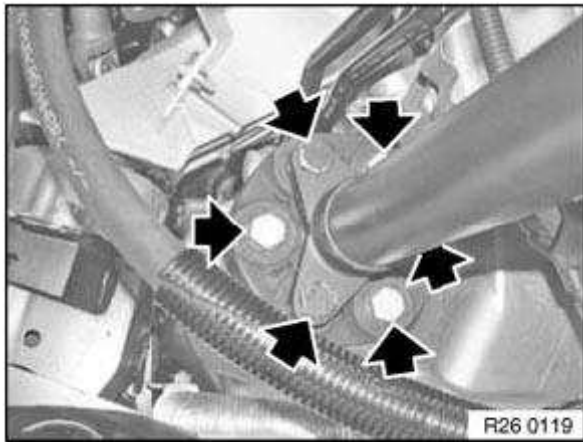


Fig. 26: Locating Screws And Nuts
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Slide propeller shaft fully towards rear.

Cup seal (1) must snap audibly into place and rest entirely on dust guard (2).

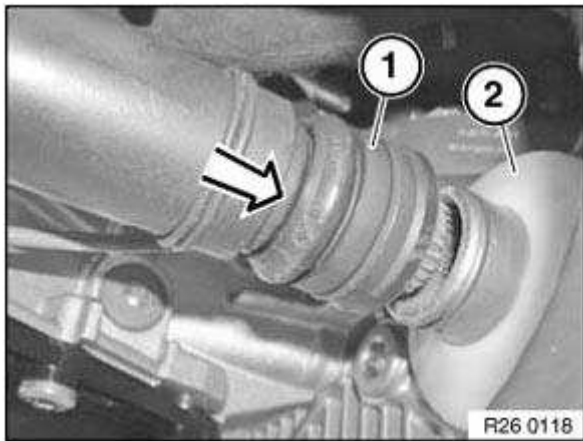


Fig. 27: Sliding Propeller Shaft Towards Rear
 Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: During installation arrows (1) on circumference of flexible disc must point to flange arms ().

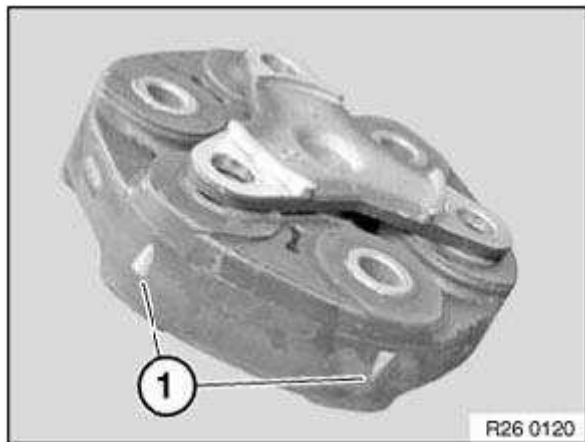


Fig. 28: Identifying Installation Arrows On Circumference Of Flexible Disc
Courtesy of BMW OF NORTH AMERICA, INC.

CENTRE CONSOLE ASSEMBLY

26 11 020 REPLACING CENTER MOUNT GAITER

Necessary preliminary tasks:

- Remove **propeller shaft** .

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.

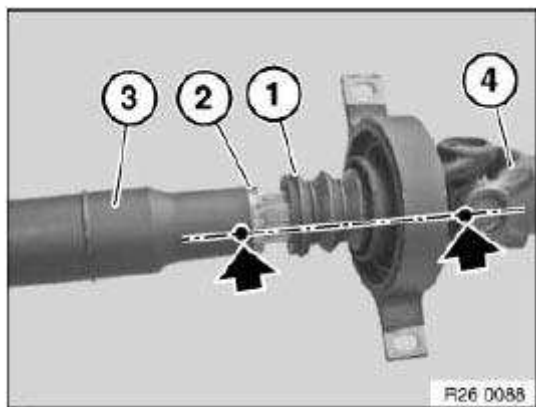


Fig. 29: Locating Front And Rear Propeller Shaft Position
Courtesy of BMW OF NORTH AMERICA, INC.

Pull propeller shaft apart.

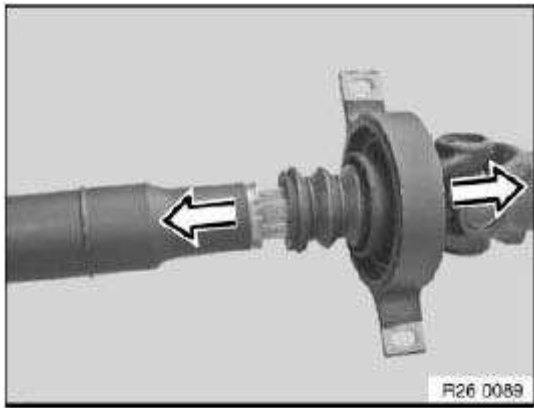


Fig. 30: Pulling Propeller Shaft
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

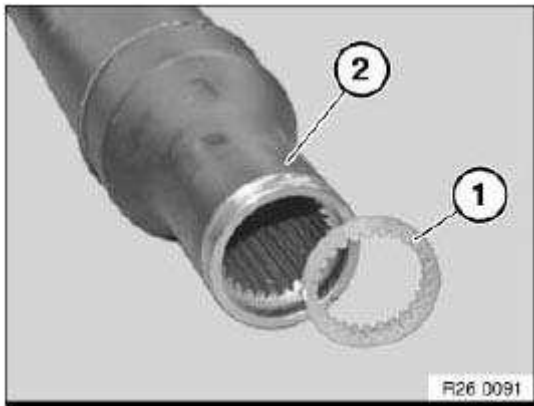


Fig. 31: Identifying Front Propeller Shaft Clamping Ring
 Courtesy of BMW OF NORTH AMERICA, INC.

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 **PROPELLER SHAFT - 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.

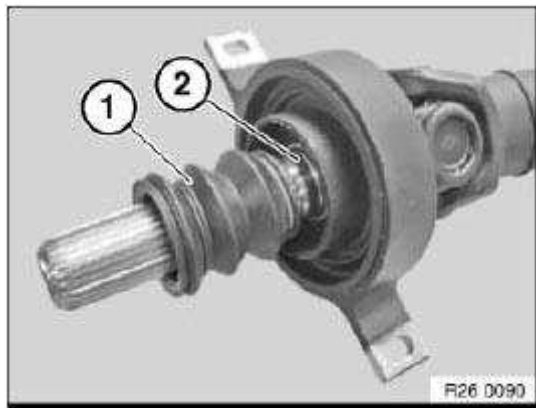


Fig. 32: Identifying Gaiter And Groove
Courtesy of BMW OF NORTH AMERICA, INC.

26 12 001 REPLACING COMPLETE PROPELLER SHAFT CENTER MOUNT

Special tools required:

- 00 7 500
- 23 1 160

See **MAINTENANCE AND GENERAL INFORMATION - SPECIAL TOOLS** .

See .

Necessary preliminary tasks:

- Remove **propeller shaft** .

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).

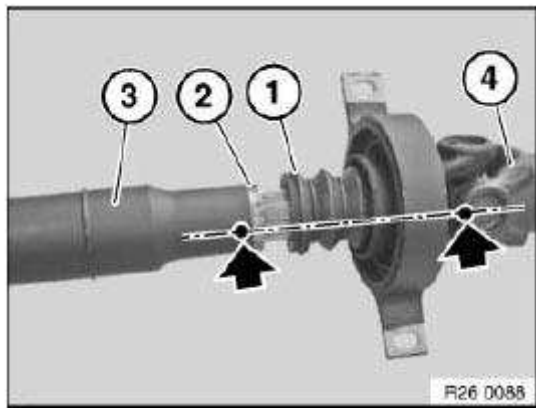


Fig. 33: Locating Front And Rear Propeller Shaft Position
 Courtesy of BMW OF NORTH AMERICA, INC.

Pull propeller shaft apart.

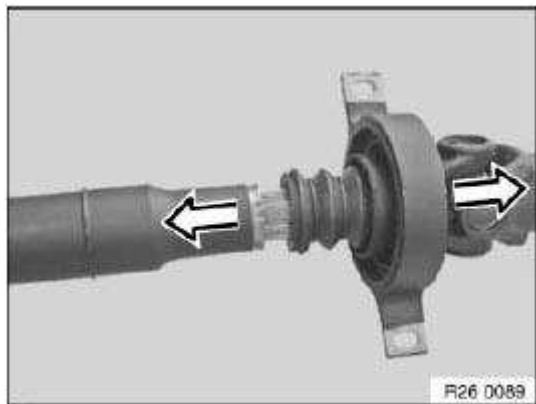


Fig. 34: Pulling Propeller Shaft
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

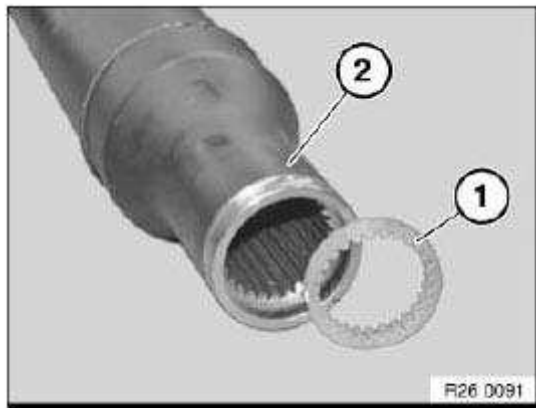


Fig. 35: Identifying Front Propeller Shaft Clamping Ring
 Courtesy of BMW OF NORTH AMERICA, INC.

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).

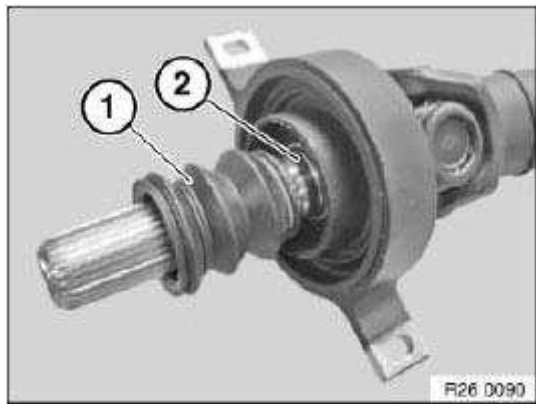


Fig. 36: Identifying Gaiter And Groove
 Courtesy of BMW OF NORTH AMERICA, INC.

Install special tool **00 7 500** between center mount (1) and universal joint (2).

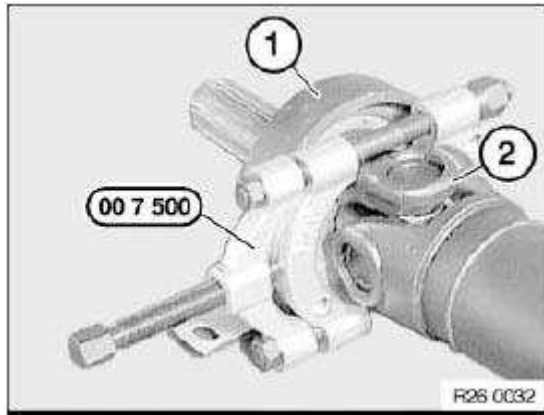


Fig. 37: Installing Special Tool 00 7 500 Between Centre Mount And Universal Joint
Courtesy of BMW OF NORTH AMERICA, INC.

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

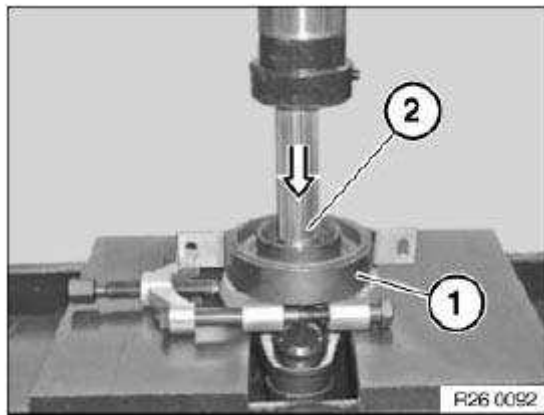


Fig. 38: Forcing Centre Mount Off Propeller Shaft
Courtesy of BMW OF NORTH AMERICA, INC.

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

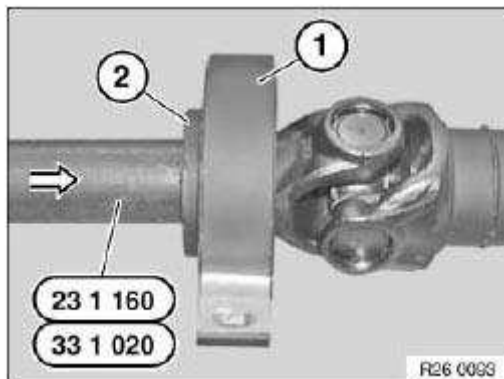


Fig. 39: Driving Centre Mount Using Special Tool 23 1 160
Courtesy of BMW OF NORTH AMERICA, INC.

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

Special tools required:

- 23 1 160
- 33 3 202
- 33 3 203

See **REAR AXLE - SPECIAL TOOLS** .

Necessary preliminary tasks:

- Replace **propeller shaft center mount**

Press grooved ball bearing using special tool 23 1 160 out of center mount (1).

NOTE: Illustration shows E46.

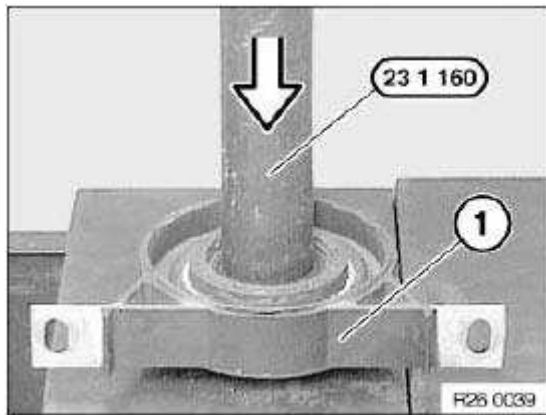


Fig. 40: Pressing Grooved Ball Bearing Using Special Tool 23 1 160 Out Of Centre Mount
Courtesy of BMW OF NORTH AMERICA, INC.

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

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

NOTE: Illustration shows E46.

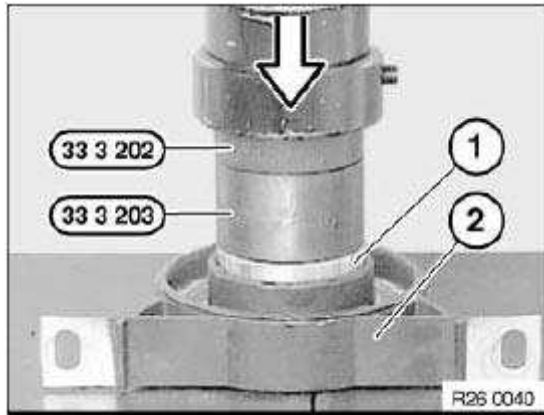


Fig. 41: Pressing Grooved Ball Bearing Using Special Tools 33 3 202 And 33 3 203 In To Centre Mount
Courtesy of BMW OF NORTH AMERICA, INC.

DRIVELINE/AXLES

Propeller Shaft - Repair Instructions - X6

PROPELLER SHAFT, GENERAL

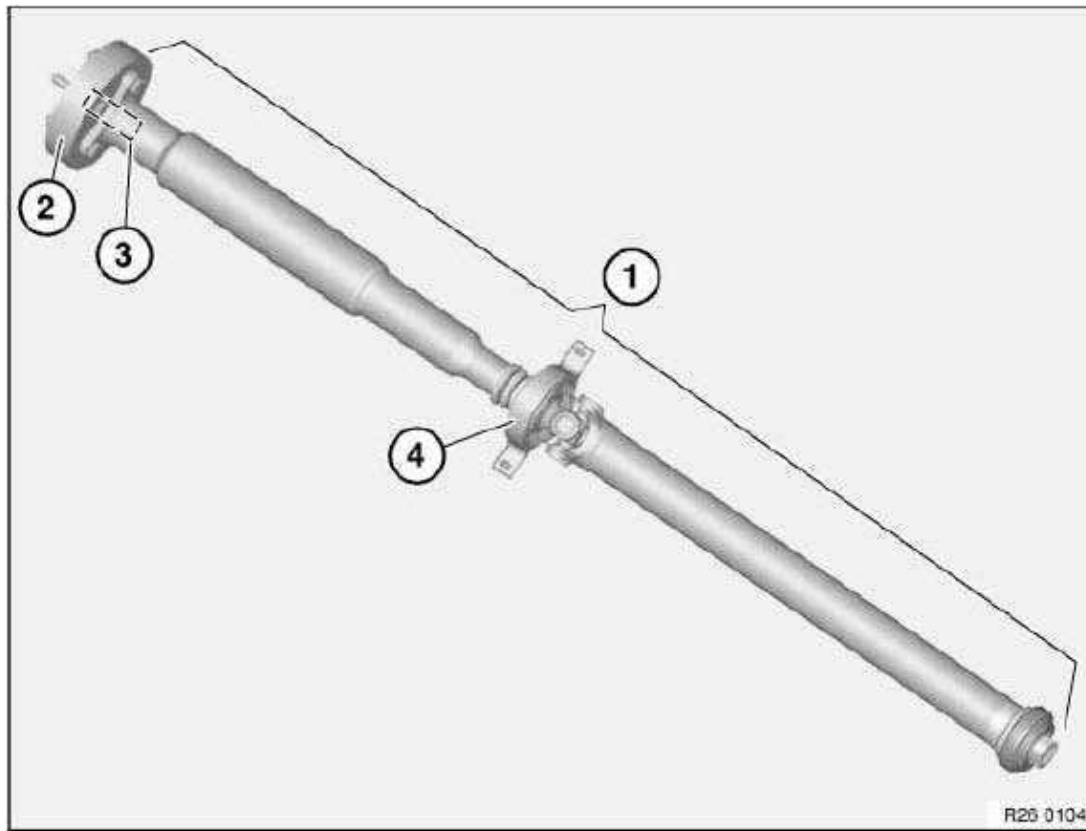
26 00 ... PROPELLER SHAFT DEFLECTION ANGLES

IMPORTANT: Specifications on propeller shaft deflection angles

Only possible on request with the vehicle identification number of the problem vehicle via PuMA.

PROPELLER SHAFT, ASSEMBLY

26 11 ... OVERVIEW (INSERTED PROPELLER SHAFT)



1 Complete propeller shaft

3 Centering mount

2 Flexible disk

4 Centre mount

Fig. 1: Identifying Propeller Shaft Components
Courtesy of BMW OF NORTH AMERICA, INC.

26 11 000 REMOVING AND INSTALLING PROPELLER SHAFT (INSERTED) COMPLETELY

Special tools required:

- **00 9 120**
- **00 9 130**
- **33 5 040**
- **33 5 070**

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 disc at nuts and tighten down by way of bolts.

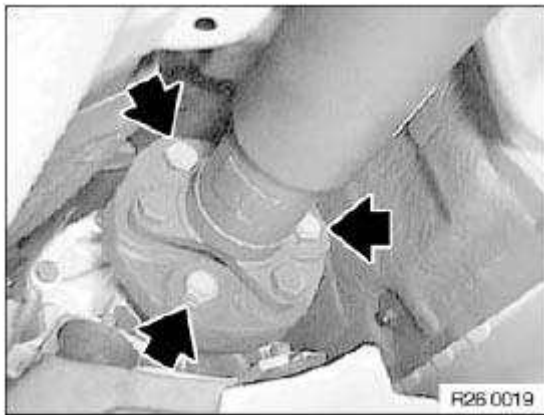


Fig. 2: Locating ZNS Bolts And Self-Locking Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check centring mount.

If necessary, replace damaged **centring mount** .

Grease centring mount.

- Grease: BMW Service Operating Fluids. See **PROPELLER SHAFT - OPERATING FLUIDS** .

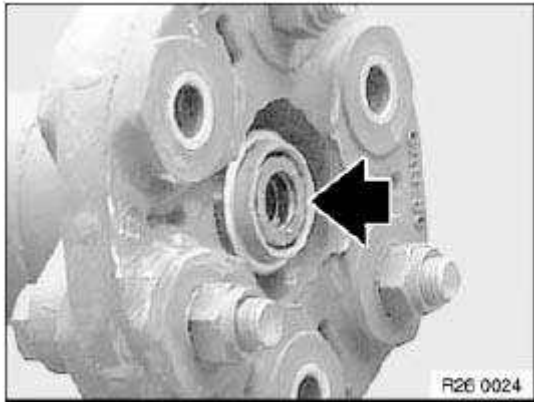


Fig. 3: Locating Centring Mount
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Tighten down screws/bolts.

Secure special tool angle of rotation **00 9 120** with magnet **00 9 130** to underbody and continue bolting according to angle of rotation.

Tightening torque, see **26 11 1AZ** in **PROPELLER SHAFT**

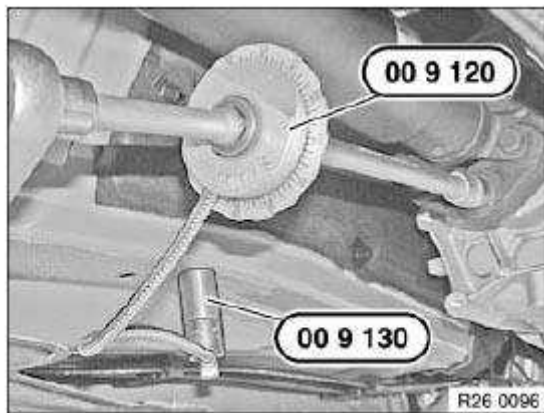


Fig. 4: Tightening Underbody Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

Slacken screws (1)

Tightening torque, see **26 11 6AZ** .

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

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

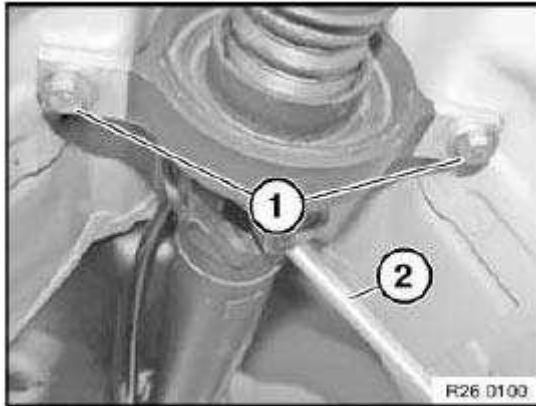


Fig. 5: Securing Propeller Shaft Using Suitable Tool
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Check installation location.
Part number and date of manufacture must be visible from below.

Installation:

The bolt fastening points of the centre bearing are off-centre.

Part (A) of the propeller shaft centre bearing must be installed upwards into the propeller shaft tunnel.

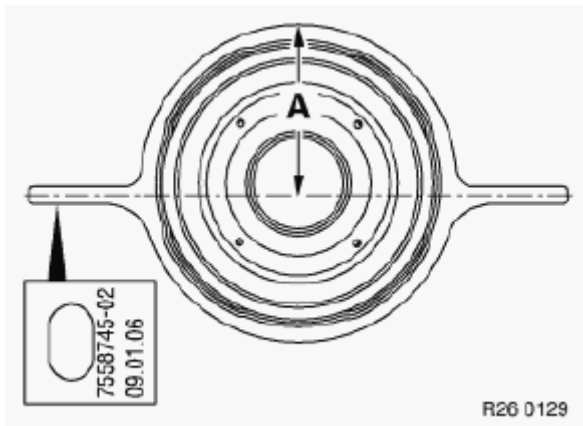


Fig. 6: Identifying Propeller Shaft Part Number
Courtesy of BMW OF NORTH AMERICA, INC.

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.

Release insert nut against direction of travel **in clockwise direction** with special tools **33 5 040** and **33 5 070** .

Tightening torque, see 26 11 1AZ in **PROPELLER SHAFT ASSEMBLY** .

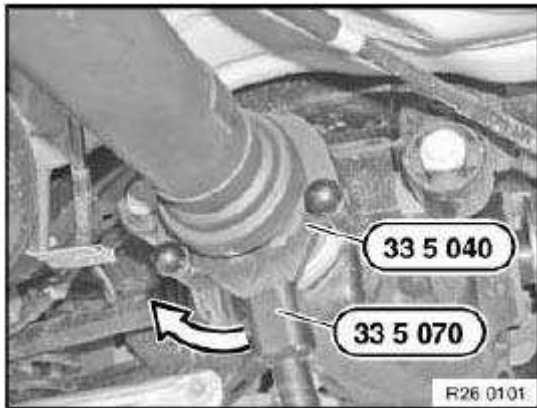


Fig. 7: Releasing Insert Nut Using Special Tool
Courtesy of BMW OF NORTH AMERICA, INC.

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

Installation:

Retaining clip and seal must be replaced.

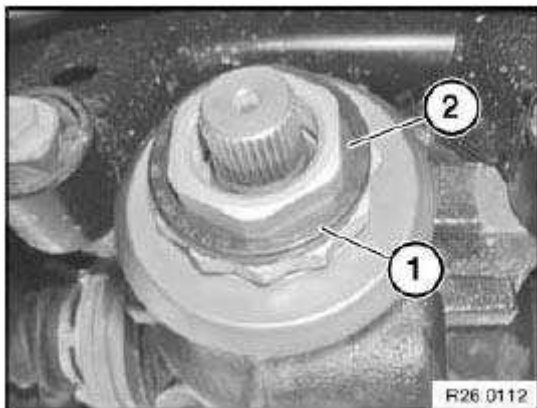


Fig. 8: Identifying Propeller Shaft Retaining Clip And Seal Location
Courtesy of BMW OF NORTH AMERICA, INC.

Remove insert nut (1).

Installation:

Insert nut must be replaced.

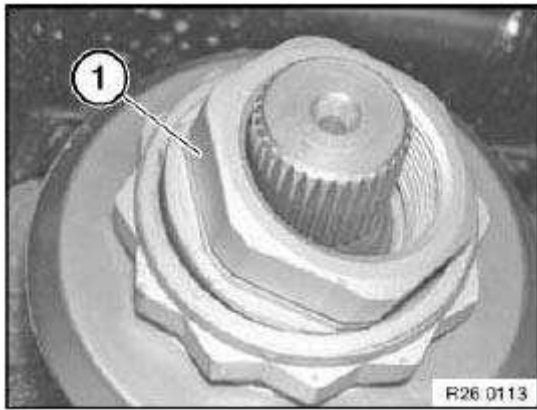


Fig. 9: Identifying Insert Nut
 Courtesy of BMW OF NORTH AMERICA, INC.

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. See **PROPELLER SHAFT - OPERATING FLUIDS** .

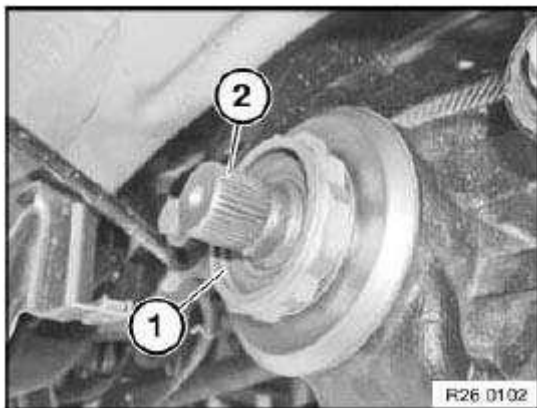


Fig. 10: Identifying Insert Collar And Bevel Pinion
 Courtesy of BMW OF NORTH AMERICA, INC.

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

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

Grease: BMW Service Operating Fluids. See **PROPELLER SHAFT - OPERATING FLUIDS** .

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

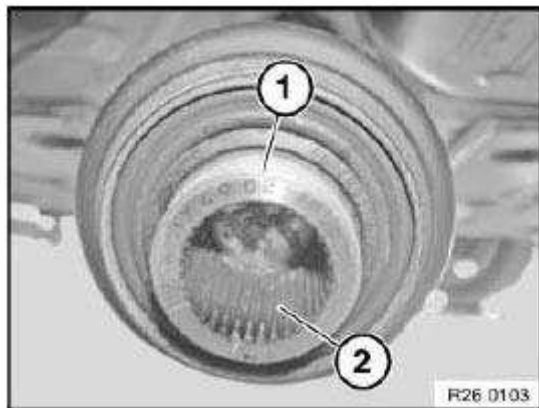


Fig. 11: Identifying Hub Teeth And Thread
 Courtesy of BMW OF NORTH AMERICA, INC.

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

Install retaining clip (2).

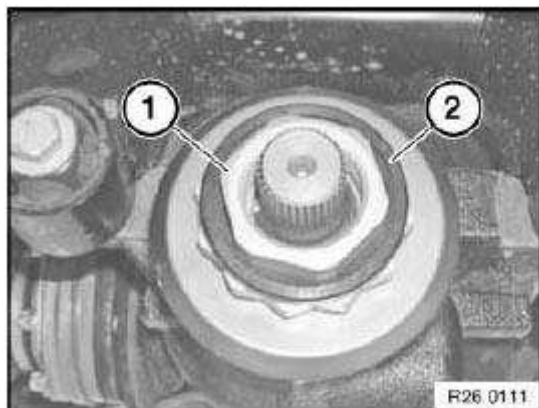


Fig. 12: Identifying Insert Nut And Retaining Clip
 Courtesy of BMW OF NORTH AMERICA, INC.

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

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** .

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.

Tightening torque, see **26 11 1AZ** in **PROPELLER SHAFT ASSEMBLY** .

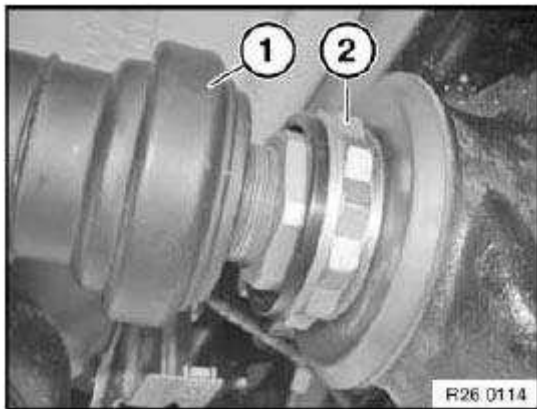


Fig. 13: Identifying Propeller Shaft And Bihexagonal Flange Nut
Courtesy of BMW OF NORTH AMERICA, INC.

26 11 020 REPLACING CENTRE MOUNT GAITER

Necessary preliminary tasks:

- Remove **PROPELLER SHAFT**.

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.

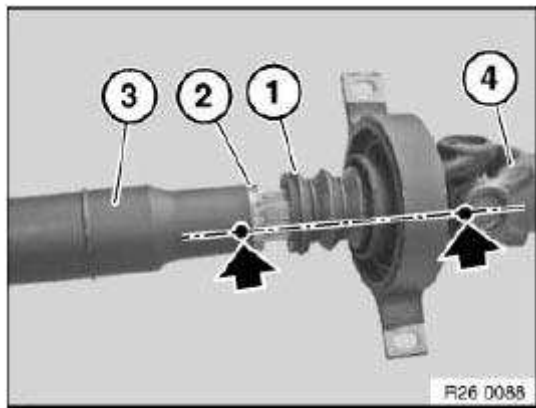


Fig. 14: Identifying Front Propeller Shaft And Rear Propeller Shaft
 Courtesy of BMW OF NORTH AMERICA, INC.

Pull propeller shaft apart.

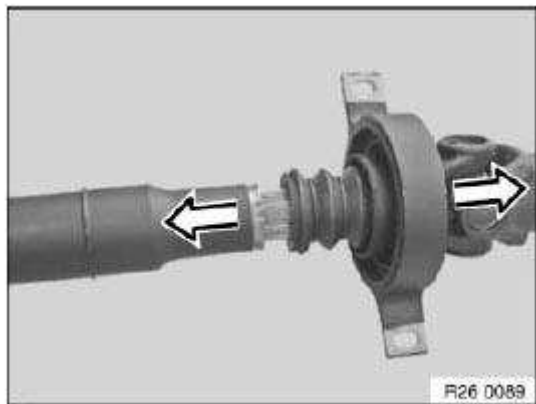


Fig. 15: Pulling Propeller Shaft Apart
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

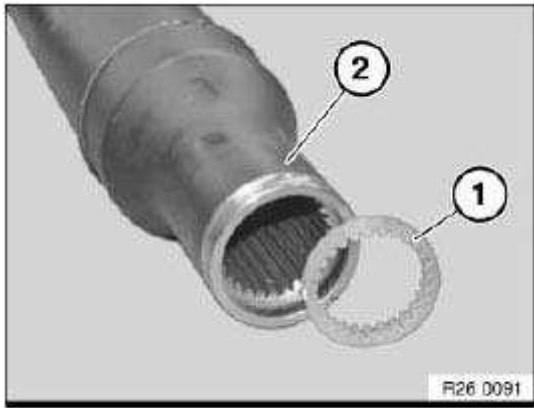


Fig. 16: Identifying Clamping Ring And Front Propeller Shaft
Courtesy of BMW OF NORTH AMERICA, INC.

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: BMW Service Operating Fluids. See **PROPELLER SHAFT - 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.

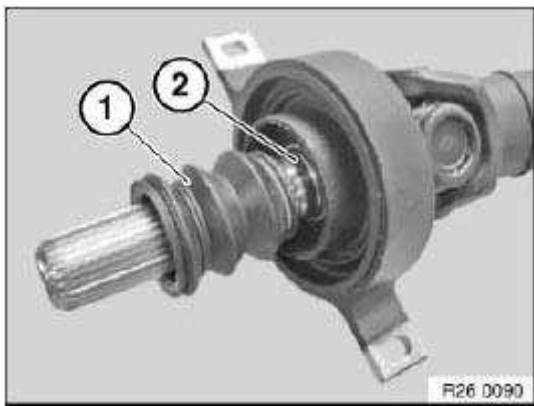


Fig. 17: Pushing Gaiter Into Groove
Courtesy of BMW OF NORTH AMERICA, INC.

26 11 051 REPLACING FLEXIBLE DISK FOR FRONT PROPELLER SHAFT

Necessary preliminary tasks:

- Remove **PROPELLER SHAFT** from transmission and centre bearing

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

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

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

Tightening torque and angle of rotation: see **26 11 1AZ** in **PROPELLER SHAFT ASSEMBLY** .

Installation

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

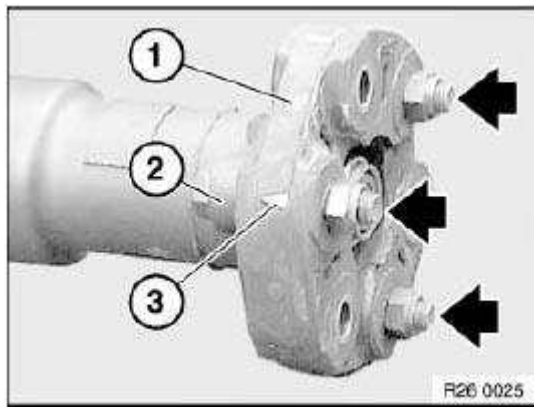


Fig. 18: Locating Flexible Disc Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check centring mount.

Replace damaged **centring mount** .

Grease centering mount .

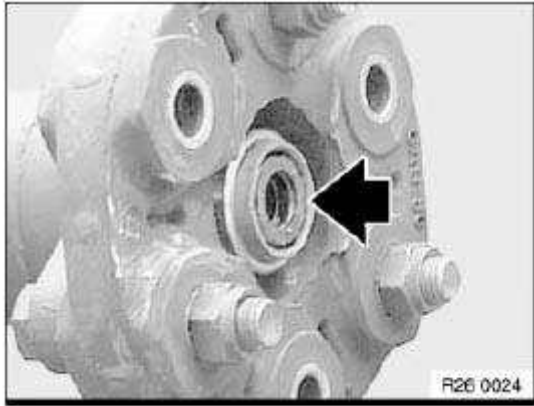


Fig. 19: Locating Centring Mount
Courtesy of BMW OF NORTH AMERICA, INC.

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

Special tools required:

- **00 5 500**
- **11 1 310**
- **11 2 030**

Necessary preliminary tasks:

- **Remove propeller shaft . See PROPELLER SHAFT.**

Completely fill centring bore (1) with viscous grease.

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

The centring 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 centring bore with water instead of grease.**

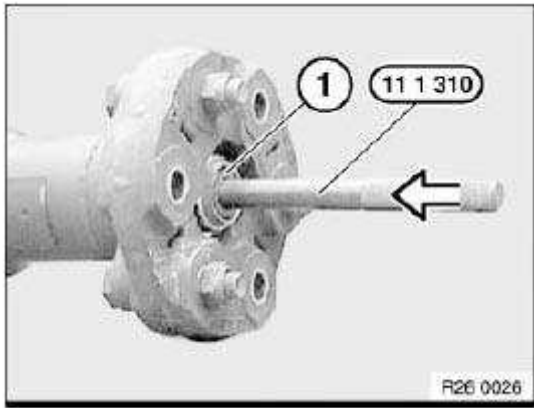


Fig. 20: Filling Centring Bore
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Remove grease/water from mount bore.

Drive in centring mount (1) with special tools **11 2 030** and **00 5 500** into propeller shaft (observe protrusion).

Grease centring mount.

- Grease: BMW Service Operating Fluids. See **PROPELLER SHAFT - OPERATING FLUIDS** .

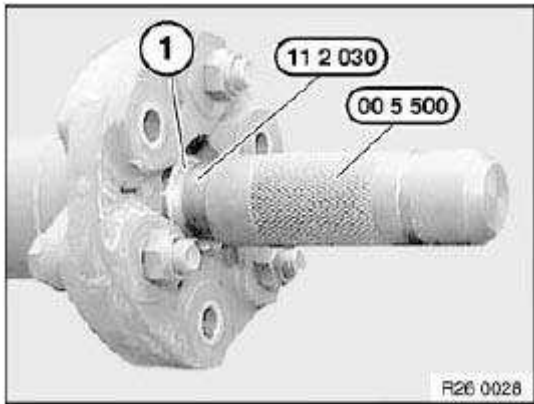


Fig. 21: Driving Centring Mount With Special Tools
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation

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

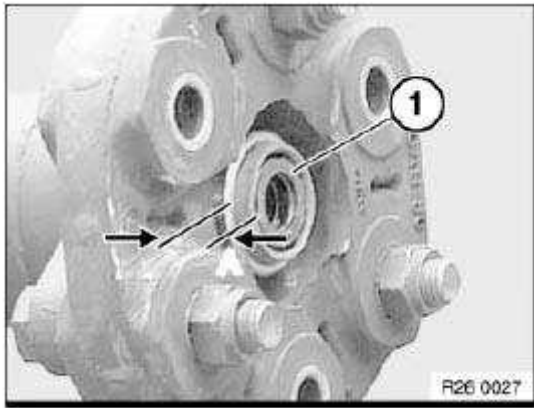


Fig. 22: Identifying Centring Mount
Courtesy of BMW OF NORTH AMERICA, INC.

CENTER CONSOLE ASSEMBLY

26 12 001 REPLACING COMPLETE PROPELLER SHAFT CENTRE MOUNT

Special tools required:

- **00 7 500**
- **23 1 160**

Necessary preliminary tasks:

- Remove **PROPELLER SHAFT**.

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).

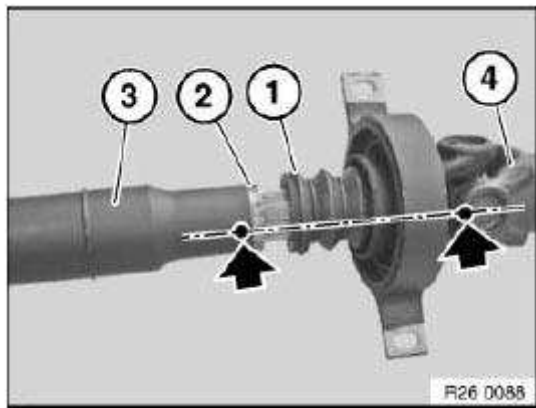


Fig. 23: Identifying Front Propeller Shaft, Gaiter And Groove
 Courtesy of BMW OF NORTH AMERICA, INC.

Pull propeller shaft apart.

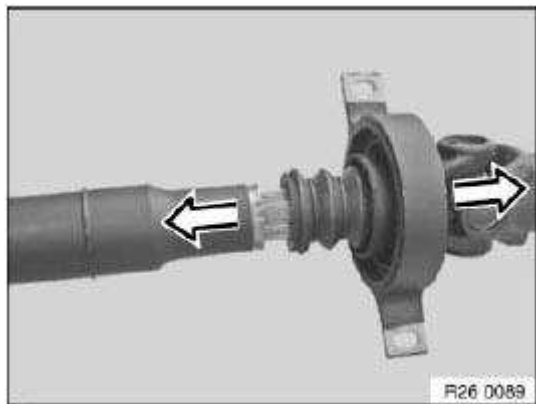


Fig. 24: Pulling Propeller Shaft Apart
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

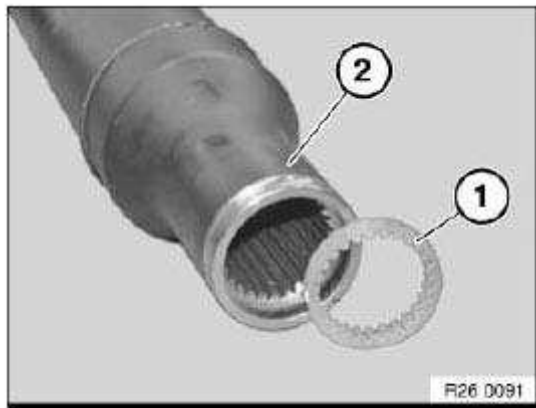


Fig. 25: Identifying Clamping Ring And Front Propeller Shaft
 Courtesy of BMW OF NORTH AMERICA, INC.

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.

Grease: BMW Service Operating Fluids. See **PROPELLER SHAFT - OPERATING FLUIDS** .

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).

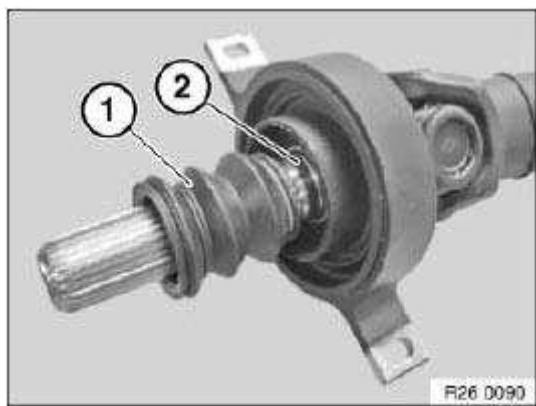


Fig. 26: Pushing Gaiter Into Groove
 Courtesy of BMW OF NORTH AMERICA, INC.

Install special tool **00 7 500** between centre mount (1) and universal joint (2).

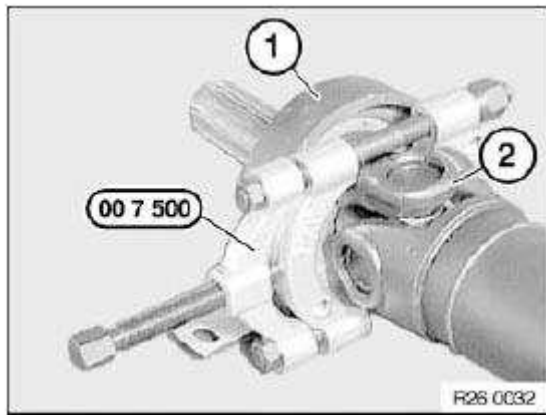


Fig. 27: Identifying Centre Mount And Universal Joint
 Courtesy of BMW OF NORTH AMERICA, INC.

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

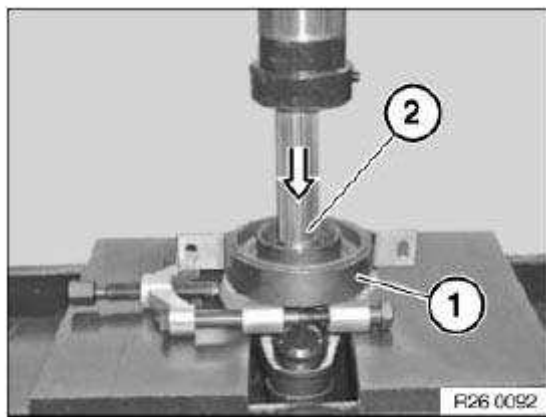


Fig. 28: Pressing Centre Mount To Propeller Shaft
 Courtesy of BMW OF NORTH AMERICA, INC.

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** .

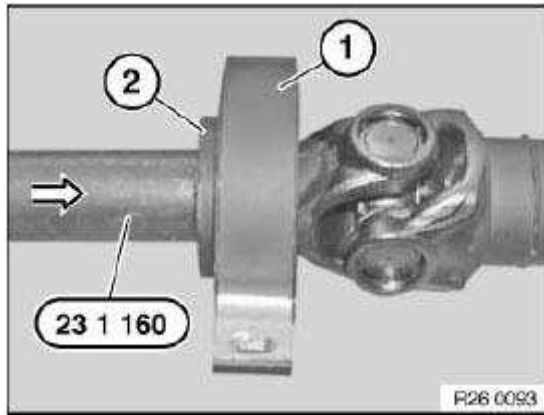


Fig. 29: Identifying Centre Mount Onto Propeller Shaft
Courtesy of BMW OF NORTH AMERICA, INC.

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

Special tools required:

- 23 1 160
- 33 3 202
- 33 3 203

Necessary preliminary tasks:

- Replace **PROPELLER SHAFT CENTER MOUNT**

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

NOTE: Illustration shows E46.

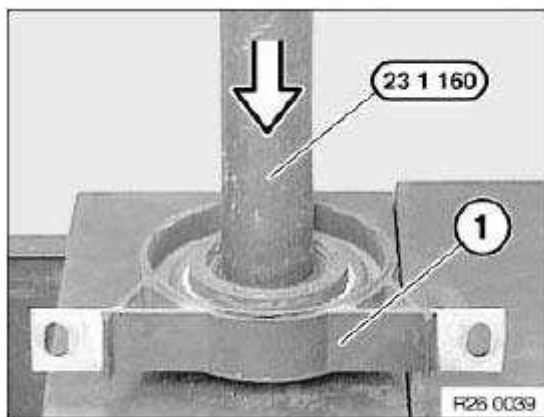


Fig. 30: Pressing Ball Bearing
Courtesy of BMW OF NORTH AMERICA, INC.

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

Circolight, refer to BMW Parts Service.

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

NOTE: Illustration shows E46.

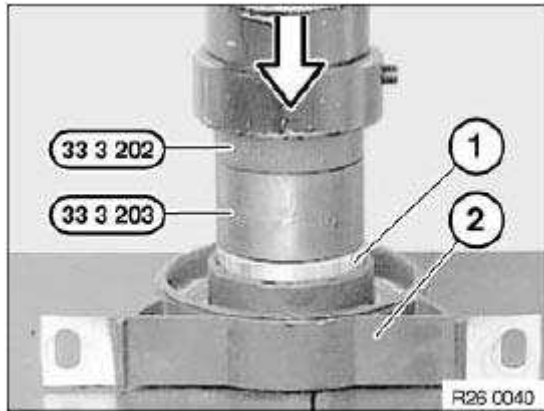


Fig. 31: Pressing Grooved Ball Bearing Into Centre Mount
Courtesy of BMW OF NORTH AMERICA, INC.

26 20 000 REMOVING AND INSTALLING FRONT PROPELLER SHAFT

IMPORTANT: Do not move vehicle with drive power once propeller shaft has been removed.

Necessary preliminary tasks:

- Remove **UNDERBODY PROTECTION**
- Remove **REINFORCEMENT PLATE**
- Remove **EXHAUST SYSTEM** (E71 N63)

Release screws.

Installation:

Replace screws.

Tightening torque, see **26 11 9AZ** .

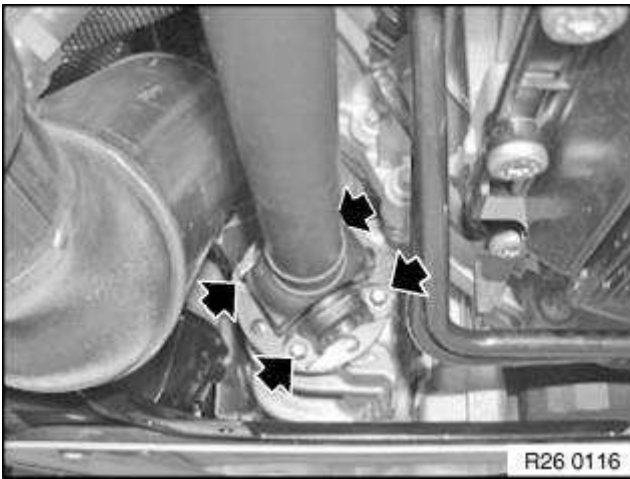


Fig. 32: Locating Screws

Courtesy of BMW OF NORTH AMERICA, INC.

Slide propeller shaft towards rear and remove.

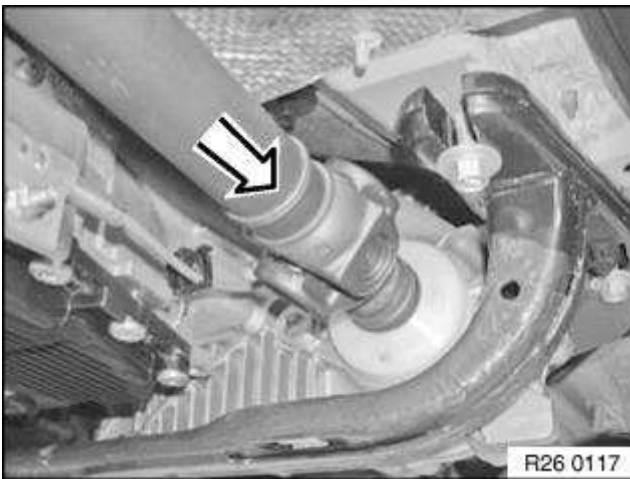


Fig. 33: Identifying Propeller Shaft

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Slide propeller shaft fully towards rear.

Cup seal (1) must snap audibly into place and rest entirely on dust guard (2).

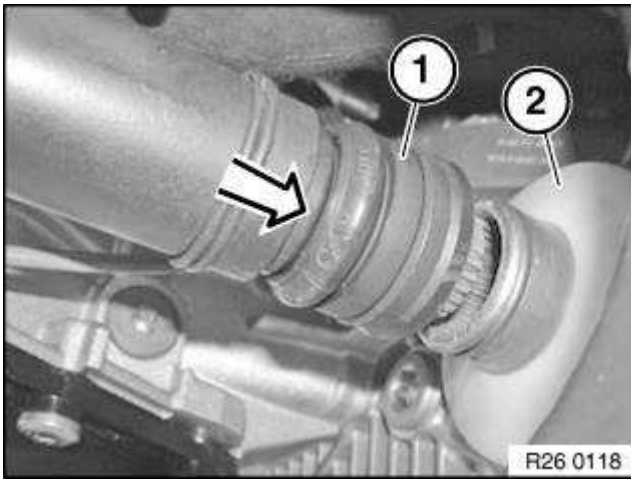


Fig. 34: Identifying Cup Seal And Dust Guard On Drive Shaft
Courtesy of BMW OF NORTH AMERICA, INC.

DRIVELINE/AXLES

Propeller Shaft - Technical Data - X6

PROPELLER SHAFT GENER

26 00 PROPELLER SHAFT IN GENERAL

PROPELLER SHAFT - TECHNICAL DATA

Grease for slide	Molykote Longtherm 2
Grease for constant velocity joint	Optimol
Volume of grease for velocity joints	80 grams

DRIVELINE/AXLES

Propeller Shaft - Tightening Torques - X6

PROPELLER SHAFT

26 11 PROPELLER SHAFT COMPLETE

PROPELLER SHAFT COMPLETE-TIGHTENING TORQUE SPECIFICATIONS

	Type
1AZ Flexible disc to propeller shaft and transmission output flange Steel propeller shaft	E36/E38/E39/E46/E52/E53/E60/E61/E63/E64/E65/E66/E83/E85/E87/E90/E91
	E36/E38/E39/E46/E52/E53/E60/E61/E63/E64/E65/E66/E83/E85/E87/E90/E91
	E31/E38/E39/E46
	E32/E34/E36/E38/E39
	E60/E61/E63/E64
	E32/E34/E36/E38/E39/E46/E53/E85
	E60/E61/E63/E64
	E39 (M5)/E36 (M3)/E46 (M3),
	E65
Flexible disc to transmission output flange	E46/E39/E60/M57 only

Flexible disc to transmission output flange	E65/E66/All except N73, M67
	E60/E61/E63/E64/E65/E66/E67
Flexible disc on propeller shaft	E83
Flexible disc to transmission output flange	E83
Aluminum propeller shaft: Flexible disc to transmission output flange	E39/E60
Aluminum propeller shaft: Flexible disc on propeller shaft	E39/E60
	E60/E61/E63/E64
	E60

	E63 (N52)
Flexible disc to transmission output flange ZNS screws and nuts Shiny zinc coating All versions	
	E60/E61/E63/E64/E85/E86/E87/E90/E91/E92/E93/E81/E82/E83/E88/E89
	E46/E53/E60/E61/E63/E64/E65/E85/E86/E87/E90/E91/E92/E93/E70/E71/E81/E82/E83/E88/
	E60/E61/E63/E64/E65
	E83
2AZ Coupling propeller shaft to transmission	E36/E38/E39/E46/E52/E53/E60/E61/E63/E64/E65/E66/E83/E85/E87/E90/E91
	E32/E31
3AZ Clamping ring for slide after installation in the car	E36/E38/E39/E46/E52/E53/E60/E61/E63/E64/E65/E66/E83/E85/E87/E90/E91
	E30/Four Wheel Drive

PROPELLER SHAFT COMPLETE-TIGHTENING TORQUE SPECIFICATIONS

	Type
4AZ Propeller shaft to drive flange (rear differential)	
Version, universal joint: >Compression nut	E36/E38/E39/E46/E52/E53/E60/E61/E63/E64/E65/E66/E83/E85
Version, universal joint: >Torx bolt	E36/E38/E39/E46/E52/E53/E60/E61/E63/E64/E65/E66/E83/E85
Version, constant-velocity joint: >Torx bolt	E46 (M3)/E38/ E39/ E46/E60/E83 (M57TU) E63 (N52)
Version, constant-velocity joint: >Compression nut	E36/E38/E39/E46/E52/E53/E60/E61/E63/E64/E65/E66/E83/E85
Compression nut	E36/E38/E39/E46/E52/E53/E60/E61/E63/E64/E65/E66/E83/E85
Finned nut	E36/E38/E39/E46/E52/E53/E60/E61/E63/E64/E65/E66/E83/E85
Finned nut	E36/E38/E39/E46/E52/E53/E60/E61/E63/E64/E65/E66/E83/E85
ZNS screws and nuts, shiny zinc coating All versions with universal or constant-velocity joint	
	E83/E85/E86/E87/E90/E91/E92/E93/E81/E82/E88

	E92 M3
	E46/E60/E61/E63/E64/E65/E66/E83/E85/E86/E81/E82/E87/E90/E91/E92/E93/E88
	E90/E91/E92/E93/E81/E87/E82/E83/E88
Screw with ribbed teeth	E85/M, E86/M
5AZ Pivot to center propeller shaft journal with Loctite (Version without slide)	E36/E38/E39/E46/E52/E53/E60/E61/E63/E64/E65/E66/E83/E85/E86/E87/E90/E91/E92
6AZ Centre mount to body	E36/E38/E39/E46/E52/E53/E60/E61/E63/E64/E65/E66/E83/E85/E86/E87/E90/E91/E92/E88
7AZ Flexible disc to front axle differential	E53
8AZ Flexible disc on propeller shaft	E53
9AZ Front propeller shaft to transfer box/front differential	

ZNS screws and nuts, shiny zinc coating	
	E60/E61/E90/E91/E92
	E46
	E53/E70/E71
	E46
Universal joint	E70/E83/E71

26 11 PROPELLER SHAFT COMPLETE

PROPELLER SHAFT COMPLETE-TIGHTENING TORQUE SPECIFICATIONS

		Type	Tightening Specification
1AZ	Propeller shaft plugged into rear differential (insert nut)	E9x/E82 N54/E88 N54// E90/E91/E92 M57T2/Top/E89	75 Nm
		E70/E71	75 Nm