

2005 BMW Z4

2003-04 DRIVE AXLES Axle Shafts - Z4

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IDENTIFICATION

MODEL & ENGINE IDENTIFICATION

Application-Model (Chassis Code)	Engine Size (Code)
2003-04	
Z4 (E85)	2.5L (M54)
Z4 (E85)	3.0L (M54)

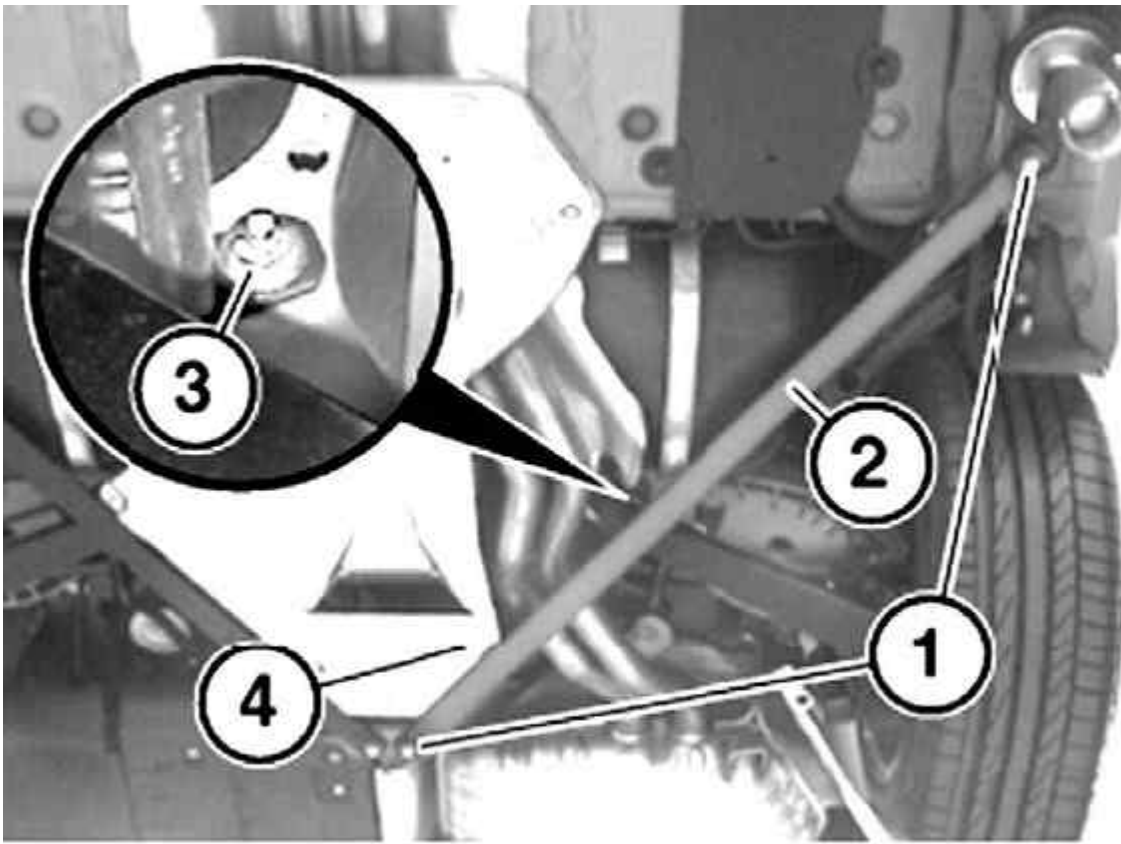
REMOVAL & INSTALLATION

AXLE SHAFTS

NOTE: Axle shafts differ in length. If necessary, mark axle shafts. Left is short and right is long.

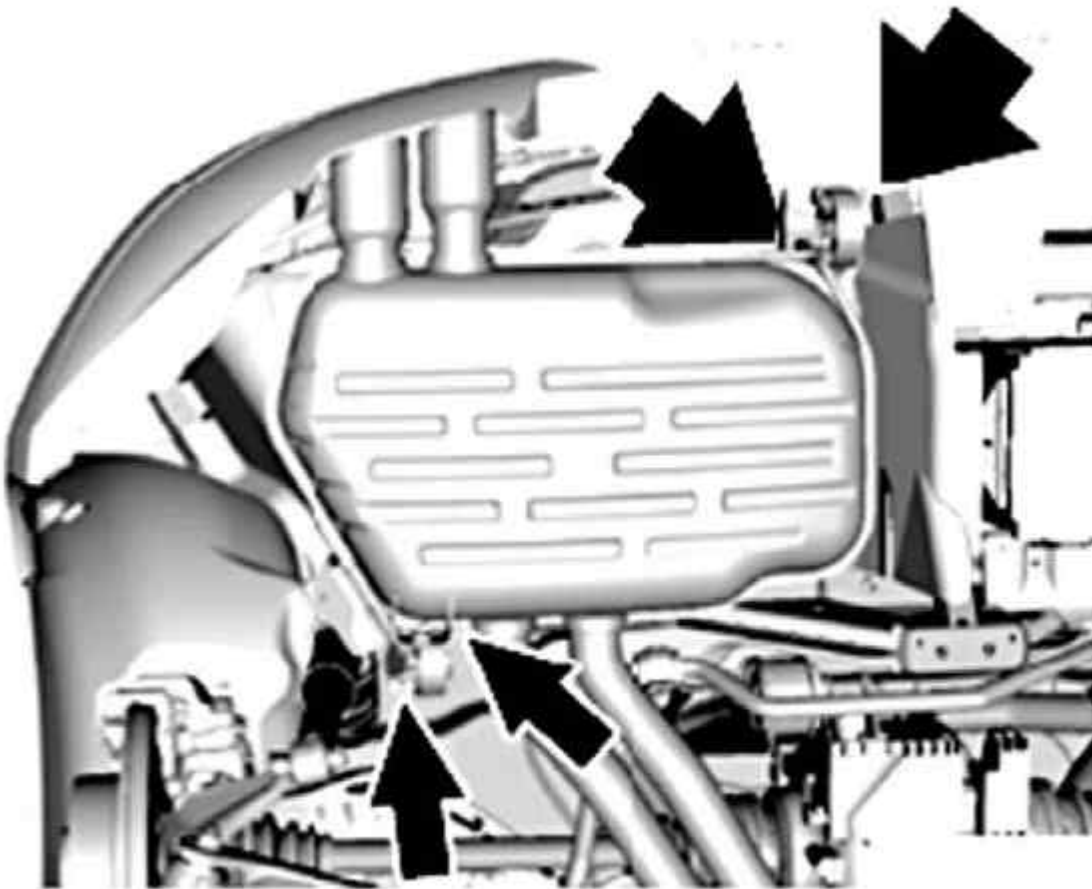
Removal

1. If removing left axle shaft, remove exhaust system. See **EXHAUST SYSTEM**.
2. Raise and support vehicle. Remove wheel.
3. Remove heat shield at rear.
4. Remove screw (4), screws (1) and nut (3) and remove tension strut. See **Fig. 1**.
5. If exhaust system has not been removed, open both rear rubber mounts of exhaust system. See **Fig. 2**.
6. Remove stabilizer on left and right from control arm. See **Fig. 3**. Remove stabilizer from rear axle carrier and feed out to right. See **Fig. 4**.
7. Remove collar nut. See **Fig. 5**.
8. Remove bolts on axle shaft-to-differential. See **Fig. 6**. Prevent axle shaft from falling.
9. Screw on Special Tool (33 2 111/116/117) with 3 wheel lug nuts. See **Fig. 7**. Pry axle shaft out of drive flange.



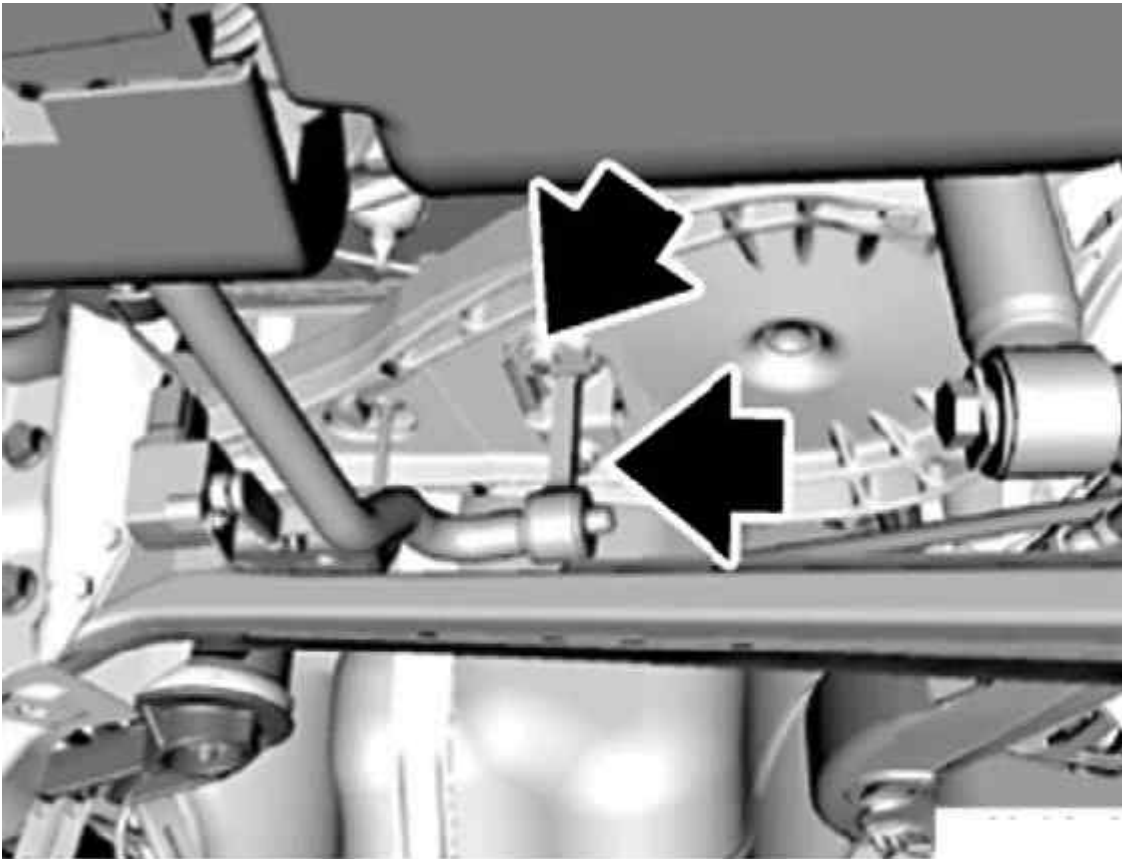
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Fig. 1: Removing Tension Strut
Courtesy of BMW OF NORTH AMERICA, INC.



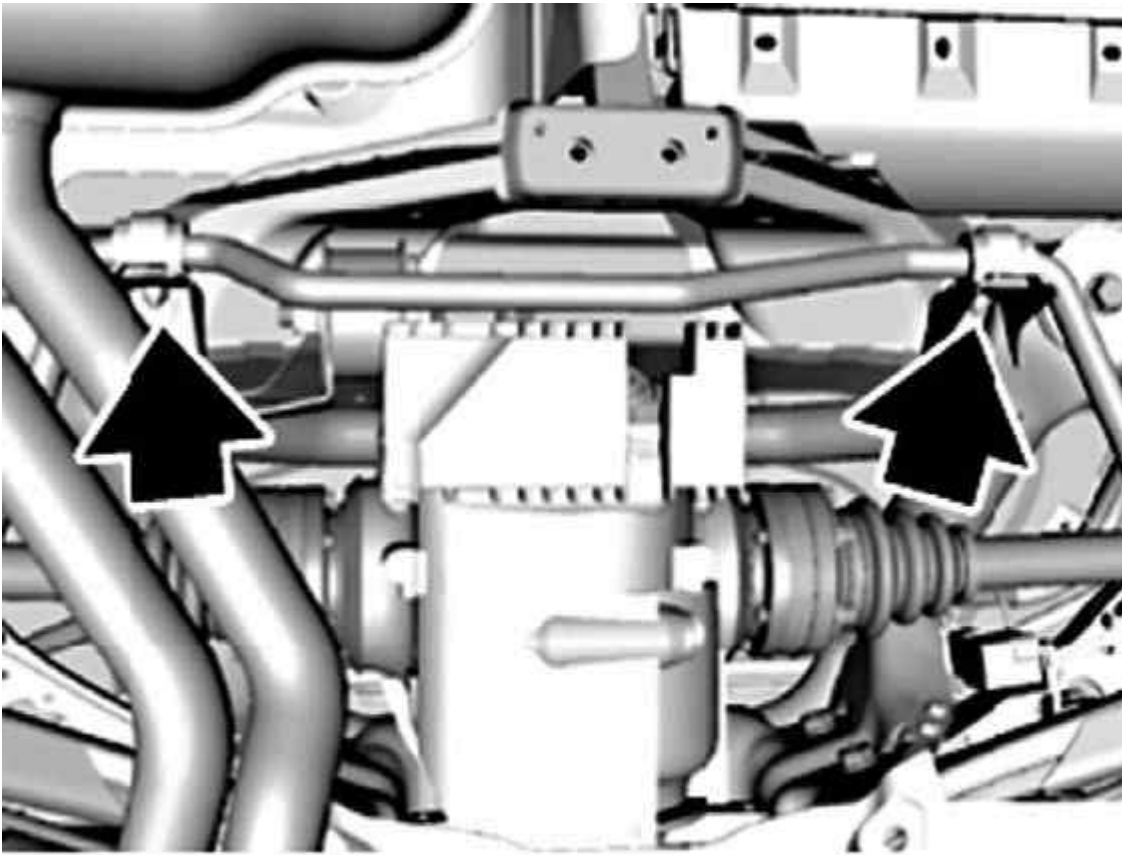
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Fig. 2: Locating Rubber Mounts Of Exhaust System
Courtesy of BMW OF NORTH AMERICA, INC.



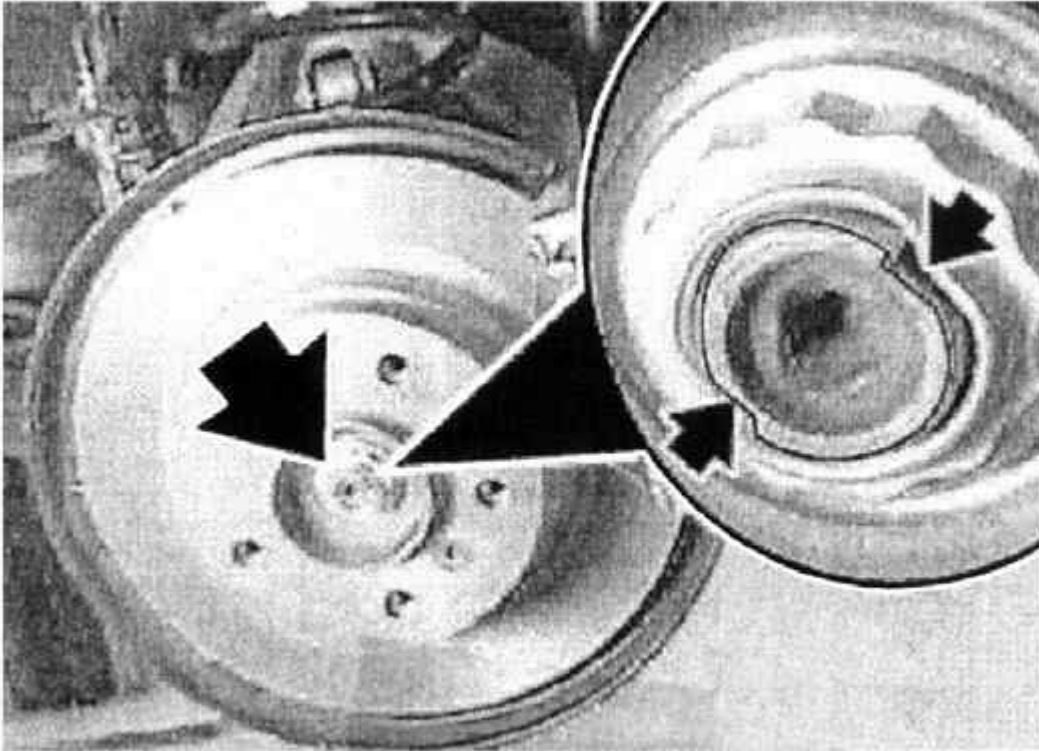
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Fig. 3: Removing Stabilizer From Control Arm
Courtesy of BMW OF NORTH AMERICA, INC.



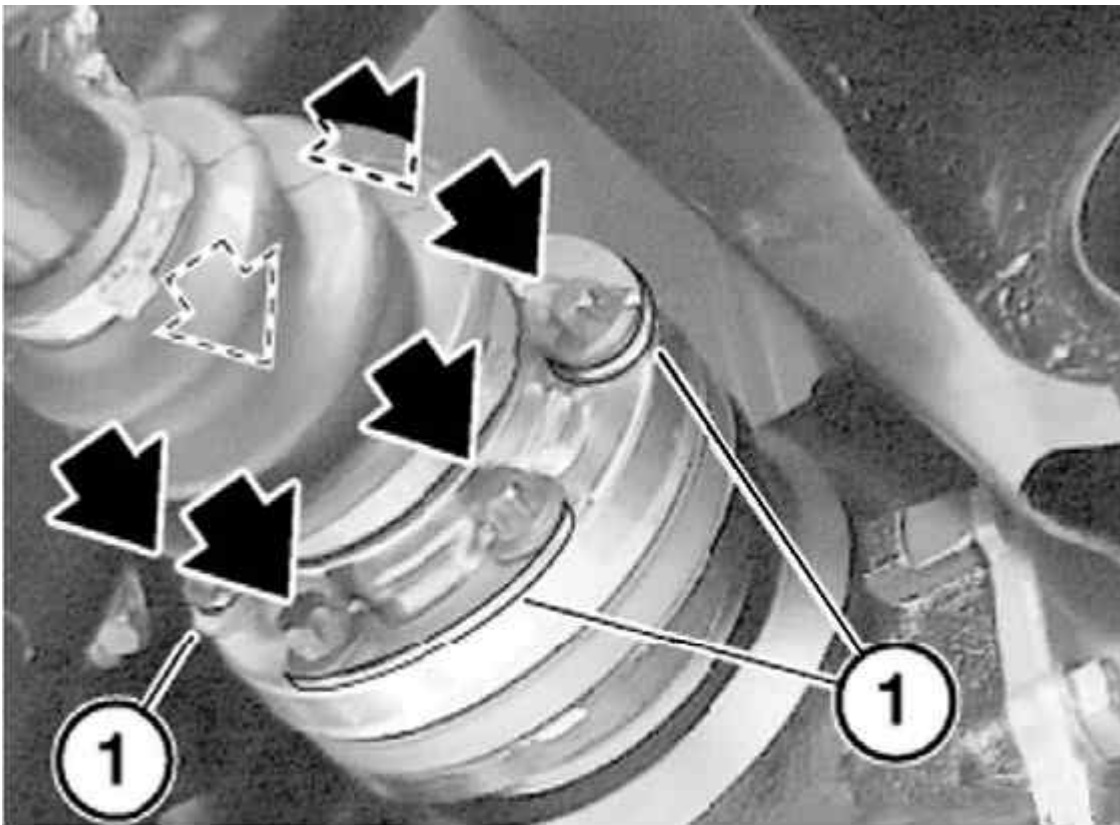
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Fig. 4: Removing Stabilizer Bar From Rear Axle Carrier
Courtesy of BMW OF NORTH AMERICA, INC.



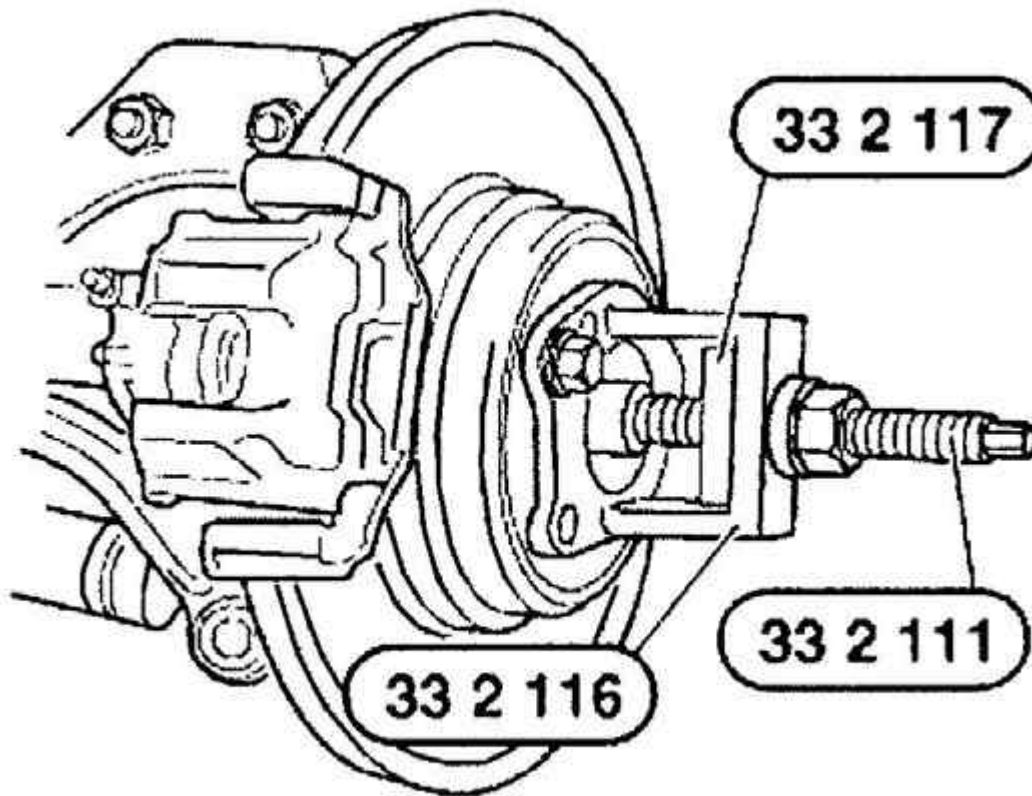
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Fig. 5: Staking Axle Collar Nut
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 6: Locating Axle Shaft-To-Differential Bolts
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 7: Pressing Out Axle Shaft

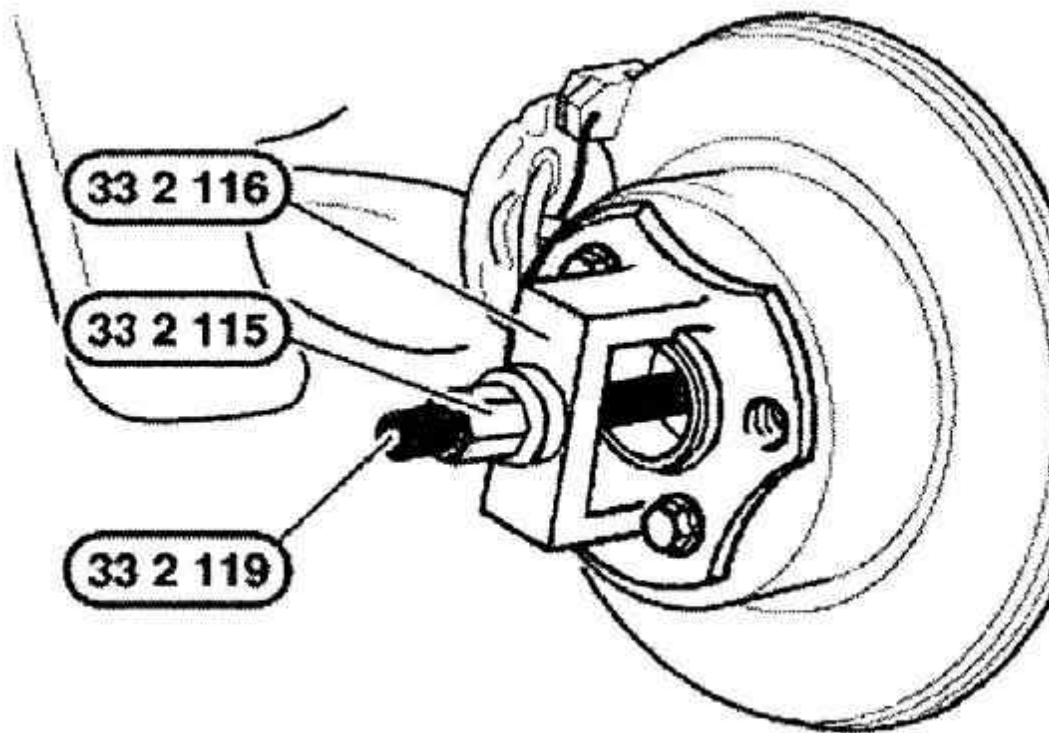
Courtesy of BMW OF NORTH AMERICA, INC.

Installation

1. Screw Special Tool (33 2 119) onto axle shaft. Screw on Special Tool (33 2 116) with 3 wheel lug nuts. See **Fig. 8**. Pull in axle shaft using Special Tool (33 2 115).
2. Install axle shaft to differential. Use washers (1). See **Fig. 6**. Tighten bolts to specification. See **TORQUE SPECIFICATIONS**.
3. Install a NEW axle shaft collar nut which has been lightly oiled. Tighten to specification. See **TORQUE SPECIFICATIONS**. Secure collar nut by peening flat surface on axle shaft. See **Fig. 5**.
4. Make sure stabilizer bar and rubber mount are free of grease. Coat retaining bracket with Circolight or equivalent. Install stabilizer bar to rear axle carrier and tighten to specification. See **TORQUE SPECIFICATIONS**.
5. Install stabilizer bar to control arm. Tighten to specification. See **TORQUE SPECIFICATIONS**.
6. If necessary, close rubber mounts of exhaust system.
7. Install tension struts. Replace screws (1) and nut (3). See **Fig. 1**. Install screws (1). Tighten to

specification and then to rotation. See **TORQUE SPECIFICATIONS**. Tighten nut (3) to specification. See **TORQUE SPECIFICATIONS**. Tighten down screws (4).

8. Install wheel. Tighten lug nuts to specification. See **TORQUE SPECIFICATIONS**.
9. If necessary, install exhaust system. See **EXHAUST SYSTEM**.
10. Install heat shield.



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Fig. 8: Using Special Tool (33 2 119)

Courtesy of BMW OF NORTH AMERICA, INC.

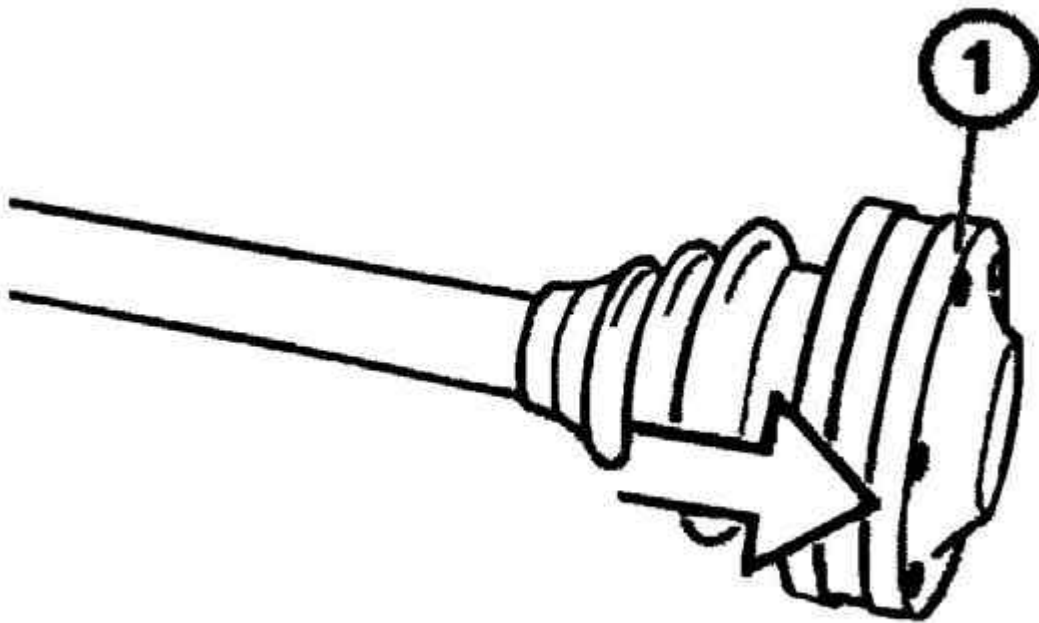
CV JOINT BOOT

CAUTION: Clean axle shaft thoroughly so that no dirt can get into joints during repairs. Use dust cover repair kit.

Removal

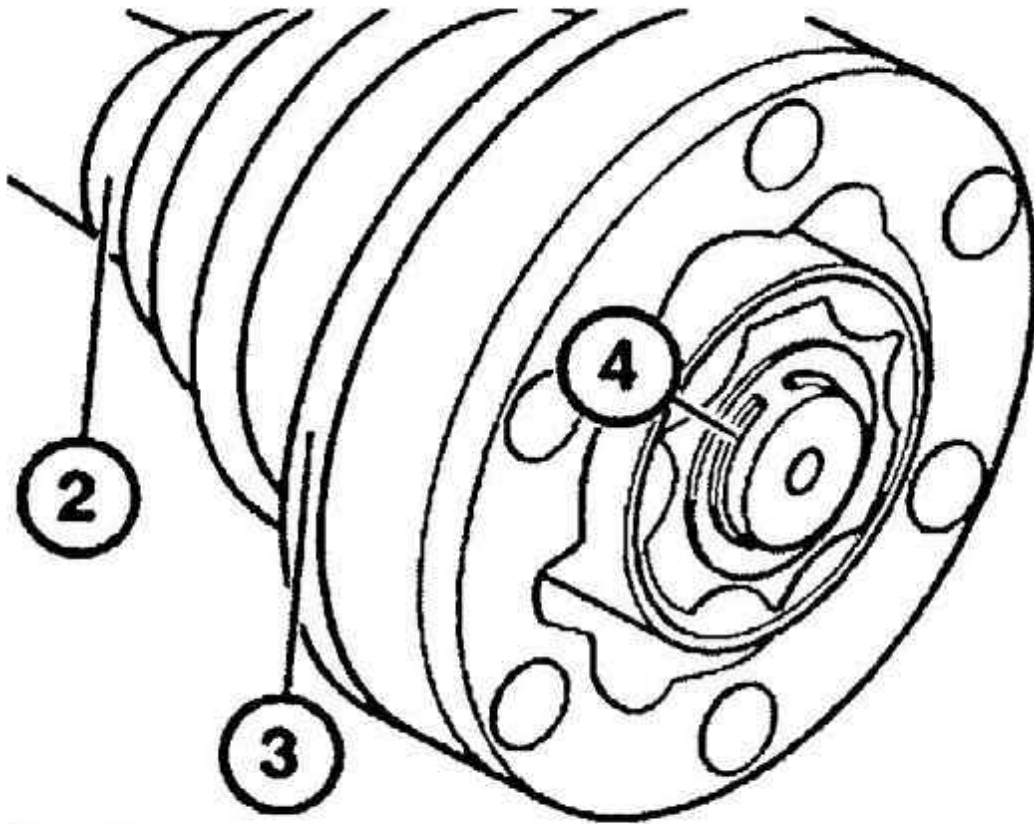
1. Remove axle shaft. See **AXLE SHAFTS**.
2. Remove sealing cover (1) from end of axle shaft CV joint. See **Fig. 9**.
3. Unfasten hose clips (2). See **Fig. 10**. Press cap (3) off together with dust cover. Remove circlip (4).

4. Using Special Tool (26 1 110) in accordance with diameter of axle shaft, press splined axle shaft out of CV joint. Bearing inner race must rest on rib of special tool. See **Fig. 11**. With hollow shafts, also use Special Tool (21 2 120). **DO NOT** disassemble CV joint. Check joint for dirt or damage. Remove boot. If constant velocity joint has to be disassembled, mark positions of ball hub, ball cage and joint with respect to each other with electric inscriber. See **Fig. 12**.
5. Unfasten hose clips (5 and 6). See **Fig. 13**. Pull rubber boot off over splined shaft.



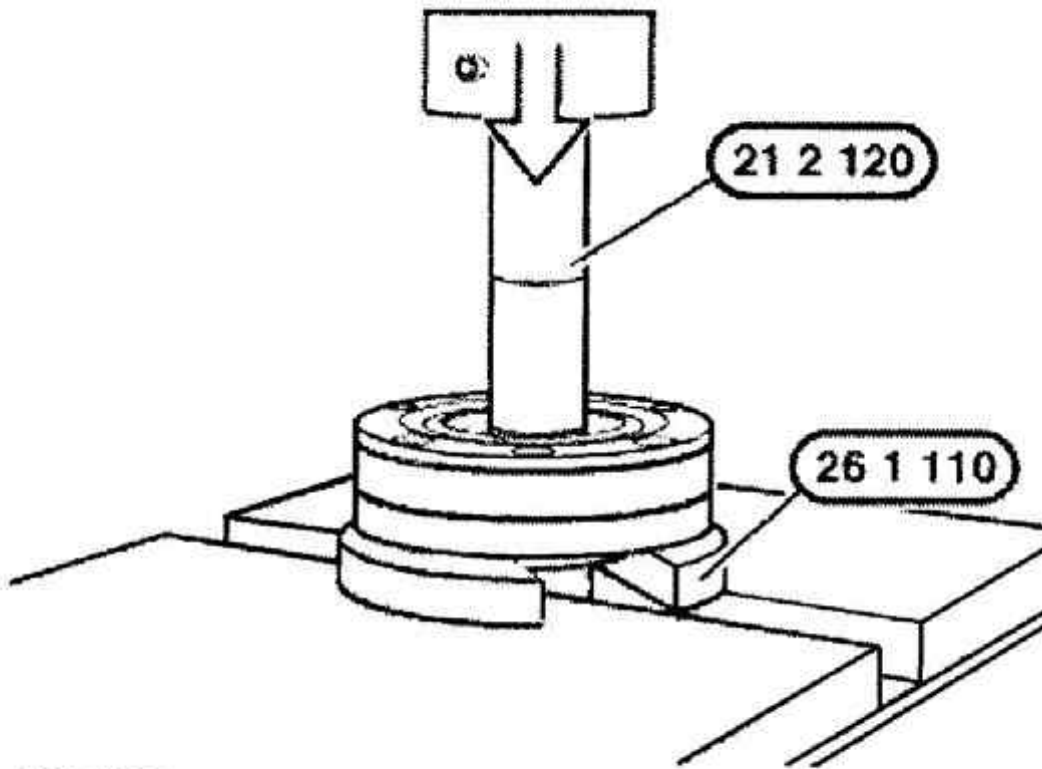
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Fig. 9: Locating Sealing Cover
Courtesy of BMW OF NORTH AMERICA, INC.



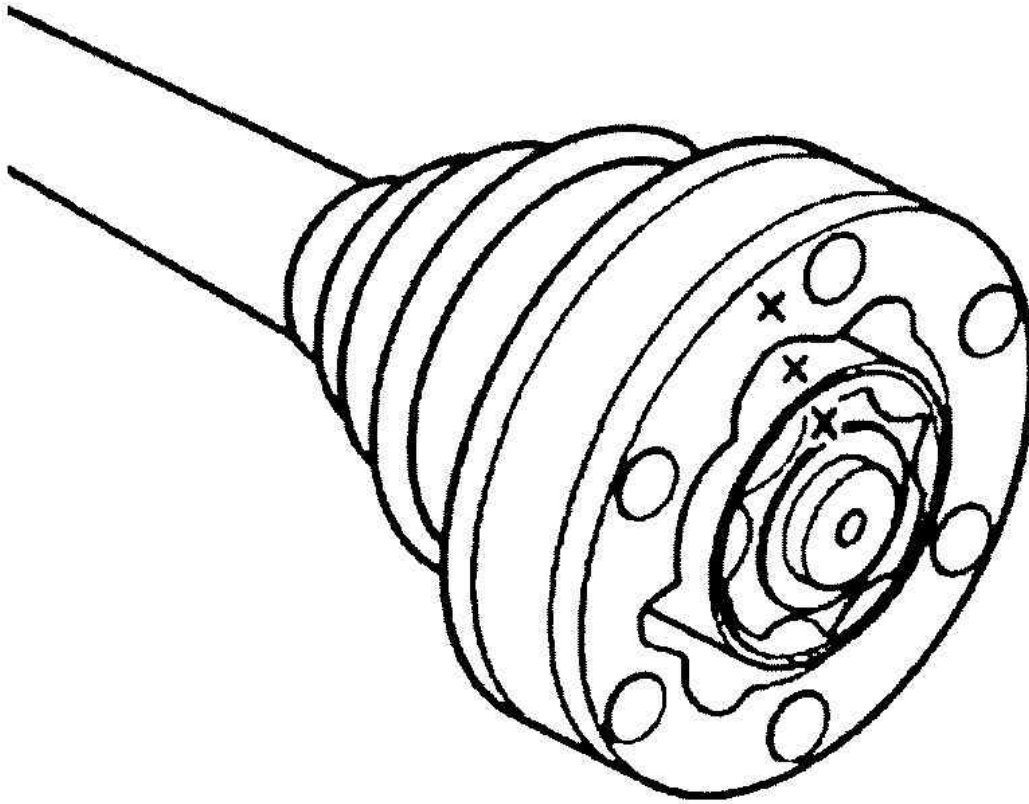
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Fig. 10: Identifying Dust Cover Components
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 11: Pressing Axle From CV Joint
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 12: Marking Positions Of Dust Cover Components
Courtesy of BMW OF NORTH AMERICA, INC.

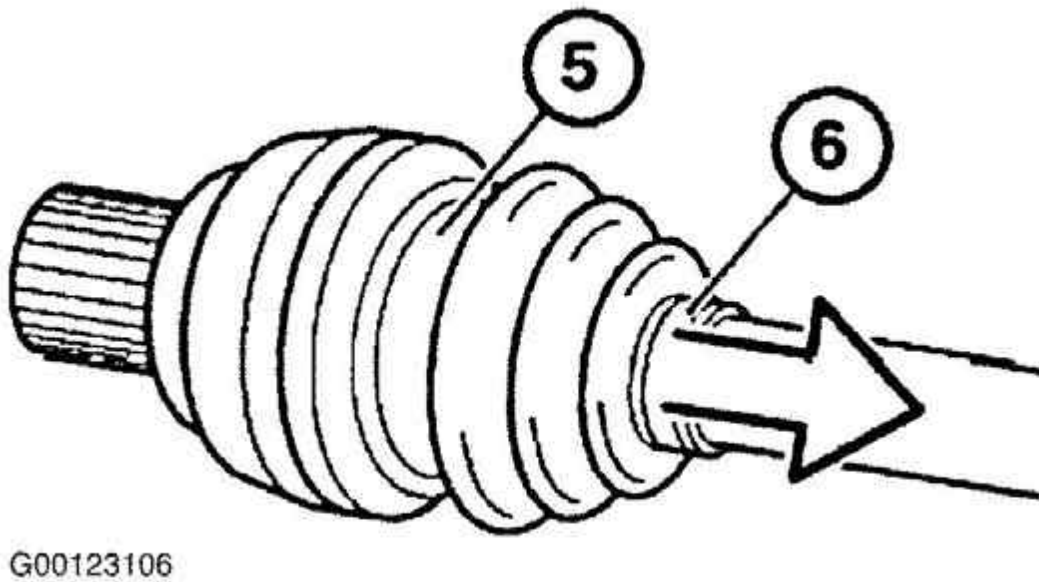


Fig. 13: Locating Hose Clamps

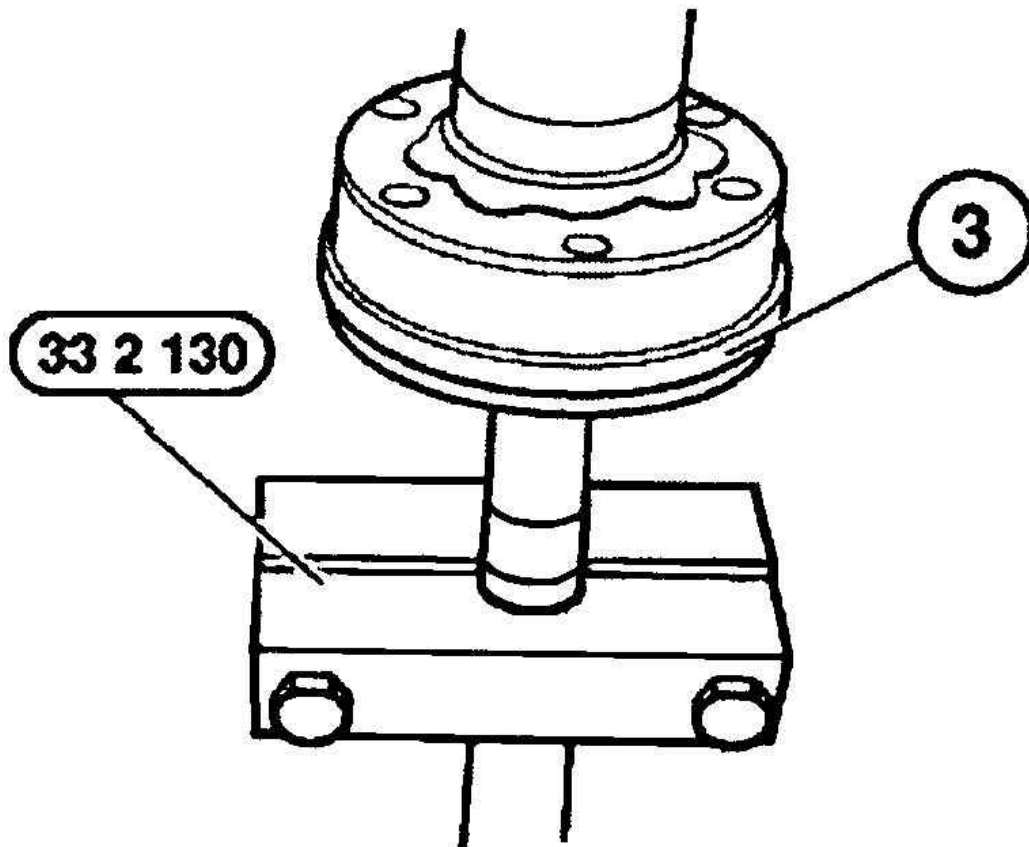
Courtesy of BMW OF NORTH AMERICA, INC.

Installation (Wheel Side Joint)

1. Ensure all parts are clean prior to assembly. Apply grease supplied in repair kit. Mount differential end dust cover.
2. Remove adhesive tape. Coat sealing face of cap with sealing compound. Install onto constant velocity joint with a thrust ring.
3. Pull NEW rubber boot onto CV joint.

Installation (Differential Side Joint)

1. Using Special Tool (33 2 130), press CV joint and cap (3) over inner bearing race on splined shaft. See **Fig. 14**.
2. Install NEW circlip.
3. Pack joint and boot with grease supplied in joint kit.
4. Pull boot onto cap.
5. Fit new hose clamps. The fastener of the large hose clamp must be located between two bores of the CV joint.
6. Coat sealing surfaces of sealing cap with sealing gel and press on sealing cap with a thrust ring.



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Fig. 14: Using Special Tool (33 2 130)
Courtesy of BMW OF NORTH AMERICA, INC.

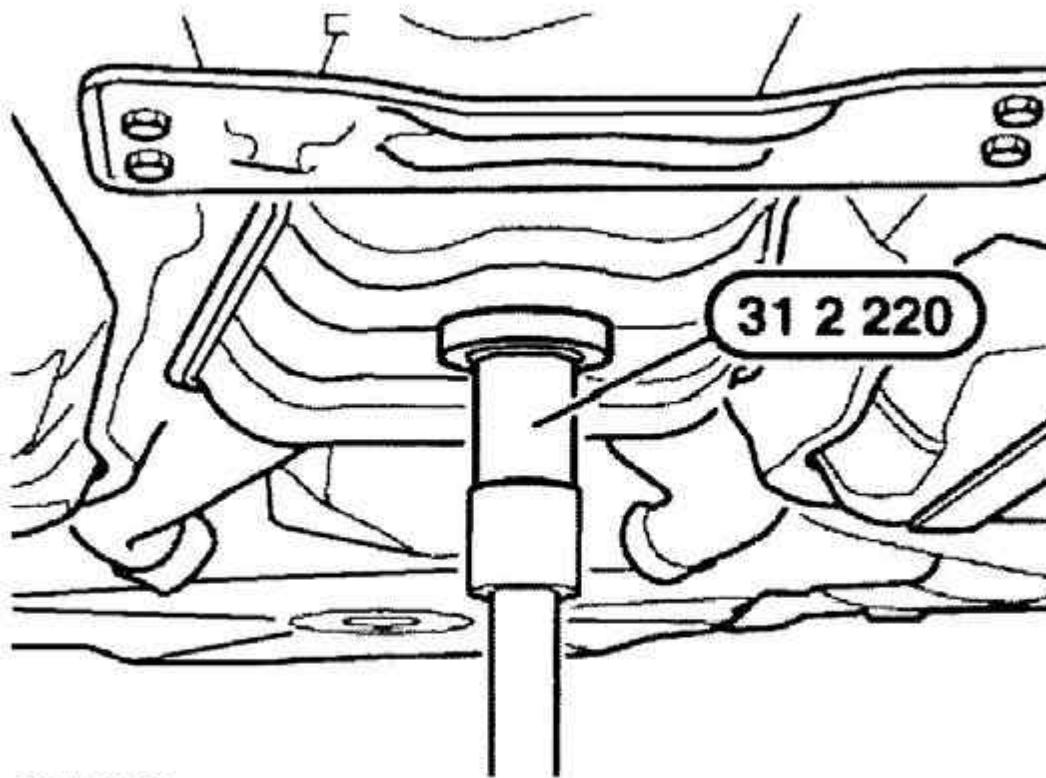
EXHAUST SYSTEM

WARNING: Only perform procedure after engine has cooled down. Scalding hazard.

NOTE: Removal of exhaust system must be carried out with assistance of a second person.

NOTE: Reinforcement plate is connected with rubber mounts to exhaust system and can remain on exhaust system during removal.

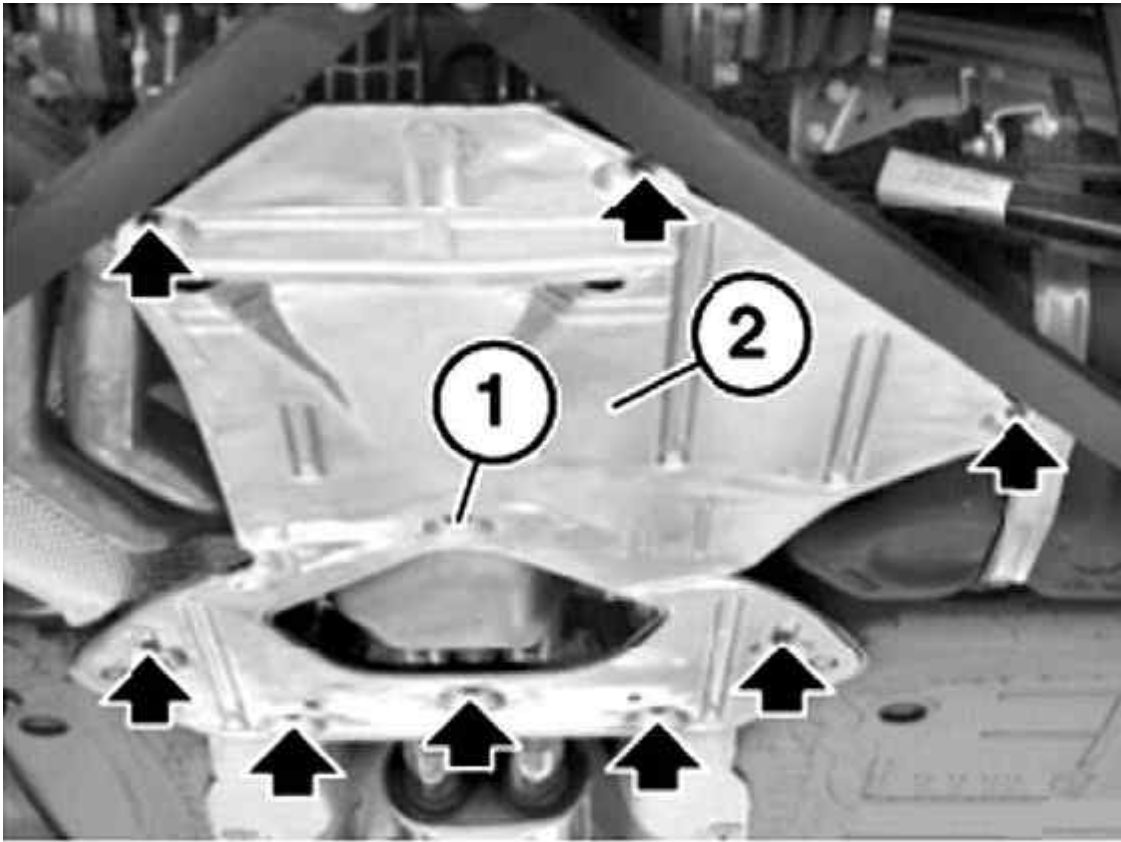
1. Support exhaust system with jack and Special Tool (31 2 220) and secure against falling out. See **Fig. 15**.
2. Lift out expansion rivet (1). See **Fig. 16**. Remove screws and remove heat shield (2).
3. Remove nuts (1) and remove connecting plate (2). See **Fig. 17**.
4. Remove screws on reinforcement plate (1). See **Fig. 18**. Remove screws and remove body reinforcement strut (2). Remove nuts on rubber mount of rear muffler (3) on left and right. Lower exhaust system with lifter and remove.
5. To install, reverse removal procedure. Replace both seals (1) on connecting plate. See **Fig. 19**. Replace self-locking nuts. Coat threads with copper paste.



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Fig. 15: Supporting Exhaust System

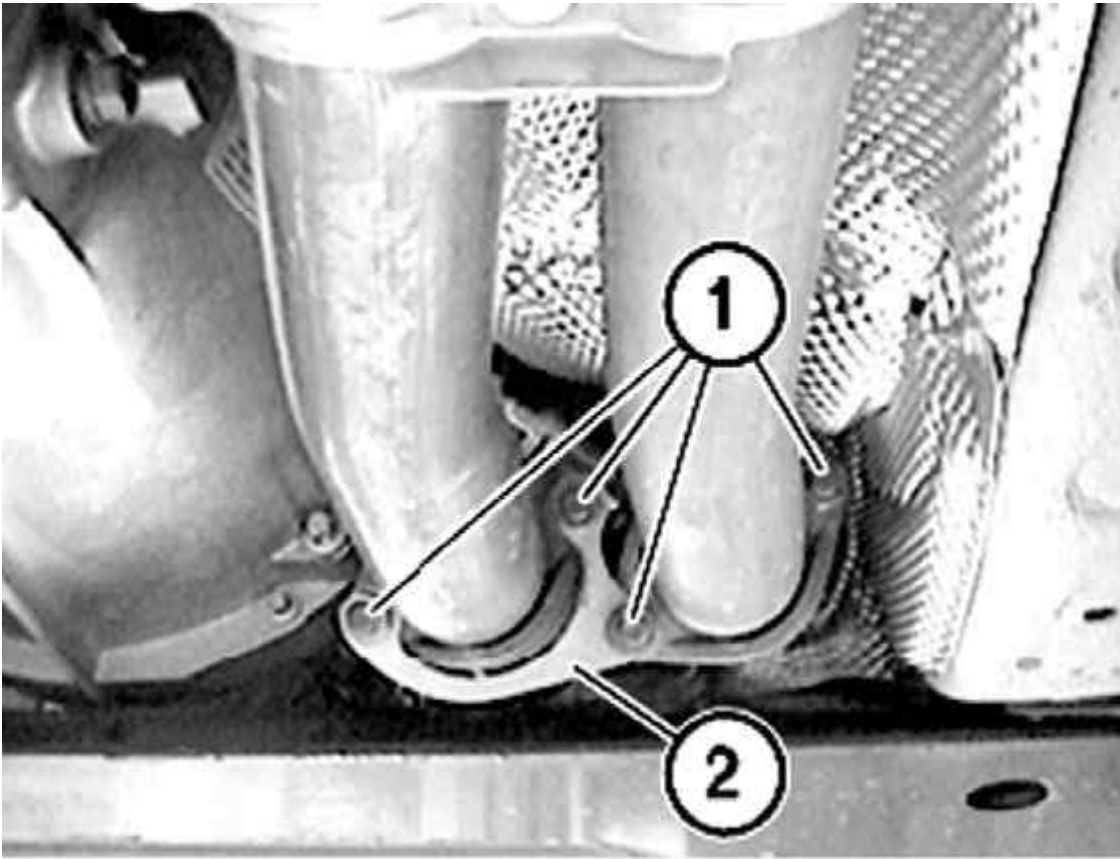
Courtesy of BMW OF NORTH AMERICA, INC.



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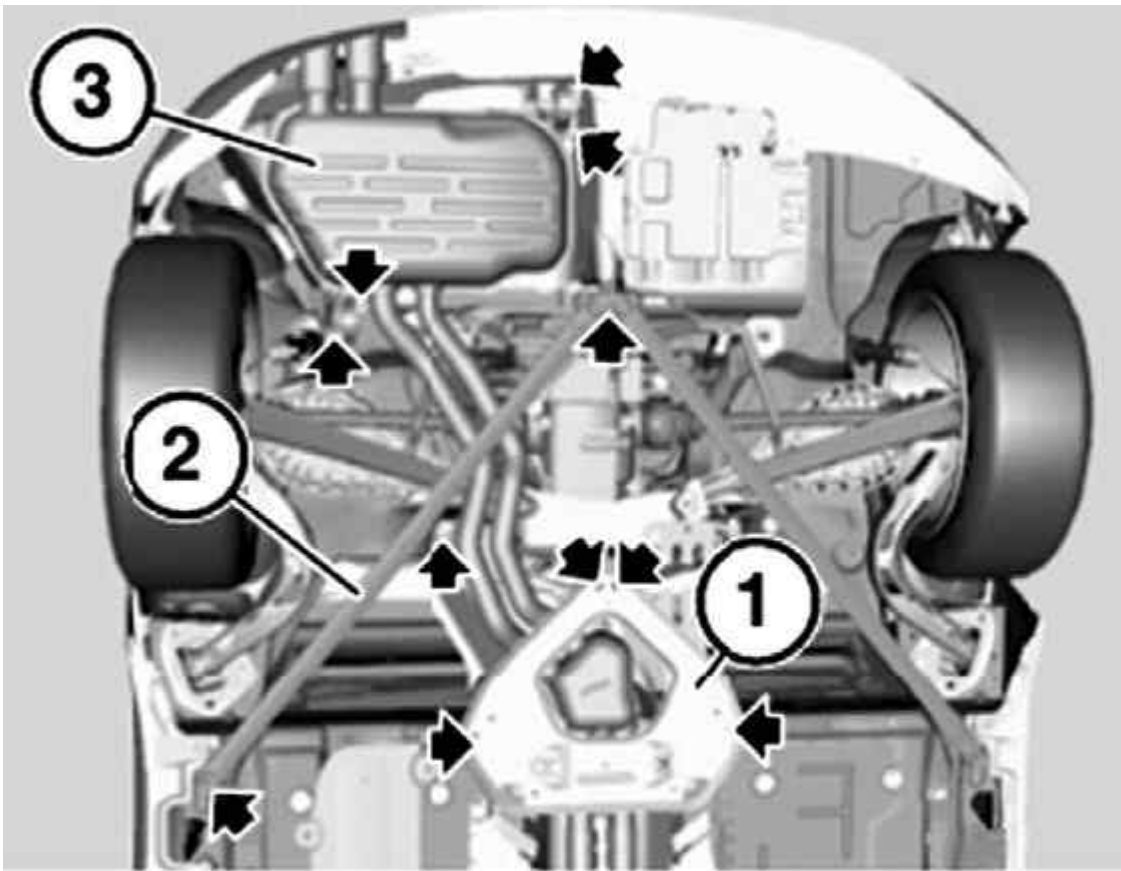
Fig. 16: Removing Heat Shield

Courtesy of BMW OF NORTH AMERICA, INC.



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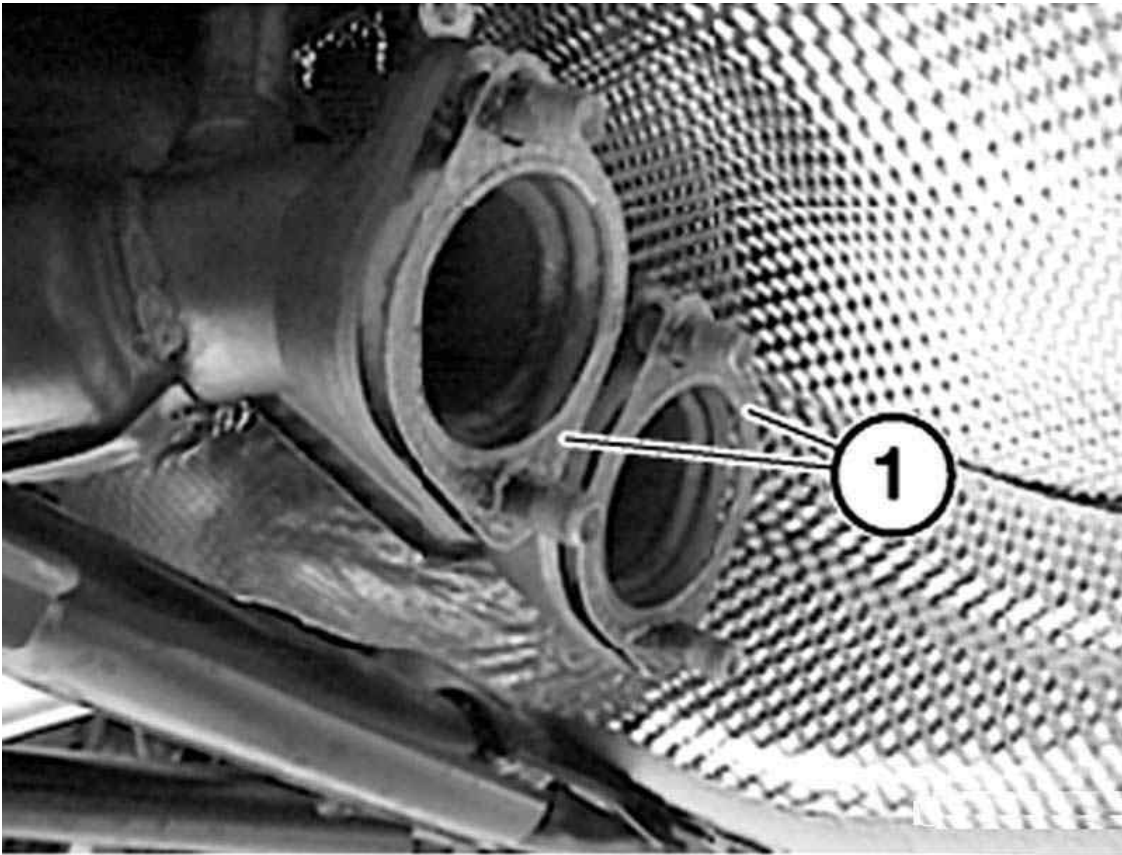
Fig. 17: Removing Connecting Plate
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 18: Removing Exhaust System

Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 19: Locating Seals On Connecting Plate
 Courtesy of BMW OF NORTH AMERICA, INC.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Axle Shaft Collar Nut (Bearing Unit)	213 (290)
Axle Shaft-To-Differential & Drive Flange	
8 mm Black With Ribbed Teeth	47 (64)
8 mm Silver With Ribbed Teeth	38 (52)
10 mm Fillister Or Torx Head	61 (83)
10 mm With Locking Teeth	71 (96)
10 mm Black With Ribbed Teeth	74 (100)
10 mm Silver With Ribbed Teeth	59 (80)
12 mm With Locking Teeth	81 (110)
12 mm With Ribbed Teeth	100 (135)

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Bracket Stabilizer Link-To-Upper Control Arm	16 (22)
Reinforcing Plate/Tension Strut-To-Rear Axle	(1) 44 (59)
Reinforcing Plate-To-Rear Axle	15 (21)
Retaining Bracket, Stabilizer Bar-To-Rear Axle Support	16 (22)
Tension Strut-To-Rear Axle	18 (24)
Wheel Lug Nut	81-96 (110-130)
(1) Tighten an additional 90 degrees.	