

2003-05 STEERING

Steering Gear - Z4

REMOVAL & INSTALLATION

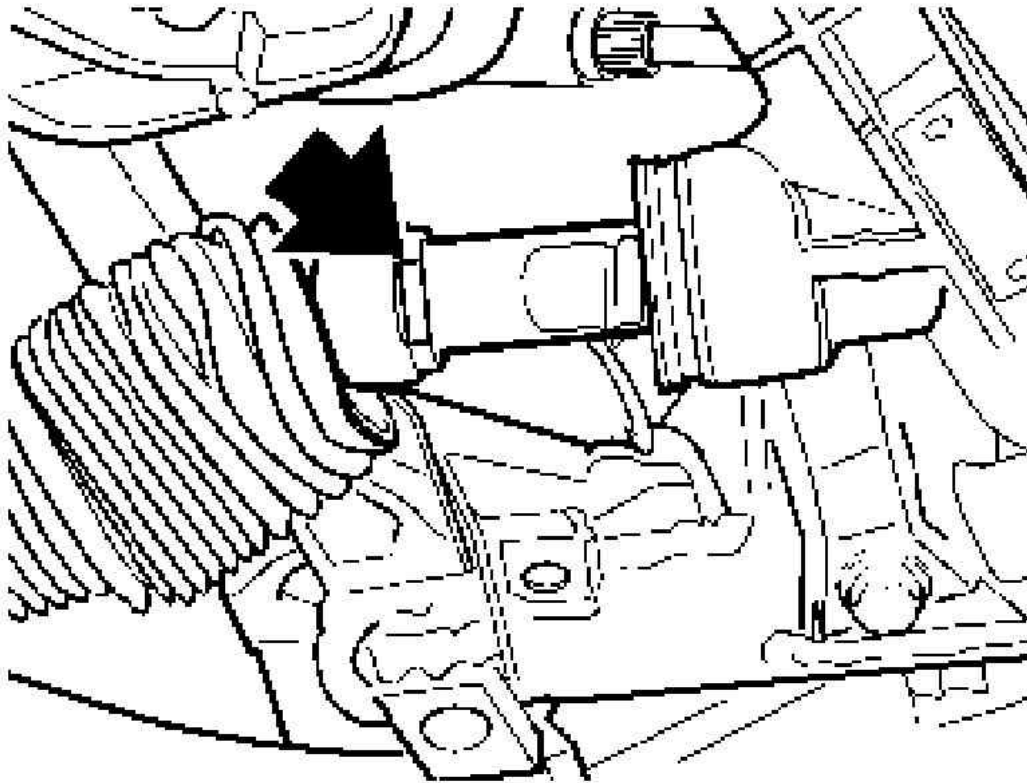
GAITER (BOOT) FOR STEERING GEAR

NOTE: **Numbers in text refer to numbers in figures.**

Removal & Installation

Clean rack and tie rod. Grease toothed area of rack. The steering gear must be replaced if the polished surface of the rack is damaged (rust). After installation, carry out steering angle sensor adjustment. See **STEERING ANGLE SENSOR** .

Unscrew and remove splash guard. Release both clamping bands See **Fig. 1** . Detach gaiter from steering gear. Remove steering tie rod from rack. To avoid damage to rack and to suspension mounting, move rack in as far as possible. Cut open gaiter and remove. Fit new gaiter over tie rod. Screw on tie rod.

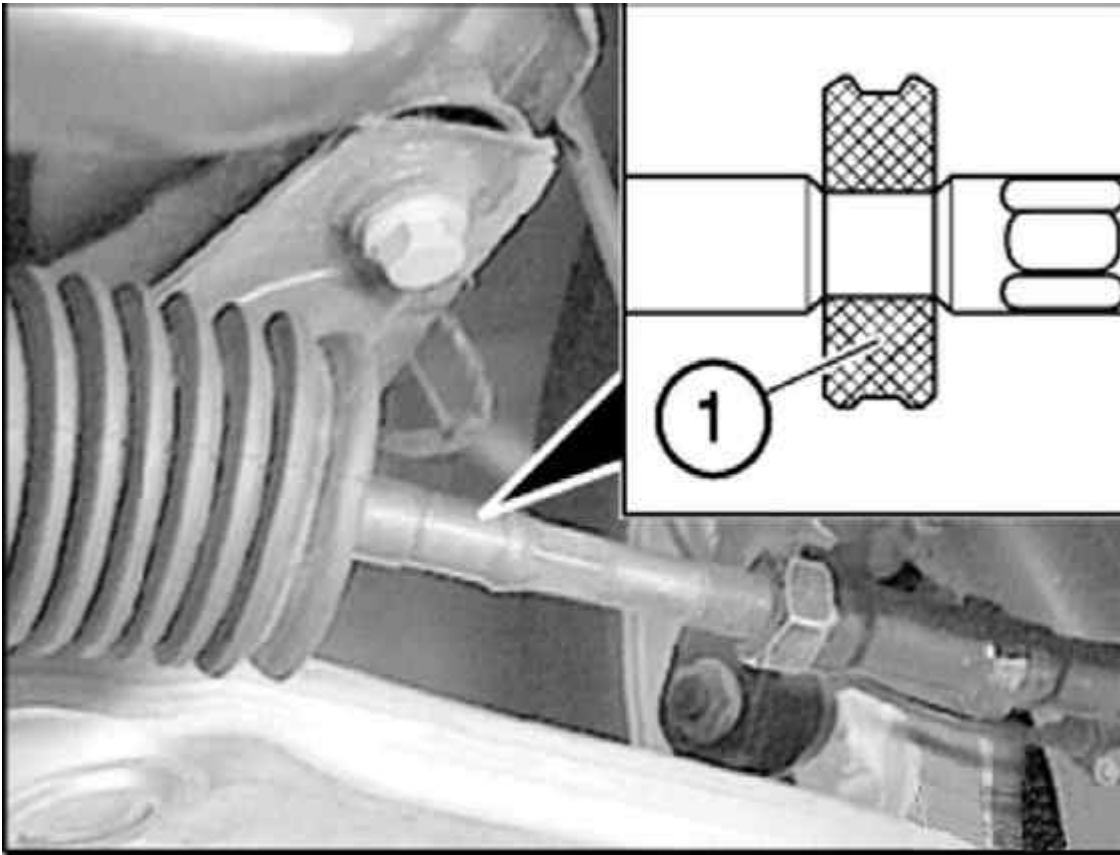


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Fig. 1: Releasing Clamping Bands

Courtesy of BMW OF NORTH AMERICA, INC.

Grease steering tie rod at taper. This prevents the gaiter from rotating when the tie rod rotates. Fit support ring (1) from repair kit. Install gaiter with clamping bands.



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Fig. 2: Installing Support Ring From Repair Kit
Courtesy of BMW OF NORTH AMERICA, INC.

STEERING GEAR

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Removal & Installation

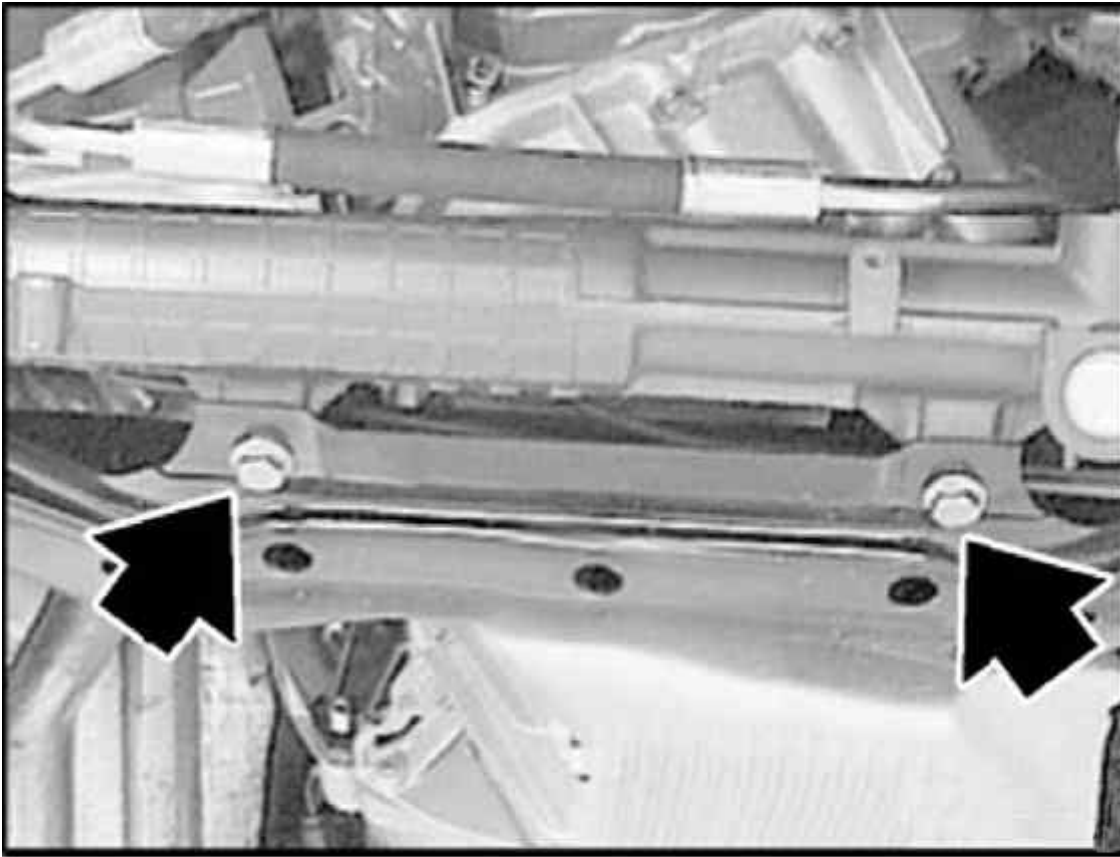
Remove front wheel. Remove reinforcement plate.

Remove tie rod end on both sides from swivel bearing. During replacement, remove tie rod end at both ends of tie rod.

Remove lower section of steering spindle from steering gear. After installation, perform chassis alignment check. See **SPECIFICATIONS & PROCEDURES** article. Also, carry out steering angle sensor adjustment. See **STEERING ANGLE SENSOR**

Unfasten screws. Remove steering gear toward front. During installation, replace screws and self-locking nuts.

See **Fig. 3** .



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Fig. 3: Replacing Steering Gear

Courtesy of BMW OF NORTH AMERICA, INC.

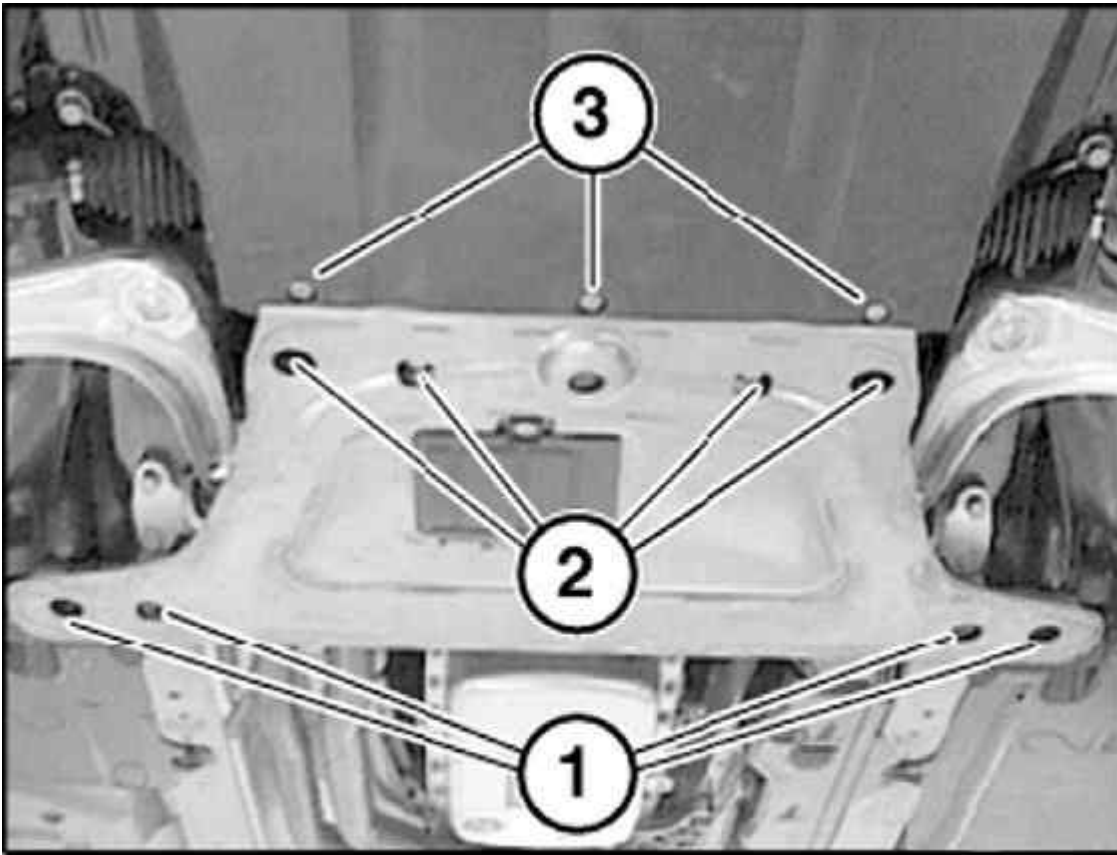
REINFORCEMENT PLATE

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

Vehicles must not be driven without reinforcement plates. Driving without the reinforcement plate may damage the front axle. Bolts of reinforcement plate must be tightened to torque and then tightened an additional 90 degrees with special tool (00 9 120).

Release bolts (3). Unfasten bolts (1 and 2). Remove reinforcement plate. During installation, replace bolts (1 and 2). Insert bolts. Tighten down screws (1 and 2) to torque. Tighten down bolts (3). See **Fig. 4** .



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Fig. 4: Identifying Reinforcement Plate Bolt Locations
Courtesy of BMW OF NORTH AMERICA, INC.

TORQUE SPECIFICATIONS

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Application	Ft. Lbs. (N.m)
Reinforcement Plate To Front Axle Support/Engine Carrier	44 (59) ⁽¹⁾
Steering Gear To Front Axle Carrier	31 (42)
Tie Rod/Axial Joint To Rack	74 (100)
Tie Rod End To Steering Knuckle/Swivel Bearing	48 (65) ⁽²⁾
Tie Rod End To Tie Rod (Clamping Nut)	33 (45)

(1) Tighten NEW bolts an additional 90 degrees.

(2) Tie rod end with split pin hole must not be bolted with a self-locking nut.