

2005 MINI Cooper

2002-05 MANUAL TRANSMISSIONS On-Vehicle Servicing

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On-Vehicle Servicing

APPLICATION

MANUAL TRANSMISSION APPLICATIONS

Application	Transmission Model
Cooper	R65
Cooper S	Getrag 285

LUBRICATION

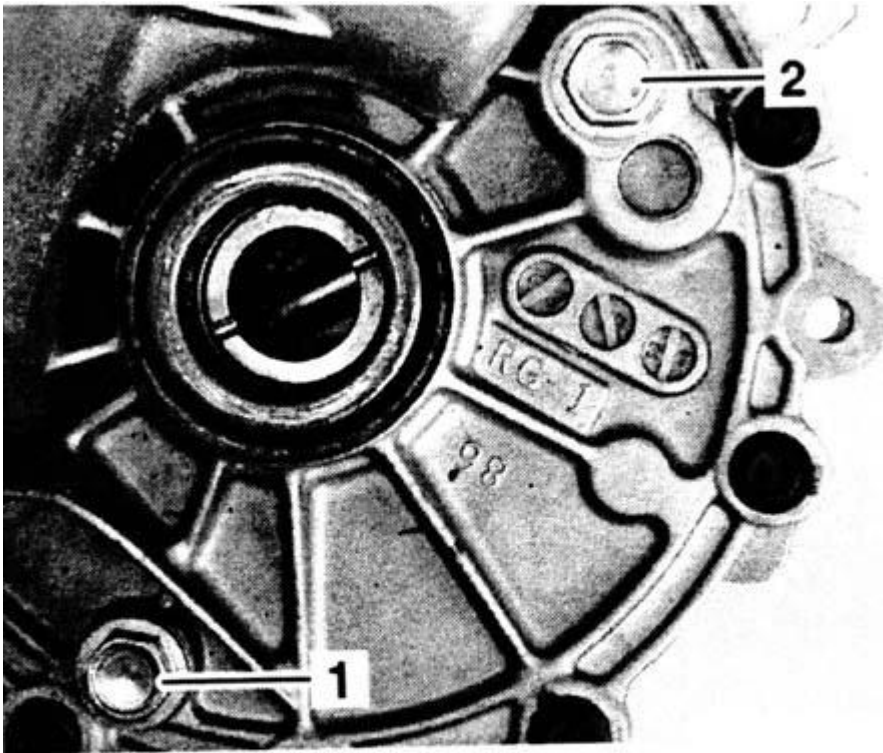
SERVICE INTERVALS

Inspect fluid level when vehicle is serviced. DO NOT drain fluid, transmission has lifetime fluid. Fluid change is not required.

CHECKING FLUID LEVEL

R65

The oil drain and filler level plugs on the R65 gearbox are both positioned in the differential housing on the main gearbox housing. See **Fig. 1** . Both plugs have an external hexagonal 17 mm head. With the vehicle on level ground, the gearbox is filled until the oil is level with the bottom of the filler/level plug hole.



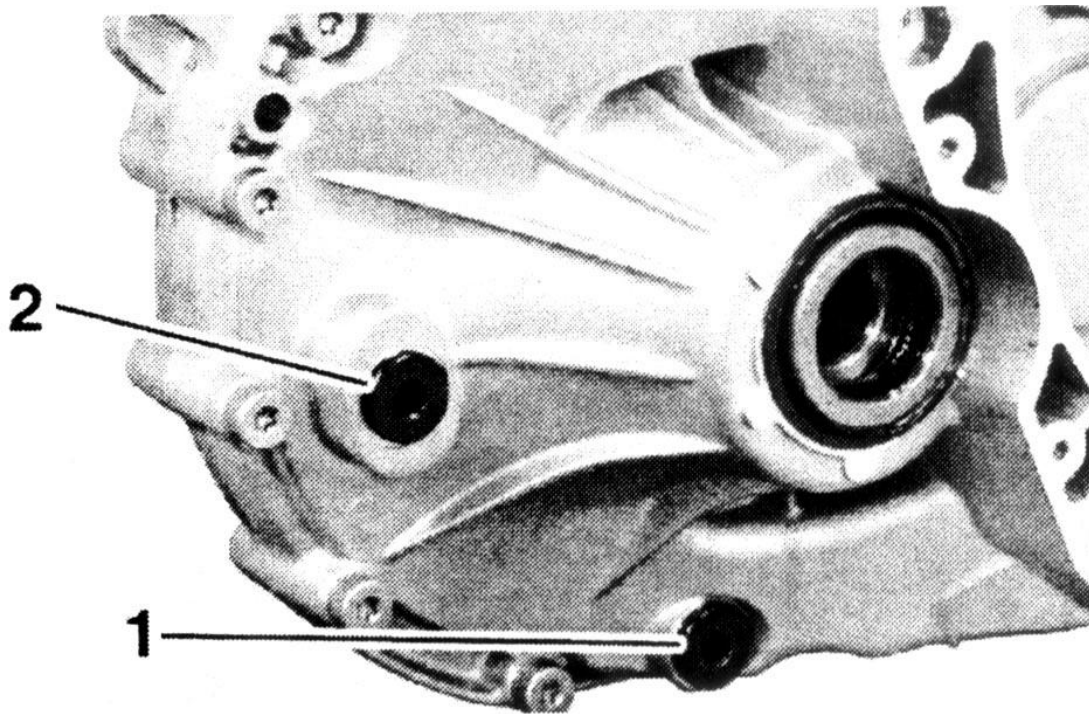
- 1. Drain Plug
- 2. Filter/Level Plug

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Fig. 1: Identifying Drain & Fill Plugs (R65)
Courtesy of BMW OF NORTH AMERICA, INC.

Getrag 285

The oil drain and filler level plugs on the Getrag 285 are both positioned in the differential housing on the main gearbox casing. See **Fig. 2** . Both plugs have an 8 mm Allen key. There is no requirement for maintenance at any of the service intervals.



1. Drain Plug
2. Filter/Level Plug

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Fig. 2: Identifying Drain & Fill Plugs (Getrag 285)
Courtesy of BMW OF NORTH AMERICA, INC.

RECOMMENDED FLUID

Transmissions are filled with Castrol MTF 94 lifetime fluid.

FLUID CAPACITIES

TRANSMISSION FLUID CAPACITIES

Model	Qts. (L)
Cooper (R65)	2.1 (2.0)
Cooper S (Getrag 285)	1.8 (1.7)

ADJUSTMENTS

GEARSHIFT LINKAGE

No external adjustment is necessary.

REMOVAL & INSTALLATION

NOTE: Removal and installation information only applies to R65 (Cooper) transmission.

5TH GEAR COVER

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

1. Remove engine protection cover. See **Fig. 3** . Drain gearbox oil. Remove front left wheel arch liner. Release front left ABS sensor from modular front end. Remove retaining bolts (1) from 5th gear cover. Remove 5th gear cover (2). Clean sealing face.
2. Check sealing surface and 5th gear cover for damage. See **Fig. 4** and **Fig. 5** . Replace 5th gear cover seal (1). Refit 5th gear cover. Refill gearbox. Check for leaks.

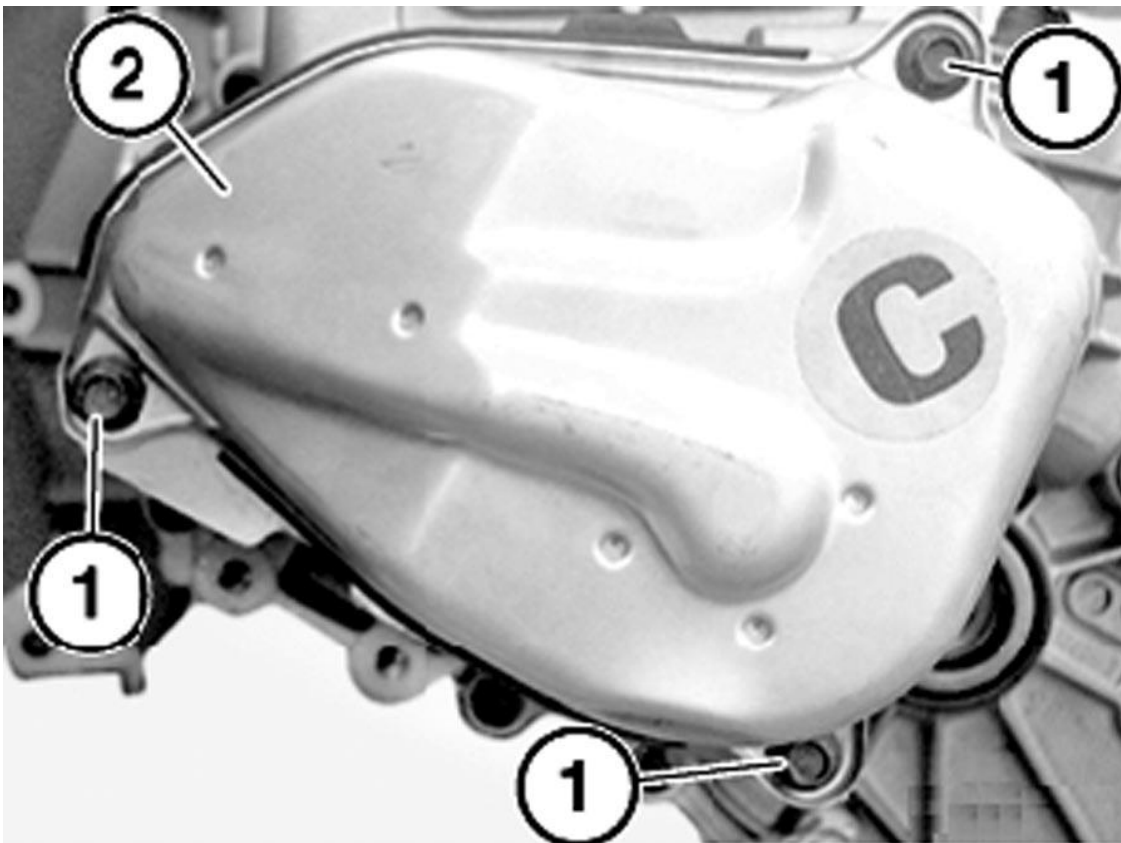
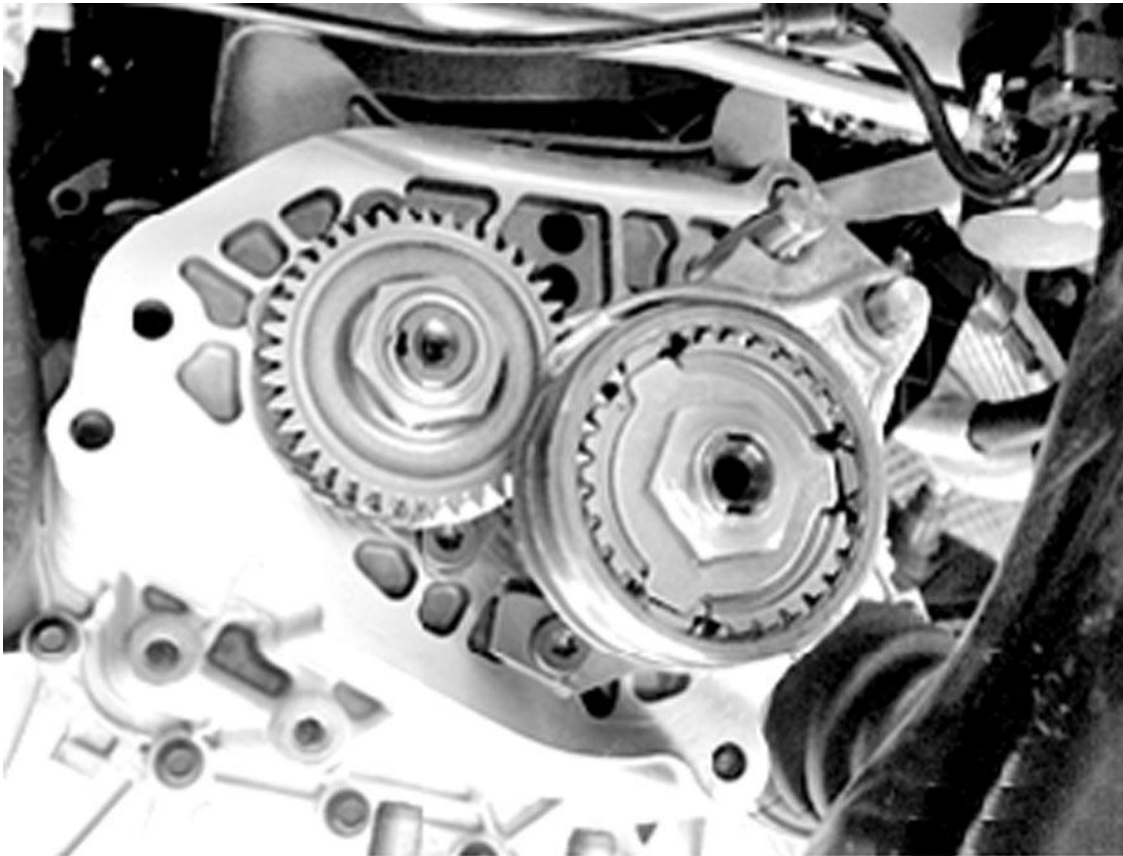


Fig. 3: Removing 5th Gear Cover

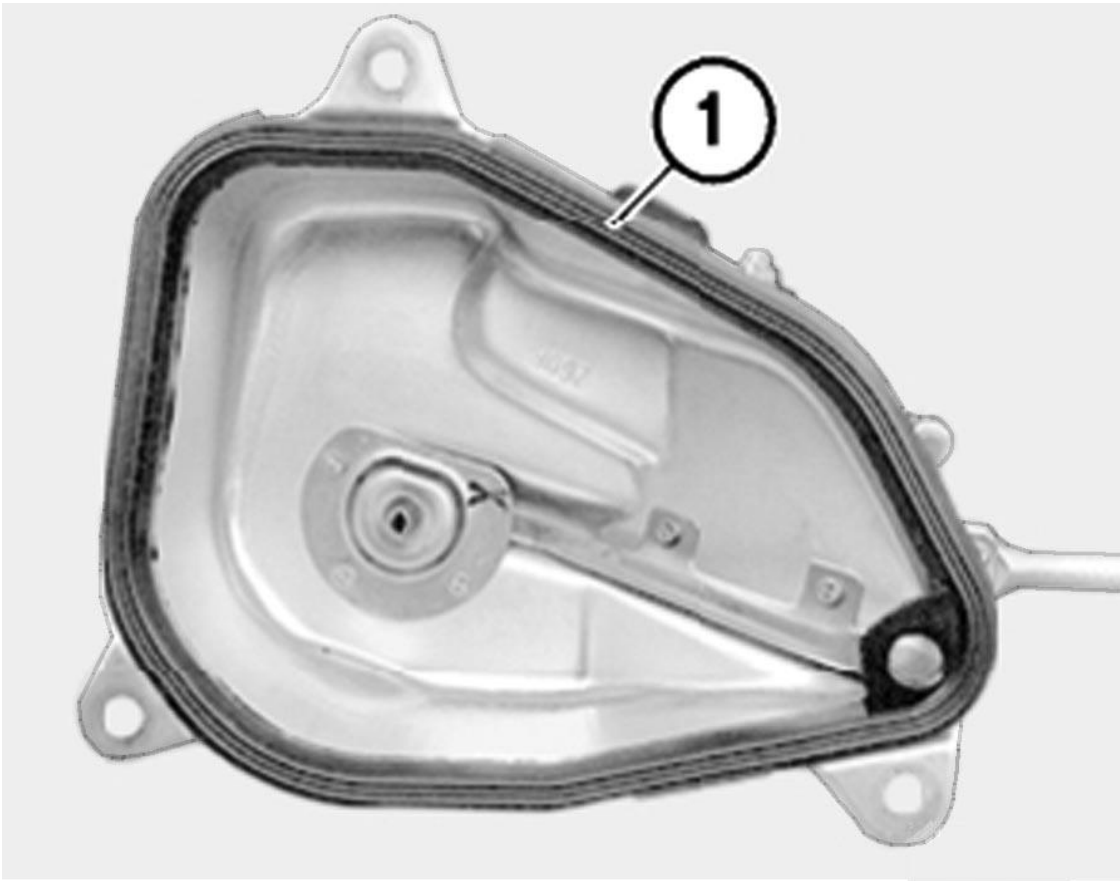
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 4: Checking Sealing Surface

Courtesy of BMW OF NORTH AMERICA, INC.



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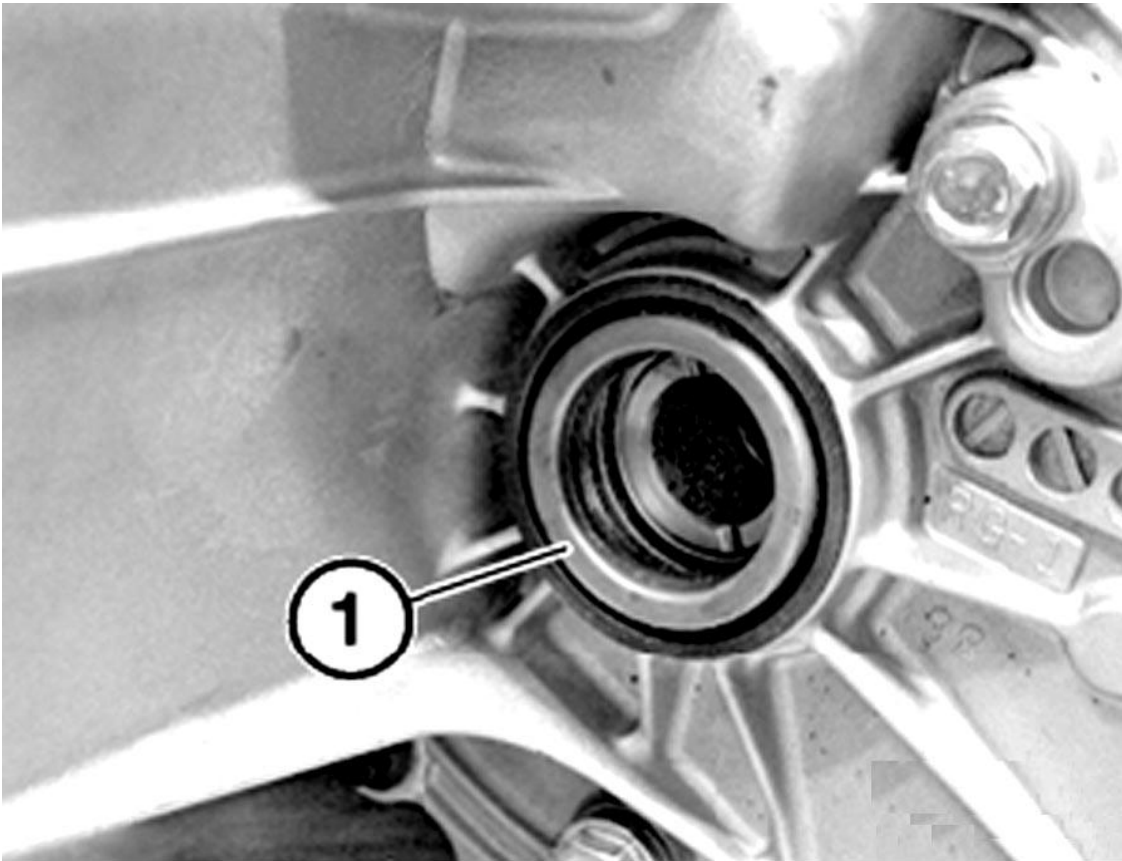
Fig. 5: Checking 5th Gear Cover & Installing Seal
Courtesy of BMW OF NORTH AMERICA, INC.

LEFT DRIVESHAFT SEAL (5 SPEED)

NOTE: Numbers in text refer to numbers in figures.

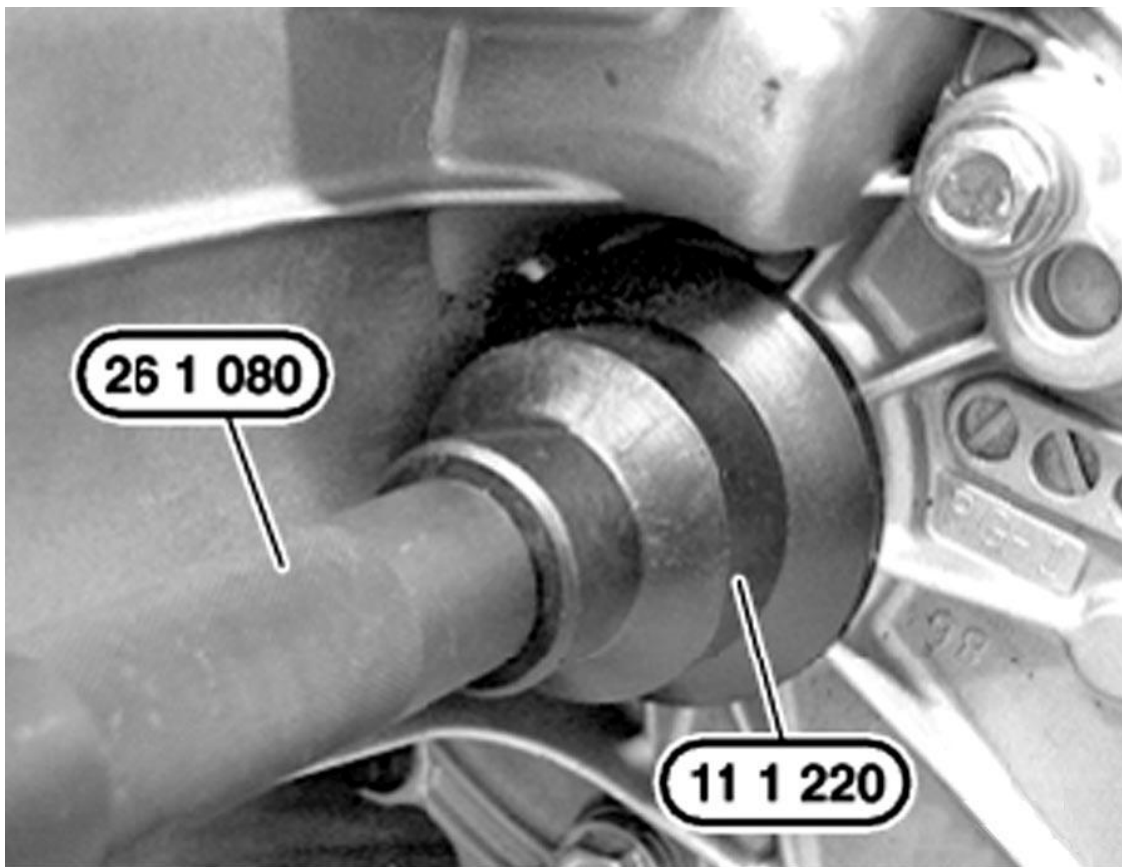
Removal & Installation

1. Drain gearbox oil. Remove left axle shaft. See **AXLE SHAFTS** article. Use a screwdriver to lever out radial seal (1) from transmission housing, using care to not damage the transmission casing. See **Fig. 6** . Using special tool (261080) and special tool (111220) fit seal into casing until the outer seal ring is flush with the transmission casing.
2. When pushing output shaft over resistance of snap ring, output shaft must snap audibly into place. See **Fig. 7** . Refill gearbox with oil and check for leaks.



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Fig. 6: Removing Radial Seal
Courtesy of BMW OF NORTH AMERICA, INC.



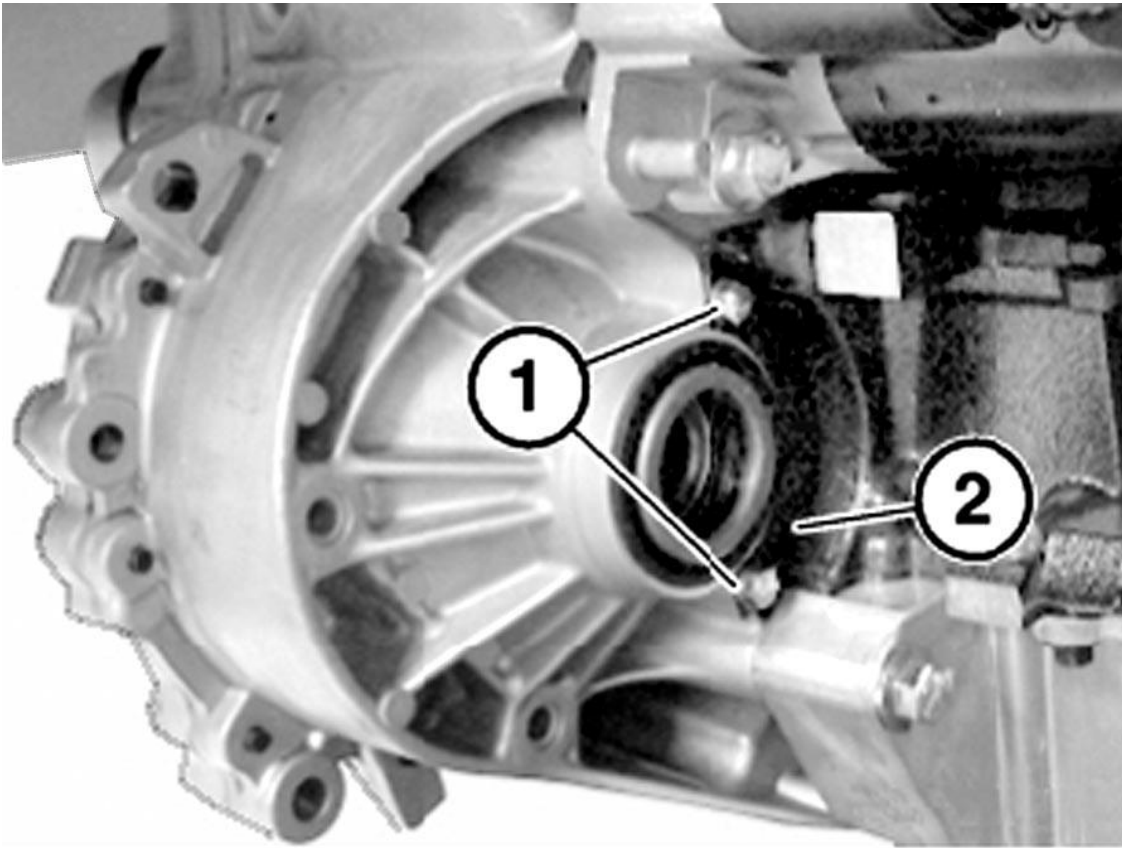
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Fig. 7: Installing Radial Seal

Courtesy of BMW OF NORTH AMERICA, INC.

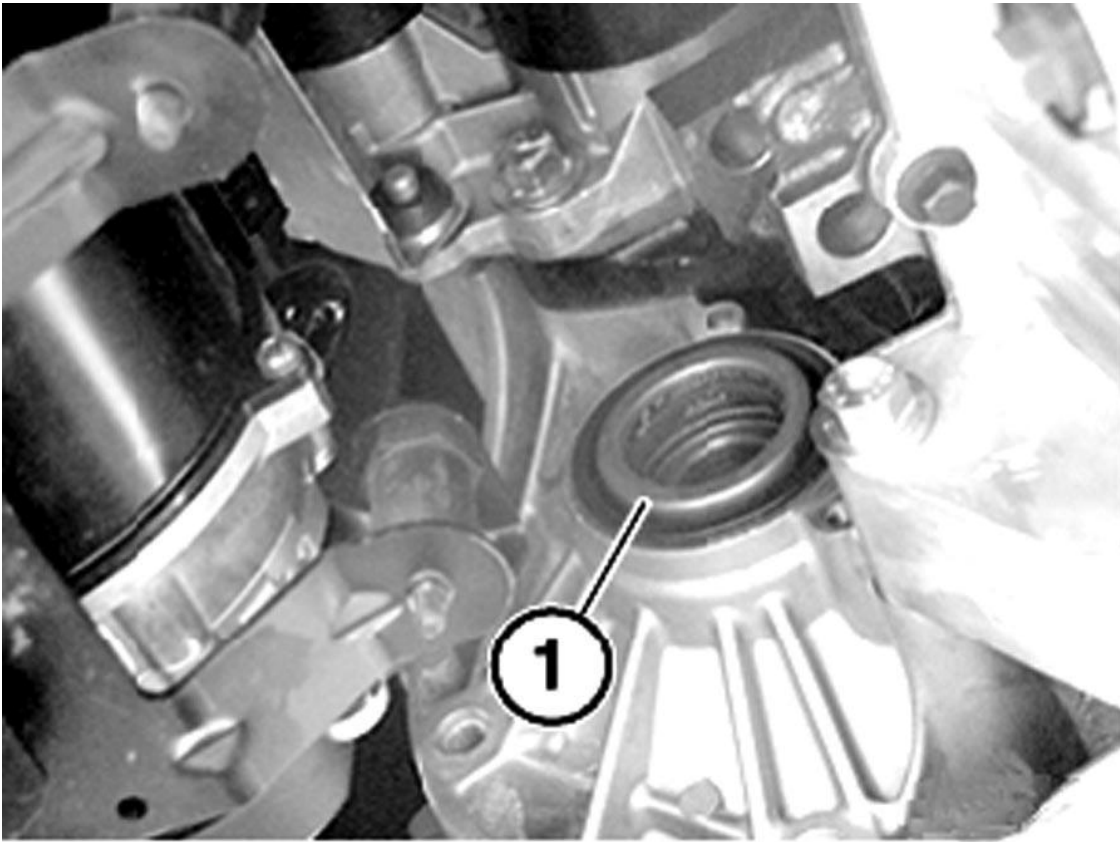
RIGHT DRIVESHAFT SEAL (5 SPEED)**NOTE:** Numbers in text refer to numbers in figures.**Removal & Installation**

1. Drain gearbox oil. Remove right axle shaft. See **AXLE SHAFTS** article. Remove closure plate retaining bolts (1) and remove closure plate (2). See **Fig. 8** . Remove engine lower stabilizer. Use a screwdriver to lever out radial seal (1) from transmission housing. See **Fig. 9** .
2. Use care to avoid damage to transmission casing. To install, use special tool (261080) and special tool (111220) fit seal into casing until the outer seal ring is flush with transmission casing. See **Fig. 10** . Refill gearbox with oil and check for leaks.



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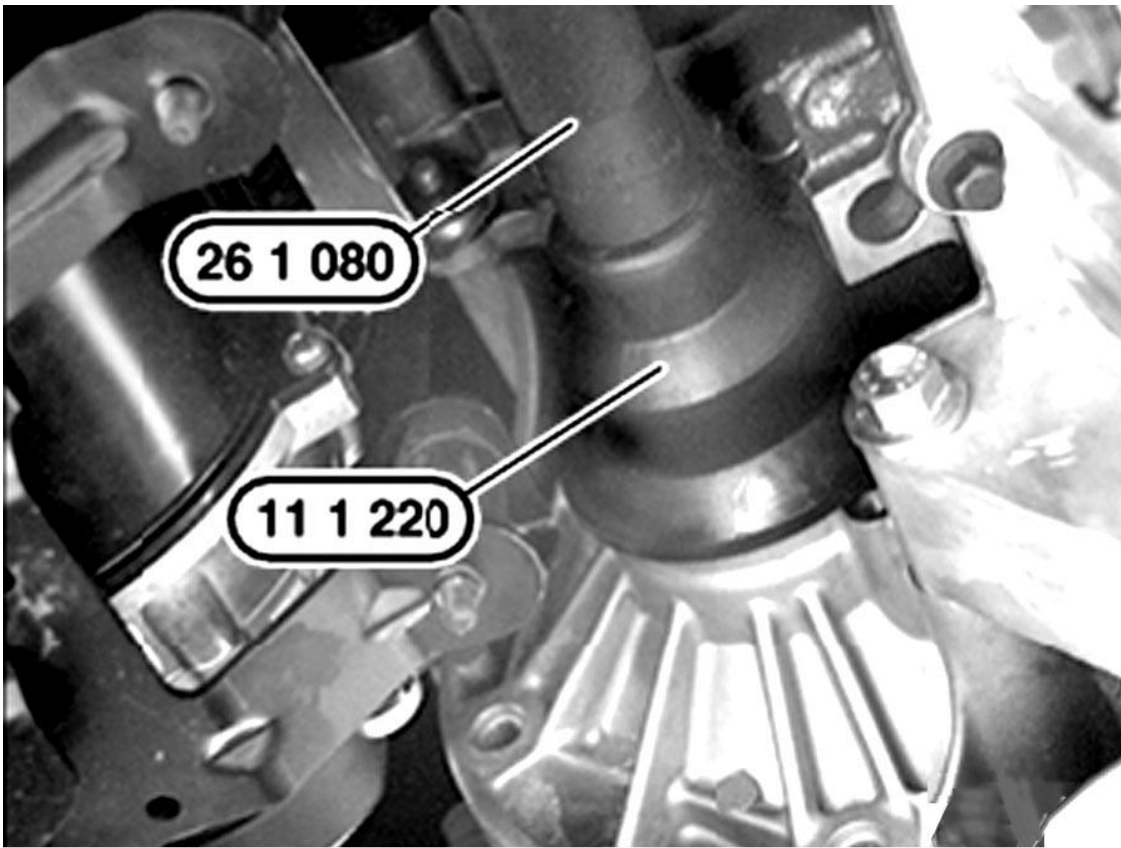
Fig. 8: Removing Bolts & Closure Plate
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 9: Removing Radial Seal

Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 10: Installing Radial Seal

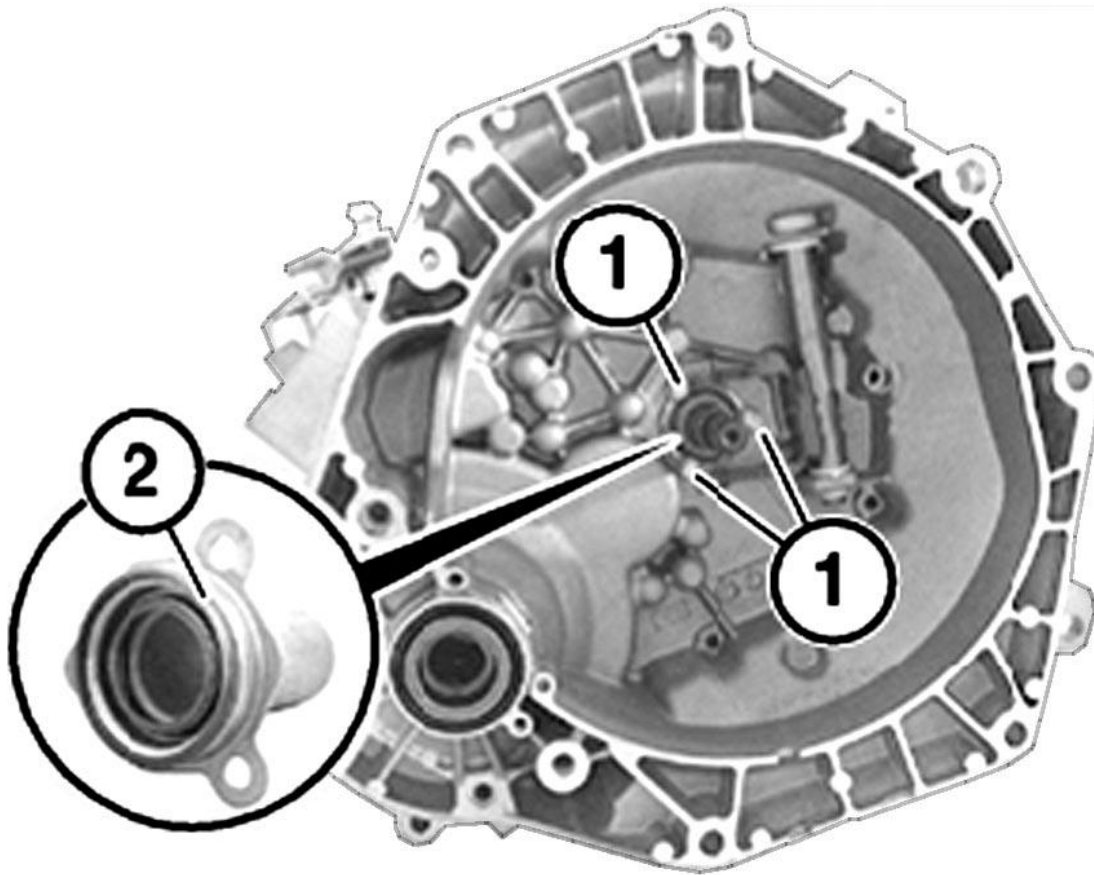
Courtesy of BMW OF NORTH AMERICA, INC.

REPLACING RADIAL SEAL ON INPUT SHAFT

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

Remove transmission. See **MANUAL TRANSMISSION - REMOVAL & INSTALLATION** article. Remove clutch release bearing. Remove retaining bolts (1) and remove guide tube (2). See **Fig. 11** . Radial seal and guide tube are supplied as an assembly. During installation, apply tape to the input shaft splines to protect the radial seal during installation. Lubricate radial seal lip. Replace guide sleeve retaining bolts.



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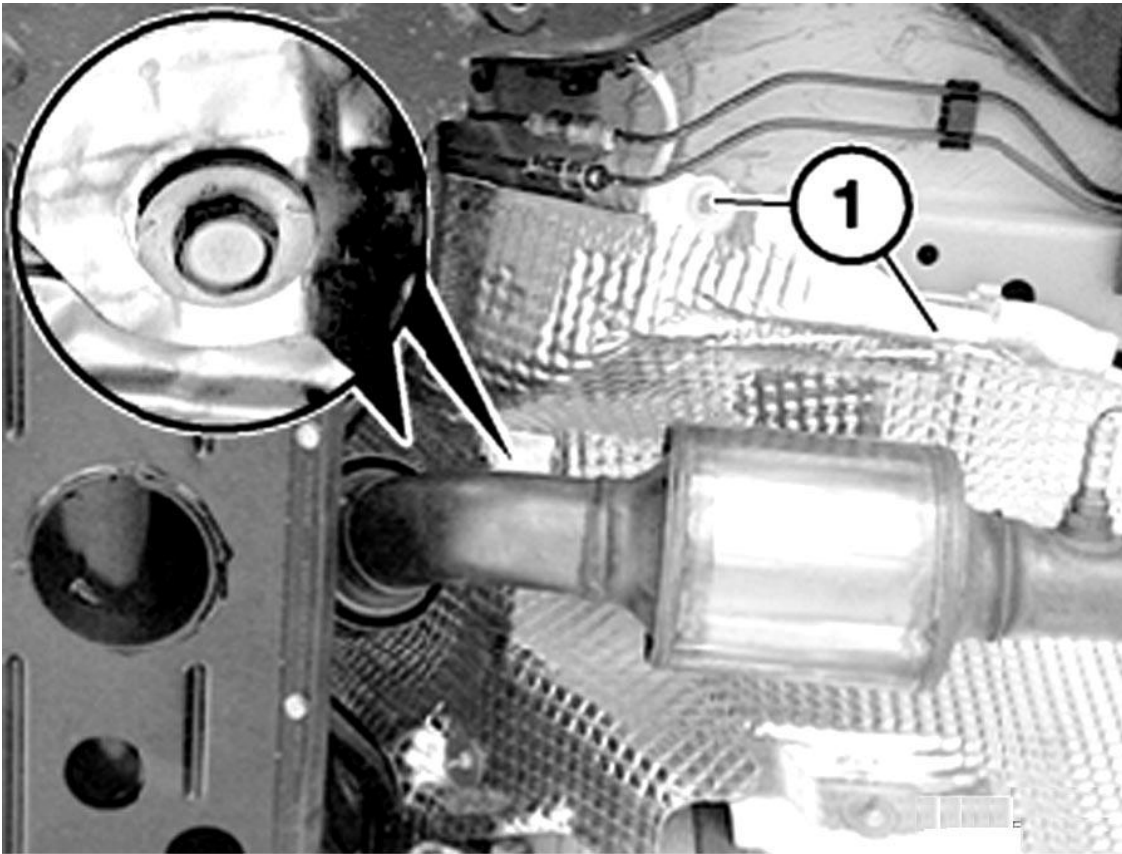
Fig. 11: Removing Retaining Bolts & Guide Tube
Courtesy of BMW OF NORTH AMERICA, INC.

SHIFT LEVER BRACKET

NOTE: Numbers in text refer to numbers in figures.

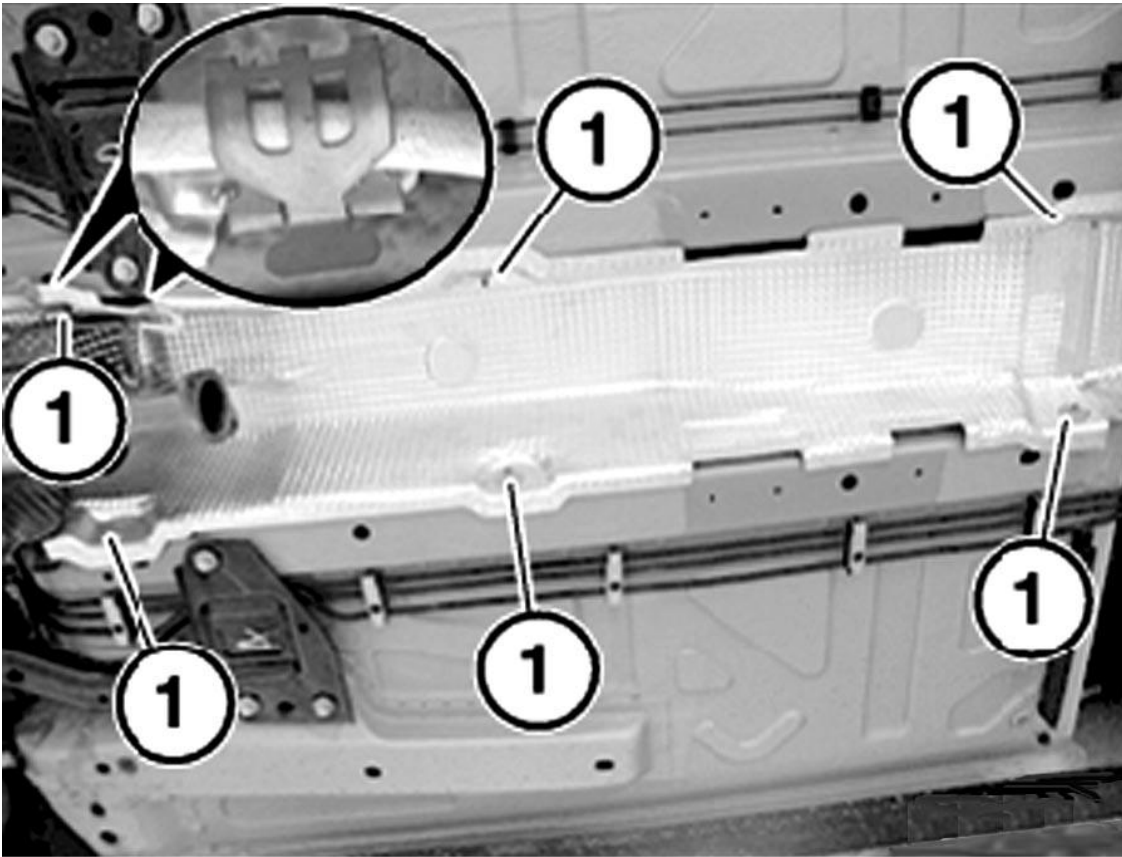
Removal & Installation

1. Remove shift lever boot. Remove rear silencer/exhaust system. Undo screws (1) and remove front heat shield. See **Fig. 12** . Undo screws (1) and remove center heat shield. See **Fig. 13** . Release shift cables from retaining fixtures on vehicle floor. Release screws (1). Detach shift lever housing (2). See **Fig. 14** . Use care to not damage locking tabs on cover.
2. Lift out locking tabs and release shift lever cover. See **Fig. 15** . Locking tabs (1) on cover (2) must not be damaged. See **Fig. 16** . Replace seals if defective. Use suitable pliers to detach shift cable assemblies (1). See **Fig. 17** . Remove clips (2) and pull shift cable assemblies out of housing.



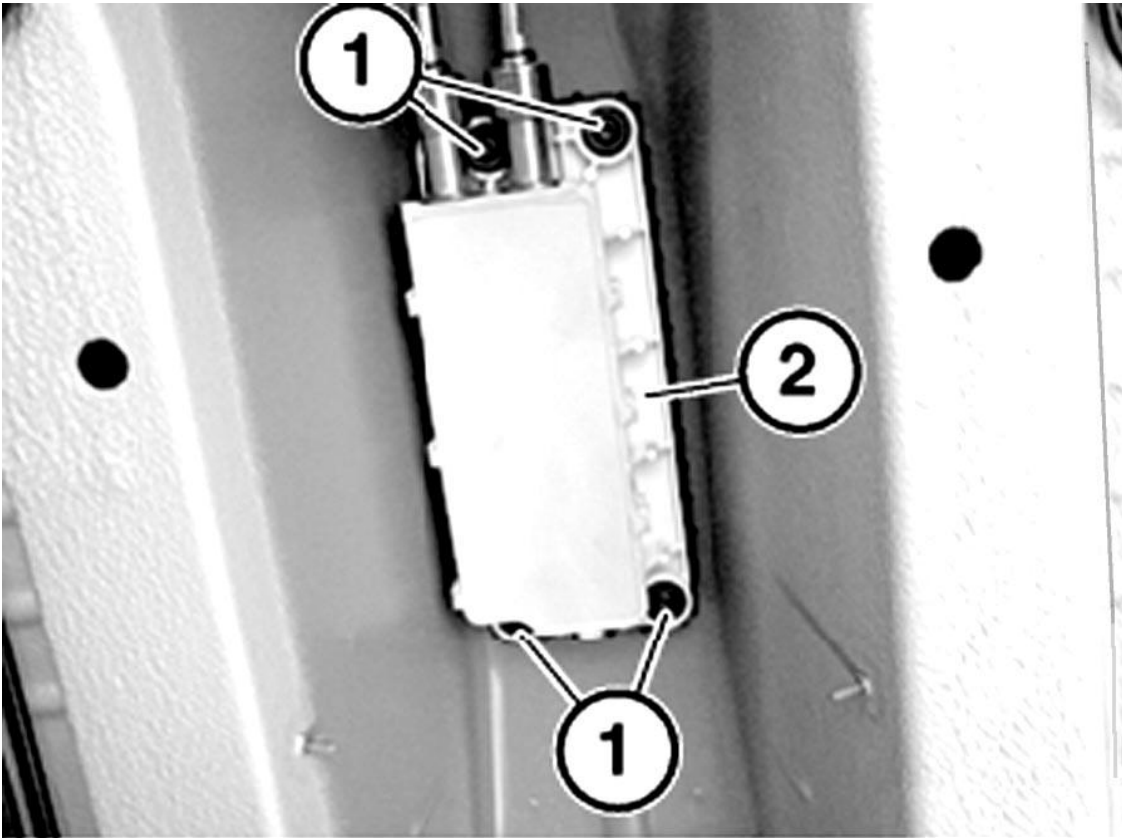
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Fig. 12: Removing Front Heat Shield
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 13: Removing Center Heat Shield
Courtesy of BMW OF NORTH AMERICA, INC.



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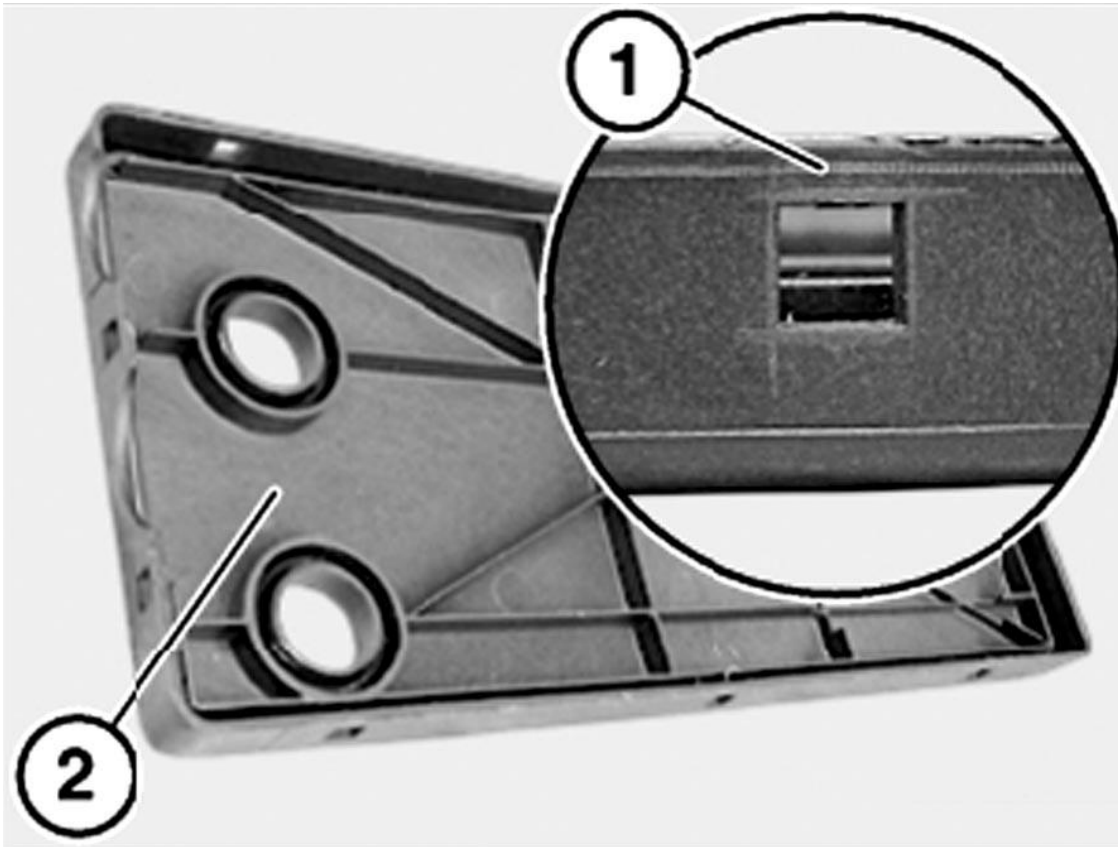
Fig. 14: Removing Shift Lever Housing
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 15: Releasing Shift Lever Cover

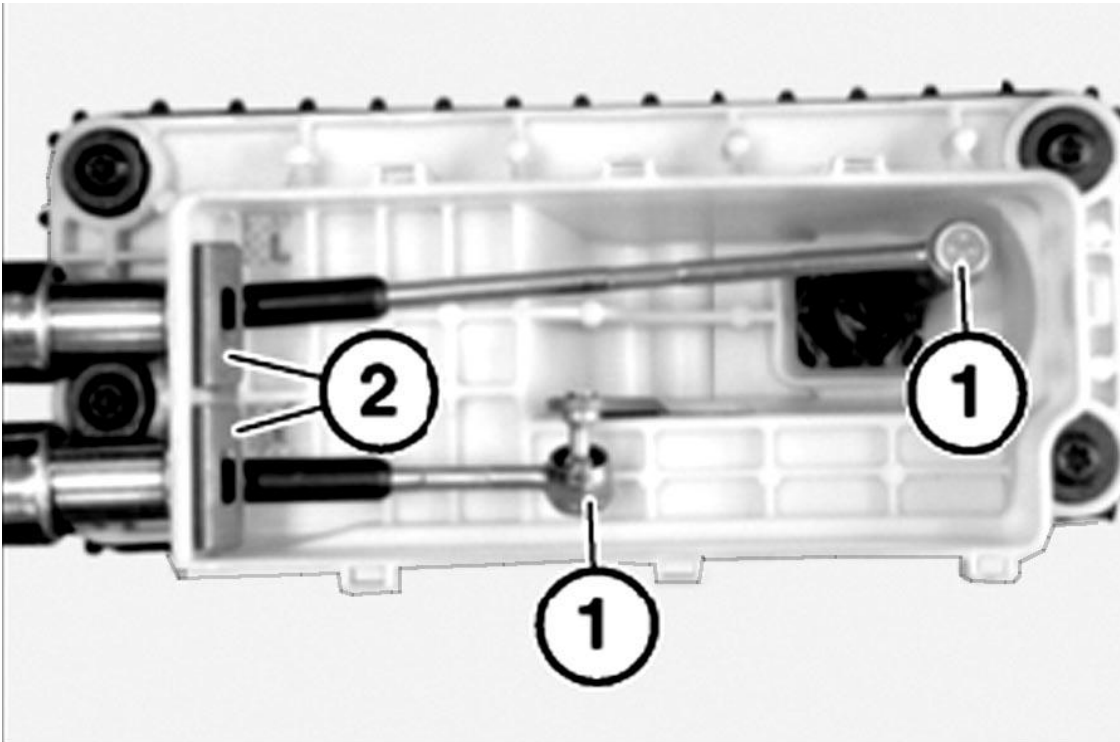
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 16: Identifying Locking Tabs

Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 17: Detaching Shift Cable Assemblies
Courtesy of BMW OF NORTH AMERICA, INC.

SHIFT LEVER KNOB

CAUTION: Gear knob will be released suddenly, keep face clear of gear knob during removal. Do not twist knob during removal as this would cause the turning lock in the knob to shear off.

Removal & Installation

Position gear selector lever to neutral. Pull gearknob upwards to disengage turning lock in gear knob from gear selector lever. See **Fig. 18** .



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Fig. 18: Removing Shift Lever Knob

Courtesy of BMW OF NORTH AMERICA, INC.

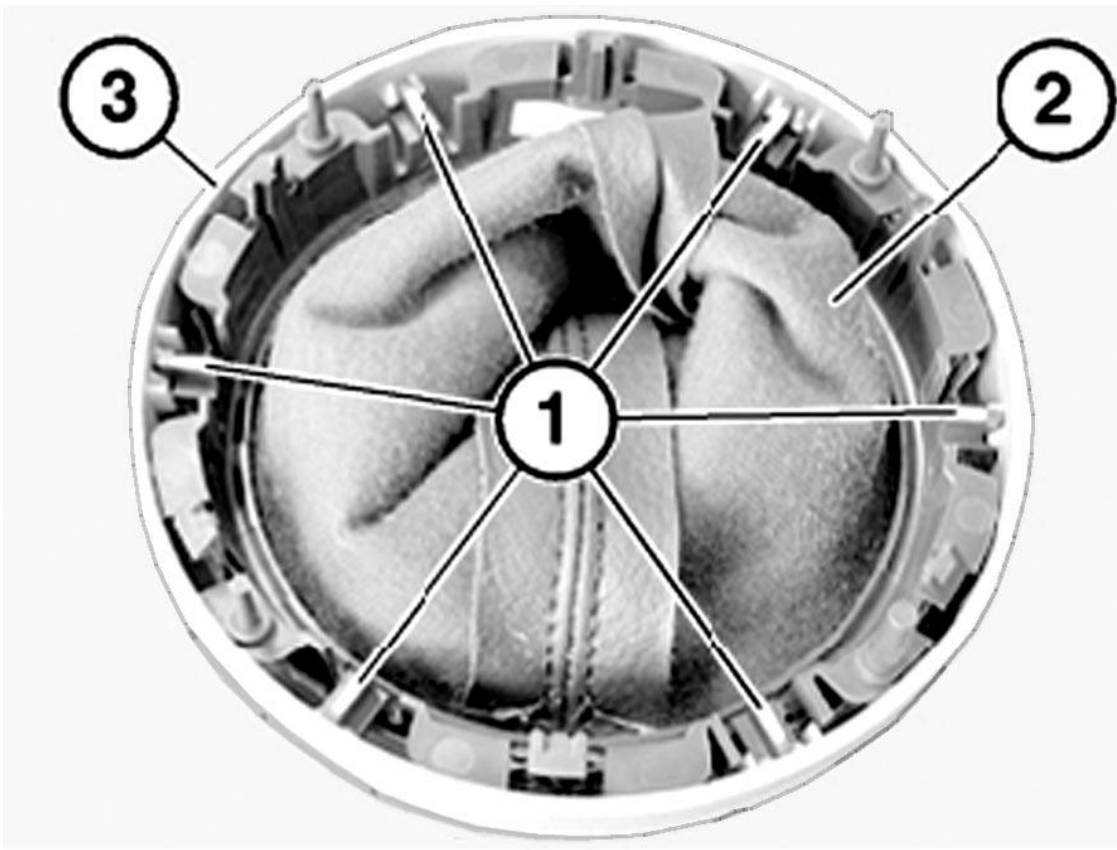
SHIFT LEVER DUST COVER**Removal & Installation**

Remove shift lever knob. See **SHIFT LEVER KNOB** . Pull dust cover surround (1) upwards to release six securing clips. See **Fig. 19** . Remove gaiter. Dust cover surround has locating pins that ensure correct installation into the center console. Release clips (1) and remove dust cover (2) from dust cover surround (3). See **Fig. 20** .



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Fig. 19: Removing Dust Cover
Courtesy of BMW OF NORTH AMERICA, INC.



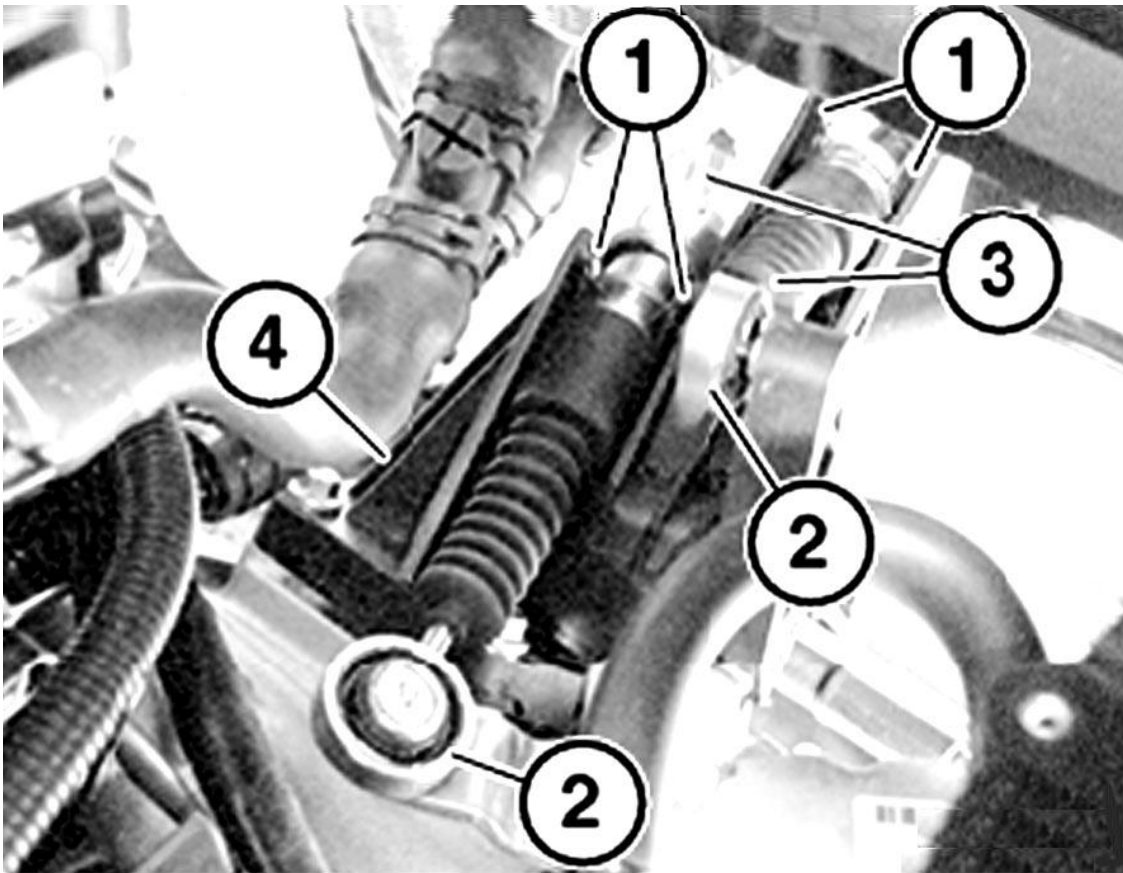
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Fig. 20: Removing Dust Cover From Dust Cover Surround
Courtesy of BMW OF NORTH AMERICA, INC.

SHIFT CABLE ASSEMBLY

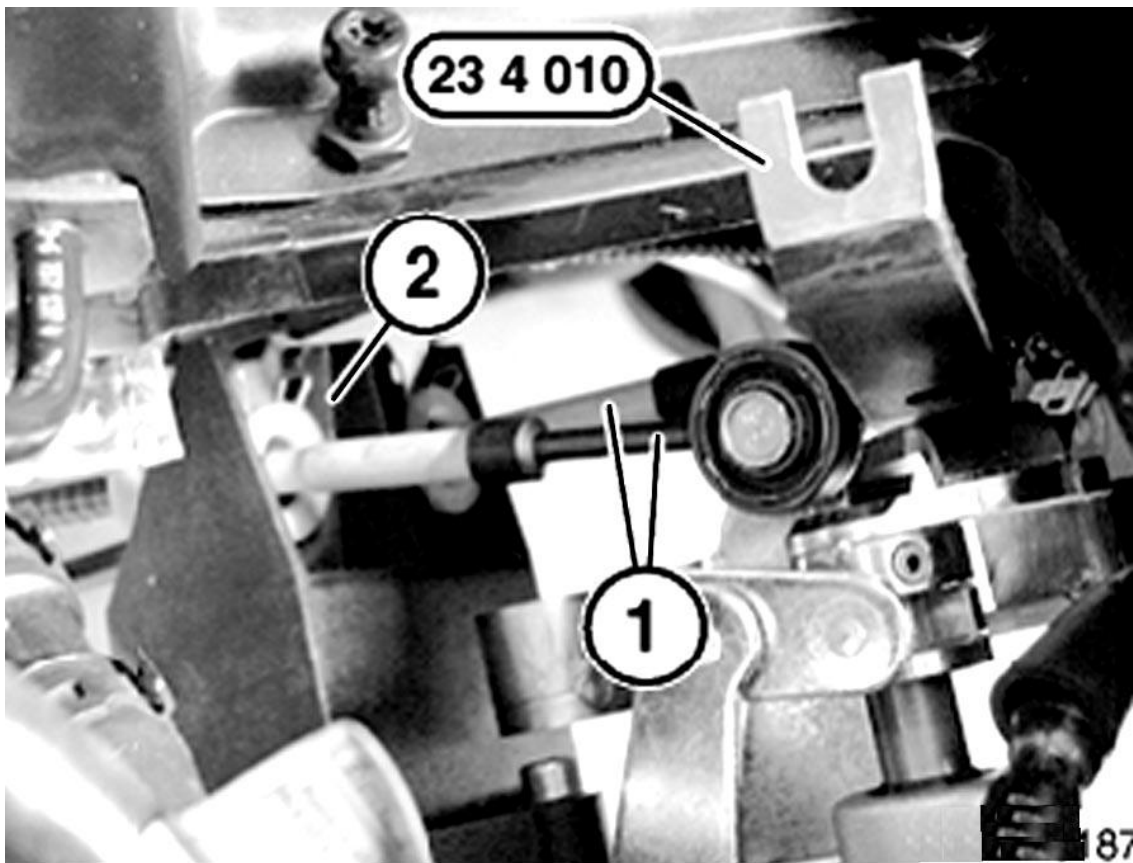
Removal & Installation

Detach shift cable assembly at shift lever bracket. On Cooper, remove battery box. Release clips (1) for shift cable at housing. Detach shift cable from ball joint (2). Pull shift cable (3) out of housing (4). See **Fig. 21** . Remove housing and cable from vehicle. On Cooper S, remove intake filter housing. Use special tool (234010) to detach shift cable assembly (1) at ball joint. Detach shift cable at stop/bracket (2) and remove. See **Fig. 22** .



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Fig. 21: Removing Shift Cable (Cooper)
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 22: Detaching Shift Cable At Stop/Bracket (Cooper S)
Courtesy of BMW OF NORTH AMERICA, INC.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
R65	
Drain Plug	24-30 (32-40)
Fill Plug	15-22 (20-30)
Getrag 285 Drain/Filler Plug	