

2003-05 MANUAL & AUTOMATIC TRANSMISSIONS

Gear Shift Mechanisms - Z4

ADJUSTMENTS

INTERLOCK CABLE

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

Remove gearshift lever trim. See **GEARSHIFT LEVER TRIM** . Remove center console switch unit. See **CENTER CONSOLE SWITCH UNIT** .

Move selector lever (1) to "P" position (front stop of shifting gate).

Loosen screw (4). It must be possible to move cable (2) slightly in holder (3). See **Fig. 1** .

Move ignition key to "0" position and remove.

Press interlock locking pawl (5) downwards as far as it will go.

Tighten screw (4). See **TORQUE SPECIFICATIONS** .

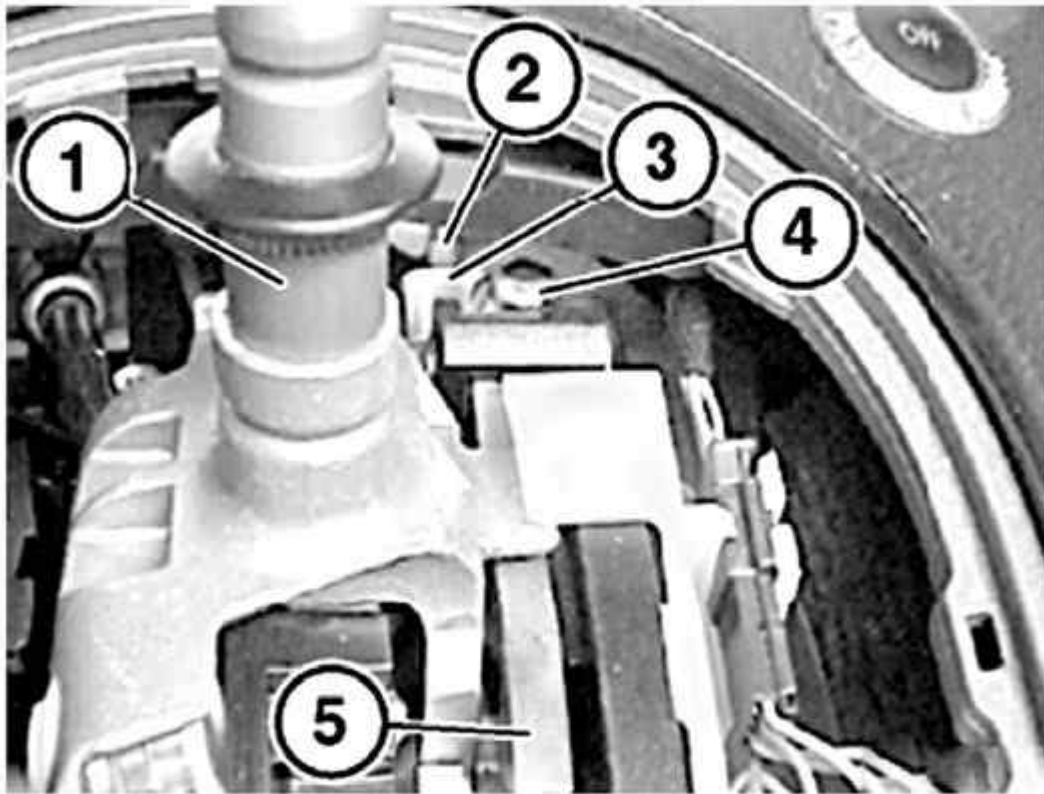
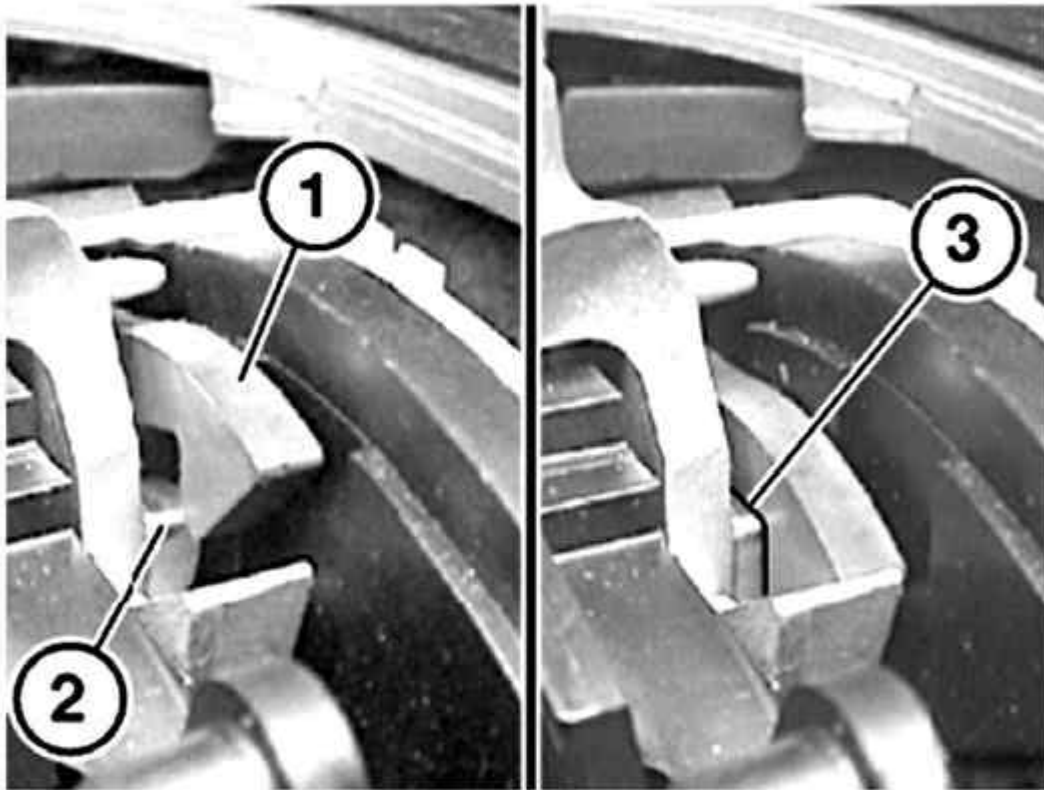


Fig. 1: Adjusting Interlock Cable

Courtesy of BMW OF NORTH AMERICA, INC.

To check adjustment of interlock, turn ignition key to "ignition" position and "0" position. Interlock locking pawl (1) must rest (3) on shift tower (2). If necessary, adjust interlock cable again. See **Fig. 2** .



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Fig. 2: Checking Interlock Adjustment
Courtesy of BMW OF NORTH AMERICA, INC.

SELECTOR LEVER

NOTE: Numbers in text refer to numbers in figures.

Check cable for ease of movement.

Adjust as follows:

- Move selector lever to "P" setting. See **Fig. 3**.
- Grip clamp bushing (1). Loosen nut (2).
- Press selector lever (3) forwards (park position).
- Press cable (4) in direction of arrow and release again.
- Grip clamping piece (1). Tighten nut (2).
- During installation, move selector lever into "P" setting. Check whether parking lock is engaged by rotating shaft or by pushing car

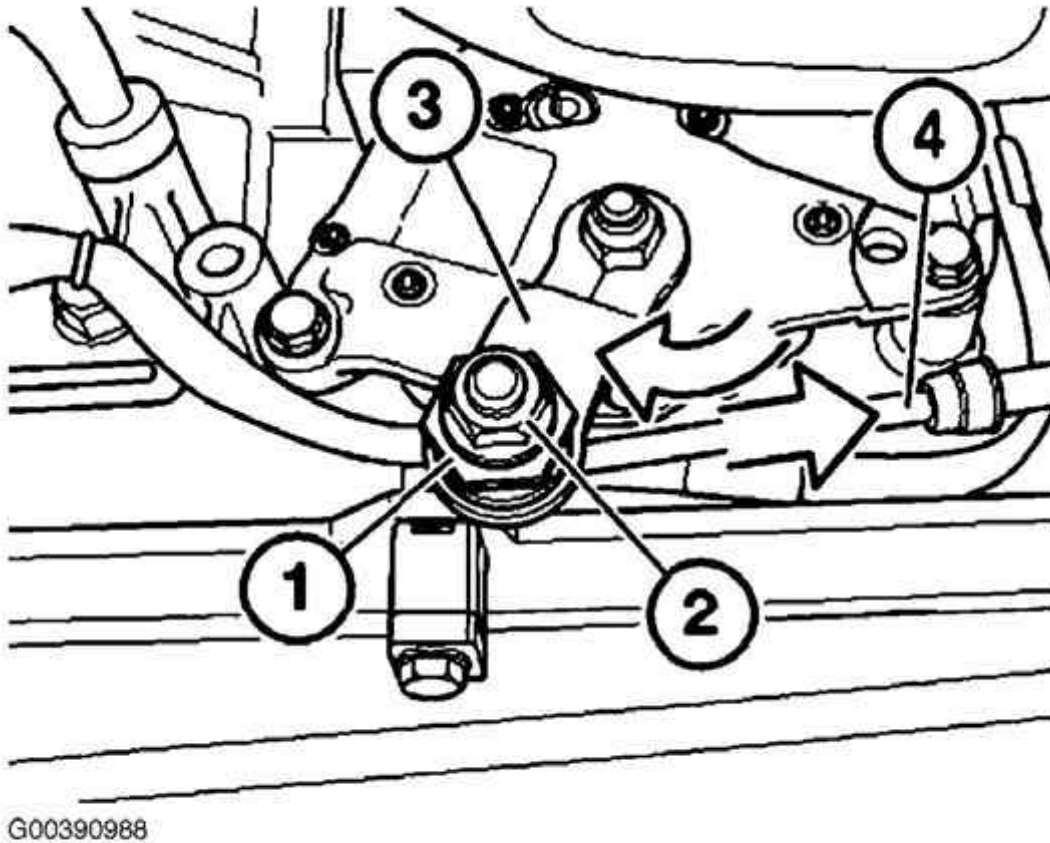


Fig. 3: Adjusting Selector Lever

Courtesy of BMW OF NORTH AMERICA, INC.

REMOVAL & INSTALLATION

SHIFT ARM (REINFORCED) FOR SHIFT LEVER MOUNTING

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

Remove crossmember. See CROSSMEMBER .

Unflange propeller shaft from transmission and vehicle underbody on one side.

Remove selector lever. See SHIFT LEVER .

Remove support bearing from fixture. Detach retainers (1) towards rear top. See Fig. 4 .

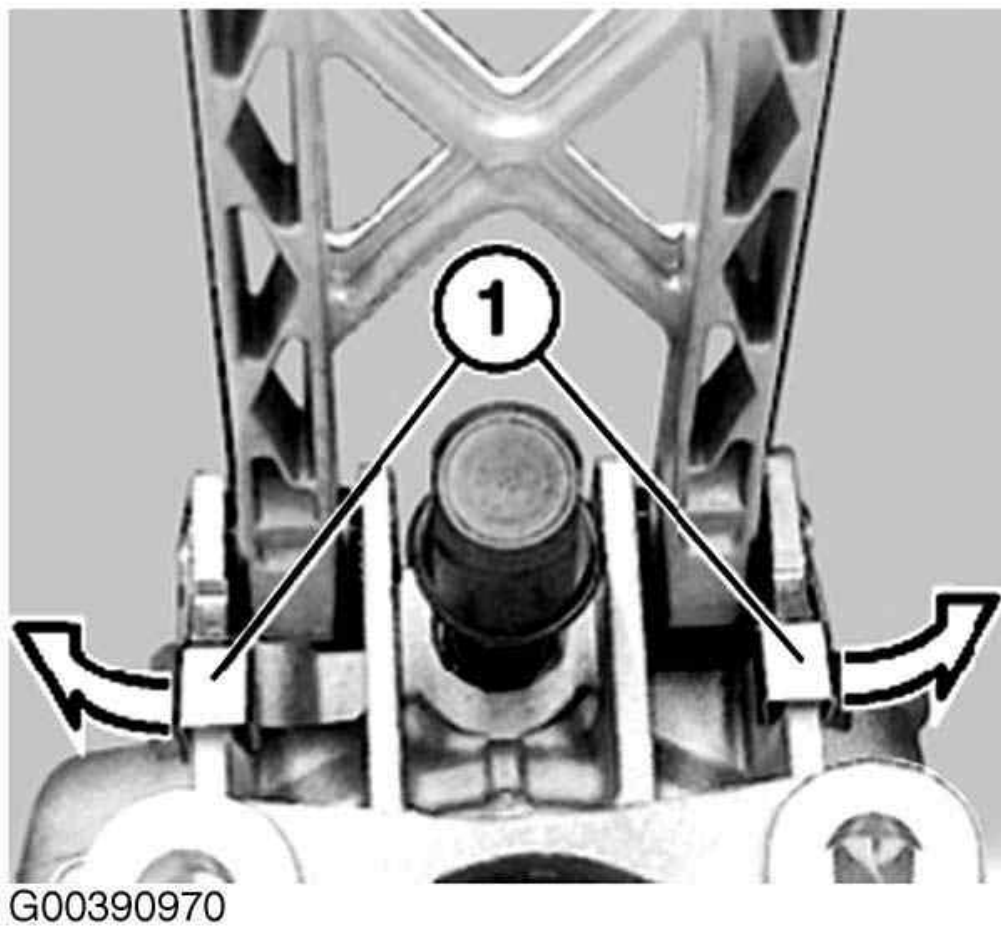
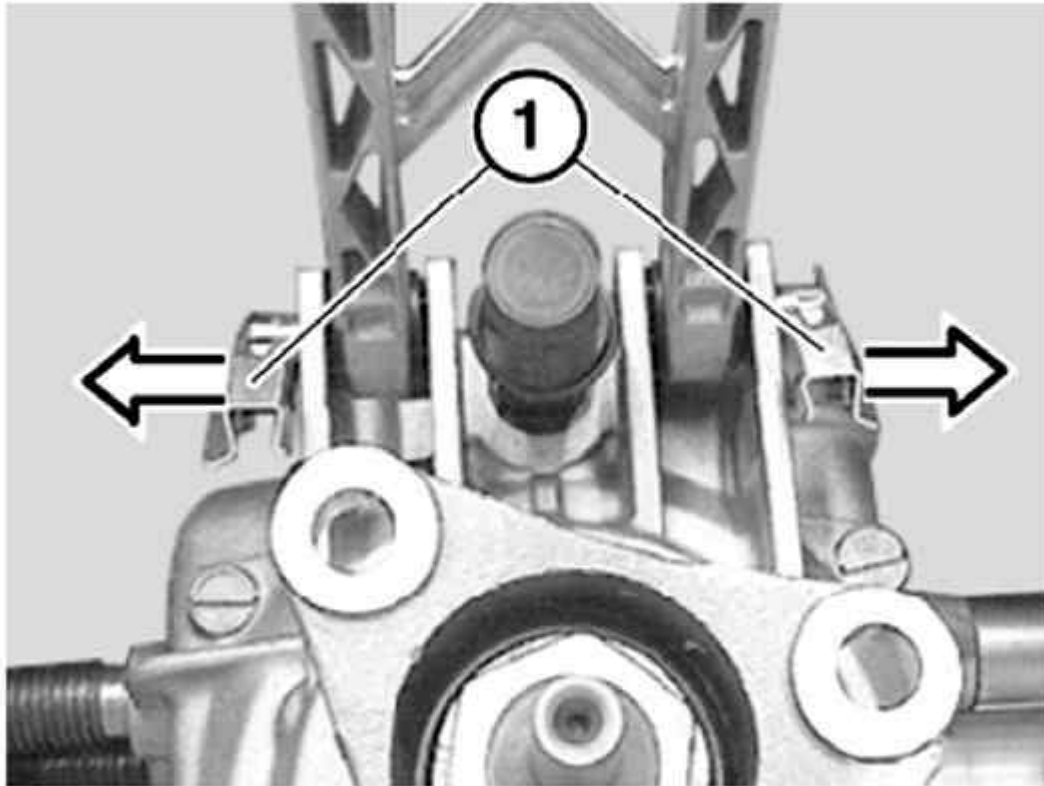


Fig. 4: Detaching Retainers Toward Rear Top
Courtesy of BMW OF NORTH AMERICA, INC.

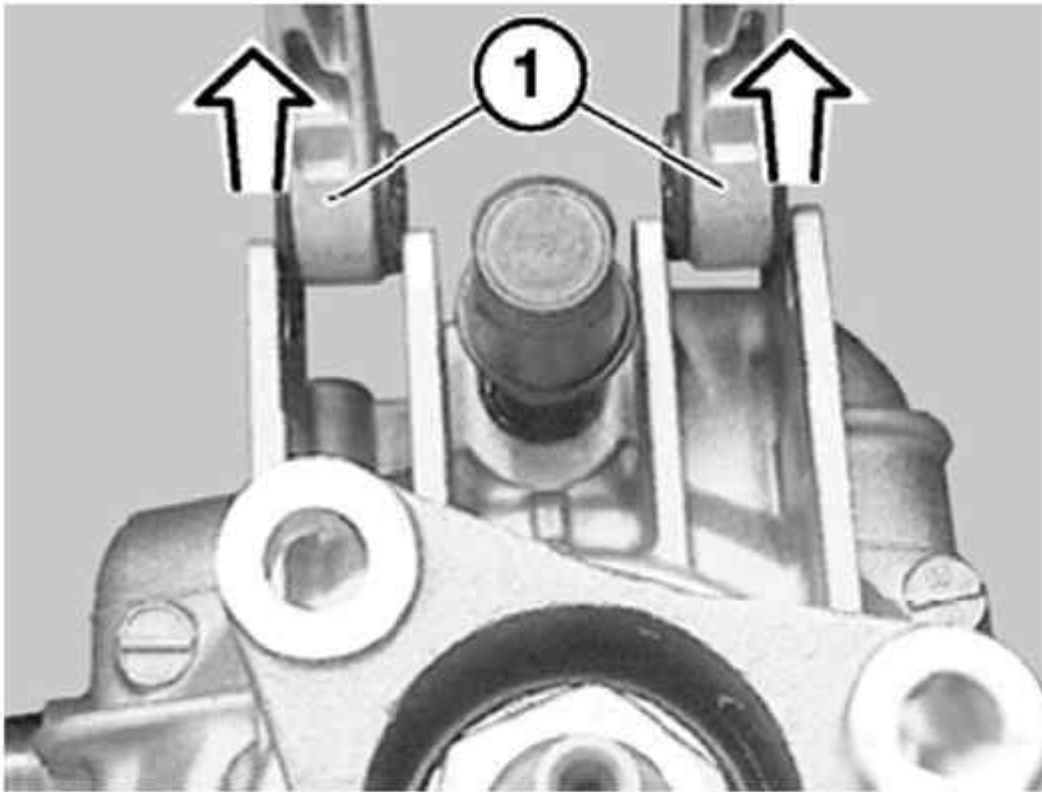
Pullout fastener (1) with bearing pin at side. During installation, grease bearing pin. See **Fig. 5**.



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Fig. 5: Pulling Out Fastener With Bearing Pin At Side
Courtesy of BMW OF NORTH AMERICA, INC.

Remove shift arm (1) towards top. See **Fig. 6** .

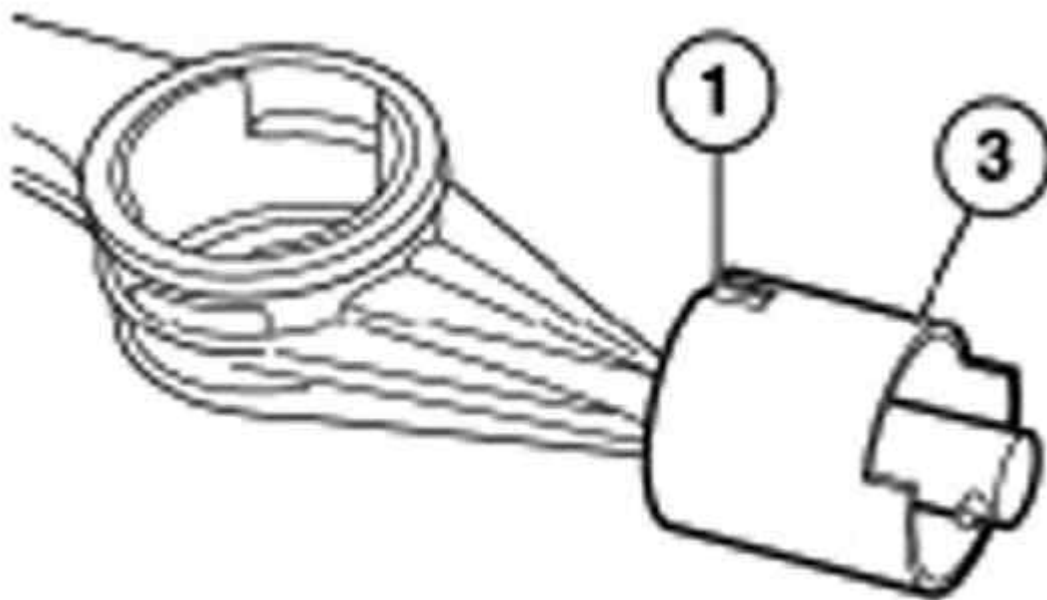


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Fig. 6: Removing Shift Arm Toward Top
Courtesy of BMW OF NORTH AMERICA, INC.

Remove support bearing (1) from shift arm. See **Fig. 7** .

NOTE: During installation, grease bearing pin of shift arm. Attach support bearing (1) with opening (3) towards rear top to shift arm.



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Fig. 7: Fitting Support Bearing With Opening Toward Rear
Courtesy of BMW OF NORTH AMERICA, INC.

Replace damaged bearing bushings (1). See **Fig. 8** .

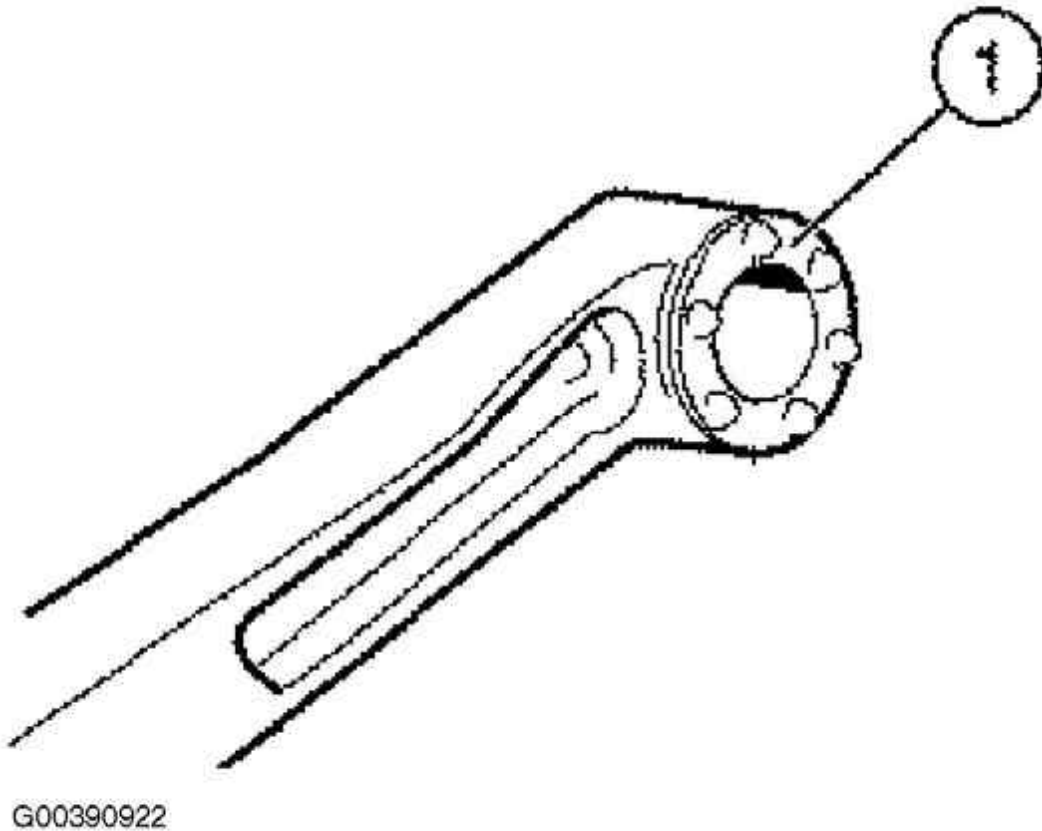


Fig. 8: Identifying Bearing Bushing

Courtesy of BMW OF NORTH AMERICA, INC.

U-GAITER

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

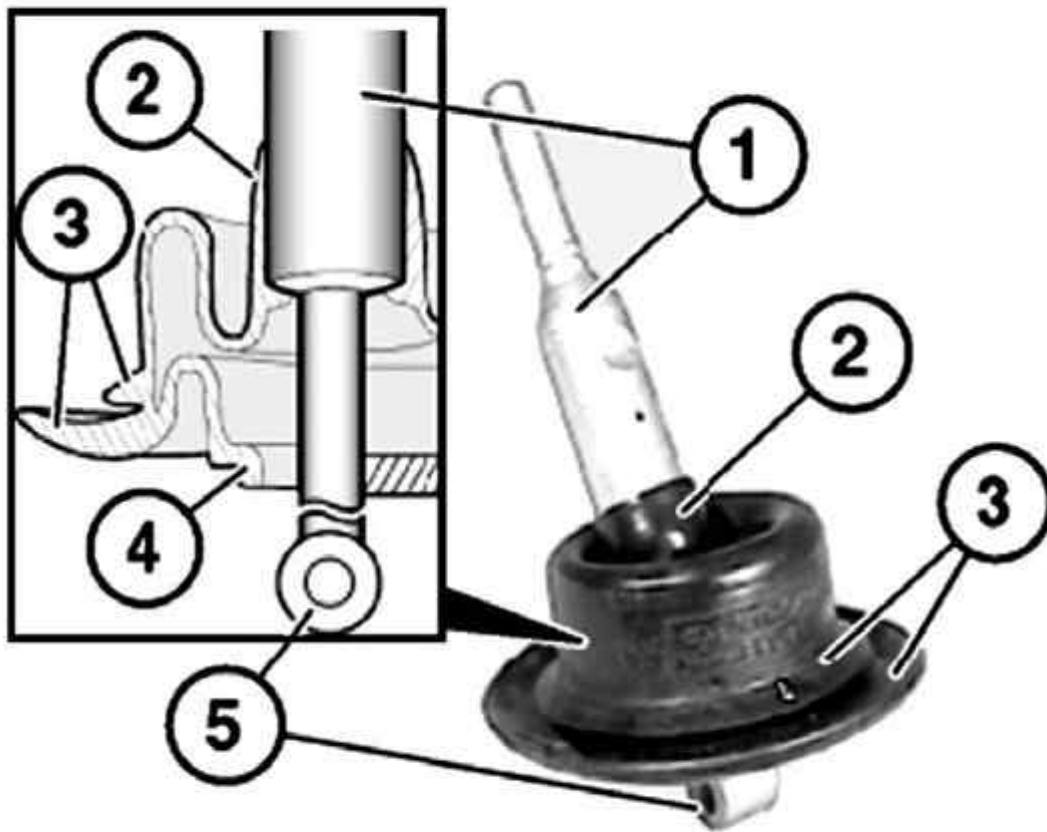
Remove shift lever. See **SHIFT LEVER** . Detach U-gaiter from shift lever. See **Fig. 9** . If necessary, rub inside of molded section (1) beforehand with Circolight lubricant.



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Fig. 9: Detaching U-Gaiter From Shift Lever
Courtesy of BMW OF NORTH AMERICA, INC.

During installation, degrease shift lever (1). Coat inside of molded section (2) with Circolight lubricant. Pull U-gaiter from above over shift lever and align. Arrow on upper lip (3) must point crossways to mount eye (5) in direction of travel. U-gaiter bead is identified as (4). See **Fig. 10** .



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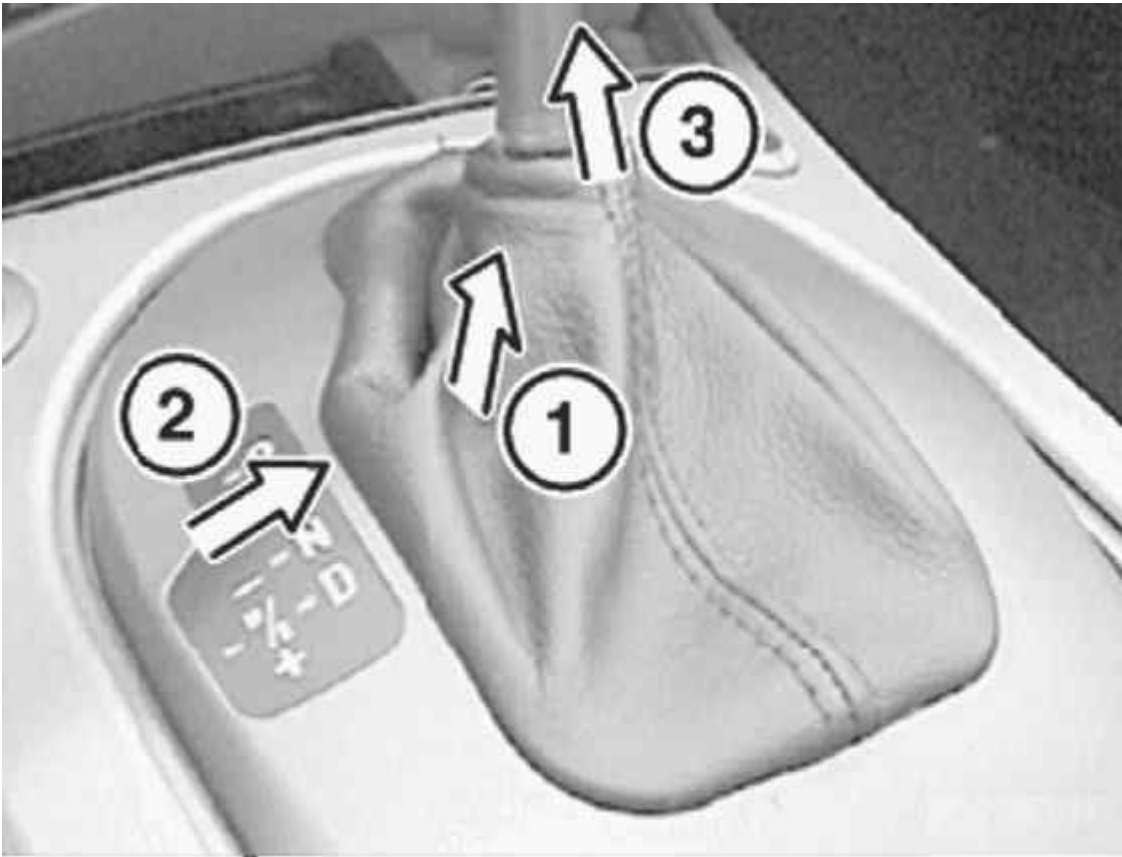
Fig. 10: Identifying U-Gaiter Components
Courtesy of BMW OF NORTH AMERICA, INC.

SHIFT LEVER COVER (GAITER)

NOTE: Numbers in text refer to numbers in figures.

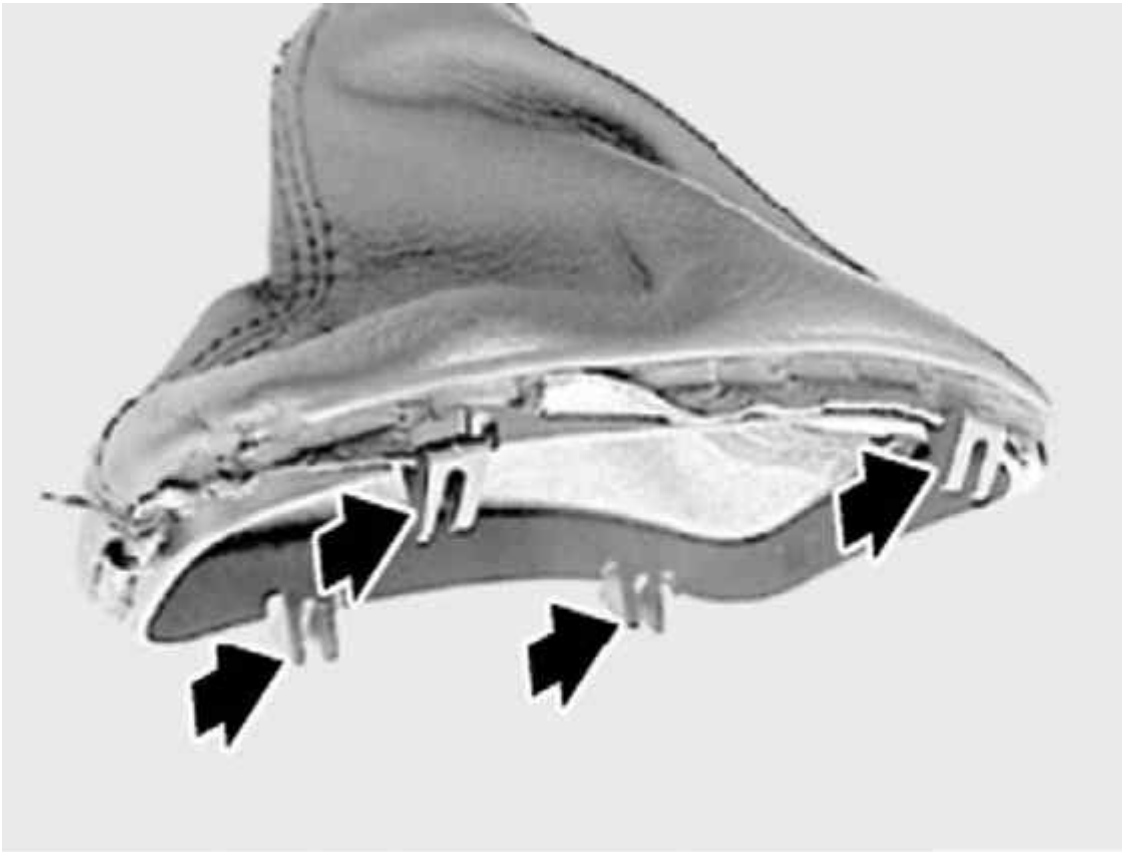
Removal & Installation

Remove **SHIFT LEVER KNOB**. The method for removing the gaiter is the same for manual and automatic transmissions. Carefully pull gaiter (1) taut on leather. Press frame (2) inwards slightly until catch is released. Lift out gaiter (3). See **Fig. 11**. During installation, retaining lugs must not be damaged. See **Fig. 12**.



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Fig. 11: Removing Gaiter
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 12: Identifying Retaining Lugs
Courtesy of BMW OF NORTH AMERICA, INC.

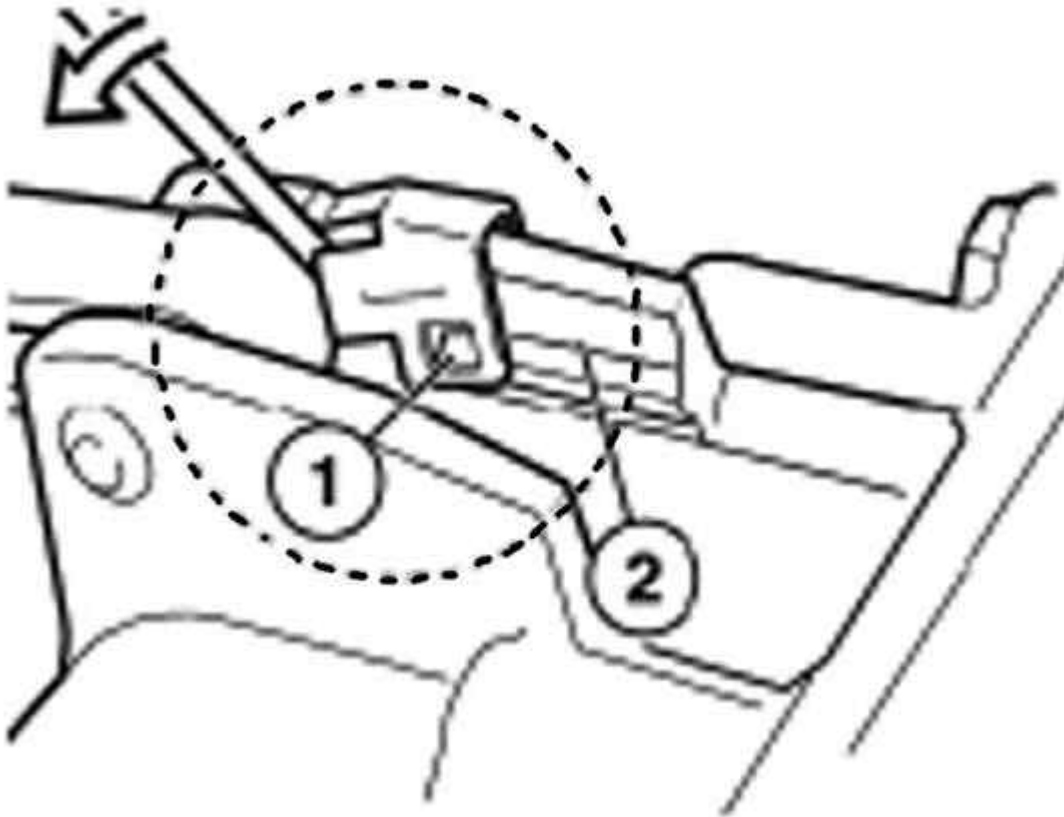
SHIFT ARM FOR SHIFT LEVER MOUNT

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

Remove crossmember. See **CROSSMEMBER**. Unflange propeller shaft from transmission and tie back to side on vehicle underbody. Remove shift lever. See **SHIFT LEVER**. Remove support bearing from fixture. See **SHIFT ARM SUPPORT BEARING**.

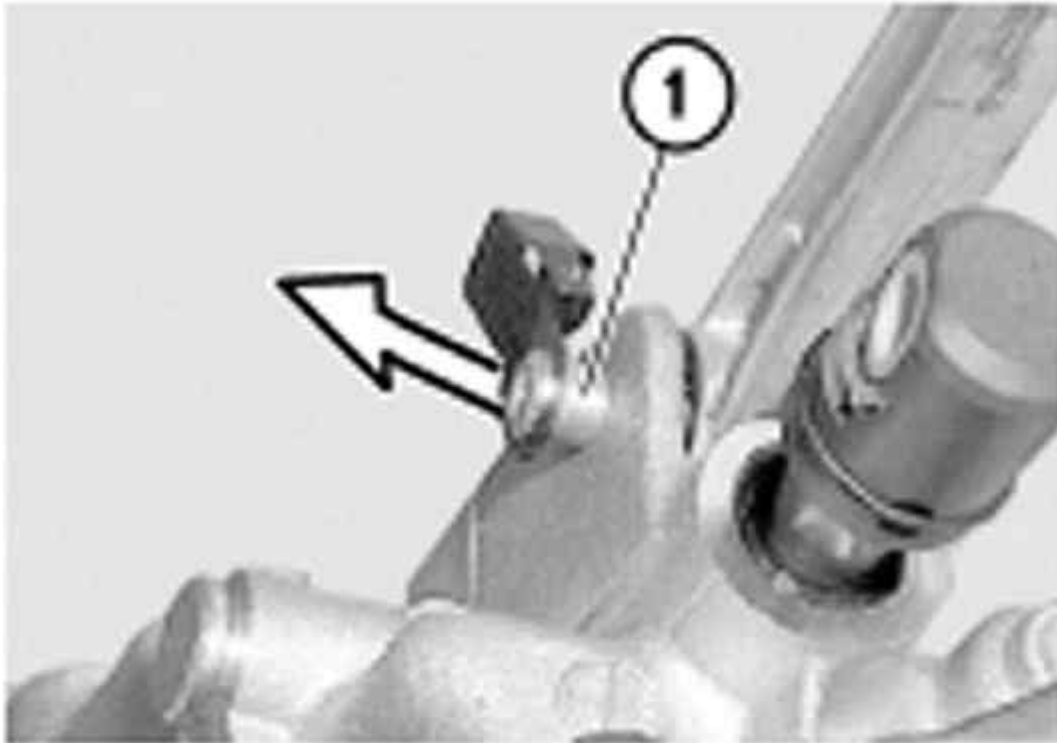
Lever out spring (1) with a screwdriver from lug (2) on housing. Tilt spring upwards. See **Fig. 13**.



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Fig. 13: Tilting Spring Upward**Courtesy of BMW OF NORTH AMERICA, INC.**

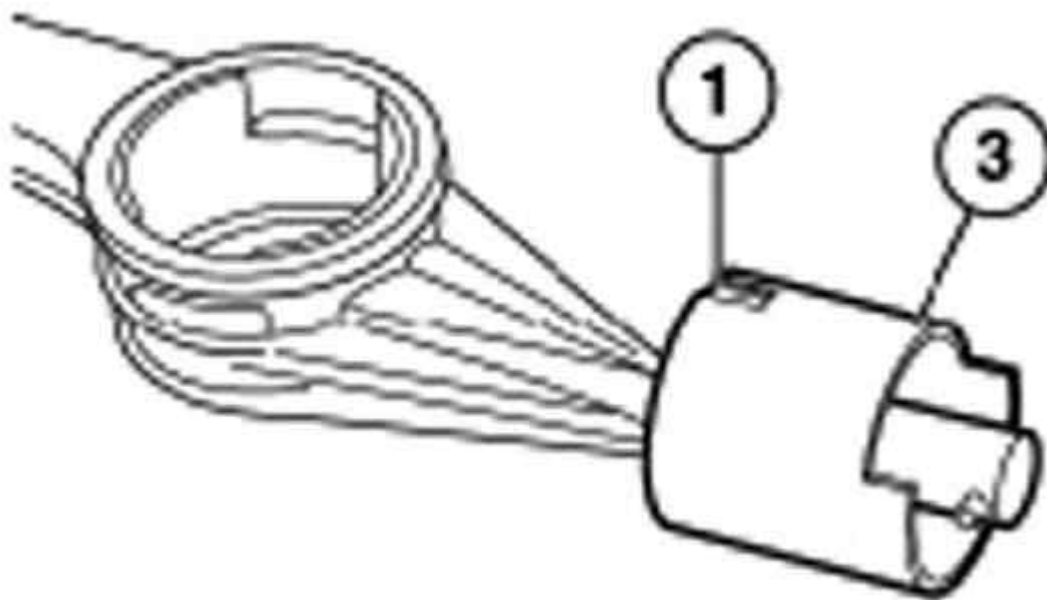
Remove bearing pin (1). Remove shift arm. During installation, grease bearing pin (1). See **Fig. 14** .



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Fig. 14: Removing Bearing Pin**Courtesy of BMW OF NORTH AMERICA, INC.**

Detach support bearing (1) from shift arm. During installation, grease bearing pin of selector arm. Fit support bearing (1) with opening (3) towards top rear on new shift arm. See **Fig. 15** .



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Fig. 15: Fitting Support Bearing With Opening Toward Rear On Selector Arm
Courtesy of BMW OF NORTH AMERICA, INC.

Replace damaged bearing sleeve (1). See **Fig. 16** .

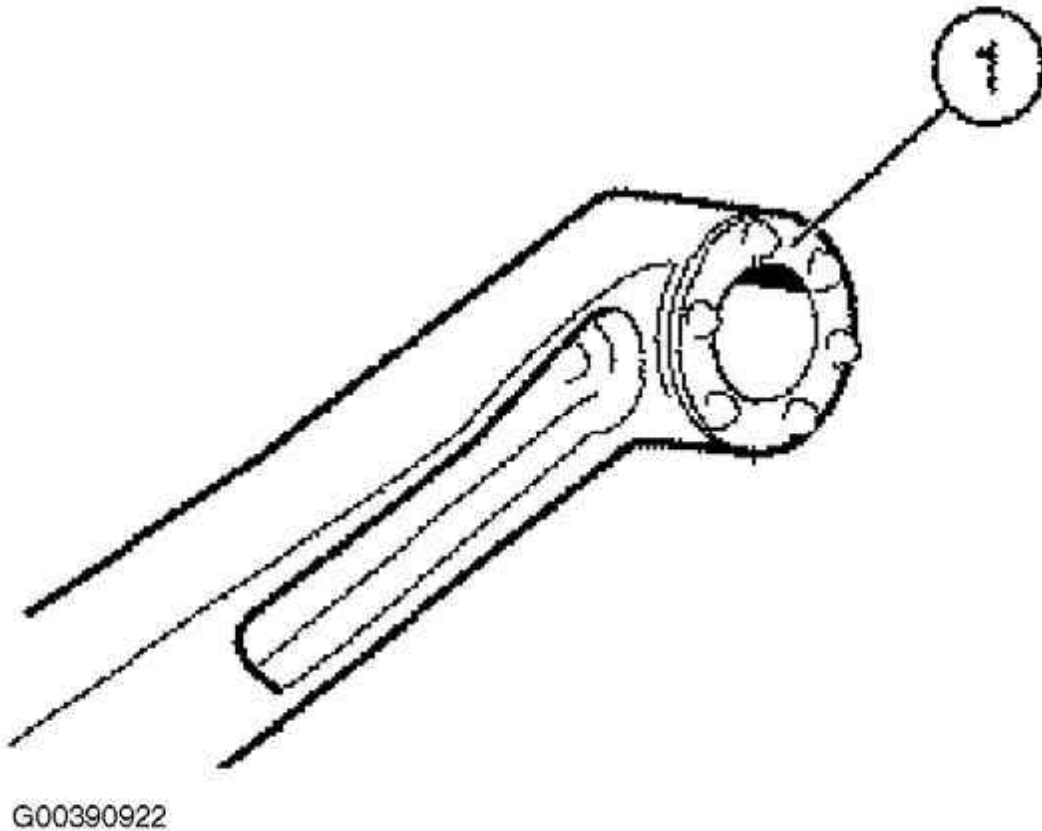


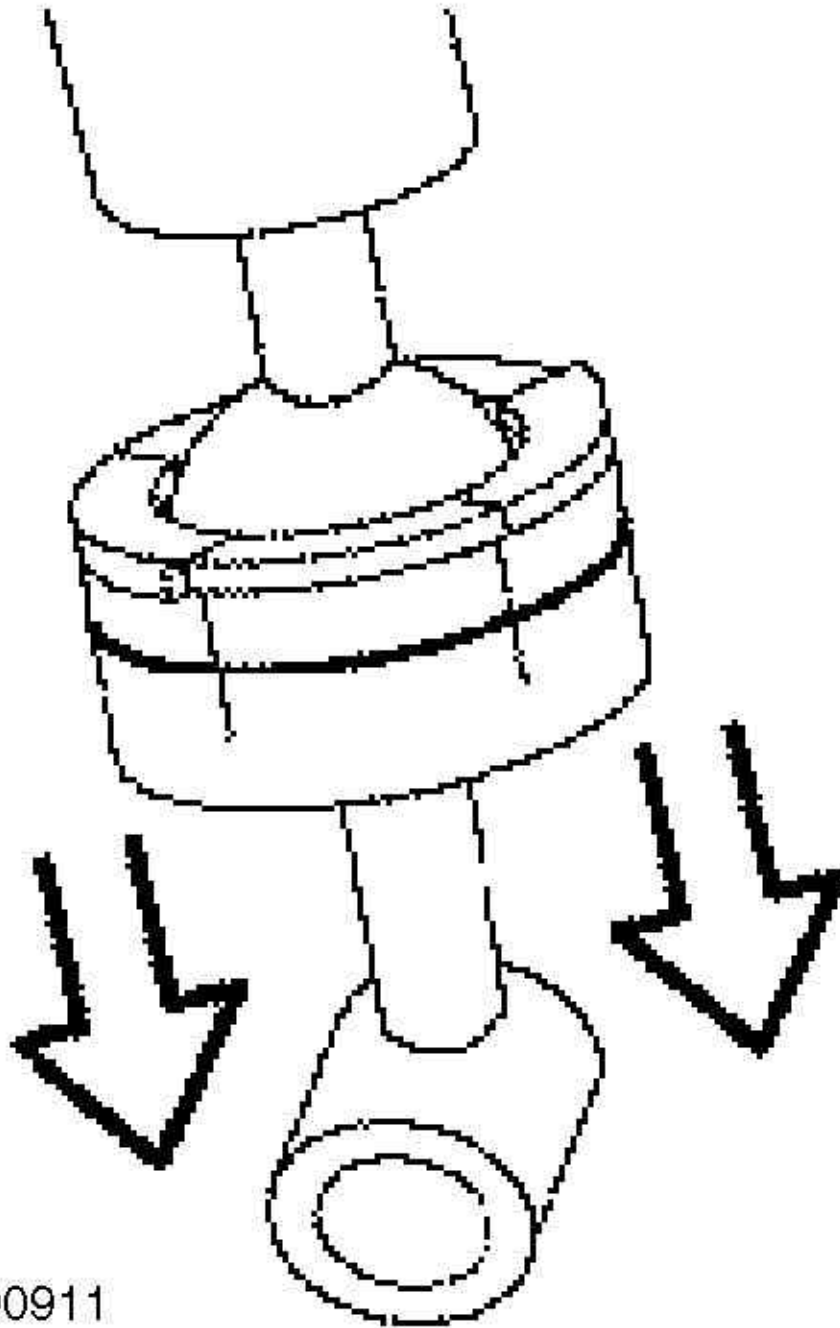
Fig. 16: Identifying Bearing Bushing
Courtesy of BMW OF NORTH AMERICA, INC.

BEARING SHELL FOR SHIFT LEVER

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

Remove shift lever. See **SHIFT LEVER** . Detach mount from selector lever. Grease ball joint. See **Fig. 17** .



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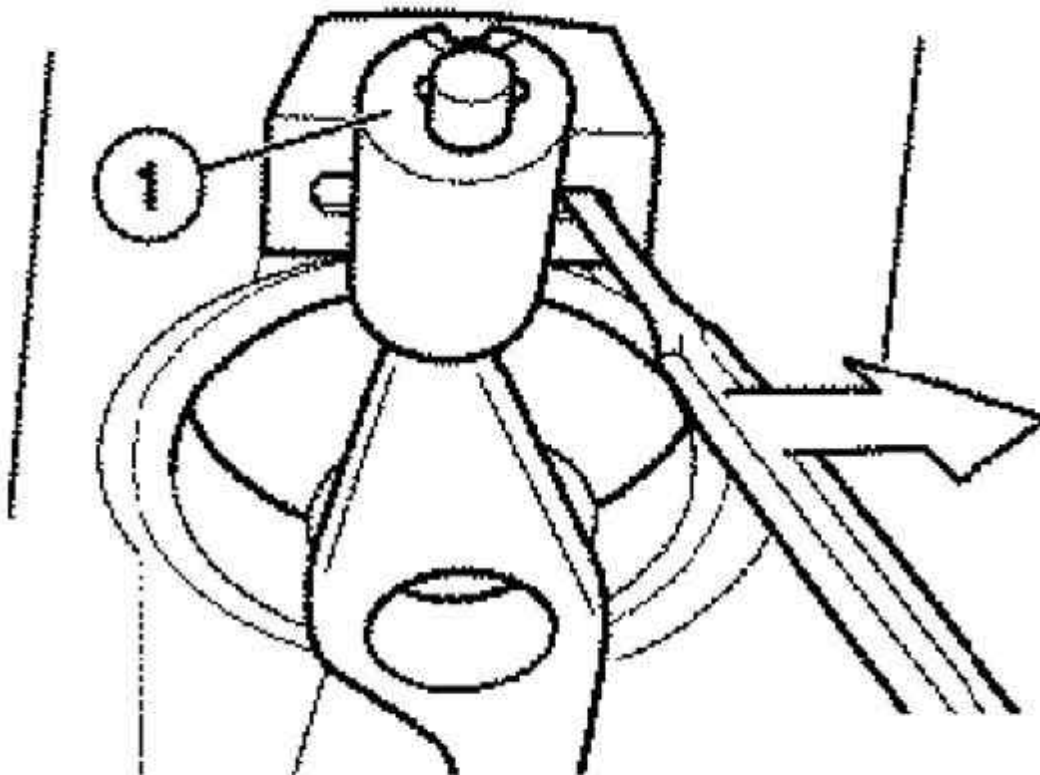
Fig. 17: Detaching Mount From Selector Lever
Courtesy of BMW OF NORTH AMERICA, INC.

SHIFT ARM SUPPORT BEARING

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

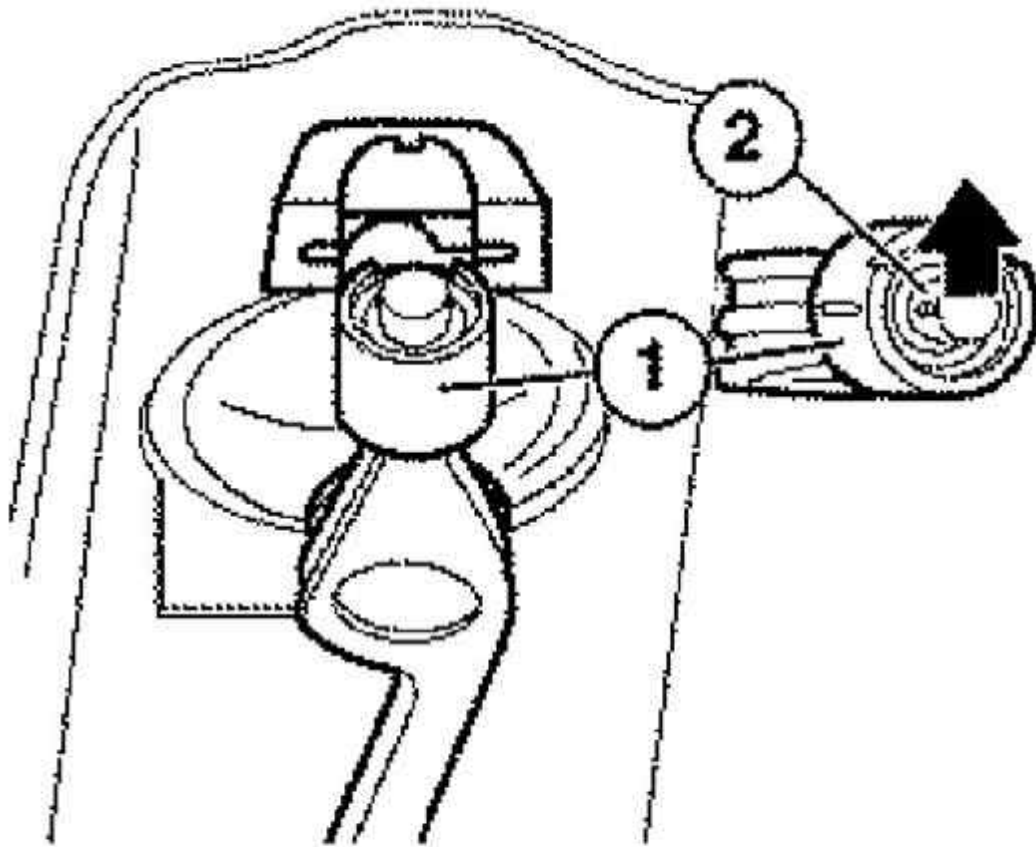
Remove rear reinforcement plate. See **REINFORCEMENT PLATE** . Remove exhaust system from exhaust manifold and support. Remove middle heat shield. Lever support bearing (1) with a short screwdriver out of mounting. See **Fig. 18** . Detach support bearing from shift arm. During installation, grease bearing pin of shift arm.



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Fig. 18: Levering Out Support Bearing
Courtesy of BMW OF NORTH AMERICA, INC.

During installation, fit support bearing (1) with opening (2) toward top rear onto mounting. See **Fig. 19** .



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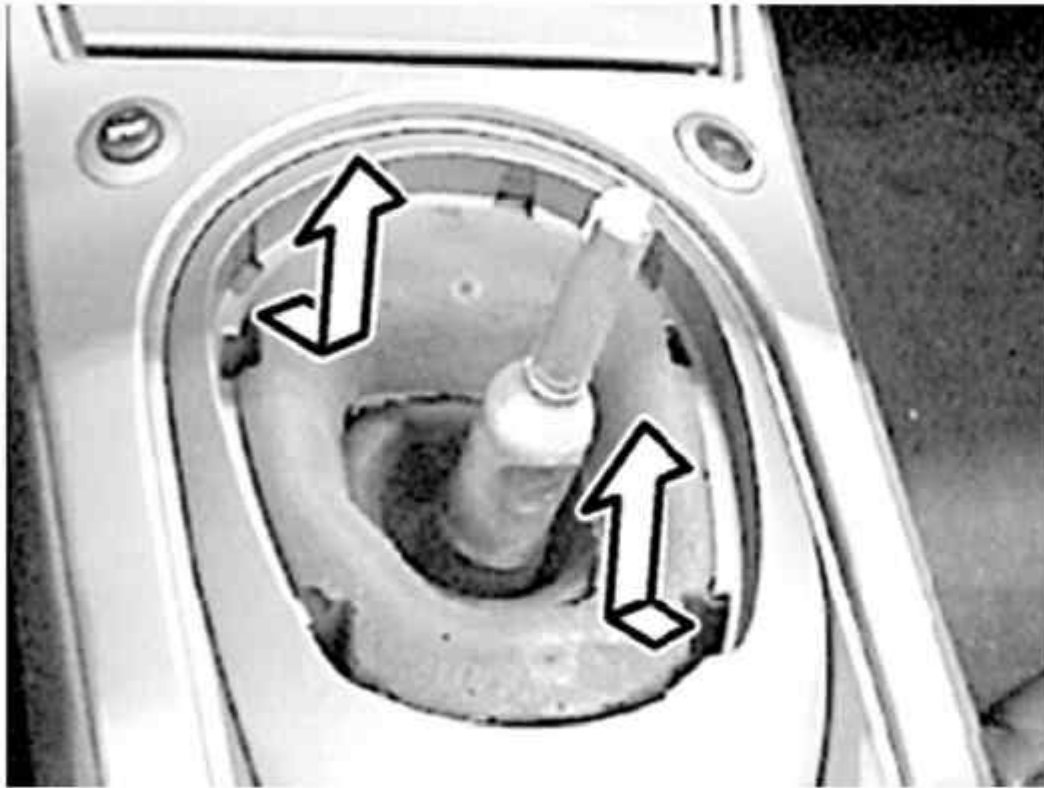
Fig. 19: Installing Support Bearing With Opening Toward Top Rear
Courtesy of BMW OF NORTH AMERICA, INC.

SHIFT LEVER

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

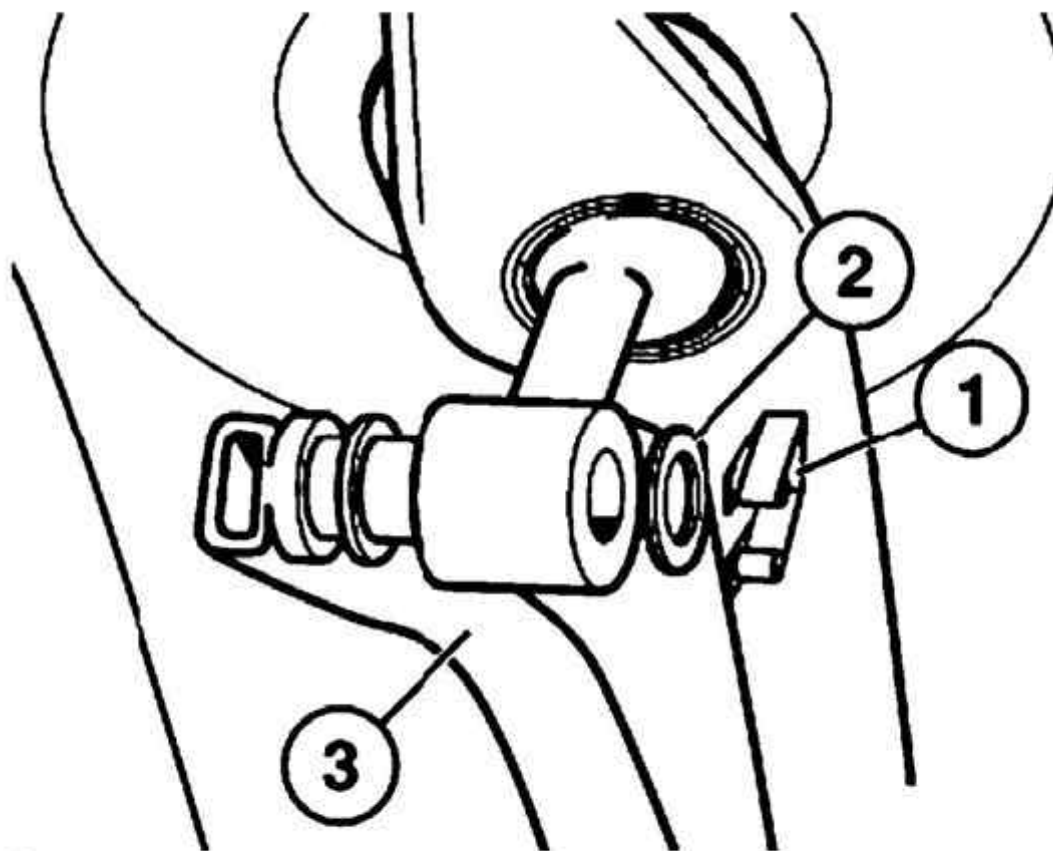
Remove shift lever gaiter. See **SHIFT LEVER COVER (GAITER)** . Remove rear middle reinforcement plate. See **REINFORCEMENT PLATE** . Remove exhaust system from exhaust manifold and support. Remove middle heat shield. Remove insert/sound insulation. See **Fig. 20** .



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Fig. 20: Removing Insert/Sound Insulation
Courtesy of BMW OF NORTH AMERICA, INC.

Remove shift rod (3). See **Fig. 21** . During installation, grease shift rod pin. Note location of retainer (1), washer (2) and selector rod (3).



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Fig. 21: Removing Shift Rod

Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool 25 1 110 into mount and turn 90 degrees counterclockwise. Press mount upwards out of selector arm. See **Fig. 22**.

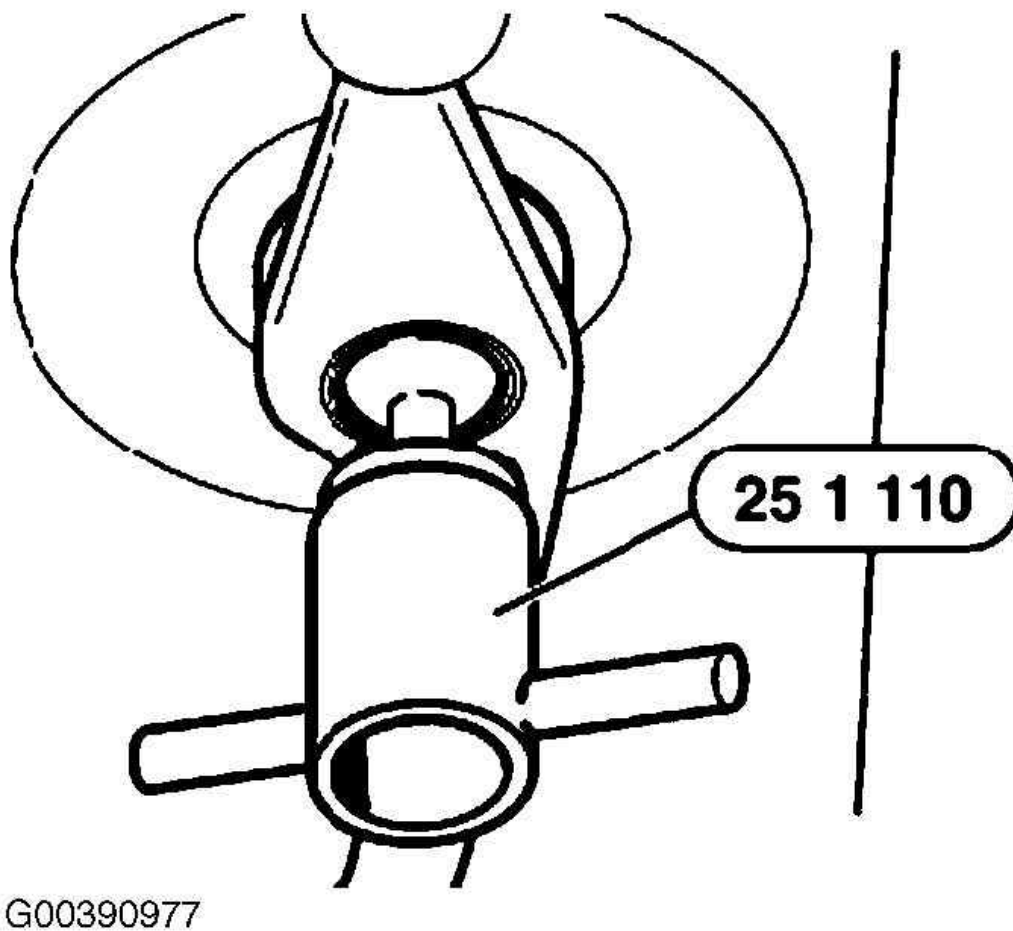


Fig. 22: Pressing Mount Upward Out Of Selector Arm
Courtesy of BMW OF NORTH AMERICA, INC.

Feed U-gaiter from shift arm and out of body cutout. See **Fig. 23** .

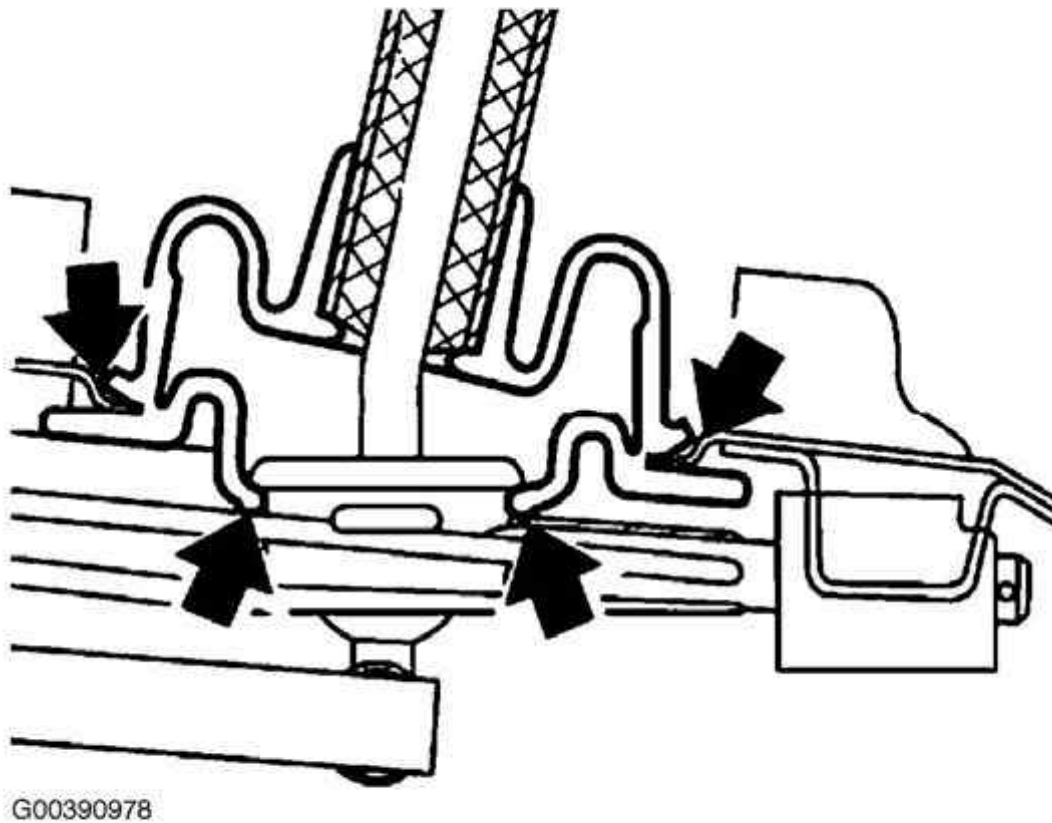
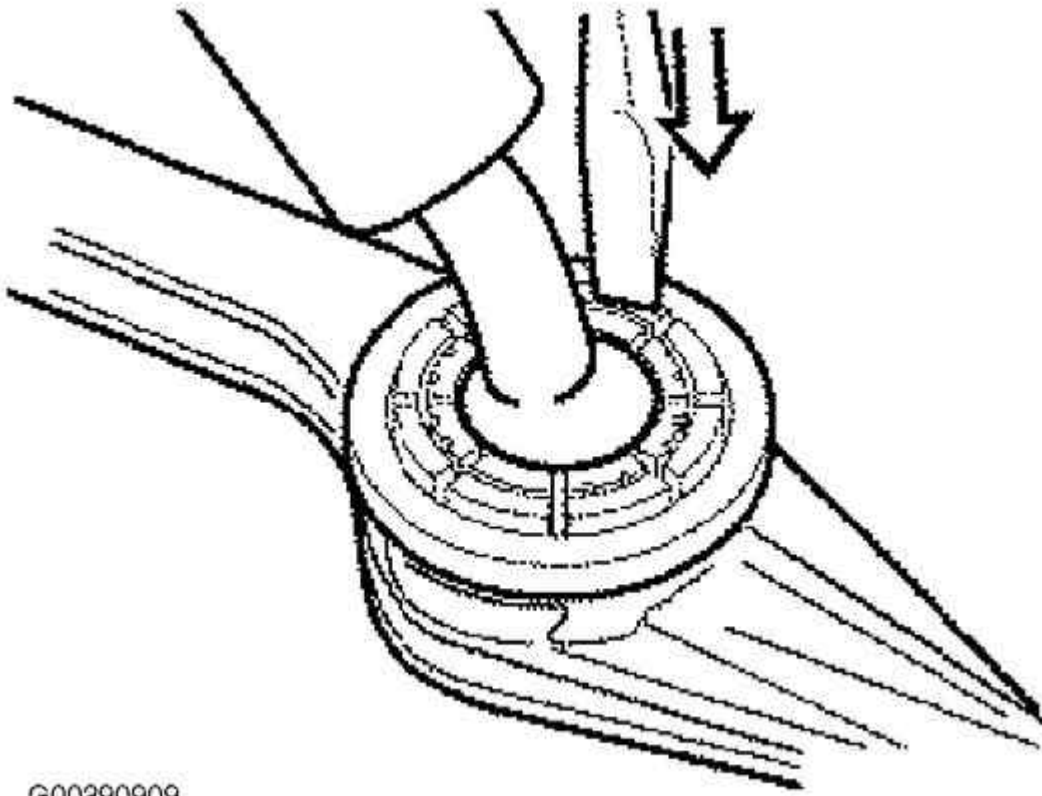


Fig. 23: Feeding U-Gaiter From Shift Arm
Courtesy of BMW OF NORTH AMERICA, INC.

During installation, pull U-gaiter bead (4) over receptacle on shift arm and pop U-gaiter lips (3) into body cutout. Make sure the arrow on the upper U-gaiter lip (3) is seated in the direction of travel and crossways to the shift lever eye (5). Note location of shift lever (1), U-gaiter molded section (2), U-gaiter lips (3), U-gaiter bead (4) and shift lever eye (5). See **Fig. 10** .

During installation, grease selector lever ball. Fit mount on shift arm receptacle. Align retaining lugs of mount to openings in receptacle (crossways to direction of travel). Press shift arm with mount downwards until mount snaps audibly into place (if necessary, use a tool for pressing in). See **Fig. 24** . See **TORQUE SPECIFICATIONS** .



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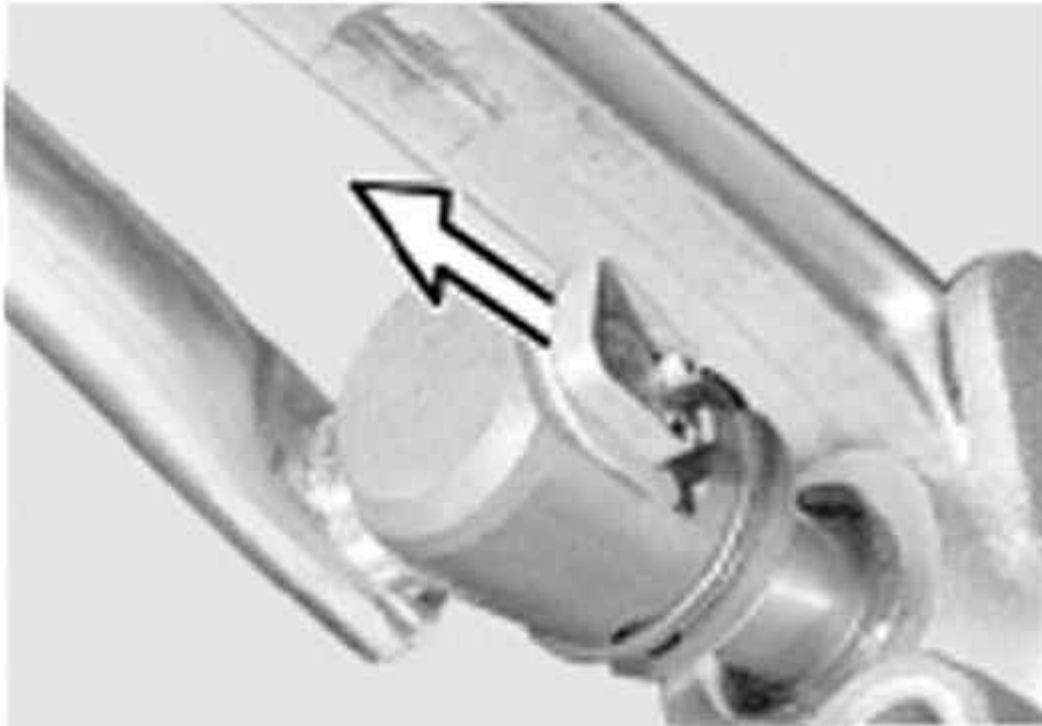
Fig. 24: Pressing Mount In Area Of Retaining Lugs
Courtesy of BMW OF NORTH AMERICA, INC.

SHIFT ROD

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

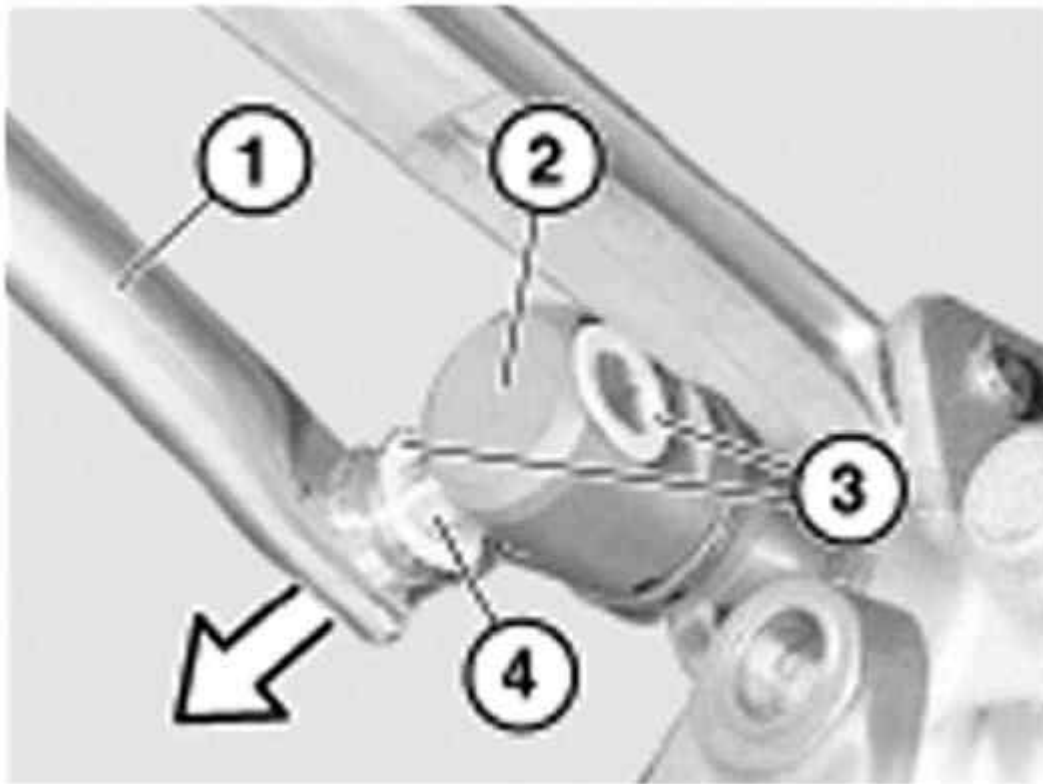
Remove rear reinforcement plate. See **REINFORCEMENT PLATE** . Remove exhaust system from exhaust manifold and support. Remove middle heat shield. Detach locking clip. See **Fig. 25** .



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Fig. 25: Detaching Locking Clip**Courtesy of BMW OF NORTH AMERICA, INC.**

Pull shift rod (1) out of shift rod joint (2) and remove shims (3). See **Fig. 26** . During installation, grease shift rod pin (4). Large contact surface of disks (3) must rest on shift rod joint (2).



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Fig. 26: Pulling Shift Rod Out Of Shift Rod Joint
Courtesy of BMW OF NORTH AMERICA, INC.

Detach locking clip (1). Remove disk (2). Remove selector rod (3). During installation, grease shift rod pin. See **Fig. 27** .

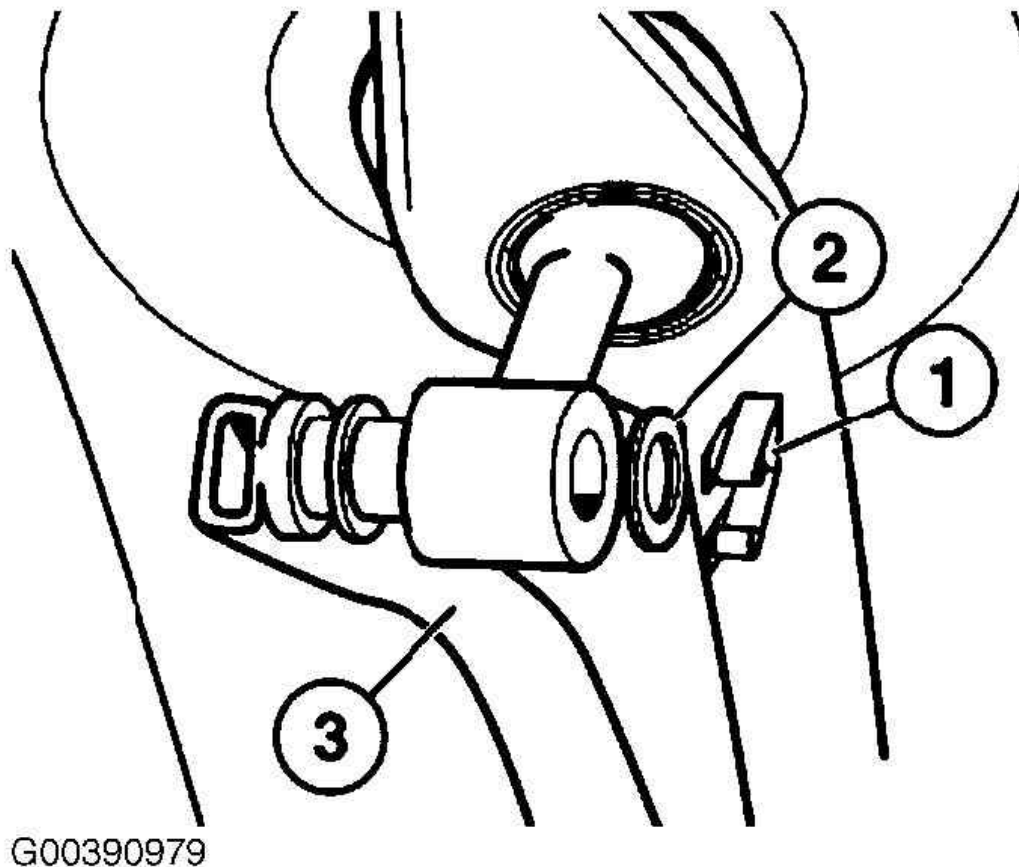


Fig. 27: Installing Shift Rod

Courtesy of BMW OF NORTH AMERICA, INC.

GEARSHIFT LEVER TRIM

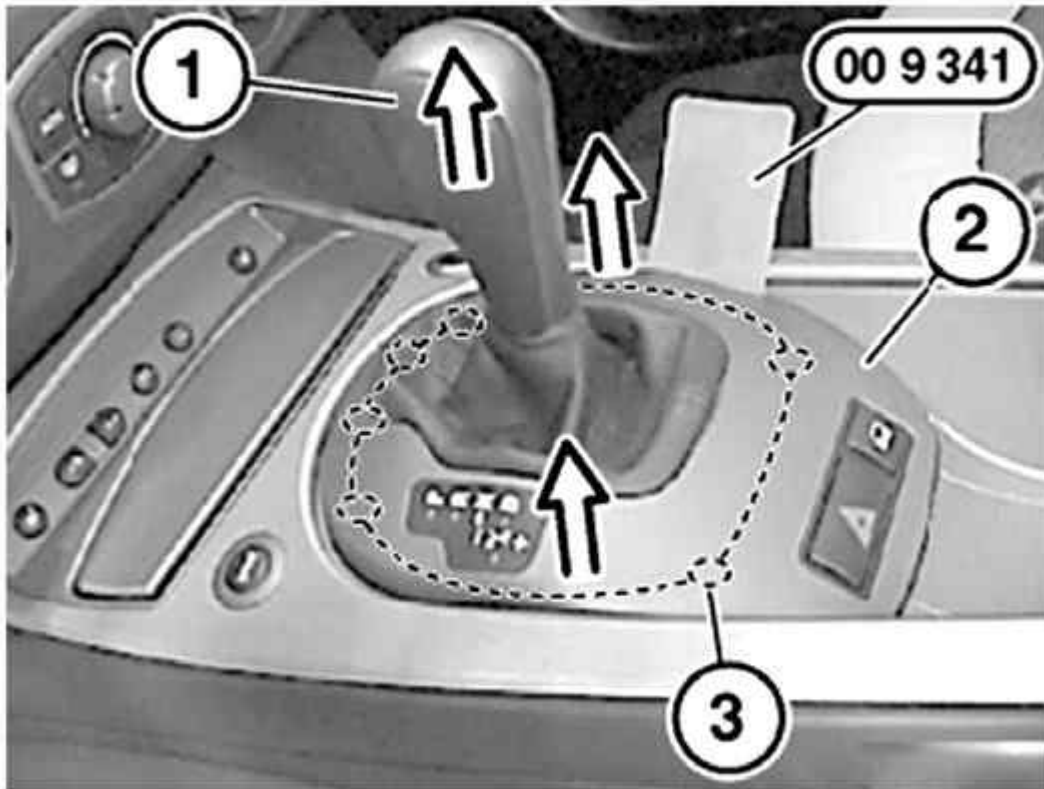
NOTE: Numbers in text refer to numbers in figures.

NOTE: Removing the trim for the gearshift lever is virtually identical for automatic or manual transmissions. The illustrations show the removal of the trim for the gearshift lever in versions with automatic transmissions.

Removal & Installation

Apply parking brake On versions with automatic transmission, move selector to N position. On version with manual transmission, engage neutral.

Fit special tool (00 9 341) as illustrated. Unclip trim for gearshift lever (2) from mounting points (3) all round in direction of arrow. Lift trim for gearshift lever (2), disconnect associated plug connections and remove trim for gearshift lever (2). If necessary, pull off knob for shift lever. See **SHIFT LEVER GRIP/KNOB** . See **Fig. 28** .



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Fig. 28: Removing Gearshift Lever Trim

Courtesy of BMW OF NORTH AMERICA, INC.

During installation, make sure retainers (3) are correctly seated in their mounts. Unclip selector lever cover (2) from catches (1) all round and remove from trim for shift lever (4). See **Fig. 29** .

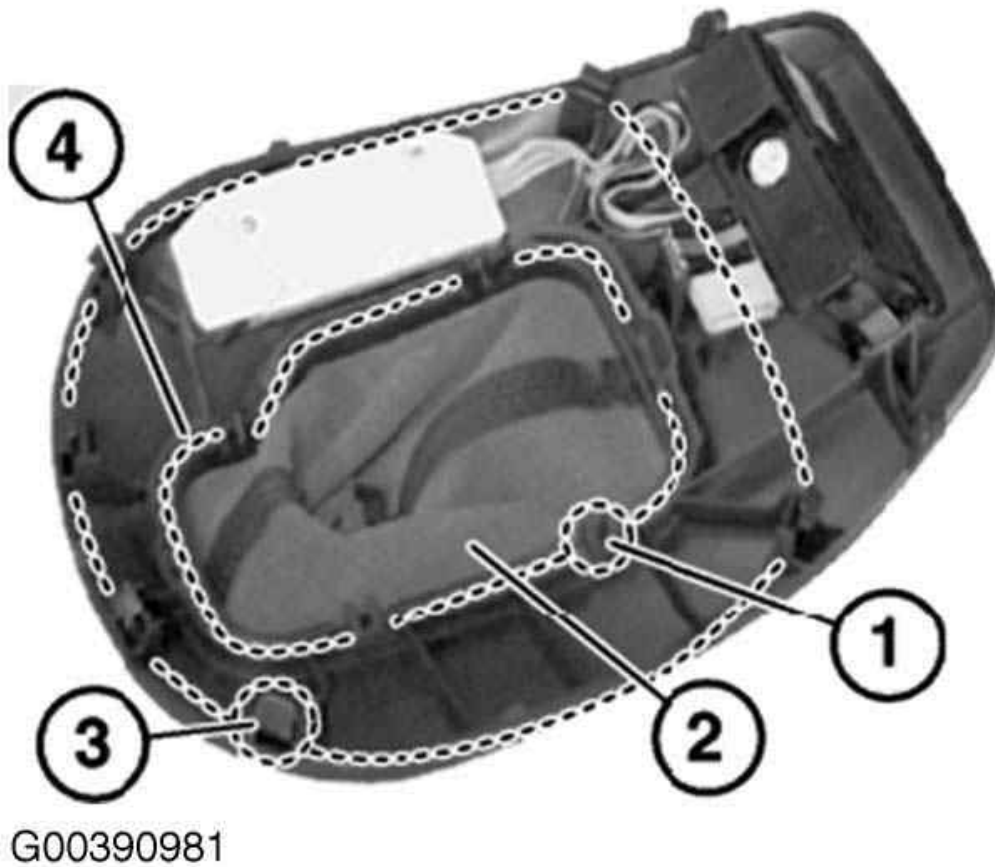


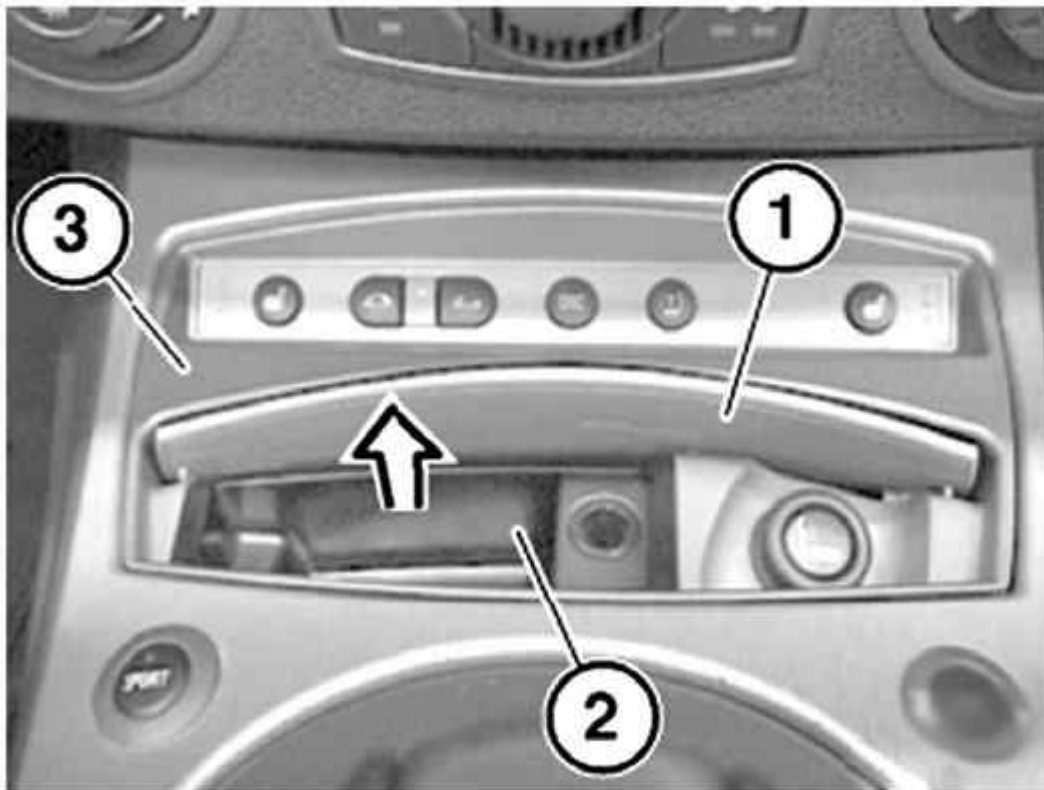
Fig. 29: Installing Gearshift Lever Trim
Courtesy of BMW OF NORTH AMERICA, INC.

CENTER CONSOLE SWITCH UNIT

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

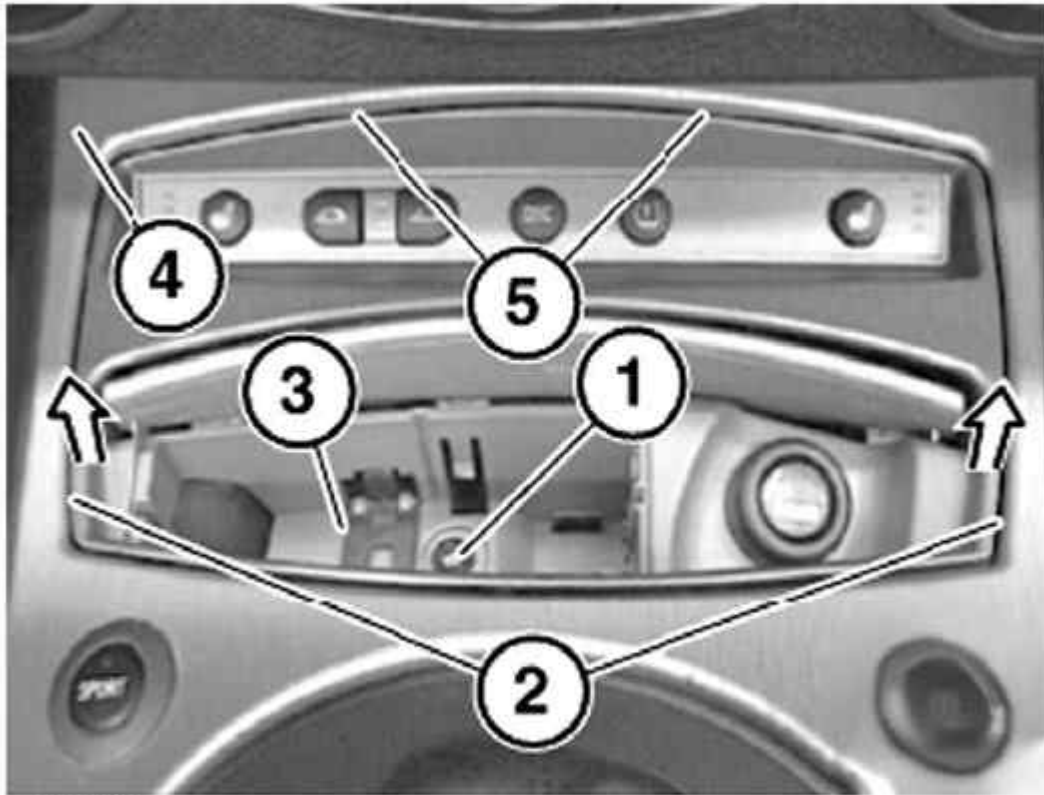
Open cover (1). Remove ashtray insert (2) in direction of arrow from center console function carrier (3). See Fig. 30 .



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Fig. 30: Removing Ashtray Insert**Courtesy of BMW OF NORTH AMERICA, INC.**

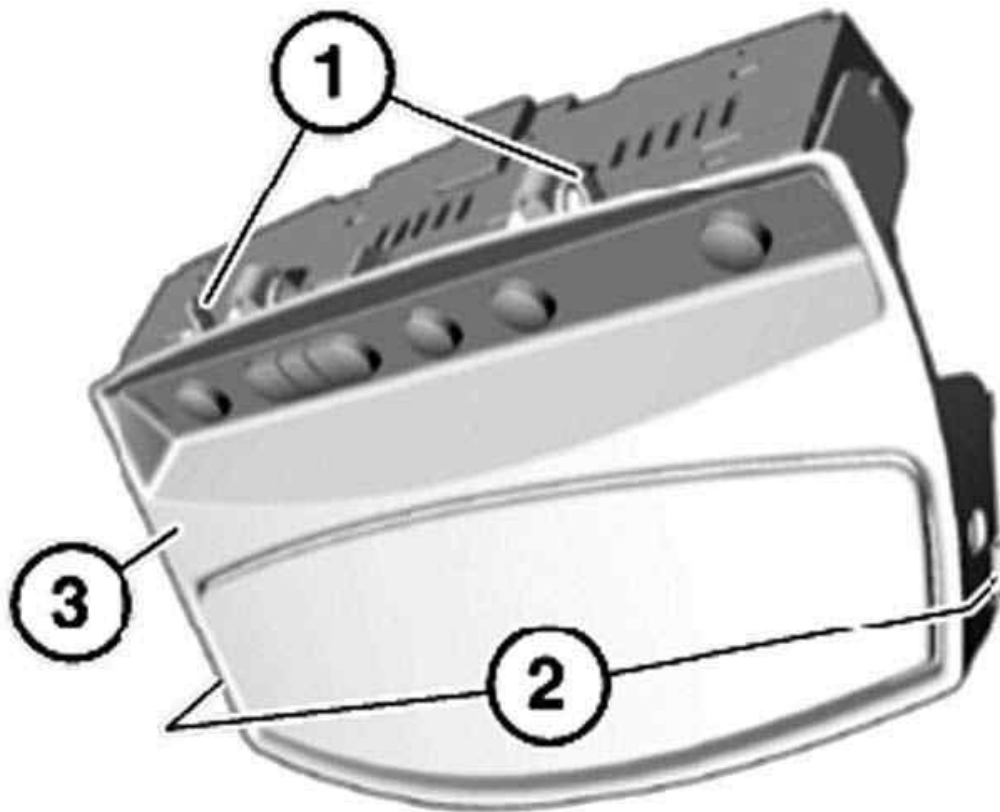
Unscrew bolt (1). Unclip side guides (2) and raise center console function carrier (3). Feed center console function carrier (3) out of front guides (5) and pull back a little. Unlock associated plug connections, disconnect and remove center console function carrier (3) from center console (4). See **Fig. 31** .



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Fig. 31: Removing Function Carrier**Courtesy of BMW OF NORTH AMERICA, INC.**

During installation, make sure front guides (1) of center console function carrier (3) are correctly seated. Make sure side guides (2) of center console function carrier (3) snap into place correctly. See **Fig. 32** .



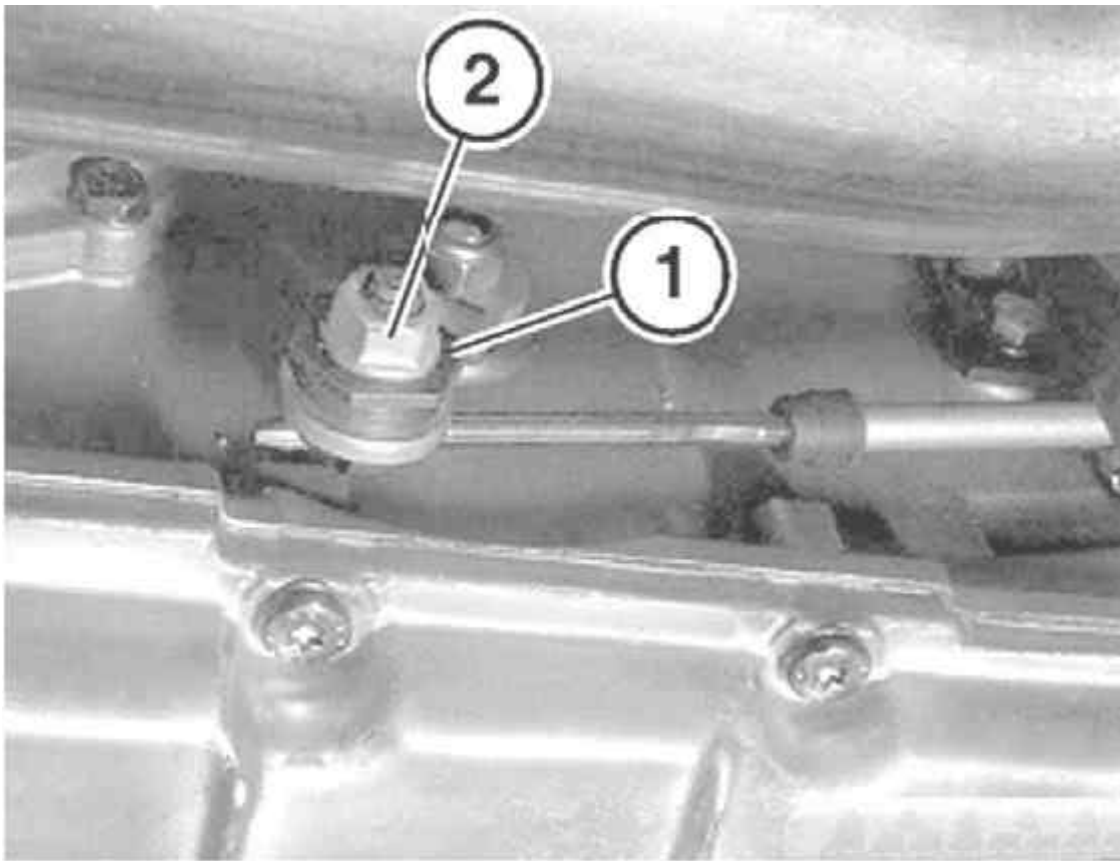
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Fig. 32: Installing Function Carrier

Courtesy of BMW OF NORTH AMERICA, INC.

SHIFT TOWER (STEPTRONIC)**NOTE:** Numbers in text refer to numbers in figures.**Removal & Installation**

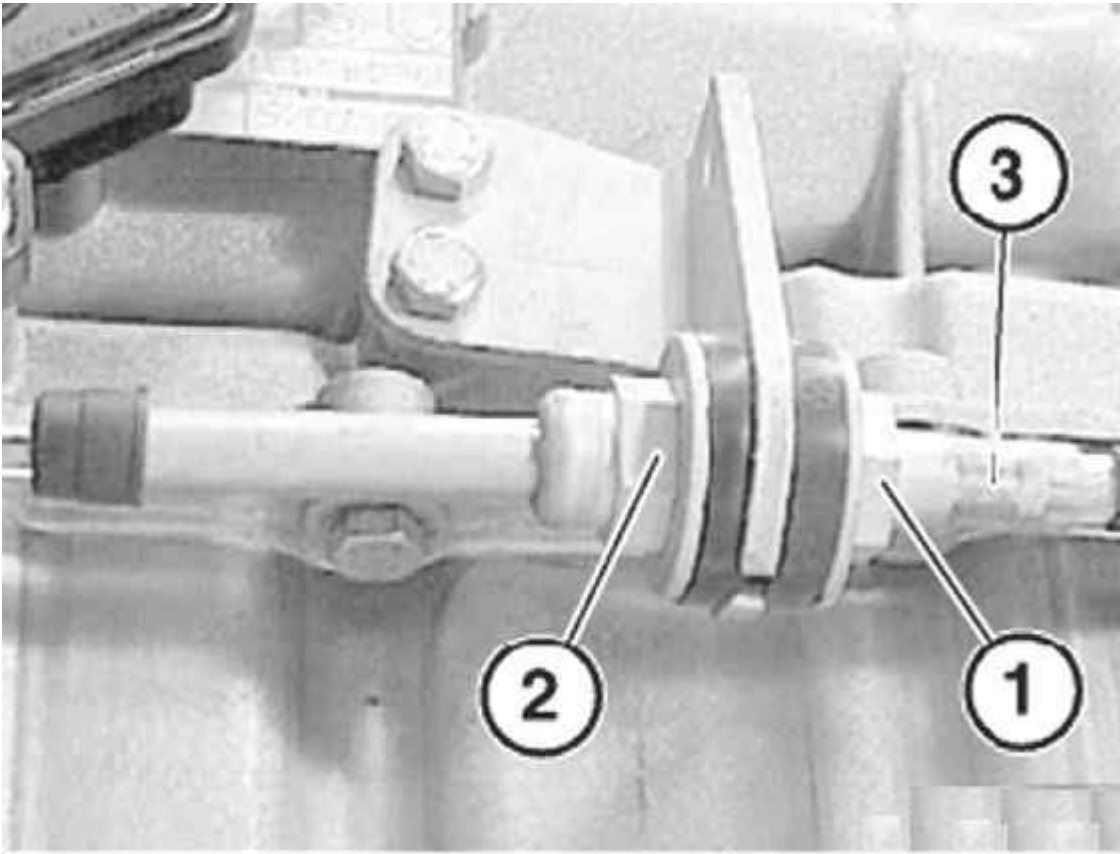
Remove rear underbody protection. Remove center console. See **CENTER CONSOLE**. Move selector lever to park position "P". Grip clamping sleeve (1) and slacken nut (2). See **Fig. 33**. During installation, adjust selector lever. See **SELECTOR LEVER**.



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Fig. 33: Gripping Clamping Sleeve & Slackening Nut
Courtesy of BMW OF NORTH AMERICA, INC.

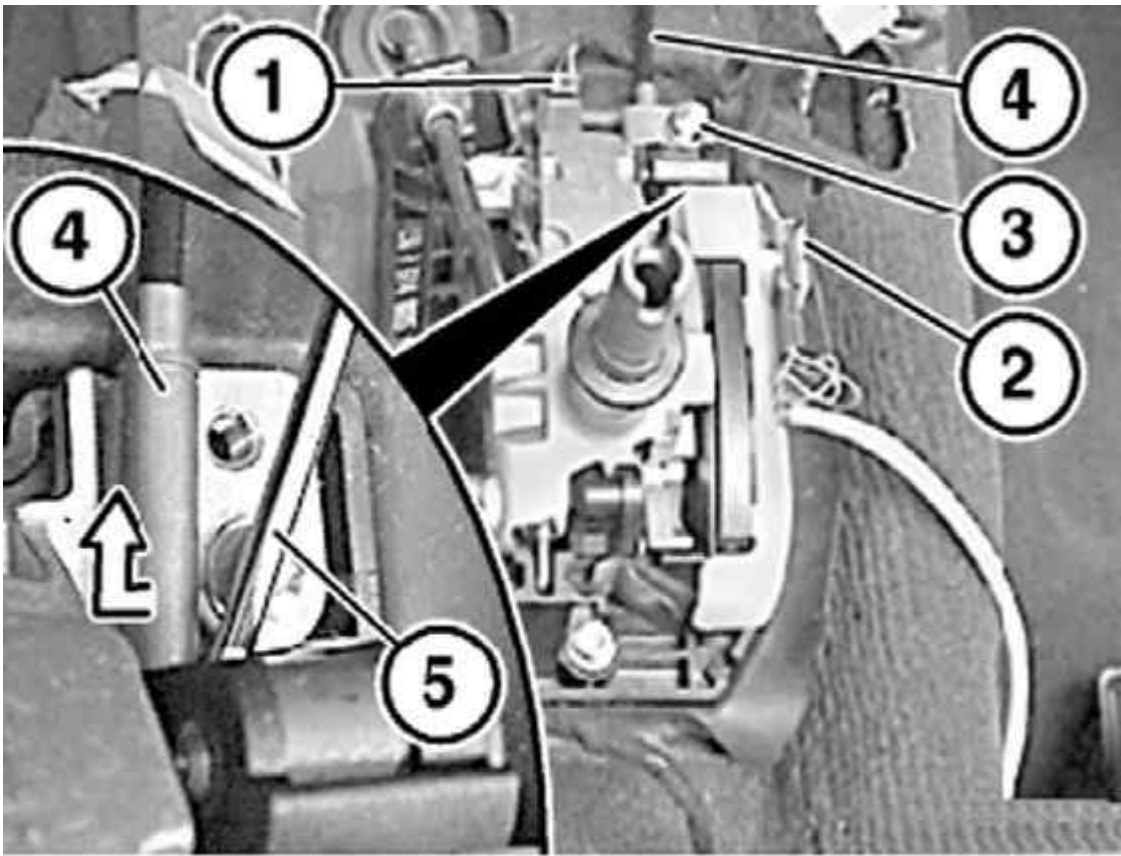
Brace cable on hex head (1) and loosen nut (2). Pull cable (3) out of bracket. See **Fig. 34** .



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Fig. 34: Bracing Cable On Hex Head & Loosening Nut
Courtesy of BMW OF NORTH AMERICA, INC.

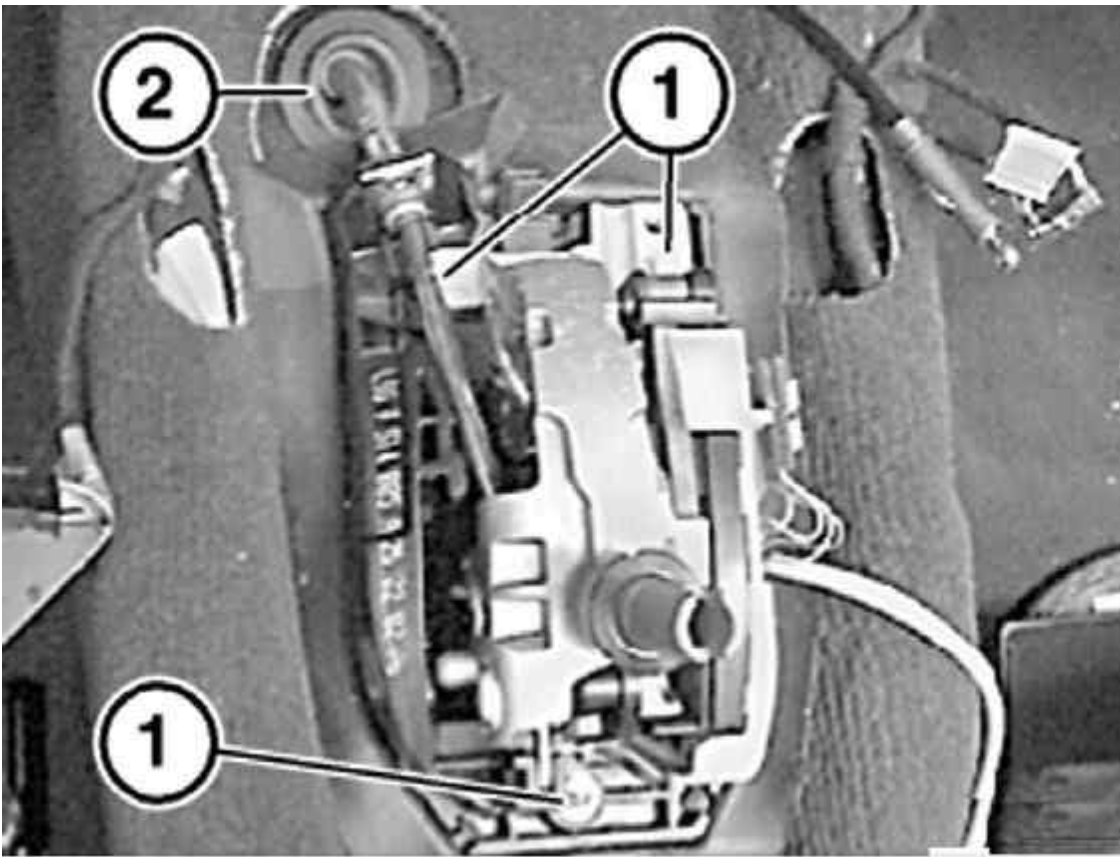
Disconnect plugs (1 and 2). Release screw (3). Slide interlock cable (4) down using a screwdriver (5) from shaft of interlock locking pawl towards left. After installation, adjust interlock function. See **INTERLOCK CABLE** . See **Fig. 35** .



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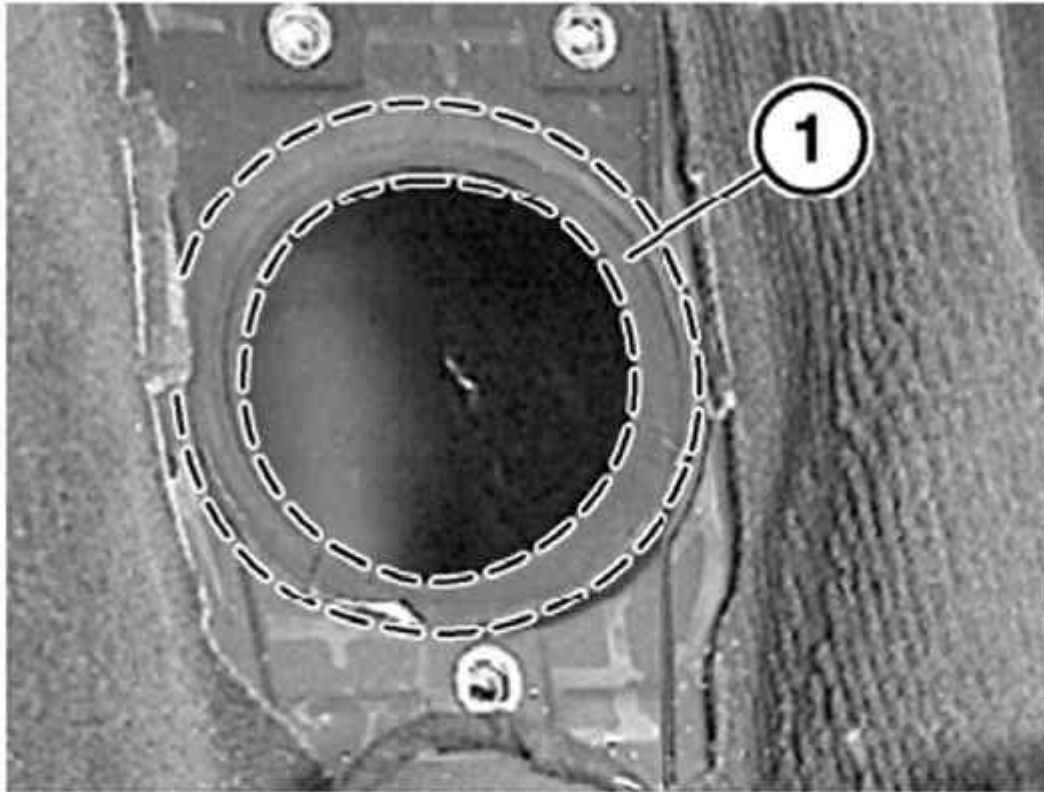
Fig. 35: Sliding Interlock Cable Down
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1). Feed sleeve (2) out of body. See **Fig. 36** . Lift shift tower out of center console. During installation, ensure seal is not damaged. See **Fig. 37** . See **TORQUE SPECIFICATIONS** .



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Fig. 36: Feeding Sleeve Out Of Body
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 37: Checking Seal For Damage
Courtesy of BMW OF NORTH AMERICA, INC.

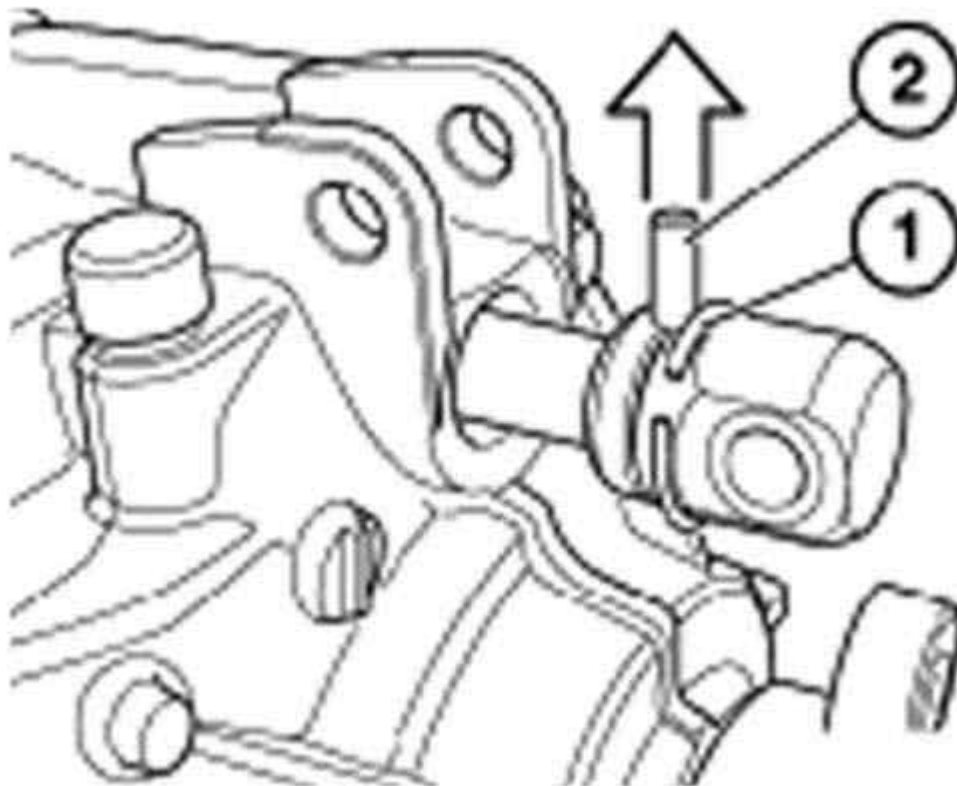
SELECTOR ROD JOINT

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

Remove exhaust system. See EXHAUST SYSTEM. Remove middle and side right heat shields. Remove crossmember. See **CROSSMEMBER**. Unflange propeller shaft from transmission and side. Remove shift rod from transmission.

Lever spring washer (1) out of groove and push a little towards rear. Drive dowel pin (2) upwards/downwards out of shift rod joint. Pull off shift rod joint towards rear. During installation, grease shaft. Replace spring washer (1). See **Fig. 38**.



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Fig. 38: Replacing Spring Washer

Courtesy of BMW OF NORTH AMERICA, INC.

Check rubber ring (1) in shift rod joint (2) and replace if necessary. See **Fig. 39** .



Fig. 39: Checking Rubber Ring In Shift Rod Joint
Courtesy of BMW OF NORTH AMERICA, INC.

SHIFT LEVER GRIP/KNOB

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

Do not twist knob during removal as this would cause the turning lock in the knob to shear off. Tug firmly to remove knob. See **Fig. 40** . During installation, fit knob on selector lever, align and press on until it snaps noticeably into place.



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Fig. 40: Removing Shift Lever Knob

Courtesy of BMW OF NORTH AMERICA, INC.

BEARING BUSHINGS FOR SHIFT ARM

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

Press out bearing bushing (1). Coat new bearing bushing (1) with Circolight lubricant and then press into shift arm until side edges of bushing protrude uniformly. See **Fig. 16** .

CROSSMEMBER

NOTE: Numbers in text refer to numbers in figures.

Removal & Installation

Release metal nuts. Remove heat shield (1). See **Fig. 41** . Support transmission with hydraulic lifter.

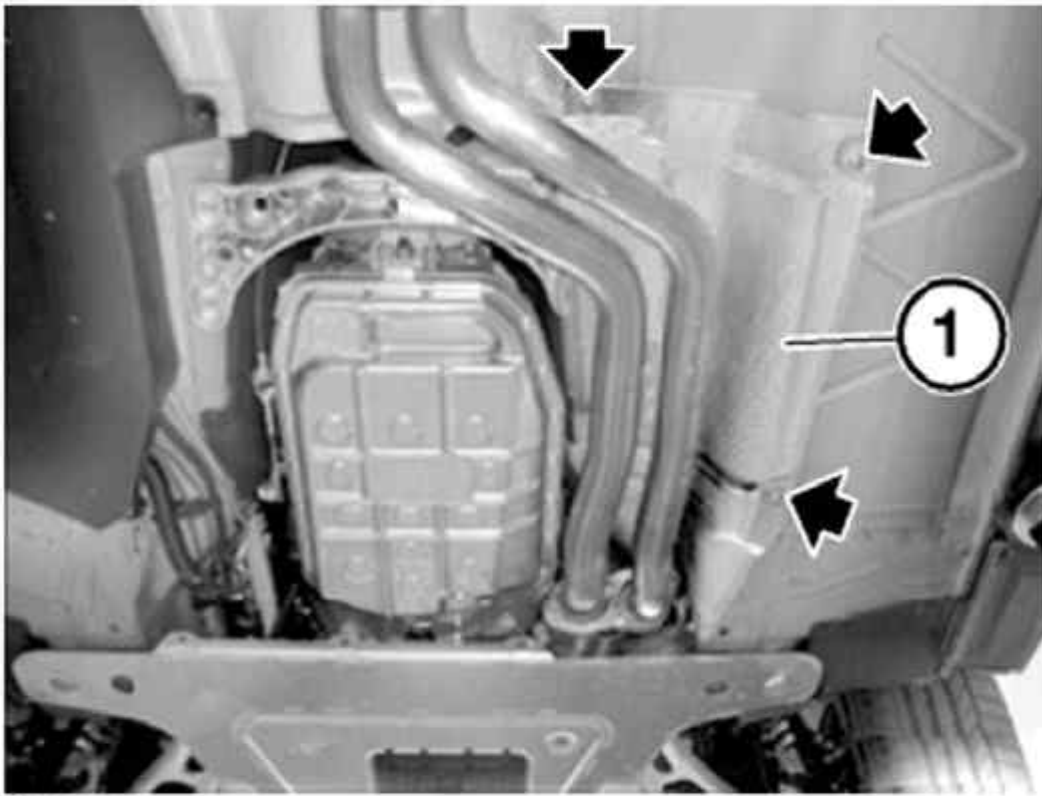
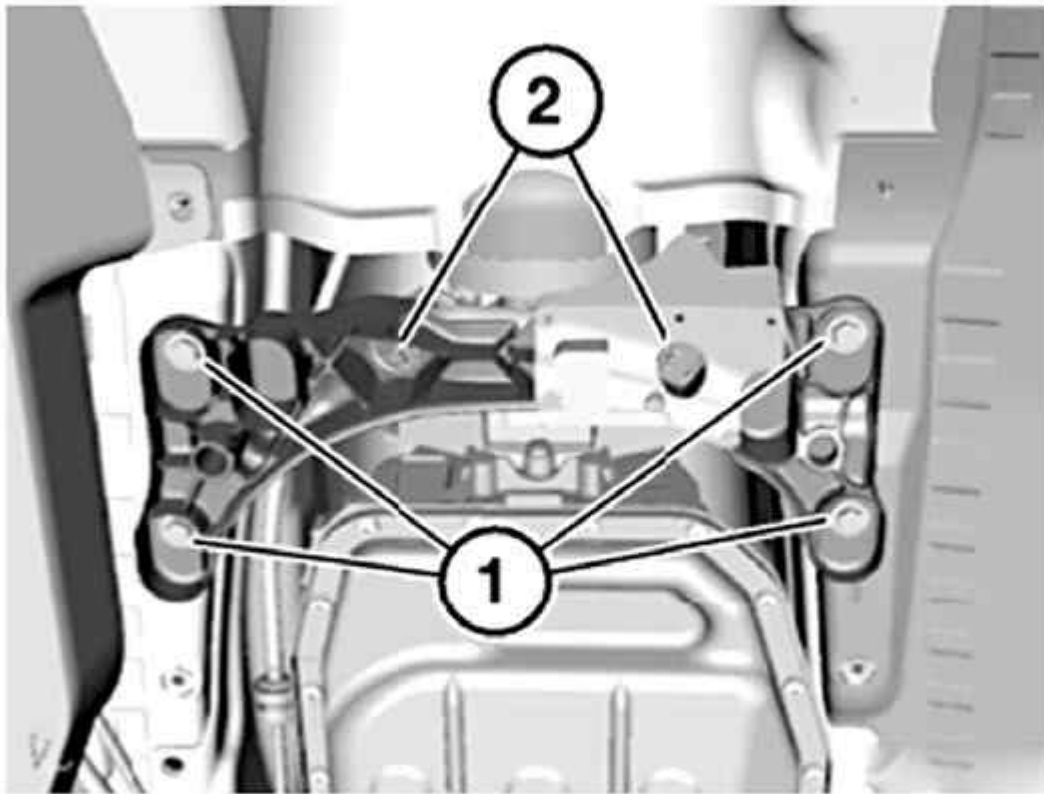


Fig. 41: Removing Heat Shield

Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten nuts (2). Release screws (1) and remove transmission crossmember. See **Fig. 42** . See **TORQUE SPECIFICATIONS** .



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Fig. 42: Removing Crossmember

Courtesy of BMW OF NORTH AMERICA, INC.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Cable On Shift Tower	11 (15)
Crossmember To Body	15 (21)
Transmission Mount To Crossmember	14 (19)
INCH Lbs. (N.m)	
Clamping Screw On Shift Lever	88 (10)
Interlock Cable On Shift Tower	62 (7)
Shift Console To Tunnel	62 (7)