

2005 BMW Z4

2001-05 AUTOMATIC TRANSMISSION Removal & Installation - 325i, 325Ci, 330i, 330Ci, Z4 (A5S 325Z)

2001-05 AUTOMATIC TRANSMISSION

Removal & Installation - 325i, 325Ci, 330i, 330Ci, Z4 (A5S 325Z)

IDENTIFICATION

NOTE: For further information, see AUTOMATIC TRANSMISSION article.

VEHICLE IDENTIFICATION

Model (Chassis Code)	Engine Size (Code)
2001-2005	
325i, 325Ci (E46)	2.5 L (M54)
330i, 330Ci (E46)	3.0 L (M54)
2003-05	
Z4 (E85)	2.5 L (M54)
Z4 (E85)	3.0 L (M54)

REMOVAL & INSTALLATION

CAUTION: Disconnecting vehicle battery will cancel fault codes of control units. On vehicles with radio codes, after disconnecting battery, radio codes must be re-entered. Obtain radio code card from customer. Note stored stations and restore then after connecting battery. Also, where applicable, initialize sunroof and set steering angle.

CAUTION: Use only the approved transmission fluid in this automatic transmission. Failure to comply with this requirement will result in serious damage to the automatic transmission.

NOTE: Numbers in text refer to numbers in figures.

REMOVAL

1. Disconnect battery. See INSTRUCTIONS FOR DISCONNECTING AND CONNECTING BATTERY. On vehicles except Z4, remove heater bulkhead. On Z4, release fan cowl and pull upwards approximately 2 cm. On all vehicles, remove reinforcement plate and underbody protection.
2. Remove complete exhaust system. See REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (M54) article.
3. Remove heat shield (1). See **Fig. 1**.
4. Remove heat shield (1). See **Fig. 2**.
5. On Z4, remove screws and remove exhaust bracket (1). See **Fig. 3**.
6. Grip clamping sleeve (1) of selector lever. See **Fig. 4**. Loosen nut (2).

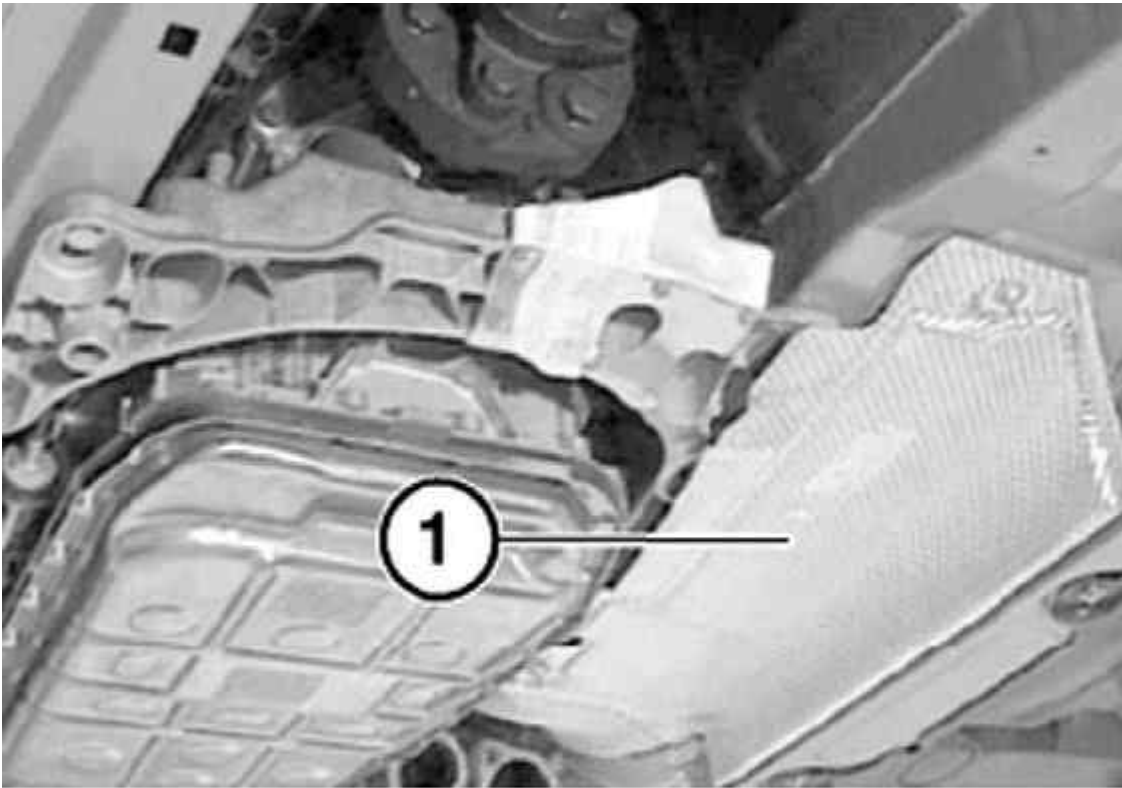
2005 BMW Z4

2001-05 AUTOMATIC TRANSMISSION Removal & Installation - 325i, 325Ci, 330i, 330Ci, Z4 (A5S 325Z)

7. Grip Bowden cable (1) at hexagon head (2). Unscrew nut (3). Pull cable (1) out of holder. See **Fig. 5**.
8. Support transmission with Special Tools (00 2 030 / 24 5 301 / 24 5 304). See **Fig. 6**.
9. Remove screws. Remove cross-member (1). See **Fig. 7**.
10. Remove screws of flexible disk-to-propeller shaft and transmission output flange. See **Fig. 8**.
11. Grip propeller shaft. Remove nuts. Bend propeller shaft downwards at center bearing (1). See **Fig. 9**. Detach propeller shaft from transmission output flange and tie back to side on vehicle underbody.
12. Lower transmission. On all vehicles except Z4, lower until cylinder head touches end wall. Suspend Special Tool (11 8 022) from left and right control arms. Position special tool so engine sump rests securely on special tool. See **Fig. 10**. Tighten down knurled screws until special tool fits tightly with engine oil sump.
13. Unlock and remove cable plug (1). See **Fig. 11**.
14. Unlock and remove cable plug (1). See **Fig. 12**. Unclip cable from transmission housing.
15. Remove screw. Remove hydraulic lines to oil cooler from mounting. See **Fig. 13**.
16. Remove screw. Remove hydraulic lines (1, 2) from transmission housing. See **Fig. 14**.
17. Lift out cover behind exhaust manifold. See **Fig. 15**.
18. Unfasten retaining screws of torque converter with Special Tool (24 1 110). See **Fig. 16**. Rotate engine until screw appears in window. Remove screw with special tool. Continue rotating engine until further screws appear in window and remove each in turn.
19. Protect torque converter from slipping out. On vehicles with M54, 2.5L engines, insert Special Tool (24 4 131 / 24 4 135) in opening of transmission housing. See **Fig. 17**. For all other vehicles, insert Special Tool (24 4 131 / 24 4 134) in opening of transmission housing. See **Fig. 18**. Clamp torque converter by turning knurled screw.
20. Release screws. See **Fig. 19**. Pull off transmission from engine towards rear and lower it.
21. For subsequent work on transmission, support transmission with Special Tool (24 0 180) on Assembly Stand (00 1 450). See **Fig. 20**.

2005 BMW Z4

2001-05 AUTOMATIC TRANSMISSION Removal & Installation - 325i, 325Ci, 330i, 330Ci, Z4 (A5S 325Z)

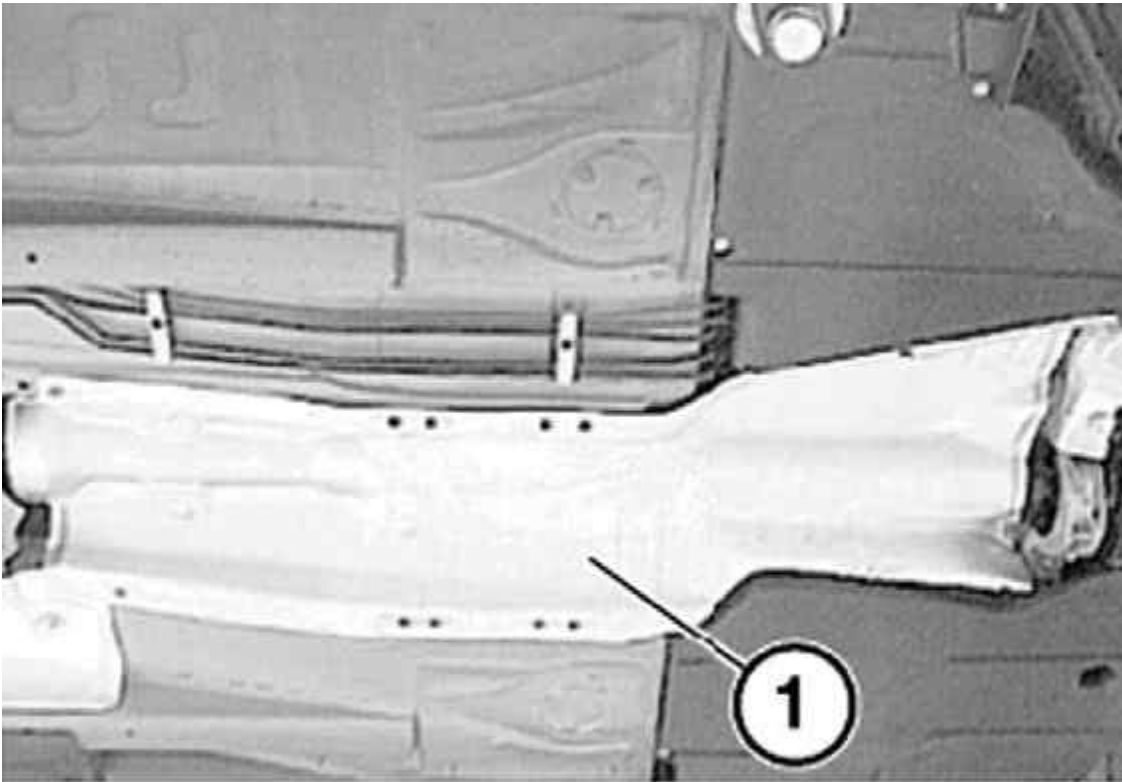


G00367852

Fig. 1: Removing Second Heat Shield
Courtesy of BMW OF NORTH AMERICA, INC.

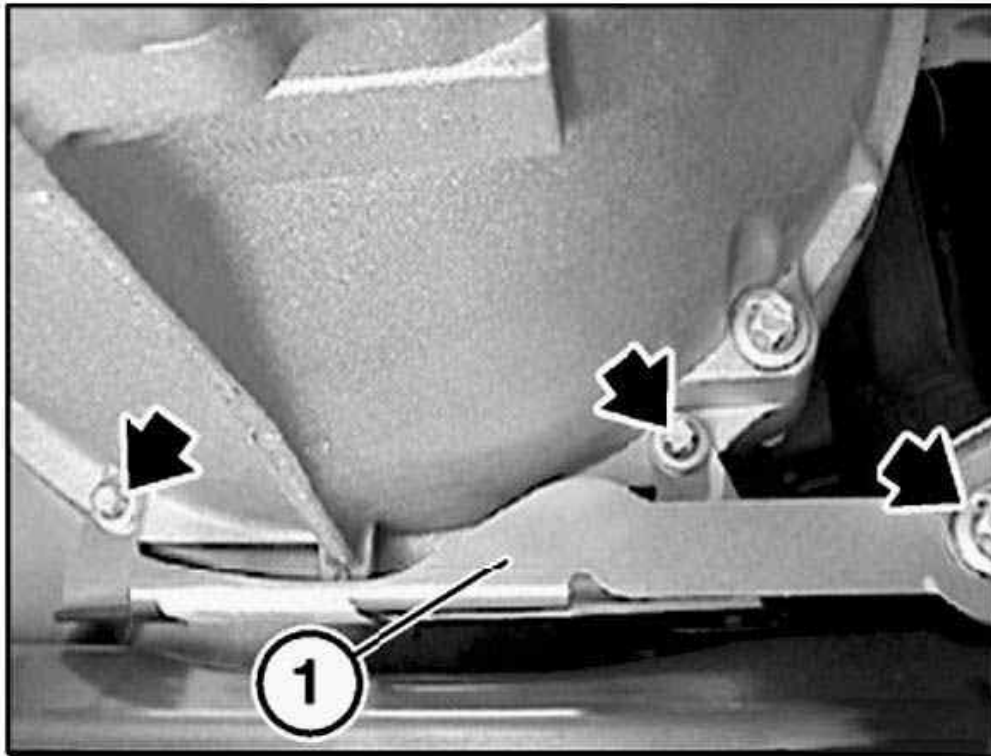
2005 BMW Z4

2001-05 AUTOMATIC TRANSMISSION Removal & Installation - 325i, 325Ci, 330i, 330Ci, Z4 (A5S 325Z)



G00367851

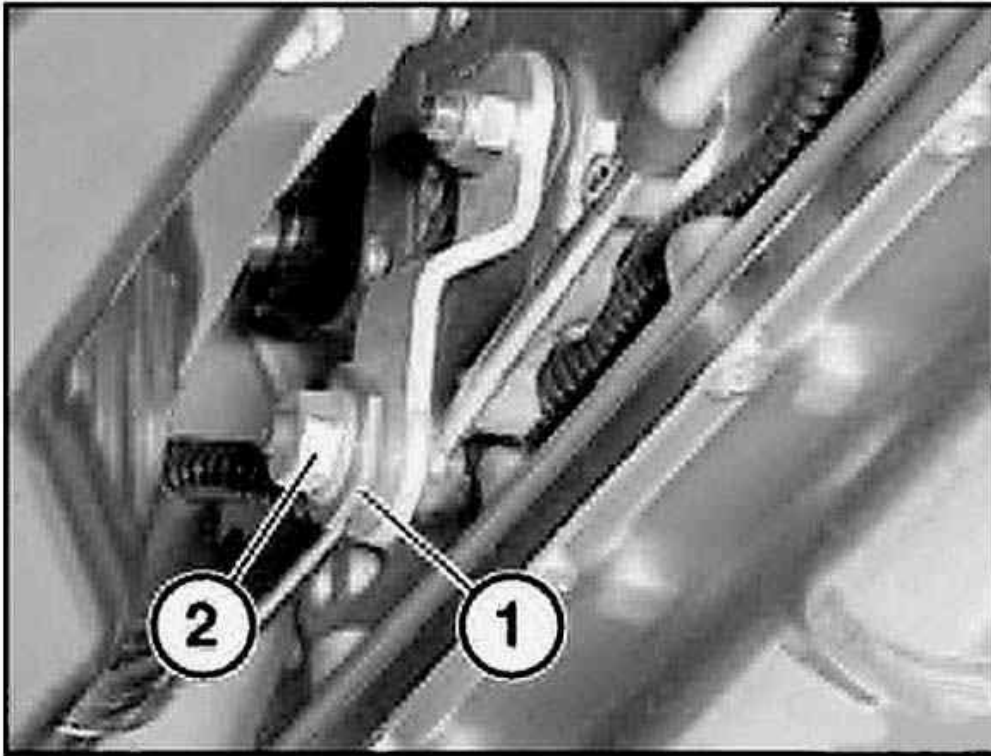
Fig. 2: Removing First Heat Shield
Courtesy of BMW OF NORTH AMERICA, INC.



G00374712

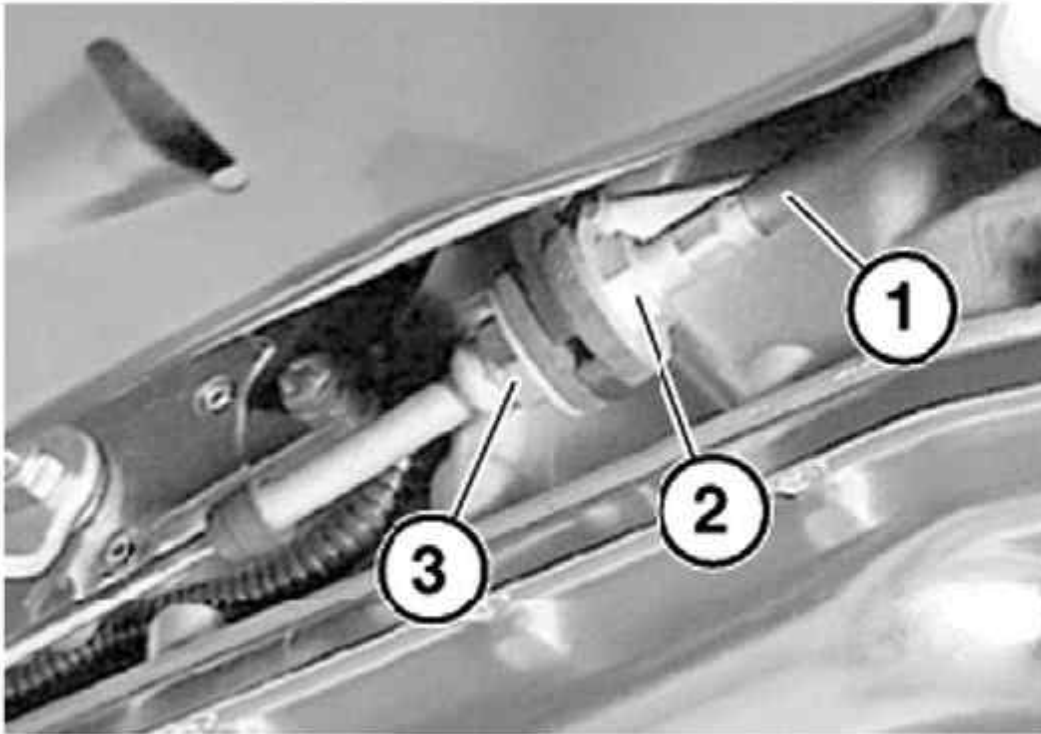
Fig. 3: Removing Exhaust Bracket

Courtesy of BMW OF NORTH AMERICA, INC.



G00367900

Fig. 4: Locating Selector Lever Nut
Courtesy of BMW OF NORTH AMERICA, INC.

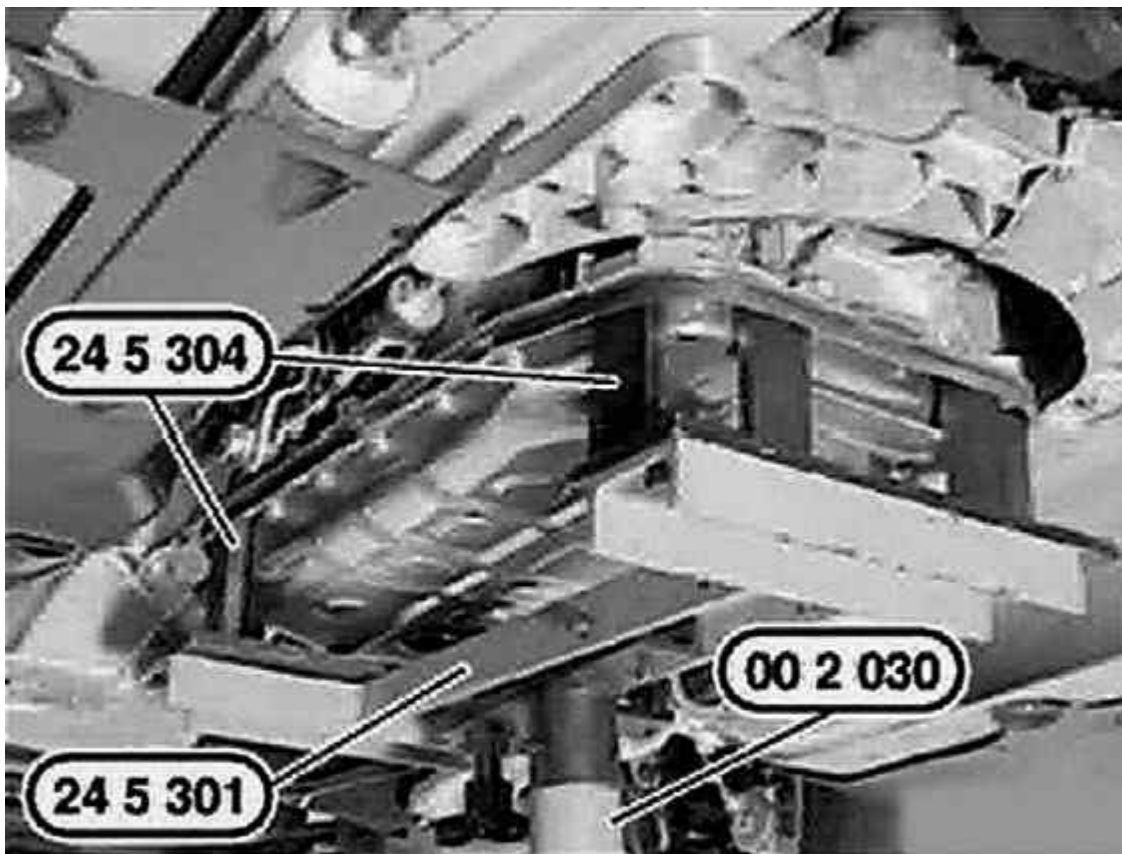


G00367854

Fig. 5: Pulling Bowden Cable Out
Courtesy of BMW OF NORTH AMERICA, INC.

2005 BMW Z4

2001-05 AUTOMATIC TRANSMISSION Removal & Installation - 325i, 325Ci, 330i, 330Ci, Z4 (A5S 325Z)

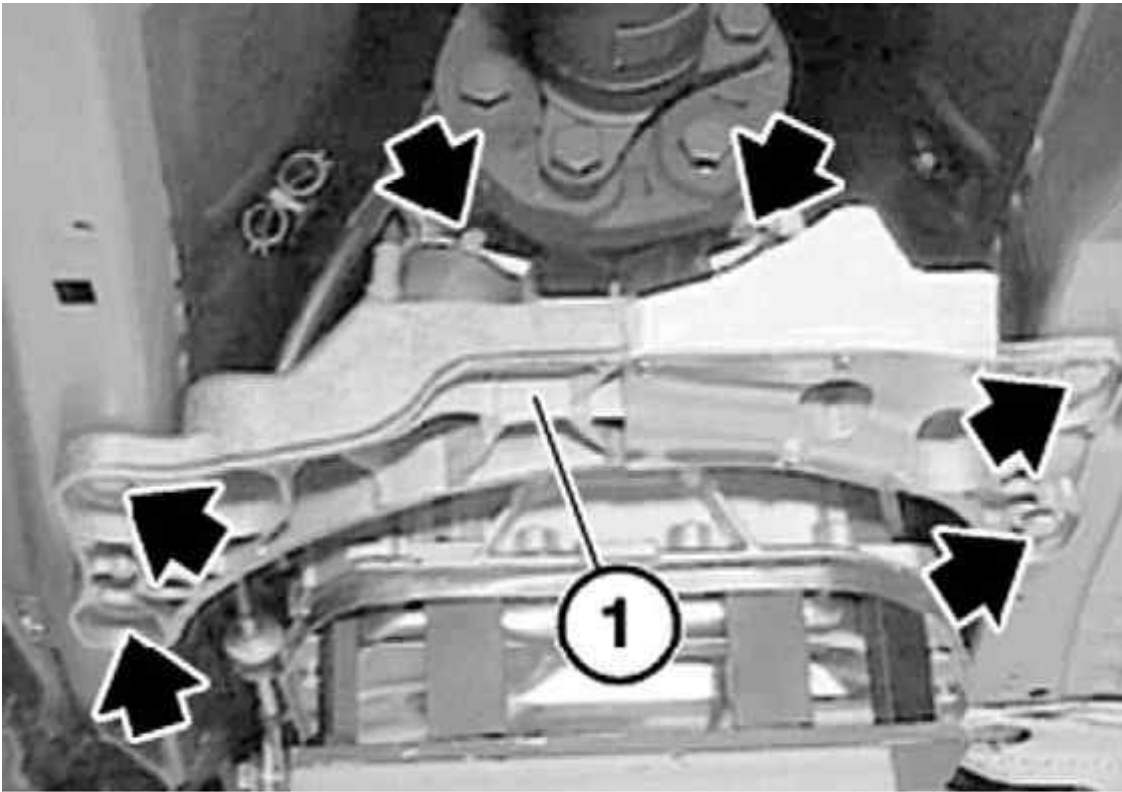


G00367901

Fig. 6: Supporting Transmission With Special Tool
Courtesy of BMW OF NORTH AMERICA, INC.

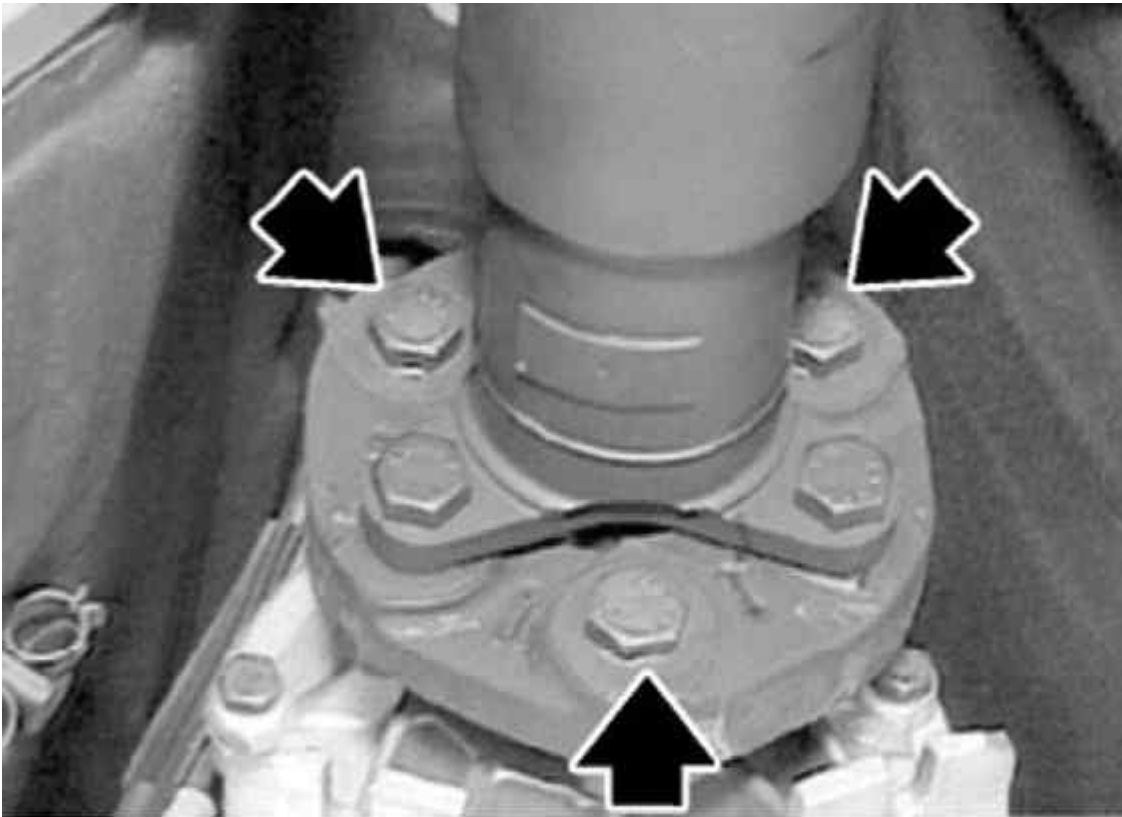
2005 BMW Z4

2001-05 AUTOMATIC TRANSMISSION Removal & Installation - 325i, 325Ci, 330i, 330Ci, Z4 (A5S 325Z)



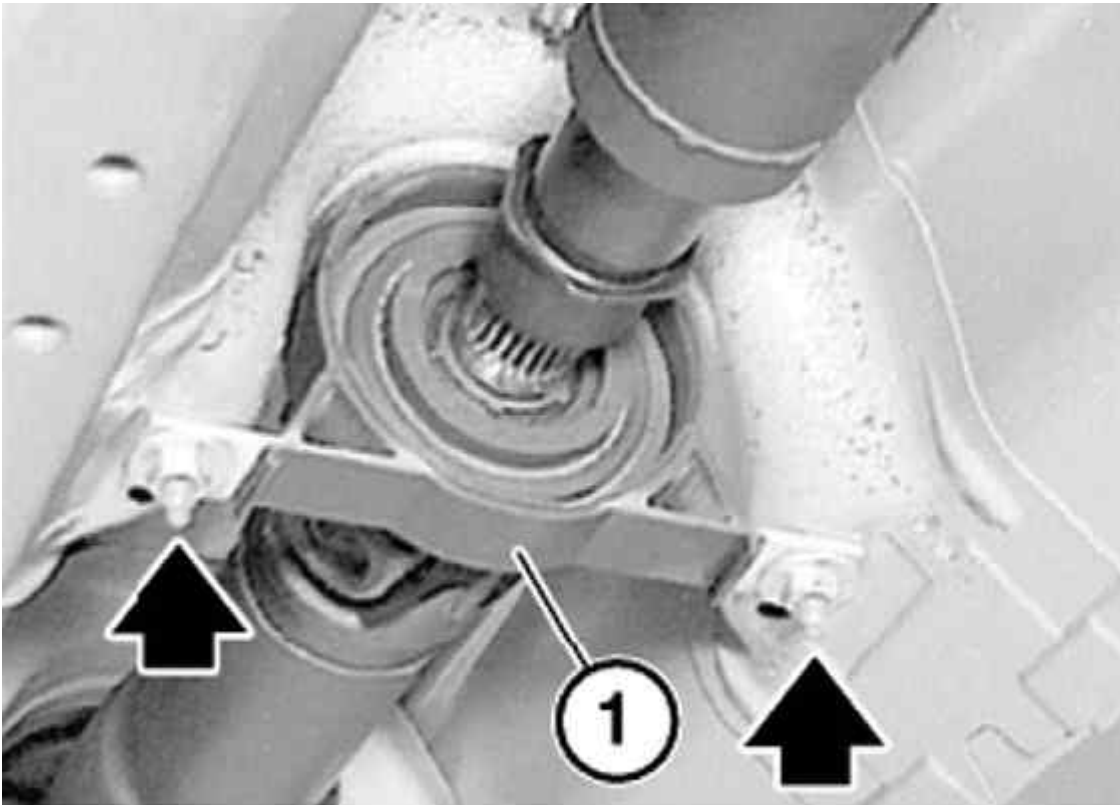
G00367856

Fig. 7: Removing Cross-Member
Courtesy of BMW OF NORTH AMERICA, INC.



G00367857

Fig. 8: Locating Flexible Disk To Propeller Shaft Screws
Courtesy of BMW OF NORTH AMERICA, INC.

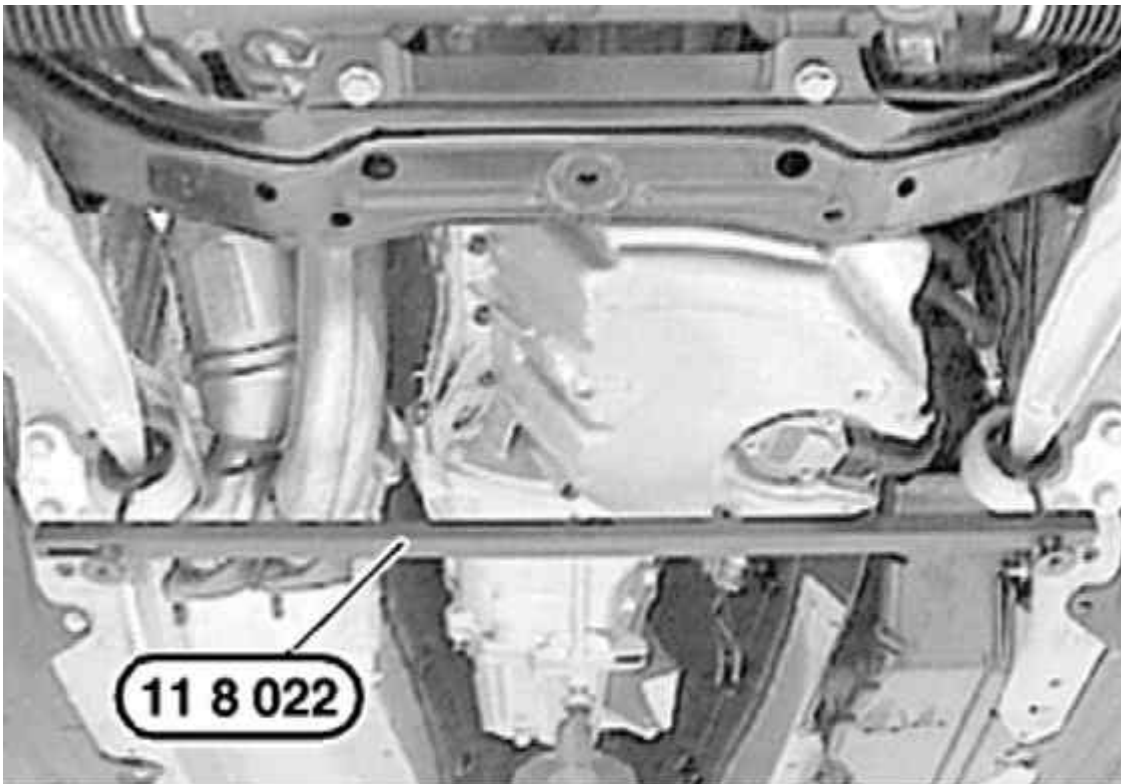


G00367858

Fig. 9: Detaching Propeller Shaft From Transmission Output Flange
Courtesy of BMW OF NORTH AMERICA, INC.

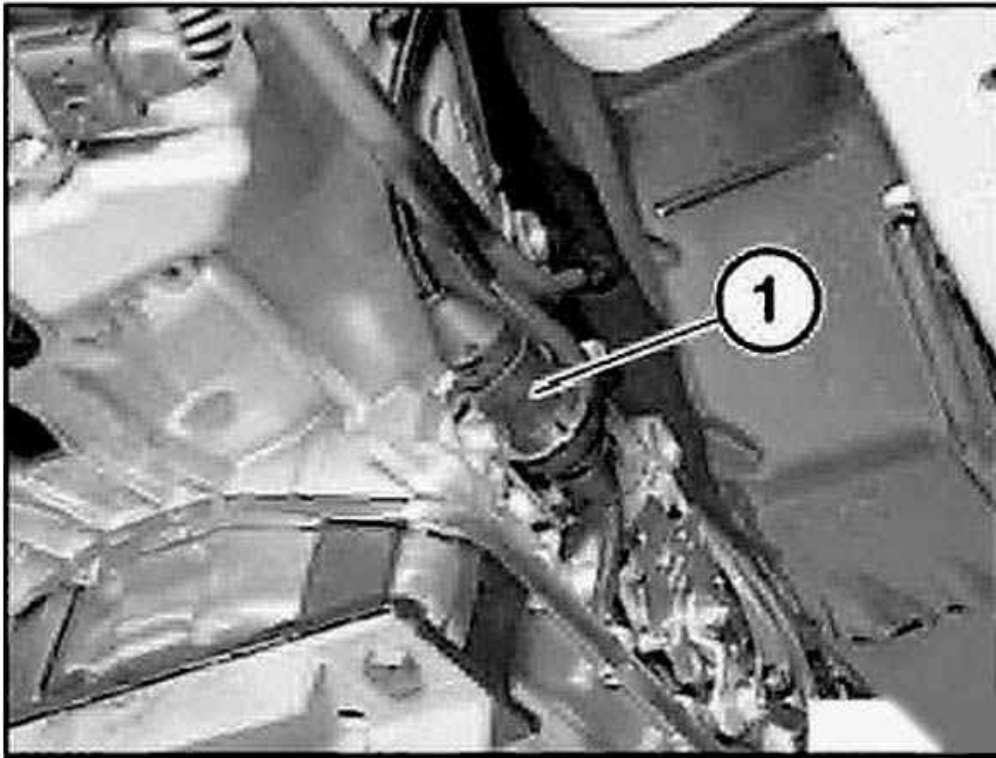
2005 BMW Z4

2001-05 AUTOMATIC TRANSMISSION Removal & Installation - 325i, 325Ci, 330i, 330Ci, Z4 (A5S 325Z)



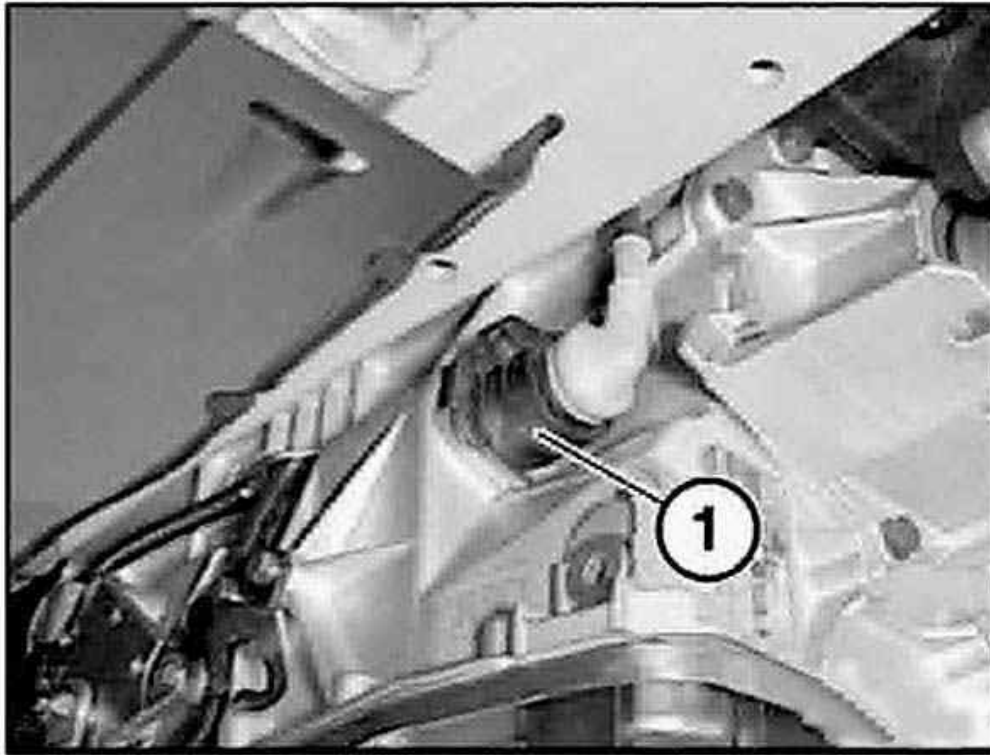
G00367859

Fig. 10: Lowering Transmission
Courtesy of BMW OF NORTH AMERICA, INC.



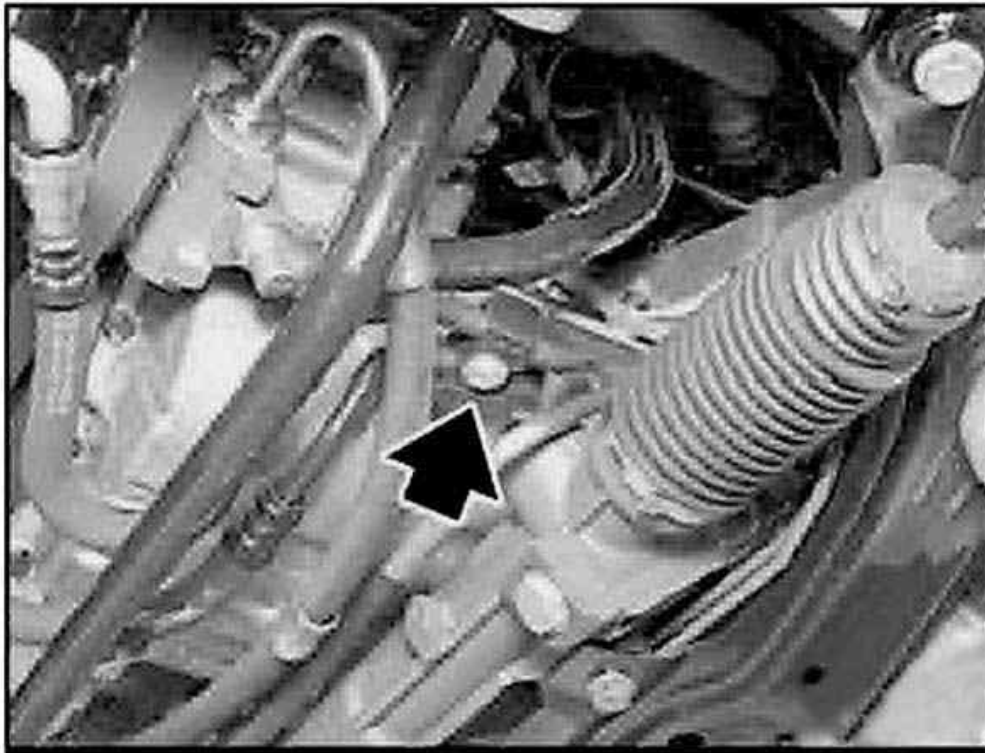
G00367904

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



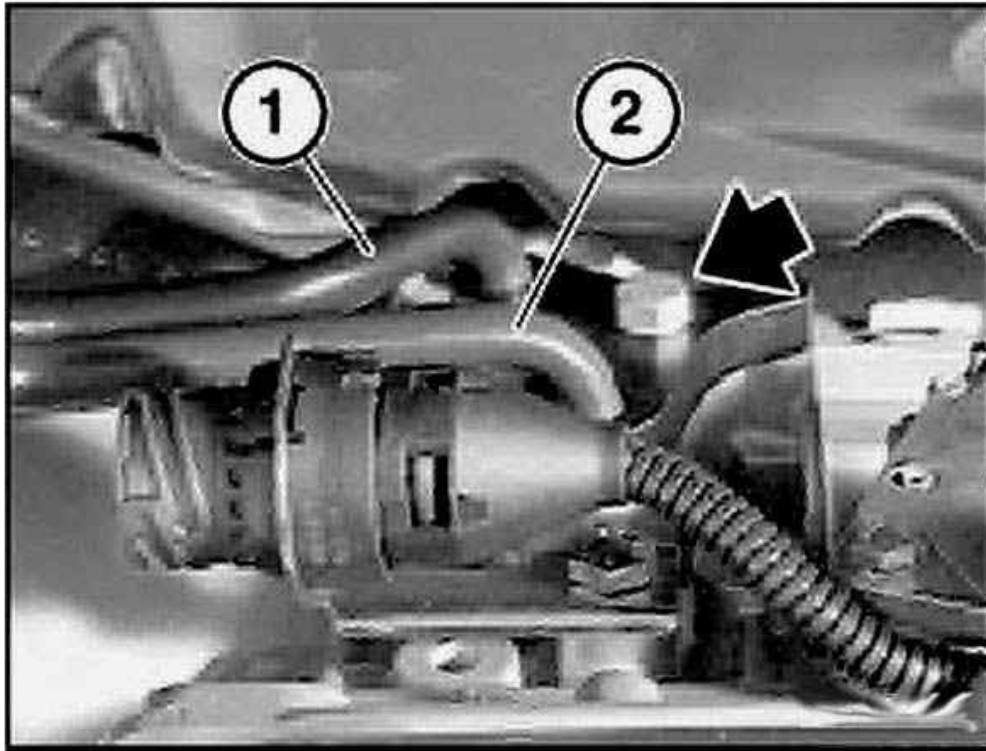
G00367905

Fig. 12: Removing Cable Connector
Courtesy of BMW OF NORTH AMERICA, INC.



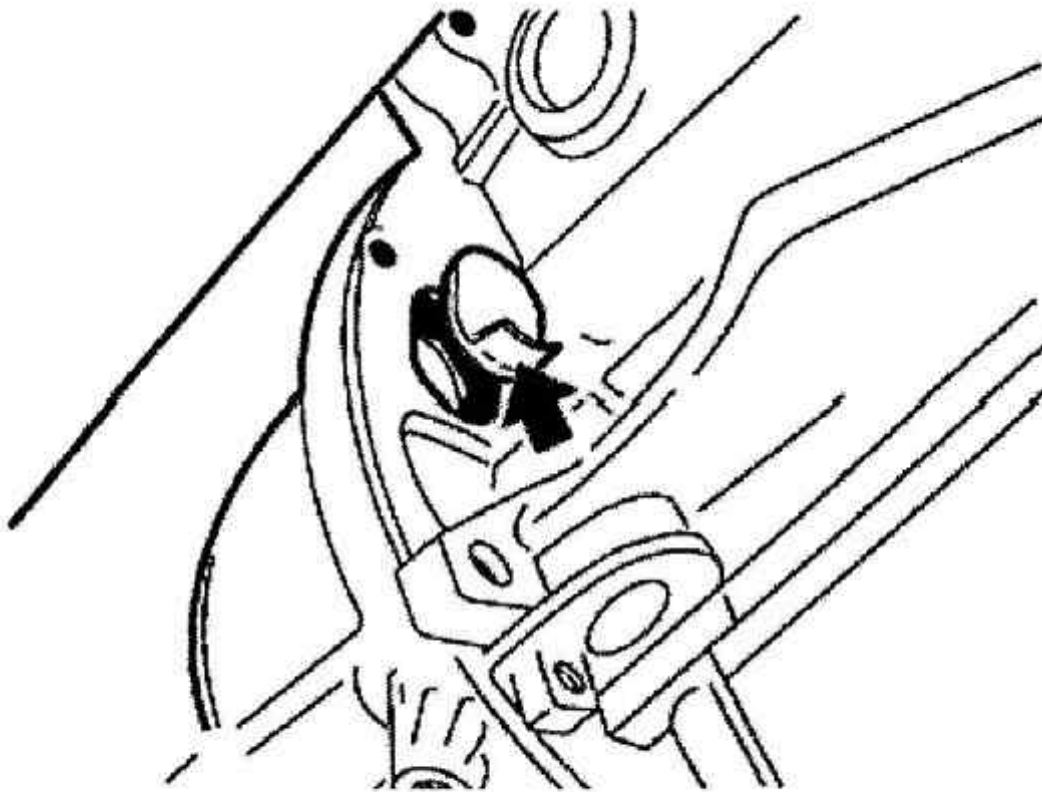
G00367906

Fig. 13: Removing Hydraulic Lines To Oil Cooler
Courtesy of BMW OF NORTH AMERICA, INC.



G00367907

Fig. 14: Removing Hydraulic Lines From Transmission Housing
Courtesy of BMW OF NORTH AMERICA, INC.



G00367862

Fig. 15: Removing Cover

Courtesy of BMW OF NORTH AMERICA, INC.

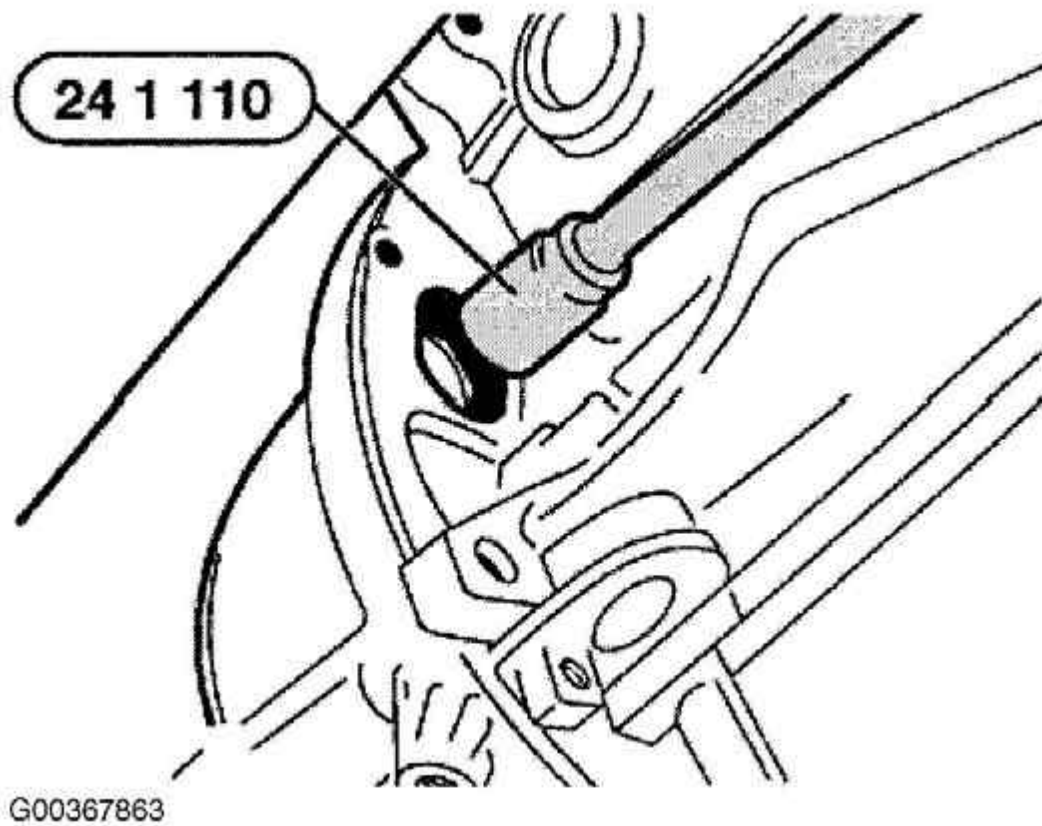
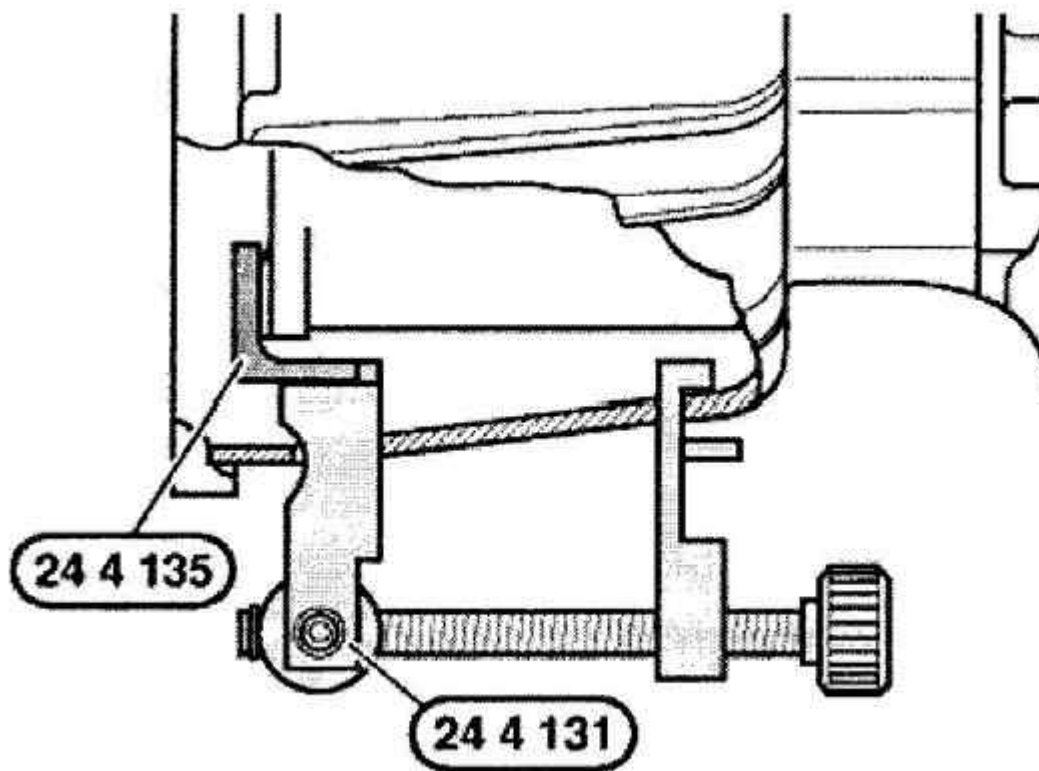


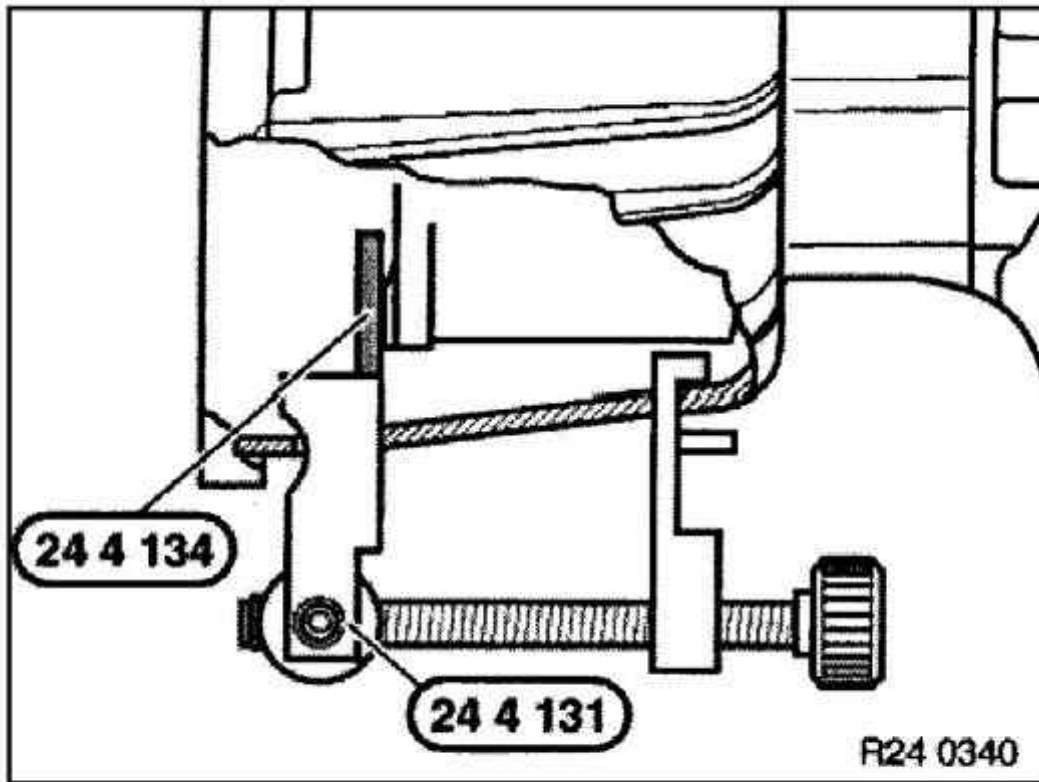
Fig. 16: Releasing Retaining Screws

Courtesy of BMW OF NORTH AMERICA, INC.



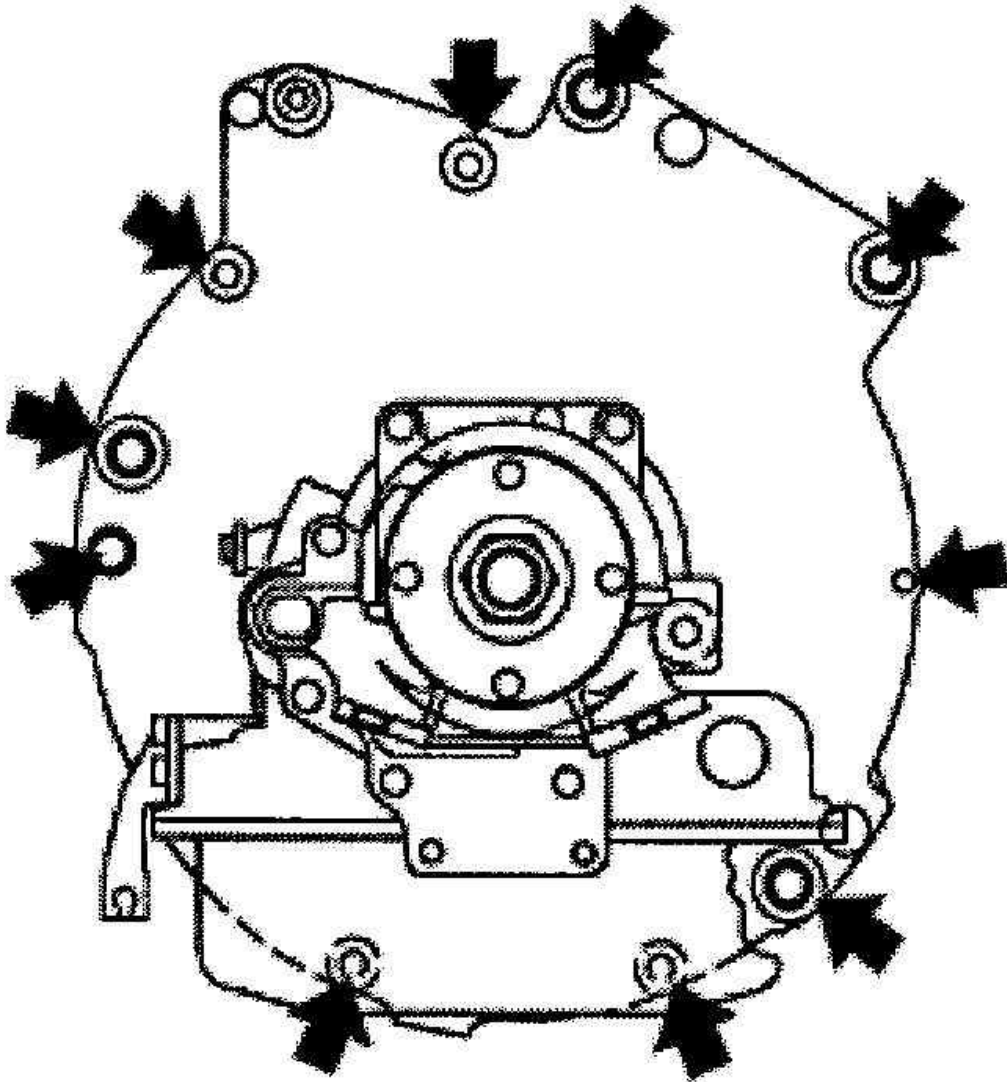
G00367864

Fig. 17: Protecting Torque Converter From Slipping Out
Courtesy of BMW OF NORTH AMERICA, INC.



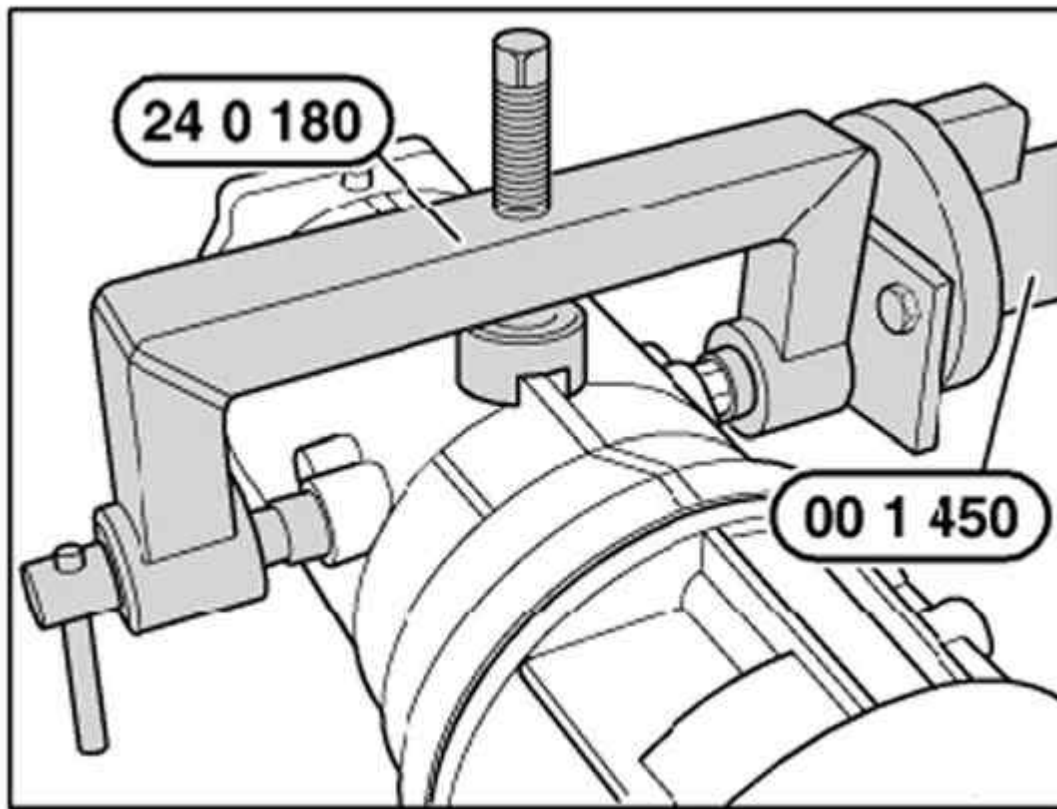
G00367908

Fig. 18: Clamping Torque Converter In Place
Courtesy of BMW OF NORTH AMERICA, INC.



G00056372

Fig. 19: Removing/Installing Transmission-To-Engine Screws
Courtesy of BMW OF NORTH AMERICA, INC.



G00374713

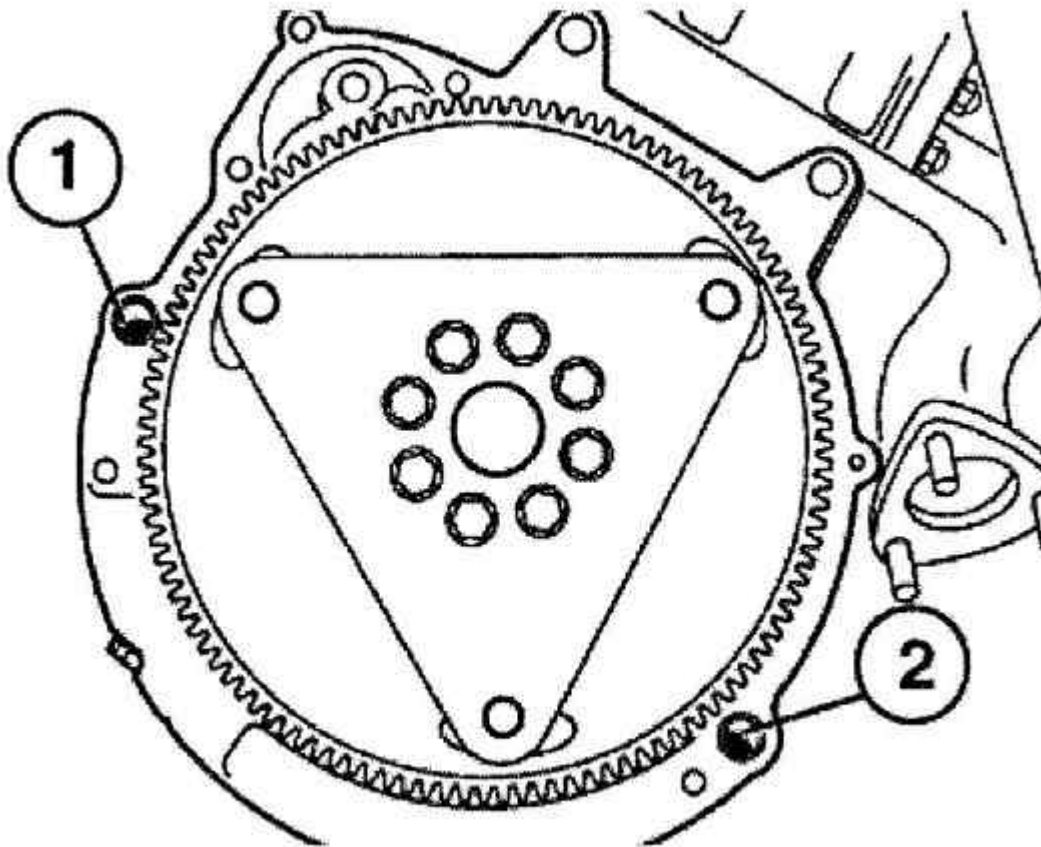
Fig. 20: Supporting Transmission With Special Tool
Courtesy of BMW OF NORTH AMERICA, INC.

INSTALLATION

CAUTION: When joining up engine and transmission, ensure ease of movement of torque converter.

1. Pay attention to adapter sleeves (1 and 2). See **Fig. 21** . Remove damaged adapter sleeves from transmission housing and replace.
2. Sheet metal flywheel is provided with three recesses for the torque converter retaining lugs. When joining together engine and transmission, the three retaining lugs on the torque converter must be flush with the three recesses on the sheet metal flywheel. See **Fig. 22** . Failure to comply with this requirement will result in damage to the automatic transmission. Turning on the torque converter or engine is no longer possible after guiding engine and transmission together and would cause damage.
3. Bore on driver must point to center of aperture in cover plate. See **Fig. 23** .
4. Tighten transmission-to-engine screws to specification. See **Fig. 19** . See **TORQUE SPECIFICATIONS** .

5. Use only original bolts. Tighten torque converter-to-flywheel screws to specification. See **Fig. 16** . See **TORQUE SPECIFICATIONS** .
6. To complete installation, reverse removal procedure. Replace sealing rings on lines. See **Fig. 24** .
7. On all vehicles except compacts and Z4, Remove any butylene tape already fitted on center bearing. Clean adhesive area on center bearing and on body. Coat adhesive area on body with mineral oil to enable sticky butylene tape to feed easily into propeller shaft tunnel. This prevents any deformation of butylene tape. Pull masking tape off butylene tape on both sides. Attach butylene tape (1) to outside of center bearing (2). See **Fig. 25** .
8. On all vehicles except compacts and Z4, press center bearing (2) into transmission tunnel. See **Fig. 26** .
9. Tighten nuts of center mount-to-body to specification. See **Fig. 9** . See **TORQUE SPECIFICATIONS** .
10. Replace self-locking nuts of flexible disk-to-propeller shaft and transmission output flange and tighten to specification. See **Fig. 8** . See **TORQUE SPECIFICATIONS** .
11. Tighten screws of cross member-to-body and rubber mounts-to-cross member or transmission to specification. See **Fig. 7** . See **TORQUE SPECIFICATIONS** .
12. Tighten cable on shift tower/transmission to specification. See **Fig. 5** . See **TORQUE SPECIFICATIONS** .
13. Check cable for ease of movement. Move selector lever to Park. Grip clamp bushing (1). See **Fig. 27** . Loosen nut (2). Press selector lever (3) forwards into park position. Press cable (4) in direction of arrow and release again. Grip clamping piece (1). Tighten nut (2) to specification. See **TORQUE SPECIFICATIONS** . Move selector lever to park position. Check whether parking gear is engaged by rotating Cardin shaft or by pushing car.
14. After completion of work, check transmission fluid level. Connect battery.



G00056375

Fig. 21: Locating Adapter Sleeves
Courtesy of BMW OF NORTH AMERICA, INC.

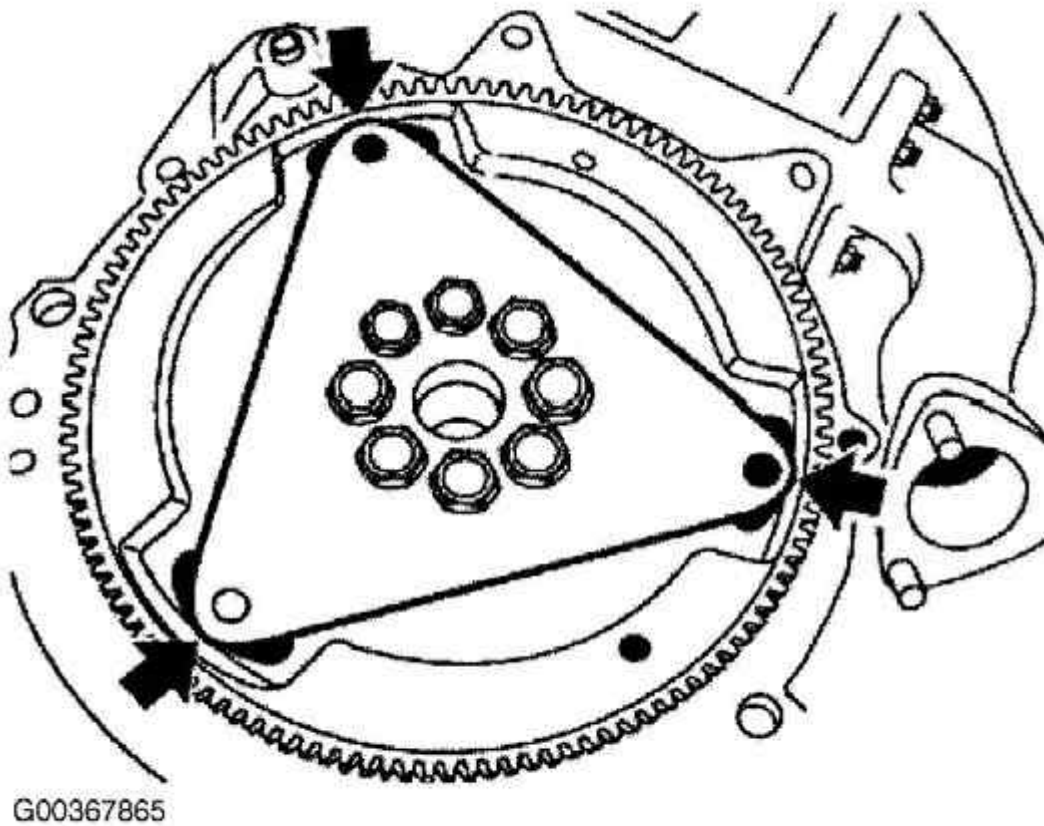


Fig. 22: Aligning Recesses In Sheet Metal Flywheel
Courtesy of BMW OF NORTH AMERICA, INC.

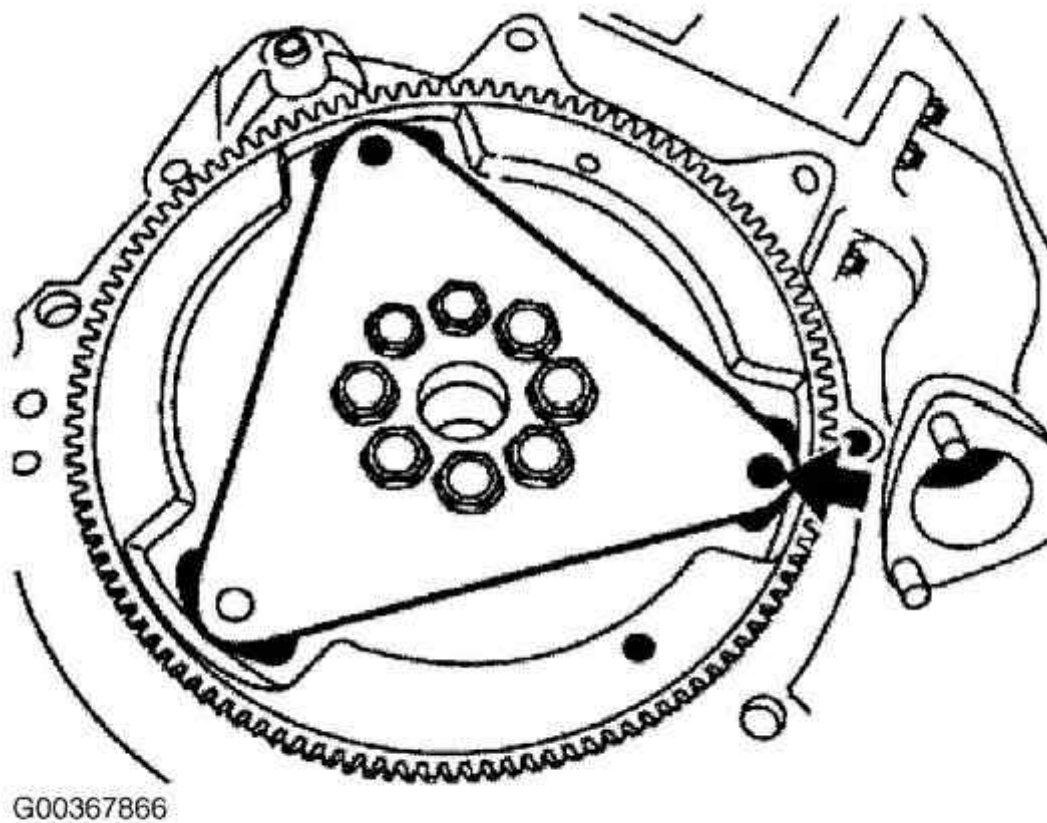
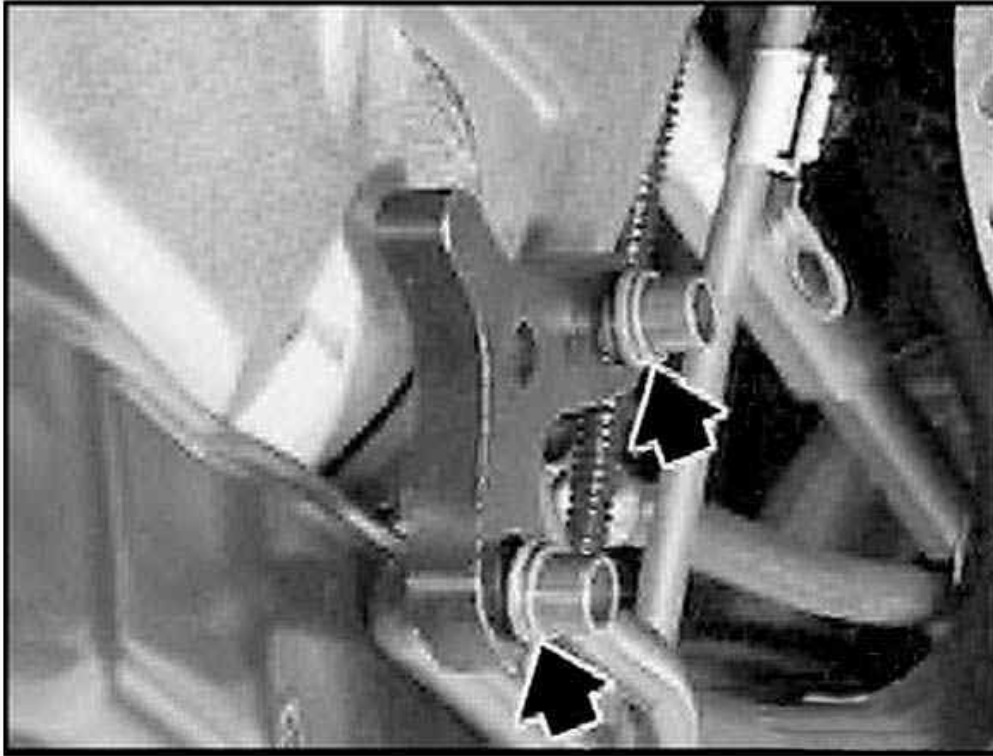


Fig. 23: Pointing Bore To Center Of Aperture In Cover Plate
Courtesy of BMW OF NORTH AMERICA, INC.

2005 BMW Z4

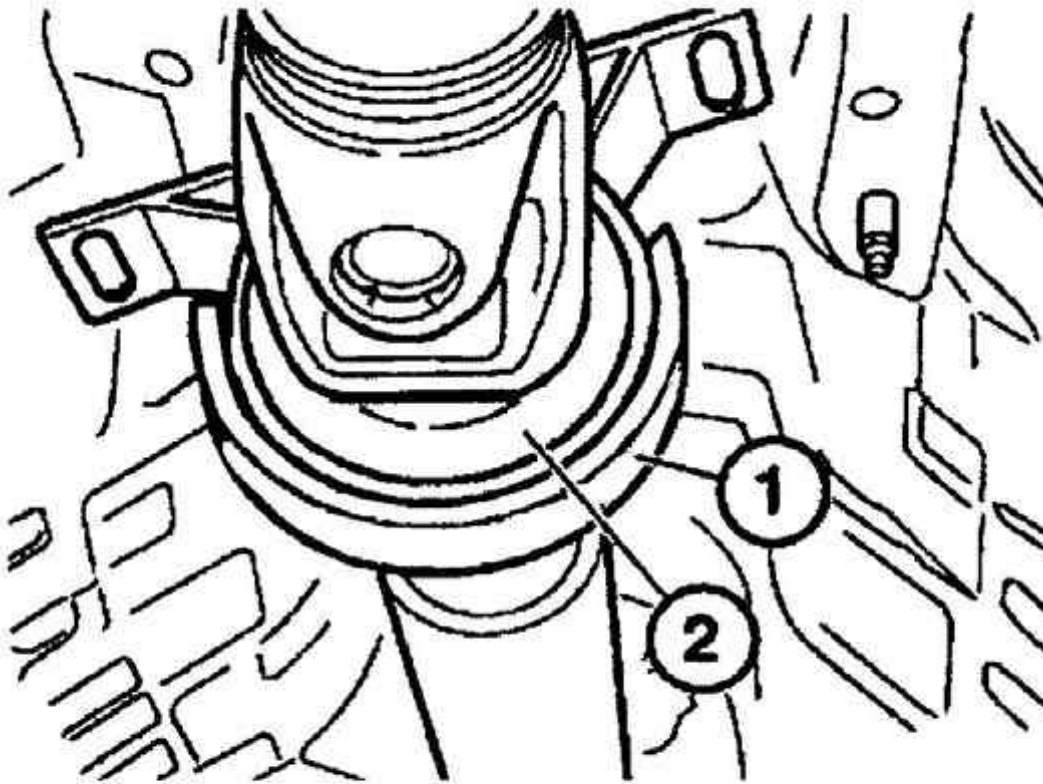
2001-05 AUTOMATIC TRANSMISSION Removal & Installation - 325i, 325Ci, 330i, 330Ci, Z4 (A5S 325Z)



G00367909

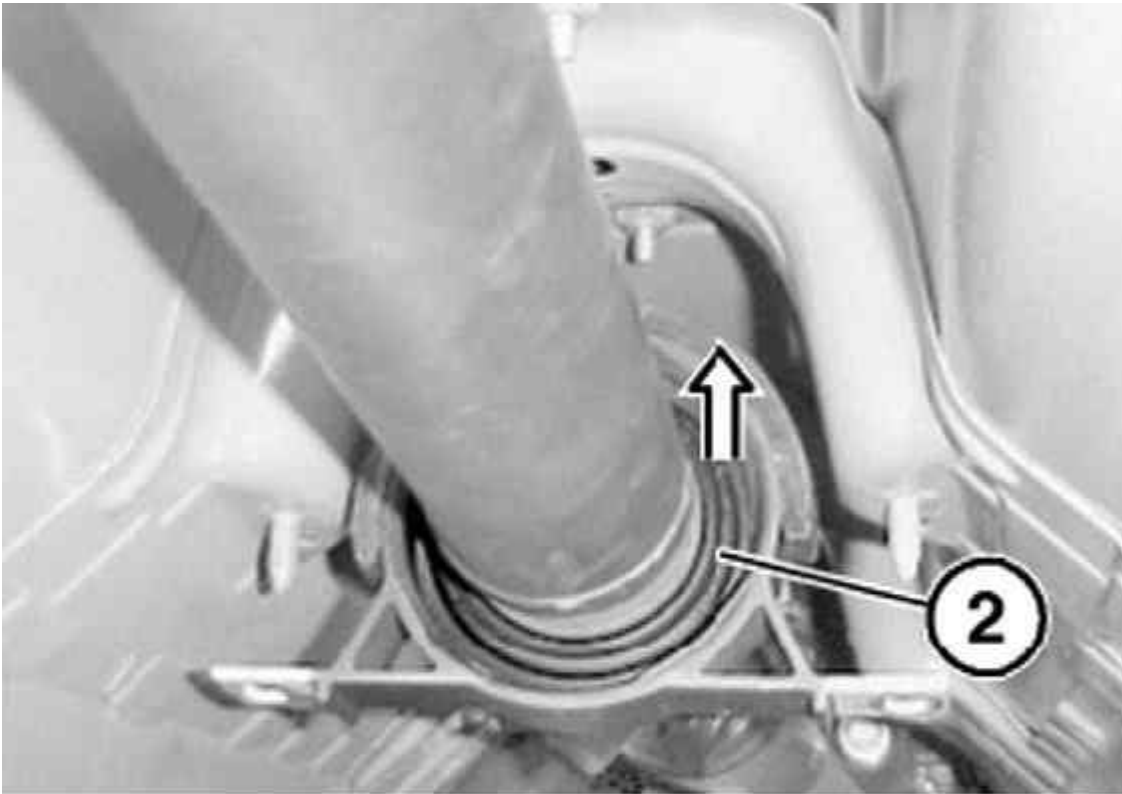
Fig. 24: Locating O-Rings

Courtesy of BMW OF NORTH AMERICA, INC.



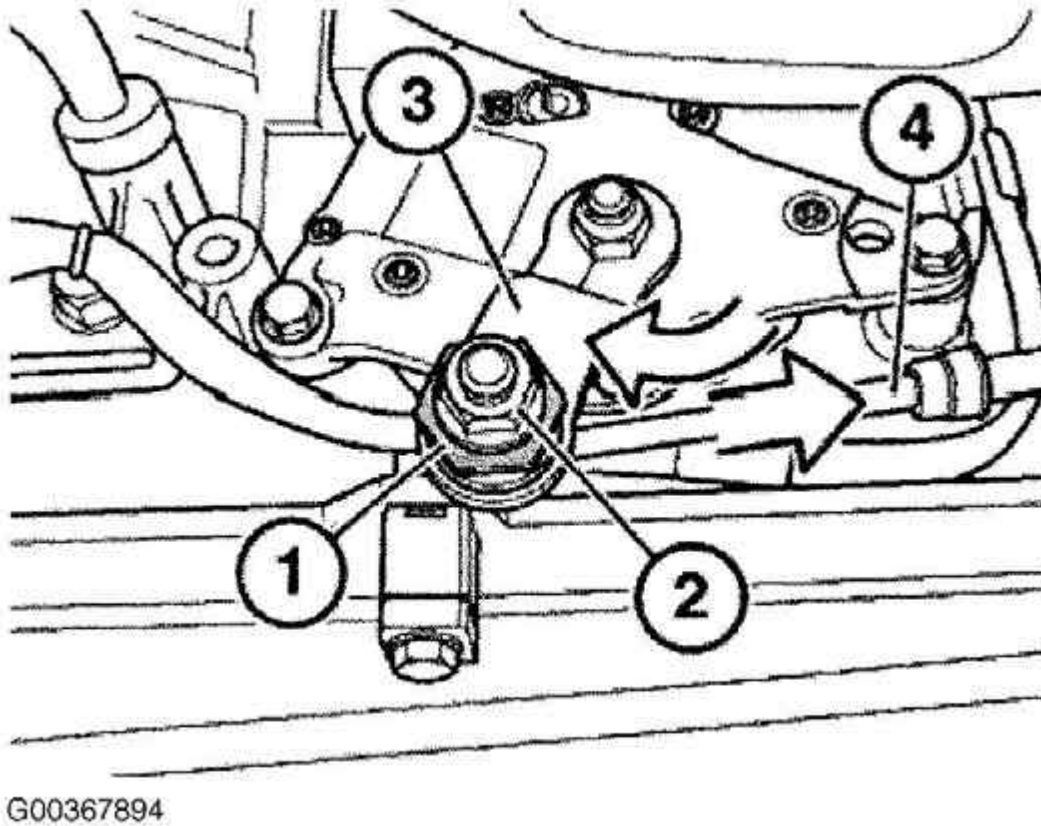
G00367869

Fig. 25: Sticking Butylene Tape To Center Bearing
Courtesy of BMW OF NORTH AMERICA, INC.



G00367870

Fig. 26: Pressing Center Bearing Into Transmission Tunnel
Courtesy of BMW OF NORTH AMERICA, INC.

**Fig. 27: Adjusting Shift Lever**

Courtesy of BMW OF NORTH AMERICA, INC.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Bowden Cable On Shift Tower/Transmission	11 (15)
Center Mount-To-Body	15 (21)
Cross Member-To-Body	15 (21)
Flexible Disk-To-Propeller Shaft & Transmission Output Flange	
M10 8.8 Thread	35 (48)
M10 10.9 Thread	47 (64)
M14 Thread	103 (140)
M12 10.9 Thread	74 (100)
Rubber Mounts-To-Cross Member Or Transmission	15 (21)
Torque Converter-To-Flywheel	33 (45)

2005 BMW Z4
2001-05 AUTOMATIC TRANSMISSION Removal & Installation - 325i, 325Ci, 330i, 330Ci, Z4 (A5S 325Z)

Transmission-To-Engine	
Hex Screws	
M8 Thread	18 (24)
M10 Thread	33 (45)
M12 Thread	60 (82)
Torx Bolts	
M8 Thread	15 (21)
M10 Thread	31 (42)
M12 Thread	53 (72)
INCH Lbs. (N.m)	
Clamping Screw On Shift Lever	89 (10)