

TRANSMISSION**Automatic Transmission - Repair Instructions - X6****TRANSMISSION IN GENERAL****00 DANGER OF POISONING IF OIL IS INGESTED/ABSORBED THROUGH THE SKIN****Danger of poisoning!**

Ingesting oil or absorbing through the skin may cause poisoning!

Possible symptoms are:

- Headaches
- Dizziness
- Stomach aches
- Vomiting
- Diarrhoea
- Cramps/fits
- Unconsciousness

Protective measures/rules of conduct:

- Pour oil only into appropriately marked containers
- Do **not** pour oil into drinking vessels (drinks bottles, glasses, cups or mugs)
- Observe country-specific safety regulations

First aid measures:

- Do not induce vomiting.

If the person affected is still conscious, he/she must rinse out their mouth with water, drink plenty of water and consult a doctor immediately.

If the person affected is unconscious, do not administer anything by mouth, place the person in the recovery position and seek immediate medical attention.

00 RISK OF INJURY IF OIL COMES INTO CONTACT WITH EYES AND SKIN**Danger of injury!**

Contact with eyes or skin may result in injury!

Possible symptoms are:

- Impaired sight
- Irritation of the eyes
- Reddening of the skin
- Rough and cracked skin

Protective measures/rules of conduct:

- Wear protective goggles
- Wear oil-resistant protective gloves
- Observe country-specific safety regulations

First aid measures:

- **Eye contact:** Rinse eyes immediately with plenty of water for at least 15 minutes; if available, use an eye-rinsing bottle. If irritation of the eyes persists, consult a doctor.
- **Skin contact:** Wash off with soap and water immediately. If irritation persists, consult a doctor.

NOTE: **Do not use solvents/thinners.**

00 SAFETY INSTRUCTIONS FOR HANDLING OIL

WARNING: **DANGER OF POISONING** if oil is ingested/absorbed through the skin!
RISK OF INJURY if oil comes into contact with eyes and skin!

Recycling:

Observe country-specific waste-disposal regulations.

Measures if oil is unintentionally released:

- **Personal precautionary measures:** Danger of slipping! Keep non-involved persons away from the work area. Wear personal protective clothing/equipment.
- **Environmental protection measures:** Prevent oil from draining into drain channels, sewerage systems, pits, cellars, water and the ground.
- **Limiting spread:** Use oil blocks to prevent the surface spread of oil.
- **Cleaning procedure:** Bind and dispose of escaped oil with nonflammable absorbents.

NOTE: **Do not flush oil away with water or aqueous cleaning agents.**

**00 11 500 CHECKING/TOPPING UP FLUID LEVEL IN AUTOMATIC TRANSMISSION
(GA6HP19Z) (X6 35I)**

See **00 11 500 CHECKING/TOPPING UP FLUID LEVEL IN AUTOMATIC TRANSMISSION**

(GA6HP19Z) .

**00 11 500 CHECKING/TOPPING UP OIL LEVEL IN AUTOMATIC TRANSMISSION (GA6HP26Z)
(X6 50I)**

IMPORTANT: Use only the approved TRANSMISSION FLUID .

Failure to comply with this requirement will result in serious damage to the automatic transmission.

Installation note:

Tighten down filler plug using

1. Hexagon wrench 8 A/F
2. Torque wrench
3. Socket 8 A/F

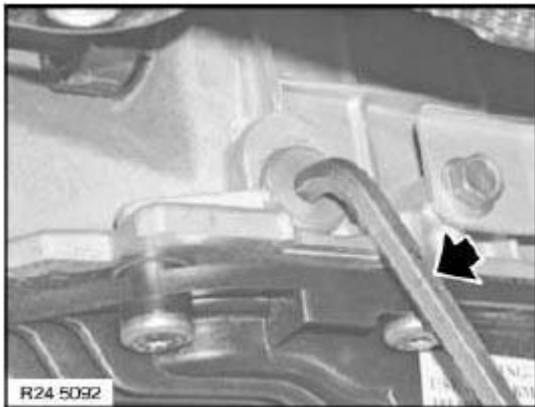


Fig. 1: Locating Torque Wrench

Courtesy of BMW OF NORTH AMERICA, INC.

Topping up transmission fluid after a repair:

Stand vehicle on a level surface and secure against rolling off.

Undo filler plug (1).

Installation note:

Replace sealing ring.

Top up transmission fluid until it emerges from filling orifice.

Start engine.

Replenish transmission fluid until it emerges from filling orifice.

Screw in filler plug (1).

Tightening torque: **24 11 7AZ** .

Press brake pedal to floor and shift through all gears several times at idle speed. Then shift to "P" position (Park).

Then check fluid level.

Checking fluid level:

- Call up Service functions (Drive) in BMW diagnosis system
- Carry out fluid level check in accordance with instructions

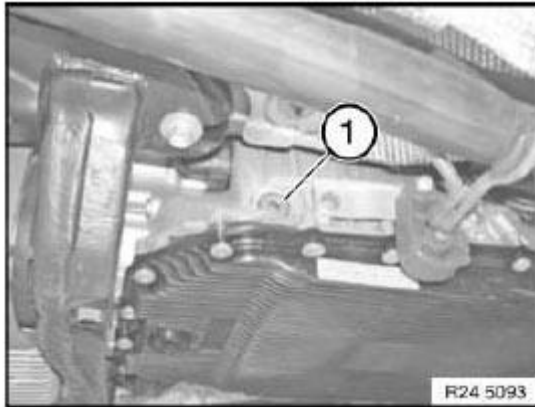


Fig. 2: Identifying Filler Plug

Courtesy of BMW OF NORTH AMERICA, INC.

00 11 500 CHECKING/TOPPING UP OIL LEVEL IN AUTOMATIC TRANSMISSION (GA8HP45Z, GA8HP90Z) (X6 35I, 50I 2011-13)

IMPORTANT:

- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
- Wear protective gloves.
- Ensure adequate ventilation

IMPORTANT: Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397**

To set the correct level, it is mandatory that the service function "Transmission control unit: oil adjustment" is performed using the diagnosis system.

Failure to comply with this requirement will result in serious damage to the automatic transmission.

Conditions for oil level adjustment with BMW diagnosis system:

- Initial condition: Transmission oil temperature 30 °C to 40 °C
- Final condition: Transmission oil temperature 40 °C to 50 °C

IMPORTANT: Transmission GA8HP70Z with N57 engine from 03/2011!!

Precondition for oil adjustment:

- Transmission oil temperature 30°C to maximum 40°C.

(The transmission oil temperature **must** be maintained. This will increase the oil quantity in the transmission.)

Performing oil-level adjustment:

An oil-level adjustment is necessary for certain fault code entries in the automatic transmission and after repair (e. g. mechatronic replacement, converter replacement, transmission replacement).

- Connect diagnosis and information system.
- Service function (transmission control unit: Oil adjustment) call up
- Carry out oil level check in accordance with instructions

Adding transmission oil

Stand vehicle on a level surface and secure against rolling off.

Undo oil filler plug (1).

Add automatic transmission fluid according to instructions in the BMW diagnosis system.

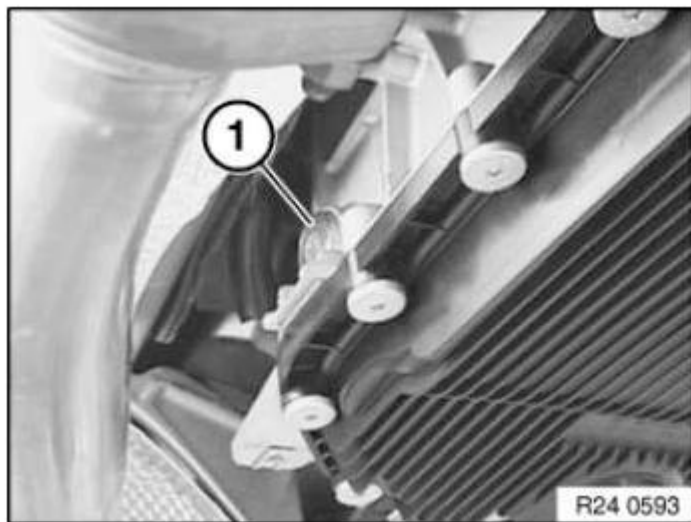


Fig. 3: Identifying Oil Filler Plug

Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Replace sealing ring/oil filler plug

Tightening torque: **24 11 3AZ**

Tighten down oil filler plug using

1. Hexagon socket wrench AF 8
2. Torque wrench
3. Socket AF 8

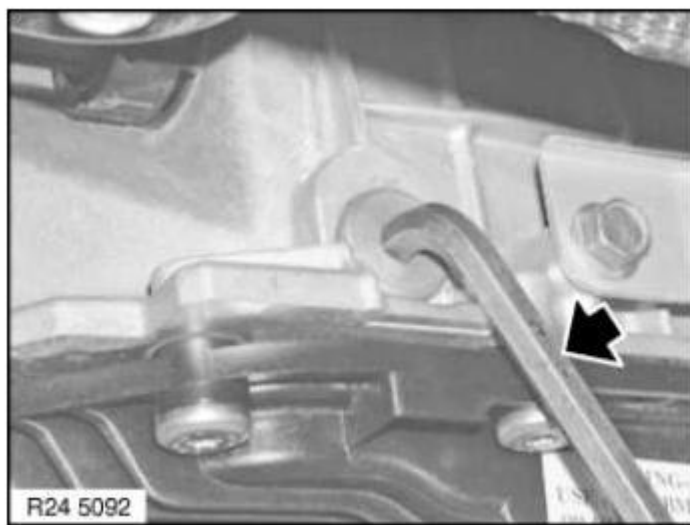


Fig. 4: Tightening Oil Filler Plug Using Socket Wrench

Courtesy of BMW OF NORTH AMERICA, INC.

23 TRANSMISSION DESIGNATIONS

Breakdown of BMW designation:

BREAKDOWN OF TRANSMISSION DESIGNATIONS

A5S 300J (former designation)		
A	Transmission type	○ S = Manual transmission ○ A = Automatic transmission
5	Number of forward gears	
S	Type of top gear	○ D = Direct gear ○ S = Overdrive gear
300	Max. input torque (Nm)	
J	Code letter of transmission manufacturer	○ G = Getrag ○ J = Jatco ○ R = GMPT (General Motors Powertrain) ○ Z = ZF (Zahnradfabrik Friedrichshafen)
SMG	Notes	SMG = Sequential M gearbox/transmission
GS6-37BZ (new designation according to BMW Group Standard GS 90007)		
G	Transmission	
S	Transmission type	○ S = Manual transmission ○ A = Automatic transmission
6	Number of forward gears	
-		○ - = Standard with manual gearshift ○ HP = Hydraulic planetary gear ○ DKG = Twin clutch transmission/gearbox
37	Transmission type	○ 26 = D-transmission ○ 31 = C-transmission ○ 39 = F-transmission ○ 37 = H-transmission ○ 53 = G-transmission ○ 17 = I-transmission ○ 47 = SMG 7-speed
B	Gear set	○ B = Gasoline gear ratio

2010 BMW X6 ActiveHybrid

TRANSMISSION Automatic Transmission - Repair Instructions - X6

		○ D = Diesel gear ratio ○ S = Sport gear ratio
Z	Code letter of transmission manufacturer	○ G = Getrag ○ Z = ZF (Zahnradfabrik Friedrichshafen)

Manual transmission:

BREAKDOWN OF MANUAL TRANSMISSION DESIGNATIONS

BMW designation	Manufacturer	Manufacturer designation	Remark
S5D 200G	Getrag	B transmission (220/5)	
S5D 200G	Getrag	B transmission (221/5)	for M41 engine only
S5D 250G	Getrag	B transmission (220/5)	Reinforced design
S5D 260Z	ZF	C-transmission (S5-31 D)	for M51 engine only
S5D 280Z	ZF	C-transmission (S5-31)	
S5D 310Z	ZF	C-transmission (S5-31)	up to 9.95
S5D 320Z	ZF	C-transmission (S5-31)	from 9.95 (reinforced design)
GS5S31BZ (SMG)	ZF	C transmission	SMG
GS5-39DZ	ZF	F transmission	
S6S 420G	Getrag	D-transmission (226/6)	
S6S 420G (SMG)	Getrag	D transmission	SMG
S6S 560G	Getrag	E-transmission (286/6)	
GS6-37BZ	ZF	H-transmission	
GS6S37BZ (SMG)	ZF	H-transmission	
GS6-37DZ	ZF	H-transmission	
GS6-37BG	Getrag	H-transmission	
GS6-53BZ	ZF	G-transmission	
GS6-53DZ	ZF	G-transmission	
GS6-17BG	Getrag	I-transmission	
GS7S47BG (SMG)	Getrag	Transmission (247)	SMG 7-speed
GS7D36SG	Getrag	DKG436	DKG 7-speed

2010 BMW X6 ActiveHybrid**TRANSMISSION Automatic Transmission - Repair Instructions - X6**

Automatic transmission:

BREAKDOWN OF AUTOMATIC TRANSMISSION DESIGNATIONS

BMW designation	Manufacturer	Manufacturer designation	Remark
A4S 200R	General Motors Powertrain	GM4	
A4S 270R	General Motors Powertrain	THM-R1w	Transmission wide-stepped
A4S 310R	General Motors Powertrain	THM-R1	
A5S 300J	Jatco	Jatco	
A5S 310Z	ZF	5HP-18	
A5S 325Z	ZF	5HP-19	
A5S 440Z	ZF	5HP-24	
A5S 560Z	ZF	5HP-30	
A5S 360R/390R	GM		
GA6HP19Z	ZF	6HP19	Hybrid
GA6HP26Z	ZF	6HP26	
GA6HP32Z	ZF	6HP32	
GA6L45R	GM	GM6	
GA8HP45Z	ZF	8HP45	
GA8HP70Z	ZF	8HP70	
GA8P70H	ZF	8P70	
GA8HP90Z	ZF	8HP90	
GA7AHSCD	Daimler	AHS-C	Hybrid

23... UNIVERSAL BMW TRANSMISSION TAKE-UP

Special tools required:

- **00 2 030**
- **23 4 050**

NOTE:

- The universal transmission bracket is introduced for the E60 AWD

- Suitable for manual and automatic transmissions

IMPORTANT: Front and rear supports (1) can be laterally adjusted by means of screws (2). Carrier (3) of rear supports (1) can be longitudinally adjusted by means of screw.
Supports must be adapted in length and width to the transmission.

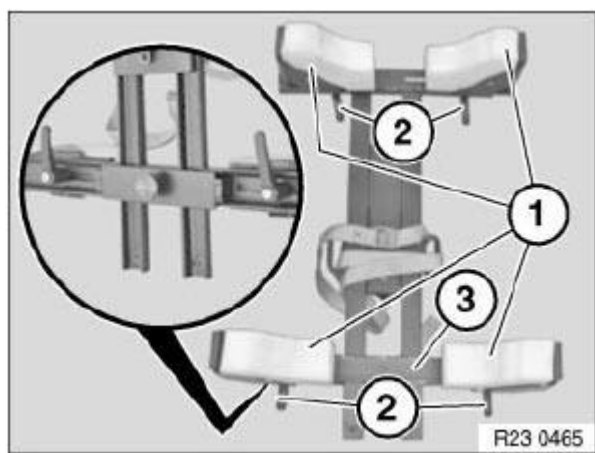


Fig. 5: Identifying Rear Supports Carrier
Courtesy of BMW OF NORTH AMERICA, INC.

Supporting transmission:

Support transmission with special tools 23 4 050, 00 2 030.

IMPORTANT: Transmission must be secured with tensioning strap (1).

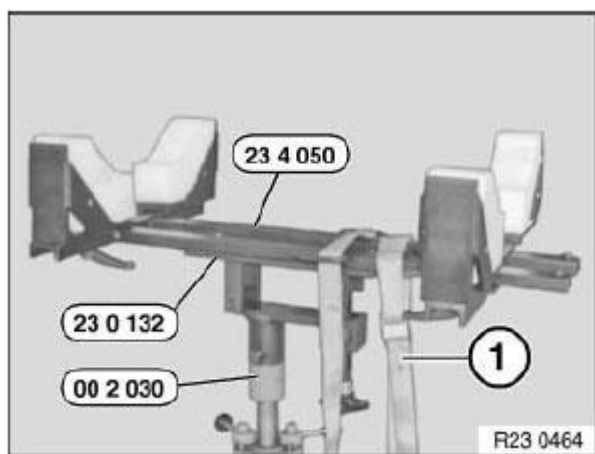


Fig. 6: Supporting Transmission Using Special Tools 23 4 050 And 00 2 030
Courtesy of BMW OF NORTH AMERICA, INC.

23..... UNIVERSAL TRANSMISSION RETAINING BRIDGE

Special tools required:

- 00 1 450
- 24 0 200

NOTE:

- The transmission retaining bridge 24 0 200 is suitable for both manual and automatic transmissions

IMPORTANT: Adapters and spindles must be adapted for positive locking to the transmission.
(Risk of injury)

Adapt adapters (1) and spindle with thrust piece (3) to transmission.

Adapt length with slide (2).

Screw in spindle (4).

IMPORTANT: Before mounting on assembly stand 00 1 450, check retaining bridge for secure seating.

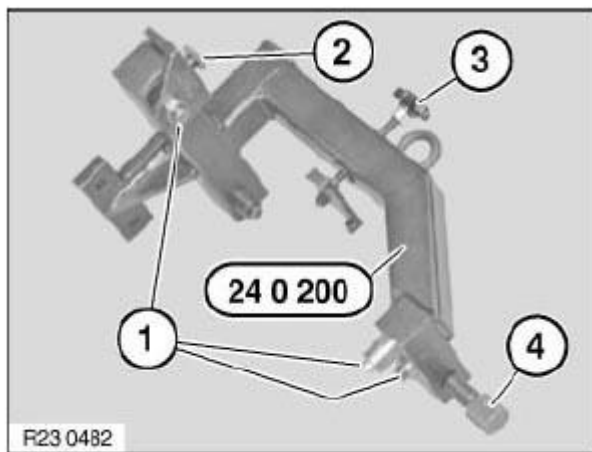
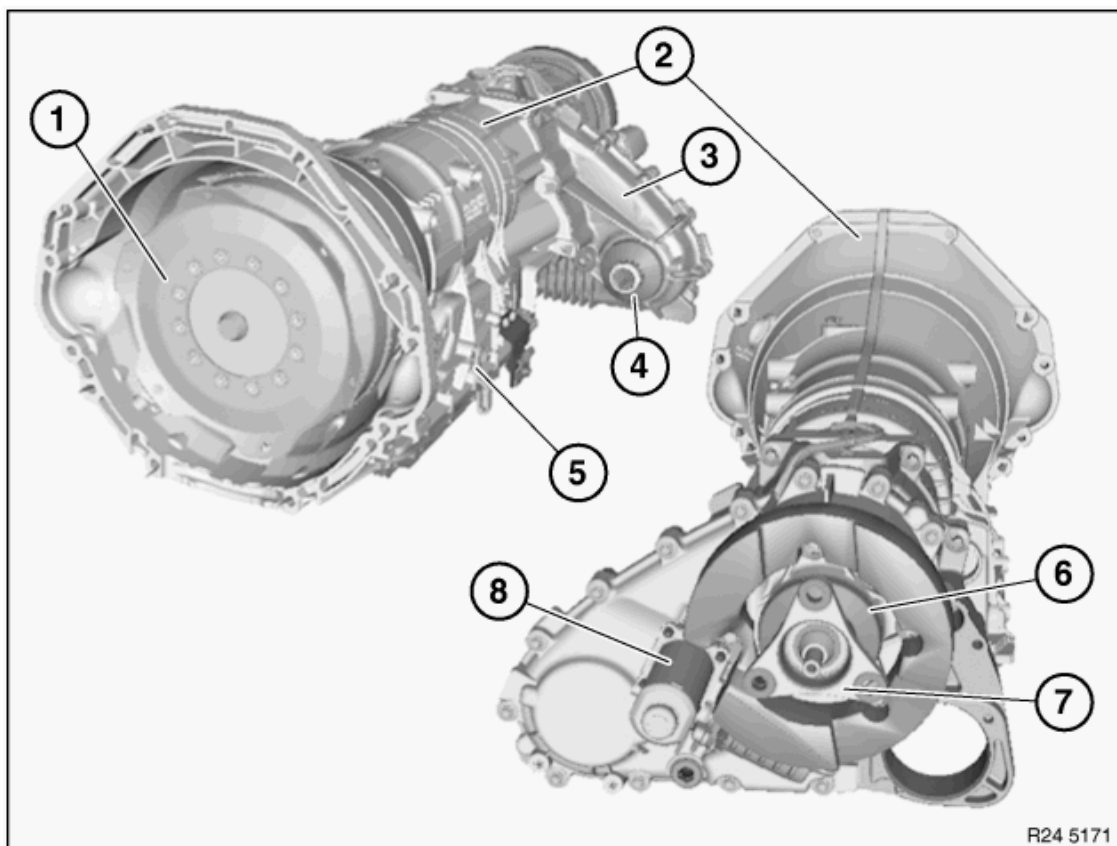


Fig. 7: Identifying Transmission Retaining Bridge 24 0 200
Courtesy of BMW OF NORTH AMERICA, INC.

24 00... OVERVIEW OF TRANSMISSION HOUSING (GA6HP26Z) (X6 50I)



- | | | | |
|---|-------------------------------------|---|---------------|
| 1 | Torque converter | 5 | Radial seal |
| 2 | Transmission housing, front section | 6 | Radial seal |
| 3 | Transfer case | 7 | Output flange |
| 4 | Radial seal | 8 | Servomotor |

Fig. 8: Overview Of Transmission Housing (GA6HP26Z)

Courtesy of BMW OF NORTH AMERICA, INC.

24 00 018 ADJUSTING GEAR LEVER (PARKING LOCK EMERGENCY RELEASE)

NOTE: Check cable for ease of movement.
Move gear selector switch to "P" position.
Control for emergency release must not be actuated.

Unfasten nut.

Remove cable (1).

Installation note:

Adjust cable

- Release nut
- Adjust cable by means of holder (2)
- Spacing A = 1.5 mm

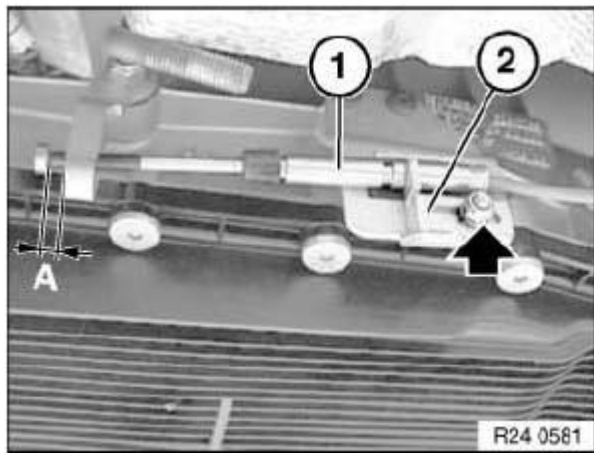


Fig. 9: Identifying Cable And Holder

Courtesy of BMW OF NORTH AMERICA, INC.

24 00 030 REMOVING AND INSTALLING AUTOMATIC TRANSMISSION (GA6HP19Z) (X6 35I)

Special tools required:

- 00 2 030
- 00 9 010
- 00 9 120
- 00 9 130
- 23 4 050
- 24 1 110
- 24 1 370
- 24 2 390

IMPORTANT: After completion of work, check transmission oil level .

Use only the approved TRANSMISSION OIL .

Failure to comply with this requirement will result in serious damage to the automatic transmission!

IMPORTANT: Aluminum screws/bolts must be replaced each time they are released .

Aluminum screws/bolts are permitted with and without color coding (blue).

For reliable identification:

Aluminum screws/bolts are not magnetic .

Jointing torque and angle of rotation must be observed without fail (risk of damage) .

Necessary preliminary tasks:

- Disconnect **BATTERY**
- If necessary, remove **fan cowl** . See **17 11 035 REMOVING AND INSTALLING/REPLACING FAN COWL WITH ELECTRIC FAN (N54) or 17 11 035 REMOVING AND INSTALLING/REPLACING FAN COWL WITH ELECTRIC FAN (N63) .**
- Remove **UNDERBODY PROTECTION** .
- Remove **reinforcement plate** . See **31 10 010 REMOVING AND INSTALLING/REPLACING REINFORCEMENT PLATE** .

Important notes on installation are described in this work step

- Remove exhaust system. See **18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N54) or 18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N63) .**
- Remove heat shields
- Remove **propeller shaft from front differential** . See **26 20 000 REMOVING AND INSTALLING FRONT PROPELLER SHAFT (N52K, M57T2, N54) or 26 11 000 REMOVING AND INSTALLING PROPELLER SHAFT (INSERTED) COMPLETELY (N63) .**
- Remove propeller shaft. See **26 11 000 REMOVING AND INSTALLING PROPELLER SHAFT (INSERTED) COMPLETELY (N54) or 26 11 000 REMOVING AND INSTALLING PROPELLER SHAFT (INSERTED) COMPLETELY (N63) .**
- Support engine with lifter when removing transmission

Unfasten nut.

Disconnect cable (1).

Installation note:

- Unfasten nut.
- Adjust cable by means of holder (2) until spacing $A = 1 \text{ mm}$ is obtained
- Tighten nut.

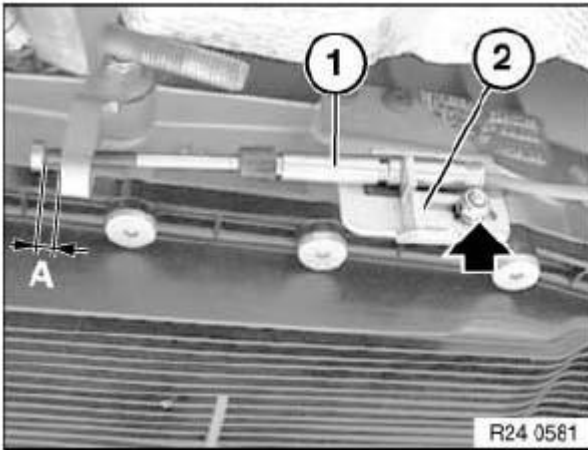


Fig. 10: Identifying Cable And Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Disconnect hydraulic lines (2) to transmission fluid cooler.

Tightening torque, see **17 22 3AZ** in **17 22 TRANSMISSION OIL COOLER LINES (N52)** or **17 22 ENGINE OIL COOLER LINES AND TRANSMISSION OIL COOLER LINES (N63)** .

Installation note:

Replace sealing rings.

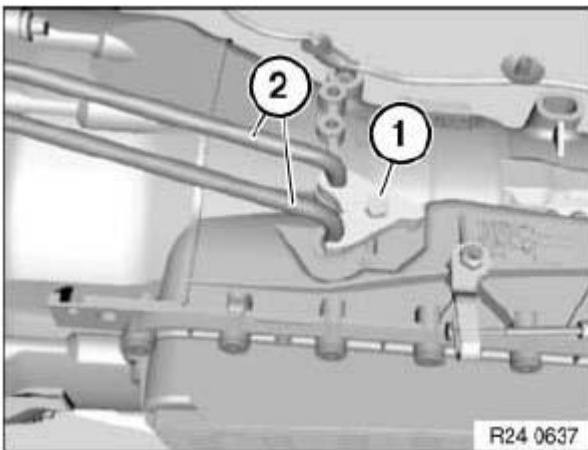


Fig. 11: Identifying Hydraulic Lines And Screw On Transmission Fluid Cooler
Courtesy of BMW OF NORTH AMERICA, INC.

Release nut (1) and bracket from transmission oil lines on oil sump.

Tightening torque, see **17 22 1AZ** in **17 22 TRANSMISSION OIL COOLER LINES (N52)** or **17 22**

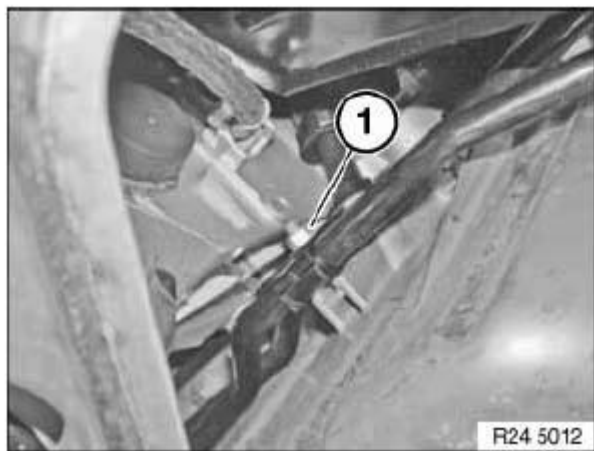
ENGINE OIL COOLER LINES AND TRANSMISSION OIL COOLER LINES (N63) .

Fig. 12: Identifying Transmission Oil Lines Bracket Nut
Courtesy of BMW OF NORTH AMERICA, INC.

Vehicle with Adaptive Drive.

Remove heat shield (1).

Release screw (2).

Detach bracket (3) from front axle.

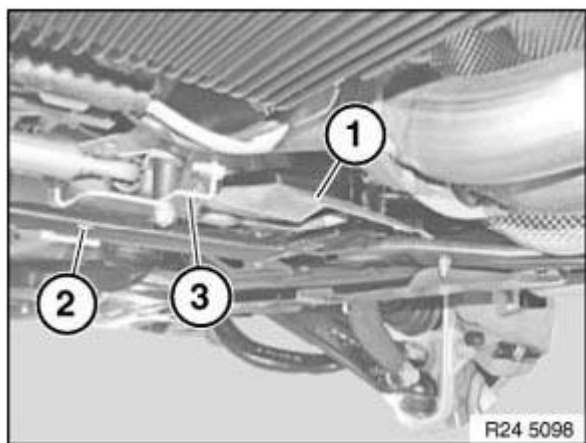


Fig. 13: Identifying Heat Shield, Screw And Bracket
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Detach oil line (2) from front axle.

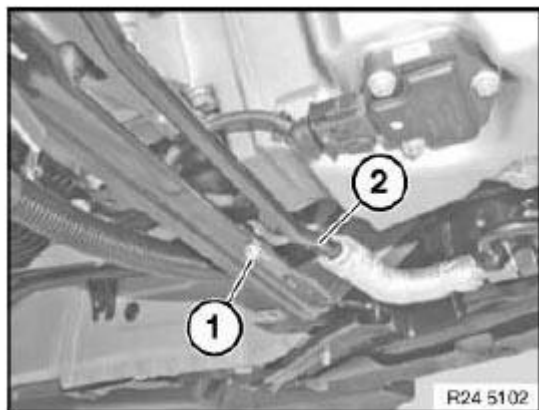


Fig. 14: Identifying Oil Line And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Detach oil lines (1) from bracket (2).

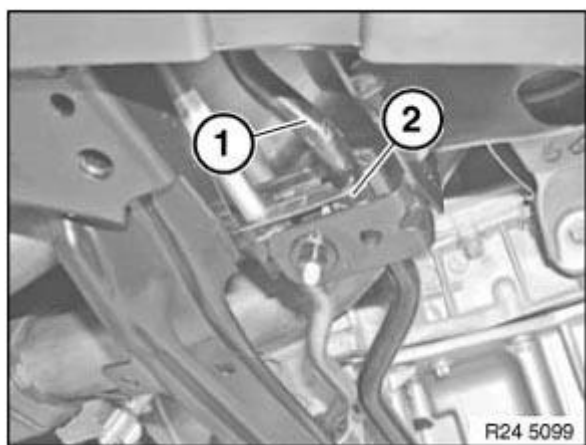


Fig. 15: Identifying Oil Line And Bracket
Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect connector (1).

Release screws (2).

Remove retaining plate (3).

Tightening torque, **24 00 1AZ** .

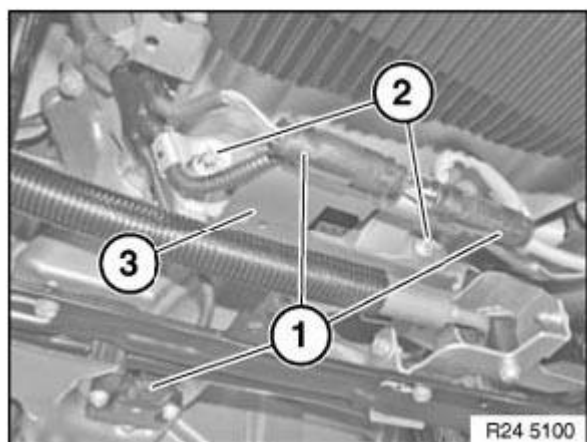


Fig. 16: Identifying Connector, Screws And Retaining Plate
Courtesy of BMW OF NORTH AMERICA, INC.

Release aluminum screw on right (1) on right next to cable retaining plate with special tool **00 9 010** .

Aluminum screws must be replaced.

Tightening torque **24 00 2AZ** .

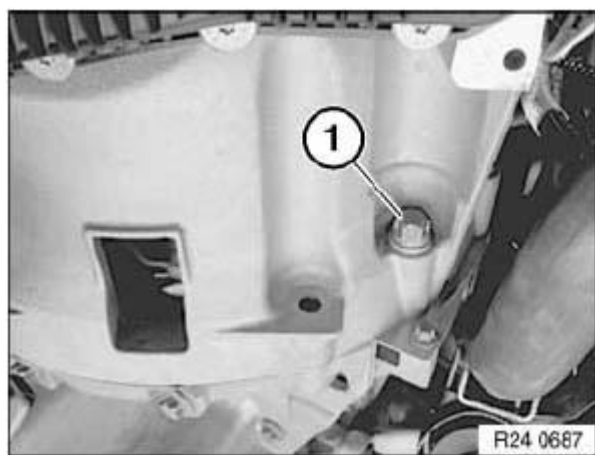


Fig. 17: Identifying Aluminum Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool **24 1 370** into opening of transmission housing and secure with screw (1).

NOTE: **Check installation location.**

Lug (2) must point in opposite direction to direction of travel!

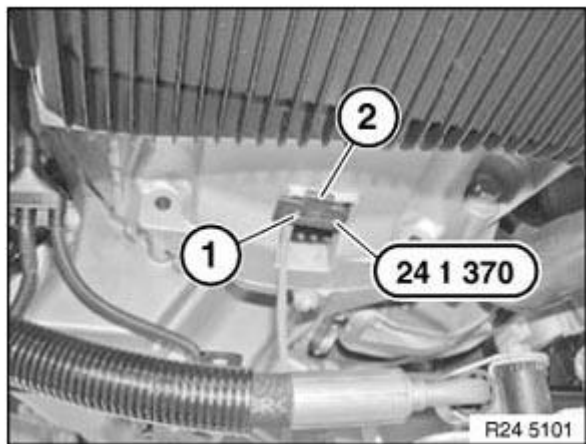


Fig. 18: Identifying Special Tool 24 1 370 On Opening Of Transmission Housing
Courtesy of BMW OF NORTH AMERICA, INC.

- Unlock and disconnect plug (1) by turning.
- Do not touch pins.
- Release cable from retainers.
- Insert special tool **24 2 390** in sealing sleeve.

Operations are described in

NOTES ON MECHATRONICS

IMPORTANT: Read and comply with important note.

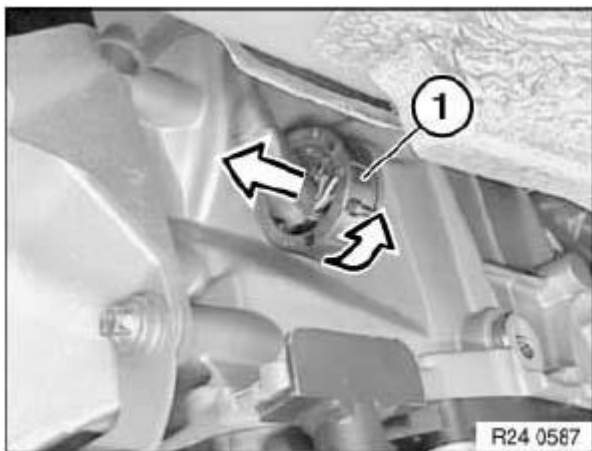


Fig. 19: Disconnecting Plug
Courtesy of BMW OF NORTH AMERICA, INC.

Supporting transmission:

Support transmission with special tools **23 4 050** , **00 2 030** .

Secure transmission to mounting with tensioning strap (1).

After completion of work, check transmission oil level.

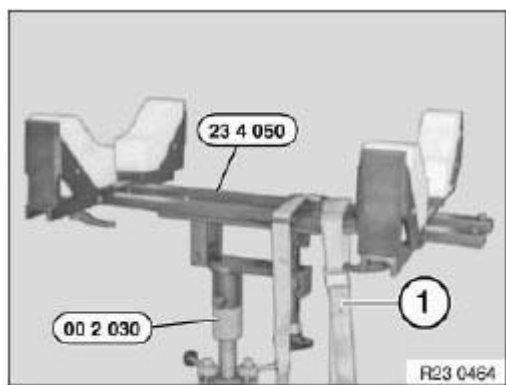


Fig. 20: Supporting Transmission Using Special Tools 23 4 050 And 00 2 030
Courtesy of BMW OF NORTH AMERICA, INC.

Crank engine at vibration damper in direction of rotation until screw (1) is visible in opening.

Release all screws of torque converter with special tool **24 1 110** .

Crank engine further and release remaining 5 bolts.

Tightening torque **24 40 1AZ** .

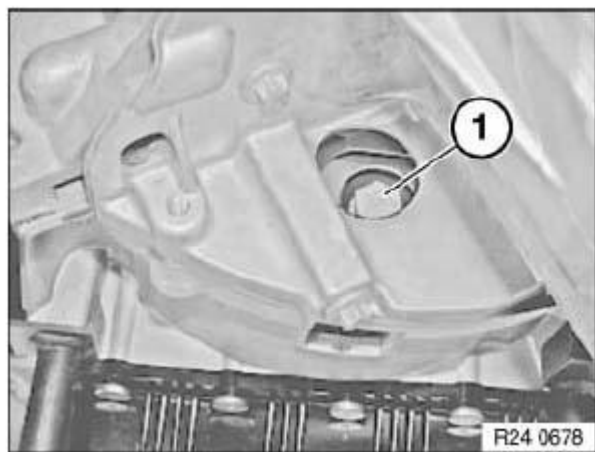


Fig. 21: Identifying Torque Converter Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws.

Installation note:

Observe **screw fastening sequence** without fail.

Tightening torque, steel screws **24 00 1AZ** .

Aluminum screws **must** be replaced.

Tightening torque and angle of rotation, aluminum screws/bolts **24 00 2AZ** .

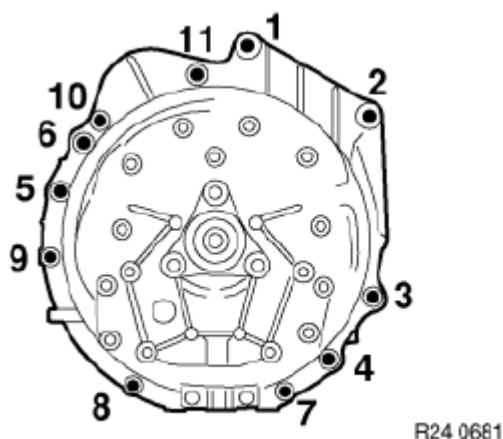


Fig. 22: Tightening Sequence Of Torque Converter Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Tighten down screws/bolts to specified torque.

Secure rotation angle of special tool **00 9 120** with magnet **00 9 130**

Secure to floor plate and screw down aluminum screws/bolts in accordance with angle of rotation.

Angle of rotation **24 00 2AZ** .

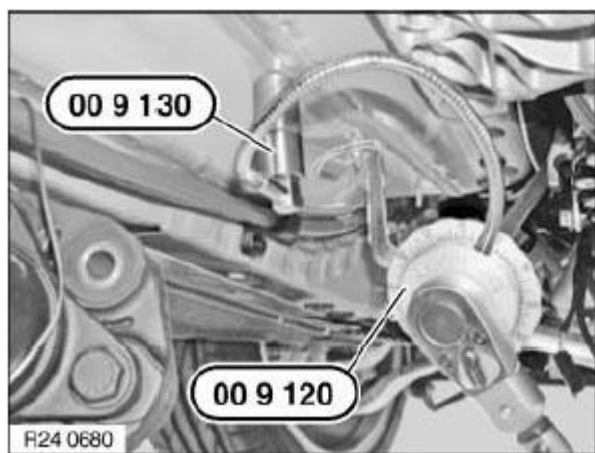


Fig. 23: Securing Rotation Angle Of Special Tool 00 9 120 Using Magnet 00 9 130
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Bore hole (1) of drive plate must be accessible from opening on engine oil sump. Check dowel sleeves (2...3) for correct seating.

Replace damaged dowel sleeves.

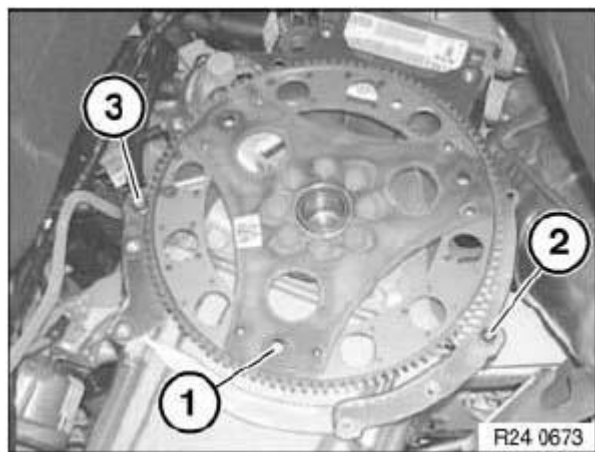


Fig. 24: Identifying Hole And Dowel Sleeves
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Rotate torque converter until bore in torque converter is flush with bore in driving disc.

Flange automatic transmission to engine.

24 00 023 REMOVING AND INSTALLING AUTOMATIC TRANSMISSION (GA6HP26Z) (X6 50I)

Special tools required:

- **00 2 030**
- 23 4 050
- **24 1 380**
- **24 2 390**

IMPORTANT: After completion of work, check transmission oil level .

Use only the approved TRANSMISSION OIL .

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Disconnect **BATTERY**
- Secure engine in **INSTALLATION POSITION**
- If necessary, remove **FAN COWL**
- Remove both **INTAKE FILTER HOUSINGS** .
- Remove **EXHAUST SYSTEM** .
- Remove underbody protection at front and rear. See **FRONT UNDERBODY PROTECTION** and **REAR UNDERBODY PROTECTION** .
- Remove **REINFORCEMENT PLATE**
- Remove front **PROPELLER SHAFT** .
- Remove **PROPELLER SHAFT** .

Unfasten nut.

Disconnect cable (1).

Installation note:

- Unfasten nut.
- Adjust cable by means of holder (2) until spacing A = 1 mm is obtained
- Tighten nut.

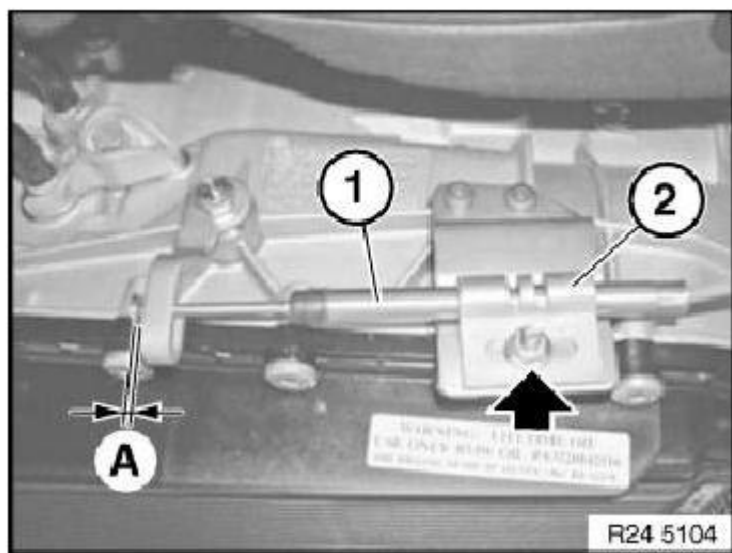


Fig. 25: Locating Cable Nut

Courtesy of BMW OF NORTH AMERICA, INC.

Vehicles with Adaptive Drive:

Release screws (1).

Secure line (2) under cross-brace (3).

Remove cover (4).

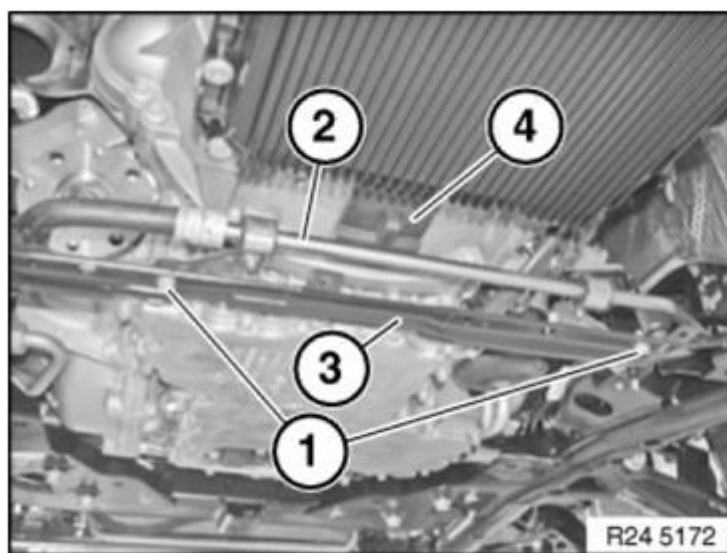


Fig. 26: Identifying Cross-Brace, Cover And Mounting Screws

Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1) and remove crankshaft sensor.

Disengage cable from holder (2).

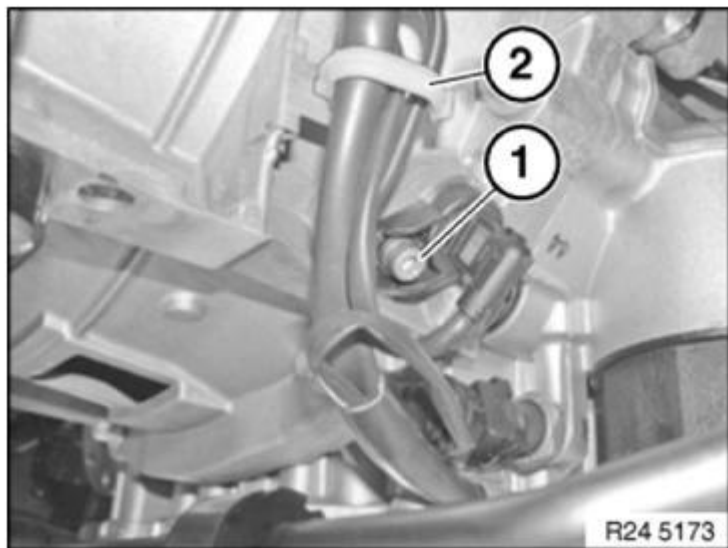


Fig. 27: Identifying Crankshaft Sensor Mounting Screw
Courtesy of BMW OF NORTH AMERICA, INC.

- Unlock plug (1) by turning and disconnect
- Release cable from retainers
- Insert special tool **24 2 390** in sealing sleeve

IMPORTANT: Observe important notes:

These tasks are described in NOTES ON MECHATRONICS.

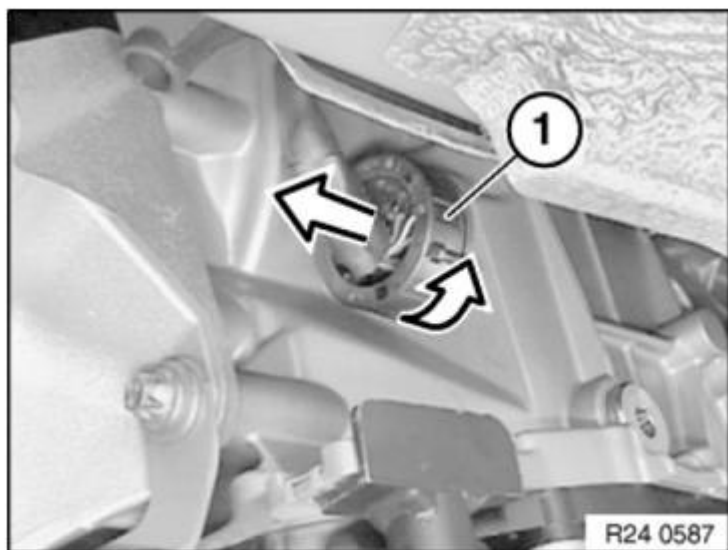


Fig. 28: Disconnecting Connector

Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Disconnect hydraulic lines (2) to transmission fluid cooler.

Installation note:

Replace sealing rings.

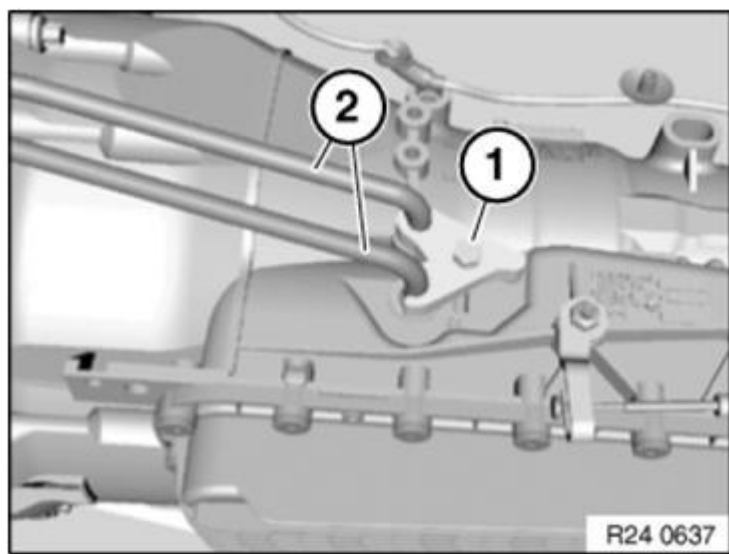


Fig. 29: Identifying Hydraulic Lines And Mounting Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1).

Tightening torque, **24 00 1AZ** .

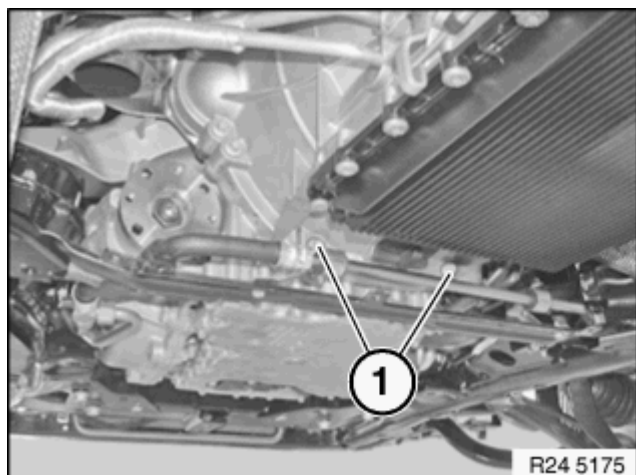


Fig. 30: Identifying Screws

Courtesy of BMW OF NORTH AMERICA, INC.

Crank engine at vibration damper until screw (1) is visible in opening.

Release all 6 screws (1) on torque converter.

Tightening torque, 24 00 1AZ .

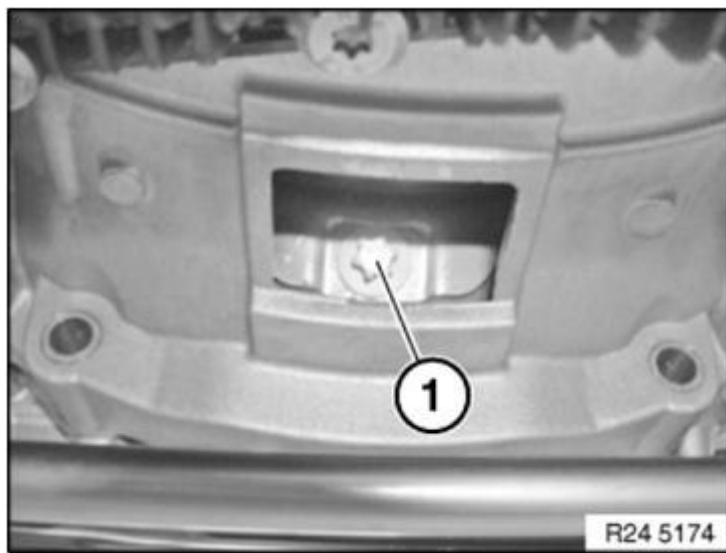


Fig. 31: Identifying Torque Converter Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Press special tool 24 1 380 together and insert in opening of transmission housing.

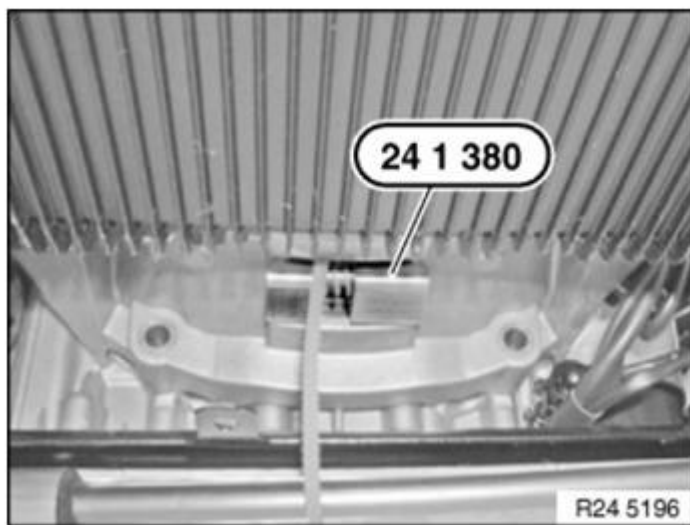


Fig. 32: Inserting Special Tool 24 1 380 In Transmission Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Unlock and detach plugs (1) and (2).

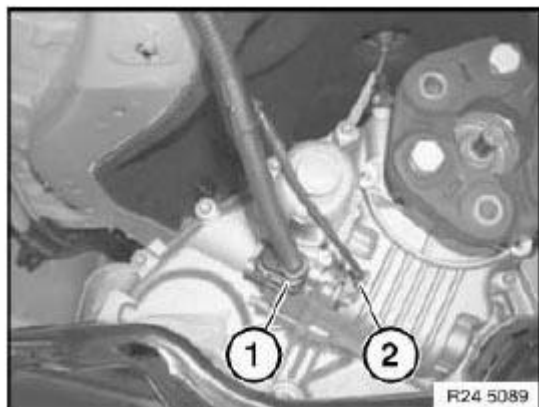


Fig. 33: Identifying Plugs

Courtesy of BMW OF NORTH AMERICA, INC.

Release screws.

Tightening torque **22 32 4AZ** .

Release screw (1).

Tightening torque **22 32 5AZ** .

Remove cross-member.

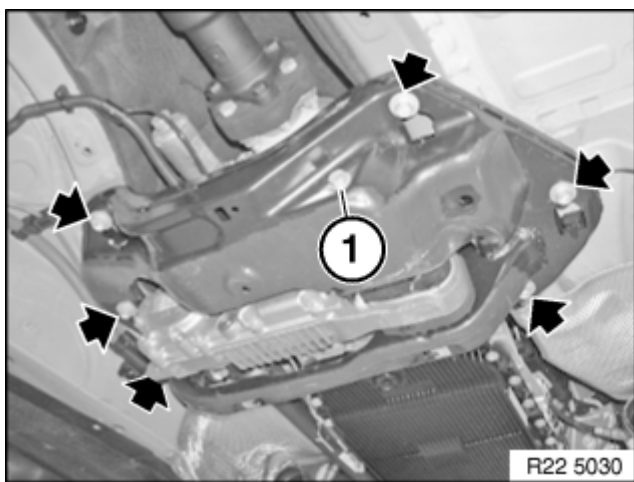


Fig. 34: Removing Crossmember

Courtesy of BMW OF NORTH AMERICA, INC.

- Remove **PROPELLER SHAFT** from transmission.
- Release center mount.

NOTE:

- Bending the propeller shaft by an excessive angle can cause premature damage to the joint/propeller shaft!
- Tie up propeller shaft to underbody.
- Support engine with lifter when removing transmission.

Lower engine with transmission.

Then support transmission.

Supporting transmission:

Support transmission with special tools 23 4 050, 00 2 030.

Secure transmission to mounting with tensioning strap (1).

Tasks are described in **GEARBOX HOLDER**.

After completion of work, check transmission oil level.

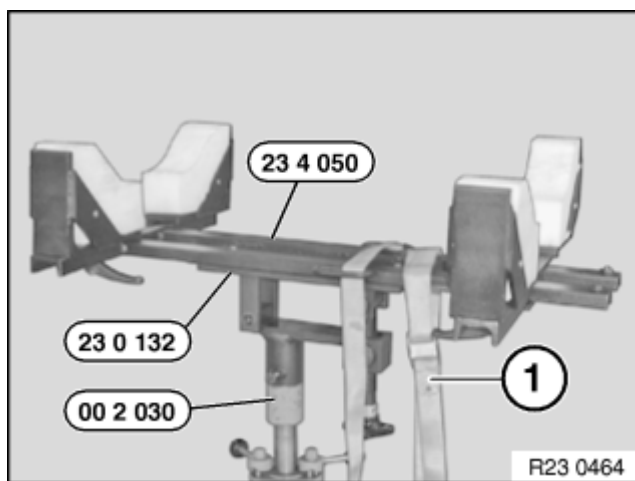


Fig. 35: Supporting Transmission

Courtesy of BMW OF NORTH AMERICA, INC.

Release screws.

Tightening torque, **24 00 1AZ** .

Unflange transmission.

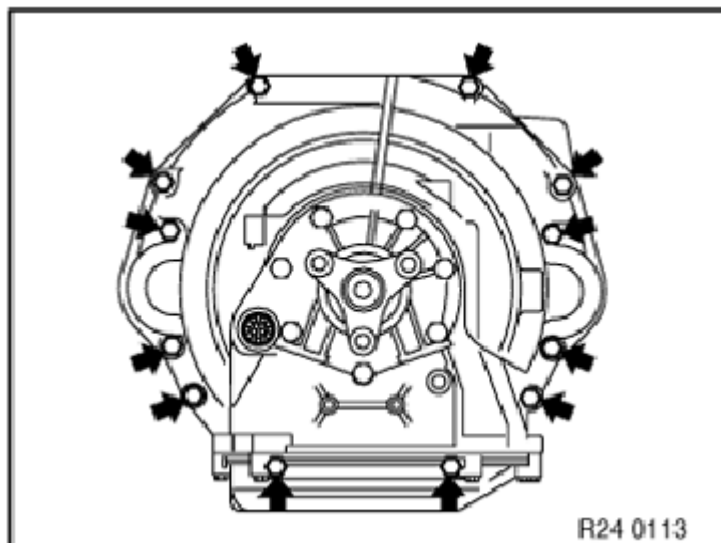


Fig. 36: Locating Transmission Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Bore (1) in driving disk must be accessible from opening on engine oil pan.

Check that adapter sleeves (2) are correctly seated.

Replace damaged dowel sleeves.

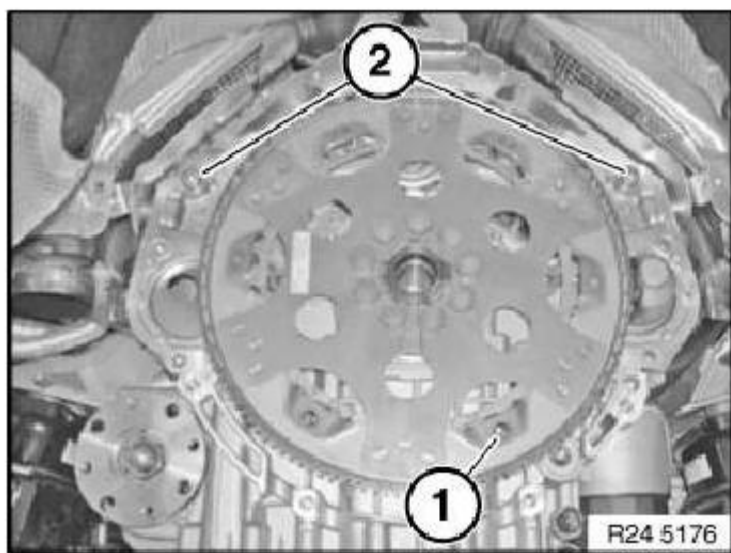


Fig. 37: Identifying Driving Plate Bore Hole And Fitting Sleeves
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Rotate torque converter until bore hole in torque converter is flush with bore hole in drive plate.

Flange-mount transmission to engine.

24 00 033 REMOVING AND INSTALLING AUTOMATIC TRANSMISSION (GA8HP45Z) (X6 35I 2011-13)

- IMPORTANT:**
- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
 - Wear protective gloves.
 - Ensure adequate ventilation.

IMPORTANT: After completion of repair work, check TRANSMISSION OIL LEVEL.

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397*

Failure to comply with this requirement will result in serious damage to the automatic transmission!

IMPORTANT: For vehicles with N54/N55 engine up to production date 09/2012, aluminium bolts for the for the securing of the transmission are also installed.

As of production date 09/2012, only steel bolts are installed for the securing of the transmission.

NOTE: Aluminium screws/bolts must be replaced each time they are released .

Aluminium screws/bolts are permitted with and without color coding (blue).

For reliable identification:

Aluminium screws/bolts are not magnetic .

Jointing torque and angle of rotation must be observed without fail (risk of damage).

The aluminium bolts can be optionally replaced by steel bolts.

Necessary preliminary tasks:

- Disconnect the **BATTERY**
- If necessary, remove **FAN COWL**
- Remove **UNDERBODY PROTECTION**
- Remove **REINFORCEMENT PLATE**

Important installation notes are described in this job item

- Important installation notes are described in this job item
- Remove **EXHAUST SYSTEM**
- Remove heat shields Remove propeller shaft from front axle differential
- Detach **PROPELLER SHAFT** at transfer box, release center mount

NOTE:

- Bending the propeller shaft by an excessive angle can cause premature damage to the joint/propeller shaft!
- Tie up the propeller shaft to the vehicle underbody.
- Support engine with lifter when removing transmission.

Release screw (1).

Disconnect hydraulic lines (2) to transmission oil cooler.

Tightening torque: 19 Nm

Installation note:

Replace sealing rings.

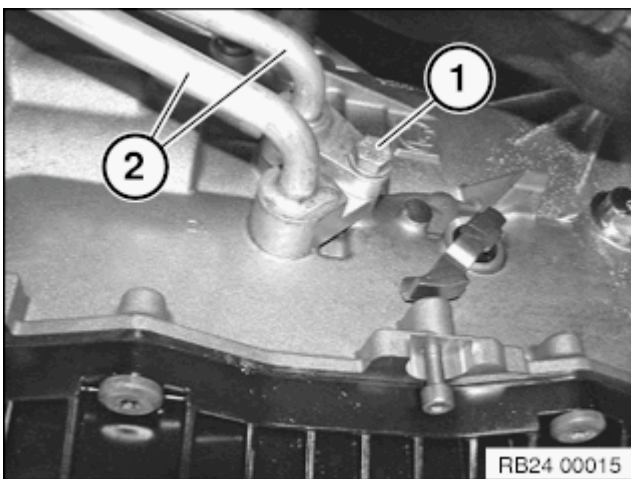


Fig. 38: Identifying Screw And Hydraulic Lines
Courtesy of BMW OF NORTH AMERICA, INC.

Vehicle with adaptive drive.

Remove heat shield (1).

Release screw (2).

Detach bracket (3) from front axle.

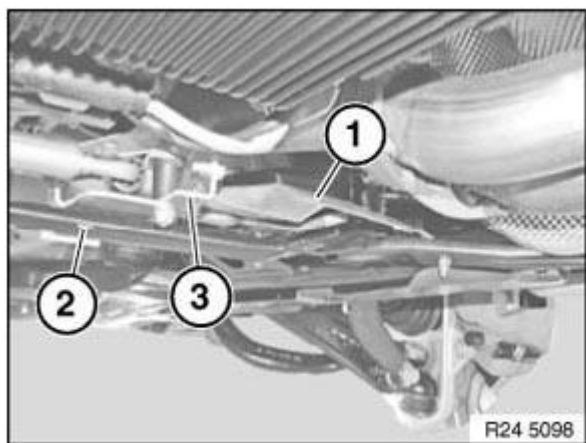


Fig. 39: Identifying Heat Shield, Screw And Bracket
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Detach oil line (2) from front axle.

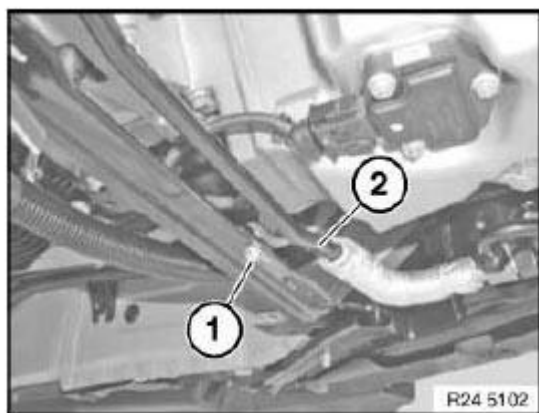


Fig. 40: Identifying Screw And Oil Line
Courtesy of BMW OF NORTH AMERICA, INC.

Detach engine oil pipes (1) from holder (2).

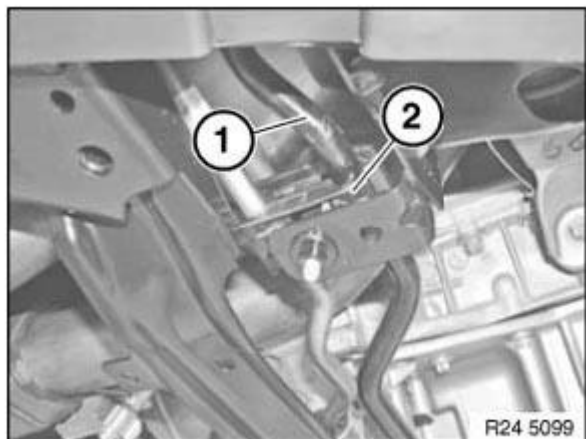


Fig. 41: Identifying Oil Line And Bracket
Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect connector (1).

Unfasten screws (2).

Remove retaining plate (3).

Tightening torque: see **Fig. 43**.

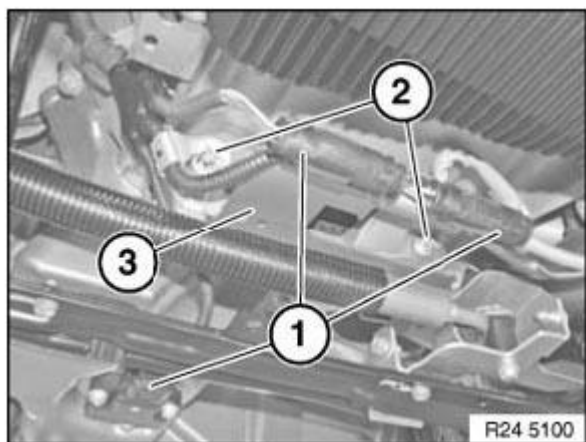


Fig. 42: Identifying Connector, Screws And Retaining Plate
Courtesy of BMW OF NORTH AMERICA, INC.

	Type	Thread	Tightening specifications	Dimension
1AZ Transmission to engine				
Torx bolts	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z	M6		9 Nm
Torx bolts	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z	M10		38 Nm
	F30/ F31/ F35 GA8HP45Z	M10x10.9		56 Nm
Steel Torx screws	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z / GA8P70H	M8		19 Nm
	GA8HP70Z(N63)	M8		21 Nm
Steel Torx screws	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z / GA8P70H	M12		66 Nm

Fig. 43: Tightening Torque 24 00 1AZ

Courtesy of BMW OF NORTH AMERICA, INC.

Release nuts (1) and (2).

Tightening torque: 19 Nm

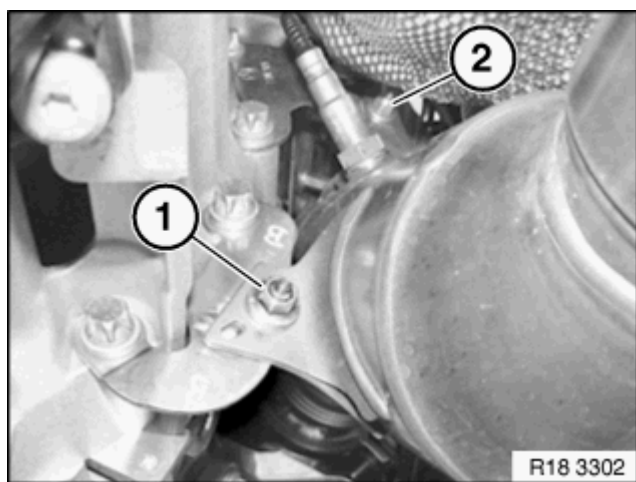


Fig. 44: Locating Nuts

Courtesy of BMW OF NORTH AMERICA, INC.

Release aluminium screw (1) on right next to cable retaining plate with special tool 00 9 010 (Socket WAF 46).

Aluminium screws must be replaced.

Tightening torque: see **Fig. 46**.

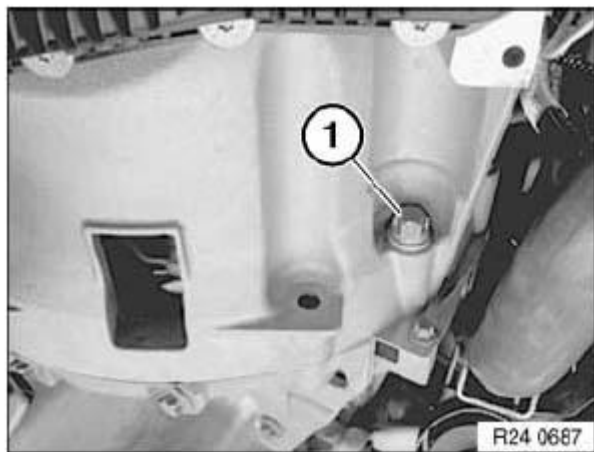


Fig. 45: Identifying Aluminium Bolt To Cable Retaining Plate
Courtesy of BMW OF NORTH AMERICA, INC.

2AZ Transmission to engine N52/N53/N54/N55 Aluminium screws/bolts are not magnetic	GA6HP19Z / GA6HP26Z / GA8HP45Z		Replace screws Jointing torque and angle of rotation must be observed without fail	
	GA6HP19Z	M10x30	Jointing torque Angle of rotation	20 Nm 90-110 °
	GA6HP19Z	M10x85	Jointing torque Angle of rotation	20 Nm 180-200 °
	GA6HP19Z / GA8HP45Z	M12	Jointing torque Angle of rotation	25 Nm 130 °

Fig. 46: Tightening Torque 24 00 2AZ
Courtesy of BMW OF NORTH AMERICA, INC.

Prepare special tool (1) 24 4 161 (A) with shaped element (2) 24 4 166 as pictured.

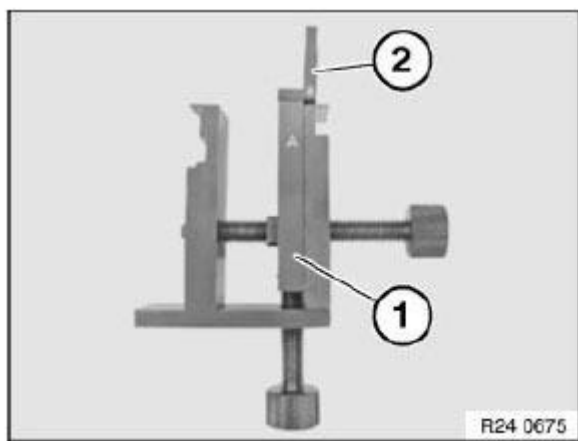


Fig. 47: Identifying Special Tools
Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool 24 4 160 into recess of transmission housing and clamp gently with screw (1).

Raise by turning screw (2) and clamp down.

Then tighten down screw (1).

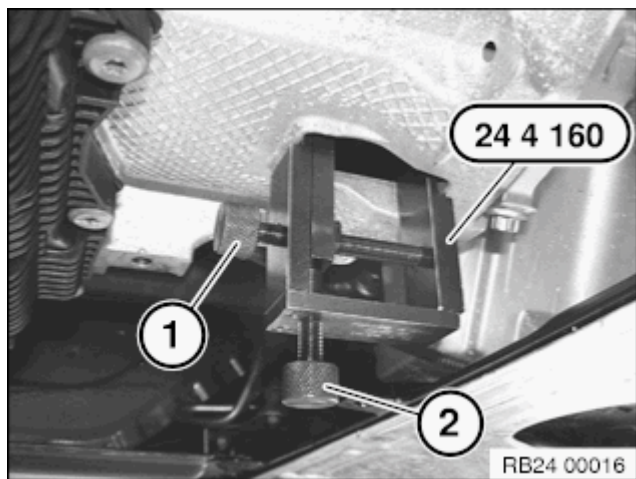


Fig. 48: Identifying Screws Of Special Tool
Courtesy of BMW OF NORTH AMERICA, INC.

- Unlock and disconnect connector (1) by turning.
- Do not touch pins.
- Release cable from brackets.
- Insert special tool 24 2 390 (cap) in sealing cup.

Tasks are described in Gearbox holder.

IMPORTANT: Read and comply with important note:

See NOTES on mechatronics

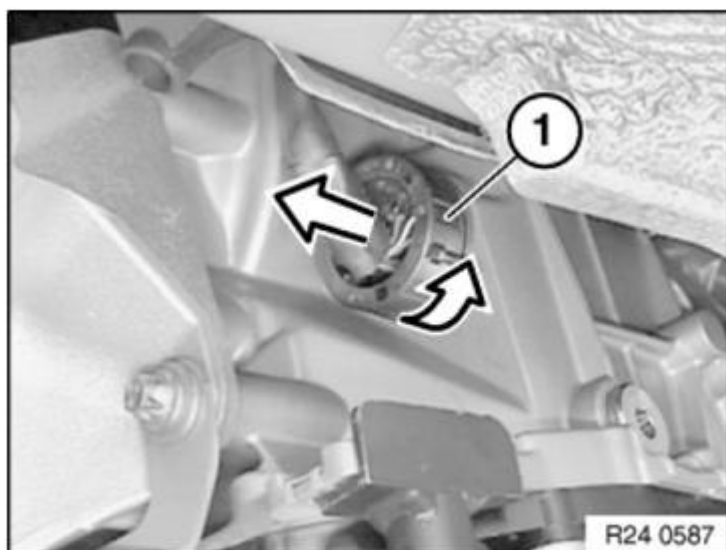


Fig. 49: Disconnecting Connector

Courtesy of BMW OF NORTH AMERICA, INC.

Supporting transmission:

Support transmission with special tools 23 4 050, 00 2 030.

Secure transmission to mounting with tensioning strap (1).

Tasks are described in **TRANSMISSION BRACKET**.

After completion of work, check transmission fluid level.

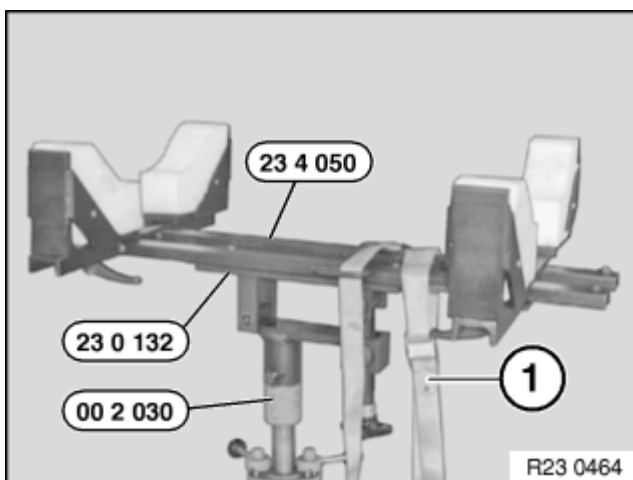


Fig. 50: Supporting Transmission

Courtesy of BMW OF NORTH AMERICA, INC.

Release screw.

Tightening torque: 38 Nm

Release screw (1).

Tightening torque: 68 Nm

Remove cross member.

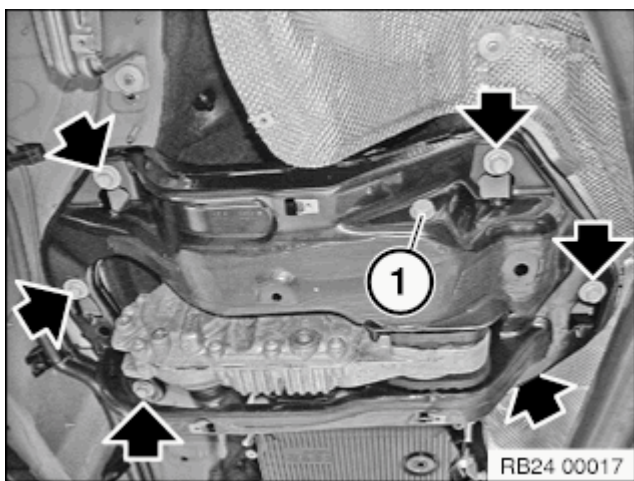


Fig. 51: Identifying Screw

Courtesy of BMW OF NORTH AMERICA, INC.

Crank engine at vibration damper in direction of rotation until screw (1) is visible in recess.

Release all 6 bolts of torque converter with special tool 24 1 110 (socket wrench insert).

Installation note:

Replace converter screws. Remove any remaining adhesive residue from the thread.

Tightening torque: see **Fig. 53**.

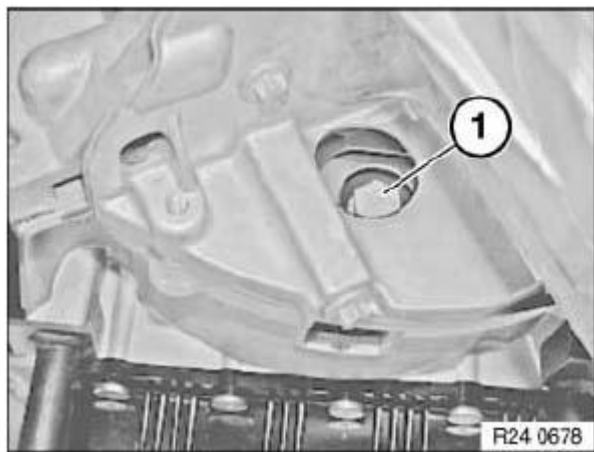


Fig. 52: Identifying Vibration Damper In Screw
Courtesy of BMW OF NORTH AMERICA, INC.

	Type	Thread	Tightening specification	Measure
1AZ Torque converter to flywheel		M8		26 Nm
	A4S 270R / A4S 310R / A5S 310Z / A5S 300J / A5S 440Z / A5S 560Z / A5S 325Z / A4S 200R / GA6HP26Z / GA6HP19Z	M10 8.8		45 Nm
	A5S360/ 390R	M10		45 Nm
	A5S360/ 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z / GA6L45R	M10 10.9		56 Nm

Fig. 53: Tightening Torque 24 40 1AZ
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws.

Installation note:

Observe **screw fastening sequence** without fail.

Tightening torque: see **Fig. 55**.

Aluminium screws **must** be replaced.

Tightening torque and angle of rotation for aluminium screws (7, 8, 9, 10, 11): see **Fig. 56**.

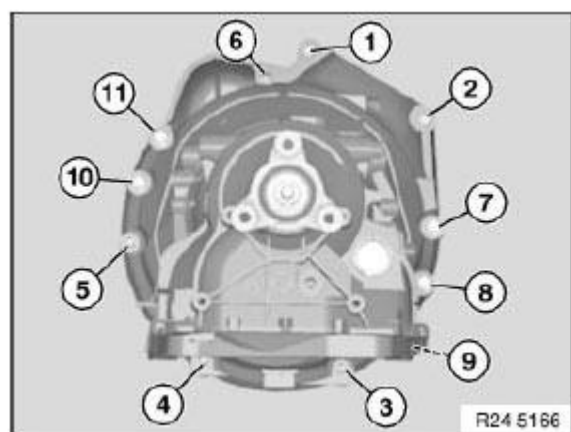


Fig. 54: Identifying Loosening Sequence Of Transmission Housing Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

	Type	Thread	Tightening specifications	Dimension
1AZ Transmission to engine				
Torx bolts	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z	M6		9 Nm
Torx bolts	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z	M10		38 Nm
	F30/ F31/ F35 GA8HP45Z	M10x10.9		56 Nm
Steel Torx screws	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z / GA8P70H	M8		19 Nm
	GA8HP70Z(N63)	M8		21 Nm
Steel Torx screws	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z / GA8P70H	M12		66 Nm

Fig. 55: Tightening Torque 24 00 1AZ
 Courtesy of BMW OF NORTH AMERICA, INC.

2AZ Transmission to engine N52/N53/N54/N55 Aluminium screws/bolts are not magnetic	GA6HP19Z / GA6HP26Z / GA8HP45Z		Replace screws Jointing torque and angle of rotation must be observed without fail	
	GA6HP19Z	M10x30	Jointing torque Angle of rotation	20 Nm 90-110 °
	GA6HP19Z	M10x85	Jointing torque Angle of rotation	20 Nm 180-200 °
	GA6HP19Z / GA8HP45Z	M12	Jointing torque Angle of rotation	25 Nm 130 °

Fig. 56: Tightening Torque 24 00 2AZ
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Tighten down screws/bolts to specified torque.

Attach special tool 00 9 120 (torque angle measuring dial) for angle of rotation with magnet 00 9 130

Secure to vehicle underbody and screw down aluminium screws/bolts in accordance with angle of rotation.

Angle of rotation: see **Fig. 56**.

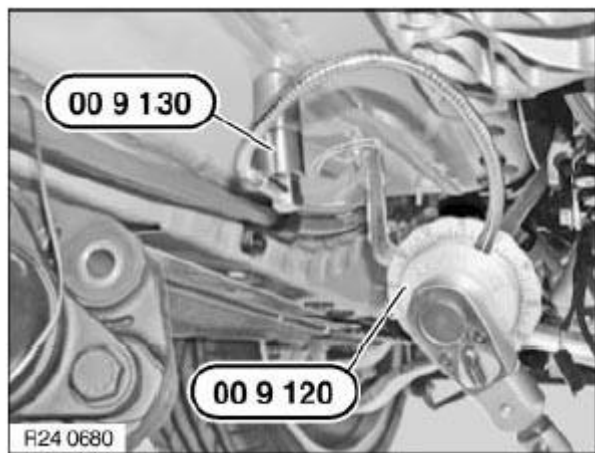


Fig. 57: Identifying Special Tool (00 9 120) And (00 9 130)
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Bore hole (1) of drive plate must be accessible from recess on engine oil sump.

Check fitting sleeves (2...3) for correct seating.

Replace damaged fitting sleeves.

NOTE: Graphic representation similar.

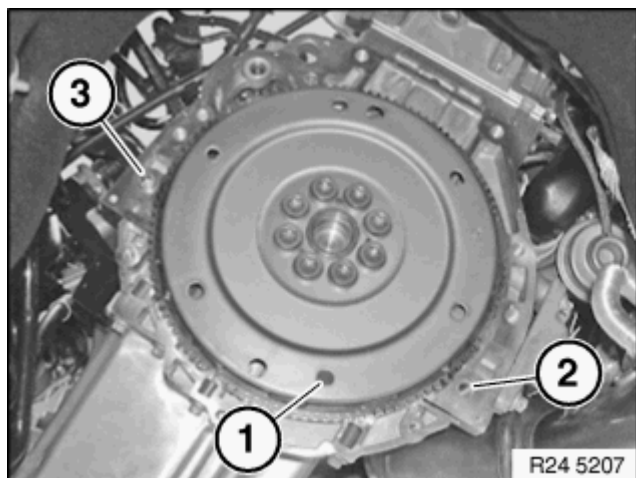


Fig. 58: Identifying Bore Hole And Fitting Sleeves

Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Rotate torque converter until bore hole in torque converter is flush with bore hole in drive plate.

Flange automatic transmission to engine.

24 00 023 REMOVING AND INSTALLING AUTOMATIC TRANSMISSION (GA8HP70Z) (X6 50I 2011-13)

IMPORTANT: After completion of repair work, check TRANSMISSION OIL LEVEL.

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397**

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Disconnect the **BATTERY**
- Secure engine in **INSTALLATION POSITION**
- If necessary, remove **FAN COWL**
- Remove underbody protection at **FRONT** and **REAR**
- Remove **REINFORCEMENT PLATE**
- Remove **EXHAUST SYSTEM**
- Remove **FRONT PROPELLER SHAFT**
- Detach **PROPELLER SHAFT**

Vehicles with Adaptive Drive:

Release screws (1).

Secure line (2) under cross-brace (3).

Remove cover (4).

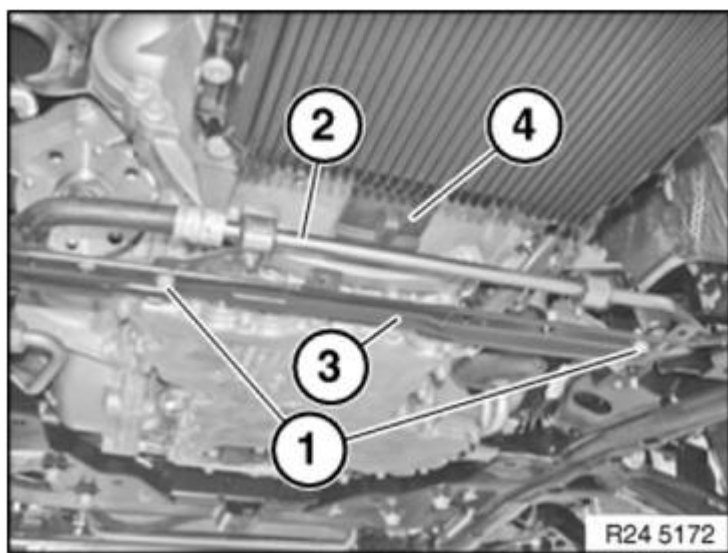


Fig. 59: Identifying Cross-Brace, Cover And Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1) and remove crankshaft sensor.

Disengage cable from holder (2).

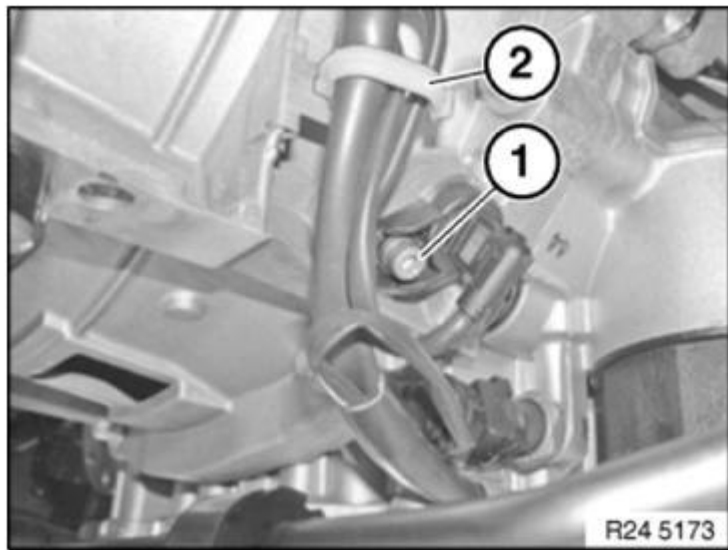


Fig. 60: Identifying Crankshaft Sensor Mounting Screw
Courtesy of BMW OF NORTH AMERICA, INC.

- Release connector (1) by turning and disconnect
- Release cable from brackets
- Insert special tool 24 2 390 (cap) in sealing cup.

These tasks are described in NOTES ON MECHATRONICS

(Important: Observe important note)

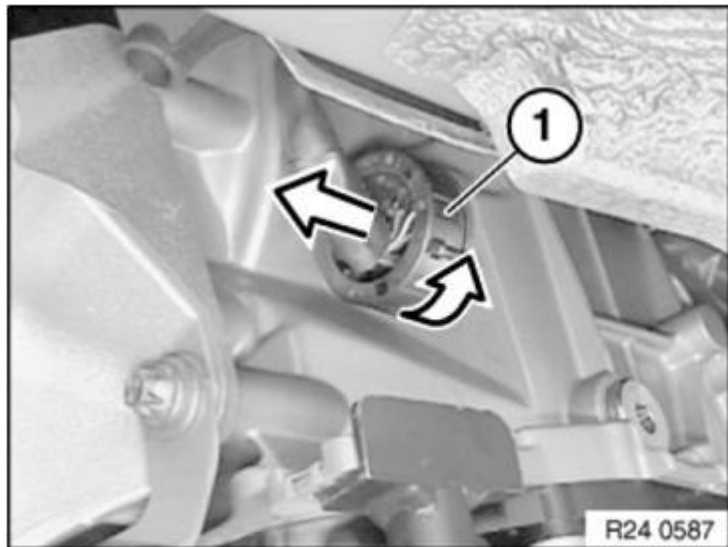


Fig. 61: Disconnecting Connector

Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Disconnect hydraulic lines (2) to transmission oil cooler.

Installation note:

Replace sealing rings.

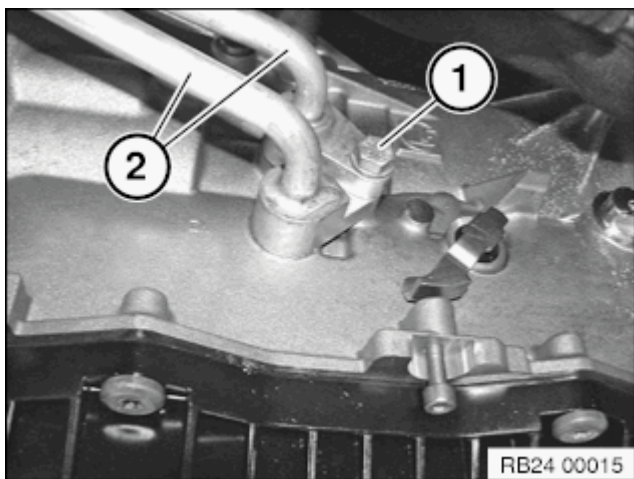


Fig. 62: Identifying Screw And Hydraulic Lines

Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1).

Tightening torque: see **Fig. 64**.

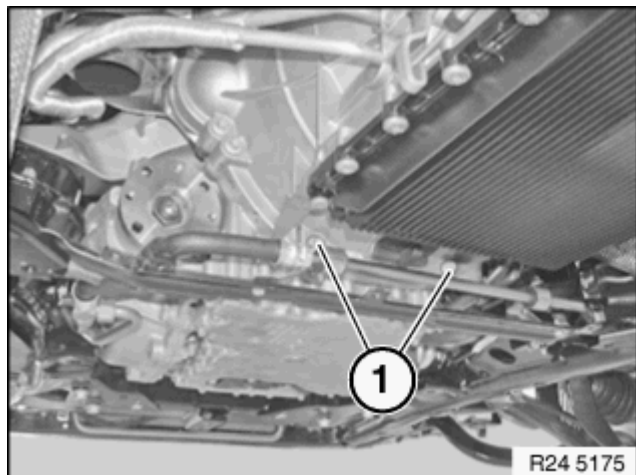


Fig. 63: Identifying Screws

Courtesy of BMW OF NORTH AMERICA, INC.

	Type	Thread	Tightening specifications	Dimension
1AZ Transmission to engine				
Torx bolts	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z	M6		9 Nm
Torx bolts	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z	M10		38 Nm
	F30/ F31/ F35 GA8HP45Z	M10x10.9		56 Nm
Steel Torx screws	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z / GA8P70H	M8		19 Nm
	GA8HP70Z(N63)	M8		21 Nm
Steel Torx screws	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z / GA8P70H	M12		66 Nm

Fig. 64: Tightening Torque 24 00 1AZ

Courtesy of BMW OF NORTH AMERICA, INC.

Crank engine at vibration damper until screw (1) is visible in recess.

Release all 6 screws (1) on torque converter.

Tightening torque: 56 Nm

NOTE: Replace converter screws.

(Remove adhesive residue from thread, if applicable)

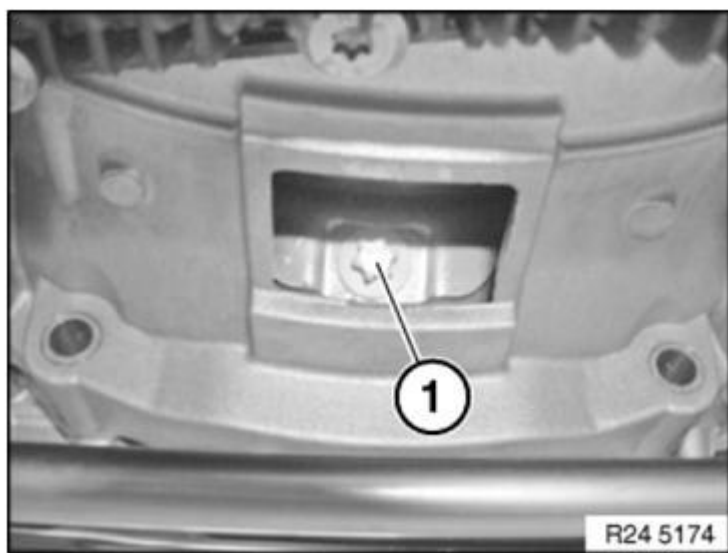


Fig. 65: Identifying Torque Converter Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Press special tool 24 1 380 together and insert into recess in transmission housing.

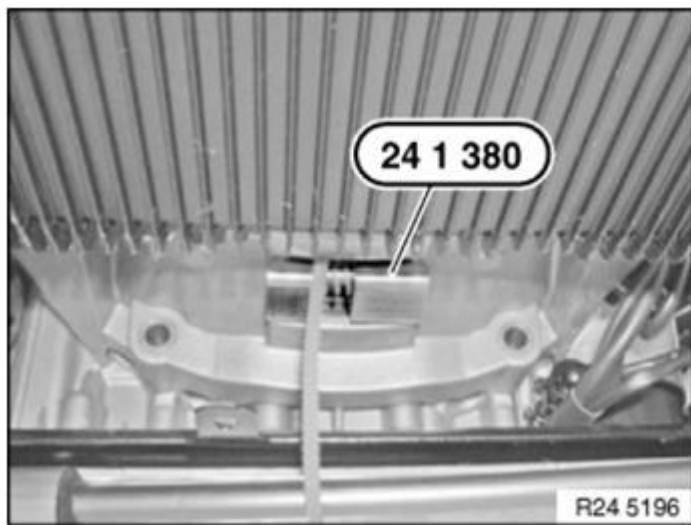


Fig. 66: Inserting Special Tool 24 1 380 In Transmission Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws.

Tightening torque: 38 Nm

Release screw (1).

Tightening torque: 68 Nm

Remove cross member.

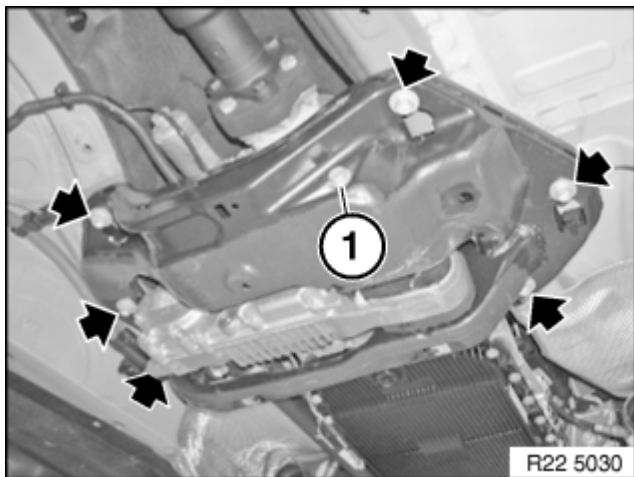


Fig. 67: Removing Crossmember

Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect connector (1) from transfer box control unit (3) (longitudinal torque module).

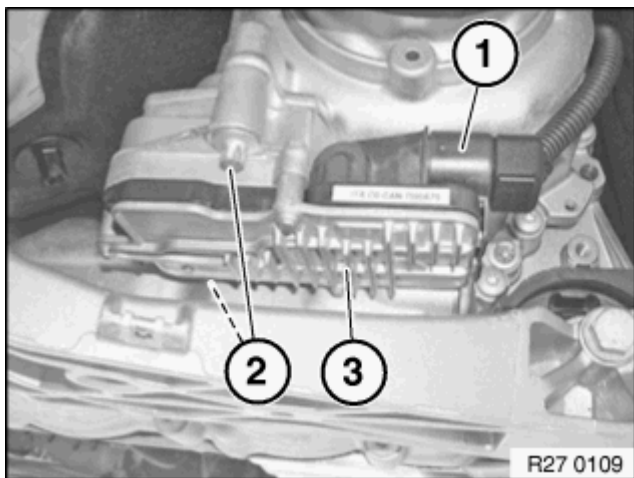


Fig. 68: Identifying Connector And Control Unit

Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Remove earth strap (2).

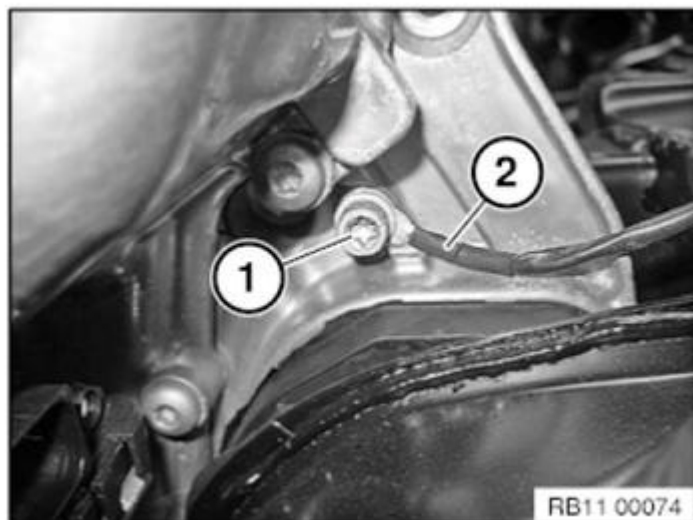


Fig. 69: Identifying Ground Strap And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Lower engine with transmission.

Secure engine and transmission in lowered position with engine bridge.

Then support transmission.

Supporting transmission:

Support transmission with special tools 23 4 050, 00 2 030.

Secure transmission to mounting with tensioning strap (1).

Tasks are described in Gearbox holder.

After completion of work, check transmission oil level.

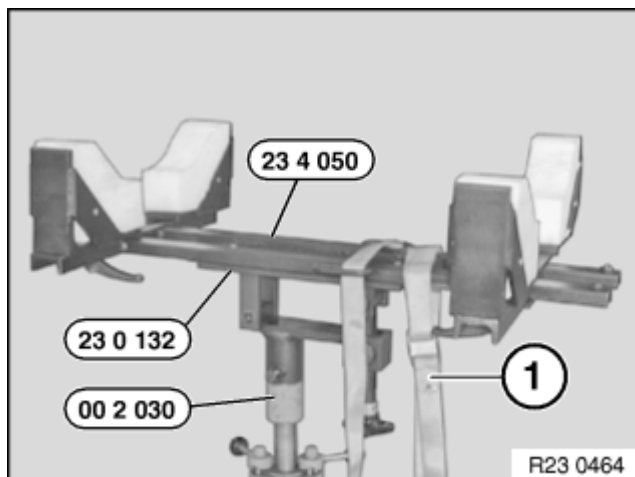


Fig. 70: Supporting Transmission

Courtesy of BMW OF NORTH AMERICA, INC.

Release screws.

Tightening torque: **Fig. 72**

Unflange transmission.

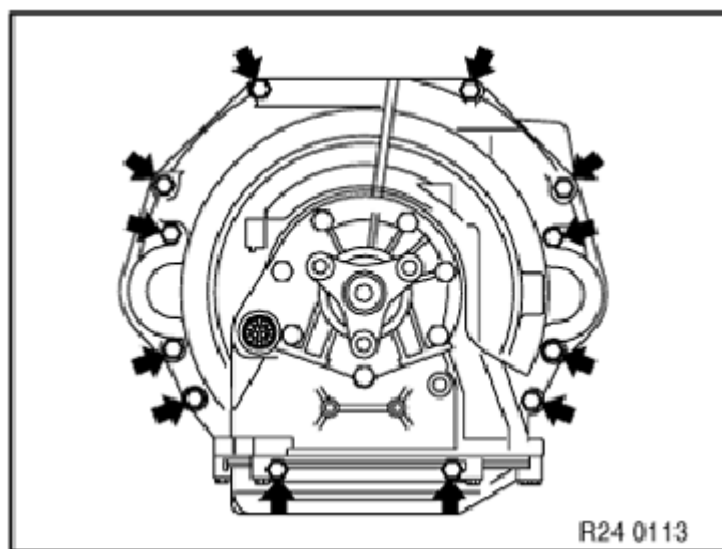


Fig. 71: Locating Transmission Screws

Courtesy of BMW OF NORTH AMERICA, INC.

	Type	Thread	Tightening specifications	Dimension
1AZ Transmission to engine				
Torx bolts	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z	M6		9 Nm
Torx bolts	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z	M10		38 Nm
	F30/ F31/ F35 GA8HP45Z	M10x10.9		56 Nm
Steel Torx screws	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z / GA8P70H	M8		19 Nm
	GA8HP70Z(N63)	M8		21 Nm
Steel Torx screws	GA6HP19Z / GA6HP26Z / GA8HP45Z / GA8HP70Z / GA8HP90Z / GA8P70H	M12		66 Nm

Fig. 72: Tightening Torque 24 00 1AZ

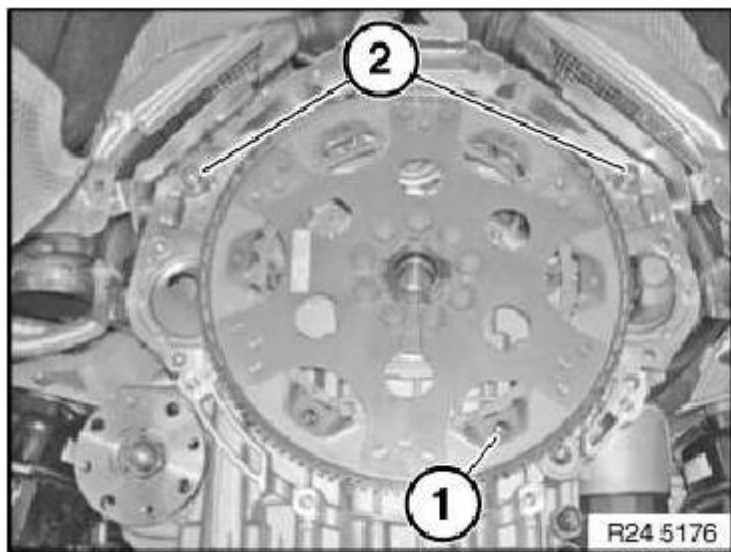
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Bore hole (1) in drive plate must be accessible from recess on engine oil sump.

Check that fitting sleeves (2) are correctly fitted.

Replace damaged fitting sleeves.

**Fig. 73: Identifying Driving Plate Bore Hole And Fitting Sleeves**

Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Rotate torque converter until bore hole in torque converter is flush with bore hole in drive plate.

Flange-mount transmission to engine.

24 00 050 INSTALLING EXCHANGE TRANSMISSION (GA6HP19Z) (X6 35I)

Drain automatic transmission fluid at oil drain plug.

Tightening torque: 24 11 6AZ .

IMPORTANT: After completion of work, program transmission control unit.

Recycling:

Catch and dispose of escaping transmission fluid.

Observe country-specific waste-disposal regulations

- IMPORTANT:**
- Before installing replacement transmission, always flush transmission fluid cooler together with lines . See 17 21 500 FLUSHING TRANSMISSION OIL COOLER WITH LINES (AUTOMATIC TRANSMISSION) (GA6HP19Z, GAHP26Z, GA6HP32Z) .
 - After completion of work, check transmission fluid level. See 00 11 500 CHECKING/TOPPING UP FLUID LEVEL IN AUTOMATIC TRANSMISSION (GA6HP19Z) .

Replacement transmission is supplied filled with transmission fluid.

Use only the approved TRANSMISSION OIL .

Failure to comply with this instruction will result in serious damage to the transmission.

Necessary preliminary tasks:

- Remove automatic transmission. See REMOVING AND INSTALLING AUTOMATIC TRANSMISSION (GA6HP19Z).

Convert selector lever (1).

Tightening torque 24 51 1AZ .

Modify holder (2).

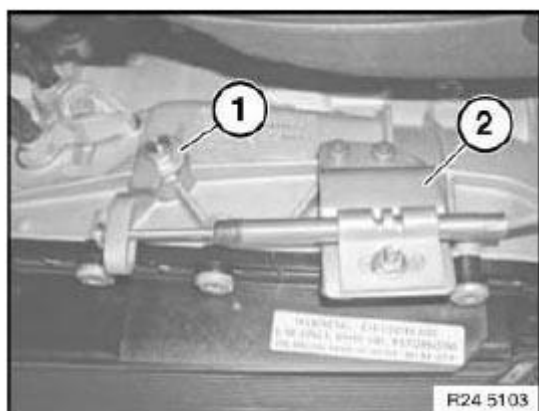


Fig. 74: Identifying Selector Lever And Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Modify transfer box.

Convert transportation lock (1).

Convert all cable holders.

Convert all seal plugs.

Convert protective cap on output shaft.

IMPORTANT: After removing transportation lock, secure torque converter against slipping out.

Transmission identification:

- refer to BMW Parts Service.
- On type plate

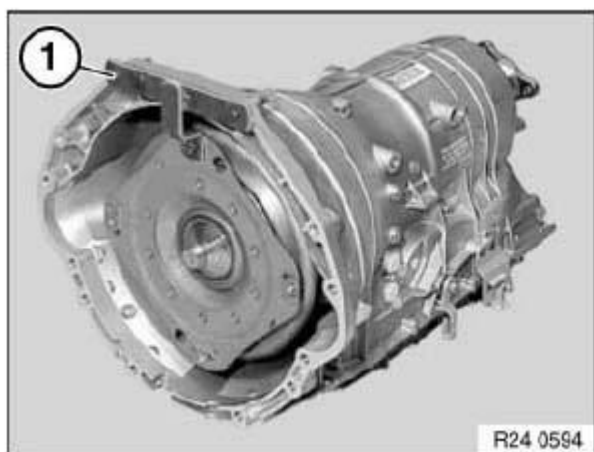


Fig. 75: Identifying Transportation Lock

Courtesy of BMW OF NORTH AMERICA, INC.

24 00 043 INSTALLING EXCHANGE TRANSMISSION (GA6HP26Z) (X6 50I)

Drain automatic transmission fluid at oil drain plug.

Tightening torque:

Metal oil sump: 12 Nm

Plastic oil sump: 8 Nm

IMPORTANT: After completion of work, program transmission control unit.

Recycling:

Catch and dispose of escaping transmission fluid.

Observe country-specific waste-disposal regulations

- IMPORTANT:**
- Before installing replacement transmission, always **FLUSH TRANSMISSION FLUID COOLER TOGETHER WITH LINES** .
 - After completion of work, **CHECK TRANSMISSION FLUID LEVEL**.

Replacement transmission is supplied filled with transmission fluid.

- Use only the approved **TRANSMISSION OIL** .

Failure to comply with this instruction will result in serious damage to the transmission.

Necessary preliminary tasks:

- Remove **AUTOMATIC TRANSMISSION**.

Modify gearshift lever (1).

Tightening torque: 10 Nm

Modify clip (2) for cable.

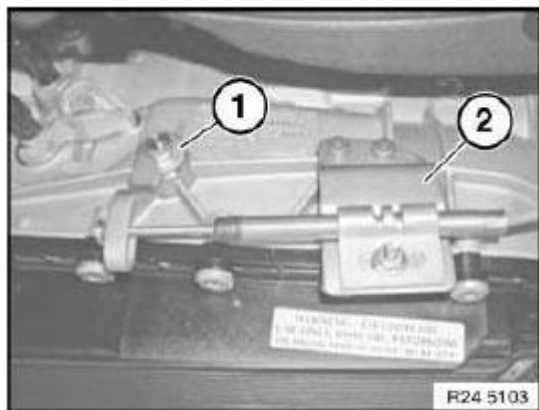


Fig. 76: Identifying Convert Selector Lever
Courtesy of BMW OF NORTH AMERICA, INC.

Modify TRANSFER CASE .

Modify transportation retainers.

Convert all cable clips.

Convert all seal plugs.

Modify protective cap on output shaft.

IMPORTANT: After removing transportation retainer, secure torque converter against slipping out.

Transmission identification:

- refer to BMW Parts Department
- on type plate

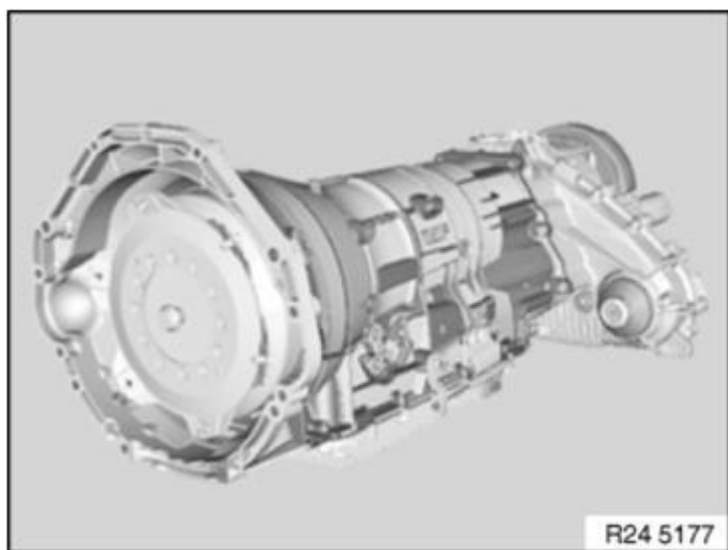


Fig. 77: Overview Of Transfer Case
Courtesy of BMW OF NORTH AMERICA, INC.

24 00 054 INSTALLING EXCHANGE TRANSMISSION (GA8HP45Z) (X6 35I 2011-13)

- IMPORTANT:**
- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
 - Wear protective gloves.
 - Ensure adequate ventilation.

Drain automatic transmission fluid at oil drain plug.

Tightening torque **24 11 2AZ** .

IMPORTANT: After completion of repair work, program control transmission control unit.

Recycling:

Catch and dispose of escaping transmission oil.

Observe country-specific waste disposal regulations.

- IMPORTANT:**
- Before installing replacement transmission, always flush **TRANSMISSION FLUID COOLER TOGETHER WITH LINES** .
 - After completion of repair work, check **TRANSMISSION OIL LEVEL**.
 - Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397**

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove AUTOMATIC TRANSMISSION.
- Remove and modify TRANSFER BOX

Modify transportation retainers.

Convert all cable clips.

Convert all seal plugs.

Convert protective cap on output shaft.

IMPORTANT: After removing transportation retainer, secure torque converter against slipping out.

Transmission identification:

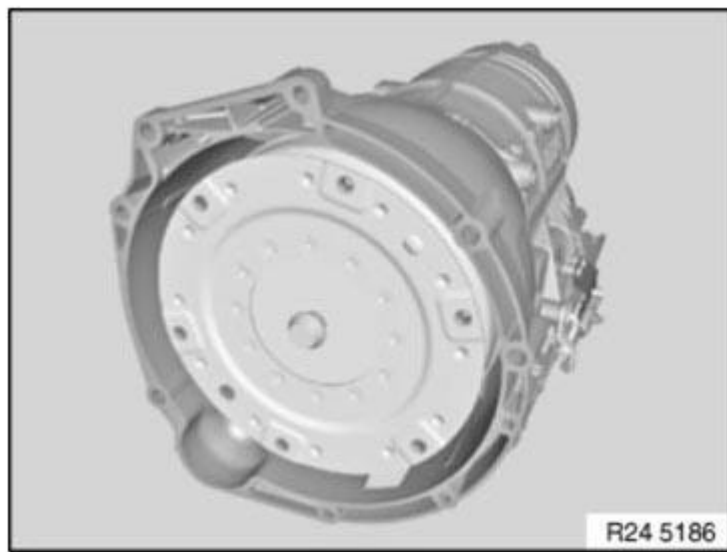


Fig. 78: Overview Of Gearbox Casing
Courtesy of BMW OF NORTH AMERICA, INC.

- refer to BMW Parts Department.
- On type plate

24 00 055 INSTALLING EXCHANGE GEARBOX (GA8HP70Z) (X6 50I 2011-13)

- IMPORTANT:**
- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
 - Wear protective gloves.
 - Ensure adequate ventilation.

Drain automatic transmission fluid at oil drain plug.

Tightening torque **24 11 2AZ** .

IMPORTANT: After completion of repair work, program control transmission control unit.

Recycling:

Catch and dispose of escaping transmission oil.

Observe country-specific waste disposal regulations.

- IMPORTANT:**
- Before installing replacement transmission, always flush **TRANSMISSION FLUID COOLER TOGETHER WITH LINES** .
 - After completion of repair work, check **TRANSMISSION OIL LEVEL**.
 - Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397*

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove **AUTOMATIC TRANSMISSION**.

Modify **TRANSFER CASE** .

Modify transportation retainers.

Convert all cable clips.

Convert all seal plugs.

Convert protective cap on output shaft.

IMPORTANT: After removing transportation retainer, secure torque converter against slipping out.

Transmission identification:

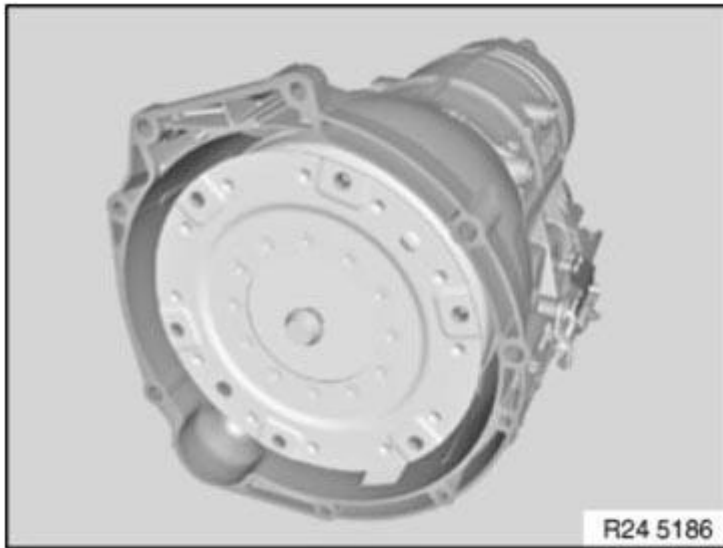


Fig. 79: Overview Of Gearbox Casing
Courtesy of BMW OF NORTH AMERICA, INC.

- refer to BMW Parts Department.
- On type plate

TRANSMISSION CASE, OIL SUMP

24 11 011 REMOVING AND INSTALLING/SEALING OR REPLACING TRANSMISSION SUMP (GA6HP19Z) (X6 35I)

IMPORTANT: Remove transmission sump only after it has cooled down.
After completion of work, check FLUID LEVEL .
Use only the approved TRANSMISSION OIL .
Failure to comply with this requirement will result in serious damage to the automatic transmission!

Recycling:

Catch and dispose of escaping transmission fluid.

Observe country-specific waste-disposal regulations.

Necessary preliminary tasks:

- Remove **UNDERBODY PROTECTION** .
- Remove heat shields
- Remove **CROSS MEMBER** .

Remove oil drain plug (1).

Tightening torque: **24 11 6AZ** .

Drain automatic transmission fluid.

Installation note:

Replace oil drain plug.

Recycling:

Catch and dispose of escaping transmission oil.

Observe country-specific waste disposal regulations.

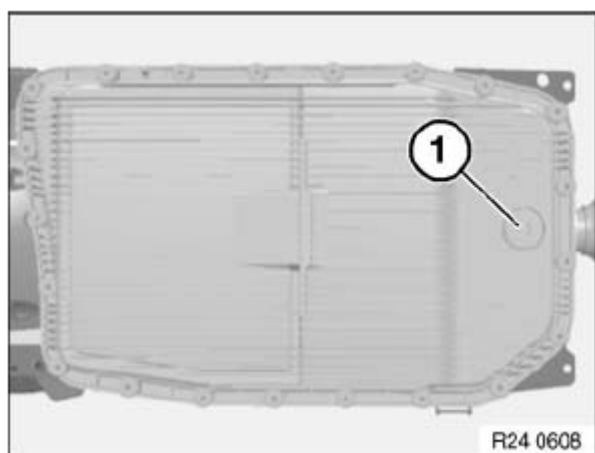


Fig. 80: Identifying Oil Drain Plug

Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew all bolts.

Remove transmission sump (1).

Installation note:

Insert screws (2) until screw heads make contact.

Insert all further screws in diagonal sequence from inside to outside until screw heads make contact.

Tightening torque: **24 11 5AZ** .

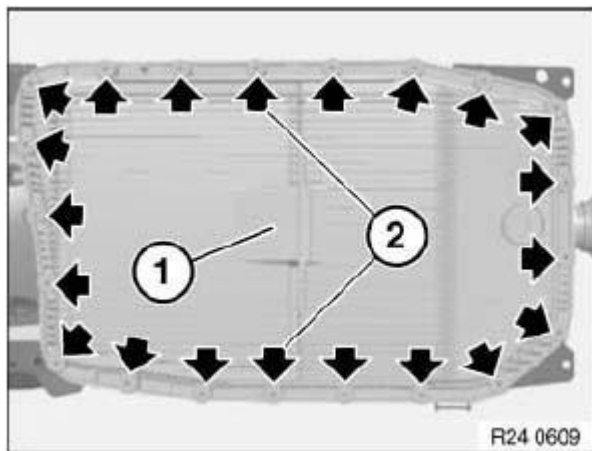


Fig. 81: Identifying Transmission Sump With Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Remove gasket (1) from transmission sump.

Clean gearbox oil sump to remove residual oil.

Clean sealing faces and groove with a cloth.

Insert new gasket in transmission sump groove.

IMPORTANT: Do not degrease transmission sump with cleaning agent.

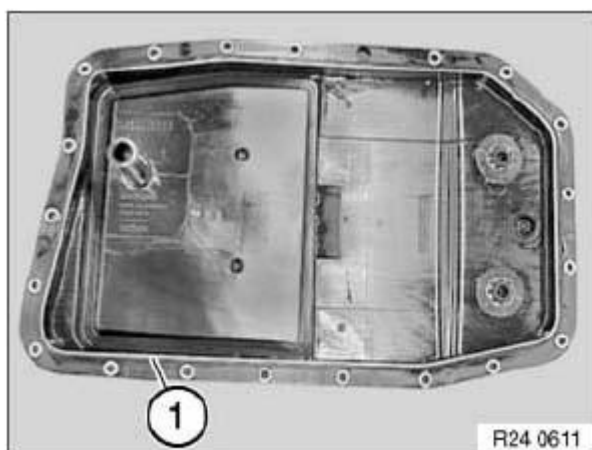


Fig. 82: Identifying Transmission Sump Gasket
Courtesy of BMW OF NORTH AMERICA, INC.

Replace sealing ring (1) on oil filter tube.

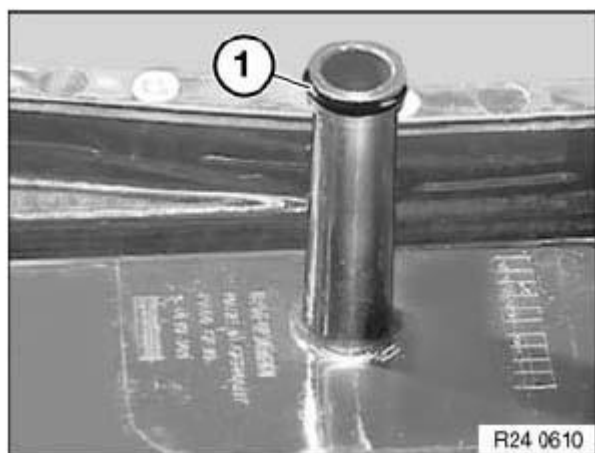


Fig. 83: Identifying Sealing Ring On Oil Filter Tube
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

The gasket is correctly installed when it is engaged in the locating opening of the transmission sump.

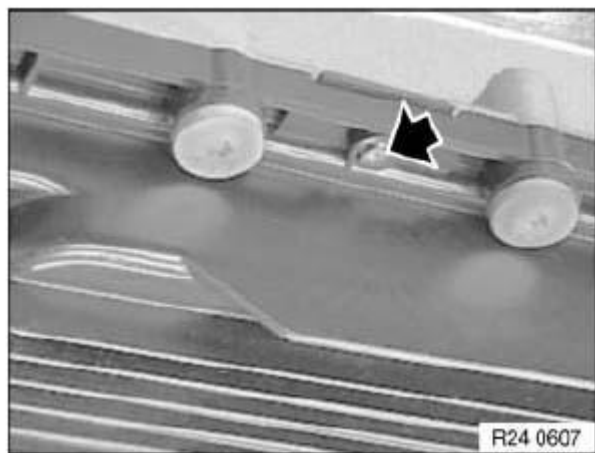


Fig. 84: Locating Gasket Position
Courtesy of BMW OF NORTH AMERICA, INC.

**24 11 010 REMOVING AND INSTALLING/SEALING OR REPLACING GEARBOX SUMP
(GA6HP26Z) (X6 50I)**

IMPORTANT:

- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
- Wear protective gloves.
- Ensure adequate ventilation.

IMPORTANT: Remove transmission sump only after it has cooled down.

After completion of work, check TRANSMISSION FLUID LEVEL.

Use only the approved TRANSMISSION OIL .

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Recycling:

Catch and dispose of escaping transmission fluid.

Observe country-specific waste-disposal regulations.

Necessary preliminary tasks:

- Remove **UNDERBODY PROTECTION** .

Remove oil drain plug (1).

Tightening torque: **24 11 6AZ** .

Drain automatic transmission fluid.

Installation note:

Replace oil drain plug.

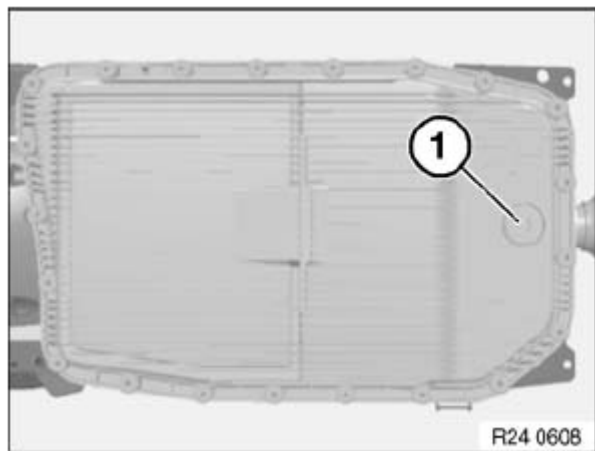


Fig. 85: Identifying Oil Drain Plug

Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew all bolts.

Remove transmission sump (1).

Installation note:

Insert screws (2) until screw heads make contact.

Insert all further screws in diagonal sequence from inside to outside until screw heads make contact.

Tightening torque: **24 11 5AZ** .

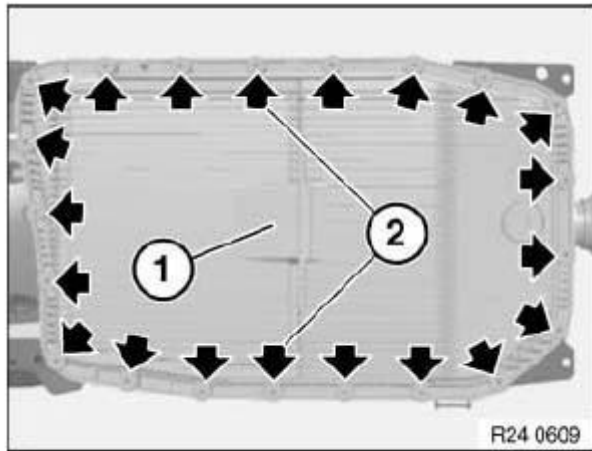


Fig. 86: Identifying Transmission Sump With Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Remove gasket (1) from transmission sump.

Clean sealing faces and groove with a cloth.

Insert new gasket in transmission sump groove.

IMPORTANT: Do not degrease transmission sump with cleaning agent.

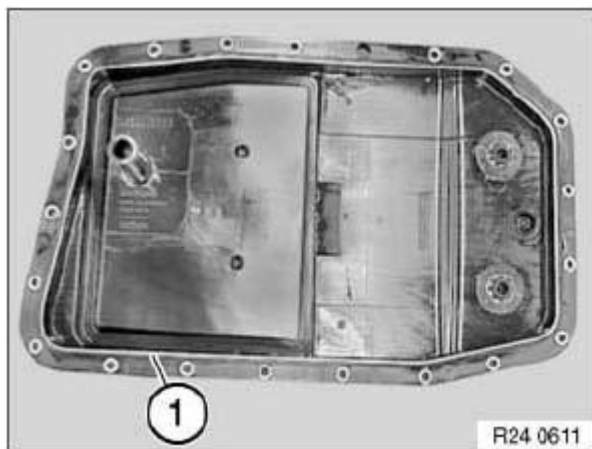


Fig. 87: Identifying Transmission Sump Gasket
Courtesy of BMW OF NORTH AMERICA, INC.

Replace sealing ring (1) on oil filter tube.

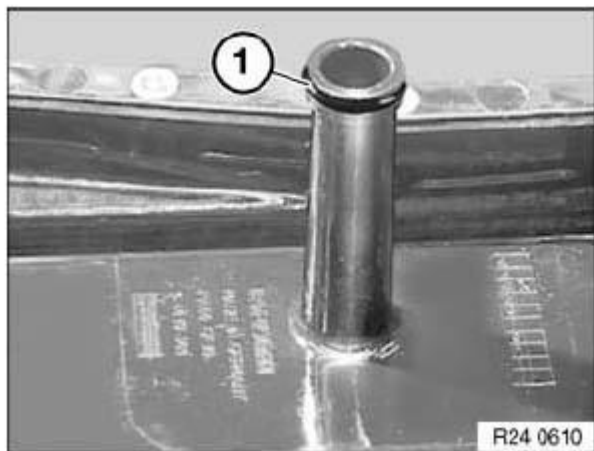


Fig. 88: Identifying Sealing Ring On Oil Filter Tube
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

The gasket is correctly installed when it is engaged in the locating opening of the transmission sump.

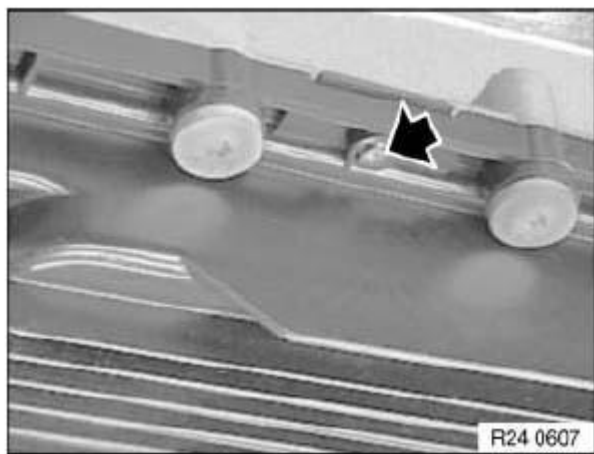


Fig. 89: Locating Gasket Position
Courtesy of BMW OF NORTH AMERICA, INC.

24 11 014 REMOVING AND INSTALLING/SEALING OR REPLACING TRANSMISSION OIL SUMP (GA8HP45Z) (X6 35I 2011-13)

IMPORTANT:

- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
- Wear protective gloves.
- Ensure adequate ventilation.

IMPORTANT: Remove transmission oil sump only after it has cooled down.
After completion of repair work, check TRANSMISSION OIL LEVEL.

IMPORTANT: Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397**

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Installation note:

The transmission oil sump must be renewed **every** time it is removed.

Necessary preliminary tasks:

- Remove rear UNDERBODY PROTECTION .
- Remove TRANSMISSION CROSS MEMBER .

Remove oil drain plug (1).

Tightening torque: 8 Nm

Drain automatic transmission oil.

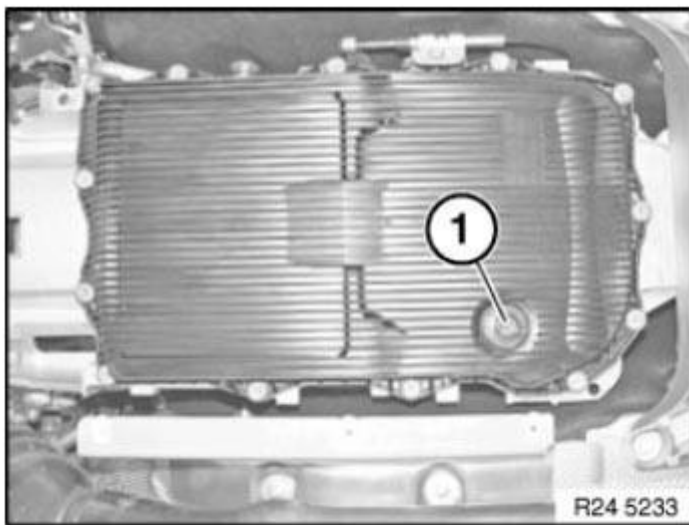


Fig. 90: Identifying Transmission Oil Sump Bolts Loosening Sequence
Courtesy of BMW OF NORTH AMERICA, INC.

Recycling:

Catch and dispose of escaping transmission oil.

Observe country-specific waste disposal regulations.

Unscrew all bolts.

Remove and renew transmission oil sump.

Installation note:

Insert new screws until screw heads make contact.

Tighten down screws in sequence 1...13 to specified torque.

NOTE: Replace aluminium screws; jointing torque and angle of rotation must be observed without fail.

Jointing torque: 4 Nm

Angle of rotation: 45°

IMPORTANT: Aluminium screws/bolts must be replaced every time they are released. Jointing torque and angle of rotation must be observed without fail (risk of damage) .

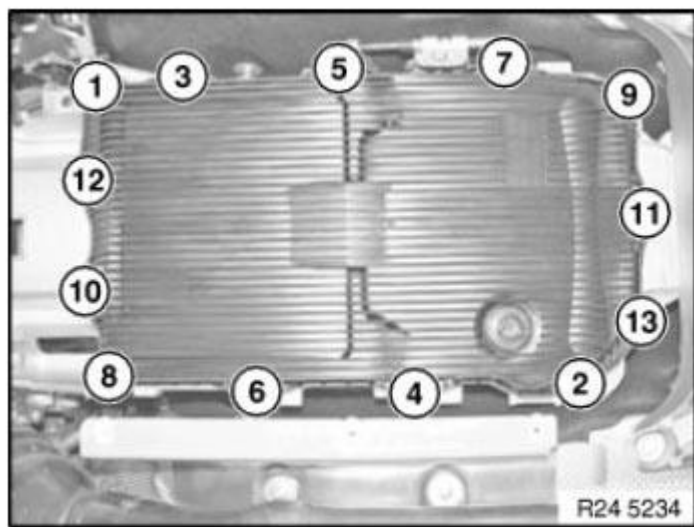


Fig. 91: Securing Transmission Using Special Tool (24 0 200)
Courtesy of BMW OF NORTH AMERICA, INC.

24 11 015 REMOVING AND INSTALLING/SEALING OR REPLACING TRANSMISSION OIL SUMP

(GA8HP70Z) (X6 50I 2011-13)

- IMPORTANT:**
- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
 - Wear protective gloves.
 - Ensure adequate ventilation.

IMPORTANT: Remove transmission oil sump only after it has cooled down.
After completion of repair work, check TRANSMISSION OIL LEVEL.

IMPORTANT: Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397**

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Installation note:

The transmission oil sump must be renewed **every** time it is removed.

Necessary preliminary tasks:

- Remove rear UNDERBODY PROTECTION .
- Remove TRANSMISSION CROSS MEMBER .

Remove retaining plates (2).

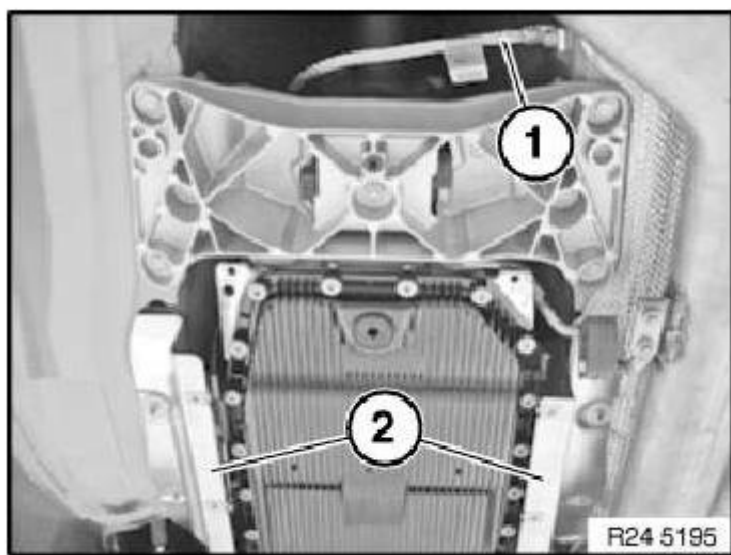


Fig. 92: Identifying Earth Strap And Panels
Courtesy of BMW OF NORTH AMERICA, INC.

Remove oil drain plug (1).

Tightening torque: 8 Nm

Drain automatic transmission oil.

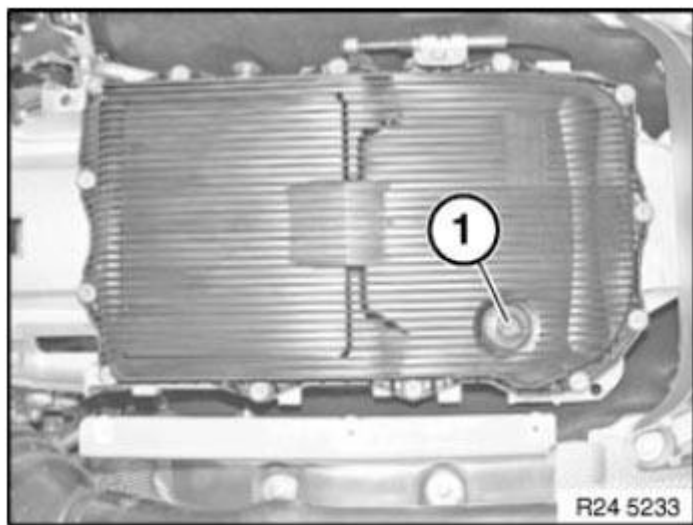


Fig. 93: Identifying Transmission Oil Sump Bolts Loosening Sequence
Courtesy of BMW OF NORTH AMERICA, INC.

Recycling:

Catch and dispose of escaping transmission oil.

Observe country-specific waste disposal regulations.

Unscrew all bolts.

Remove and renew transmission oil sump.

Installation note:

Insert new screws until screw heads make contact.

Tighten down screws in sequence 1...13 to specified torque.

NOTE: Replace aluminium screws; jointing torque and angle of rotation must be observed without fail.

Jointing torque: 4 Nm

Angle of rotation: 45°

IMPORTANT: Aluminium screws/bolts must be replaced every time they are released. Jointing torque and angle of rotation must be observed without fail (risk of damage) .

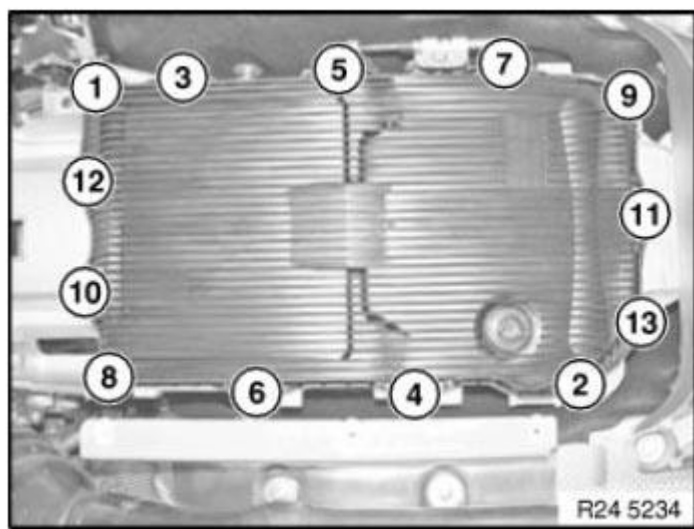


Fig. 94: Securing Transmission Using Special Tool (24 0 200)
Courtesy of BMW OF NORTH AMERICA, INC.

EXTENSION HOUSING, BEARINGS, SEAL

24 13 013 REPLACING OUTPUT FLANGE SHAFT SEAL (GA6HP19Z) (X6 35I)

Special tools required:

- 23 0 490
- 24 4 310

IMPORTANT: After completion of work, check FLUID LEVEL .

Use only the approved TRANSMISSION OIL .

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove UNDERBODY PROTECTION .
- Remove TRANSFER BOX

Drive a hole into radial shaft seal (1) using a center punch.

IMPORTANT: Do not use a drill as drillings may result in transmission malfunction.

Screw special tool 23 0 490 into radial shaft seal (1).

Drive out radial shaft seal (1) with impact weight (2).

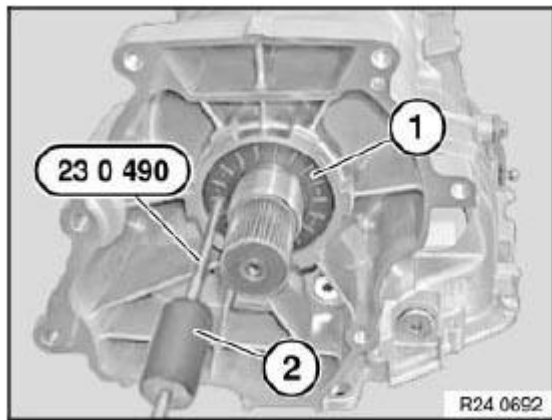


Fig. 95: Screwing Special Tool 23 0 490 Into Radial Shaft Seal
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Coat sealing lips of new radial seal with clean transmission oil.

Drive shaft seal firmly home with special tool 24 4 310 .

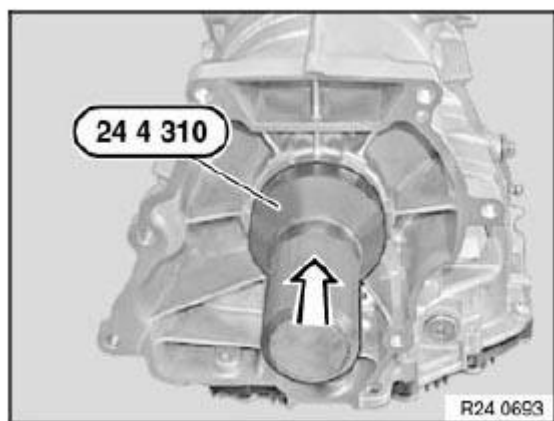


Fig. 96: Driving Shaft Seal Using Special Tool 24 4 310
Courtesy of BMW OF NORTH AMERICA, INC.

24 13 012 REPLACING OUTPUT FLANGE SHAFT SEAL (GA6HP26Z) (X6 50I)

Special tools required:

- **23 0 490**
- **24 4 310**

IMPORTANT: After completion of work, check **TRANSMISSION FLUID LEVEL**.
Use only the approved **TRANSMISSION OIL** .

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove **UNDERBODY PROTECTION** .
- Remove **TRANSFER BOX**

Drive a hole into radial shaft seal (1) using a center punch.

IMPORTANT: Do not use a drill as drillings may result in transmission malfunction.

Screw special tool 23 0 490 (puller) into radial shaft seal (1).

Drive out radial shaft seal (1) with impact weight (2).

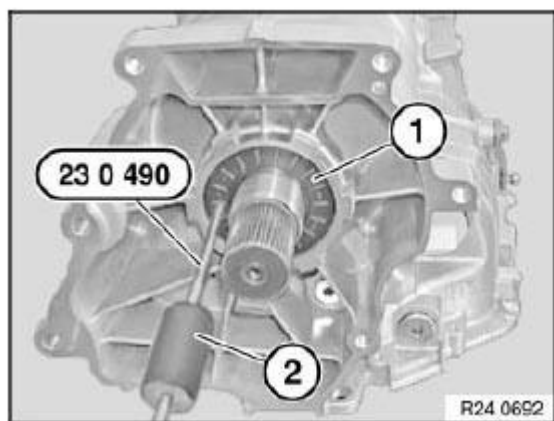


Fig. 97: Screwing Special Tool 23 0 490 Into Radial Shaft Seal
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Coat sealing lips of new radial seal with clean transmission oil.

Drive shaft seal firmly home with special tool 24 4 310 (mandrel).

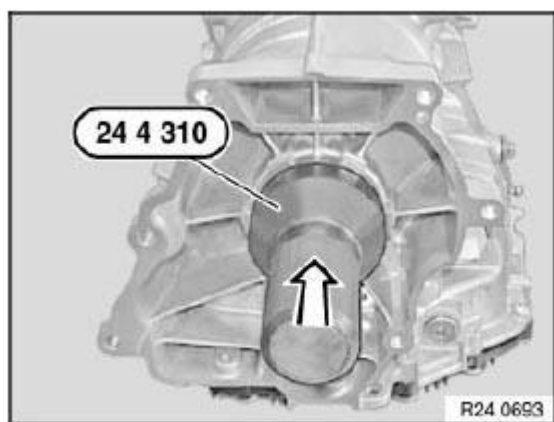


Fig. 98: Driving Shaft Seal Using Special Tool 24 4 310
 Courtesy of BMW OF NORTH AMERICA, INC.

24 13 012 REPLACING OUTPUT FLANGE RADIAL SHAFT SEAL (GA8HP45Z) (X6 35I 2011-13)

IMPORTANT: After completion of repair work, check TRANSMISSION OIL LEVEL.

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83**

22 2 305 397

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove transfer case. See "ATC 450" under **TRANSFER BOX - REPAIR**.

Drive a hole into radial shaft seal (1) using a center punch.

IMPORTANT: Do not use a drill as drillings may result in transmission malfunction.

Thread special tool 23 0 490 (puller) into radial shaft seal (1).

Drive out radial shaft seal (1) with impact weight (2).

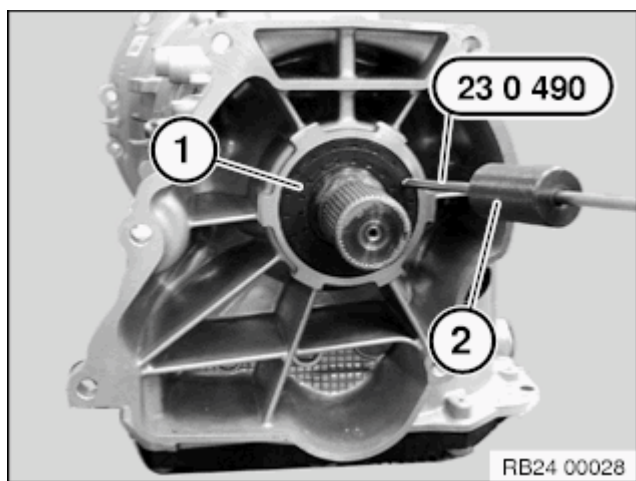


Fig. 99: Identifying Radial Shaft Seal, Impact Weight, And Special Tool 23 0 490
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Coat sealing lips of new radial shaft seal with clean transmission oil.

Drive shaft seal firmly home with special tool 23 3 220 (mandrel).

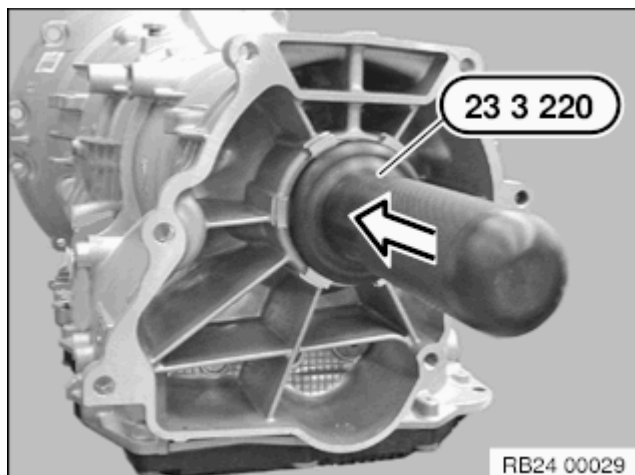


Fig. 100: Installing Radial Shaft Seal

Courtesy of BMW OF NORTH AMERICA, INC.

24 13 012 REPLACING OUTPUT FLANGE RADIAL SHAFT SEAL (GA8HP70Z) (X6 50I 2011-13)

IMPORTANT: After completion of repair work, check TRANSMISSION OIL LEVEL.

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397**

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove TRANSFER BOX

Drive a hole into radial shaft seal (1) using a center punch.

IMPORTANT: Do not use a drill as drillings may result in transmission malfunction.

Thread special tool 23 0 490 (puller) into radial shaft seal (1).

Drive out radial shaft seal (1) with impact weight (2).

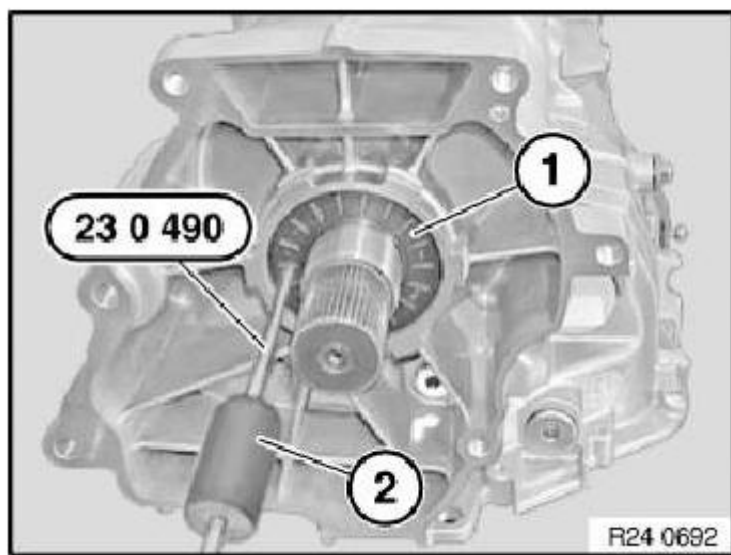


Fig. 101: Removing Radial Shaft Seal

Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Coat sealing lips of new radial shaft seal with clean transmission oil.

Drive shaft seal firmly home with special tool 24 4 310 (mandrel).

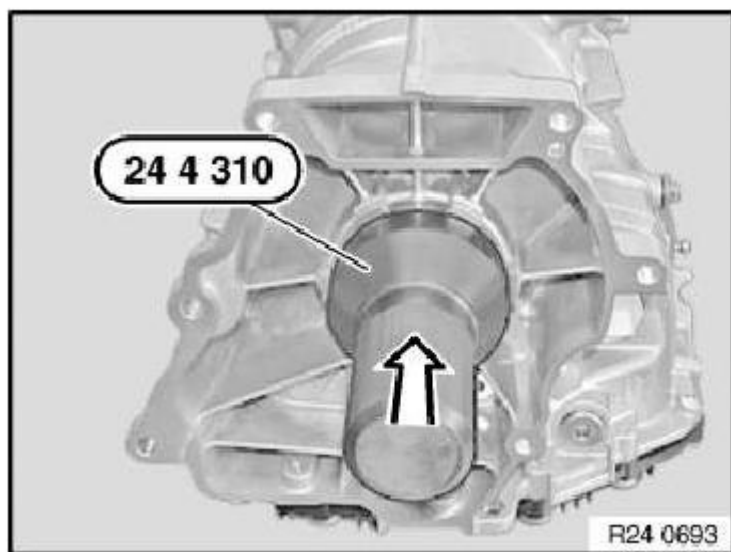


Fig. 102: Installing Radial Shaft Seal Using Special Tool (24 4 310)

Courtesy of BMW OF NORTH AMERICA, INC.

MECHANICAL ATTACHMENTS

24 14 002 REPLACING SHAFT SEAL FOR SELECTOR SHAFT (GA6HP19Z) (X6 35I)**Special tools required:**

- 24 5 361
- 24 5 362
- 24 5 364
- 24 5 366

IMPORTANT: After completion of work, check FLUID LEVEL .

Use only the approved TRANSMISSION OIL .

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove UNDERBODY PROTECTION .

Unfasten nut.

Remove cable (1).

Installation note:

Adjusting cable:

- Release nut
- Adjust cable by means of holder (2)

Distance A > or = 1.5 mm.

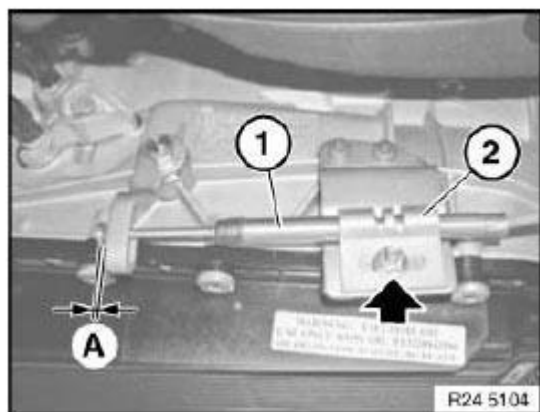


Fig. 103: Identifying Cable, Holder With Distance
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten nut.

Take off holder (1).

Tightening torque **24 51 1AZ** .

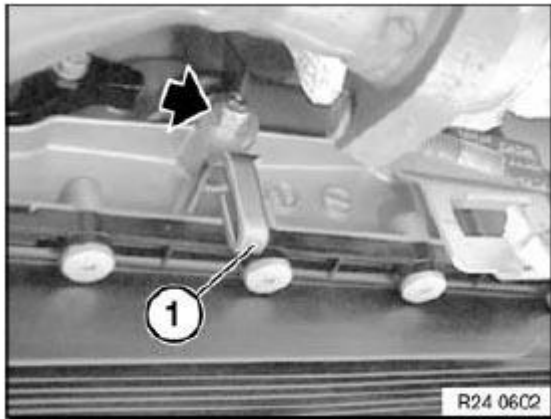


Fig. 104: Identifying Holder And Nut
Courtesy of BMW OF NORTH AMERICA, INC.

Screw in special tool **24 5 361** until it is firmly connected with shaft seal.

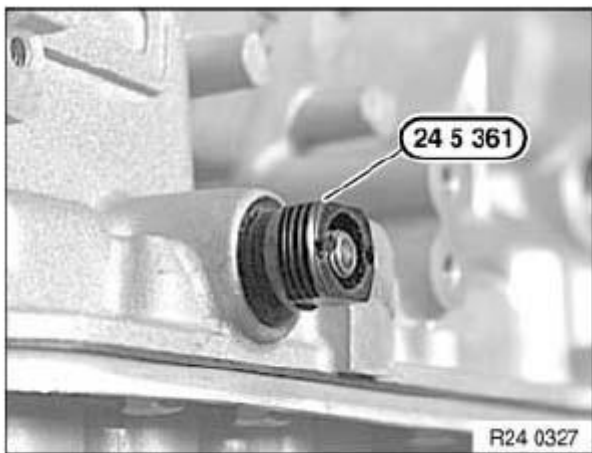


Fig. 105: Identifying Special Tool 24 5 361
Courtesy of BMW OF NORTH AMERICA, INC.

Screw special tool **24 5 362** onto special tool **24 5 361** and tighten down.

This pulls the shaft seal out of the transmission housing.

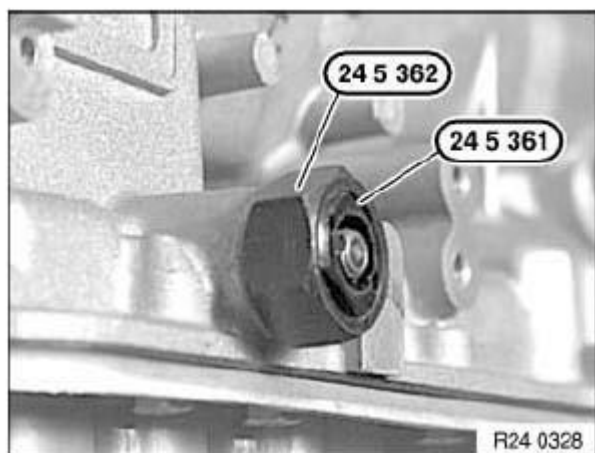


Fig. 106: Identifying Special Tool 24 5 362 And 24 5 361
Courtesy of BMW OF NORTH AMERICA, INC.

Oil sealing lip on shaft seal (1).

Screw in shaft seal (1) with special tools **24 5 366** and **24 5 364** as far as it will go.

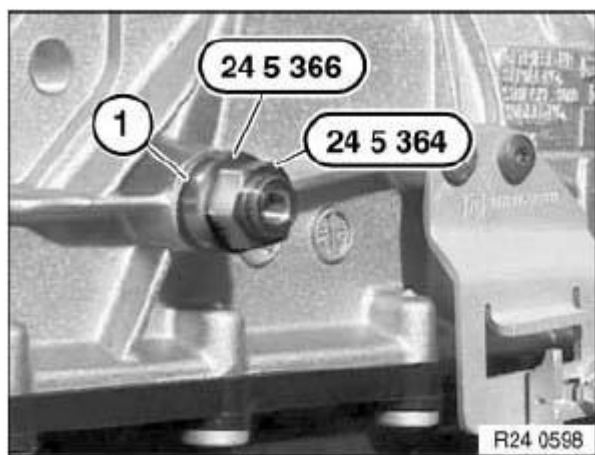


Fig. 107: Identifying Shaft Seal With Special Tools 24 5 366 And 24 5 364
Courtesy of BMW OF NORTH AMERICA, INC.

24 14 001 REPLACING SELECTOR SHAFT SEAL (GA6HP26Z) (X6 50I)

Special tools required:

- **24 5 361**
- **24 5 362**
- **24 5 364**
- **24 5 366**

IMPORTANT: After completion of work, check TRANSMISSION FLUID LEVEL.

Use only the approved TRANSMISSION OIL .

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove UNDERBODY PROTECTION .

Unfasten nut.

Remove cable (1).

Installation note:

Adjusting cable:

- Release nut
- Adjust cable by means of holder (2)

Distance A > or = 1 mm.

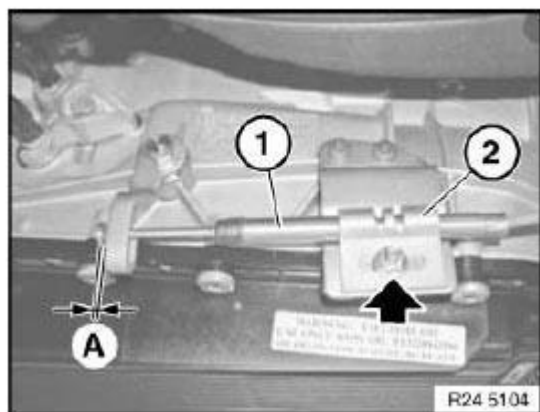


Fig. 108: Identifying Cable, Holder With Distance
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten nut.

Take off holder (1).

Tightening torque 24 51 1AZ .

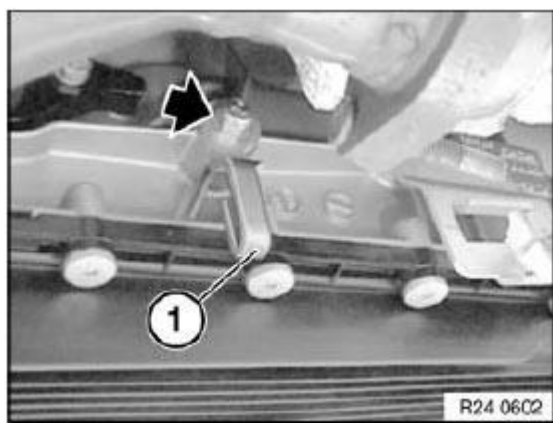


Fig. 109: Identifying Holder And Nut
Courtesy of BMW OF NORTH AMERICA, INC.

Screw in special tool 24 5 361 (bush) until it is firmly connected with shaft seal.

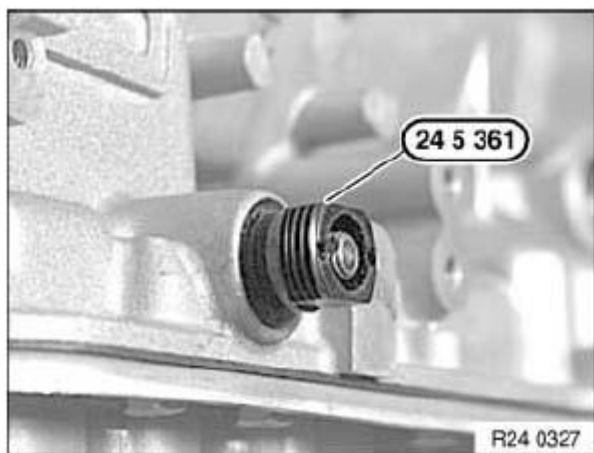


Fig. 110: Identifying Special Tool 24 5 361
Courtesy of BMW OF NORTH AMERICA, INC.

Screw special tool 24 5 362 (nut) onto special tool 24 5 361 (bush) and tighten down.

This pulls the shaft seal out of the transmission housing.

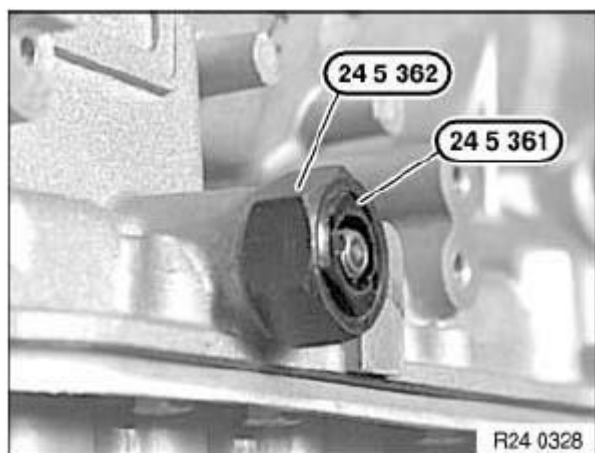


Fig. 111: Identifying Special Tool 24 5 362 And 24 5 361
Courtesy of BMW OF NORTH AMERICA, INC.

Oil sealing lip on shaft seal (1).

Screw in shaft seal (1) with special tools 24 5 366 (bush) and 24 5 364 (nut) as far as it will go.

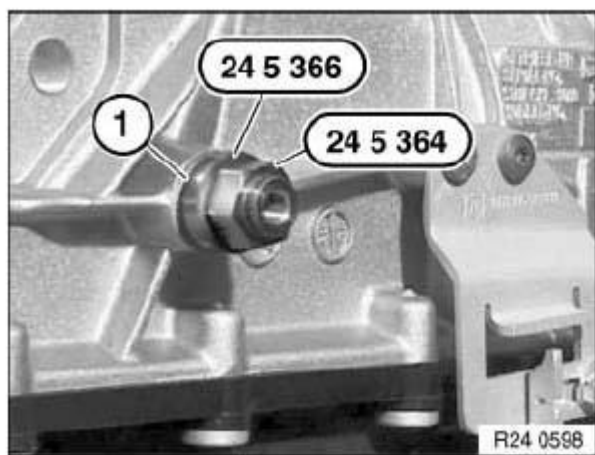


Fig. 112: Identifying Shaft Seal With Special Tools 24 5 366 And 24 5 364
Courtesy of BMW OF NORTH AMERICA, INC.

24 14 004 REPLACING SHAFT SEAL FOR SELECTOR SHAFT (GA8HP45Z) (X6 35I 2011-13)

IMPORTANT:

- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
- Wear protective gloves.
- Ensure adequate ventilation.

IMPORTANT: After completion of repair work, check TRANSMISSION OIL LEVEL.

IMPORTANT: Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397**

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove **MECHATRONICS**.
- Remove heat shields.
- Detach **PROPELLER SHAFT** center mount.
- Detach transmission **CROSS MEMBER**
- Lower transmission using workshop jack.

Using a suitable tool, drive clamping sleeve (1) out of selector shaft.

Withdraw selector shaft (2) outwards.

NOTE: Return spring is under tension.

Installation note:

Replace selector shaft (2).

Replace clamping sleeve (1).

Insert narrower end of clamping sleeve (1) into hole first. Using a suitable tool, drive in clamping sleeve until it is flush with the hole.

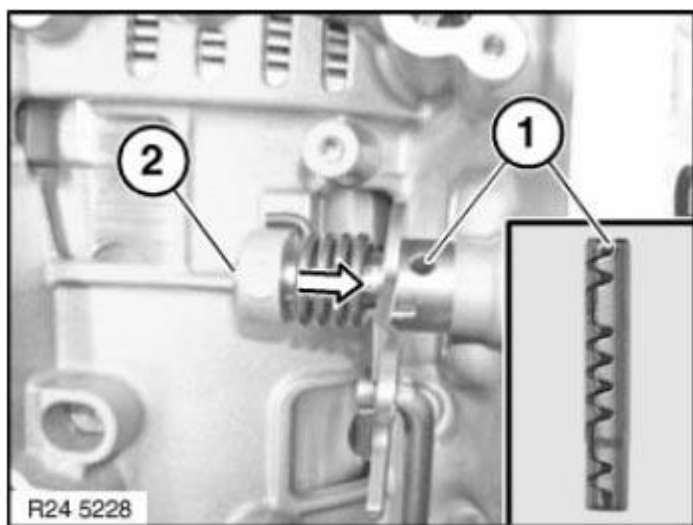


Fig. 113: Identifying Special Tool (24 5 367) Onto Radial Shaft Seal
Courtesy of BMW OF NORTH AMERICA, INC.

Screw in special tool 24 5 367 (puller) until it is firmly connected with radial shaft seal.

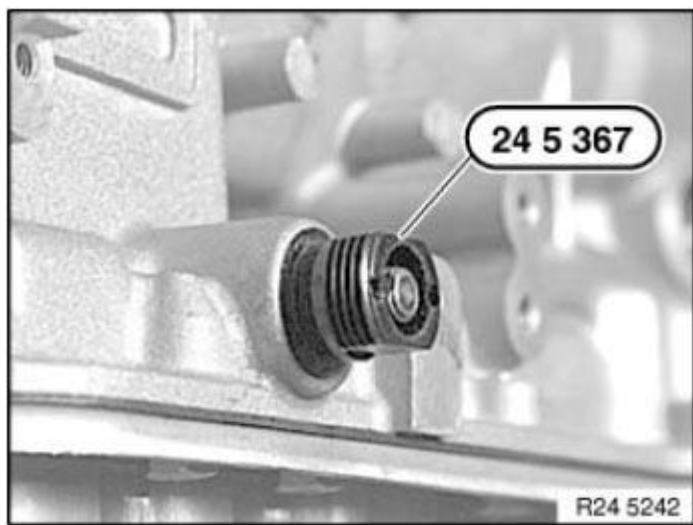


Fig. 114: Screwing Special Tool (24 5 362) Onto Special Tool (24 5 367)
Courtesy of BMW OF NORTH AMERICA, INC.

Screw special tool 24 5 362 (nut) onto special tool 24 5 367 (puller) and tighten down.

This pulls the shaft seal out of the transmission housing.

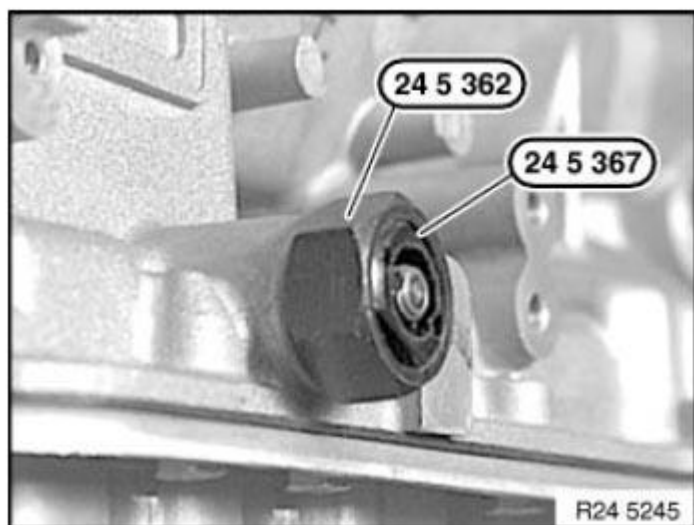


Fig. 115: Driving Radial Shaft Seal Fully Home Using Special Tool (24 5 366)
Courtesy of BMW OF NORTH AMERICA, INC.

Oil sealing lip on shaft seal (1).

Drive radial shaft seal (1) fully home using special tool 24 5 366 (bush) and plastic hammer.

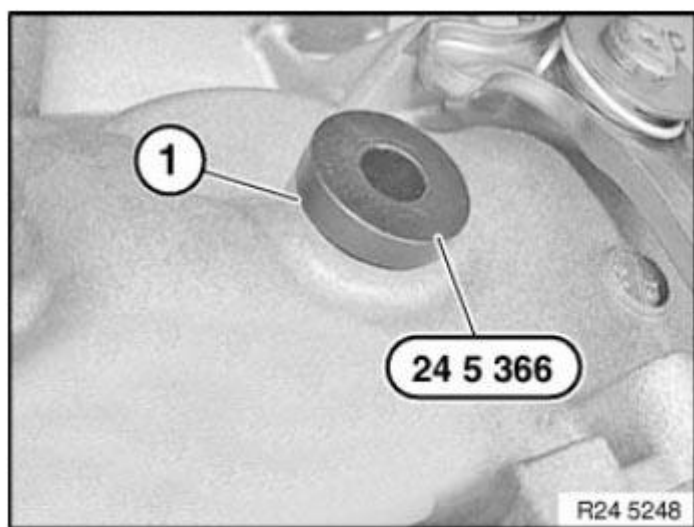


Fig. 116: Identifying Oil Accumulator Cable Connector And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

24 14 006 REPLACING SHAFT SEAL FOR SELECTOR SHAFT (GA8HP70Z) (X6 50I 2011-13)

IMPORTANT:

- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
- Wear protective gloves.

- Ensure adequate ventilation.

IMPORTANT: After completion of repair work, check TRANSMISSION OIL LEVEL.

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397**

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove MECHATRONICS
- Remove EXHAUST SYSTEM
- Remove heat shields
- Remove FRONT PROPELLER SHAFT
- Detach PROPELLER SHAFT CENTRE MOUNT
- Detach TRANSMISSION CROSS MEMBER
- Lower transmission using workshop jack

Using a suitable tool, drive clamping sleeve (1) out of selector shaft.

Withdraw selector shaft (2) outwards.

NOTE: **Return spring is under tension.**

Installation note:

Replace selector shaft (2).

Replace clamping sleeve (1).

Insert narrower end of clamping sleeve (1) into hole first. Using a suitable tool, drive in clamping sleeve until it is flush with the hole.

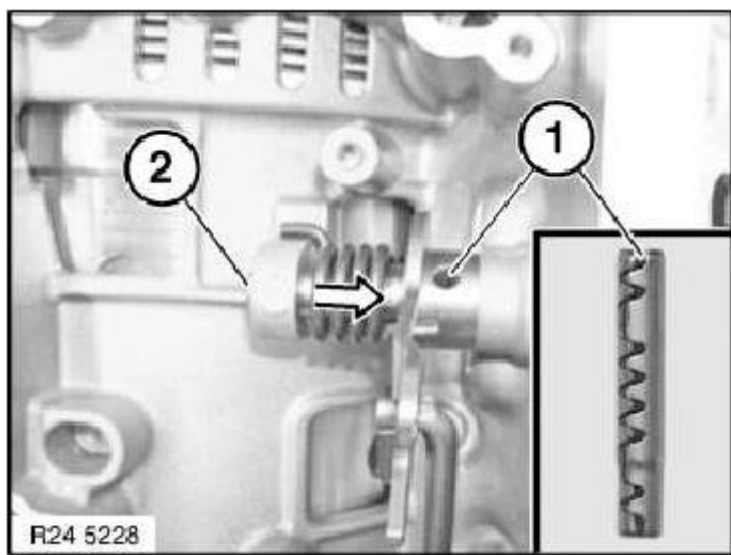


Fig. 117: Driving Out Selector Shaft Clamping Sleeve
Courtesy of BMW OF NORTH AMERICA, INC.

Screw in special tool 24 5 367 (puller) until it is firmly connected with radial shaft seal.

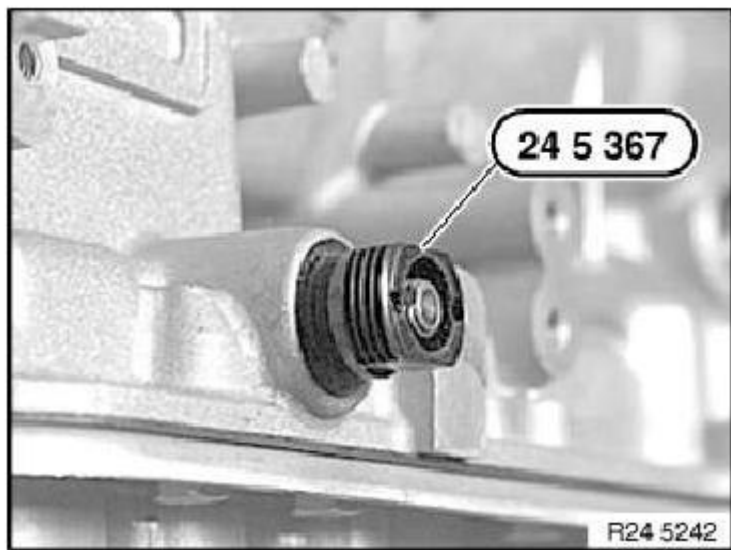


Fig. 118: Connecting Radial Shaft Seal Using Special Tool (24 5 367)
Courtesy of BMW OF NORTH AMERICA, INC.

Screw special tool 24 5 362 (nut) onto special tool 24 5 367 (puller) and tighten down.

This pulls the shaft seal out of the transmission housing.

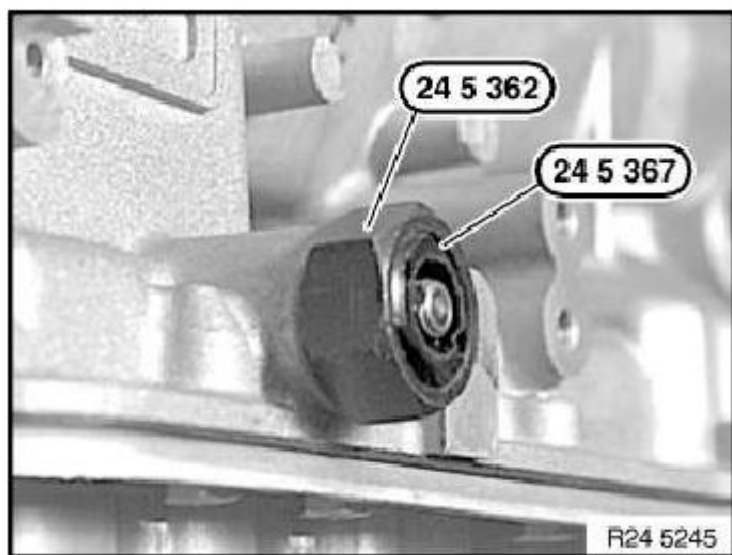


Fig. 119: Tightening Special Tool (24 5 362) Onto Special Tool (24 5 367)
Courtesy of BMW OF NORTH AMERICA, INC.

Oil sealing lip on shaft seal (1).

Drive radial shaft seal (1) fully home using special tool 24 5 366 (bush) and plastic hammer.

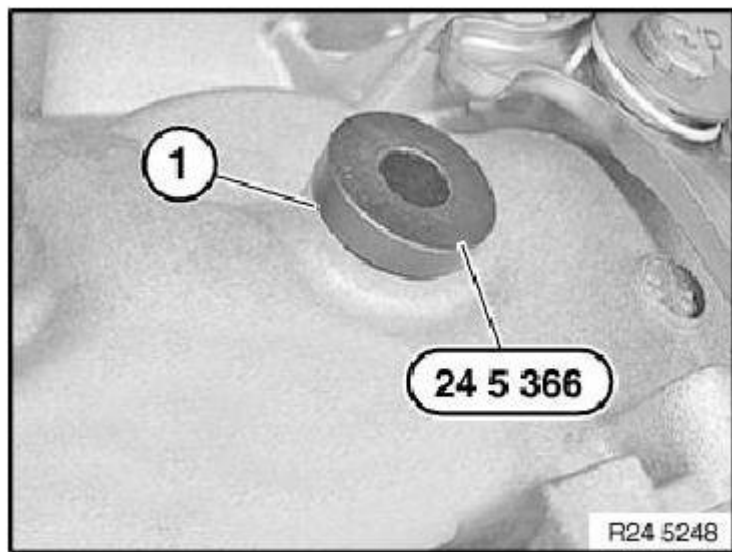


Fig. 120: Driving Radial Shaft Seal Using Special Tool (24 5 366)
Courtesy of BMW OF NORTH AMERICA, INC.

HYDRAULIC/ELECTRICAL CONTROL COMPONENTS/ELEMENTS

24 30 101 REPLACING OIL ACCUMULATOR (GA8HP45Z) (X6 35I 2011-13)

- IMPORTANT:**
- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
 - Wear protective gloves.
 - Ensure adequate ventilation.

IMPORTANT: After completion of repair work, check TRANSMISSION OIL LEVEL.

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397**

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Installation note:

The transmission oil sump must be renewed every time it is removed.

Installation note:

- Remove transmission **OIL SUMP**.
- Remove retaining plates.

Recycling:

Catch and dispose of escaping transmission oil.

Observe country-specific waste disposal regulations.

Release screws (1) (M6x20).

Release screw (2) (M6x59).

Tightening torque: 8 Nm

Carefully unlock cable connector (3) with screwdriver.

Carefully pull out oil accumulator.

IMPORTANT: Mounting bolts of oil accumulator must be replaced after removal.

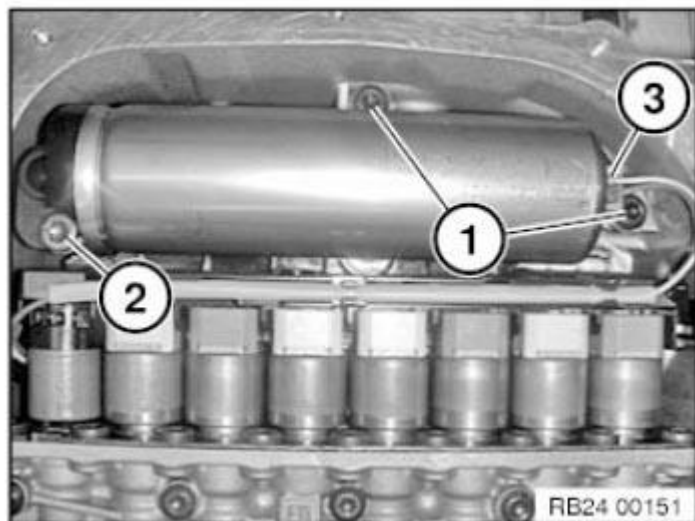


Fig. 121: Securing Transmission Using Special Tool (24 0 200)
Courtesy of BMW OF NORTH AMERICA, INC.

24 30 101 REPLACING OIL RESERVOIR (GA8HP70Z) (X6 50I 2011-13)

- IMPORTANT:**
- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
 - Wear protective gloves.
 - Ensure adequate ventilation.

IMPORTANT: Applies to vehicles from 08/2011

Remove transmission oil sump only after it has cooled down.

After completion of repair work, check TRANSMISSION OIL LEVEL.

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397*

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Installation note:

The transmission oil sump must be renewed **every** time it is removed.

Installation note:

- Remove transmission **OIL SUMP**.
- Remove retaining plates.

Recycling:

Catch and dispose of escaping transmission oil.

Observe country-specific waste disposal regulations.

Release screws (1) (M6x20).

Release screw (2) (M6x59).

Tightening torque: 8 Nm

Carefully unlock cable connector (3) with screwdriver.

Carefully pull out oil accumulator.

IMPORTANT: Mounting bolts of oil accumulator must be replaced after removal.

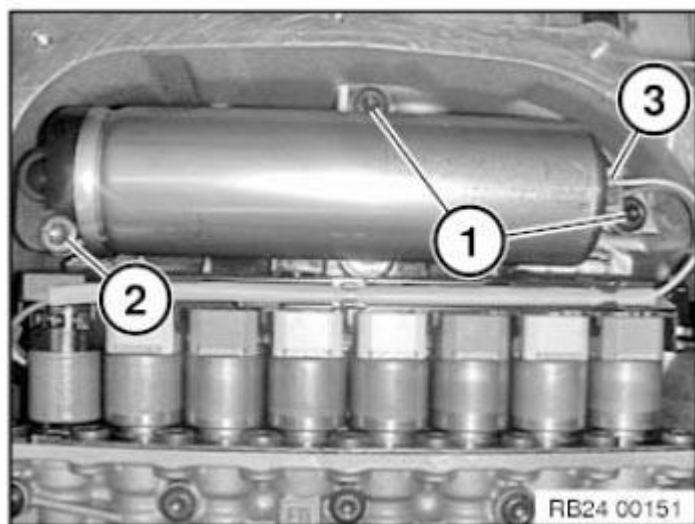


Fig. 122: Securing Transmission Using Special Tool (24 0 200)
Courtesy of BMW OF NORTH AMERICA, INC.

OIL PUMP

24 31 011 REPLACING TORQUE CONVERTER SHAFT SEAL (GA6HP19Z) (X6 35I)**Special tools required:**

- **00 1 450**
- **24 0 200**
- **24 2 351**
- **24 2 352**
- **24 2 353**
- **24 2 400**

Necessary preliminary tasks:

- Remove automatic transmission. See **REMOVING AND INSTALLING AUTOMATIC TRANSMISSION (GA6HP19Z)**.

IMPORTANT: After completion of work, check **FLUID LEVEL** .

Use only approved **TRANSMISSION OIL** .

Failure to comply with this instruction will result in serious damage to the transmission.

Secure transmission with special tool **24 0 200** to assembly stand **00 1 450** .

Remove **TORQUE CONVERTER**.

NOTE: Read and comply with note on installation of **transmission retaining bridge** .

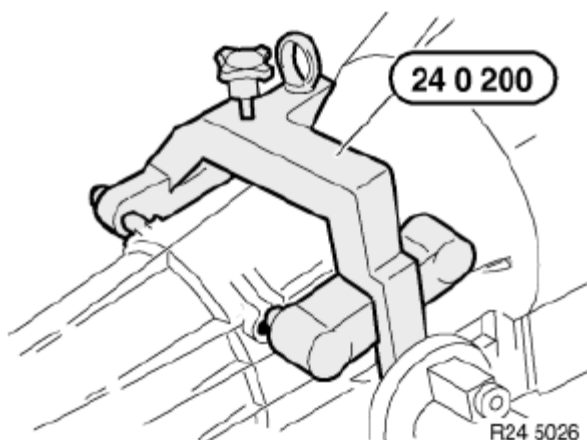


Fig. 123: Securing Transmission Using Special Tool 24 0 200
Courtesy of BMW OF NORTH AMERICA, INC.

Attach special tool **24 2 353** to drive shaft (1).

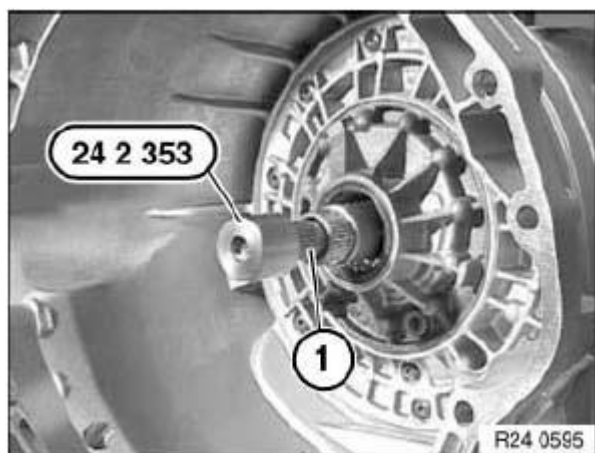


Fig. 124: Attaching Special Tool 24 2 353 To Drive Shaft
Courtesy of BMW OF NORTH AMERICA, INC.

Screw in special tool **24 2 351** until it is firmly connected with shaft seal.

Screw in special tool **24 2 352** to remove shaft seal.

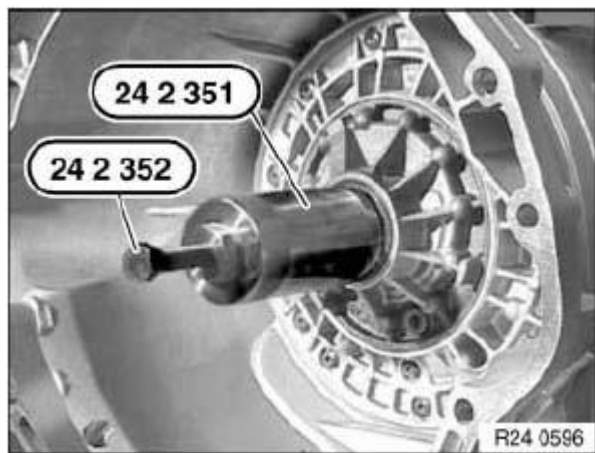


Fig. 125: Identifying Special Tools 24 2 351 And 24 2 352
Courtesy of BMW OF NORTH AMERICA, INC.

Oil sealing lip on shaft seal.

Drive in shaft seal (1) with special tool **24 2 400** as far as it will go.

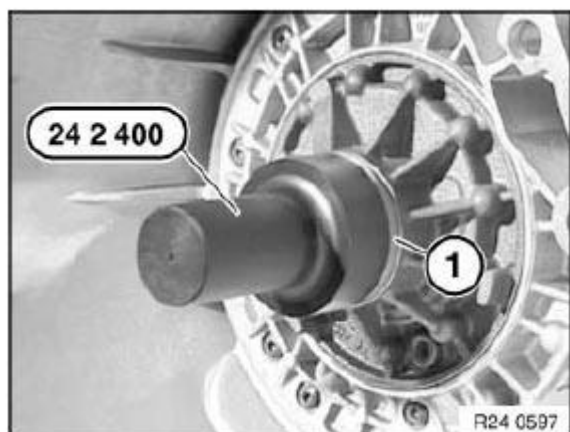


Fig. 126: Driving Shaft Seal Using Special Tool 24 2 400
Courtesy of BMW OF NORTH AMERICA, INC.

24 31 010 REPLACING TORQUE CONVERTER SHAFT SEAL (GA6HP26Z) (X6 50I)

Special tools required:

- **00 1 450**
- **24 0 200**
- **24 2 351**
- **24 2 352**
- **24 2 353**
- **24 2 360**

Necessary preliminary tasks:

- Remove **AUTOMATIC TRANSMISSION**.

IMPORTANT: After completion of work, check **TRANSMISSION FLUID LEVEL**.
Use only approved **TRANSMISSION OIL** .
Failure to comply with this instruction will result in serious damage to the transmission.

Secure transmission with special tool **24 0 200** to assembly stand **00 1 450** .

Remove **TORQUE CONVERTER**.

NOTE: Read and comply with note on installation of **transmission retaining bridge** .

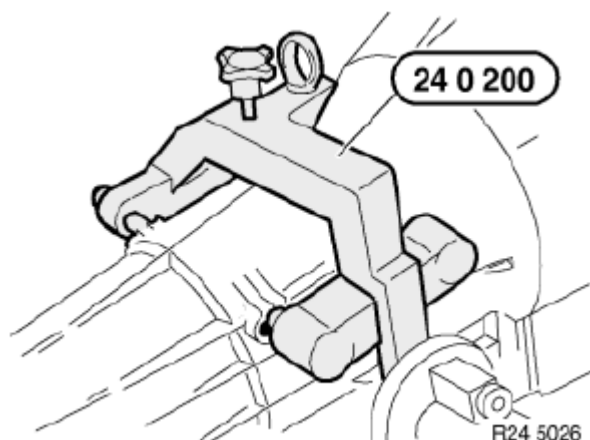


Fig. 127: Securing Transmission Using Special Tool 24 0 200
 Courtesy of BMW OF NORTH AMERICA, INC.

Attach special tool 24 2 353 (synchronizing key) to drive shaft (1).

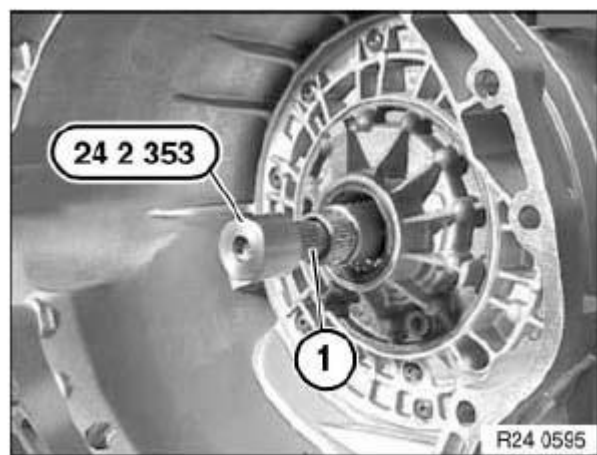


Fig. 128: Attaching Special Tool 24 2 353 To Drive Shaft
 Courtesy of BMW OF NORTH AMERICA, INC.

Screw in special tool 24 2 351 (puller) until it is firmly connected with shaft seal.

Screw in special tool 24 2 352 (spindle) to remove shaft seal.

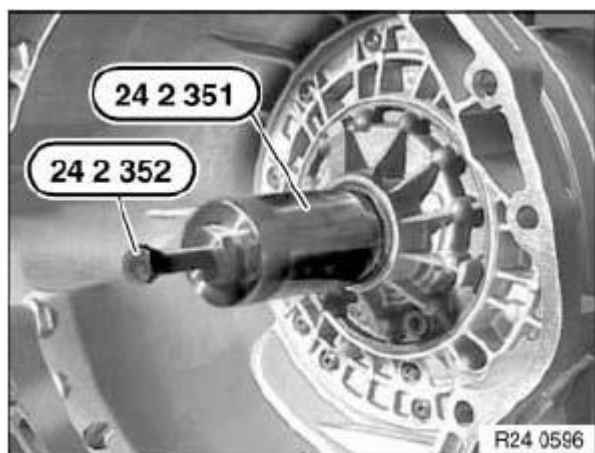


Fig. 129: Identifying Special Tools 24 2 351 And 24 2 352
Courtesy of BMW OF NORTH AMERICA, INC.

Oil sealing lip on shaft seal.

Drive in shaft seal (1) with special tool 24 2 360 (mandrel) as far as it will go.

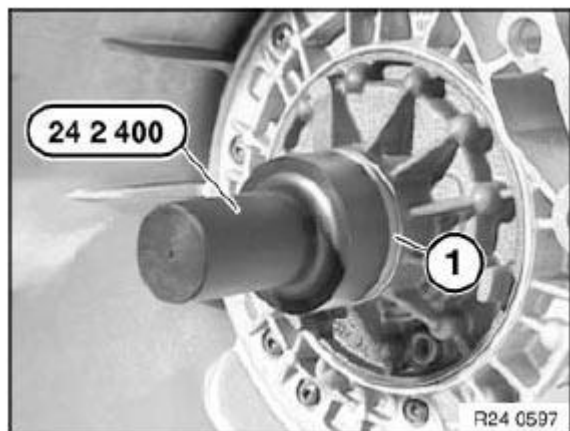


Fig. 130: Driving Shaft Seal Using Special Tool 24 2 400
Courtesy of BMW OF NORTH AMERICA, INC.

24 31 013 REPLACING TORQUE CONVERTER RADIAL SHAFT SEAL (GA8HP45Z) (X6 35I 2011-13)

IMPORTANT:

- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
- Wear protective gloves.
- Ensure adequate ventilation.

IMPORTANT: After completion of repair work, check TRANSMISSION OIL LEVEL.

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397**

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

Remove **TORQUE CONVERTER**.

Secure transmission with special tool 24 0 200 on assembly stand 00 1 450.

NOTE: Read and comply with note on installation of **TRANSMISSION RETAINING BRIDGE**.

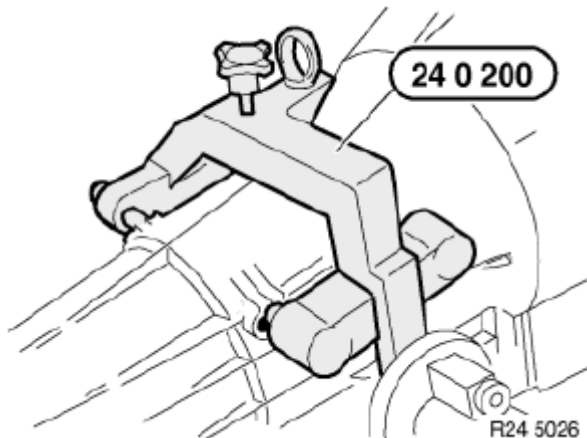


Fig. 131: Pulling Out Radial Shaft Seal Using Special Tools (24 1 420 And 13 5 250)
Courtesy of BMW OF NORTH AMERICA, INC.

Pull out radial shaft seal (1) with special tools 24 1 420 and 13 5 250 (pullers).

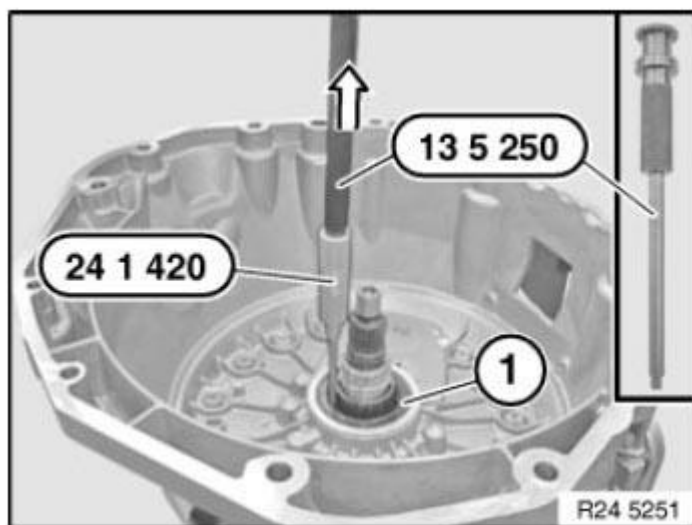


Fig. 132: Driving Radial Shaft Seal Using Special Tool (24 2 410)
Courtesy of BMW OF NORTH AMERICA, INC.

When replacing screws (1) along the dashed line, always change one screw after the other.

Jointing torque: 10 Nm

Angle of rotation: 90°

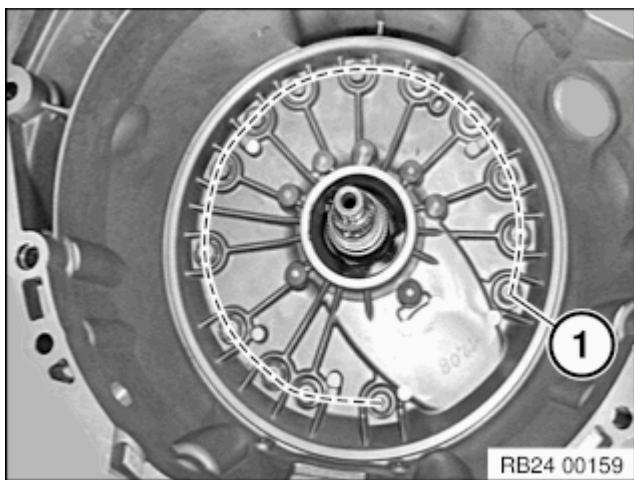


Fig. 133: Identifying Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

1. Install the O-ring on the drive shaft.
2. Oil sealing lip on shaft seal.
3. Drive in radial shaft seal (1) with special tool 24 1 410 (mandrel) as far as it will go.

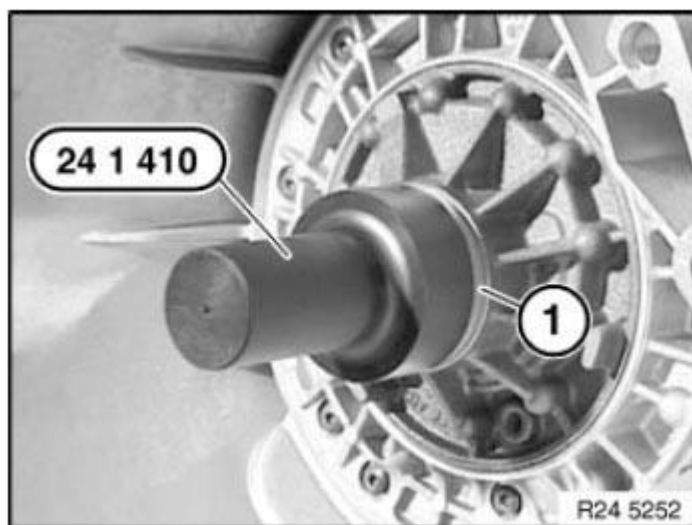


Fig. 134: Identifying Parking Lock Lever And Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

24 31 564 REPLACING TORQUE CONVERTER RADIAL SHAFT SEAL (GA8HP70Z) (X6 50I 2011-13)

IMPORTANT:

- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
- Wear protective gloves.
- Ensure adequate ventilation.

IMPORTANT: After completion of repair work, check TRANSMISSION OIL LEVEL.

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397*

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

Remove TORQUE CONVERTER.

Secure transmission with special tool 24 0 200 on assembly stand 00 1 450.

NOTE: Read and comply with note on installation of TRANSMISSION RETAINING

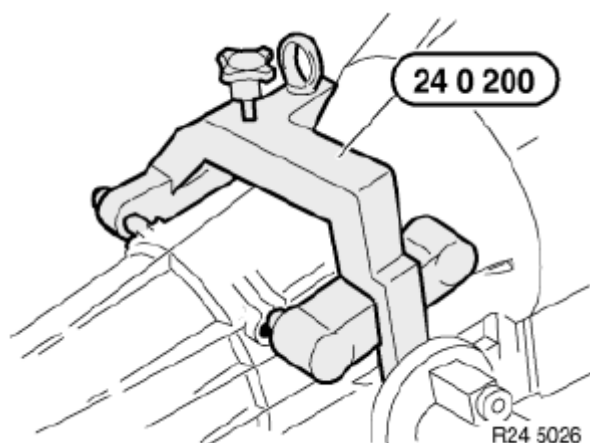
BRIDGE.

Fig. 135: Pulling Out Radial Shaft Seal Using Special Tools (24 1 420 And 13 5 250)
 Courtesy of BMW OF NORTH AMERICA, INC.

Pull out radial shaft seal (1) with special tools 24 1 420 and 13 5 250 (pullers).

Installation note:

Replace the O-ring on the drive shaft.

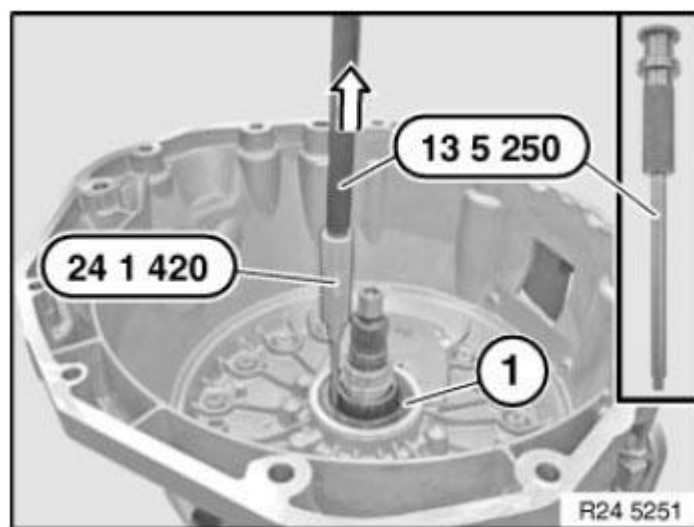


Fig. 136: Driving Radial Shaft Seal Using Special Tool (24 2 410)
 Courtesy of BMW OF NORTH AMERICA, INC.

Oil sealing lip on radial shaft seal.

Drive in radial shaft seal (1) with special too l24 2 410 (adapter) as far as it will go.

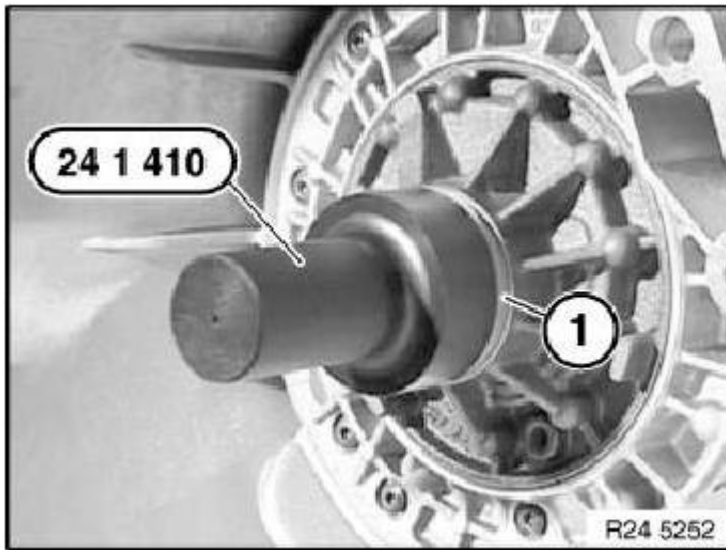


Fig. 137: Installing Radial Shaft Seal Using Special Tool (24 2 410)
 Courtesy of BMW OF NORTH AMERICA, INC.

24 31 575 REPLACING OIL PUMP O-RINGS (GA6HP26/19Z)

Special tools required:

- 24 1 180
- 24 1 184

IMPORTANT: After completion of work, check transmission fluid level. See AUTOMATIC TRANSMISSION (GA6HP26Z) or 00 11 500 CHECKING/TOPPING UP FLUID LEVEL IN AUTOMATIC TRANSMISSION (GA6HP19Z) .
 Use only approved TRANSMISSION OIL .
 Failure to comply with this instruction will result in serious damage to the transmission.

Necessary preliminary tasks:

- Remove automatic transmission. See REMOVING AND INSTALLING AUTOMATIC TRANSMISSION (GA6HP19Z).
- Secure transmission with **transmission holding bridge** on assembly stand
- Remove TORQUE CONVERTER
- Remove MECHATRONICS

Remove adapter (1).

Installation note:

Note installation position.

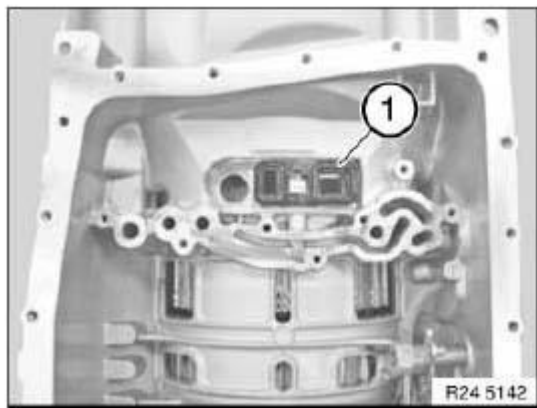


Fig. 138: Identifying Adapter

Courtesy of BMW OF NORTH AMERICA, INC.

Release screws.

Tightening torque 24 31 3AZ .

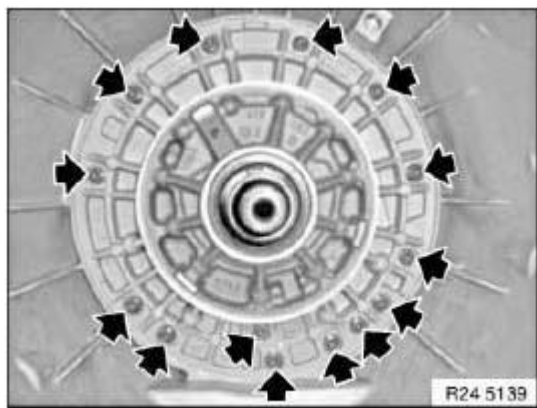


Fig. 139: Locating Transmission Screws

Courtesy of BMW OF NORTH AMERICA, INC.

Slide special tool 24 1 184 completely into extractor 24 1 180 .

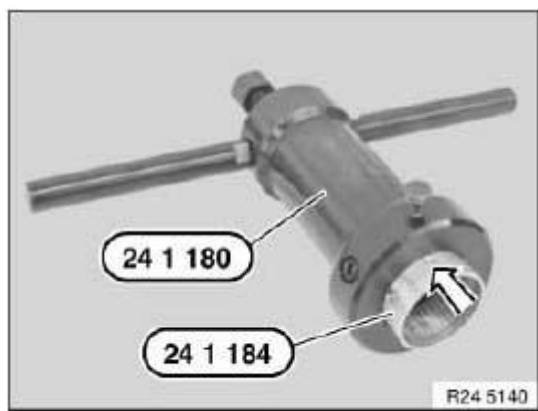


Fig. 140: Sliding Special Tool 24 1 184 In To Extractor 24 1 180
Courtesy of BMW OF NORTH AMERICA, INC.

Attach special tool **24 1 180** and secure with screw (1).

Insert screw (2) and release oil supply unit from transmission housing.

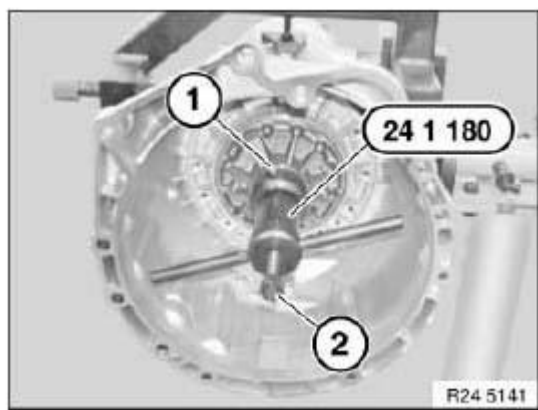


Fig. 141: Securing Special Tool 24 1 180 With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws.

Tightening torque **24 31 1AZ** .

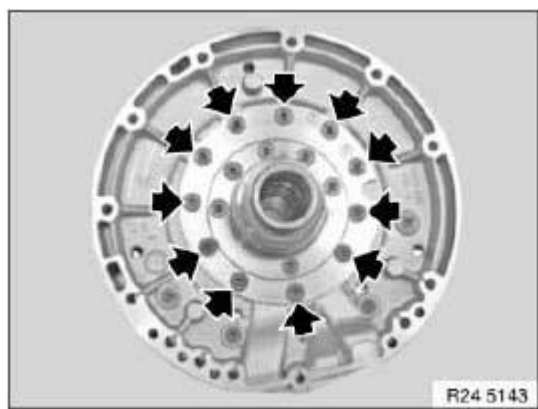


Fig. 142: Locating Screws

Courtesy of BMW OF NORTH AMERICA, INC.

Detach cover (1) from pump housing (2).

Replace O-rings (3 + 4).

Installation note:

Pay attention to installation position of gears during disassembly.

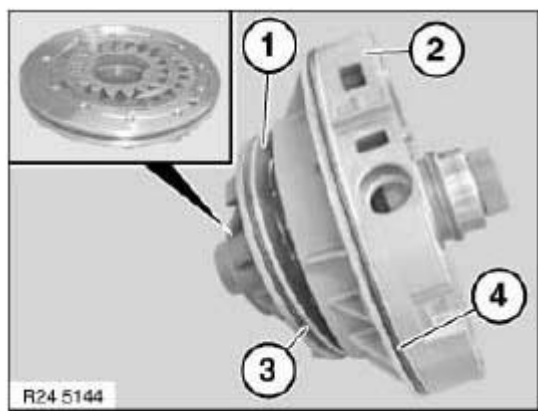


Fig. 143: Identifying Cover On Pump Housing

Courtesy of BMW OF NORTH AMERICA, INC.

SHIFT VALVES, PARKING LOCK

24 34... MANUAL EMERGENCY RELEASE OF TRANSMISSION LOCK

In the event of a power supply interruption, e.g. flat battery or electrical fault, the transmission lock must be manually released, otherwise the wheel will be locked and the vehicle cannot be moved.

IMPORTANT: Secure vehicle against rolling, e.g. with chocks.

Press the brake pedal when manually releasing the transmission lock, otherwise there is a risk that the vehicle will roll when the transmission lock is manually released.

If the parking brake has to be released as well, observe the following procedure:

1. First, manually release the parking brake .
2. Then manually release the automatic transmission lock.

NOTE: The release tool is located in the tool kit under the floor panel in the luggage compartment!

Slide back cover mat (1) of drinks holder and remove.

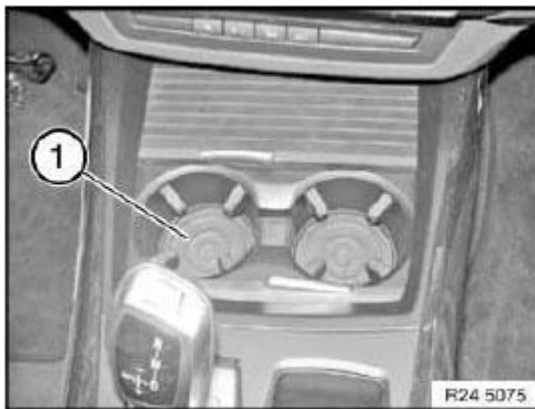


Fig. 144: Identifying Back Cover Mat Of Drinks Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Open cover (1) in drinks holder base with release tool in direction of arrow.

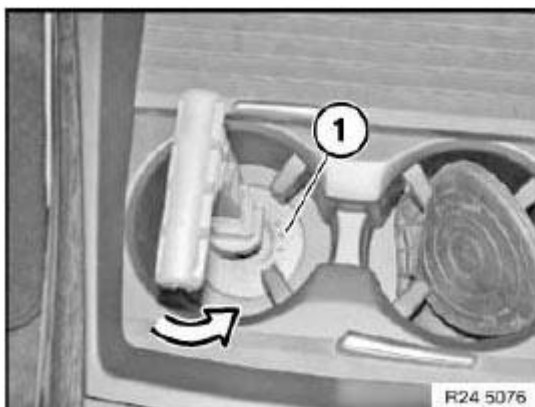


Fig. 145: Opening Drinks Holder Base Using Release Tool
Courtesy of BMW OF NORTH AMERICA, INC.

Insert release tool into opening.

Turn release tool clockwise up to stop and press down.

Transmission lock is released!



Fig. 146: Releasing Transmission Lock
Courtesy of BMW OF NORTH AMERICA, INC.

Locking transmission lock:

Pull out release tool in direction of arrow.

Transmission lock is locked.



Fig. 147: Pulling Out Release Tool
Courtesy of BMW OF NORTH AMERICA, INC.

24 34... MANUALLY RELEASING PARKING LOCK (FROM UNDERNEATH VEHICLE)

For various tasks, it is necessary to unlock and lock the parking lock.

This can be done from inside the passenger compartment or underneath the vehicle.

Before unlocking the parking lock, secure the vehicle against rolling away.

In the event of a power supply interruption, e.g. flat battery or electrical fault, the parking lock must be manually released, otherwise the wheels will be locked and the vehicle cannot be moved.

Manual emergency release of parking lock from passenger compartment is not possible with GA6HP/GA8HP gearboxes from 03/2010:

The Bowden cable for unlocking the transmission can be omitted for E70 /71 as of production date 04 / 2010.

Before removing the underbody panel, always check inside the vehicle to be certain the parking lock emergency release is not fitted.

From the vehicle underbody:

Raise vehicle.

Manual emergency release of parking lock

Graphic shows: GA6HP gearbox.

- Remove **UNDERBODY PROTECTION** .
- Screw in screw (1) with hexagon socket (SW5) until parking lock is released by lever (2).

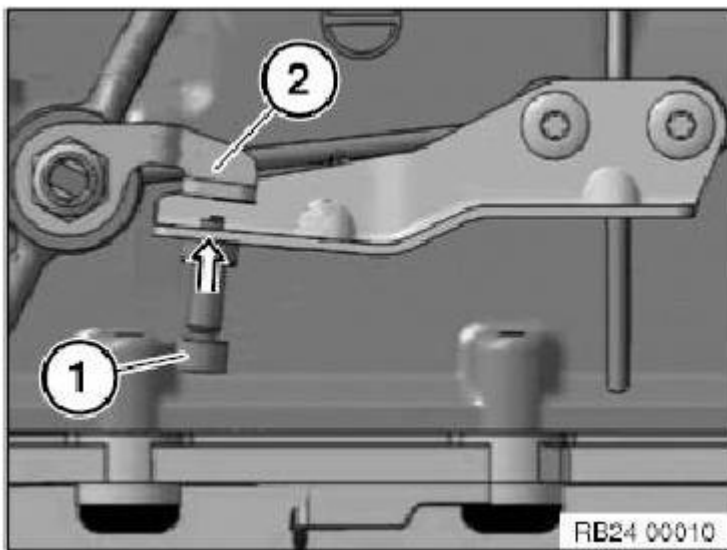


Fig. 148: Releasing Parking Lock Lever
Courtesy of BMW OF NORTH AMERICA, INC.

Then unscrew and remove screw (1).

Screw (1) should protrude 1.5 to 2.5 mm above thread lip (A).

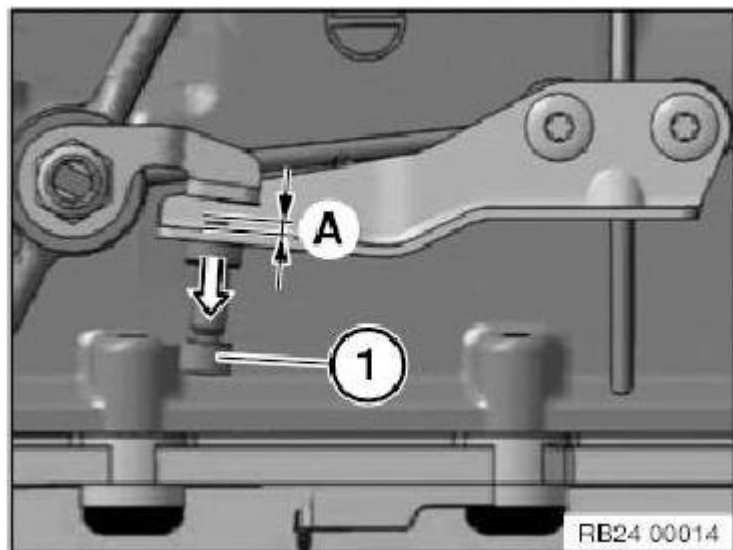


Fig. 149: Identifying Thread Lip And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

From the vehicle underbody:

Raise vehicle. Manual emergency release of parking lock

Manual emergency release of parking lock

Illustration shows GA8HP transmission.

- Remove **UNDERBODY PROTECTION** .
- Screw in bolt (1) with hexagon socket (SW5) until parking lock is released by lever (2).
- It is **imperative** that bolt is always replaced.
- Clean thread with screw tap size M6X1, 0.

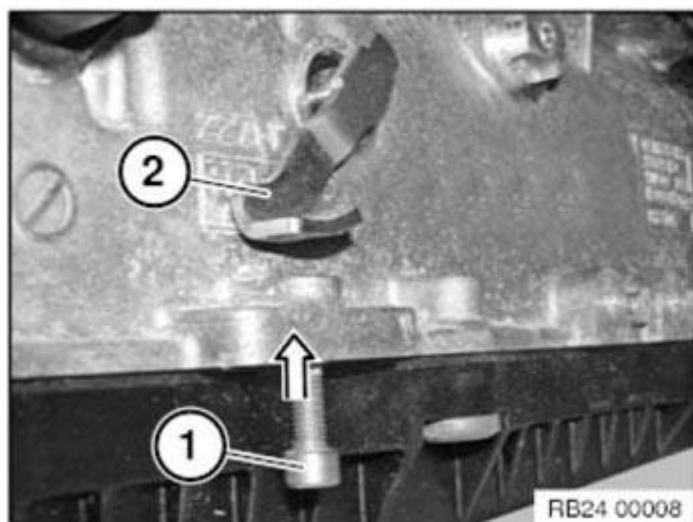


Fig. 150: Identifying Parking Lock Lever And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Screw new micro-encapsulated screw (1) into thread.

IMPORTANT: Screwing in and adjusting of screw to 1.5 to 2.5 mm above thread lip (A) must occur within 3 minutes.

The screw may no longer be turned after 3 minutes (hardening of adhesive), otherwise it must be replaced.

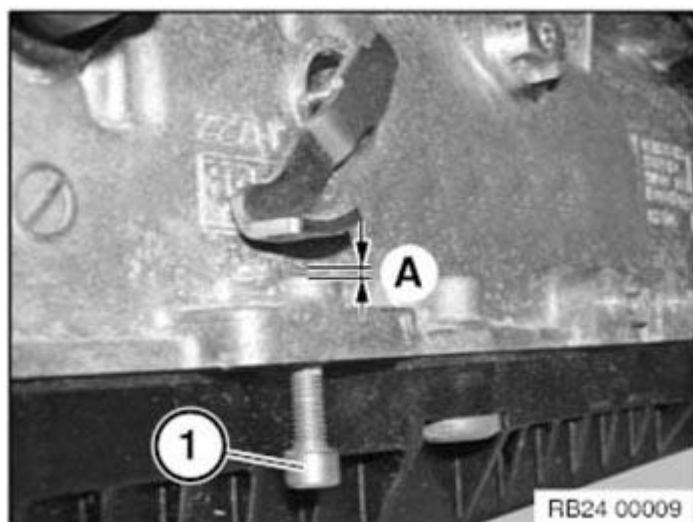


Fig. 151: Identifying Thread Lip
Courtesy of BMW OF NORTH AMERICA, INC.

From passenger compartment:

- Refer to **MANUAL EMERGENCY RELEASE OF TRANSMISSION LOCK**.

From underneath vehicle with Bowden cable:

- Illustration shows GA6HP transmission.
- Remove **UNDERBODY PROTECTION** .
- Press lever (1) towards rear.

Clamp lever firmly if permanently unlocking is desired.

Locking:

- Release lever (1) or release clamping

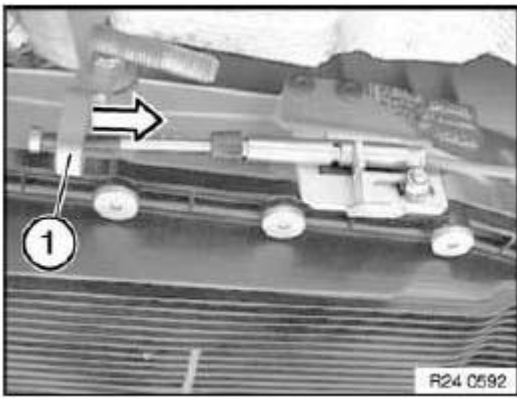


Fig. 152: Releasing Lever

Courtesy of BMW OF NORTH AMERICA, INC.

24 34... UNLOCK TRANSMISSION LOCK ELECTRONICALLY

For various tasks, it is necessary to unlock and lock the parking lock.

Before releasing the parking lock, secure the vehicle against rolling away.

- The emergency release is only possible if the engine does not start and the starter is turning.
- If the emergency release must be activated although the engine starts, the fuse for the electrical fuel pump may be pulled.
- The emergency release is active for 15 minutes.
- As soon as a wheel speed signal is recorded, this period will be extended by another 15 minutes.
- After this period of time, the parking lock will be engaged without message.
- The chronological information depends on the battery capacity.
- Only specially trained service personnel are permitted to operate both the mechanical as well as the electrical emergency transmission release system.
- The vehicle must be raised and the underbody panelling removed in order to operate the mechanical

emergency transmission release.

NOTE: For mechanical emergency transmission release, see MANUAL EMERGENCY RELEASE OF TRANSMISSION LOCK and MANUALLY RELEASING PARKING LOCK (FROM UNDERNEATH VEHICLE).

IMPORTANT: To operate the electronic emergency transmission release the vehicle must not be towed but rather only pushed.
In the case of misuse, a corresponding fault is entered in the fault memory.

Unlock transmission lock electronically

- Switch the ignition on.
- Apply the brake pedal and hold it down during the entire procedure.
- Press START-STOP button.
- As soon as the starter can be heard to operate (this may take several seconds on diesel engines or at low temperatures).
- Press and hold down the release button (1)



Fig. 153: Identifying Gear Selector Switch
Courtesy of BMW OF NORTH AMERICA, INC.

1. The specified time must necessarily be complied with!
2. Push selector lever (2) forward up to point of resistance and hold for 2 seconds.
3. Release the selector lever and quickly move it forward by another level again.



Fig. 154: Identifying Gear Position N On Instrument Panel
 Courtesy of BMW OF NORTH AMERICA, INC.

- Gear position N is shown in the instrument panel.
- The parking lock is now electronically unlocked.
- Release the brake pedal after the parking lock has been successfully unlocked.
- Leave the ignition switched on in order to subsequently move the vehicle.
- The transmission automatically shifts into P when the ignition is turned off.



Fig. 155: Removing Torque Converter Using Special Tool (24 1 440)
 Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: When the Start-Stop button is pressed again, the parking lock will be

reactivated without message.

If the gearbox cannot be released, turn the ignition off and on again and repeat the previous steps.

Allow the starter to cool down for approx. 10 minutes after unsuccessful attempts.

24 34... NOTES ON MECHATRONICS (GA6HP26Z/GA6HP19Z) (X6 35I, 50I)

Special tools required:

- 24 2 390

IMPORTANT: After completing work:

- Load specific data version with DIS
- Check fluid level. See AUTOMATIC TRANSMISSION (GA6HP19Z) (35i) or AUTOMATIC TRANSMISSION (GA6HP26Z) (50i).

Use only TRANSMISSION OIL .

Failure to comply with this requirement will result in serious damage to the automatic transmission!

IMPORTANT: Read and comply with notes on PROTECTION AGAINST ELECTROSTATIC DAMAGE (ESD PROTECTION) .

Unscrew plug (1) and disconnect.

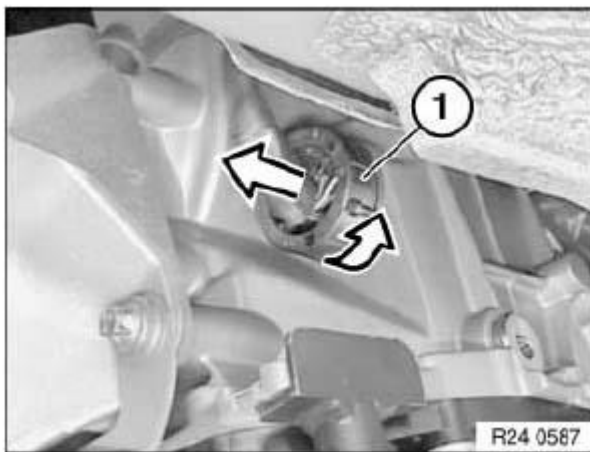


Fig. 156: Disconnecting Plug

Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool 24 2 390 (cap) in sealing sleeve (1).

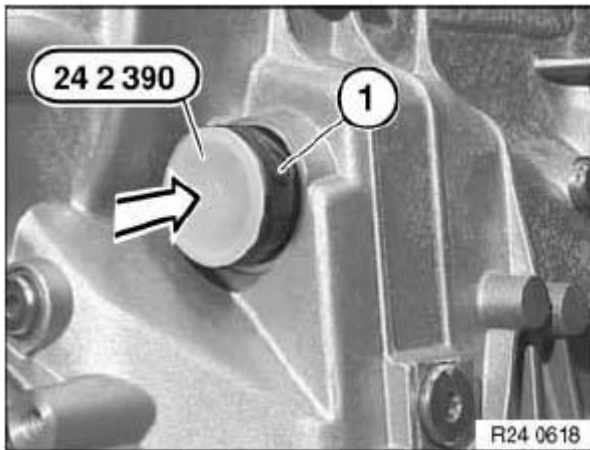


Fig. 157: Inserting Special Tool 24 2 390 In Sealing Sleeve
Courtesy of BMW OF NORTH AMERICA, INC.

24 34... NOTES ON MECHATRONICS (GA8HP45Z, GA8HP70Z) (X6 35I, 50I 2011-13)

IMPORTANT:

- Do not let skin come in contact with transmission oil and do not inhale fuel vapors.
- Wear protective gloves.
- Ensure adequate ventilation.

IMPORTANT: After completing work:

- Load specific data status with the BMW diagnosis system
- Check TRANSMISSION OIL LEVEL
- Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397*

Failure to comply with this requirement will result in serious damage to the automatic transmission!

IMPORTANT: Read and comply with notes on PROTECTION AGAINST ELECTROSTATIC DISCHARGE (ESD PROTECTION) .

Unscrew connector (1) and disconnect.

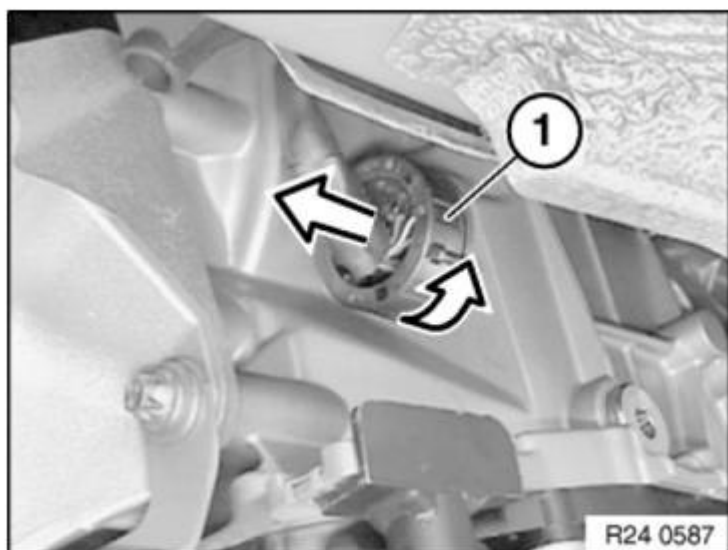


Fig. 158: Disconnecting Connector

Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool 24 2 390 (cap) in sealing sleeve (1).

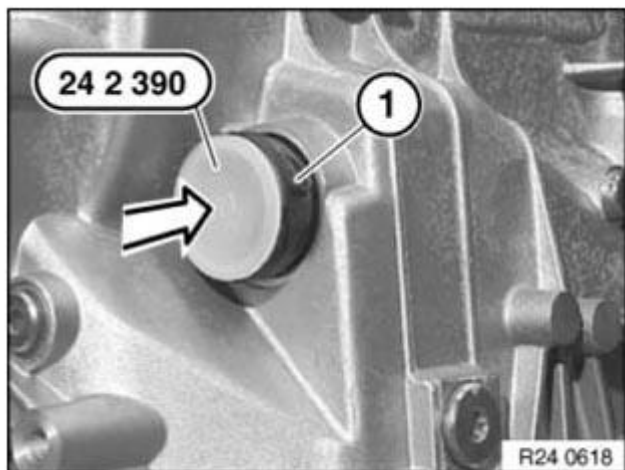


Fig. 159: Inserting Special Tool (24 2 390) In Sealing Sleeve

Courtesy of BMW OF NORTH AMERICA, INC.

24 34 021 REPLACING SEALING SLEEVE FOR TRANSMISSION HOUSING (GA6HP19Z) (X6 35I)

Special tools required:

- 24 2 390

IMPORTANT: After completion of work, check transmission oil level .

Use only approved TRANSMISSION OIL .

Failure to comply with this requirement will result in serious damage to the

automatic transmission!*Necessary preliminary tasks:*

- Remove heat shields
- Remove **transmission cross-member** . See **22 32 050 REPLACING CROSSMEMBER FOR TRANSMISSION MOUNTING (N54)** or **22 32 050 REPLACING CROSSMEMBER FOR TRANSMISSION MOUNTING (N63)** .
- Remove **transmission oil sump**

IMPORTANT: Support transmission with workshop hoist.

Unlock and disconnect plug (1) by turning.

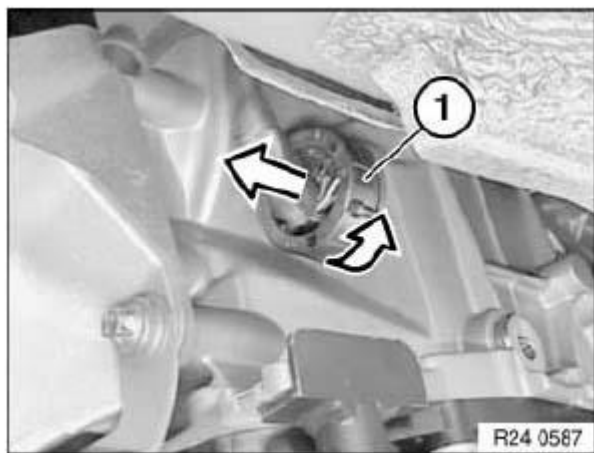


Fig. 160: Disconnecting Plug

Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool **24 2 390** in sealing sleeve (1).

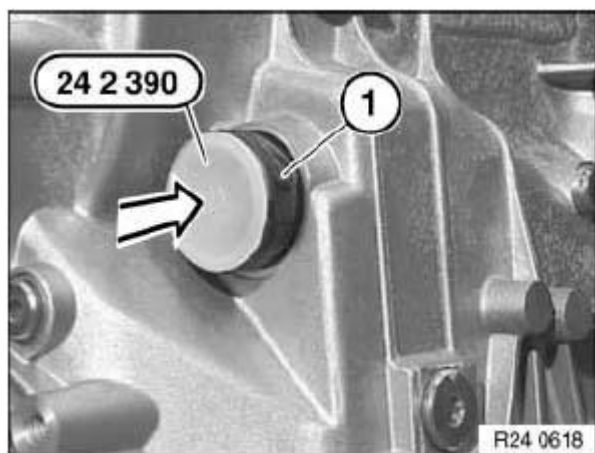


Fig. 161: Inserting Special Tool 24 2 390 In Sealing Sleeve
Courtesy of BMW OF NORTH AMERICA, INC.

Unlock sealing sleeve with slide (1).

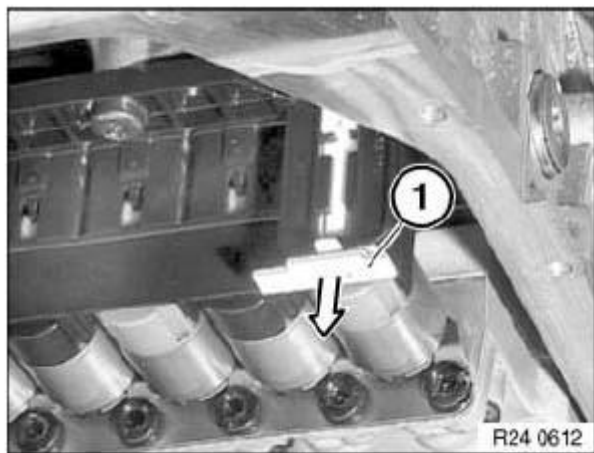


Fig. 162: Unlocking Sealing Sleeve
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Note position of sealing sleeve.

Pull out sealing sleeve (1).

Installation note:

Screw in sealing sleeve partially (lug in upper area). Turn until lug engages in groove of transmission. Slide in sealing sleeve.

Lug on sealing sleeve must not be damaged!

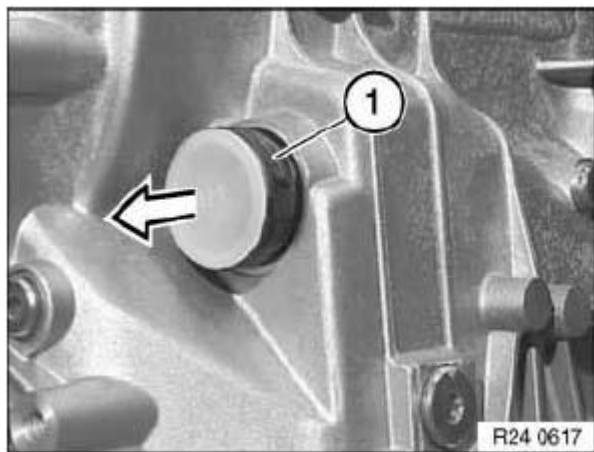


Fig. 163: Pulling Out Sealing Sleeve

Courtesy of BMW OF NORTH AMERICA, INC.

24 34 020 REPLACING SEALING SLEEVE FOR TRANSMISSION HOUSING (GA6HP26Z) (X6 50I)

Special tools required:

- 24 2 390

IMPORTANT: After completion of work, CHECK TRANSMISSION OIL LEVEL.

Use only approved TRANSMISSION OIL .

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove UNDERBODY PROTECTION
- Remove TRANSMISSION OIL SUMP

IMPORTANT: Support transmission with workshop hoist.

Unlock and disconnect plug (1) by turning.

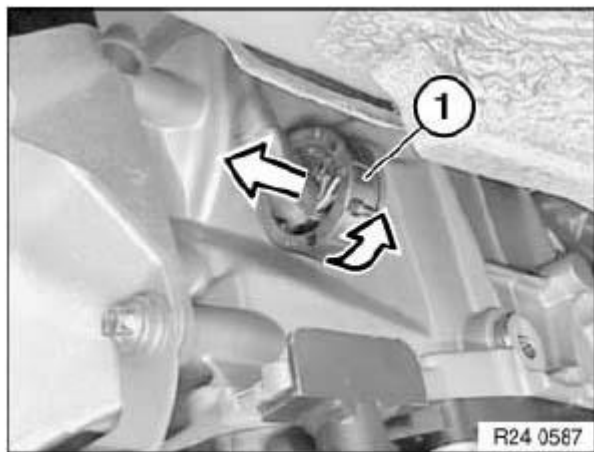


Fig. 164: Disconnecting Plug

Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool **24 2 390** in sealing sleeve (1).

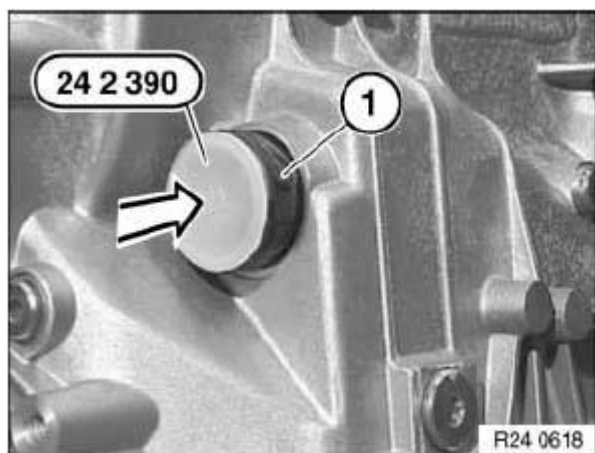


Fig. 165: Inserting Special Tool 24 2 390 In Sealing Sleeve
Courtesy of BMW OF NORTH AMERICA, INC.

Unlock sealing sleeve with slide (1).

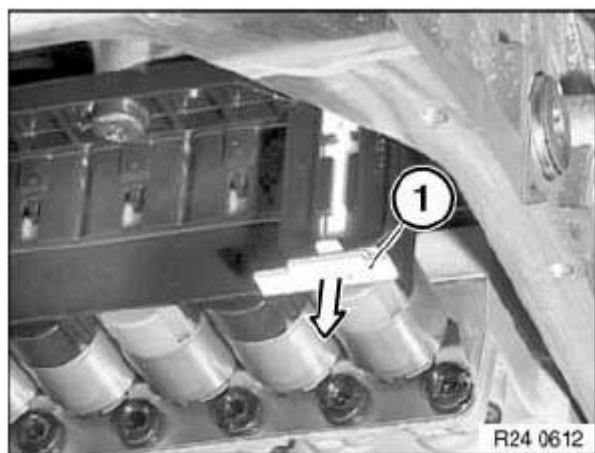


Fig. 166: Unlocking Sealing Sleeve
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: **Note position of sealing sleeve.**

Pull out sealing sleeve (1).

Installation note:

Screw in sealing sleeve partially (lug in upper area). Turn until lug engages in groove of transmission. Slide in sealing sleeve.

Lug on sealing sleeve must not be damaged!

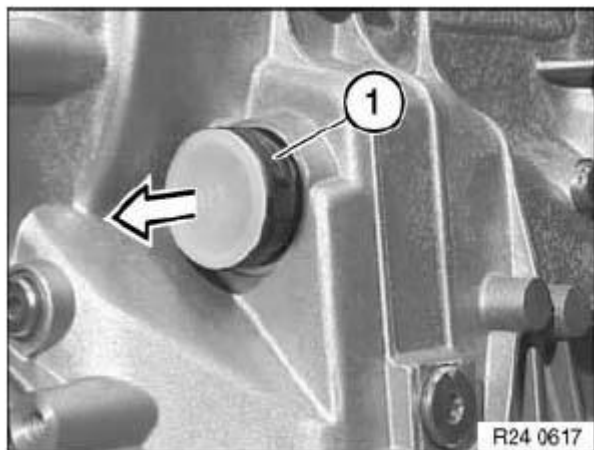


Fig. 167: Pulling Out Sealing Sleeve

Courtesy of BMW OF NORTH AMERICA, INC.

24 34 022 REPLACING SEALING SLEEVE FOR TRANSMISSION HOUSING (GA8HP45Z) (X6 35I 2011-13)

IMPORTANT:

- Do not let skin come in contact with transmission oil and do not inhale transmission oil vapors.
- Wear protective gloves.
- Ensure adequate ventilation

NOTE:

After completing work:

- Load specific data status with the BMW diagnosis system

IMPORTANT: After completion of the repair work, TRANSMISSION OIL LEVEL

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397**

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove rear UNDERBODY PROTECTION .
- Remove transmission OIL SUMP.

- If required, remove OIL ACCUMULATOR.
- Remove transmission CROSS MEMBER .

IMPORTANT: Support transmission with workshop jack.

Unlock and disconnect connector (1) by turning.

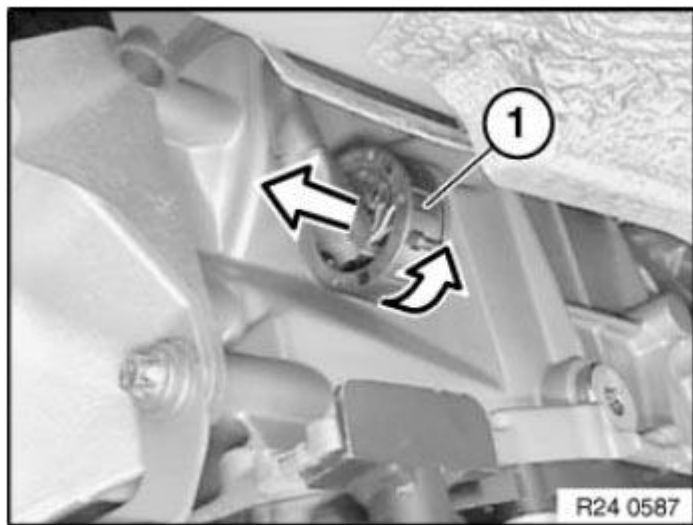


Fig. 168: Inserting Special Tool (24 2 390) In Sealing Cup
Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool 24 2 390 (cap) in sealing sleeve (1).

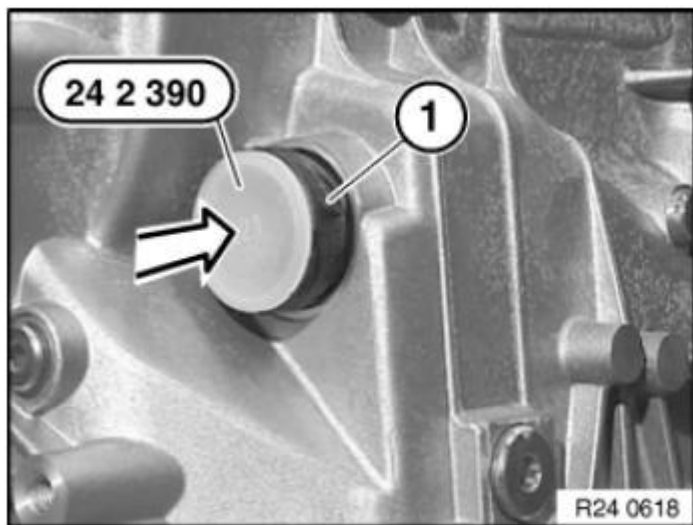


Fig. 169: Sliding Sealing Cup
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1) and unlock sealing cup with slide (2).

Tightening torque: 8 Nm

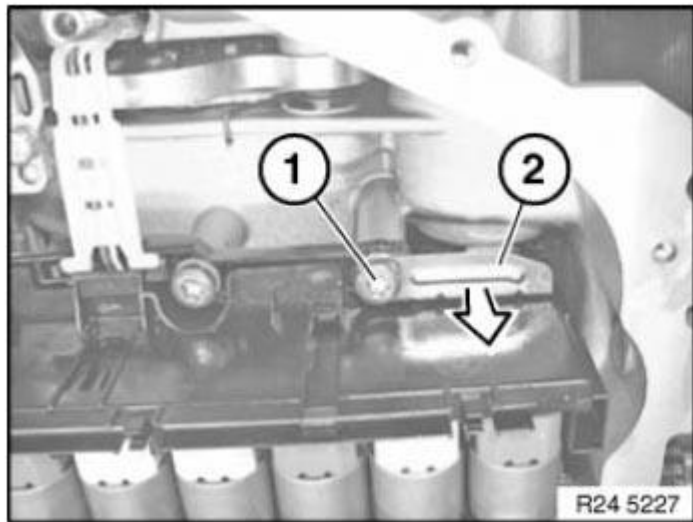


Fig. 170: Pulling Out Sealing Cup

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Make a note of installation position of sealing sleeve.

Pull out sealing cup (1).

Installation note:

Fit sealing sleeve in position (lug on inner surface). Turn until lug engages in groove of transmission. Slide in sealing cup.

Lug on sealing sleeve must not be damaged!

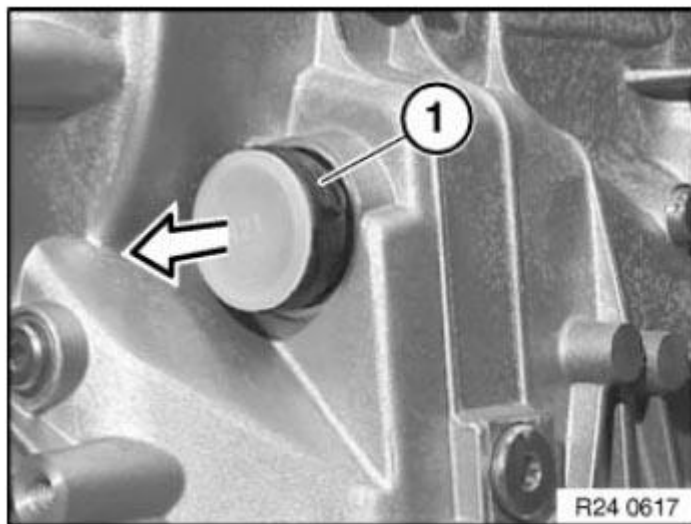


Fig. 171: Identifying Release Button

Courtesy of BMW OF NORTH AMERICA, INC.

24 34 562 REPLACING MECHATRONICS (GA6HP19Z) (X6 35I)

Special tools required:

- 24 2 390

NOTE: After completing work:

- Load specific data version with DIS.

IMPORTANT: After completion of work, check transmission oil level .

Use only approved TRANSMISSION OIL .

Failure to comply with this requirement will result in serious damage to the automatic transmission!

IMPORTANT: Read and comply with notes on PROTECTION AGAINST ELECTROSTATIC DAMAGE (ESD PROTECTION) .

Necessary preliminary tasks:

- Remove heat shields.
- Support automatic transmission with hydraulic lifter.
- Remove **transmission cross-member** . See 22 32 050 REPLACING CROSSMEMBER FOR TRANSMISSION MOUNTING (N54) or 22 32 050 REPLACING CROSSMEMBER FOR TRANSMISSION MOUNTING (N63) .

Version 1:

Grip clamping sleeve (1) and slacken nut (2).

Detach retainer (3) downwards using a screwdriver.

Pull cable (4) out of holder.

Installation note:

Adjust selector lever .

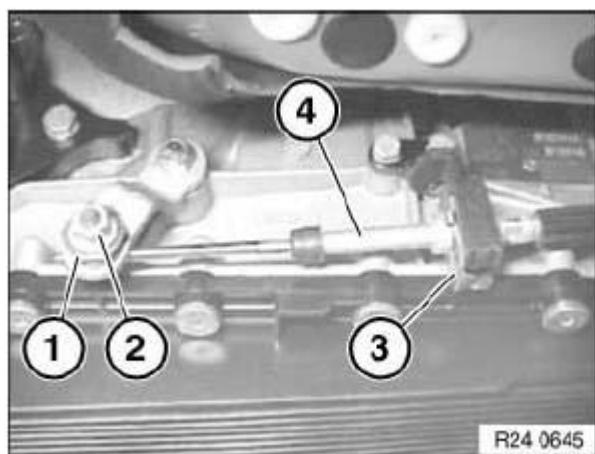


Fig. 172: Identifying Sleeve, Nut, Retainer And Cable
Courtesy of BMW OF NORTH AMERICA, INC.

Version 2:

Release screw (1).

Remove clamp (2).

Release shift cable head (3) using a screwdriver from ball head of shift cable lever.

Installation note:

Adjust selector lever .

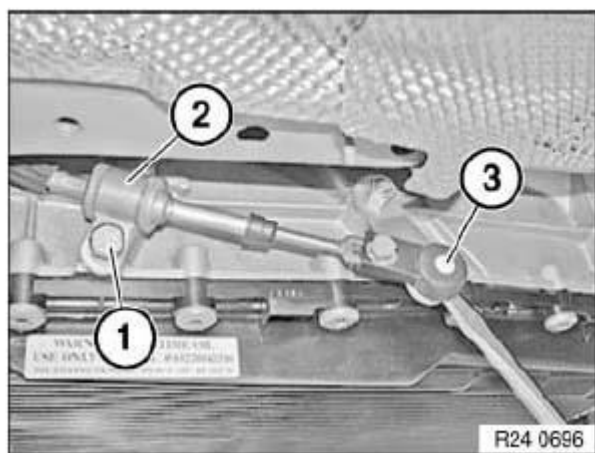


Fig. 173: Identifying Screw, Clamp And Shift Cable Head
Courtesy of BMW OF NORTH AMERICA, INC.

Version 3:

Unfasten nut.

Remove cable (1).

Installation note:

Adjusting cable:

- Release nut
- Adjust cable by means of holder (2) until spacing $A = 1$ mm is obtained
- Tighten down nut

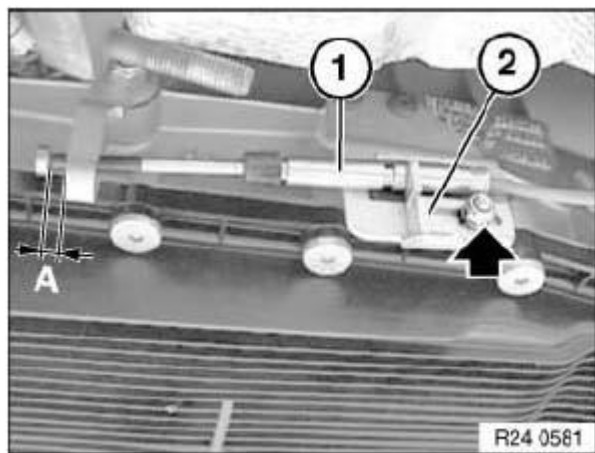


Fig. 174: Identifying Cable And Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Version 4:

Move selector lever to "Park".

Release shift cable head (1) using a screwdriver from ball head of shift lever.

Detach retainer (2) downwards using a screwdriver.

Slide cable (3) towards rear and disengaged in downward direction.

Installation note:

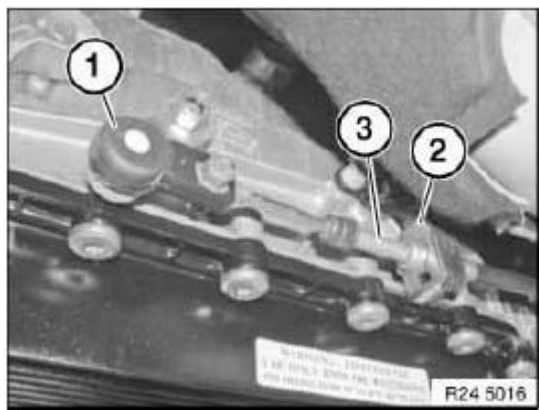
Adjusting shift lever

Fig. 175: Identifying Cable Head, Retainer And Cable
Courtesy of BMW OF NORTH AMERICA, INC.

Secure lever (1) with a cable tie (2) or wire in vertical position.

NOTE: E65 only.

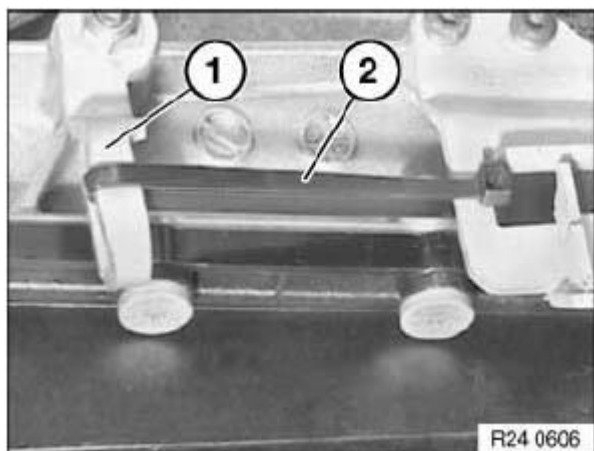


Fig. 176: Securing Lever Using Cable Tie
Courtesy of BMW OF NORTH AMERICA, INC.

M57T2 only

Release bolts (1).

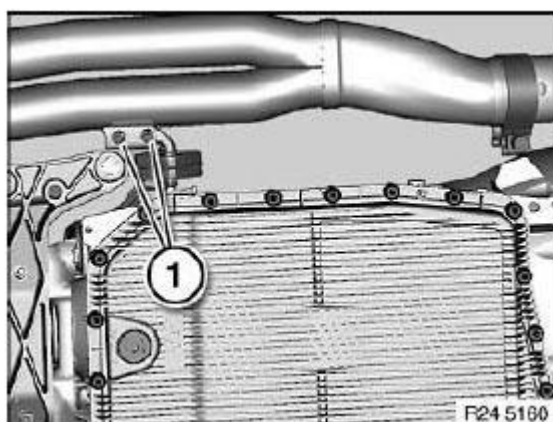


Fig. 177: Identifying Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

M57T2 only

Release bolts (1).

Bracket remove.

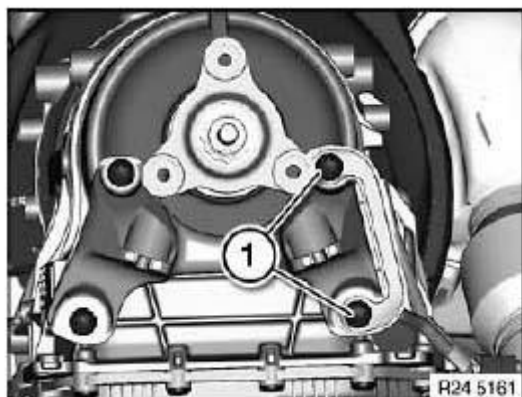


Fig. 178: Identifying Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Mechatronics can be destroyed by static discharges. Therefore the contacts inside the plug must not be touched. Insert special tool immediately after work step.

Unscrew plug (1) and disconnect.

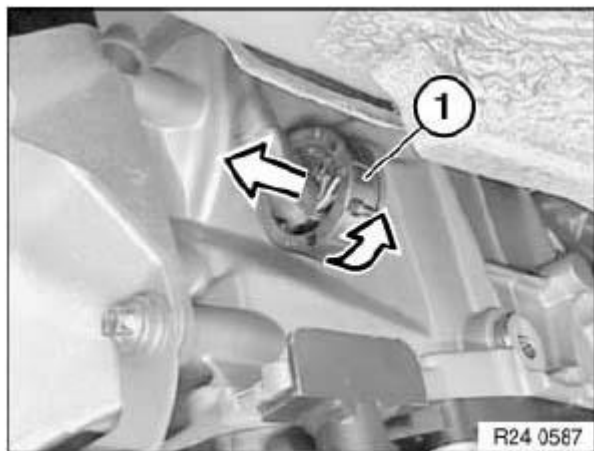


Fig. 179: Disconnecting Plug
Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool 24 2 390 in sealing sleeve (1).

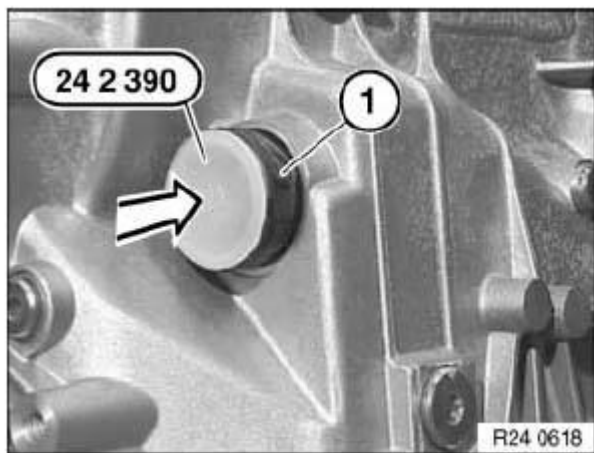


Fig. 180: Inserting Special Tool 24 2 390 In Sealing Sleeve
Courtesy of BMW OF NORTH AMERICA, INC.

Remove transmission oil sump .

Unlock sealing sleeve with slide (1).

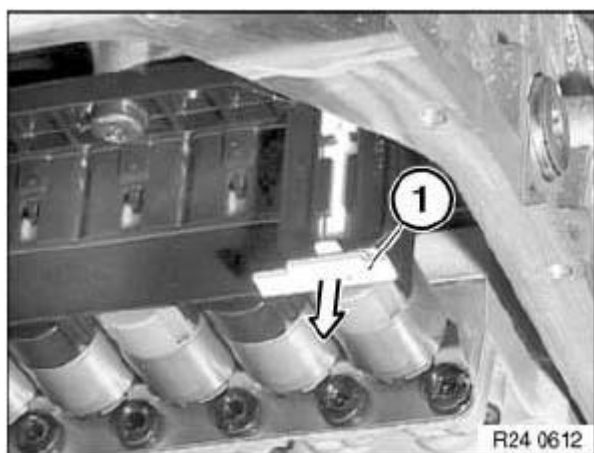


Fig. 181: Unlocking Sealing Sleeve

Courtesy of BMW OF NORTH AMERICA, INC.

Note position of sealing sleeve.

Pull out sealing sleeve (1).

Installation note:

Screw in sealing sleeve partially (lug in upper area). Turn until lug engages in groove of transmission. Slide in sealing sleeve.

Lug on sealing sleeve must not be damaged!

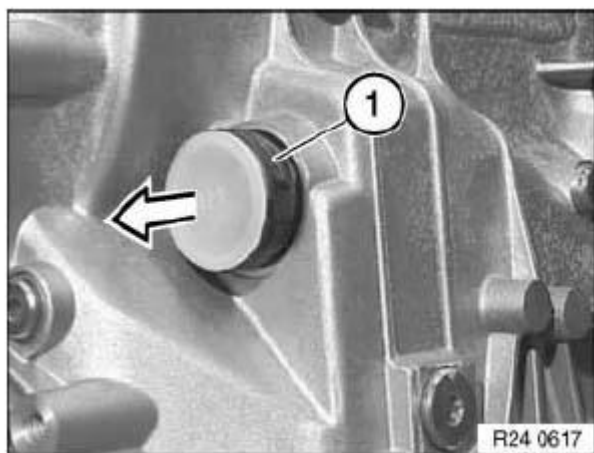


Fig. 182: Pulling Out Sealing Sleeve

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: GA6HP19Z

Release all screws (1 and 2).

- 1 = M6 x 58 mm
- 2 = M6 x 20 mm

Remove MECHATRONICS.

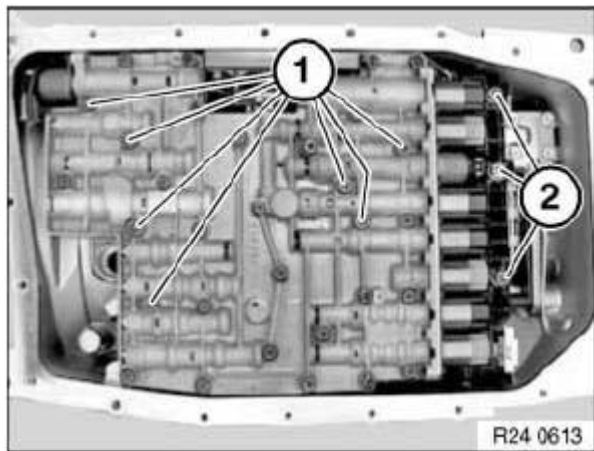


Fig. 183: Identifying Mechatronics Screws
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: GA6HP19Z TU

Release all screws (1 and 2).

- 1 = M6 x 59 mm
- 2 = M6 x 20 mm

Remove MECHATRONICS.

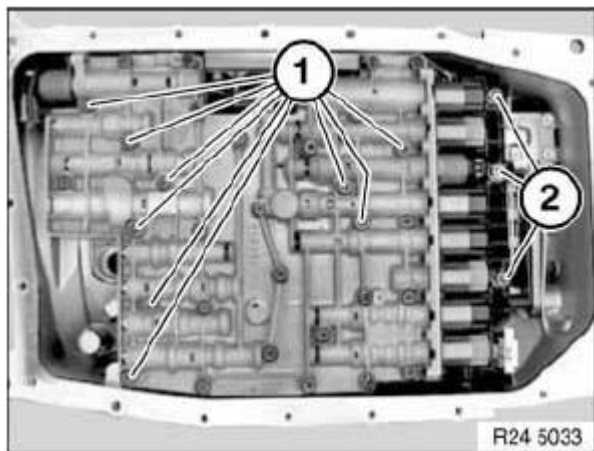


Fig. 184: Identifying Mechatronics Screws
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Only installed in E65!
Mechatronics without protective bar for solenoid valve must not be reused after removal.

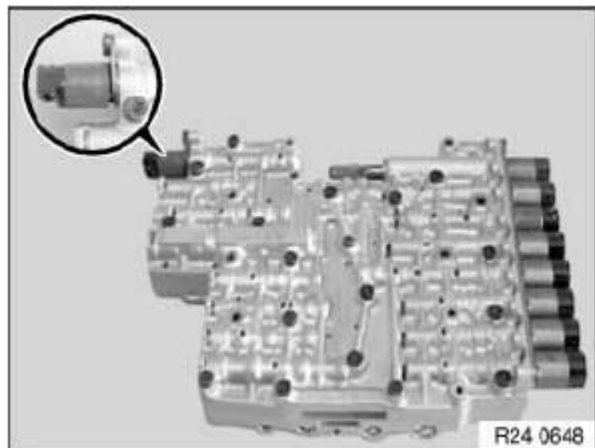


Fig. 185: Identifying Mechatronics Without Protective Bar For Solenoid Valve
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Only installed in E65!
Fit/reuse only mechatronics with protective bar (1) for solenoid valve.

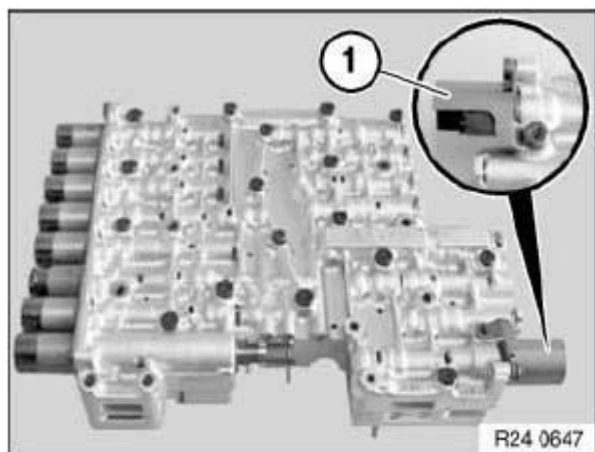


Fig. 186: Identifying Mechatronics With Protective Bar For Solenoid Valve
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Check gaskets (1 and 2) for damage, replace gaskets if necessary.

Coat new seals with automatic transmission fluid and install.

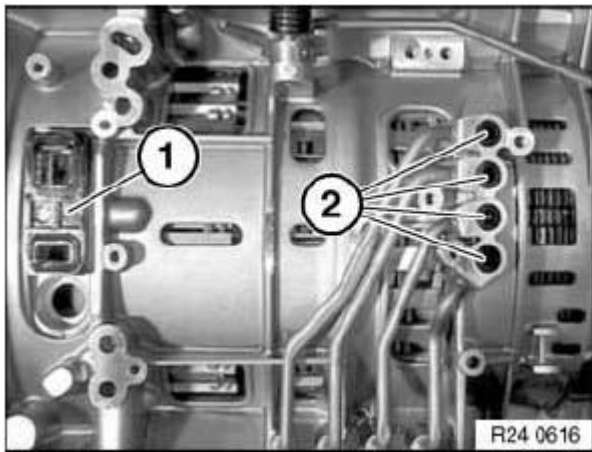


Fig. 187: Identifying Gaskets

Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Insert screws (3) alternately until contact is made with each screw head.

Insert all further screws contact is made with each screw head.

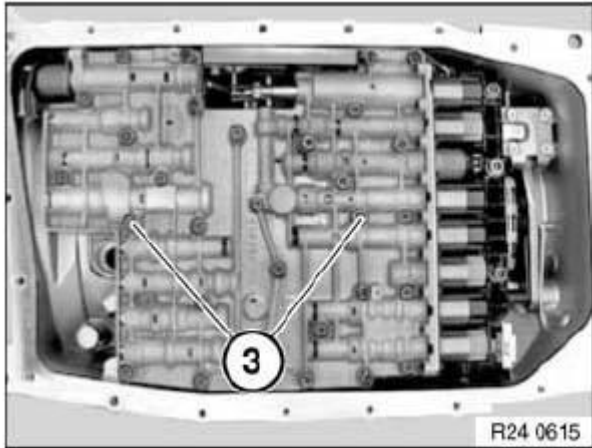


Fig. 188: Identifying Screw Head Screws

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: GA6HP19Z

IMPORTANT: Tighten down screws in order 1...10.

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Tightening torque 24 30 1AZ .

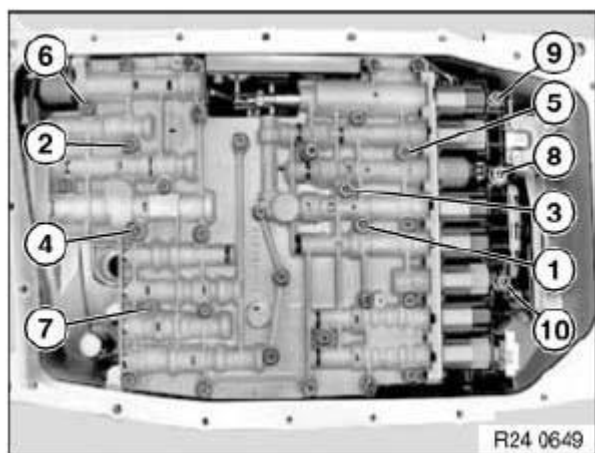


Fig. 189: Tightening Sequence Of Screws
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: GA6HP19Z TU

IMPORTANT: Tighten down screws in order 1...13.
Failure to comply with this requirement will result in serious damage to the automatic transmission!
Tightening torque 24 30 1AZ .

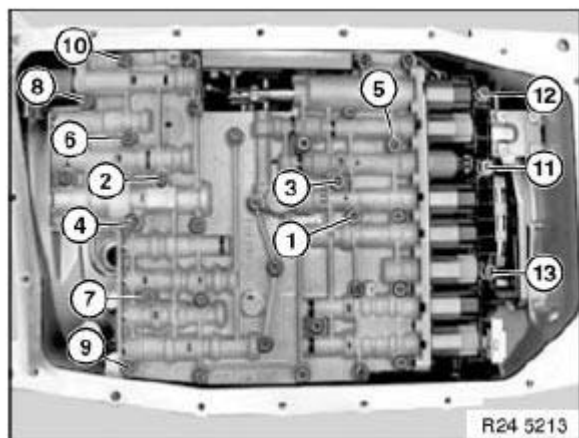


Fig. 190: Tightening Sequence Of Screws
Courtesy of BMW OF NORTH AMERICA, INC.

24 34 561 REPLACING MECHATRONICS (GA6HP26Z) (X6 50I)

Special tools required:

- 24 2 390

NOTE: After completing work:

- Load specific data version with DIS.

IMPORTANT: After completion of work, check transmission oil level .

Use only approved TRANSMISSION OIL .

Failure to comply with this requirement will result in serious damage to the automatic transmission!

IMPORTANT: Read and comply with notes on PROTECTION AGAINST ELECTROSTATIC DAMAGE (ESD PROTECTION) .*Necessary preliminary tasks:*

E60/ E61/ E63/ E64, E70 N62/N62TU only:

- Remove exhaust system. See **18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N54)** or **18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N63)** .
- If necessary, release cross-member from exhaust system on transmission.
- If necessary, remove **heat shield** on left and right.
- Remove **transmission cross-member** . See **22 32 050 REPLACING CROSSMEMBER FOR TRANSMISSION MOUNTING (N54)** or **22 32 050 REPLACING CROSSMEMBER FOR TRANSMISSION MOUNTING (N63)** .

**NOTE: Version 1:
Unfasten nut.
Remove cable (1).***Installation note:***Adjusting shift lever**

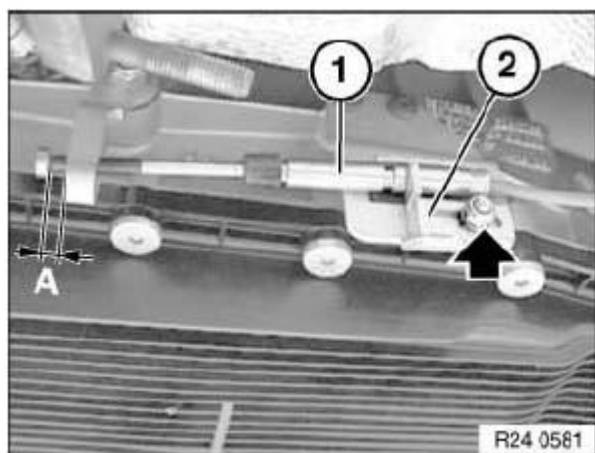


Fig. 191: Identifying Cable And Holder

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: **Version 2:**
Grip clamping sleeve (1) and slacken nut (2).
Detach retainer (3) towards bottom using a screwdriver.
Pull cable (4) out of holder.

Installation note:

Adjust selector lever

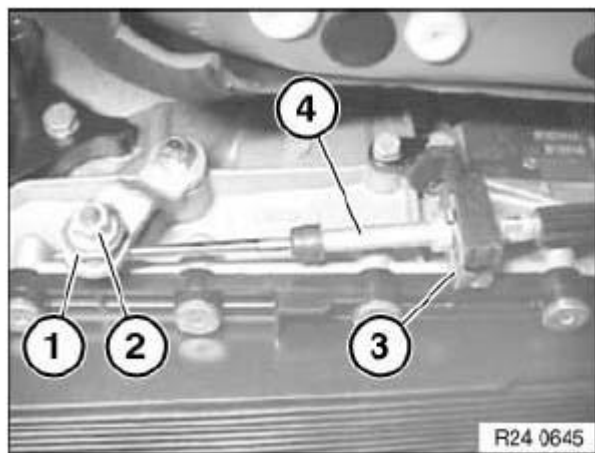


Fig. 192: Identifying Sleeve, Nut, Retainer And Cable

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: **Version 3:**
Release screw (1).
Remove clamp (2).
Release shift cable head (3) using a screwdriver from ball head of shift cable

lever.

Installation note:

Adjust selector lever .

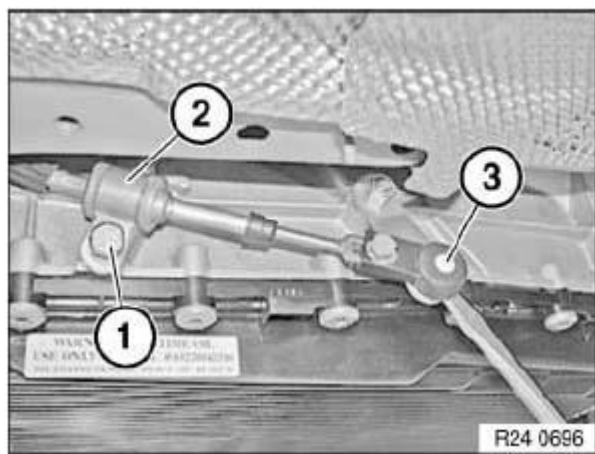


Fig. 193: Identifying Screw, Clamp And Shift Cable Head
Courtesy of BMW OF NORTH AMERICA, INC.

Secure lever (1) with a cable tie (2) or wire in vertical position.

NOTE: Illustration shows E65.

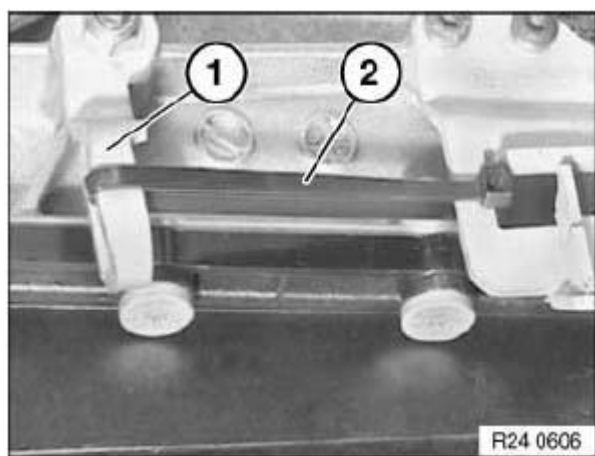


Fig. 194: Securing Lever Using Cable Tie
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Mechatronics can be destroyed by static discharges. Therefore the contacts inside the plug must not be touched. Insert special tool immediately after work step.

Unscrew plug (1) and disconnect.

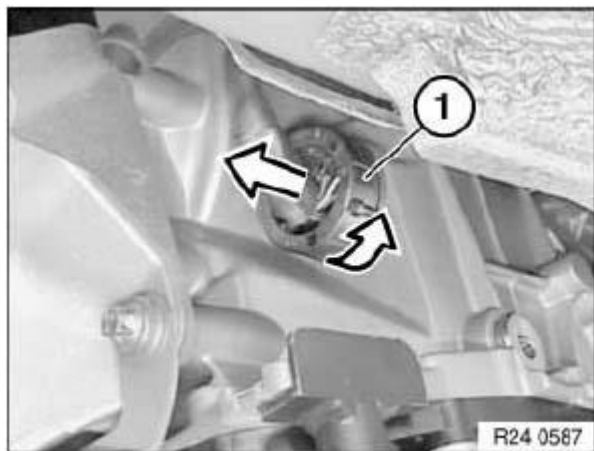


Fig. 195: Disconnecting Plug

Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool 24 2 390 in sealing sleeve (1).

Remove **transmission oil sump** .

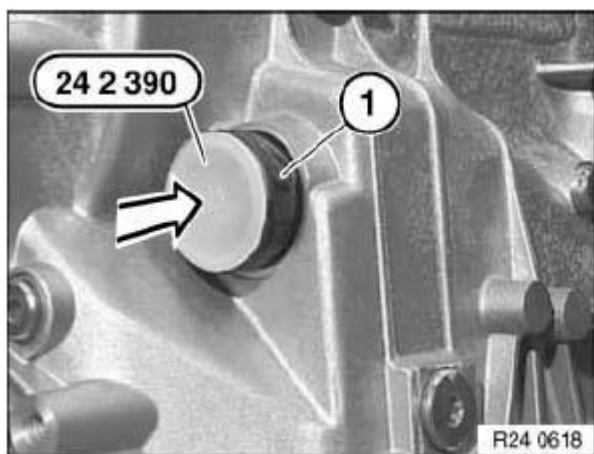


Fig. 196: Inserting Special Tool 24 2 390 In Sealing Sleeve

Courtesy of BMW OF NORTH AMERICA, INC.

Unlock sealing sleeve with slide (1).

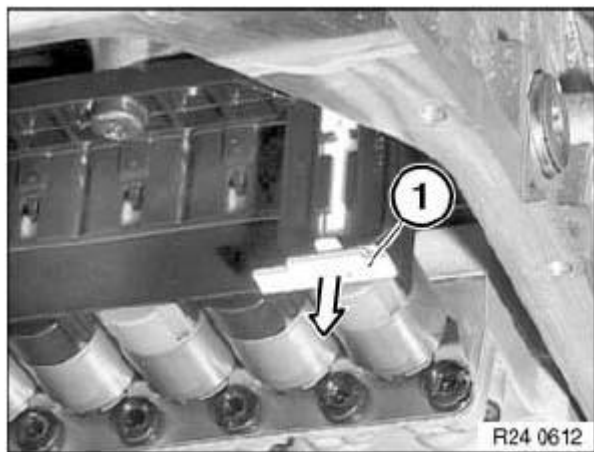


Fig. 197: Unlocking Sealing Sleeve

Courtesy of BMW OF NORTH AMERICA, INC.

Note position of sealing sleeve.

Pull out sealing sleeve (1).

Installation note:

Screw in sealing sleeve partially (lug in upper area). Turn until lug engages in groove of transmission. Slide in sealing sleeve.

Lug on sealing sleeve must not be damaged!

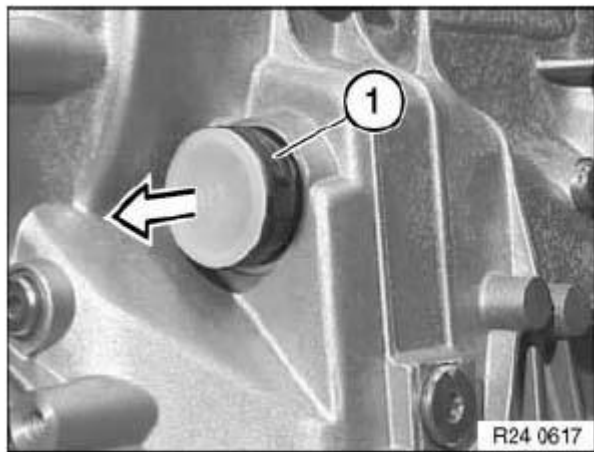


Fig. 198: Pulling Out Sealing Sleeve

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: GA6HP26Z, GA6HP32Z

Release all screws (1 and 2).

- 1 = M6 x 59 mm
- 2 = M6 x 20 mm

Remove mechatronics.

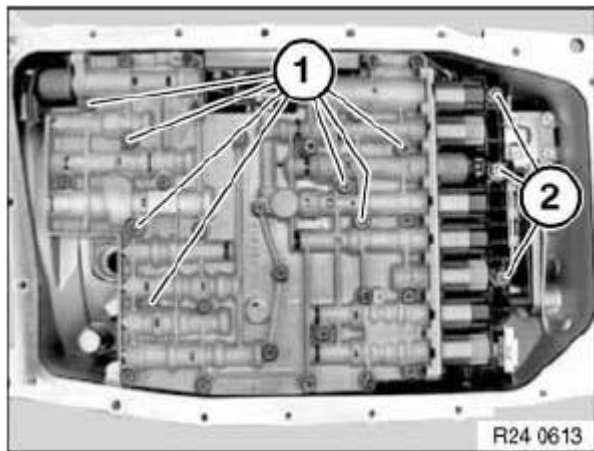


Fig. 199: Identifying Mechatronics Screws
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: GA6HP26TU, GA6HP32TU

Release all screws (1 and 2).

- 1 = M6 x 59 mm
- 2 = M6 x 20 mm

Remove mechatronics.

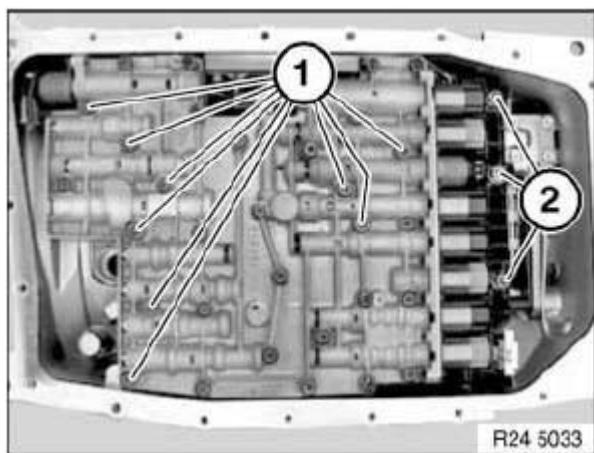


Fig. 200: Identifying Mechatronics Screws
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: E65/66 only:

Mechatronics without protective bar for solenoid valve must not be reused after removal.

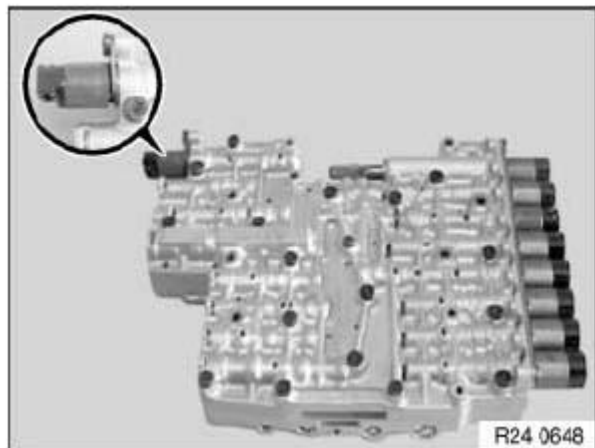


Fig. 201: Identifying Mechatronics Without Protective Bar For Solenoid Valve
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: E65/66 only:

Fit/reuse only mechatronics with protective bar (1) for solenoid valve.

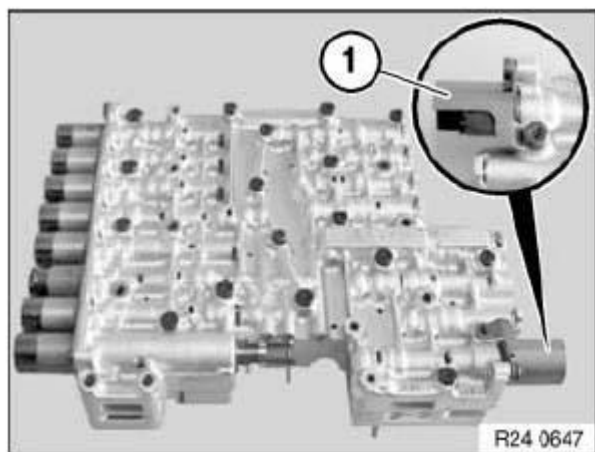


Fig. 202: Identifying Mechatronics With Protective Bar For Solenoid Valve
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Check gaskets (1 and 2) for damage, replace gaskets if necessary.

Coat new seals with automatic transmission fluid and install.

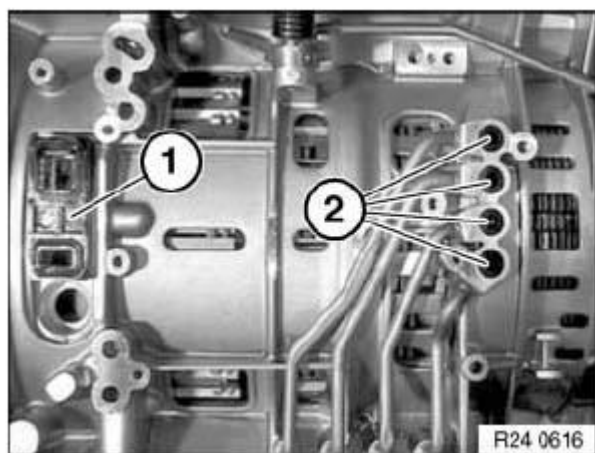


Fig. 203: Identifying Gaskets

Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Insert screws (3) alternately until contact is made with each screw head.

Insert all further screws contact is made with each screw head.

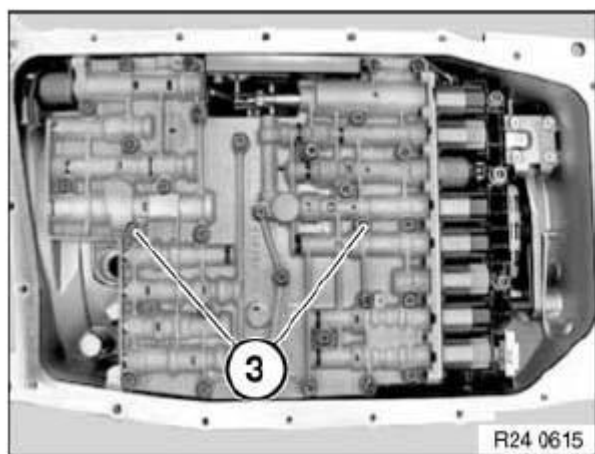


Fig. 204: Identifying Screw Head Screws

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: GA6HP26Z, GA6HP32Z

IMPORTANT: Tighten down screws in order 1...10.

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Tightening torque 24 30 1AZ .

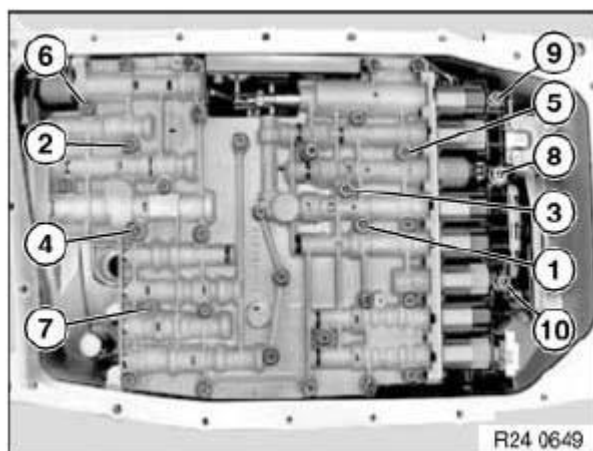


Fig. 205: Tightening Sequence Of Screws
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: GA6HP26TU, GA6HP32TU

IMPORTANT: Tighten down screws in order 1...13.
Failure to comply with this requirement will result in serious damage to the automatic transmission!
Tightening torque 24 30 1AZ .

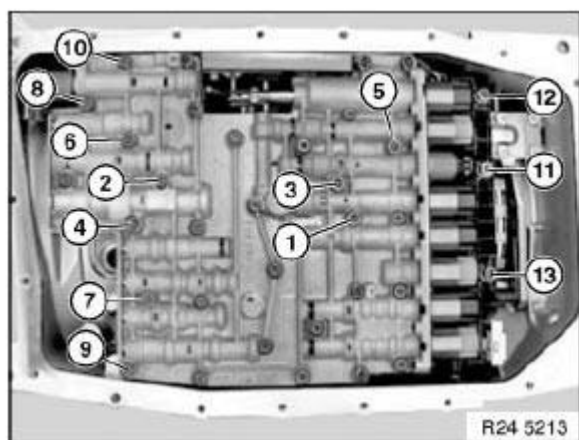


Fig. 206: Tightening Sequence Of Screws
Courtesy of BMW OF NORTH AMERICA, INC.

24 34 564 REPLACING MECHATRONICS (GA8HP45Z) (X6 35I 2011-13)

IMPORTANT:

- Do not let skin come in contact with transmission oil and do not inhale transmission oil vapors.
- Wear protective gloves.
- Ensure adequate ventilation

NOTE: After completing work:

- Load specific data status with the BMW diagnosis system

IMPORTANT: In vehicles with Automatic Start/Stop , an oil reservoir is installed in the mechatronics.

After completion of the repair work, TRANSMISSION OIL LEVEL

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397*

Failure to comply with this requirement will result in serious damage to the automatic transmission!

IMPORTANT: Read and comply with notes on PROTECTION AGAINST ELECTROSTATIC DISCHARGE (ESD PROTECTION) .

Necessary preliminary work:

- Remove rear UNDERBODY PROTECTION .
- Remove exhaust bracket.

IMPORTANT: Mechatronics can be destroyed by static discharges. Therefore the contacts inside the connector must not be touched. Insert special tool immediately after operation.

Unscrew connector (1) and disconnect.

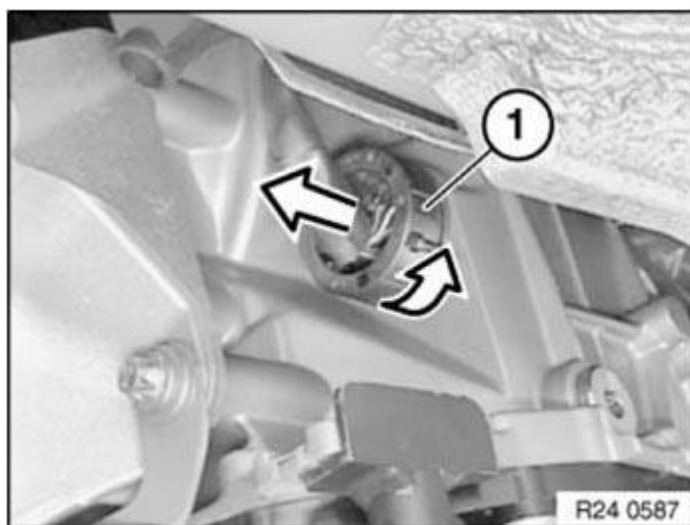


Fig. 207: Disconnecting Connector

Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool 24 2 390 (cap) in sealing cup (1).

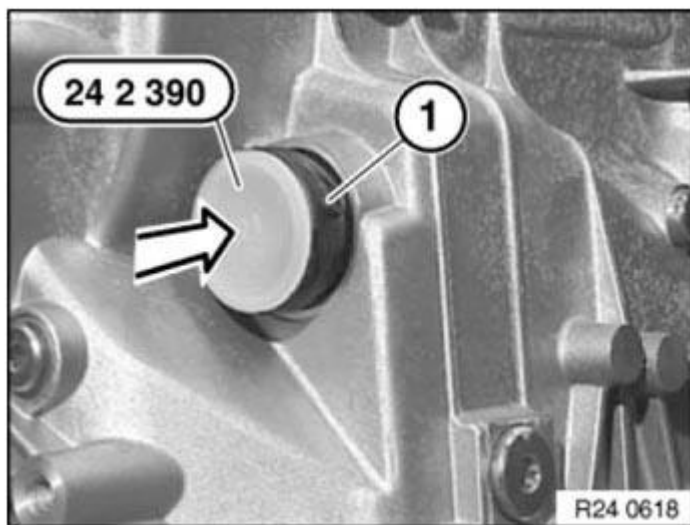


Fig. 208: Inserting Special Tool (24 2 390) In Sealing Sleeve

Courtesy of BMW OF NORTH AMERICA, INC.

Remove TRANSMISSION OIL SUMP.

Remove oil reservoir.

Release screw (1) and unlock sealing cup with slide (2).

Tightening torque: 8 Nm

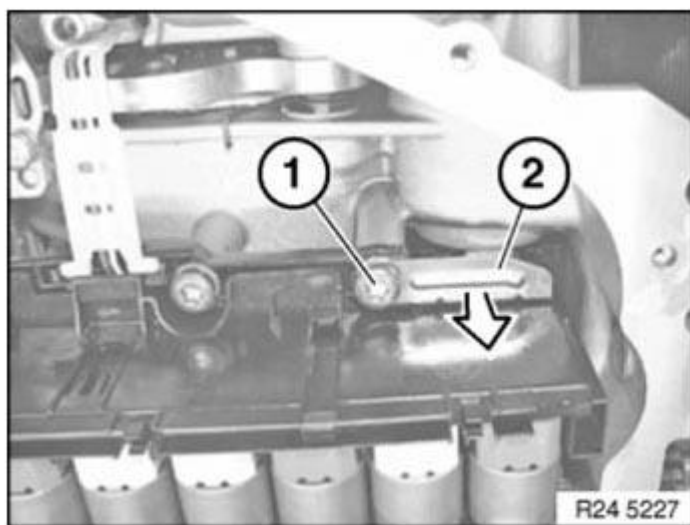


Fig. 209: Removing Sealing Cup

Courtesy of BMW OF NORTH AMERICA, INC.

Note position of sealing cup.

Pull out sealing cup (1).

Installation note:

Fit sealing cup in position (lug on inside). Turn until lug engages in groove of transmission. Slide in sealing cup.

Lug on sealing cup must not be damaged!

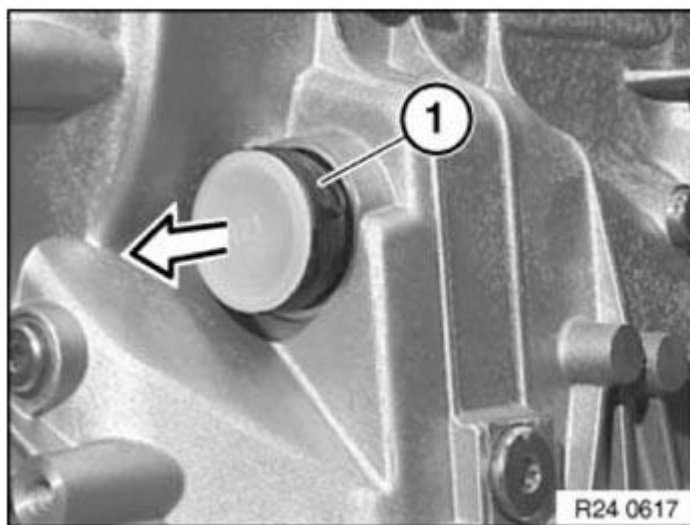


Fig. 210: Pulling Out Sealing Cup

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Only for vehicles without oil reservoir.

Release all screws (1 and 2).

- 1 = M6 x 59 mm
- 2 = M6 x 20 mm

Carefully remove mechatronics.

Installation note:

Replace all screws (1 and 2).

Replace O-rings for oil ducts on the mechatronics unit and wet with automatic transmission fluid.

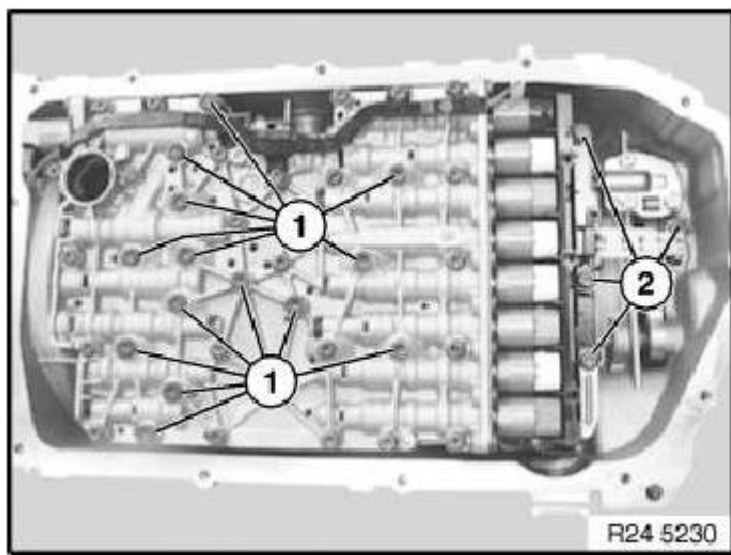


Fig. 211: Identifying Mechatronics Unit Mounting Screws (For Vehicles Without Oil Reservoir)
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Only for vehicles with oil reservoir.

Release all screws (1 and 2).

- 1 = M6 x 59 mm
- 2 = M6 x 20 mm

Carefully remove mechatronics.

Installation note:

Replace all screws (1 and 2).

Replace O-rings for oil ducts on the mechatronics unit and wet with automatic transmission fluid.

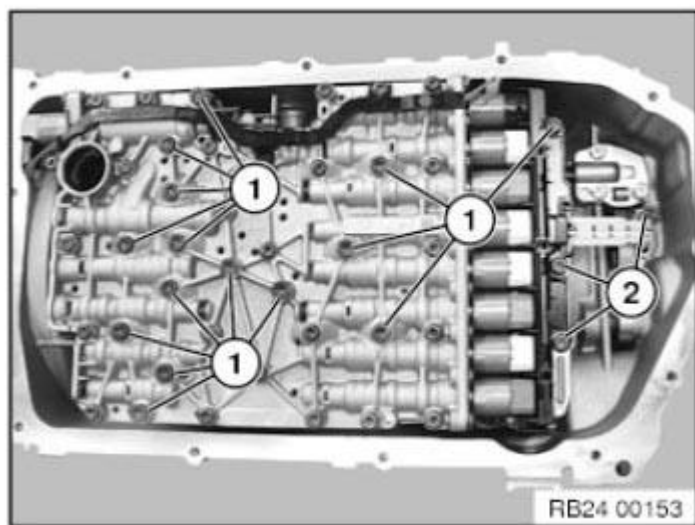


Fig. 212: Identifying Sealing Sleeve

Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Replace gasket (1).

Coat new seal with automatic transmission fluid and install.

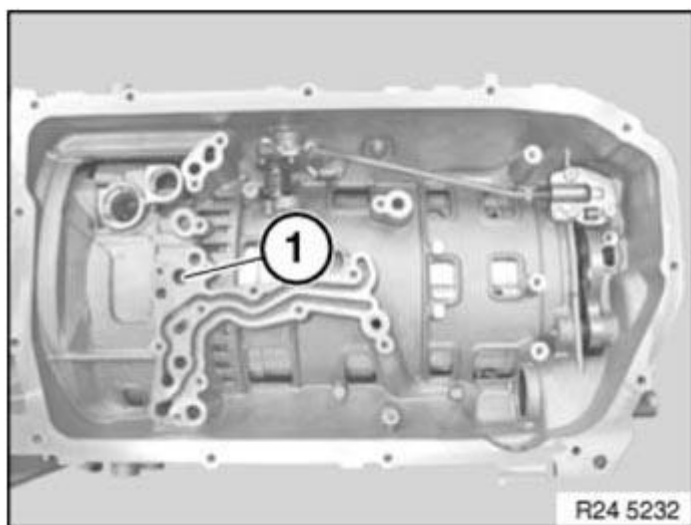


Fig. 213: Identifying Gasket

Courtesy of BMW OF NORTH AMERICA, INC.

Screw in retaining pins 24 1 430 at screw position 4 and 9.

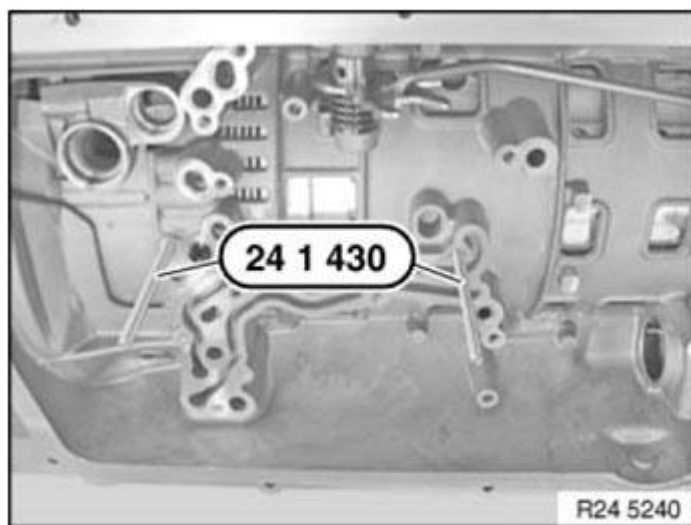


Fig. 214: Installing Retaining Pins (24 1 430) At Screw Position
Courtesy of BMW OF NORTH AMERICA, INC.

Fit mechatronics unit.

Fit shift claw (2) in gearshift shaft (3) by pressing release lever (1).

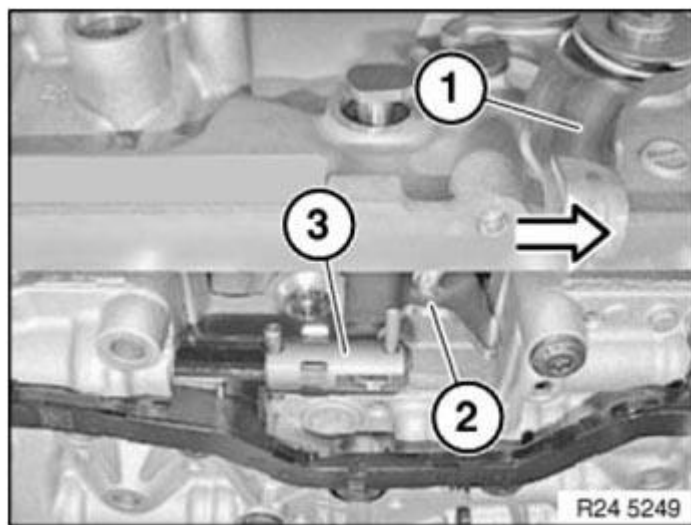


Fig. 215: Pressing Release Lever
Courtesy of BMW OF NORTH AMERICA, INC.

Screw down wing nuts as far as they will go on to the mechatronics unit.

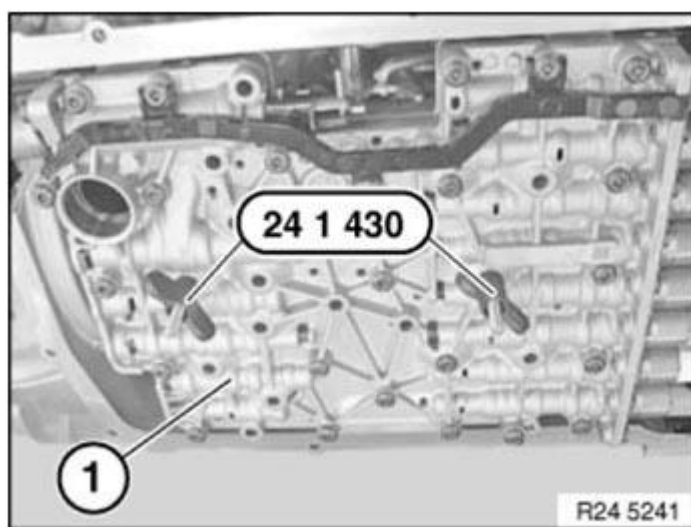


Fig. 216: Installing Mechatronics Unit Wing Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Observe different screw lengths.

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Installation note:

Insert screws 8 and 14 until screw heads make contact.

Remove guide pins and fit remaining screws.

Tighten screws in sequence 1....18.

Tightening torque: 8 Nm

IMPORTANT: In vehicles with an oil reservoir, the screw 17 (M6 x 59 mm) must be secured with the oil reservoir.

Tighten in the order of 1...16 and 18.

Tightening torque: 8 Nm

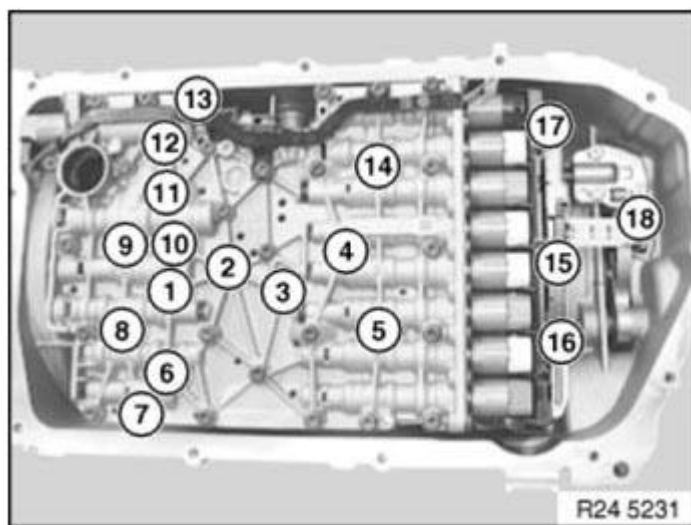


Fig. 217: Identifying Tightening Sequence Of Mechatronics Screws

Courtesy of BMW OF NORTH AMERICA, INC.

24 34 565 REPLACING MECHATRONICS (GA8HP70Z) (X6 50I 2011-13)

IMPORTANT:

- Do not let skin come in contact with transmission oil and do not inhale transmission oil vapors.
- Wear protective gloves.
- Ensure adequate ventilation

NOTE:

After completing work:

- Load specific data status with the BMW diagnosis system

IMPORTANT: In vehicles with Automatic Start/Stop , an oil reservoir is installed in the mechatronics.

After completion of the repair work, TRANSMISSION OIL LEVEL

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397*

Failure to comply with this requirement will result in serious damage to the automatic transmission!

IMPORTANT: Read and comply with notes on PROTECTION AGAINST ELECTROSTATIC DISCHARGE (ESD PROTECTION) .

Necessary preliminary work:

- Remove rear UNDERBODY PROTECTION .
- Remove exhaust bracket.

Remove panels (2).

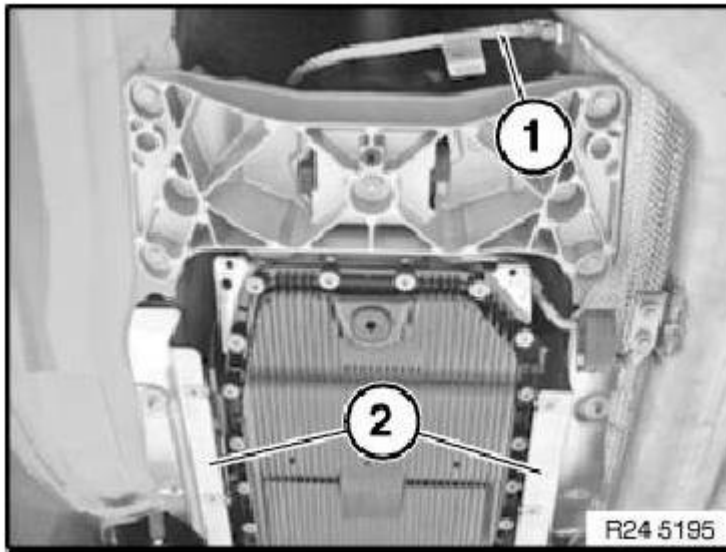


Fig. 218: Identifying Earth Strap And Panels
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Mechatronics can be destroyed by static discharges. Therefore the contacts inside the connector must not be touched. Insert special tool immediately after operation.

Unscrew connector (1) and disconnect.

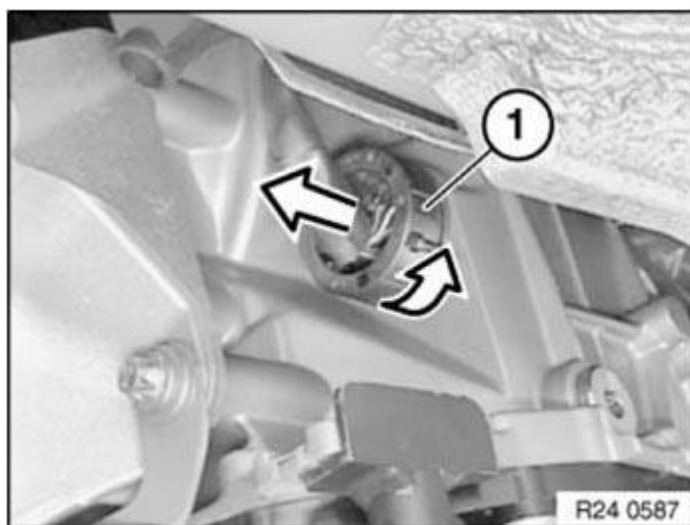


Fig. 219: Disconnecting Connector

Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool 24 2 390 (cap) in sealing cup (1).

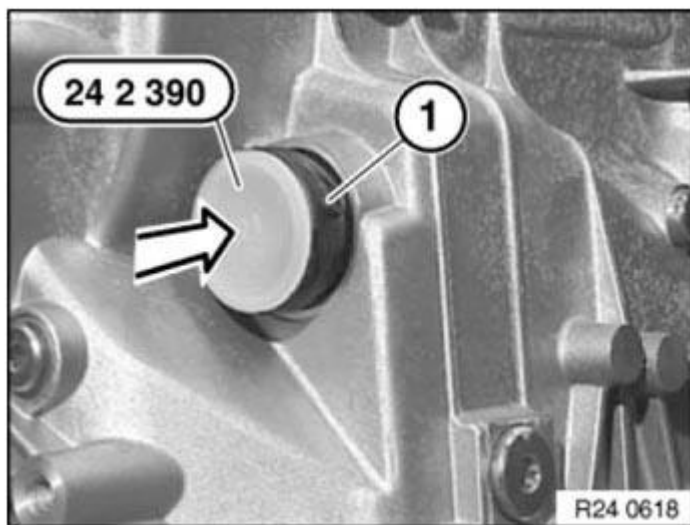


Fig. 220: Inserting Special Tool (24 2 390) In Sealing Sleeve

Courtesy of BMW OF NORTH AMERICA, INC.

Remove TRANSMISSION OIL SUMP.

Remove oil reservoir.

Release screw (1) and unlock sealing cup with slide (2).

Tightening torque: 8 Nm

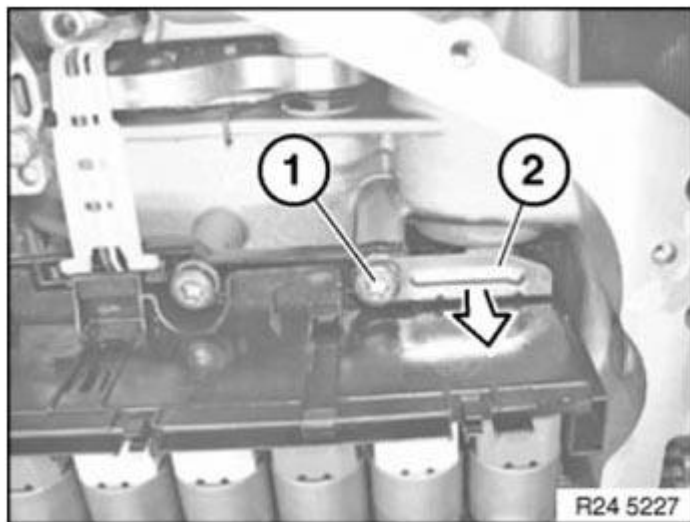


Fig. 221: Removing Sealing Cup

Courtesy of BMW OF NORTH AMERICA, INC.

Note position of sealing cup.

Pull out sealing cup (1).

Installation note:

Fit sealing cup in position (lug on inside). Turn until lug engages in groove of transmission. Slide in sealing cup.

Lug on sealing cup must not be damaged!

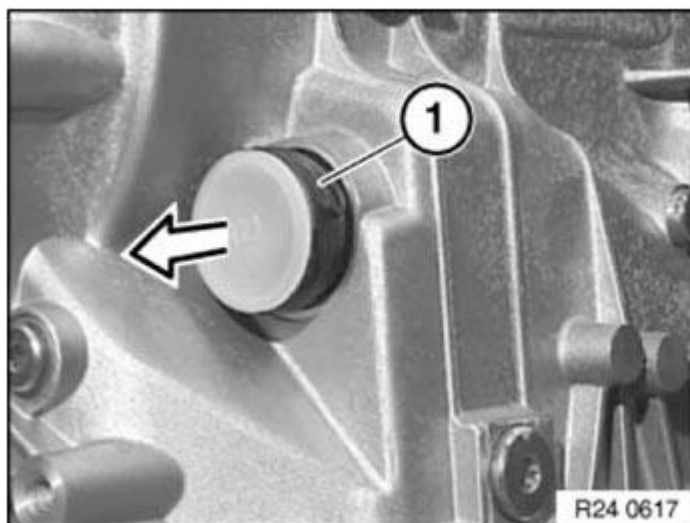


Fig. 222: Pulling Out Sealing Cup

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Only for vehicles without oil reservoir.

Release all screws (1 and 2).

- 1 = M6 x 59 mm
- 2 = M6 x 20 mm

Carefully remove mechatronics.

Installation note:

Replace all screws (1 and 2).

Replace O-rings for oil ducts on the mechatronics unit and wet with automatic transmission fluid.

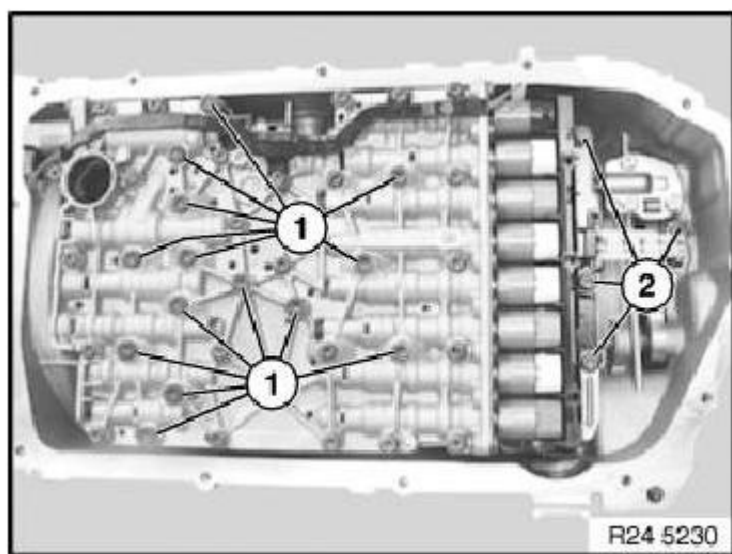


Fig. 223: Identifying Mechatronics Unit Mounting Screws (For Vehicles Without Oil Reservoir)
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Only for vehicles with oil reservoir.

Release all screws (1 and 2).

- 1 = M6 x 59 mm
- 2 = M6 x 20 mm

Carefully remove mechatronics.

Installation note:

Replace all screws (1 and 2).

Replace O-rings for oil ducts on the mechatronics unit and wet with automatic transmission fluid.

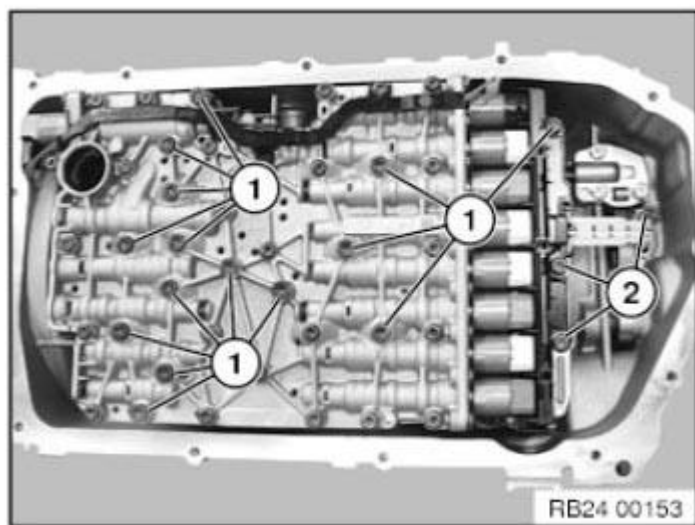


Fig. 224: Identifying Sealing Sleeve

Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Replace gasket (1).

Coat new seal with automatic transmission fluid and install.

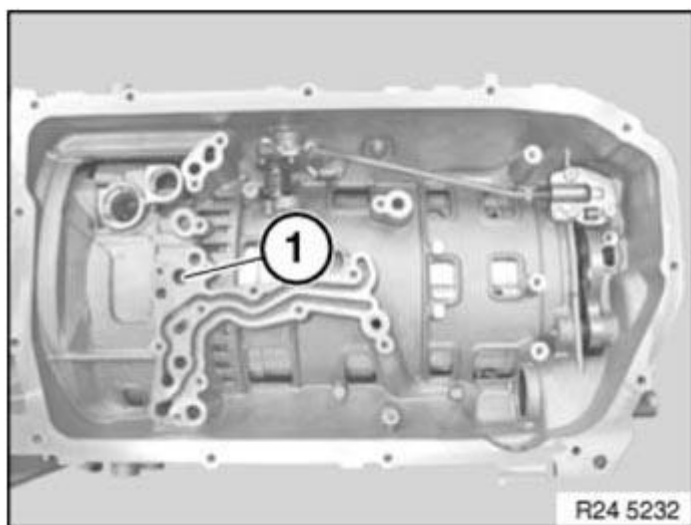


Fig. 225: Identifying Gasket

Courtesy of BMW OF NORTH AMERICA, INC.

Screw in retaining pins 24 1 430 at screw position 4 and 9.

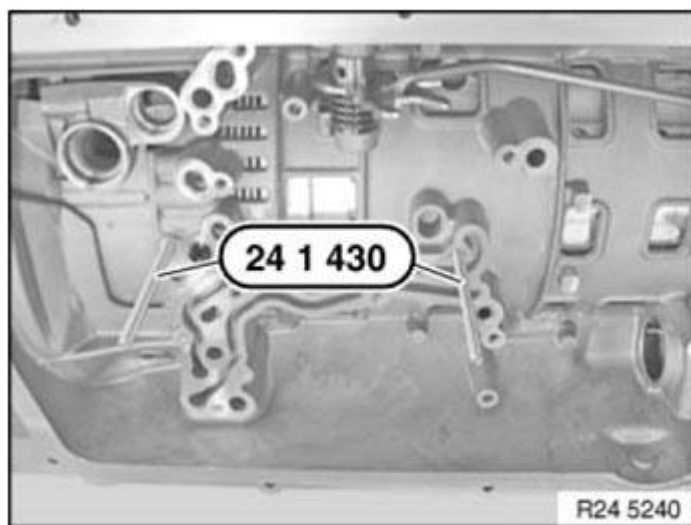


Fig. 226: Installing Retaining Pins (24 1 430) At Screw Position
Courtesy of BMW OF NORTH AMERICA, INC.

Fit mechatronics unit.

Fit shift claw (2) in gearshift shaft (3) by pressing release lever (1).

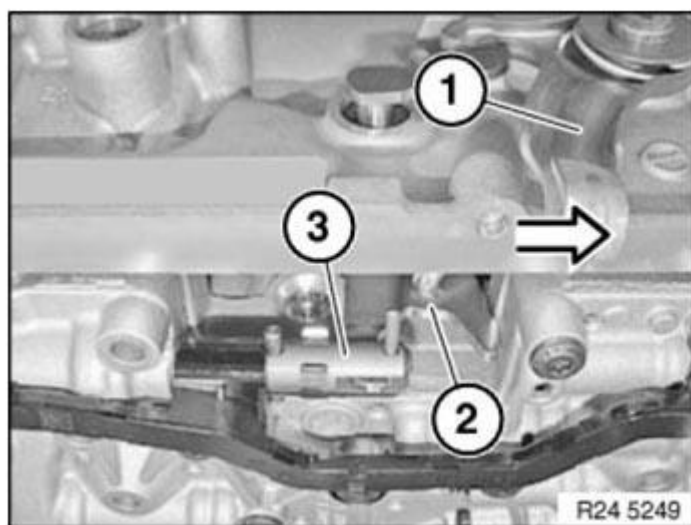


Fig. 227: Pressing Release Lever
Courtesy of BMW OF NORTH AMERICA, INC.

Screw down wing nuts as far as they will go on to the mechatronics unit.

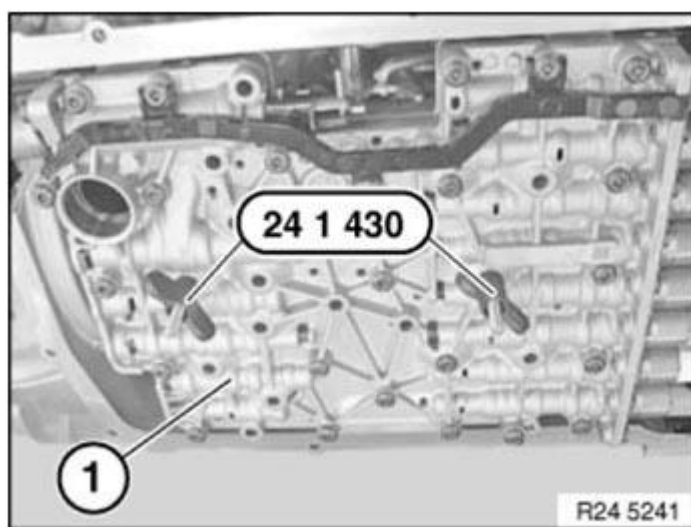


Fig. 228: Installing Mechatronics Unit Wing Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Observe different screw lengths.

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Installation note:

Insert screws 8 and 14 until screw heads make contact.

Remove guide pins and fit remaining screws.

Tighten screws in sequence 1....18.

Tightening torque: 8 Nm

IMPORTANT: In vehicles with an oil reservoir, the screw 17 (M6 x 59 mm) must be secured with the oil reservoir.

Tighten in the order of 1...16 and 18.

Tightening torque: 8 Nm

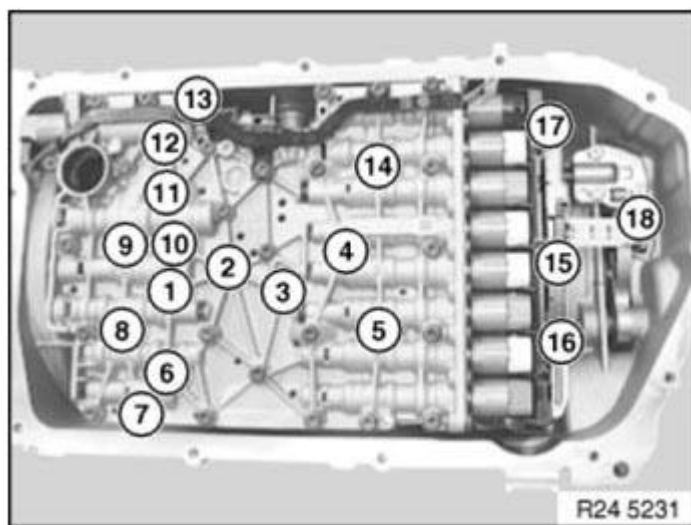


Fig. 229: Identifying Tightening Sequence Of Mechatronics Screws

Courtesy of BMW OF NORTH AMERICA, INC.

TORQUE CONVERTER

24 40 011 REMOVING AND INSTALLING/REPLACING TORQUE CONVERTER (GA6HP19Z) (X6 35I)

Special tools required:

- 00 2 550
- 24 4 000

IMPORTANT: After completion of work, check FLUID LEVEL .

Use only approved TRANSMISSION OIL .

Failure to comply with this instruction will result in serious damage to the transmission.

Necessary preliminary tasks:

- Remove automatic transmission. See REMOVING AND INSTALLING AUTOMATIC TRANSMISSION (GA6HP19Z).

Screw special tool **24 4 000** into torque converter.

Remove torque converter.

NOTE: When torque converter is removed, transmission oil flows out.

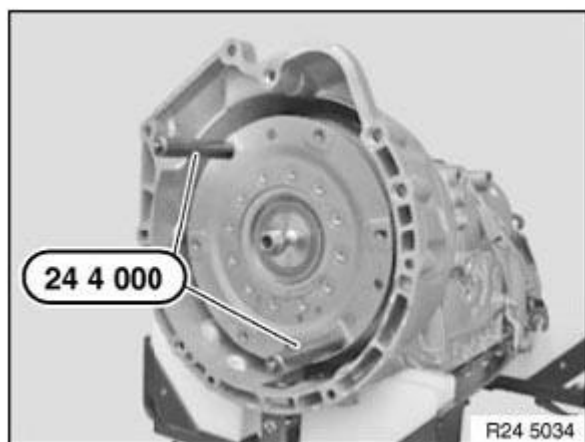


Fig. 230: Identifying Special Tool 24 4 000 On Torque Converter
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

When installing, do not damage shaft seal and bearing.

If the torque converter is not correctly installed, the driver of the pump impeller may be damaged when the transmission is flanged to the engine.

Remove torque converter and set down vertically.

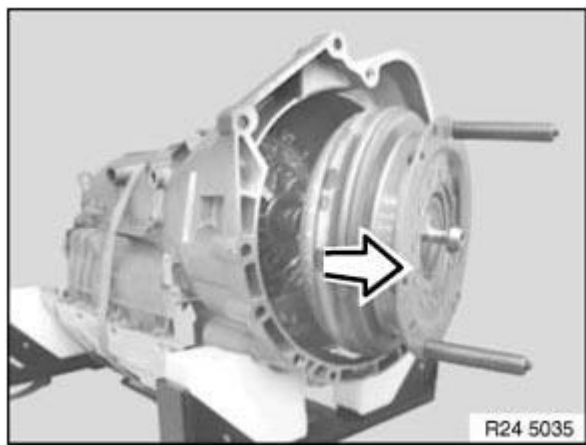


Fig. 231: Removing Torque Converter
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Push torque converter through shaft seal onto transmission shaft as far as it will go.

Press torque converter by hand into converter housing and turn in the process. Converter hub opening must snap into place in driver of pump impeller. Torque converter must be felt to slip inwards.

Determine distance between contact surface and surface (1) of tapped hole in torque converter with special tool 00 2 550 .

NOTE: Measured value must be greater than 30 mm.

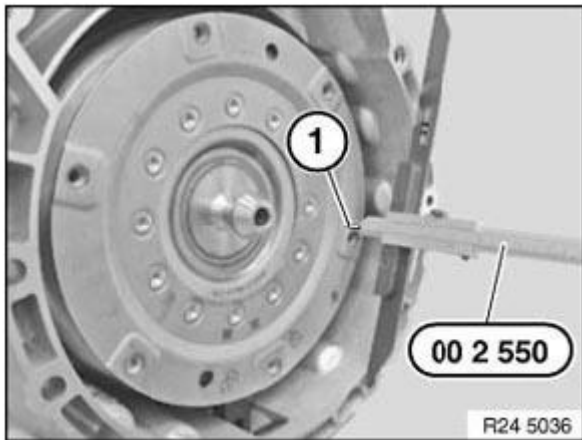


Fig. 232: Measuring Distance Between Contact Surface And Torque Converter Tapped Hole Surface Using Special Tool 00 2 550

Courtesy of BMW OF NORTH AMERICA, INC.

24 40 010 REMOVING AND INSTALLING/REPLACING TORQUE CONVERTER (GA6HP26Z) (X6 50I)

Special tools required:

- 00 2 550

IMPORTANT: After completion of work, check TRANSMISSION FLUID LEVEL.

Use only approved TRANSMISSION OIL .

Failure to comply with this instruction will result in serious damage to the transmission.

Necessary preliminary tasks:

- Remove AUTOMATIC TRANSMISSION.

Pull torque converter (1) by hand out of housing and set down vertically.

NOTE: When torque converter is removed, transmission oil flows out.

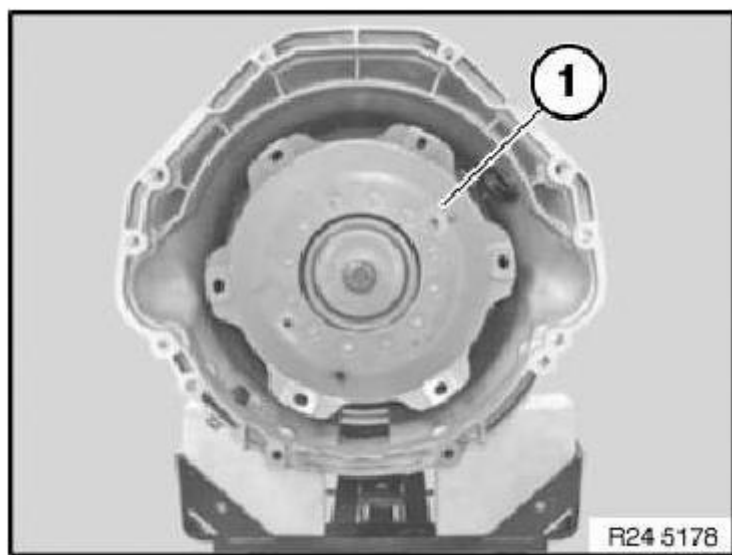


Fig. 233: Identifying Torque Converter
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

When installing, do not damage shaft seal and bearing.

If the torque converter is not correctly installed, the driver of the pump impeller may be damaged when the transmission is flanged to the engine.

Installation note:

Push torque converter through shaft seal onto transmission shaft as far as it will go.

Press torque converter by hand into converter housing and turn in the process. Converter hub opening must snap into place in driver of pump impeller. Torque converter must be felt to slip inwards.

Calculate measurement between contact face and top edge of converter (1) with special tool 00 2 550 (depth gauge).

NOTE: **Measured value must be min. 25 mm.**

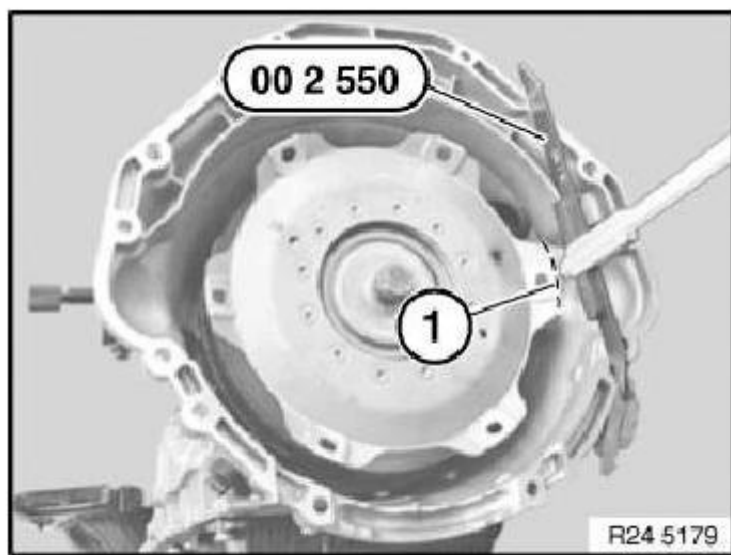


Fig. 234: Calculating Measurement Between Contact Face And Top Edge Of Converter Using Special Tool (00 2 550)

Courtesy of BMW OF NORTH AMERICA, INC.

24 40 014 REMOVING AND INSTALLING/REPLACING TORQUE CONVERTER (GA8HP45Z) (X6 35I 2011-13)

Special tools required:

- 00 2 550
- 24 4 000

IMPORTANT:

- Do not let skin come in contact with transmission oil and do not inhale transmission oil vapors.
- Wear protective gloves.
- Ensure adequate ventilation

IMPORTANT: After completion of the repair work, TRANSMISSION OIL LEVEL

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

**** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397***

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove **AUTOMATIC TRANSMISSION**.

Screw special tool 24 4 000 (handle) into torque converter.

Remove torque converter.

NOTE: When torque converter is removed, transmission oil flows out.

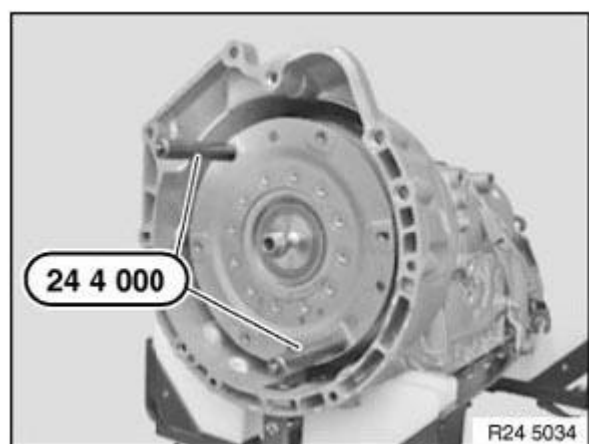


Fig. 235: Identifying Special Tool 24 4 000 On Torque Converter
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

When installing, do not damage radial shaft seal and bearing.

If the torque converter is not correctly installed, the driver of the pump impeller may be damaged when the transmission is flanged to the engine.

Remove torque converter and set down vertically.

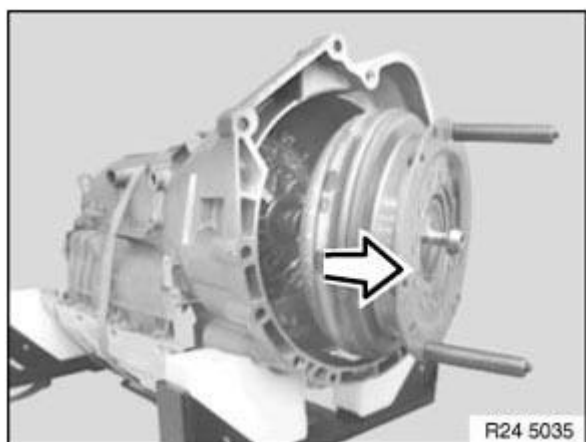


Fig. 236: Removing Torque Converter

Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

O-ring on drive shaft, must be replaced when exchanging the torque converter.

Push torque converter through radial shaft seal onto transmission shaft to the limit position.

Press torque converter by hand into converter housing and turn in the process. Converter hub recess must snap into place in driver of pump impeller. Torque converter must be felt to slip inwards.

Determine distance between contact surface and surface (1) of threaded hole in torque converter with special tool 00 2 550 (measurement aid).

NOTE: Measured value must be greater than 30 mm.

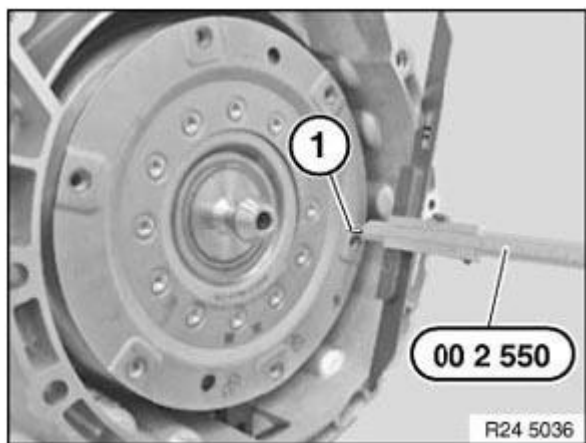


Fig. 237: Measuring Distance Between Contact Surface And Torque Converter Tapped Hole Surface Using Special Tool 00 2 550

Courtesy of BMW OF NORTH AMERICA, INC.

24 40 015 REMOVING AND INSTALLING/REPLACING TORQUE CONVERTER (GA8HP70Z) (X6 50I 2011-13) (X6 50I 2011-13)**Special tools required:**

- 00 2 550
- 24 4 000

- IMPORTANT:**
- Do not let skin come in contact with transmission oil and do not inhale transmission oil vapors.
 - Wear protective gloves.
 - Ensure adequate ventilation

IMPORTANT: After completion of the repair work, TRANSMISSION OIL LEVEL

Use only the approved transmission oil:

ATF oil Shell L12108* BMW part number 83 22 2 152 426

*** Can be substituted by the lifetime oil "ATF -3"..... BMW part number 83 22 2 305 397**

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Necessary preliminary tasks:

- Remove AUTOMATIC TRANSMISSION.

Screw special tool 24 4 000 (handle) into torque converter.

Remove torque converter.

NOTE: When torque converter is removed, transmission oil flows out.

Place torque converter vertically.

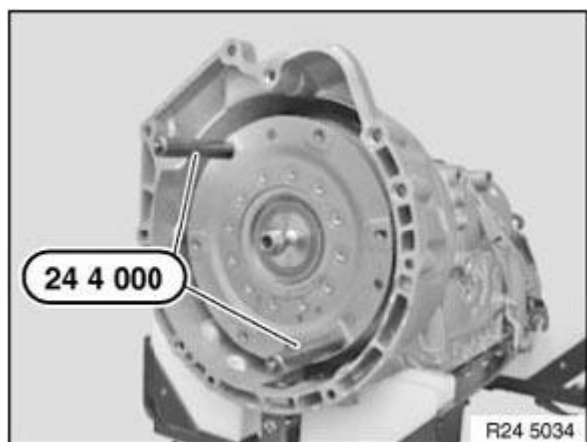


Fig. 238: Identifying Special Tool 24 4 000 On Torque Converter
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

When installing, do not damage radial shaft seal and bearing.

If the torque converter is not correctly installed, the driver of the pump impeller may be damaged when the transmission is flanged to the engine.

Installation note:

O-ring on drive shaft, must be replaced when exchanging the torque converter.

Push torque converter through radial shaft seal onto transmission shaft to the limit position.

Press torque converter by hand into converter housing and turn in the process. Converter hub recess must snap into place in driver of pump impeller. Torque converter must be felt to slip inwards.

Determine distance between contact surface (1) and outer edge (2) of bore hole in torque converter with special tool 00 2 550 (measurement aid).

NOTE: **N63: Measured value must be = 20 mm**

N57: Measured value must be = 15 mm

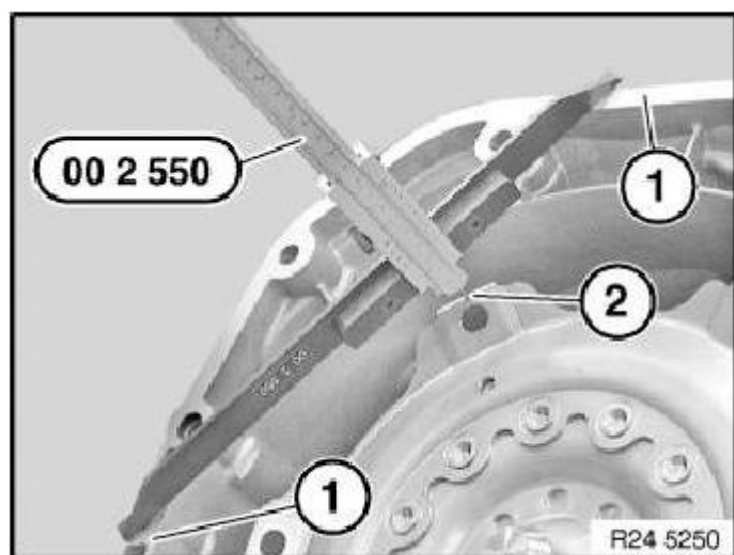


Fig. 239: Measuring Distance Between Contact Surface And Hole Outer Edge In Torque Converter Using Special Tool (00 2 550)

Courtesy of BMW OF NORTH AMERICA, INC.

SHIFT FUNCTION

24 50 010 REPLACING EMERGENCY ACTUATOR

Necessary preliminary tasks:

- Remove rear compartment blower. See **64 11 263 REMOVING AND INSTALLING COMPLETE REAR CABIN FAN** .
- Remove air duct under center console.

Unfasten nut. Remove cable (1). Installation: Adjust gearshift lever.

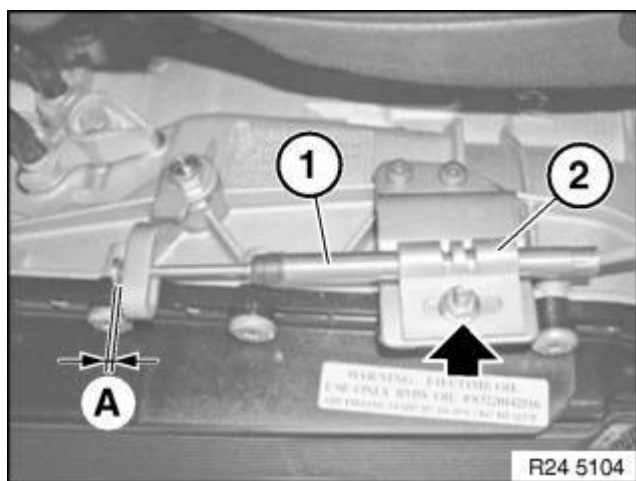


Fig. 240: Removing Cable

Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1) and remove emergency actuator (2) in upward direction.

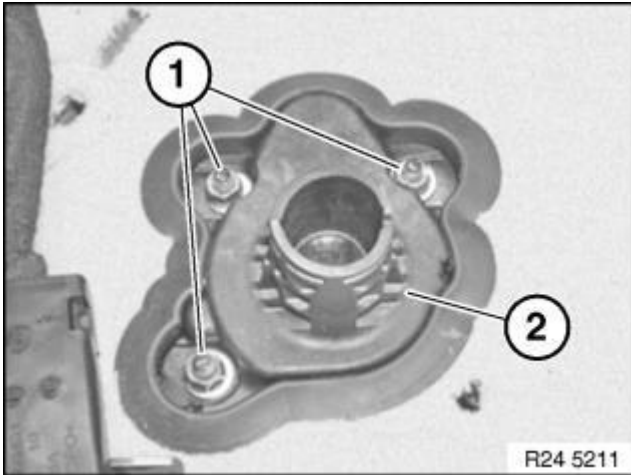


Fig. 241: Removing Emergency Actuator

Courtesy of BMW OF NORTH AMERICA, INC.