6511 MONO RADIO

65 11 072 REMOVING AND INSTALLING/REPLACING CD CHANGER

Necessary preliminary tasks

- Remove **RIGHT GLOVEBOX WITH HOUSING**
- Clamp off **BATTERY NEGATIVE LEAD**

Release screws (1).

Remove CD changer (2) from glovebox.

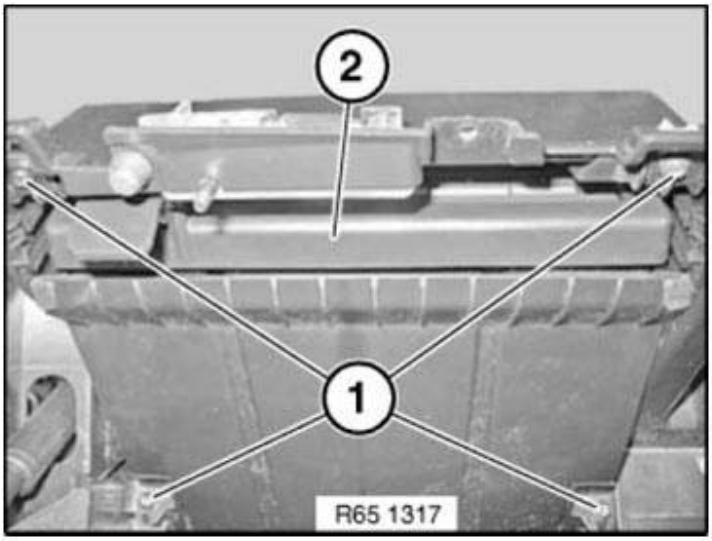


Fig. 1: Identifying CD Changer With Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

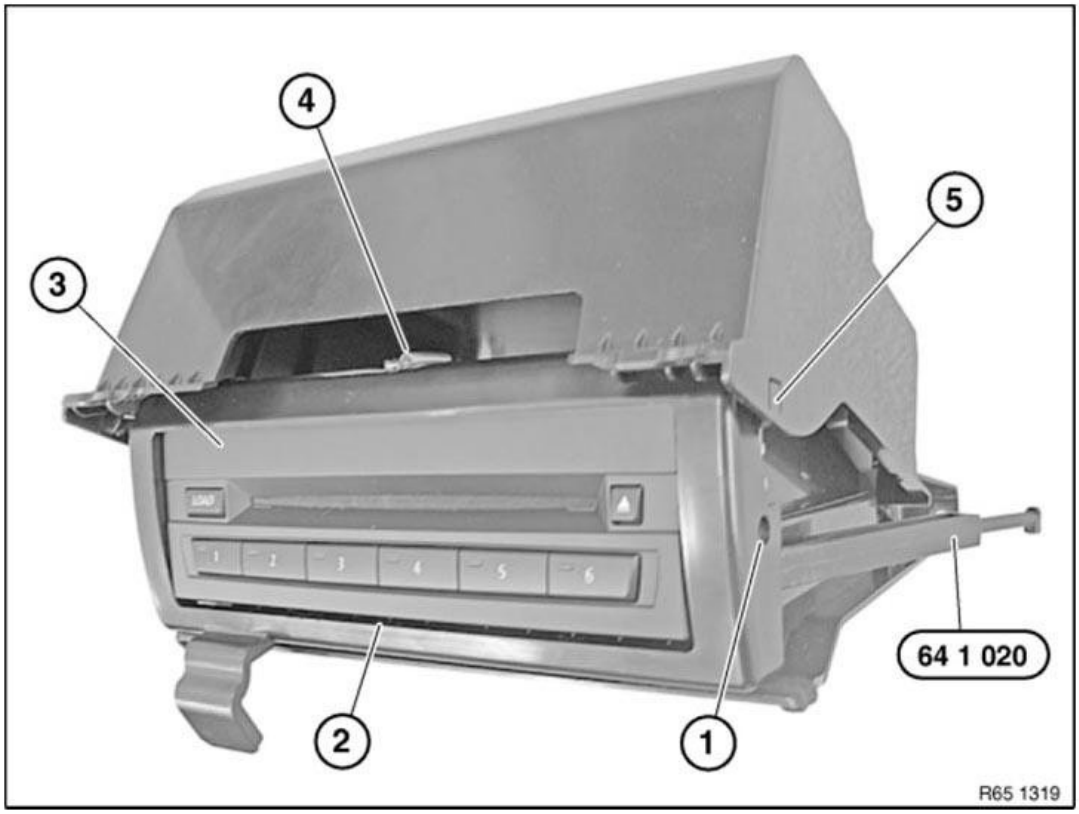


Fig. 2: Opening CD Changer Side Catches Using Special Tool (64 1 020)
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Unlock side catches (1) on front trim (2) with special tool 64 0 020.

Remove front trim (2) towards front from CD changer.

Disconnect spring (4).

Unlock side catches (5) with special tool 64 1 020.

Remove front trim (2).

Pull CD changer (3) forwards out of holder.

Replacement

Carry out vehicle programming and encoding.

65 11 080 REMOVING AND INSTALLING/REPLACING RADIO

IMPORTANT: Read and comply with notes on protection against electrostatic damage (ESD PROTECTION) .

NOTE: Comply with notes and instructions on HANDLING OPTICAL FIBRES .

Necessary preliminary tasks

- Clamp off **BATTERY NEGATIVE LEAD**

Pry out trim (1) with special tool 00 9 323 and remove.

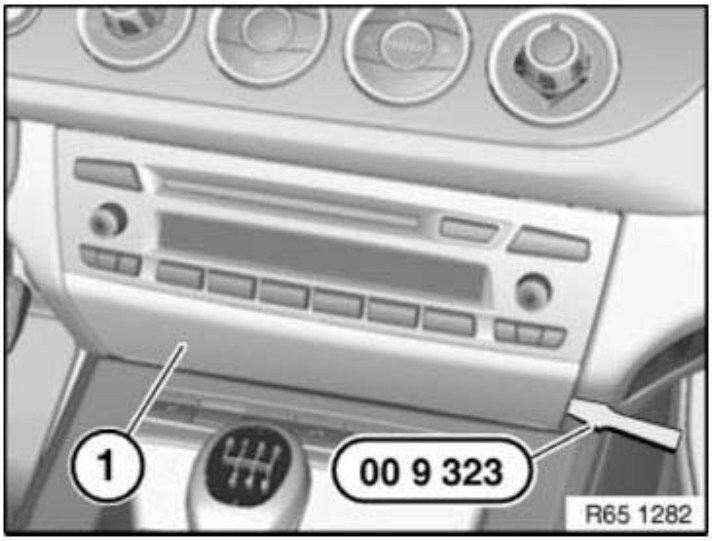


Fig. 3: Prying Out Trim Using Special Tool (00 9 323)
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1).

Pull out radio (2) towards front.

Unlock associated plug connections and disconnect.

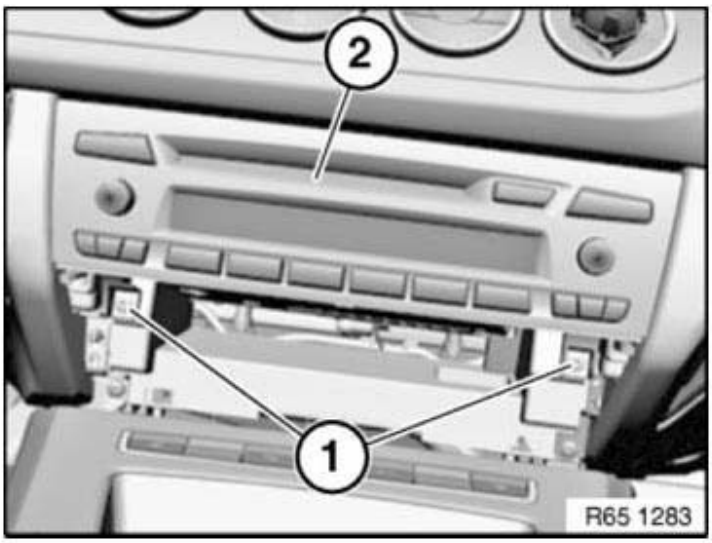


Fig. 4: Identifying Radio With Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

US version only:

If there is a **violet** aerial connection (1) **as well as** the black aerial connection (2), additional **tasks are required when replacing the radio!**

Read and observe document REPLACING SATELLITE TUNER .

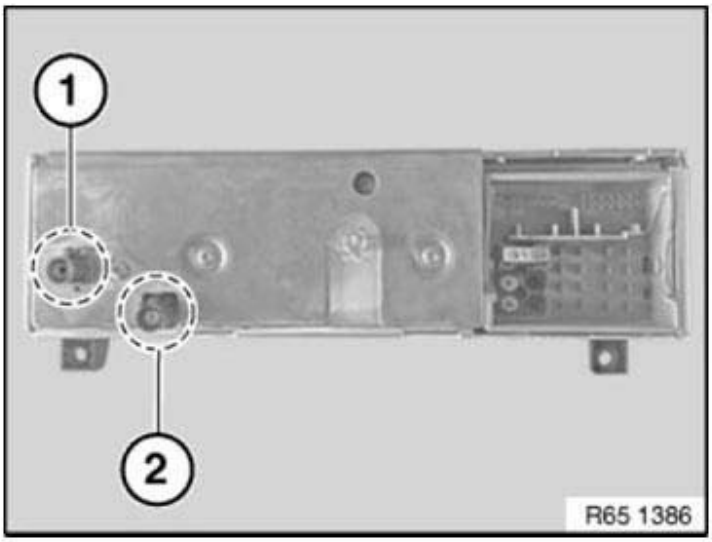


Fig. 5: Identifying Violet Aerial Connection And Black Aerial Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

Carry out vehicle programming/encoding.

65 11 ... REMOVING AND INSTALLING/REPLACING SATELLITE TUNER (US VERSION ONLY)

Necessary preliminary work

- Remove **RADIO**

NOTE: Satellite tuner can be recognized by the violet aerial connection (1) which is also located next to the black aerial connection (2).

Additional work is required when the satellite tuner is replaced!

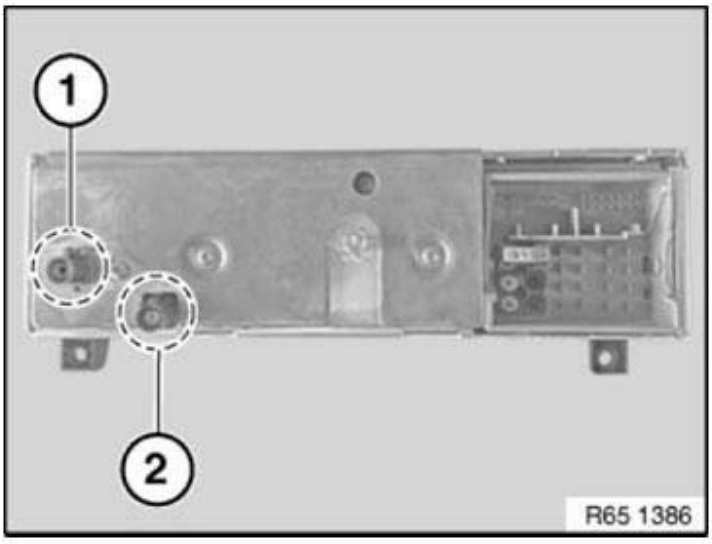


Fig. 6: Identifying Violet Aerial Connection And Black Aerial Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

Record SID number (1) of the removed device.

NOTE: The SID number (1) can be found on the label of the housing.

Record SID number (1) of the new device.



Fig. 7: Identifying SID Number
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

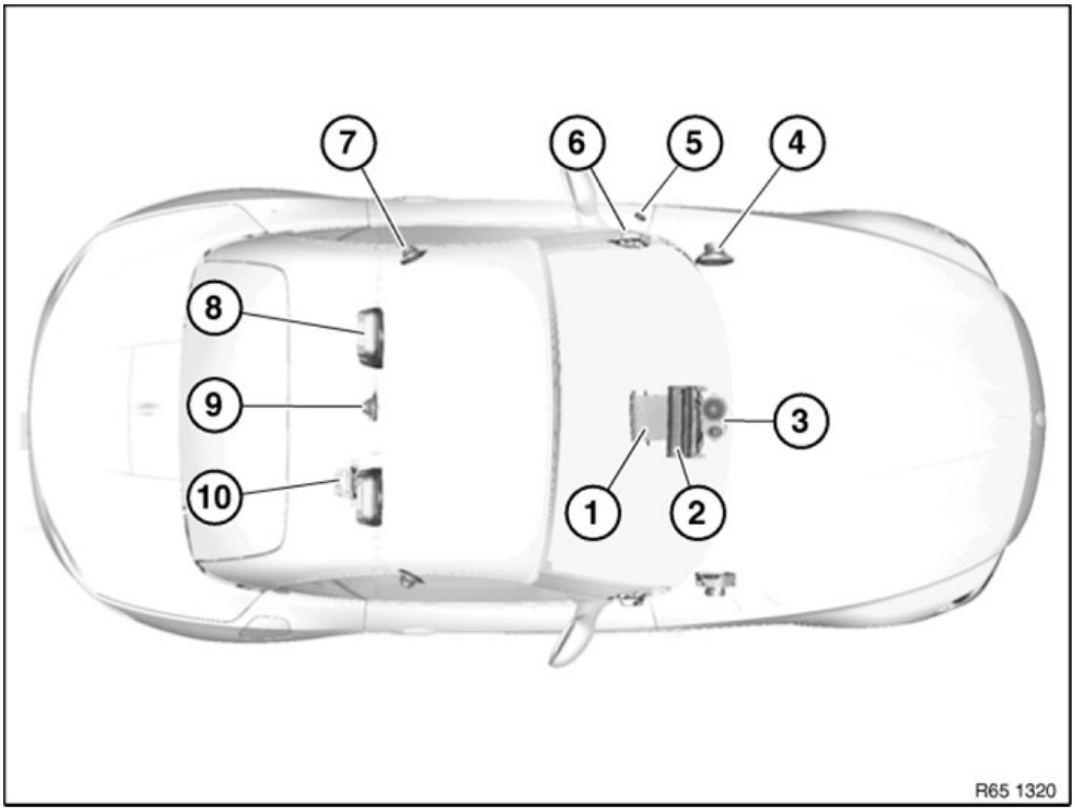
Carry out vehicle programming/encoding.

Replacement

Please contact Sirius. Use the SID number to cancel current device and register new one.

6512 STEREO RADIO, AMPLIFIER

65 00 .. OVERVIEW OF AUDIO COMPONENTS



1 Car Information Computer
2 Central Information Display (CID)
3 Mid-range speaker (instrument panel)
4 Bass speaker (A-pillar)
5 Tweeter (mirror trim)
6 Mid-range speaker (door)
7 Mid-range speaker (in side trim panel)
8 Central bass speaker
9 Mid-range speaker/tweeter (in partition wall panel)
10 Amplifier

Fig. 8: Identifying Audio System Components
Courtesy of BMW OF NORTH AMERICA, INC.

65 12 230 REMOVING AND INSTALLING (REPLACING) DAB TUNER

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

NOTE: Follow instructions for HANDLING OPTICAL FIBRES .

Necessary preliminary tasks:

- Clamp off **BATTERY NEGATIVE LEAD**
- Remove **LUGGAGE COMPARTMENT TRIM ON LEFT SIDE PANEL**

Lever out expansion rivets (1).

Feed out storage compartment (2) towards top.

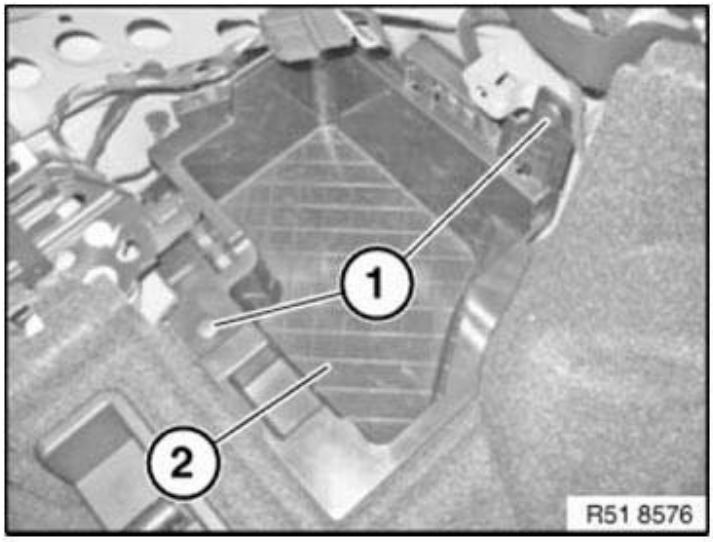


Fig. 9: Identifying Storage Compartment And Expansion Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts (1).

Raise DAB tuner including bracket (2).

Unlock and disconnect associated plug connections (3).

Feed out DAB tuner including bracket (2).

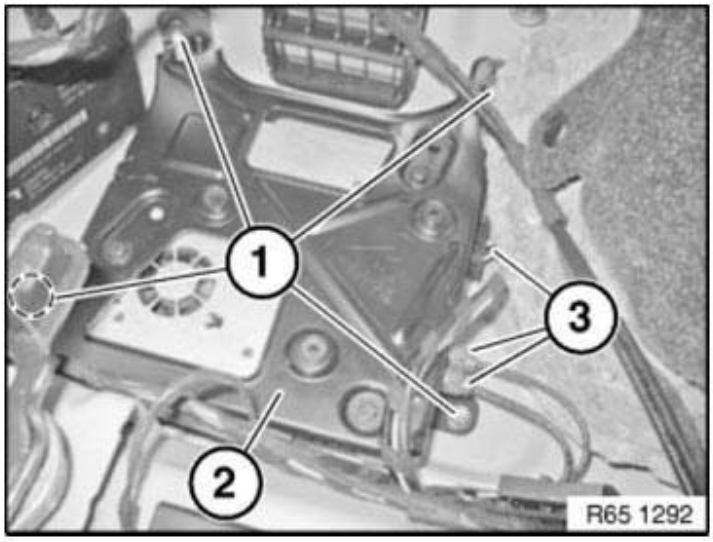


Fig. 10: Identifying DAB Tuner With Plug Connections And Mounting Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

Release screws (1).

Remove bracket (2) from DAB tuner.

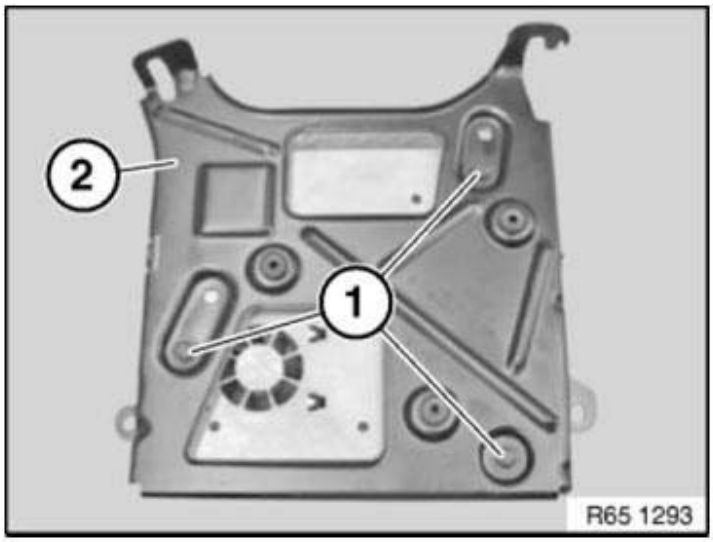


Fig. 11: Identifying DAB Tuner Bracket And Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

Carry out vehicle programming/coding.

65 12 050 REMOVING AND INSTALLING/REPLACING LEFT OR RIGHT CENTRAL BASS SPEAKER

Necessary preliminary tasks

- Remove **LOWER PARTITION TRIM PANEL**

Release screws (1).

Unfasten plug connection (2) and disconnect.

Remove central bass speaker housing (3) towards front.

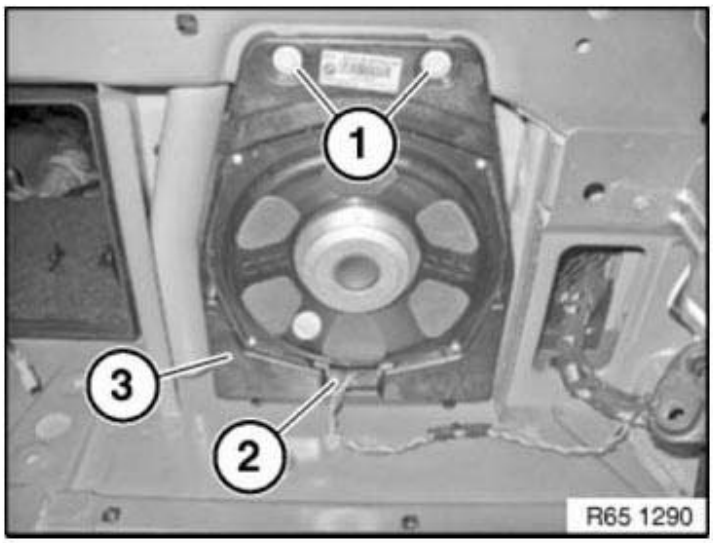


Fig. 12: Identifying Central Bass Speaker Housing With Plug Connections And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

65 13 188 REMOVING AND INSTALLING/REPLACING MID-RANGE SPEAKER (IN UPPER PARTITION PANEL)

Lever out rear speaker trim (1) with special tool 00 9 323 from partition panel (2) and remove.

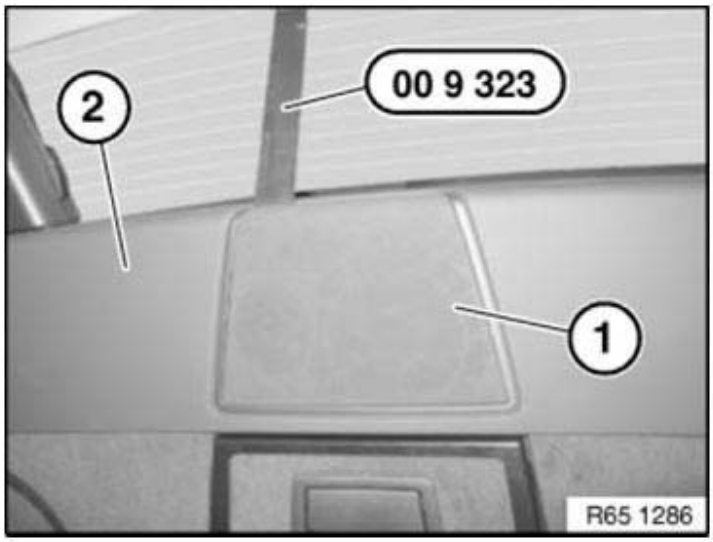


Fig. 13: Removing Rear Speaker Trim Using Special Tool (00 9 323)
Courtesy of BMW OF NORTH AMERICA, INC.

Lever plug connection (1) out of mounting and disconnect.

Unfasten screws (2).

Feed out speaker (3) towards front and disconnect associated plug connection.

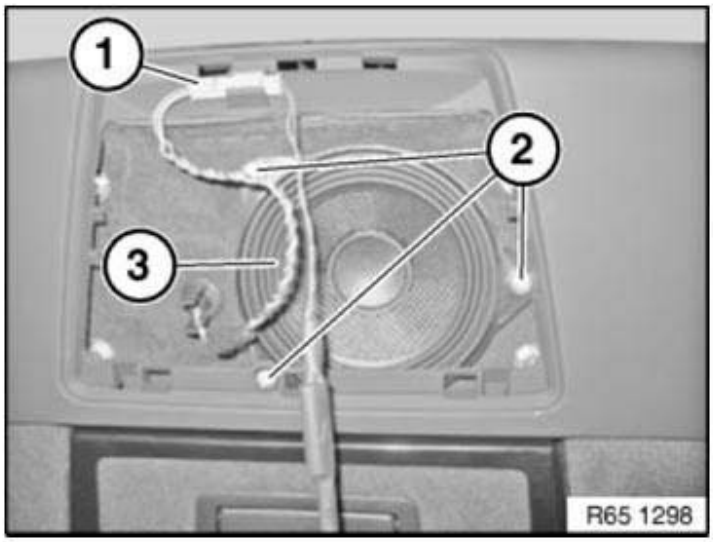


Fig. 14: Identifying Speaker With Plug Connection And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

65 12 220 REMOVING AND INSTALLING/REPLACING SATELLITE RADIO (US VERSION ONLY UNTIL 09/2009)

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

NOTE: Follow instructions for HANDLING OPTICAL FIBRES .

Necessary preliminary tasks:

- Disconnect **BATTERY EARTH CABLE**
- Remove **luggage compartment TRIM PANEL ON LEFT SIDE WALL**

Lever out expansion rivets (1).

Feed out storage compartment (2) towards top.

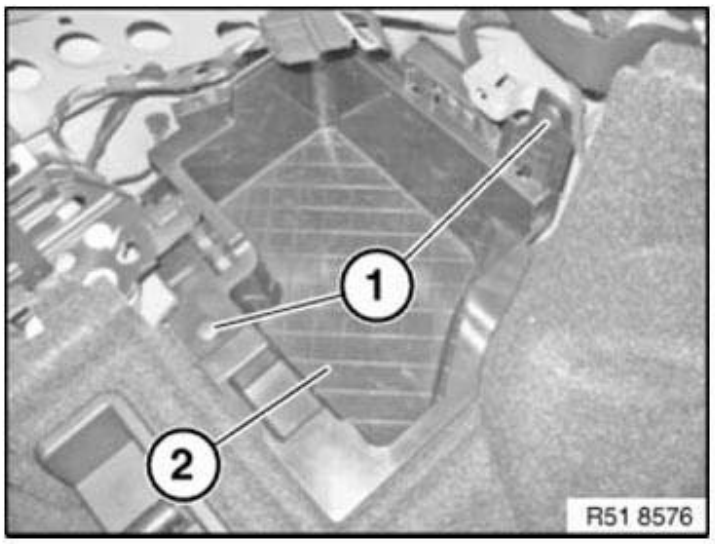


Fig. 15: Identifying Storage Compartment And Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts (1).

Raise satellite tuner including bracket (2).

Unlock and disconnect associated plug connections (3).

Slide out satellite tuner (2).

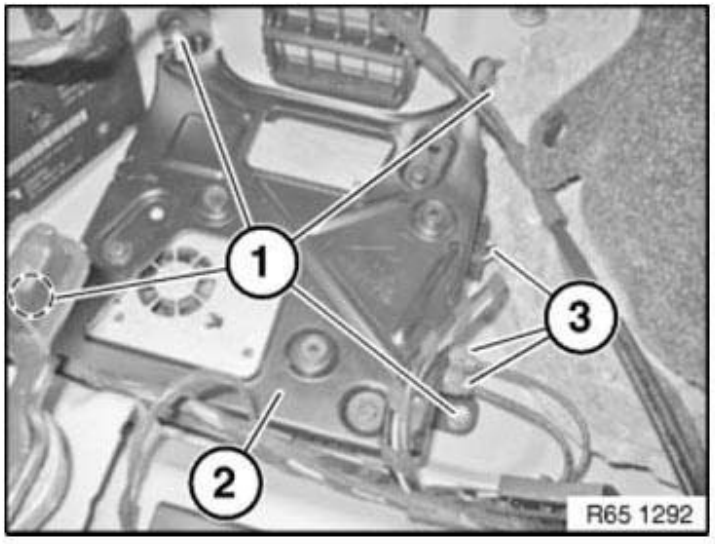


Fig. 16: Identifying Satellite Tuner With Plug Connections And Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

Release screws (1).

Remove bracket (2) from satellite tuner.

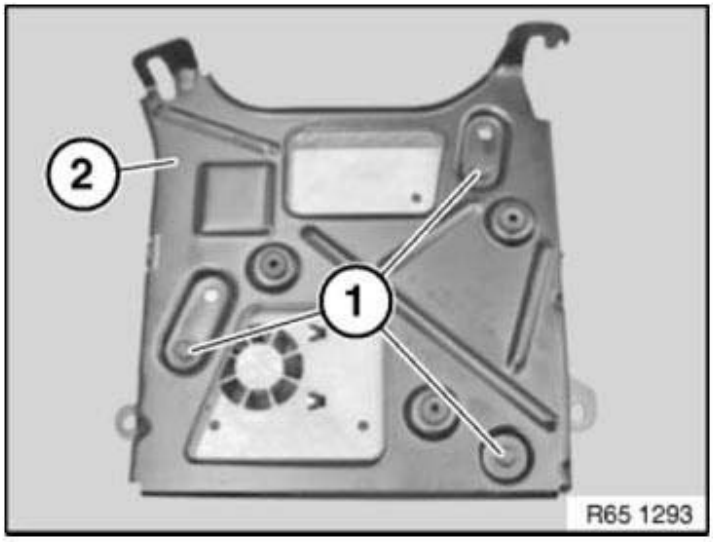


Fig. 17: Identifying Satellite Tuner Bracket And Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

When replacing, please observe

Record ID number (2) of the removed device.

NOTE: The ID number (2) can be found on the label of the housing. Above the barcode the text reads "Sirius ID" (1) and next to it is the company's logo "Sirius Satellite Radio" (3).

Record ID number (2) of the new device.

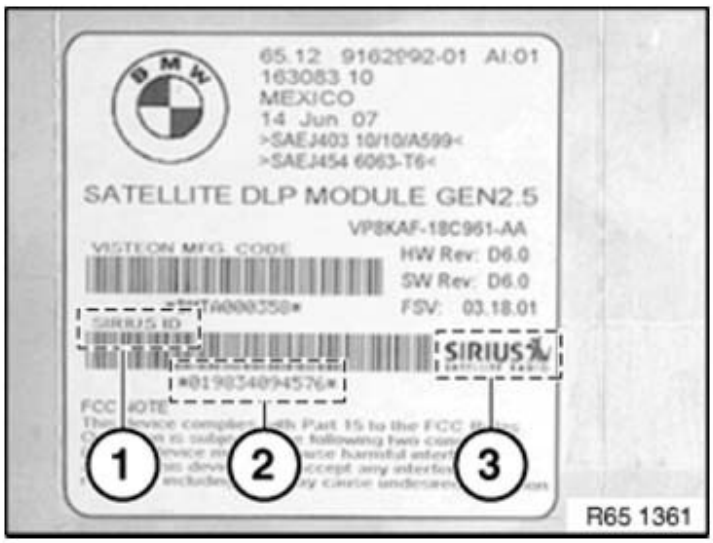


Fig. 18: Identifying Sirius ID, ID Number And Sirius Satellite Radio
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

Carry out vehicle programming/coding .

NOTE: Please contact Sirius. Use the ID number to cancel current device and register new one.

65 12 220 REMOVING AND INSTALLING/REPLACING SATELLITE TUNER (ONLY FOR US MODELS STARTING AT 09/2009)

Necessary preliminary tasks:

- Remove **CAR INFOTAINMENT COMPUTER**

When replacing, please observe

Record SID number (1) of the removed device.

NOTE: The SID number (1) can be found on the label of the housing. Location may be different, depending on the manufacturer of the device.

Record SID number (1) of the new device.

Input enabling code from the ASAP portal.

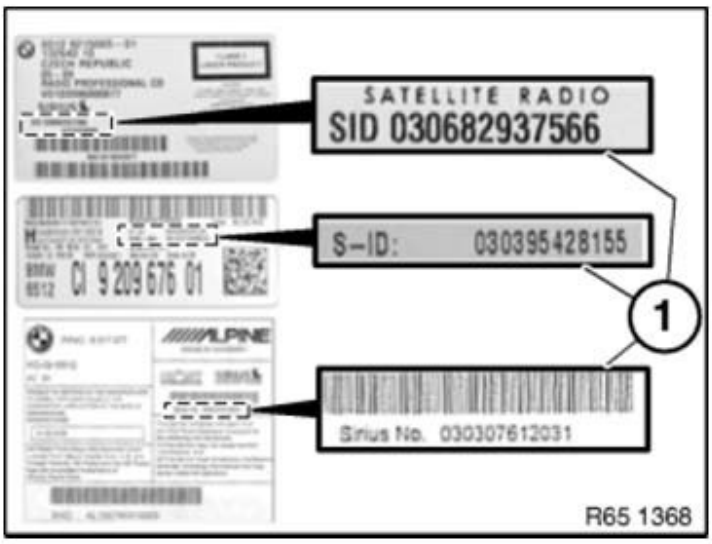


Fig. 19: Identifying SID Number
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Perform vehicle programming and coding .

NOTE: Please contact Sirius. Use the SID number to cancel current device and register new one.

65 13 100 REMOVING AND INSTALLING/REPLACING TWEETER (IN UPPER PARTITION PANEL)

Lever out rear speaker cover (1) with special tool 00 9 323 from partition wall panel (2) and remove.

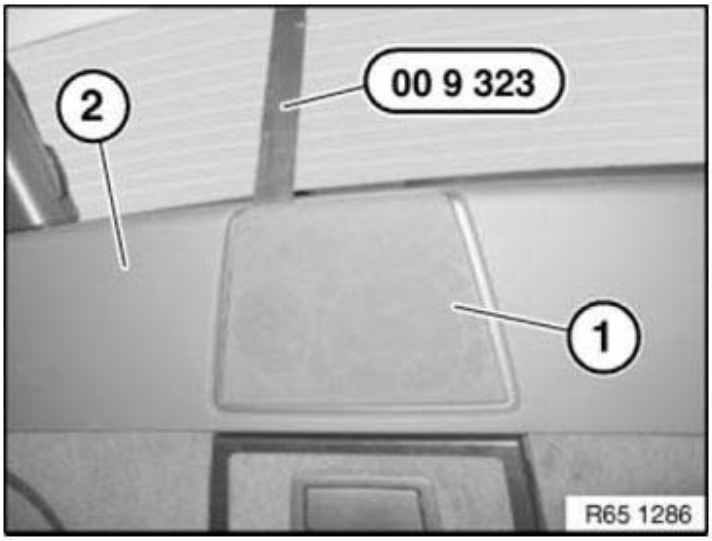


Fig. 20: Removing Rear Speaker Cover Using Special Tool (00 9 323)
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Lever out plug connection (1) at resistor (2) and disconnect.

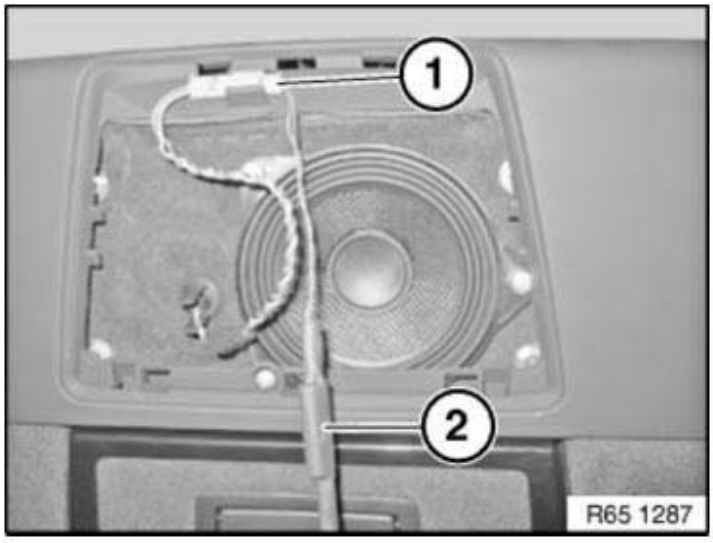


Fig. 21: Identifying Plug Connection And Resistor
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip tweeter (1) from rear speaker cover (2) and remove.

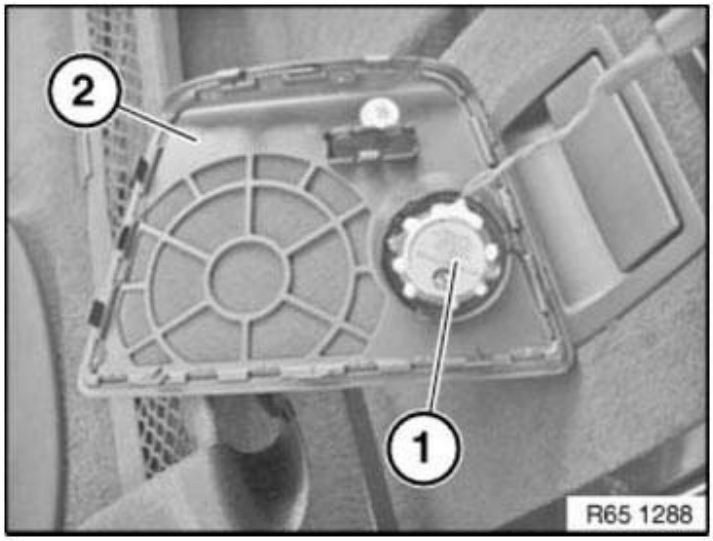


Fig. 22: Identifying Rear Speaker Cover Tweeter
Courtesy of BMW OF NORTH AMERICA, INC.

6513 SPEAKER AND COVER

65 13 065 REMOVING AND INSTALLING/REPLACING FRONT SPEAKER CARRIER (INSTRUMENT PANEL)

Unclip trim (1) with special tool 00 9 317 from catches and remove towards top.

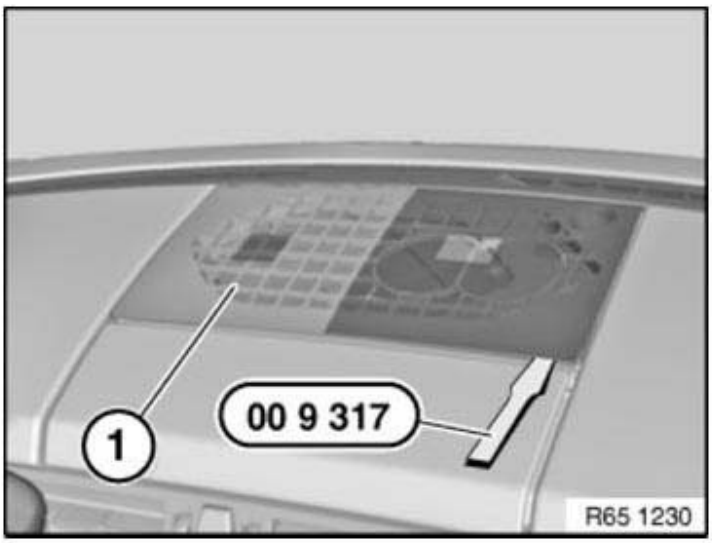


Fig. 23: Opening Trim Using Special Tool (00 9 317) From Catches
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Retainers (1) on speaker trim (2) must be correctly seated on associated lugs and must not be damaged.

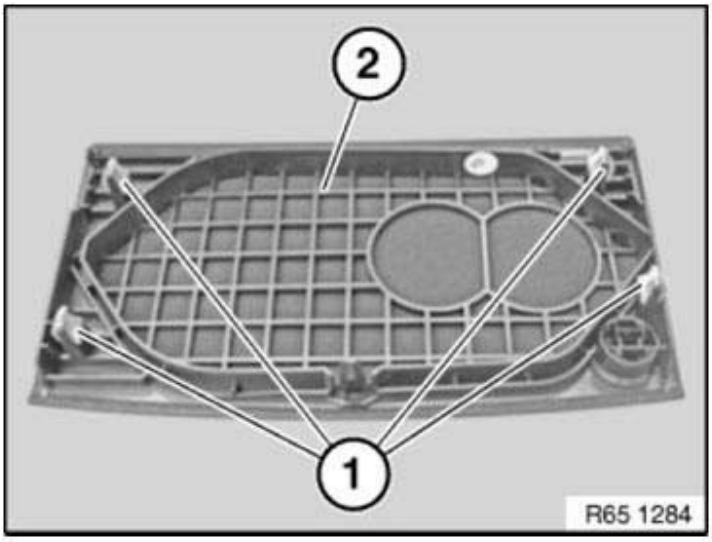


Fig. 24: Identifying Retainers On Speaker Trim
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1).

Remove speaker carrier (2) and disconnect associated plug connection.

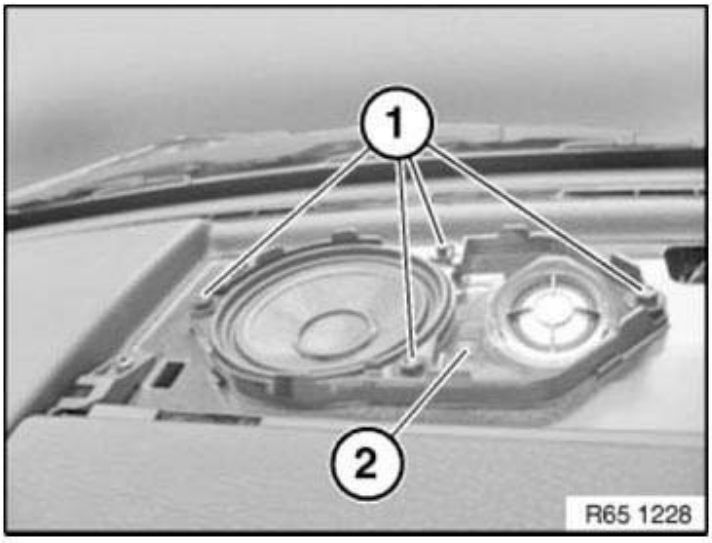


Fig. 25: Identifying Speaker Carrier With Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

- Remove **midrange speaker** (1)

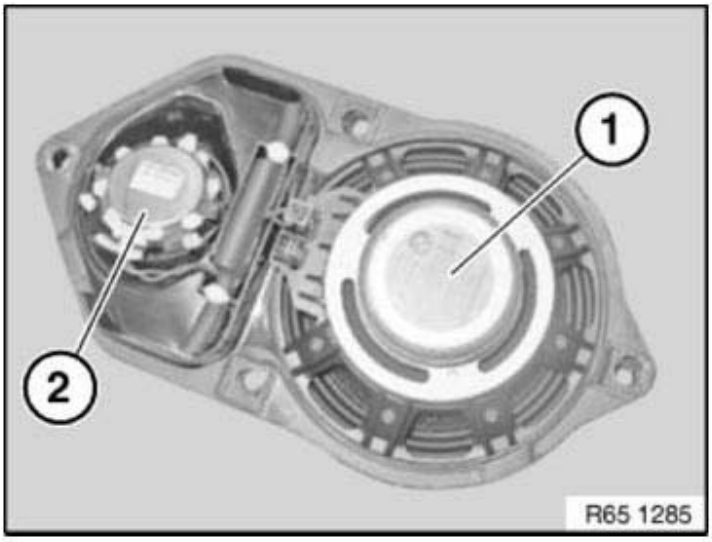


Fig. 26: Identifying Mid Range Speaker

Courtesy of BMW OF NORTH AMERICA, INC.

65 12 050 REMOVING AND INSTALLING/REPLACING LEFT OR RIGHT CENTRAL BASS SPEAKER

Necessary preliminary tasks

- Remove **LOWER PARTITION TRIM PANEL**

Release screws (1).

Unfasten plug connection (2) and disconnect.

Remove central bass speaker housing (3) towards front.

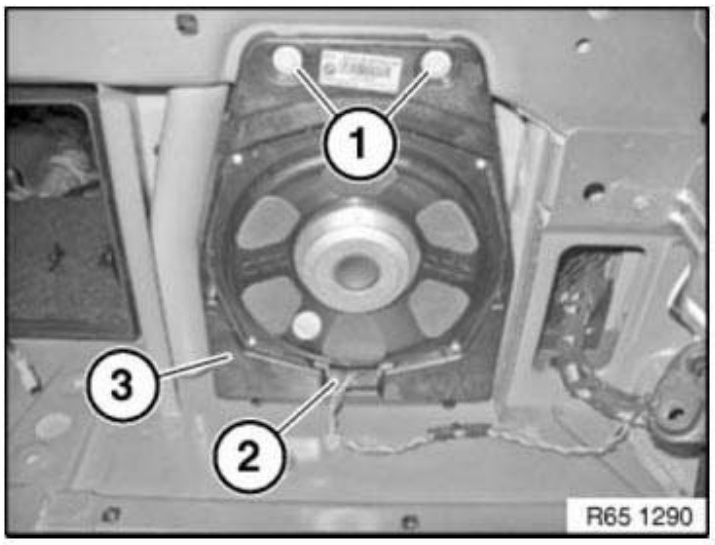


Fig. 27: Identifying Central Bass Speaker Housing With Plug Connection And Mounting Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

65 13 030 REMOVING AND INSTALLING/REPLACING LEFT SPEAKER (WOOFER, A-PILLAR)

Necessary preliminary tasks

- Remove **FOOTWELL SIDE TRIM PANEL ON A-PILLAR, LEFT**

Release screws (1).

Remove speaker (2) from side member (3) and disconnect associated plug connection.

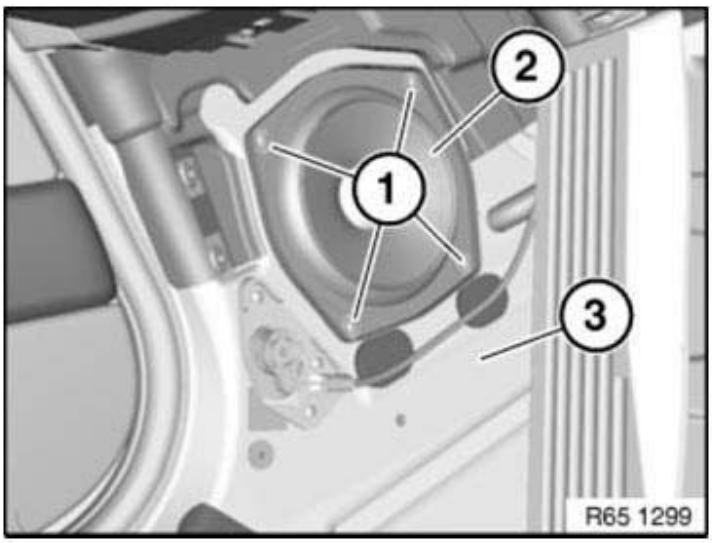


Fig. 28: Identifying Speaker With Side Member And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

65 13 188 REMOVING AND INSTALLING/REPLACING MID-RANGE SPEAKER (IN UPPER PARTITION PANEL)

Lever out rear speaker trim (1) with special tool 00 9 323 from partition panel (2) and remove.

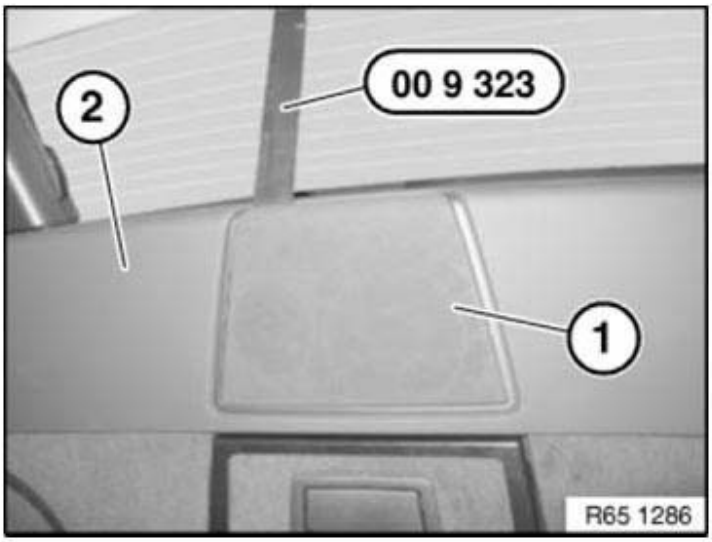


Fig. 29: Removing Rear Speaker Cover Using Special Tool (00 9 323)
Courtesy of BMW OF NORTH AMERICA, INC.

Lever plug connection (1) out of mounting and disconnect.

Unfasten screws (2).

Feed out speaker (3) towards front and disconnect associated plug connection.

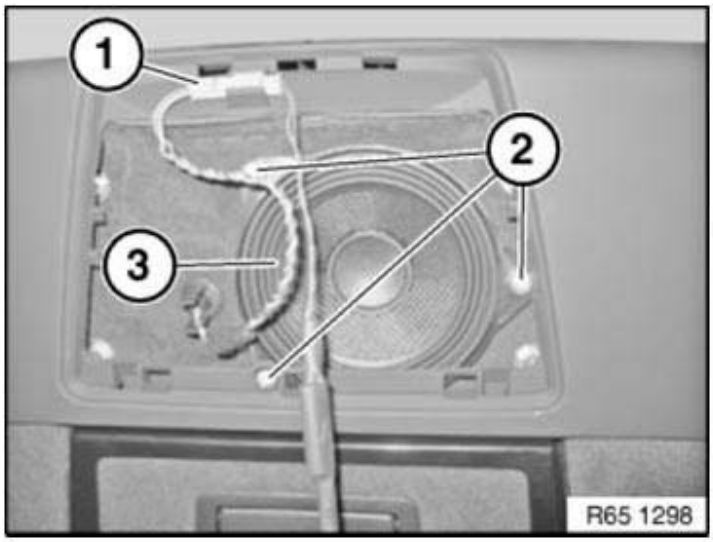


Fig. 30: Identifying Speaker With Plug Connection And Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

65 13 032 REMOVING AND INSTALLING/REPLACING RIGHT SPEAKER (WOOFER, A-PILLAR)

Necessary preliminary tasks

- Remove **FOOTWELL SIDE TRIM PANEL ON A-PILLAR ON RIGHT** .

Operation is shown on the left side by way of example.

Release screws (1).

Remove speaker (2) from side member (3) and disconnect associated plug connection.

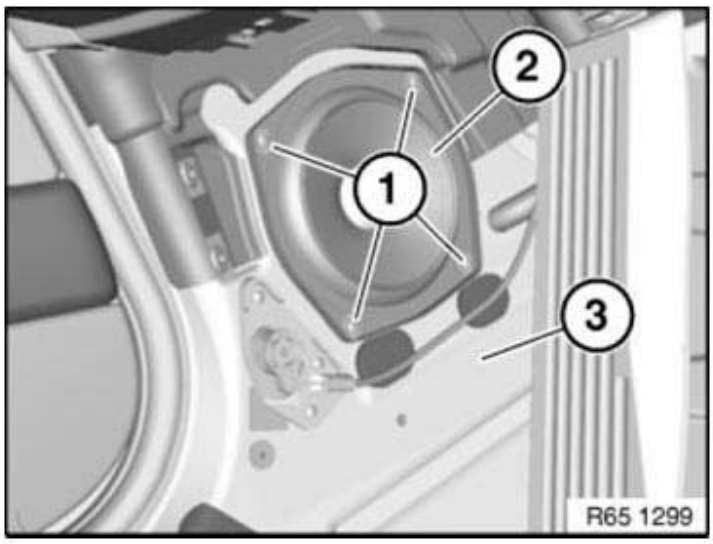


Fig. 31: Identifying Speaker With Side Member And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

65 13 070 REMOVING AND INSTALLING/REPLACING SPEAKER (MIDRANGE SPEAKER IN DOOR TRIM PANEL)

Necessary preliminary tasks:

- Remove front left or right **DOOR TRIM PANEL** .

Release screws (1).

Remove speaker (2).

Disconnect associated plug connections.

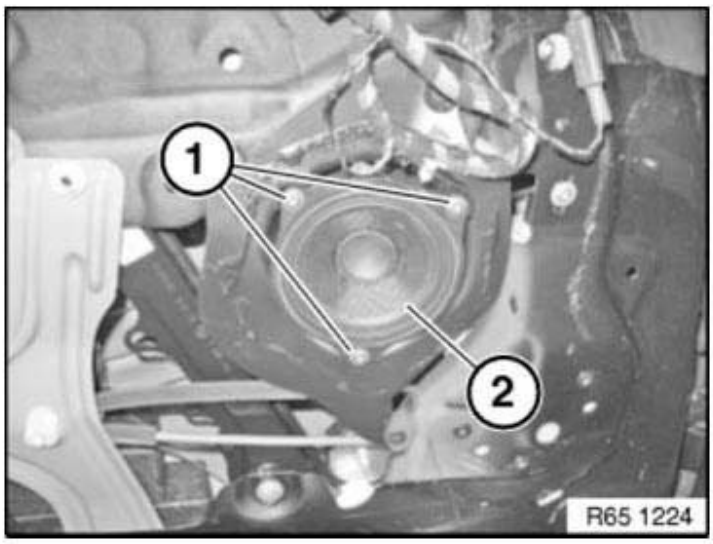


Fig. 32: Identifying Speaker With Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

65 13 090 REMOVING AND INSTALLING/REPLACING SPEAKER (MIDRANGE SPEAKER IN REAR SIDE TRIM PANEL)

Unclip speaker cover (1) on side trim panel in middle with special tool 00 9 317 and remove.

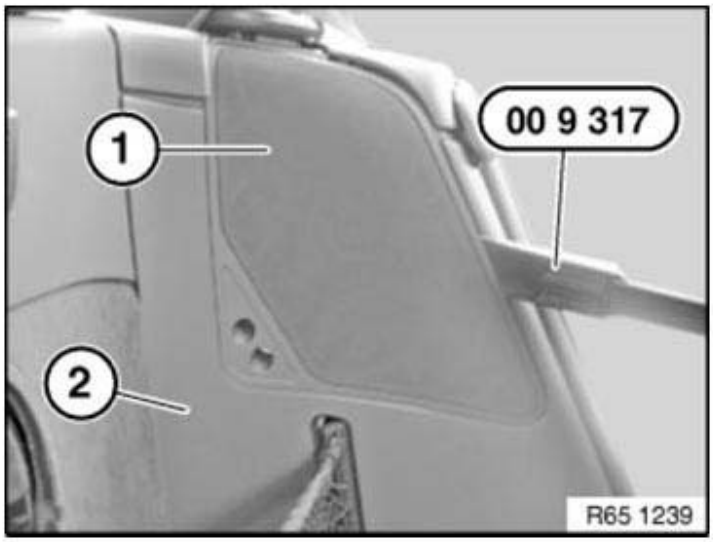


Fig. 33: Opening Speaker Cover On Side Trim Panel In Middle Using Special Tool (00 9 317)
Courtesy of BMW OF NORTH AMERICA, INC.

All retaining lugs on speaker cover (1) must not be damaged.

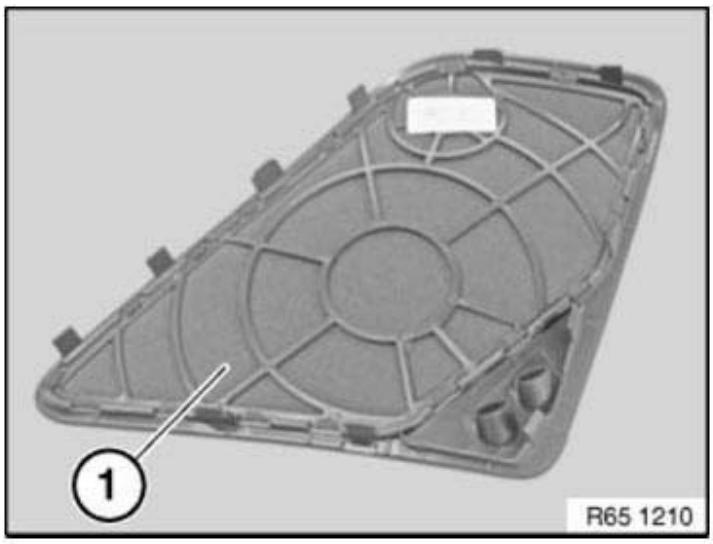


Fig. 34: Identifying Speaker Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1).

Remove mid-range speaker (2).

Disconnect associated plug connection.

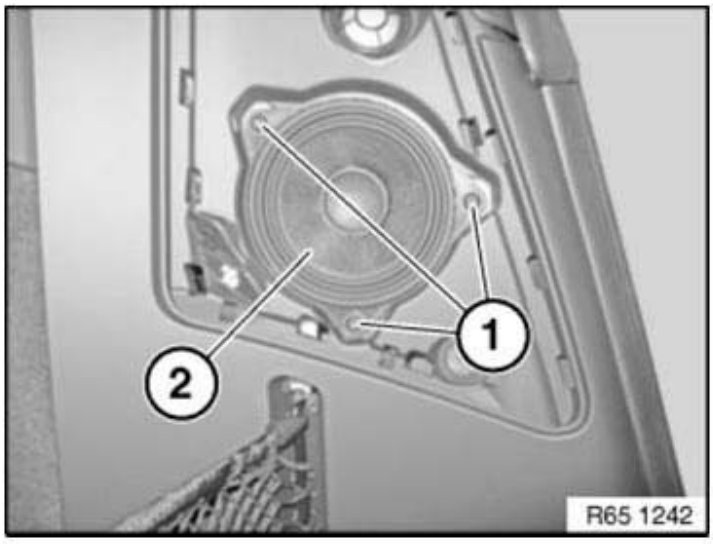


Fig. 35: Identifying Mid Range Speaker With Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

65 13 060 REMOVING AND INSTALLING/REPLACING SPEAKER (MIDRANGE SPEAKER, IN INSTRUMENT PANEL)

Unclip trim (1) with special tool 00 9 317 from catches and remove towards top.

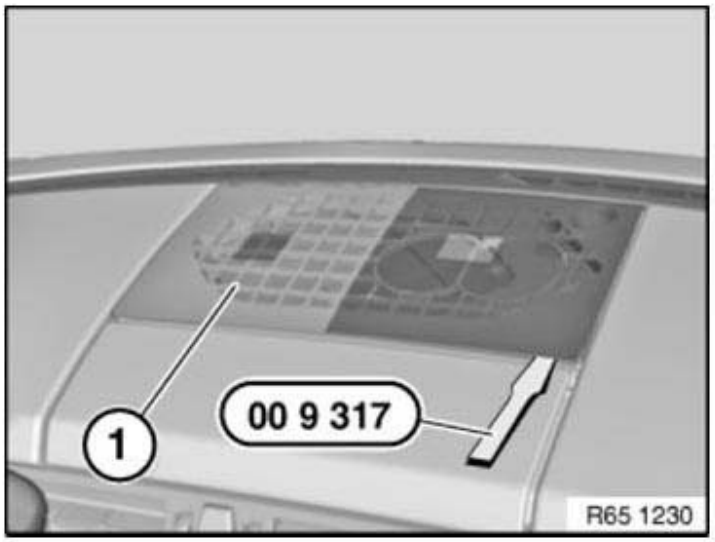


Fig. 36: Opening Trim Using Special Tool (00 9 317) From Catches
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Retainers (1) on speaker trim (2) must be correctly seated on associated lugs and must not be damaged.

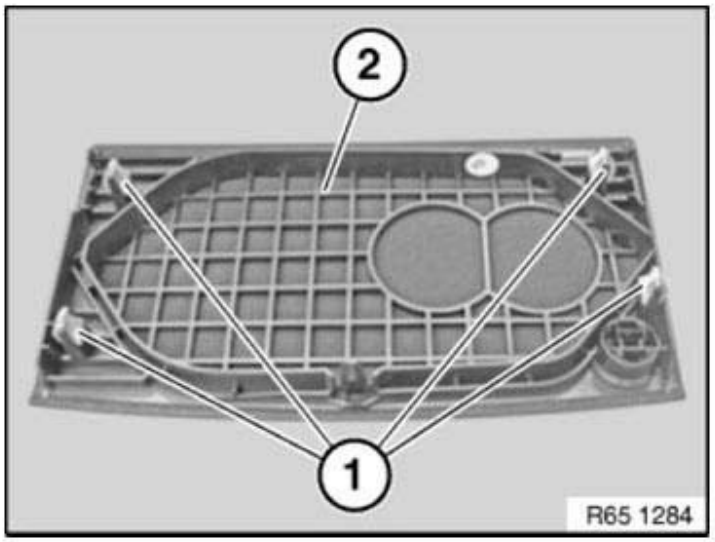


Fig. 37: Identifying Retainers On Speaker Trim
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1).

Remove speaker (2).

Disconnect plug connection underneath.

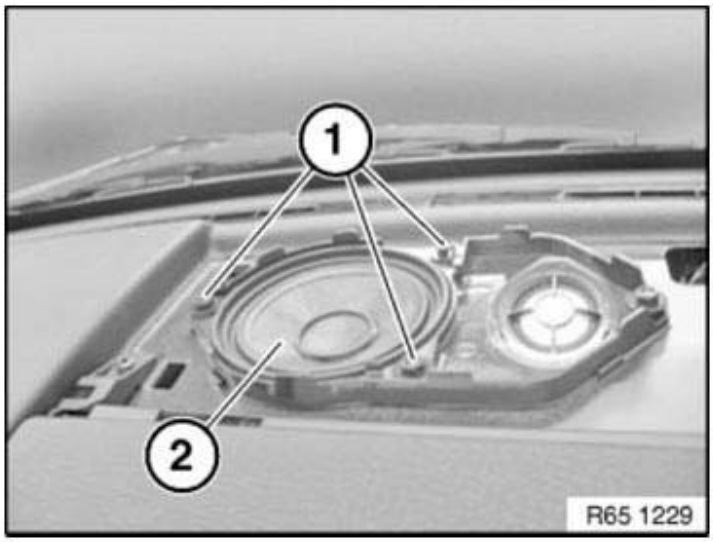


Fig. 38: Identifying Speaker With Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

65 13 050 REMOVING AND INSTALLING/REPLACING SPEAKER (TWEETER IN MIRROR TRIANGLE TRIM)

Necessary preliminary tasks

- Remove **midrange speaker in door trim panel**.

Unclip speaker trim (1) first at top out of catch.

Then press speaker trim (1) downwards and remove.

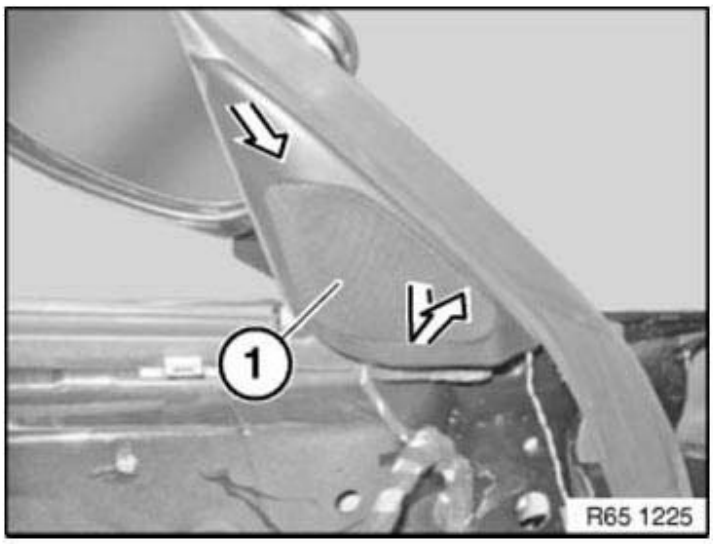


Fig. 39: Removing Speaker Trim
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

Unclip tweeter (1) from mountings (2) and remove.

Installation:

Retaining lugs must not be damaged.

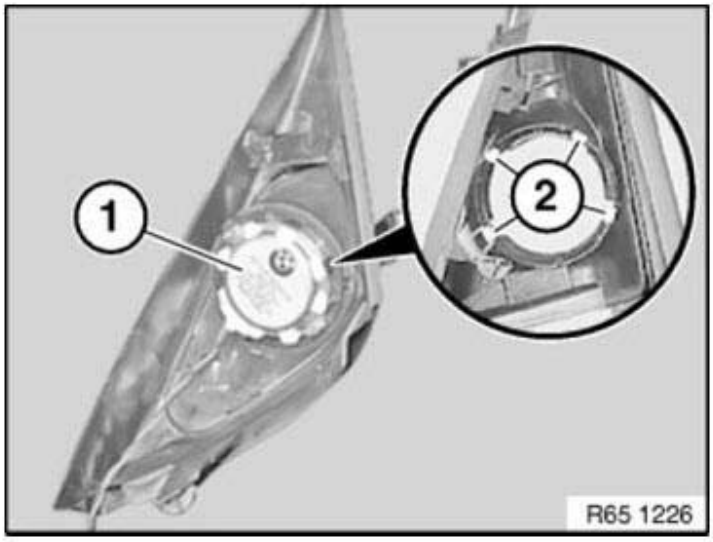


Fig. 40: Identifying Tweeter On Mounting
Courtesy of BMW OF NORTH AMERICA, INC.

65 13 100 REMOVING AND INSTALLING/REPLACING TWEETER (IN UPPER PARTITION

PANEL)

Lever out rear speaker cover (1) with special tool 00 9 323 from partition wall panel (2) and remove.

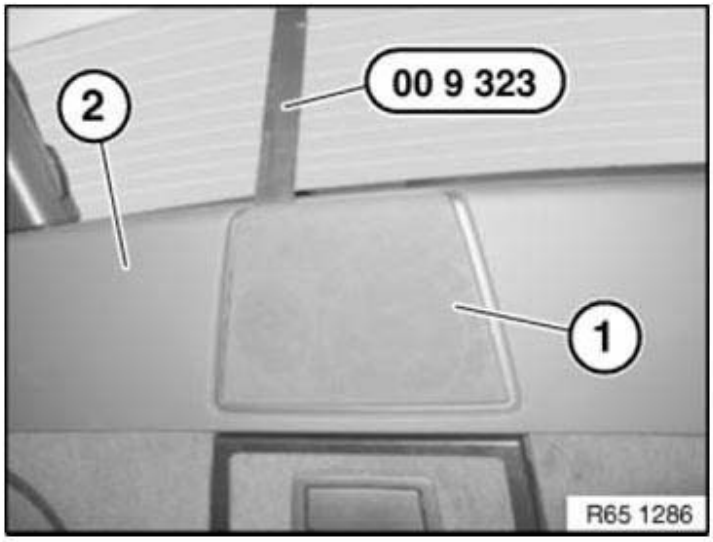


Fig. 41: Removing Rear Speaker Cover Using Special Tool (00 9 323)
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Lever out plug connection (1) at resistor (2) and disconnect.

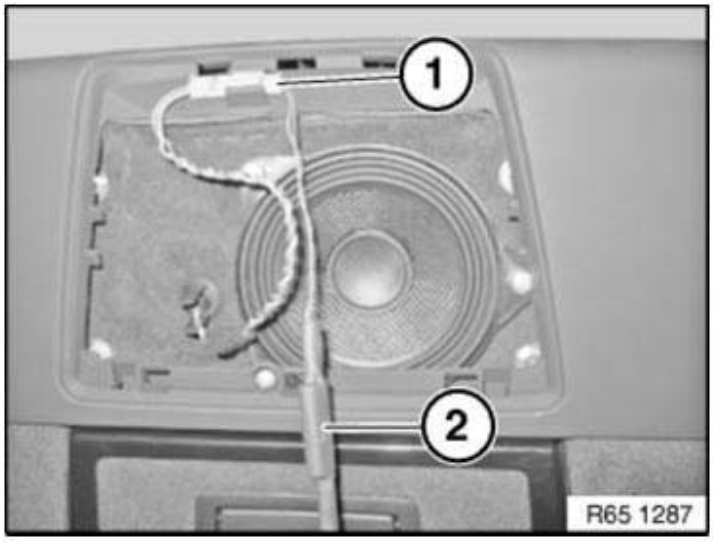


Fig. 42: Identifying Plug Connection And Resistor
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip tweeter (1) from rear speaker cover (2) and remove.

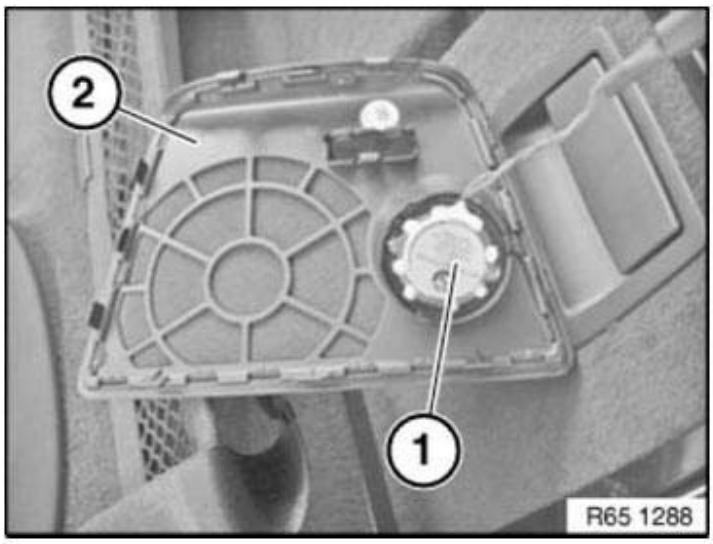


Fig. 43: Identifying Rear Speaker Cover Tweeter
Courtesy of BMW OF NORTH AMERICA, INC.

51 41 ... REPLACING SPEAKER COVER ON LEFT OR RIGHT DOOR TRIM PANEL

Partially fit special tool 00 9 317 as illustrated.

Carefully lever speaker cover (2) out of door trim panel (1).

IMPORTANT: Tape off working area. Risk of damage!

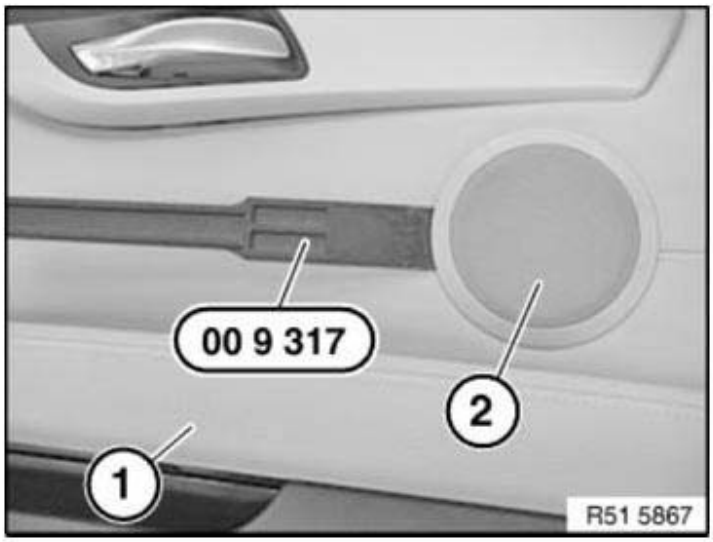


Fig. 44: Removing Speaker Cover Using Special Tool (00 9 317)
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Guide (2) and catch along line (3) must not be damaged.

Insert guide (2) of speaker cover (1) correctly in opening (5) of door trim panel (4) and carefully engage speaker cover (1) on edge.

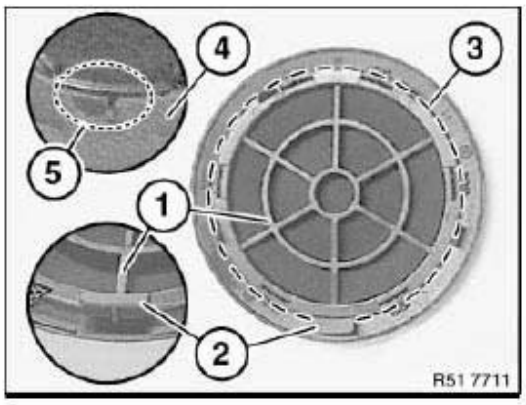


Fig. 45: Identifying Speaker Cover Guide
Courtesy of BMW OF NORTH AMERICA, INC.

6520 AERIAL ANTENNA

65 20 410 REMOVING AND INSTALLING/REPLACING DAB TUNER AERIAL

Necessary preliminary tasks:

- Remove **ROOF SWITCH CLUSTER**

Disconnect plug connection (1).

Unclip DAB tuner aerial (2) and remove.

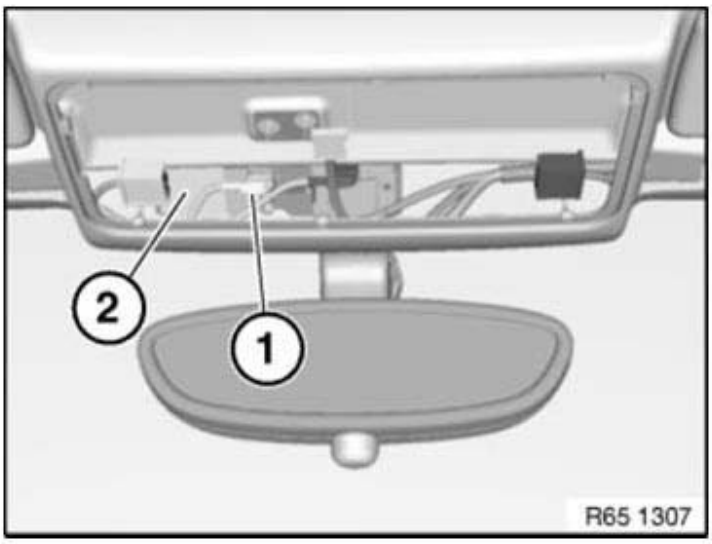


Fig. 46: Identifying DAB Tuner Aerial With Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 110 REMOVING AND INSTALLING/REPLACING AERIAL AMPLIFIER (DIVERSITY)

IMPORTANT: Read and comply with NOTES on protection against electrostatic damage (ESD protection).

Necessary preliminary tasks

- Remove **LUGGAGE COMPARTMENT TRIM ON SIDE PANEL**

Lever out expansion rivets (1).

Feed out storage compartment (2) towards top.

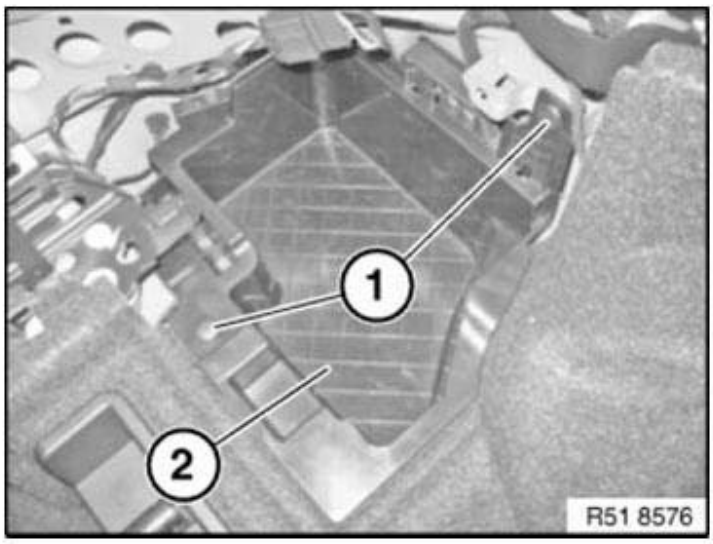


Fig. 47: Identifying Storage Compartment And Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Remove aerial amplifier (3).

Unlock plug connections (2) and disconnect.

If necessary, disconnect further plug connections.

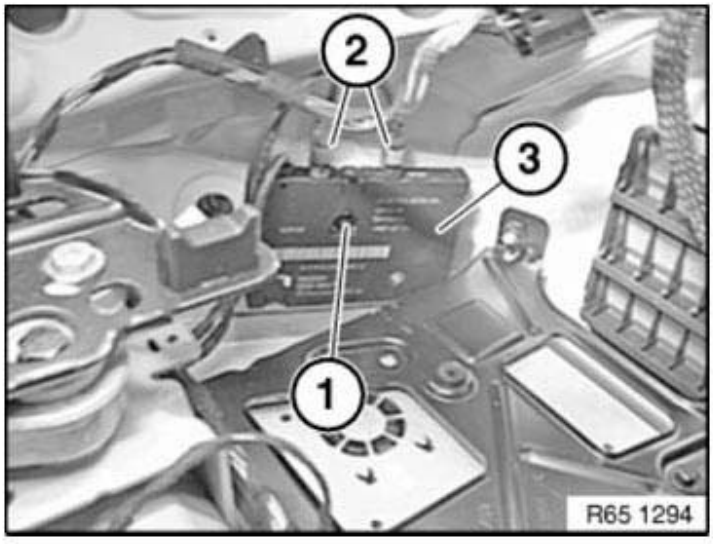


Fig. 48: Identifying Aerial Amplifier With Plug Connection And Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 055 REMOVING AND INSTALLING/REPLACING AERIAL BASE

Necessary preliminary tasks

- Remove **AERIAL ROD**
- Completely remove left rear **POWER WINDOW REGULATOR**

Lever out aerial base cover (1) with special tool 00 9 317, lifting upwards, and remove.

Installation:

Retaining lugs on cover (1) must not be damaged.

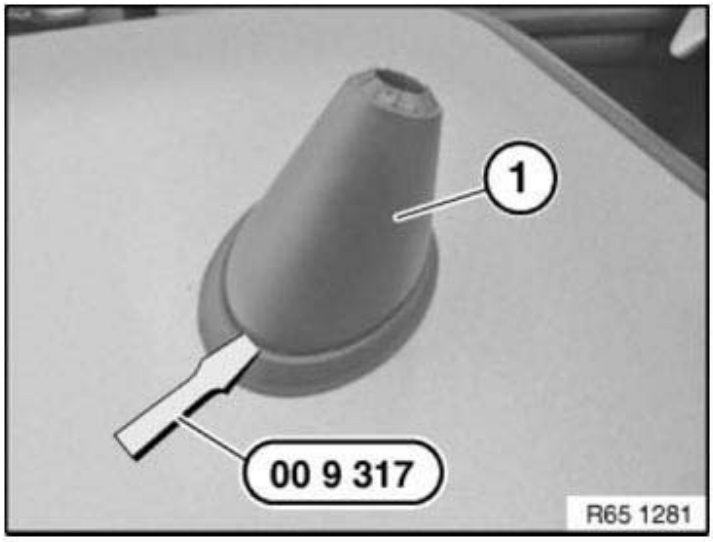


Fig. 49: Removing Aerial Base Cover Using Special Tool (00 9 317)
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

Press plugs (2) inwards.

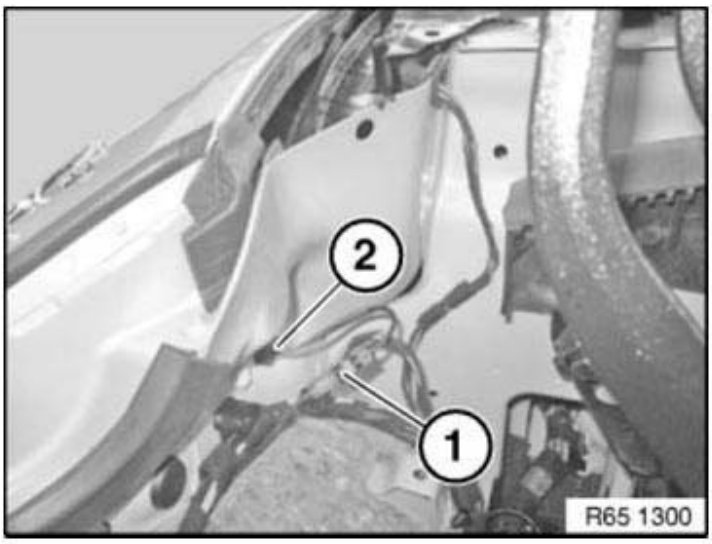


Fig. 50: Identifying Plug With Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Release nut (1) on aerial base (2).

Remove screw connection (2) in upward direction.

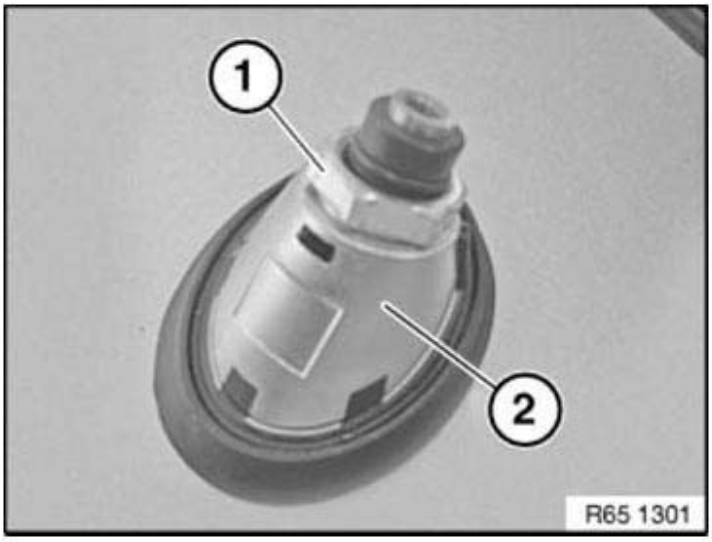


Fig. 51: Identifying Nut On Aerial Base
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: For purposes of clarity, illustration shows aerial base removed.

Feed out aerial base (1) downwards through body.

Installation:

Sealing lip (2) must be correctly seated on body.

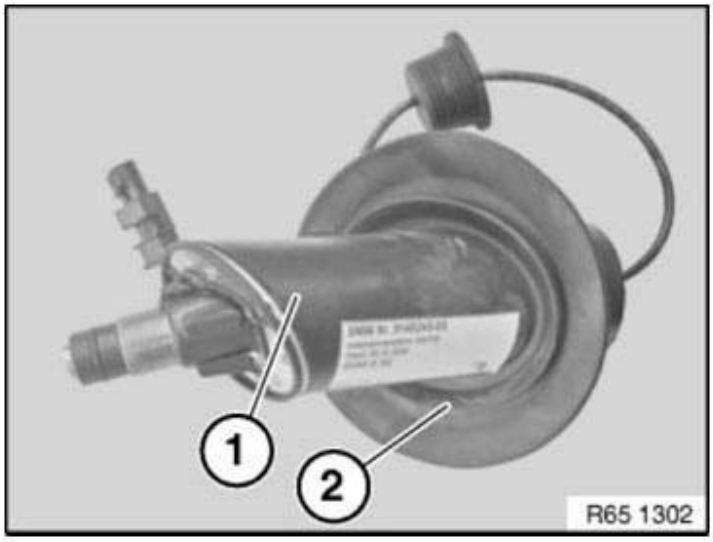


Fig. 52: Identifying Aerial Base And Sealing Lip
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 405 REMOVING AND INSTALLING/REPLACING AERIAL FOR SATELLITE DIGITAL AUDIO RADIO SERVICE (SDARS)

Necessary preliminary tasks:

- Remove **AUXILIARY BRAKE LIGHT REAR LID COVER**

Release nut (1) on underside of rear lid.

Unfasten aerial plug (2) and disconnect.

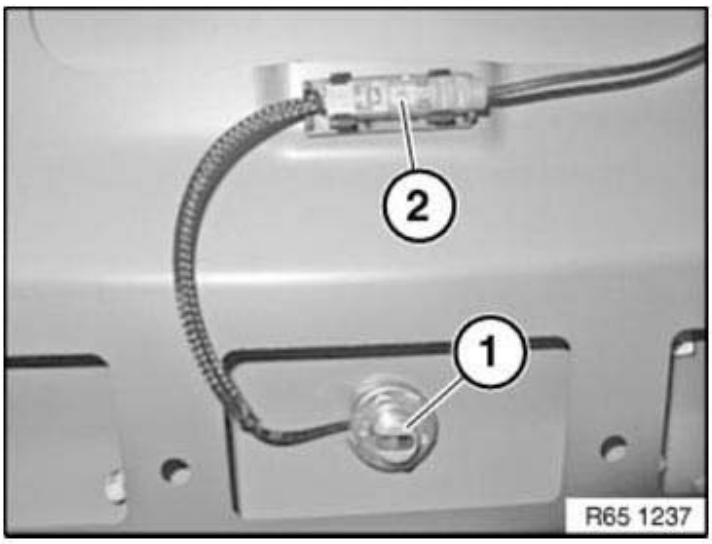


Fig. 53: Identifying Aerial Plug With Nut
Courtesy of BMW OF NORTH AMERICA, INC.

Lever SDARS aerial (1) upwards out of rear lid.

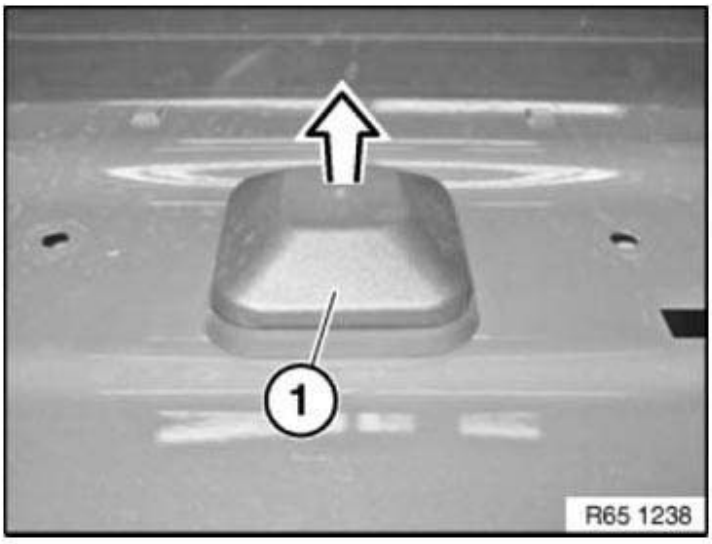


Fig. 54: Removing SDARS Aerial
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 420 REMOVING AND INSTALLING/REPLACING AERIAL OF GLOBAL POSITIONING SYSTEM (GPS)

Necessary preliminary tasks:

- Remove **ROOF SWITCH CLUSTER**

Unfasten plug connection (1) and disconnect.

Unlock retaining lug (2).

Remove GPS aerial (3).

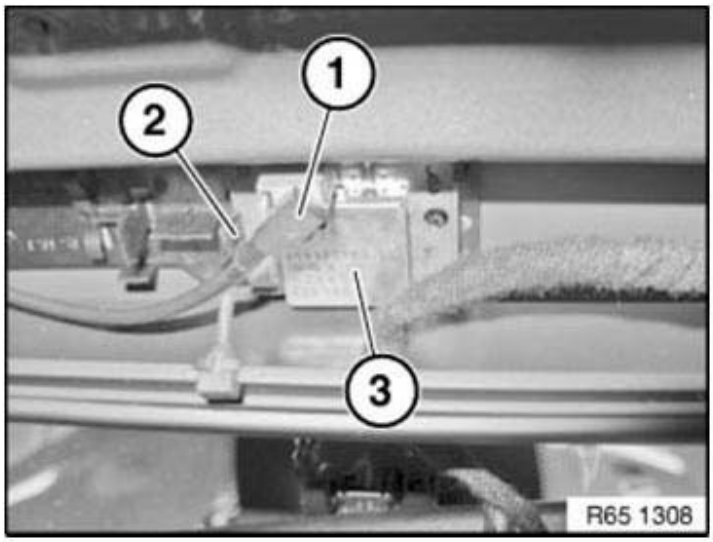


Fig. 55: Identifying GPS Aerial With Retaining Lug And Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 050 REMOVING AND INSTALLING/REPLACING AERIAL ROD

Release aerial rod (1) in direction of arrow and remove from aerial base (2).

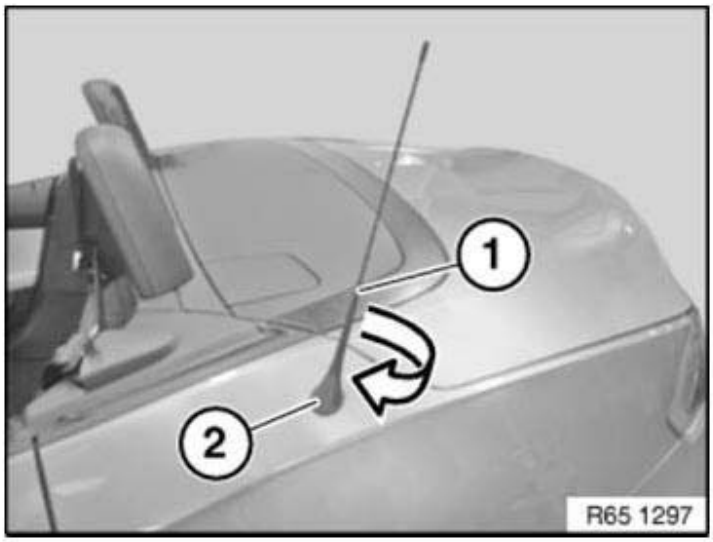


Fig. 56: Removing Aerial Rod
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 150 REMOVING AND INSTALLING/REPLACING BACK-UP AERIAL

Necessary preliminary tasks:

- Remove **COMPLETE CENTRE CONSOLE** .

Unfasten plug connection (1) and disconnect.

Unfasten screws (2).

Remove back-up aerial (3) towards top from tunnel (4).

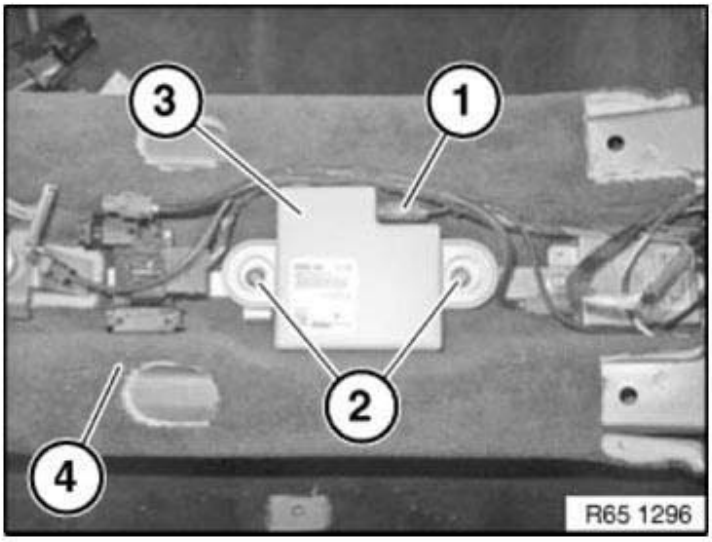


Fig. 57: Identifying Back-Up Aerial With Plug Connection And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 300 REMOVING AND INSTALLING/REPLACING BUMPER AERIAL (FM)

Necessary preliminary tasks:

- Remove **REAR BUMPER TRIM**
- Remove **LUGGAGE COMPARTMENT TRIM ON SIDE PANEL**

Disconnect plug connection (1) on aerial amplifier (2).

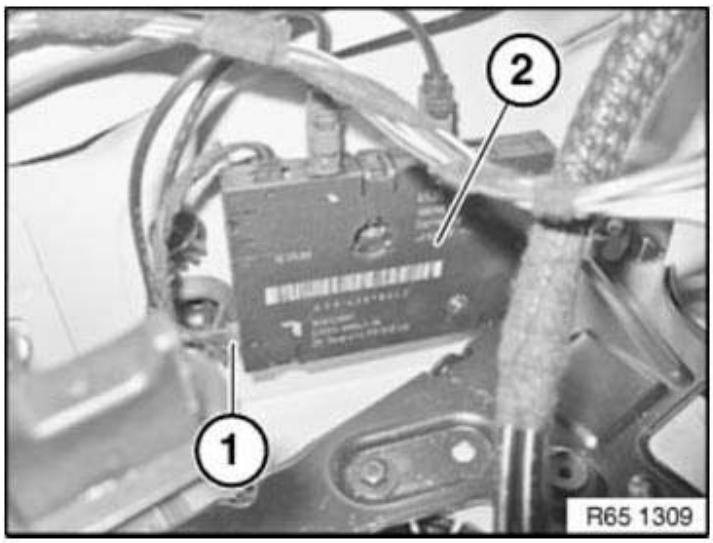


Fig. 58: Identifying Plug Connection On Aerial Amplifier
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip FM aerial (1) from left bumper carrier (2).

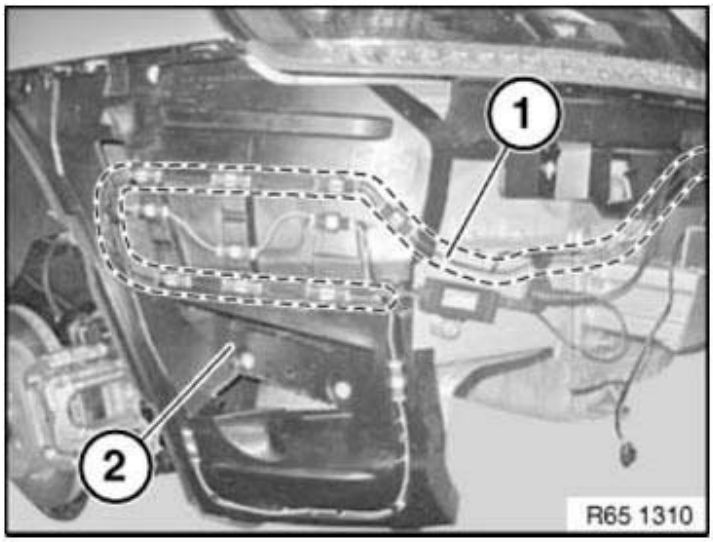


Fig. 59: Identifying FM Aerial And Left Bumper Carrier
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip FM aerial (1) from holders on bumper guide (2).

Feed FM aerial (1) out of penetration (3) and remove.

Installation:

Make sure FM aerial is laid correctly.

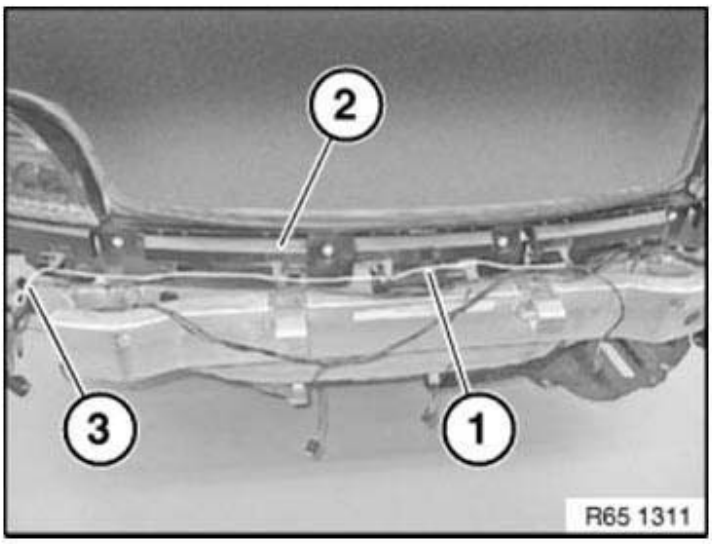


Fig. 60: Identifying FM Aerial And Bumper Guide
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 165 REMOVING AND INSTALLING/REPLACING LEFT TV AERIAL

Necessary preliminary tasks:

- Remove **REAR BUMPER TRIM**

Unclip TV aerial (1).

Unfasten plug connection (2) and disconnect.

Release screw (3).

Remove TV aerial (1).

Installation:

Make sure TV aerial (1) is correctly laid.

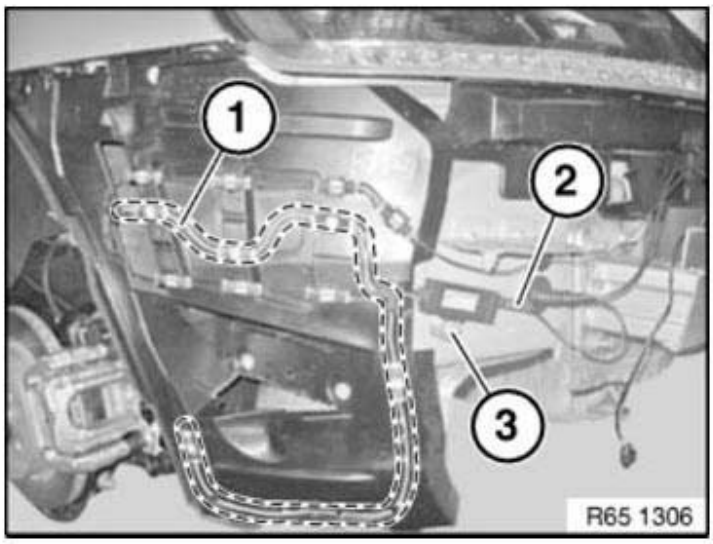


Fig. 61: Identifying TV Aerial With Plug Connection And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 250 REMOVING AND INSTALLING/REPLACING REAR TELEPHONE AERIAL

Necessary preliminary tasks

- Remove **REAR BUMPER TRIM**

Unfasten plug connection (1) and disconnect.

Unlock telephone aerial (2).

Remove telephone aerial (2) from bracket (3).

Installation:

Make sure telephone aerial (2) is correctly seated.

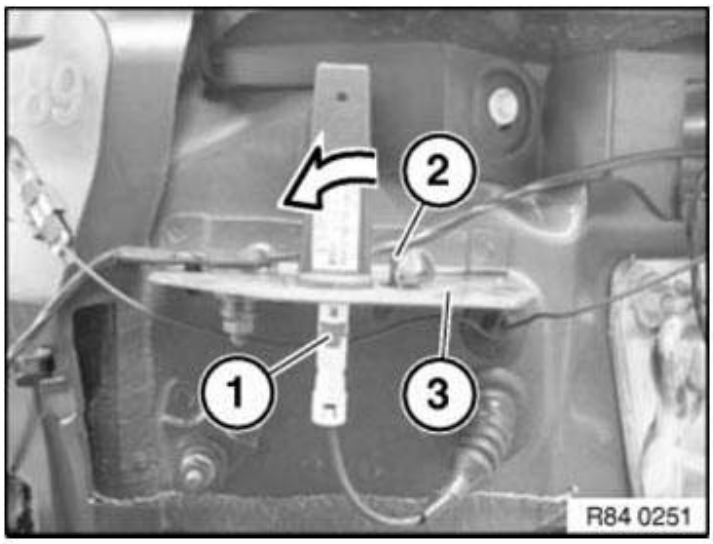


Fig. 62: Removing Telephone Aerial
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 167 REMOVING AND INSTALLING/REPLACING RIGHT TV AERIAL

Operation is identical to:

REMOVING AND INSTALLING LEFT TV AERIAL .

6524 REAR WINDOW AERIAL ANTENNA

65 50 030 REMOVING AND INSTALLING/REPLACING TV MODULE

IMPORTANT: Read and comply with NOTES on protection against electrostatic damage (ESD protection).

NOTE: Follow INSTRUCTIONS for handling optical fibres.

Necessary preliminary tasks:

- Disconnect **BATTERY NEGATIVE LEAD**
- Remove **LUGGAGE COMPARTMENT TRIM ON LEFT SIDE PANEL**

Lever out expansion rivets (1).

Feed out storage compartment (2) towards top.

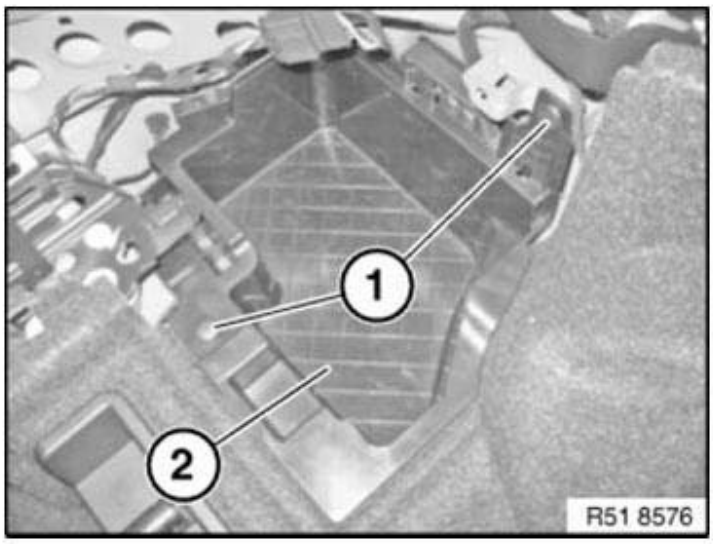


Fig. 63: Identifying Storage Compartment And Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts (1).

Raise TV module including bracket (2).

Unlock and disconnect associated plug connections (3).

Feed out TV module (2).

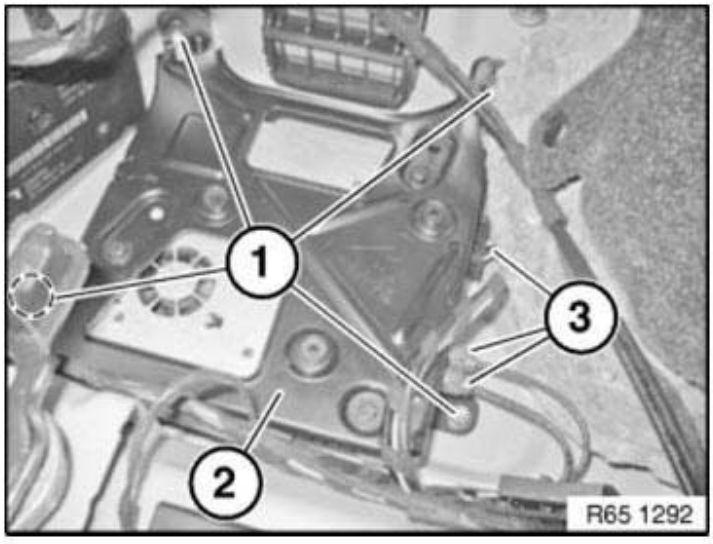


Fig. 64: Identifying TV Module With Plug Connections And Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

Release screws (1).

Remove bracket (2) from TV module.

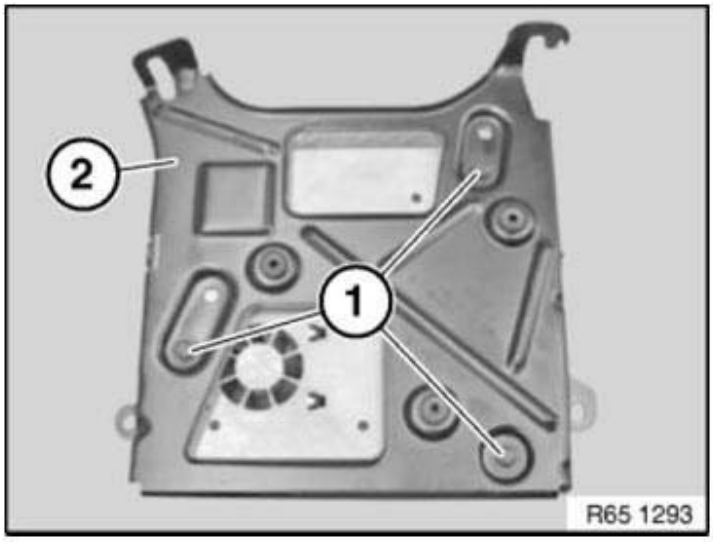


Fig. 65: Identifying Bracket On TV Module
Courtesy of BMW OF NORTH AMERICA, INC.

65 24 020 REMOVING AND INSTALLING/REPLACING BLOCKING CIRCUIT (LEFT OR RIGHT)

Necessary preliminary tasks

- Remove **ROOFLINER FOR ROOF SHELL AT REAR**

Release screw (1).

Remove blocking circuit (2) from roof shell (3).

Unlock associated plug connections and disconnect.

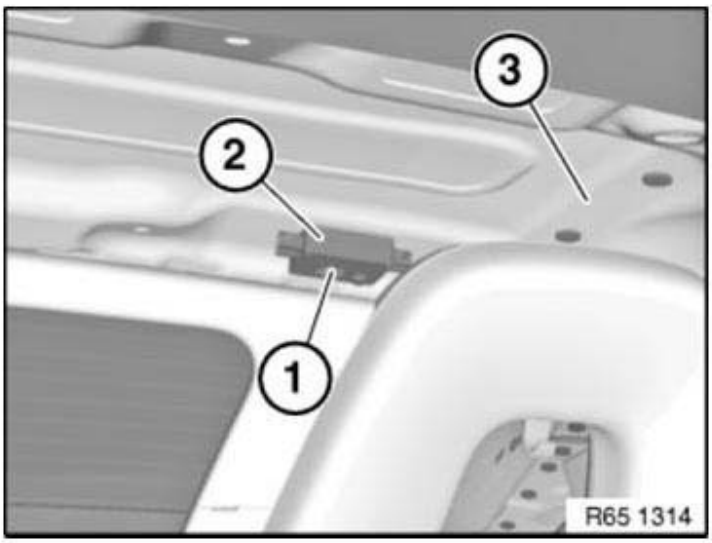


Fig. 66: Identifying Roof Shell With Blocking Circuit And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Fit blocking circuit (1) so that screw (2) engages thread (3) and locating pin (4) engages bore (5).

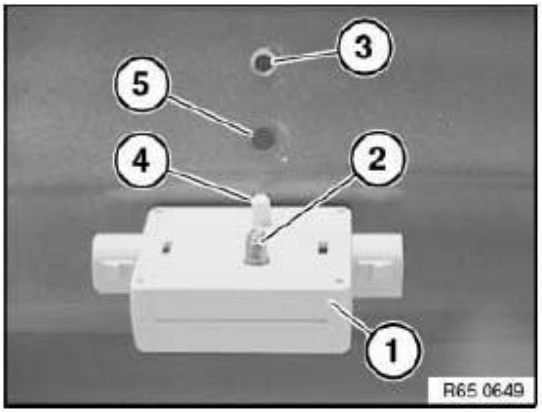


Fig. 67: Identifying Blocking Circuit, Screw, Thread, Locating Pin And Bore
Courtesy of BMW OF NORTH AMERICA, INC.

6550 VIDEO AND TV EQUIPMENT

65 50 057 REMOVING AND INSTALLING/REPLACING CENTRAL INFORMATION DISPLAY (CID)

IMPORTANT: Read and comply with NOTES on protection against electrostatic damage (ESD protection).

Necessary preliminary tasks

- Remove **CENTRE FRESH-AIR GRILLE**

Lift trim (1) with special tool 00 9 317 out of latch mechanisms and remove upwards.

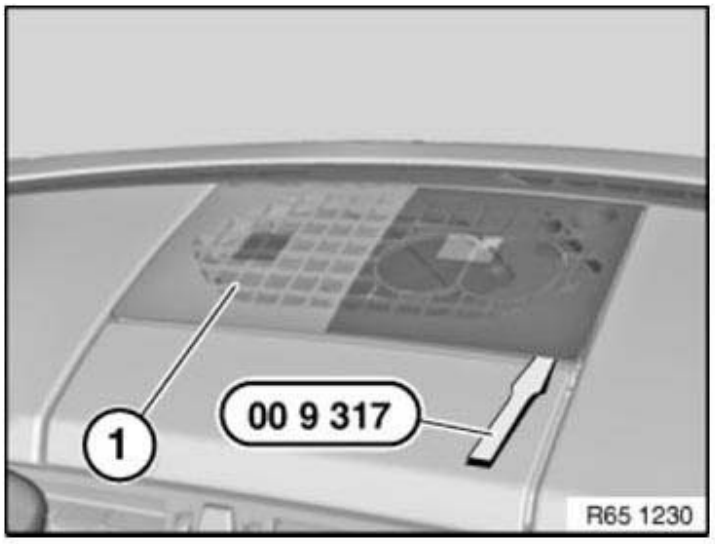


Fig. 68: Opening Trim Using Special Tool (00 9 317) From Catches
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1) from CID (2) on speaker carrier (3).

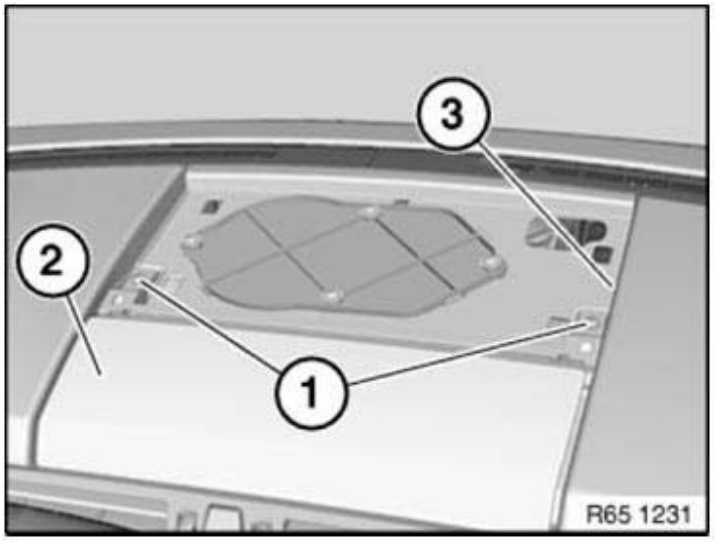


Fig. 69: Identifying CID Mounting Screws On Speaker Carrier
Courtesy of BMW OF NORTH AMERICA, INC.

Fold out CID (1) manually.

Unfasten screws (2).

Remove CID (1) towards top.

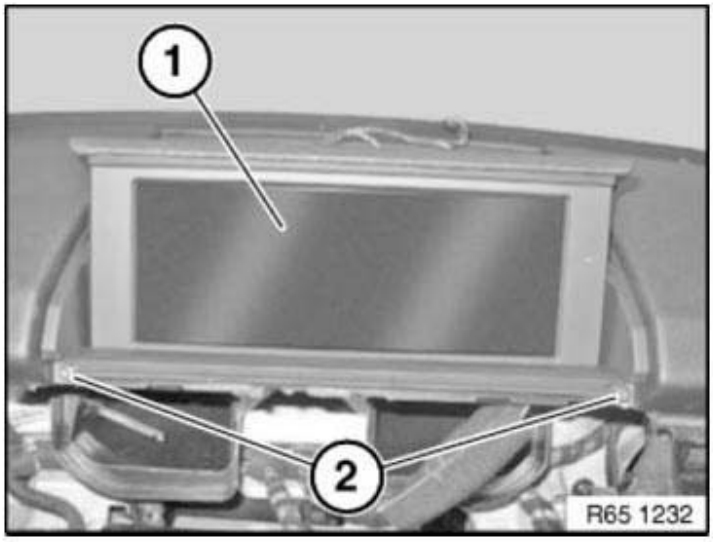


Fig. 70: Identifying CID With Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Slide protective sleeve (1) upwards.

Unfasten plug connection (2) and disconnect.

Disconnect plug connection (3).

Installation:

Ensure correct routing of cables.

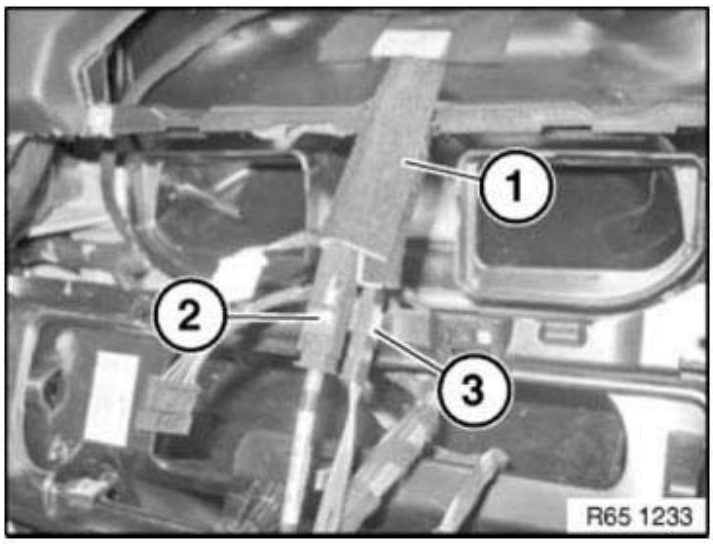


Fig. 71: Identifying Protective Sleeve With Plug Connections
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

Carry out vehicle programming/coding.

65 50 030 REMOVING AND INSTALLING/REPLACING TV MODULE

IMPORTANT: Read and comply with NOTES on protection against electrostatic damage (ESD protection).

NOTE: Follow INSTRUCTIONS for handling optical fibres.

Necessary preliminary tasks:

- Disconnect **BATTERY NEGATIVE LEAD**
- Remove **LUGGAGE COMPARTMENT TRIM ON LEFT SIDE PANEL**

Lever out expansion rivets (1).

Feed out storage compartment (2) towards top.

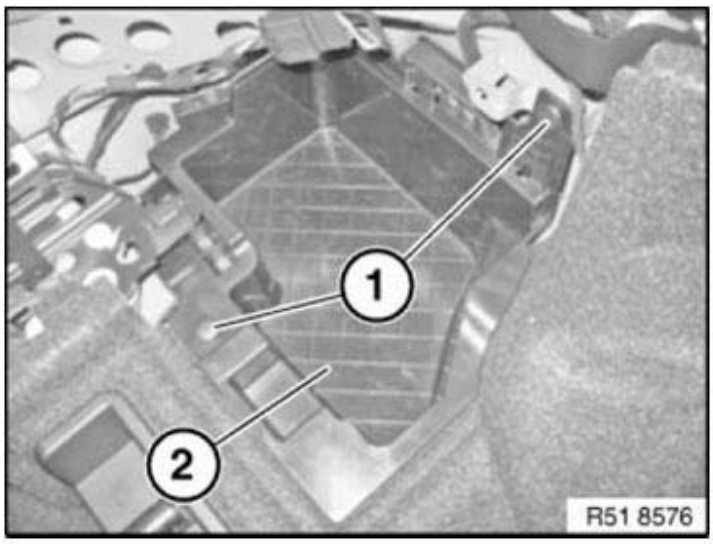


Fig. 72: Identifying Storage Compartment And Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts (1).

Raise TV module including bracket (2).

Unlock and disconnect associated plug connections (3).

Feed out TV module (2).

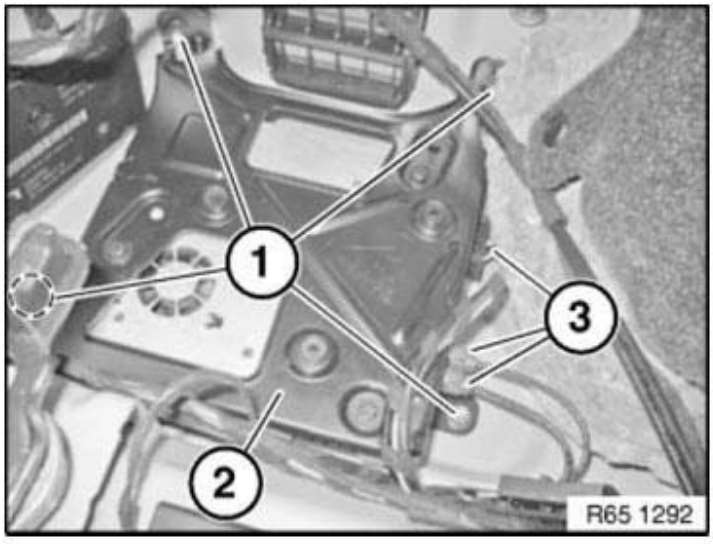


Fig. 73: Identifying TV Module With Plug Connections And Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

Release screws (1).

Remove bracket (2) from TV module.

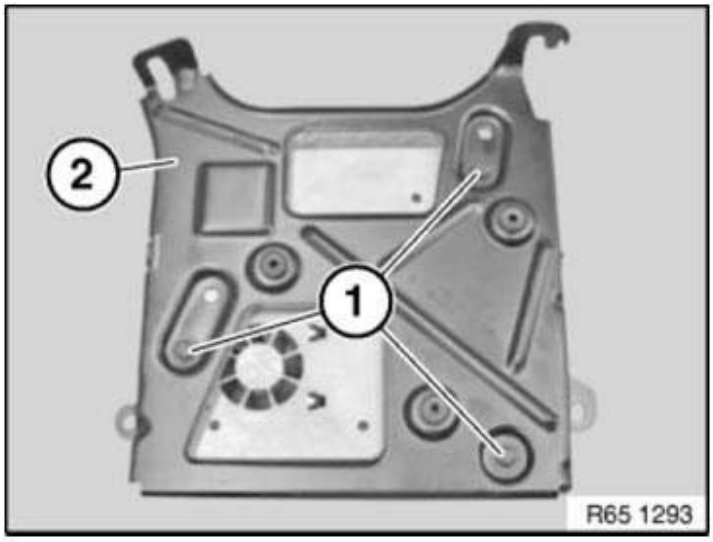


Fig. 74: Identifying Bracket On TV Module
Courtesy of BMW OF NORTH AMERICA, INC.

6575 ANTI-THEFT ALARM SYSTEM

65 75 055 REMOVING AND INSTALLING/REPLACING EMERGENCY POWER SIREN WITH TILT SENSOR

Necessary preliminary tasks

- Remove **FRONT LEFT WHEEL ARCH COVER**

Release screws (1).

Unfasten plug connection (2) and disconnect.

Remove emergency power siren including bracket (3).

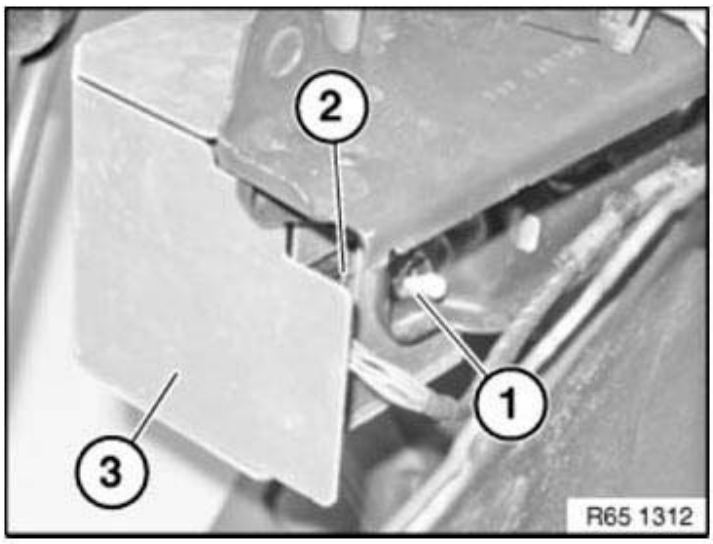


Fig. 75: Identifying Emergency Power Siren With Plug Connection And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

Release nut (1) and remove emergency power siren with tilt sensor (2).

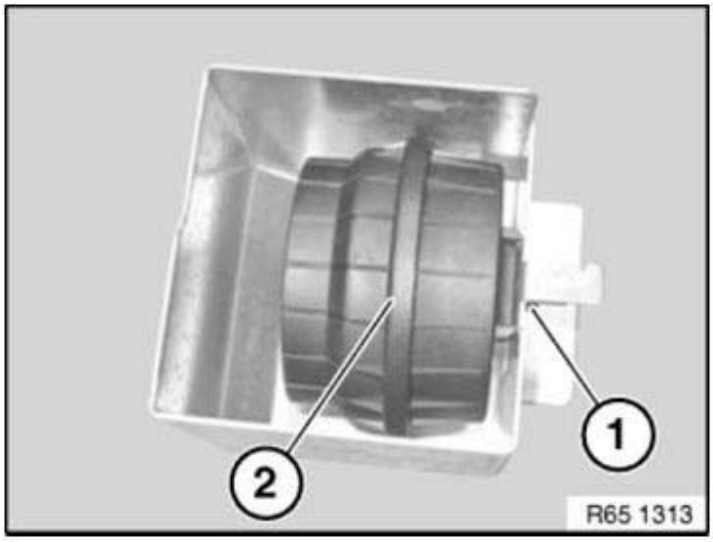


Fig. 76: Identifying Tilt Sensor And Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Carry out vehicle programming/coding.

65 75 080 REMOVING AND INSTALLING/REPLACING INTERIOR MOVEMENT DETECTION

MODULE IN LEFT OR RIGHT FRONT DOOR

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

Necessary preliminary tasks

- Remove **FRONT DOOR TRIM PANEL**

Release screws (1).

Remove microwave sensor (2) from door trim panel (3).

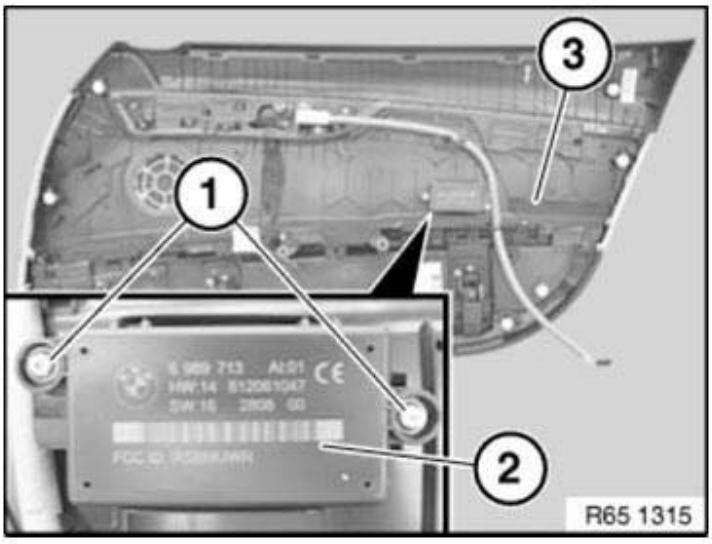
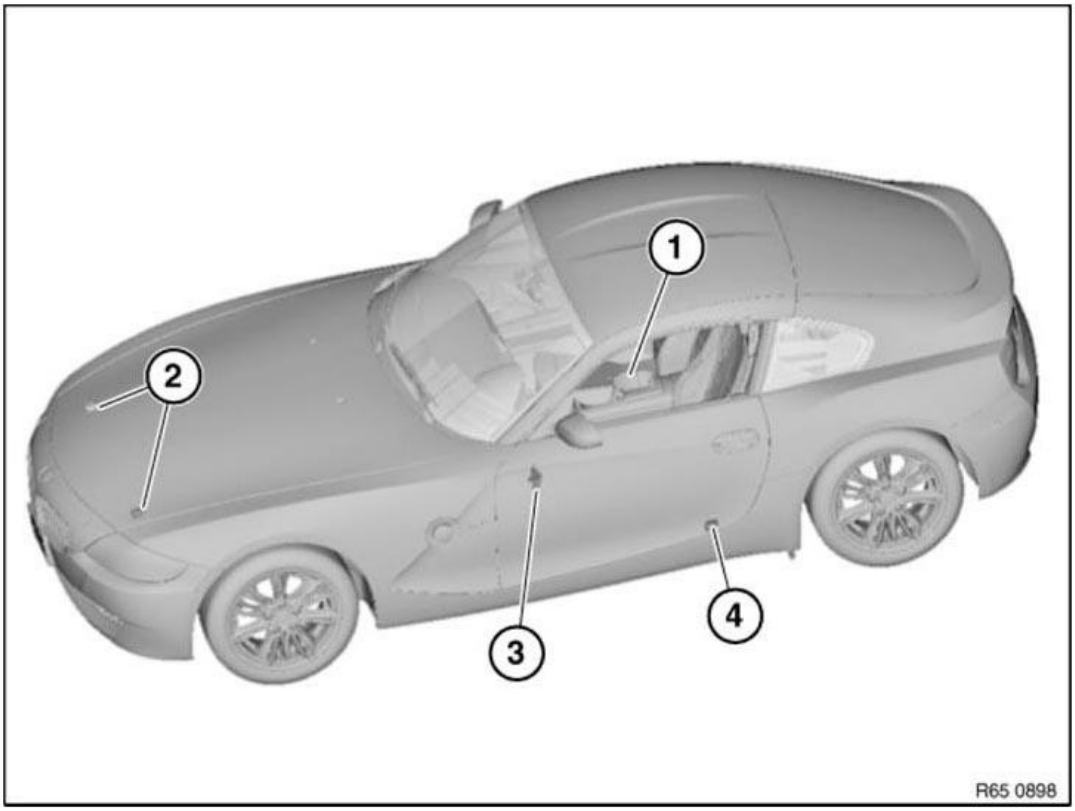


Fig. 77: Identifying Microwave Sensor With Door Trim Panel And Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

6577 AIRBAG TRIGGERING UNIT, DIAGNOSIS UNIT

65 77 ... OVERVIEW OF SENSORS FOR AIRBAG SYSTEM



1. Airbag control unit
2. Acceleration sensors, front (left/right, US version only)
3. Sensor, B-pillar (left/right)
4. Sensor, front door (left/right)

Fig. 78: Identifying Airbag System Sensors
Courtesy of BMW OF NORTH AMERICA, INC.

1. Airbag control unit
2. Acceleration sensors, front (left/right, US version only)
3. Sensor, B-pillar (left/right)
4. Sensor, front door (left/right)

65 77 720 REMOVING AND INSTALLING (REPLACING) LEFT B-PILLAR SENSOR

WARNING: NOTE AIRBAG SAFETY INSTRUCTIONS !
Incorrect handling can activate airbag and cause injury.

Necessary preliminary tasks:

- Disconnect battery negative lead and cover
- Remove **REAR BOTTOM SIDE TRIM PANEL**

Press floor lining (1) to one side.

Unfasten screws (2).

Tightening torque **65 77 3AZ** .

Remove B-pillar sensor (3).

Disconnect associated plug connection.

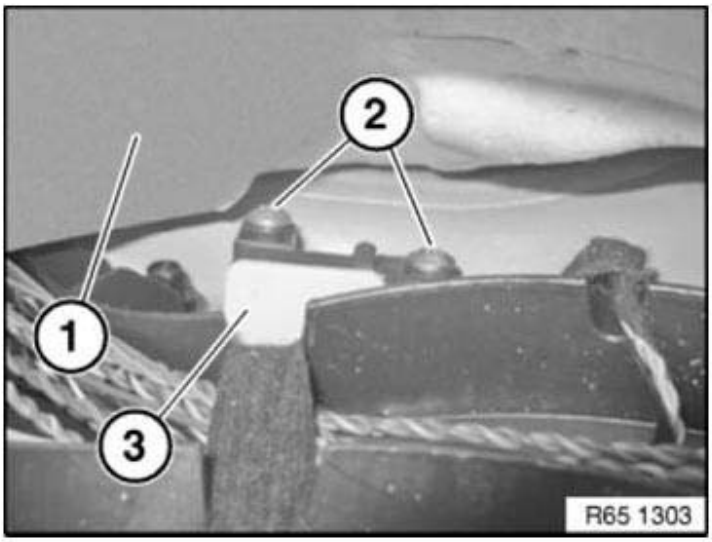


Fig. 79: Identifying Press Floor Lining And B-Pillar Sensor
Courtesy of BMW OF NORTH AMERICA, INC.

65 77 016 REMOVING AND INSTALLING/REPLACING AIRBAG CONTROL UNIT

WARNING: NOTE AIRBAG SAFETY INSTRUCTIONS!
Incorrect handling can activate airbag and cause injury.

IMPORTANT: Read and comply with notes on protection against electrostatic damage (ESD PROTECTION).

Necessary preliminary tasks:

- **DISCONNECT BATTERY NEGATIVE LEAD** and cover.
- Remove **COMPLETE CENTRE CONSOLE** .

Unlock plug connections (1) and disconnect.

Unscrew nuts (2).

Tightening torque **65 77 1AZ** .

Remove airbag control unit (3).

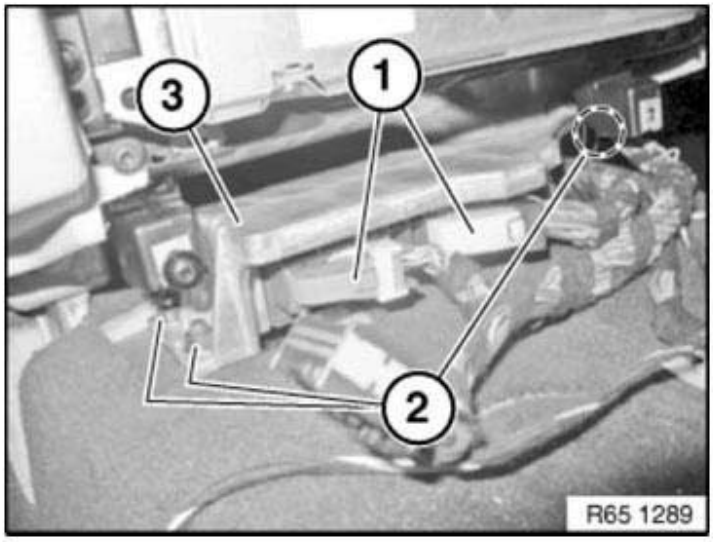


Fig. 80: Identifying Airbag Control Unit With Plug Connections And Mounting Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Carry out vehicle programming/coding.

65 75 055 REMOVING AND INSTALLING/REPLACING EMERGENCY POWER SIREN WITH TILT SENSOR

Necessary preliminary tasks

- Remove **FRONT LEFT WHEEL ARCH COVER**

Release screws (1).

Unfasten plug connection (2) and disconnect.

Remove emergency power siren including bracket (3).

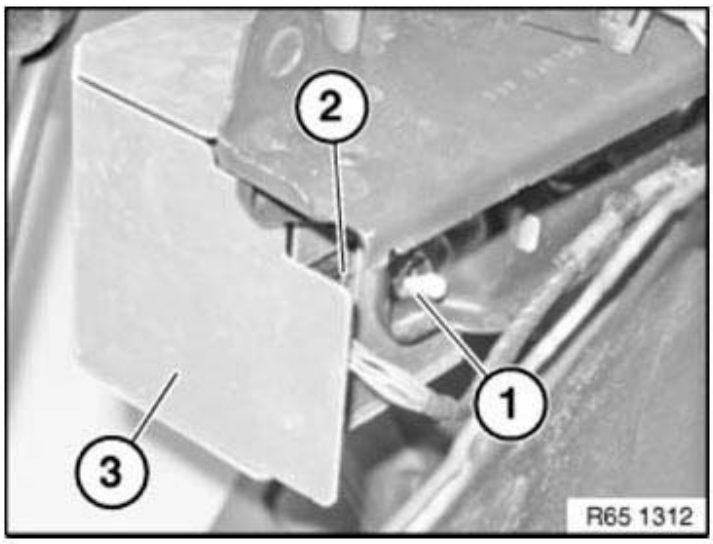


Fig. 81: Identifying Emergency Power Siren With Plug Connection And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement

Release nut (1) and remove emergency power siren with tilt sensor (2).

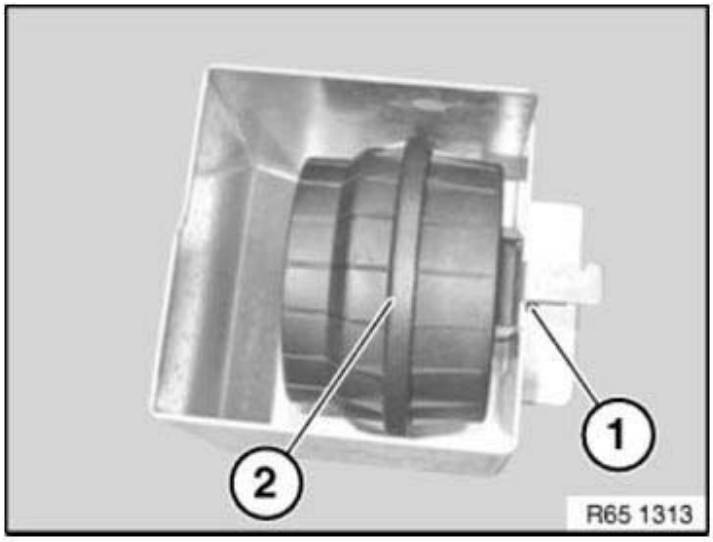


Fig. 82: Identifying Tilt Sensor And Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Carry out vehicle programming/coding .

65 77 740 REMOVING AND INSTALLING/REPLACING FRONT LEFT DOOR SENSOR (US

VERSION ONLY

WARNING: NOTE AIRBAG SAFETY INSTRUCTIONS !

Necessary preliminary tasks:

- Disconnect **BATTERY NEGATIVE LEAD**
- Remove **SOUND INSULATION FROM FRONT DOOR**

Release screws (1).

Tightening torque **51 21 16AZ** .

Remove adapter for door speaker (2).

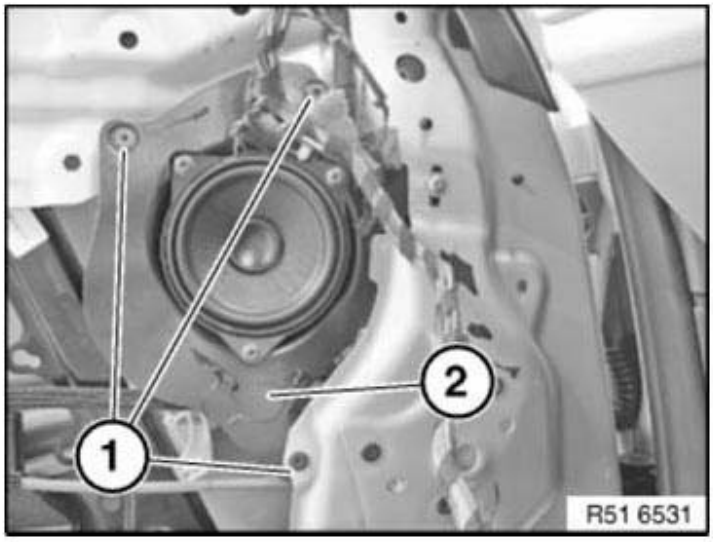


Fig. 83: Identifying Door Speaker Adapter With Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1) on front door sensor.

Tightening torque **65 77 4AZ** .

Remove front door sensor () and unlock and disconnect associated plug connection.

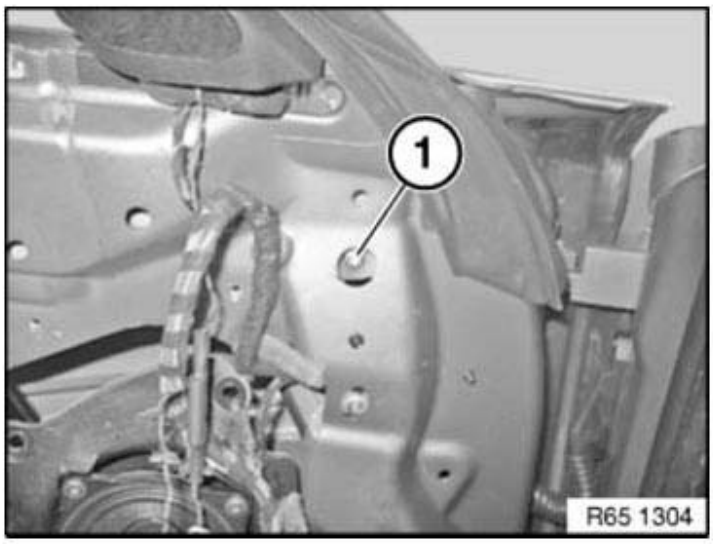


Fig. 84: Identifying Screw On Front Door Sensor
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Make sure front door sensor (1) is in correct installation position.

Guide lug (2) must be correctly seated in corresponding mounting on front door.

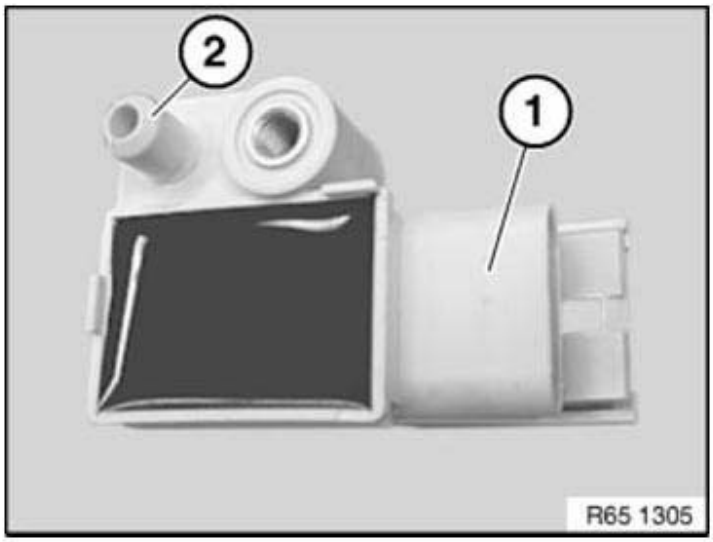


Fig. 85: Identifying Front Door Sensor And Guide Lug
Courtesy of BMW OF NORTH AMERICA, INC.

65 77 532 REMOVING AND INSTALLING/REPLACING FRONT LEFT SENSOR (US VERSION ONLY)

Installation:

Remove **SUCTION FILTER HOUSING** .

Unscrew nuts (1).

Tightening torque **65 77 6AZ** .

Unfasten plug connection (2) and disconnect.

Remove front left sensor (3) from front panel.

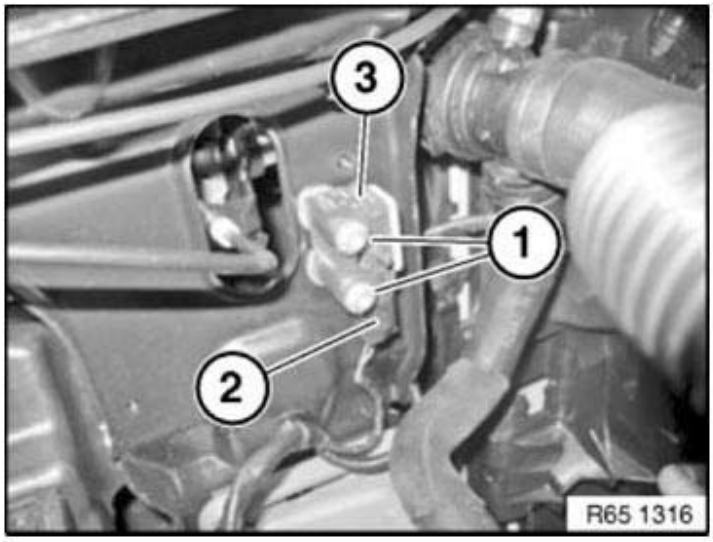


Fig. 86: Identifying Front Left Sensor With Plug Connection And Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

65 77 745 REMOVING AND INSTALLING/REPLACING FRONT RIGHT DOOR SENSOR (US VERSION ONLY)

Operation is described in:

REMOVING AND INSTALLING/REPLACING FRONT LEFT DOOR SENSOR .

65 77 534 REMOVING AND INSTALLING/REPLACING FRONT RIGHT SENSOR (US VERSION ONLY)

Release screws (1), tightening torque **65 77 6AZ** .

Unfasten plug connection (2) and disconnect.

Remove front right sensor (3) from front panel.

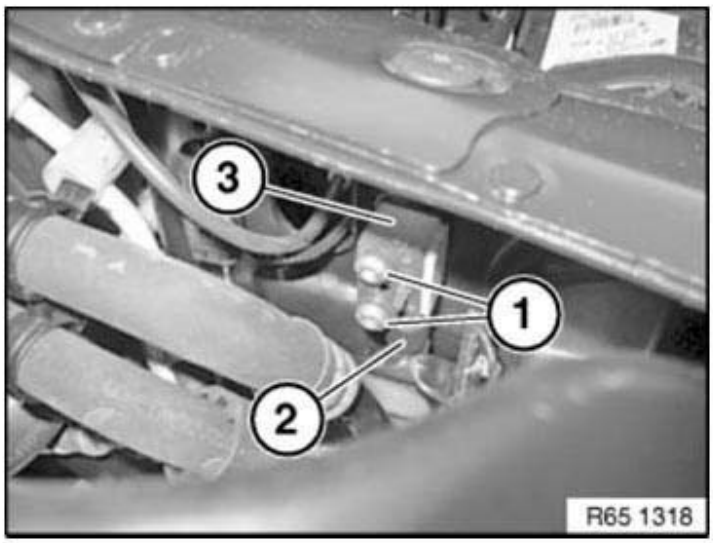


Fig. 87: Identifying Front Right Sensor With Plug Connection And Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

65 77 725 REMOVING AND INSTALLING/REPLACING RIGHT B-PILLAR SENSOR

Operation is identical to:

REMOVING AND INSTALLING LEFT B-PILLAR SENSOR

65 77 604 REPLACING SENSOR MAT (CIS MAT) FOR FRONT PASSENGER SEAT OCCUPANCY DETECTION DETECTOR

WARNING: Note AIRBAG SAFETY REGULATIONS !
Incorrect handling can lead to airbag deployment and cause injury.

WARNING: Only US and Canadian version of front passenger seat (with CIS mat):
The CIS mat can only be removed in conjunction with the padding from the seat cover.
If CIS mat or padding is defective, both parts may only be replaced together.
After fitting the seat cover, the CIS mat must be enabled with the BMW programming system.

Procedure for replacing the CIS mat together with the upholstery is described under:

- Remove padding for front seat . See **5213400 REPLACING SEAT COVER ON LEFT OR RIGHT FRONT SEAT (NORMAL/MANUAL)** or **5215400 REPLACING SEAT COVER FOR LEFT OR RIGHT FRONT SEAT (SPORT/MANUAL)**

The work scope with CIS mat is different in the following work steps:

Release the bolting point (1) of the ground cable on the seat pan.

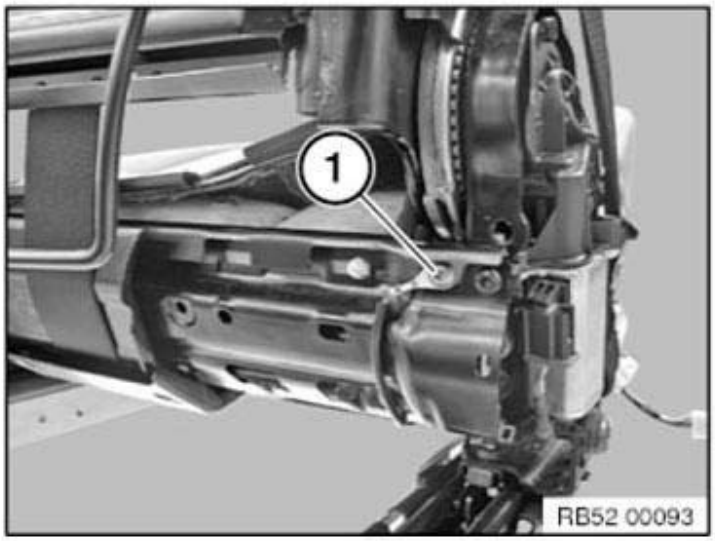


Fig. 88: Identifying Ground Cable Bolting Point On Seat Pan
Courtesy of BMW OF NORTH AMERICA, INC.

Cut open cable strap (1).

Lift the locking tab and pull the connector out of the side of the connector housing.

Installation note:

Replace cable tie (1).

Connector is encoded against incorrect assembly.

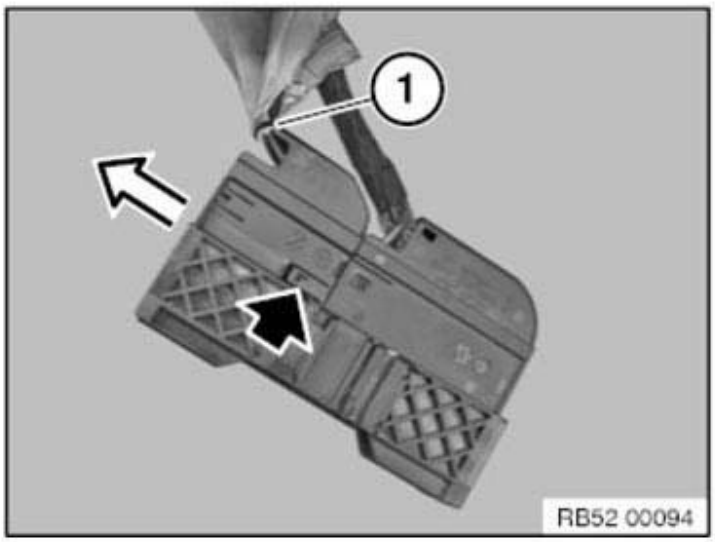


Fig. 89: Pulling Connector From Connector Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Enabling seat occupancy detection (CIS mat):

- Connect BMW programming system
- Encode airbag control unit
- Delete fault memory if necessary

65 77 600 REPLACING SENSOR MAT FOR FRONT PASSENGER SEAT OCCUPANCY DETECTOR

WARNING: Note AIRBAG SAFETY INSTRUCTIONS !
Incorrect handling can activate airbag and cause injury.

WARNING: US/CDN front passenger seat (with OC3 mat) only:
A defective OC3 mat may only be replaced complete with the padding and the seat cover.
New OC3 mat is supplied with padding, seat cover and if necessary seat heating.
After fitting, the OC3 mat must be enabled with the diagnosis system.
Individual parts not available.

Release seat occupancy detector:

- Connect diagnosis system
- Release seat occupancy detector
- Clear fault memory if necessary

Necessary preliminary tasks

- Remove seat cover for right front seat

Disconnect plug connection (1).

IMPORTANT: To prevent the seat occupancy detector electronics box from slipping, do not pull too strongly on the cable.

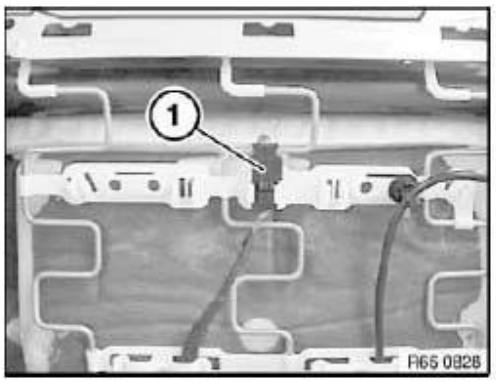


Fig. 90: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Cut front sticking surface (4) in area on sensor mat (1) with cutter knife or heavy-duty scalpel from foam without damaging the foam and the sensor mat.

If necessary, also cut away deviating sticking points from seat padding without incurring damage.

Remove sensor mat (1) and feed out electric lead.

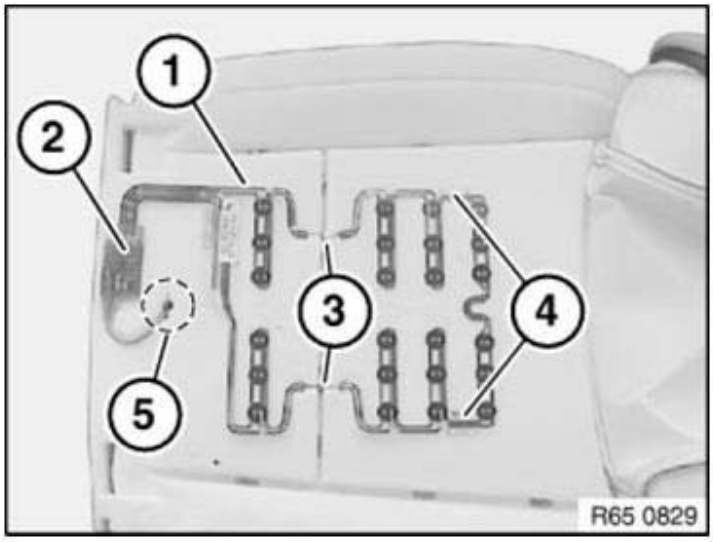


Fig. 91: Identifying Sensor Mat, Front Sticking Surface And Electronic Box
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Observe installation sequence:

- Align new sensor mat (1) to seat padding
- Guide cable in area (5) through hole penetration for seat padding

- Press sensor mat down to base of basting groove in area (3) and align again
- Carefully staple cross trim wire of seat cover to holding wire of seat padding
- Sensor mat must not be able to move and must be checked again
- Pull all protective foil off sensor mat adhesive strips and stick to seat padding

IMPORTANT: In order to guarantee the function and fastening (adhesive strength) at the sticking surfaces of sensor mat (1), the foam must not show any traces of damage.
Replace the foam if it is hardened or damaged particularly in the area of the sticking surfaces.
To prevent the electronics box (2) from slipping, do not pull cable too strongly through hole penetration (5).

65 77 601 REPLACING SENSOR MAT FOR FRONT PASSENGER SEAT OCCUPANCY DETECTOR (SPORT SEAT)

Operation is described in:

Replacing **SENSOR MAT FOR FRONT PASSENGER SEAT OCCUPANCY DETECTOR** .

6581 ON-BOARD COMPUTER

65 81 060 REMOVING AND INSTALLING/REPLACING OUTSIDE TEMPERATURE SENSOR

Necessary preliminary tasks

- Remove **FRONT UNDERBODY PROTECTION**

NOTE: Outside temperature sensor is situated in area (1) on left wheel arch cover (2).

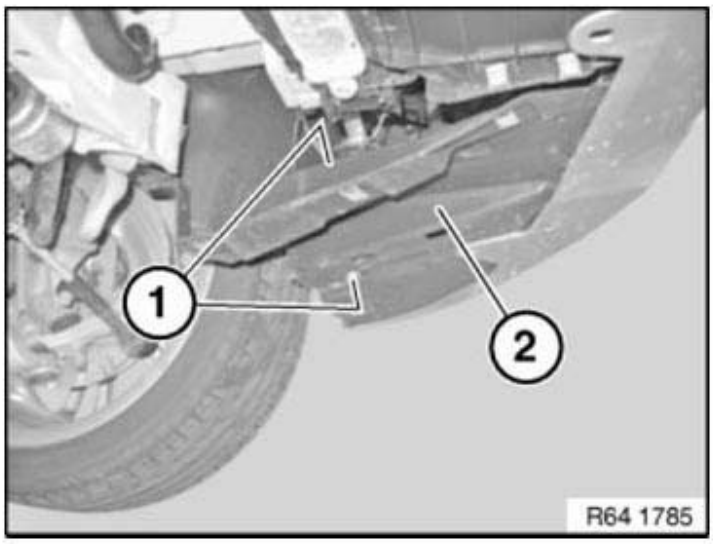


Fig. 92: Identifying Outside Temperature Sensor Position And Left Wheel Arch Cover
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: For purposes of clarity, illustration shows wheel arch cover removed.

Unfasten plug connection (1) and disconnect.

Unclip outside temperature sensor (2) in direction of arrow from wheel arch cover.

Installation:

Make sure outside temperature sensor (2) is correctly engaged in wheel arch cover.

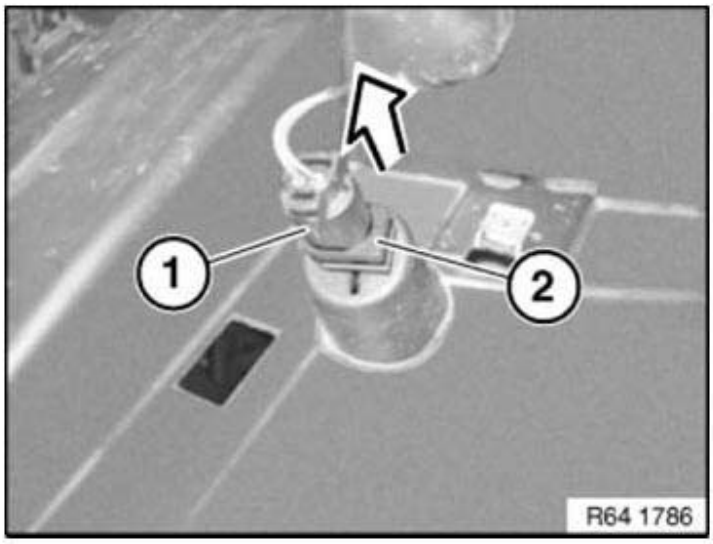


Fig. 93: Removing Outside Temperature Sensor

Courtesy of BMW OF NORTH AMERICA, INC.

6583 CAR COMMUNICATION COMPUTER (CCC)

65 83 020 REMOVING AND INSTALLING (REPLACING) CAR INFORMATION COMPUTER (CIC)

IMPORTANT: Risk of damage!

A hard disk is installed in the Car Information Computer (CIC).

Carry out mechanical work on the CIC and adjacent components with care.

Avoid subjecting the CIC to vibration/shocks.

IMPORTANT: Read and comply with notes on protection against electrostatic damage (ESD PROTECTION).

NOTE: Comply with notes and instructions on HANDLING OPTICAL FIBRES .

Necessary preliminary work

- Clamp off **NEGATIVE BATTERY CABLE**

Unclip middle trim (1) with special tool 00 9 323.



Fig. 94: Opening Middle Trim Using Special Tool (00 9 323)
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Retainers (1) must be correctly seated and must not be damaged!

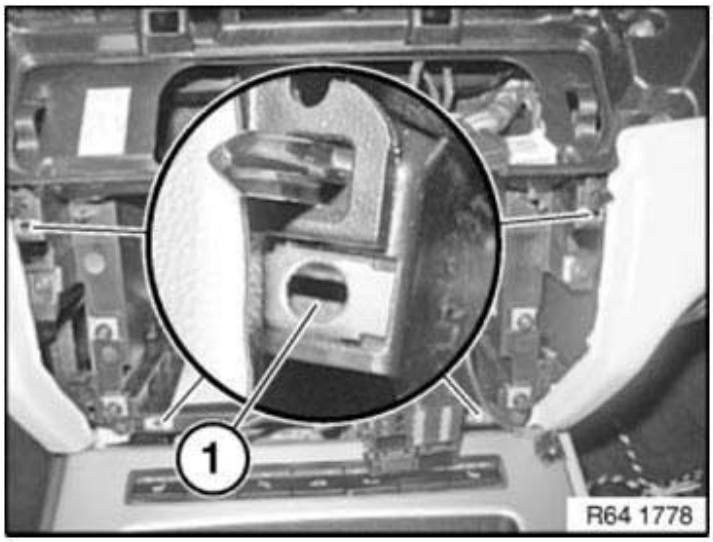


Fig. 95: Identifying Retainers
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Cover centre console to prevent damage and scratching.

Release screws (1).

Carefully pull out CIC (2) towards front.

Unlock associated plug connections and disconnect.

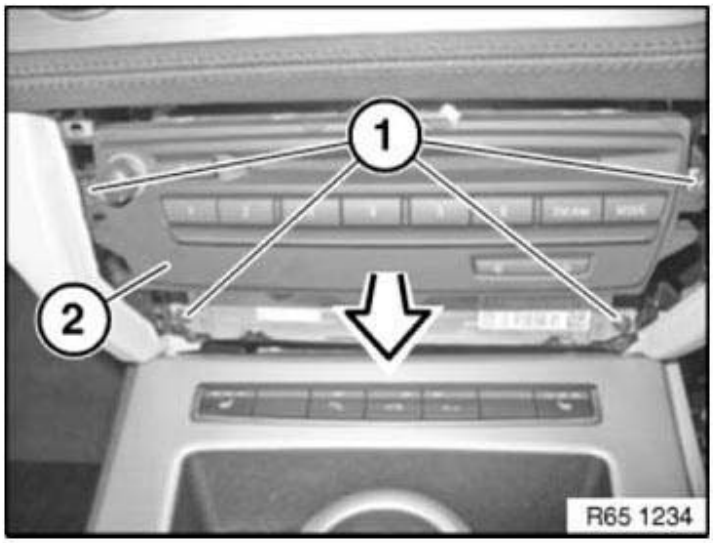


Fig. 96: Pulling Out CIC Towards Front

Courtesy of BMW OF NORTH AMERICA, INC.

Only for US models with satellite tuner:

When replacing the CIC unit, additional work is required!

- Read the document **REPLACING SATELLITE TUNERS FROM 09/2009 ONWARD** .

Replacement:

Carry out vehicle programming/coding.

6590 NAVIGATION SYSTEMS

65 20 410 REMOVING AND INSTALLING/REPLACING DAB TUNER AERIAL

Necessary preliminary tasks:

- Remove **ROOF SWITCH CLUSTER**

Disconnect plug connection (1).

Unclip DAB tuner aerial (2) and remove.

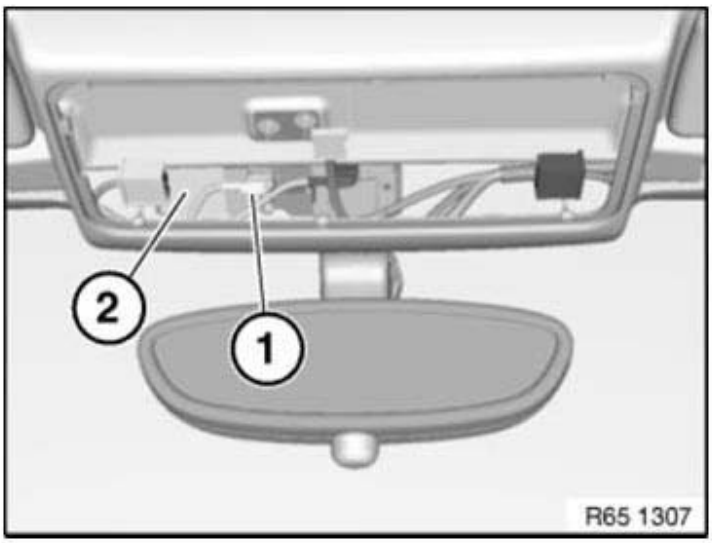


Fig. 97: Identifying DAB Tuner Aerial With Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 405 REMOVING AND INSTALLING/REPLACING AERIAL FOR SATELLITE DIGITAL AUDIO RADIO SERVICE (SDARS)

Necessary preliminary tasks:

- Remove **AUXILIARY BRAKE LIGHT REAR LID COVER**

Release nut (1) on underside of rear lid.

Unfasten aerial plug (2) and disconnect.

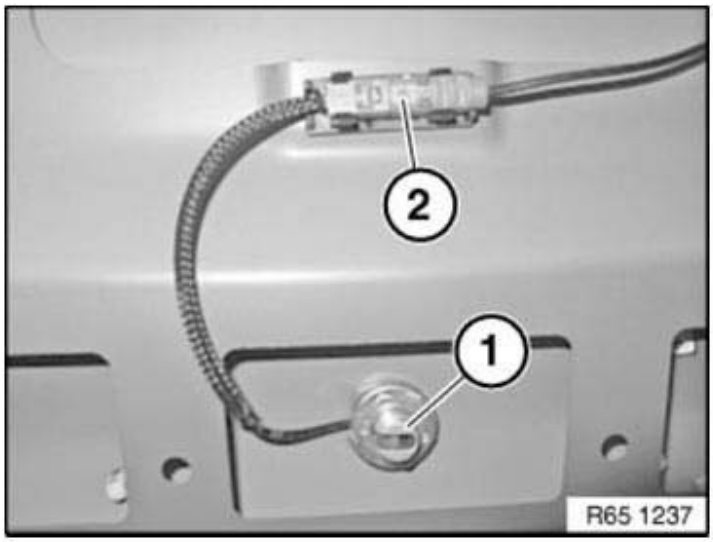


Fig. 98: Identifying Aerial Plug And Nut On Underside Of Rear Lid
Courtesy of BMW OF NORTH AMERICA, INC.

Lever SDARS aerial (1) upwards out of rear lid.

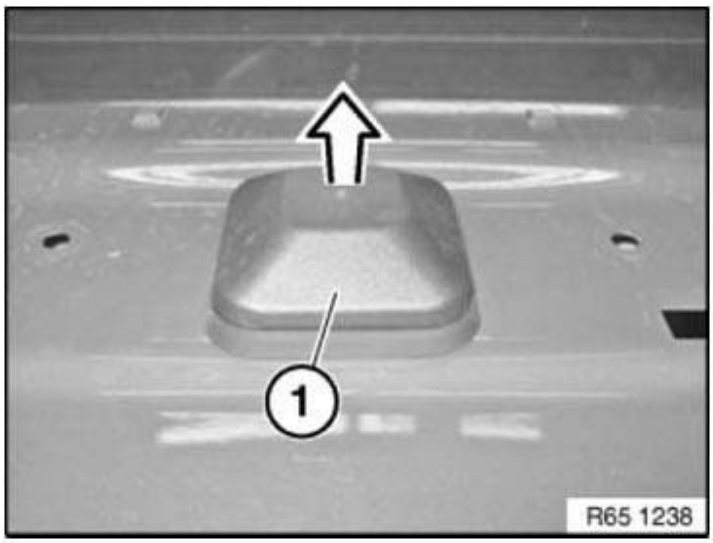


Fig. 99: Removing SDARS Aerial
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 420 REMOVING AND INSTALLING/REPLACING AERIAL OF GLOBAL POSITIONING SYSTEM (GPS)

Necessary preliminary tasks:

- Remove **ROOF SWITCH CLUSTER**

Unfasten plug connection (1) and disconnect.

Unlock retaining lug (2).

Remove GPS aerial (3).

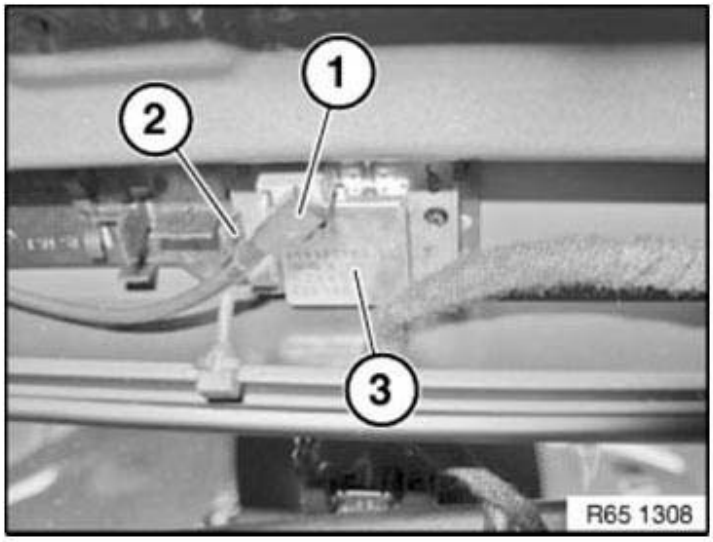


Fig. 100: Identifying GPS Aerial With Plug Connection And Retaining Lug
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 300 REMOVING AND INSTALLING/REPLACING BUMPER AERIAL (FM)

Necessary preliminary tasks:

- Remove **REAR BUMPER TRIM**
- Remove **LUGGAGE COMPARTMENT TRIM ON SIDE PANEL**

Disconnect plug connection (1) on aerial amplifier (2).

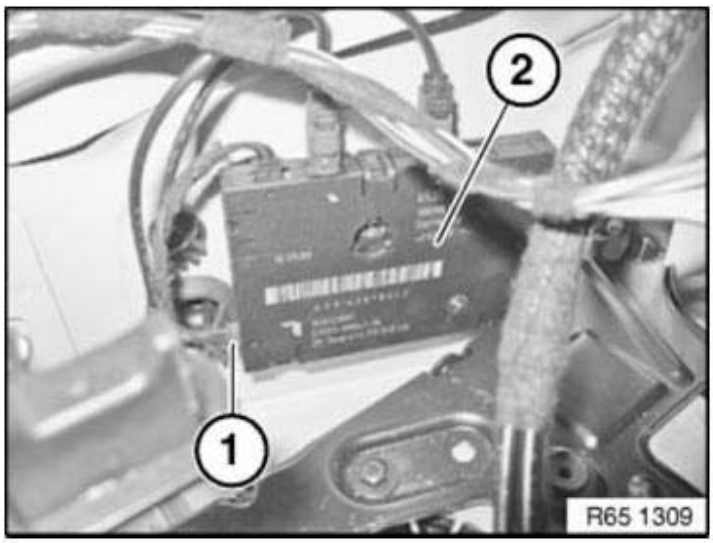


Fig. 101: Identifying Plug Connection On Aerial Amplifier
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip FM aerial (1) from left bumper carrier (2).

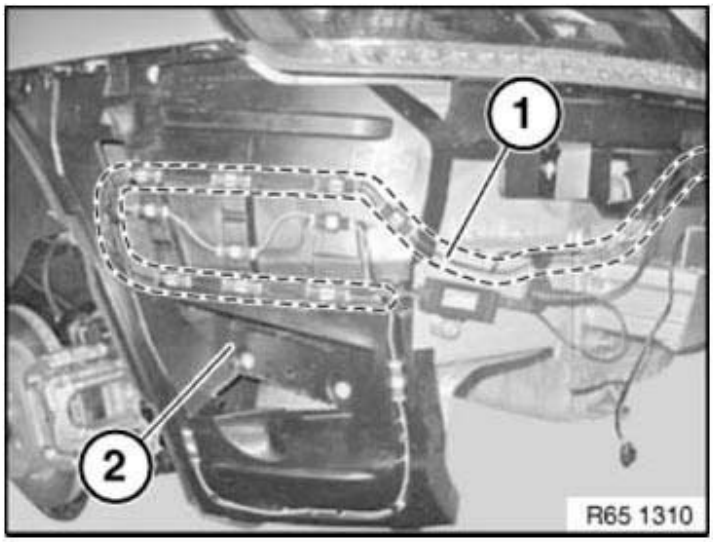


Fig. 102: Identifying FM Aerial And Left Bumper Carrier
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip FM aerial (1) from holders on bumper guide (2).

Feed FM aerial (1) out of penetration (3) and remove.

Installation:

Make sure FM aerial is laid correctly.

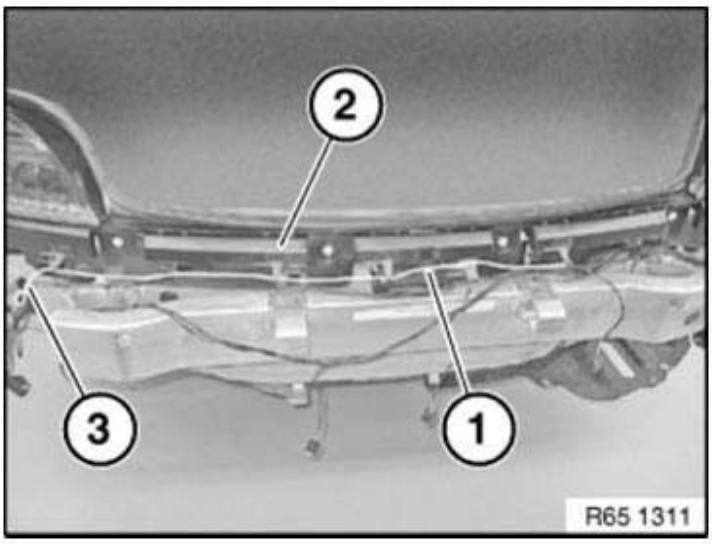


Fig. 103: Identifying FM Aerial And Bumper Guide
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 165 REMOVING AND INSTALLING/REPLACING LEFT TV AERIAL

Necessary preliminary tasks:

- Remove **REAR BUMPER TRIM**

Unclip TV aerial (1).

Unfasten plug connection (2) and disconnect.

Release screw (3).

Remove TV aerial (1).

Installation:

Make sure TV aerial (1) is correctly laid.

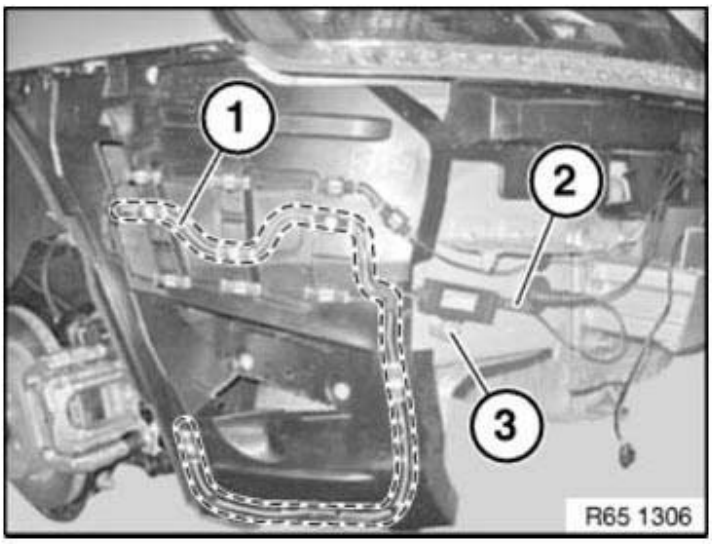


Fig. 104: Identifying TV Aerial With Plug Connection And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

65 20 167 REMOVING AND INSTALLING/REPLACING RIGHT TV AERIAL

Operation is identical to:

REMOVING AND INSTALLING LEFT TV AERIAL .

AIRBAG TRIGGERING CONTROL

65 77 AIRBAG TRIGGERING CONTROL

TIGHTENING TORQUE SPECIFICATION - AIRBAG TRIGGERING CONTROL

		Type	Thread	Tightening specification	Measure
1AZ	Airbag control unit to tunnel middle	E70, E71, E72, E82, E84, E88			8 Nm
		E89			8.5 Nm
2AZ	Sensor, A-pillar	E70			8 Nm
3AZ	Sensor, B-pillar	E70, E71, E72, E82, E84, E88, E89			8 Nm
4AZ	Sensor, front door, to inner door panel	E70, E71, E72, E82, E84, E88, E89			8 Nm
5AZ	Sensor, rear seat, to seat frame	E70			8 Nm
6AZ	Acceleration sensor to front carrier support	E70, E71, E72, E82, E84, E88, E89		Replace screws	8 Nm
7AZ	Holder, rollover controller to rollover protection	E88			4.5 Nm
8AZ	Rollover controller to holder	E88			5 Nm

8410 CELLULAR TELEPHONE

84 10 050 REMOVING AND INSTALLING (REPLACING) USB HUB

IMPORTANT: Read and comply with notes on protection against electrostatic damage (ESD PROTECTION) .

Necessary preliminary tasks

- Remove **COMPLETE CENTRE CONSOLE**

Unlock plug connections (1) and disconnect.

Unlock plug connections (2) and disconnect.

Release screws (3) and remove USB hub (4).

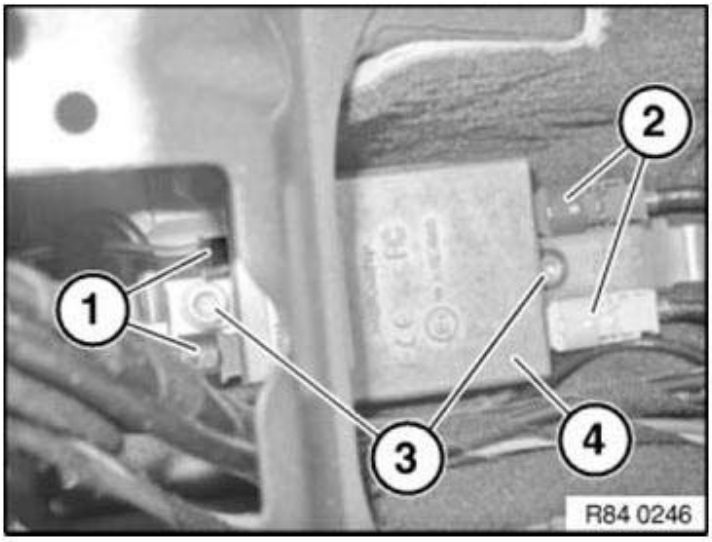


Fig. 1: Identifying USB Hub With Plug Connections And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Carry out vehicle programming/encoding with scan tool.

8411 TRANSCEIVER, HANDSET, SUPPORT, CARD READER

84 11 519 REMOVING AND INSTALLING/REPLACING EJECT BOX

Necessary preliminary tasks

- Remove complete **CENTRE CONSOLE**

Release cable tie (1).

Unlock retaining lugs (2).

Press eject box (3) upwards.

Installation:

Replace cable tie (1).

Retaining lugs must not be damaged.

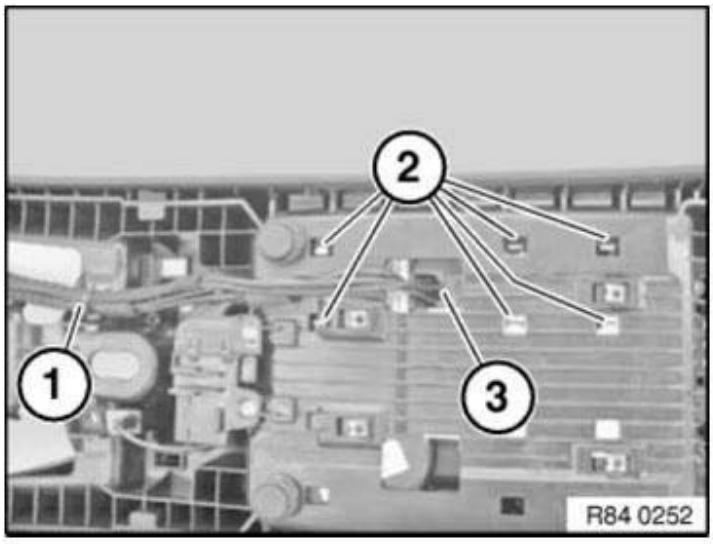


Fig. 2: Identifying Eject Box With Cable Tie And Retaining Lugs
Courtesy of BMW OF NORTH AMERICA, INC.

Remove eject box (1) upwards from centre console (2).

Installation:

Ensure correct cable routing.

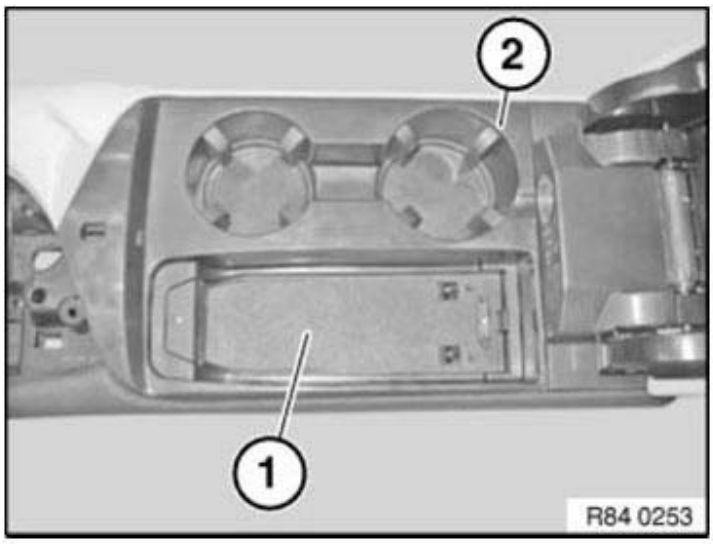


Fig. 3: Identifying Eject Box And Centre Console
Courtesy of BMW OF NORTH AMERICA, INC.

84 50 060 REMOVING AND INSTALLING/REPLACING BLUETOOTH AERIAL

Necessary preliminary tasks

- Remove **TRIM PANEL FOR PEDAL ASSEMBLY** .

Unclip Bluetooth aerial (1) and remove from trim panel for pedal assembly (2).

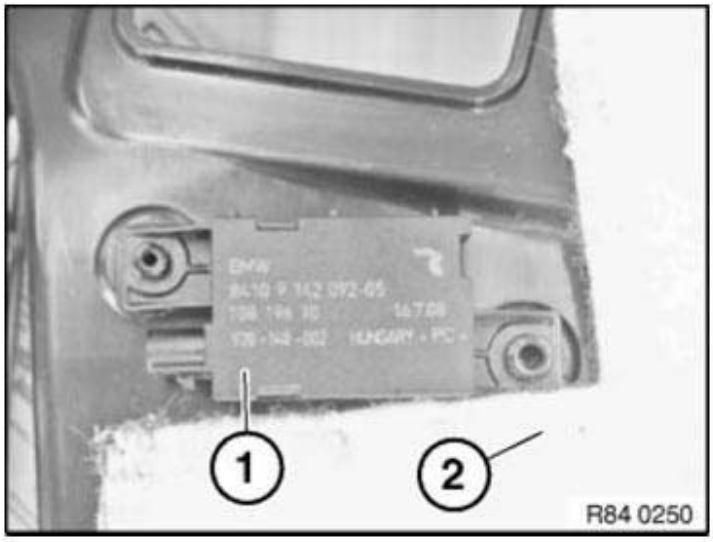


Fig. 4: Identifying Bluetooth Aerial And Trim Panel For Pedal Assembly
Courtesy of BMW OF NORTH AMERICA, INC.

84 11 660 REMOVING AND INSTALLING/REPLACING TELEMATICS CONTROL UNIT (TCU)

(OPTION SA633/SA639)

IMPORTANT: Read and comply with notes on protection against electrical damage (ESD PROTECTION) .

NOTE: Comply with notes and instructions on HANDLING OPTICAL WAVEGUIDES .

Necessary preliminary tasks:

- Remove **PANEL FOR LUGGAGE COMPARTMENT PARTITION**
- Disconnect **BATTERY NEGATIVE LEAD**

Unlock plug connections (1) and disconnect.

Unfasten aerial plug (2) and disconnect.

Release all nuts.

Remove TCU (3).

Installation:

Observe colour coding of aerial plugs (2).

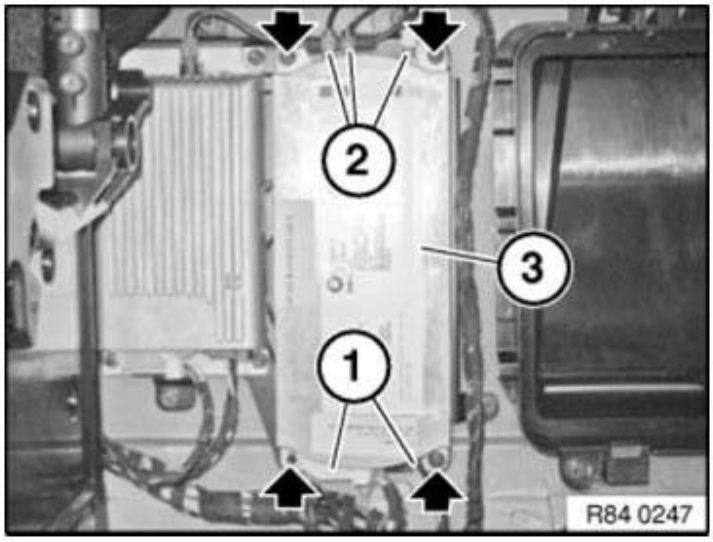


Fig. 5: Identifying TCU, Aerial Plug And Plug Connections
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

- Carry out vehicle programming/coding using scan tool.

8421 HANDHELD COMPUTER

84 21 542 REMOVING AND INSTALLING (REPLACING) HANDSFREE CHARGING ELECTRONICS (HIGH)

Operation is described in:

See removing and installing **hands-free** charging electronics.

Replacement:

- Carry out vehicle programming/coding using scan tool.

84 21 535 REMOVING AND INSTALLING (REPLACING) HANDSFREE CHARGING ELECTRONICS (OPTIONAL EXTRA SA644)

IMPORTANT: Read and comply with notes on protection against electrostatic damage (ESD PROTECTION) .

NOTE: Comply with notes and instructions on HANDLING OPTICAL WAVEGUIDES .

Necessary preliminary tasks

- Remove **PANEL FOR LUGGAGE COMPARTMENT PARTITION**
- Disconnect **BATTERY NEGATIVE LEAD**

Unlock plug connections (1) and disconnect.

Release all nuts.

Remove hands-free charging electronics (2).

Installation:

Make sure plug connections are correctly engaged.

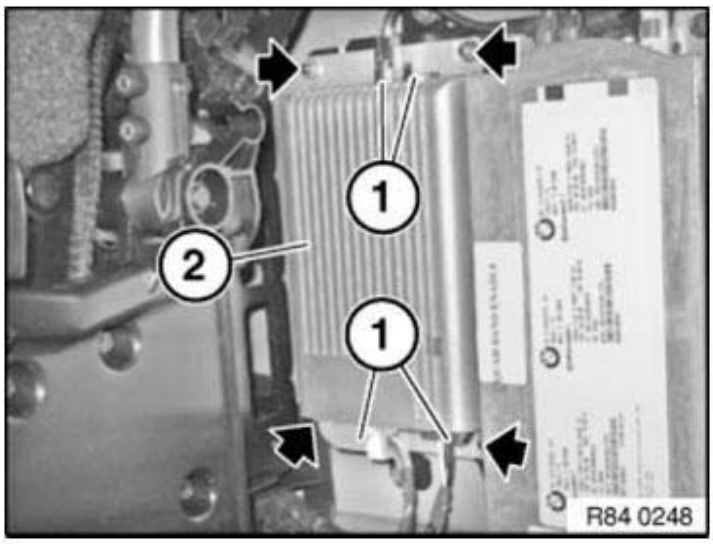


Fig. 6: Identifying Hands-Free Charging Electronics With Plug Connections
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

- Carry out vehicle programming/coding using scan tool.

84 21 545 REMOVING AND INSTALLING/REPLACING HANDS-FREE CHARGING ELECTRONICS (HIGH) (USB/AUDIO INTERFACE)

IMPORTANT: Read and comply with notes on protection against electrostatic damage (ESD PROTECTION) .

NOTE: Comply with notes and instructions on HANDLING OPTICAL WAVEGUIDES .

Necessary preliminary tasks

- Remove **PANEL FOR LUGGAGE COMPARTMENT PARTITION**
- Disconnect **BATTERY NEGATIVE LEAD**

Unlock plug connections (1) and disconnect.

Release all nuts.

Remove hands-free charging electronics (2).

Installation:

Make sure plug connections are correctly engaged.

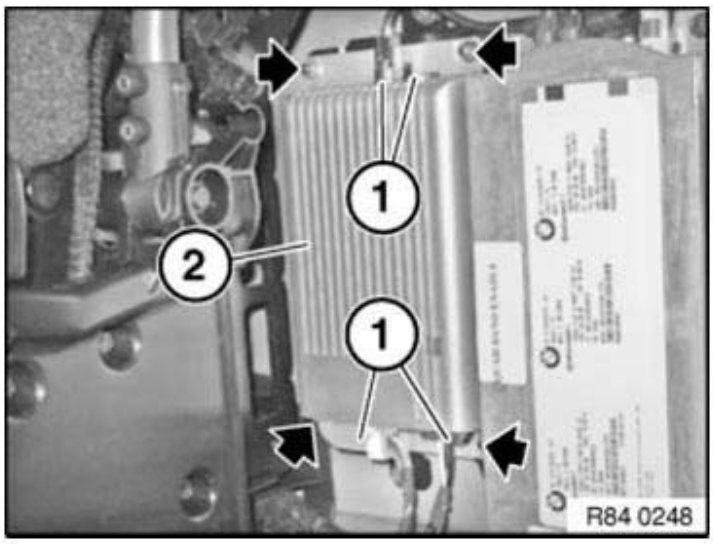


Fig. 7: Identifying Hands-Free Charging Electronics With Plug Connections
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

- Carry out vehicle programming/coding

8431 HANDS-FREE SYSTEM, MICROPHONE, SPEAKER

84 31 541 REMOVING AND INSTALLING/REPLACING HANDS-FREE MICROPHONE ON STEERING COLUMN

Necessary preliminary tasks

- Remove **UPPER STEERING COLUMN TRIM**

Unlock hands-free microphone (1) and holder (2) and remove in direction of arrow.

Feed cable (3) out of upper steering column trim (4).

Remove hands-free microphone (1).

Installation:

Make sure cable (3) is laid without kinks.

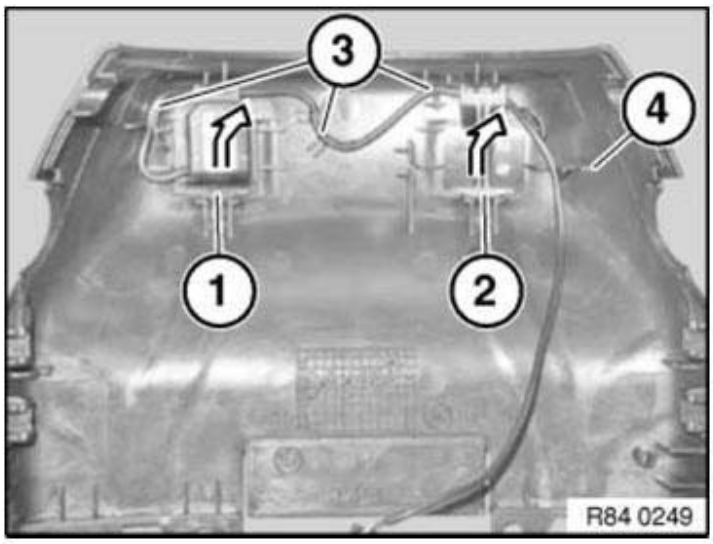


Fig. 8: Removing Hands-Free Microphone And Holder
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Disconnecting the plug connection for the hands-free microphone or emergency SOS call button results in fault memory entries in the telephone control unit (limitation in the emergency SOS call system).

After fitting, read out fault memory and if necessary delete entries.

84 31 020 REMOVING AND INSTALLING/REPLACING HANDS-FREE SYSTEM SPEAKER

Necessary preliminary tasks

- Remove **TRIM FOR PEDAL ASSEMBLY**

Disconnect plug connection (1).

If necessary, release cable tie from catches (2).

Unlock catches (2) and remove speaker (3) from mounting.

Installation:

Catches (2) must not be damaged.

Guide lugs of mounting must be seated in grooves of speaker (3).

Speaker (3) must snap audibly into place in mounting.

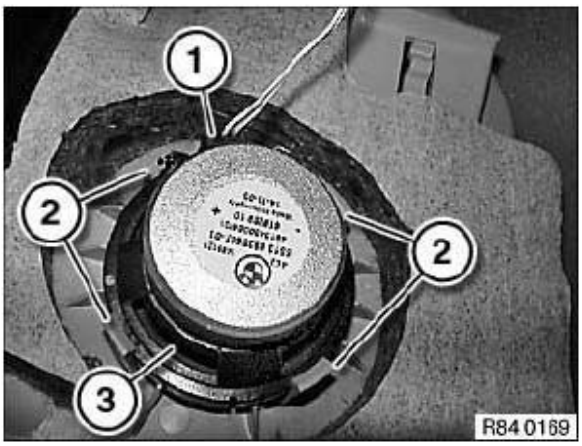


Fig. 9: Identifying Catches And Speaker With Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

8450 ANTENNA

84 50 060 REMOVING AND INSTALLING/REPLACING BLUETOOTH AERIAL

Necessary preliminary tasks

- Remove **TRIM PANEL FOR PEDAL ASSEMBLY** .

Unclip Bluetooth aerial (1) and remove from trim panel for pedal assembly (2).

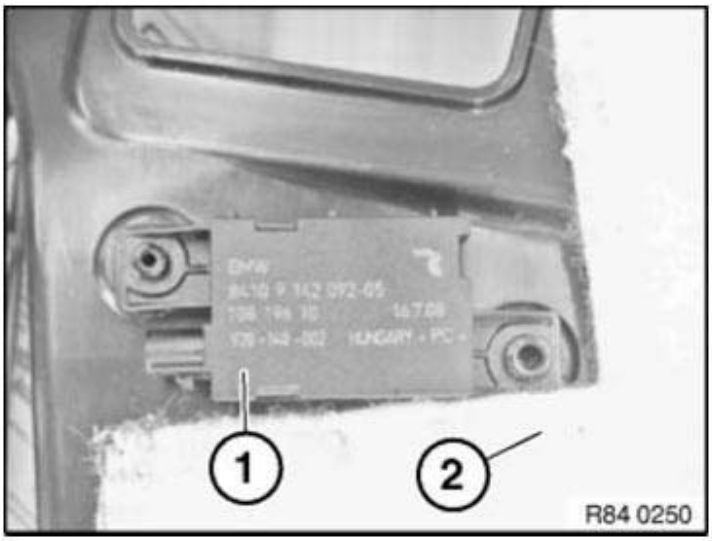


Fig. 10: Identifying Bluetooth Aerial And Trim Panel For Pedal Assembly
Courtesy of BMW OF NORTH AMERICA, INC.

6612 RADIO-CONTROLLED LOCKING SYSTEM

66 12 100 REMOVING AND INSTALLING/REPLACING SLIDE-IN UNIT FOR RADIO CONTROL KEY

Necessary preliminary tasks

- Remove **LOWER LEFT TRIM FROM INSTRUMENT PANEL**

Replacement

Release screw (1).

Remove slide-in unit for radio control key (2) in direction of arrow from panel (3).

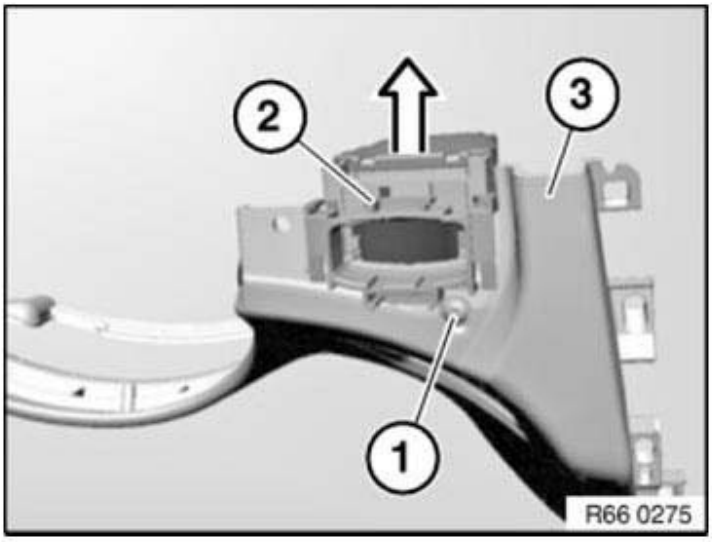


Fig. 1: Remove Radio Control Key Slide-In Unit
Courtesy of BMW OF NORTH AMERICA, INC.

6620 PARK DISTANCE CONTROL

66 20 520 REMOVING AND INSTALLING/REPLACING A FRONT ULTRASONIC TRANSDUCER (MIDDLE)

Necessary preliminary tasks

- Remove **FRONT BUMPER TRIM**

NOTE: For purposes of clarity, illustration shows bumper removed.

Disconnect plug connection (1) and unclip ultrasonic transducer (2) from retaining lugs (3).

Installation:

Retaining lugs must not be damaged!

Make sure ultrasonic transducer (2) is securely seated.

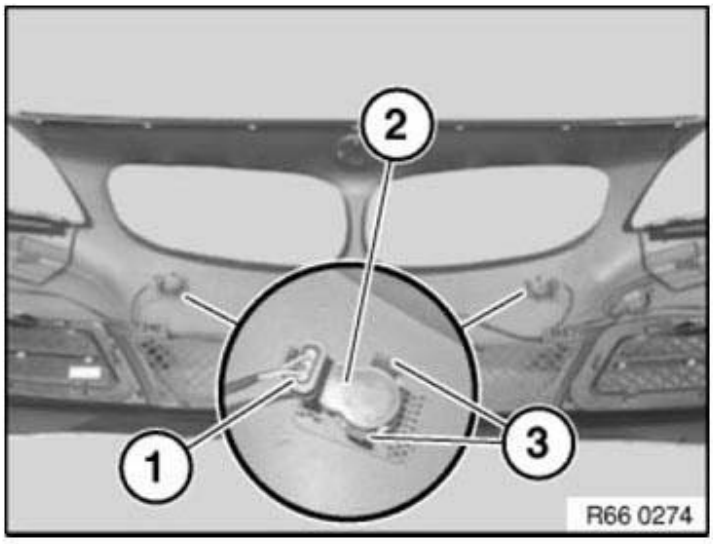


Fig. 2: Identifying Ultrasonic Transducer With Plug Connection And Retaining Lugs
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Make sure rubber ring (1) is correctly seated on ultrasonic transducer (2).

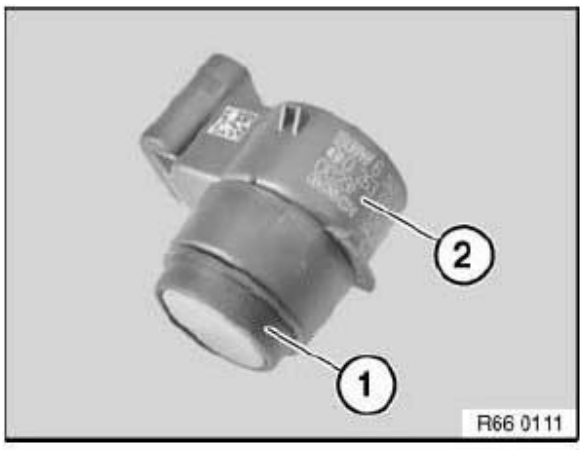


Fig. 3: Identifying Rubber Ring And Ultrasonic Transducer
Courtesy of BMW OF NORTH AMERICA, INC.

66 20 518 REMOVING AND INSTALLING/REPLACING A FRONT ULTRASONIC TRANSDUCER (SIDE)

Necessary preliminary tasks:

- Remove **FRONT WHEEL ARCH COVER** in working area

Unfasten plug connection (1) and disconnect.

Unclip ultrasonic transducer (2) from retaining lugs.

Installation:

Retaining lugs must not be damaged!

Make sure ultrasonic transducer (2) is securely seated.

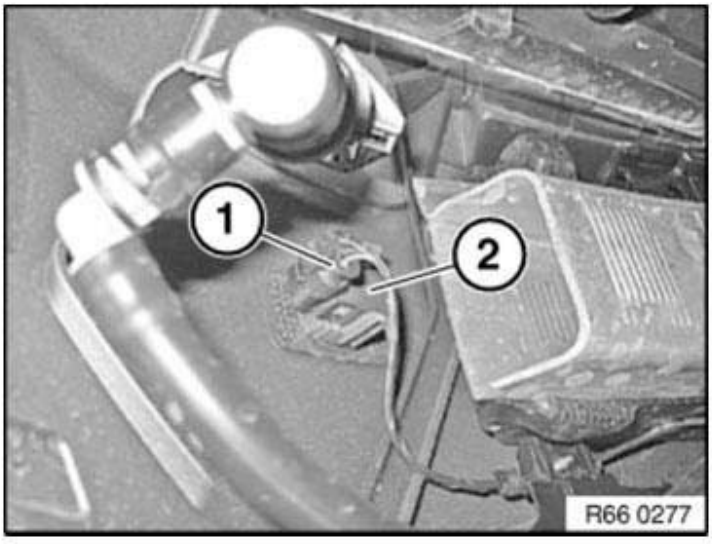


Fig. 4: Identifying Ultrasonic Transducer With Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Make sure rubber ring (1) is correctly seated on ultrasonic transducer (2).

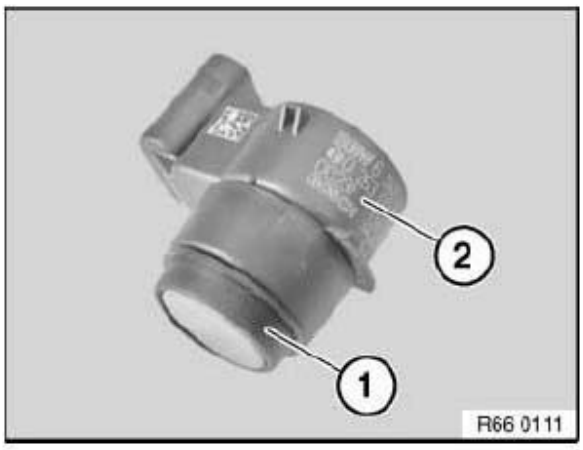


Fig. 5: Identifying Rubber Ring And Ultrasonic Transducer
Courtesy of BMW OF NORTH AMERICA, INC.

66 20 534 REMOVING AND INSTALLING/REPLACING A REAR LEFT ULTRASONIC TRANSDUCER (PARK DISTANCE CONTROL)

Unfasten plug connection (1) and disconnect.

Unclip ultrasonic transducer (2) from retaining lugs.

Installation:

Retaining lugs must not be damaged!

Make sure ultrasonic transducer (2) is securely seated.

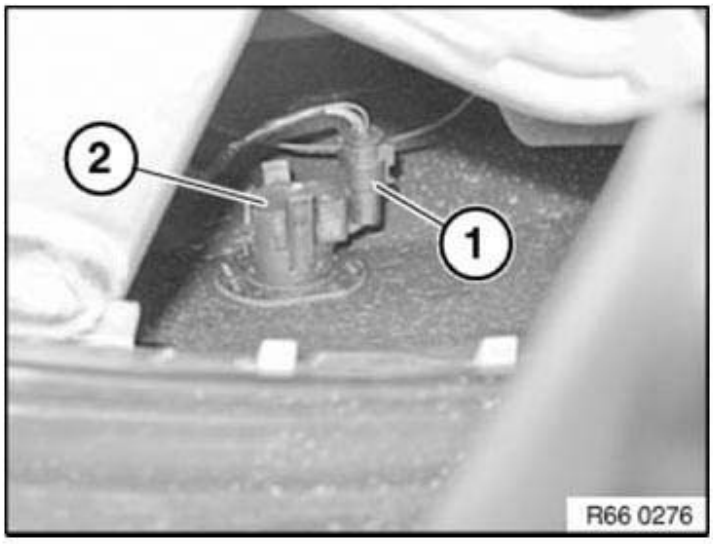


Fig. 6: Identifying Ultrasonic Transducer With Plug Connection

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Make sure rubber ring (1) is correctly seated on ultrasonic transducer (2).

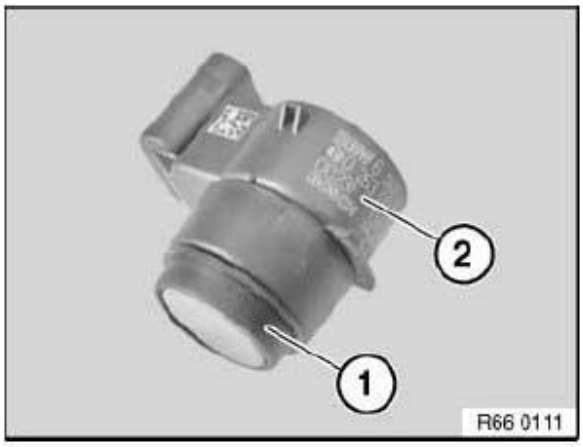


Fig. 7: Identifying Rubber Ring And Ultrasonic Transducer
Courtesy of BMW OF NORTH AMERICA, INC.

66 20 536 REMOVING AND INSTALLING/REPLACING A REAR MIDDLE LEFT ULTRASONIC TRANSDUCER (PARK DISTANCE CONTROL)

Necessary preliminary tasks:

- Remove **REAR BUMPER TRIM**

Unlock retaining tabs (1) in direction of arrow and pull ultrasonic transducer (2) out of holder (3).

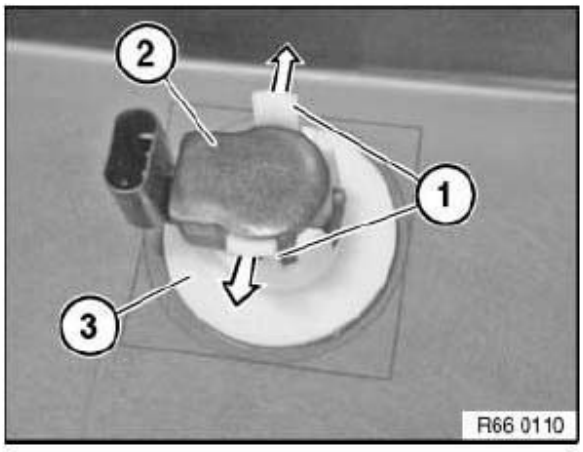


Fig. 8: Opening Ultrasonic Transducer Retaining Tabs
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Retaining hooks (1) of ultrasonic transducer (2) must engage exactly in mountings (3).

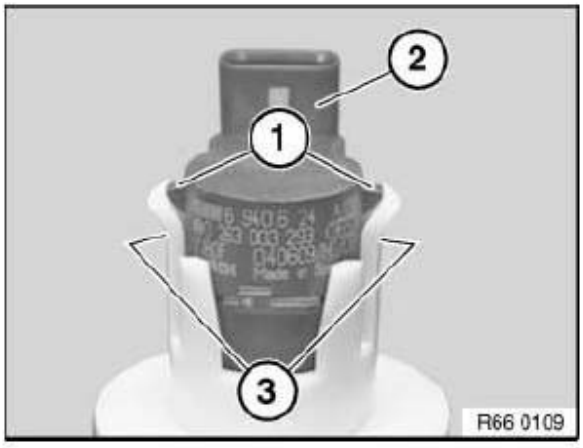


Fig. 9: Identifying Ultrasonic Transducer With Hooks And Mountings
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Make sure rubber ring (1) is correctly seated on ultrasonic transducer (2).

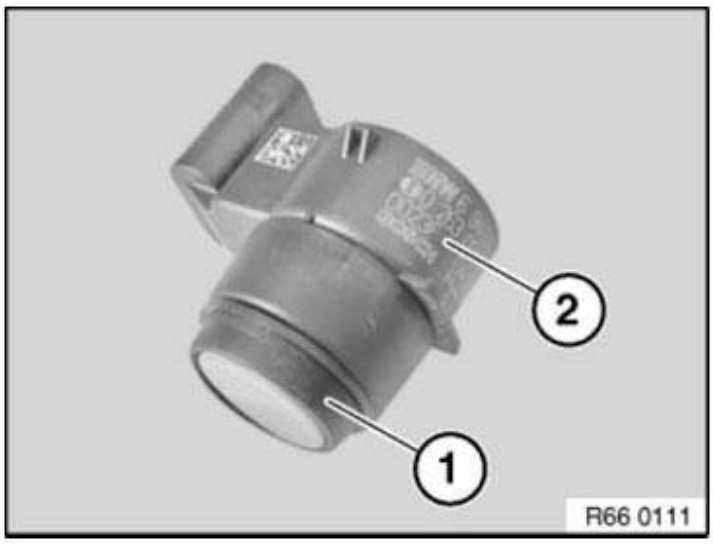


Fig. 10: Identifying Ultrasonic Transducer With Rubber Ring
Courtesy of BMW OF NORTH AMERICA, INC.

66 20 537 REMOVING AND INSTALLING/REPLACING A REAR MIDDLE RIGHT ULTRASONIC TRANSDUCER (PARK DISTANCE CONTROL)

Necessary preliminary tasks:

- Remove **REAR BUMPER TRIM**

Unlock retaining tabs (1) in direction of arrow and pull ultrasonic transducer (2) out of holder (3).

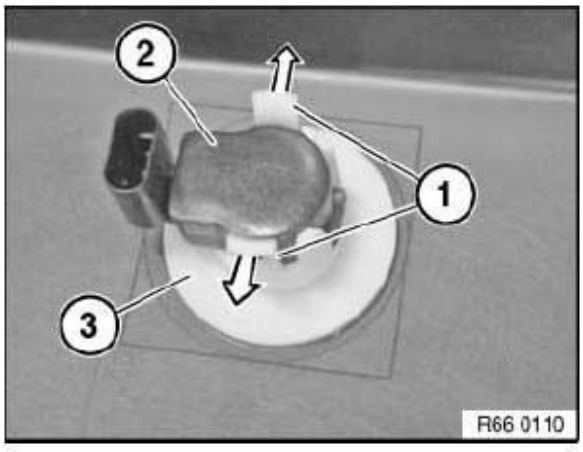


Fig. 11: Opening Ultrasonic Transducer Retaining Tabs
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Retaining hooks (1) of ultrasonic transducer (2) must engage exactly in mountings (3).

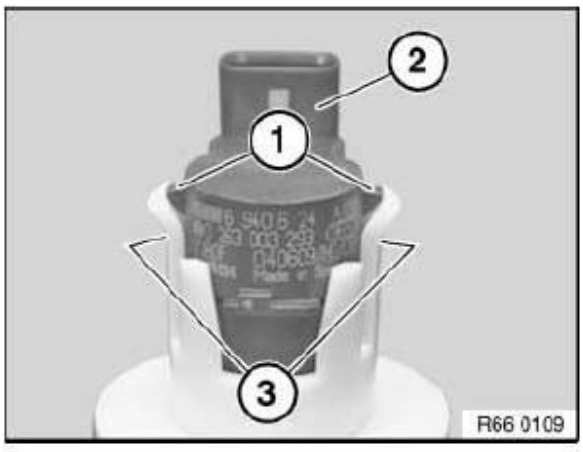


Fig. 12: Identifying Ultrasonic Transducer With Hooks And Mountings
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Make sure rubber ring (1) is correctly seated on ultrasonic transducer (2).

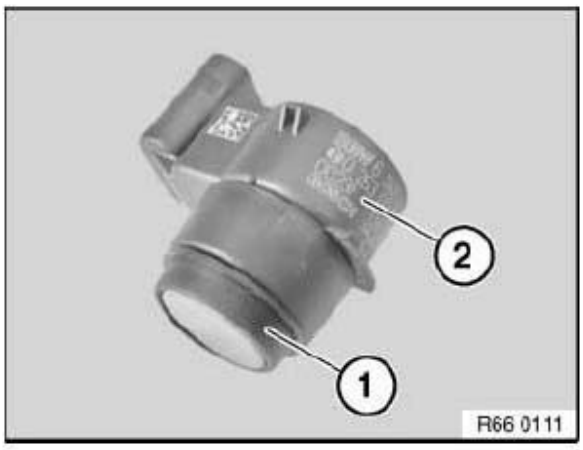


Fig. 13: Identifying Rubber Ring And Ultrasonic Transducer
Courtesy of BMW OF NORTH AMERICA, INC.

66 20 535 REMOVING AND INSTALLING/REPLACING A REAR RIGHT ULTRASONIC TRANSDUCER (PARK DISTANCE CONTROL)

The following operation is described in:

Removing **REAR LEFT ULTRASONIC TRANSDUCER**

66 20 508 REMOVING AND INSTALLING/REPLACING CONTROL UNIT (PARK DISTANCE CONTROL)

Necessary preliminary tasks:

- Remove **RIGHT LUGGAGE COMPARTMENT TRIM PANEL**

Unlock plug connections (1) and disconnect.

Lift out control unit (2).

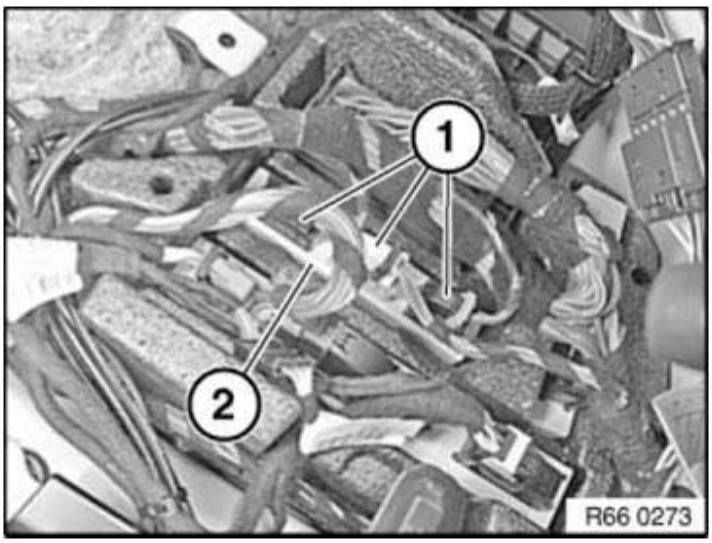


Fig. 14: Identifying Park Distance Control Unit With Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Carry out vehicle programming/encoding using scan tool.

66 DISTANCE SYSTEMS, CRUISE CONTROL

66-3140 OPPS DEVICE

OPPS device MW

NOTE: (OPS package) (complete set)

Consisting of:

1 = 0495304 OPS device

NOTE: To order the OPS devices, please contact the appropriate SIEMENS hotline.

2 = 0495305 Cable

NOTE: (OBD cable, incl. CAN line)

3 = 0495306 Adapter cable

NOTE: (LAN adapter cable) To order the LAN adapter cable, please contact the appropriate SIEMENS hotline.

NOTE: Specify the LAN adapter cable model (crossed or uncrossed).

6211 INSTRUMENT CLUSTER

62 11 280 REMOVING AND INSTALLING/REPLACING INSTRUMENT CLUSTER

NOTE: Extend steering column completely and set in downward position.

Release screw (1).

Fold back instrument cluster (2) in direction of arrow and pull out towards rear.

Unlock associated plug connection and disconnect.

Remove instrument cluster (2).

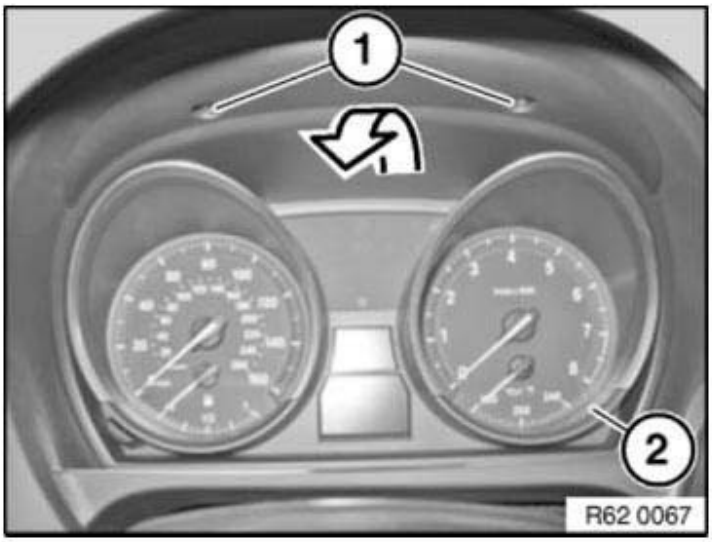


Fig. 1: Fold Back Instrument Cluster In Direction Of Arrow
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Retaining lugs (1) of instrument cluster (2) must be exactly seated in mountings of instrument panel.

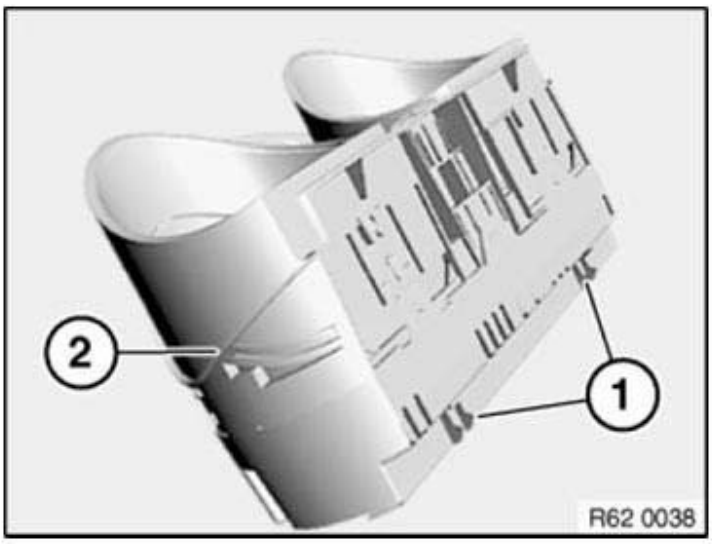


Fig. 2: Identifying Instrument Cluster Retaining Lugs
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Carry out vehicle programming/coding using scan tool.

62 INSTRUMENTS

62-1190 ADAPTER

0493028 621190 Adapter MW

NOTE: (Adapter 15/20-pin) only for oil service - Replaced by 62 1 140, July 94

Storage Location

I 106

62-1300 ADAPTER

0493042 621300 Adapter MW

NOTE: For instrument panel

Storage Location

Y2

SI number

02 03 89 (038)

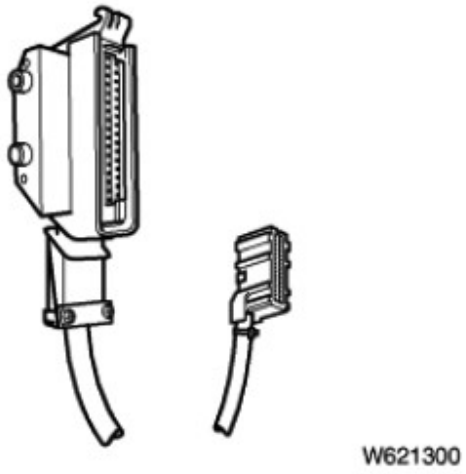


Fig. 1: Identifing Adapter (621300)
Courtesy of BMW OF NORTH AMERICA, INC.

REAR LIGHT UNIT

63 21 REAR LIGHT UNIT

TIGHTENING TORQUE SPECIFICATION - REAR LIGHT UNIT

	Type	Thread	Tightening specification	Measure
1AZ Retaining nuts, rear light	E89			2.5 Nm

NEW RADIO REMOTE CONTROL (RKE)

All Models Beginning 09/99

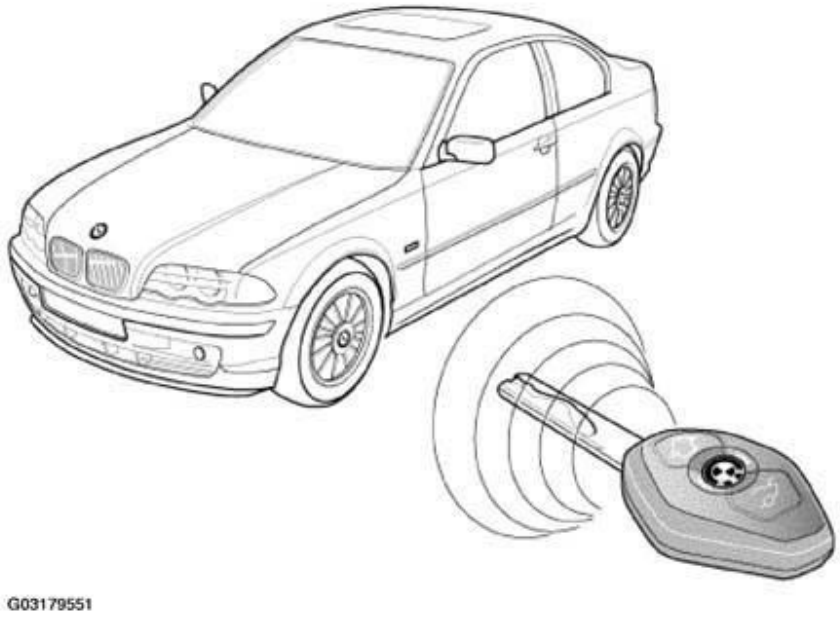


Fig. 1: Identifying New Radio Remote Control
Courtesy of BMW OF NORTH AMERICA, INC.

1. RADIO TECHNOLOGY

Radio technology is a comprehensive term covering all areas of cordless telecommunication such as telephone, radio, television. Transmission is by means of electromagnetic waves.

Due to the fact that the radio waves are not limited to one single direction and have a wider range than the infrared waves, this technology is also being increasingly employed in remote controls.

The same remote-control technology is used in motor vehicle construction as, for example, in construction site cranes, in model construction, alarm systems, garage-door opening systems etc.

These remote controls are operated on the same approved frequency (315 MHz or 433.92 MHz).

2. RADIO REMOTE CONTROL, GENERAL INFORMATION

The radio remote control for the central locking system (FZV) is a further development of the radio-compact

remote control, or the radio remote control which first appeared in the E38.

The radio transmitter is still located in the grip of the car key, the receiver module is installed in the vehicle. All radio telegrams are encoded by means of a constantly changing code. This ensures that the vehicle cannot be opened by someone who has eavesdropped telegrams.

Depending on vehicle type, equipment and country-specific version, in addition to the functions "opening/closing central locking system" and "central arrest" the following functions are also available: "activating/deactivating alarm system", "deactivating tilt sensor/passenger-compartment sensor", "convenient opening/closing window and sliding roof", "switching on interior lighting" and "opening/closing luggage compartment lid".

The remote control keys can be initialized at the vehicle without visiting a BMW Service point when, for example, the owner requires additional keys or, for security reasons, following the loss of a radio remote control key. The initialization procedure is described in the respective Owner's Handbooks.

The radio remote control is available as standard equipment in the models E38, E39, E46 and as an option in the E36 models (option 302).

Up to 4 radio transmitters can be operated per vehicle.

In many countries, radio remote controls are subject to radio-technical registration specifications. The required designation is on the key grip.

3. SYSTEM OVERVIEW

The radio remote control consists of:

1. Radio transmitter (integrated in the key grip)
2. General module of the central body electrics (ZKE)
3. Receiver module (integrated in aerial amplifier or aerial diversity)
4. Aerial in rear window or rear side window on touring

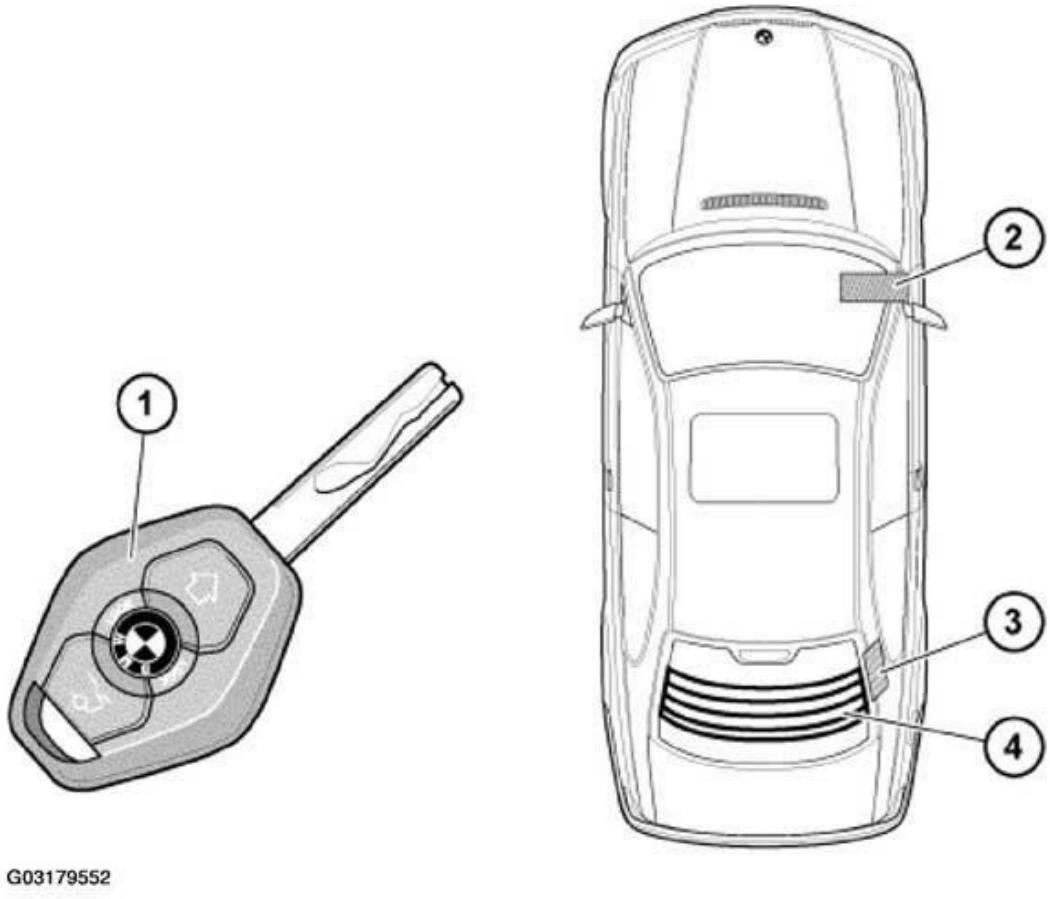


Fig. 2: Identifying RKE Components & Locations
Courtesy of BMW OF NORTH AMERICA, INC.

The reception of the radio signals from the transmitter varies according to location in relation to vehicle. The rear area (aerial) of the vehicle is the reference point.

External influences can cause the range or operation of the remote control to deviate from the mean distances specified below either **positively** (through reflection) or **negatively** due to sources of interference (radio-technical systems).

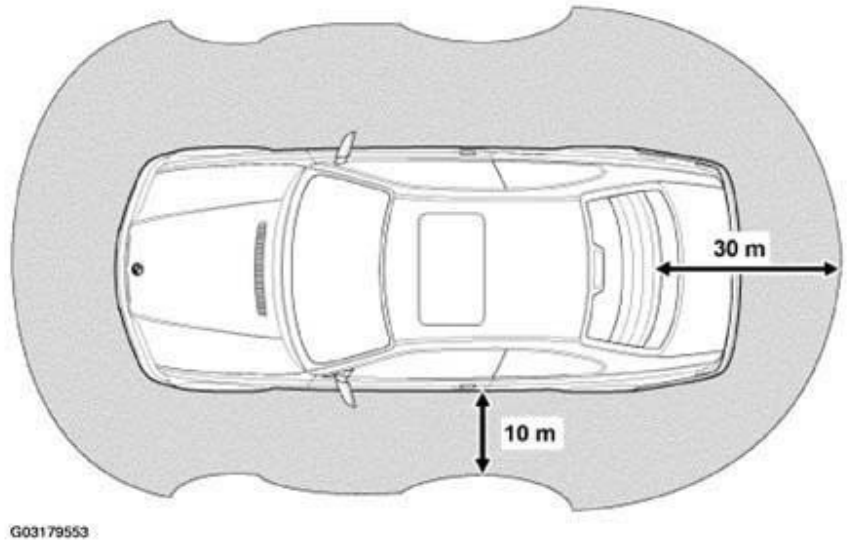


Fig. 3: Identifying RKE Range Of Operation
Courtesy of BMW OF NORTH AMERICA, INC.

External radio-technical systems/equipment that are operated on the same frequency (433.92 MHz; 315 MHz; 70 cm band) with a higher output can interfere with the remote control function. Possible sources of interference are:

- Radio Headphones (Known As Cordless Headphones)
- Radio Sets (Amateur Radio; Radio Telephone; Toy Models)
- Radio Modems
- Garage-Door Remote Controls
- Telemetry Transmitters, E.G. Weather Station With Temperature Sensor
- House Burglar Alarm Systems With Sensors
- Remote-Controlled Sockets
- Radio Bells (For Paging)
- TV Radio Systems (Reverse Channel For Television Remote Control)
- Industrial Plants
- Non-Suppressed Electric Motors

4. REMOTE CONTROL FUNCTIONS

- Opening/closing central locking system (ZV)
- Switching on interior lighting
- Activating/deactivating anti-theft alarm system (DWA)
- Activating/deactivating tilt sensor and interior protection of the anti-theft alarm system
- Opening/closing side windows

- Opening/closing sliding roof
- Opening/closing luggage compartment lid
- Activating/deactivating Panic Mode - only US models

If required, this function can be used to trip an alarm via the DWA.

5. OPERATING RELIABILITY

As of ignition lock position 1 (terminal "R", no more remote control functions are carried out.

If the ignition lock switches to position 1 following "Central arrest" of the central locking system (ZV), the ZV changes "Central arrest" to "Central locking".

If there is a key in the ignition lock which is recognised as valid by the electronic immobiliser III, the central locking system cannot be actuated in "Central arrest".

Due to the high range, "Convenient closing" of the rear vent windows is not possible on the E46 coupe as these windows do not have an anti-trap function.

All of the comfort functions and closing of the automatic luggage compartment lid operate only as long as the appropriate button is actuated on the remote control key.

6. NEW RADIO TRANSMITTER (KEY)

Beginning in September 1999, a new generation of radio transmitters will be introduced into series production.

The most important basic functions are the same as those of the present transmitters.

The operating functions will still be actuated via three buttons.

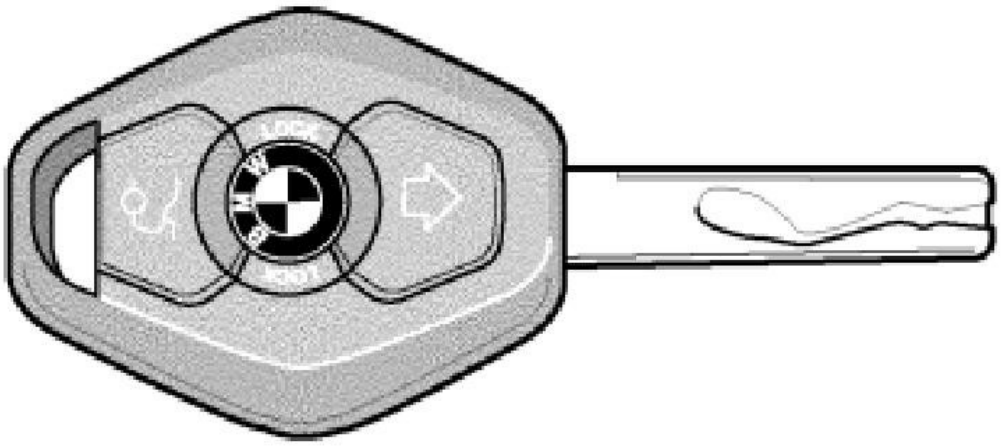


Fig. 4: Identifying New Radio Transmitter (Front Of Key)
Courtesy of BMW OF NORTH AMERICA, INC.

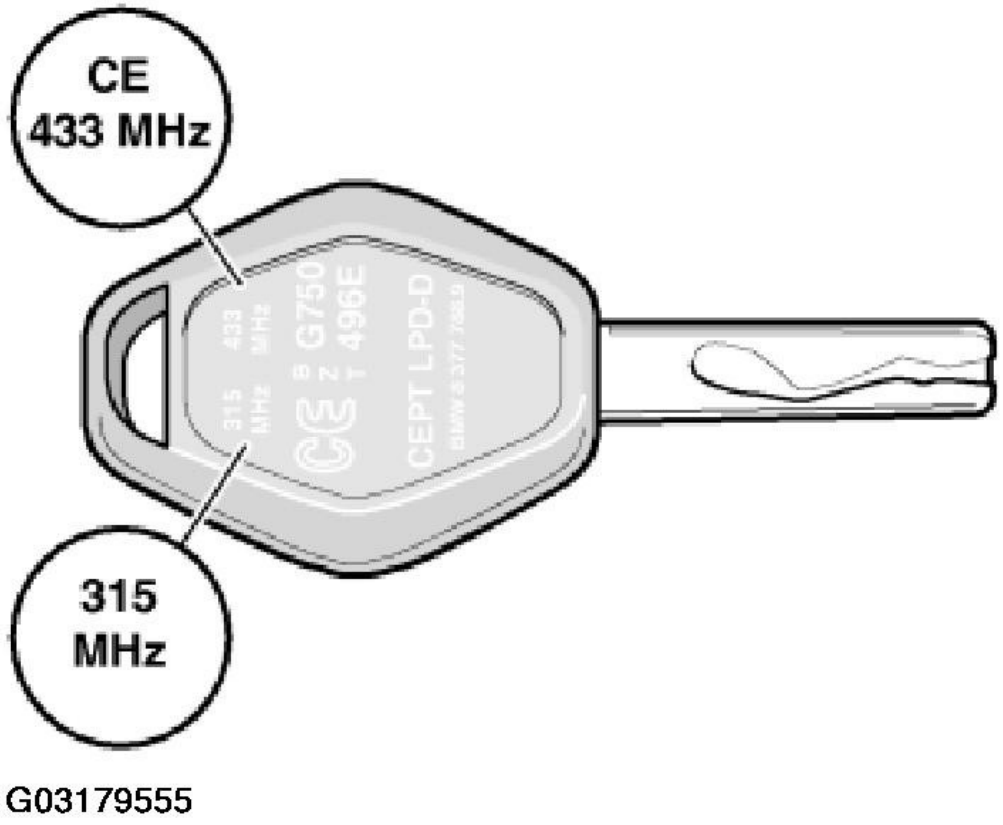


Fig. 5: Identifying New Radio Transmitter (Back Of Key)
Courtesy of BMW OF NORTH AMERICA, INC.

Overview Of Modifications:

1. New appearance with coloured BMW logo.
2. New keyboard arrangement and larger keys.
3. A storage battery instead of a regular battery, charged via the ring aerial at the ignition lock.
4. The key casing is waterproof, dustproof, sealed and cannot be opened.
5. The function display (red LED) has been omitted.

6.1 Operating Principles Of Input Keys

(Basic Functions)

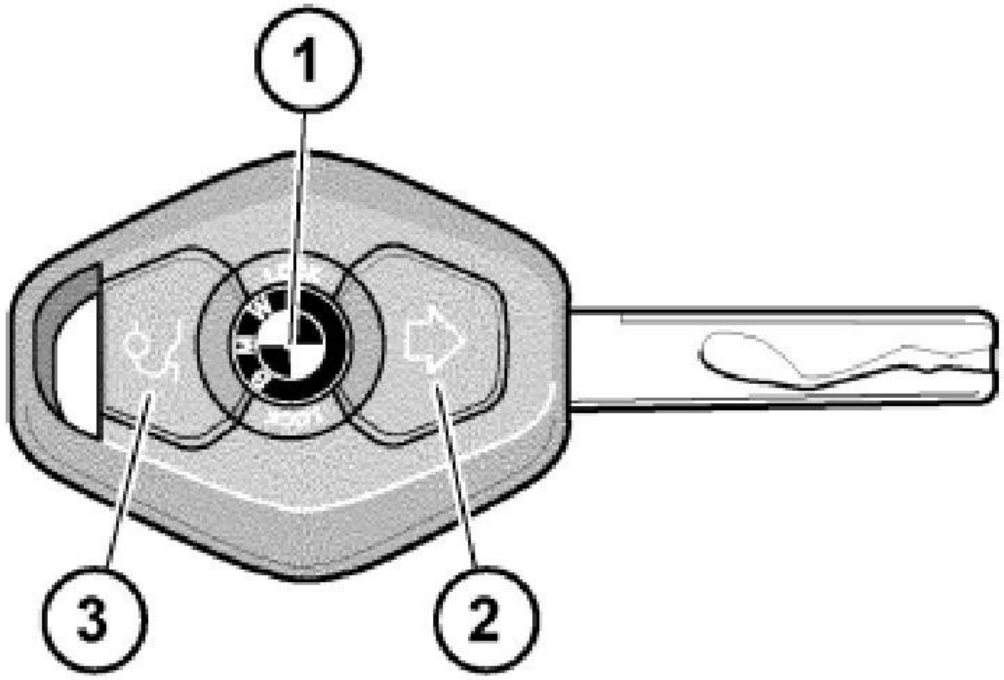


Fig. 6: Identifying RKE Input Buttons
Courtesy of BMW OF NORTH AMERICA, INC.

Press **button 1** briefly:

- Central locking system closes, moves into central arrest, the DWA may be activated.
- The interior lighting is switched on when the vehicle is locked.
- Panic Mode (on US models) is deactivated again.

Press **button 1** a second time after a short interval:

- The interior protection and tilt sensor of the DWA are deactivated

Press **button 1** and hold in:

- Central locking system, side windows and sliding roof close ("Convenient closing").
- This function is encoded differently from country to country and is not available in all national versions.

Press **button 2** briefly:

- Central locking system opens, interior lighting switches on, the DWA may be deactivated.

Press **button 2** and hold in:

- Central locking system, side windows and sliding roof open ("Convenient opening").

Press **button 3** briefly:

- Luggage compartment lid opens.

Press **button 3** and hold in:

- Panic Mode (on US models) is active again.
- Automatic luggage compartment lid closing.

Individual functions may deviate from those described above; this depends on the respective country-specific encoding and the settings made via Car & Key Memory.

6.2 Signal Processing

Signal processing is by means of a microprocessor on the printed circuit board in the key casing. This microprocessor:

- Evaluates The Key Actuations,
- Generates The New Key Code,
- Relays The Key Code,
- Controls Transmitter Output Stage,
- Monitors Power Supply (Storage Battery) For Radio Transmitter.

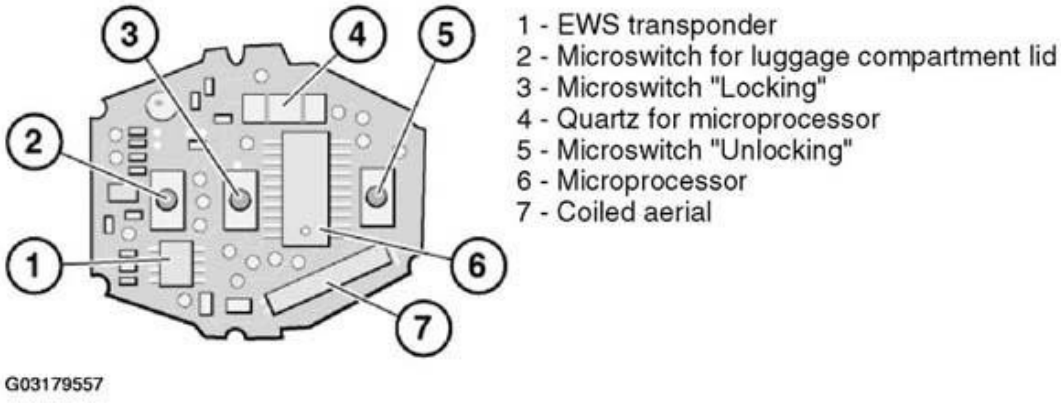


Fig. 7: Identifying RKE Components On Printed Circuit Board Of Key
Courtesy of BMW OF NORTH AMERICA, INC.

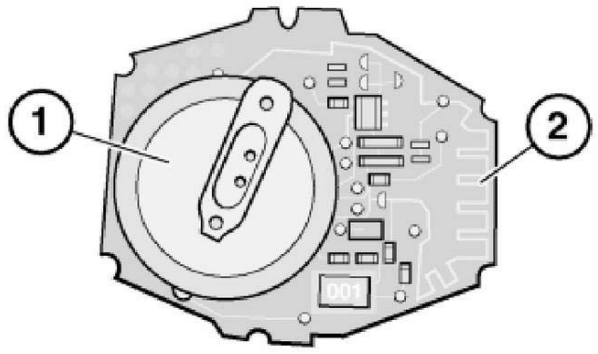
The signals transmitted via the transmitter output stage are radiated via an aerial integrated on the printed circuit board. The carrier frequency is 433.92 MHz (ECE) or 315 MHz (US), depending on country-specific registration.

When the system is being initialized, a key code is created and stored in the microprocessor of the radio transmitter. Following every key actuation at the radio transmitter, a new key code is transmitted (changing code). The codes are recalculated according to a specified process so that the receiver module can differentiate reliably between its own and external radio transmitters.

NOTE: Each transmitter can "lose" its key code if, e.g., someone inadvertently actuates buttons in the initialization sequence outside the car. In this case, all radio transmitters belonging to the car must be re-initialized.

6.3 Power Supply

The new radio transmitter does not use regular batteries but rather a rechargeable vanadium-lithium storage battery. New radio transmitters will be supplied with charged storage batteries.



1 - Storage battery
2 - High-frequency aerial (433.92 MHz or 315 MHz)

Fig. 8: Identifying Storage Battery And High-Frequency Aerial
Courtesy of BMW OF NORTH AMERICA, INC.

As of ignition lock position 1 (terminal "R"), the storage battery is charged inductively. The charging process is realized via the ring aerial of the ignition lock and via the coiled aerial integrated in the radio transmitter. An electronic charging unit on the printed circuit board controls the charging process.

The battery is designed for a very long service life. A prerequisite is that the radio transmitter is used.

If radio transmitters are not used, the storage battery is discharged after approx. 18 months.

With severely discharged storage batteries, the charging period is approx. 30 hours up to maximum capacity. After charging for approx. 30 minutes, the remote control can be actuated approx. 15 times.

6.4 Voltage Monitoring

If cell-end voltage has been reached, the central locking system, for example, can no longer be locked using the remote control. The "Convenient closing" can no longer be used, nor can the radio transmitter be initialized.

Every time a button is actuated, the storage battery voltage in the radio transmitter is monitored. Once the storage battery signal is contained in three consecutive telegrams, it is stored together with the corresponding radio transmitter key number for diagnostic purposes in the general module of the central body electrics. The entry is deleted when five consecutive radio transmitter telegrams no longer contain the storage battery signal.

In the case of E38 and E39 models, this status is already indicated by a signal in the check control.

7. SYSTEM INITIALIZATION

In order that the radio transmitters can communicate with the vehicle, each individual radio transmitter must be initialized with the receiver module.

Up to four radio transmitters can be initialized and used per vehicle.

Since each radio transmitter has its own key code, all existing radio transmitters must be reinitialized when, for example, a new radio transmitter is to be added.

Initialization Procedure:

1. Open central locking system (ZV) using the car key.
2. Get into the car and close all doors.
3. Using the car key, switch the ignition lock briefly to ignition lock position 1 and then switch off again. The switching time must remain under 5 seconds, otherwise the system is not ready for initialization.
4. At the radio transmitter: Press button 2 and hold in.
5. Press button 1 three times (in a space of 10 seconds). Button 2 must remain held in.
6. Release button 2.
7. The ZV signals by means of "Locking" and immediate "Unlocking" that a radio transmitter has been successfully initialized.

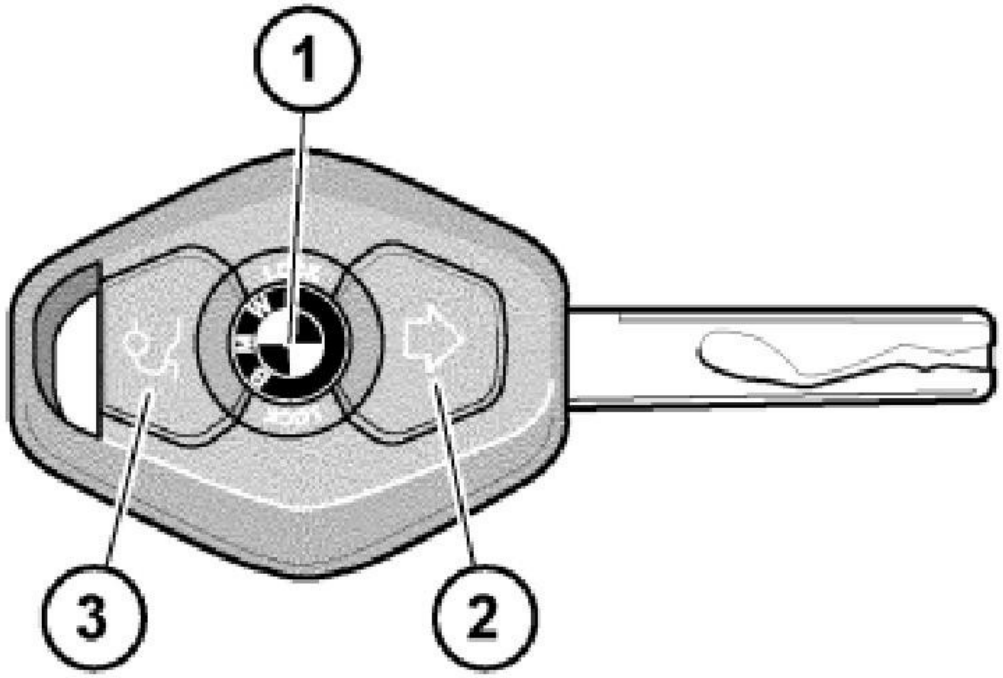


Fig. 9: Identifying RKE Input Buttons
Courtesy of BMW OF NORTH AMERICA, INC.

If the ZV does not send a return signal, initialization must be restarted.

Once the first initialization process has been completed, another three radio transmitters can be initialized.

For every other radio transmitter, the procedure described under step 4) above must be repeated within 30 seconds, otherwise initialization stand-by is switched off.

During initialization, all other existing radio transmitters must be initialized. The ignition lock must never be reactivated during the initialization process. If this were to happen, then all radio transmitters would have to be re-initialized.

8. DIAGNOSIS

The radio remote control can be diagnosed via DIS and MoDiC under "Central body electrics - ZKE".

9. SYSTEM INTERCONNECTIONS

Various functions in the central body electrics, the anti-theft alarm system (DWA) and the electronic immobiliser (EWS) can be activated or deactivated by means of the radio transmitters.

During vehicle diagnosis, it is important to know how the radio transmitter influences the total system.

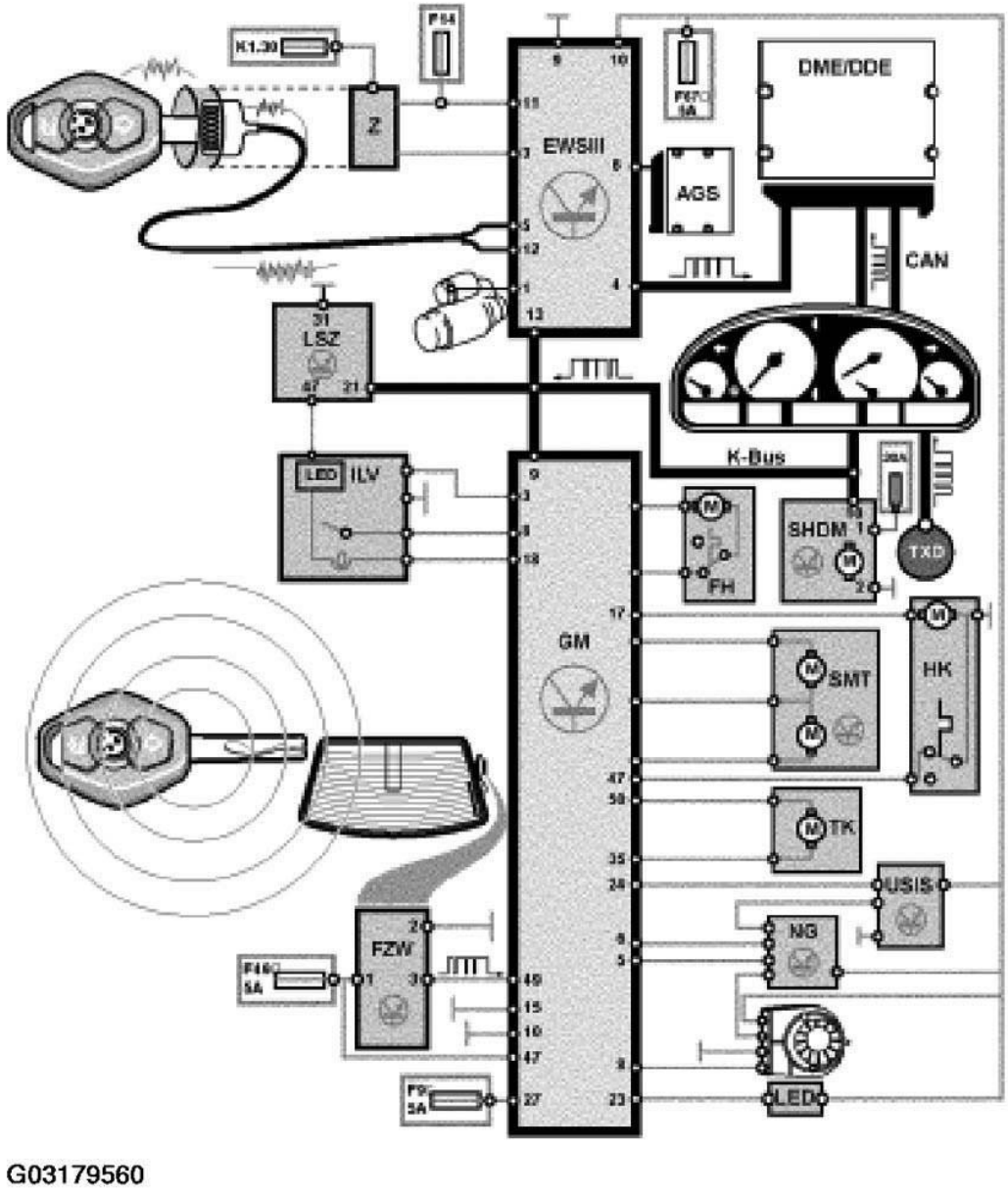


Fig. 10: Identifying System Interconnections And Function (E46 Shown)
Courtesy of BMW OF NORTH AMERICA, INC.

SYSTEM INTERCONNECTION LEGEND

Component	Designation
Z	Ignition lock, electromechanical part
EWSIII	Electronic immobiliser, control unit
EWSIII/1	Output - starter signal (X1659)
EWSIII/3	Input - ignition/starter switch signal (X1659)
EWSIII/4	Output - engine control unit signal, uni-directional (X1659)
EWSIII/5	Output - ring coil signal (X1659)
EWSIII/6	Input - transmission control unit switch signal (X1659)
EWSIII/9	Ground/earth (X1659)
EWSIII/10	Input - terminal 30 of fuse F67 (X1659)
EWSIII/11	Input - terminal R from ignition lock via fuse F14 (X1659)
EWSIII/12	Output - ring coil signal (X1659)
EWSIII/13	Input/output - K bus signal (X1659)
F9	Terminal 30/5A fuse
F46	Terminal 30/30A fuse
F49	Terminal 30/5A fuse
F67	Terminal 30/5A fuse
LSZ	Central light switch
LSZ/21	Input/output K bus (X12)
LSZ/31	Ground/earth (X12)
LSZ/47	Output - search light signal (58g) (X12)
ILV	Interior lighting, front
ACS	Automatic transmission control unit
DME/DDE	Digital Engine Electronics/Digital Diesel Electronics
DME/33	Input - EWS release signal (X6004)
CAN	Controller Area Network (CAN bus)
K-Bus	Bodyshell bus
FH	Window lift (stands for all window lifts in vehicle)
SHDM	Sunroof module
SMT	Lock module (stands for all doors)
HK	Luggage compartment lid motor
TK	Fuel filler cap drive
USIS	Ultrasonic interior protection
NG	Tilt sensor
FZV	Radio central locking receiver
FZV/1	Input - terminal 30 signal of fuse F49 (X1143)
FZV/2	Ground/earth - (X1143)

FVZ/3	Input/output - radio transmitter signal (X1153)
GM	General module V
GM/3	Output - electric consumer cut-out signal (X332)
GM/5	Output - tilt sensor monitoring signal (X254)
GM/6	Input - tilt sensor monitoring, immobiliser signal (X254)
GM/8	Input - interior lighting switch signal, front, continuous operation (X253)
GM/8	Output - control signal, DWA emergency power siren alarm (X254)
GM/9	Input/output - K bus signal (X253)
GM/10	Ground/earth (X253)
GM/17	Output - luggage compartment lid unlocking motor signal to luggage compartment lid drive (X253)
GM/18	Input - interior lighting signal (X253)
GM/23	Output - DWA light emitting diode signal (X254)
GM/24	Input - passenger-compartment sensor signal (USIS) (X254)
GM/27	Input - terminal R of fuse F9 (X253)
GM/35	Output - fuel filler cap unlocking signal (X253)
GM/42	Input - luggage compartment lid contact signal from luggage compartment lid drive (X253)
GM/47	Input - terminal 30 signal of fuse F49 (X253)
GM/49	Input/output - radio remote control data line signal (X253)
GM/50	Output - fuel filler cap locking signal (X253)
TXD	Diagnostic bus to diagnostic connector

1.0 SEAT LEATHER CARE

"Karneol" leather care cleans the leather upholstery of mild stains or dirt. It also provides conditioners to prevent drying out. Not suitable for suede.

BMW Part No. 81 22 9 400 901.

2.0 PREMIUM LEATHER CARE KIT

BMW Part No. 81 11 024 455.

5213 FRONT SEAT, NORMAL, MANUAL

52 14 ... PERFORMING FUNCTION CHECK WITH ADAPTER CABLE (FOR SEAT REPAIRS)

NOTE: The function check on a repaired driver's or front passenger seat can be performed outside the vehicle by using adapter cable 61 4 360.

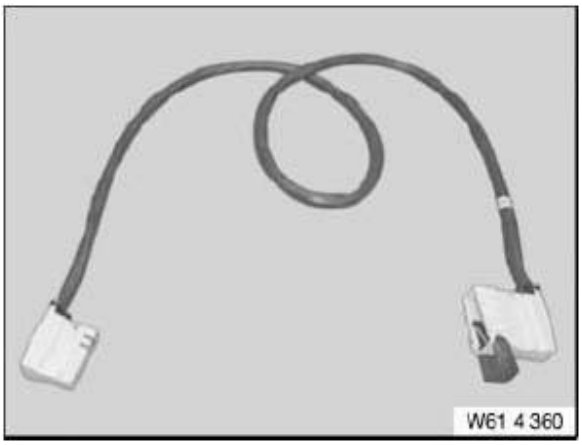


Fig. 1: Identifying Adapter Cable (61 4 360)
Courtesy of BMW OF NORTH AMERICA, INC.

Use:

Adapter cable 61 4 360 is connected to vehicle wiring harness (1) and removed seat (2).

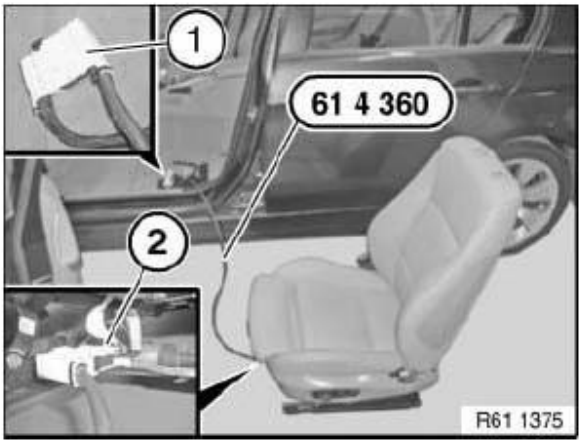


Fig. 2: Connecting Adapter Cable (61 4 360) To Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

52 14 ... PERFORMING FUNCTION CHECK WITH ADAPTER CABLE (FOR SEAT REPAIRS)

NOTE: The function check on a repaired driver's or front passenger seat can be performed outside the vehicle by using adapter cable 61 4 360.

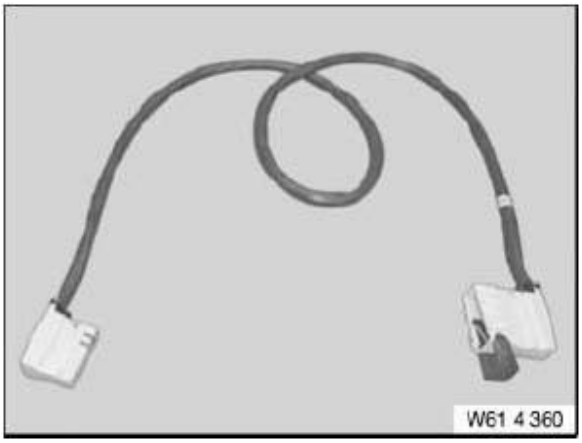


Fig. 3: Identifying Adapter Cable (61 4 360)
Courtesy of BMW OF NORTH AMERICA, INC.

Use:

Adapter cable 61 4 360 is connected to vehicle wiring harness (1) and removed seat (2).

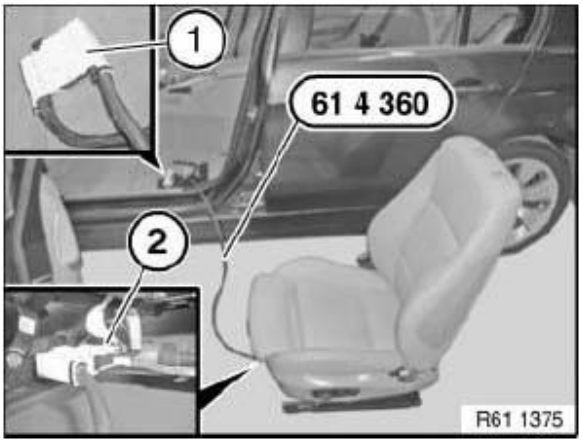


Fig. 4: Connecting Adapter Cable (61 4 360) To Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 021 REMOVING AND INSTALLING/REPLACING FLEXMAT ON LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks

- Remove padding for front seat . See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **52 15 400 Replacing seat cover for left or right front seat (sport/manual)**

Remove plug housing (1) from flexmat.

Cut all cable ties and disengage wiring harnesses from flexmat.

Installation:

Make sure wiring harnesses are laid correctly.

Observe bending radius and do not lay wiring harnesses tensioned.

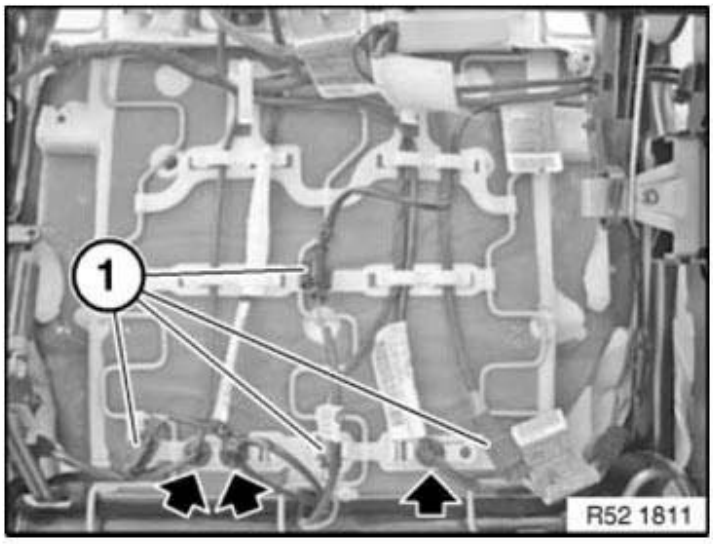


Fig. 5: Identifying Flexmat Plug Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Disengage flexmat (1) at front.

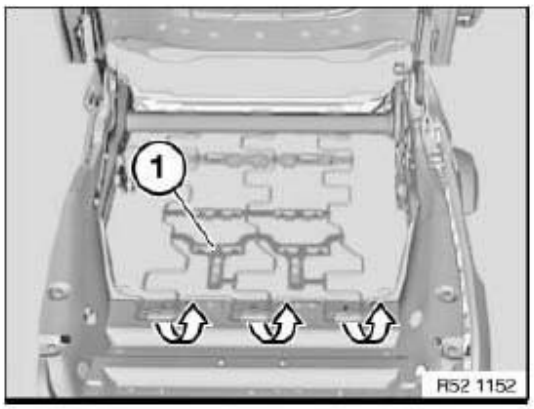


Fig. 6: Removing Flexmat
Courtesy of BMW OF NORTH AMERICA, INC.

Swing flexmat (1) down and disengage from seat frame.

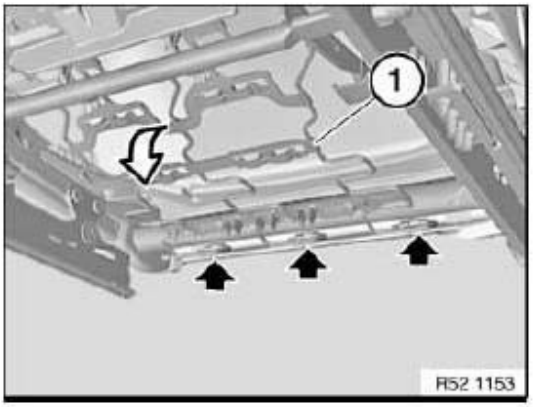


Fig. 7: Moving Flexmat
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 ... REMOVING AND INSTALLING ISOFIX HOLDER

Necessary preliminary tasks

- Remove seat fabric See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)**

Release screws (1).

Tightening torque **52 10 07AZ** .

Remove Isofix holder.

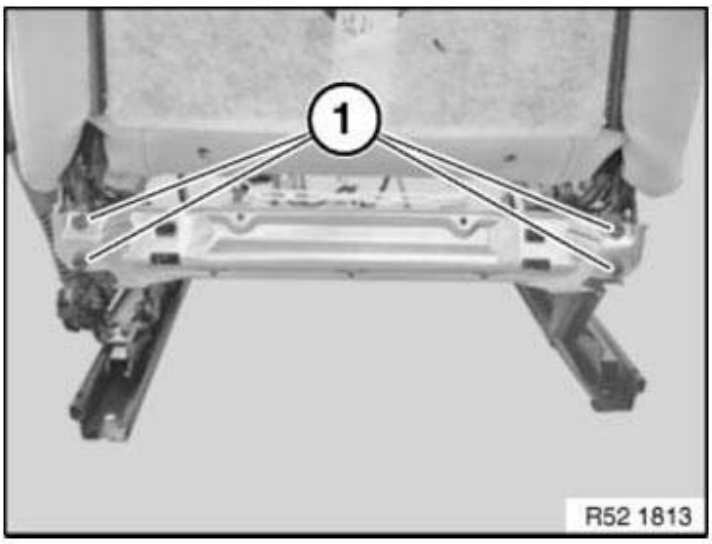


Fig. 8: Identifying Isofix Holder Screws
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 000 REMOVING AND INSTALLING LEFT OR RIGHT FRONT SEAT (NORMAL/MANUAL)

Necessary preliminary tasks

- Open convertible top
- Disconnect **BATTERY NEGATIVE LEAD**

IMPORTANT: An airbag module and a pyrotechnical seat belt tensioner are installed in the front seat.
Improper handling can lead to triggering of the pyrotechnical seat belt pretensioner or side airbag, resulting in injuries.

Installation:

- Powerlok screws must be replaced and must **not** be reused
- Powerlok screws are mechanical screw locks with trilobular threads
- Screws are fitted with a Torx Plus system and can be released with a standard Torx screwdriver

Move seat to upper back position.

Release and dispose of screws (1).

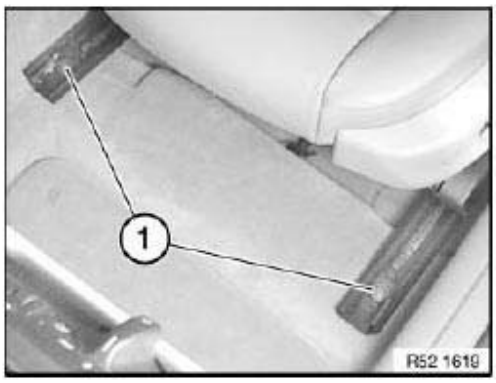


Fig. 9: Identifying Seat Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Move seat forwards and position flush with seat runners.

Unclip release tab (2) for belt anchor fitting trim (1) with plastic wedge.

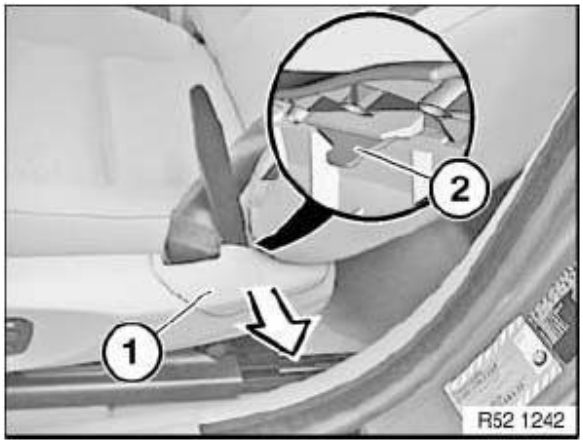


Fig. 10: Removing Release Tab For Belt Anchor Fitting Trim Using Plastic Wedge
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Tightening torque **72 11 2AZ** .

Remove anchor fitting (2).

Installation:

Make sure anchor fitting (2) is correctly seated on seat mechanism pin.

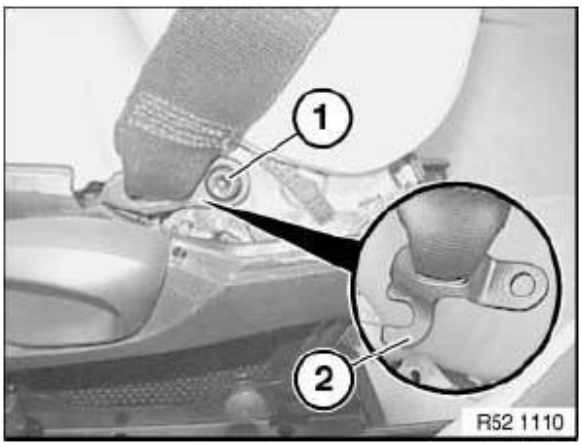


Fig. 11: Identifying Anchor Fitting With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Release and dispose of screws (1).

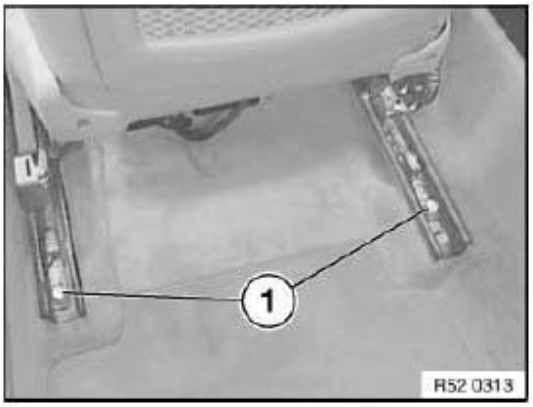


Fig. 12: Identifying Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect plug connection (1).

IMPORTANT: Cover door sill with protective covers (risk of damage).

Lift out front seat.

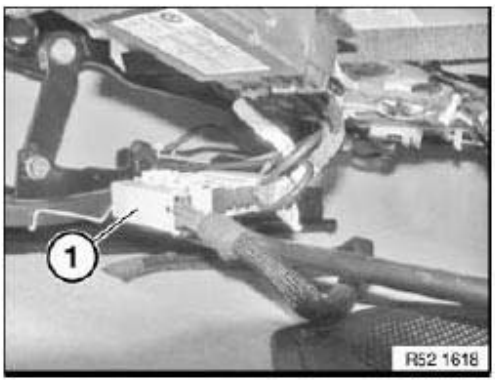


Fig. 13: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

- Carpet must not get between seat rails and floor pan in area of fastening points (grating noises)
- Replace microencapsulated screws
- Insert all screws loose to avoid twisting
- Tighten down all screws to specified torque

Tightening torque **52 10 1AZ** .

WARNING: When carrying out further work on the front seat, it is absolutely imperative to observe the SAFETY REGULATIONS on handling airbag modules and pyrotechnical seat belt tensioners
Improper handling can lead to triggering of the pyrotechnical seat belt pretensioner or side airbag, resulting in injuries.

52 13 390 REMOVING AND INSTALLING OR REPLACING FRONT LEFT OR RIGHT HEAD RESTRAINT

WARNING: Danger of pinching!

Reach on left and right under head restraint and unclip in jerks in upward direction.

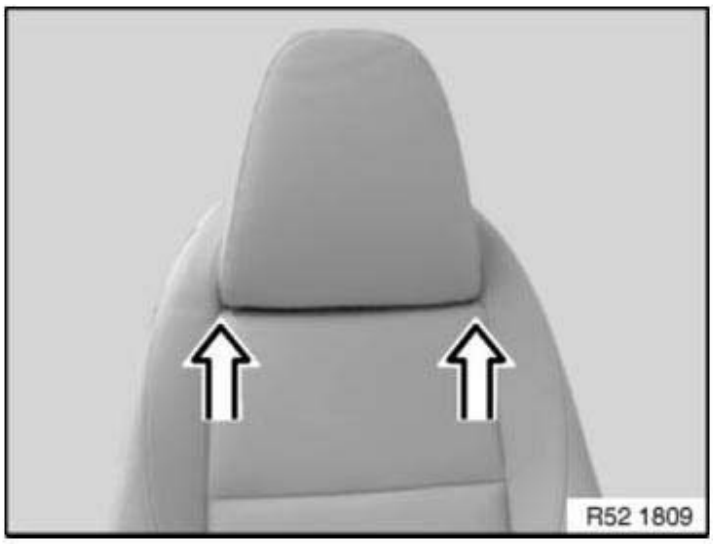


Fig. 14: Removing Head Restraint
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 198 REMOVING AND INSTALLING OR REPLACING REAR PANEL ON LEFT OR RIGHT FRONT SEAT BACKREST

Release clips (1) with diagonal cutting pliers.

Remove rear panel (2) downwards with a turning action.

NOTE: Remove remnants of clips.

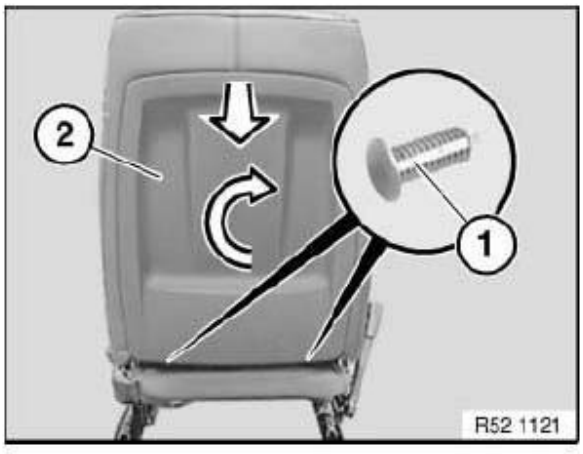


Fig. 15: Removing Rear Panel
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Retaining hooks (1) and bore holes (2) on rear panel (3) must not be damaged.

Replace faulty clips.

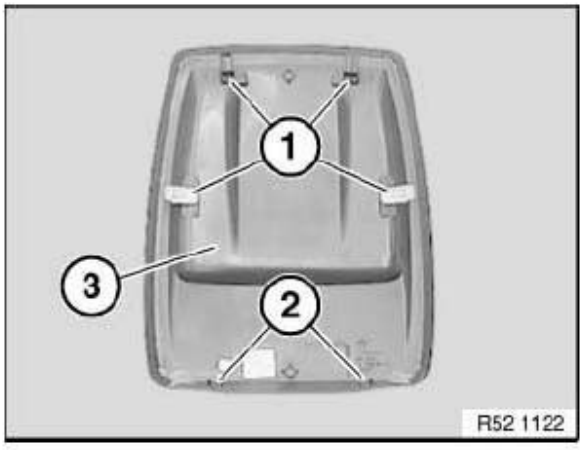


Fig. 16: Identifying Hooks And Bore Holes On Rear Panel
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 030 REMOVING AND INSTALLING/REPLACING BACKREST FRAME ON LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks

- Remove **FRONT SEAT**
- Remove **REAR PANEL** on front seat backrest

Release airbag wiring harness (2) from cable holders on flexmat.

Disconnect cable tie from clips.

Raise release clip (3) and pull plug (4) out of plug housing (1).

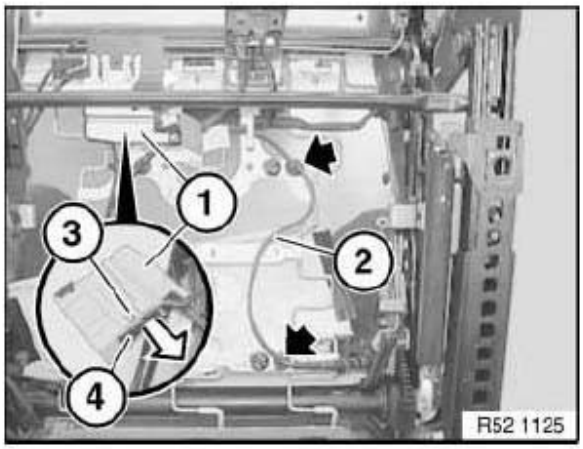


Fig. 17: Pulling Plug Out Of Plug Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Always feed in cable tie (1) at narrow end of plug housing in direction of arrow.

Cables must be secured with insulation under cable tie.

Firmly tighten cable tie (1) to relieve strain. It must not be possible to move the cable.

Make sure plug (2) is correctly locked in plug housing (3).

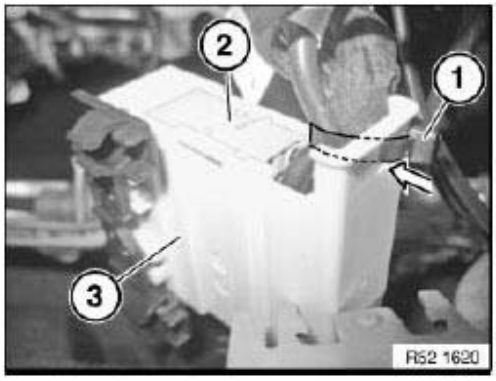


Fig. 18: Installing Cable Tie At Narrow End Of Plug Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

Unclip cable.

Release wiring harness (3) from cable holders on seat mechanism.

Unfasten plug connection (2) and disconnect.

IMPORTANT: Feed all wiring harnesses carefully through the seat and backrest mechanism as the edges of the frame can be sharp.

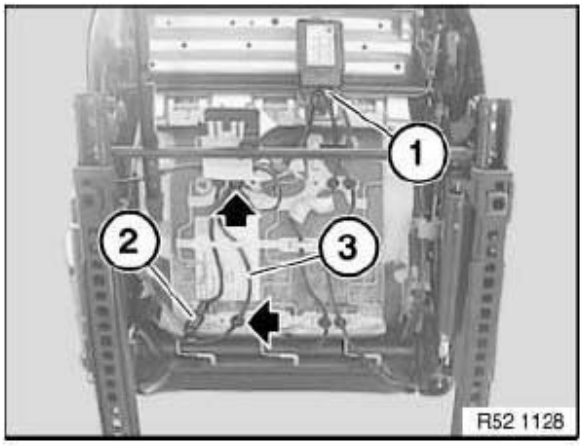


Fig. 19: Identifying Plug Connections And Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

Unhook backrest cover (1) on left and right.

Release screws (2) on left and right.

Tightening torque **52 10 02AZ** .

Remove backrest frame (3) completely towards top.

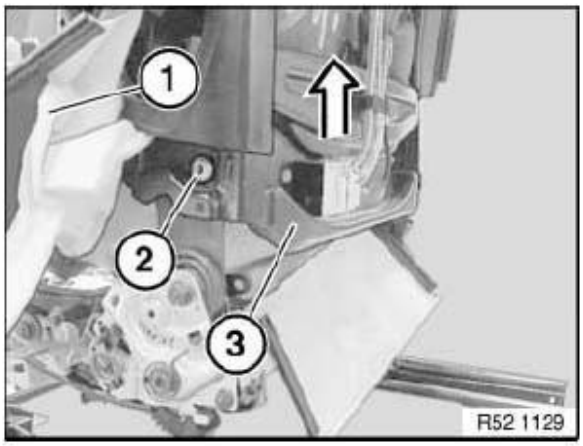


Fig. 20: Removing Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

- Remove backrest cover with padding.
- Remove **SIDE AIRBAG** .
- Remove lumbar support See **5215059 Removing and installing/replacing lumbar support pump with valve housing for lumbar support/backrest width adjustment**; **5213059 Removing and installing/replacing lumbar support pump with valve housing for lumbar support**; **5213055 Removing and installing/replacing lumbar support on front seat** or **5215061 Replacing both air cushions for backrest width adjustment on left or right front seat**.

52 13 025 REMOVING AND INSTALLING/REPLACING LEFT OR RIGHT SEAT MECHANISM (NORMAL/MANUAL)

This job is described under:

- Remove **BACKREST FRAME** on front seat

Replacement only:

- Remove seat cover . See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)** for front seat
- Remove **SEAT BELT TENSIONER**
- Remove control unit for seat heating . See **6135080 Removing and installing/replacing control unit/module for left or right seat adjustment** or **6135095 Removing and installing/replacing control unit/module for seat heating**

Seat mechanism is supplied complete with corresponding drive units.

Unlock plug housing (3) and remove from holder.

Disengage wiring harnesses from flexmat.

Installation:

Make sure wiring harnesses are laid correctly.

Observe bending radius and do not lay wiring harnesses tensioned.

Release screws (1).

Tightening torque **52 10 05AZ** .

Remove holder (2) for control unit.

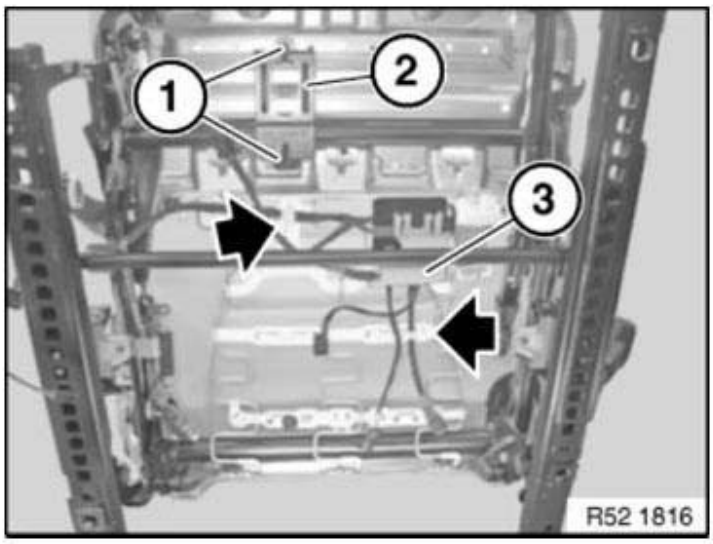


Fig. 21: Identifying Plug Housing With Screws And Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Tightening torque **52 10 03AZ** .

Remove belt buckle deflector trim (2).

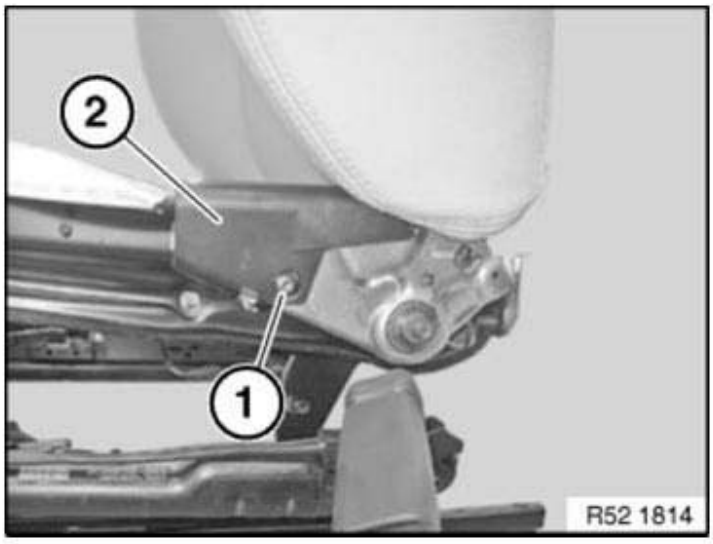


Fig. 22: Identifying Belt Buckle Deflector Trim With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Sport seat only:

Release screws (1).

Remove connection for thigh support.

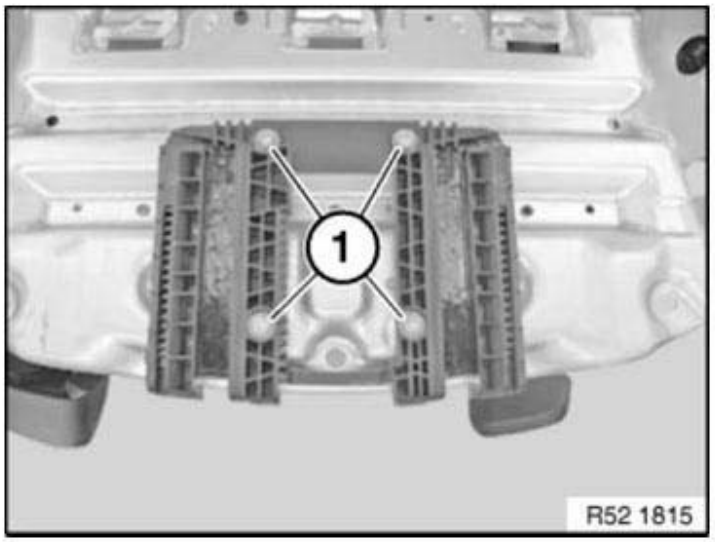


Fig. 23: Identifying Screws
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 055 REMOVING AND INSTALLING/REPLACING LUMBAR SUPPORT ON FRONT SEAT

Necessary preliminary tasks

- Remove **REAR PANEL ON FRONT SEAT**

Detach backrest cover (1) from backrest frame.

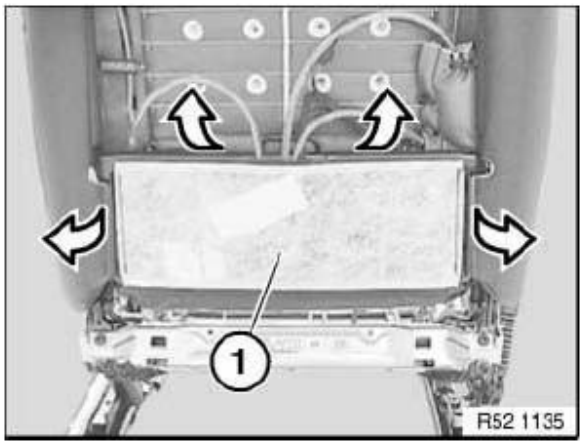


Fig. 24: Removing Backrest Cover From Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Do not pop valve housing (1) out of backrest frame for this operation.

Carefully pull valve housing (1) forwards out of backrest frame.

Unlock quick connectors and detach air hoses from valve housing (1).

NOTE: Connections are coded against incorrect assembly.

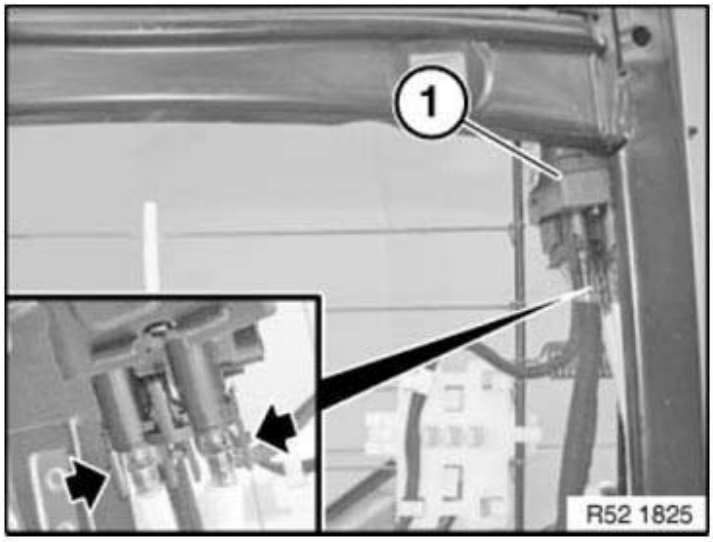


Fig. 25: Identifying Valve Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Detach lumbar cushion (1) from spring wire.

Installation:

Attach lumbar cushion (1) to second and fourth wires from below.

Press backrest support forwards a little.

Pull out lumbar cushion (1) downwards.

Feed air hoses out of backrest frame and spring wire.

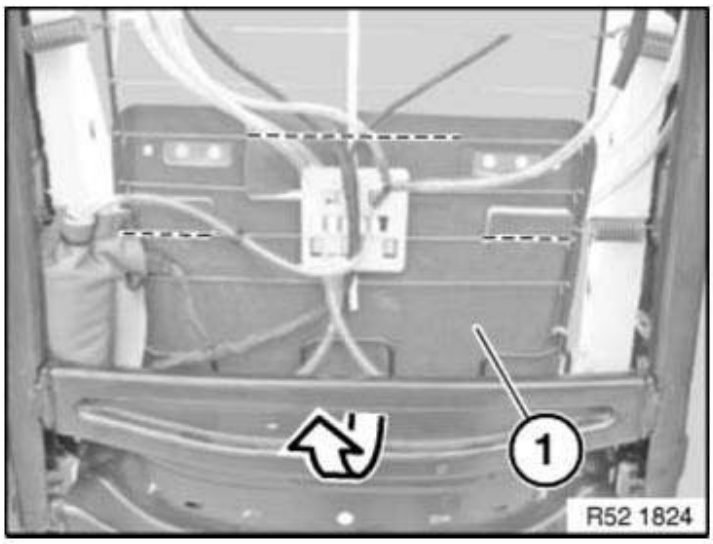


Fig. 26: Pulling Out Lumbar Cushion
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check lumbar cushion at top (1) and bottom (2) for damage.

Air hoses (3) must not be kinked.

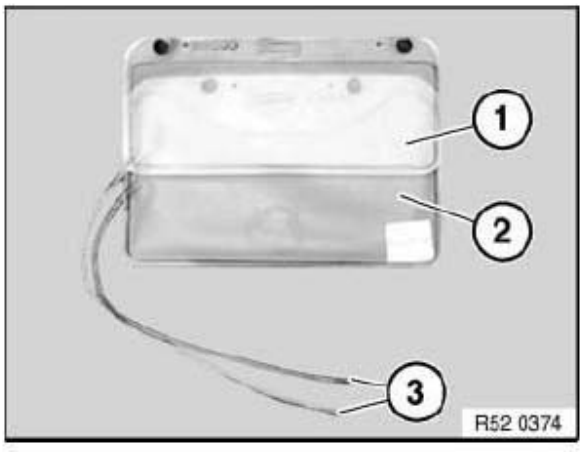


Fig. 27: Identifying Lumbar Cushion At Top And Bottom With Air Hoses
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Carry out **FUNCTION CHECK** .

52 13 059 REMOVING AND INSTALLING/REPLACING LUMBAR SUPPORT PUMP WITH VALVE

HOUSING FOR LUMBAR SUPPORT

Necessary preliminary tasks

- Remove **REAR PANEL ON FRONT SEAT**

Detach backrest cover (1) from backrest frame.

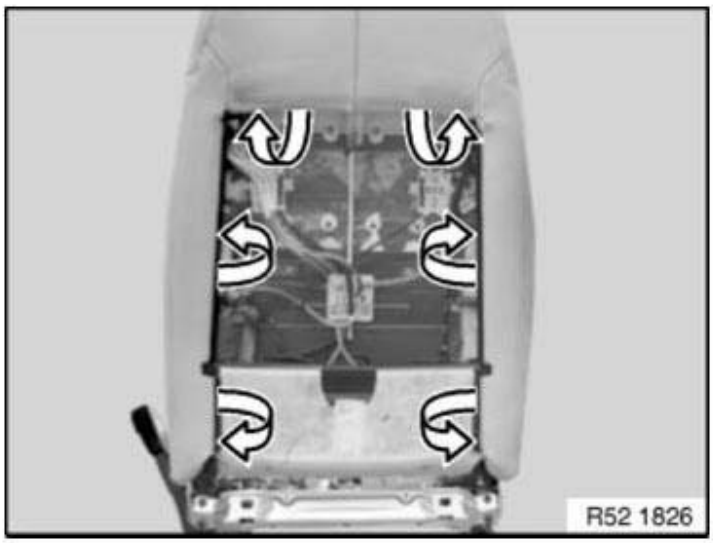


Fig. 28: Removing Backrest Cover From Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Release cable tie (1).

Installation:

Replace defective cable tie.

Open zip fastener (2).

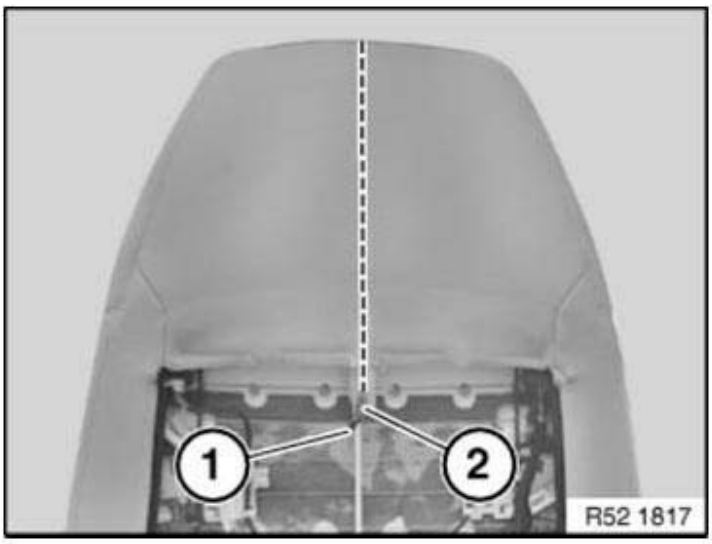


Fig. 29: Identifying Cable Tie And Zip Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

Detach cable tie.

Installation:

Replace defective cable ties.

Remove lumbar support pump (1) from backrest frame.

Unfasten plug connection (2) and disconnect.

Unclip air hose from holder (3).

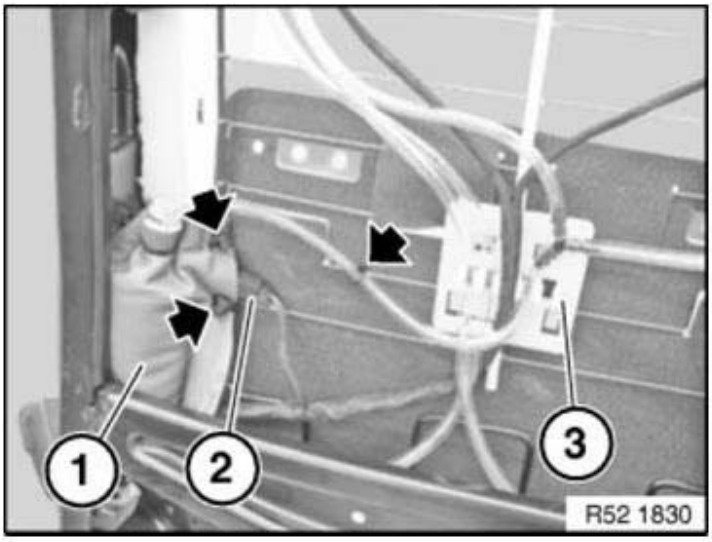


Fig. 30: Identifying Lumbar Support Pump With Plug Connection And Air Hose Holder
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows removal without backrest cover for purposes of clarity.

Pop valve housing (2) for lumbar support in direction of arrow out of backrest frame.

Disengage wiring harness from cable tie (3).

Installation:

Feed rubber plug (1) through backrest frame.

Pull rubber plug (1) and pop valve housing into backrest frame.

Check rubber sleeve of valve housing for correct seating in backrest frame.

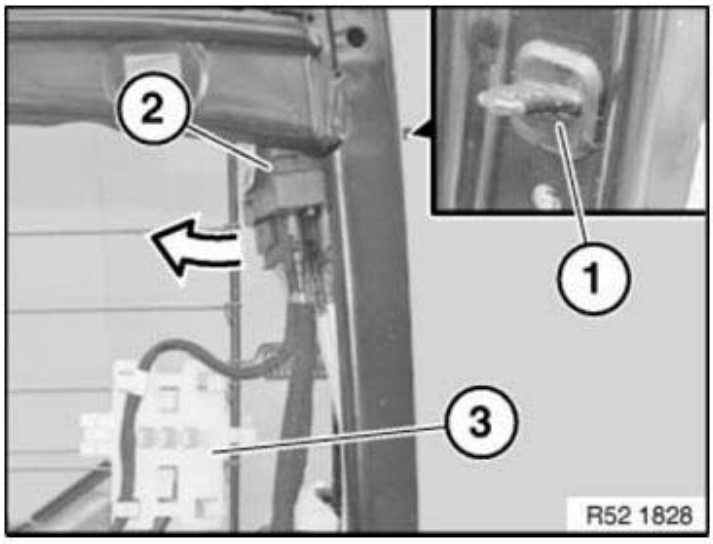


Fig. 31: Removing Valve Housing For Lumbar Support Out Of Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

Unlock quick connector and detach air hoses (2) and (3 and 4) from valve housing.

Valve unit for lumbar support:

(2) Hose (clear), lumbar drive
(3) Hose (blue), top lumbar cushion
(4) Hose (red), bottom lumbar cushion

NOTE: Connections are coded against incorrect assembly.

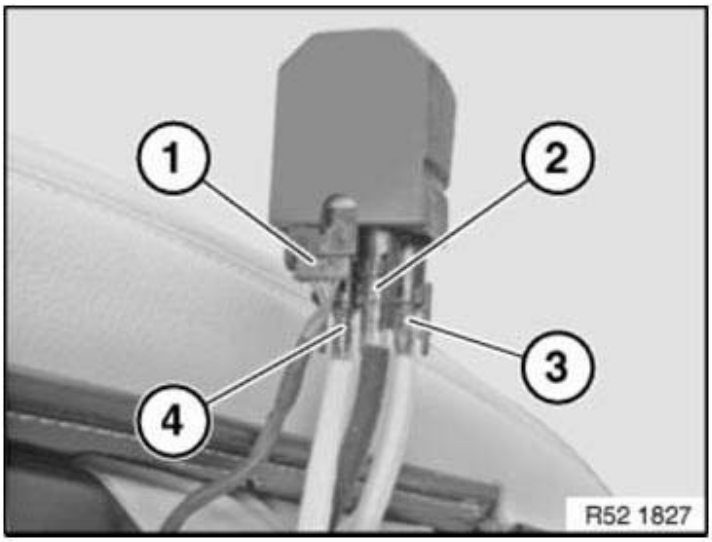


Fig. 32: Identifying Plug Connection With Hoses
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Carry out FUNCTION TEST .

52 13 040 REMOVING AND INSTALLING/REPLACING OUTER COVER ON LEFT OR RIGHT FRONT SEAT BACKREST (NORMAL/MANUAL)

Necessary preliminary tasks

- Remove **FRONT SEAT**

NOTE: Picture shows installed seat by way of example.

Raise lock (3) and lever out handle

1. for backrest angle adjustment and
2. for seat height adjustment with special tool 00 9 317 .

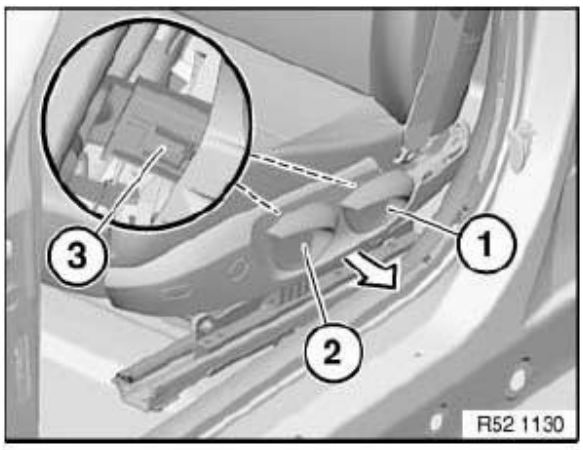


Fig. 33: Removing Handle
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Tightening torque **52 10 10AZ** .

NOTE: Trim (2) is engaged in marked area.

Press lock (3) and pull trim (2) off seat mechanism.

If necessary, lever out carefully with special tool 00 9 317 .

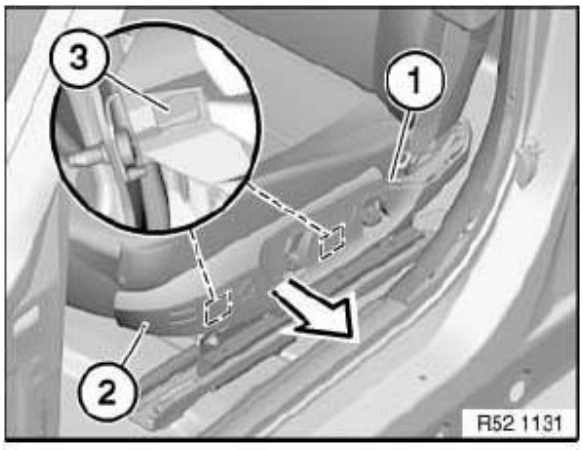


Fig. 34: Pulling Trim Off Seat Mechanism
Courtesy of BMW OF NORTH AMERICA, INC.

If necessary, unlock plug connection (1) for backrest width adjustment and disconnect.

If necessary, unlock plug connection (2) for lumbar support and disconnect.

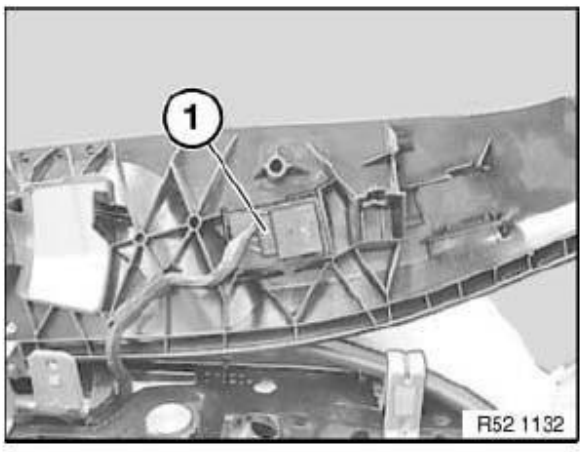


Fig. 35: Identifying Plug Connections
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

If necessary, remove backrest width adjustment switch and lumbar support switch.

Installation:

Make sure backrest width adjustment and lumbar support switches are correctly engaged.

52 13 405 REPLACING BACKREST COVER FOR LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks

- Clamp off **BATTERY NEGATIVE LEAD**
- Remove **REAR PANEL**
- Remove **HEAD RESTRAINT**

Version with seat heating only

Unfasten plug connection (1) and disconnect.

Detach cable tie.

Release wiring harness (2) from cable holders on seat mechanism.

IMPORTANT: Feed the wiring harness carefully through the seat and backrest mechanism as the edges of the frame can be sharp.

Installation:

Lay wiring harness without kinks and tension.

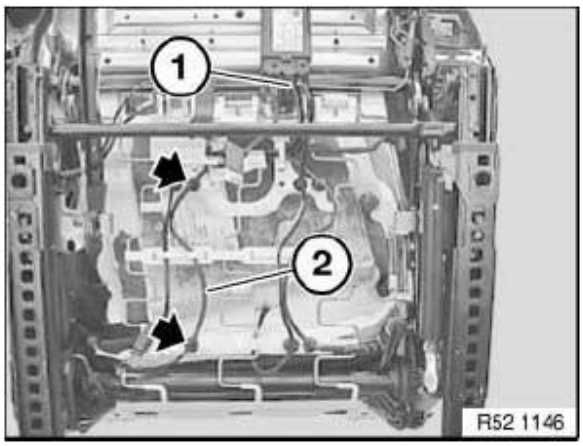


Fig. 36: Identifying Plug Connection And Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip cable tie (1) from seat mechanism.

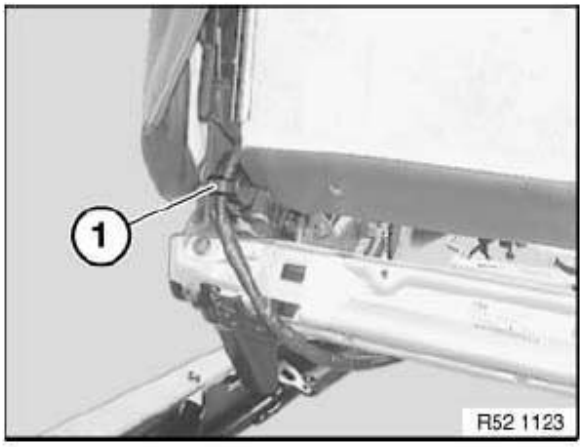


Fig. 37: Identifying Seat Mechanism Cable Tie
Courtesy of BMW OF NORTH AMERICA, INC.

Release cable tie (1).

Installation:

Replace defective cable tie.

Open zip fastener (2).

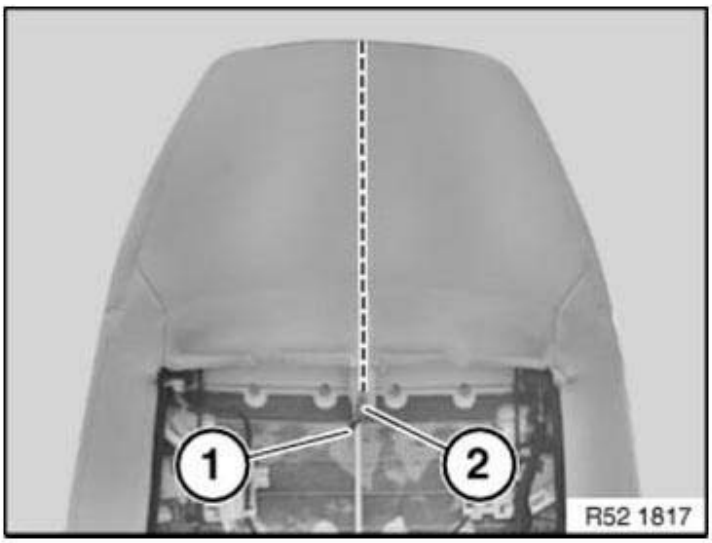


Fig. 38: Identifying Cable Tie And Zip Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

Detach backrest cover (1) from backrest frame.

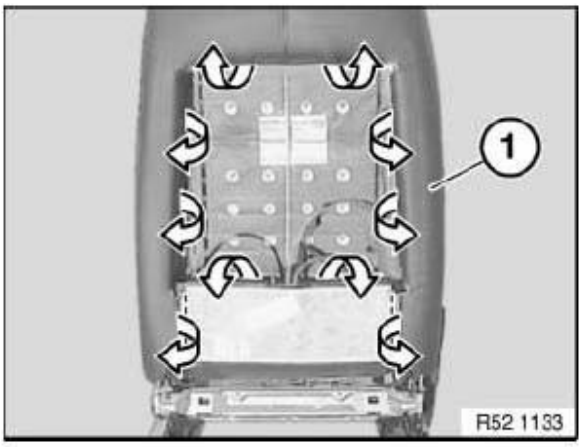


Fig. 39: Removing Backrest Cover From Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts (1).

Installation:

Replace nuts.

Tightening torque **72 12 03AZ** .

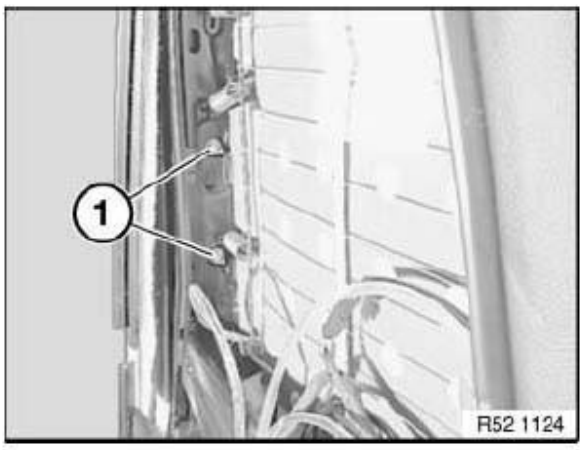


Fig. 40: Identifying Seat Mechanism Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Detach mounting strip (4) from flexmat.

Carefully pull airbag module (3) with threaded pins out of backrest frame and feed out between padding (1) and inner bag (2).

Set down airbag module (3) to one side.

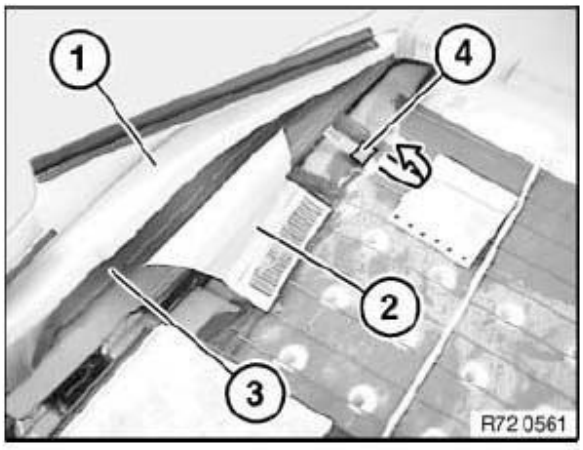


Fig. 41: Removing Mounting Strip From Flexmat
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Pull inner bag (1) fully over airbag module and threaded pins.

Feed in mounting strip (2) of inner bag (1) through backrest frame.

Insert threaded pins into backrest frame and secure with new nuts.

No inner bag material is permitted to project through the hole in the inner frame.

Install nuts and tighten down.

Tightening torques **72 12 03AZ** .

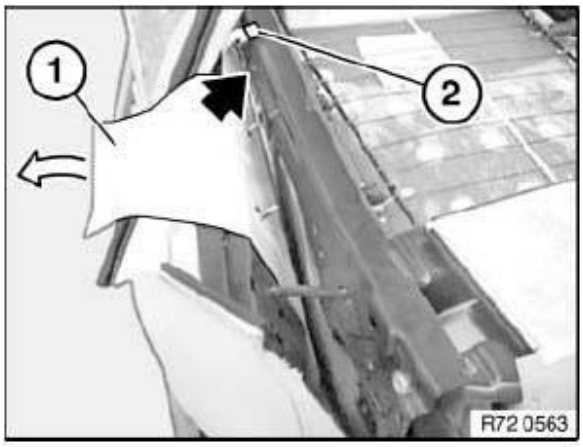


Fig. 42: Pulling Inner Bag Over Airbag Module And Threaded Pins
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Inner bag must be between airbag module and backrest frame!

Engage mounting strip (1) of inner bag in flexmat.

Position inner bag (2) smoothly over backrest frame.

Engage backrest cover (3) in backrest frame.

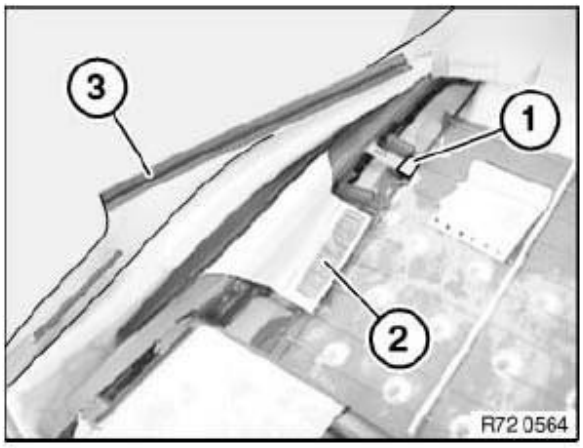


Fig. 43: Identifying Mounting Strip, Inner Bag And Backrest Cover

Courtesy of BMW OF NORTH AMERICA, INC.

Reposition backrest cover (1) at side and bottom and pull off with padding towards top from backrest frame.

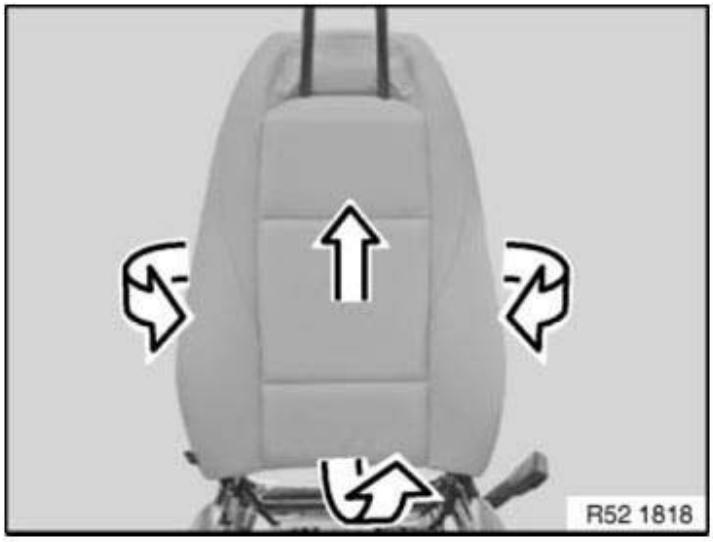


Fig. 44: Positioning Backrest Cover At Side And Bottom
Courtesy of BMW OF NORTH AMERICA, INC.

Release all retainers in marked area.

Remove backrest cover from padding.

NOTE: Remove all remnants of retainers from backrest cover and padding.

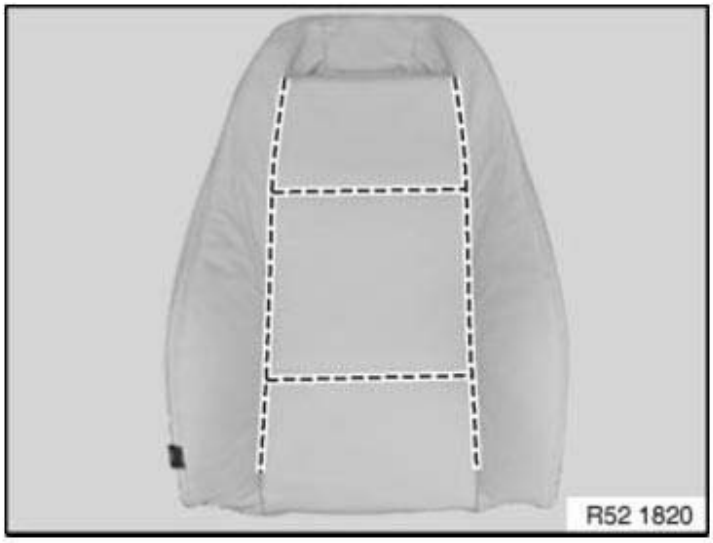


Fig. 45: Identifying Retainers Marked Area

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Bend new retainer (2) with special tool **52 0 050** .

1. Padding
2. Retainer
3. Trim wire in padding
4. Trim wire in backrest cover
5. Backrest cover

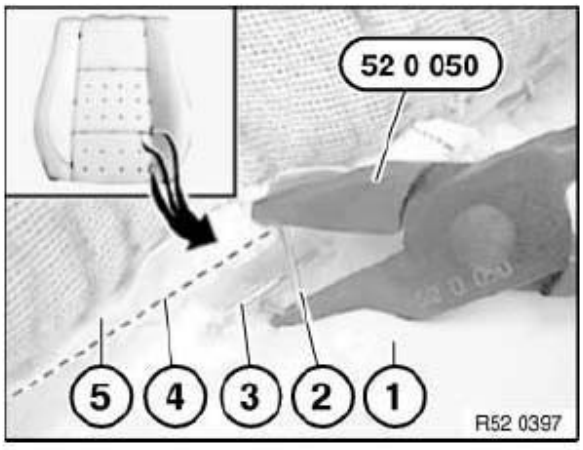


Fig. 46: Bending Retainer Using Special Tool (52 0 050)
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement of backrest cover

Pull trim wires out of backrest cover.

Cut new backrest cover to size and insert trim wires.

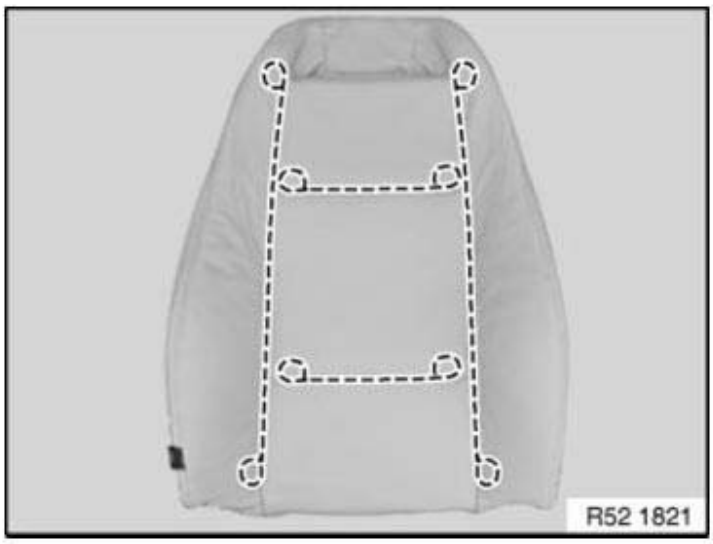


Fig. 47: Identifying Backrest Cover
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 455 REPLACING HEATING ELEMENTS FOR LEFT OR RIGHT FRONT SEAT (BASIC)

Necessary preliminary tasks

- Remove seat and backrest covers See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5213405 Replacing backrest cover for left or right front seat**

NOTE: Heating element is bonded to the foam section and cannot be separated from each other without incurring damaging.
Foam section and heating mat must be replaced.

Check new foam section:

- No obvious damage or material defects
- All trim wires present in foam
- No bubbles in foam section
- No dirt/contamination on foam or residual foam
- Pay attention to foam section on left and right

Check new heating mat:

- No obvious damage or material defects
- All tear-off film pieces presents
- Note variant by examining label on cable

Guide cable for backrest heating through foam hole.

Stick on main section (1):

- Pull adhesive film pieces off main section (1) and stick to upper edge of main section foam until flush

Stick on bead section (2):

- Pull adhesive film pieces off bead section (2) and stick on heating mat along bead section edges.
- Press down evenly in outwards direction

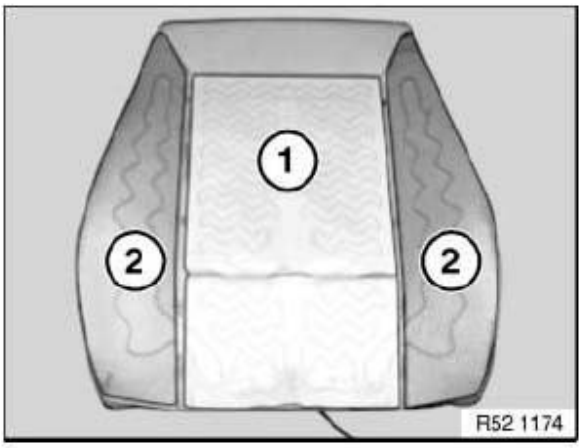


Fig. 48: Identifying Sticks On Main And Bead Section (Backrest Heating)
Courtesy of BMW OF NORTH AMERICA, INC.

Guide cable for seat heating through foam hole.

Stick on main section (1):

- Pull adhesive film pieces off main section (1) and stick to upper edge of main section foam until flush

Stick on bead section (2):

- Pull adhesive film pieces off bead section (2) and stick on heating mat along bead section edges.
- Press down evenly in outwards direction

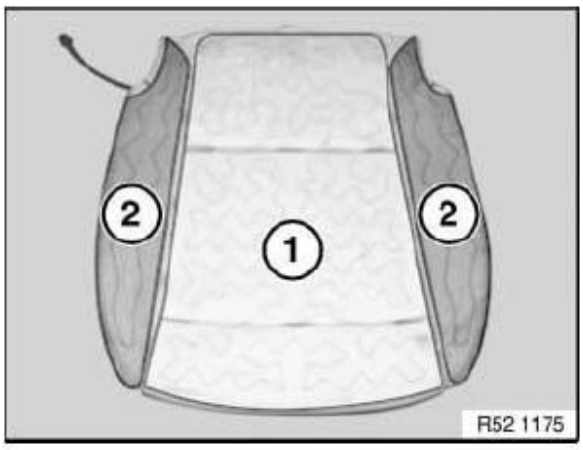


Fig. 49: Identifying Sticks On Main And Bead Section (Seat Heating)
Courtesy of BMW OF NORTH AMERICA, INC.

Check laying of heating mats:

- Heating mats laid without folds
- Heating mats correctly positioned
- All bonding surfaces stuck on

NOTE: Carry out FUNCTION CHECK .

52 13 415 REPLACING LEFT OR RIGHT SUPPORT FOR FRONT SEAT (NORMAL/MANUAL)

Operation is described in:

- Replacing **SEAT COVER ON LEFT OR RIGHT FRONT SEAT** .

WARNING: US/CDN front passenger seat (with CIS mat) only:
If CIS mat or padding is defective, both parts must be replaced together. Seat heating is integrated in the CIS mat and is stuck to the padding over the full surface.



Fig. 50: Identifying US/CDN Front Passenger Seat
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: The CIS mat must be enabled after each installation operation.

Enabling seat occupancy detector (CIS mat):

- Connect BMW programming system
- Code airbag control unit
- Clear fault memory if necessary

52 13 420 REPLACING LEFT OR RIGHT SUPPORT FOR FRONT SEAT BACKREST (NORMAL/MANUAL)

Operation is described in:

Replacing **BACKREST COVER FOR LEFT OR RIGHT FRONT SEAT** .

52 13 400 REPLACING SEAT COVER ON LEFT OR RIGHT FRONT SEAT (NORMAL/MANUAL)

Necessary preliminary tasks

- Remove **FRONT SEAT**
- Remove outer cover See **5213040 Removing and installing/replacing outer cover on left or right front seat backrest (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)** on front seat

WARNING: US/CDN front passenger seat (with CIS mat) only:
If CIS mat or padding is defective, both parts must be replaced together.

WARNING: US/CDN front passenger seat (with CIS mat) only:
To avoid damaging the CIS mat, it is essential to carry out the following operations with extra care.

IMPORTANT: Risk of damage on sharp-edged seat mechanism.
Guide all cables carefully through seat and backrest mechanism.
Make sure cable is routed without kinks and tension.
Make sure plug connections are correctly locked.
Make sure plugs are correctly seated in catches.

Version with seat occupancy detector (CIS mat) only:

1. Data line CIS
2. Earth cable, seat pan
3. Earth cable, backrest frame

Unlock all plug connections and disconnect.

NOTE: From build date 09/2009 onward, earth cable (3) not included on backrest frame.

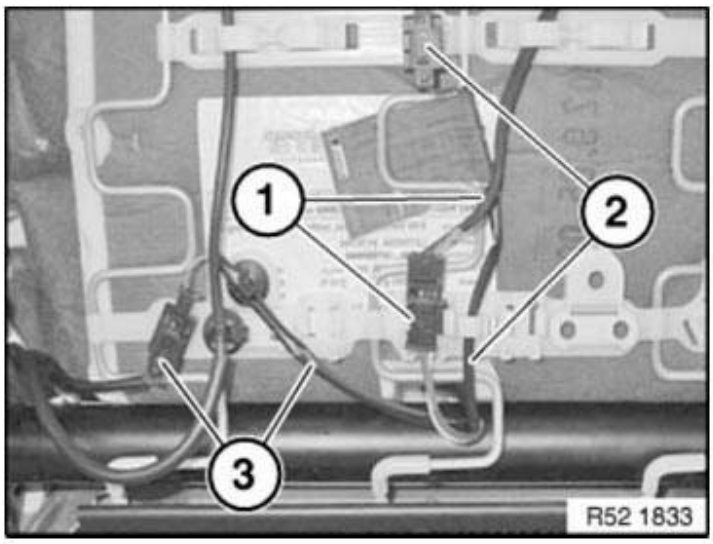


Fig. 51: Identifying Data Line CIS And Earth Cables
Courtesy of BMW OF NORTH AMERICA, INC.

Version with seat heating only:

Unlock plug connection (1) for seat heating and disconnect.

Unfasten cable strap.

Disengage wiring harness from cable clips (flexmat).

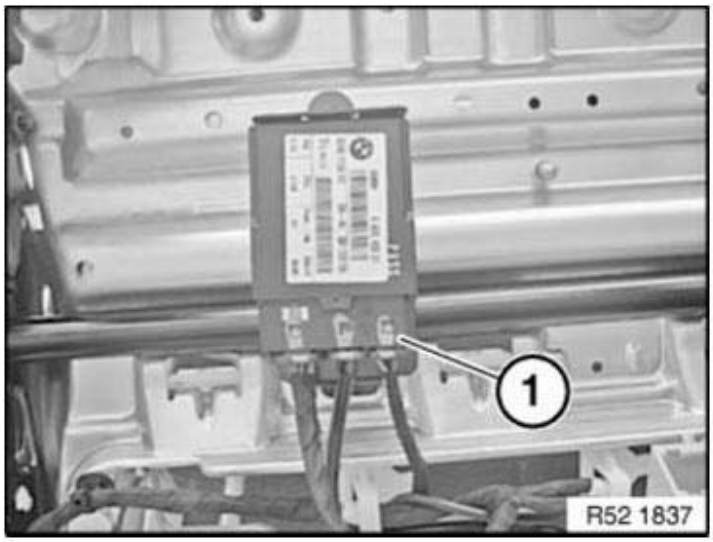


Fig. 52: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Version with seat occupancy detector without seat heating (CIS mat) only:

Seat heating is integrated in the CIS mat and is stuck to the padding over the full surface.

Lay cable for seat heating as shown to flexmat and secure with cable strap.

Secure plug with cable strap to cable.

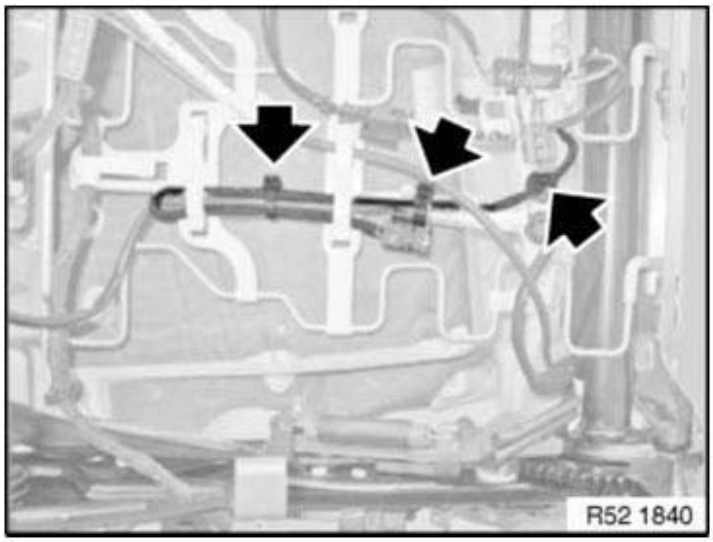


Fig. 53: Locating Plug With Cable Strap
Courtesy of BMW OF NORTH AMERICA, INC.

Vehicle exterior:

Lever clip (1) out of seat cover.

Installation:

If necessary, replace faulty clip.

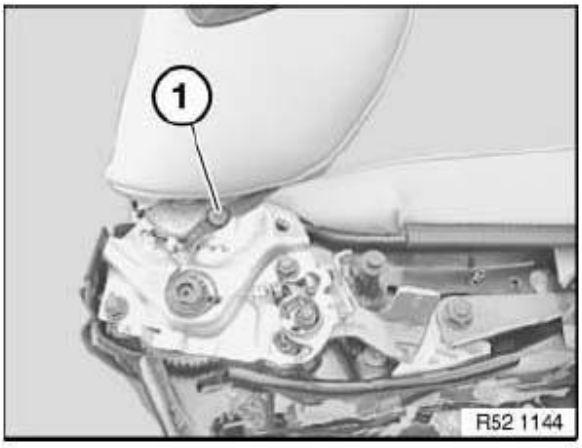


Fig. 54: Identifying Clip
Courtesy of BMW OF NORTH AMERICA, INC.

Tunnel side:

Disengage cover fastener (1) from belt deflector trim.

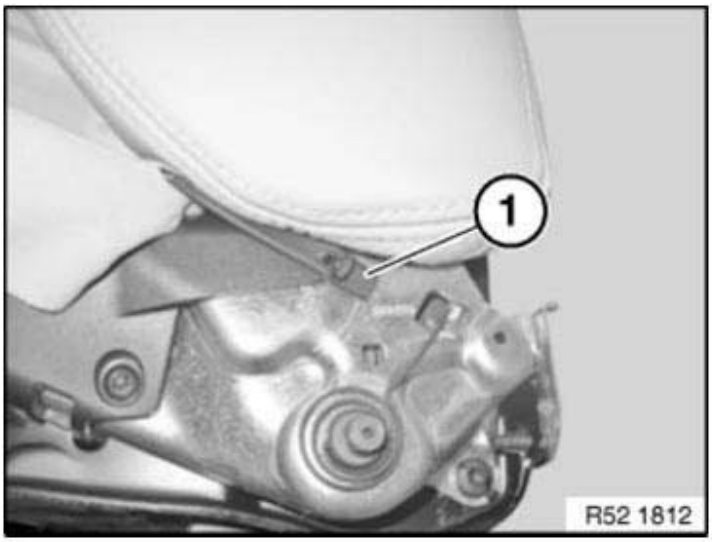


Fig. 55: Identifying Cover Fastener Of Belt Deflector Trim
Courtesy of BMW OF NORTH AMERICA, INC.

Detach seat cover (1) from seat frame.

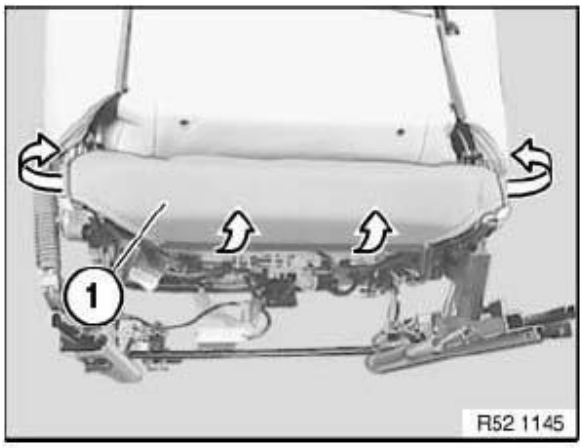


Fig. 56: Removing Seat Cover From Seat Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Pull out cover welt (1) completely from seat frame (2).

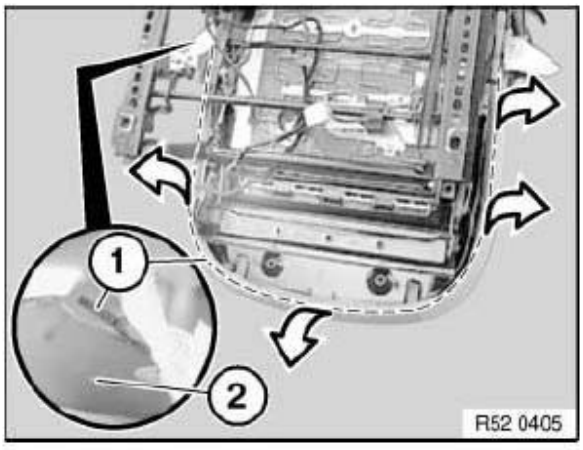


Fig. 57: Pulling Cover Welt From Seat Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Remove seat cover (1) with padding towards front/top.

IMPORTANT: Carefully slide bracing cloth with foam through backrest gap and seat structure.

Installation:

Slide foam completely through backrest gap and seat structure. Make sure foam and bracing cloth are correctly fitted.

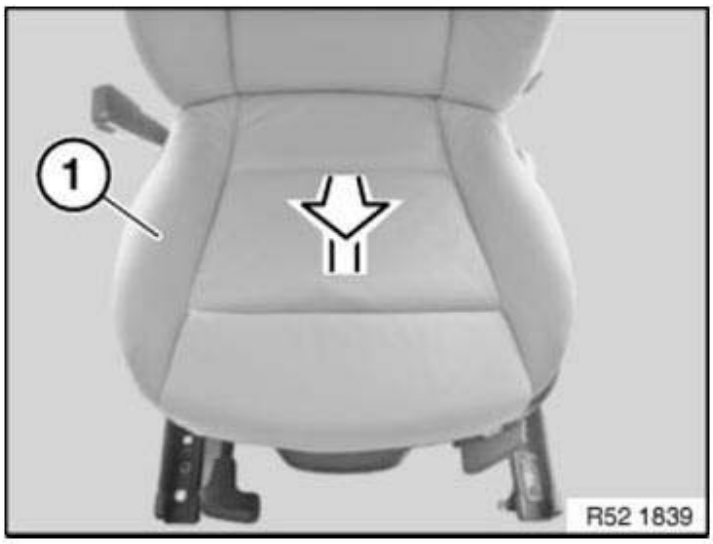


Fig. 58: Removing Seat Cover With Padding
Courtesy of BMW OF NORTH AMERICA, INC.

Version with seat heater and/or with seat occupancy detector (CIS mat):

Pull seat cover (1) with padding forward a little and feed wiring harnesses (2) out.

Remove seat cover (1) with padding towards front/top.

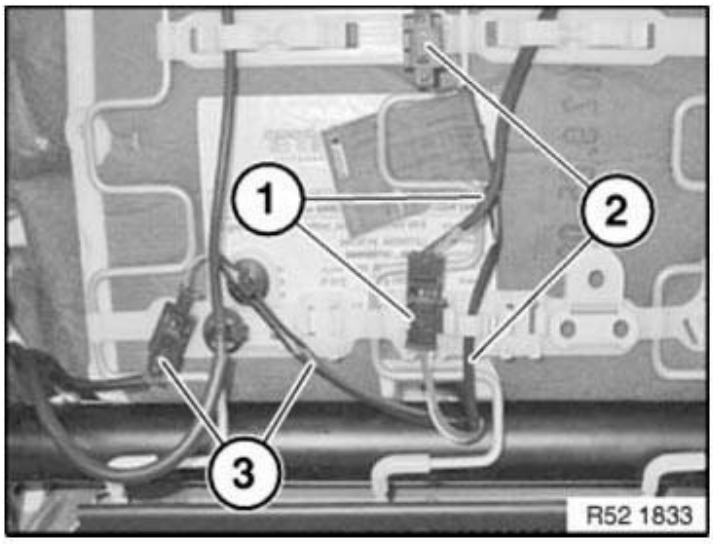


Fig. 59: Identifying Seat Cover And Wiring Harnesses
Courtesy of BMW OF NORTH AMERICA, INC.

Carefully detach all retainers in side area from OKE strips (1).

Carefully turn seat cover over and release retainers from OKE strips (2).

Remove seat cover from padding.

IMPORTANT: Remove all remnants of clips from seat cover and padding (CIS mat).

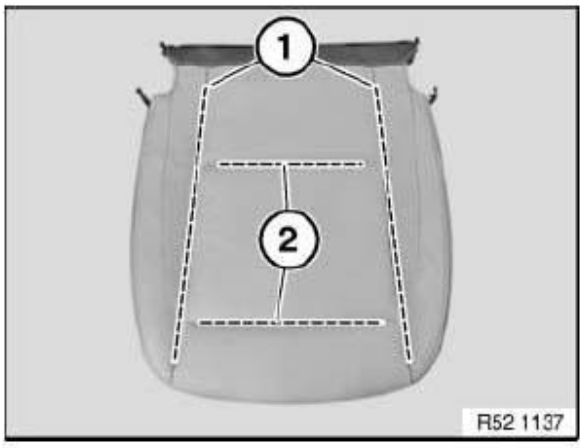


Fig. 60: Identifying Retainers Of OKE Strips
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Bend new retainers (2) with special tool **52 0 050** .

1. Padding
2. Retainer
3. Trim wire in padding
4. OKE strip in cover
5. Seat cover

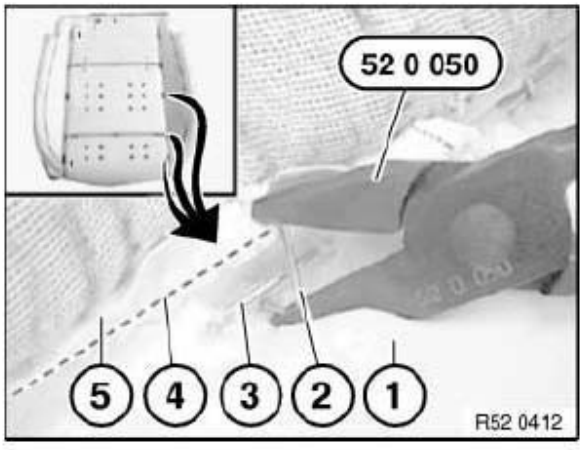


Fig. 61: Bending Retainers Using Special Tool (52 0 050)
Courtesy of BMW OF NORTH AMERICA, INC.

65 77 604 REPLACING SENSOR MAT (CIS MAT) FOR FRONT PASSENGER SEAT OCCUPANCY DETECTION DETECTOR

WARNING: Note AIRBAG SAFETY REGULATIONS !
Incorrect handling can lead to airbag deployment and cause injury.

WARNING: Only US and Canadian version of front passenger seat (with CIS mat):
The CIS mat can only be removed in conjunction with the padding from the seat cover.
If CIS mat or padding is defective, both parts may only be replaced together.
After fitting the seat cover, the CIS mat must be enabled with the BMW programming system.

Procedure for replacing the CIS mat together with the upholstery is described under:

- Remove padding for front seat See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)**

The work scope with CIS mat is different in the following work steps:

Release the bolting point (1) of the ground cable on the seat pan.

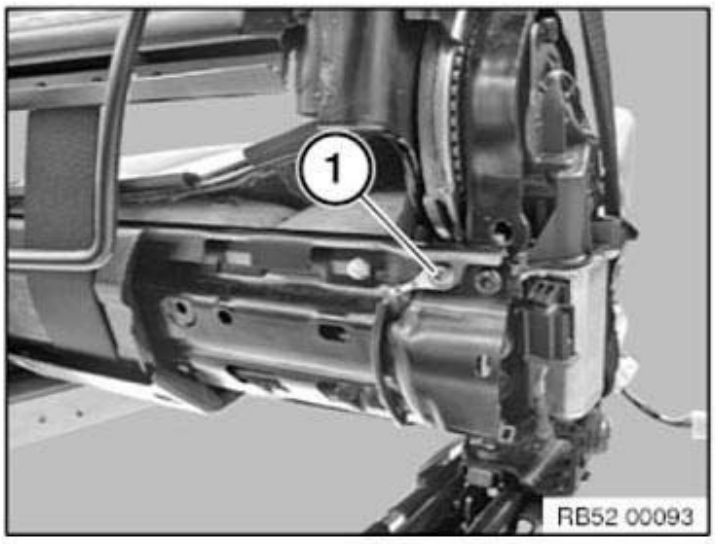


Fig. 62: Identifying Bolting Point Of Ground Cable
Courtesy of BMW OF NORTH AMERICA, INC.

Cut open cable strap (1).

Lift the locking tab and pull the connector out of the side of the connector housing.

Installation note:

Replace cable tie (1).

Connector is encoded against incorrect assembly.

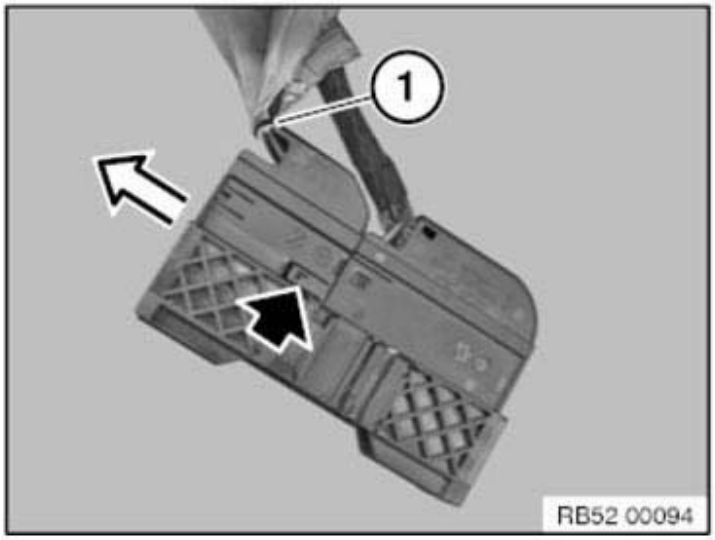


Fig. 63: Pulling Connector Out Of Connector Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Enabling seat occupancy detection (CIS mat):

- Connect BMW programming system
- Encode airbag control unit
- Delete fault memory if necessary

5214 FRONT SEAT, NORMAL, ELECTRIC

52 14 ... ADDITIONAL WORK IN EVENT OF FAULTY DRIVE/GEARING FOR LONGITUDINAL ADJUSTMENT

Release screws (1) of rockers for seat height adjustment.

Installation:

Carefully bend side section back and feed rocker out of top rail.

Tilt front seat back.

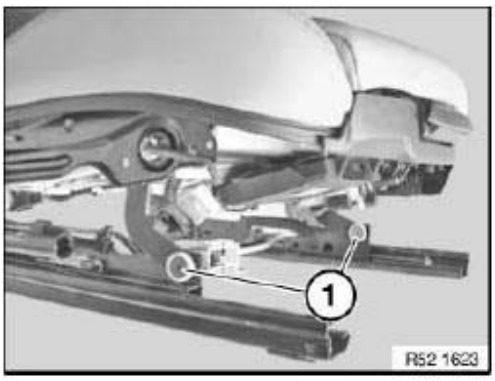


Fig. 64: Identifying Rocker Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

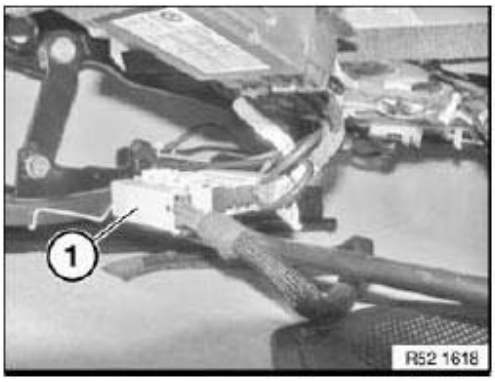


Fig. 65: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip central connector (2) from seat mechanism.

Unclip control units (1) See **6135080 Removing and installing/replacing control unit/module for left or right seat adjustment** or **6135095 Removing and installing/replacing control unit/module for seat heating** .

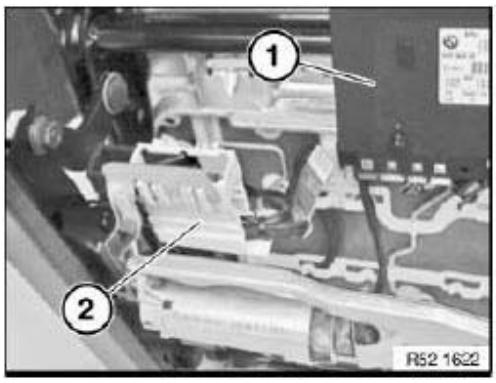


Fig. 66: Identifying Control Unit And Central Connector
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

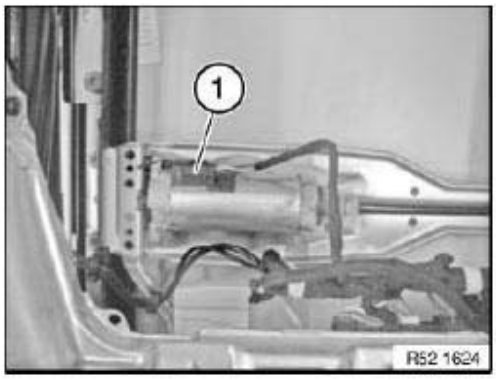


Fig. 67: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Bend metal tab (1) open.

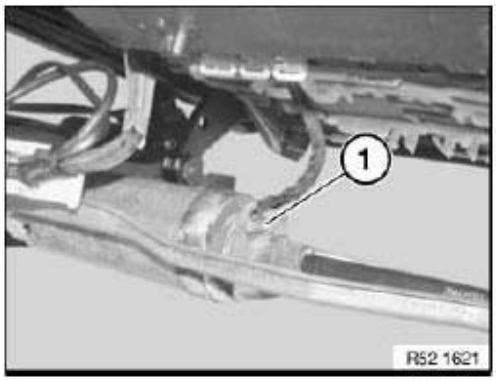


Fig. 68: Identifying Metal Tab
Courtesy of BMW OF NORTH AMERICA, INC.

Lift drive (1) and flex shaft (2) out of guide (4) in direction of arrow.

Detach drive (1) from rubber mounts (3).

Detach flex shaft (3) from drive (1).

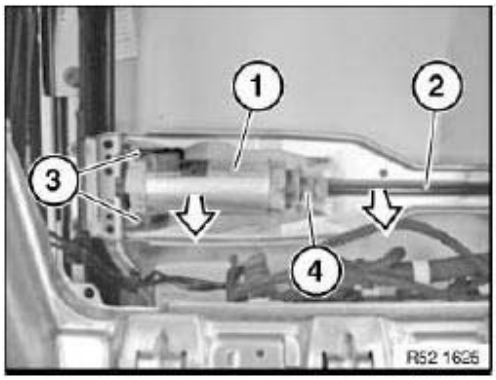


Fig. 69: Lifting Drive And Flex Shaft Out Of Guide
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1) at front.

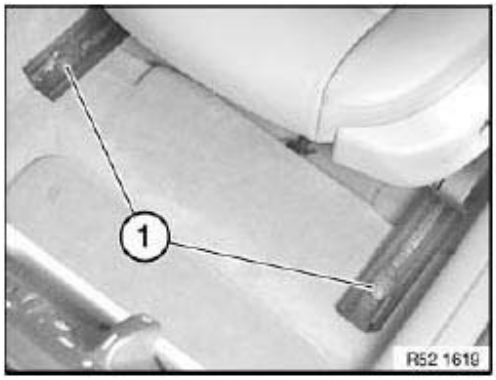


Fig. 70: Identifying Seat Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Install new drive for longitudinal seat adjustment.

Move front seat forwards.

Release screws (1) at rear.

IMPORTANT: Cover door sill with protective covers (risk of damage).

Lift out front seat and assemble.

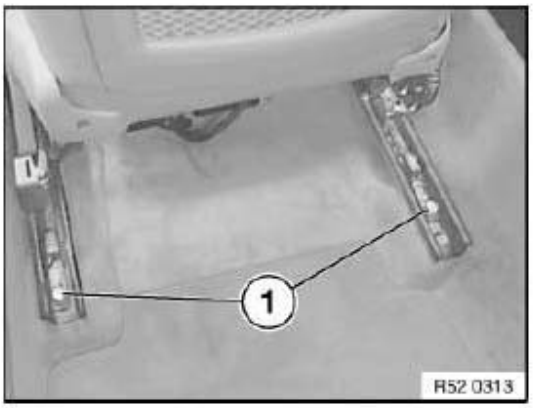


Fig. 71: Identifying Seat Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

- Make sure flex shaft is correctly fitted on drive
- Carpet must not get between seat rails and floor pan in area of fastening points (grating noises)
- Powerlok screws must be replaced and must **not** be reused
- Powerlok screws are mechanical screw locks with trilobular threads
- Insert all screws loose to avoid twisting
- Tighten down all screws to specified torque

  Tightening torque **52 10 1AZ** .

52 14 ... PERFORMING FUNCTION CHECK WITH ADAPTER CABLE (FOR SEAT REPAIRS)

NOTE: The function check on a repaired driver's or front passenger seat can be performed outside the vehicle by using adapter cable 61 4 360.

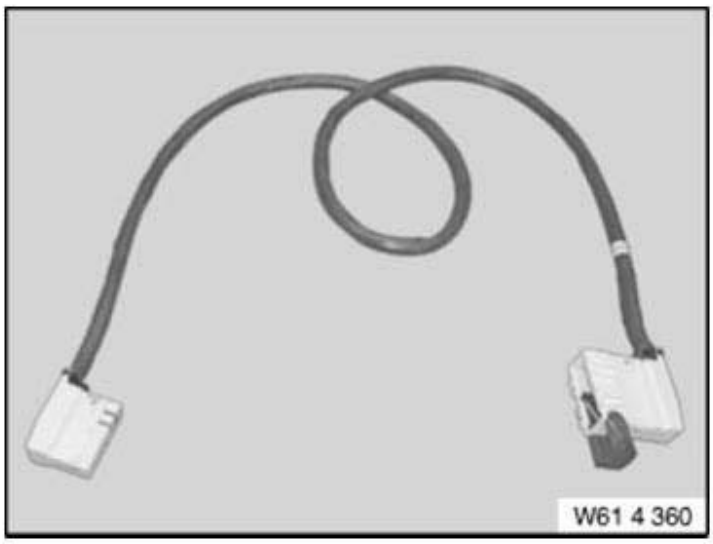


Fig. 72: Identifying Adapter Cable (61 4 360)
Courtesy of BMW OF NORTH AMERICA, INC.

Use:

Adapter cable 61 4 360 is connected to vehicle wiring harness (1) and removed seat (2).

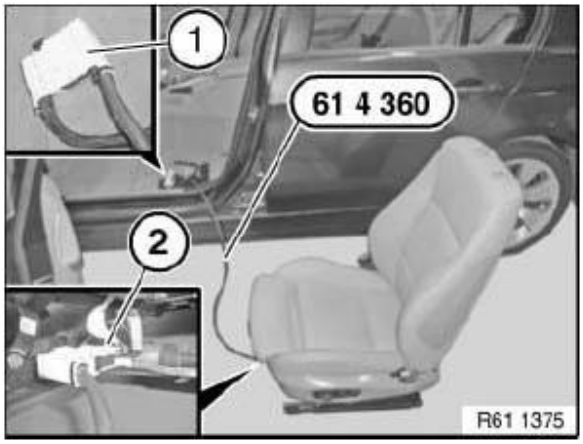


Fig. 73: Connecting Adapter Cable (61 4 360) To Vehicle Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

52 14 ... PERFORMING FUNCTION CHECK WITH ADAPTER CABLE (FOR SEAT REPAIRS)

NOTE: The function check on a repaired driver's or front passenger seat can be performed outside the vehicle by using adapter cable 61 4 360.

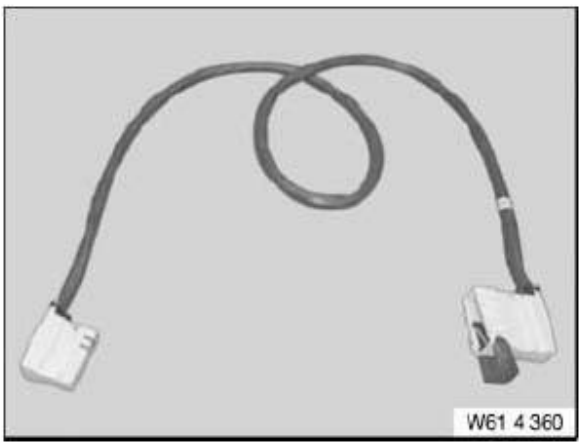


Fig. 74: Identifying Adapter Cable (61 4 360)
Courtesy of BMW OF NORTH AMERICA, INC.

Use:

Adapter cable 61 4 360 is connected to vehicle wiring harness (1) and removed seat (2).

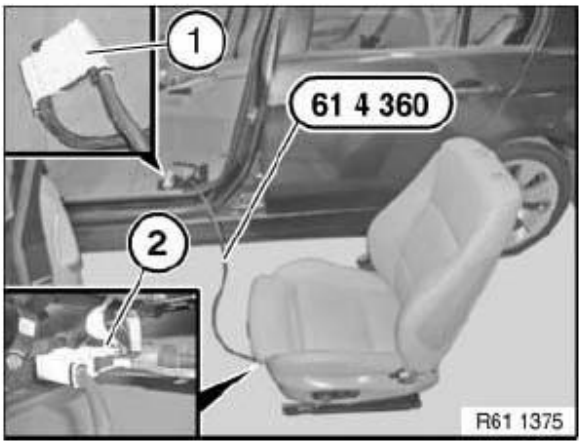


Fig. 75: Connecting Adapter Cable (61 4 360) To Vehicle Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 021 REMOVING AND INSTALLING/REPLACING FLEXMAT ON LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks

- Remove padding for front seat See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)**

Remove plug housing (1) from flexmat.

Cut all cable ties and disengage wiring harnesses from flexmat.

Installation:

Make sure wiring harnesses are laid correctly.

Observe bending radius and do not lay wiring harnesses tensioned.

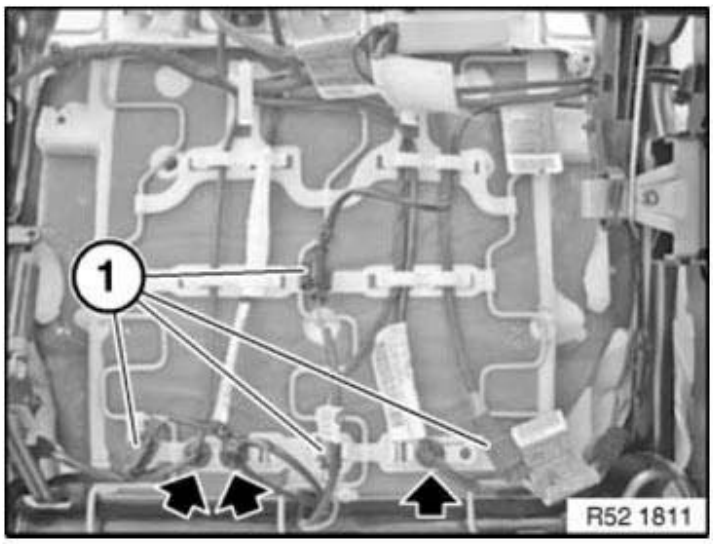


Fig. 76: Identifying Flexmat Plug Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Disengage flexmat (1) at front.

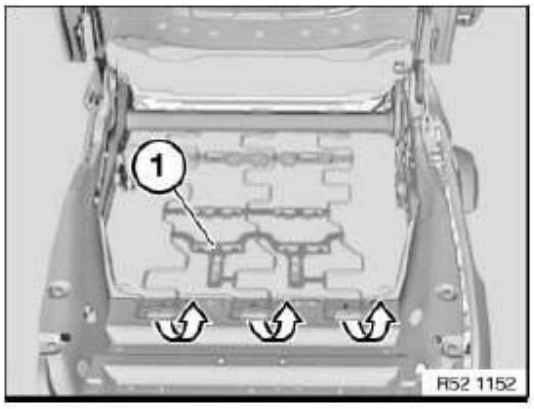


Fig. 77: Removing Flexmat
Courtesy of BMW OF NORTH AMERICA, INC.

Swing flexmat (1) down and disengage from seat frame.

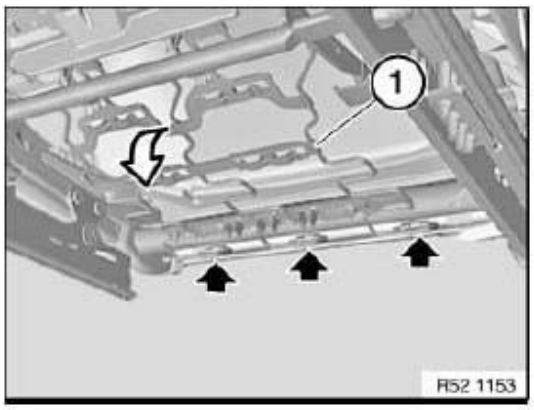


Fig. 78: Moving Flexmat
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 ... REMOVING AND INSTALLING ISOFIX HOLDER

Necessary preliminary tasks

- Remove seat fabric See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)**

Release screws (1).

Tightening torque **52 10 07AZ** .

Remove Isofix holder.

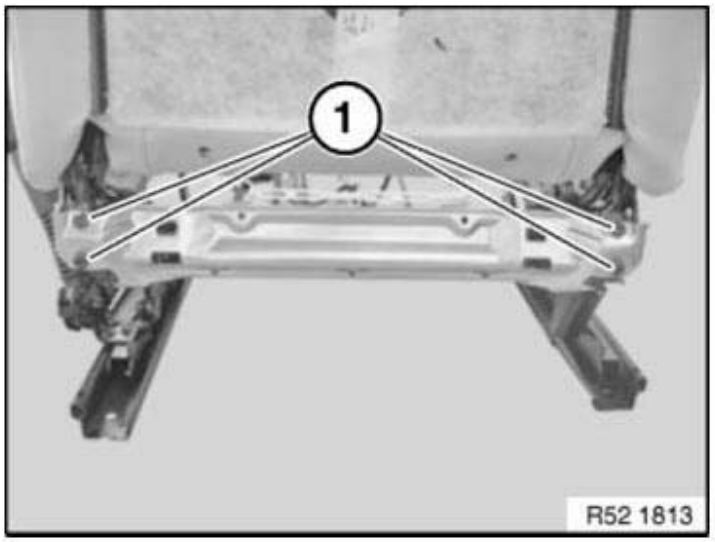


Fig. 79: Identifying Isofix Holder Screws
Courtesy of BMW OF NORTH AMERICA, INC.

52 14 ... REMOVING AND INSTALLING CARRIER FOR OUTER COVER ON LEFT OR RIGHT FRONT SEAT (ELECTRIC)

Necessary preliminary tasks

- Remove **OUTER COVER**

Cut open cable tie (1).

Unlock and disconnect plug connections (2) on servodrive.

Release screw (3).

Tightening torque **52 10 06AZ** .

Unclip carrier in marked area and remove.

Installation:

Replace cable ties.

Make sure carrier is correctly seated on seat mechanism.

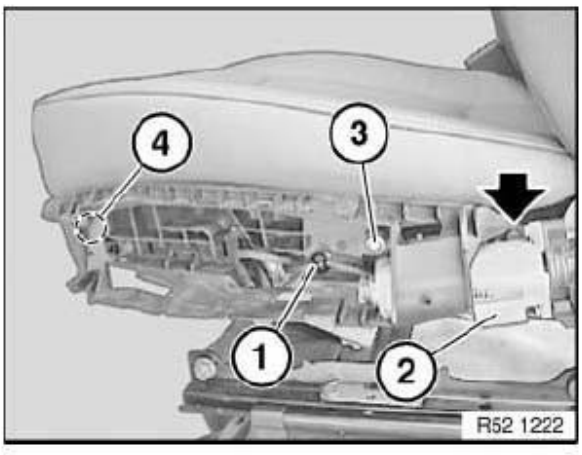


Fig. 80: Identifying Cable Tie, Plug Connections With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 000 REMOVING AND INSTALLING LEFT OR RIGHT FRONT SEAT (NORMAL/MANUAL)

Necessary preliminary tasks

- Open convertible top
- Disconnect **BATTERY NEGATIVE LEAD**

IMPORTANT: An airbag module and a pyrotechnical seat belt tensioner are installed in the front seat.
Improper handling can lead to triggering of the pyrotechnical seat belt pretensioner or side airbag, resulting in injuries.

Installation:

- Powerlok screws must be replaced and must **not** be reused
- Powerlok screws are mechanical screw locks with trilobular threads
- Screws are fitted with a Torx Plus system and can be released with a standard Torx screwdriver

Move seat to upper back position.

Release and dispose of screws (1).

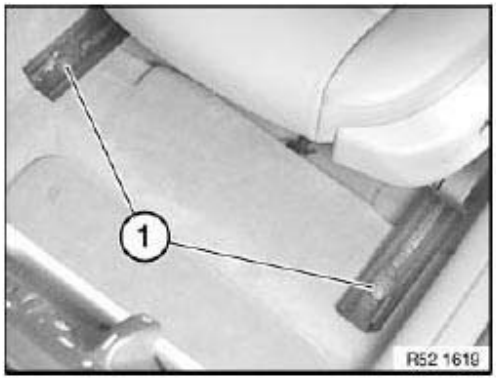


Fig. 81: Identifying Seat Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Move seat forwards and position flush with seat runners.

Unclip release tab (2) for belt anchor fitting trim (1) with plastic wedge.

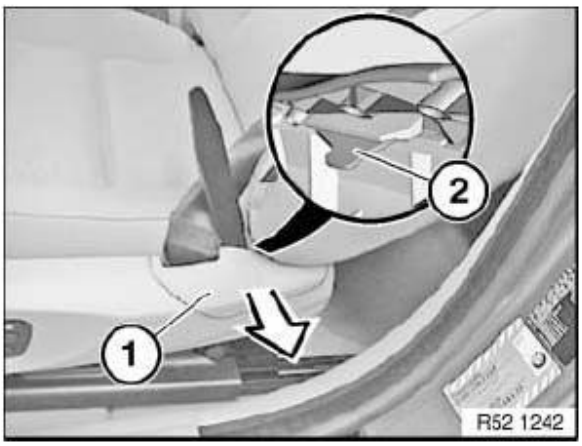


Fig. 82: Removing Release Tab For Belt Anchor Fitting Trim Using Plastic Wedge
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Tightening torque **72 11 2AZ** .

Remove anchor fitting (2).

Installation:

Make sure anchor fitting (2) is correctly seated on seat mechanism pin.

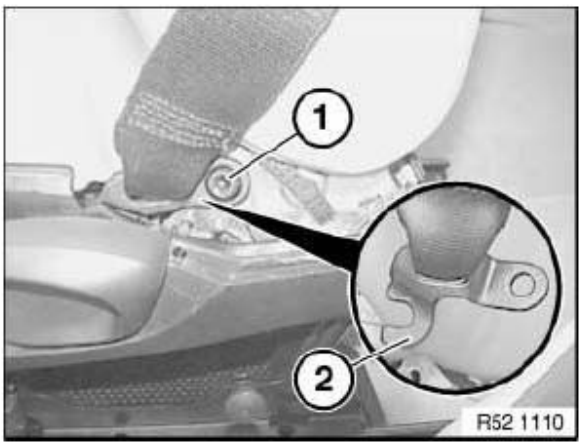


Fig. 83: Identifying Anchor Fitting With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Release and dispose of screws (1).

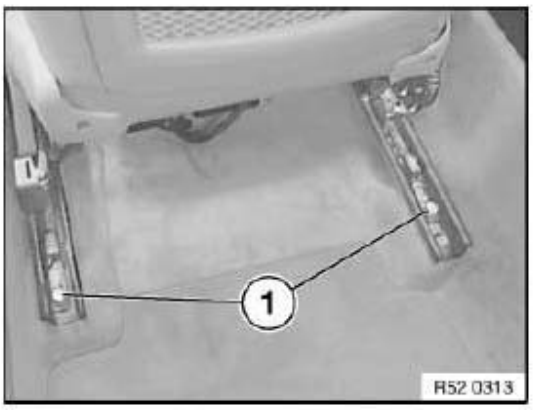


Fig. 84: Identifying Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect plug connection (1).

IMPORTANT: Cover door sill with protective covers (risk of damage).

Lift out front seat.

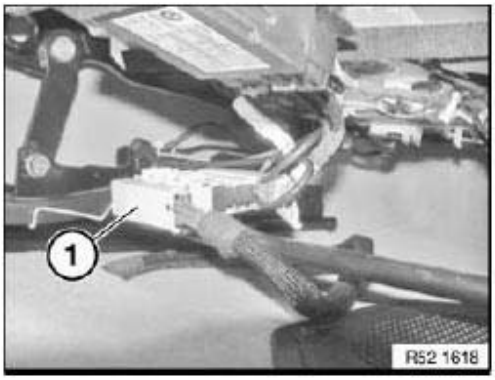


Fig. 85: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

- Carpet must not get between seat rails and floor pan in area of fastening points (grating noises)
- Replace microencapsulated screws
- Insert all screws loose to avoid twisting
- Tighten down all screws to specified torque

Tightening torque **52 10 1AZ** .

WARNING: When carrying out further work on the front seat, it is absolutely

imperative to observe the SAFETY REGULATIONS on handling airbag modules and pyrotechnical seat belt tensioners
Improper handling can lead to triggering of the pyrotechnical seat belt pretensioner or side airbag, resulting in injuries.

52 13 390 REMOVING AND INSTALLING OR REPLACING FRONT LEFT OR RIGHT HEAD RESTRAINT

WARNING: Danger of pinching!

Reach on left and right under head restraint and unclip in jerks in upward direction.

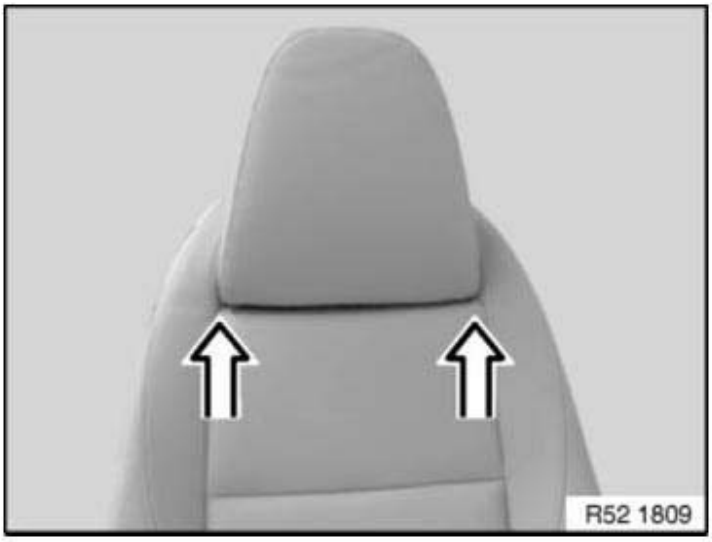


Fig. 86: Removing Head Restraint
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 198 REMOVING AND INSTALLING OR REPLACING REAR PANEL ON LEFT OR RIGHT FRONT SEAT BACKREST

Release clips (1) with diagonal cutting pliers.

Remove rear panel (2) downwards with a turning action.

NOTE: Remove remnants of clips.

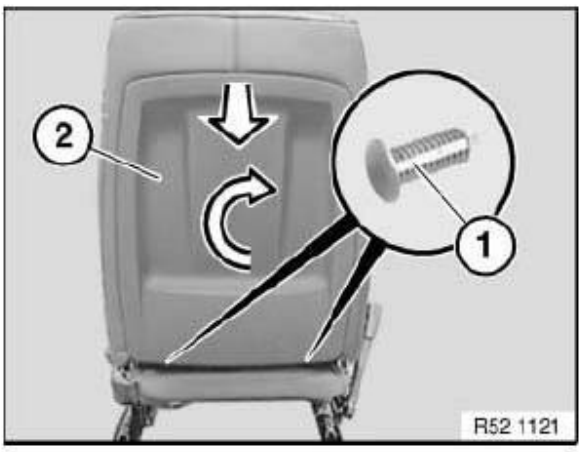


Fig. 87: Removing Rear Panel
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Retaining hooks (1) and bore holes (2) on rear panel (3) must not be damaged.

Replace faulty clips.

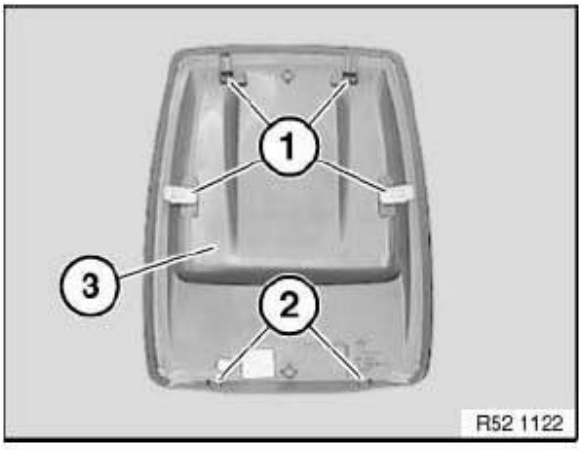


Fig. 88: Identifying Hooks And Bore Holes On Rear Panel
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 030 REMOVING AND INSTALLING/REPLACING BACKREST FRAME ON LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks

- Remove **FRONT SEAT**
- Remove **REAR PANEL** on front seat backrest

Release airbag wiring harness (2) from cable holders on flexmat.

Disconnect cable tie from clips.

Raise release clip (3) and pull plug (4) out of plug housing (1).

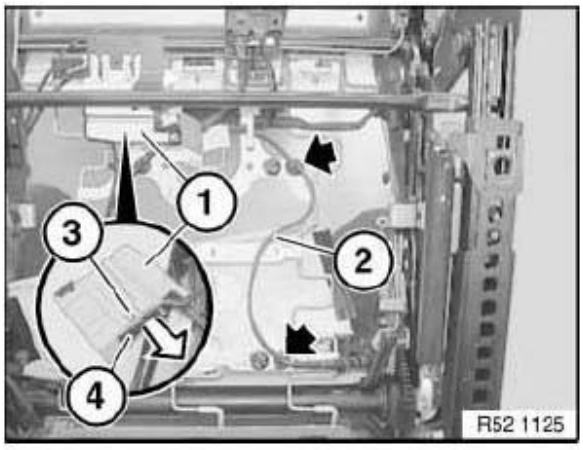


Fig. 89: Pulling Plug Out Of Plug Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Always feed in cable tie (1) at narrow end of plug housing in direction of arrow.

Cables must be secured with insulation under cable tie.

Firmly tighten cable tie (1) to relieve strain. It must not be possible to move the cable.

Make sure plug (2) is correctly locked in plug housing (3).

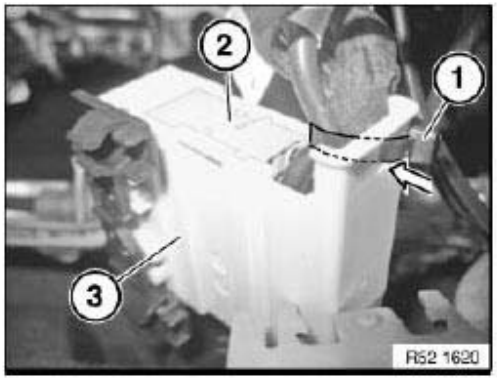


Fig. 90: Installing Cable Tie At Narrow End Of Plug Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

Unclip cable.

Release wiring harness (3) from cable holders on seat mechanism.

Unfasten plug connection (2) and disconnect.

IMPORTANT: Feed all wiring harnesses carefully through the seat and backrest mechanism as the edges of the frame can be sharp.

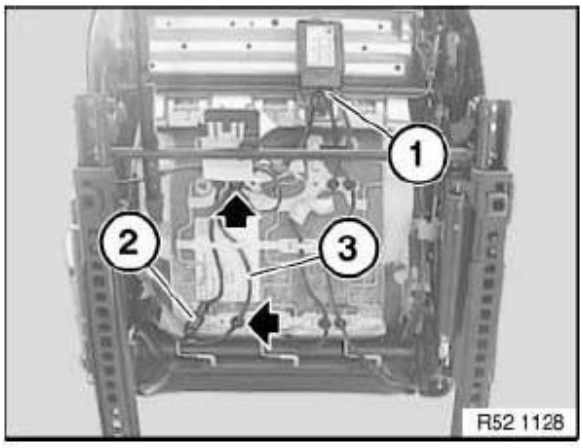


Fig. 91: Identifying Plug Connections And Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

Unhook backrest cover (1) on left and right.

Release screws (2) on left and right.

Tightening torque **52 10 02AZ** .

Remove backrest frame (3) completely towards top.

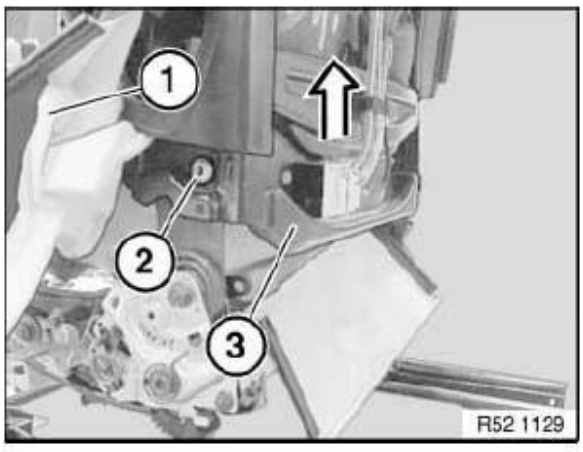


Fig. 92: Removing Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

- Remove backrest cover with padding.
- Remove **SIDE AIRBAG** .
- Remove lumbar support See **5215059 Removing and installing/replacing lumbar support pump with valve housing for lumbar support/backrest width adjustment**; **5213059 Removing and installing/replacing lumbar support pump with valve housing for lumbar support**; **5213055 Removing and installing/replacing lumbar support on front seat** or **5215061 Replacing both air cushions for backrest width adjustment on left or right front seat**.

52 13 025 REMOVING AND INSTALLING/REPLACING LEFT OR RIGHT SEAT MECHANISM (NORMAL/MANUAL)

This job is described under:

- Remove **BACKREST FRAME** on front seat

Replacement only:

- Remove seat cover See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)** for front seat
- Remove **SEAT BELT TENSIONER**
- Remove control unit for seat heating See **6135080 Removing and installing/replacing control unit/module for left or right seat adjustment** or **6135095 Removing and installing/replacing control unit/module for seat heating**

Seat mechanism is supplied complete with corresponding drive units.

Unlock plug housing (3) and remove from holder.

Disengage wiring harnesses from flexmat.

Installation:

Make sure wiring harnesses are laid correctly.

Observe bending radius and do not lay wiring harnesses tensioned.

Release screws (1).

Tightening torque **52 10 05AZ** .

Remove holder (2) for control unit.

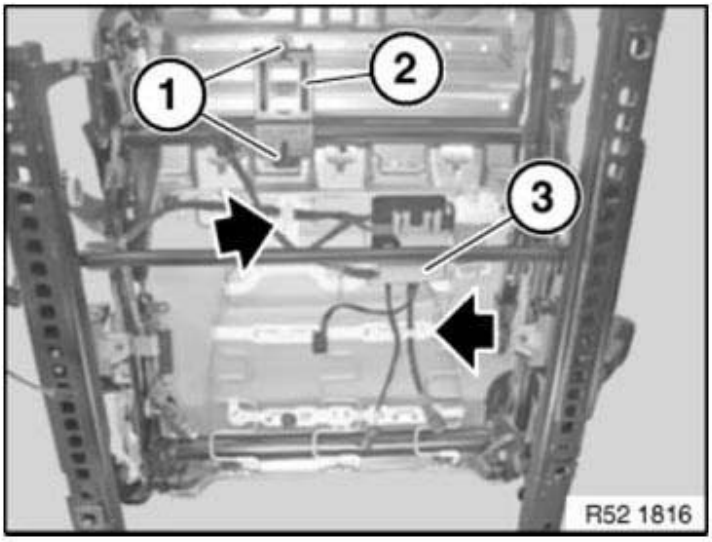


Fig. 93: Identifying Plug Housing With Screws And Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Tightening torque **52 10 03AZ** .

Remove belt buckle deflector trim (2).

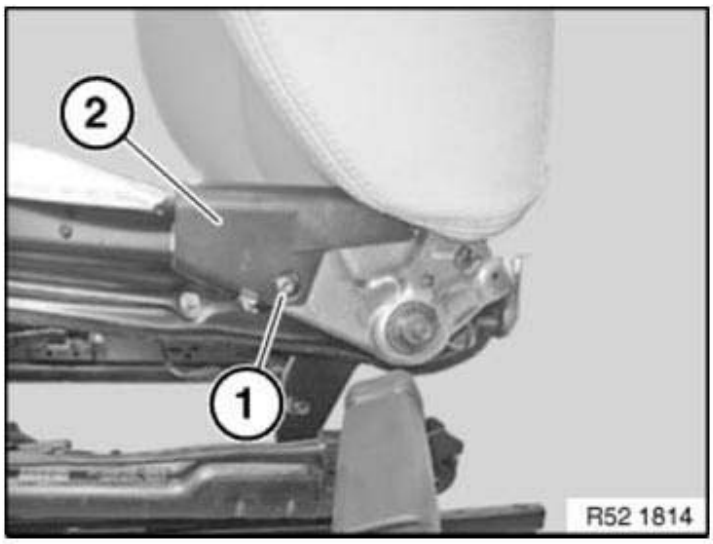


Fig. 94: Identifying Belt Buckle Deflector Trim With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Sport seat only:

Release screws (1).

Remove connection for thigh support.

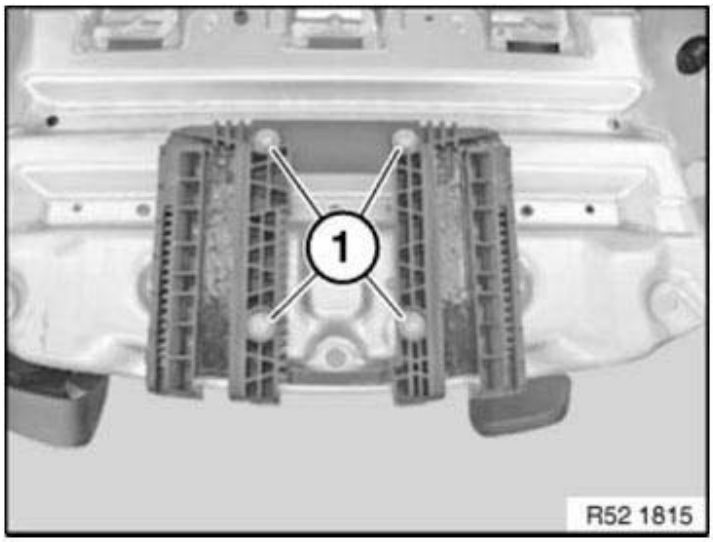


Fig. 95: Identifying Screws
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 055 REMOVING AND INSTALLING/REPLACING LUMBAR SUPPORT ON FRONT SEAT

Necessary preliminary tasks

- Remove **REAR PANEL ON FRONT SEAT**

Detach backrest cover (1) from backrest frame.

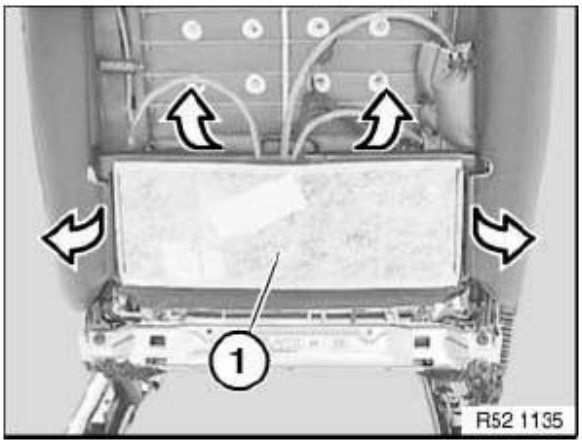


Fig. 96: Removing Backrest Cover From Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Do not pop valve housing (1) out of backrest frame for this operation.

Carefully pull valve housing (1) forwards out of backrest frame.

Unlock quick connectors and detach air hoses from valve housing (1).

NOTE: Connections are coded against incorrect assembly.

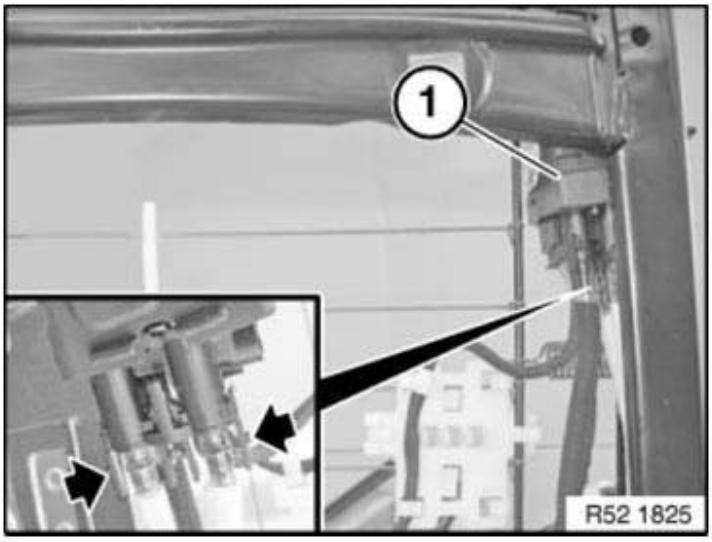


Fig. 97: Identifying Valve Housing

Courtesy of BMW OF NORTH AMERICA, INC.

Detach lumbar cushion (1) from spring wire.

Installation:

Attach lumbar cushion (1) to second and fourth wires from below.

Press backrest support forwards a little.

Pull out lumbar cushion (1) downwards.

Feed air hoses out of backrest frame and spring wire.

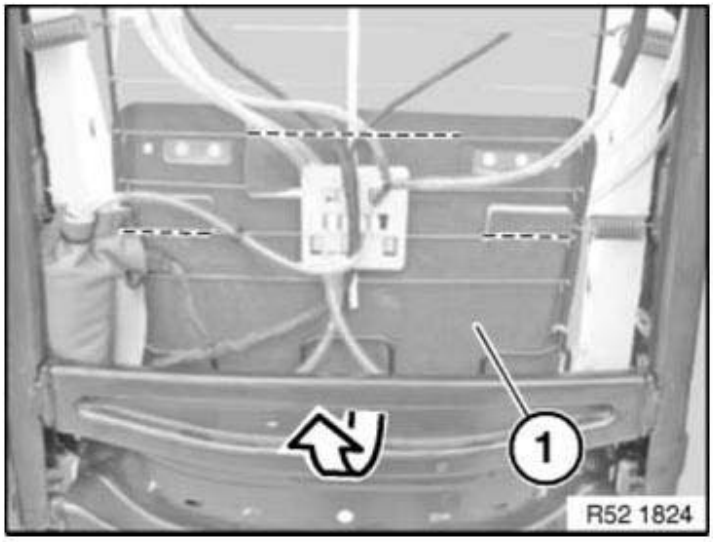


Fig. 98: Pulling Out Lumbar Cushion
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check lumbar cushion at top (1) and bottom (2) for damage.

Air hoses (3) must not be kinked.

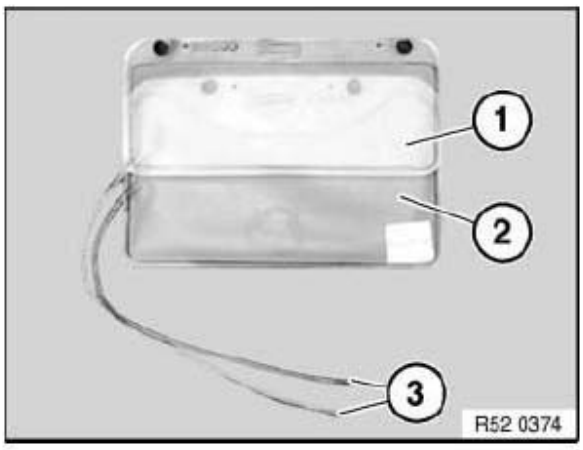


Fig. 99: Identifying Lumbar Cushion At Top And Bottom With Air Hoses
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Carry out **FUNCTION CHECK** .

52 13 059 REMOVING AND INSTALLING/REPLACING LUMBAR SUPPORT PUMP WITH VALVE HOUSING FOR LUMBAR SUPPORT

Necessary preliminary tasks

- Remove **REAR PANEL ON FRONT SEAT**

Detach backrest cover (1) from backrest frame.

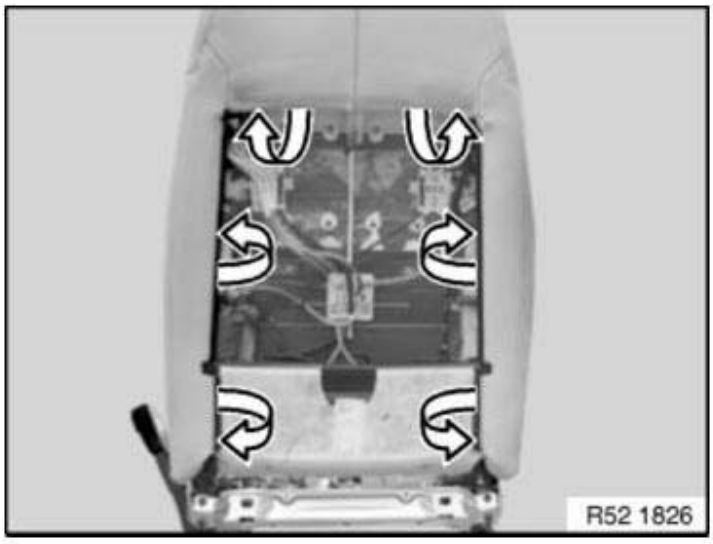


Fig. 100: Removing Backrest Cover From Backrest Frame

Courtesy of BMW OF NORTH AMERICA, INC.

Release cable tie (1).

Installation:

Replace defective cable tie.

Open zip fastener (2).

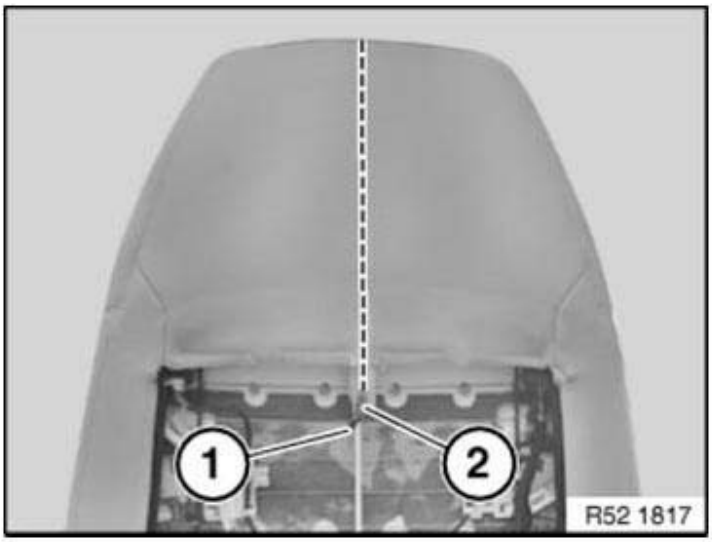


Fig. 101: Identifying Cable Tie And Zip Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

Detach cable tie.

Installation:

Replace defective cable ties.

Remove lumbar support pump (1) from backrest frame.

Unfasten plug connection (2) and disconnect.

Unclip air hose from holder (3).

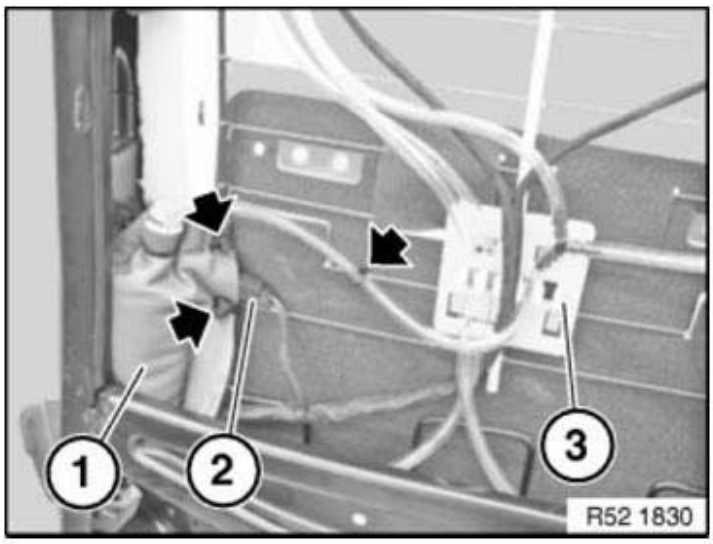


Fig. 102: Identifying Lumbar Support Pump With Plug Connection And Air Hose Holder
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows removal without backrest cover for purposes of clarity.

Pop valve housing (2) for lumbar support in direction of arrow out of backrest frame.

Disengage wiring harness from cable tie (3).

Installation:

Feed rubber plug (1) through backrest frame.

Pull rubber plug (1) and pop valve housing into backrest frame.

Check rubber sleeve of valve housing for correct seating in backrest frame.

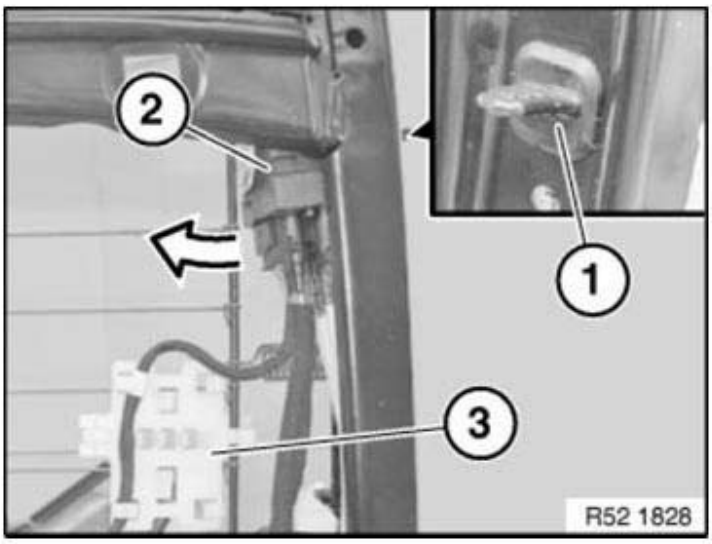


Fig. 103: Removing Valve Housing For Lumbar Support Out Of Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

Unlock quick connector and detach air hoses (2) and (3 and 4) from valve housing.

Valve unit for lumbar support:

(2) Hose (clear), lumbar drive
(3) Hose (blue), top lumbar cushion
(4) Hose (red), bottom lumbar cushion

NOTE: Connections are coded against incorrect assembly.

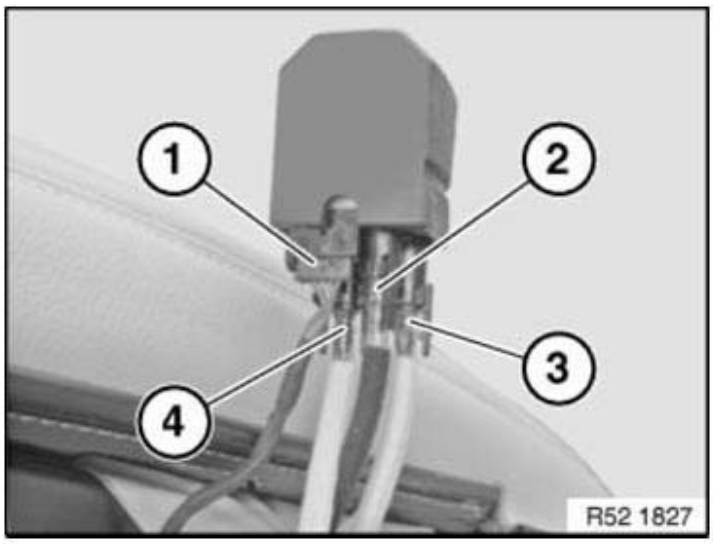


Fig. 104: Identifying Plug Connection With Hoses
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Carry out FUNCTION TEST .

52 14 040 REMOVING AND INSTALLING/REPLACING OUTER COVER ON FRONT LEFT OR RIGHT SEAT (NORMAL/ELECTRIC)

Necessary preliminary tasks

- Remove **FRONT SEAT**

NOTE: Picture shows installed seat by way of example.

Move backrest to full rearward position.

Unclip release tab (2) for belt anchor fitting trim (1) with plastic wedge.

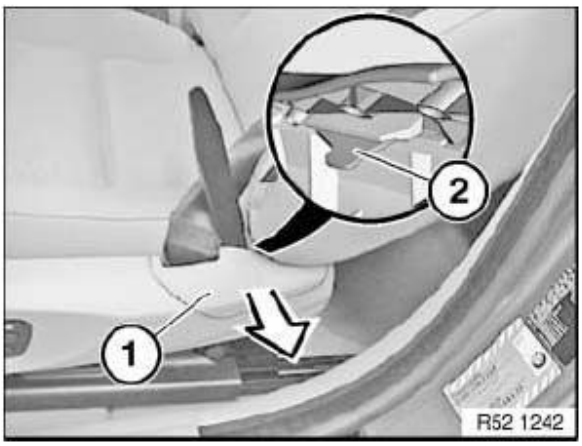


Fig. 105: Removing Release Tab For Belt Anchor Fitting Trim Using Plastic Wedge
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw or catch (3).

Lever lugs (1) out of holders (2).

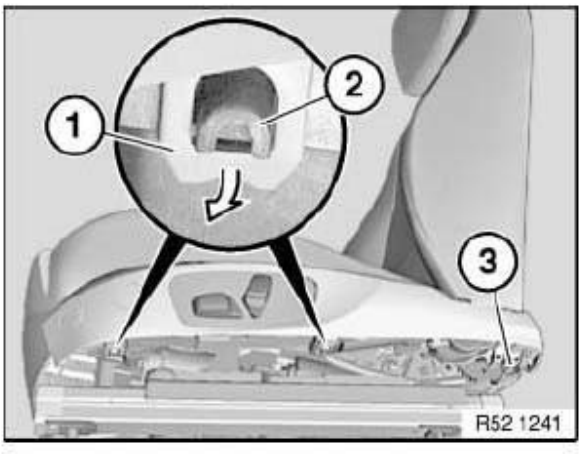


Fig. 106: Removing Lugs Out Of Holders
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Cover (1) could detach itself in from area with carrier section (2) from seat mechanism.

Carefully pull cover (1) with carrier section (2) in front area off seat mechanism.

Press unlocking lug (3) with screwdriver and detach cover from carrier section.

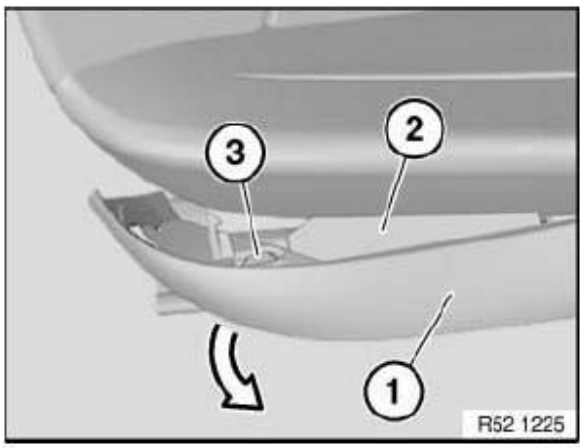


Fig. 107: Pulling Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Raise lug (1) and unlock.

Reach between seat padding and cover (2) and pull cover off carrier section.

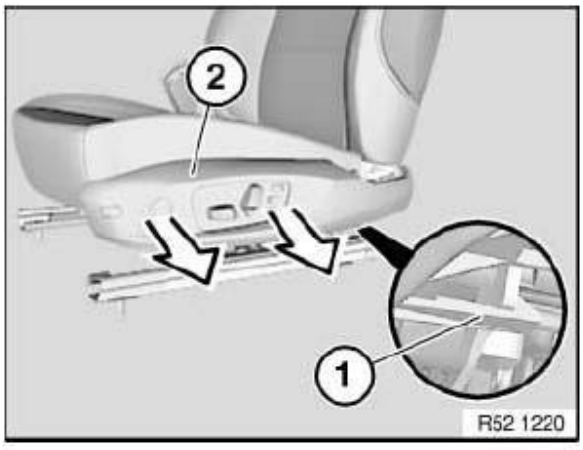


Fig. 108: Pulling Cover Off Carrier Section
Courtesy of BMW OF NORTH AMERICA, INC.

Unlock and disconnect plug connections:

1. Switch combination
2. Lumbar support
3. Backrest width adjustment

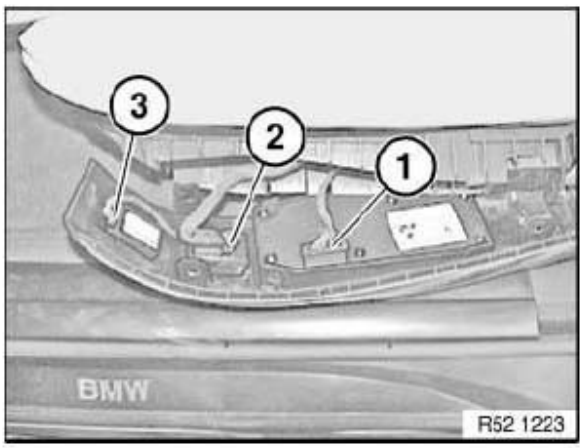


Fig. 109: Identifying Switch Combination, Lumbar Support And Backrest Width Adjustment
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Retaining clips and lugs of cover must not be damaged.

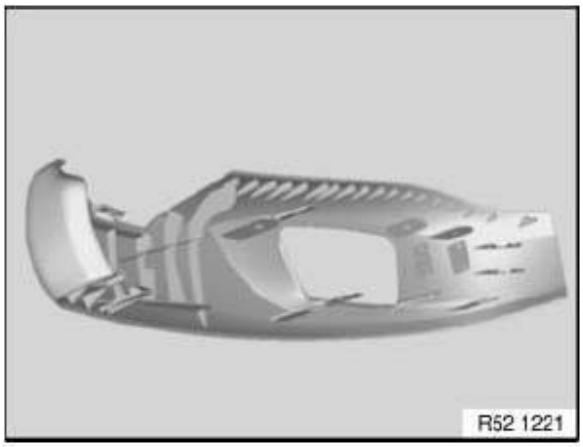


Fig. 110: Identifying Retaining Clips And Lugs Of Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement only:

Unlock catches of switch housing and remove switch from cover.

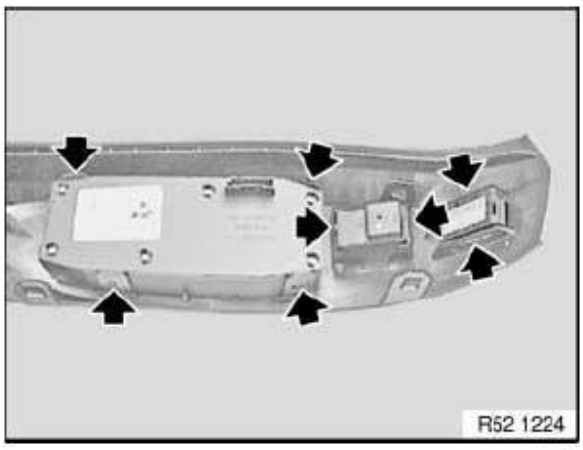


Fig. 111: Locating Catches Of Switch Housing
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 405 REPLACING BACKREST COVER FOR LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks

- Clamp off **BATTERY NEGATIVE LEAD**
- Remove **REAR PANEL**
- Remove **HEAD RESTRAINT**

Version with seat heating only

Unfasten plug connection (1) and disconnect.

Detach cable tie.

Release wiring harness (2) from cable holders on seat mechanism.

IMPORTANT: Feed the wiring harness carefully through the seat and backrest mechanism as the edges of the frame can be sharp.

Installation:

Lay wiring harness without kinks and tension.

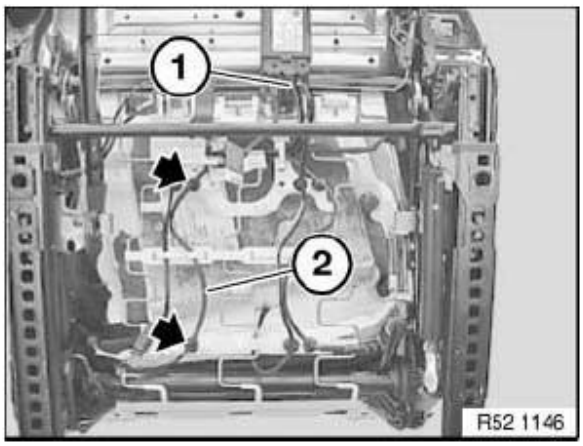


Fig. 112: Identifying Plug Connection And Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip cable tie (1) from seat mechanism.

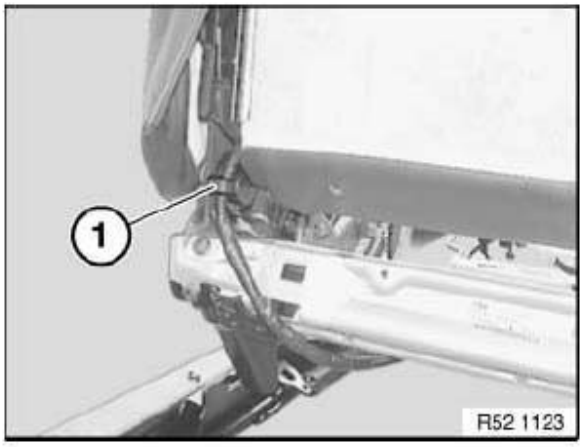


Fig. 113: Identifying Cable Tie Of Seat Mechanism
Courtesy of BMW OF NORTH AMERICA, INC.

Release cable tie (1).

Installation:

Replace defective cable tie.

Open zip fastener (2).

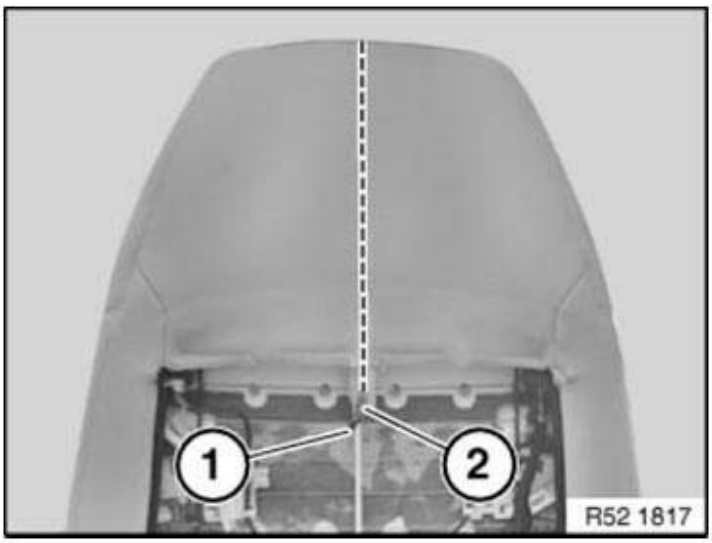


Fig. 114: Identifying Cable Tie And Zip Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

Detach backrest cover (1) from backrest frame.

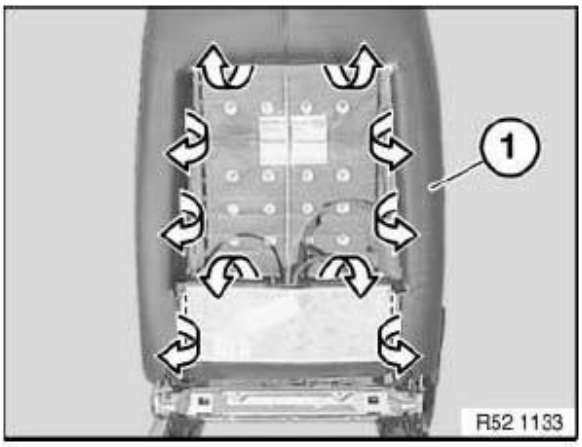


Fig. 115: Removing Backrest Cover From Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts (1).

Installation:

Replace nuts.

Tightening torque **72 12 03AZ** .

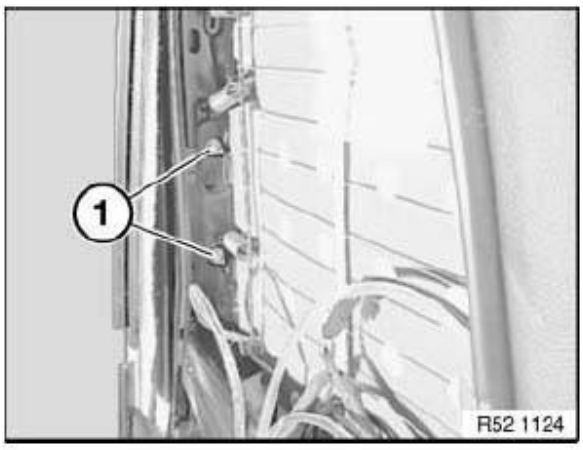


Fig. 116: Identifying Seat Mechanism Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Detach mounting strip (4) from flexmat.

Carefully pull airbag module (3) with threaded pins out of backrest frame and feed out between padding (1) and inner bag (2).

Set down airbag module (3) to one side.

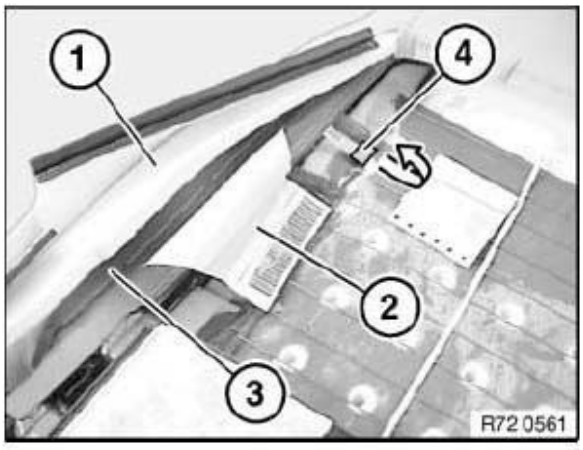


Fig. 117: Removing Mounting Strip From Flexmat
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Pull inner bag (1) fully over airbag module and threaded pins.

Feed in mounting strip (2) of inner bag (1) through backrest frame.

Insert threaded pins into backrest frame and secure with new nuts.

No inner bag material is permitted to project through the hole in the inner frame.

Install nuts and tighten down.

Tightening torques **72 12 03AZ** .

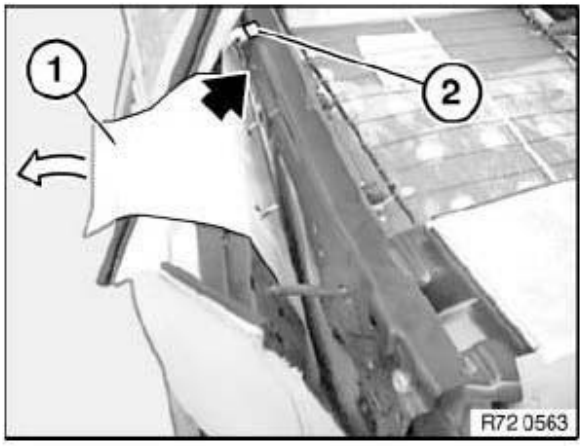


Fig. 118: Pulling Inner Bag Over Airbag Module And Threaded Pins
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Inner bag must be between airbag module and backrest frame!

Engage mounting strip (1) of inner bag in flexmat.

Position inner bag (2) smoothly over backrest frame.

Engage backrest cover (3) in backrest frame.

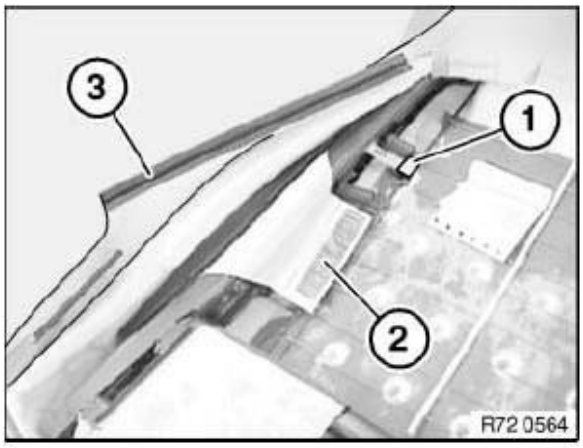


Fig. 119: Identifying Mounting Strip, Inner Bag And Backrest Cover

Courtesy of BMW OF NORTH AMERICA, INC.

Reposition backrest cover (1) at side and bottom and pull off with padding towards top from backrest frame.

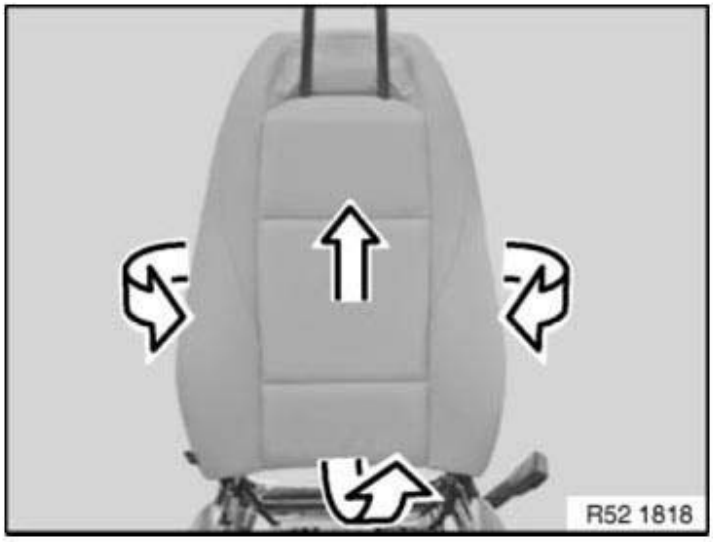


Fig. 120: Positioning Backrest Cover At Side And Bottom
Courtesy of BMW OF NORTH AMERICA, INC.

Release all retainers in marked area.

Remove backrest cover from padding.

NOTE: Remove all remnants of retainers from backrest cover and padding.

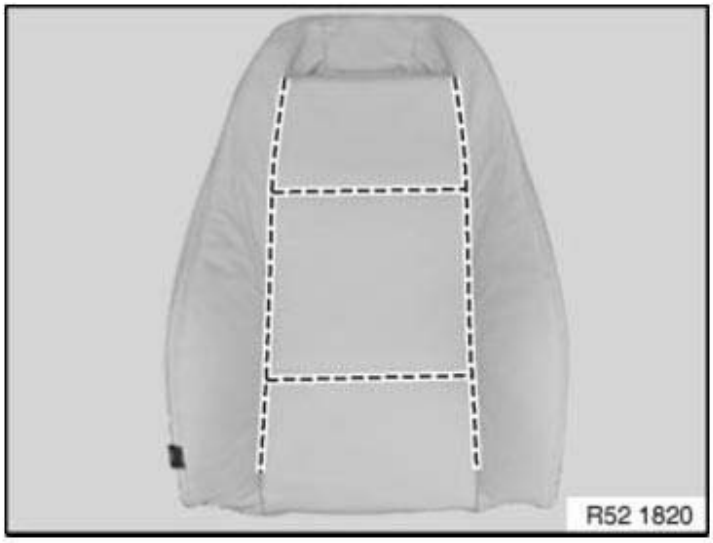


Fig. 121: Identifying Retainer Marked Area

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Bend new retainer (2) with special tool **52 0 050** .

1. Padding
2. Retainer
3. Trim wire in padding
4. Trim wire in backrest cover
5. Backrest cover

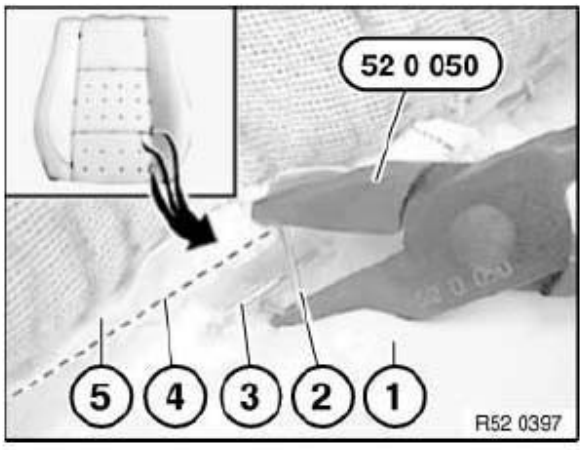


Fig. 122: Bending Retainer Using Special Tool (52 0 050)
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement of backrest cover

Pull trim wires out of backrest cover.

Cut new backrest cover to size and insert trim wires.

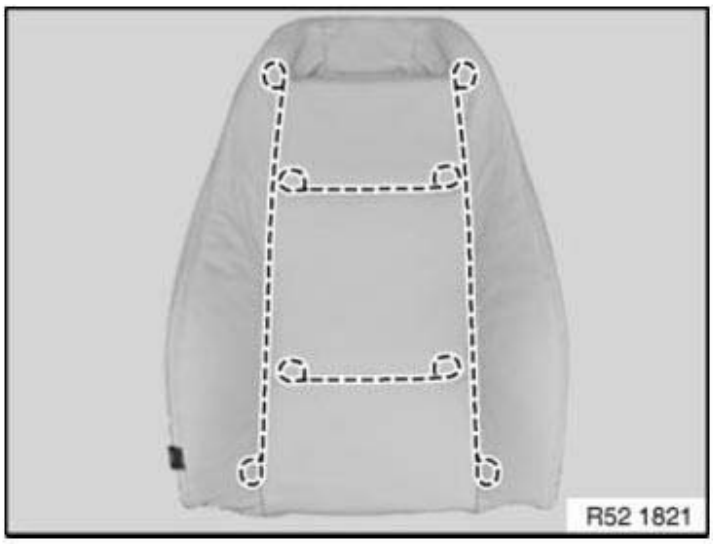


Fig. 123: Identifying Backrest Cover
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 455 REPLACING HEATING ELEMENTS FOR LEFT OR RIGHT FRONT SEAT (BASIC)

Necessary preliminary tasks

- Remove seat and backrest covers See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5213405 Replacing backrest cover for left or right front seat**

NOTE: Heating element is bonded to the foam section and cannot be separated from each other without incurring damaging.
Foam section and heating mat must be replaced.

Check new foam section:

- No obvious damage or material defects
- All trim wires present in foam
- No bubbles in foam section
- No dirt/contamination on foam or residual foam
- Pay attention to foam section on left and right

Check new heating mat:

- No obvious damage or material defects
- All tear-off film pieces presents
- Note variant by examining label on cable

Guide cable for backrest heating through foam hole.

Stick on main section (1):

- Pull adhesive film pieces off main section (1) and stick to upper edge of main section foam until flush

Stick on bead section (2):

- Pull adhesive film pieces off bead section (2) and stick on heating mat along bead section edges.
- Press down evenly in outwards direction

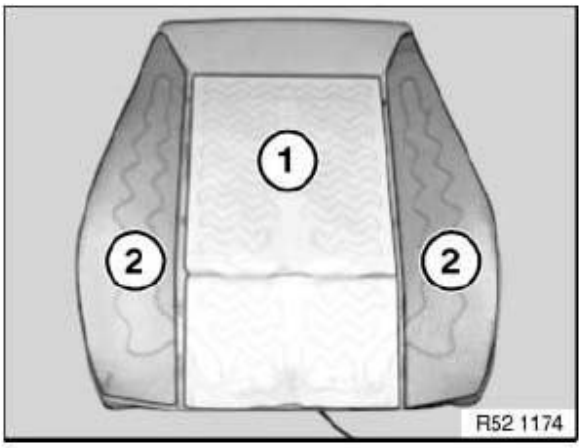


Fig. 124: Identifying Sticks On Main And Bead Section (Backrest Heating)
Courtesy of BMW OF NORTH AMERICA, INC.

Guide cable for seat heating through foam hole.

Stick on main section (1):

- Pull adhesive film pieces off main section (1) and stick to upper edge of main section foam until flush

Stick on bead section (2):

- Pull adhesive film pieces off bead section (2) and stick on heating mat along bead section edges.
- Press down evenly in outwards direction

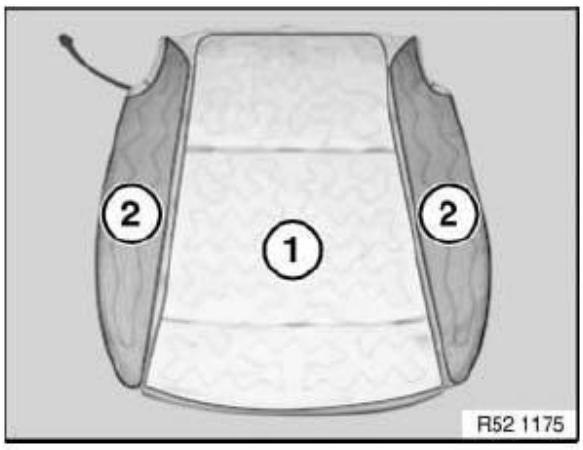


Fig. 125: Identifying Sticks On Main And Bead Section (Seat Heating)
Courtesy of BMW OF NORTH AMERICA, INC.

Check laying of heating mats:

- Heating mats laid without folds
- Heating mats correctly positioned
- All bonding surfaces stuck on

NOTE: Carry out FUNCTION CHECK .

52 13 415 REPLACING LEFT OR RIGHT SUPPORT FOR FRONT SEAT (NORMAL/MANUAL)

Operation is described in:

- Replacing **SEAT COVER ON LEFT OR RIGHT FRONT SEAT** .

WARNING: US/CDN front passenger seat (with CIS mat) only:
If CIS mat or padding is defective, both parts must be replaced together. Seat heating is integrated in the CIS mat and is stuck to the padding over the full surface.



Fig. 126: Identifying US/CDN Front Passenger Seat
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: The CIS mat must be enabled after each installation operation.

Enabling seat occupancy detector (CIS mat):

- Connect BMW programming system
- Code airbag control unit
- Clear fault memory if necessary

52 13 420 REPLACING LEFT OR RIGHT SUPPORT FOR FRONT SEAT BACKREST (NORMAL/MANUAL)

Operation is described in:

Replacing **BACKREST COVER FOR LEFT OR RIGHT FRONT SEAT** .

52 13 400 REPLACING SEAT COVER ON LEFT OR RIGHT FRONT SEAT (NORMAL/MANUAL)

Necessary preliminary tasks

- Remove **FRONT SEAT**
- Remove **OUTER COVER** on front seat

WARNING: US/CDN front passenger seat (with CIS mat) only:
If CIS mat or padding is defective, both parts must be replaced together.

WARNING: US/CDN front passenger seat (with CIS mat) only:

To avoid damaging the CIS mat, it is essential to carry out the following operations with extra care.

IMPORTANT: Risk of damage on sharp-edged seat mechanism.
Guide all cables carefully through seat and backrest mechanism.
Make sure cable is routed without kinks and tension.
Make sure plug connections are correctly locked.
Make sure plugs are correctly seated in catches.

Version with seat occupancy detector (CIS mat) only:

1. Data line CIS
2. Earth cable, seat pan
3. Earth cable, backrest frame

Unlock all plug connections and disconnect.

NOTE: From build date 09/2009 onward, earth cable (3) not included on backrest frame.

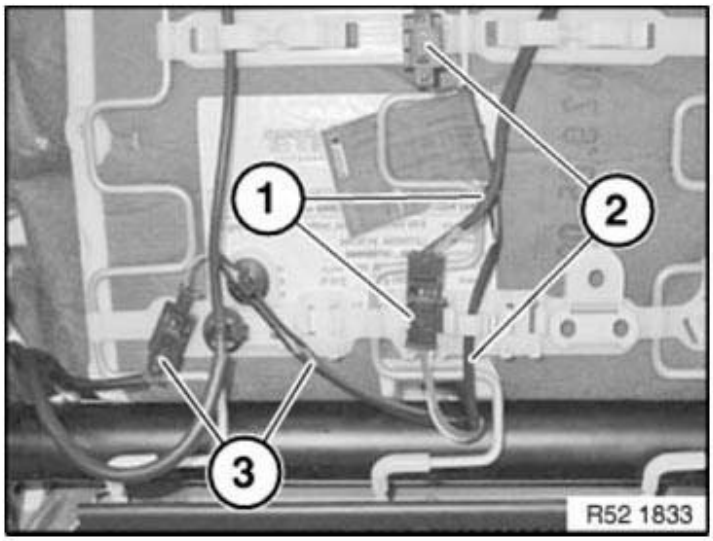


Fig. 127: Identifying Data Line CIS And Earth Cables
Courtesy of BMW OF NORTH AMERICA, INC.

Version with seat heating only:

Unlock plug connection (1) for seat heating and disconnect.

Unfasten cable strap.

Disengage wiring harness from cable clips (flexmat).

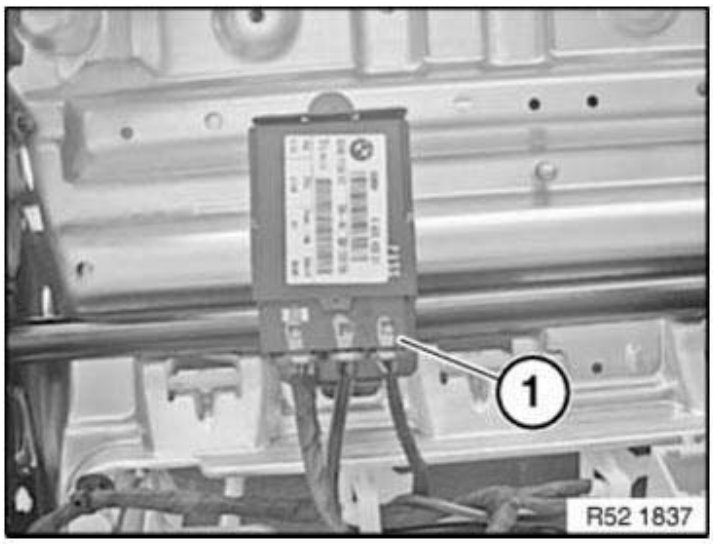


Fig. 128: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Version with seat occupancy detector without seat heating (CIS mat) only:

Seat heating is integrated in the CIS mat and is stuck to the padding over the full surface.

Lay cable for seat heating as shown to flexmat and secure with cable strap.

Secure plug with cable strap to cable.

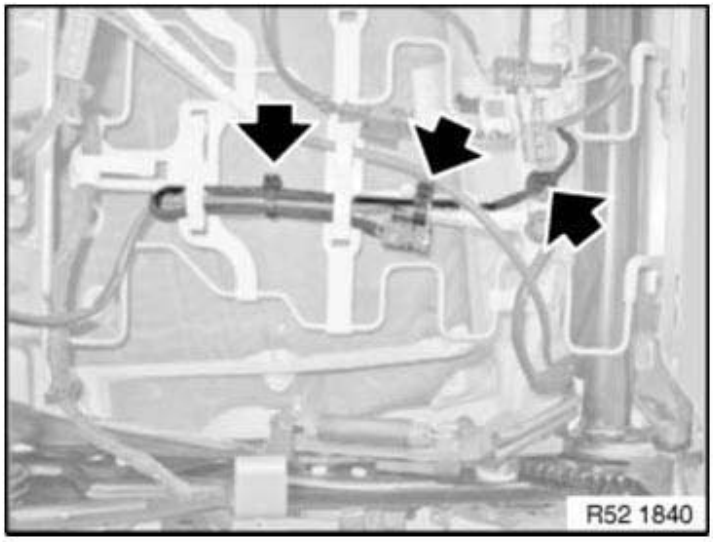


Fig. 129: Locating Plug With Cable Strap
Courtesy of BMW OF NORTH AMERICA, INC.

Vehicle exterior:

Lever clip (1) out of seat cover.

Installation:

If necessary, replace faulty clip.

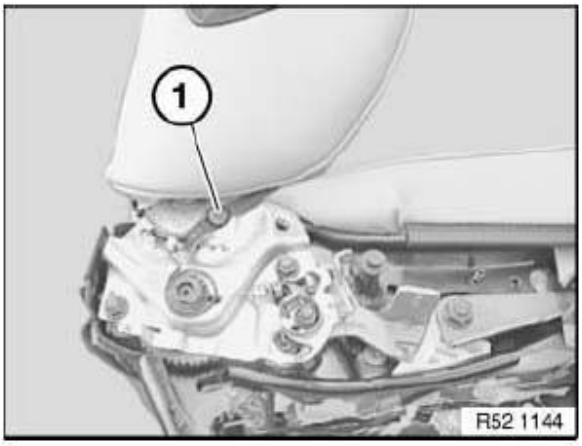


Fig. 130: Identifying Clip
Courtesy of BMW OF NORTH AMERICA, INC.

Tunnel side:

Disengage cover fastener (1) from belt deflector trim.

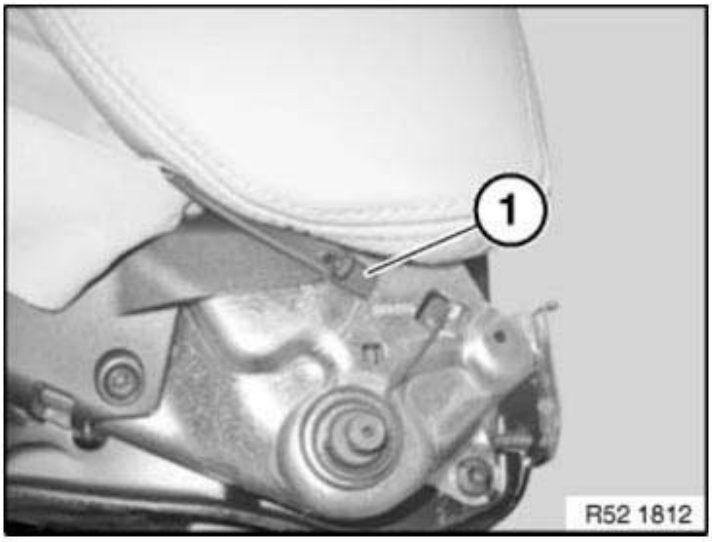


Fig. 131: Identifying Cover Fastener Of Belt Deflector Trim
Courtesy of BMW OF NORTH AMERICA, INC.

Detach seat cover (1) from seat frame.

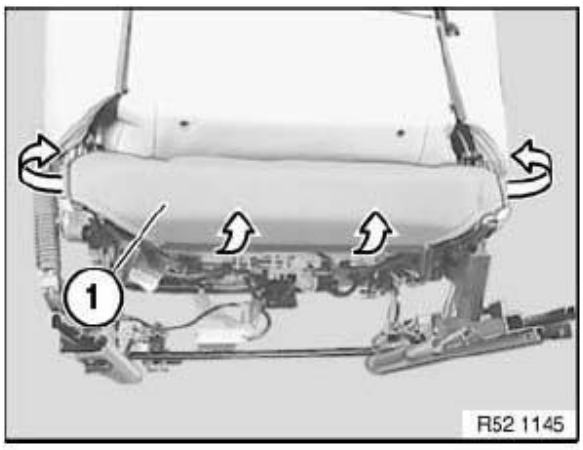


Fig. 132: Removing Seat Cover From Seat Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Pull out cover welt (1) completely from seat frame (2).

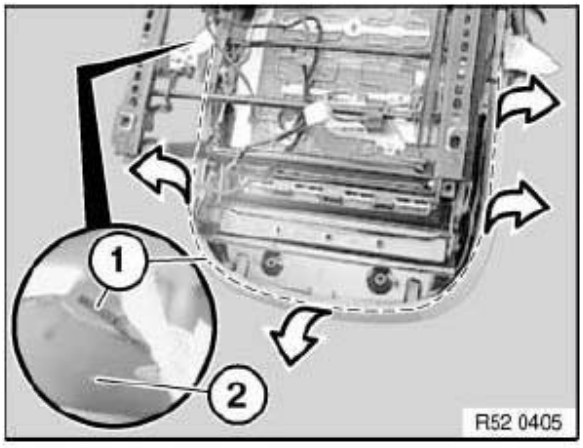


Fig. 133: Pulling Out Cover Welt From Seat Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Remove seat cover (1) with padding towards front/top.

IMPORTANT: Carefully slide bracing cloth with foam through backrest gap and seat structure.

Installation:

Slide foam completely through backrest gap and seat structure. Make sure foam and bracing cloth are correctly fitted.

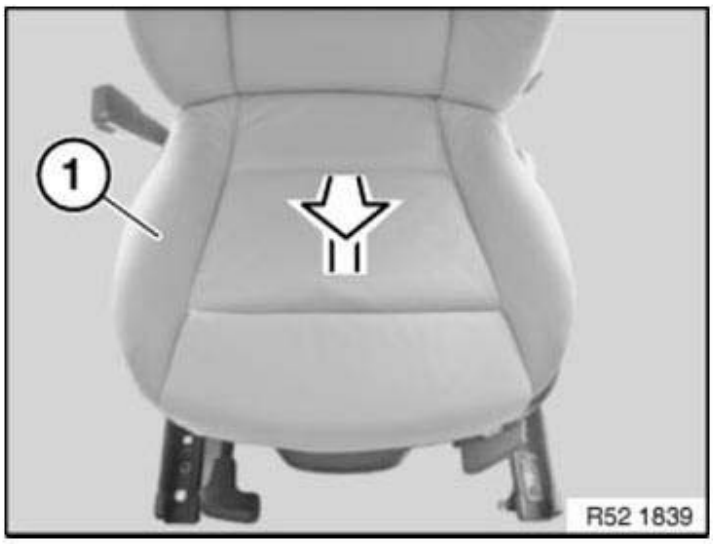


Fig. 134: Removing Seat Cover With Padding
Courtesy of BMW OF NORTH AMERICA, INC.

Version with seat heater and/or with seat occupancy detector (CIS mat):

Pull seat cover (1) with padding forward a little and feed wiring harnesses (2) out.

Remove seat cover (1) with padding towards front/top.

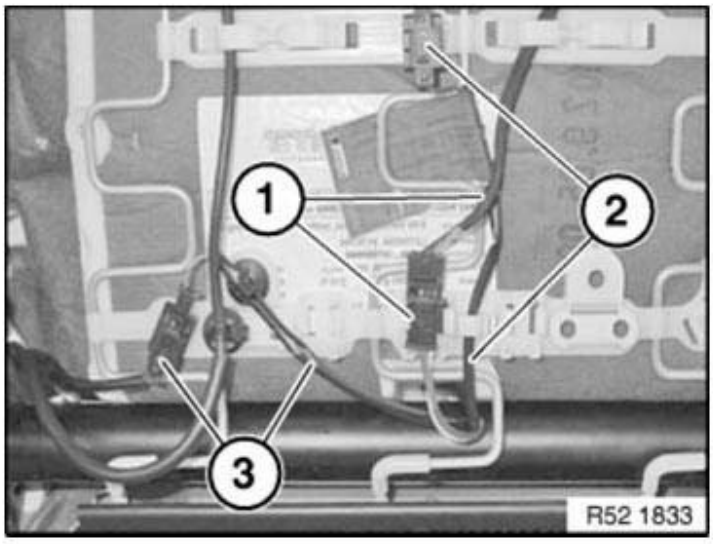


Fig. 135: Identifying Seat Cover With Wiring Harnesses
Courtesy of BMW OF NORTH AMERICA, INC.

Carefully detach all retainers in side area from OKE strips (1).

Carefully turn seat cover over and release retainers from OKE strips (2).

Remove seat cover from padding.

IMPORTANT: Remove all remnants of clips from seat cover and padding (CIS mat).

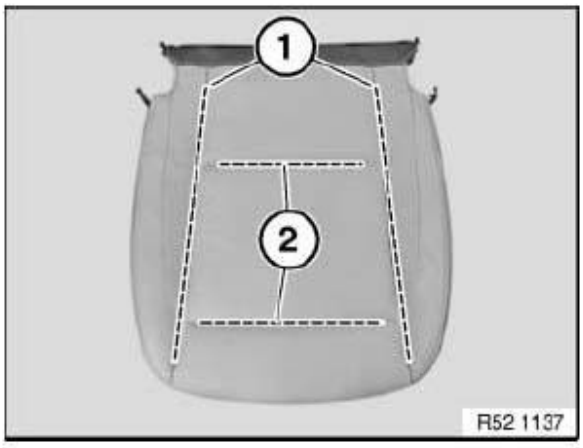


Fig. 136: Identifying OKE Strips
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Bend new retainers (2) with special tool **52 0 050** .

1. Padding
2. Retainer
3. Trim wire in padding
4. OKE strip in cover
5. Seat cover

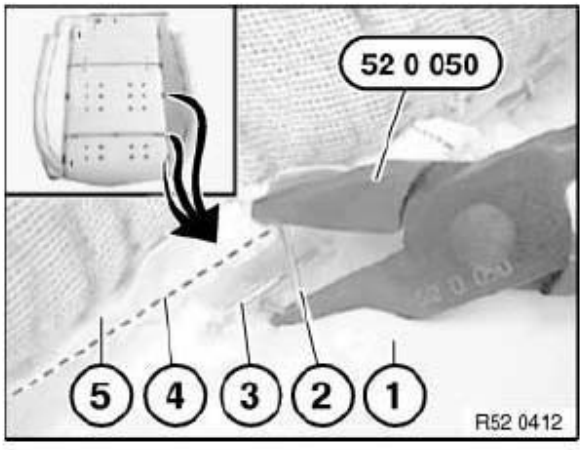


Fig. 137: Bending Retainers Using Special Tool (52 0 050)
Courtesy of BMW OF NORTH AMERICA, INC.

65 77 604 REPLACING SENSOR MAT (CIS MAT) FOR FRONT PASSENGER SEAT OCCUPANCY DETECTION DETECTOR

WARNING: Note AIRBAG SAFETY REGULATIONS !
Incorrect handling can lead to airbag deployment and cause injury.

WARNING: Only US and Canadian version of front passenger seat (with CIS mat):
The CIS mat can only be removed in conjunction with the padding from the seat cover.
If CIS mat or padding is defective, both parts may only be replaced together.
After fitting the seat cover, the CIS mat must be enabled with the BMW programming system.

Procedure for replacing the CIS mat together with the upholstery is described under:

- Remove padding for front seat See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)**

The work scope with CIS mat is different in the following work steps:

Release the bolting point (1) of the ground cable on the seat pan.

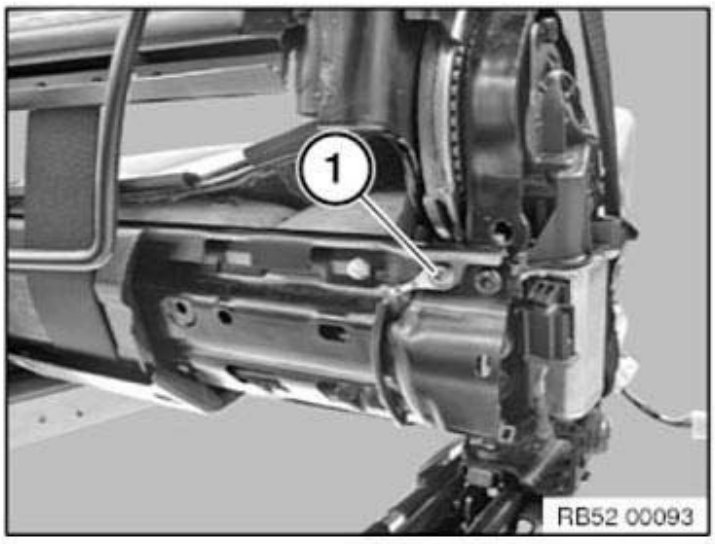


Fig. 138: Identifying Bolting Point Of Ground Cable
Courtesy of BMW OF NORTH AMERICA, INC.

Cut open cable strap (1).

Lift the locking tab and pull the connector out of the side of the connector housing.

Installation note:

Replace cable tie (1).

Connector is encoded against incorrect assembly.

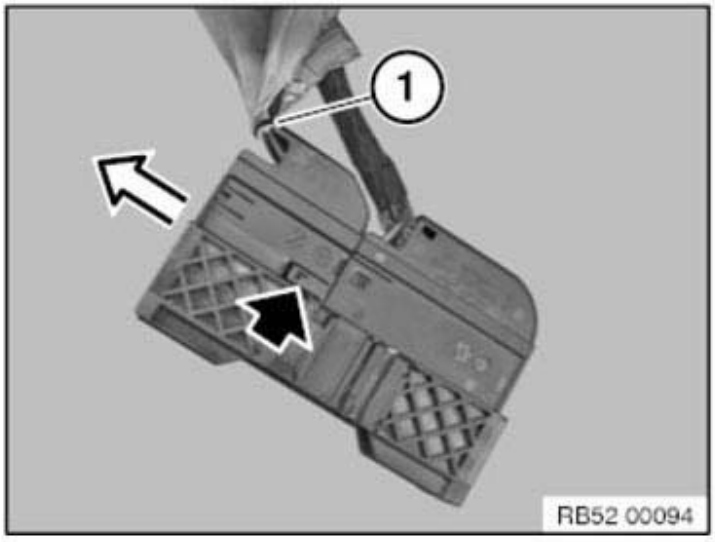


Fig. 139: Pulling Connector Out Of Connector Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Enabling seat occupancy detection (CIS mat):

- Connect BMW programming system
- Encode airbag control unit
- Delete fault memory if necessary

5215 FRONT SEAT, SPORTS, MANUAL

52 14 ... PERFORMING FUNCTION CHECK WITH ADAPTER CABLE (FOR SEAT REPAIRS)

NOTE: The function check on a repaired driver's or front passenger seat can be performed outside the vehicle by using adapter cable 61 4 360.

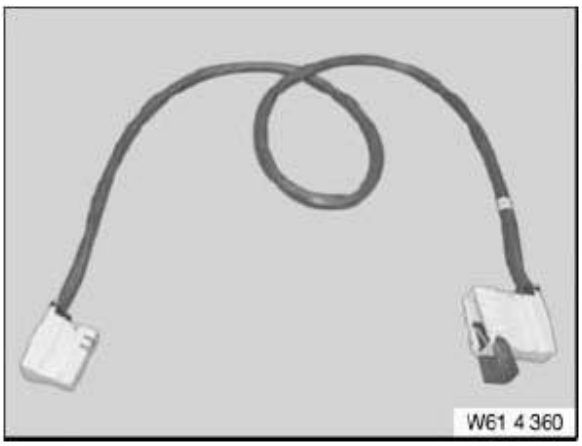


Fig. 140: Identifying Adapter Cable (61 4 360)
Courtesy of BMW OF NORTH AMERICA, INC.

Use:

Adapter cable 61 4 360 is connected to vehicle wiring harness (1) and removed seat (2).

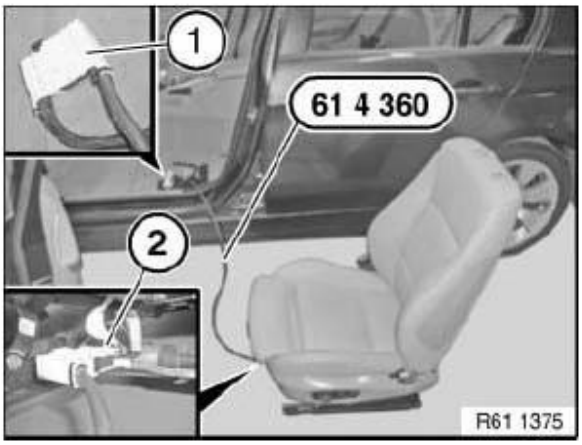


Fig. 141: Connecting Adapter Cable (61 4 360) To Vehicle Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

52 14 ... PERFORMING FUNCTION CHECK WITH ADAPTER CABLE (FOR SEAT REPAIRS)

NOTE: The function check on a repaired driver's or front passenger seat can be performed outside the vehicle by using adapter cable 61 4 360.

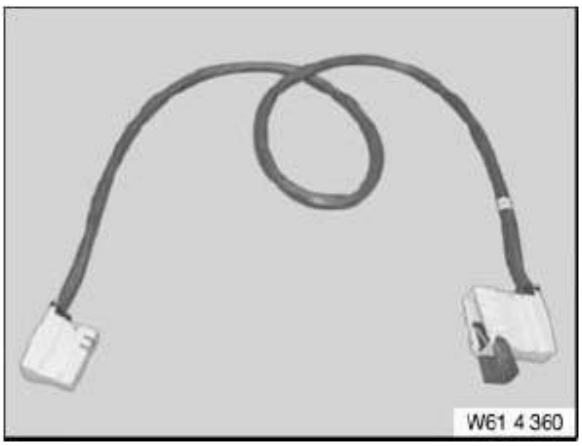


Fig. 142: Identifying Adapter Cable (61 4 360)
Courtesy of BMW OF NORTH AMERICA, INC.

Use:

Adapter cable 61 4 360 is connected to vehicle wiring harness (1) and removed seat (2).

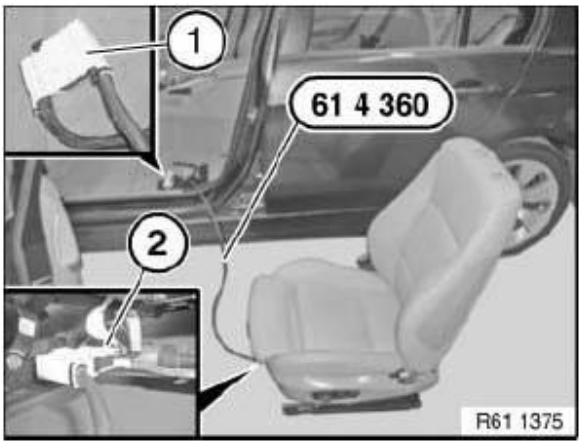


Fig. 143: Connecting Adapter Cable (61 4 360) To Vehicle Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 021 REMOVING AND INSTALLING/REPLACING FLEXMAT ON LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks

- Remove padding for front seat See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)**

Remove plug housing (1) from flexmat.

Cut all cable ties and disengage wiring harnesses from flexmat.

Installation:

Make sure wiring harnesses are laid correctly.

Observe bending radius and do not lay wiring harnesses tensioned.

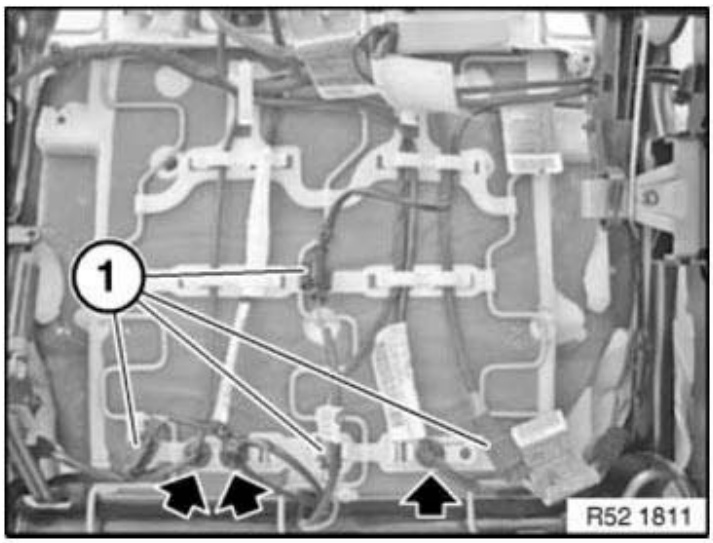


Fig. 144: Identifying Flexmat Plug Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Disengage flexmat (1) at front.

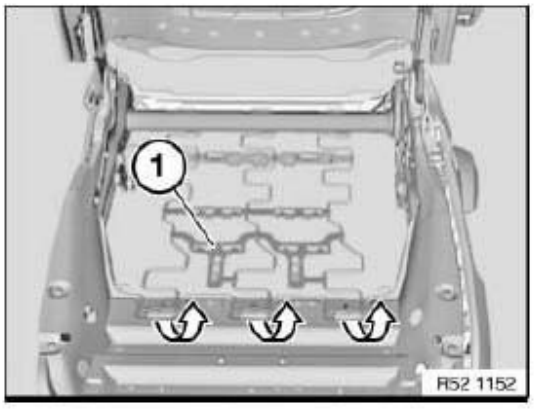


Fig. 145: Removing Flexmat
Courtesy of BMW OF NORTH AMERICA, INC.

Swing flexmat (1) down and disengage from seat frame.

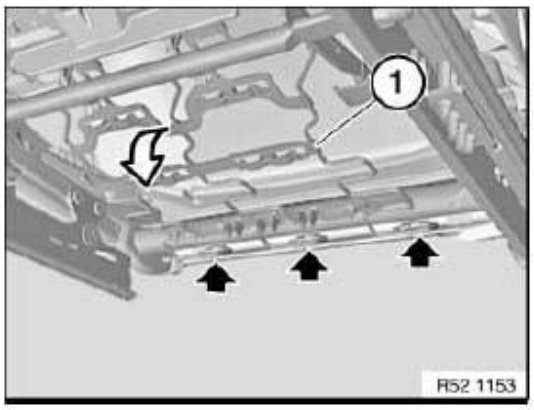


Fig. 146: Moving Flexmat
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 ... REMOVING AND INSTALLING ISOFIX HOLDER

Necessary preliminary tasks

- Remove seat fabric See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)**

Release screws (1).

Tightening torque **52 10 07AZ** .

Remove Isofix holder.

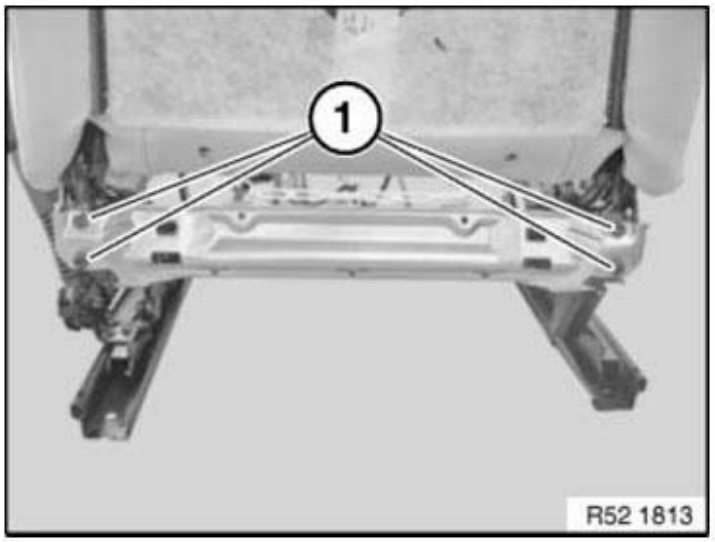


Fig. 147: Identifying Isofix Holder Screws
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 000 REMOVING AND INSTALLING LEFT OR RIGHT FRONT SEAT (NORMAL/MANUAL)

Necessary preliminary tasks

- Open convertible top
- Disconnect **BATTERY NEGATIVE LEAD**

IMPORTANT: An airbag module and a pyrotechnical seat belt tensioner are installed in the front seat.
Improper handling can lead to triggering of the pyrotechnical seat belt pretensioner or side airbag, resulting in injuries.

Installation:

- Powerlok screws must be replaced and must **not** be reused
- Powerlok screws are mechanical screw locks with trilobular threads
- Screws are fitted with a Torx Plus system and can be released with a standard Torx screwdriver

Move seat to upper back position.

Release and dispose of screws (1).

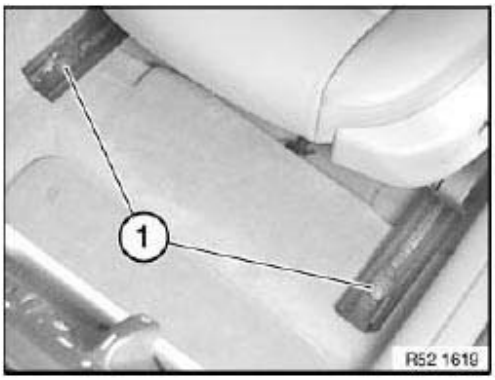


Fig. 148: Identifying Seat Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Move seat forwards and position flush with seat runners.

Unclip release tab (2) for belt anchor fitting trim (1) with plastic wedge.

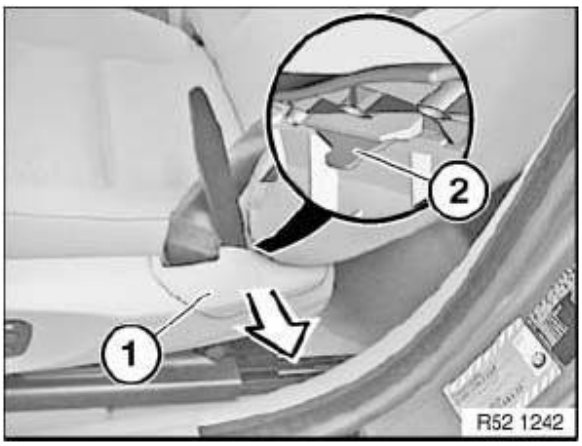


Fig. 149: Removing Release Tab For Belt Anchor Fitting Trim Using Plastic Wedge
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Tightening torque **72 11 2AZ** .

Remove anchor fitting (2).

Installation:

Make sure anchor fitting (2) is correctly seated on seat mechanism pin.

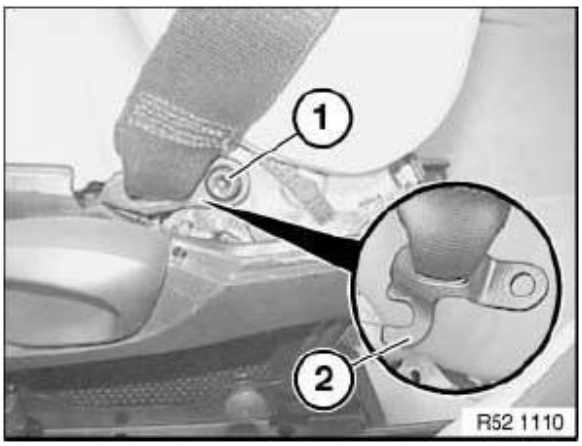


Fig. 150: Identifying Anchor Fitting With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Release and dispose of screws (1).

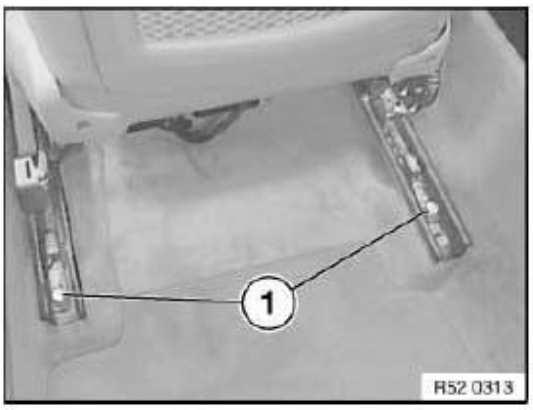


Fig. 151: Identifying Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect plug connection (1).

IMPORTANT: Cover door sill with protective covers (risk of damage).

Lift out front seat.

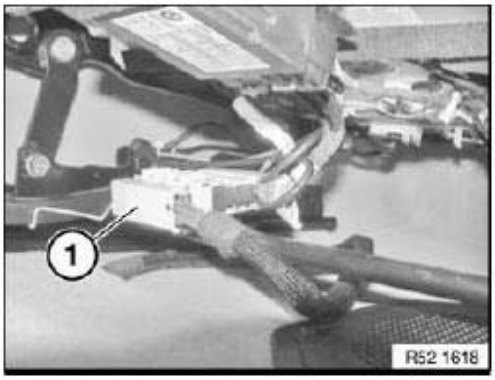


Fig. 152: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

- Carpet must not get between seat rails and floor pan in area of fastening points (grating noises)
- Replace microencapsulated screws
- Insert all screws loose to avoid twisting
- Tighten down all screws to specified torque

Tightening torque **52 10 1AZ** .

WARNING: When carrying out further work on the front seat, it is absolutely

imperative to observe the SAFETY REGULATIONS on handling airbag modules and pyrotechnical seat belt tensioners
Improper handling can lead to triggering of the pyrotechnical seat belt pretensioner or side airbag, resulting in injuries.

52 13 390 REMOVING AND INSTALLING OR REPLACING FRONT LEFT OR RIGHT HEAD RESTRAINT

WARNING: Danger of pinching!

Reach on left and right under head restraint and unclip in jerks in upward direction.

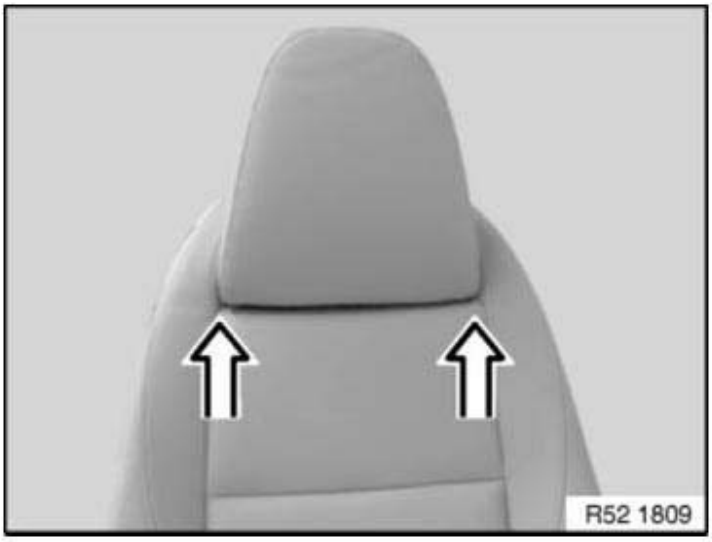


Fig. 153: Removing Head Restraint
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 198 REMOVING AND INSTALLING OR REPLACING REAR PANEL ON LEFT OR RIGHT FRONT SEAT BACKREST

Release clips (1) with diagonal cutting pliers.

Remove rear panel (2) downwards with a turning action.

NOTE: Remove remnants of clips.

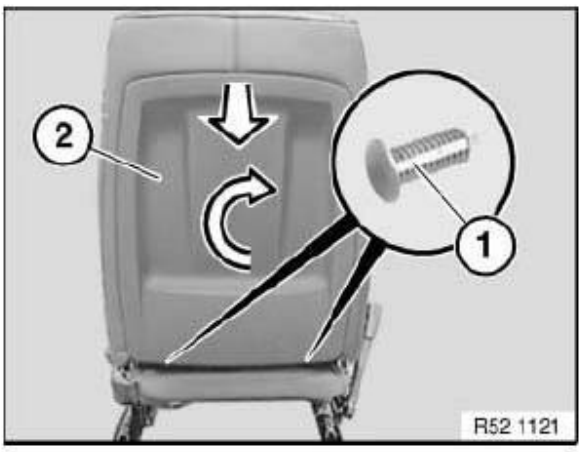


Fig. 154: Removing Rear Panel
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Retaining hooks (1) and bore holes (2) on rear panel (3) must not be damaged.

Replace faulty clips.

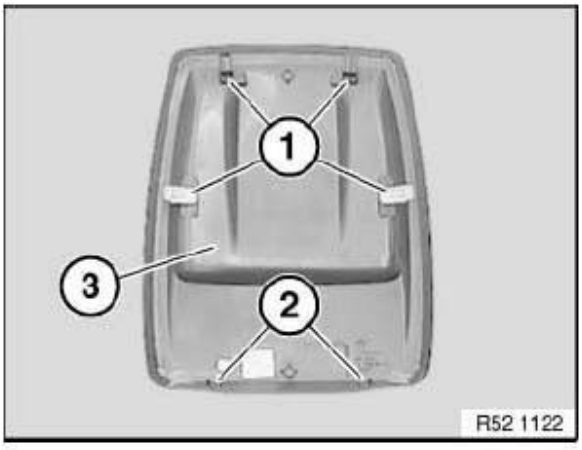


Fig. 155: Identifying Hooks And Bore Holes On Rear Panel
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 030 REMOVING AND INSTALLING/REPLACING BACKREST FRAME ON LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks

- Remove **FRONT SEAT**
- Remove **REAR PANEL** on front seat backrest

Release airbag wiring harness (2) from cable holders on flexmat.

Disconnect cable tie from clips.

Raise release clip (3) and pull plug (4) out of plug housing (1).

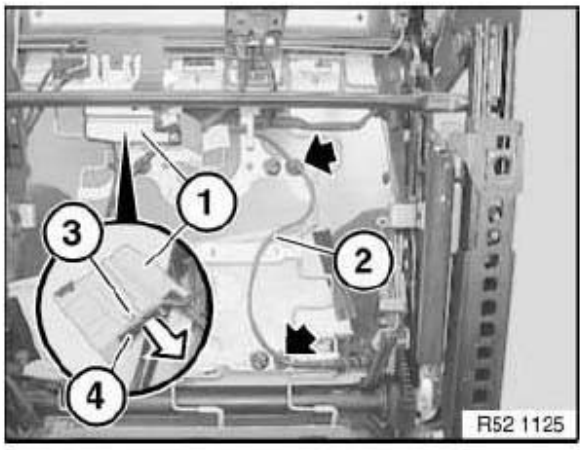


Fig. 156: Pulling Plug Out Of Plug Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Always feed in cable tie (1) at narrow end of plug housing in direction of arrow.

Cables must be secured with insulation under cable tie.

Firmly tighten cable tie (1) to relieve strain. It must not be possible to move the cable.

Make sure plug (2) is correctly locked in plug housing (3).

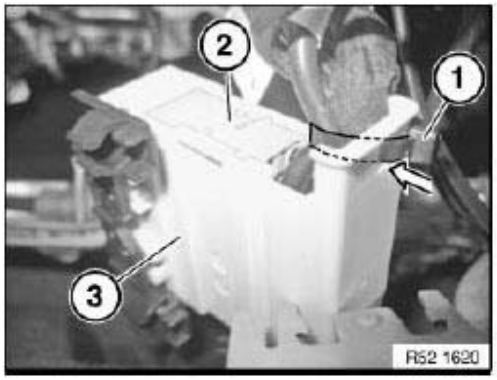


Fig. 157: Installing Cable Tie At Narrow End Of Plug Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect. Unclip cable.

Release wiring harness (3) from cable holders on seat mechanism.

Unfasten plug connection (2) and disconnect.

IMPORTANT: Feed all wiring harnesses carefully through the seat and backrest mechanism as the edges of the frame can be sharp.

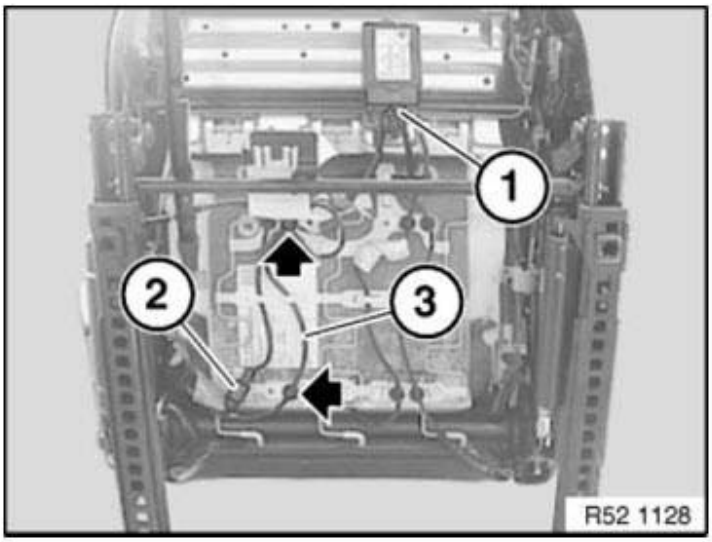


Fig. 158: Identifying Plug Connection And Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

Unhook backrest cover (1) on left and right.

Release screws (2) on left and right.

Tightening torque **52 10 02AZ** .

Remove backrest frame (3) completely towards top.

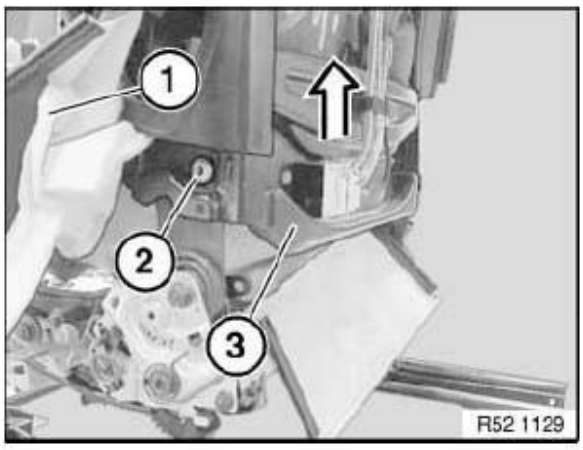


Fig. 159: Removing Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

- Remove backrest cover with padding.
- Remove **SIDE AIRBAG** .
- Remove lumbar support See **5215059 Removing and installing/replacing lumbar support pump with valve housing for lumbar support/backrest width adjustment**; **5213059 Removing and installing/replacing lumbar support pump with valve housing for lumbar support**; **5213055 Removing and installing/replacing lumbar support on front seat** or **5215061 Replacing both air cushions for backrest width adjustment on left or right front seat**.

52 13 025 REMOVING AND INSTALLING/REPLACING LEFT OR RIGHT SEAT MECHANISM (NORMAL/MANUAL)

This job is described under:

- Remove **BACKREST FRAME** on front seat

Replacement only:

- Remove seat cover See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)** for front seat
- Remove **SEAT BELT TENSIONER**
- Remove control unit for seat heating See **6135080 Removing and installing/replacing control unit/module for left or right seat adjustment** or **6135095 Removing and installing/replacing control unit/module for seat heating**

Seat mechanism is supplied complete with corresponding drive units.

Unlock plug housing (3) and remove from holder.

Disengage wiring harnesses from flexmat.

Installation:

Make sure wiring harnesses are laid correctly.

Observe bending radius and do not lay wiring harnesses tensioned.

Release screws (1).

Tightening torque **52 10 05AZ** .

Remove holder (2) for control unit.

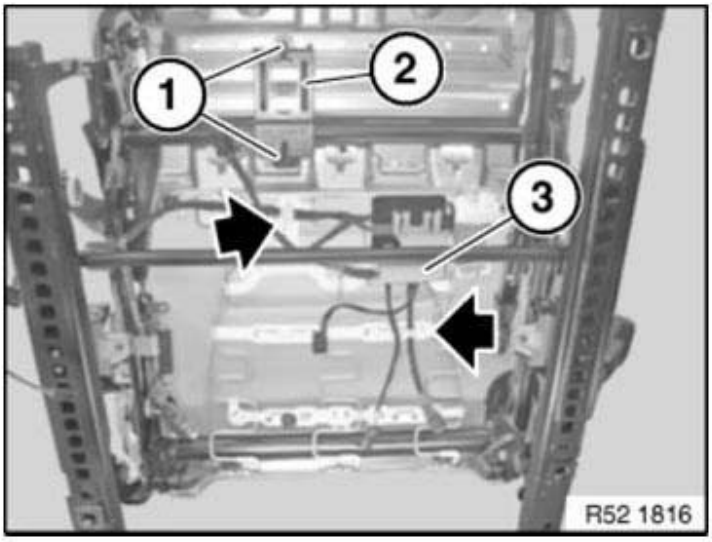


Fig. 160: Identifying Plug Housing With Screws And Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Tightening torque **52 10 03AZ** .

Remove belt buckle deflector trim (2).

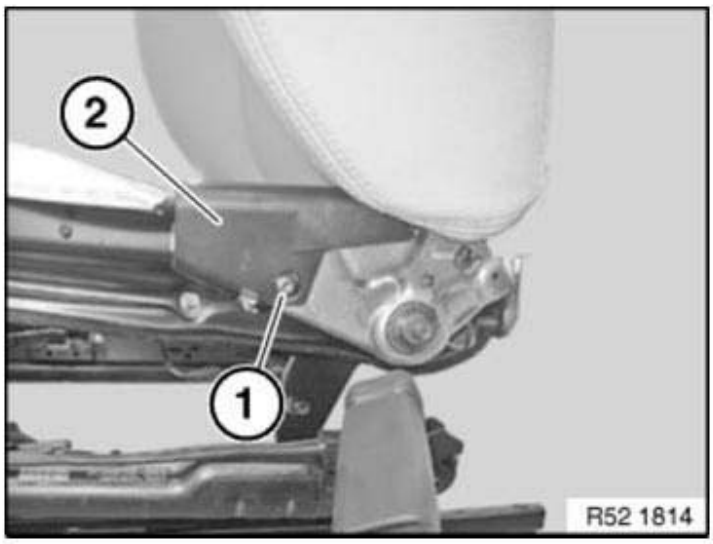


Fig. 161: Identifying Belt Buckle Deflector Trim With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Sport seat only:

Release screws (1).

Remove connection for thigh support.

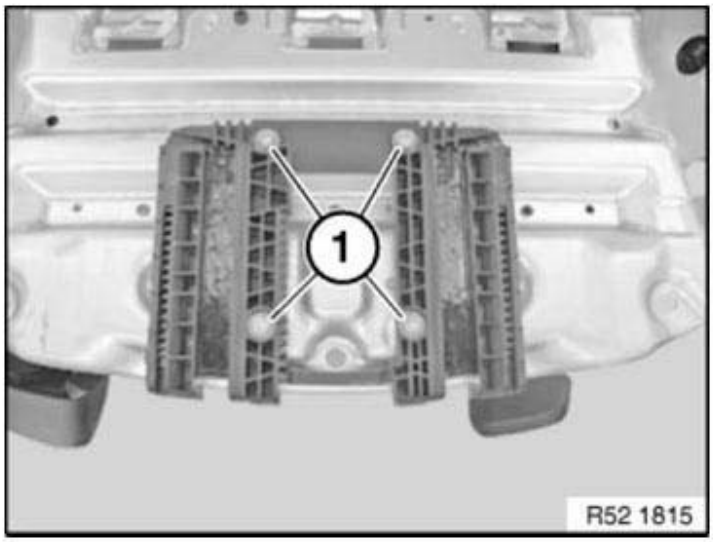


Fig. 162: Identifying Screws
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 055 REMOVING AND INSTALLING/REPLACING LUMBAR SUPPORT ON FRONT SEAT

Necessary preliminary tasks

- Remove **REAR PANEL ON FRONT SEAT**

Detach backrest cover (1) from backrest frame.

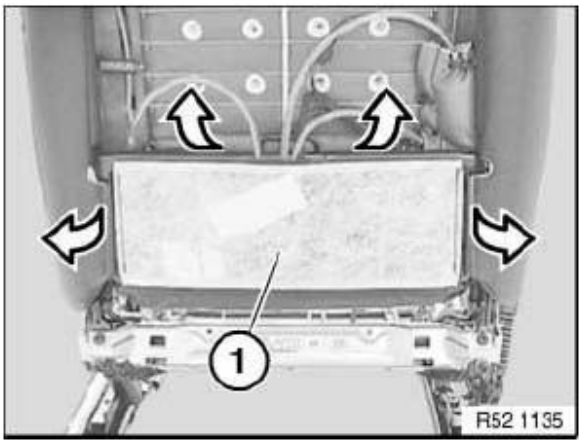


Fig. 163: Removing Backrest Cover From Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Do not pop valve housing (1) out of backrest frame for this operation. Carefully pull valve housing (1) forwards out of backrest frame.

Unlock quick connectors and detach air hoses from valve housing (1).

NOTE: Connections are coded against incorrect assembly.

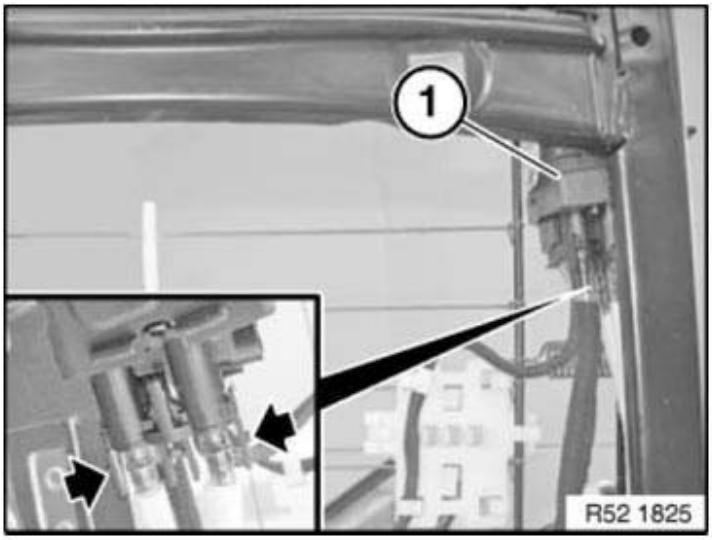


Fig. 164: Identifying Valve Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Detach lumbar cushion (1) from spring wire.

Installation:

Attach lumbar cushion (1) to second and fourth wires from below.

Press backrest support forwards a little.

Pull out lumbar cushion (1) downwards.

Feed air hoses out of backrest frame and spring wire.

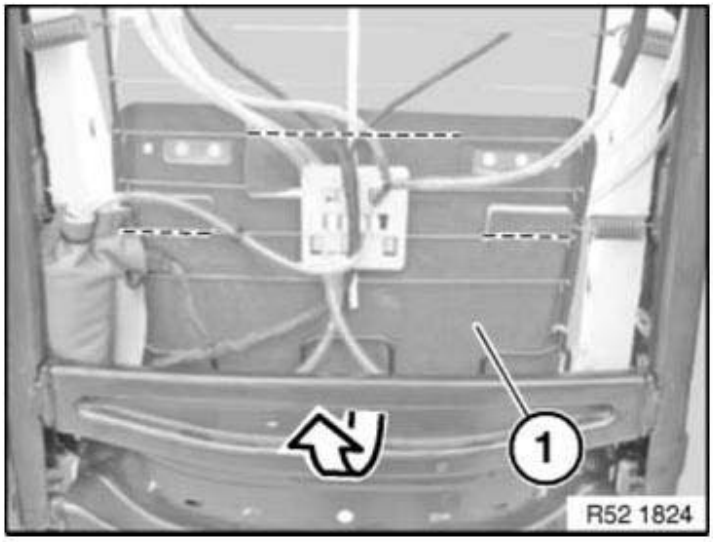


Fig. 165: Pulling Out Lumbar Cushion
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check lumbar cushion at top (1) and bottom (2) for damage.

Air hoses (3) must not be kinked.

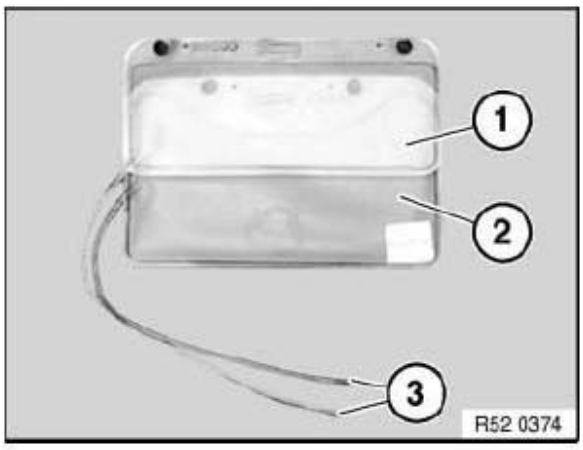


Fig. 166: Identifying Lumbar Cushion At Top And Bottom With Air Hoses
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Carry out **FUNCTION CHECK** .

52 15 059 REMOVING AND INSTALLING/REPLACING LUMBAR SUPPORT PUMP WITH VALVE HOUSING FOR LUMBAR SUPPORT/BACKREST WIDTH ADJUSTMENT

Necessary preliminary tasks

- Remove **REAR PANEL ON FRONT SEAT**

Detach backrest cover (1) from backrest frame.

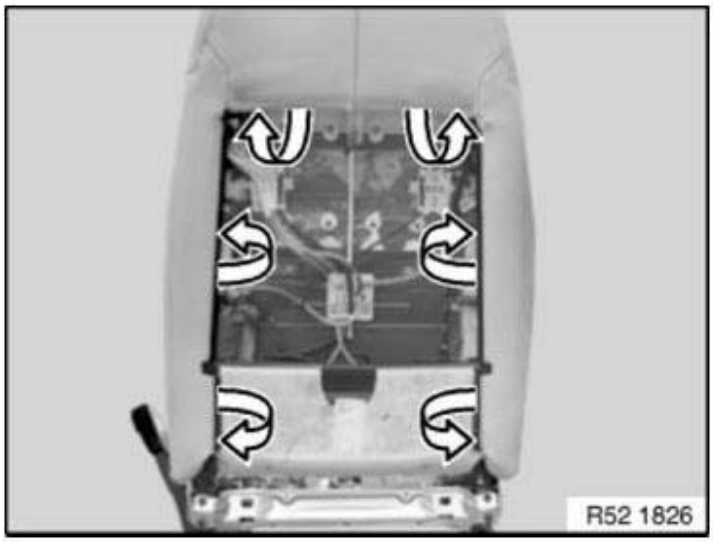


Fig. 167: Removing Backrest Cover From Backrest Frame

Courtesy of BMW OF NORTH AMERICA, INC.

Release cable tie (1).

Installation:

Replace defective cable tie.

Open zip fastener (2).

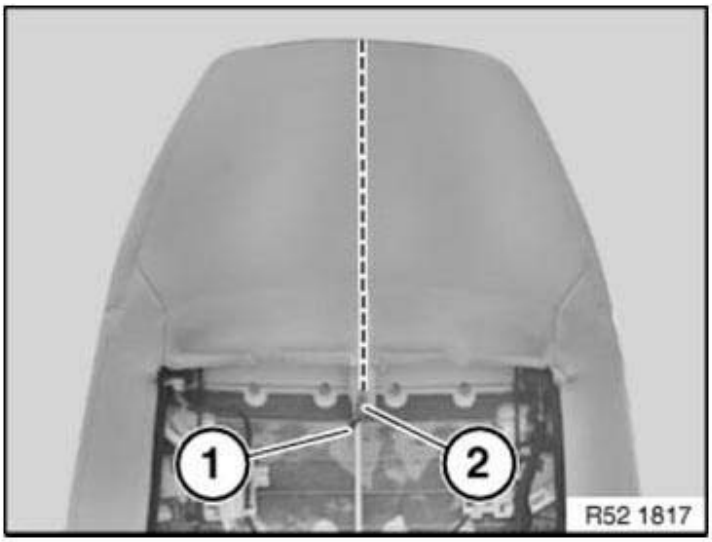


Fig. 168: Identifying Cable Tie And Zip Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

Detach cable tie.

Installation:

Replace defective cable ties.

Remove lumbar support pump (1) from backrest frame.

Unfasten plug connection (2) and disconnect.

Unclip air hose from holder (3).

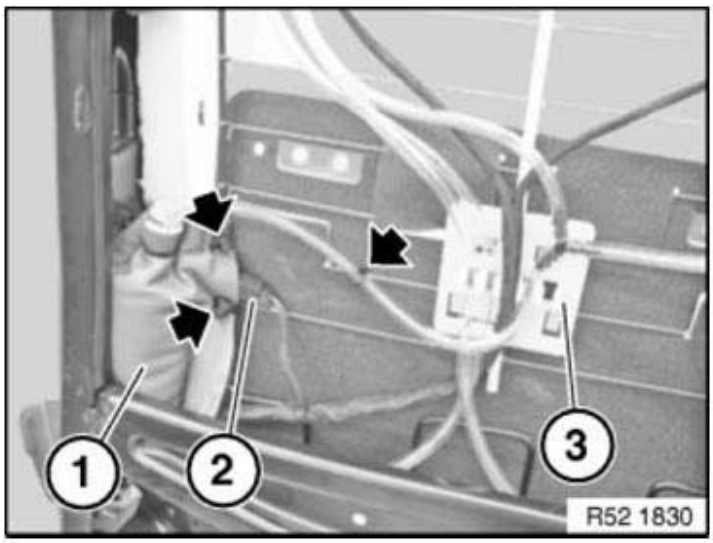


Fig. 169: Identifying Lumbar Support Pump With Plug Connection And Air Hose Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Pop valve housing (2) for lumbar support in direction of arrow out of backrest frame.

Disengage wiring harness from cable tie (3).

Installation:

Feed rubber plug (1) through backrest frame.

Pull rubber plug (1) and pop valve housing into backrest frame.

Check rubber sleeve of valve housing for correct seating in backrest frame.

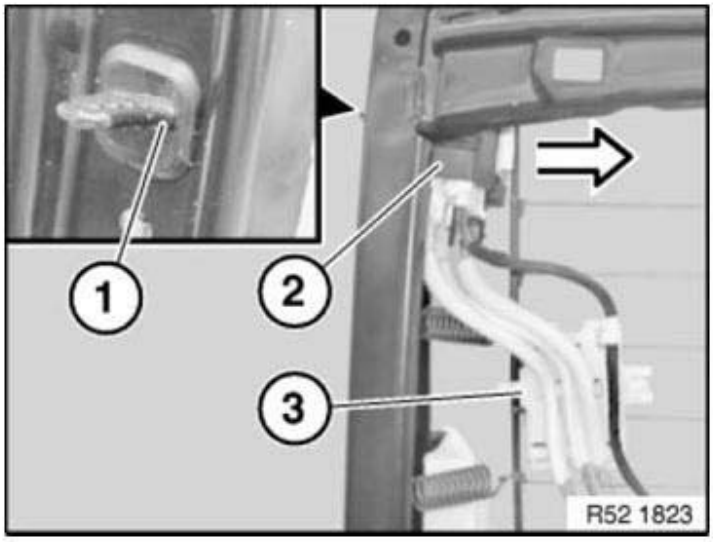


Fig. 170: Removing Valve Housing Out Of Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

Unlock quick connector and detach air hoses (2, 3 and 4) from valve housing.

Valve unit for backrest width adjustment:

(2) Hose (clear), lumbar drive
(3) Hose (clear), right lumbar cushion
(4) Hose (clear), left lumbar cushion

NOTE: Connections are coded against incorrect assembly.

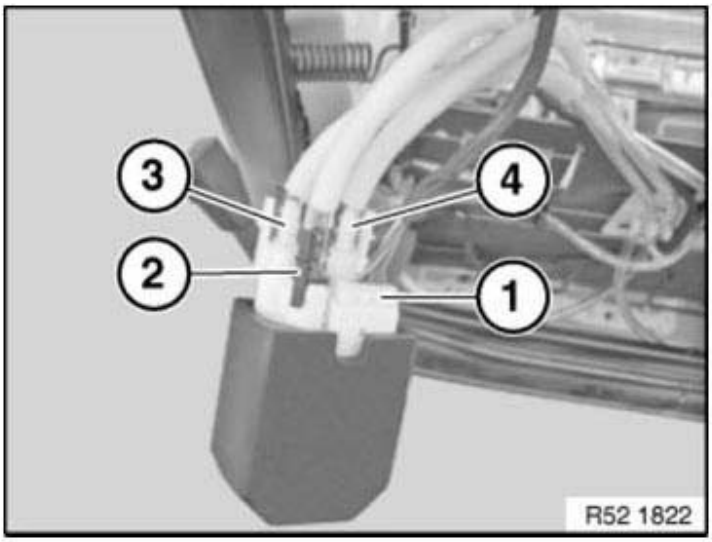


Fig. 171: Identifying Plug Connection With Air Hoses
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Carry out FUNCTION CHECK .

52 13 040 REMOVING AND INSTALLING/REPLACING OUTER COVER ON LEFT OR RIGHT FRONT SEAT BACKREST (NORMAL/MANUAL)

Necessary preliminary tasks

- Remove **FRONT SEAT**

NOTE: Picture shows installed seat by way of example.

Raise lock (3) and lever out handle

1. for backrest angle adjustment and
2. for seat height adjustment

with special tool 00 9 317 .

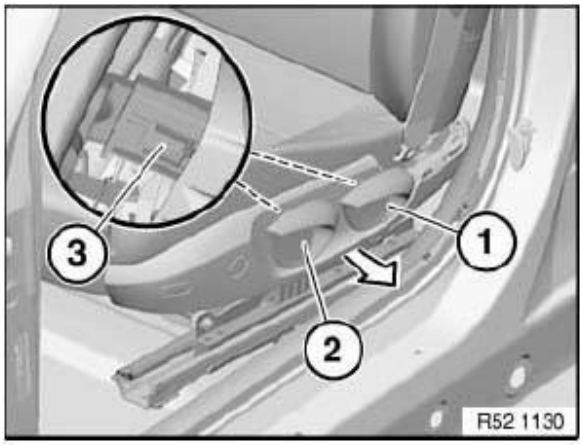


Fig. 172: Removing Handle
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Tightening torque **52 10 10AZ** .

NOTE: Trim (2) is engaged in marked area.

Press lock (3) and pull trim (2) off seat mechanism.

If necessary, lever out carefully with special tool 00 9 317 .

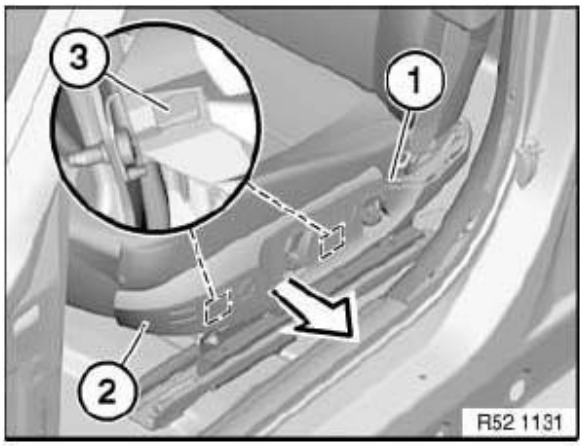


Fig. 173: Pulling Off Seat Mechanism Trim
Courtesy of BMW OF NORTH AMERICA, INC.

If necessary, unlock plug connection (1) for backrest width adjustment and disconnect.

If necessary, unlock plug connection (2) for lumbar support and disconnect.

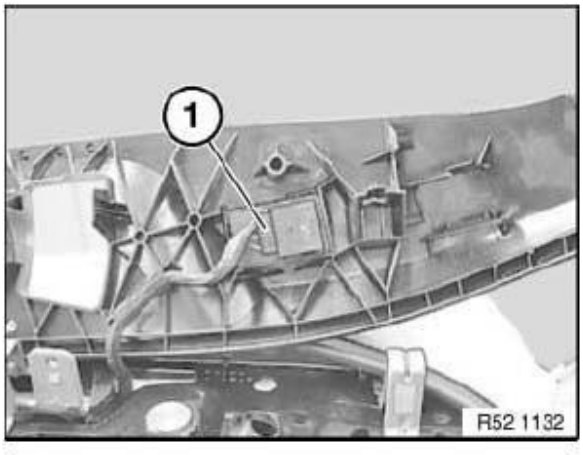


Fig. 174: Identifying Plug Connections
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

If necessary, remove backrest width adjustment switch and lumbar support switch.

Installation:

Make sure backrest width adjustment and lumbar support switches are correctly engaged.

52 15 403 REMOVING AND INSTALLING/REPLACING THIGH SUPPORT COVER ON FRONT SEAT (SPORT/MANUAL)

Release thigh support (1) and move forward.

Lever welt of seat cover (2) out of thigh support.

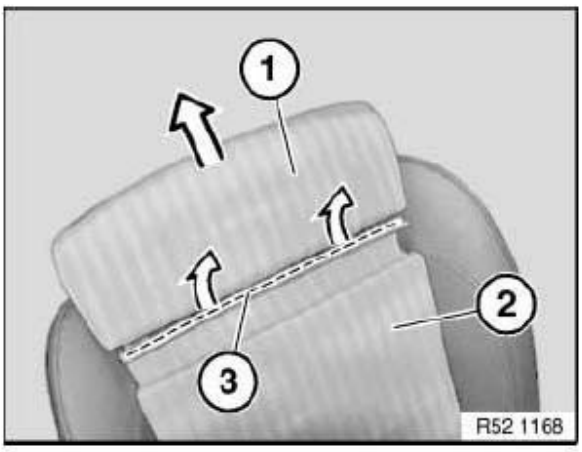


Fig. 175: Removing Thigh Support
Courtesy of BMW OF NORTH AMERICA, INC.

Lever out cover welt in marked area (1).

Disengage trim thread in marked area (2) from thigh support.

Remove cover with padding.

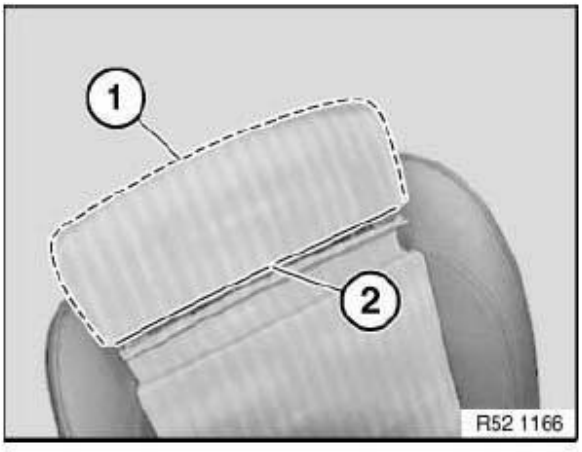


Fig. 176: Identifying Cover Welt And Trim Thread Marked Areas
Courtesy of BMW OF NORTH AMERICA, INC.

Pull cover (1) off padding (2).

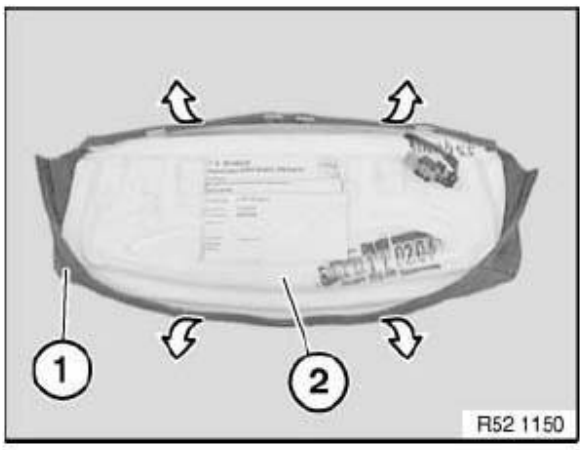


Fig. 177: Pulling Cover Off Padding
Courtesy of BMW OF NORTH AMERICA, INC.

52 15 050 REMOVING AND INSTALLING/REPLACING THIGH SUPPORT ON LEFT OR RIGHT FRONT SEAT (SPORT/MANUAL)

Release thigh support (1) and move forward.

Lever welt (3) of seat cover (2) out of thigh support (1).

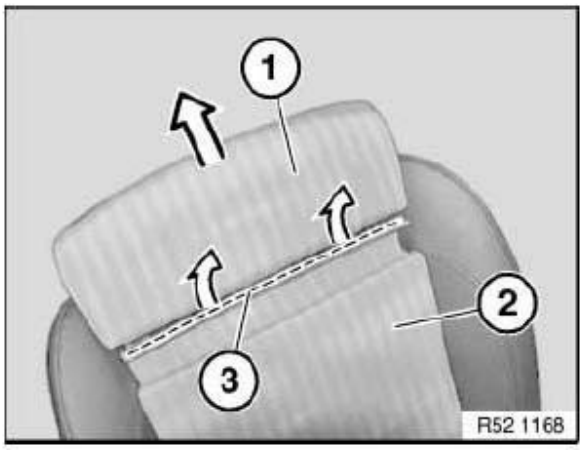


Fig. 178: Removing Thigh Support
Courtesy of BMW OF NORTH AMERICA, INC.

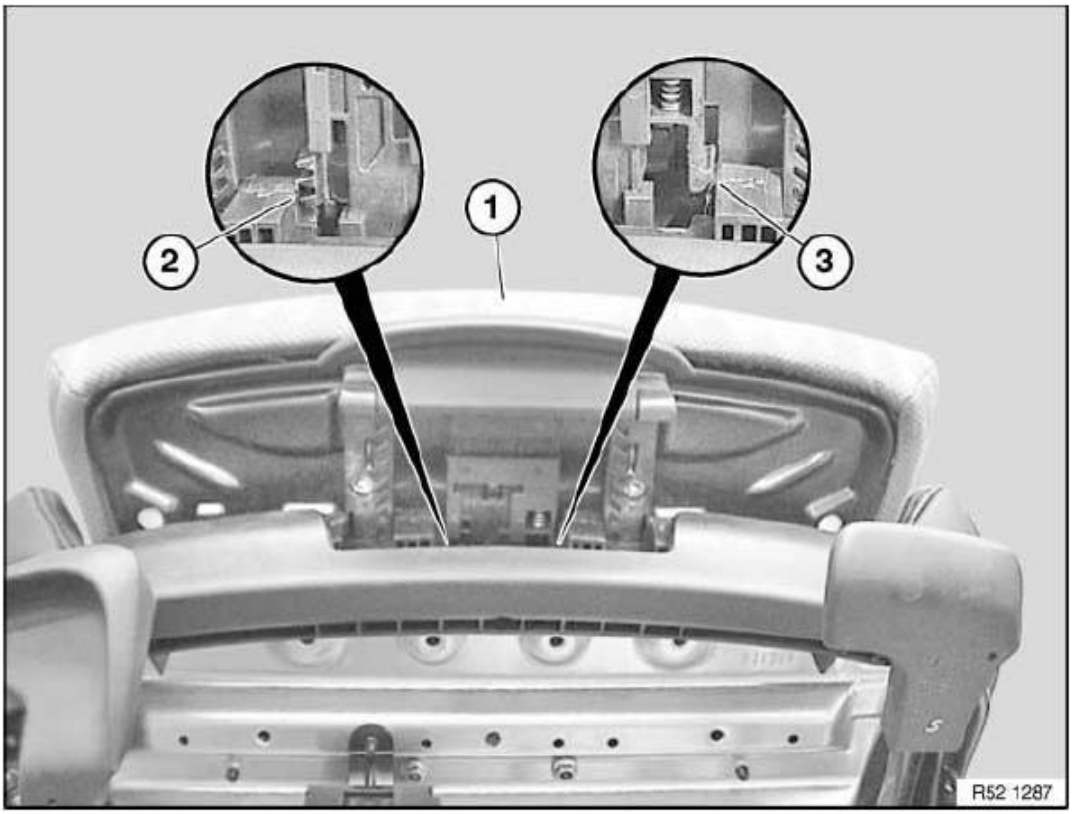


Fig. 179: Identifying Actuator, Centering Element And End Stop
Courtesy of BMW OF NORTH AMERICA, INC.

Do not extend thigh support to its full extent.

Keep actuator (1) pressed in order to unlock centering element (2).

Carefully raise end stop (3) for thigh support with a screwdriver and at same time pull thigh support forwards out of guide rails.

View of thigh support mechanism:

1. End stop for thigh support
2. Locking mechanism for thigh support

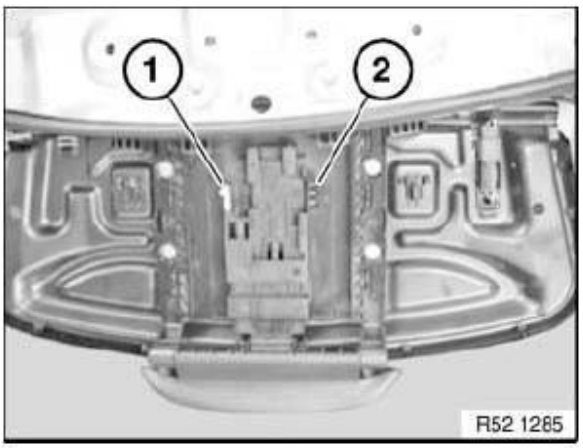


Fig. 180: Identifying End Stop And Locking Mechanism For Thigh Support
Courtesy of BMW OF NORTH AMERICA, INC.

View of seat frame mechanism:

3. Guide rail on seat with depth arrester
4. Guide rail on seat with end stop

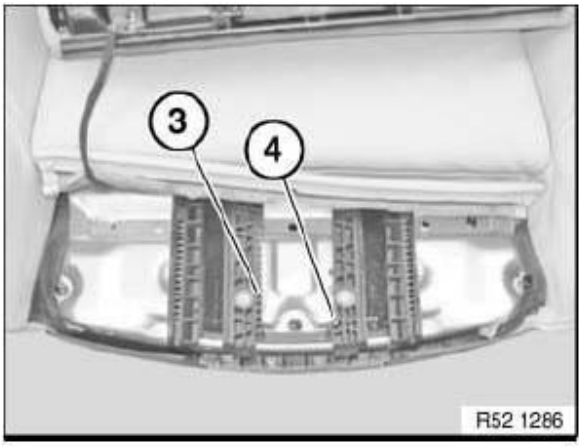


Fig. 181: Identifying Guide Rails On Seat With Depth Arrester And End Stop
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

NOTE: Check guide rails (2) and adjustment mechanism (3) for damage.

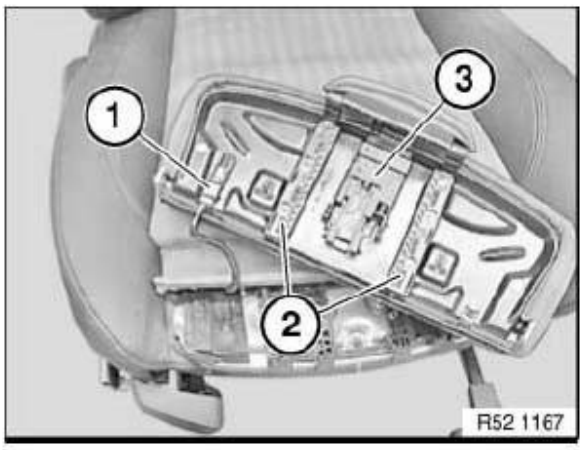


Fig. 182: Identifying Plug Connection, Guide Rail With Adjustment Mechanism
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 405 REPLACING BACKREST COVER FOR LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks

- Clamp off **BATTERY NEGATIVE LEAD**
- Remove **REAR PANEL**
- Remove **HEAD RESTRAINT**

Version with seat heating only

Unfasten plug connection (1) and disconnect.

Detach cable tie.

Release wiring harness (2) from cable holders on seat mechanism.

IMPORTANT: Feed the wiring harness carefully through the seat and backrest mechanism as the edges of the frame can be sharp.

Installation:

Lay wiring harness without kinks and tension.

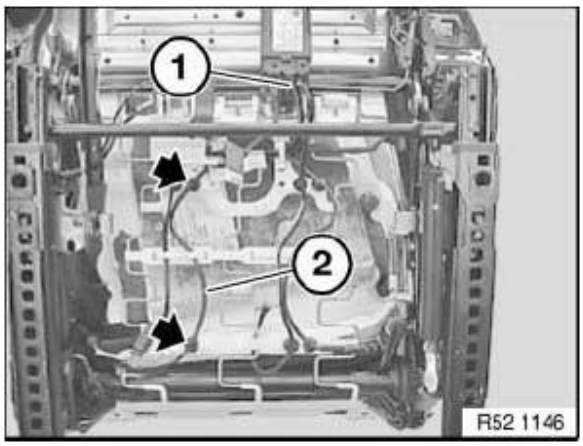


Fig. 183: Identifying Plug Connection And Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip cable tie (1) from seat mechanism.

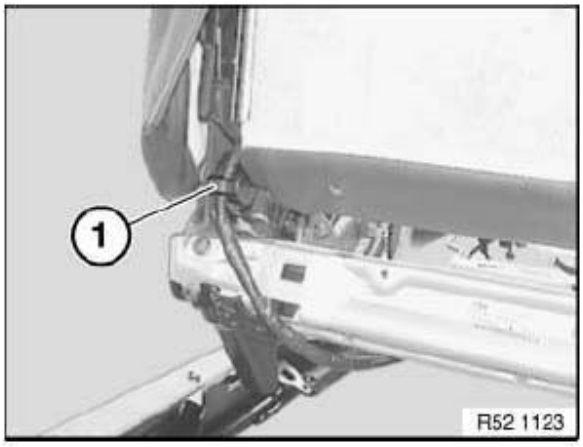


Fig. 184: Identifying Cable Tie Of Seat Mechanism
Courtesy of BMW OF NORTH AMERICA, INC.

Release cable tie (1).

Installation:

Replace defective cable tie.

Open zip fastener (2).

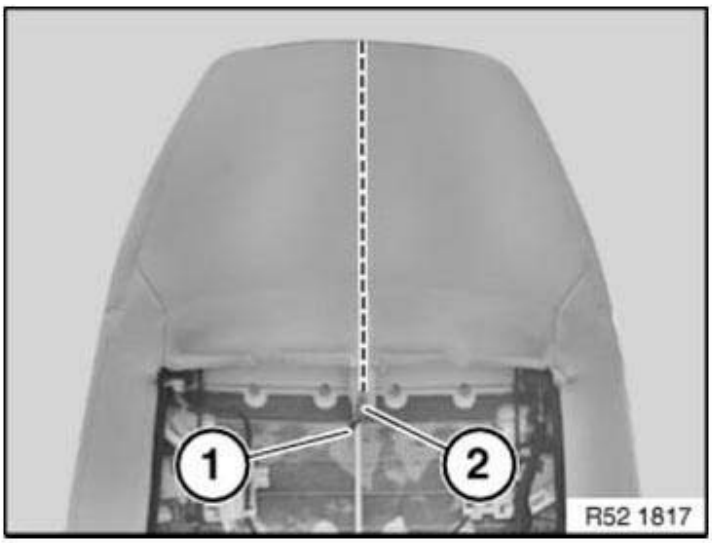


Fig. 185: Identifying Cable Tie And Zip Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

Detach backrest cover (1) from backrest frame.

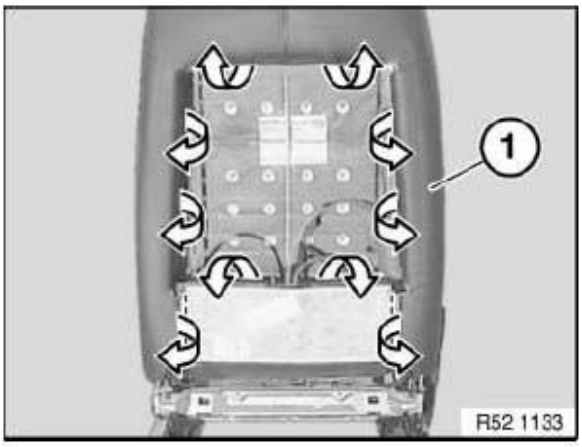


Fig. 186: Removing Backrest Cover From Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts (1).

Installation:

Replace nuts.

Tightening torque **72 12 03AZ** .

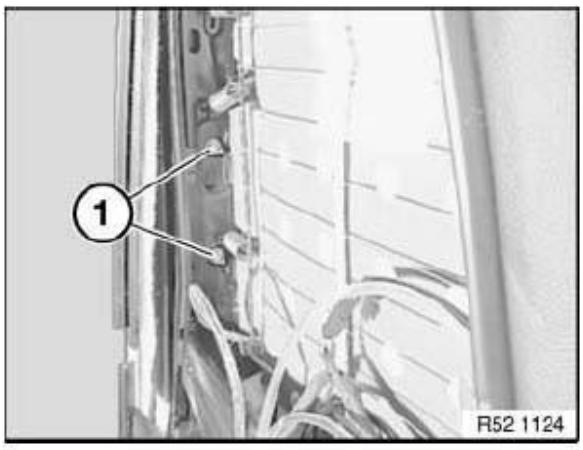


Fig. 187: Identifying Seat Mechanism Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Detach mounting strip (4) from flexmat.

Carefully pull airbag module (3) with threaded pins out of backrest frame and feed out between padding (1) and inner bag (2).

Set down airbag module (3) to one side.

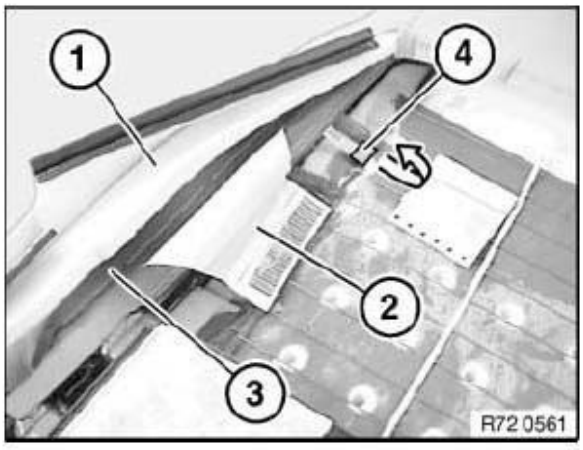


Fig. 188: Removing Mounting Strip From Flexmat
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Pull inner bag (1) fully over airbag module and threaded pins.

Feed in mounting strip (2) of inner bag (1) through backrest frame.

Insert threaded pins into backrest frame and secure with new nuts.

No inner bag material is permitted to project through the hole in the inner frame.

Install nuts and tighten down.

Tightening torques **72 12 03AZ** .

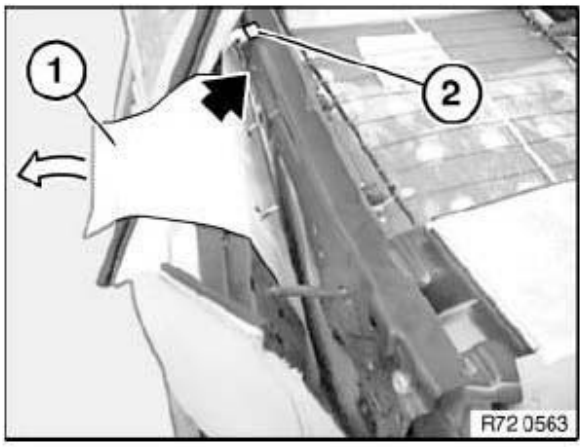


Fig. 189: Pulling Inner Bag Over Airbag Module And Threaded Pins
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Inner bag must be between airbag module and backrest frame!

Engage mounting strip (1) of inner bag in flexmat.

Position inner bag (2) smoothly over backrest frame.

Engage backrest cover (3) in backrest frame.

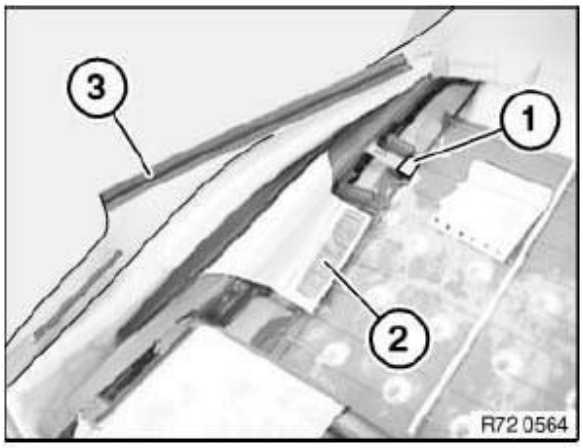


Fig. 190: Identifying Mounting Strip, Inner Bag And Backrest Cover

Courtesy of BMW OF NORTH AMERICA, INC.

Reposition backrest cover (1) at side and bottom and pull off with padding towards top from backrest frame.

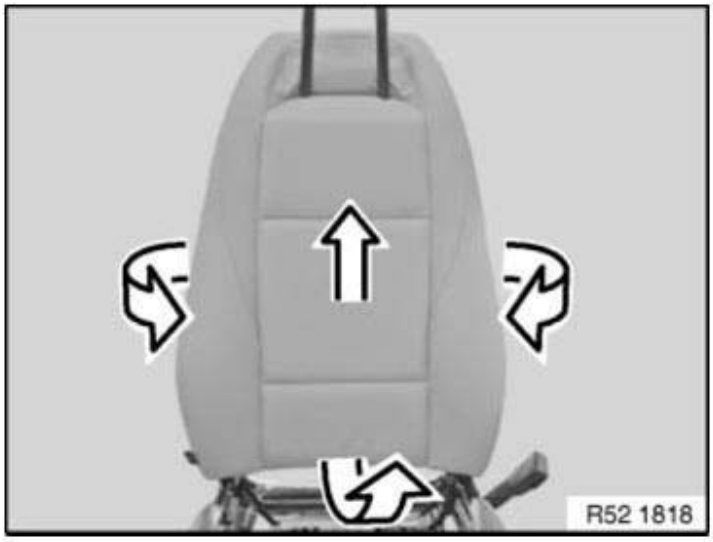


Fig. 191: Positioning Backrest Cover At Side And Bottom
Courtesy of BMW OF NORTH AMERICA, INC.

Release all retainers in marked area.

Remove backrest cover from padding.

NOTE: Remove all remnants of retainers from backrest cover and padding.

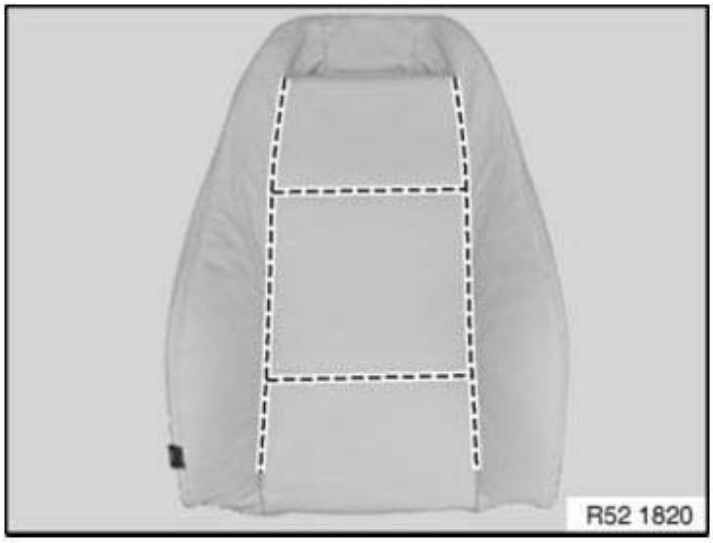


Fig. 192: Identifying Retainers Marked Area

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Bend new retainer (2) with special tool **52 0 050** .

1. Padding
2. Retainer
3. Trim wire in padding
4. Trim wire in backrest cover
5. Backrest cover

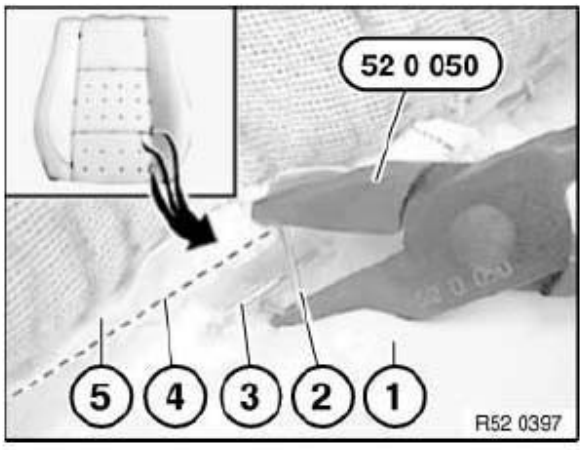


Fig. 193: Bending Retainer Using Special Tool (52 0 050)
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement of backrest cover

Pull trim wires out of backrest cover.

Cut new backrest cover to size and insert trim wires.

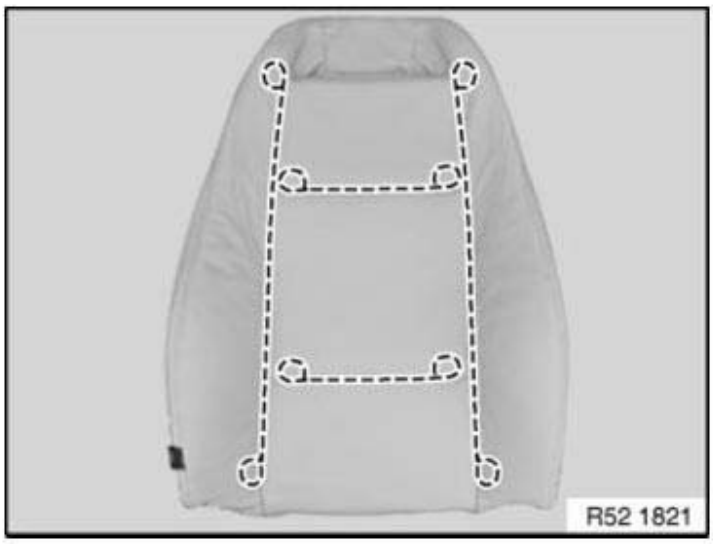


Fig. 194: Identifying Backrest Cover
Courtesy of BMW OF NORTH AMERICA, INC.

52 15 451 REPLACING BACKREST HEATING ELEMENT FOR LEFT OR RIGHT SPORTS SEAT

Operation is described in:

- Replacing **HEATING ELEMENTS FOR LEFT OR RIGHT FRONT SEAT**

52 15 061 REPLACING BOTH AIR CUSHIONS FOR BACKREST WIDTH ADJUSTMENT ON LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks

- Partially remove **BACKREST COVER**

NOTE: Do not pop valve housing (1) out of backrest frame for this operation.

Carefully pull valve housing (1) forwards out of backrest frame.

Unlock quick connectors and detach air hoses from valve housing (1).

NOTE: Connections are coded against incorrect assembly.

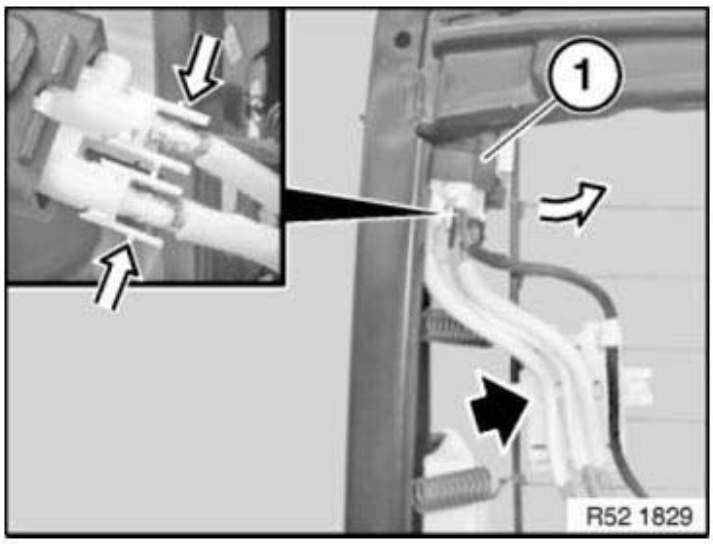


Fig. 195: Removing Valve Housing Out Of Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Removal of the cushion on the left side is depicted; proceed in the same way for the right side.

Air cushion must be completely drained.

Unclip carrier for backrest width adjustment from backrest frame.

Feed carrier with air hose out of backrest frame.

Installation:

Make sure the carrier for backrest width adjustment is fitted correctly on the backrest frame.

Install air hoses without kinks.

Check air cushion for damage.

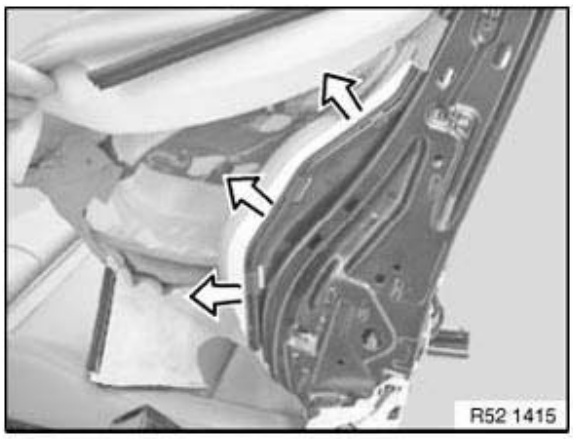


Fig. 196: Removing Carrier With Air Hose Out Of Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Carry out FUNCTION TEST

52 15 450 REPLACING CUSHION HEATING ELEMENT FOR LEFT OR RIGHT FRONT SEAT

Operation is described in:

- Replacing **HEATING ELEMENTS FOR LEFT OR RIGHT FRONT SEAT**

52 15 452 REPLACING HEATING ELEMENT FOR LEFT OR RIGHT FRONT SEAT (THIGH SUPPORT)

Operation is described in:

- Replacing **HEATING ELEMENTS FOR LEFT OR RIGHT FRONT SEAT**

52 15 455 REPLACING HEATING ELEMENTS FOR LEFT OR RIGHT FRONT SEAT (SPORT)

Necessary preliminary tasks

- Remove **SEAT FABRIC**
- Remove **BACKREST COVER**
- Remove **THIGH SUPPORT COVER**

NOTE: Heating elements are bonded with a foam section and cannot be separated from each other without causing damage.
Foam section and heating elements must be replaced.

Check new foam section:

- No obvious damage or material defects

- All trim wires present in foam
- No bubbles in foam section
- No dirt/contamination on foam or residual foam
- Pay attention to foam section on left and right

Check new heating mat:

- No obvious damage or material defects
- All tear-off film pieces presents
- Note variant by examining label on cable

Guide cable for backrest heating through foam hole.

Stick on main section (1):

- Pull adhesive film pieces off main section (1) and stick to upper edge of main section foam until flush

Stick on bead section (2):

- Pull adhesive film pieces off bead section (2) and stick on heating mat along bead section edges.
- Press down evenly in outwards direction

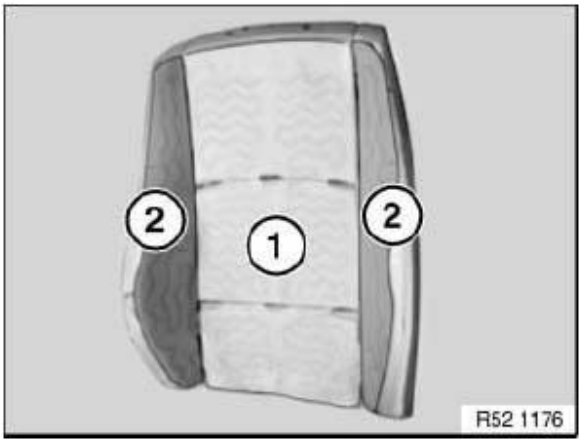


Fig. 197: Identifying Sticks On Main And Bead Section
Courtesy of BMW OF NORTH AMERICA, INC.

Guide cable for seat heating through foam hole.

Stick on STV heating mat (1):

- Pull off adhesive film and stick to rear foam edge until flush

Stick on bead section (2):

- Pull adhesive film pieces off bead section (2) and stick on heating mat along bead section edges.
- Press down evenly in outwards direction

Stick on main section (3):

- Pull adhesive film pieces off main section (3) and stick to upper edge of main section foam until flush

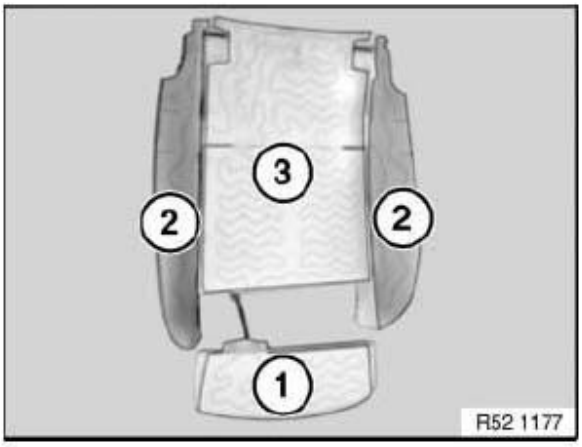


Fig. 198: Identifying Sticks On STV Heating Mat, Main And Bead Section
Courtesy of BMW OF NORTH AMERICA, INC.

Check laying of heating mats:

- Heating mats laid without folds
- Heating mats correctly positioned
- All bonding surfaces stuck on

NOTE: Carry out FUNCTION TEST

52 15 415 REPLACING PADDING FOR LEFT OR RIGHT FRONT SEAT (SPORT/MANUAL)

Operation is described in:

Replacing **SEAT COVER ON LEFT OR RIGHT FRONT SEAT** .

52 15 420 REPLACING PADDING FOR LEFT OR RIGHT FRONT SEAT BACKREST (SPORT/MANUAL)

Operation is described in:

Replacing **BACKREST COVER FOR LEFT OR RIGHT FRONT SEAT** .

52 15 417 REPLACING PADDING FOR LEFT OR RIGHT THIGH SUPPORT (SPORT/MANUAL)

This operation is described in section on:

Replacing **THIGH SUPPORT COVER ON LEFT OR RIGHT FRONT SEAT** .

52 15 400 REPLACING SEAT COVER FOR LEFT OR RIGHT FRONT SEAT (SPORT/MANUAL)

Necessary preliminary tasks

- Remove **FRONT SEAT**
- Remove **THIGH SUPPORT**
- Manual version:

  Remove **OUTER COVER**

- Electric version:

Remove **CARRIER FOR COVER**

WARNING: US/CDN front passenger seat (with CIS mat) only:
If CIS mat or padding is defective, both parts must be replaced together.

IMPORTANT: The CIS mat must be enabled after each installation operation.

Enabling seat occupancy detector (CIS mat):

- Connect BMW programming system
- Encode airbag control unit
- Clear fault memory if necessary

WARNING: US/CDN front passenger seat (with CIS mat) only:
To avoid damaging the CIS mat, it is essential to carry out the following operations with extra care.

IMPORTANT: Risk of damage on sharp-edged seat mechanism.

Guide all cables carefully through seat and backrest mechanism.

Make sure cable is routed without kinks and tension.

Make sure plug connections are correctly locked.

Make sure plugs are correctly seated in catches.

Version with seat occupancy detector (CIS mat) only:

1. Data line CIS
2. Earth cable, seat pan
3. Earth cable, backrest frame

Unlock all plug connections and disconnect.

NOTE: From build date 09/2009 onward, earth cable (3) not included on backrest frame.

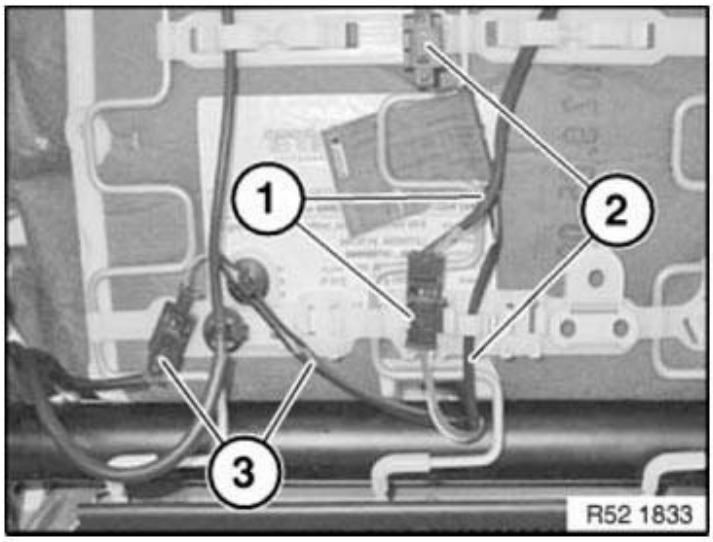


Fig. 199: Identifying Data Line CIS And Earth Cables
Courtesy of BMW OF NORTH AMERICA, INC.

Version with seat heating only:

Unlock plug connection (1) for seat heating and disconnect.

Unfasten cable strap.

Disengage wiring harness from cable clips (flexmat).

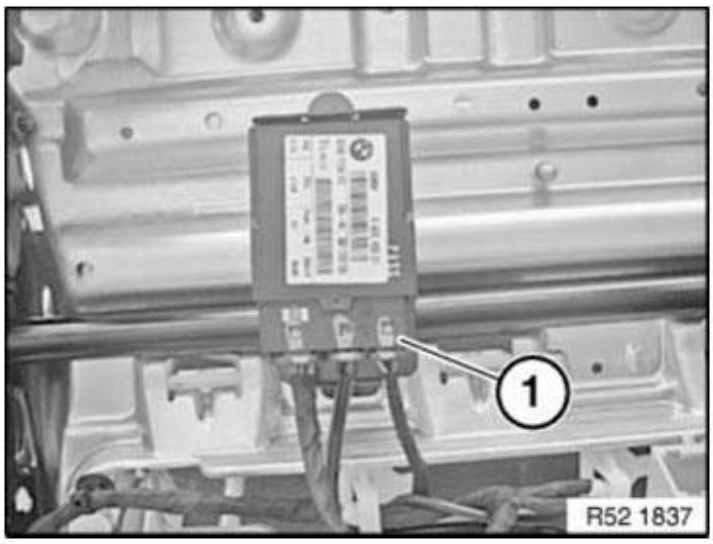


Fig. 200: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Version with seat occupancy detector (CIS mat) without seat heating only

Cable for seat heating, seat padding:

Seat heating is integrated in the CIS mat and is stuck to the padding over the full surface.

Lay cable for seat heating as shown to flexmat and secure with cable strap.

Secure plug with cable strap to cable.

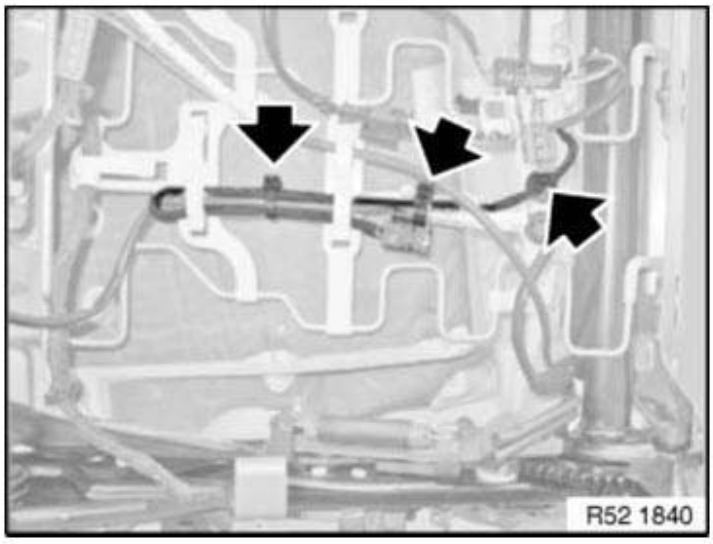


Fig. 201: Locating Plug With Cable Strap
Courtesy of BMW OF NORTH AMERICA, INC.

Cable for seat heating, thigh support:

Cramp cable (1) to welt strip with retainers (2).

Installation:

Bend retainers (2) with special tool **52 0 050** .

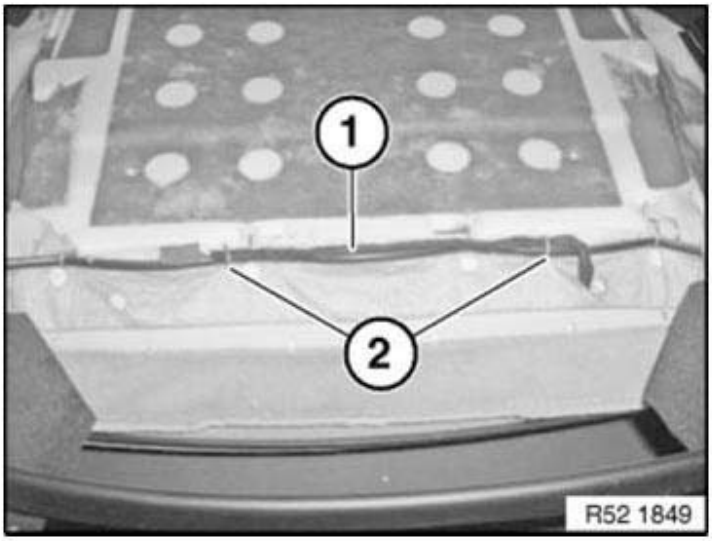


Fig. 202: Identifying Cable And Retainers
Courtesy of BMW OF NORTH AMERICA, INC.

Clamp plug (1) behind welt strip (2).

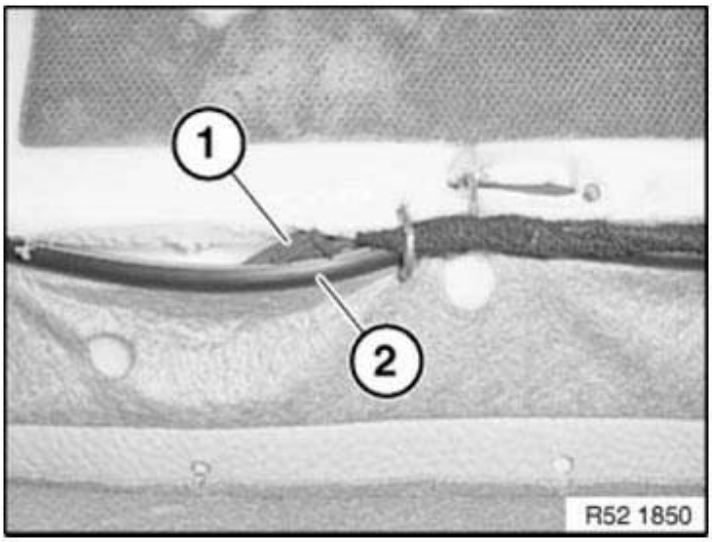


Fig. 203: Identifying Plug With Welt Strip
Courtesy of BMW OF NORTH AMERICA, INC.

Unlock retaining lugs (1).

Remove seat trim (2) downwards.

Installation:

Seat trim (2) must not be damaged.

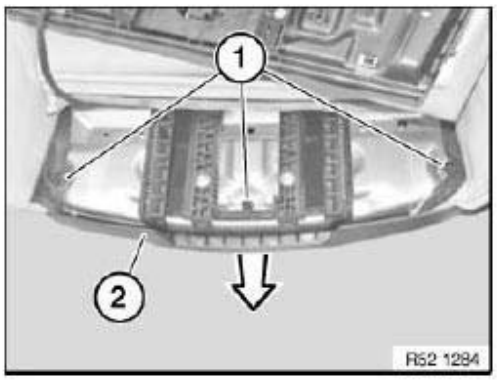


Fig. 204: Removing Seat Trim
Courtesy of BMW OF NORTH AMERICA, INC.

Lever clip (1) out of seat cover on left and right.

Installation:

If necessary, replace faulty clip.

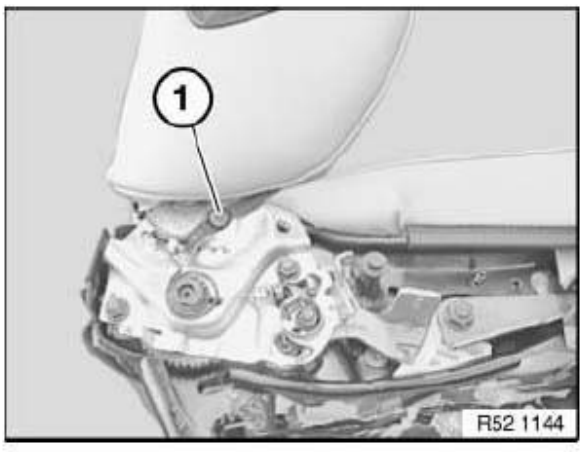


Fig. 205: Identifying Clip
Courtesy of BMW OF NORTH AMERICA, INC.

Tunnel side:

Disengage cover fastener (1) from belt deflector trim.

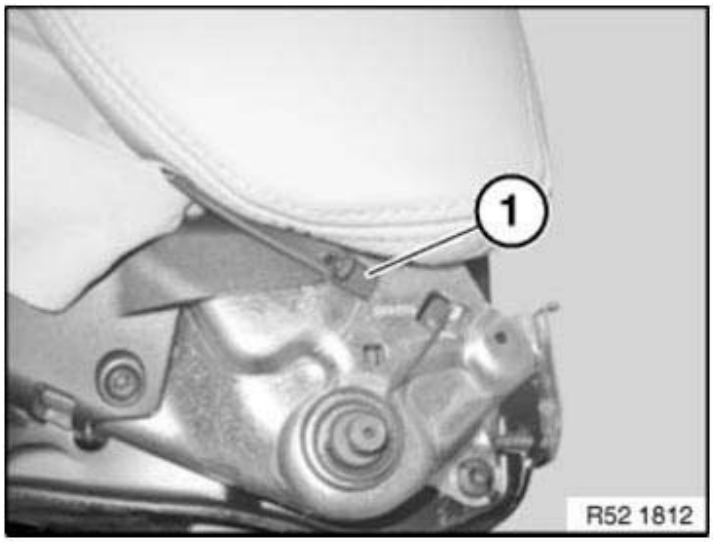


Fig. 206: Identifying Cover Fastener Of Belt Deflector Trim
Courtesy of BMW OF NORTH AMERICA, INC.

Detach seat cover (1) from seat frame.

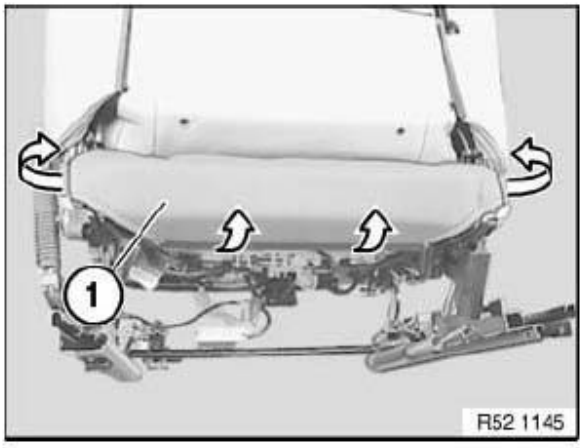


Fig. 207: Removing Seat Cover From Seat Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Pull out cover welt (1) completely from seat frame (2).

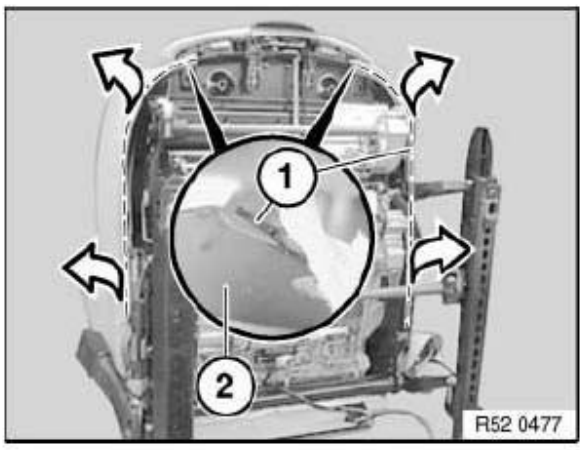


Fig. 208: Pulling Out Cover Welt From Seat Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Remove seat cover (1) with padding towards front/top.

IMPORTANT: Carefully slide bracing cloth with foam through backrest gap and seat structure.

Installation:

Slide foam completely through backrest gap and seat structure. Make sure foam and bracing cloth are correctly fitted.

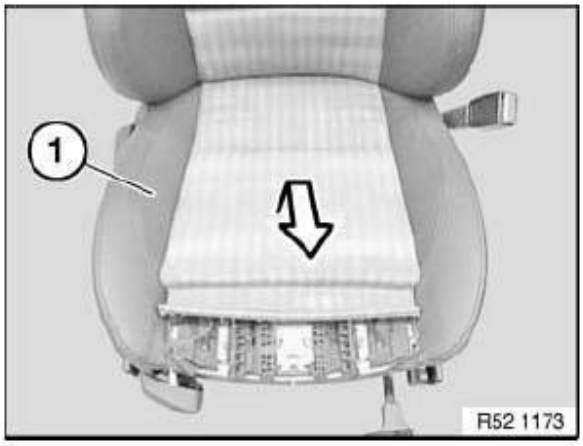


Fig. 209: Removing Seat Cover With Padding
Courtesy of BMW OF NORTH AMERICA, INC.

Version with seat heating and/or seat occupancy detector (CIS mat):

Release the corresponding plug connections depending on the version and disconnect.

Pull seat cover (1) with padding forward a little and feed wiring harness (2) out.

Remove seat cover (1) with padding towards front/top.

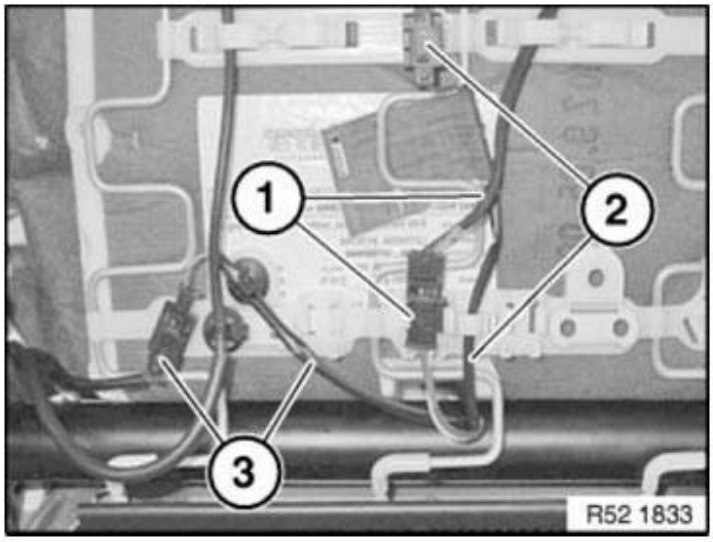


Fig. 210: Identifying Seat Cover And Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

Release all retainers in marked area.

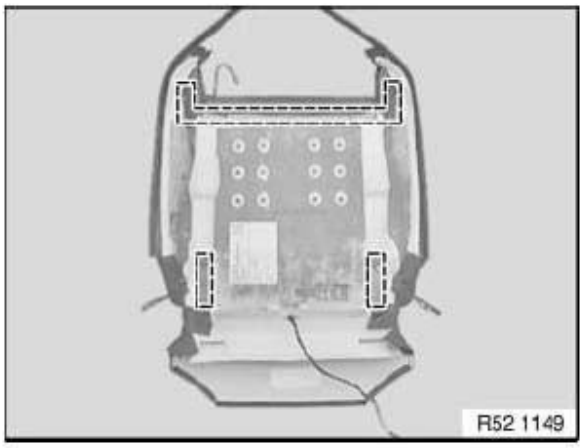


Fig. 211: Identifying Retainers Marked Area
Courtesy of BMW OF NORTH AMERICA, INC.

Detach all retainers in side area from OKE strips.

Carefully fold back seat cover and release retainers from OKE strips.

Remove seat cover from padding.

IMPORTANT: Remove all remnants of clips from seat cover and padding (CIS mat).

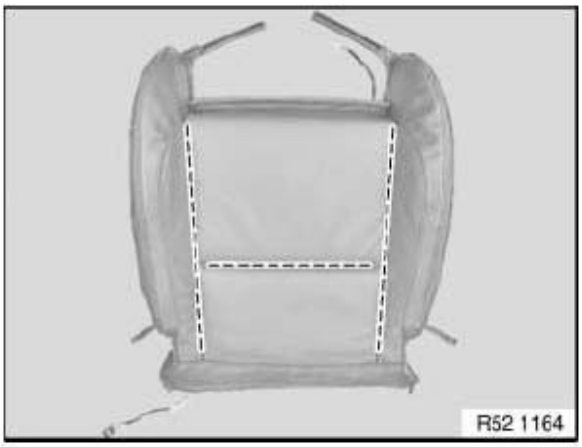


Fig. 212: Identifying Retainers Of OKE Strips
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Bend new retainers (2) with special tool **52 0 050** .

1. Padding
2. Retainer
3. Trim wire in padding
4. OKE strip in cover
5. Seat cover

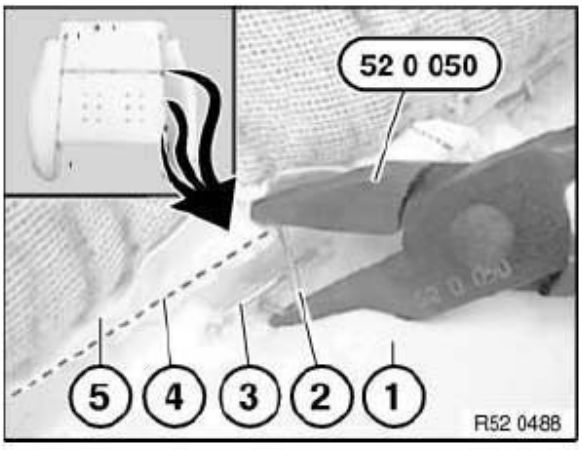


Fig. 213: Bending Retainers Using Special Tool (52 0 050)
Courtesy of BMW OF NORTH AMERICA, INC.

5216 FRONT SEAT, SPORTS, ELECTRIC

52 14 ... ADDITIONAL WORK IN EVENT OF FAULTY DRIVE/GEARING FOR LONGITUDINAL ADJUSTMENT

Release screws (1) of rockers for seat height adjustment.

Installation:

Carefully bend side section back and feed rocker out of top rail.

Tilt front seat back.

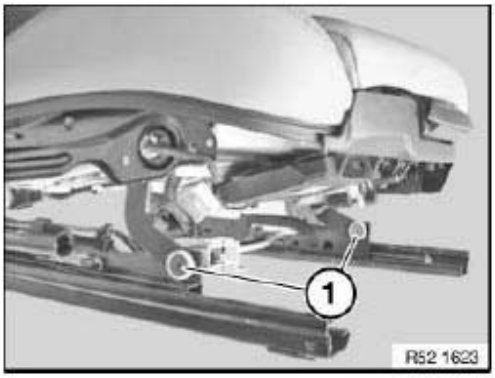


Fig. 214: Identifying Rocker Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

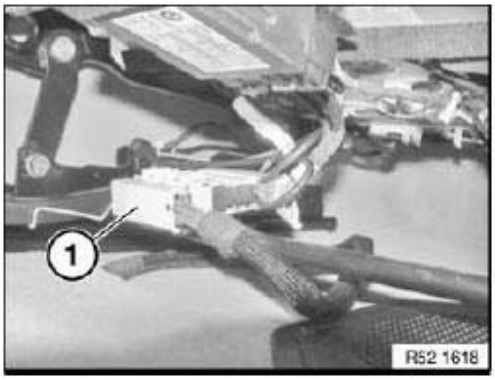


Fig. 215: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip central connector (2) from seat mechanism.

Unclip control units (1) See **6135080 Removing and installing/replacing control unit/module for left or**

right seat adjustment or **6135095 Removing and installing/replacing control unit/module for seat heating** .

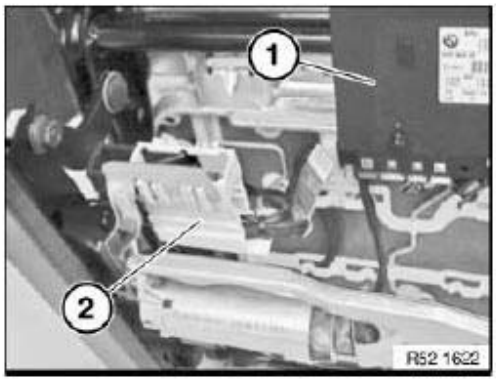


Fig. 216: Identifying Control Units And Seat Mechanism Central Connector
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

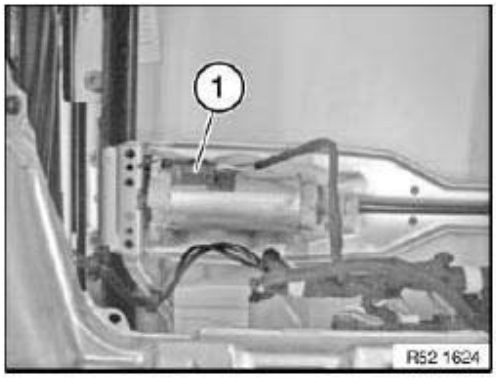


Fig. 217: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Bend metal tab (1) open.

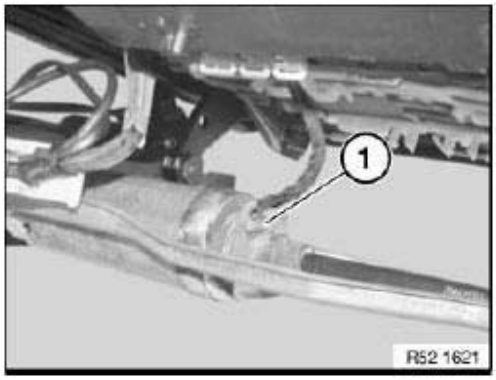


Fig. 218: Identifying Metal Tab
Courtesy of BMW OF NORTH AMERICA, INC.

Lift drive (1) and flex shaft (2) out of guide (4) in direction of arrow.

Detach drive (1) from rubber mounts (3).

Detach flex shaft (3) from drive (1).

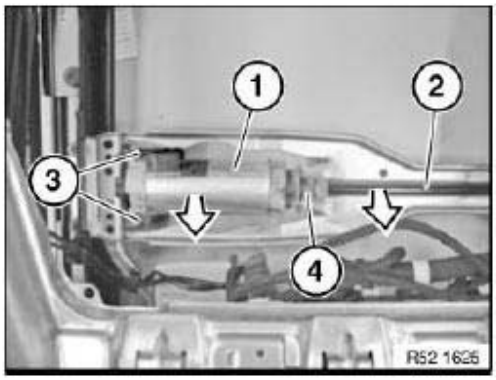


Fig. 219: Lifting Drive And Flex Shaft Out Of Guide
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1) at front.

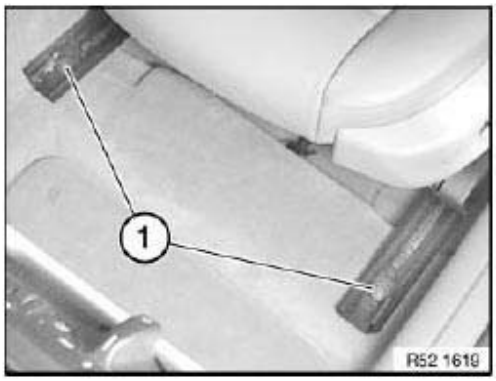


Fig. 220: Identifying Seat Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Install new drive for longitudinal seat adjustment.

Move front seat forwards.

Release screws (1) at rear.

IMPORTANT: Cover door sill with protective covers (risk of damage).

Lift out front seat and assemble.

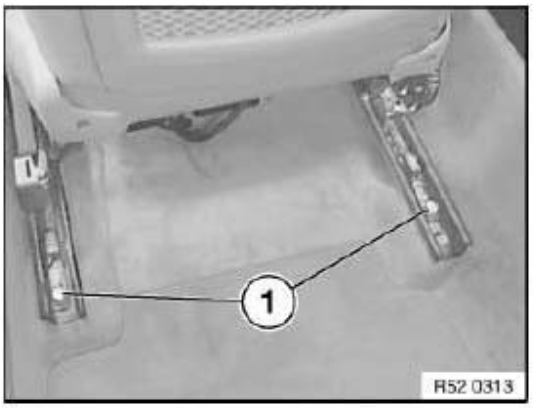


Fig. 221: Identifying Seat Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

- Make sure flex shaft is correctly fitted on drive
- Carpet must not get between seat rails and floor pan in area of fastening points (grating noises)
- Powerlok screws must be replaced and must **not** be reused
- Powerlok screws are mechanical screw locks with trilobular threads
- Insert all screws loose to avoid twisting
- Tighten down all screws to specified torque

Tightening torque **52 10 1AZ** .

52 14 ... PERFORMING FUNCTION CHECK WITH ADAPTER CABLE (FOR SEAT REPAIRS)

NOTE: The function check on a repaired driver's or front passenger seat can be performed outside the vehicle by using adapter cable 61 4 360.

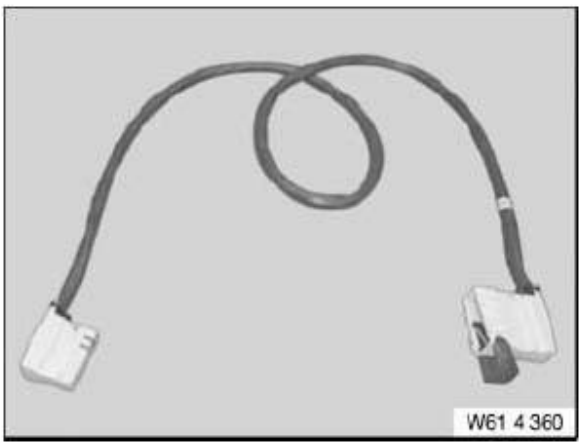


Fig. 222: Identifying Adapter Cable (61 4 360)
Courtesy of BMW OF NORTH AMERICA, INC.

Use:

Adapter cable 61 4 360 is connected to vehicle wiring harness (1) and removed seat (2).

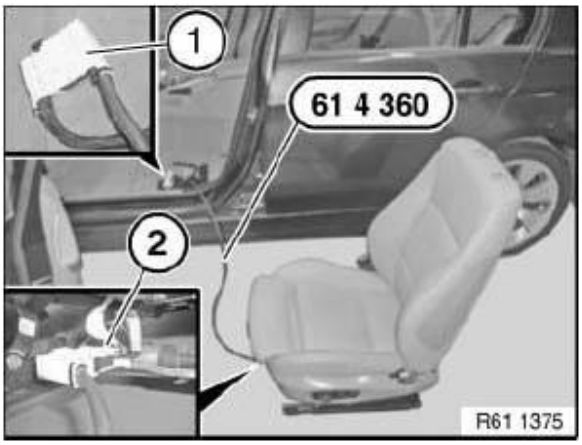


Fig. 223: Connecting Adapter Cable (61 4 360) To Vehicle Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

52 14 ... PERFORMING FUNCTION CHECK WITH ADAPTER CABLE (FOR SEAT REPAIRS)

NOTE: The function check on a repaired driver's or front passenger seat can be performed outside the vehicle by using adapter cable 61 4 360.

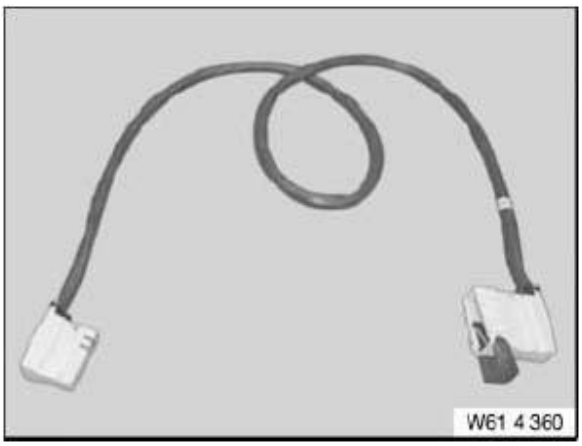


Fig. 224: Identifying Adapter Cable (61 4 360)
Courtesy of BMW OF NORTH AMERICA, INC.

Use:

Adapter cable 61 4 360 is connected to vehicle wiring harness (1) and removed seat (2).

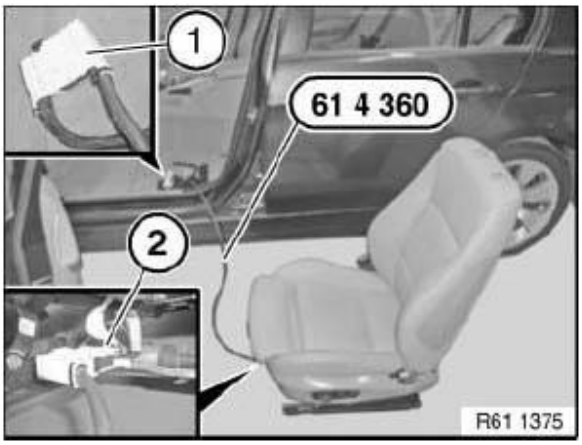


Fig. 225: Connecting Adapter Cable (61 4 360) To Vehicle Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 021 REMOVING AND INSTALLING/REPLACING FLEXMAT ON LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks

- Remove padding for front seat See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)**

Remove plug housing (1) from flexmat.

Cut all cable ties and disengage wiring harnesses from flexmat.

Installation:

Make sure wiring harnesses are laid correctly.

Observe bending radius and do not lay wiring harnesses tensioned.

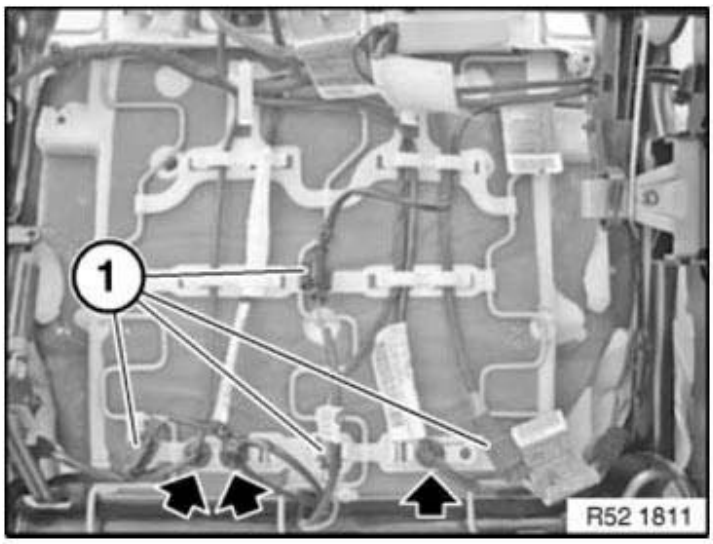


Fig. 226: Identifying Flexmat Plug Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Disengage flexmat (1) at front.

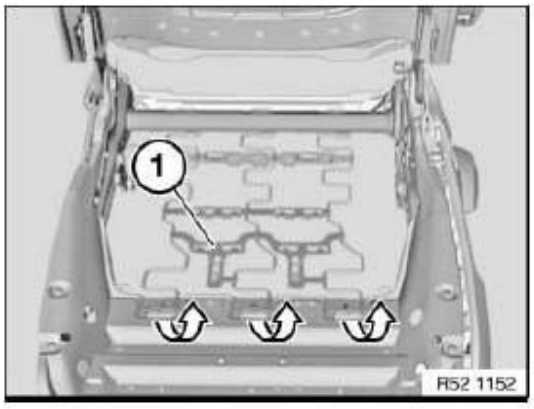


Fig. 227: Removing Flexmat
Courtesy of BMW OF NORTH AMERICA, INC.

Swing flexmat (1) down and disengage from seat frame.

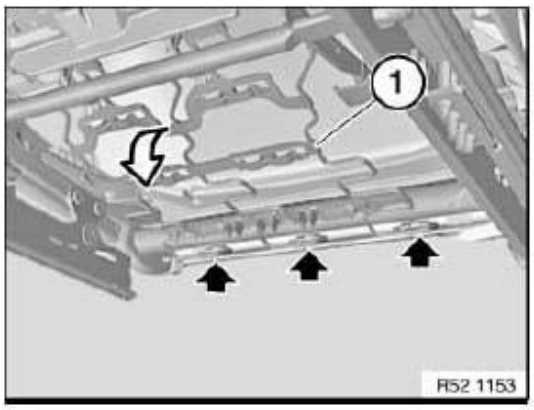


Fig. 228: Moving Flexmat
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 ... REMOVING AND INSTALLING ISOFIX HOLDER

Necessary preliminary tasks

- Remove seat fabric See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)**

Release screws (1).

Tightening torque **52 10 07AZ** .

Remove Isofix holder.

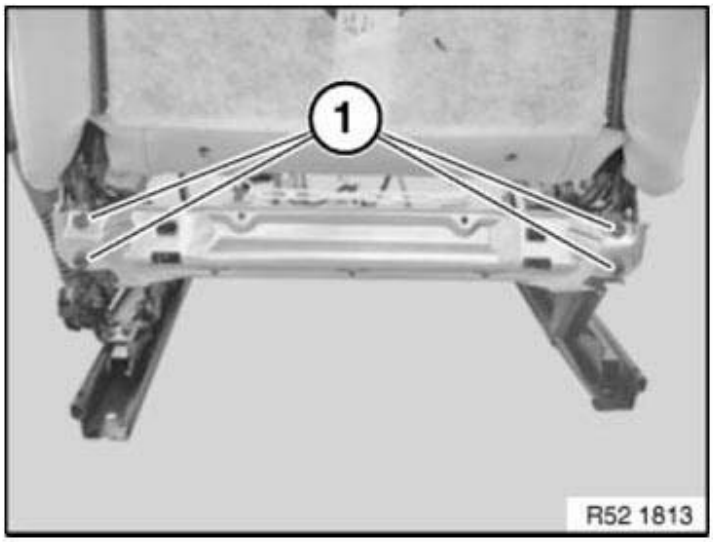


Fig. 229: Identifying Isofix Holder Screws
Courtesy of BMW OF NORTH AMERICA, INC.

52 14 ... REMOVING AND INSTALLING CARRIER FOR OUTER COVER ON LEFT OR RIGHT FRONT SEAT (ELECTRIC)

Necessary preliminary tasks

- Remove **OUTER COVER**

Cut open cable tie (1).

Unlock and disconnect plug connections (2) on servodrive.

Release screw (3).

Tightening torque **52 10 06AZ** .

Unclip carrier in marked area and remove.

Installation:

Replace cable ties.

Make sure carrier is correctly seated on seat mechanism.

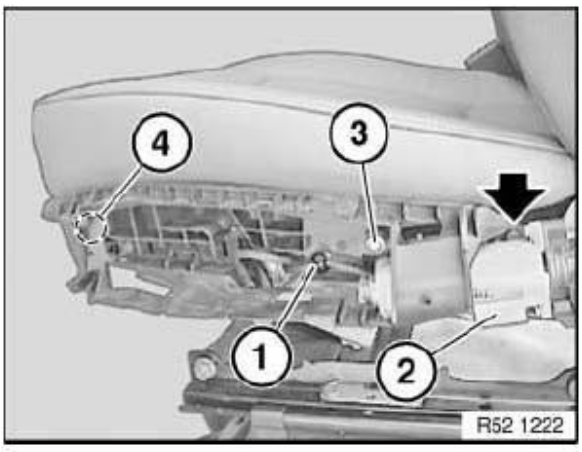


Fig. 230: Identifying Cable Tie, Plug Connections With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 000 REMOVING AND INSTALLING LEFT OR RIGHT FRONT SEAT (NORMAL/MANUAL)

Necessary preliminary tasks

- Open convertible top
- Disconnect **BATTERY NEGATIVE LEAD**

IMPORTANT: An airbag module and a pyrotechnical seat belt tensioner are installed in the front seat.
Improper handling can lead to triggering of the pyrotechnical seat belt pretensioner or side airbag, resulting in injuries.

Installation:

- Powerlok screws must be replaced and must **not** be reused
- Powerlok screws are mechanical screw locks with trilobular threads
- Screws are fitted with a Torx Plus system and can be released with a standard Torx screwdriver

Move seat to upper back position.

Release and dispose of screws (1).

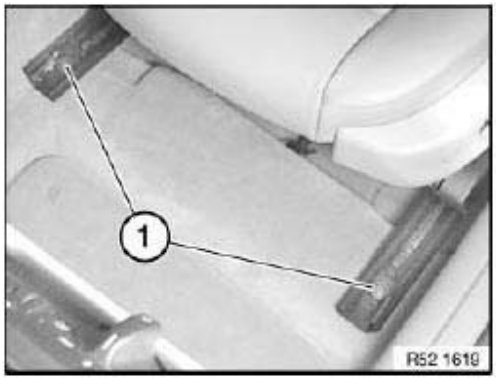


Fig. 231: Identifying Seat Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Move seat forwards and position flush with seat runners.

Unclip release tab (2) for belt anchor fitting trim (1) with plastic wedge.

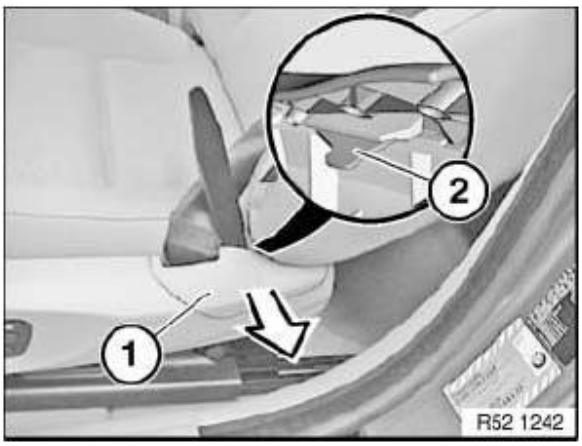


Fig. 232: Removing Release Tab For Belt Anchor Fitting Trim Using Plastic Wedge
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Tightening torque **72 11 2AZ** .

Remove anchor fitting (2).

Installation:

Make sure anchor fitting (2) is correctly seated on seat mechanism pin.

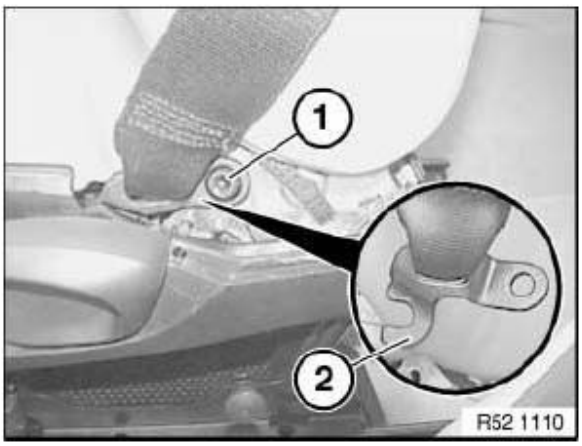


Fig. 233: Identifying Anchor Fitting With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Release and dispose of screws (1).

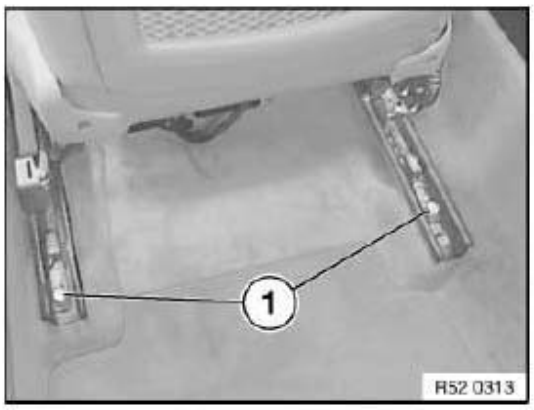


Fig. 234: Identifying Seat Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect plug connection (1).

IMPORTANT: Cover door sill with protective covers (risk of damage).

Lift out front seat.

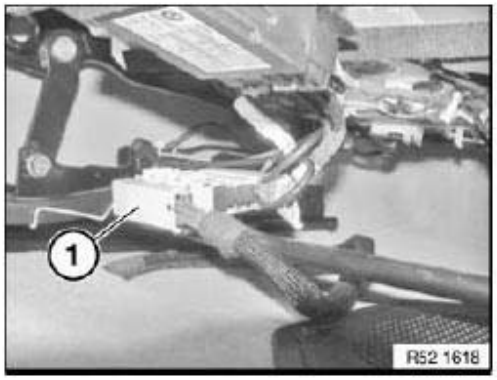


Fig. 235: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

- Carpet must not get between seat rails and floor pan in area of fastening points (grating noises)
- Replace microencapsulated screws
- Insert all screws loose to avoid twisting
- Tighten down all screws to specified torque

Tightening torque **52 10 1AZ** .

WARNING: When carrying out further work on the front seat, it is absolutely

imperative to observe the SAFETY REGULATIONS on handling airbag modules and pyrotechnical seat belt tensioners
Improper handling can lead to triggering of the pyrotechnical seat belt pretensioner or side airbag, resulting in injuries.

52 13 390 REMOVING AND INSTALLING OR REPLACING FRONT LEFT OR RIGHT HEAD RESTRAINT

WARNING: Danger of pinching!

Reach on left and right under head restraint and unclip in jerks in upward direction.

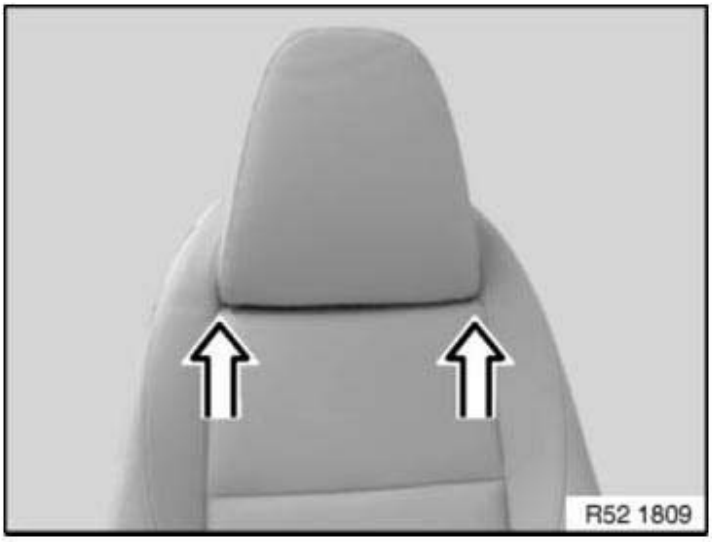


Fig. 236: Removing Head Restraint
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 198 REMOVING AND INSTALLING OR REPLACING REAR PANEL ON LEFT OR RIGHT FRONT SEAT BACKREST

Release clips (1) with diagonal cutting pliers.

Remove rear panel (2) downwards with a turning action.

NOTE: Remove remnants of clips.

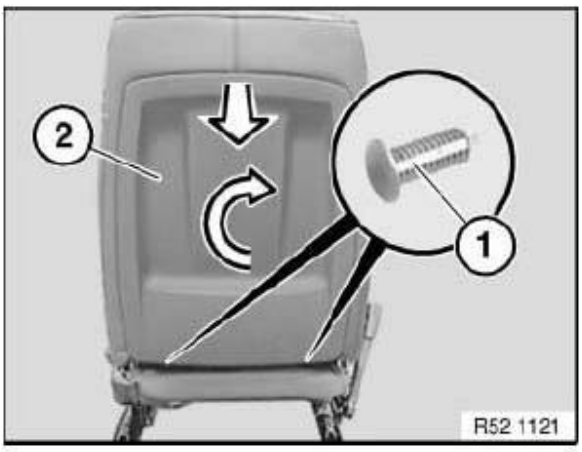


Fig. 237: Removing Rear Panel
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Retaining hooks (1) and bore holes (2) on rear panel (3) must not be damaged.

Replace faulty clips.

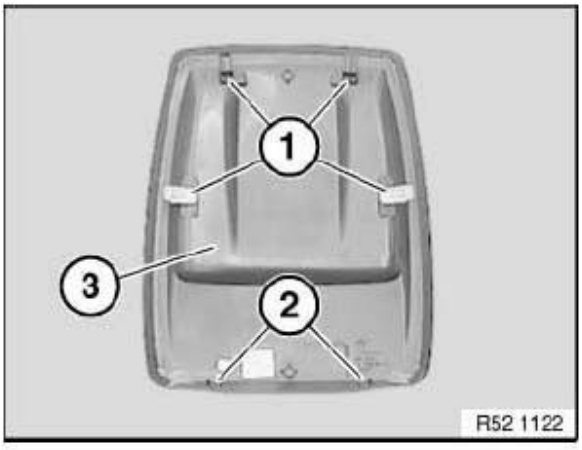


Fig. 238: Identifying Hooks And Bore Holes On Rear Panel
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 030 REMOVING AND INSTALLING/REPLACING BACKREST FRAME ON LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks:

- Remove **FRONT SEAT**
- Remove **REAR PANEL** on front seat backrest

Release airbag wiring harness (2) from cable holders on flexmat.

Disconnect cable tie from clips.

Raise release clip (3) and pull plug (4) out of plug housing (1).

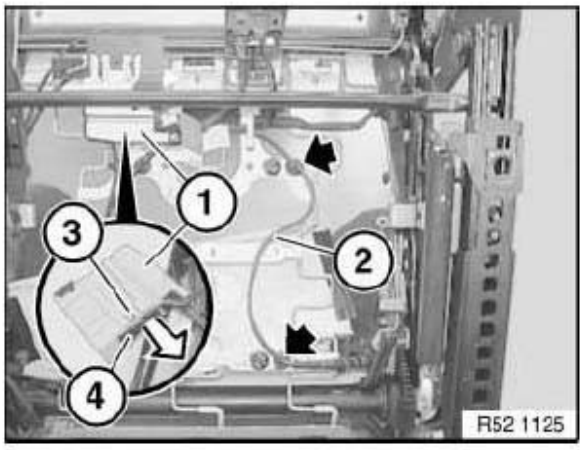


Fig. 239: Pulling Plug Out Of Plug Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Always feed in cable tie (1) at narrow end of plug housing in direction of arrow.

Cables must be secured with insulation under cable tie.

Firmly tighten cable tie (1) to relieve strain. It must not be possible to move the cable.

Make sure plug (2) is correctly locked in plug housing (3).

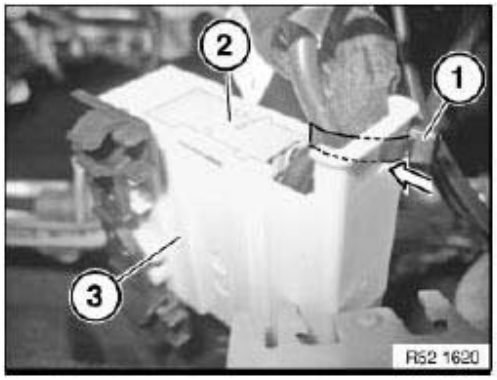


Fig. 240: Installing Cable Tie At Narrow End Of Plug Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

Unclip cable.

Release wiring harness (3) from cable holders on seat mechanism.

Unfasten plug connection (2) and disconnect.

IMPORTANT: Feed all wiring harnesses carefully through the seat and backrest mechanism as the edges of the frame can be sharp.

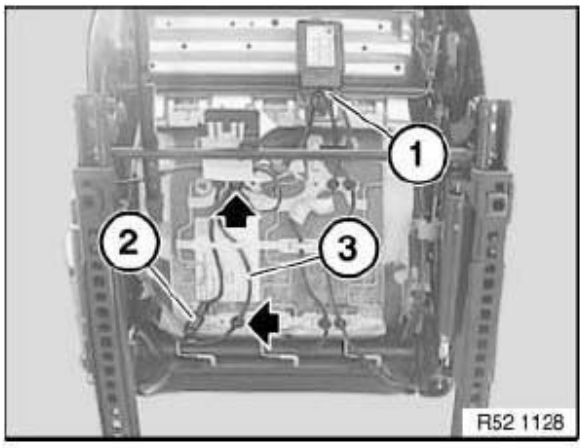


Fig. 241: Identifying Plug Connections And Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

Unhook backrest cover (1) on left and right.

Release screws (2) on left and right.

Tightening torque **52 10 02AZ** .

Remove backrest frame (3) completely towards top.

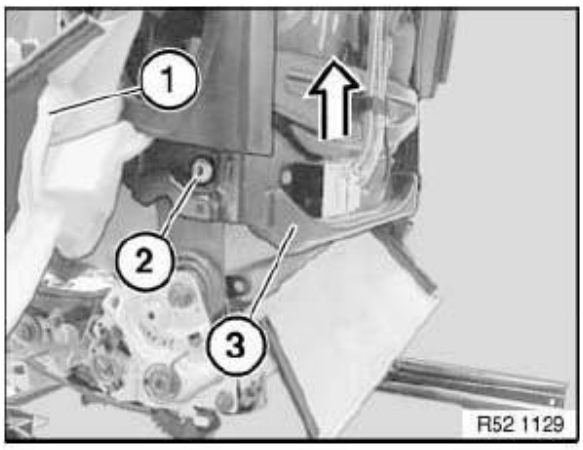


Fig. 242: Removing Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

- Remove backrest cover with padding.
- Remove **SIDE AIRBAG** .
- Remove lumbar support See **5215059 Removing and installing/replacing lumbar support pump with valve housing for lumbar support/backrest width adjustment**; **5213059 Removing and installing/replacing lumbar support pump with valve housing for lumbar support**; **5213055 Removing and installing/replacing lumbar support on front seat** or **5215061 Replacing both air cushions for backrest width adjustment on left or right front seat**.

52 13 025 REMOVING AND INSTALLING/REPLACING LEFT OR RIGHT SEAT MECHANISM (NORMAL/MANUAL)

This job is described under:

- Remove **BACKREST FRAME** on front seat

Replacement only:

- Remove seat cover See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)** for front seat
- Remove **SEAT BELT TENSIONER**
- Remove **control unit for seat heating**

Seat mechanism is supplied complete with corresponding drive units.

Unlock plug housing (3) and remove from holder.

Disengage wiring harnesses from flexmat.

Installation:

Make sure wiring harnesses are laid correctly.

Observe bending radius and do not lay wiring harnesses tensioned.

Release screws (1).

Tightening torque **52 10 05AZ** .

Remove holder (2) for control unit.

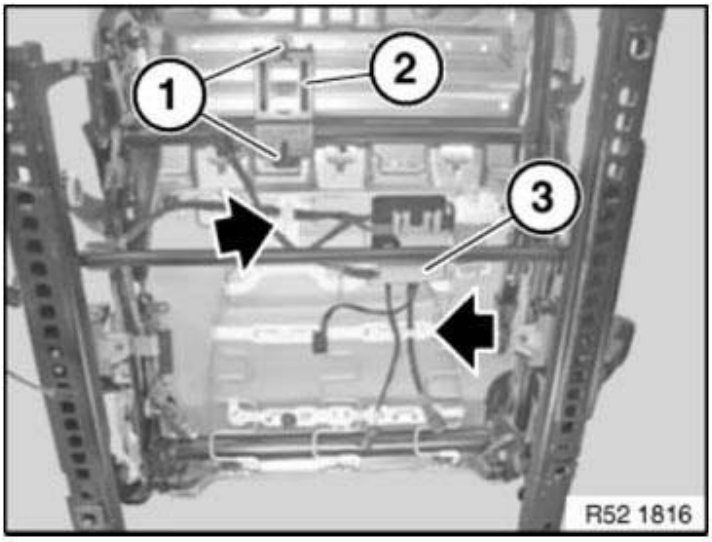


Fig. 243: Identifying Plug Housing With Screws And Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Tightening torque **52 10 03AZ** .

Remove belt buckle deflector trim (2).

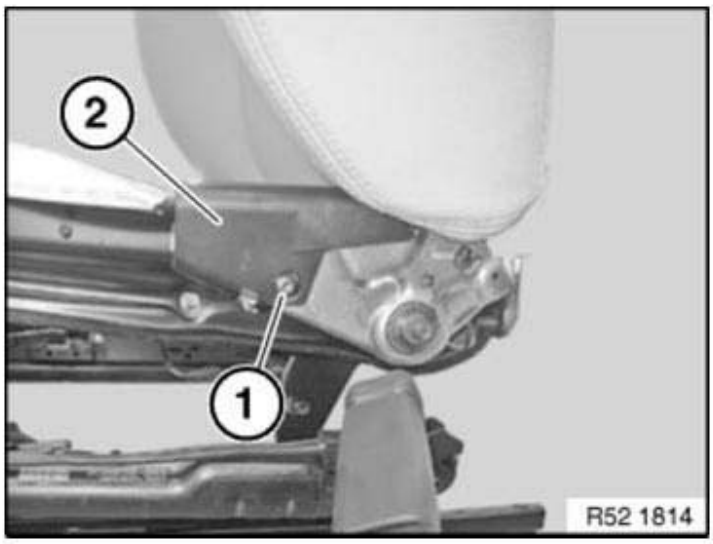


Fig. 244: Identifying Belt Buckle Deflector Trim With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Sport seat only:

Release screws (1).

Remove connection for thigh support.

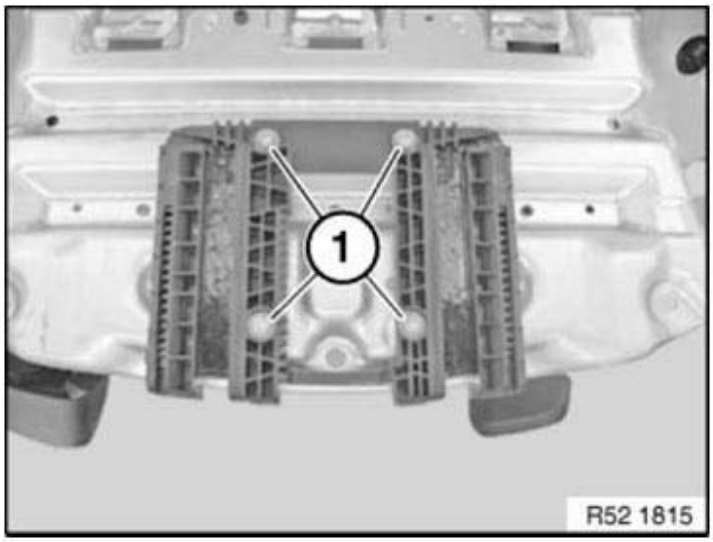


Fig. 245: Identifying Screws
Courtesy of BMW OF NORTH AMERICA, INC.

52 15 059 REMOVING AND INSTALLING/REPLACING LUMBAR SUPPORT PUMP WITH VALVE HOUSING FOR LUMBAR SUPPORT/BACKREST WIDTH ADJUSTMENT

Necessary preliminary tasks

- Remove **REAR PANEL ON FRONT SEAT**

Detach backrest cover (1) from backrest frame.

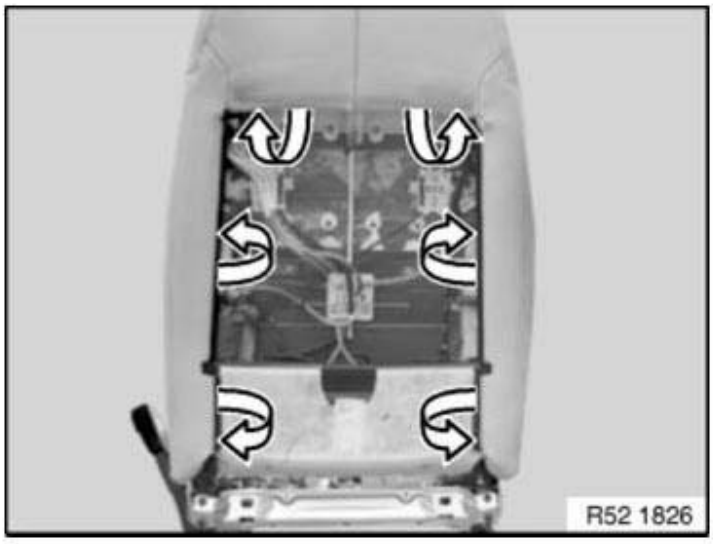


Fig. 246: Removing Backrest Cover From Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Release cable tie (1).

Installation:

Replace defective cable tie.

Open zip fastener (2).

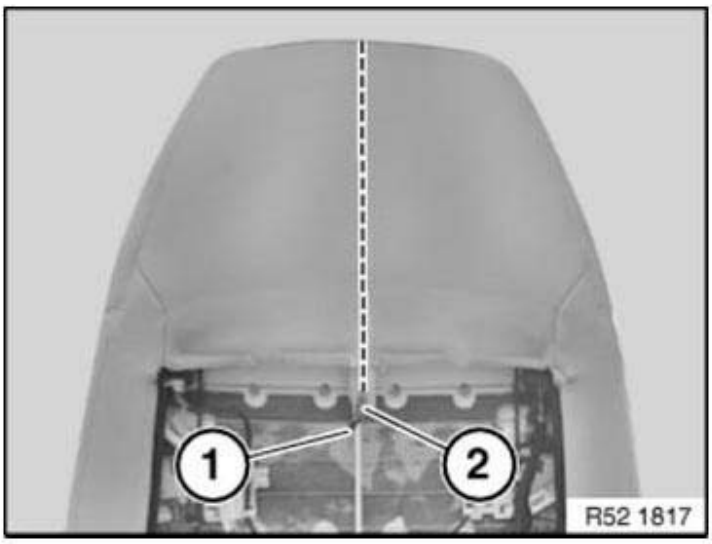


Fig. 247: Identifying Cable Tie And Zip Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

Detach cable tie.

Installation:

Replace defective cable ties.

Remove lumbar support pump (1) from backrest frame.

Unfasten plug connection (2) and disconnect.

Unclip air hose from holder (3).

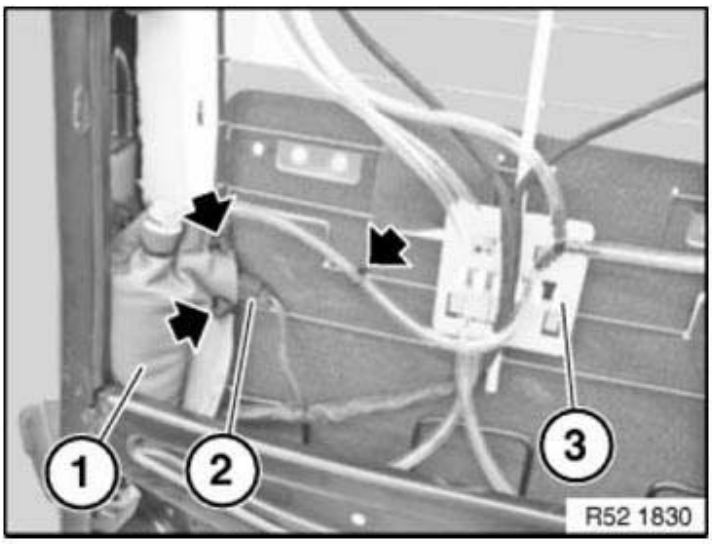


Fig. 248: Identifying Lumbar Support Pump With Plug Connection And Air Hose Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Pop valve housing (2) for lumbar support in direction of arrow out of backrest frame.

Disengage wiring harness from cable tie (3).

Installation:

Feed rubber plug (1) through backrest frame.

Pull rubber plug (1) and pop valve housing into backrest frame.

Check rubber sleeve of valve housing for correct seating in backrest frame.

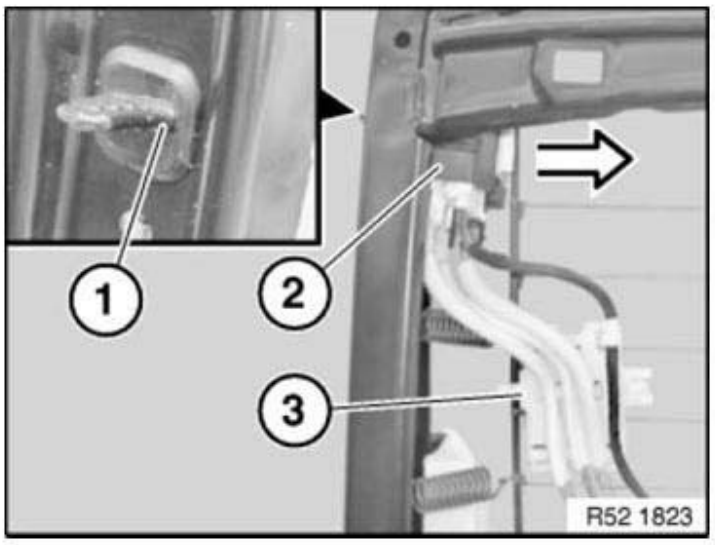


Fig. 249: Removing Valve Housing Out Of Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

Unlock quick connector and detach air hoses (2, 3 and 4) from valve housing.

Valve unit for backrest width adjustment:

(2) Hose (clear), lumbar drive
(3) Hose (clear), right lumbar cushion
(4) Hose (clear), left lumbar cushion

NOTE: Connections are coded against incorrect assembly.

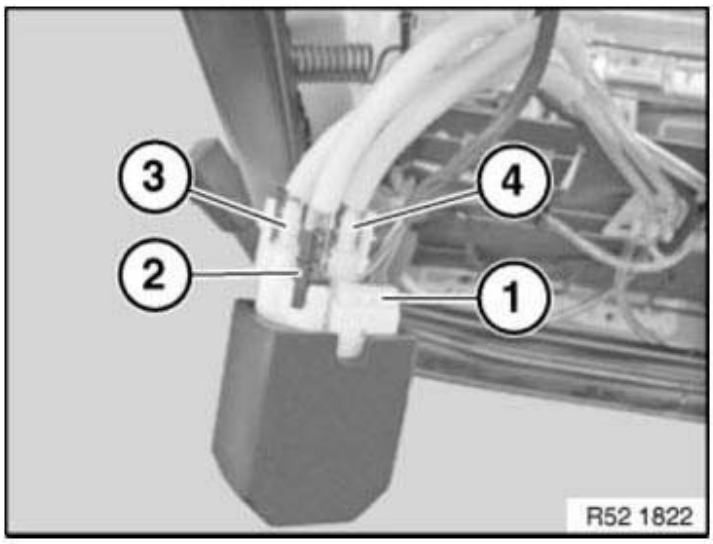


Fig. 250: Identifying Plug Connection With Air Hoses
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Carry out FUNCTION CHECK .

52 14 040 REMOVING AND INSTALLING/REPLACING OUTER COVER ON FRONT LEFT OR RIGHT SEAT (NORMAL/ELECTRIC)

Necessary preliminary tasks

- Remove **FRONT SEAT**

NOTE: Picture shows installed seat by way of example.

Move backrest to full rearward position.

Unclip release tab (2) for belt anchor fitting trim (1) with plastic wedge.

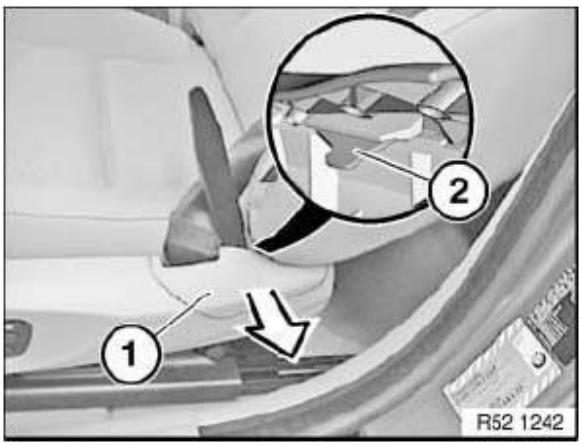


Fig. 251: Removing Release Tab For Belt Anchor Fitting Trim Using Plastic Wedge
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw or catch (3).

Lever lugs (1) out of holders (2).

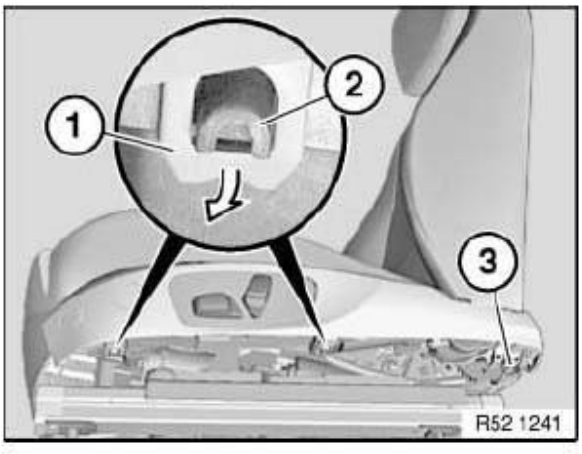


Fig. 252: Removing Lugs Out Of Holders
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Cover (1) could detach itself in from area with carrier section (2) from seat mechanism.

Carefully pull cover (1) with carrier section (2) in front area off seat mechanism.

Press unlocking lug (3) with screwdriver and detach cover from carrier section.

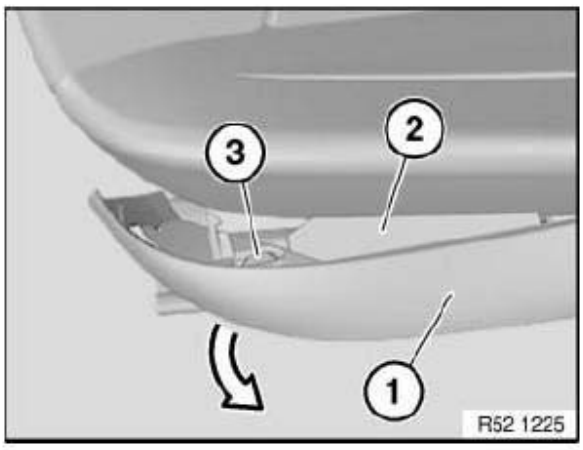


Fig. 253: Pulling Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Raise lug (1) and unlock.

Reach between seat padding and cover (2) and pull cover off carrier section.

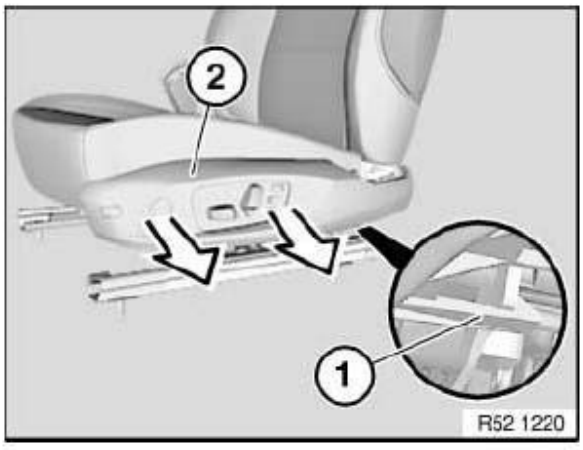


Fig. 254: Pulling Cover Off Carrier Section
Courtesy of BMW OF NORTH AMERICA, INC.

Unlock and disconnect plug connections:

1. Switch combination
2. Lumbar support
3. Backrest width adjustment

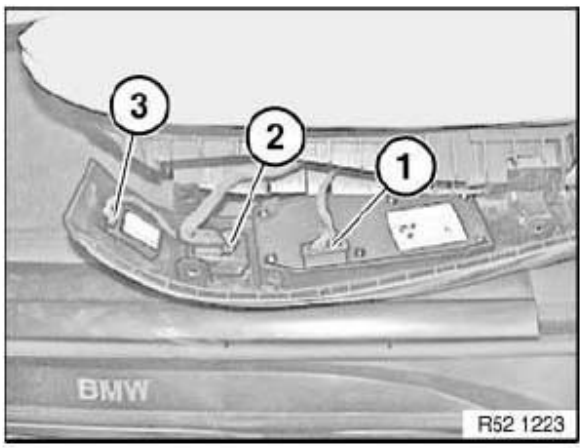


Fig. 255: Identifying Switch Combination, Lumbar Support And Backrest Width Adjustment
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Retaining clips and lugs of cover must not be damaged.

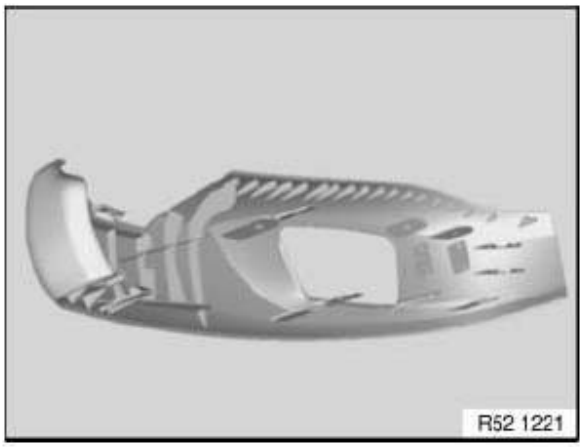


Fig. 256: Identifying Retaining Clips And Lugs Of Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement only:

Unlock catches of switch housing and remove switch from cover.

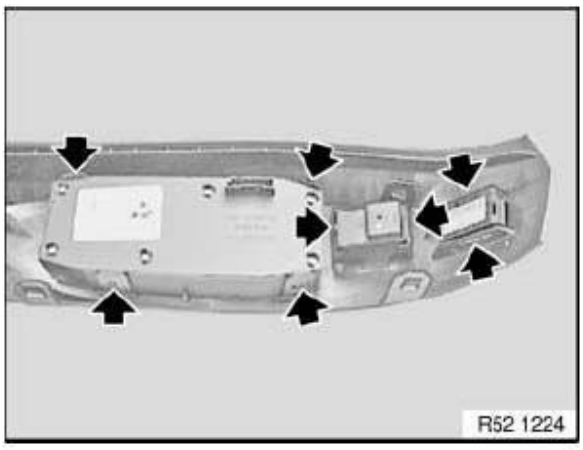


Fig. 257: Locating Catches Of Switch Housing
Courtesy of BMW OF NORTH AMERICA, INC.

52 15 403 REMOVING AND INSTALLING/REPLACING THIGH SUPPORT COVER ON FRONT SEAT (SPORT/MANUAL)

Release thigh support (1) and move forward.

Lever welt of seat cover (2) out of thigh support.

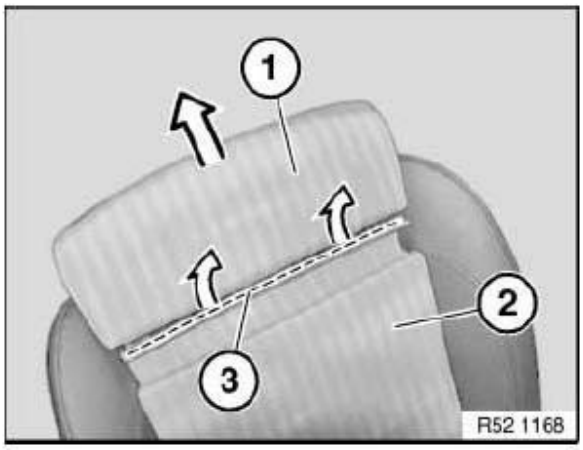


Fig. 258: Removing Thigh Support
Courtesy of BMW OF NORTH AMERICA, INC.

Lever out cover welt in marked area (1).

Disengage trim thread in marked area (2) from thigh support.

Remove cover with padding.

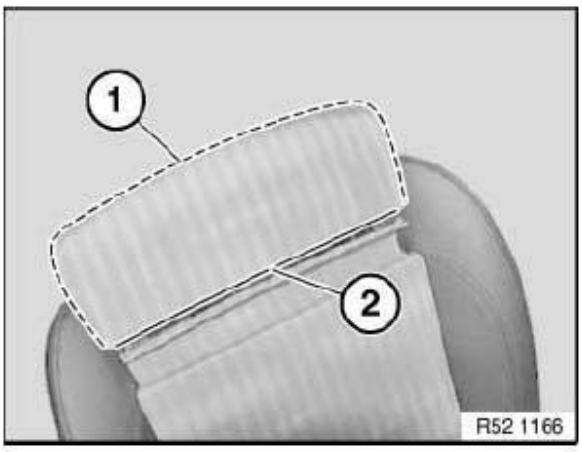


Fig. 259: Identifying Cover Welt And Trim Thread Marked Areas
Courtesy of BMW OF NORTH AMERICA, INC.

Pull cover (1) off padding (2).

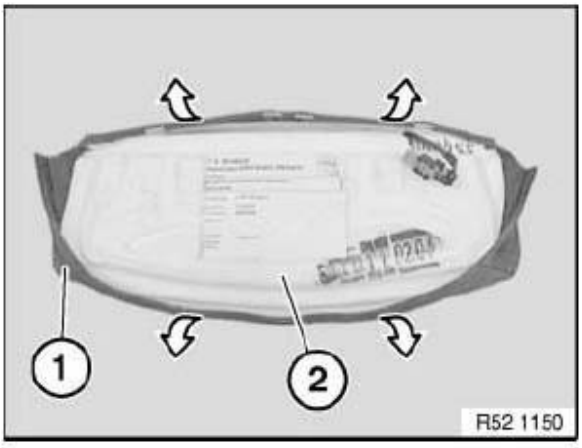


Fig. 260: Pulling Cover Off Padding
Courtesy of BMW OF NORTH AMERICA, INC.

52 13 405 REPLACING BACKREST COVER FOR LEFT OR RIGHT FRONT SEAT

Necessary preliminary tasks

- Clamp off **BATTERY NEGATIVE LEAD**
- Remove **REAR PANEL**
- Remove **HEAD RESTRAINT**

Version with seat heating only

Unfasten plug connection (1) and disconnect.

Detach cable tie.

Release wiring harness (2) from cable holders on seat mechanism.

IMPORTANT: Feed the wiring harness carefully through the seat and backrest mechanism as the edges of the frame can be sharp.

Installation:

Lay wiring harness without kinks and tension.

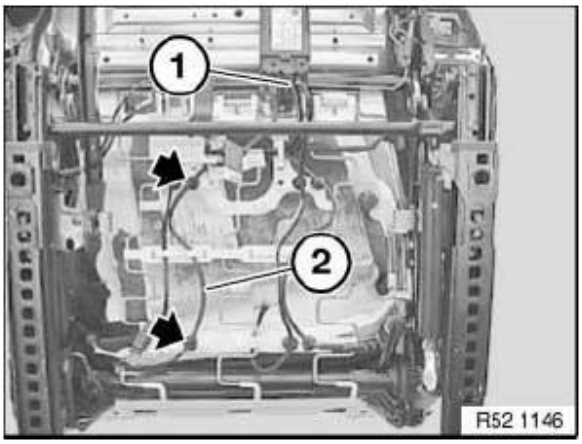


Fig. 261: Identifying Plug Connection And Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip cable tie (1) from seat mechanism.

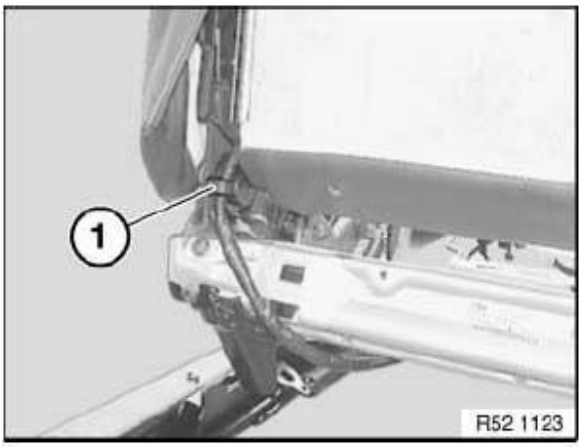


Fig. 262: Identifying Cable Tie Of Seat Mechanism
Courtesy of BMW OF NORTH AMERICA, INC.

Release cable tie (1).

Installation:

Replace defective cable tie.

Open zip fastener (2).

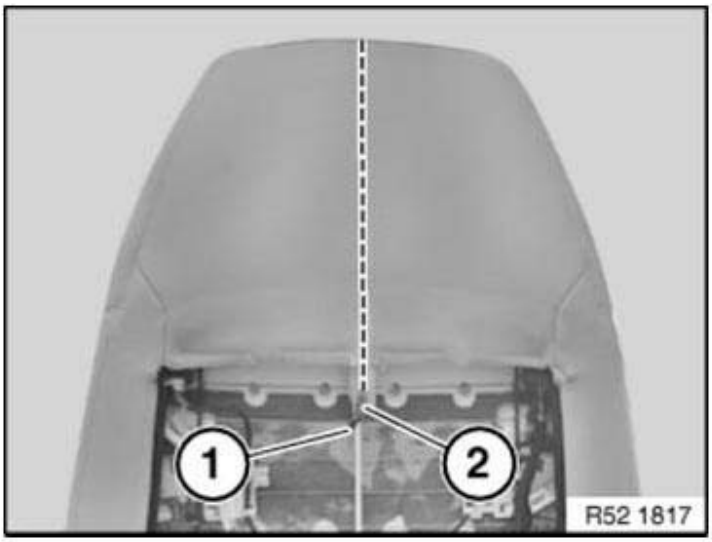


Fig. 263: Identifying Cable Tie And Zip Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

Detach backrest cover (1) from backrest frame.

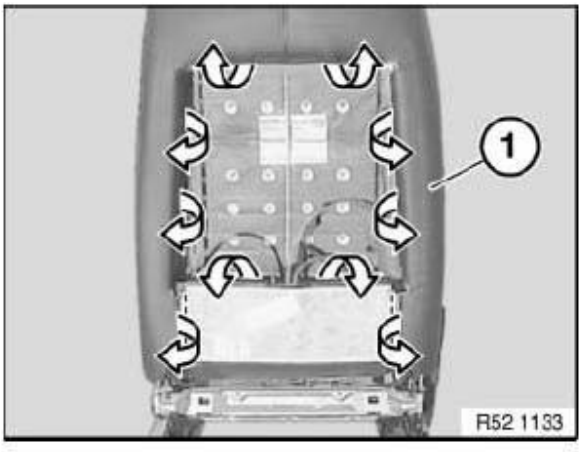


Fig. 264: Removing Backrest Cover From Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts (1).

Installation:

Replace nuts.

Tightening torque **72 12 03AZ** .

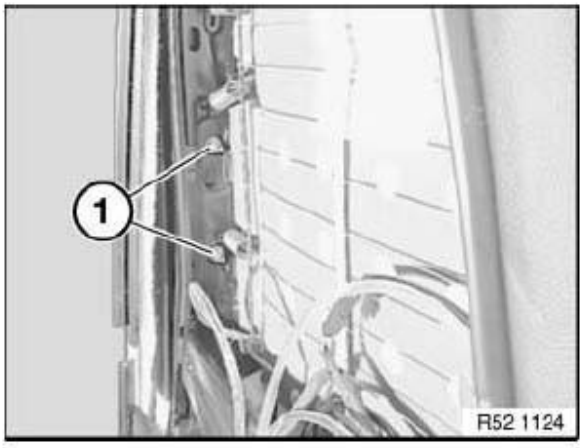


Fig. 265: Identifying Seat Mechanism Nut
Courtesy of BMW OF NORTH AMERICA, INC.

Detach mounting strip (4) from flexmat.

Carefully pull airbag module (3) with threaded pins out of backrest frame and feed out between padding (1) and inner bag (2).

Set down airbag module (3) to one side.

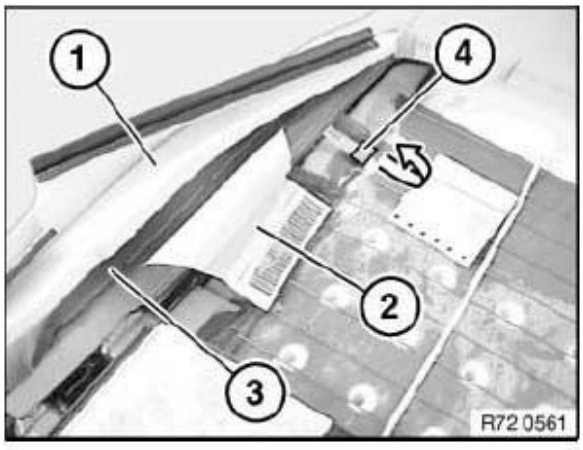


Fig. 266: Removing Mounting Strip From Flexmat
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Pull inner bag (1) fully over airbag module and threaded pins.

Feed in mounting strip (2) of inner bag (1) through backrest frame.

Insert threaded pins into backrest frame and secure with new nuts.

No inner bag material is permitted to project through the hole in the inner frame.

Install nuts and tighten down.

Tightening torques **72 12 03AZ** .

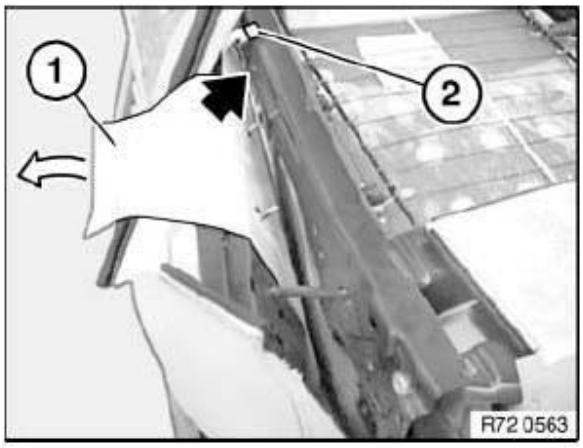


Fig. 267: Pulling Inner Bag Over Airbag Module And Threaded Pins
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Inner bag must be between airbag module and backrest frame!

Engage mounting strip (1) of inner bag in flexmat.

Position inner bag (2) smoothly over backrest frame.

Engage backrest cover (3) in backrest frame.

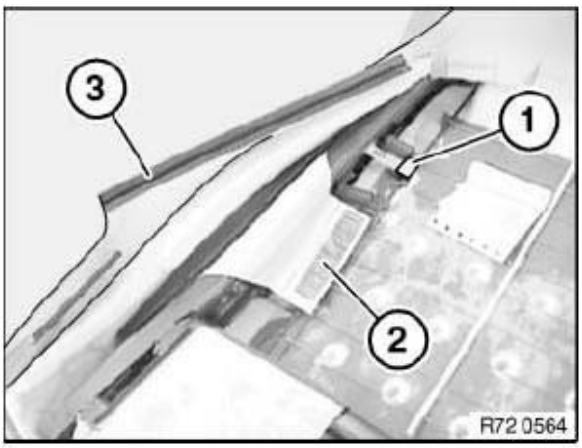


Fig. 268: Identifying Mounting Strip, Inner Bag And Backrest Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Reposition backrest cover (1) at side and bottom and pull off with padding towards top from backrest frame.

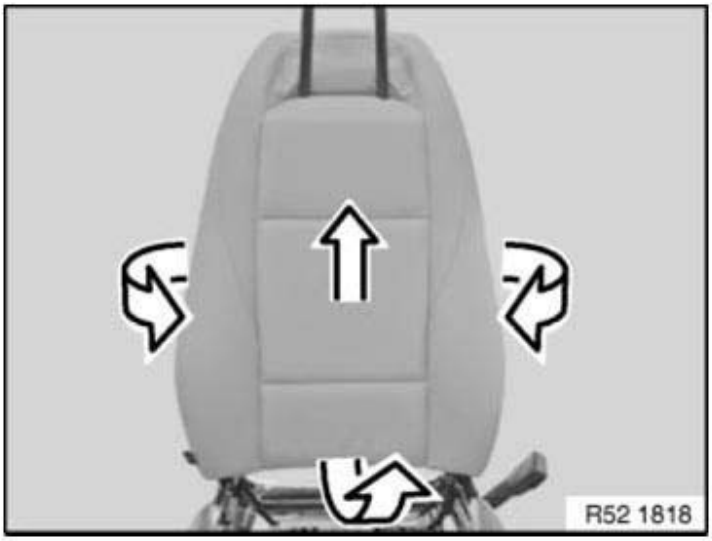


Fig. 269: Positioning Backrest Cover At Side And Bottom
Courtesy of BMW OF NORTH AMERICA, INC.

Release all retainers in marked area.

Remove backrest cover from padding.

NOTE: Remove all remnants of retainers from backrest cover and padding.

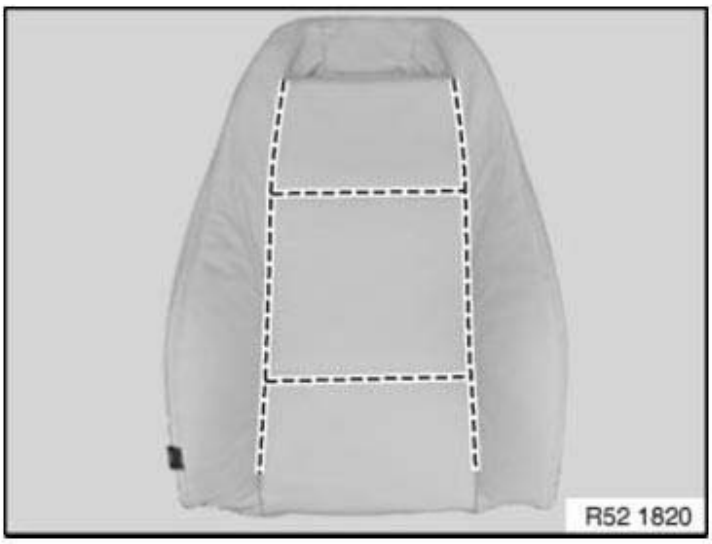


Fig. 270: Identifying Retainers Marked Area
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Bend new retainer (2) with special tool **52 0 050** .

1. Padding
2. Retainer
3. Trim wire in padding
4. Trim wire in backrest cover
5. Backrest cover

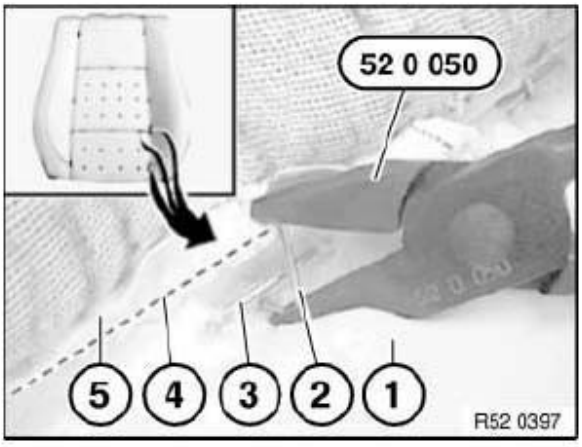


Fig. 271: Bending Retainer Using Special Tool (52 0 050)
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement of backrest cover

Pull trim wires out of backrest cover.

Cut new backrest cover to size and insert trim wires.

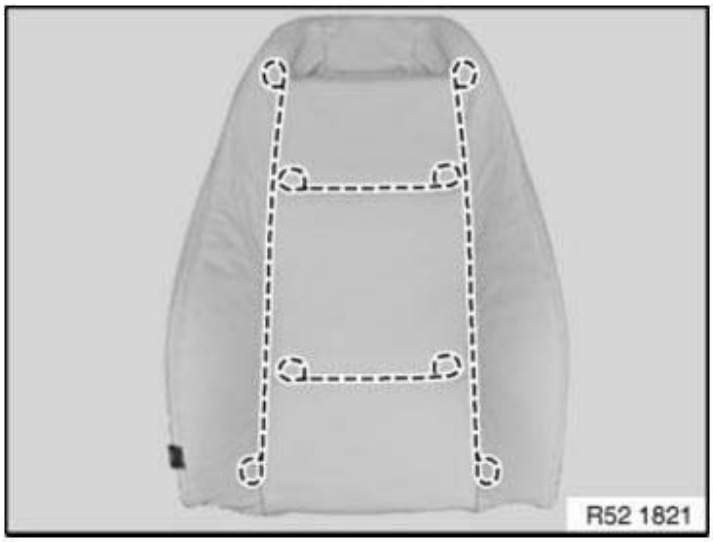


Fig. 272: Identifying Backrest Cover
Courtesy of BMW OF NORTH AMERICA, INC.

52 15 451 REPLACING BACKREST HEATING ELEMENT FOR LEFT OR RIGHT SPORTS SEAT

Operation is described in:

- Replacing **HEATING ELEMENTS FOR LEFT OR RIGHT FRONT SEAT**

52 16 056 REPLACING BOTH AIR CUSHIONS FOR BACKREST WIDTH ADJUSTMENT ON LEFT OR RIGHT FRONT SEAT (SPORT/ELECTRIC)

Operation is identical to:

Replacing **BOTH AIR CUSHIONS FOR BACKREST WIDTH ADJUSTMENT** on left or right front seat (Sport/mechanical).

52 15 450 REPLACING CUSHION HEATING ELEMENT FOR LEFT OR RIGHT FRONT SEAT

Operation is described in:

- Replacing **HEATING ELEMENTS FOR LEFT OR RIGHT FRONT SEAT**

52 15 452 REPLACING HEATING ELEMENT FOR LEFT OR RIGHT FRONT SEAT (THIGH SUPPORT)

Operation is described in:

- Replacing **HEATING ELEMENTS FOR LEFT OR RIGHT FRONT SEAT**

52 15 455 REPLACING HEATING ELEMENTS FOR LEFT OR RIGHT FRONT SEAT (SPORT)

Necessary preliminary tasks

- Remove **SEAT FABRIC**
- Remove **BACKREST COVER**
- Remove **THIGH SUPPORT COVER**

NOTE: Heating elements are bonded with a foam section and cannot be separated from each other without causing damage.
Foam section and heating elements must be replaced.

Check new foam section:

- No obvious damage or material defects
- All trim wires present in foam
- No bubbles in foam section
- No dirt/contamination on foam or residual foam
- Pay attention to foam section on left and right

Check new heating mat:

- No obvious damage or material defects
- All tear-off film pieces presents
- Note variant by examining label on cable

Guide cable for backrest heating through foam hole.

Stick on main section (1):

- Pull adhesive film pieces off main section (1) and stick to upper edge of main section foam until flush

Stick on bead section (2):

- Pull adhesive film pieces off bead section (2) and stick on heating mat along bead section edges.
- Press down evenly in outwards direction

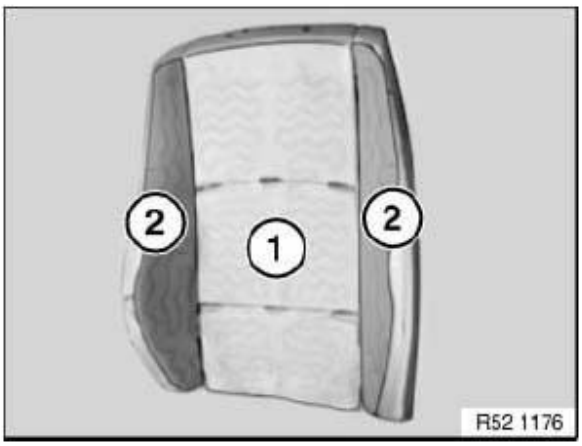


Fig. 273: Identifying Sticks On Main And Bead Section
Courtesy of BMW OF NORTH AMERICA, INC.

Guide cable for seat heating through foam hole.

Stick on STV heating mat (1):

- Pull off adhesive film and stick to rear foam edge until flush

Stick on bead section (2):

- Pull adhesive film pieces off bead section (2) and stick on heating mat along bead section edges.
- Press down evenly in outwards direction

Stick on main section (3):

- Pull adhesive film pieces off main section (3) and stick to upper edge of main section foam until flush

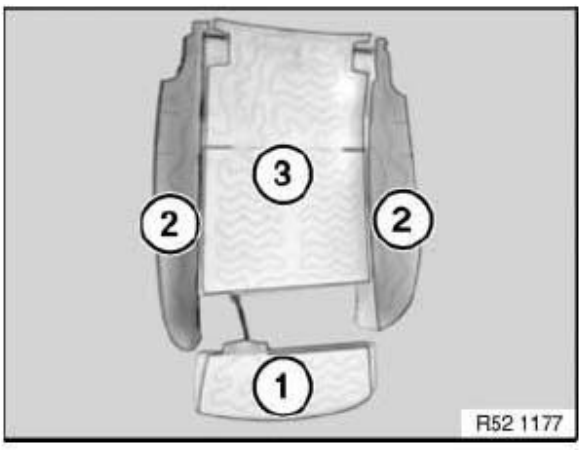


Fig. 274: Identifying Sticks On STV Heating Mat, Main And Bead Section
Courtesy of BMW OF NORTH AMERICA, INC.

Check laying of heating mats:

- Heating mats laid without folds
- Heating mats correctly positioned
- All bonding surfaces stuck on

NOTE: Carry out FUNCTION TEST

52 16 050 REPLACING LUMBAR CUSHION ON LEFT OR RIGHT FRONT SEAT

Removal is identical to:

Removing and installing/replacing **LUMBAR SUPPORT ON FRONT SEAT**

52 15 415 REPLACING PADDING FOR LEFT OR RIGHT FRONT SEAT (SPORT/MANUAL)

Operation is described in:

Replacing **SEAT COVER ON LEFT OR RIGHT FRONT SEAT** .

52 15 420 REPLACING PADDING FOR LEFT OR RIGHT FRONT SEAT BACKREST (SPORT/MANUAL)

Operation is described in:

Replacing **BACKREST COVER FOR LEFT OR RIGHT FRONT SEAT** .

52 15 417 REPLACING PADDING FOR LEFT OR RIGHT THIGH SUPPORT (SPORT/MANUAL)

This operation is described in section on:

Replacing **THIGH SUPPORT COVER ON LEFT OR RIGHT FRONT SEAT** .

52 15 400 REPLACING SEAT COVER FOR LEFT OR RIGHT FRONT SEAT (SPORT/MANUAL)

Necessary preliminary tasks

- Remove **FRONT SEAT**
- Remove **THIGH SUPPORT**
- Manual version:

  Remove **OUTER COVER**

- Electric version:

Remove **CARRIER FOR COVER**

WARNING: US/CDN front passenger seat (with CIS mat) only:
If CIS mat or padding is defective, both parts must be replaced together.

IMPORTANT: The CIS mat must be enabled after each installation operation.

Enabling seat occupancy detector (CIS mat):

- Connect BMW programming system
- Encode airbag control unit
- Clear fault memory if necessary

WARNING: US/CDN front passenger seat (with CIS mat) only:
To avoid damaging the CIS mat, it is essential to carry out the following operations with extra care.

IMPORTANT: Risk of damage on sharp-edged seat mechanism.

Guide all cables carefully through seat and backrest mechanism.

Make sure cable is routed without kinks and tension.

Make sure plug connections are correctly locked.

Make sure plugs are correctly seated in catches.

Version with seat occupancy detector (CIS mat) only:

1. Data line CIS
2. Earth cable, seat pan
3. Earth cable, backrest frame

Unlock all plug connections and disconnect.

NOTE: From build date 09/2009 onward, earth cable (3) not included on backrest frame.

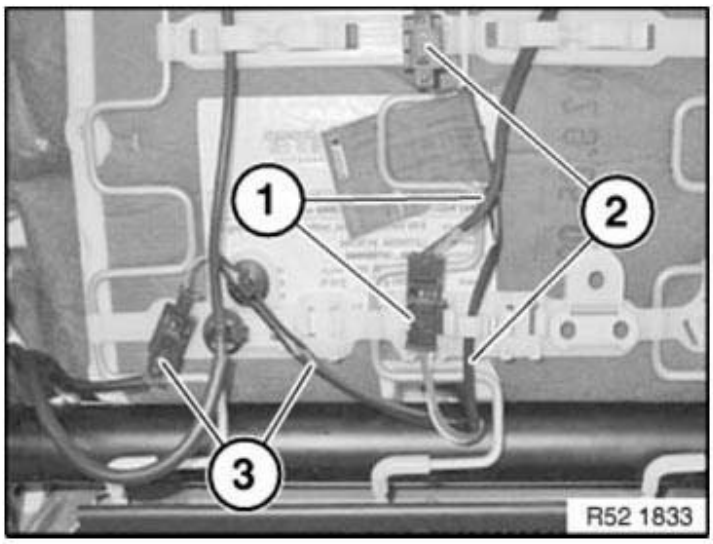


Fig. 275: Identifying Data Line CIS And Earth Cables
Courtesy of BMW OF NORTH AMERICA, INC.

Version with seat heating only:

Unlock plug connection (1) for seat heating and disconnect.

Unfasten cable strap.

Disengage wiring harness from cable clips (flexmat).

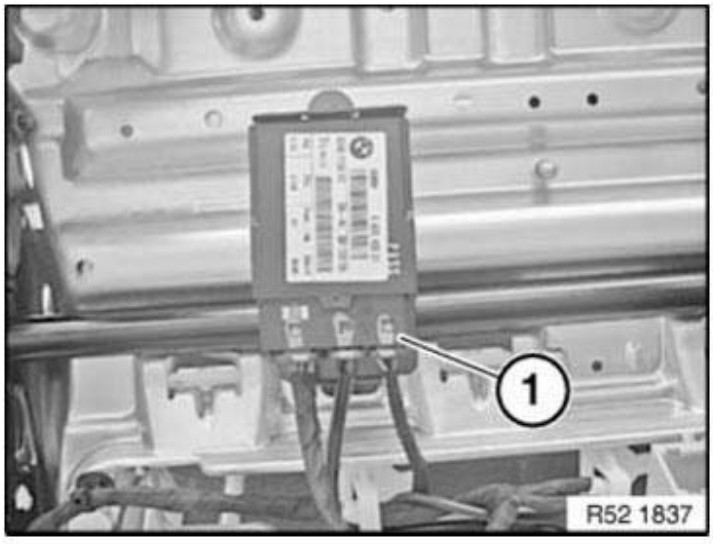


Fig. 276: Identifying Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Version with seat occupancy detector (CIS mat) without seat heating only:

Cable for seat heating, seat padding:

Seat heating is integrated in the CIS mat and is stuck to the padding over the full surface.

Lay cable for seat heating as shown to flexmat and secure with cable strap.

Secure plug with cable strap to cable.

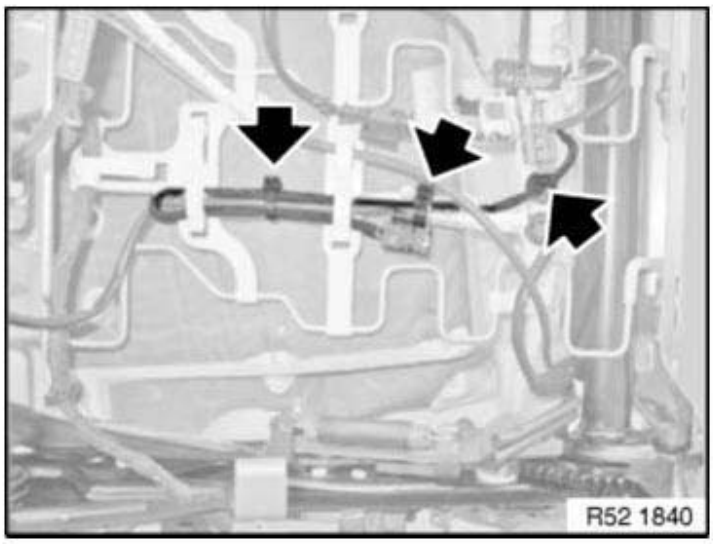


Fig. 277: Locating Plug With Cable Strap
Courtesy of BMW OF NORTH AMERICA, INC.

Cable for seat heating, thigh support:

Cramp cable (1) to welt strip with retainers (2).

Installation:

Bend retainers (2) with special tool **52 0 050** .

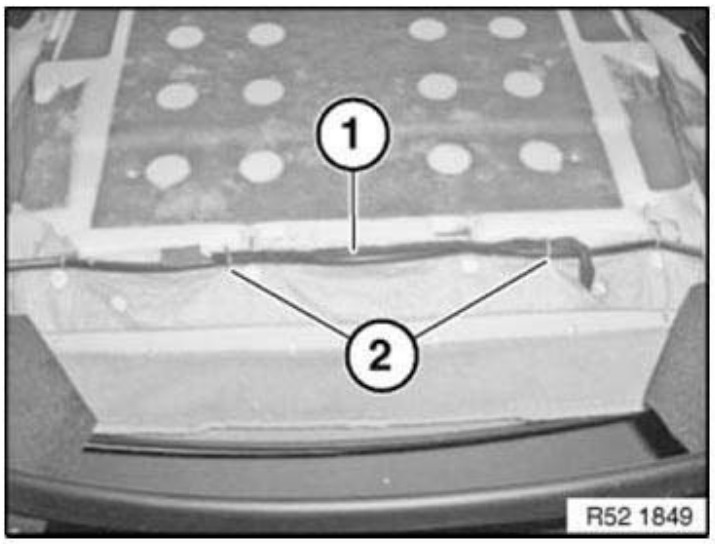


Fig. 278: Identifying Cable And Retainers
Courtesy of BMW OF NORTH AMERICA, INC.

Clamp plug (1) behind welt strip (2).

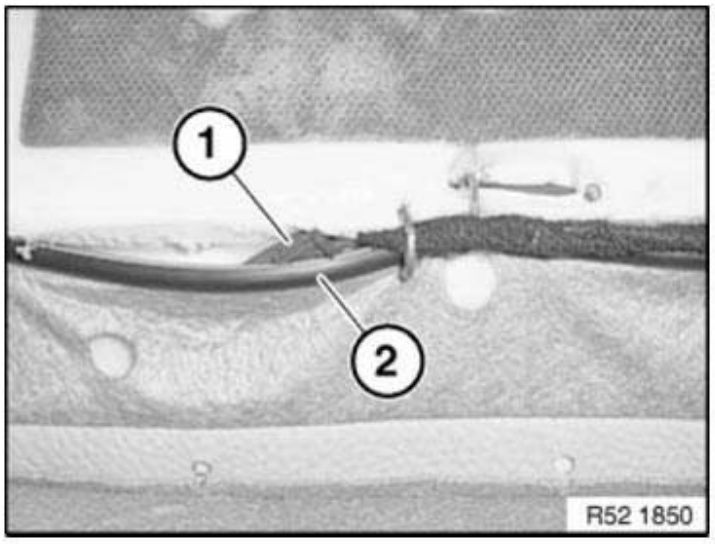


Fig. 279: Identifying Plug With Welt Strip
Courtesy of BMW OF NORTH AMERICA, INC.

Unlock retaining lugs (1).

Remove seat trim (2) downwards.

Installation:

Seat trim (2) must not be damaged.

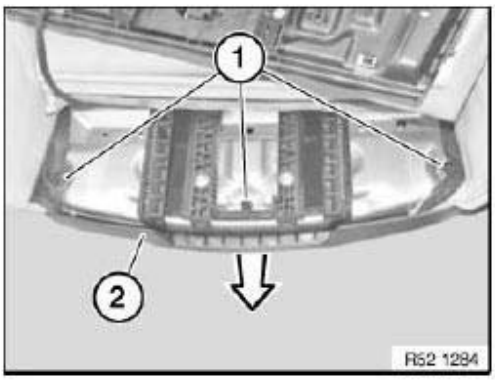


Fig. 280: Removing Seat Trim
Courtesy of BMW OF NORTH AMERICA, INC.

Lever clip (1) out of seat cover on left and right.

Installation:

If necessary, replace faulty clip.

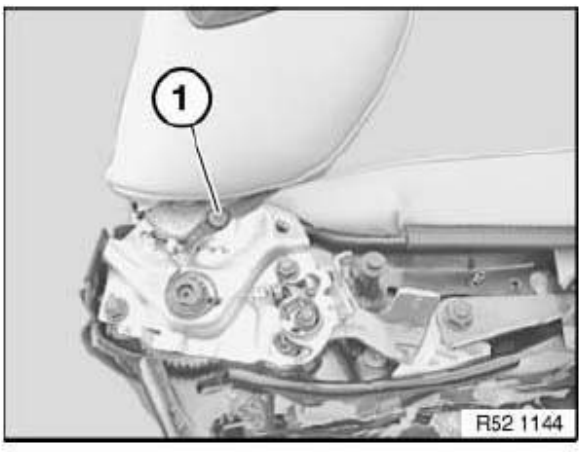


Fig. 281: Identifying Clip
Courtesy of BMW OF NORTH AMERICA, INC.

Tunnel side:

Disengage cover fastener (1) from belt deflector trim.

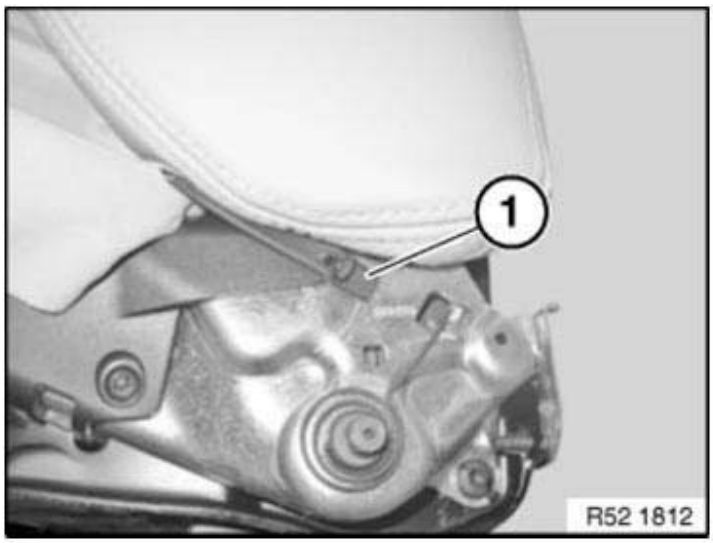


Fig. 282: Identifying Cover Fastener Of Belt Deflector Trim
Courtesy of BMW OF NORTH AMERICA, INC.

Detach seat cover (1) from seat frame.

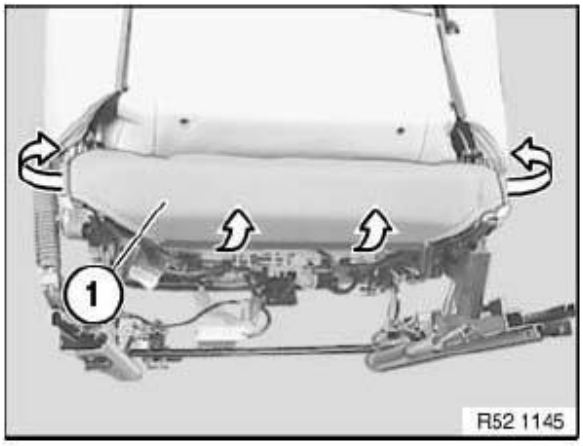


Fig. 283: Removing Seat Cover From Seat Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Pull out cover welt (1) completely from seat frame (2).

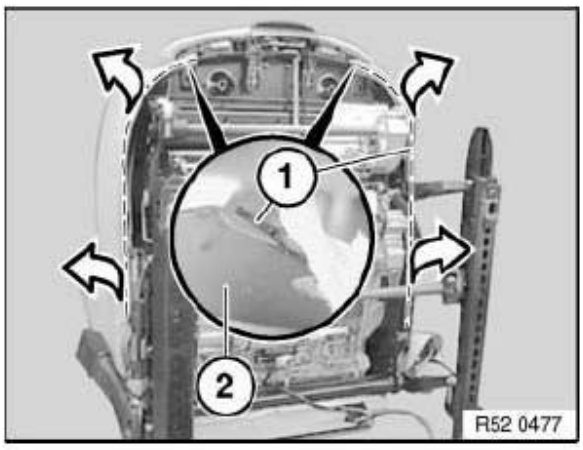


Fig. 284: Pulling Out Cover Welt From Seat Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Remove seat cover (1) with padding towards front/top.

IMPORTANT: Carefully slide bracing cloth with foam through backrest gap and seat structure.

Installation:

Slide foam completely through backrest gap and seat structure. Make sure foam and bracing cloth are correctly fitted.

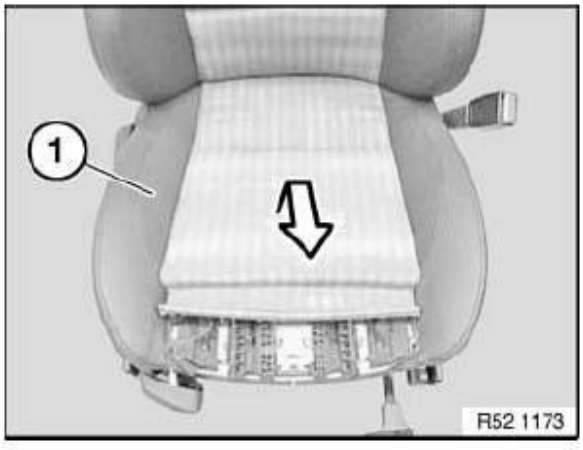


Fig. 285: Removing Seat Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Version with seat heating and/or seat occupancy detector (CIS mat):

Release the corresponding plug connections depending on the version and disconnect.

Pull seat cover (1) with padding forward a little and feed wiring harness (2) out.

Remove seat cover (1) with padding towards front/top.

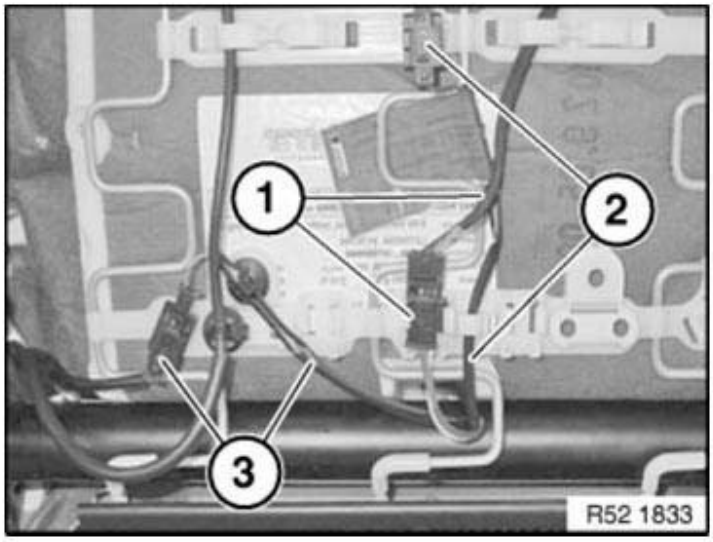


Fig. 286: Identifying Seat Cover And Wiring Harness
Courtesy of BMW OF NORTH AMERICA, INC.

Release all retainers in marked area.

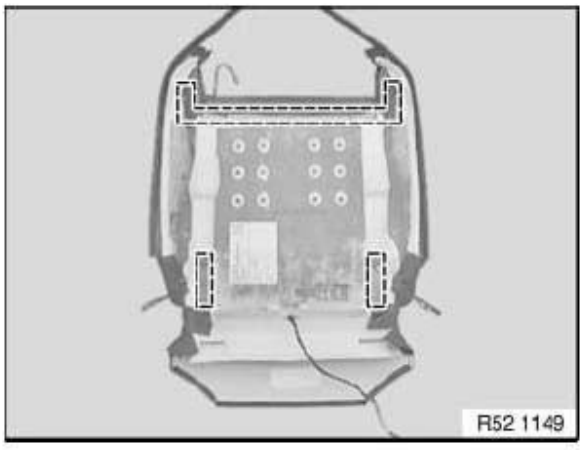


Fig. 287: Identifying Retainers Marked Area
Courtesy of BMW OF NORTH AMERICA, INC.

Detach all retainers in side area from OKE strips.

Carefully fold back seat cover and release retainers from OKE strips.

Remove seat cover from padding.

IMPORTANT: Remove all remnants of clips from seat cover and padding (CIS mat).

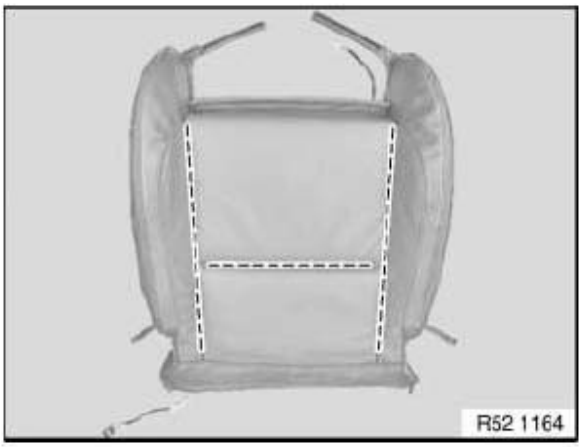


Fig. 288: Identifying Retainers Of OKE Strips
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Bend new retainers (2) with special tool **52 0 050** .

1. Padding
2. Retainer
3. Trim wire in padding
4. OKE strip in cover
5. Seat cover

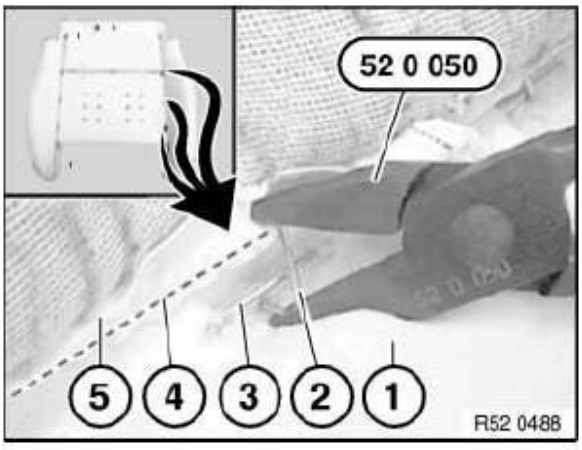


Fig. 289: Bending Retainers Using Special Tool (52 0 050)
Courtesy of BMW OF NORTH AMERICA, INC.

65 77 604 REPLACING SENSOR MAT (CIS MAT) FOR FRONT PASSENGER SEAT OCCUPANCY

DETECTION DETECTOR

WARNING: Note AIRBAG SAFETY REGULATIONS !
Incorrect handling can lead to airbag deployment and cause injury.

WARNING: Only US and Canadian version of front passenger seat (with CIS mat):
The CIS mat can only be removed in conjunction with the padding from the seat cover.
If CIS mat or padding is defective, both parts may only be replaced together.
After fitting the seat cover, the CIS mat must be enabled with the BMW programming system.

Procedure for replacing the CIS mat together with the upholstery is described under:

- Remove padding for front seat See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)**

The work scope with CIS mat is different in the following work steps:

Release the bolting point (1) of the ground cable on the seat pan.

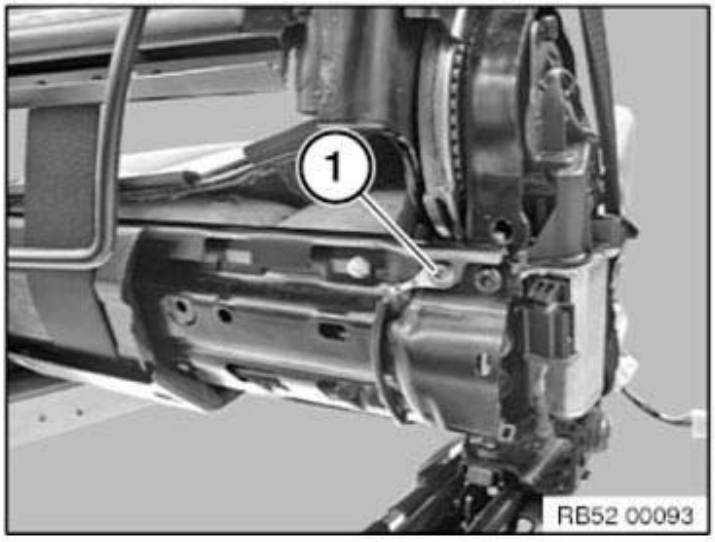


Fig. 290: Identifying Bolting Point Of Ground Cable On Seat Pan
Courtesy of BMW OF NORTH AMERICA, INC.

Cut open cable strap (1).

Lift the locking tab and pull the connector out of the side of the connector housing.

Installation note:

Replace cable tie (1).

Connector is encoded against incorrect assembly.

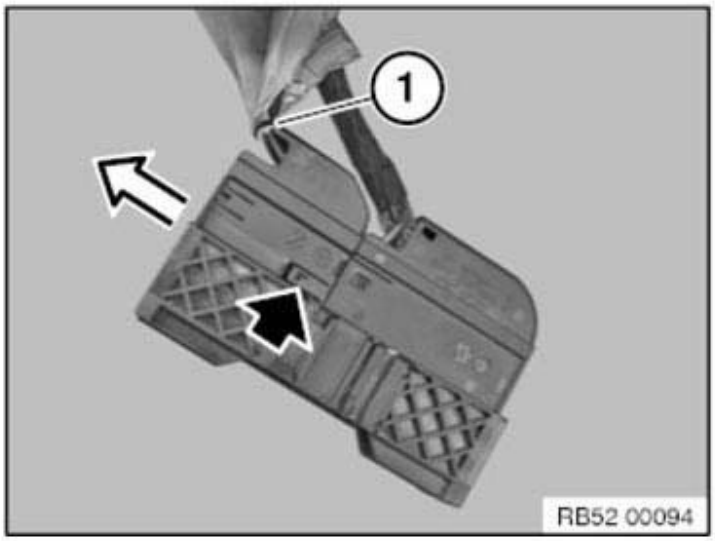


Fig. 291: Pulling Connector Out Of Connector Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Enabling seat occupancy detection (CIS mat):

- Connect BMW programming system
- Encode airbag control unit
- Delete fault memory if necessary

5217 FRONT SEAT, COMFORT

65 77 604 REPLACING SENSOR MAT (CIS MAT) FOR FRONT PASSENGER SEAT OCCUPANCY DETECTION DETECTOR

WARNING: Note AIRBAG SAFETY REGULATIONS !
Incorrect handling can lead to airbag deployment and cause injury.

WARNING: Only US and Canadian version of front passenger seat (with CIS mat):
The CIS mat can only be removed in conjunction with the padding from the seat cover.
If CIS mat or padding is defective, both parts may only be replaced together.
After fitting the seat cover, the CIS mat must be enabled with the BMW

programming system.

Procedure for replacing the CIS mat together with the upholstery is described under:

- Remove padding for front seat See **5213400 Replacing seat cover on left or right front seat (normal/manual)** or **5215400 Replacing seat cover for left or right front seat (sport/manual)**

The work scope with CIS mat is different in the following work steps:

Release the bolting point (1) of the ground cable on the seat pan.

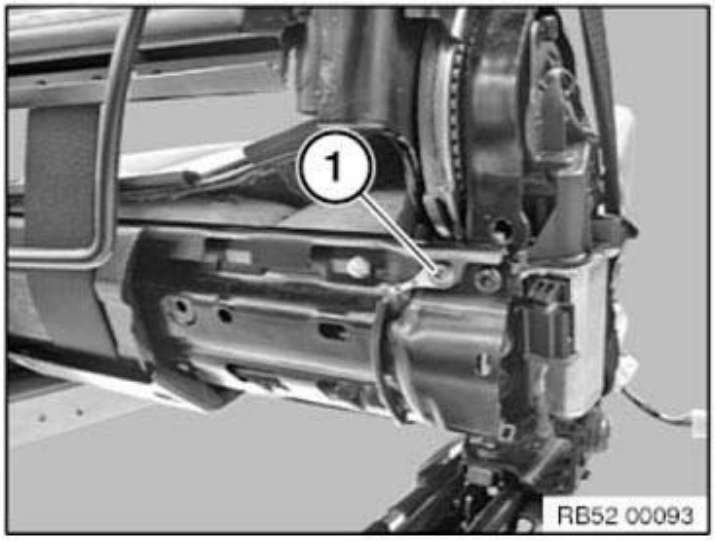


Fig. 292: Identifying Bolting Point Of Ground Cable On Seat Pan
Courtesy of BMW OF NORTH AMERICA, INC.

Cut open cable strap (1).

Lift the locking tab and pull the connector out of the side of the connector housing.

Installation note:

Replace cable tie (1).

Connector is encoded against incorrect assembly.

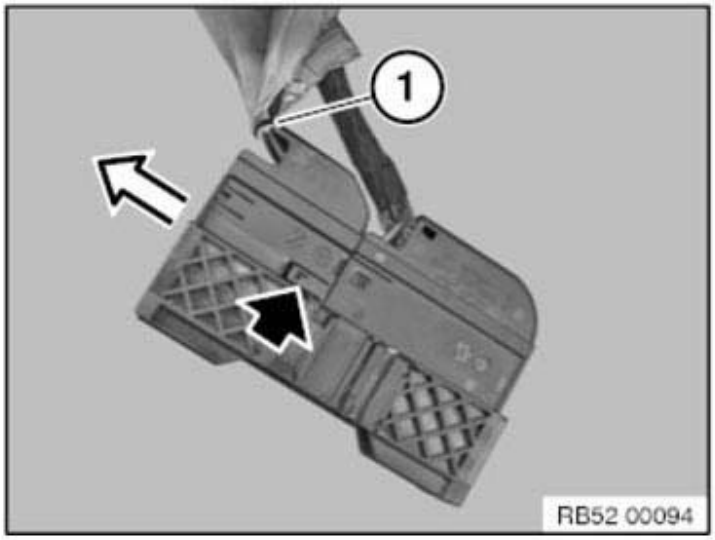


Fig. 293: Pulling Connector Out Of Connector Housing
Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Enabling seat occupancy detection (CIS mat):

- Connect BMW programming system
- Encode airbag control unit
- Delete fault memory if necessary

52 SEATS

52-0000 ADAPTER CABLE

Adapter cable MW

NOTE: (Adapter cable OC3) OC3 mat in conjunction with ISTA --> action only USA and Canada



Fig. 1: Identifing Adapter Cable (520000)
Courtesy of BMW OF NORTH AMERICA, INC.

52-0050 PLIERS

Pliers MW

NOTE: For securing clamps on seat cover

Storage Location

A13

SI number

52 06 87 (808)



Fig. 2: Identifing Pliers (520050)
Courtesy of BMW OF NORTH AMERICA, INC.

FRONT SEATS

52 10 FRONT SEATS

TIGHTENING TORQUE SPECIFICATION - FRONT SEATS

		Type	Thread	Tightening specification	Measure
1AZ	Seat to floor plate	E89	M10 (trilobular)	Replace Powerlok screw	44 Nm
2AZ	Backrest frame to seat frame	E89			32 Nm
3AZ	Mounting, belt buckle deflector	E89			3.7 Nm
4AZ	Seat depth adjustment to seat mechanism	E89			1.1 Nm
5AZ	Bracket, control unit, to seat structure	E89			2 Nm
6AZ	Carrier unit to seat frame	E89			9 Nm
7AZ	Isofix clip on backrest frame	E89	M6		10 Nm
		E89	M5		3 Nm
8AZ	Mounting frame to partition	E89			3.3 Nm
9AZ	Holder, skibag retainer, to body	E89			15 Nm
10AZ	Trim, seat, outer	E89			1 Nm

GENERAL INFORMATION

Telephone Diagnostics - Overview - All Models

TELEMATICS

FREQUENTLY ASKED QUESTIONS

1. **What is telematics?**

   Telematics combines wireless voice and data to provide location-specific security, information, productivity, and in-vehicle entertainment services to drivers and their passengers.

2. **How does a telematics system work?**

   The heart of a telematics system within the car is a telematics Communications Unit (TCU) that is connected (wirelessly) to a central service center. The TCU serves as the central platform of a telematics system, where all telematics-related technologies are deeply integrated. It communicates location-specific information to a central service center and in turn the center helps deliver telematics services to a driver via the cellular phone.

   These services can include dispatching ambulance services to a driver in an emergency situation, or sending roadside assistance to a driver whose car has broken down. Other services include the ability of a central server to deliver navigation assistance and real-time traffic information, among others. What's more, the TCU is also connected to the engine control unit (or the onboard computer) which enables enhanced services such as remote engine diagnostics and automatic airbag notification.(01)

3. **What is the difference between telematics and navigation systems?**

   A telematics system provides numerous services to drivers, and navigation is simply one of the services offered. Navigation systems that are starting to appear in highend cars today are referred to as autonomous navigation systems. Here, the navigation database resides in the car on a CD. These systems are relatively expensive. telematics systems provide navigation assistance "off-board". This means that the database resides outside the car, making the service far more affordable to a wider number of people.

4. **Where does the word "telematics" come from?**

   The term originated in Europe and remains widely used in the European automotive industry to describe automotive communications technologies.

5. **Can you explain a telematics system in technological detail? What are its components?**

   The main component in a telematics system is the telematics Communications Unit (TCU). In North America, a TCU contains a Motorola GPS receiver, cellular transceiver, and modem/transceiver control board. In Europe, a TCU contains a Motorola GPS receiver and GSM transceiver. Motorola's European telematics systems do not require a modem due to the already existing digital data transfer services, such as SMS (short message service) available with GSM.

Every telematics system developed by Motorola contains Motorola's automotivegrade telematics software, which is uniquely programmed to deeply integrate the components of a TCU, enabling simplified delivery of telematics services from one centralized area.

6. **What services does a telematics system offer today?**

   Today, telematics systems offer drivers emergency and roadside assistance, air bag deployment notification, navigation, remote door unlock, vehicle security notification and stolen vehicle tracking services.(01) (02)

7. **What services will telematics offer in the future?**

   Just as today's telematics safety and security features are a direct result of initial consumer demand, future telematics services will also be a direct result of what drivers want in their cars. These systems may provide customized services such as travel information (traffic updates, parking availability, airline status), messaging (voice mail and email retrieval), information (sports, weather, stock market updates and Internet access) and entertainment (audio games, books, magazines and newspapers). These are only a few of the applications which will evolve with telematics to keep drivers and their passengers in touch.

   Eventually, telematics will even reach outside the car and communicate with the office and home, extending far beyond voice conversations. Drivers will be able to turn on home lights, start and stop the sprinkler system, set their office security system - all via their telematics systems.

8. **How does a driver interact with a telematics system?**

   Drivers activate telematics systems via buttons located on the dashboard or the overhead console of the car. Motorola works with each automaker to help develop a purpose-built system for the projected ergonomic desires of drivers. The BMW Mayday telematics system has an emergency and roadside assistance button located on a cellular handset. The Mercedes TeleAid system has an S.O.S. button located behind the rear view mirror and "Information" and "Roadside Assistance" buttons located in the armrest.

9. **Can a Global Positioning System (GPS) phone handle telematics services?**

   We have several concerns about integrating GPS functionality into a phone handset, instead of the vehicle itself.

   Our first issue is the ability of a GPS phone to operate inside of the automobile without an external GPS or cellular antenna. GPS antennas must have an unrestricted view of the sky to track satellites. So the decision must be made whether it's more cost-effective to have the GPS in the phone or in the car.

   Furthermore, integrating telematics into a portable phone may be very attractive from a cost and convenience perspective, but does not support the stolen vehicle alarm, door lock/unlock, and other features that require the device to remain in the car when the occupants have left.

   Finally, GPS is only one part of the locating solution. In addition, cellular infrastructure positioning, such as cell tower triangulation, can help. Given current technology, GPS does not operate as effectively inside multiple story, concrete or metal buildings, where many emergency calls originate.

All of these issues, and many others, are taken into account when designing telematics systems and service.

10. **How does the airbag deployment notification feature work?**

    The TCU is constantly "listening" or on the lookout for any sign of emergency. Because the TCU is connected to the engine control unit, when the airbag sensor sends a message to the engine controller to deploy the airbag, the controller alerts the TCU as well. Automotive-grade software that enables these functions and assures their reliability.

    Once the TCU is alerted, it automatically makes a cellular call to the response center. The call gets priority call status and jumps ahead of other telematics calls, and the operator is alerted that a call has been received from an airbag deployment. That way, emergency crews can be sent immediately to the scene. (01)

11. **What services do consumers really want in their cars?**

    Initially, autonomous navigation-only systems caught the fancy of drivers in Europe and Japan, while in North America, consumers were more interested in emergency response or emergency call systems. Increasingly, consumers are attracted to the broader spectrum of telematics services, such as the delivery of personalized information and entertainment.

12. **Do Motorola's systems use digital cellular technology?**

    Yes. In Europe, Motorola's telematics systems use the European digital standard, GSM.

    In North America, however, only AMPS offers the broad geographic coverage essential for reliable emergency response services. That's why it's the system being utilized in North American telematics right now.

13. **What do telematics systems cost?**

    While each automotive company determines its own pricing, system prices currently range from $500 to $2000 in Europe and North America. Some GM vehicles include the OnStar system at no additional equipment charge, and require only a low monthly service fee. Monthly service costs vary, depending on the services offered. Like other new technologies, we anticipate that consumer demand will ultimately drive these costs down.

14. **Do European and North American drivers expect different features?**

    It's clear that Europeans and Americans are all interested in navigation, safety and security services. But the degree to which they prioritize these services varies.

    In Europe, there is a greater emphasis on navigation. At the same time, frequent cross-border travel creates language barriers, making familiar navigation and security services even more welcome. In the United States and Canada, safety and security are the most desired services. North Americans are also interested in navigation, but the need for it is not as great. All drivers are interested in getting real-time traffic information.

15. **When will North American telematics make the shift to digital?**

    In North America, the growth of telematics depends on digital cellular standards providing service over a larger geographic area, especially in cities. Unlike the European-wide GSM standard, North America has multiple standards including AMPS, TDMA, CDMA, GSM and iDEN®.

    Today, only AMPS offers wide enough geographic cellular coverage for emergency response services. That's why it is utilized in the Motorola telematics systems Motorola currently installed in North America. For data transmission on analog AMPS, modems can be added to the telematics hardware and central service center. In the future, systems will be based on digital wireless, to allow a richer array of features in metropolitan areas.

    In addition, as the industry endeavors to deliver comprehensive data services such as Internet access and customized entertainment services, the migration to digital communications technology will be even more essential.

    Companies such as Motorola, Nokia, Ericsson and Unwired Planet are addressing these issues for a wide variety of wireless devices. Through the Wireless Applications Protocol (WAP) consortium, we are working together to ensure a reliable and standard method of transferring data over wireless networks worldwide.

16. **What new technologies will help deliver greater telematics services?**

    An important, ongoing initiative that will help drive telematics growth is the ITS Data Bus, or IDB. IDB is based on an open protocol for networking car audio, video, communication and computing devices. Lead by the Society of Automotive Engineers (SAE) and supported by several corporations (including Motorola), IDB will allow seamless integration of multiple technologies inside the car.

    IDB will allow simple plug-and-play use of any consumer electronics, regardless of the manufacturer. In addition, a firewall contained in the IDB will allow all electronics in the car to operate independently of each other, eliminating signal interference.

17. **How will IDB specifically impact telematics?**

    Many companies are expected to integrate IDB into their telematics components and other electronics systems. Motorola, for example, plans to integrate IDBs into our telematics Communications Units, enabling the system to act as the central hub for all electronics interacting within the car. This will allow consumers to simply plug and play various electronics via their TCU, and take advantage of additional telematics services, without requiring multiple wires and cables overlapping in different areas of their vehicle. Not only will IDB allow easier installations, but it enable drivers to add new services without being concerned about propriety systems and wiring. With IDB, consumers will have greater choice, resulting in greater market growth.

Automatic airbag deployment notification, information services and other telamatics services must be supported by your carrier's network, depend on service availability and coverage, and require a subscription. These services are not available in all areas. Check with your service provider for availability. All location based services are subject to the availability of GPS signal or alternative location tracking means. GPS coverage is not

available in all areas.

The use of wireless devices and their accessories may be prohibited or restricted in certain areas. Always obey the laws and regulations on the use of these products. All navigation systems select routes based on several criteria: geographic distance, type of route, and in some cases dynamic traffic information. While these systems usually opt for the shortest travel time to your destination, it is important that you take into account factors including road and driving conditions, terrain and local environments, some of which may contain hazards to you or your vehicle. Always use your best judgment when deciding on a route. As the driver of your vehicle, you are always the final decision-maker, and despite the many advantages of using any Telematics system, you are ultimately responsible for ensuring your safety.

GLOSSARY

AMPS Advanced Mobile Phone System

The first-generation analog cellular phone system that originated in the United States.

APCO

Association of Public Communications Officials

CDMA Code Division Multiple Access

An advanced digital cellular and PCS platform that converts audio signals into a stream of digital information (made up of 1s and 0s). This "digital speech packet" is transmitted via a wide-band channel consisting of several radio frequencies. CDMA differs from the other popular digital cellular platform, TDMA, in that it uses several frequencies instead of just one. These digital platforms ensure greater call clarity and security, prevent cloning fraud and allow a greater number of calls to be handled by a tower or response center at one time.

CDPD Cellular Digital Packet Data

Using the existing AMPS system to carry digital data, by transmitting dense packets of information across vacant analog channels.

CTIA

Cellular Telephone Industry Association

Data Bus

The central collection of wires that carry instructions to electronic components throughout the vehicle.

DCS-1800

The low-power variant of GSM (the European digital standard). Uses a 1.8 GHz carrier. Example: Mercury One-2-One.

DCS-1900

The proposed use of GSM (the European digital standard) with a 1.9 GHz carrier for PCS applications.

DCTU Digital Cordless Telephone U.S.

A standard based on a micro-cellular radio system that provides low-power cordless access between a subscriber and a base station up to a few hundred meters away. DCTU is a version of its European counterpart, DECT.

DECT Digital European Cordless Telephone

A standard based on a micro-cellular radio system that provides low-power cordless access between a subscriber and a base station up to a few hundred meters away.

ETACS Enhanced TACS (Total Access Communication System)

European analog cellular.

ETSI European Telecommunications Standards Institute

The standards body responsible for GSM.

FDMA Frequency Division Multiple Access

Used for AMPS and TACS, the two key analog systems and their variants, this system gives each conversation its own unique radio channel.

FLEX® Protocol

Created by Motorola, FLEX is the global de facto standard for high-speed, one-way alphanumeric paging. With its ability to handle more robust code transport messages effectively, Motorola's FLEX protocol is laying the foundation for graceful growth from 1600 to 6400 bits per second (bps) transmission rates.

Gateway

A device that allows consumer products to interface with the communication system in vehicles, while protecting the vehicle's system from defective devices or inappropriate messages.

GPS Global Positioning System

Also refers to Global Positioning Satellite. A system using satellites, receivers and software to allow users to determine their exact geographic position.

GSM Global System for Mobiles

A European digital standard.

Half-Rate

A variant of GSM, Half-Rate doubles system capacity by more efficient speech coding.

IDB ITS Data Bus

A medium-speed multiplexed bus intended for command and control of devices in vehicles. It has been proposed by Motorola and the Society of Automotive Engineers (SAE) as an industry standard. Should this happen, IDB will allow device manufacturers to create products that will be compatible with all vehicles - versus today's data bus systems which differ by automobile manufacturer. The IDB would interface with an existing vehicle bus through a gateway.

iDEN® Integrated Digital Enhanced Network

A new generation of digital wireless technology developed by Motorola to enable multiple services to be delivered from a single, integrated wireless communications system. iDEN is the backbone of the Nextel all-digital cellular service.

InFLEXion®

A Motorola protocol which enables transmission and storage of voice messages and offers enhanced privacy, channel efficiency and ease of use. What's more, InFLEXion allows greater detail and expression to come through.

IS-41

The protocol for "roaming" within the U.S., describing how services should "hand over" between operators.

IS-54

The TDMA standard for U.S. digital cellular.

IS-95

The CDMA standard for U.S. digital cellular.

ISO 9000

The International Organization for Standardization (ISO) published the ISO 9000 series of quality management and quality assurance standards in 1987 as a means to rationalize the many various national approaches to the subject of product quality. The ISO 9000 series has been widely recognized as an aid in developing manufacturing and service organizations' quality management as an additional assurance to product purchasers that the products and services they buy will consistently meet quality objectives.

ISO 9001

This standard is used when conformance with specific requirements is to be assured by the supplier during several product stages including design and development, production, testing, inspection and servicing.

ITS IntelligentTransportation Systems

A broad range of diverse technologies, including information processing, communications, control and electronics, which, when applied to our transportation system, can save time, money and lives.

ITS America IntelligentTransportation Systems of America

An organization mandated by the U.S. Congress in 1991 to foster public and private partnerships to increase the safety and efficiency of surface transportation through the application of advanced ITS technologies.

JDC Japanese Digital Cellular

Now renamed PDC.

JTAC Japanese Total Access Communication

Like the European TACS, JTAC is the Japanese analog cellular system.

LMR Land Mobile Radio

Wireless communication for specialized applications, such as taxis and emergency services.

MMI Man/Machine Interface

Also known as User Interface. The means by which the user interacts with a machine or device. In the past, knobs, dials and displays manipulated by a user's hand were common interfaces on technical devices. Today, MMI includes more advanced functions such as Voice Dialing, speech synthesis and touch screens.

NAMPS

Narrowband AMPS.

PCS Personal Communications Service

Service that bundles voice communications, numeric and text messaging, voice mail and other features into one device, service or bill.

PCS-1900

Like DCS-1900, this refers to the proposed use of a 1.9 GHz carrier for PCS applications.

PDC Personal Digital Cellular

The Japanese cellular standard.

PHS Personal Handy System

The Japanese cordless phone standard.

Protocol

A standard set of rules that governs how computers or other electronics communicate with one another. Protocols define a message's format as well as how they are exchanged. Agreeing to a standard protocol allows different types of computer systems to communicate with one another in spite of their differences.

PSAP Public Safety Answering Point

PSTN Public Switched Telephone Network

QS 9000

The quality system standard established by Chrysler, Ford, General Motors, truck manufacturers and other subscribing companies. This standard includes the ISO 9000 requirements, plus additional requirements for all aspects of the business. QS 9000 includes a detailed Advanced Product Quality Planning, Control Plan, Continuous Improvement, Production Part Approval Process, Manufacturing Capabilities methodologies and more.

ReFLEX®

The world's first two-way alphanumeric paging protocol, created by Motorola. ReFLEX enables pagers to confirm receipt, respond to and initiate messages.

SAE Society of Automotive Engineers

A one-stop resource for technical information and expertise used in designing, building, maintaining and operating self-propelled vehicles for use on land or sea, in air or space.

SIM Subscriber Identification Module

A card used in GSM to personalize a handset.

TACS Total Access Communication System

European analog cellular.

TCU Telematics Control Unit

The embedded vehicle control unit that communicates with the automobile controls, GPS satellite and customer service center to provide Telematics features to a driver.

TDMA Time Division Multiple Access

An advanced digital cellular platform that converts audio signals into a stream of digital information (made up of 1s and 0s) and divides it into "digital speech packets" according to time. The packets are then transmitted one a single radio frequency. TDMA differs from the other popular digital cellular platform, CDMA, in that it uses one channel instead of many. These digital platforms ensure greater call clarity and security, prevent cloning fraud and allow a greater number of calls to be handled by a tower or response center at one time.

TETRA TErrestrial Trunked RAdio

European digital cellular land mobile radio system.

TIA Telecommunications Industry Association

The United States' telecommunications standards making body.

User Interface

Also known as Man/Machine Interface (MMI). The means by which the user interacts with a machine or device. In the past, knobs, dials and displays manipulated by a user's hand were common interfaces on technical devices. Today, User Interfaces include more advanced functions such as Voice Dialing, speech synthesis and touch screens.

VR Virtual Reality

Used in a variety of Motorola products and services, it is a type of computer-generated environment in which the user interacts with the environment in three dimensions that provide sensory information to make an individual feel that they are in a different place.

WAP Wireless Application Protocol

A standard that aims to align industry efforts to bring advanced applications and Internet content to digital cellular phones.

LOADING PLATFORM

86 10 ... ADJUSTING BRAKE SYSTEM

Proper adjustment of the brake system is only possible if the brake Bowden cables and all brake system moving parts move freely and are ready for operation.

The wheels must be completely fitted and able to rotate freely. Always adjust both brake sides. The left and right sides are adjusted in the same way.

Pull out overrunning equipment (1) fully in direction of arrow.

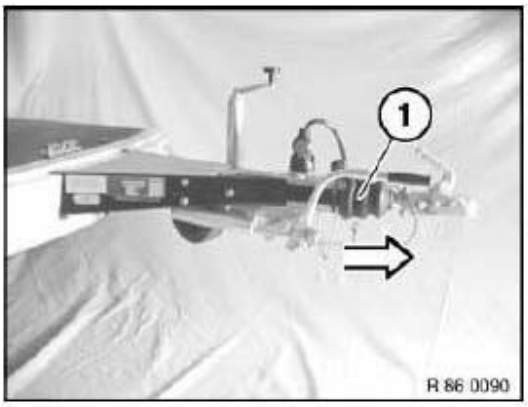


Fig. 1: Pulling Overrunning Equipment
Courtesy of BMW OF NORTH AMERICA, INC.

Reversing lever (1) must rest directly on innerlying tow tube of overrunning brake.

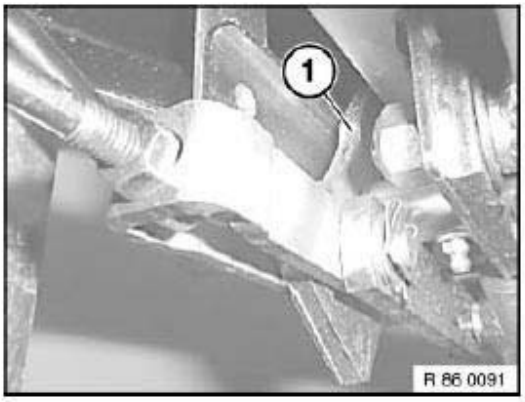


Fig. 2: Identifying Reversing Lever

Courtesy of BMW OF NORTH AMERICA, INC.

Screw brake linkage (1) into nut (2) until distance (3) (nut (2) - end of brake linkage (1)), is 10 - 15mm. Lock brake linkage (1) in position with nut (4).

Check distance (3) and nuts (2, 4) with brake linkage installed.

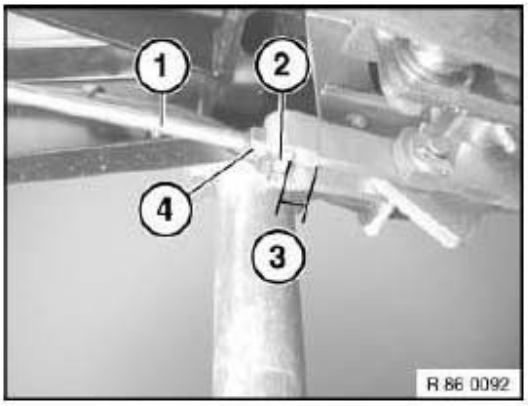


Fig. 3: Identifying Brake Linkage With Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Insert pull rod (1) in brake compensator (2) and screw nut (3) onto pull rod (2).

Tighten nut (3) until pull rod (1) is free of play.

Check pull rod (1) already fitted for zero play.

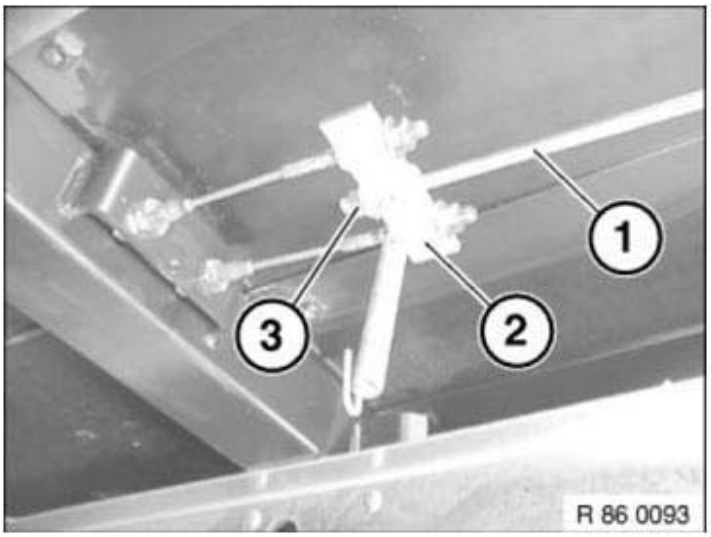


Fig. 4: Identifying Pull Rod, Brake Compensator And Screw Nut
Courtesy of BMW OF NORTH AMERICA, INC.

Hook tension spring (1) to tension spring mount (2).

Installation

The brake shoes are adjusted in two work steps. In the first step, the distance between the lower half of the brake shoes and the brake drum is adjusted. In the second step, the distance between the upper half of the brake shoes and the brake drum is adjusted.

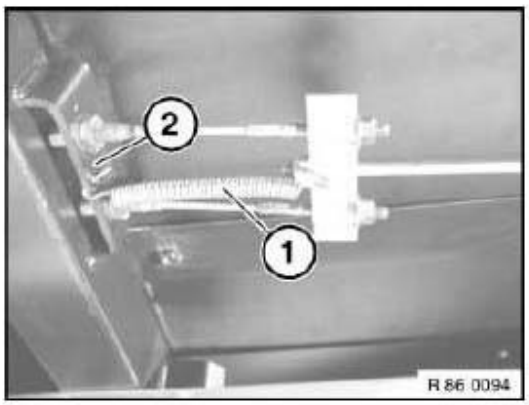


Fig. 5: Identifying Tension Spring On Tension Spring Mount
Courtesy of BMW OF NORTH AMERICA, INC.

Rotate road wheel (1) in direction of travel and simultaneously turn adjusting screw (2) in direction of arrow.

Tighten adjusting screw (2) until road wheel (1) can no longer be turned.

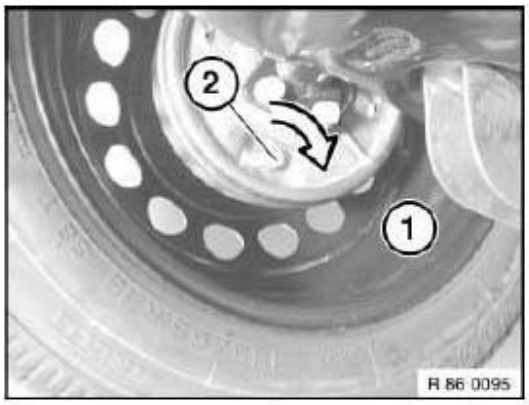


Fig. 6: Rotating Road Wheel
Courtesy of BMW OF NORTH AMERICA, INC.

Turn adjusting screw (1) in direction of arrow and release slowly until road wheel (2) can rotate.

Finish adjustment procedure when slight grinding noises can be heard in lower brake shoe halves.

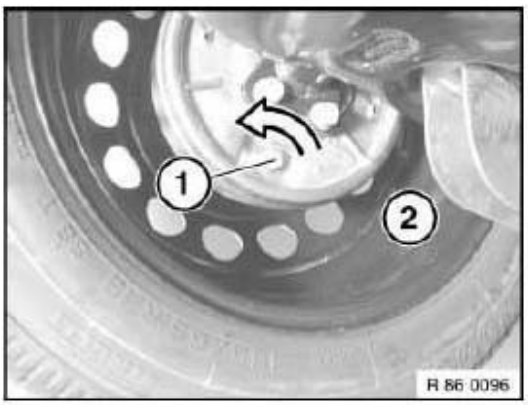


Fig. 7: Turning Adjusting Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Firmly tighten handbrake lever three to five times.

Depending on road wheel side, tighten nut (1) or (2) until slight grinding noises can be heard in upper brake shoe halves.

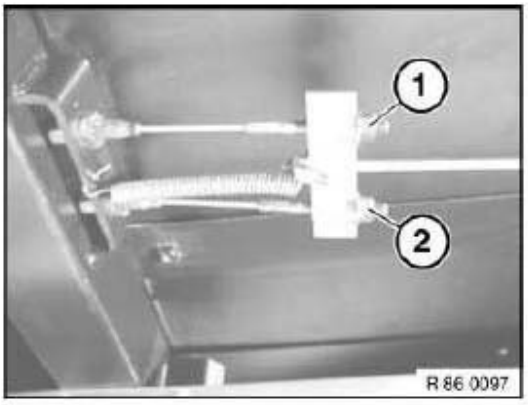


Fig. 8: Identifying Road Wheel Side Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... ADJUSTING SPRING FORCE ACCUMULATOR

The spring force accumulator requires no maintenance and generally does not need to be readjusted.

Adjustment dimension, spring force accumulator: distance between end of support tube - internal washer (1) is 90 mm.

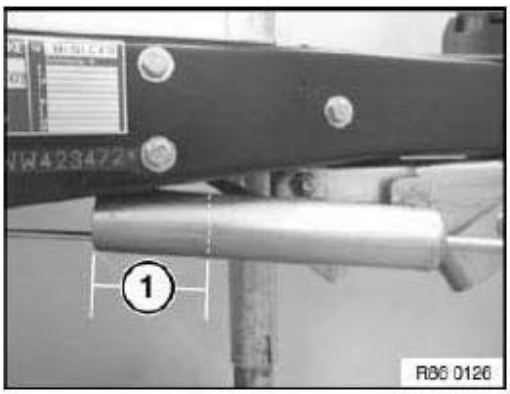


Fig. 9: Identifying Distance Between End Of Support Tube And Internal Washer
Courtesy of BMW OF NORTH AMERICA, INC.

To tension spring force accumulator: turn nut (2) located in support tube (1) clockwise.

To relieve tension on spring force accumulator: turn nut (2) located in support tube (1) counterclockwise.

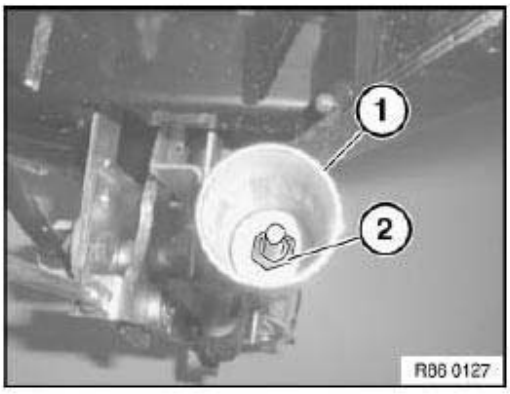


Fig. 10: Identifying Support Tube With Nut
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... DISASSEMBLY OF CAMLOCK RETAINING CAM

Unscrew bolts (1).

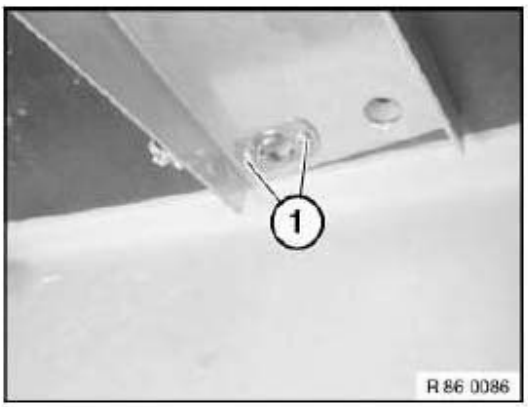


Fig. 11: Identifying Camlock Retaining Cam Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... DISASSEMBLY OF BASE PLATE

NOTE: **Disassembly of bar**
REFER TO 86 10 ... REPLACING BAR
Disassembly of lashing plate
REFER TO 86 10 ... REPLACING LASHING PLATE AND LASHING EYE
Disassembly of 12 volt socket
REFER TO 86 10 ... REPLACING 12 VOLT SOCKET
Remove plastic bush/metal bush
REFER TO 86 10 ... REMOVING PLASTIC BUSH/METAL BUSH
Disassembly of light guard
REFER TO 86 10 ... REPLACING REAR LIGHT
Disassembly of front apron
REFER TO 86 10 ... DISASSEMBLY OF FRONT APRON
Disassembly of left and right aprons
REFER TO 86 10 ... DISASSEMBLY OF LEFT AND RIGHT APRONS
Disassembly of left and right wheel boxes
REFER TO 86 10 ... DISASSEMBLY OF LEFT AND RIGHT WHEEL BOXES
Disassembly of rear apron
REFER TO 86 10 ... DISASSEMBLY OF REAR APRON
Disassembly of left and right lamp housings
REFER TO 86 10 ... DISASSEMBLY OF LEFT AND RIGHT LAMP HOUSINGS
Disassembly of rivet connection, rear support
REFER TO 86 10 ... DISASSEMBLY PROCEDURE OF RIVET CONNECTION, REAR SUPPORT

Unscrew bolts (1).

CAUTION: Before drilling out rivet heads, drive in rivet pins with a punch. Drill out rivet connections (2).

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 32AZ.**

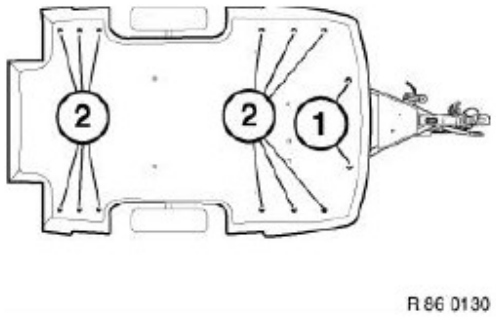


Fig. 12: Identifying Base Plate Nut And Rivet Connections
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... DISASSEMBLY OF BRACKET ON PLATFORM BASE

Unscrew bolts (1).

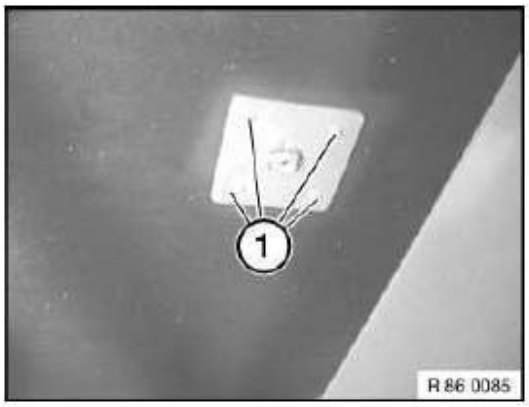


Fig. 13: Identifying Platform Base Bracket Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... DISASSEMBLY OF FRONT APRON

Drill out rivets (1) on lower apron edge.

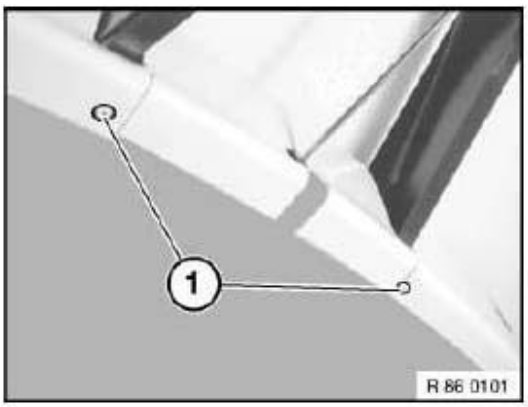


Fig. 14: Identifying Rivets On Lower Apron Edge
Courtesy of BMW OF NORTH AMERICA, INC.

Remove sealing compound (1).

Drill out rivets (2).

Installation

Use Sikaflex 221 as sealing compound.

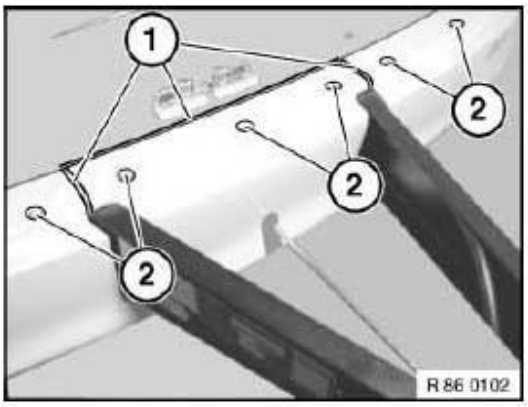


Fig. 15: Identifying Front Apron Sealing Compound And Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

Press side sections (1) to side in direction of arrow. Tilt center section (2) downwards and remove to side.

Installation

Use Sikaflex 221 as sealing compound.

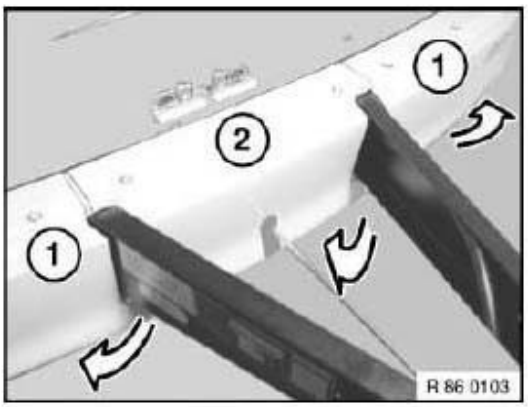


Fig. 16: Pressing Side Sections
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... DISASSEMBLY OF FRONT PROTECTION BAR

Release screws (1) on cross-member (2).

Installation

Use new self-locking nuts.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 4AZ.**

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 5AZ.**

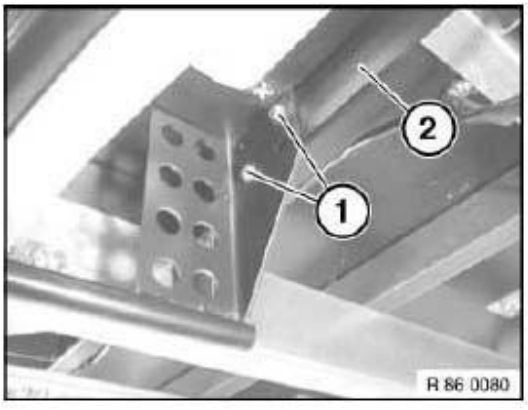


Fig. 17: Identifying Screws On Cross-Member
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1) on longitudinal member (2).

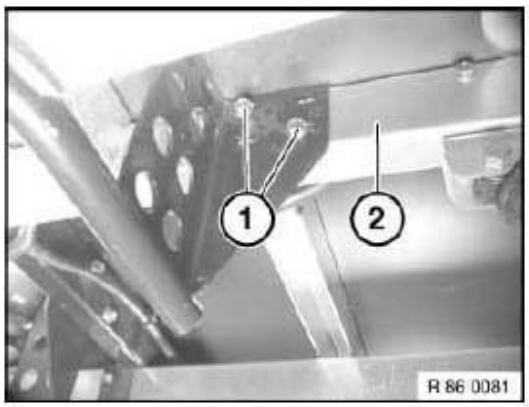


Fig. 18: Identifying Screws On Longitudinal Member
Courtesy of BMW OF NORTH AMERICA, INC.

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 5AZ.**

86 10 ... DISASSEMBLY OF JOCKEY WHEEL OR JOCKEY WHEEL MOUNT

Turn clamping lever (1) in direction of arrow and release clamping connection. Open clamping bracket (2) and remove jockey wheel (3). Release screws on mount (4) and remove screws.

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 11AZ.**

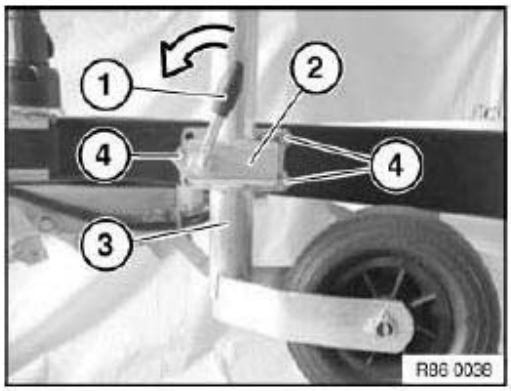


Fig. 19: Turning Clamping Lever
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... DISASSEMBLY OF LEFT AND RIGHT APRONS

NOTE: Remove position light, REFER TO 86 10 ... REPLACING POSITION LIGHT.

Remove rear light, REFER TO 86 10 ... REPLACING REAR LIGHT.
Remove plastic bush/metal bush
REFER TO 86 10 ... REMOVING PLASTIC BUSH/METAL BUSH.

Drill out rivets (1) on lower apron edge.

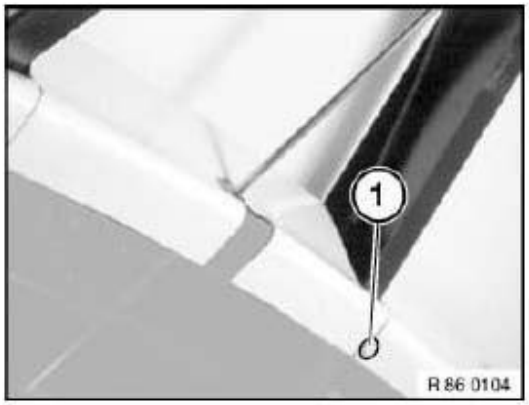


Fig. 20: Identifying Rivets On Lower Apron Edge
Courtesy of BMW OF NORTH AMERICA, INC.

Remove sealing compound (1).

Drill out all rivets (2) along apron edge.

Installation

Use Sikaflex 221 as sealing compound.

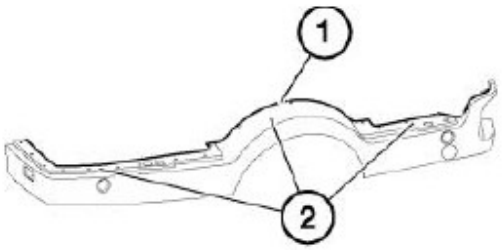


Fig. 21: Identifying Rivets On Lower Apron Edge And Sealing Compound
Courtesy of BMW OF NORTH AMERICA, INC.

Remove sealing compound (1).

Drill out rivets (2) on lower apron edge.

Installation

Use Sikaflex 221 as sealing compound.

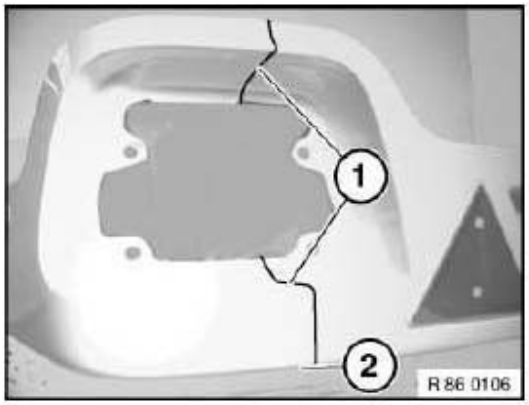


Fig. 22: Identifying Sealing Compound And Rivets On Lower Apron Edge
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... DISASSEMBLY OF LEFT AND RIGHT LAMP HOUSINGS

Cut through sealing compound (1) and remove.

Drill out rivet connections (2).

Installation

Use Sikaflex 221 as sealing compound.

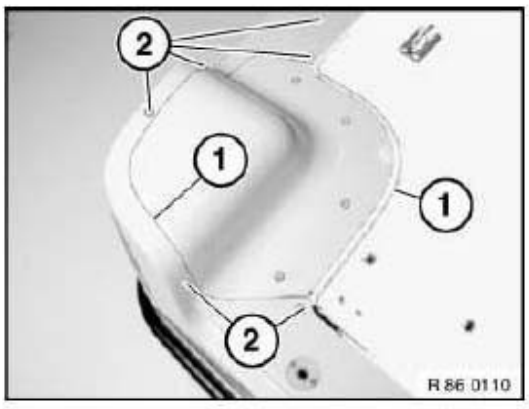


Fig. 23: Identifying Sealing Compound And Rivet Connections Of Left And Right Lamp Housings
Courtesy of BMW OF NORTH AMERICA, INC.

Drill out rivet connections (1).

Raise side sections (2, 3).

Pull out lamp housing (4) towards inside in direction of platform.

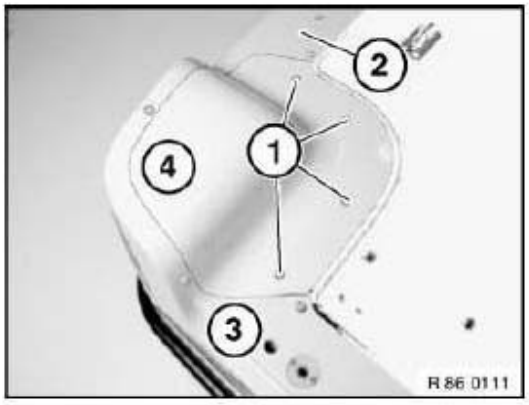


Fig. 24: Identifying Lamp Housing With Rivet Connections And Side Sections
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... DISASSEMBLY OF LEFT AND RIGHT WHEEL BOXES

Remove sealing compound (1).

Drill out rivets (2).

Raise side apron (3). Pull out wheel box (4) towards rear.

Installation

Use Sikaflex 221 as sealing compound.

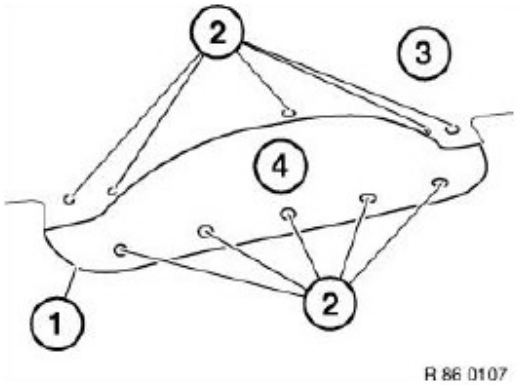


Fig. 25: Identifying Wheel Box With Rivets, Side Apron And Sealing Compound
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... DISASSEMBLY OF LICENCE PLATE MOUNTING PLATE

CAUTION: Once the connecting screws (1) have been removed, the closing spring of the hinge retracts. Risk of trapping!

Release screws (1) in loading ramp frame (2) on left and right sides.

Installation

Use new self-locking nuts.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 7AZ.**

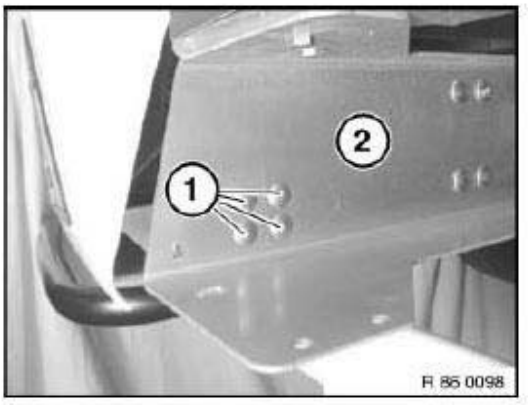


Fig. 26: Identifying Screws On Loading Ramp Frame
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... DISASSEMBLY OF LOADING RAMP FRAME/DISASSEMBLY OF RAIL, LEFT/RIGHT

NOTE: Two persons are required to disassemble the loading ramp frame.
Disassembly of license plate mounting plate
REFER TO 86 10 ... DISASSEMBLY OF LICENSE PLATE MOUNTING PLATE.
Disassembly of pull rod
REFER TO 86 10 ... DISASSEMBLY OF OVERRUNNING EQUIPMENT.

Release screws (1) of loading ramp frame (2) on cross-strut (3).

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 7AZ.**

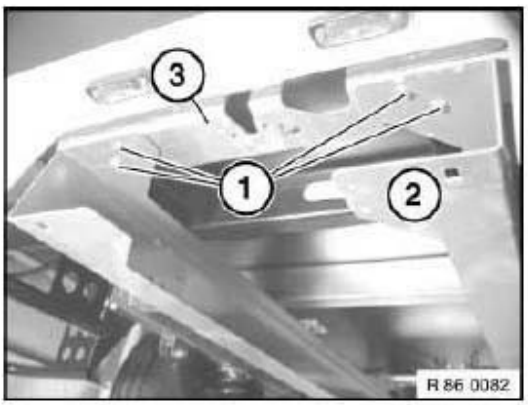


Fig. 27: Identifying Loading Ramp Frame Screws On Cross-Strut
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1, 2) on left and right sides of loading ramp frame (3).

Installation

Use new self-locking nuts.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 8AZ.**

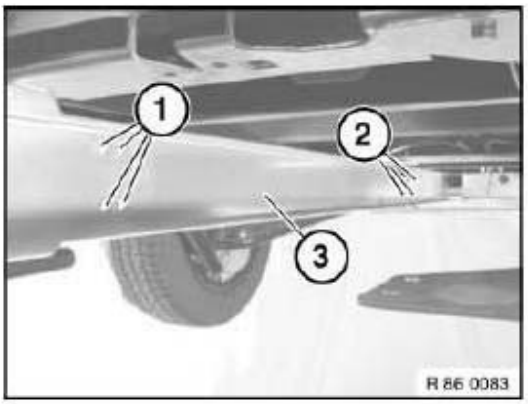


Fig. 28: Identifying Loading Ramp Frame Screws On Left And Right Sides
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1, 2, 3).

Installation

Use new self-locking nuts.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 9AZ.**

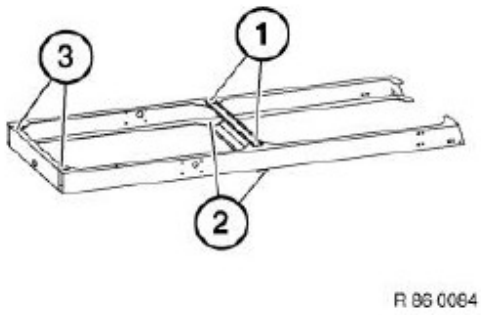


Fig. 29: Identifying Screws
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... DISASSEMBLY OF REAR APRON

NOTE: Remove rear light, REFER TO 86 10 ... REPLACING REAR LIGHT.
Remove plastic bush/metal bush
REFER TO 86 10 ... REMOVING PLASTIC BUSH/METAL BUSH.

Cut through sealing compound (1) on left and right and remove.

Drill out rivets (2) on left and right sides on lower apron edge.

Installation

Use Sikaflex 221 as sealing compound.

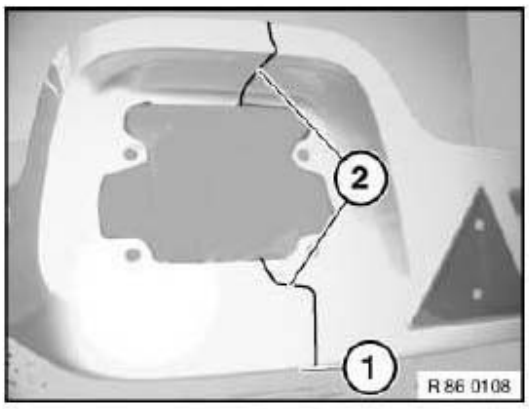


Fig. 30: Identifying Rear Apron Sealing Compound And Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

Cut through sealing compound (1) and remove.

Drill out rivets (2).

Installation

Use Sikaflex 221 as sealing compound.

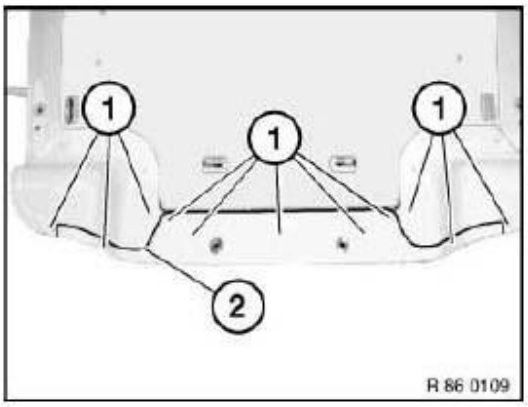


Fig. 31: Identifying Sealing Compound And Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... DISCONNECTING PLUG CONNECTION, WIRING HARNESS, FRONT/REAR

Spread levers (1) on socket housing apart in direction of arrow and disconnect female connector (2) in direction of arrow towards bottom.

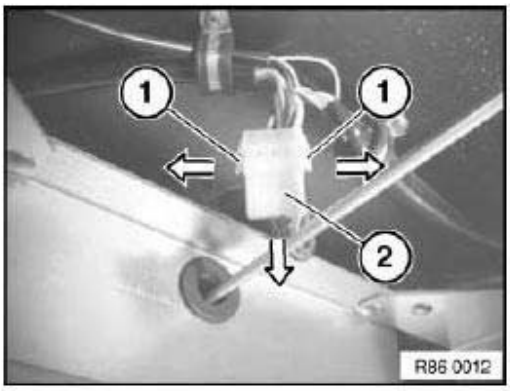


Fig. 32: Disconnecting Female Connector
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... INSTALLATION POSITION OF BMW LETTERING

Top edge of lettering at same height as recess for position light (1).

Distance between drawbar member and lettering (2) is 300 mm.

Installation

Remove grease from gluing surfaces.

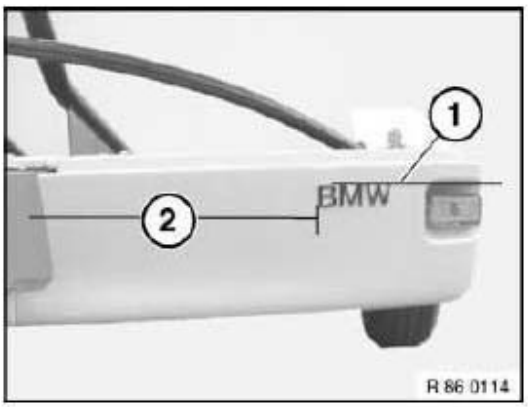


Fig. 33: Identifying BMW Lettering Distance
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... POSITIONING OF MULTITRAILER HOOD FOR MAINTENANCE AND REPAIR WORK

IMPORTANT: At least two persons are needed to install and remove the hood from the platform.
Before installing and removing the hood, secure the BMW multitrailer and the entire combination against rolling. For this purpose, use the parking brake and the chocks of the BMW multitrailer.
The hood can also be set up and lowered with the aid of the universal lift available from BMW in conjunction with the roof racks and the hood adapter.
Under no circumstances should work of any kind be carried out below the suspended hood.

For maintenance and repair work, raise the hood using a lifting platform. Twin-column lifting platforms, body lifting platforms and twin-stamp underfloor platforms are suitable. The seating plates and areas of the lifting platform must be adjustable according to the dimensions of **Fig. 34**.

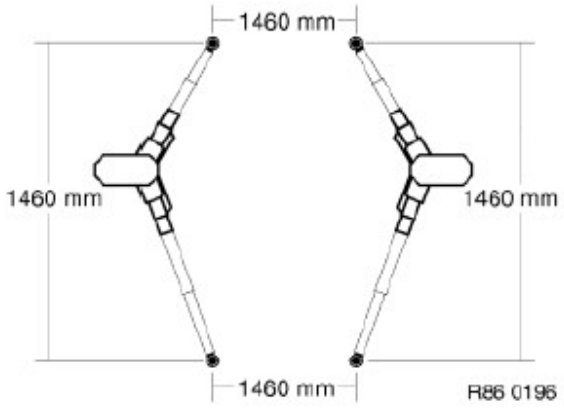


Fig. 34: Identifying Adjustable Dimension Of Seating Plates And Lifting Platform Areas
Courtesy of BMW OF NORTH AMERICA, INC.

The lifting platform must conform to the relevant legal provisions of the accident prevention regulations and be serviced as specified. Comply with the lifting platform operating instructions, in particular the safety instructions and the carrying capacity.

Make sure you adhere to the BMW-recommended work area of 5 x 7 m and to an escape route of 0.6 m between two lifting platforms.

Please comply with the following instructions before raising the hood:

- Raise only when it is unloaded;
- Ensure sufficient clearance between the seating plates/seating areas and the GFP edge of the hood;
- The hood must always be positioned in the middle of the lifting platform.

IMPORTANT: The hood may only be raised at the pin (1). Under no circumstances may the hood be raised at the GFP edge of the hood (2). See Fig. 35. Exclusively for removal of pin (1), raise the hood in the GFP area.
Also refer to:
86 21 ... REMOVING CENTERING PIN FROM MOUNTING BRACKET .

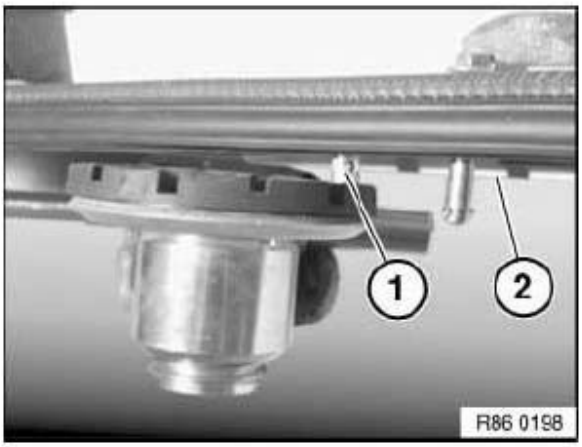


Fig. 35: Identifying Centering Pin Of Mounting Bracket And Hood
Courtesy of BMW OF NORTH AMERICA, INC.

00 00 ... RAISING BMW MULTI-TRAILER

CAUTION: Twin-strut underfloor platforms and twin-pillar lifting platforms are suitable for raising the BMW multi-trailer.
Lifting platforms with drive-on surfaces are not suitable for raising in order to carry out maintenance and repair work.

The lifting platform must comply with the relevant statutory accident prevention regulations and be serviced according to the manufacturer's instructions. It is essential to follow the lifting platform operating instructions, in particular the safety instructions and carrying capacity!

Make sure you adhere to the BMW-recommended work area of 5 x 7 m and to an escape route of 0.6 m between two lifting platforms.

Before raising the BMW multi-trailer, please observe the following points:

- Raise the trailer only when it is unloaded
- Remove a supplied loading ramp from the loading ramp frame so that all chassis areas of the BMW multi-trailer are freely accessible
- There must be sufficient clearance between the carrier arms/flat girder bridges and the GFK aprons or the front guard of the BMW multi-trailer
- The BMW multi-trailer must always be positioned in the middle of the lifting platform.

CAUTION: You will need special additional supports for the lifting platform in order to bridge the difference in height between longitudinal member and lower edge of GFK side apron or front guard of the BMW multi-trailer. The minimum height of the additional supports is 145 mm. Use only the additional supports approved by the platform manufacturer or specified in these repair instructions.
You will find appropriate examples in the repair instructions for the majority of lifting platforms present in BMW workshops. For lifting platforms that are not named, the relevant manufacturers will offer you appropriate additional supports. Please contact directly the manufacturer of the lifting platform used in your dealership.

CAUTION: The BMW multi-trailer may only be raised by its longitudinal members. Do not under any circumstances raise the BMW multi-trailer by the GFK aprons. Make sure the additional supports bear the longitudinal members over their entire width and no attachments or wiring harnesses are touched or jammed. Check the securing equipment of the additional supports for correct seating. Under no circumstances should any work be carried out underneath the BMW multi-trailer if it is not adequately secured against slipping off the lifting platform.

The areas (2) on the longitudinal members (1) marked in the adjacent diagram are the best areas for attaching the additional supports.

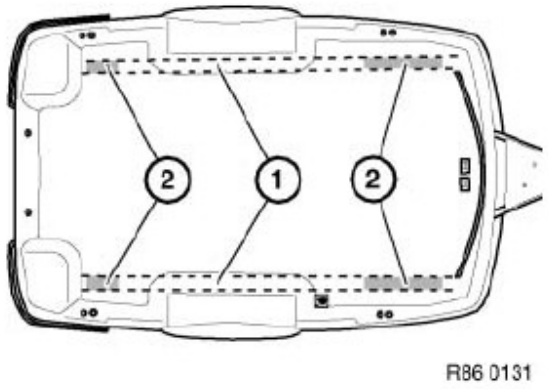


Fig. 36: Identifying Additional Support Areas On Longitudinal Members
Courtesy of BMW OF NORTH AMERICA, INC.

General notes on using twin-pillar lifting platforms

For the twin-pillar lifting platforms described, the BMW multi-trailer is positioned in the direction of travel on the platform. For lifting platforms which do not create sufficient clearance between disk wheel and carrier arms, move the BMW multi-trailer against the direction of travel onto the platform.

Becker & Sohne twin-strut underfloor platform

The BMW multi-trailer can only be raised if it is supported at right angles to the direction of travel. For raising, use the high additional supports (1) of Becker&Sohne.

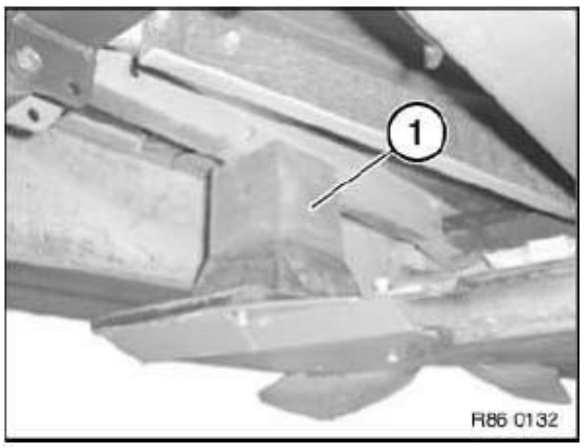


Fig. 37: Identifying Additional Support
Courtesy of BMW OF NORTH AMERICA, INC.

CAUTION: Also lash the BMW multi-trailer to the flat girder bridges of the lifting platform. Flag the protruding tow hitch and the drawbar member of the BMW multi-trailer conspicuously so as to prevent injury, e.g. with a red cloth.

MAHA twin-pillar lifting platform

The BMW multi-trailer can only be raised if you use the support plate attachment sleeves for transporters (1). Position the axle of the BMW multi-trailer in the direction of travel in front of the pillars of the platform in order to obtain the specified lifting ranges and to establish sufficient clearance between disk wheel and carrier arms. The long carrier arms raise the front and the short carrier arms raise the rear of the BMW multi-trailer.

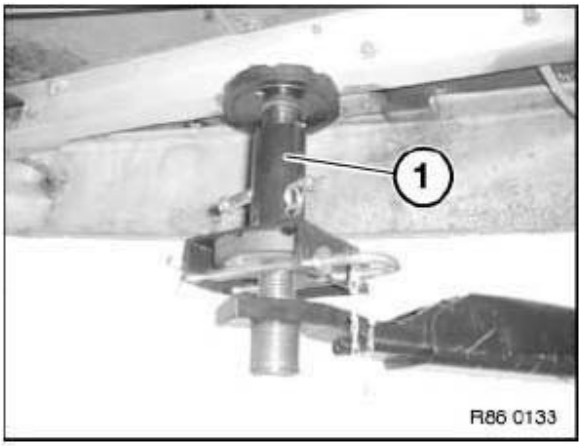


Fig. 38: Identifying MAHA Twin-Pillar Lifting Platform
Courtesy of BMW OF NORTH AMERICA, INC.

Romaico-Lift twin-pillar lifting platform

The BMW multi-trailer can only be raised if you use the 146 mm high attachments (1).

Position the axle of the BMW multi-trailer in the direction of travel in front of the pillars of the platform in order to obtain the specified lifting ranges and to establish sufficient clearance between disk wheel and carrier arms. The long carrier arms raise the front and the short carrier arms raise the rear of the BMW multi-trailer.

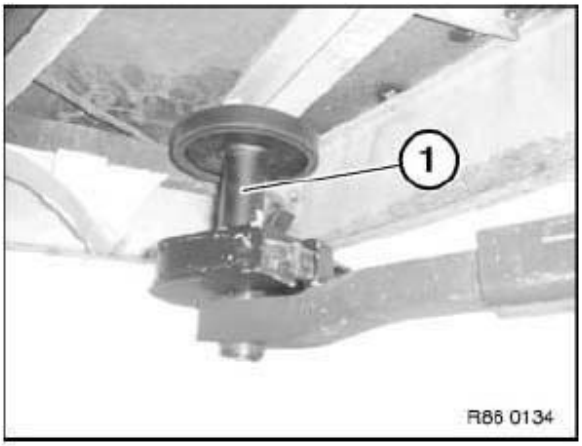


Fig. 39: Identifying High Attachment
Courtesy of BMW OF NORTH AMERICA, INC.

Working pit

The BMW multi-trailer can be serviced or repaired in conjunction with a working pit if the following measures are taken into consideration. The BMW multi-trailer must be secured against slipping/tilting sideways. The drawbar jockey wheel must be firmly secured against rolling.

86 10 ... REMOVING CAMLOCK RETAINING CAM ON LOADING RAMP

Drill out rivets (1).

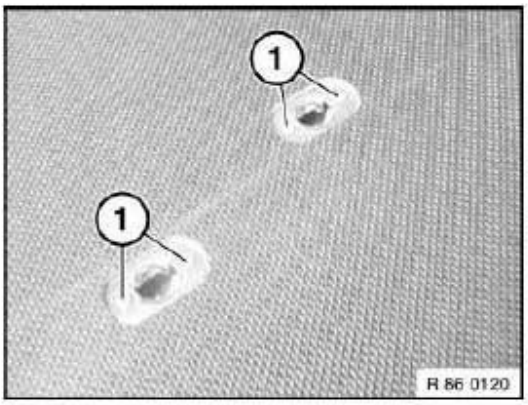


Fig. 40: Identifying Loading Ramp Screws
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING CAMLOCK SCREW CAP

Bend back edges (1) of tab washer (2). Remove tab washer (2) over cross pin (3) towards bottom.

Installation

Replace lockplate.

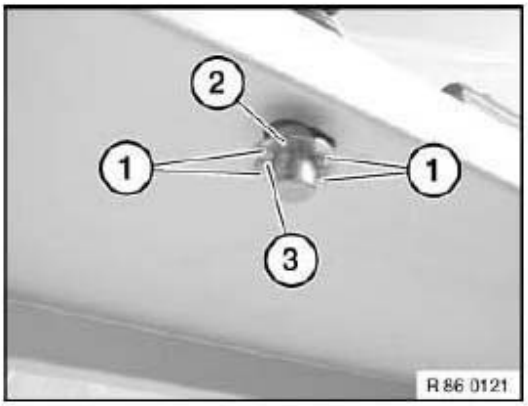


Fig. 41: Identifying Back Edges Of Tab Washer And Cross-Pin

Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING AND INSTALLING OR REPLACING LEFT OR RIGHT COIL SPRING

Release screw (1) and remove, tilt shock absorber (2) in direction of arrow towards rear.

Installation

Use new self-locking nut.

Hold shock absorber vertically and protective cap points upwards. Completely press in shock absorber once and pull out up to required installation length. Do not tilt shock absorber further than is needed for installation.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 21AZ.**

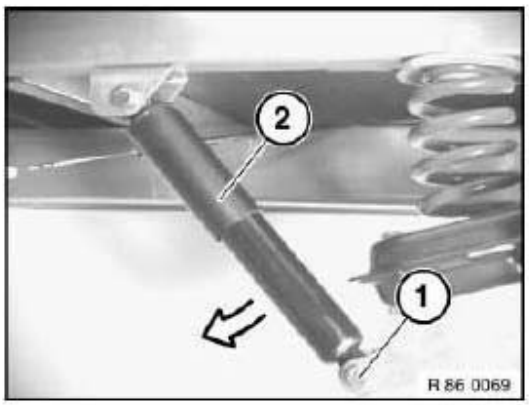


Fig. 42: Tilting Shock Absorber
Courtesy of BMW OF NORTH AMERICA, INC.

The trailing arm folds down once the coil spring on the arm has been released.

No persons should be located underneath trailing arm. Risk of injury!

Release screw (1) between trailing arm (2) and coil spring.

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 22AZ.**

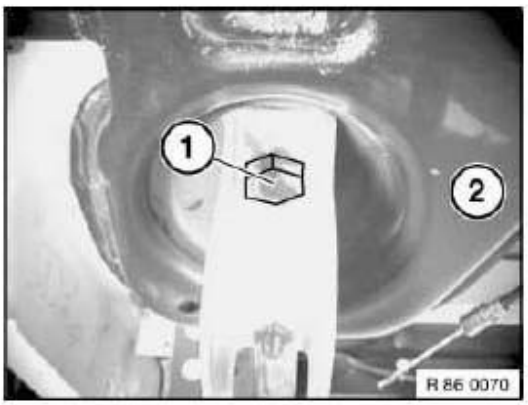


Fig. 43: Identifying Trailing Arm And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Remove pressure plate (1) from coil spring (2).

Installation

Use pressure plate with nut.

Fit pressure plate (1) according to its shape (3) into pressure spring (2).

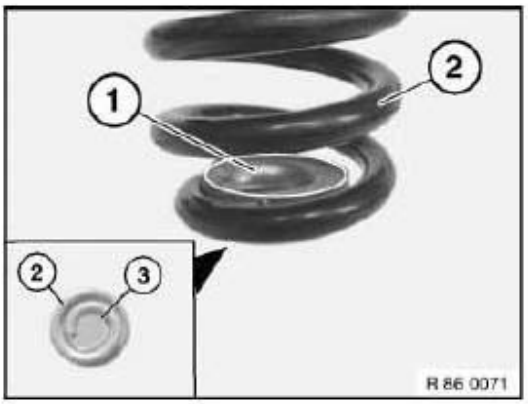


Fig. 44: Identifying Pressure Plate And Pressure Spring
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1) between coil spring (2) and longitudinal member (3). Remove small pressure plate (4) and large pressure plate (5).

Installation

Use pressure plate without nut. Fit small pressure plate (4) according to its shape (6) into pressure spring (2).

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 23AZ.**

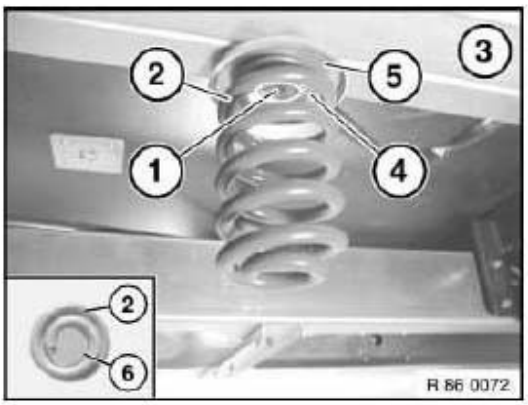


Fig. 45: Identifying Large And Small Pressure Plate, Coil Spring, Longitudinal Member And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Installation

Two persons are needed to install the coil spring correctly. One person presses down the pressure plate (2) seated inside the coil spring (1) and tightens the coil spring (1)/trailing arm (3) screw connection. At the same time, the second person levers the coil spring (1) with a screwdriver into its correct seat.

Tightening Torque for coil spring (1)/trailing arm (3),

REFER TO TECHNICAL DATA 86 10 22AZ.

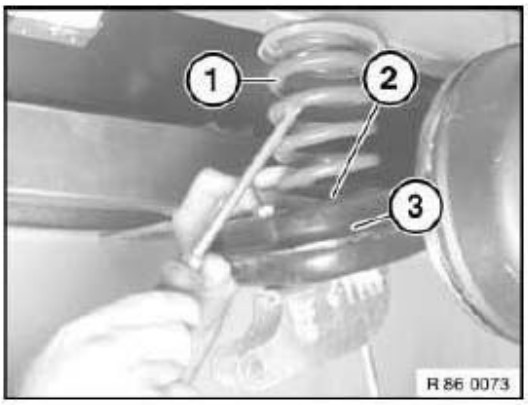


Fig. 46: Installing Coil Spring
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING BOLT ON LOADING RAMP

Insert a drift into hole (1) of bolt (2) and turn clockwise.

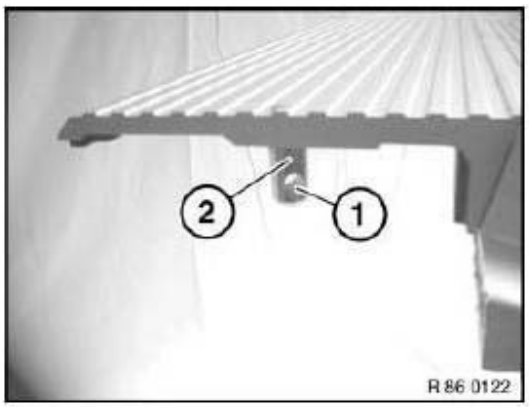


Fig. 47: Identifying Hole On Loading Ramp Bolt
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING BRAKE SHOES

The wheels of the multi-trailers must be able to rotate freely. Adjust and check brake system after installing brake shoes.

Unhook tension spring (1) from tension spring mount (2).

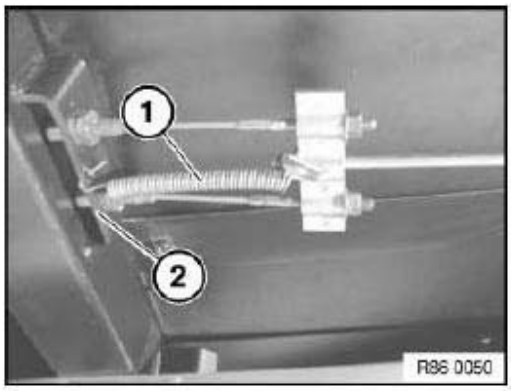


Fig. 48: Identifying Tension Spring And Tension Spring Mount
Courtesy of BMW OF NORTH AMERICA, INC.

CAUTION: Once nut (1) of pull rod (2) has been released, do not move handbrake lever. Handbrake lever can flick upwards.

Release nut (1) on pull rod (2) and remove hexagon nut. Slide brake compensator (3) towards rear.

Installation

Use new self-locking nut.

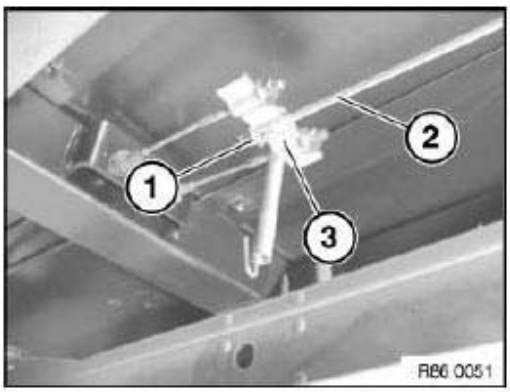


Fig. 49: Identifying Brake Compensator And Pull Rod Nut
Courtesy of BMW OF NORTH AMERICA, INC.

Grip openings (1) in wheel trim (2) with both hands and pull off wheel trim (2).

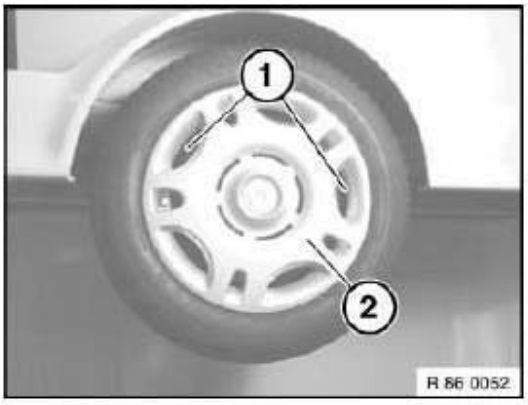


Fig. 50: Identifying Grip Openings On Wheel Trim
Courtesy of BMW OF NORTH AMERICA, INC.

Release wheel bolts (1) and remove disk wheel (2).

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 19AZ.**

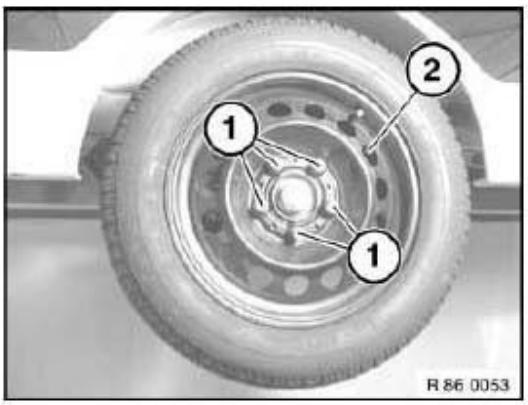


Fig. 51: Identifying Disk Wheel With Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

Turn brake shoe adjusting screw (2) on brake carrier (1) in direction of arrow and release fully. The brake shoes do not rest against the drum.

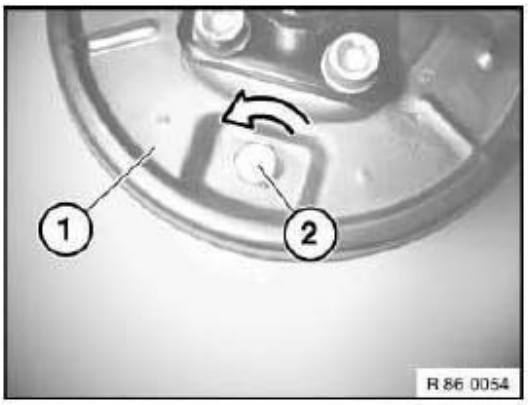


Fig. 52: Turning Brake Shoe Adjusting Screw On Brake Carrier
Courtesy of BMW OF NORTH AMERICA, INC.

Lever off cap (1).

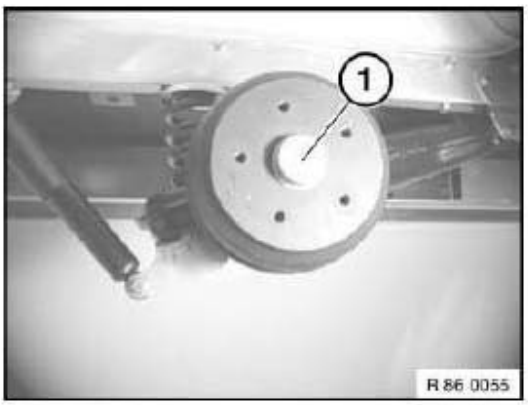


Fig. 53: Removing Cap
Courtesy of BMW OF NORTH AMERICA, INC.

Release nut (1) and remove. Pull off brake hub (2) with both hands.

Installation

Only a new nut is permitted for reinstallation.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 20AZ.**

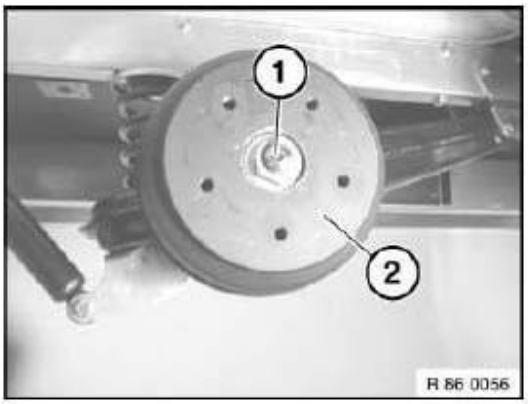


Fig. 54: Identifying Brake Hub With Nut
Courtesy of BMW OF NORTH AMERICA, INC.

Do not screw off brake hub under any circumstances.

To illustrate more clearly the work steps in **Fig. 55**, **Fig. 56** and **Fig. 57**, the wheel brake has been detached from the axle.

This procedure is not necessary for removing the brake shoes.

Push back cable (1).

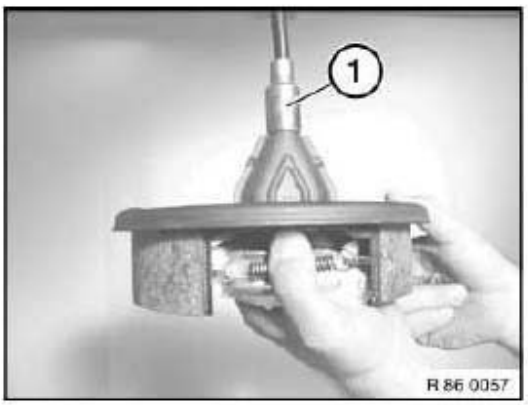


Fig. 55: Pushing Back Cable
Courtesy of BMW OF NORTH AMERICA, INC.

Remove shell (1).

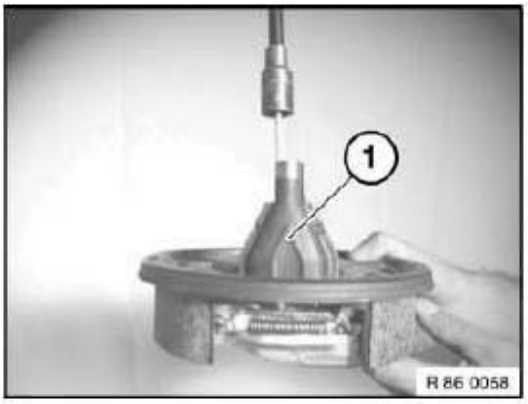


Fig. 56: Removing Shell
Courtesy of BMW OF NORTH AMERICA, INC.

Remove brake cable (1) from mounting (2).

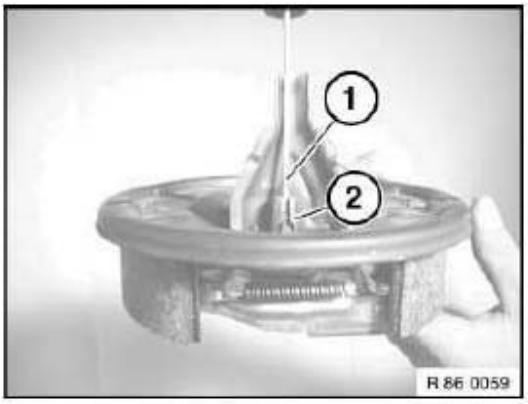


Fig. 57: Removing Brake Cable From Mounting
Courtesy of BMW OF NORTH AMERICA, INC.

Unhook pressure spring (1) from fixed brake shoe (2) and brake carrier (3).

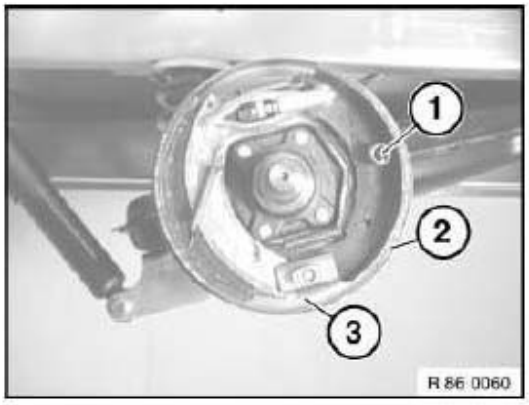


Fig. 58: Identifying Brake Shoe, Brake Cable And Pressure Spring
Courtesy of BMW OF NORTH AMERICA, INC.

Remove tension spring (1) from both brake shoe fixtures (2).

Remove brake lever assembly (3).

Installation

The fixed part of the brake lever assembly (3) is seated on the moving brake shoe. The moving part of the brake lever assembly is seated on the fixed brake shoe.

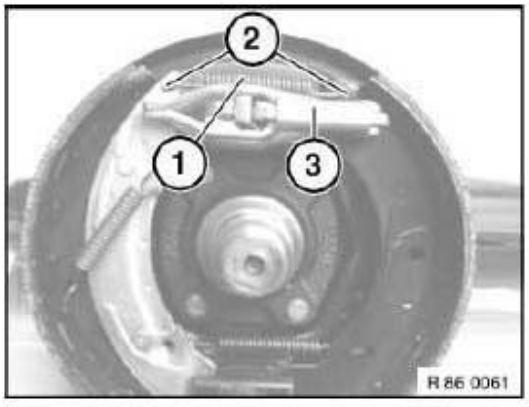


Fig. 59: Identifying Tension Spring On Brake Shoe Fixtures And Brake Lever Assembly
Courtesy of BMW OF NORTH AMERICA, INC.

Pull brake shoes (1) apart in direction of arrow, tilt forward and remove from adjustment device (2).

Installation

Always replace the four shoes and use the same make.

Minimum lining thickness: 1.5 mm

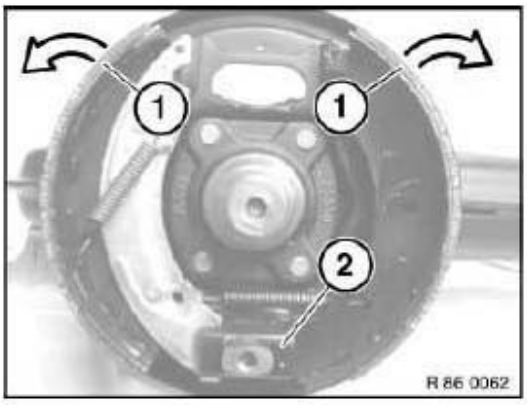


Fig. 60: Pulling Brake Shoes
Courtesy of BMW OF NORTH AMERICA, INC.

Check adjustment device (1).

Check wedge (2) and setting pins (3) for ease of movement and wear.

Apply grease if necessary.

Check brake cables for ease of movement and wear.

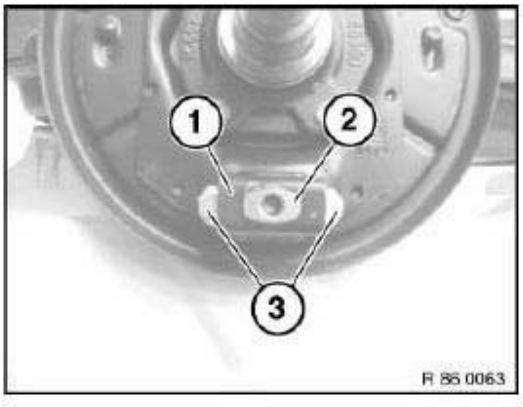


Fig. 61: Identifying Adjustment Device With Wedge And Setting Pins
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING ENTRY PROFILE SECTION ON LOADING RAMP, LEFT, RIGHT AND CENTER

CAUTION: Before drilling out rivets, drive in rivet pins with a punch.

Drill out rivets (1). Remove entry profile section (2) towards front.

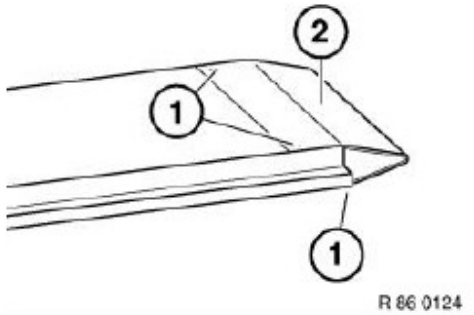


Fig. 62: Identification Entry Profile Section With Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING LEFT OR RIGHT SHOCK ABSORBER

Inspect the shock absorber while installed to ascertain whether it needs to be replaced.

Replace shock absorber if it is leaking. Replace shock absorber if it can be easily pushed in or pulled out when removed.

Release screw (1) and remove. Tilt shock absorber in direction of arrow. Release screw (2) and remove shock absorber.

Installation

Hold shock absorber vertically: protective cap points upwards. Completely press in shock absorber once and pull out up to required installation length. Do not tilt shock absorber further than is needed for installation.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 21AZ.**

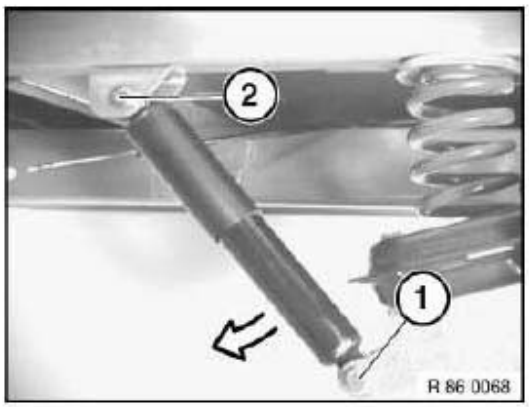


Fig. 63: Tilting Shock Absorber
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING LOADING RAMP LOCK

Unscrew bolts (1).

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 28AZ.**

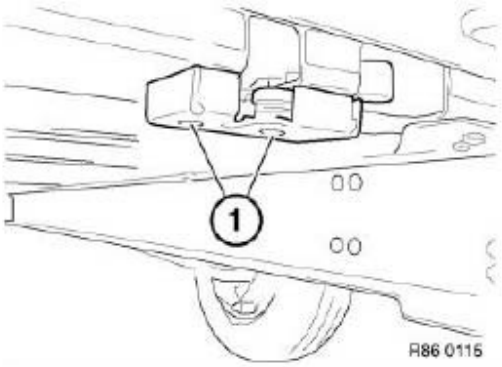


Fig. 64: Identifying Loading Ramp Lock Bolt
Courtesy of BMW OF NORTH AMERICA, INC.

Pass lever (1) of rotary striker lock (2) out of square hole (3) by twisting from side to side.

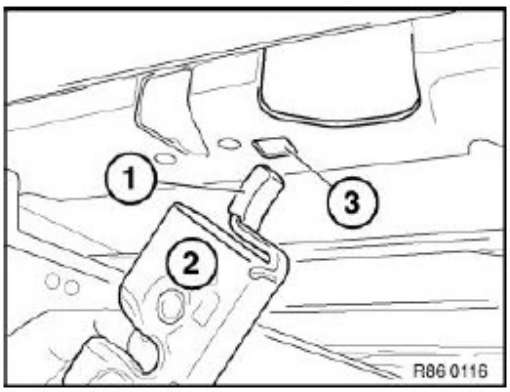


Fig. 65: Identifying Lever Of Rotary Striker Lock Out Of Square Hole
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew bolts (1).

Installation

Opening for securing clip (2) points to front or rear.

Square-head nut (3) rests with its square surface parallel to bearing pedestal (4).

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 29AZ.**

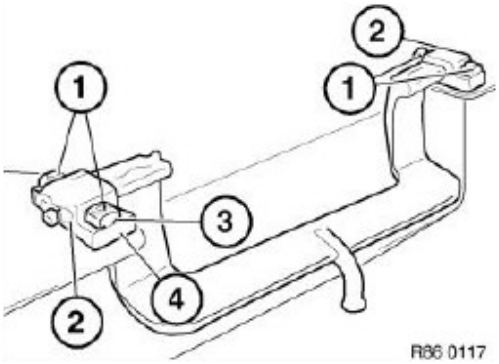


Fig. 66: Identifying Clip, Square-Head Nut With Bearing Pedestal And Loading Ramp Bolt
Courtesy of BMW OF NORTH AMERICA, INC.

Raise edge (1) of securing clip and slide in direction of arrow towards rear.

Detach bearing pedestal (2).

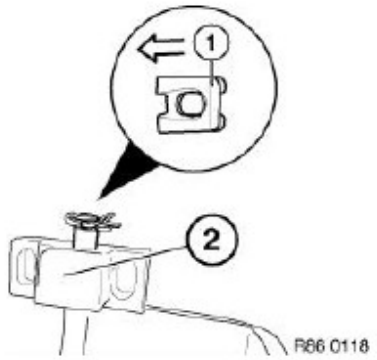


Fig. 67: Removing Bearing Pedestal
Courtesy of BMW OF NORTH AMERICA, INC.

Installation

Install bearing pedestal (1) on stub (3) of locking bracket (3).

Off-center bore (4) in bearing pedestal (1) points with short distance (A) to locking bracket (3).

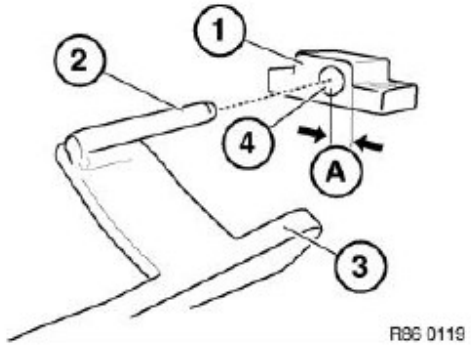


Fig. 68: Identifying Bearing Pedestal On Stub Of Locking Bracket
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING MOUNTING BRACKET SEALING CAP

Cut out mounting bracket (3) along markings (1, 2) and lever out of apron (4).

Installation

For gluing, use two-component adhesive ICEMA R 101 and hardener 7.

Mixture ratio: ICEMA R 101 7 parts; hardener 7 1 part.

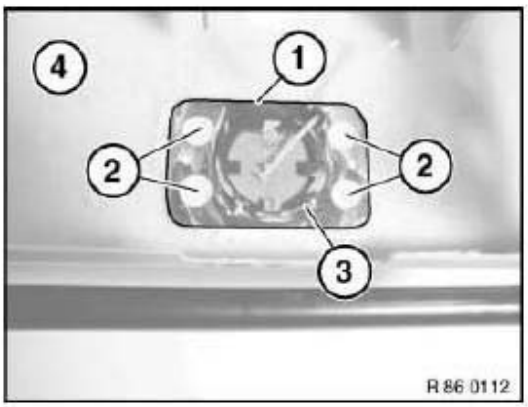


Fig. 69: Identifying Marking On Mounting Bracket And Apron
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING MOUNTING BRACKET, CENTER, LEFT AND RIGHT

NOTE: **Disassembly of Camlock retaining cam**
REFER TO 86 10 ... DISASSEMBLY OF CAMLOCK RETAINING CAM

Unscrew bolts (1).

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 31AZ.**

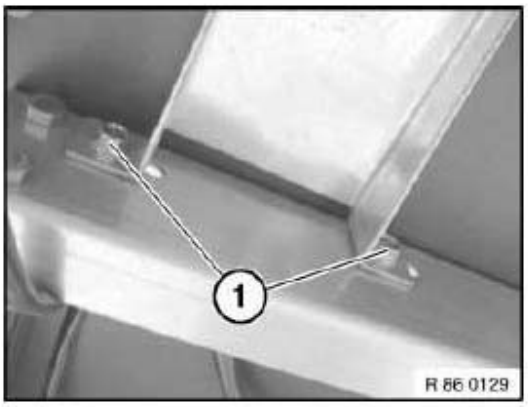


Fig. 70: Identifying Mounting Bracket Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING OUTER PULL ROD MOUNT, LEFT AND RIGHT

Release screws (1) and remove pull rod mount (2).

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 30AZ.**

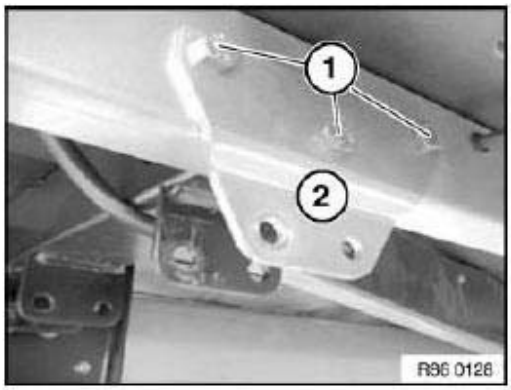


Fig. 71: Identifying Pull Rod Mount With Screws
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING OVERRUNNING EQUIPMENT/MAINTAINING OR REPLACING GUIDE BUSH/INSTALLING OVERRUNNING EQUIPMENT

After installing overrunning equipment, readjust brake system,

REFER TO 86 10 ... ADJUSTING BRAKE SYSTEM

Check the guide bush while installed to ascertain whether it needs to be replaced. Raise ball end area and replace guide bush if play is detected in ball end area.

NOTE: After installing, readjust and check brake system.

Release round head screws (1) and remove running board (2) towards top.

Installation

Use new self-locking nuts.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 10AZ.**

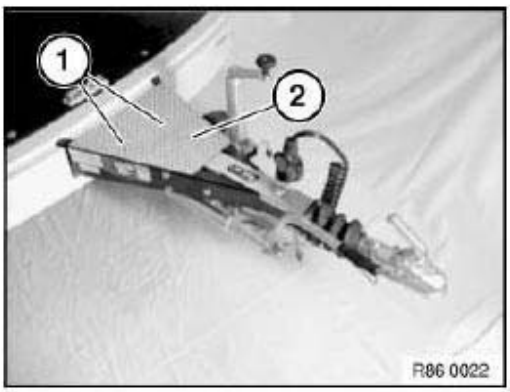


Fig. 72: Identifying Running Board With Round Head Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Unhook tension spring (1) from tension spring mount (2).

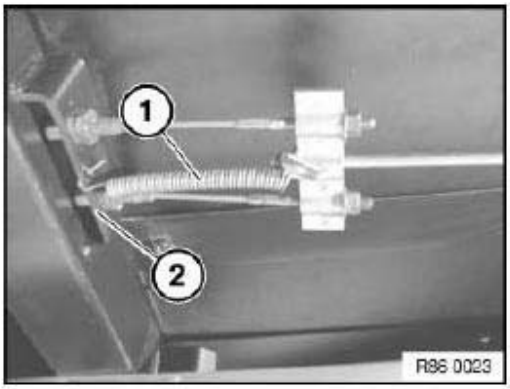


Fig. 73: Identifying Tension Spring And Tension Spring Mount
Courtesy of BMW OF NORTH AMERICA, INC.

CAUTION: Once nut (1) of pull rod (2) has been released, do not move handbrake lever. Handbrake lever can flick upwards.

Release screw (1) on pull rod (2) and remove hexagon nut. Slide brake compensator (3) towards rear.

Installation

Use new self-locking nut.

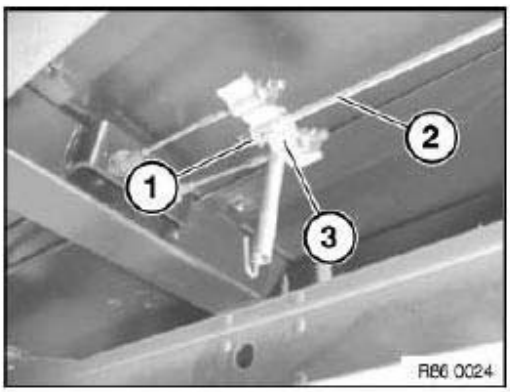


Fig. 74: Identifying Brake Compensator With Pull Rod And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1) on jockey wheel mount and remove.

Release wiring harness mount (2) and remove. Reinstall screw and tighten until hand-tight.

Installation

Tightening Torque for jockey wheel mount (1),

REFER TO TECHNICAL DATA 86 10 11AZ.

Tightening Torque for wiring harness mount (2), **REFER TO TECHNICAL DATA 86 10 12AZ.**

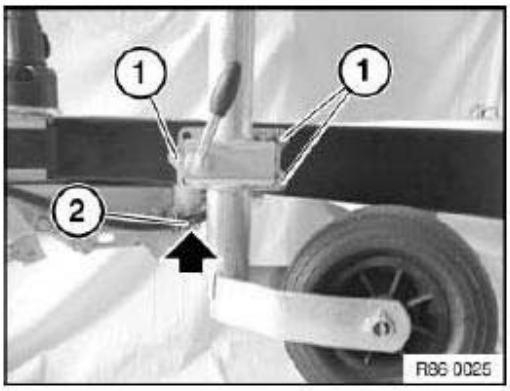


Fig. 75: Identifying Wiring Harness Mount And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw on socket holder (1) and remove. Cut through strap (2) and lay wiring harness to one side. Pull gaiter (3) in direction of arrow.

Installation

Use new self-locking nut.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 13AZ.**

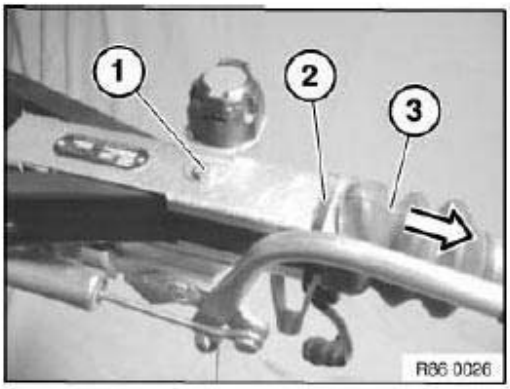


Fig. 76: Pulling Gaiter
Courtesy of BMW OF NORTH AMERICA, INC.

Remove protective caps (1).

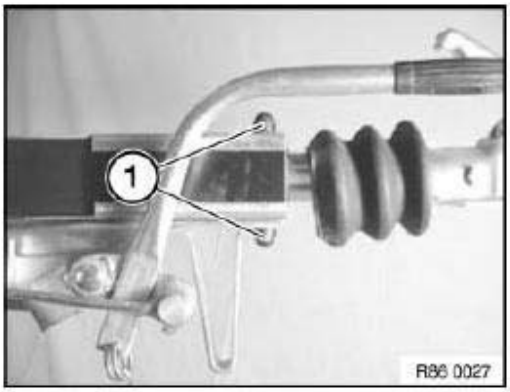


Fig. 77: Identifying Protective Caps
Courtesy of BMW OF NORTH AMERICA, INC.

Release nuts (1) and remove.

Installation

Use new self-locking nuts.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 14AZ.**

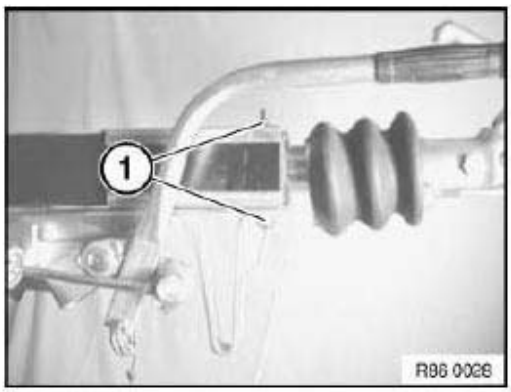


Fig. 78: Identifying Brake System Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Tilt top reversing housing (1) in direction of arrow towards rear. Slide out top reversing housing (1) and bottom reversing housing with handbrake lever unit (2) in direction of arrow towards rear.

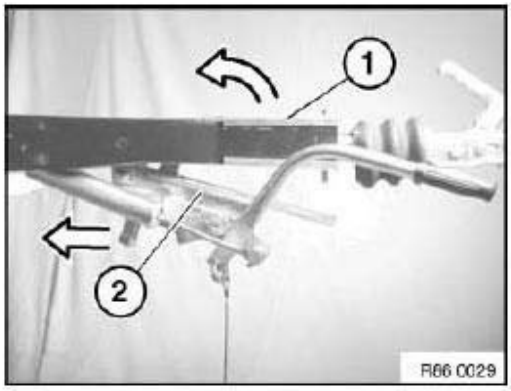


Fig. 79: Sliding Out Top Reversing Housing And Bottom Reversing Housing With Handbrake Lever Unit
Courtesy of BMW OF NORTH AMERICA, INC.

Remove holder (1) towards bottom.

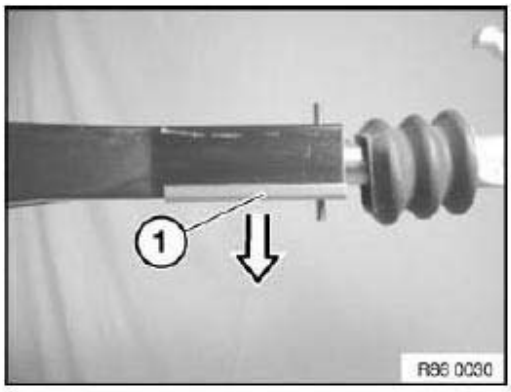


Fig. 80: Removing Holder Towards Bottom
Courtesy of BMW OF NORTH AMERICA, INC.

Pull drawbar member (1) in direction of arrow and pull out overrunning equipment (2) in direction of arrow towards front.

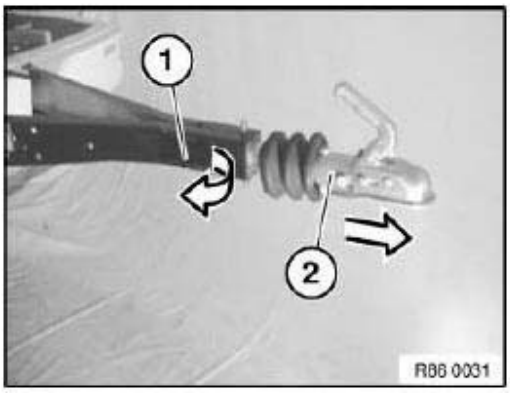


Fig. 81: Pulling Drawbar Member And Overrunning Equipment
Courtesy of BMW OF NORTH AMERICA, INC.

Remove spacer tubes (1) and threaded pins (2) from guide bush (3).

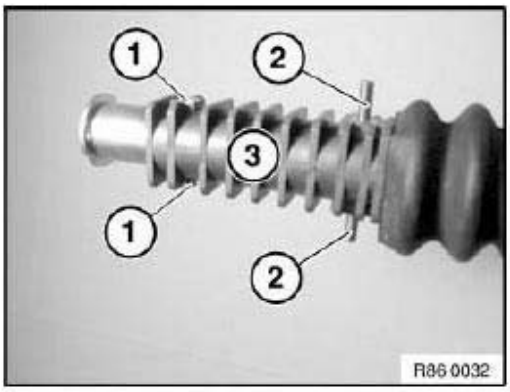


Fig. 82: Identifying Spacer Tubes And Threaded Pins Of Guide Bush
Courtesy of BMW OF NORTH AMERICA, INC.

Press pins (1) inwards. Detach counter support (2) and guide bush (3).

Maintenance

Grease tow tube (4) and attach guide bush (3).

Installation

Secure counter support (2) with new clamping sleeves to tow tube (4).

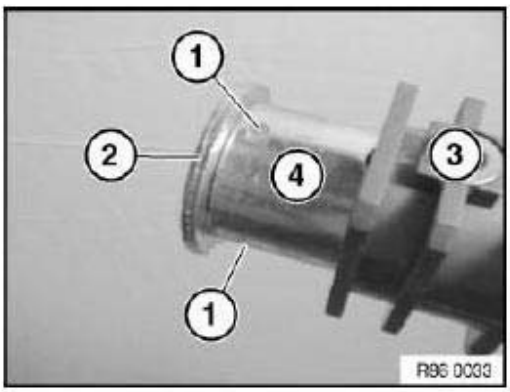


Fig. 83: Identifying Guide Bush, Tow Tube And Counter Support With Pins
Courtesy of BMW OF NORTH AMERICA, INC.

Insert spacer tubes (1) and threaded pins (2) in guide bush (3).

Make sure spacer tubes (1) are correctly seated in guide bush (3).

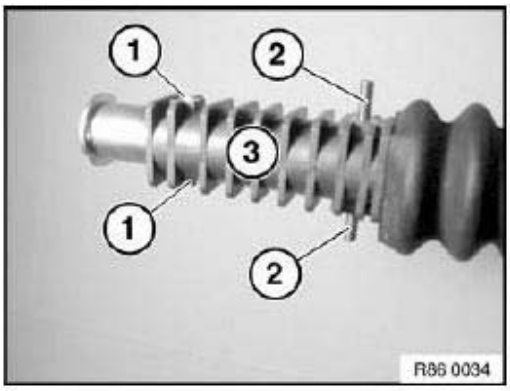


Fig. 84: Identifying Spacer Tubes And Threaded Pins With Guide Bush
Courtesy of BMW OF NORTH AMERICA, INC.

Using a screwdriver, link spacer tubes (1) and shock absorber located in tow tube. This ensures that the shock absorber remains in the correct installation position. Pull drawbar member (2) in direction of arrow and push in overrunning equipment (3) in direction of arrow towards rear.

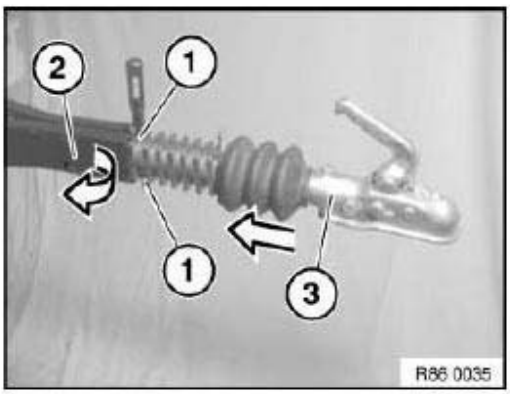


Fig. 85: Pulling Drawbar Member
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING PLASTIC BUSH/METAL BUSH

Release countersunk metal screws (1).

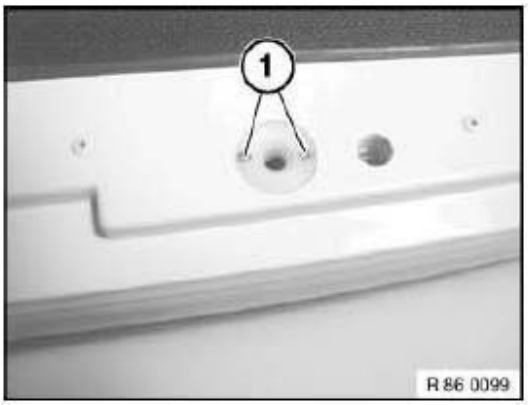


Fig. 86: Identifying Countersunk Metal Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Lever out plastic bush/metal bush (1) with a screwdriver.

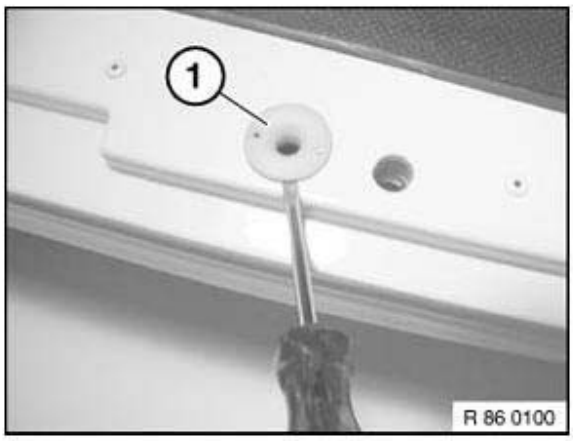


Fig. 87: Removing Plastic Bush/Metal Bush Using Screwdriver
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING REAR SUPPORTS AND BRACKET

Release screws (1) and remove rear support (2) from bracket (3).

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 26AZ.**

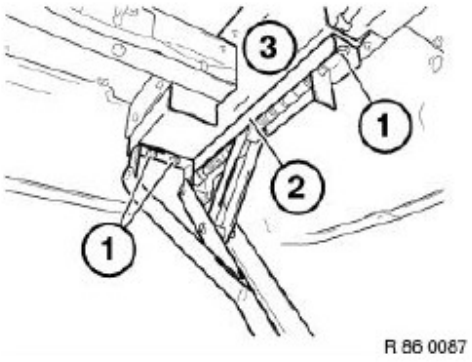


Fig. 88: Identifying Rear Support On Bracket And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Remove cable holders (1) from bracket (2). Release screws (3) on left and right sides of bracket (2). Drill out rivets (4) from underside of platform. Drill out rivets (5) from upper side of platform.

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 27AZ.**

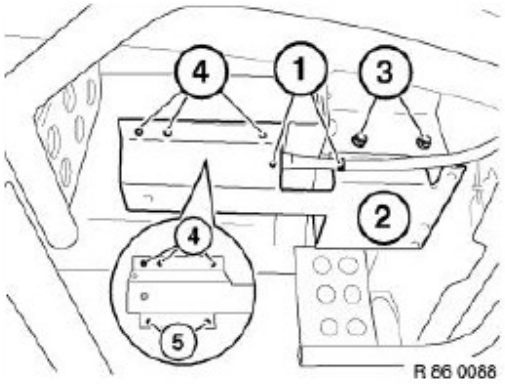


Fig. 89: Identifying Cable Holder, Bracket Screws And Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

Installation

Feed cable for rear light (1) through opening (2). Fit cable holders (4) in holes (3).

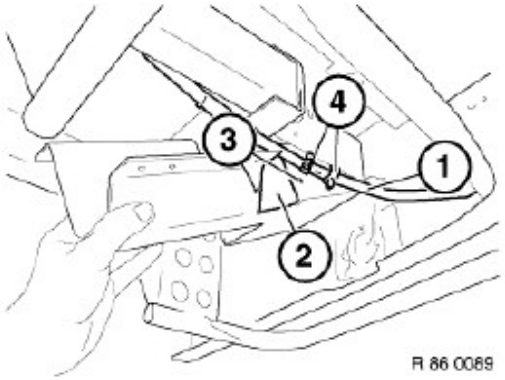


Fig. 90: Removing Cable For Rear Light From Opening
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING REFLECTING REAR LIGHT

From rear side of GFK apron, drive out plastic pins (1) with a drift.

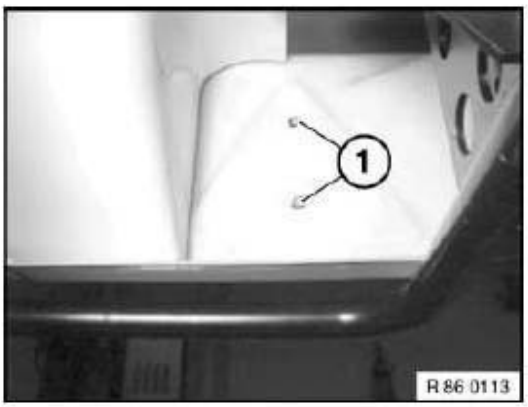


Fig. 91: Identifying Plastic Pins
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING REST ON LOADING RAMP, LEFT, RIGHT AND CENTER

CAUTION: Before drilling out rivets, drive in rivet pins with a punch.

Drill out rivets (1). Remove rest (2) towards front.

Installation

Stick on new sealing tape.

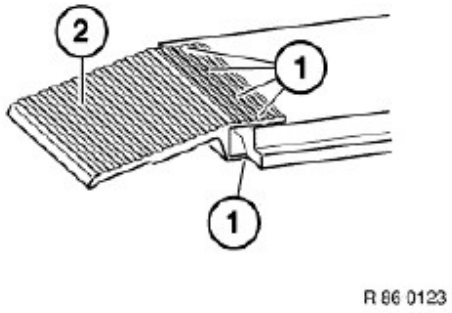


Fig. 92: Identifying Loading Ramp Rest With Screws
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING SHOCK ABSORBER FROM OVERRUNNING EQUIPMENT

Check the overrunning equipment shock absorber while installed to ascertain whether it needs to be replaced.

Apply handbrake. Push in and pull out tow ball end by hand. If it is very easy to pull out the tow ball end, the shock absorber must be replaced.

NOTE: **Complete disassembly of overrunning equipment and guide bush, REFER TO 8610 ... DISASSEMBLY OF OVERRUNNING EQUIPMENT.**

Release screw (1) and remove. Pull out internal shock absorber (2) from opening in tow tube (3) towards rear.

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 15AZ.**

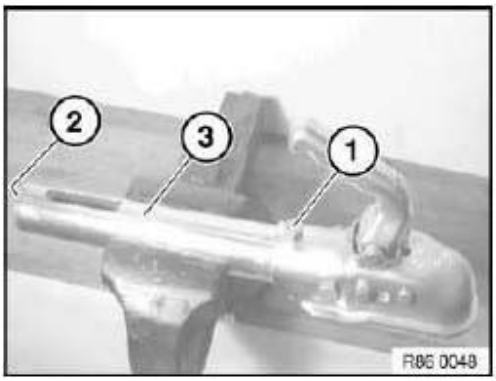


Fig. 93: Identifying Shock Absorber With Tow Tube And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Push in new shock absorber (1) as shown in illustration through opening in tow tube (2).

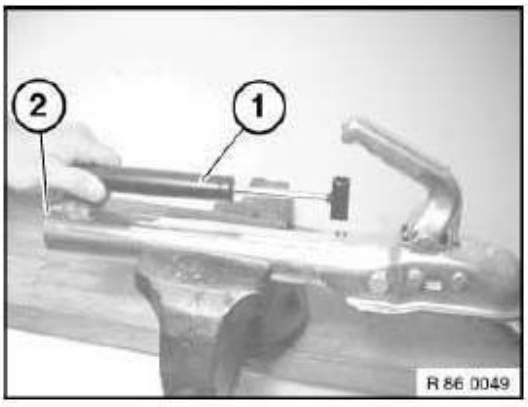


Fig. 94: Pushing Shock Absorber In Tow Tube
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING TRAILING ARM, REMOVING AND INSTALLING OR REPLACING MOUNTING

Replace bearing in trailing arm if there is play in trailing arm.

NOTE: **Remove brake cable, REFER TO 86 10 ... REMOVING BRAKE SHOES. Remove shock absorber and coil spring, REFER TO 86 10 ... REMOVING AND INSTALLING COIL SPRING.**

Release screws (1) between wheel brake (2) and trailing arm (3) and remove complete wheel brake (2).

Installation

Do not reuse screws (1). Use only the socket-head cap screws intended for this purpose. Stamped arrow on the reverse side of the brake carrier points in the direction of travel and stands at the 12 o'clock position.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 24AZ.**

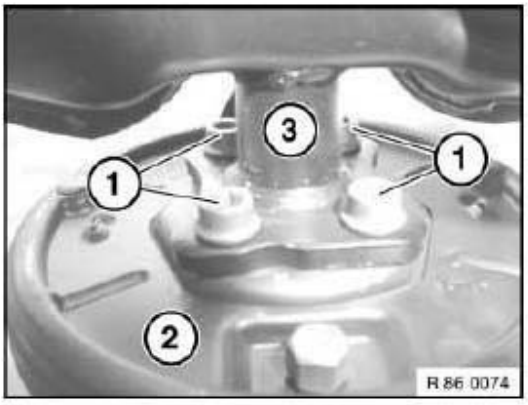


Fig. 95: Identifying Trailing Arm On Wheel Brake And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

The trailing arm folds down once the coil spring on the arm has been released.

No persons should be located underneath trailing arm. Risk of injury!

Release screws (1, 2). Use assembly hole (3) to release screw connection (2).

Press out screws (1, 2) with a mandrel.

Installation

Use new self-locking nut.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 25AZ.**

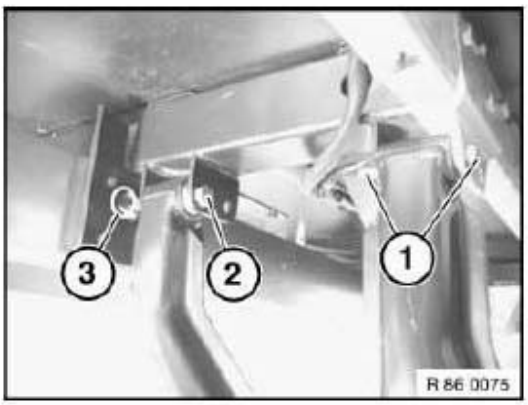


Fig. 96: Identifying Hole With Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Installation

Mount trailing arms (1) at rear mounts (4) only, viewed in direction of travel, with screws (2, 3).

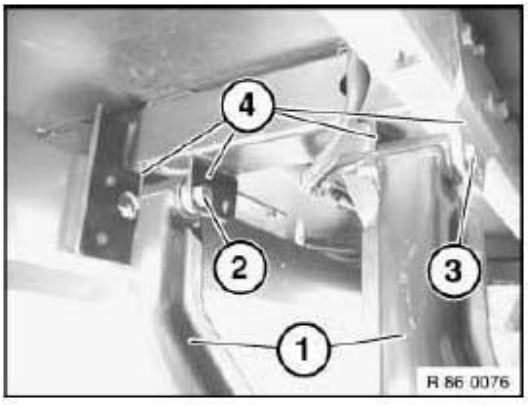


Fig. 97: Identifying Trailing Arms On Rear Mounts And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Do not damage trailing arm with drill when drilling.

Drill spacer tube (1) with a 4 mm drill at three evenly offset points. Place drill as near as possible to compensating bush (2).

Bores relieve tension on material of spacer tube.

Press out spacer tube (1) and compensating bush (2) with a drift.

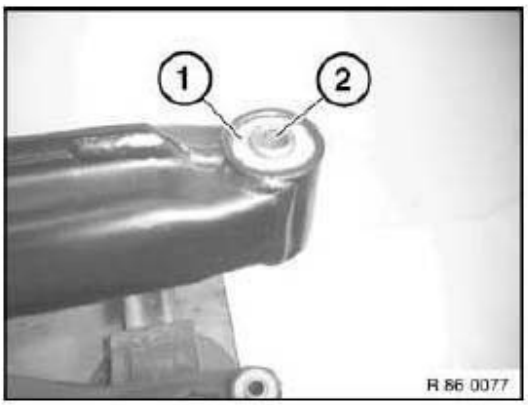


Fig. 98: Identifying Spacer Tube And Compensating Bush
Courtesy of BMW OF NORTH AMERICA, INC.

Grease new spacer tube (1) for installation with Syntheso Glep I. Drive new spacer tube (1) with a rubber mallet into trailing arm mount (2).

Installation

Make sure spacer tube (1) is not tilted when driven in.

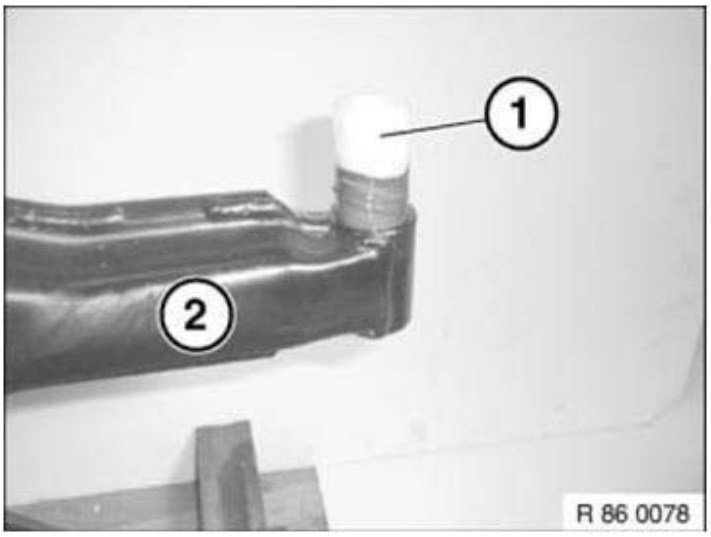


Fig. 99: Identifying Spacer Tube And Trailing Arm Mount
Courtesy of BMW OF NORTH AMERICA, INC.

Drive compensating bush (1) with a drift into spacer tube (2). Set compensating bush (1) and spacer tube (2) centrally in trailing arm mount (3).

Installation

Make sure compensating bush (1) is not tilted when driven in.

Install coil spring, **REFER TO 86 10 ... REMOVING AND INSTALLING COIL SPRING.**

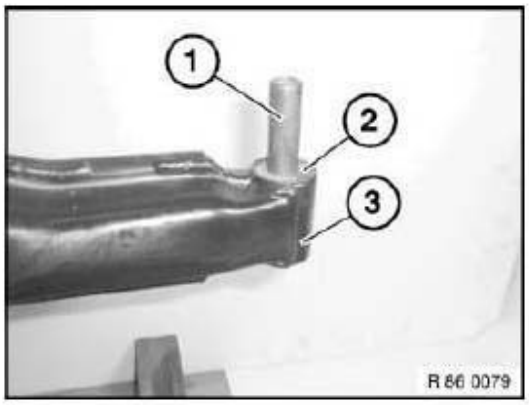


Fig. 100: Identifying Compensating Bush And Spacer Tube On Trailing Arm Mount
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING WHEEL BEARING

The angular-contact ball bearings do not require maintenance and have lifetime lubrication. The bearings cannot be readjusted.

Remove brake drum, **REFER TO 86 10 ... REMOVING BRAKE SHOES.**

Lever out both snap rings (1).

Installation

Replace expanded or damaged snap rings (1). Ensure correct seating.

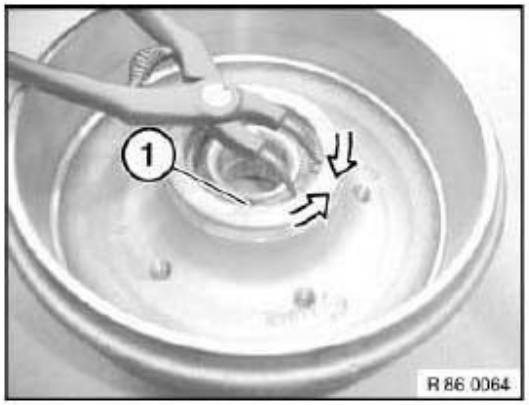


Fig. 101: Removing Snap Ring
Courtesy of BMW OF NORTH AMERICA, INC.

Press out wheel bearing with special tool 24 1 010.

CAUTION: Do not reuse old wheel bearing.



Fig. 102: Pressing Out Wheel Bearing With Special Tool (24 1 010)
Courtesy of BMW OF NORTH AMERICA, INC.

Place new wheel bearing (1) with lathe-turned end (2) in center of bore in brake drum (3).

Installation

Before pressing in new wheel bearing, check bearing seat for possible damage.

Make sure wheel bearing is not tilted when pressed in.



Fig. 103: Identifying Wheel Bearing With Lathe-Turned End On Brake Drum
Courtesy of BMW OF NORTH AMERICA, INC.

Press in new wheel bearing (1) with special tool 23 2 150 and 33 1 374.



Fig. 104: Pressing Wheel Bearing Using Special Tools (23 2 150 And 33 1 374)
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REMOVING WOODEN REST ON LOADING RAMP, LEFT, RIGHT AND CENTER

CAUTION: Before drilling out rivets, drive in rivet pins with a punch.

Drill out rivets (1).

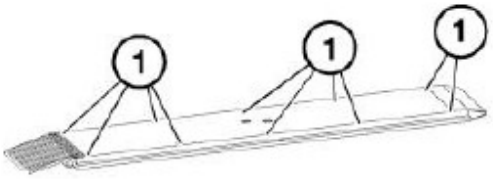


Fig. 105: Identifying Loading Ramp Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REPAIR WORK ON GFP COMPONENTS WITH GELCOAT SURFACE

Scratches in Gelcoat surface

Scratches in the Gelcoat surface which do not allow the GFP mat structure to show through can be touched up. Sand out scratches with water and 800 wet sandpaper. Then sand with water and 2000 wet sandpaper. Prepare repair area for polishing (refer to Original BMW Painting Handbook Chapter 8).

Cracks in Gelcoat surface

Sand the cracked area in a V shape beyond the end of the crack and clean.

There must be no grease or oil residues, moisture or dust remaining in the crack to be repaired.

When repairing holes such as e.g. rivet holes, deburr hole edge and heavily roughen large area around hole.

Prepare required amount of Gelcoat paste with 2% hardener and fill prepared repair area with spatula.

Apply Gelcoat paste in several applications to repair areas.

Adhere to mixture ratio (2 parts hardener to 100 parts Gelcoat paste) as precisely as possible.

Too much added hardener slows down the hardening time and changes the paint color.

The hardening period is at least 12 hours at 20° C room temperature.

The hardening period can be longer depending on the temperature.

Once the Gelcoat paste has hardened, sand the touched-up area with water and 800 wet sandpaper. Sand with water and 2000 wet sandpaper and prepare for polishing.

86 10 ... REPLACING 12 VOLT SOCKET

From underside of platform, cut through cable tie (1) and remove. Disconnect plug with grommet (2) from socket (3) towards bottom.

Installation

Position all seals correctly. Also secure plug with grommet (2) using new cable tie to other socket.

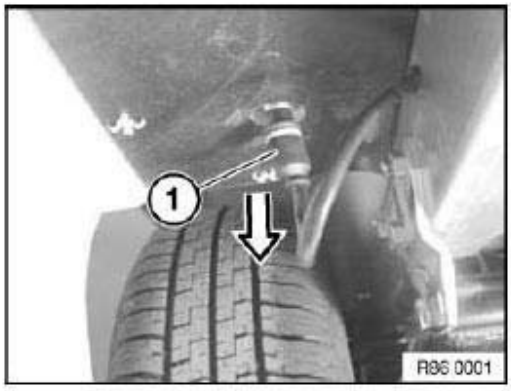


Fig. 106: Identifying Cable Tie
Courtesy of BMW OF NORTH AMERICA, INC.

On upper side of platform, release Phillips screws (1) on mounting bracket (2).

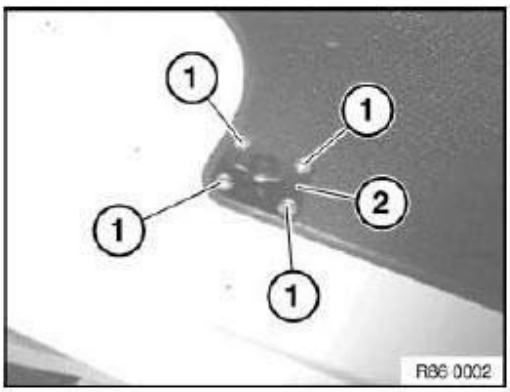


Fig. 107: Identifying Mounting Bracket With Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Remove sealing compound along white marking (1).

Installation

Make sure cable is correctly laid.

Use Sikaflex 221 as sealing compound.

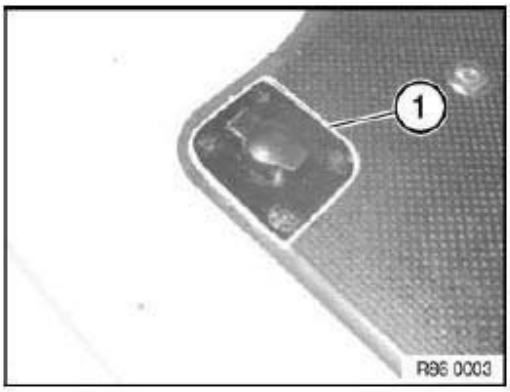


Fig. 108: Identifying White Marking Sealing Compound
Courtesy of BMW OF NORTH AMERICA, INC.

Grip under mounting bracket (1) with a screwdriver and lever out bracket (1) towards top. Remove bracket (1).

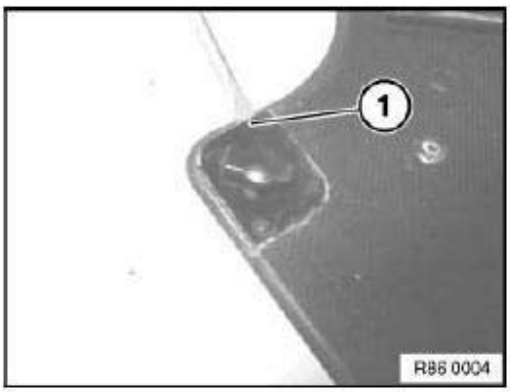


Fig. 109: Identifying Mounting Bracket
Courtesy of BMW OF NORTH AMERICA, INC.

Release nut (1). Remove socket (2) from mounting bracket (3).

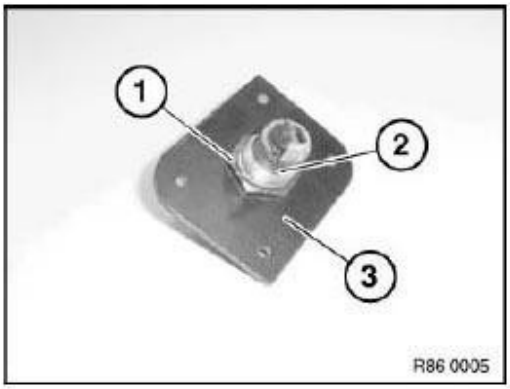


Fig. 110: Identifying Mounting Bracket With Socket And Nut
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REPLACING BAR

NOTE: Disassembly of lashing eyes, REFER TO 86 10 ... REPLACING LASHING PLATE AND LASHING EYE.

Remove lashing eyes (1).

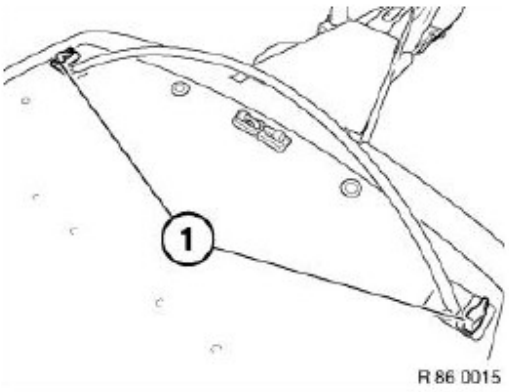


Fig. 111: Identifying Lashing Eyes
Courtesy of BMW OF NORTH AMERICA, INC.

Remove protective caps (1) on left/right.

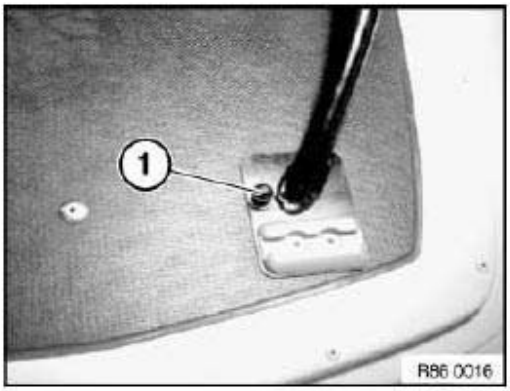


Fig. 112: Identifying Protective Cap
Courtesy of BMW OF NORTH AMERICA, INC.

Release hexagon screws (1) and countersunk head screws (2) on left/right.

Remove bar.

Installation:

Tightening Torque for hexagon screw, **REFER TO TECHNICAL DATA 86 10 2AZ.**

Tightening Torque for countersunk head screw, **REFER TO TECHNICAL DATA 86 10 3AZ.**

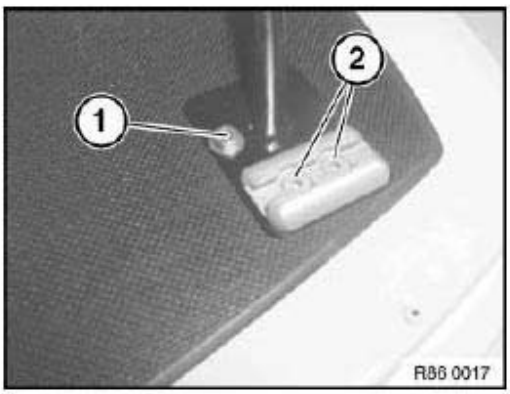


Fig. 113: Identifying Hexagon Screw And Countersunk Head Screws
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REPLACING DRAWBAR MEMBERS, LEFT AND RIGHT

NOTE: **Disassembly of overrunning equipment, REFER TO 86 10 ... DISASSEMBLY OF OVERRUNNING EQUIPMENT.**
Remove complete brake pull rod.
Removal of position light cable, REFER TO 86 10 ... REPLACING LICENSE PLATE LIGHT.

Release screws (1) on cross-member (2). Pull out cross-member (2) towards rear.

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 16AZ.**

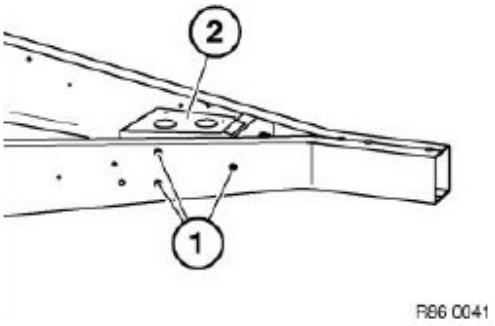


Fig. 114: Identifying Screws On Cross-Member
Courtesy of BMW OF NORTH AMERICA, INC.

Release countersunk head screws (1) and remove.

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 3AZ.**

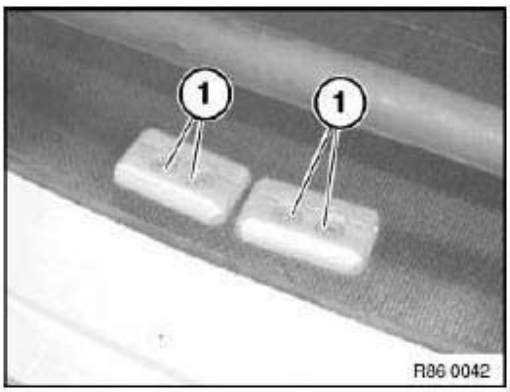


Fig. 115: Identifying Countersunk Head Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Remove cable holder (1) and remove wiring harness (2) from drawbar member (3).

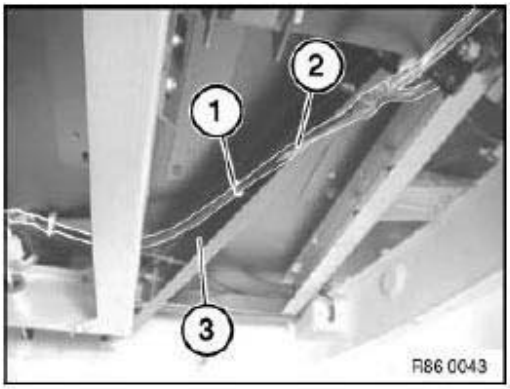


Fig. 116: Identifying Cable Holder With Wiring Harness On Drawbar Member
Courtesy of BMW OF NORTH AMERICA, INC.

Remove cable (1) from position light housing (2). Pull out cable (1) through drawbar member aperture (3).

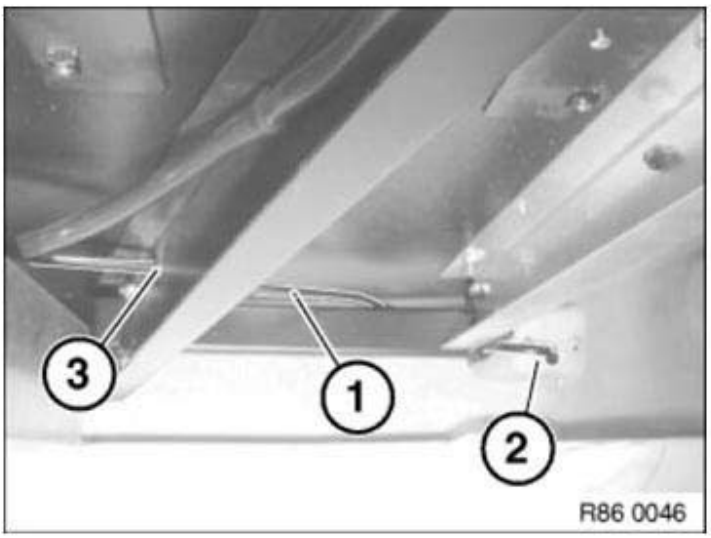


Fig. 117: Identifying Cable, Light Housing And Drawbar Member Aperture
Courtesy of BMW OF NORTH AMERICA, INC.

Release all screws on cross-member (1) and remove cross-member (1).

If necessary, release screws on mounting brackets (2) and remove cross-members (3).

Installation

Use new self-locking nuts.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 17AZ.**

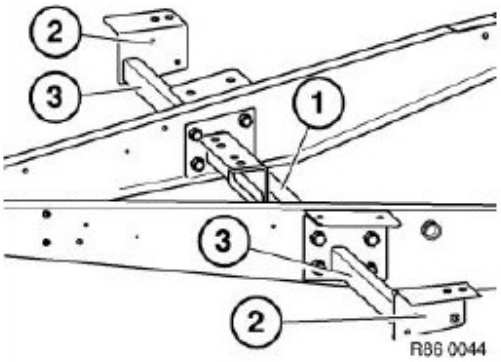


Fig. 118: Identifying Cross-Member With Mounting Brackets
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew bolt (1). Grip nut from rear through assembly hole (2) in crossmember.

Installation

Use new self-locking nuts.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 18AZ.**

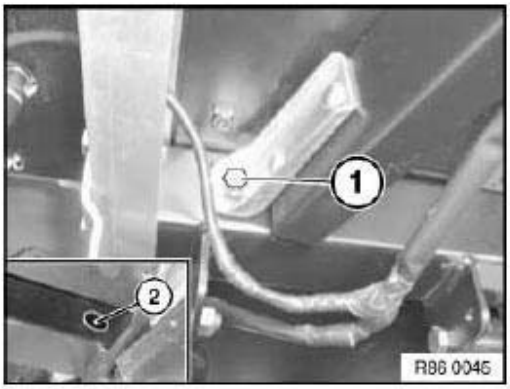


Fig. 119: Identifying Assembly Hole And Bolt
Courtesy of BMW OF NORTH AMERICA, INC.

Tilt drawbar member (1) down in direction of arrow A and pull out towards rear in direction of arrow B.

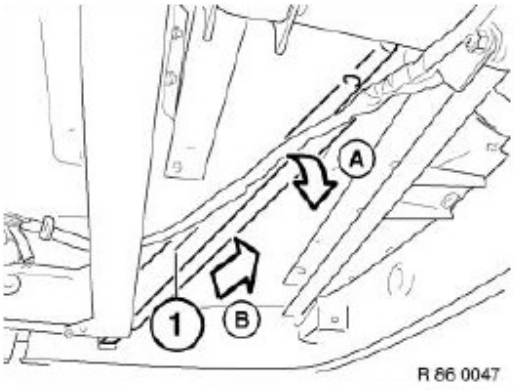


Fig. 120: Tilting Drawbar Member
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REPLACING GAITER

Position brake lever fully towards rear.

Release screws (1) and (2) and remove.

Pull off towing attachment (3) in direction of arrow.

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 15AZ.**

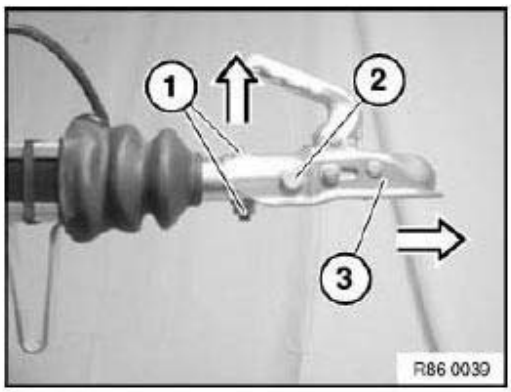


Fig. 121: Pulling Off Towing Attachment
Courtesy of BMW OF NORTH AMERICA, INC.

Pull off gaiter (1) in direction of arrow.

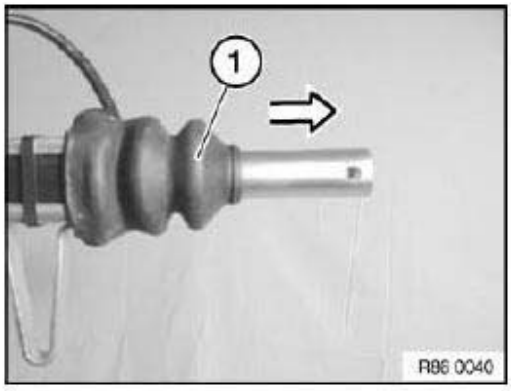


Fig. 122: Pulling Off Gaiter
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REPLACING HOLDER FOR CHOCK

Pull bar (1) down in direction of arrow A. Pull out chock (2) in direction of arrow B at an angle towards bottom.

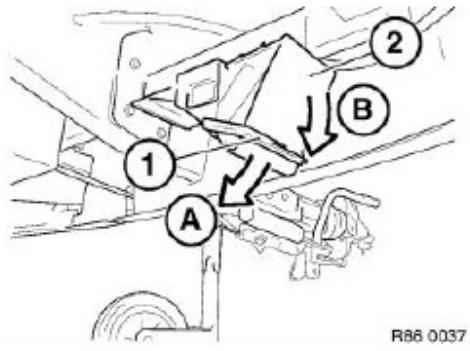


Fig. 123: Pulling Bar And Chock
Courtesy of BMW OF NORTH AMERICA, INC.

Release and unscrew cheese head tapping screws (1) on holder (2).

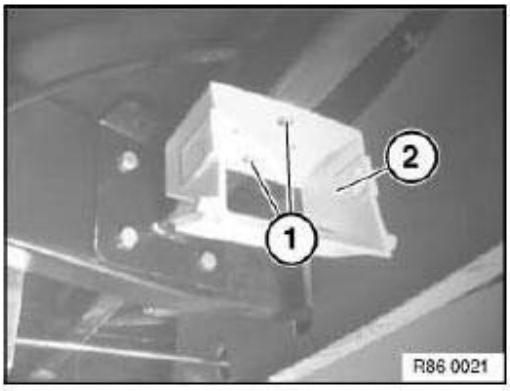


Fig. 124: Identifying Cheese Head Tapping Screws On Holder
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REPLACING LASHING PLATE AND LASHING EYE

Releasing lashing eye

Pull spring bar (1) upwards in direction of arrow A. Slide lashing eye (3) in direction of arrow B and remove from lashing plate (2).

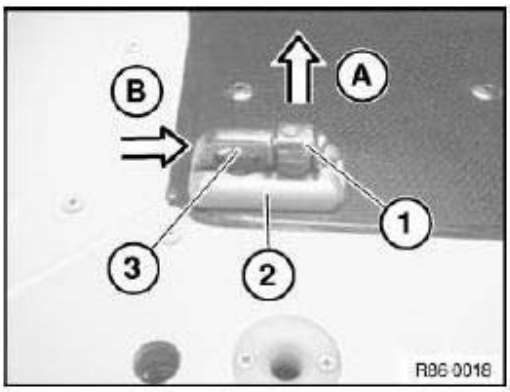


Fig. 125: Pulling Spring Bar Upward
Courtesy of BMW OF NORTH AMERICA, INC.

Release countersunk head screws (1) and remove lashing plate.

Installation

Tightening torque, **REFER TO TECHNICAL DATA 86 10 3AZ.**

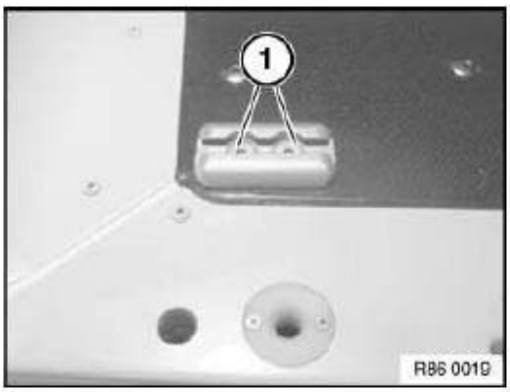


Fig. 126: Identifying Countersunk Head Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Locking lashing eye

Position lashing eye (1) on circular openings on lashing plate (2). Press lashing eye (1) in direction of arrow A into lashing plate (2). In this position, slide lashing eye (1) in direction of arrow B.

Spring bar (3) snaps in, anchors and secures lashing eye (1) in lashing plate (2).

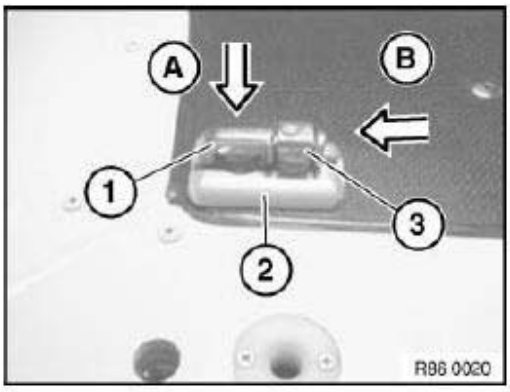


Fig. 127: Pressing Lashing Eye
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REPLACING LICENSE PLATE LIGHT

Release screws (1) and remove license plate light (2) from mounting.

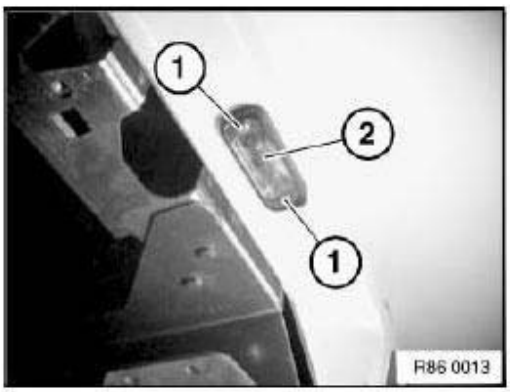


Fig. 128: Identifying License Plate Light With Mounting Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect flat connector (1) in direction of arrow.

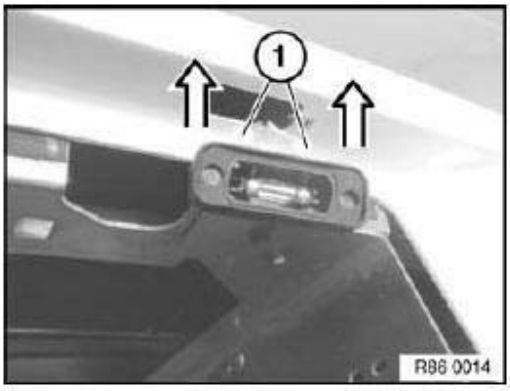


Fig. 129: Disconnecting Flat Connector
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REPLACING POSITION LIGHT

Unclip cover (1) on side recess (arrow).

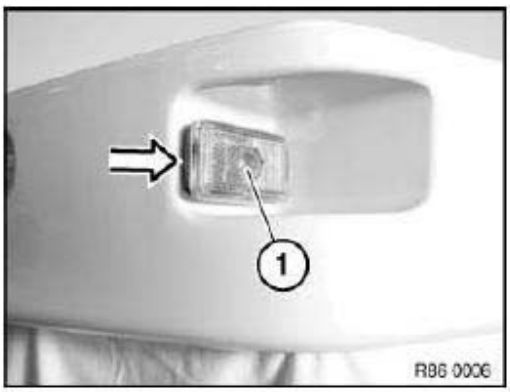


Fig. 130: Removing Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Pull flat connector (1) from flat contact.

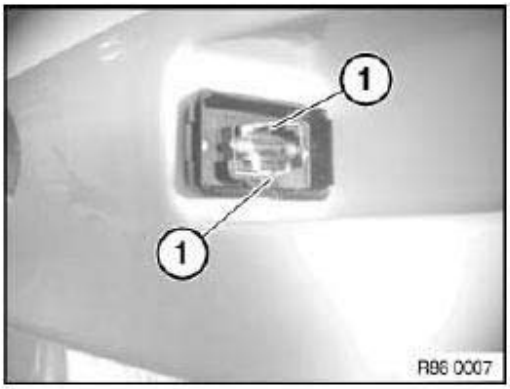


Fig. 131: Identifying Flat Connector And Cable
Courtesy of BMW OF NORTH AMERICA, INC.

Pull out cable (1) completely.

CAUTION: Before drilling out rivet heads, drive in rivet pins with a punch. Drill out rivet heads (2) and remove position light housing from front.

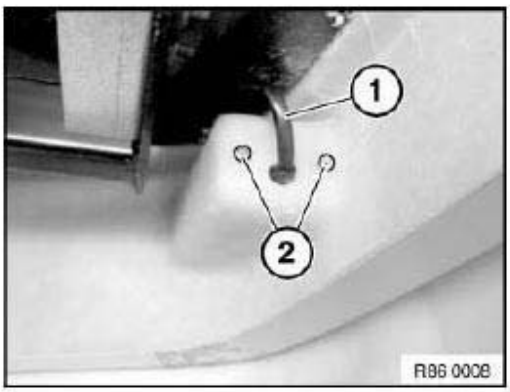


Fig. 132: Identifying Cable And Rivet Heads
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... REPLACING REAR LIGHT

Release thumb screws (1), slide light guard (2) in direction of middle of car and tilt out towards rear.

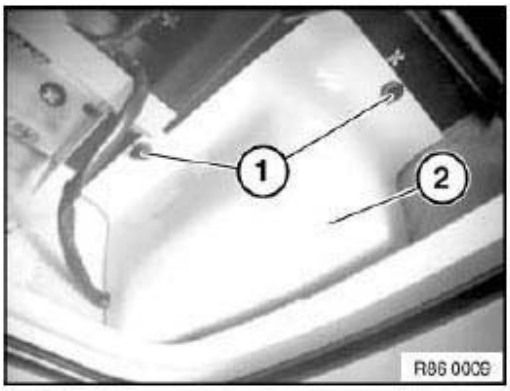


Fig. 133: Identifying Light Guard With Thumb Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Turn handwheel (1) counterclockwise in direction of arrow and remove base (2).

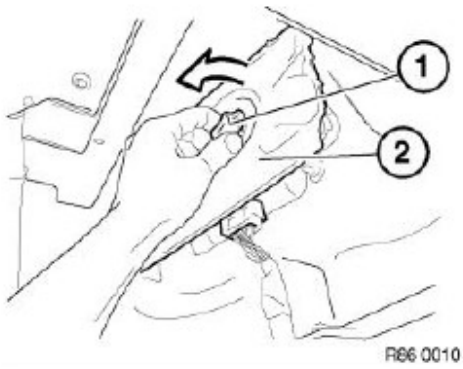


Fig. 134: Removing Base
Courtesy of BMW OF NORTH AMERICA, INC.

Release nuts (1) and press rear light (2) out towards front.

Installation

Use new self-locking nuts.

Tightening Torque, **REFER TO TECHNICAL DATA 86 10 1AZ.**

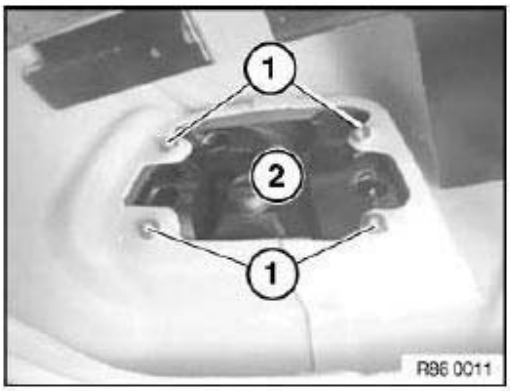


Fig. 135: Identifying Rear Light With Mounting Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... TROUBLESHOOTING ON MULTI-TRAILER

TROUBLESHOOTING CHART

Fault	Cause	Remedy
Trailer already brakes when foot is taken off accelerator	Shock absorber of overrunning equipment faulty	Replace shock absorber of overrunning equipment
Reversing sluggish or not possible	Brake system adjusted too strongly	Adjust brake system
NOTE: **When automatic reversing is activated, there is a residual braking torque caused by the design. This results**	Brake shoes jammed	Free brake shoes, replace complete brake shoes with brake shoe carrier if necessary
in slightly heavier overrunning.	Cables overtensioned	Adjust brake system
Handbrake effect too weak	Faulty adjustment	Adjust brake system
	Faulty spring force accumulator	Adjust spring force accumulator
	Brake cables heavily contaminated, corroded or kinked	Free cables, replace if necessary

Wheel brakes overheating	Brake system incorrectly adjusted	Adjust brake system
	Overrunning equipment is sluggish	Lubricate overrunning equipment
	Brake cables heavily contaminated, corroded or kinked	Free cables, replace if necessary
	Cables overtensioned	Adjust brake system
	Wheel brakes contaminated	Clean wheel brakes
	Reversing lever of overrunning equipment jammed	Remove reversing lever, clean and grease with conventional BMW lubricants
Braking effect too weak	Excessive play in brake system	Adjust brake system
	Brake linings glazed, fouled by oil, damaged or worn	Replace complete brake shoes, clean brake drums, replace if necessary
	Overrunning equipment is sluggish	Lubricate overrunning equipment
	Brake cables heavily contaminated, corroded or kinked	Free cables, replace if necessary
Jolting braking or starting off	Excessive play in brake system	Adjust brake system
	Shock absorber of overrunning equipment faulty	Replace shock absorber of overrunning equipment
	Brake shoes jammed	Replace complete brake shoes with brake shoe carrier
Brakes squeal or rattle	Wheel brakes contaminated or worn	Clean wheel brakes, replace brake shoes and/or brake drums if necessary
	Out-of-round or banging brake drum	Replace brake drums
	Pad loose	Replace brake shoes
	Wheel-bearing play excessive	Replace wheel bearings
Brakes pull to one side	Tire pressure incorrect	Correct tire pressure
	Brake linings glazed, fouled by oil, damaged or worn	Replace complete brake shoes, clean brake drums, replace if necessary
	Suspension shock absorber has no effect	Replace suspension shock absorber
	Wheel-bearing play	

Brake pads worn at angle	excessive	Replace wheel bearings
	Pads worn to less than minimum thickness	Replace brake shoes
Towing attachment fails to engage after connection	Internal attachment parts contaminated	Clean and lubricate attachment

HOOD

86 21 ... ADJUSTING HOOD PRETENSION - CAMLOC FASTENER WITH SPACERS

NOTE: At least two persons are needed to install and remove the hood. Before installing and removing the hood, secure the BMW multitrailer and the entire combination against rolling. For this purpose, use the parking brake and the chocks of the BMW multitrailer.
To help adjust the hood pretension, you will need four blocks with a minimum height of 60 mm.

Installation

Before attaching the hood, thoroughly clean the top side of the GFP apron of the BMW multitrailer.

It is particularly important to clean the contact surface of the GFP apron (1) (marked in gray) on which the rubber seal of the hood rests. Refer to **Fig. 136**.

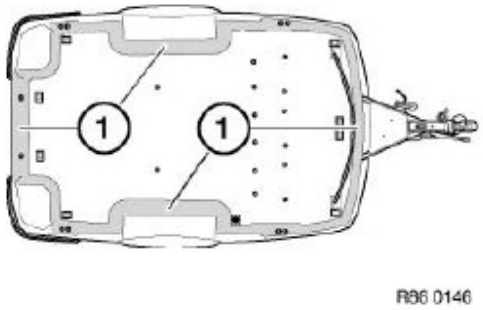


Fig. 136: Identifying Contact Surface Of GFP Apron
Courtesy of BMW OF NORTH AMERICA, INC.

The following text describes how to adjust the hood pretension as an example at one support area of the platform or at one hood fastener. The pretension is adjusted at the other support areas and fasteners in the same sequence.

The hood must be fixed on the platform in such a way that the rubber seal of the hood is placed under pretension or compressed. Only with this pretension is it possible to obtain a tight seal between hood and platform. Pretension is achieved with the Camloc fasteners and by using spacers.

Two different types of spacers (2) are available for each Camloc fastener (1): one thick and one thin. You can

fit one, two or no spacer (2) on the Camloc fastener (1).

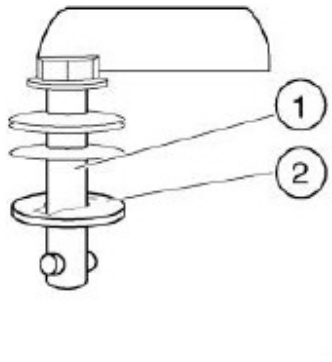


Fig. 137: Identifying Calmoc Fastener And Spacer
Courtesy of BMW OF NORTH AMERICA, INC.

Access to hood lighting plug (1):

Right side lid.

Open out spring-loaded cap (2) on socket (3) and remove hood lighting plug (1). Close cap (2). Insert hood lighting plug (1) into plug receptacle (4).

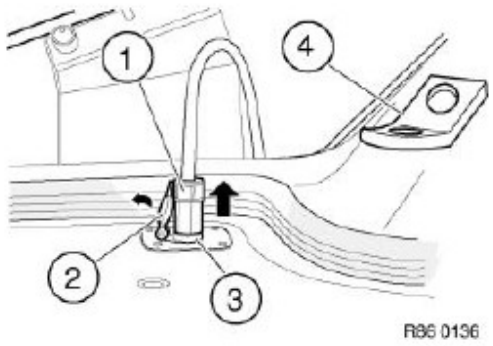


Fig. 138: Opening Spring-Loaded Cap
Courtesy of BMW OF NORTH AMERICA, INC.

Unlocking Camloc fastener:

Wing (1) of Camloc fastener (2) is parallel to outer edge of hood. Turn Camloc fastener (2) counterclockwise until it is heard and felt to unlock.

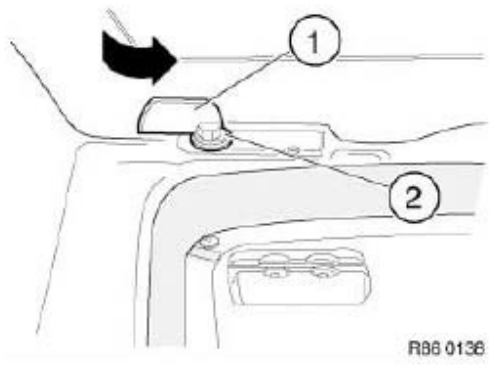


Fig. 139: Turning Camloc Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

Locking

Press hood in lid frame downwards by hand. Turn Camloc fastener clockwise until it is heard and felt to lock into place. Wing (1) of Camloc fastener is parallel to outer edge of hood.

Raise hood and place block (1) between centering pin (2) and platform. Lower hood and position centering pin (2) on block (1).

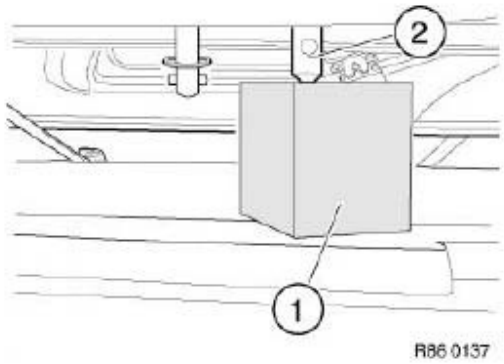


Fig. 140: Placing Block Between Centering Pin And Platform
Courtesy of BMW OF NORTH AMERICA, INC.

Remove spring nut (1) from Camloc fastener (2).

Installation

Use new spring nut.

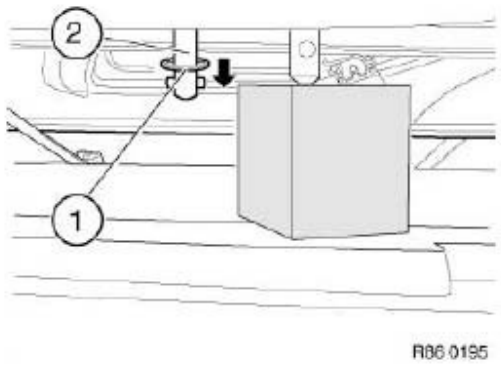


Fig. 141: Removing Spring Nut From Camloc Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

Remove Camloc fastener (1) from locating hole (2).

Installation

Press Camloc fastener (1) downwards until contact is made with hood stop. Wing (3) of Camloc fastener points to middle of hood.

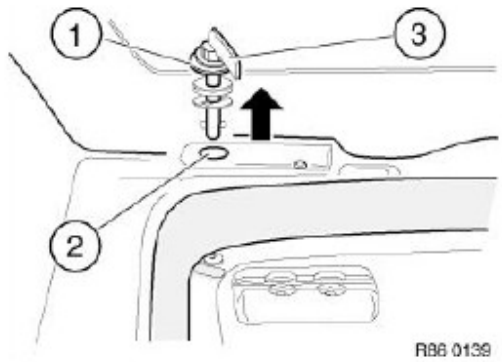


Fig. 142: Removing Camloc Fastener From Locating Hole
Courtesy of BMW OF NORTH AMERICA, INC.

Replacing spacer:

Remove spacer (1) from Camloc fastener (4) by aligning opening (2) over lateral pin (3).

Reducing pretension:

Reduce spacer thickness, replace spacer or install Camloc fastener without spacer.

Increasing pretension:

Fit a thicker spacer or two spacers.

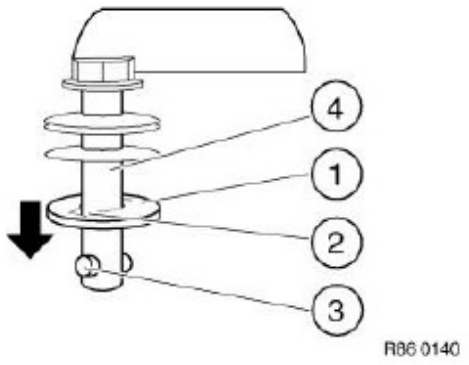


Fig. 143: Removing Spacer From Camloc Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

Installation

Place spacer (1) on Camloc fastener (4) and turn until it is in a secure position.

Check that hood seal is correctly seated.

Check that Camloc fasteners are locked. Lift hood by handle recesses. Hood must not be able to move with respect to platform of BMW multitrailer.

86 21 ... ADJUSTING REAR LID TO FIT

NOTE: The following text describes how to adjust the rear lid to fit at one mounting point as an example.
Proceed in the same way for the other mounting points.

Height adjustment of rear lid:

Release screws (1) and move rear lid in direction of arrows.

Depth adjustment of rear lid:

Release screws (2) and move rear lid in direction of arrows.

Installation

Tightening Torque, height adjustment, **REFER TO TECHNICAL DATA 86 21 7AZ.**

Tightening Torque, depth adjustment, **REFER TO TECHNICAL DATA 86 21 9AZ.**

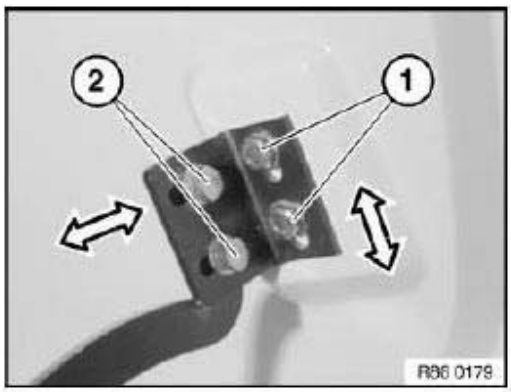


Fig. 144: Adjusting Rear Lid
Courtesy of BMW OF NORTH AMERICA, INC.

Adjust gap (A) evenly all around without displacement and correct if necessary.

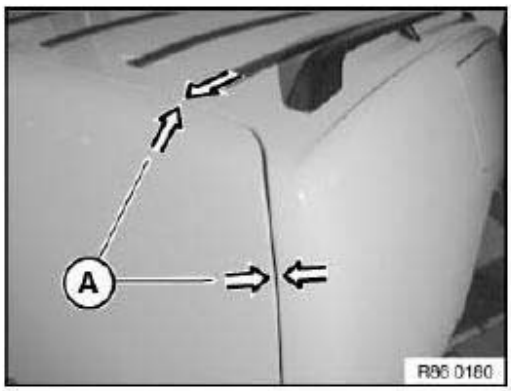


Fig. 145: Adjusting Gap
Courtesy of BMW OF NORTH AMERICA, INC.

Check lid in transition (B) to hood for displacement and correct if necessary (flush).

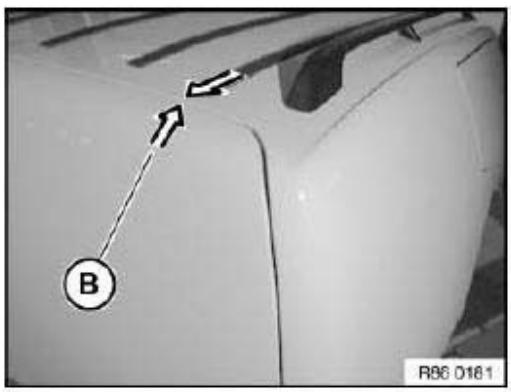


Fig. 146: Checking Lid In Transition To Hood

Courtesy of BMW OF NORTH AMERICA, INC.

To align lid in transverse direction, you can install or remove plastic washers (3) between hinge bracket (1) and mounting bracket (2).

Installation

There must always be a plastic washer (3) fitted on left and right sides of mounting bracket (2). Plastic washers are available in thicknesses of 1 mm and 3 mm.

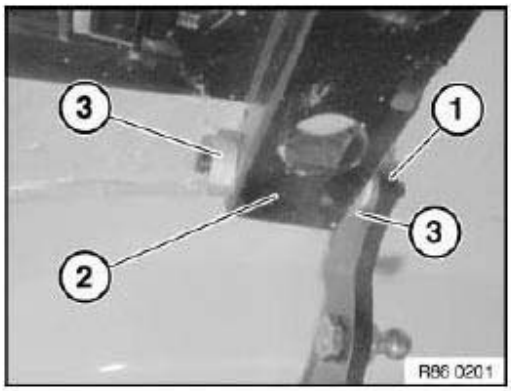


Fig. 147: Identifying Hinge Bracket, Mounting Bracket And Plastic Washer
Courtesy of BMW OF NORTH AMERICA, INC.

Check lid in transition (C) to hood (flush) and correct if necessary. Correction is made by inserting or omitting plastic washers (refer to **Fig. 147**).

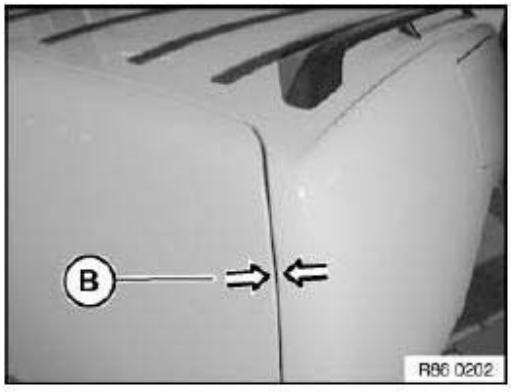


Fig. 148: Checking Lid In Transition To Hood
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... ADJUSTING ROTARY STRIKER LOCK

The following text describes how to adjust the rotary striker lock on the rear lid as an example. Proceed in the same way for the side lids. Adjust the lock while the lid is open.

Release screws (1) and adjust rotary striker lock (2) in elongated hole area in direction of arrows.

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 21 12AZ.**

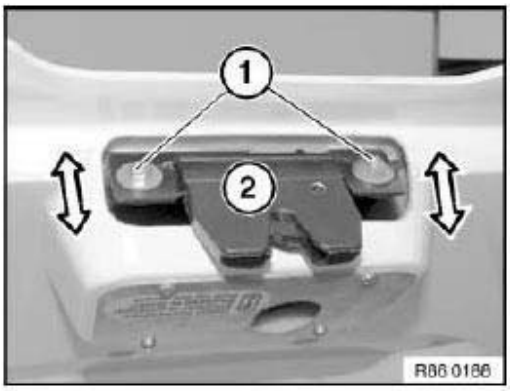


Fig. 149: Adjusting Rotary Striker Lock In Hole
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... ADJUSTING SIDE LID TO FIT

NOTE: The following text describes how to adjust the side lid to fit at one mounting point as an example. Proceed in the same way for all other mounting points.

Height adjustment of side lid:

Release screws (1) and move side lid in direction of arrows.

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 21 7AZ.**

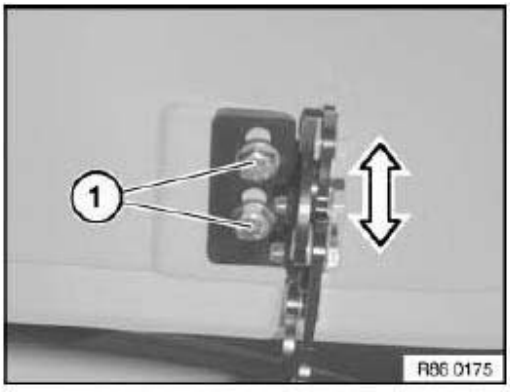


Fig. 150: Adjusting Side Lid

Courtesy of BMW OF NORTH AMERICA, INC.

Depth adjustment of side lid:

Release screws (1) and move side lid in direction of arrows.

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 21 7AZ.**

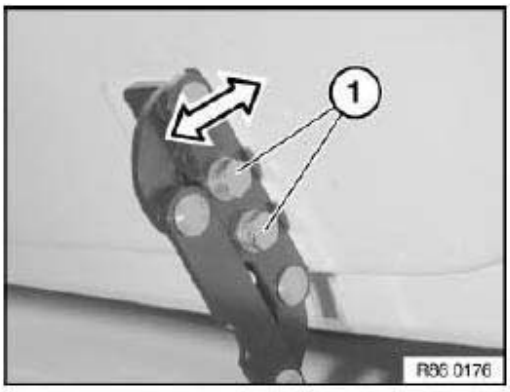


Fig. 151: Adjusting Side Lid Depth
Courtesy of BMW OF NORTH AMERICA, INC.

Adjust gap (A) evenly all around and correct if necessary.

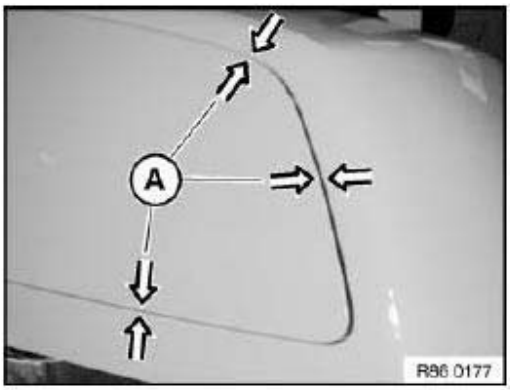


Fig. 152: Adjusting Gap
Courtesy of BMW OF NORTH AMERICA, INC.

Check lid in transition (B) to hood for displacement and correct if necessary (flush).

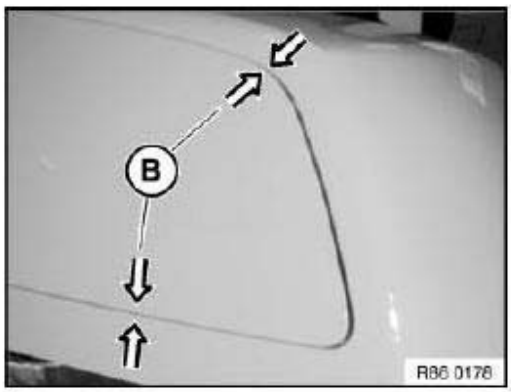


Fig. 153: Checking Lid In Transition To Hood
Courtesy of BMW OF NORTH AMERICA, INC.

To align lid in direction of travel, you can install or remove a spacer plate (3) between mounting bracket (1) and hinge (2).

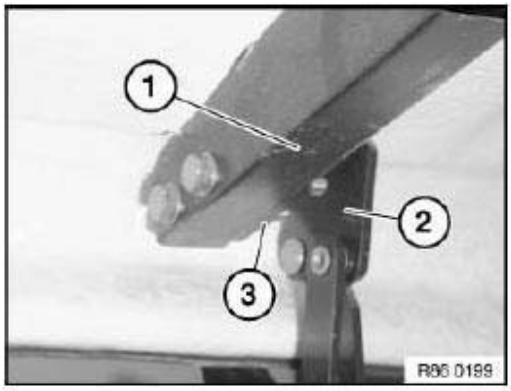


Fig. 154: Identifying Mounting Bracket With Spacer Plate And Hinge
Courtesy of BMW OF NORTH AMERICA, INC.

Check lid in transition (C) to hood for displacement and correct if necessary (flush). Correction is made by inserting or omitting spacer plates (refer to **Fig. 154**).

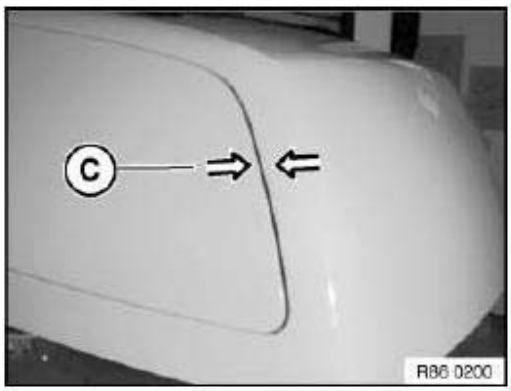


Fig. 155: Checking Lid In Transition To Hood
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... ATTACHING/REPLACING BMW BADGE

Position of attachment: inside of rear lid Remove plastic cover (1) from bore holes (2).

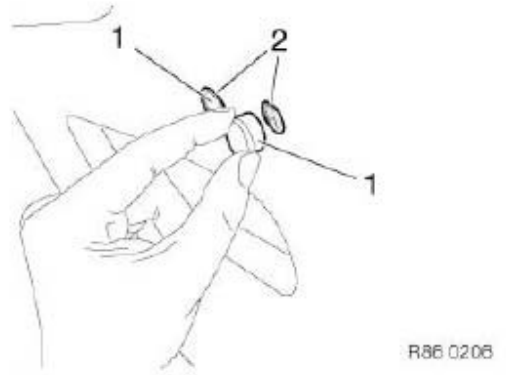


Fig. 156: Removing Plastic Cover From Bore Holes
Courtesy of BMW OF NORTH AMERICA, INC.

Inserting a set of pointed pliers through bore holes (1), detach retaining washers (2) from pins of BMW badge.

Installation:

Use only new retaining washers.

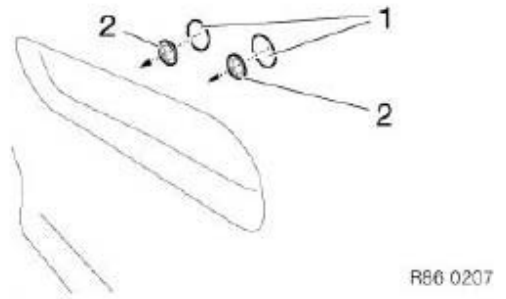


Fig. 157: Identifying Bore Holes And Retaining Washers
Courtesy of BMW OF NORTH AMERICA, INC.

CAUTION: Instruction for removing BMW badge:
Slide a blunt object (e.g. a wooden wedge) under the BMW badge and carefully lever off the badge.

Position of attachment: outside of rear lid

The BMW badge must be attached at room temperature.

Degrease bonding area with petroleum ether.

Rub down bonding area with a dry cloth.

Peel off protective film on BMW badge (1).

Insert BMW badge (1) with pin (2) into bore hole (3). If bore holes (3) are considerably larger than pin (2), optically align BMW badge (1) exactly.

Press down BMW badge (1) firmly.

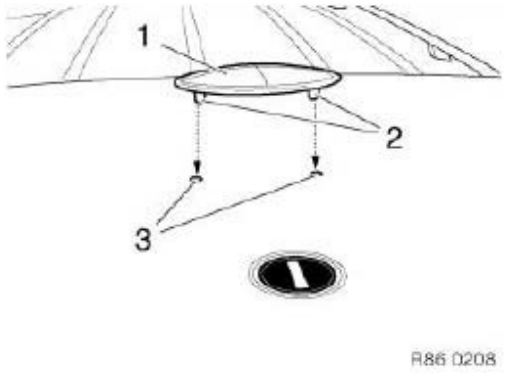


Fig. 158: Identifying BMW Badge With Pin And Hole
Courtesy of BMW OF NORTH AMERICA, INC.

Position of attachment: inside of rear lid

By inserting a 1/4" ratchet with extension and socket wrench insert (7 mm A/F) through bore holes (2), attach a retaining washer (1) in each case to pin of BMW badge. In so doing, press down on outside of rear lid with one hand on BMW badge and grip.

Push on relevant retaining washer (1) as far as it will go.

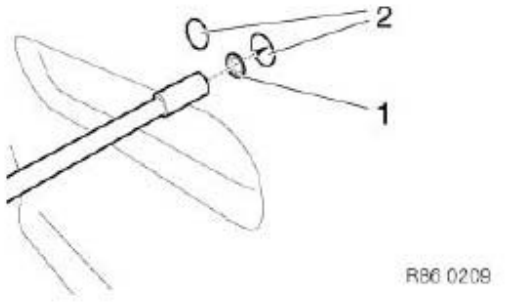


Fig. 159: Identifying Retaining Washer And Bore Holes
Courtesy of BMW OF NORTH AMERICA, INC.

Position of attachment: inside of rear lid

Insert plastic cover (1) in bore holes (2).

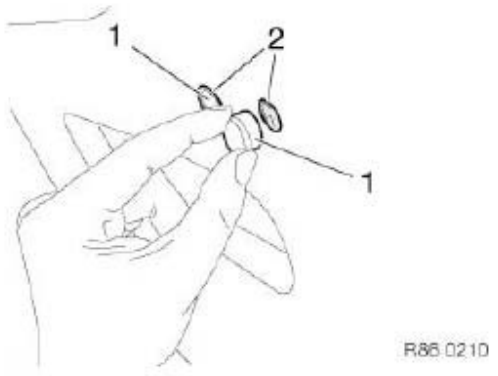


Fig. 160: Inserting Plastic Cover In Bore Holes
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... FITTING BMW LOGO

Distance between hood edge and lower edge of BMW logo (1) is 100 mm.

Distance between middle of lock and lettering (2) is 300 mm.

Installation

Degrease bonding areas with benzine. Rub down bonding area with a dry cloth.

Position of BMW logo (1): parallel to lower edge.

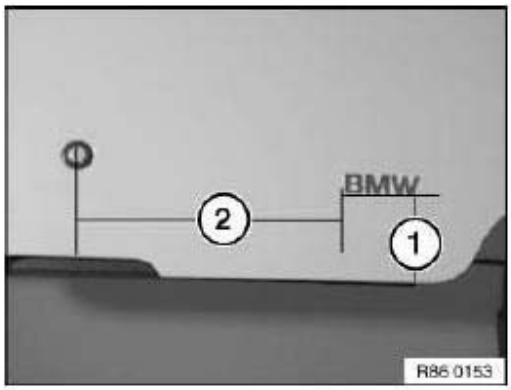


Fig. 161: Identifying BMW Logo Fitting Distance
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... INSTALLING HOOD SEAL

NOTE: Removing old seal:

In a straight area of hood, grip old seal piping with a pair of pliers and pull off horizontally. Grip detached seal with both hands and uniformly pull away from hood ridge.

Push seal piping (1) by hand onto hood ridge (2). Using a rubber hammer, gently tap seal piping (1) as far as it will go onto hood ridge (2). Make sure piping is evenly positioned especially in radii of hood ridge.

Installation

Position end face of seal at front end of hood in a straight area. Lay seal from front to rear.

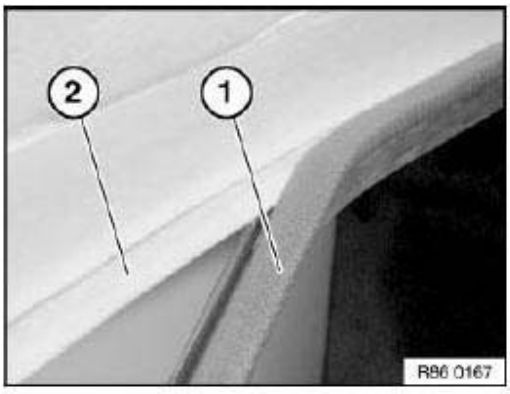


Fig. 162: Identifying Seal Piping And Hood Ridge
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... INSTALLING RUBBER ROOF STRIP

NOTE: Pull off old rubber roof strip and remove remaining traces of adhesive with universal cleaner, refer to BMW Operating Fluids. Rub down with a dry cloth.

Select rubber roof strip according to length of roof recess (1). Arrange chamfered ends of rubber roof strip to match shape of roof recess (1).

Installation

Pretreat bonding area and stick on rubber roof strip according to manufacturer's instructions.

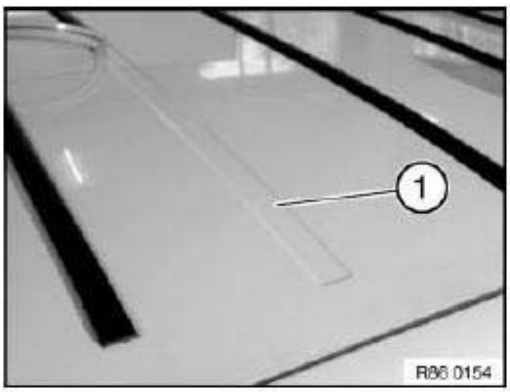


Fig. 163: Identifying Roof Recess
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... INSTALLING SEAL FOR REAR LID AND SIDE LID

NOTE: The following text describes how to install the seal for the rear lid as an example. Proceed in the same way for the side lids.
Removing old seal:
Open lid. Grip seal piping with both hands and pull seal off hood ridge. Remove old seal over lid.

Push seal piping (1) by hand onto hood ridge (2). Using a rubber hammer, gently tap seal piping (1) as far as it will go onto hood ridge (2). Make sure piping (1) is evenly positioned especially in radii of hood ridge.

Installation

Always position end face of seal in a straight area only:

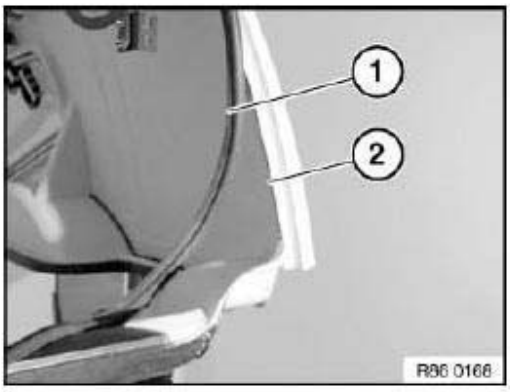


Fig. 164: Identifying Seal Piping And Hood Ridge
Courtesy of BMW OF NORTH AMERICA, INC.

e.g. on cross-member or on upper hood ridge of rear lid.

Suitable areas on side lids:

Upper and lower hood ridge.

Sealing lip of seal must point outwards.

After installing from inside and outside, check correct seating between lid seal and lid. Lid must rest without air on lid seal.

86 21 ... INSTALLING SPONGE RUBBER SEAL

NOTE: Removing old sponge rubber seal: Pull off old sponge rubber seal. Remove remaining traces of adhesive with universal cleaner, refer to BMW Operating Fluids.

Sponge rubber seal runs along area marked gray (1).

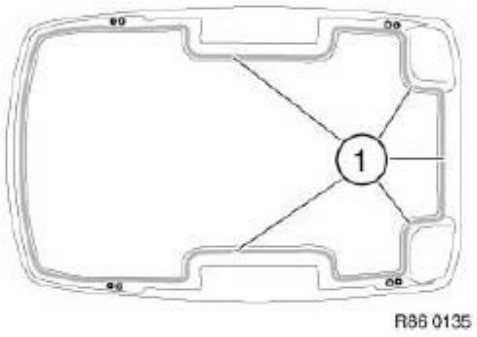


Fig. 165: Identifying Sponge Rubber Seal Areas
Courtesy of BMW OF NORTH AMERICA, INC.

Lay sponge rubber seal (1) in middle of hood contact surface (2).

Installation

Degrease contact surface (2) with benzine and rub down with a dry cloth. Stick on sponge rubber seal (1) according to manufacturer's instructions. Position end face of seal (1) in a straight area.

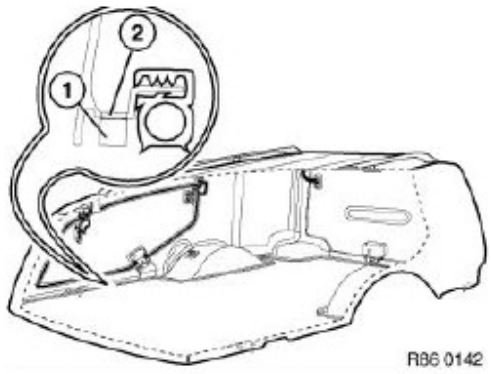


Fig. 166: Identifying Rubber Seal With Contact Surface Area
Courtesy of BMW OF NORTH AMERICA, INC.

86 10 ... POSITIONING OF MULTITRAILER HOOD FOR MAINTENANCE AND REPAIR WORK

IMPORTANT: At least two persons are needed to install and remove the hood from the platform.
Before installing and removing the hood, secure the BMW multitrailer and the entire combination against rolling. For this purpose, use the parking brake and the chocks of the BMW multitrailer.
The hood can also be set up and lowered with the aid of the universal lift available from BMW in conjunction with the roof racks and the hood adapter.
Under no circumstances should work of any kind be carried out below the suspended hood.

For maintenance and repair work, raise the hood using a lifting platform. Twin-column lifting platforms, body lifting platforms and twin-stamp underfloor platforms are suitable. The seating plates and areas of the lifting platform must be adjustable according to the dimensions of **Fig. 167**.

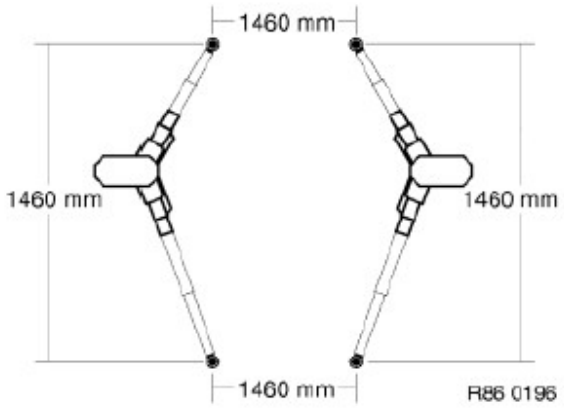


Fig. 167: Identifying Adjustable Dimension Of Seating Plates And Lifting Platform Areas
Courtesy of BMW OF NORTH AMERICA, INC.

The lifting platform must conform to the relevant legal provisions of the accident prevention regulations and be

serviced as specified. Comply with the lifting platform operating instructions, in particular the safety instructions and the carrying capacity.

Make sure you adhere to the BMW-recommended work area of 5 x 7 m and to an escape route of 0.6 m between two lifting platforms.

Please comply with the following instructions before raising the hood:

- Raise only when it is unloaded;
- Ensure sufficient clearance between the seating plates/seating areas and the GFP edge of the hood;
- The hood must always be positioned in the middle of the lifting platform.

IMPORTANT: The hood may only be raised at the pin (1). Under no circumstances may the hood be raised at the GFP edge of the hood (2). See Fig. 168. Exclusively for removal of pin (1), raise the hood in the GFP area.
Also refer to:
86 21 ... REMOVING CENTERING PIN FROM MOUNTING BRACKET .

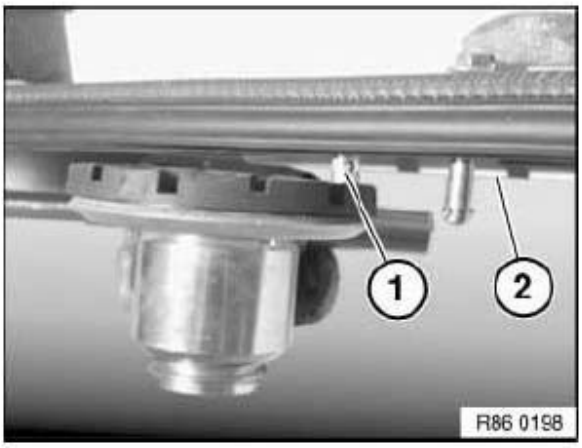


Fig. 168: Identifying Centering Pin Of Mounting Bracket And Hood
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING BALL PIVOT

NOTE: Remove gas spring,
REFER TO 86 21 ... REMOVING GAS SPRING.

NOTE: The following text describes how to remove the ball pivot from the hinge retaining bracket on the rear lid as an example. Proceed in the same way for the other ball pivots.
Make sure the attachments are reinstalled in the correct sequence. Only in this way will the gas springs open and close properly.

Grip ball pivot (1) at hexagon mount (2) and release nut (3).

Installation

Use new self-locking nut.

Tightening Torque, **REFER TO TECHNICAL DATA 86 21 10AZ.**

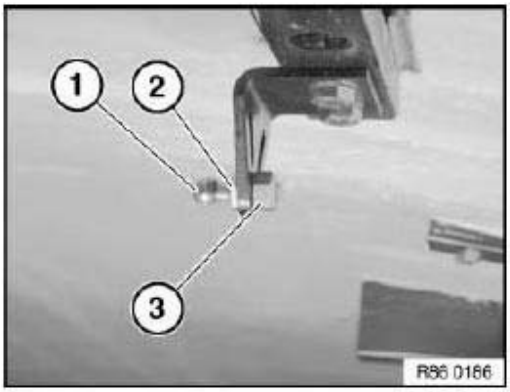


Fig. 169: Identifying Ball Pivot, Hexagon Mount And Release Nut
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING CENTERING PIN FROM MOUNTING BRACKET

NOTE: Exclusively for removal of pin, raise the hood in the GFP area. For raising, use a wooden block with a maximum width of 35 mm and a height of 45 mm. The length must be selected depending on the lifting platform securing point. Ensure the hood is secure on the blocks.

Position block (1) so that it is only located in area of sponge rubber seal (2).

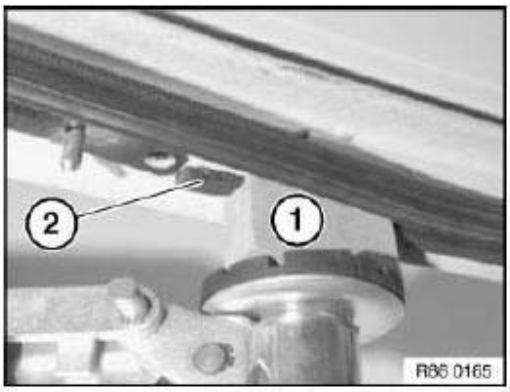


Fig. 170: Identifying Block And Rubber Seal
Courtesy of BMW OF NORTH AMERICA, INC.

Insert a mandrel into hole (1) of pin (2) and turn counterclockwise.

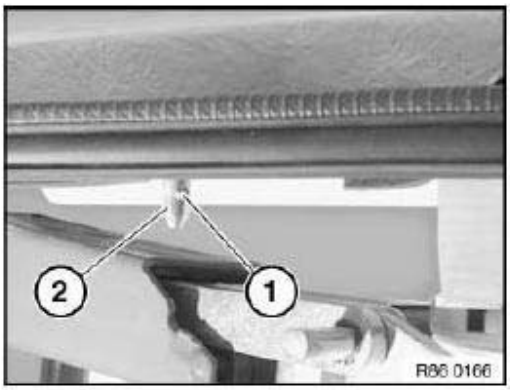


Fig. 171: Identifying Hole And Pin
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING GAS SPRING

Only remove the gas spring while the lid is open. The gas spring will then not be subjected to load and the spring piston will not jump out of the spring housing. Prop the lid open with one hand to prevent it dropping closed. Remove the gas spring with your other hand.

NOTE: Side lids are each fitted with a gas spring. Rear lid is fitted with two gas springs. The following text describes how to remove the gas spring at one mounting point as an example. Proceed in the same way for all other mounting points. Rear lid: Replace gas springs in pairs only.

Lever out retaining clip (1) in recess (2) and push on gas spring head (3) in direction of arrow. Detach spring head (3) from ball pivot.

Installation

Push retaining clip (1) back into its original position. Press spring head (3) onto ball pivot until spring head (3) snaps audibly into place.

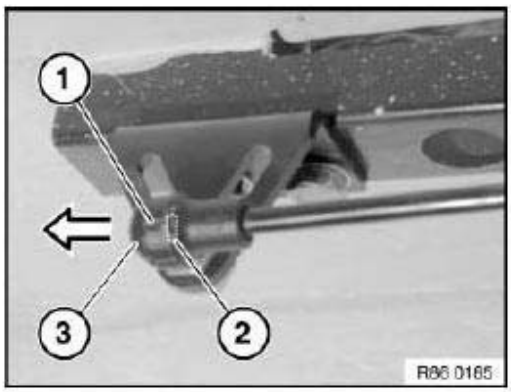


Fig. 172: Pushing Gas Spring Head
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING GAS SPRING RETAINING BRACKET

NOTE: **Remove gas spring,**
REFER TO 86 21 ... REMOVING GAS SPRING.
Remove ball pivot,
REFER TO 86 21 ... REMOVING BALL PIVOT.

Release screws (1) and remove gas spring retaining bracket (2) from mounting bracket (3).

Installation

Install retaining bracket so that it is centered in elongated holes.

Tightening Torque, **REFER TO TECHNICAL DATA 86 21 11AZ.**

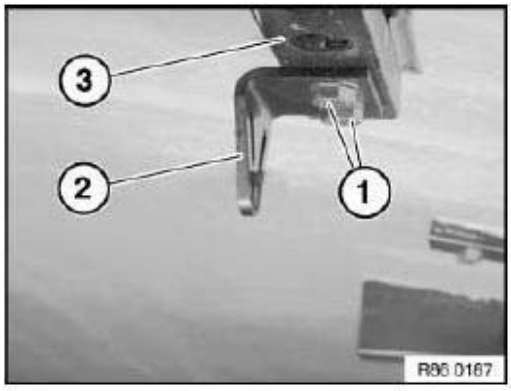


Fig. 173: Identifying Gas Spring Retaining And Mounting Bracket With Screws
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING HINGE BRACKET ON REAR LID

NOTE: **Remove rear lid, REFER TO 86 21 ... REMOVING LID.**
Remove gas spring, remove gas spring on hinge side only, REFER TO 86 21 ... REMOVING GAS SPRING.

Raise edge (1) of retaining clip (2) and slide in direction of arrow towards rear.

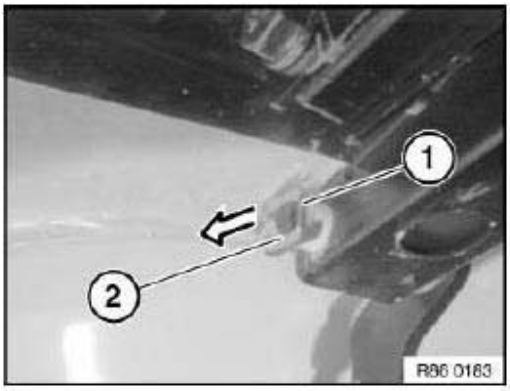


Fig. 174: Sliding Retaining Clip Edge Towards Rear
Courtesy of BMW OF NORTH AMERICA, INC.

Remove plastic washer (1). Pull hinge bracket (2) in direction of arrow out of mounting bracket (3).

Installation

There must always be a plastic washer (1) fitted on left and right sides of mounting bracket (3).

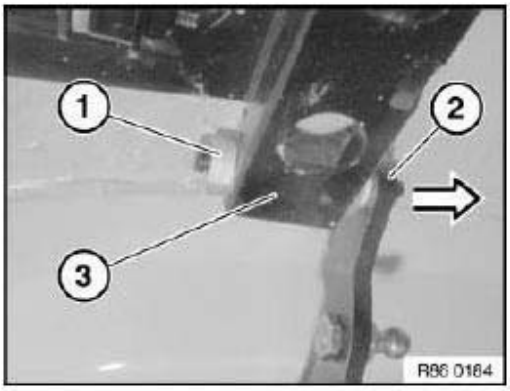


Fig. 175: Pulling Hinge Bracket Out Of Mounting Bracket
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING LID

NOTE: **Adjusting side lid to fit, REFER TO R8621 ... ADJUSTING SIDE LID TO FIT.**
Adjusting rear lid to fit, REFER TO R8621 ... ADJUSTING REAR LID TO FIT.

NOTE: **The text describes how to remove the lid at one rear lid mounting point as an example. Proceed in the same way for the side lids. Spare part lids are always supplied without complete locking systems.**

Two persons are required for this task.

NOTE: **Open lid.**

Loosen screws (1). Remove lid (2).

Installation

Rear lid: shoulder (3) points to middle of hood.

Side lid: shoulder (3) points to outside of hood.

Tightening Torque:

REFER TO TECHNICAL DATA 86 21 7AZ.

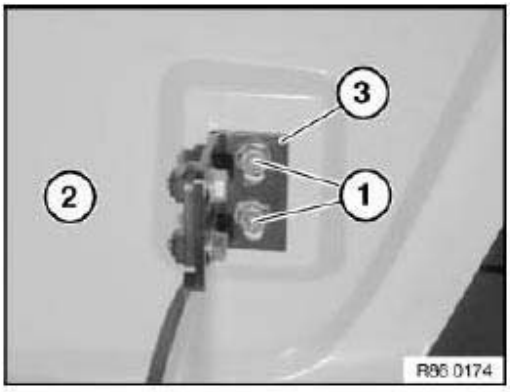


Fig. 176: Identifying Screws And Lid
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING LOCK BARREL

NOTE: **The following text describes how to remove the lock barrel on the rear lid as an example.**
Proceed in the same way for the side lids. Remove the lock barrel while the lid is open.
Remove cover, spring nut and pull rod, REFER TO 86 21 ... REMOVING ROTARY STRIKER LOCK.

Slide retainer (1) in direction of arrow away from lock barrel (2). Remove lock barrel (2).

Installation

Examine rubber backing for damage and replace if necessary. When replacing lock barrel, make sure coding of new lock barrel matches coding of fitted lock barrel (simultaneous closing).

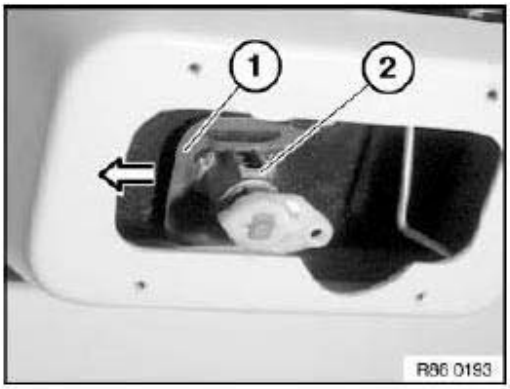


Fig. 177: Removing Lock Barrel
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING LOCK STRIKER FIXTURE ON REAR LID

Grip rubber seal on seal piping (1) and pull off in area of lock striker fixture (2). Grip lid seal (3) on seal piping (4) and pull off in area of lock striker fixture (2).

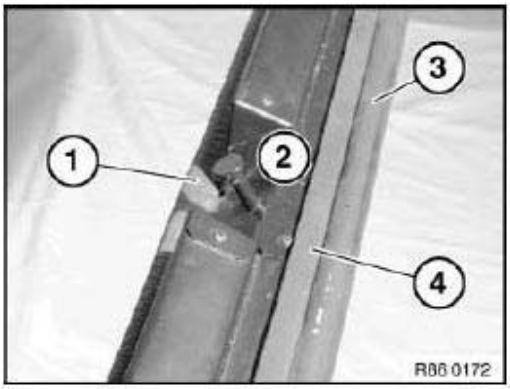


Fig. 178: Identifying Rubber And Lid Seals On Seal Piping And Lock Striker Fixture
Courtesy of BMW OF NORTH AMERICA, INC.

CAUTION: Before drilling out rivets, drive in rivet pins with a punch. Drill out rivets (1+2) and remove lock striker fixture (3).

Installation

Rivets (1) have black heads and long shanks. Rivets (2) have silver heads and short shanks.

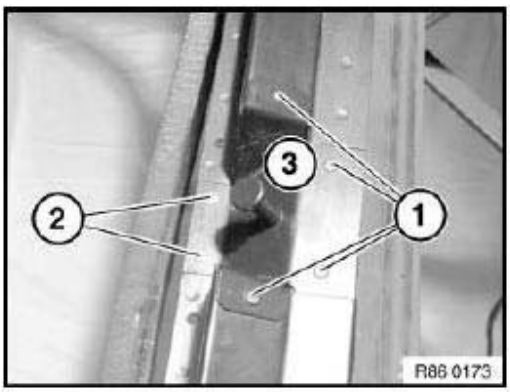


Fig. 179: Identifying Lock Striker Fixture With Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING PLUG FOR INSIDE LIGHT

NOTE: Two different types of plugs are used for the inside light. Both types function in the same way, only their designs are different.

Type 1:

Release screw (1) and separate housing plug (2).

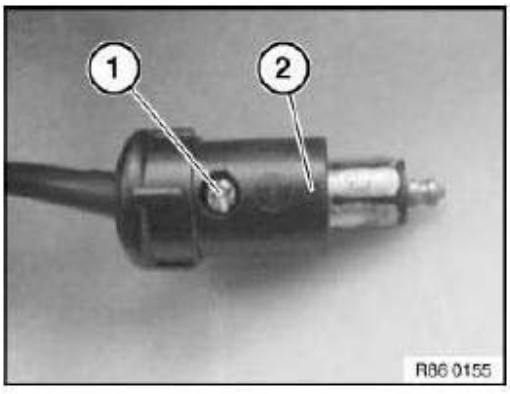


Fig. 180: Identifying Housing Plug With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1) and disconnect cables (2) from screw clamp.

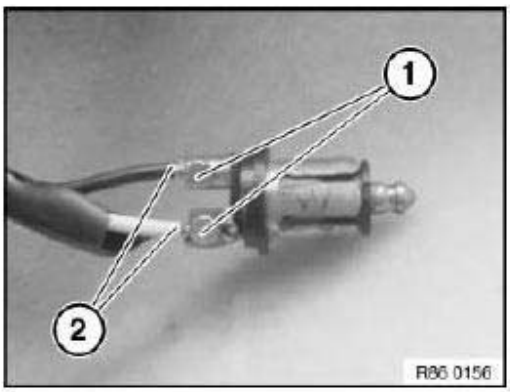


Fig. 181: Identifying Cables And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Type 2:

Release screw (1) and separate housing plug (2).

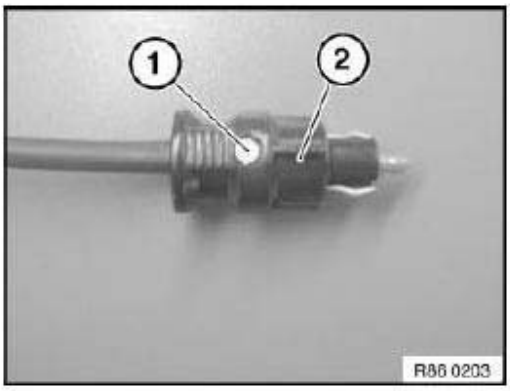


Fig. 182: Identifying Housing Plug And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Remove contact parts (1+2).

Installation

When installing, make sure contact parts (1+2) are in correct installation position.

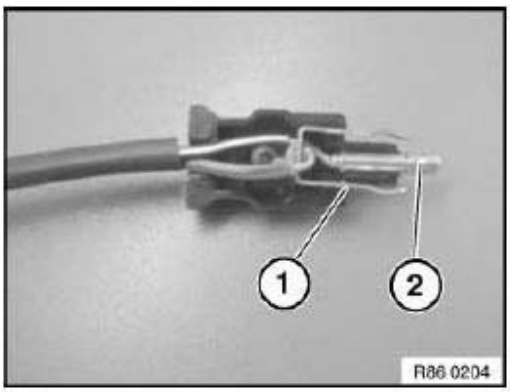


Fig. 183: Identifying Contact Parts
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING ROOF RAILING

NOTE: The text describes how to remove the roof railing at one mounting point as an example. Proceed in the same way for the other mounting points.

Open cover (1) and fold down.

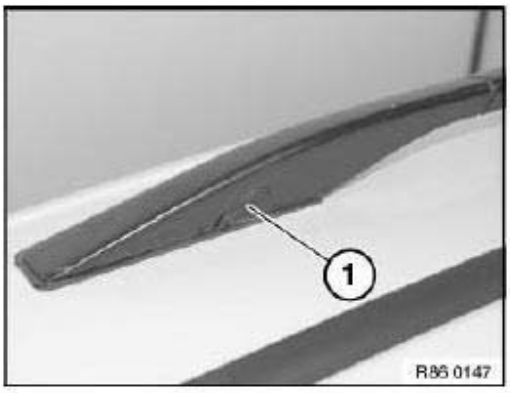


Fig. 184: Identifying Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew bolt (1).

After releasing three retaining screws, lift off roof railing (2).

Installation

Check molded sealing parts for faults and replace if necessary. Pay attention to identification of molded sealing parts and position accordingly.

Check butylene tape seal.

Use new screws. Coat all screws with OKS 90 thread locking adhesive.

First screw down railing adapter in middle. Then press roof railing downwards with a force of approx. 50 N. Then screw down railing adapter at front and rear.

Tightening Torque for roof railing at front and rear,

REFER TO TECHNICAL DATA 86 21 1AZ.

Tightening Torque for roof railing in middle, **REFER TO TECHNICAL DATA 86 21 2AZ.**

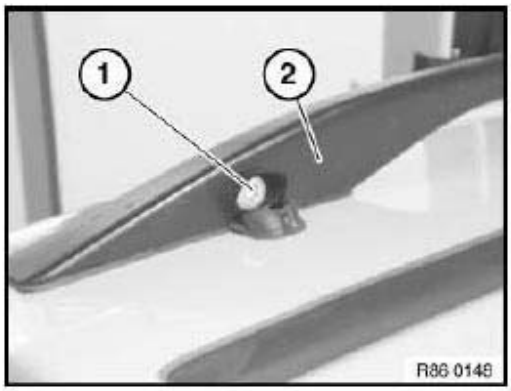


Fig. 185: Identifying Roof Railing With Bolt
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING ROOF RAILING ADAPTER

NOTE: Removing roof railing, REFER TO 86 21 ... REMOVING ROOF RAILING

Remove molded sealing part (1).

Installation

All molded sealing parts must rest flat on hood. Molded sealing parts are marked according to their position.

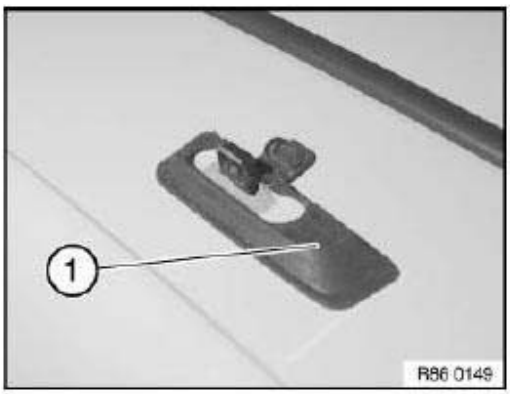


Fig. 186: Identifying Molded Sealing Part
Courtesy of BMW OF NORTH AMERICA, INC.

Cut butylene tape (1) out of railing adapter (2) along dotted line (3) with a knife.

Installation

Use butylene tape, 5 mm round, for sealing railing adapter on hood roof.

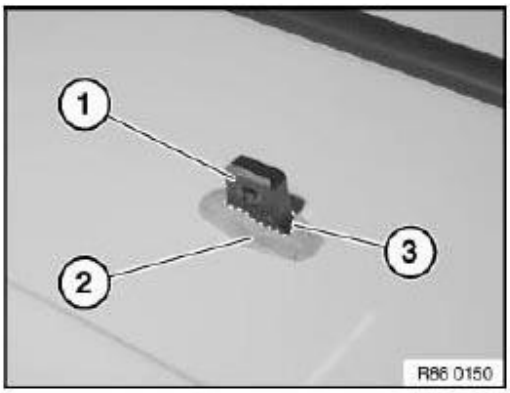


Fig. 187: Identifying Butylene Tape And Dotted Line On Roof Railing Adapter
Courtesy of BMW OF NORTH AMERICA, INC.

Railing adapters at front and rear: Release screws (1) from inside of hood. Pull out railing adapter (2) and spacer plate (3) towards bottom.

Installation

Use new screws. Coat all screws with OKS 90 thread locking adhesive. Install spacer plate (3) in its original position.

Tightening Torque for railing adapters at front and rear, **REFER TO TECHNICAL DATA 86 21 3AZ.**

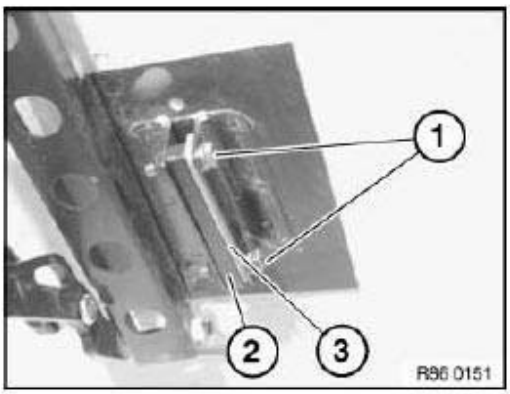


Fig. 188: Identifying Railing Adapter, Spacer Plate With Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Railing adapter in middle: Release screws (1) from inside of hood. Twist out railing adapter from outside.

Installation:

Use new screws. Tightening Torque for railing adapter in middle, **REFER TO TECHNICAL DATA 86 21 4AZ.**

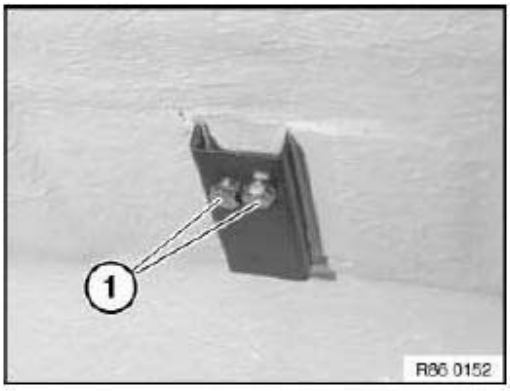


Fig. 189: Identifying Hood Inside Screws
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING ROTARY STRIKER LOCK

The following text describes how to remove the rotary striker lock on the rear lid as an example. Proceed in the same way for the side lids. Remove the lock while the lid is open.

Release screws (1) and remove cover (2). On rear lid, remove red cap (3).

Installation, rear lid only:

Place red cap back on pull rod. Red cap serves to indicate rear lid emergency unlocking facility.

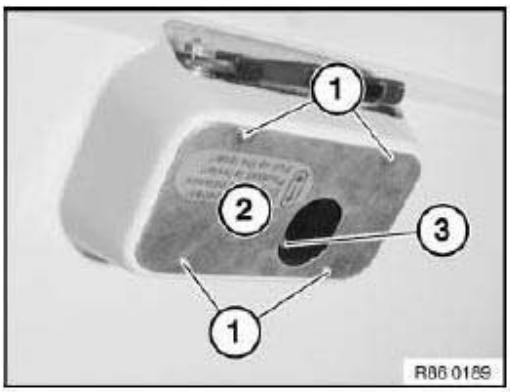


Fig. 190: Identifying Red Cap, With Cover And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Remove spring nut (1) from pull rod (2).

Installation

Use new spring nut.

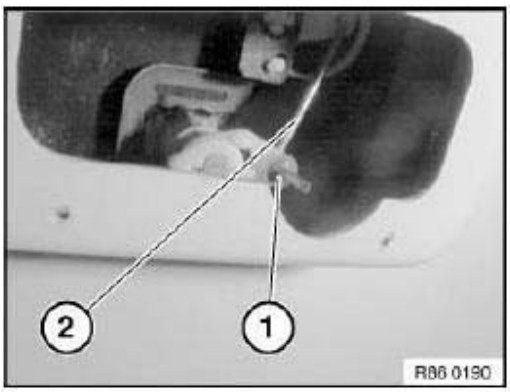


Fig. 191: Identifying Spring Nut And Pull Rod
Courtesy of BMW OF NORTH AMERICA, INC.

Unhook pull rod (1) from rocker (2).

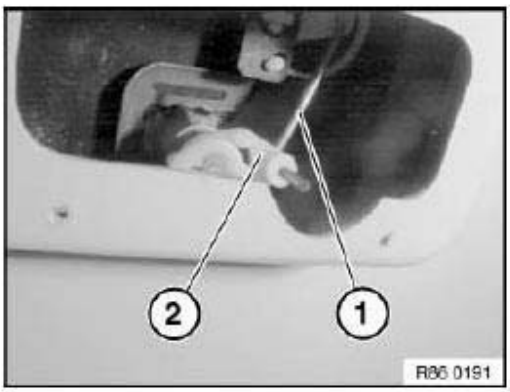


Fig. 192: Identifying Pull Rod And Rocker
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1) and remove rotary striker lock (2) from opening (3).

Installation

Tightening Torque, **REFER TO TECHNICAL DATA 86 21 12AZ.**

Use new Stover nuts.

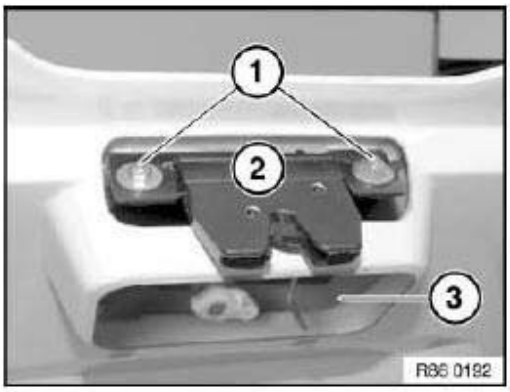


Fig. 193: Identifying Rotary Striker Lock With Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Detach spring nut (1) from pull rod (2). Remove pull rod (2) from rotary striker lock (3).

Installation

Use new spring nut.

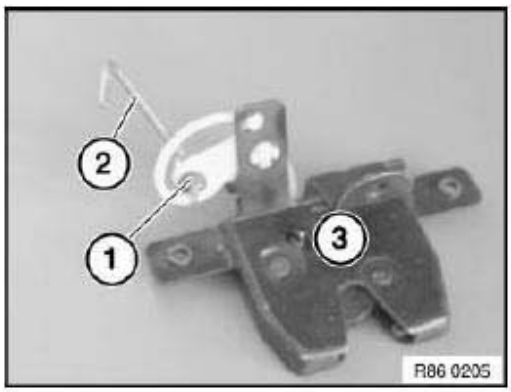


Fig. 194: Identifying Rotary Striker Lock, Pull Rod And Spring Nut
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REMOVING SIDE LID HINGE

NOTE: Remove side lid, REFER TO 86 21 ... REMOVING LID.
Remove gas spring, remove gas spring on hinge side only, REFER TO 86 21 ... REMOVING GAS SPRING.

Unscrew bolt (1). Remove hinge (2). If fitted, remove spacer plate(s) (3).

Installation

Pass screws (1) again through spacer tubes. Reinstall existing spacer plate (s) in its/their original position(s). Use new self-locking nuts.

Tightening Torque, **REFER TO TECHNICAL DATA 86 21 6AZ.**

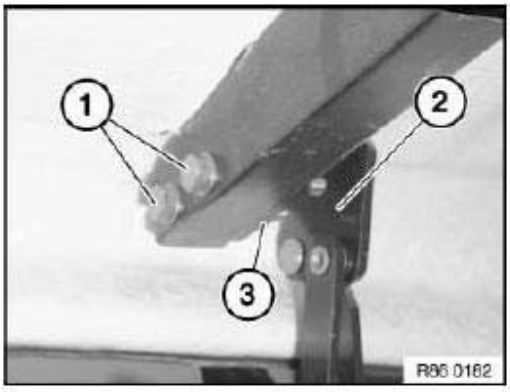


Fig. 195: Identifying Lid Hinge With Bolt And Spacer Plate
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REPLACING INSIDE LIGHT

Unclip cover (1) at side recess (arrowed) and remove towards bottom.

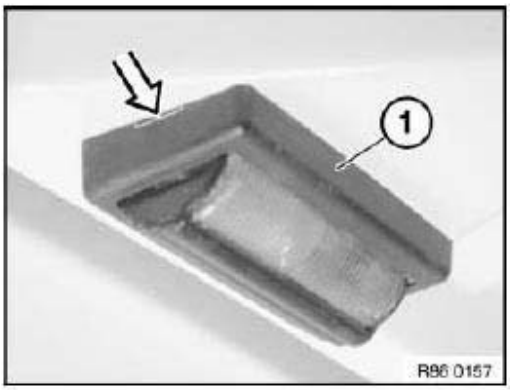


Fig. 196: Locating Cover Side Recess
Courtesy of BMW OF NORTH AMERICA, INC.

Unclip lamp housing (1) at side recess (arrowed).

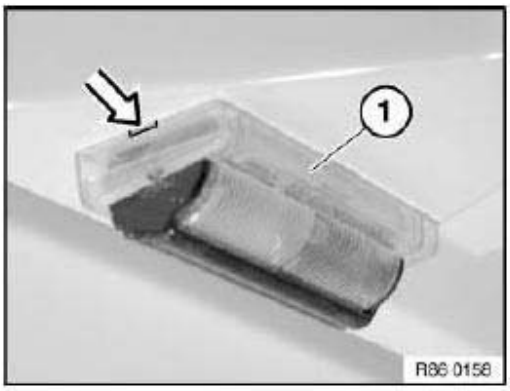


Fig. 197: Locating Lamp Housing Recess
Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect flat connector (1) from flat connector contact.

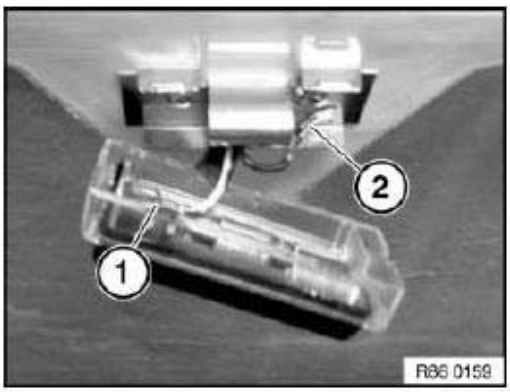


Fig. 198: Identifying Flat Connector And Contact
Courtesy of BMW OF NORTH AMERICA, INC.

CAUTION: Before drilling out rivets, drive in rivet pins with a punch. Drill out rivets (1). Pull off inside light mounting bracket (2) over flat connector (3).

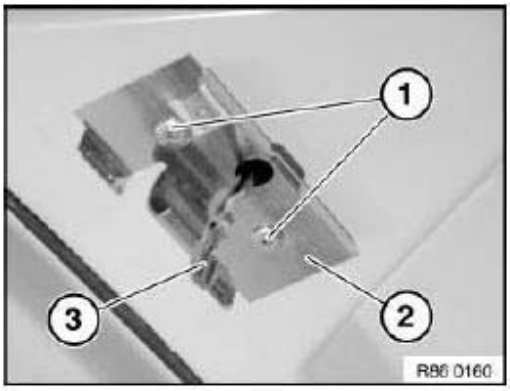


Fig. 199: Identifying Mounting Bracket, Flat Connector With Rivets
Courtesy of BMW OF NORTH AMERICA, INC.

86 21 ... REPLACING INSIDE LIGHT POWER CABLE

NOTE: Remove inside light cover and lamp housing, REFER TO 86 21 ... REPLACING INSIDE LIGHT. Remove inside light plug, REFER TO 86 21 ... REMOVING INSIDE LIGHT PLUG.

Carefully remove adhesive bonds of power cable (1) from hood surface.

Installation

Carefully remove traces of old adhesive with a scraper. Use standard heat gun adhesive as adhesive.

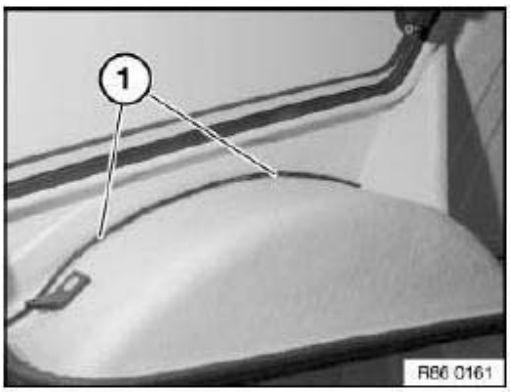


Fig. 200: Identifying Adhesive Bonds Of Power Cable On Hood Surface
Courtesy of BMW OF NORTH AMERICA, INC.

Carefully remove adhesive bonds of power cable (1) from hood surface.

Installation

Carefully remove traces of old adhesive with a scraper. Use standard heat gun adhesive as adhesive.

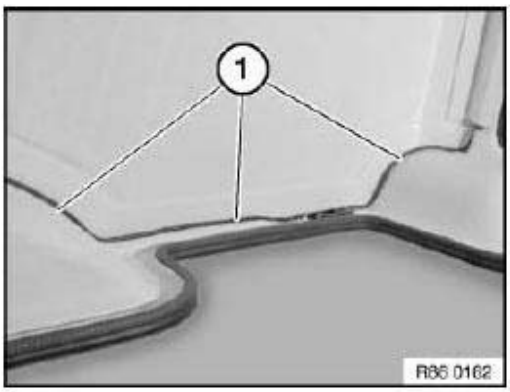


Fig. 201: Identifying Adhesive Bonds Of Power Cable On Hood Surface
Courtesy of BMW OF NORTH AMERICA, INC.

Remove flat connectors (1). Strip cable ends (2) and connect to a new cable. Feed cable connection through opening (3).

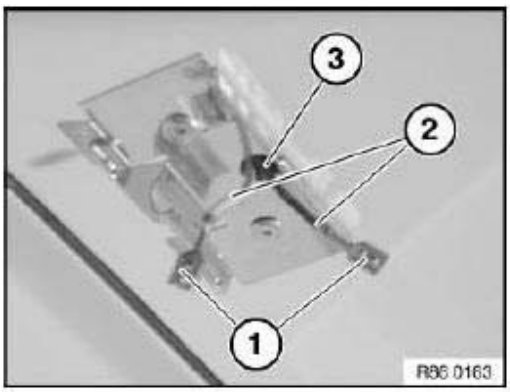


Fig. 202: Identifying Flat Connectors And Cable Ends
Courtesy of BMW OF NORTH AMERICA, INC.

Lay new power cable with old power cable through duct (1).

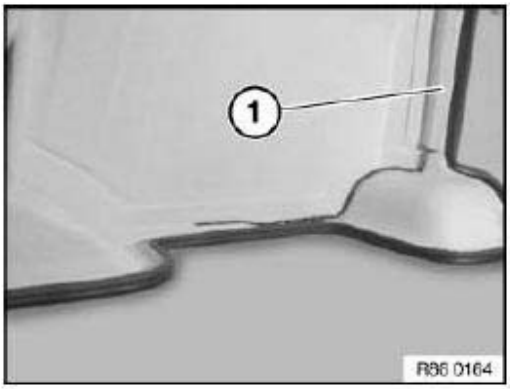


Fig. 203: Identifying Power Cable Duct
Courtesy of BMW OF NORTH AMERICA, INC.

HOOD

86 21 HOOD

TIGHTENING TORQUE SPECIFICATION - HOOD

		Type	thread	tightening specification	Measure
1AZ	Roof railing, front and rear, to roof railing adapter		M8		22.5 Nm
2AZ	Roof railing, middle, to roof railing adapter		M8		22.5 Nm
3AZ	Roof railing, front and rear, to support		M6		15 Nm
4AZ	Roof railing, middle, to support		M6		10 Nm
5AZ	Upper lock striker fixture to lower lock striker fixture		M8		27 Nm
6AZ	Hinge, side lid, to support		M8		27 Nm
7AZ	Support, lid to lid		M8		23 Nm
8AZ	Screw, depth adjustment, side lid		M8		27 Nm
9AZ	Screw, depth adjustment, rear lid		M8		27 Nm
10AZ	Ball pivot to retaining bracket		M8		23 Nm
11AZ	Retaining bracket to support		M8		27 Nm
12AZ	Rotary striker lock to support		M5		7 Nm

PLATFORM

86 10 PLATFORM

TIGHTENING TORQUE SPECIFICATION - PLATFORM

	Type	thread	tightening specification	Measure

1AZ	Nut to retaining thread, rear light		M5		7 Nm
2AZ	Bar to platform		M8x35		23 Nm
3AZ	Lashing plate to platform		M8x35		15 Nm
4AZ	Front guard to cross-member		M8x55		28 Nm
5AZ	Front guard to longitudinal member		M8x25		34 Nm
6AZ	Saucer head screw to rail		M5x15		7 Nm
7AZ	Rail, loading ramp frame to cross strut		M6x16		11.5 Nm
8AZ	Rail, loading ramp frame to longitudinal member mount		M6x16		11.5 Nm
9AZ	Cross strut to rail		M6x16		5.5 Nm
10AZ	Footplate to drawbar member		M6x25		11.5 Nm
11AZ	Bracket to drawbar member		M8x25		34 Nm
12AZ	Wiring harness mount to reversing housing		M10x1x20		58 Nm
13AZ	Socket holder to drawbar		M10x95		55 Nm
14AZ	Top reversing housing and bracket to drawbar member		M10		55 Nm
15AZ	Towing attachment to tow tube		M12x70		96 Nm
16AZ	Drawbar member to crossmember		M8x20		28 Nm
17AZ	Cross-member to drawbar member		M8x25		40 Nm
18AZ	Drawbar member to crossmember		M8x25		28 Nm
19AZ	Disk wheel to brake hub				100 Nm
20AZ	Brake hub to axle				280 Nm
21AZ	Shock absorber to bracket		M12x55		96 Nm
22AZ	Trailing arm to coil spring		M10x35		46 Nm
23AZ	Coil spring to		M10x25		46 Nm

	longitudinal member				
24AZ	Wheel brake to trailing arm		M10x1.5x30		145 Nm
25AZ	Trailing arm to mount		M12x85		96 Nm
26AZ	Rear apron to bracket		M8x25		26 Nm
27AZ	Bracket to mounting bracket		M6x16		11 Nm
28AZ	Rotary striker lock to cross strut		M8x35		18 Nm
29AZ	Bearing pedestal to loading ramp frame		M6x16		10 Nm
30AZ	Outer towbar mount to longitudinal member		M10x25		55 Nm
31AZ	Mounting bracket to longitudinal member		M10x25		78 Nm
32AZ	Base plate to cross-member		M10x35		78 Nm

GENERAL INFORMATION

BMW Universal Bluetooth - Overview - All Models

BMW UNIVERSAL BLUETOOTH™

INTRODUCTION

The BMW Universal Bluetooth™ HandsFree System (ULF) utilizes Bluetooth™ wireless technology to enable a wireless connection to be established between a Bluetooth™ enabled mobile phone and the ULF Control Module installed in the vehicle. The combination of these components results in a new generation of in-vehicle phone system.

The ULF Control Module forms an interface that allows a mobile phone with the embedded Bluetooth™ wireless technology feature to be wirelessly integrated into the vehicle. For the first time BMW is introducing a new generation hands-free telephone system kit that provides the customer with the option of using various Bluetooth™ enabled mobile phones (a list of recommended phones is available from your BMW Center).

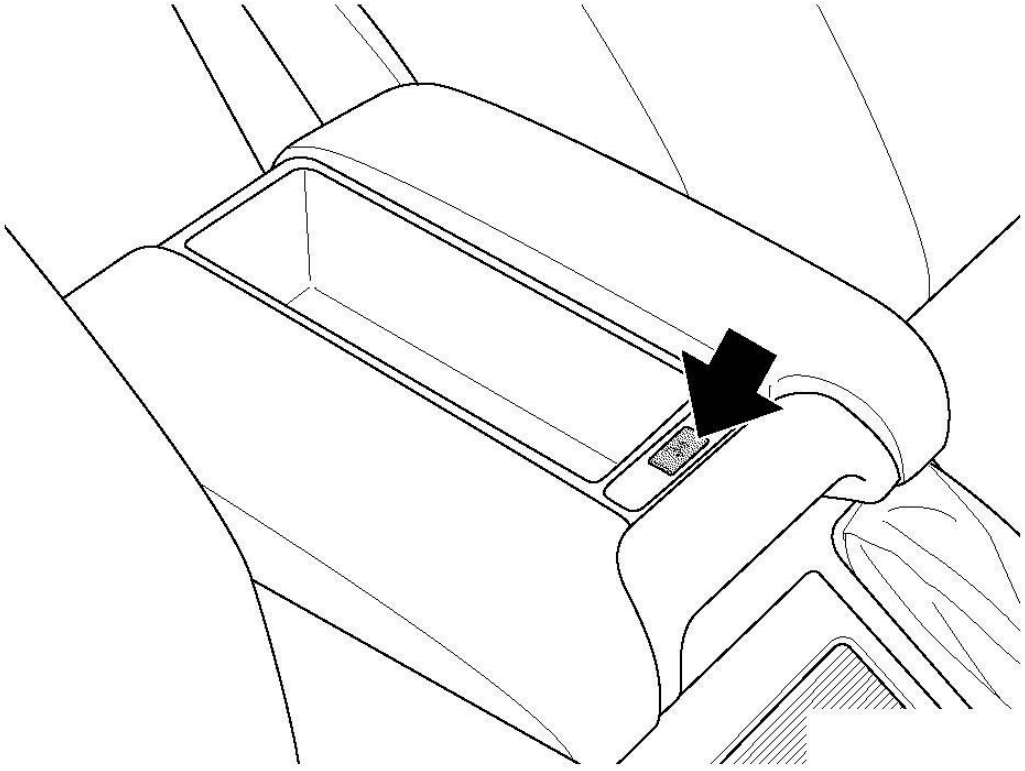


Fig. 1: Identifying Oddment Tray Button

Courtesy of BMW OF NORTH AMERICA, INC.

WHAT IS BLUETOOTH™

The name Bluetooth™ is derived from the Danish King Harald Bluetooth who lived in the 10th century. He was well known for his ability to unify his kingdom and today lends his name to a wireless technology standard that can connect/unify various electronic devices that are Bluetooth™ enabled and located within a short range (approx. 10 m or 32.8 ft) of each other.

Bluetooth™ wireless technology is a short-range radio frequency technology standard that allows several devices to communicate with each other simultaneously. The standard indicates that up to seven simultaneous connections can be established and maintained at one time, as long as the connected devices are within a range of 10 m (32.8 ft).

NOTE: The ULF system will allow four phones to be paired to the system at a time and only allow one phone to be connected at a time.

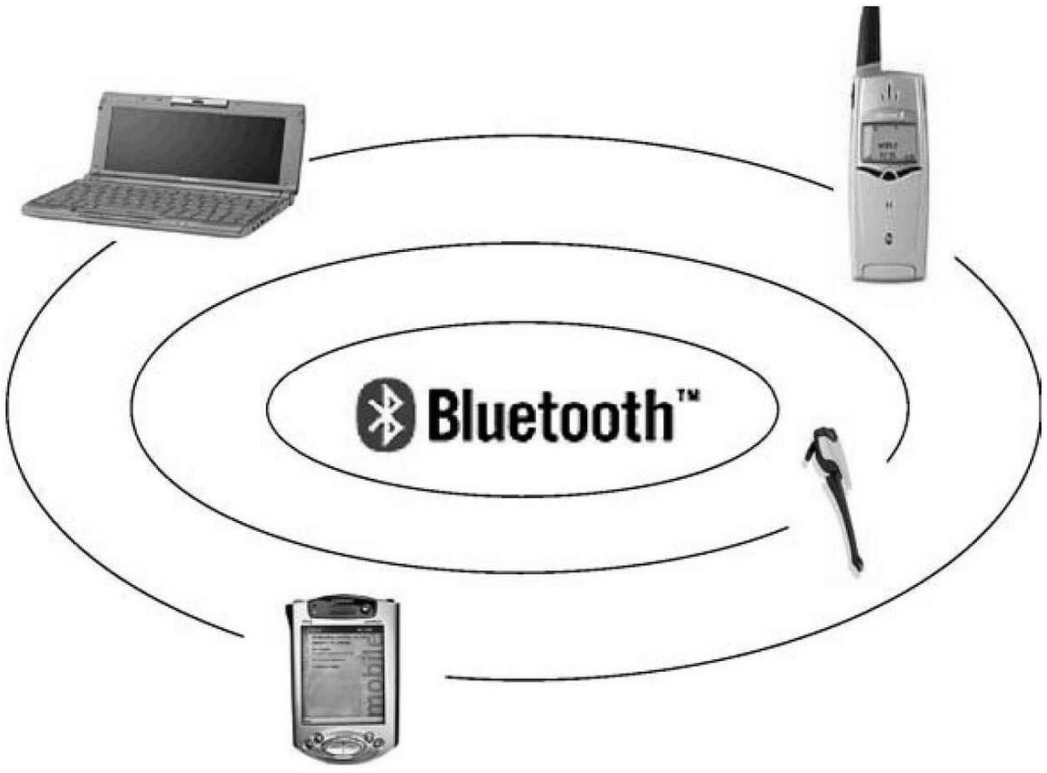


Fig. 2: Bluetooth Network Area Description
Courtesy of BMW OF NORTH AMERICA, INC.

Communication/Security

The system uses the license-free, global Industrial Scientific Medical band (ISM) at 2.45 GHz. This frequency range from 2.402 GHz to 2.480 GHz is subdivided into 79 channels with a 1 MHz bandwidth.

Signals transmitted through the airways can be scrambled and unscrambled to enhance communication security. With Bluetooth™ technology, communication frequencies are changed 1600 times per second to reduce the risk of interference or interception of the transmitted signal. The relatively small operating range of approx. 10 m (32.8 ft) also enhances the security of this technology, since tampering with the transmitted data is only possible when inside the 10 m (32.8 ft) wireless "network".

To further enhance the security of this short-range wireless network the ULF system requires a pairing procedure to be carried out for each device that will be introduced into the network. As part of this procedure a required passkey must be entered once (during the initial pairing procedure) to establish a secure connection between the phone and the ULF Control Module.

Data and Voice

Bluetooth™ was developed for the transmission of both voice as well as data. A bandwidth of approx. 1 MB/s is available for this purpose.

Bluetooth™ Enabled Phones

Ideally all phones that are Bluetooth™ enabled should work with the ULF system, however not all phones utilize the same profiles and therefore may not be recognized by the ULF System. A list of recommended Bluetooth™ enabled phones is available from your BMW Center.

ADVANTAGES OF THE ULF SYSTEM

- Once a phone is paired to the system it will be able to automatically connect to the Bluetooth™ wireless network of the vehicle, the next time it is introduced into the vehicle and the vehicle ignition is on.
- Up to four different Bluetooth™ phones can be paired to the system at one time, although only one phone can be wirelessly connected at any time.
- The phone does not need to be inserted into a phone specific cradle in order to be integrated into the vehicle.
- The phone can remain in a briefcase, purse, glove box, etc.; as long as it is turned on and located within the interior of the vehicle.
- The MFL buttons on the steering wheel can be utilized to place or receive a call, to scroll the phone book and select a number or activate voice recognition in order to dial a number via voice command.
- A voice recognition system is integrated into the ULF control module and can be activated by depressing the send/receive ™ button.
- The communications protocol of Bluetooth™ wireless technology is standardized irrespective of the manufacturer, this therefore allows various mobile telephones that utilize Bluetooth™ wireless technology and a recognized profile to be connected to the ULF System.

System Overview

A ULF system consists of a control module, microphone, Bluetooth™ antenna, a standalone pairing

(send/receive) button, or eject box with a coin tray insert.

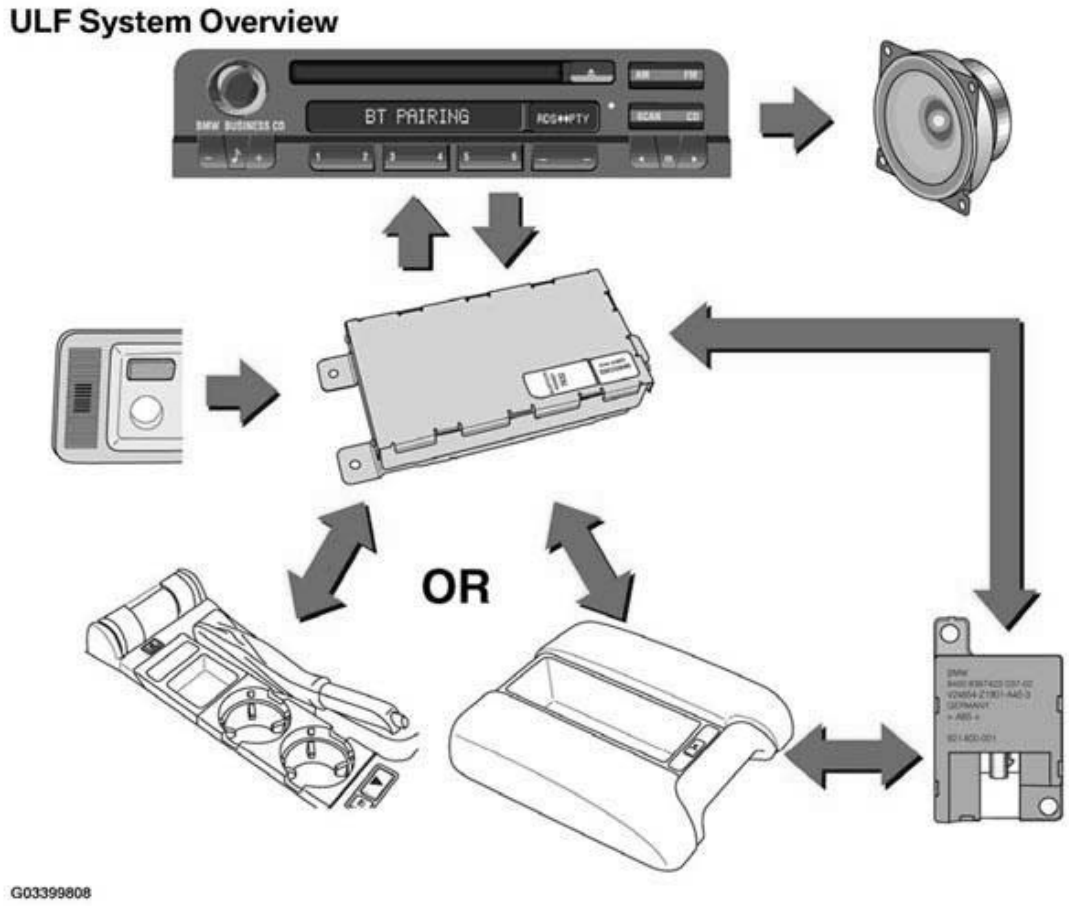


Fig. 3: ULF Control Module System Components
Courtesy of BMW OF NORTH AMERICA, INC.

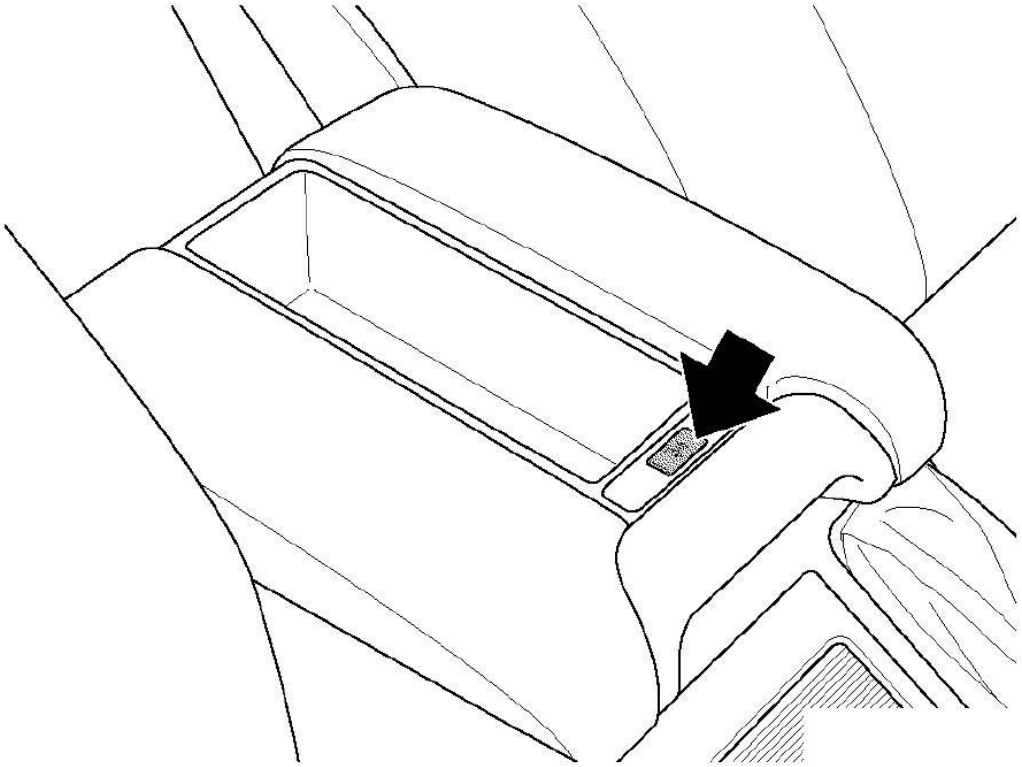
ULF Control Module

The ULF module forms the interface between the Bluetooth™ mobile phone and the electronic system in the vehicle. The mobile phone with the embedded Bluetooth™ wireless technology is the transceiver, this requires that the phone be activated, paired and present within the vehicle network in order to place or receive a call in the vehicle.

Oddment Tray

The oddment tray, which is connected to the ULF control module via the vehicles wiring harness, serves the purpose of:

Housing the send/receive ™ or pairing button, which must be depressed to activate the pairing procedure between the phone and the control module.



G03399809

Fig. 4: Identifying Oddment Tray Button
Courtesy of BMW OF NORTH AMERICA, INC.

Pairing Button

A stand-alone send/receive ™ or pairing button is supplied for the 3 Series in order to retain the cup holders. The button provides the same function as the send/receive ™ button on the steering wheel, plus is the button that must be depressed to activate the pairing procedure between the phone and the control module.

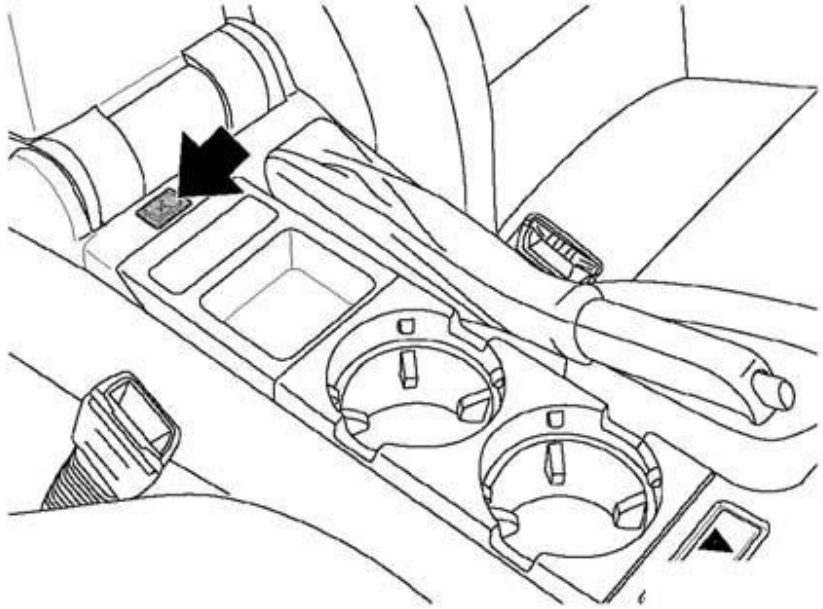


Fig. 5: Identifying Pairing Button
Courtesy of BMW OF NORTH AMERICA, INC.

Bluetooth™ Antenna

The Bluetooth™ antenna operates on a frequency of 2.45 GHZ and is installed in the interior compartment of the vehicle. This antenna provides the wireless interface between the Bluetooth™ enabled phone and the ULF Control Module.

SYSTEM OPERATION

Initial Operation

Prior to using the system for the first time, the Bluetooth™ mobile phone that is to be used must be paired with the ULF control module. This pairing procedure is necessary in order to assign the digital code of the mobile phone to the ULF control module installed in the vehicle. The pairing procedure is only required when a new phone is introduced to the ULF system for the very first time or the list of paired devices is cleared form the memory of the ULF module, it does not need to be performed every time the phone is used with the system.

After pairing, the mobile phone is recognized automatically by the ULF control module within 45 seconds after it is introduced into the vehicle and the ignition is turned on.

NOTE: Depending on the mobile phone manufacturer, particular care must be taken prior to initial operation to ensure that no headset is coupled with the mobile phone. Various devices may interpret the ULF control module as a headset and

request deactivation of the headset. Please refer to the operating instructions of the mobile phone for detailed information.

Pairing Procedure

The pairing procedure that must be initiated through the phone will differ corresponding to the different menu configurations of the various Bluetooth™ mobile phones on the market. The user's manual of the phone manufacturer should always be referenced for specific steps on how to activate the Bluetooth™ feature and to pair/link devices.

The following steps are generalized steps that should help in activating the Bluetooth™ function of most phones:

In Vehicle:

1. Depress the send /receive (pairing) button located in the center console, for at least 1 second prior to switching on the ignition and continue to hold the button down for approximately 2-3 seconds after the ignition is turned on.
2. Release the button.

NOTE: The send/receive (pairing) button in 5 Series and X5 SAV is located on the oddment tray assembly in the center console.

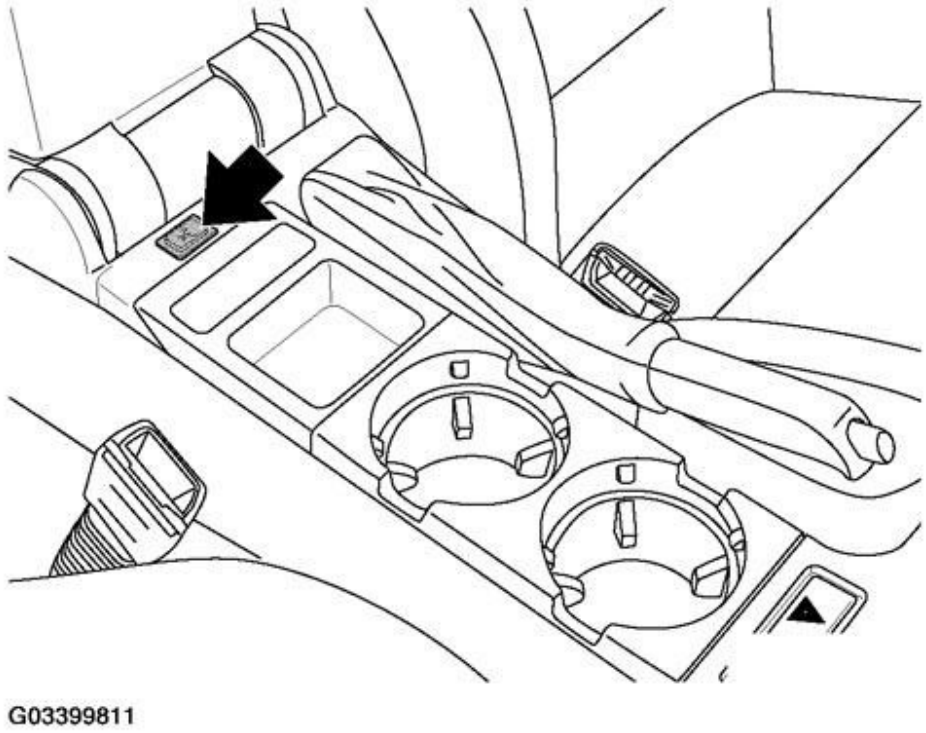
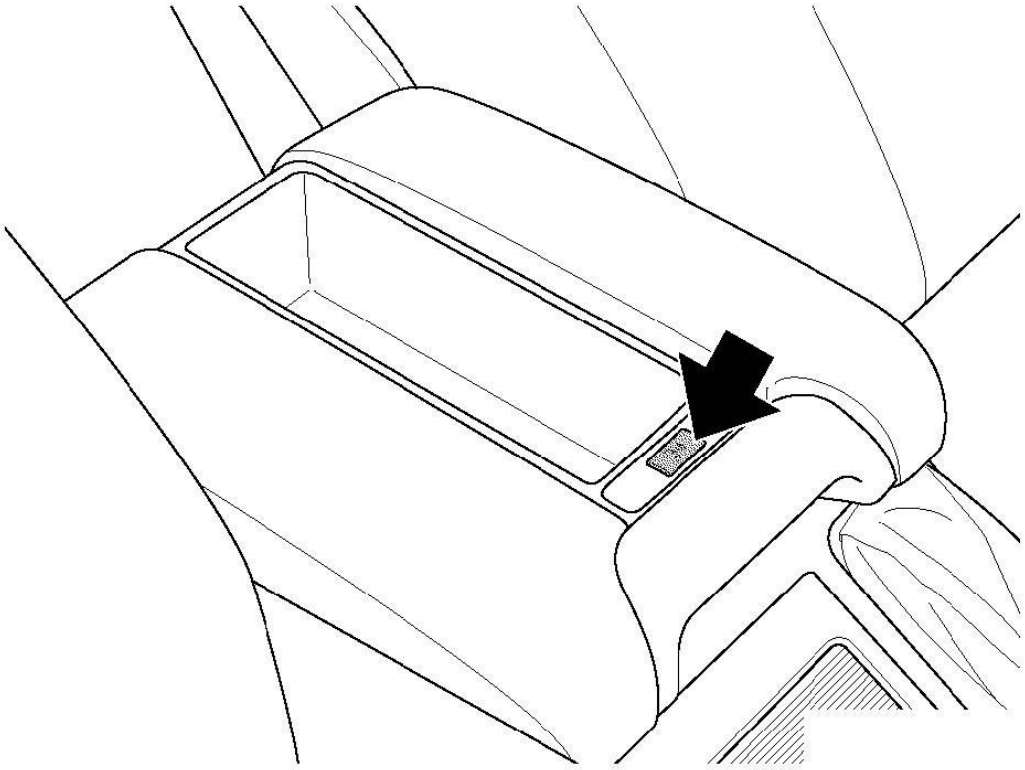


Fig. 6: Identifying Send /Receive (Pairing) Button Location (1 Of 2)
Courtesy of BMW OF NORTH AMERICA, INC.



G03399812

Fig. 7: Identifying Send /Receive (Pairing) Button Location (2 Of 2)
Courtesy of BMW OF NORTH AMERICA, INC.

3. Shortly after releasing the button on the Radio or Display Screen, the following message should be displayed:
    a. Display Screen:

        "Bluetooth Pairing" displayed.

        Green, Yellow and Red LEDs on the right side of the unit are flashing which indicates that the ULF is waiting for a signal from the Bluetooth™ device to be paired.

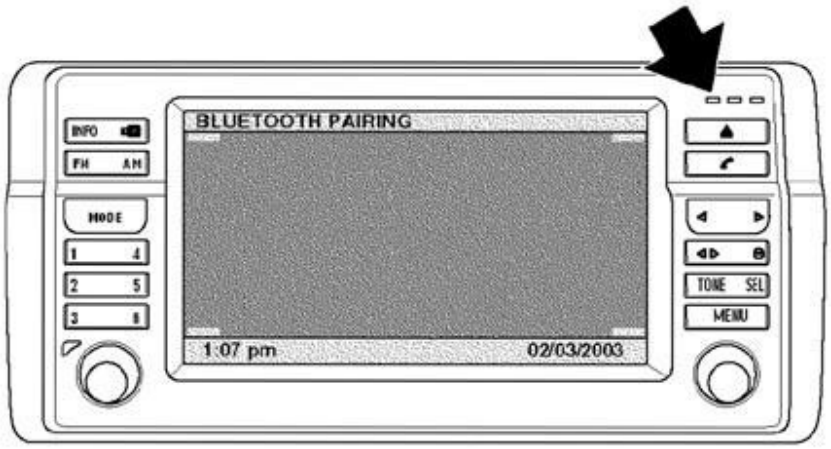


Fig. 8: Identifying Releasing Button On Radio
Courtesy of BMW OF NORTH AMERICA, INC.

b. Radio Display (5 Series and X5 SAV):

"Bluetooth Pairing" Display Which Indicates That The Ulf Is Searching For Available Bluetooth™ Devices. Green, Yellow And Red Leds On The Right Side Of The Unit Are Flashing Which Indicates That The Ulf Is Waiting For A Signal From The Bluetooth™ Device To Be Paired.

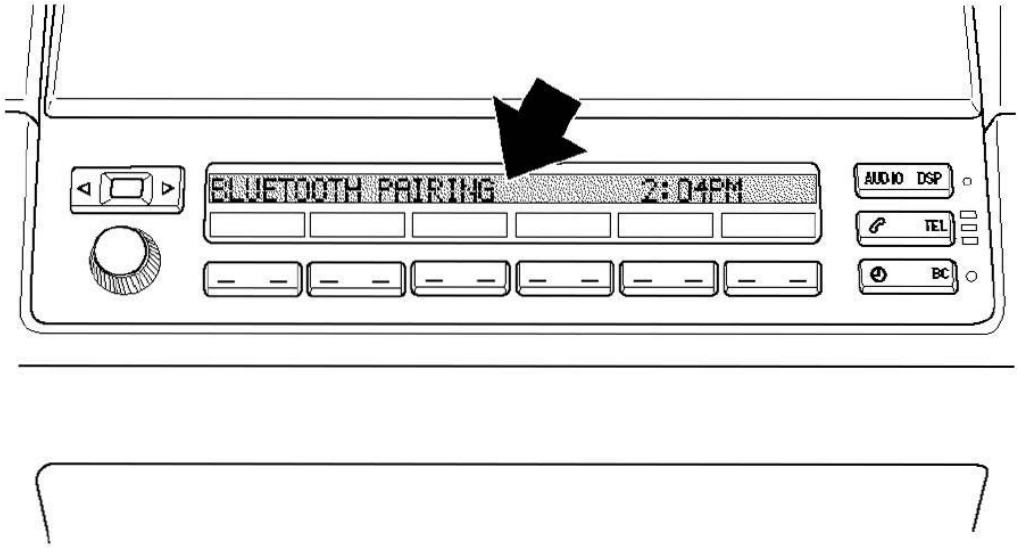


Fig. 9: Bluetooth Pairing Display
Courtesy of BMW OF NORTH AMERICA, INC.

c. Radio Display (3 Series with CD or Cassette):

"BT Pairing" display which indicates that the ULF is searching for available Bluetooth™ devices.

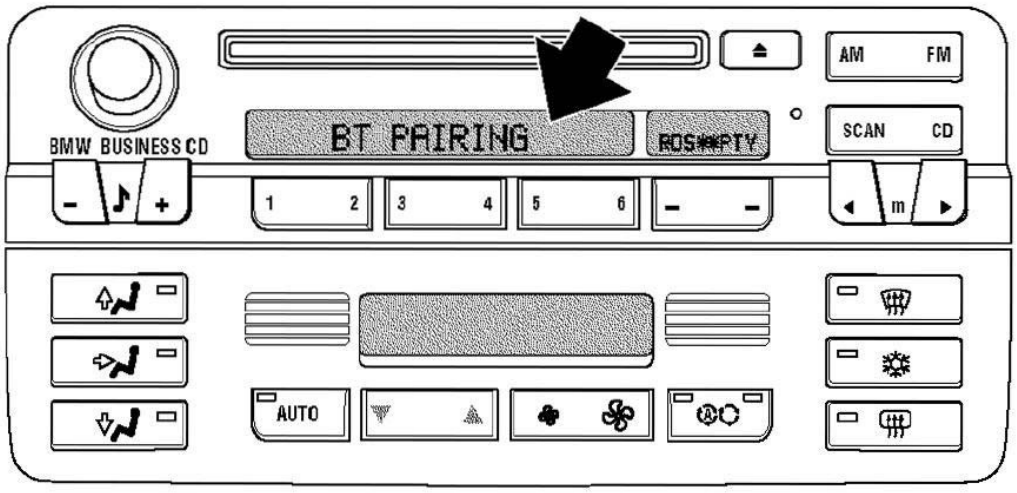


Fig. 10: BT Pairing Display
Courtesy of BMW OF NORTH AMERICA, INC.

4. Activate the search function of the phone as indicated below.

ON PHONE:

1. Locate the connection/settings menu and select Bluetooth™.
2. Select the response that will activate the Bluetooth™ feature of the phone.
3. Next select a menu option that will allow you to "Discover" or "Search" for active Bluetooth™ devices.
4. If the phone identifies/finds a device (named "BMW" followed by 5 digits) select it and follow the indicated steps to complete the pairing process.
5. Once the phone is successfully paired to the device cycle the vehicle ignition switch off and back on and the devices should wirelessly connect within 30 seconds. When the connection is established the phone will display a connection symbol.

The following steps are an example of the pairing procedure that must be initiated to pair the Sony Ericsson T68i phone to the ULF Control Module.

1. Press the menu button.
2. Select "Connect".
3. Select option 3: "Bluetooth".
4. Select option 4: "Options".
5. Select option 1: "Operation mode" and set to "On" or "Automatic".
6. Go back one step by pressing the red phone button several times.

7. Select option 3: "Discover".
8. Mobile phone display shows 'Searching'
9. Select "BMW ....." in upcoming list.
10. Select option 1: "Add to paired".
11. Enter the password (= ULF passkey) located on ULF Control Module that is in the rear of the vehicle or on the Passkey Reference Card.
    - Mobile phone display shows 'BMW ..... Pairing'
    - Mobile phone display shows 'Pairing Successful'
    - Display screen shows 'Pairing succeeded' for 3 seconds
12. Enter device name or accept the name that is automatically displayed.
13. Mobile phone display shows "Added to paired devices".
14. Exit menu by pressing the red phone/NO button.
15. Once the phone is successfully paired to the device cycle the ignition switch off and back on.
16. The devices should wirelessly connect within 30 seconds. The connection is established when the phone displays the symbols indicated, on the right side of the screen.

NOTE: **Shortly after turning on the ignition and the Bluetooth™ connection is identified, the phone may display a message asking if the connection should be established/accepted. The connection authorization request will always occur unless the setting on the phone is modified to allow automatic connection every time, please refer to the user's manual of the phone to determine how to change this setting.**

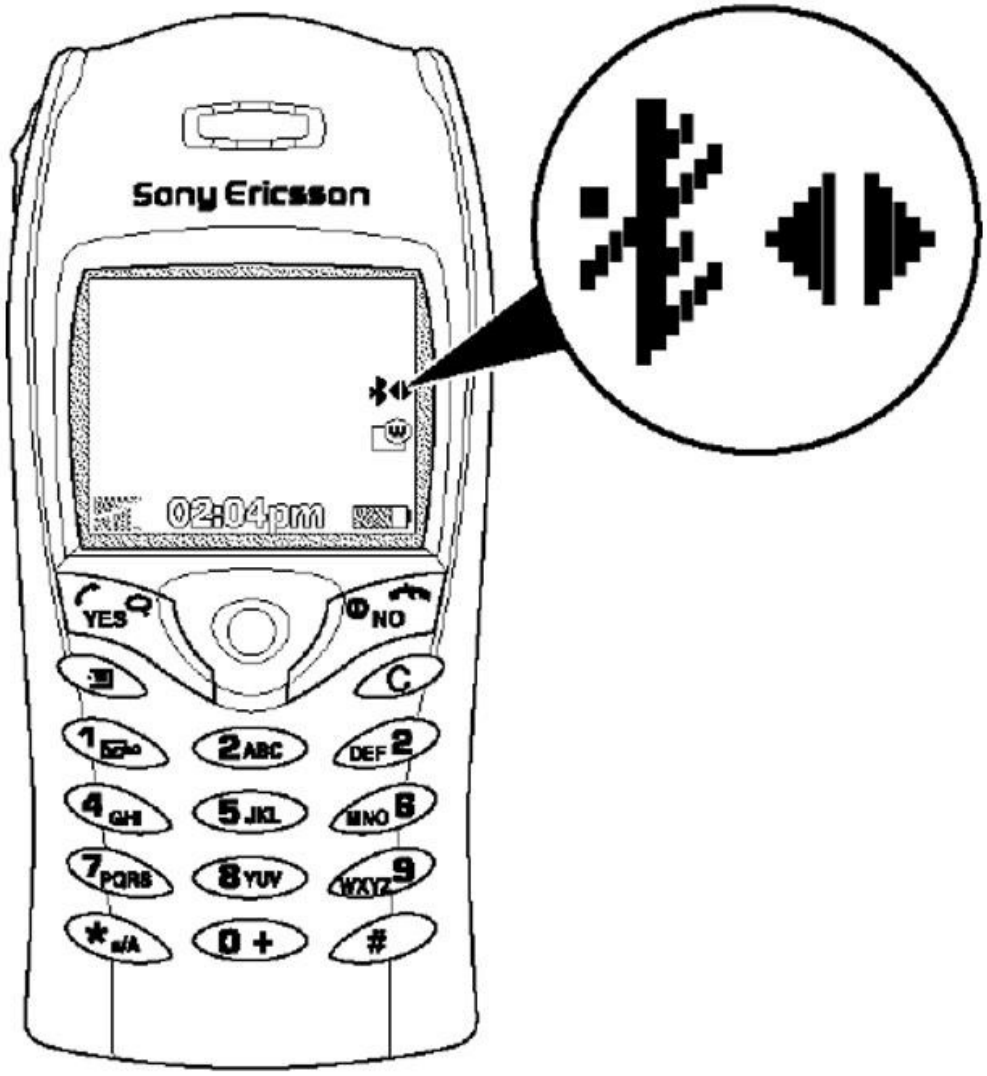


Fig. 11: Locating Connection/Settings Menu On Phone
Courtesy of BMW OF NORTH AMERICA, INC.

System Functions

The mobile phone must always be activated, paired and present within the Bluetooth™ network in order to place or receive a call through the vehicle.

Indicator Lamps

The indicator lamps show the following:

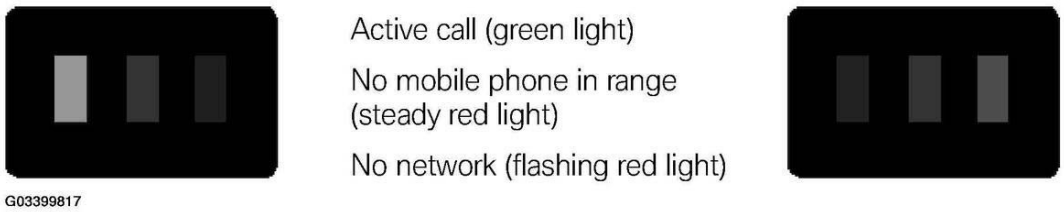


Fig. 12: Identifying Indicator Lamps
Courtesy of BMW OF NORTH AMERICA, INC.

Active call (green light).

No mobile phone in range (steady red light).

No network (flashing red light).

Adopting Telephone Book

Depending on the type of Bluetooth™ mobile phone, the telephone book is either transferred automatically (ex. Nokia 6310, Sony Ericsson T68i) or manually (depending on software version of phone) by the user to the ULF control module. The address book is stored temporarily for the purpose of accessing/displaying stored phonebook information using the steering wheel controls or telephone menu selections available on the display screen or some radio displays.

If a manual transfer of the address book must be made, the ULF must be in setup mode for manual transfer. The corresponding data can then be transferred. If phonebook data is modified while the phone is wirelessly connected to the vehicle the changes will not be displayed in the vehicle if the phonebook is scrolled via the steering wheel or display screen, changes will only be transferred the next time the ignition is cycled.

Placing a Call

A call can be placed in several different ways:

1. Using the keypad or address book of the mobile phone and depressing the send button on the phone.

   NOTE: Some phones may ask if the call is to remain within the phone. Refer to the users manual of the phone for specific instructions on disabling this feature.

2. Depressing the R/T button on the steering wheel, then scrolling (using the ™ or ™ buttons) through the address book of the phone that is linked to the ULF, until the desired number is displayed on the radio or display screen and then depressing the send/receive ™ button on the steering wheel or center console to

place the call.

3. Depressing the ™ button on the steering wheel until an audible "beep" is heard through the vehicle speakers, at this point a call can be placed by using the following voice commands:
    - "Dial number" or "Dial phone":
    - After the system asks for a number say the number.

      Example: "123 456 7890"; the system will repeat the number requested once you stop speaking momentarily, the number may also be displayed depending on the vehicle and equipment/accessories installed.

    - "Dial":

      NOTE: Once the dial command is given the number will be displayed on the dis play screen or radio; plus it will always be displayed on the mobile phone after a call is placed.

4. Briefly depressing the ™ button on the steering wheel will redial the last number dialed.

For more information on using voice commands refer to the " Owner's Manual for Voice Input System. The Convenient Alternative to Manual Control" (P/N 84 11 027 942)

Receiving/Accepting a Call

The call ringer in the Bluetooth™ mobile phone is audible when an incoming call signal is received. At the same time, the signal is sent via the Bluetooth™ interface in the mobile phone to the Bluetooth™ antenna in the vehicle. The ULF receives the incoming ring/call signal via the Bluetooth™ antenna and mutes the radio. The incoming ring/tone signal is then also transmitted to the vehicle speakers.

The following options are available for accepting a call:

3 Series without Display Screen:

- Press send/receive ™ button on MFL (Steering Wheel).
- Press send/receive ™ button in the center console.
- Press send/receive key on mobile phone.

5 Series and X5 SAV without Display Screen:

- Press send/receive ™ button on MFL (Steering Wheel).
- Press send/receive key on radio.
- Press send/receive ™ button on the oddment tray (Center Console).
- Press send/receive key on mobile phone.

Vehicles with Display Screen:

- Press send/receive ™ button on MFL (Steering Wheel).
- Press send/receive ™ button on the oddment tray (Center Console).
- Select the green phone symbol on the Display Screen.
- Press send/receive key on mobile phone.

Conducting a Call

If the call is accepted by pressing the send/receive key ™ on the Radio (5 series and X5 SAV), Display Screen, steering wheel or center console, it will be conducted via the hands free microphone and vehicle speakers.

If a call is accepted by pressing the send/receive key on the mobile phone, the reaction will depend on the type of handset. In the majority of cases, however, the question appears:

"Do you wish to use the mobile phone?"

Please refer to the operating instructions of the mobile phone for a detailed description of the operating procedure of the phone.

The hands-free function is activated after pressing the send/receive key. The incoming call is encoded (scrambled) via the Bluetooth™ interface in the mobile phone and sent to the Bluetooth™ antenna in the vehicle. The call is received by the ULF control module and output via the radio to the audio speakers.

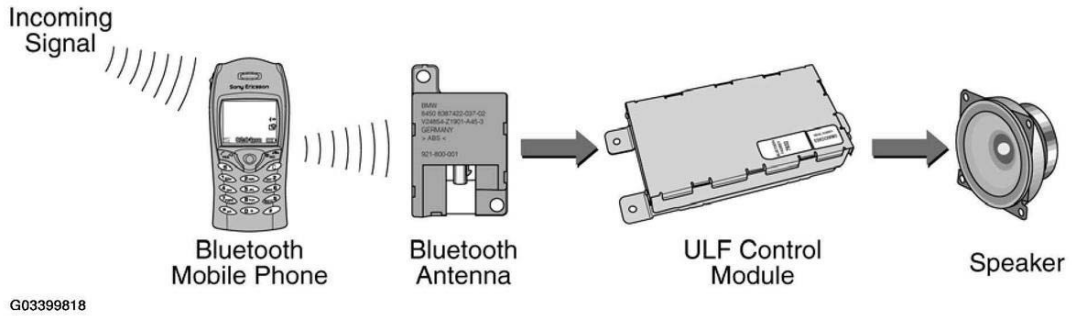


Fig. 13: Identifying Call Components (1 Of 2)
Courtesy of BMW OF NORTH AMERICA, INC.

Since the ULF system provides a digital full-duplex hands-free operation, it is possible to simultaneously speak and listen to calls. An echo cancellation function prevents feedback when speaking into the microphone. The microphone audio signal is sent via a hardwire connection to the ULF control module. In the ULF module the received audio signal is scrambled via the Bluetooth™ module and transferred via the Bluetooth™ antenna to the mobile phone. The mobile phone then transmits the call via the phone antenna.

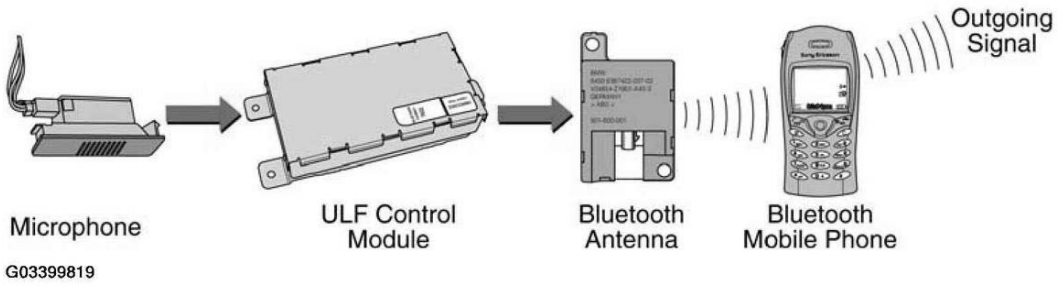


Fig. 14: Identifying Call Components (2 Of 2)
Courtesy of BMW OF NORTH AMERICA, INC.

Ending a Call

The following options are available for ending a call:

3 Series without Display Screen:

- Press send/receive ™ button on MFL (Steering Wheel).
- Press send/receive ™ button in the center console.
- Press send/receive key on mobile phone.

5 Series and X5 SAV without Display Screen:

- Press send/receive ™ button on MFL (Steering Wheel).
- Press send/receive key on radio.
- Press send/receive ™ button on the oddment tray (Center Console).
- Press send/receive key on mobile phone.

Vehicles with Display Screen:

- Press send/receive ™ button on MFL (Steering Wheel).
- Press send/receive ™ button on the oddment tray (Center Console).
- Select the green phone symbol on the Display Screen.
- Press send/receive key on mobile phone.

Transfer Active Call From Phone to ULF

If a call is received or placed via the handset, it can be transferred into the vehicle once the phone is within the active Bluetooth™ network of the vehicle.

Call transfer procedure:

1. Ignition must be on.

2. Bluetooth™ connection must be established.
3. Briefly depress the send/receive ™ button located in the center console.

NOTE: Some phones may automatically display a statement asking the user if the active call should be transferred to the ULF system shortly after the Bluetooth™ connection is established. If the request is acknowledged the call is automatically transferred into the vehicle/ULF system without having to depress the send/receive button.

Transfer Active Call from ULF to Phone

If you are currently in an active call and you need to leave the vehicle the call can be transferred into the handset in several ways.

1. Ignition is turned off and you walk away from the vehicle. Once outside the 10 m (32.8 ft) range a message may be displayed on the phone asking if the current call should be maintained or ended, by maintaining the call it will be transferred to the handset.
2. Depending on the model of phone being used the call can be transferred to the handset by manually disconnecting from the Bluetooth™ network via the connections menu or selecting a transfer function in the settings menu of the phone (refer to the user's manual of the phone for more information).

Linking Several Bluetooth™ Mobile Phones

Up to four Bluetooth™ mobile phones can be paired one after the other to the ULF control module. The pairing operation corresponds to the procedure described above.

The handset paired last has the highest priority. The telephone paired first will drop out of the list if a fifth Bluetooth™ mobile phone is paired.

NOTE: For incoming and outgoing calls, only the user connected first to the system can speak via the hands-free facility.

If two users enter the network or connection range simultaneously, only the user with the highest priority (the user last paired during the initial pairing procedure) will be able to use the hands-free function for incoming & outgoing calls. If the highest priority phone is turned off the phone with the next highest priority will be connected.

Deleting Devices

The paired Bluetooth™ mobile phones can only be deleted as a single group from the ULF control module.

The pairing procedure must first be activated, and then the send/receive ™ button on the installed eject-box or the pairing button located at the rear of the center console must again be depressed for an additional 10 seconds after the "Bluetooth Pairing" message is displayed on the radio in order to clear the list of paired devices from the control module and the message "paired devices deleted" is displayed.

TECHNICAL INFORMATION

Not only does the Universal Bluetooth™ Hands-Free System offer a means to wirelessly integrate a mobile phone into the vehicle, it also can be diagnosed using the DISplus or GT1.

The control module should always be coded to the specific vehicle that it is installed into to ensure optimum system performance. Coding of the module can be done using the DISplus or GT1 with CD33 or higher installed.

The ULF control module contains several controllers that provide the following functions:

1. Bluetooth™ Control Circuit:

   The Bluetooth™ control circuit is physically connected to the Bluetooth™ antenna. It establishes the connection between the Bluetooth™ mobile phone and the vehicle, de-scrambles the incoming call/signal from the phone, scrambles the outgoing signal from the microphone for transmission to the phone, plus controls all communication to paired Bluetooth™ devices.

2. Hands-free Control Circuit:

   The hands-free control circuit in the ULF controls the input/output of audio frequency signals in hands-free mode. The hands-free mode is designed for full-duplex transmission. This means the user can listen and speak simultaneously. Voice transmission takes place via a microphone located in the interior of the vehicle.

   Pressing and holding the send/receive ™ button until an audible beep is heard will activate the integrated voice recognition system and place the system into a hands-free mode.

3. Audio Output Control:

   The incoming signal from the Bluetooth™ phone is processed, sent through the radio and to the speakers.

4. Audio Input Control:

   The outgoing audio received from the vehicle microphone is processed and transmitted to the Bluetooth™ phone.

5. I/K-Bus Interface:

   The interface in the ULF control module for the I/K-bus controls the procedure for transmitting and receiving data telegrams via the I/K-bus in connection with other components on the bus.

6. Power Module:

   The power module in the ULF control module regulates the voltage supply and monitors system shutdown in the event of an under voltage situation in the vehicle.

SYSTEM OVERVIEW

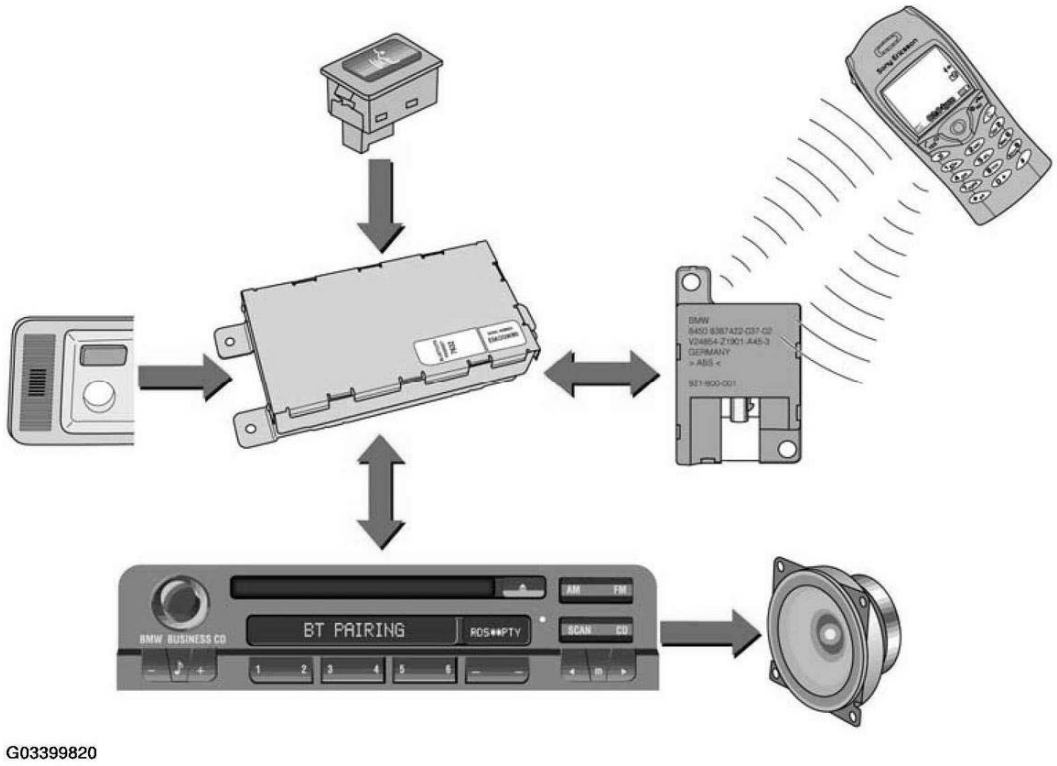


Fig. 15: Identifying Power Module System Components
Courtesy of BMW OF NORTH AMERICA, INC.

Voice Recognition

The voice recognition for the this system is integrated into the ULF Control Module and utilizes the same voice commands as those used with the TEMIC Voice Recognition Module used with the CPT8000 phone system. The "Owner's Manual for the Voice Input System" P/N 84 11 0 027 942 should be referenced for more detailed information regarding voice command features.

Coding ULF Control Module to Vehicle

After installing the ULF Kit, the vehicle should be re-coded with DISPlus/GT1 SW 33 or higher, using the "Retrofit" path to ensure that the system works properly with the systems currently installed in the vehicle. The recoding is done automatically when using the following "retrofit" procedure:

Example for coding E46 with ULF installed:

- Connect DIS or GT1 to vehicle (with SW 33 or higher installed).
- Turn on ignition.
- Select "Coding ZCS".

- Series: "E46 Series".
- Path: "2 Retrofit".
- System: "ULF Universal charging and Handsfree facility".
- Follow the on screen requests to activate the coding procedure.

Function Test

Upon completion of the recoding, verify that the BMW Universal Bluetooth™ HandsFree System is working correctly by going through the following action steps. After completing each step ensure that the desired result is obtained:

FUNCTION TEST

Action	Response
Pair phone to vehicle (refer to section for pairing instructions).	Phone and or Radio/MID/Board Computer should display statement indicating Pairing succeeded.
Turn on radio and initiate a call using voice recognition commands by depressing/holding the Voice recognition button on steering wheel until an audible beep is heard.	Radio should mute and an audible beep is heard through vehicle speakers.
Say "Dial number".	System states "Please speak the number".
Say phone number to be dialed ex"1234567890".	System states "1234567890".
If number is correct say "Dial"	Call is placed and number being dialed is displayed on phone as well as on Radio/MID/Board Computer.

TROUBLESHOOTING

TROUBLESHOOTING

Situation	Correction
No audio output through vehicle speakers.	Check SES module jumper plug.
Radio does not mute after placing a call.	Check connections at rear of radio for Tel On and Tel Mute signal. Verify that connectors and pins are properly seated.
Audio quality in vehicle may not sound very good.	Recode ULF Control Module.™ **NOTE:** **Audio quality in vehicle or at person being contacted, is dependent on the quality and signal strength of the wireless service provider in the area traveled.**
Customer complains that the person being contacted hears a "Buzzing" noise, at times during their conversation or on voice mail message that he/she has left.	Intermittently a "Buzzing" noise is noticeable to the person being called from the vehicle. The "Buzzing" noise is a result of the GSM signal being feedback through the microphone, this usually occurs if the GSM phone is located too close to the microphone.

	The customer should change the location of where the phone is placed/stored.
Driver is told that the person being contacted complains that there is an echo/reverberation in the audio; person can hear his/her voice back through the phone.	Audio volume in vehicle during a call may be a bit to loud, causing the other person to hear his/her voice coming back through the phone.
A second call is received while in a call, and call cannot be accepted using MFL controls.	Use handset to expect second call and place previous called on hold. Call waiting is functional only via the handset.
The radio audio does not come back immediately if the "other" person hangs up first.	It takes approximately 15 seconds for the ULF system to recognize that the call was terminated from outside the vehicle. If the call is terminated from outside the vehicle first, the driver can depress the button on the steering wheel to terminate the call from the vehicle and un-mute the radio quicker.
Customer is not able to pair phone to system, not able to locate ULF passkey/password reference card.	The "Bluetooth™ Passkey" is identified on the label of the ULF Control Module located in the rear of the vehicle.™ The "Bluetooth™ Passkey" for the installed control module can be obtained by connecting the DISPlus or GT1and accessing the diagnostics for the ULF system:- select "Diagnostic requests" - select "Bluetooth code".
Intermittently a popping noise is audible through the vehicles speaker and there is no Bluetooth™ wireless communication established between the ULF module and the phone.	Vehicle and /or ULF Control Module are not correctly coded.™ Recode module and vehicle (refer to **CODING ULF CONTROL MODULE TO VEHICLE**).
E46 Only: After installation of ULF system the speedometer and odometer do not work.	Remove pin 7 & 8 from the 54-pin connector going to the ULF Control Module. .

CONNECTOR PIN ASSIGNMENTS

The 54-pin connector of the ULF Control Module utilizes the following pins on X01185

PINS DESCRIPTION

PIN	**Description**
1	Microphone +
11	Cradle On/Enable
15	I-Bus
17	KL 30
19	Microphone -
21	Microphone Shield
22	Hook
27	Programming
28	Programming
32	Cradle Key +

33	Telephone On
34	Telephone On (pin 33)
35	KL R (Ignition)
36	KL 31 (Ground)
43	Programming
44	Programming
45	Programming
51	Telephone Mute
52	KL 58g (illumination)

The following pins on X4545 are utilized when the eject box is connected

PINS DESCRIPTION

PIN	Description
1	Cradle Key +
2	KL 31
3	58G
5	KL 30
13	Cradle On/Enable

NOTE: The pairing button used on the E46 only utilizes pin 1, 2 & 3 of X4545

ULF Wiring Schematic for the E53 with Boardmonitor

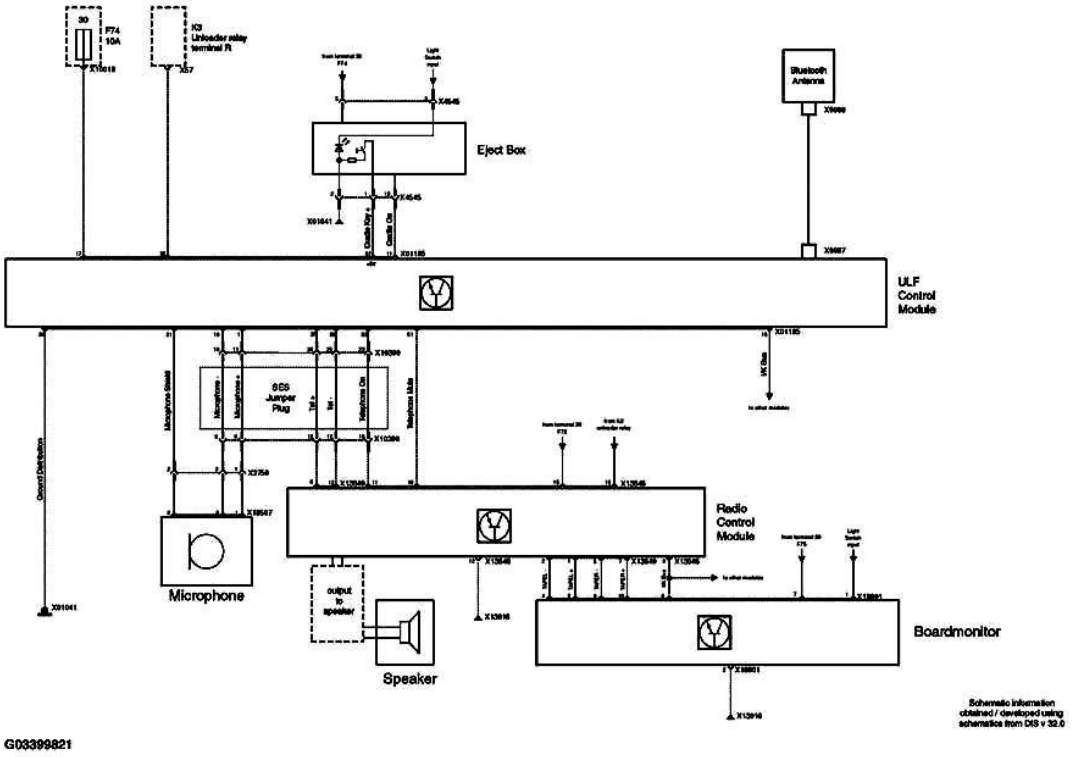


Fig. 16: ULF Wiring Schematic For E53 With Boardmonitor
Courtesy of BMW OF NORTH AMERICA, INC.

ULF Wiring Schematic for the E53 with Multi Information Display

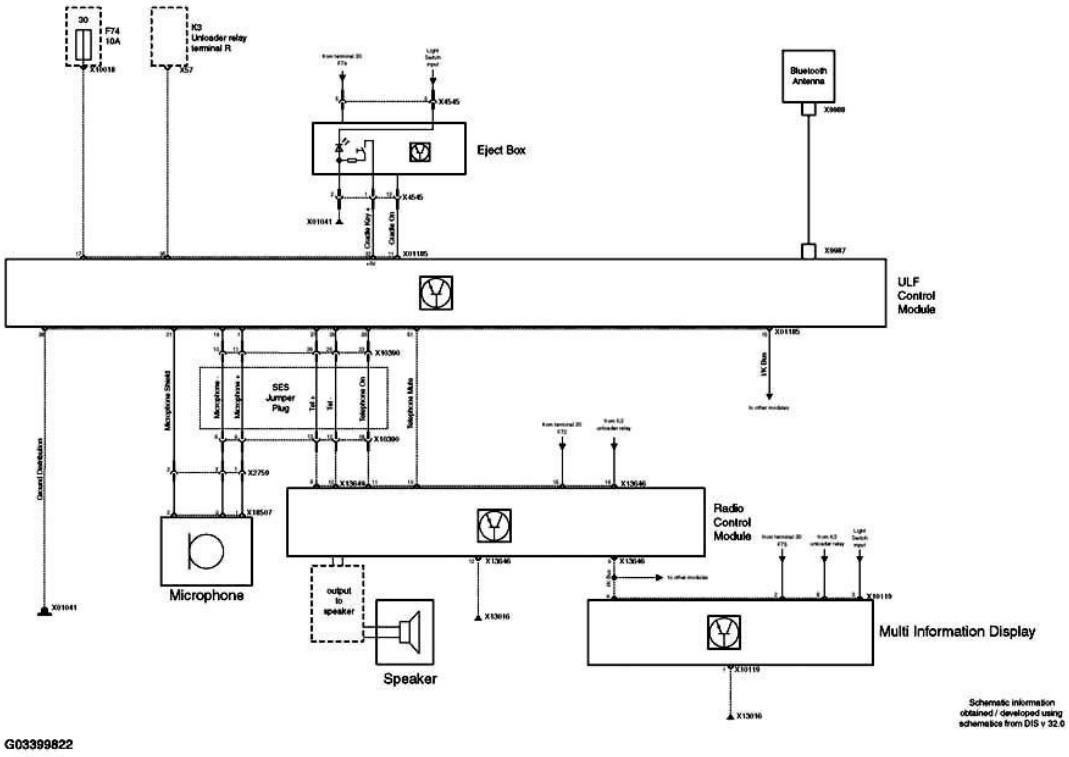


Fig. 17: ULF Wiring Schematic For E53 With MULTI Information Display
Courtesy of BMW OF NORTH AMERICA, INC.

ULF Wiring Schematic for the E39 with Boardmonitor

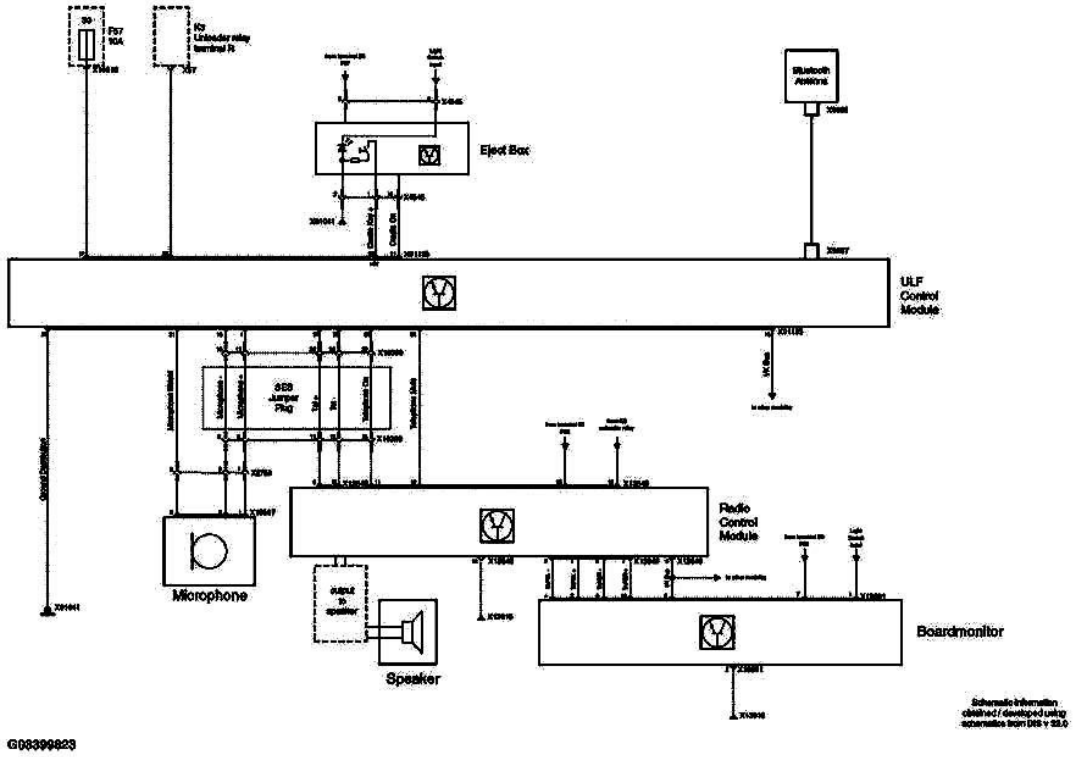


Fig. 18: ULF Wiring Schematic For E39 With Boardmonitor
Courtesy of BMW OF NORTH AMERICA, INC.

ULF Wiring Schematic for the E39 with Multi Information Display

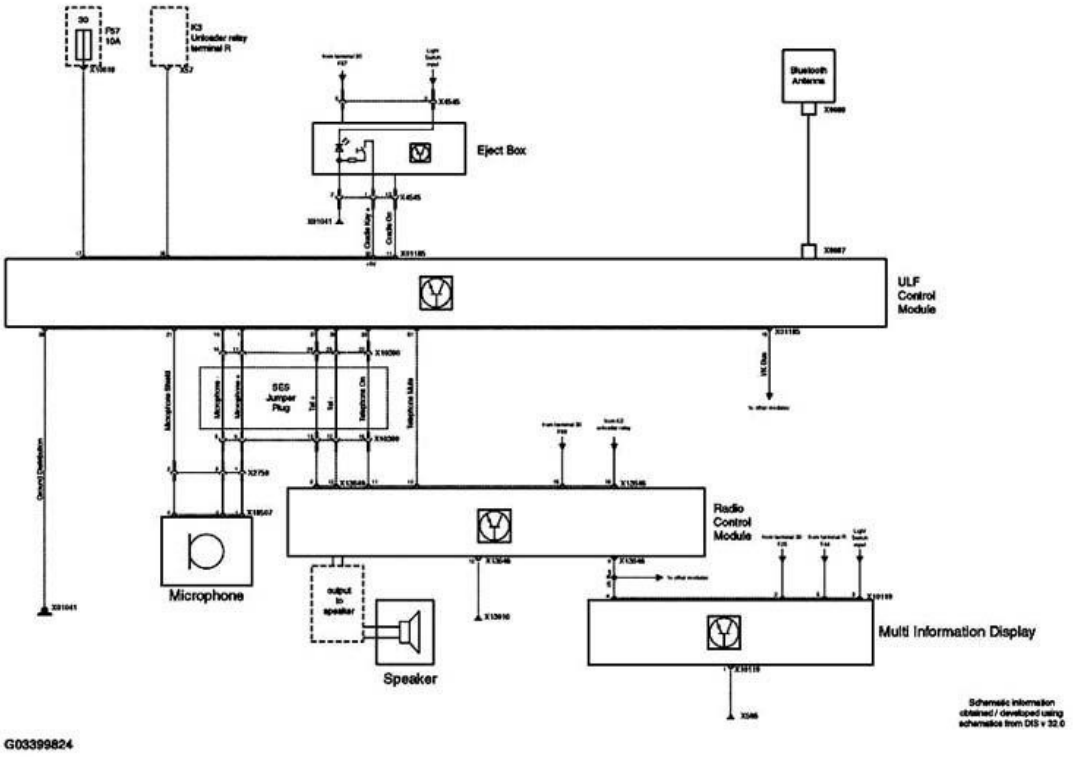


Fig. 19: ULF Wiring Schematic For E39 With Multi Information Display
Courtesy of BMW OF NORTH AMERICA, INC.

ULF Wiring Schematic for the E46 with Boardmonitor

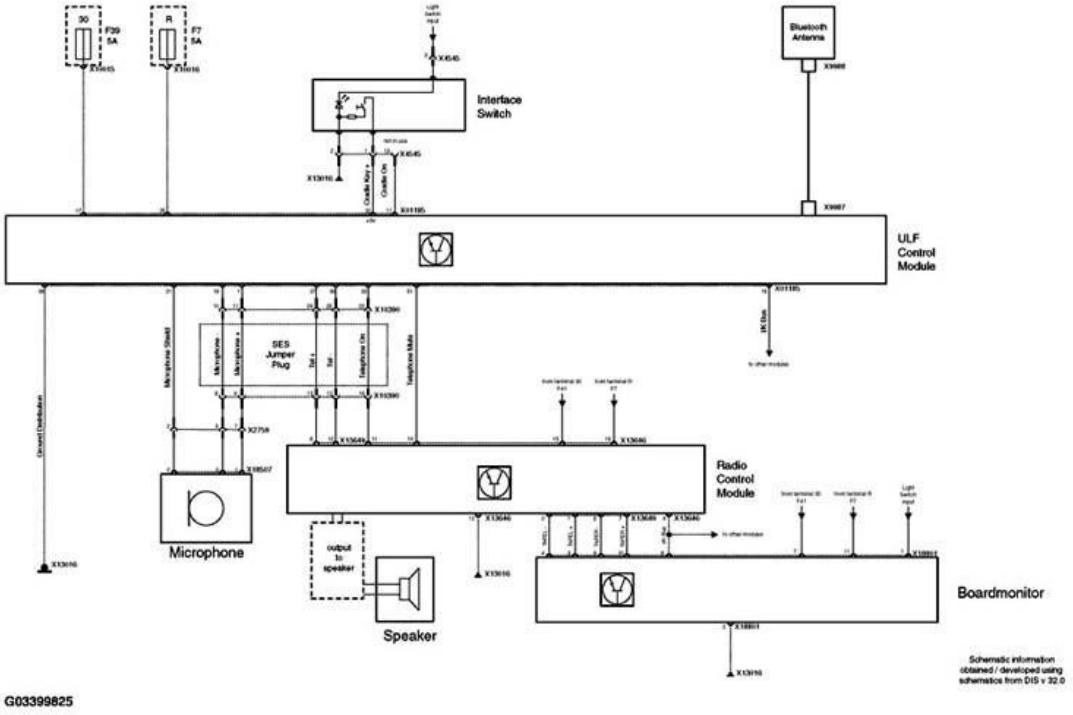


Fig. 20: ULF Wiring Schematic For E46 With Boardmonitor
Courtesy of BMW OF NORTH AMERICA, INC.

ULF Wiring Schematic for the E46 without the Boardmonitor

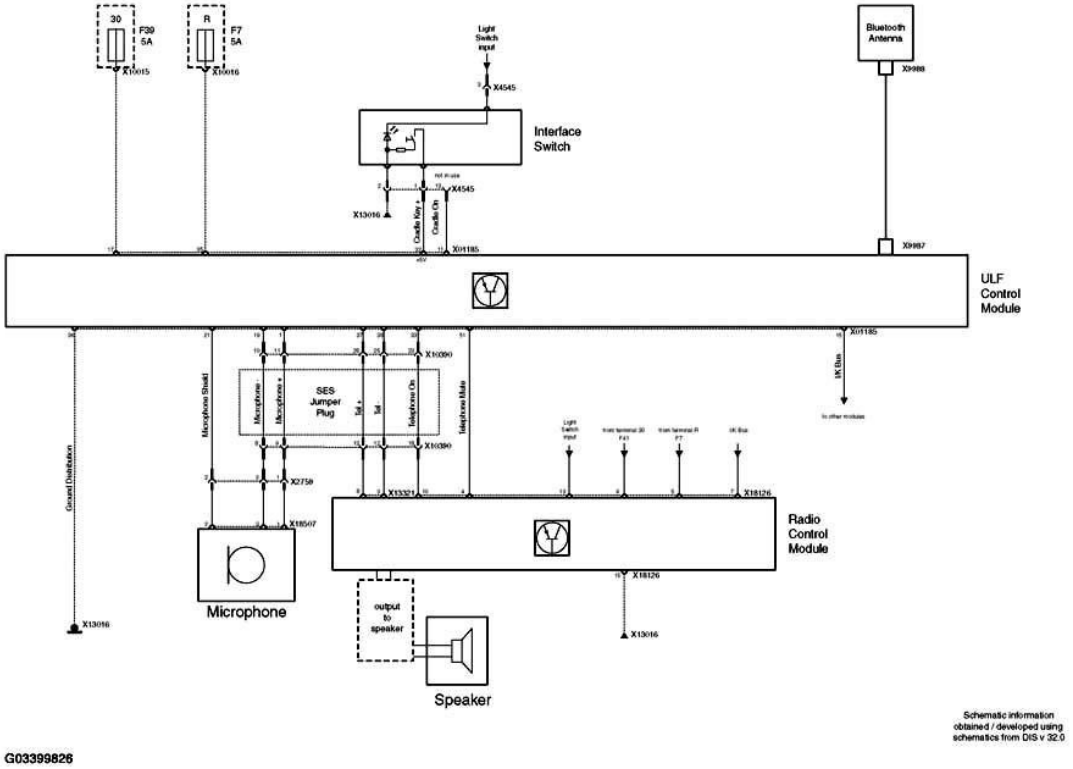


Fig. 21: ULF Wiring Schematic For E46 Without Boardmonitor
Courtesy of BMW OF NORTH AMERICA, INC.