

ACCESSORIES AND EQUIPMENT

Cruise Control Systems - Repair Instructions

RADIO-CONTROLLED LOCKING SYSTEM

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

Necessary preliminary tasks:

- Remove **FIXTURE FOR STEERING COLUMN STALK** .

Release screws (1).

Remove the radio-operated key insert (2) from the steering column switch intake (3).

IMPORTANT: Carefully unlock and disconnect associated plug connection for ribbon cable.

Replace the ribbon cable if damaged.

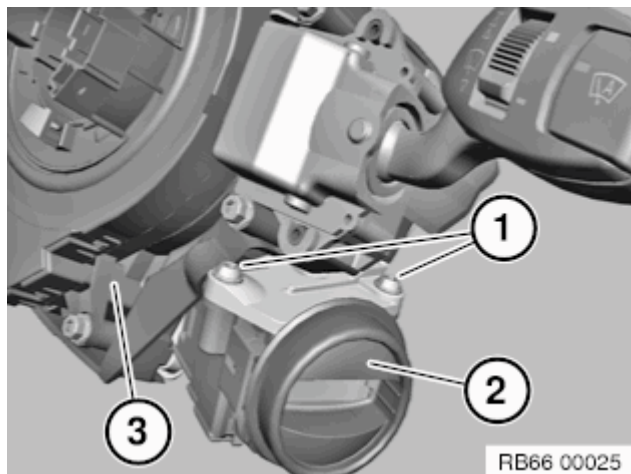


Fig. 1: Removing Radio Operated Key Insert From Steering Column Switch Intake
Courtesy of BMW OF NORTH AMERICA, INC.

PARK DISTANCE CONTROL

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

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

Necessary preliminary tasks:

- Remove **LUGGAGE COMPARTMENT FLOOR TRIM**
- Remove spare wheel.

Take off cover for control units (1).

Installation:

Make sure cover for control units (1) is correctly seated on locating pins (2).

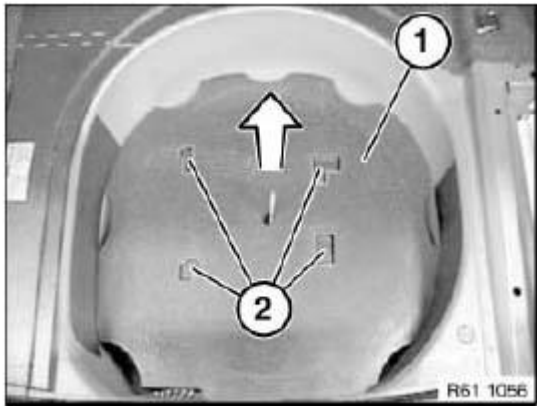


Fig. 2: Identifying Control Units And Pins
Courtesy of BMW OF NORTH AMERICA, INC.

Unlock plug connections (1) and disconnect.

Lift control unit (2) out of mounting for control units (3).

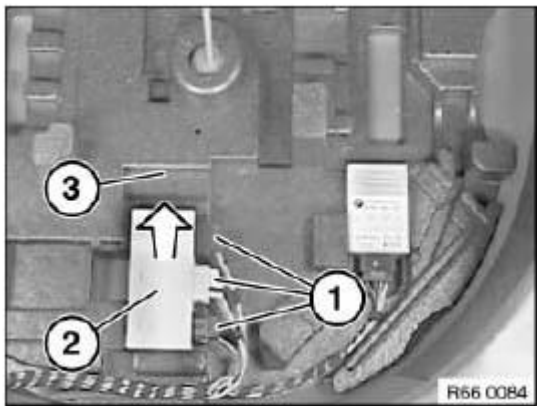


Fig. 3: Lifting Control Unit
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Carry out **PROGRAMMING/CODING** .

66 20 520 REMOVING AND INSTALLING/REPLACING AN ULTRASONIC TRANSDUCER AT FRONT (PARK DISTANCE CONTROL)

Necessary preliminary tasks:

- Remove **FRONT BUMPER TRIM** .

Unfasten plug connection (1) and disconnect.

Unlock catches (2) in direction of arrow and pull ultrasonic transducer (3) out of bracket (4).

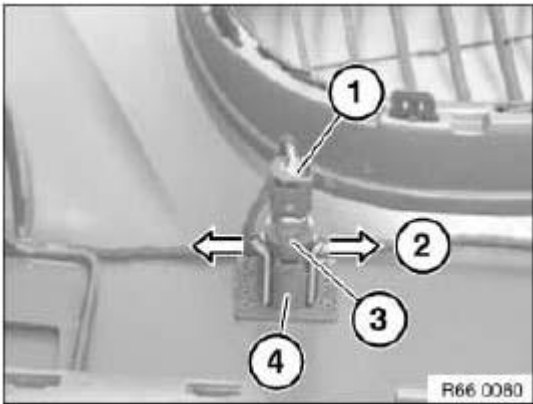


Fig. 4: Unlocking Catches And Pulling Ultrasonic Transducer
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

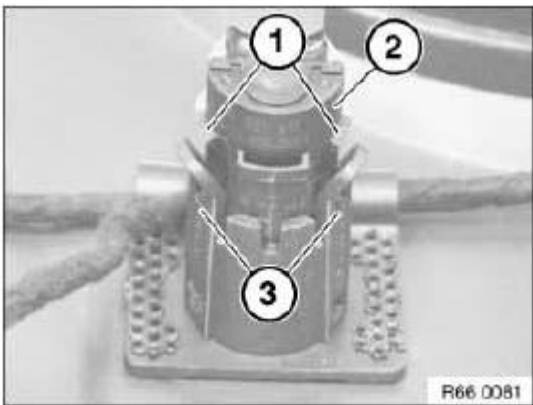


Fig. 5: Identifying Hooks, Ultrasonic Transducer And Mountings
Courtesy of BMW OF NORTH AMERICA, INC.

66 20 540 REMOVING AND INSTALLING/REPLACING A REAR ULTRASONIC TRANSDUCER (PARK DISTANCE CONTROL)

Necessary preliminary tasks:

- Remove **REAR BUMPER TRIM** .

Unfasten plug connection (1) and disconnect.

Unlock catches (2) in direction of arrow and pull ultrasonic transducer (3) out of bracket (4).

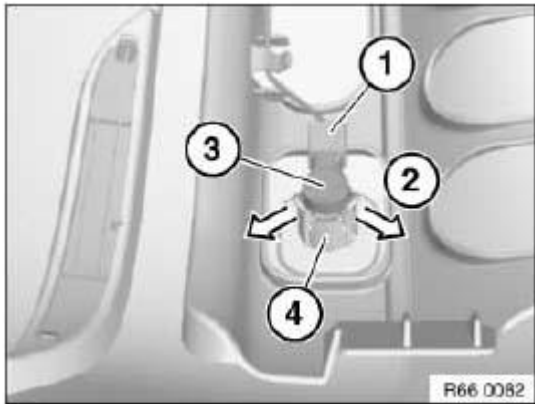


Fig. 6: Unlocking Catches And Pulling Ultrasonic Transducer
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

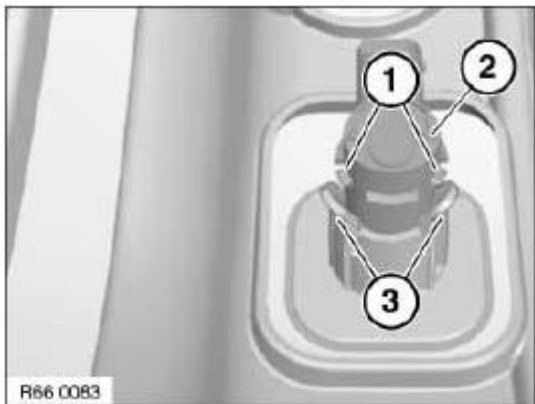


Fig. 7: Identifying Hooks, Ultrasonic Transducer And Mountings
Courtesy of BMW OF NORTH AMERICA, INC.

ADAPTIVE CRUISE CONTROL

66 31... REPLACING SCREWS ON ACC SENSOR UNIT

Necessary preliminary tasks:

- Remove ACC SENSOR

IMPORTANT: Visually inspect sensor housing for damage/leaks.

Replace ACC sensor if sensor housing is damaged.

Grip sensor housing (1) by screw in a vice (2).

Release screw by turning sensor housing (2).

IMPORTANT: After releasing screws, check sensor housing (1) again for damage.

Replace ACC sensor if sensor housing (1) is damaged.

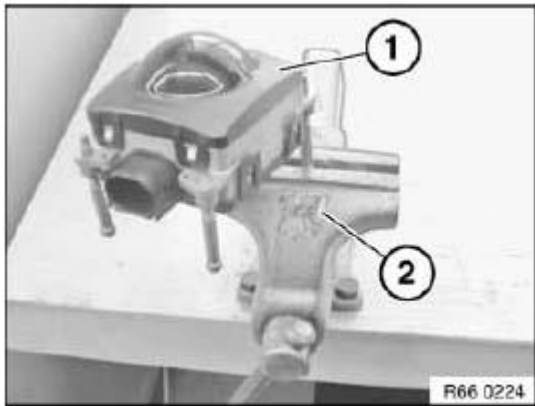


Fig. 8: Identifying Sensor Housing And Screw In Vice
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: For purposes of clarity, graphic show ACC sensor holder removed.

Replace plastic nuts (1).

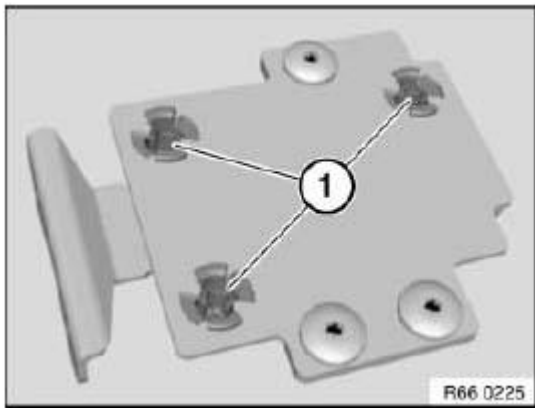


Fig. 9: Identifying Plastic Nuts

Courtesy of BMW OF NORTH AMERICA, INC.

Carry out rough adjustment of ACC sensor (1) at adjusting screws (2).

- Measurement A [mm]: 42.5 to 43.5

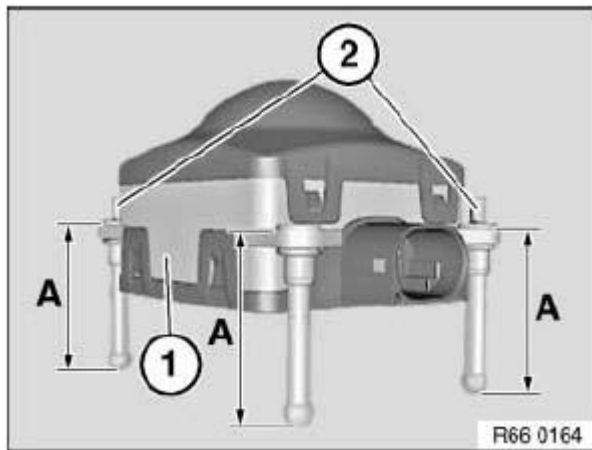


Fig. 10: Identifying ACC Sensor And Adjusting Screws Measurement

Courtesy of BMW OF NORTH AMERICA, INC.

After installation:

- Adjust ACC SENSOR

66 31 001 ADJUSTING ACC SENSOR

Special tools required:

- 36 1 100
- 36 1 130

IMPORTANT: Check ease of movement of adjustment screws prior to adjustment.
Pull-off torque of adjustment screws must not exceed 4 Nm!
Cover the lens to prevent it from coming into contact with rust remover.
Spray adjustment screws with rust remover, then repeat check after rust remover has taken effect.
If the pull-off torque is greater than 4 Nm, observe instructions on replacing adjustment screws.

Lever out cap (1).

Carry out adjustment of ACC sensor (2) with special tool **36 1 130** by means of adjusting screws (3).

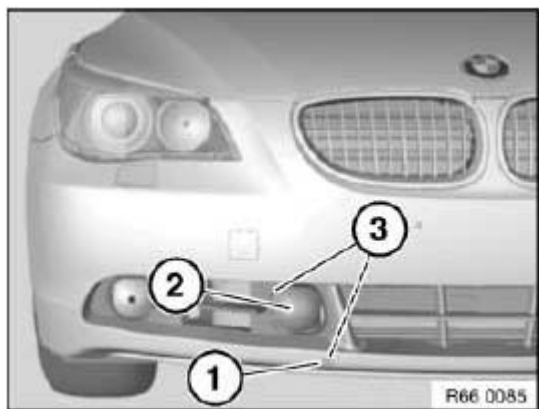


Fig. 11: Identifying Out Cap, ACC Sensor And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Special tool required:

Active Cruise Control ACC adjusting device, complete.

Order number: 81 10 0 021 292

Consisting of:

1. Mirror, complete
2. Wheel laser
3. Slotted diaphragm
4. Control bracket (for initial installation of rail)
5. Rail
6. Setup and Owner's Handbook (not shown)

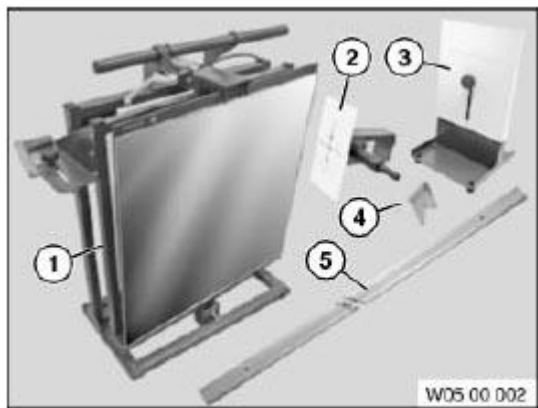


Fig. 12: Identifying Mirror, Wheel Laser, Slotted Diaphragm, Control Bracket And Rail
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: A holder which is not included in the scope of delivery is required to support the wheel laser. Use either the quick-action clamp from the existing KDS or ACC wheel holder (36 1 100).

NOTE: To adjust the ACC sensor, connect the BMW diagnosis system and fit the ACC adjusting device.
Select ACC system in diagnosis. Start test module "ACC adjustment" (service functions) and proceed in accordance with instructions.
Handle ACC adjusting device in accordance with mounting and Owner's Handbook provided with device.

NOTE: Further information on the ACC adjusting device can be found in the BMW Workshop Equipment and Planning Documentation.

66 31 006 REMOVING AND INSTALLING (REPLACING) ACC SENSOR

Necessary preliminary tasks:

- Remove **FRONT BUMPER TRIM**

Lift out wiring harness (1) at points (2).

Disconnect impact absorber (3) at carrier (4) and remove.

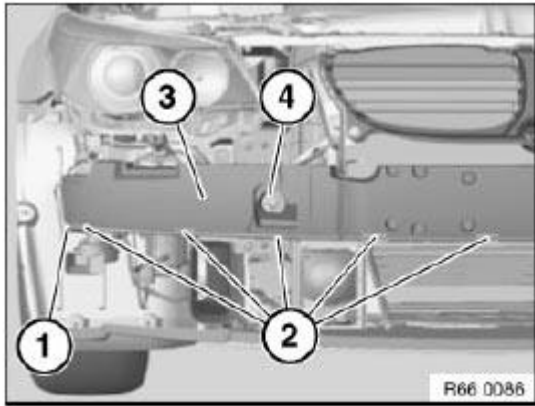


Fig. 13: Identifying Wiring Harness, Points, Impact Absorber And Carrier
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Mountings (1) of impact absorber (2) must not be damaged.

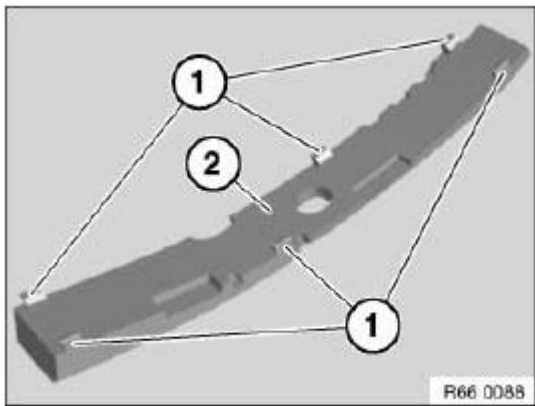


Fig. 14: Identifying Mountings And Impact Absorber
 Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

Unscrew nuts (2).

Installation:

Replace self-locking nuts.

Release screw (3).

Feed out ACC sensor (4) with retaining plate (5) in direction of arrow and remove.

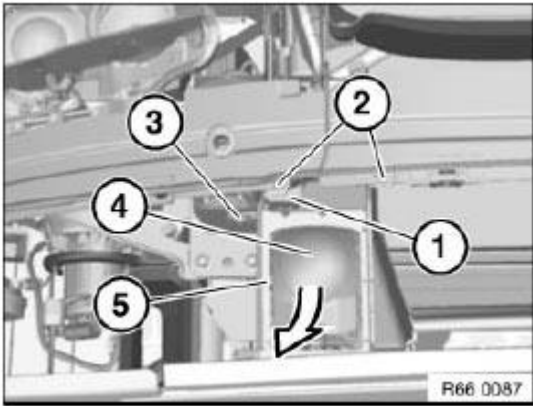


Fig. 15: Feeding Out ACC Sensor With Retaining Plate
 Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten plug connection (1) and disconnect.

Unclip electric cable (2) at cable guides (3).

Release screws (4) and remove ACC sensor (5) from retaining plate (6).

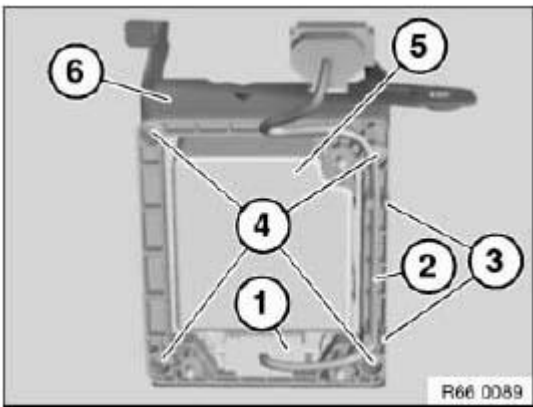


Fig. 16: Identifying Plug Connection, Cable, Cable Guides, Screws And ACC Sensor
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Adjustment aid (1) must not be damaged.

If necessary, detach adjustment aid (1) from retaining plate (2). To do so, unlock catches (3) and detach adjustment aid (1) in direction of arrow from retaining plate (2).

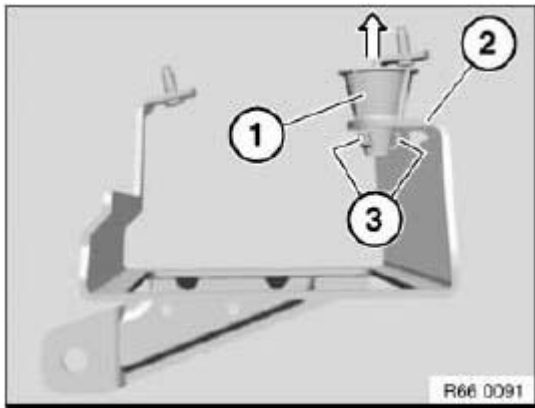


Fig. 17: Detaching Adjustment Aid Of Retaining Plate
 Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Carry out rough adjustment of ACC sensor (1).

If necessary, perform rough adjustment at adjusting screws (2).

- Measurement A [mm]: 22.5 to 25.0

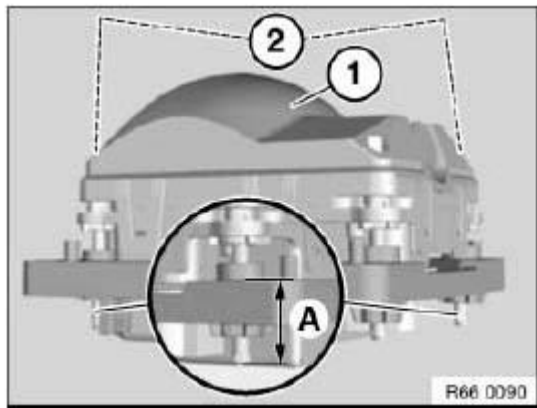


Fig. 18: Identifying ACC Sensor And Adjusting Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Carry out ACC sensor adjustment using BMW diagnostic system.

Replacement:

Carry out **PROGRAMMING/CODING**

66 31 016 REMOVING AND INSTALLING (REPLACING) LONG RANGE SENSOR (LRR SENSOR) (M-KIT)**Special tools required:**

- **00 9 317**

Tape off bumper in working area (1) with yellow plastic adhesive tape.

Lever out trim with special tool **00 9 317** and remove.

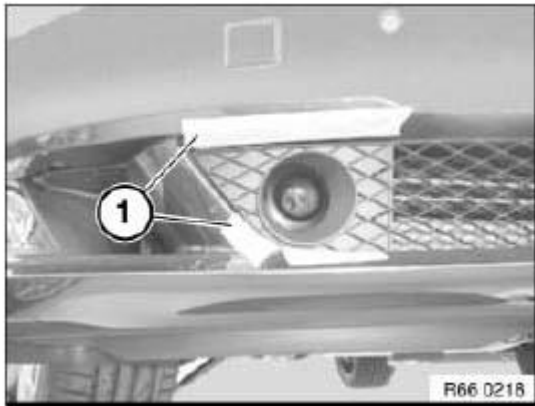


Fig. 19: Identifying Bumper In Working Area With Yellow Plastic Adhesive Tape
Courtesy of BMW OF NORTH AMERICA, INC.

Firmly press down plastic adhesive tape (1) in working area again.

Unclip long range sensor (2) from mounting.

Installation:

Make sure long range sensor (2) is correctly and securely seated.

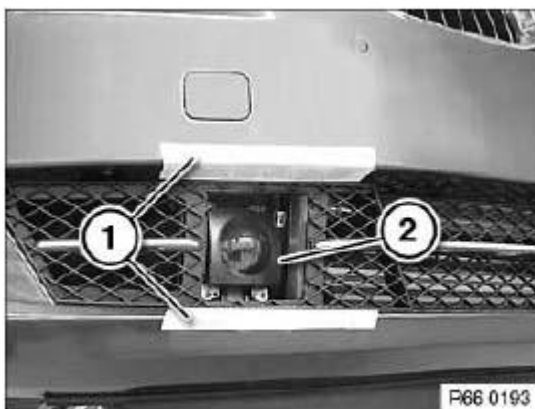


Fig. 20: Identifying Plastic Adhesive Tape And Long Range Sensor
Courtesy of BMW OF NORTH AMERICA, INC.

Secure long range sensor (1) against falling out.

Disconnect plug connection (2) and remove long range sensor (1).

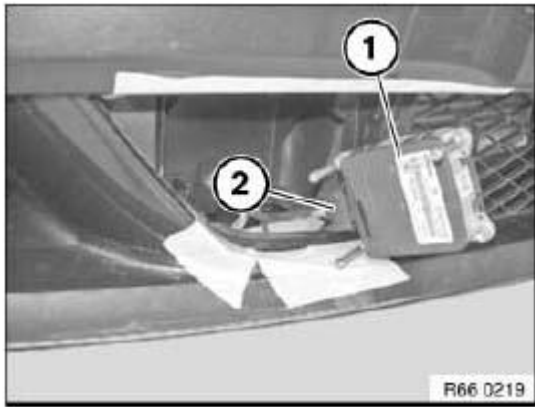


Fig. 21: Identifying Long Range Sensor And Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

- Carry out **LRR SENSOR ADJUSTMENT** using BMW diagnosis system
- Carry out **PROGRAMMING/CODING**

**66 31 016 REMOVING AND INSTALLING/REPLACING LONG RANGE SENSOR (LRR SENSOR)
(FROM BUILD DATE 03/2007)**

Special tools required:

- **00 9 317**

Lever out trim (1) with special tool **00 9 317** and remove.

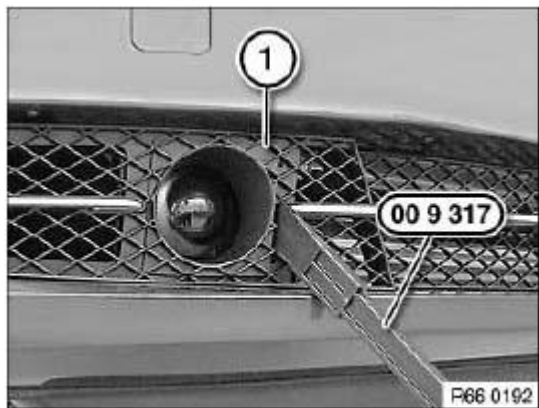


Fig. 22: Removing Trim With Special Tool 00 9 317

Courtesy of BMW OF NORTH AMERICA, INC.

Tape off bumper in working area (1) with yellow plastic adhesive tape.

Unclip long range sensor (2) from mounting.

Installation:

Make sure long range sensor (2) is correctly seated.

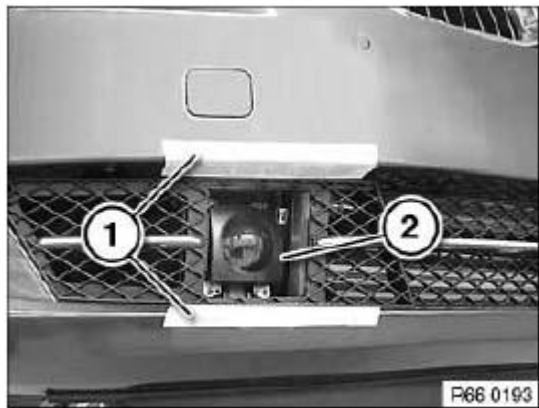


Fig. 23: Identifying Bumper In Working Area With Yellow Plastic Adhesive Tape And Long Range Sensor

Courtesy of BMW OF NORTH AMERICA, INC.

Secure long range sensor (1) against falling out.

Disconnect plug connection (2) and remove long range sensor (1).

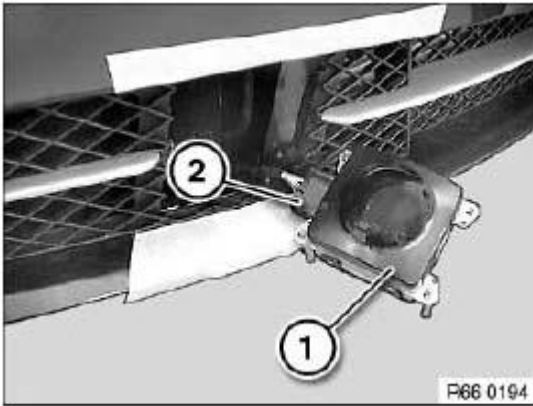


Fig. 24: Identifying Long Range Sensor And Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

- Carry out **LRR SENSOR ADJUSTMENT** using BMW diagnosis system.
- Carry out **PROGRAMMING/CODING** .

66 31 020 REMOVING AND INSTALLING (REPLACING) LEFT OR RIGHT SHORT RANGE SENSOR (SRR SENSOR) (M TECHNIK AERODYNAMIC KIT)

IMPORTANT: To ensure correct SRR operation, there must be no mechanical damage (e.g. dents) to the bumper in the SRR area, nor must filler work or multilayer paintwork (more than two paint coats) have been carried out.

Necessary preliminary tasks:

- Remove **FRONT BUMPER TRIM**

Remove impact absorber (1) and carefully detach adhesive tape in area (2).

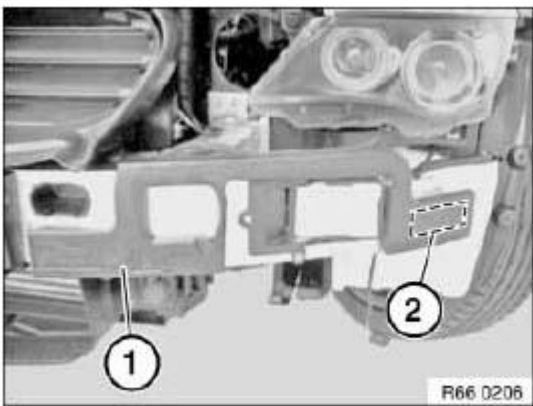


Fig. 25: Identifying Impact Absorber And Adhesive Tape In Area (2)
 Courtesy of BMW OF NORTH AMERICA, INC.

Drill out riveted joints (1) and remove bracket (2) for SRR sensor.

Disconnect associated plug connection and remove SRR sensor from bracket (2).

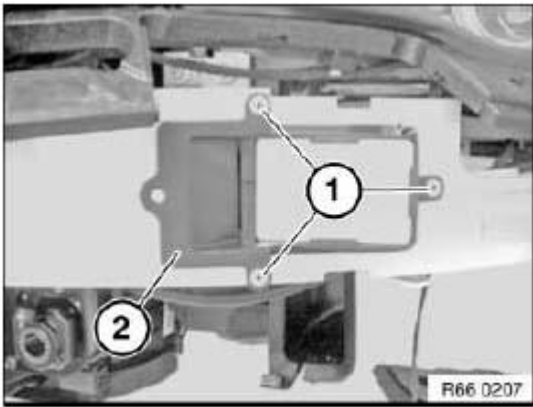


Fig. 26: Identifying Riveted Joints And Bracket For SRR Sensor
 Courtesy of BMW OF NORTH AMERICA, INC.

After installation:

Adjustment can only be carried out with the BMW diagnosis system:

Service functions:

- Chassis
 - Cruise control (ACC)
 - Adjust short range sensors

66 31 020 REMOVING AND INSTALLING/REPLACING SHORT RANGE SENSOR (SRR SENSOR)

Special tools required:

- **00 9 317**

IMPORTANT: To ensure correct SRR operation, there must be no mechanical damage (e.g. dents) to the bumper in the SRR area, nor must filler work or multilayer paintwork (more than two paint coats) have been carried out.

Necessary preliminary tasks:

- Remove **FRONT BUMPER TRIM**

Lever off impact absorber (1) with special tool **00 9 317** and remove.

Installation:

Impact absorber (1) must not be broken.

Make sure impact absorber (1) is firmly held.

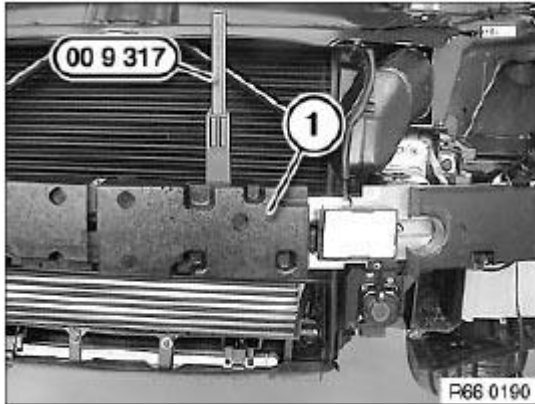


Fig. 27: Identifying Impact Absorber With Special Tool 00 9 317
Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect plug connection (1).

Unlock retaining tab (2) and slide out SRR sensor (3) in direction of arrow.

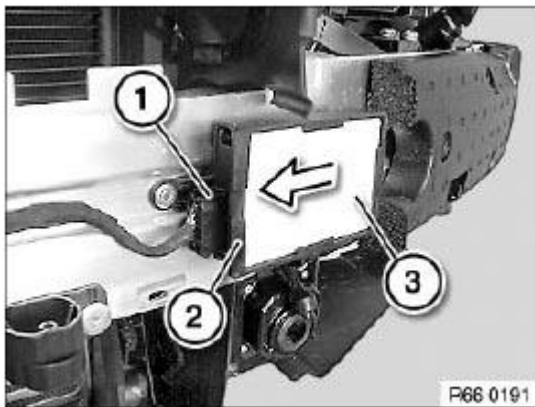


Fig. 28: Unlocking Retaining Tab And Sliding Out SRR Sensor
Courtesy of BMW OF NORTH AMERICA, INC.

After installation:

Adjustment can only be carried out with the BMW diagnosis system:

Service functions:

- Chassis
 - Cruise control (ACC)
 - Adjust short range sensors

66 31 100 REMOVING AND INSTALLING/REPLACING LONGITUDINAL DYNAMICS MODULE

Necessary preliminary tasks:

- Disconnect battery negative lead
- Release **DISTRIBUTION BOX** and place to one side

Disconnect plug connection (1).

Unlock retaining tab (2) and remove longitudinal dynamics module.

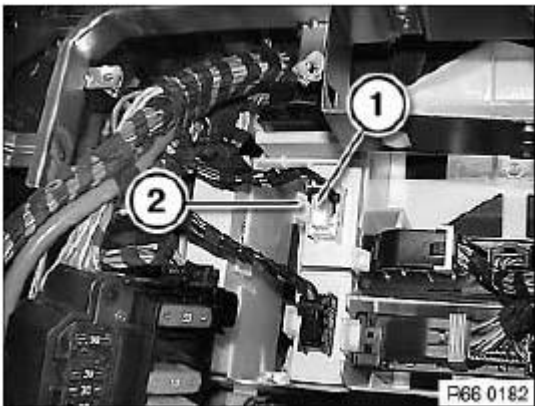


Fig. 29: Identifying Plug Connection And Retaining Tab
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Carry out **PROGRAMMING/CODING** .

FRONT CAMERA

66 51 010 REMOVING AND INSTALLING/REPLACING CONTROL UNIT FOR LANE DEPARTURE WARNING

Necessary preliminary tasks:

- Remove **RIGHT GLOVEBOX WITH HOUSING**

Version with CD changer:

- Remove **CD CHANGER**

Version with CD changer:

Release screw (1).

Slacken screw (2) and slide CD changer bracket to one side.

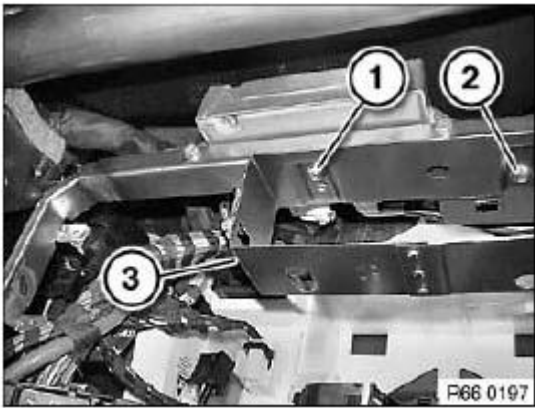


Fig. 30: Identifying Screws And CD Changer Bracket
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1).

Remove control unit for Lane Departure Warning (2) and disconnect associated plug connections.

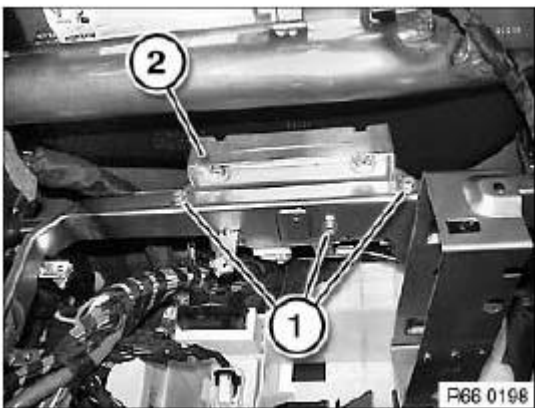


Fig. 31: Identifying Screws And Lane Departure Warning
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Release screws (1) and remove bracket (2) from control unit.

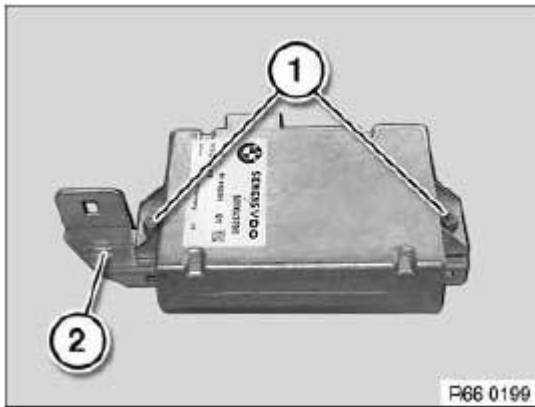


Fig. 32: Identifying Screws And Bracket Of Control Unit
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Carry out **PROGRAMMING/CODING** .

66 51 030 REMOVING AND INSTALLING/REPLACING CAMERA FOR LANE DEPARTURE WARNING

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

Expand two-part mirror base cover (1) by pressing from below and detach.

Feed out two-part mirror base cover (1) and remove.

NOTE: Catches of two-part mirror base cover (1) must not be damaged.

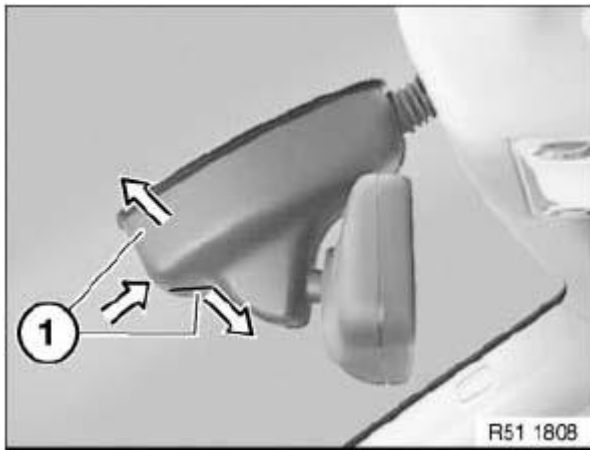


Fig. 33: Feeding Out Two-Part Mirror Base Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Slide camera (1) in direction of arrow out of mounting.

Disconnect plug connection (2).

Installation:

Make sure camera (1) is firmly seated in mounting.

Replacement:

Carry out calibration via BMW diagnosis system:

Service functions:

- Body
 - Lane Departure Warning
 - Calibrate camera

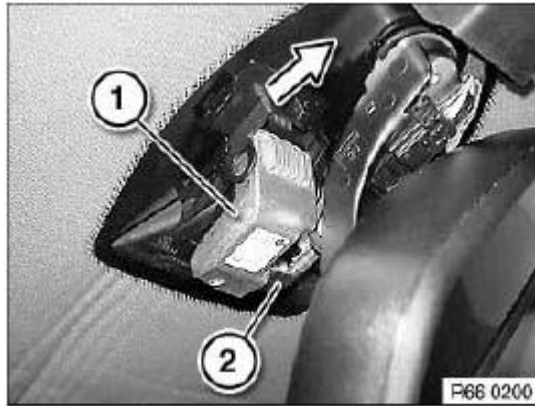


Fig. 34: Sliding Camera

Courtesy of BMW OF NORTH AMERICA, INC.

NIGHT VISION

66 54 001 ADJUSTING NIGHT VISION CAMERA

NOTE: Mechanical adjustment - as described in the following - is only possible axially .

Vertical adjustment can only be carried out with the BMW diagnosis system:

- Service functions
 - > Body
 - > Night vision
 - > Night vision camera
 - > Vertical adjustment

Necessary preliminary tasks:

- Remove grille in bumper trim on left. See **REMOVING AND INSTALLING/REPLACING GRILLE IN BUMPER TRIM (M5 OR M AERODYNAMIC KIT)** or **REMOVING AND INSTALLING/REPLACING TRIM GRILLE IN BUMPER TRIM (UP TO 03/2007)**

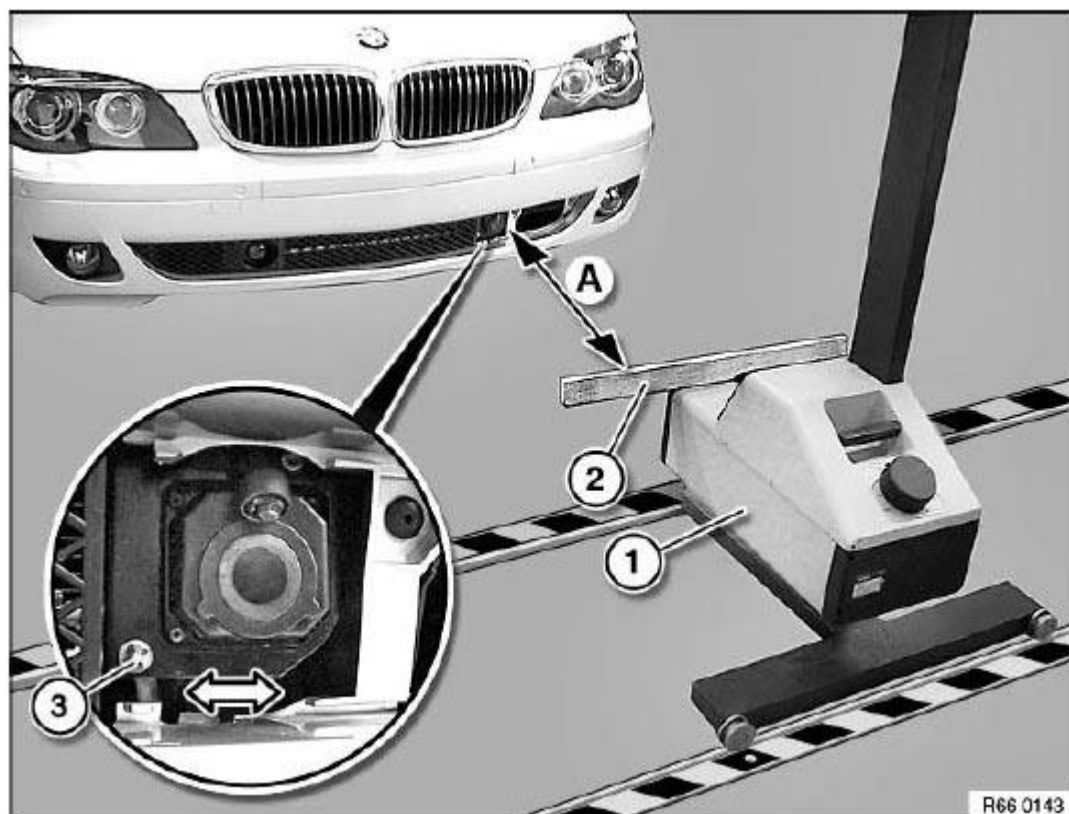


Fig. 35: Identifying Parallel Distance To Headlight Aiming Device
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Front of car must be parallel at distance (A) to headlight aiming device (1).
A = 1.5 m

Align a suitable straight object (2), e.g. a spirit level, horizontally on headlight aiming device.

Slowly carry out axial adjustment of night vision camera at adjusting screw (3).

NOTE: Illustration shows the in-car monitor view.

If necessary, align the picture of the night vision camera with aid of a second person.

Top edge (A) must be aligned parallel to top edge of screen (B).

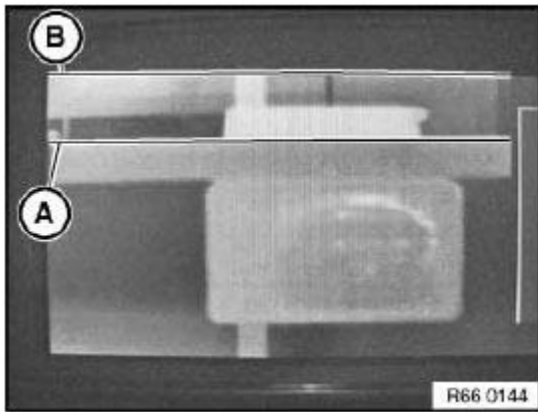


Fig. 36: Identifying Top Edge And Top Edge Of Screen
Courtesy of BMW OF NORTH AMERICA, INC.

66 54 005 REMOVING AND INSTALLING/REPLACING CONTROL UNIT FOR NIGHT VISION SYSTEM

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

Necessary preliminary tasks:

- Disconnect **battery negative lead**
- Remove TRIM FOR INSTRUMENT PANEL ON RIGHT

Disconnect plug connection (1).

Press tab (2) to side and remove control unit (3) from module carrier.

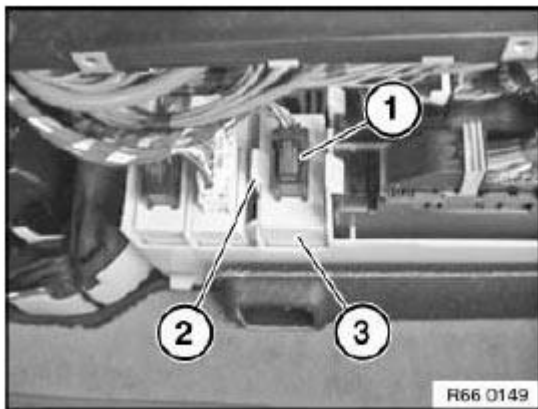


Fig. 37: Identifying Plug Connection, Tab And Control Unit
Courtesy of BMW OF NORTH AMERICA, INC.

Replacement:

Carry out **PROGRAMMING/CODING** .

NOTE: New component contains a CD with deblocking code.
CD is requested during coding/programming by the SSS.

66 54 010 REMOVE AND INSTALLING COMPLETE NIGHT VISION CAMERA (FROM 03/2007)

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

Necessary preliminary tasks:

- Remove **FRONT BUMPER TRIM**
- Remove impact absorber in working area

Drill out rivets (1).

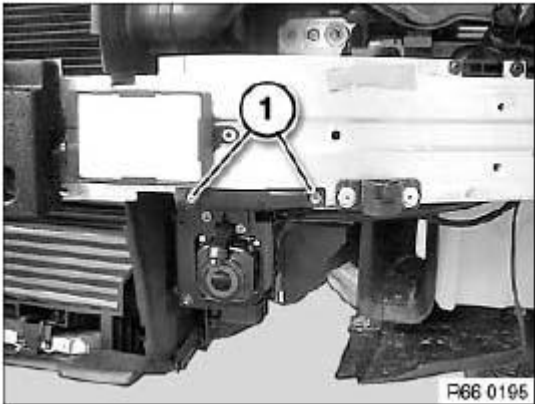


Fig. 38: Identifying Rivets

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Secure night vision camera (1) against falling down.

Disconnect plug connection (2) and release screw (3).

Tightening torque **66 54 1AZ** .

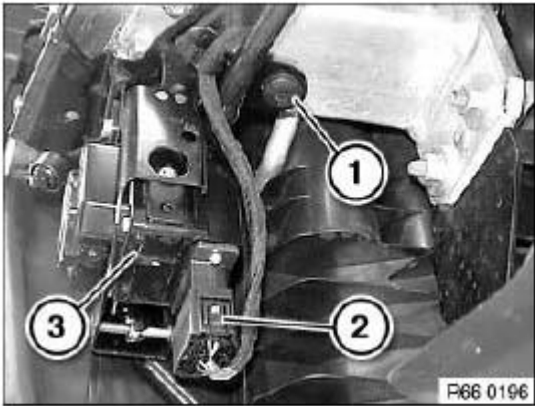


Fig. 39: Identifying Night Vision Camera, Plug Connection And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Secure night vision camera (1) against falling down.

Disconnect hose connection (2) and unclip cable fastener (3).

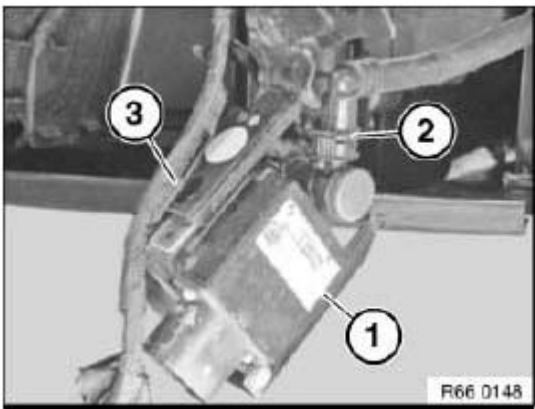


Fig. 40: Identifying Night Vision Camera, Hose Connection And Cable Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

After installation:

- Fill up with washer fluid

Replacement only:

- Replace **NIGHT VISION CAMERA**

66 54 010 REMOVE AND INSTALLING COMPLETE NIGHT VISION CAMERA (UP TO 03/2007)

Special tools required:

- **00 9 317**

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

Necessary preliminary tasks:

- Remove **FRONT BUMPER TRIM**

Disconnect plug connection (1).

Disengage cable guide (2).

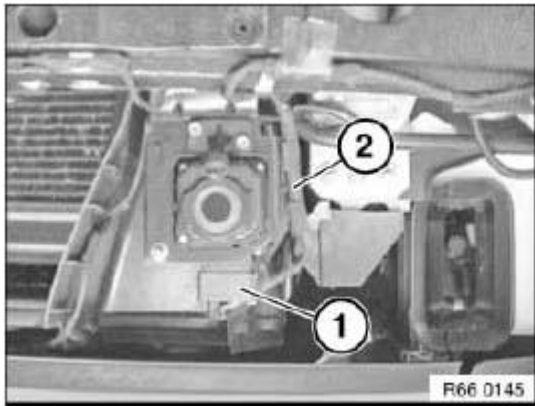


Fig. 41: Identifying Plug Connection And Cable Guide
Courtesy of BMW OF NORTH AMERICA, INC.

Gently lever out impact absorber (1) with special tool **00 9 317** .

Unscrew nuts (2).

Installation:

Make sure impact absorber (1) is correctly seated.

Tightening torque **66 54 1AZ**

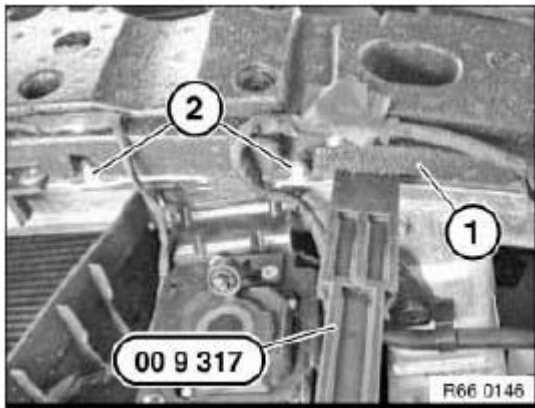


Fig. 42: Identifying Nuts And Impact Absorber With Special Tool 00 9 317
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Secure night vision camera (3) against falling down.

Release screw (1) and disengage tube (2) from mounting.

Tightening torque **66 54 1AZ** .

Remove night vision camera (3) complete with holder.

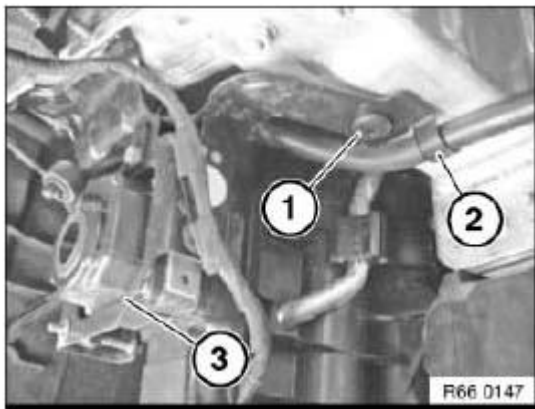


Fig. 43: Identifying Night Vision Camera, Screws And Tube
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Secure night vision camera (1) against falling down.

Disconnect hose connection (2) and unclip cable fastener (3).

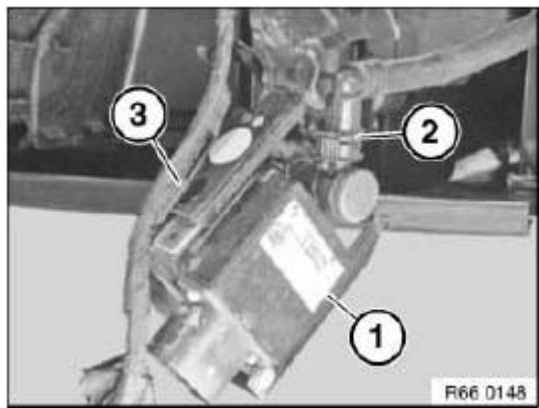


Fig. 44: Identifying Night Vision Camera, Hose Connection And Cable Fastener
Courtesy of BMW OF NORTH AMERICA, INC.

After installation:

- Fill up with washer fluid

Replacement only:

- Replace NIGHT VISION CAMERA

66 54 511 REPLACING NIGHT VISION CAMERA

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

IMPORTANT: New component contains a CD with deblocking code.
Deblocking code CD is requested during coding/programming by the SSS.
Coding/programming without the deblocking code CD is not possible!

Necessary preliminary tasks:

- Remove NIGHT VISION CAMERA

Release screw (1) on both sides.

Remove camera (2) from holder (3).

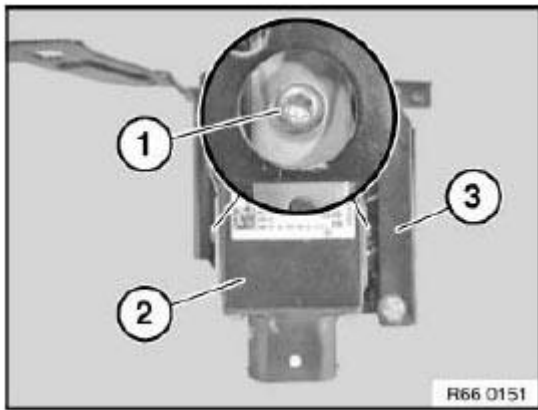


Fig. 45: Identifying Screw, Camera And Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Insert camera (1) in holder (2).

Left guide pin (3) must be correctly seated in holder (2).

Apply screw securing adhesive to screw (4) and tighten screw.

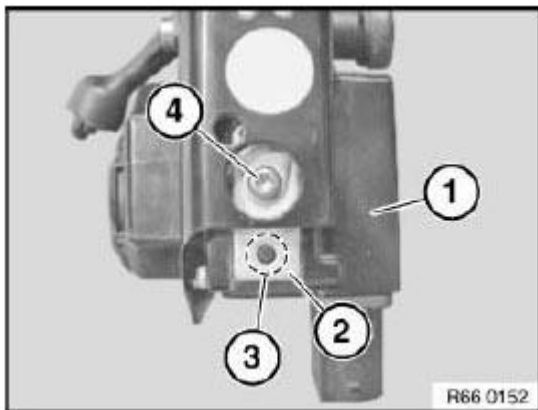


Fig. 46: Identifying Camera, Holder, Guide Pin And Adhesive To Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Tab (1) must snap noticeably into holder (2).

Make sure guide pin (3) is correctly seated in holder.

Apply screw securing adhesive to screw (4) and tighten screw.

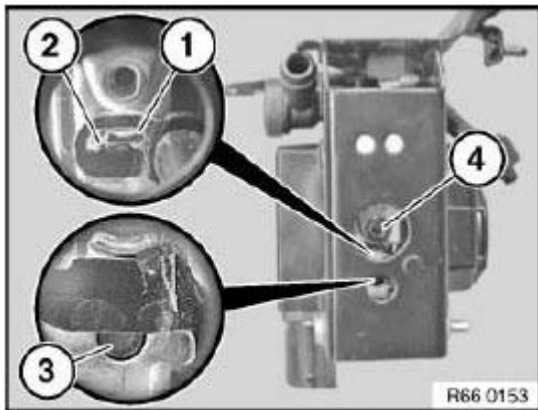


Fig. 47: Identifying Tab, Holder, Guide Pin And Adhesive To Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

- Carry out **PROGRAMMING/CODING** .
- Adjust **NIGHT VISION CAMERA**