

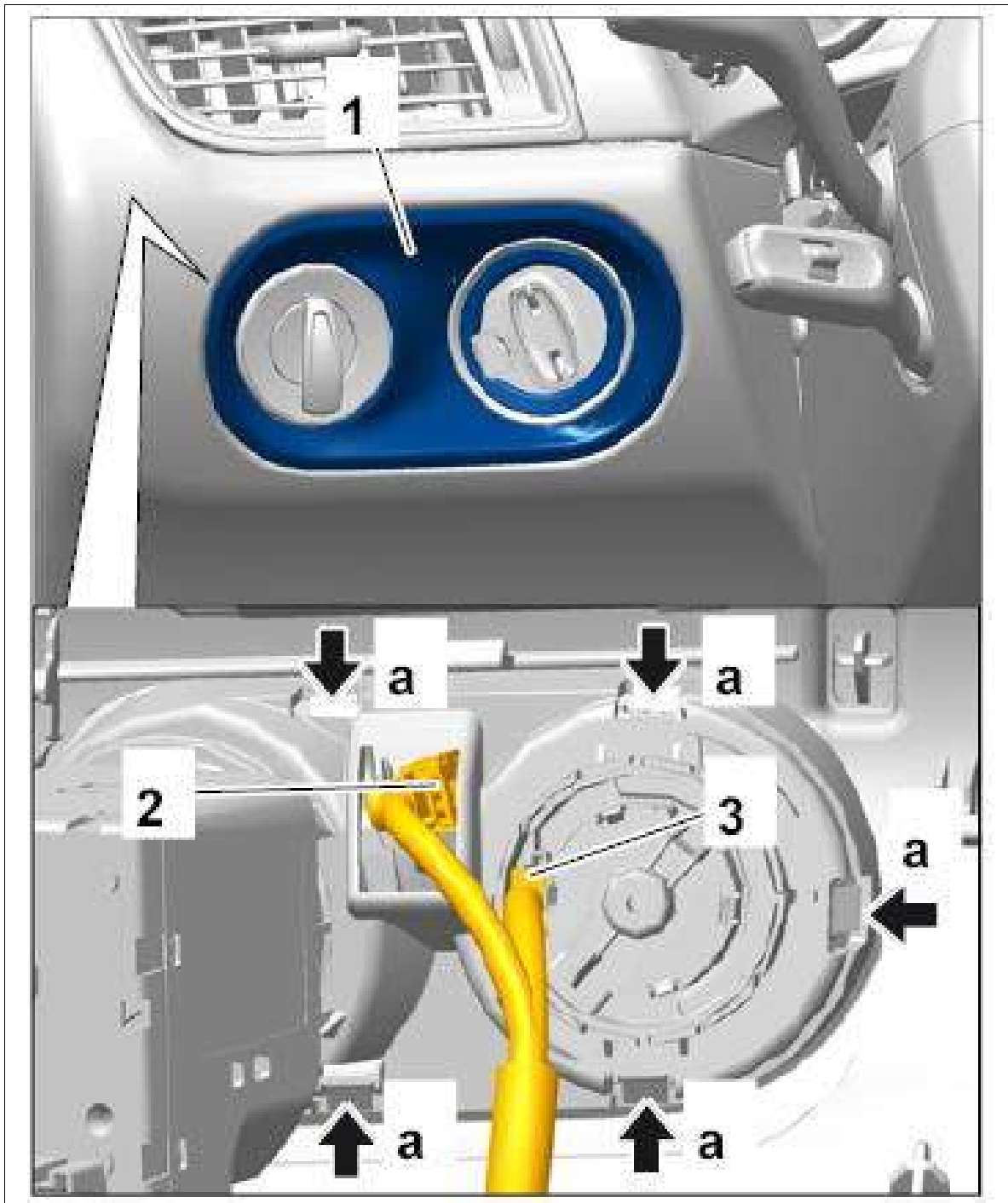
WM 940519 REMOVING AND INSTALLING MAIN HEADLIGHT SWITCH (ALL MODELS) > PRELIMINARY WORK

1. Carefully detach trim panel under dashboard at the left with lines connected from the dashboard. → Removing trim panel under dashboard at the left

WM 940519 REMOVING AND INSTALLING MAIN HEADLIGHT SWITCH (ALL MODELS) > REMOVING MAIN HEADLIGHT SWITCH

1. Remove trim panel **-1-** on main headlight switch and ignition starter switch.
 1. 1.1. Disconnect electric plug connection **-2-** for the ignition starter switch light.
 2. 1.2. Unclip locking lugs **-a-** and remove trim panel.
2. Disconnect electric plug connection **-3-** for the main headlight switch.

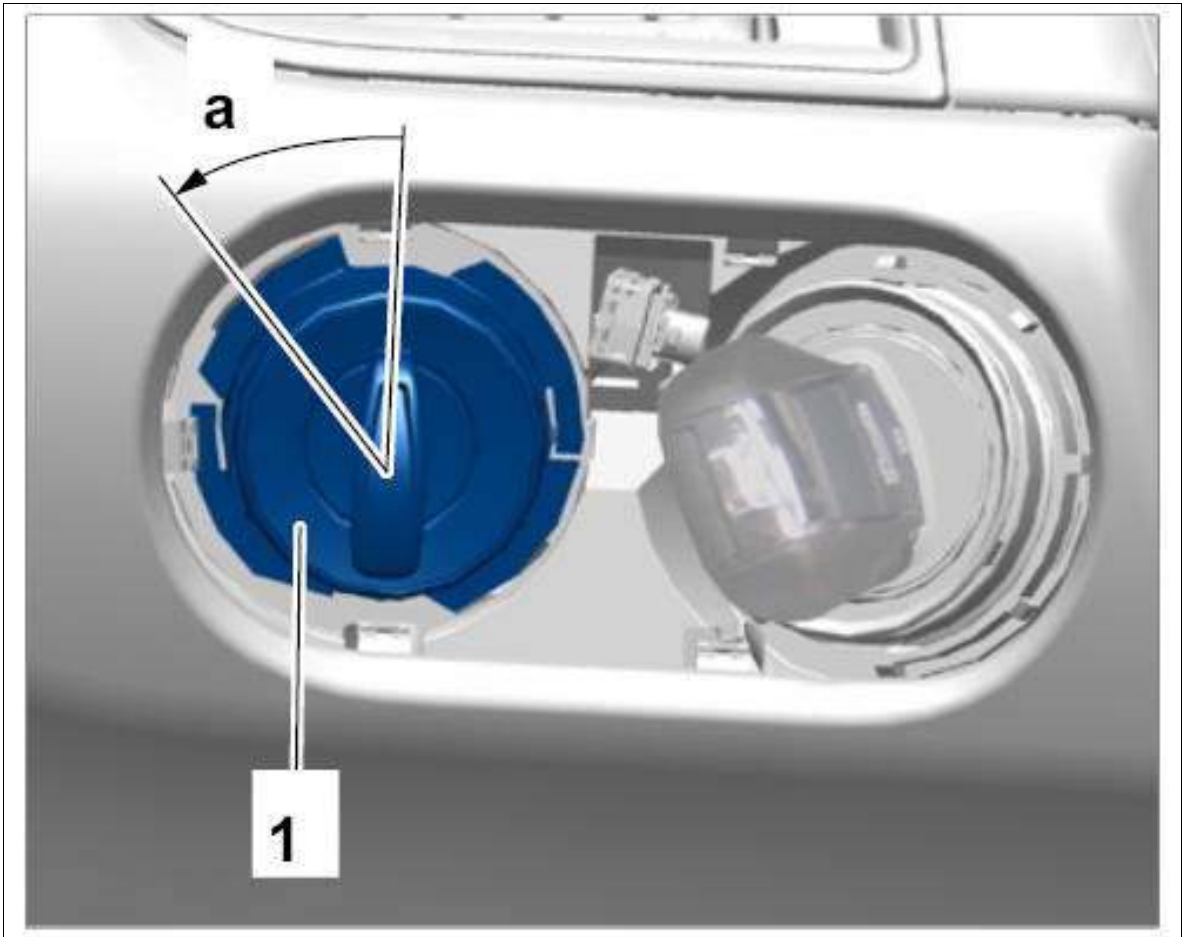
Fig 1: Removing Trim Panel On Main Headlight Switch And Ignition Starter Switch



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Turn main headlight switch housing **-1-** approx. 40° anti-clockwise **-a-** and remove it from the trim panel under the dashboard at the left.

Fig 2: Removing Main Headlight Switch



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WM 940519 REMOVING AND INSTALLING MAIN HEADLIGHT SWITCH (ALL MODELS) > INSTALLING MAIN HEADLIGHT SWITCH



Installation is performed in reverse order to removal.

WM 940519 REMOVING AND INSTALLING MAIN HEADLIGHT SWITCH (ALL MODELS) > SUBSEQUENT WORK

Install trim panel under dashboard at the left. → Installing trim panel under dashboard at the left

WM 941415 ADJUSTING HEADLIGHT MOUNTING (ALL MODELS) > TOOLS

| Designation | Type | Number | Description |
|-------------|------|--------|-------------|
| | | | |

| | | | |
|------------|-----------------------------|-------------------|--|
| star gauge | Commercially available tool | Nr.127-1 Pos.1 |  |
| star gauge | Commercially available tool | Nr.127-1 Pos.2 |  |

WM 941415 ADJUSTING HEADLIGHT MOUNTING (ALL MODELS) > TECHNICAL VALUES

| Location | Description | Type | Basic value | Tolerance 1 | Tolerance 2 |
|---------------------------------|----------------------------|-------------------|----------------|-------------|-------------|
| Headlight to headlight mounting | Hexagon-head bolt, M6 x 20 | Tightening torque | 8 Nm (6 ftlb.) | | |

WM 941415 ADJUSTING HEADLIGHT MOUNTING (ALL MODELS) > PRELIMINARY WORK

1. Remove headlight. → Removing Headlights
2. Remove headlight mounting. → Removing Headlight Mounting

WM 941415 ADJUSTING HEADLIGHT MOUNTING (ALL MODELS) > ADJUSTING HEADLIGHT MOUNTING > CHECKING ADJUSTING ELEMENTS

Information

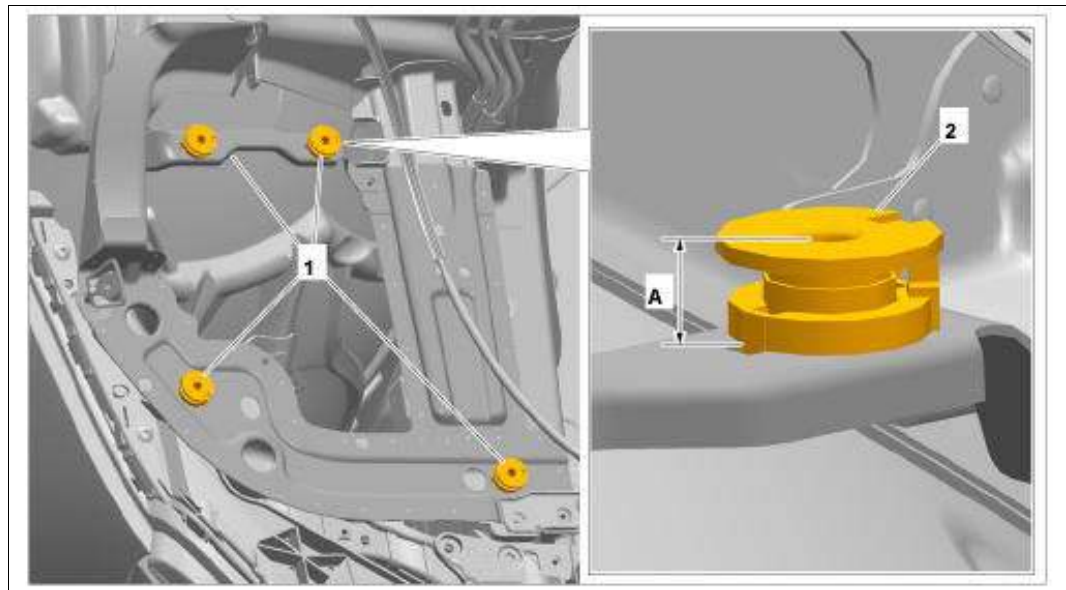
To restore the original installation position, thereby minimizing the amount of adjustment work required, the following steps must be carried out prior to removal:

- Mark the position of the headlight mounting with respect to fastening screws.
- Measure and take note of the height of the headlight mounting with respect to the body.

1. Check adjusting elements.

- 1.1. Check adjusting elements **-1-** for damage and make sure they are seated securely. If an adjusting element **-1-** is damaged, it must be replaced. Check that the adjusting elements **-1-** are fitted correctly in the body.
- 1.2. Measure the height **-A-** of the adjusting elements **-1-** using a calliper gauge and write it down so that you can set the original adjustment height again after the next test step.
- 1.3. Check that the adjusting rings **-2-** are not stiff. **Important: Left thread!** It must be possible to turn adjusting ring **-2-** without resistance over the entire thread length, otherwise replace adjusting element **-1-**.
- 1.4. Set original height **-A-** of the adjusting elements **-1-** again.

Fig 1: Checking Adjusting Elements



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WM 941415 ADJUSTING HEADLIGHT MOUNTING (ALL MODELS) > ADJUSTING HEADLIGHT MOUNTING > INSTALLING HEADLIGHT MOUNTING

Information

If work is carried out on the headlight or retainer plate, the installed fastening screws must be replaced by microencapsulated fastening screws .

Micro-encapsulated fastening screws must be tightened only once to the specified torque.

Micro-encapsulated fastening screws must be replaced after loosening them.

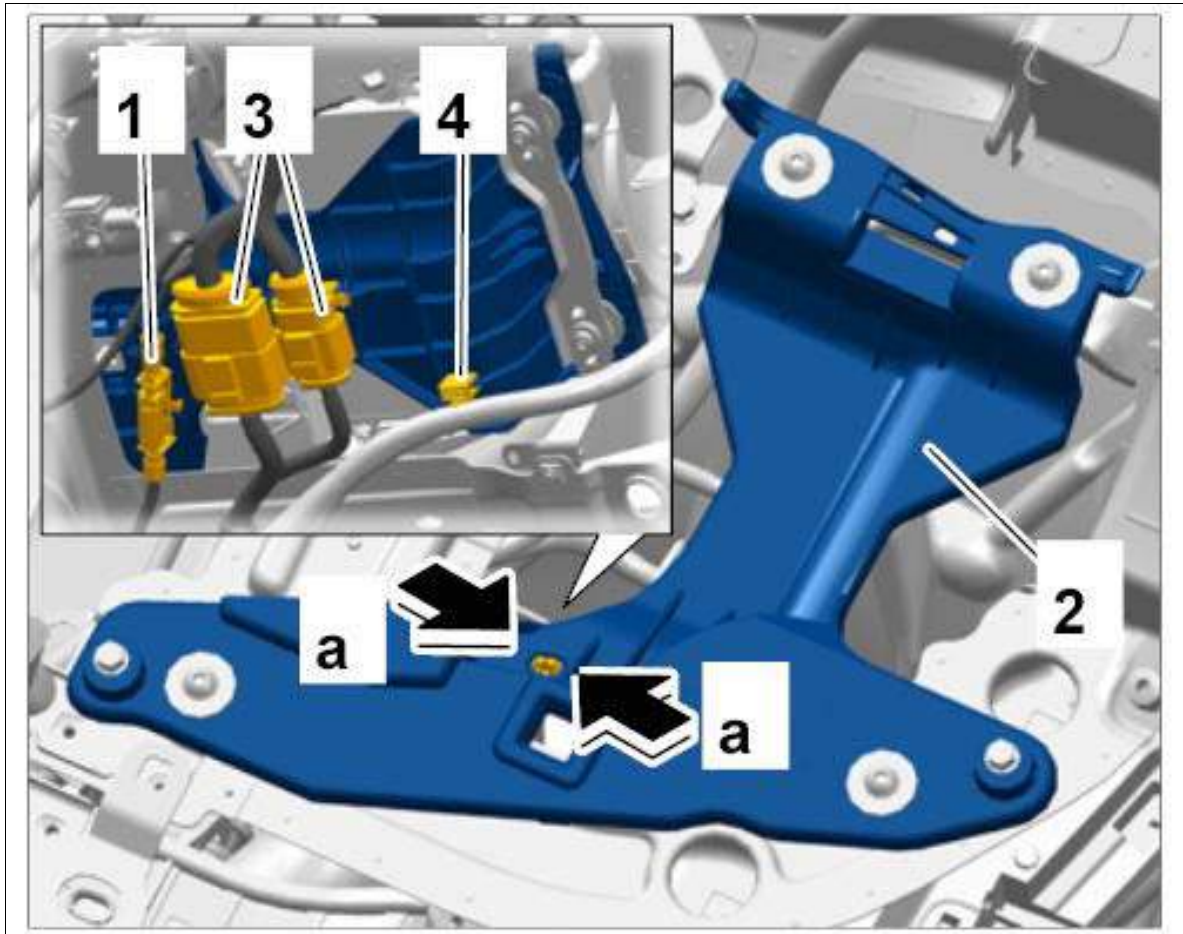
Left headlight mounting:

1. Clip antenna line holder -1- into the headlight mounting -2- .
2. Clip holders for electric plug connections -3- and headlight cleaning system hose -4- into the headlight mounting -2- .

Headlight mounting at the left and right:

3. Position headlight mounting -2- on the adjusting elements.

Fig 1: Clipping Holders And Electric Plug Connections

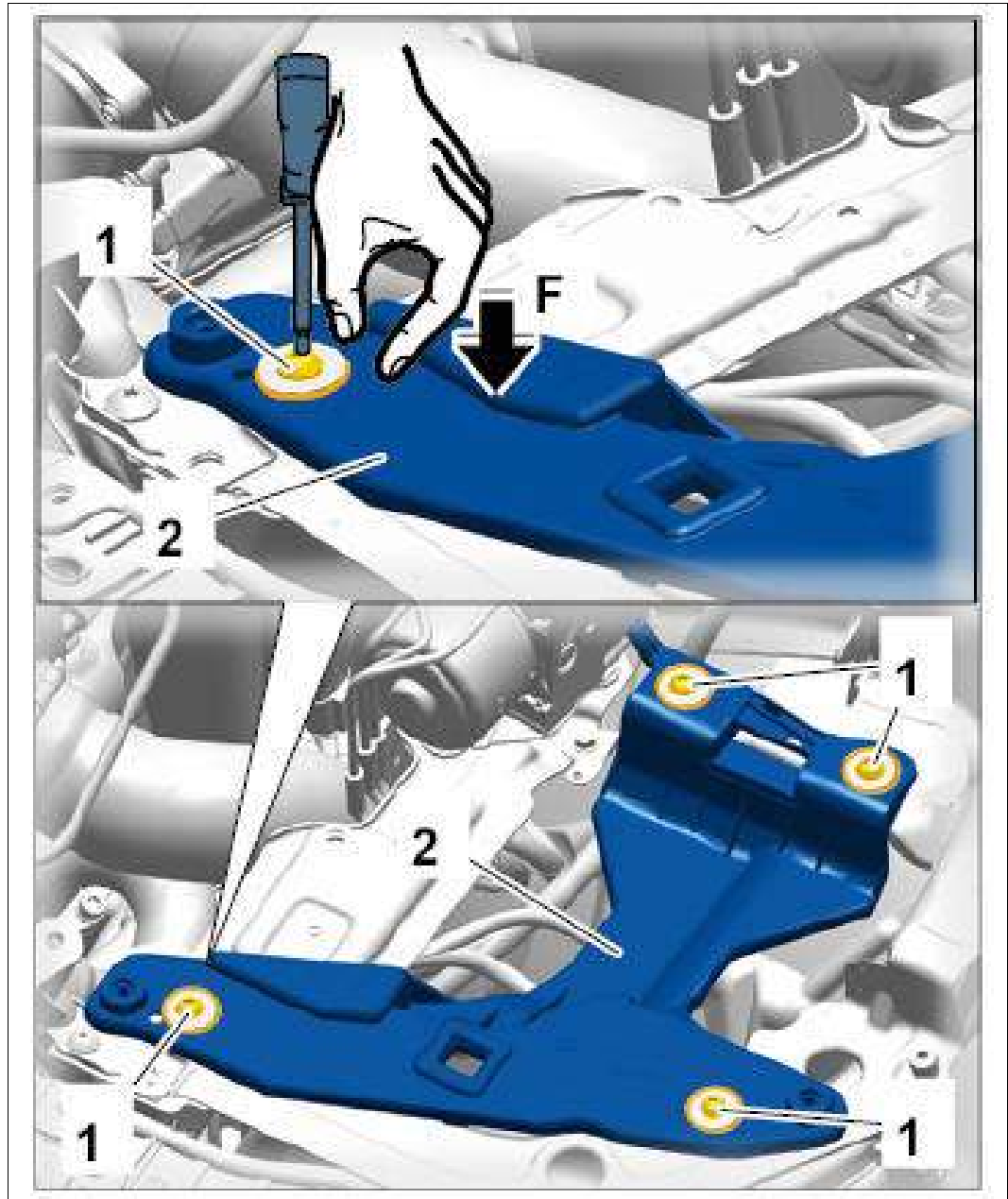


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4. Fit fastening screws -1- .

1. 4.1. Press fastening screw -1- into adjusting element.
2. 4.2. Press headlight mounting -2- in the adjusting element area down -**arrow F**- and screw fastening screw -1- into adjusting element.
3. 4.3. Align markings on the headlight mounting -2- - if markings were made - with the washers, press headlight mounting -2- down in the adjusting element area -**arrow F**- and tighten fastening screws -1- .

Fig 2: Screwing Fastening Screws



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WM 941415 ADJUSTING HEADLIGHT MOUNTING (ALL MODELS) > ADJUSTING HEADLIGHT MOUNTING > ADJUSTING HEADLIGHT MOUNTING TOWARDS Z-AXIS AND X-AXIS

Information

- Do not adjust gap dimensions between the headlight mounting and front lid until you have adjusted the gap dimensions of the front lid with respect to all other add-on parts.
- Adjust gap dimensions between the headlights and front lid in accordance with the specified

dimensions.

- The specified gap dimensions are guidelines and are relevant for repair work and assembly work.
- The gaps must not taper off or become narrow in places.
- Use star gauge Nr.127-1 Pos.1 and star gauge Nr.127-1 Pos.2 to check the gap dimensions.
- The gap dimensions and offset positions of the headlights are adjusted by moving the headlight mountings and by screwing the adjusting elements in and out.

1. Insert headlight into the mounting.

2. Close the front lid and check the gap dimensions between the headlight and front lid. →
5X00IN41 GAP DIMENSIONS

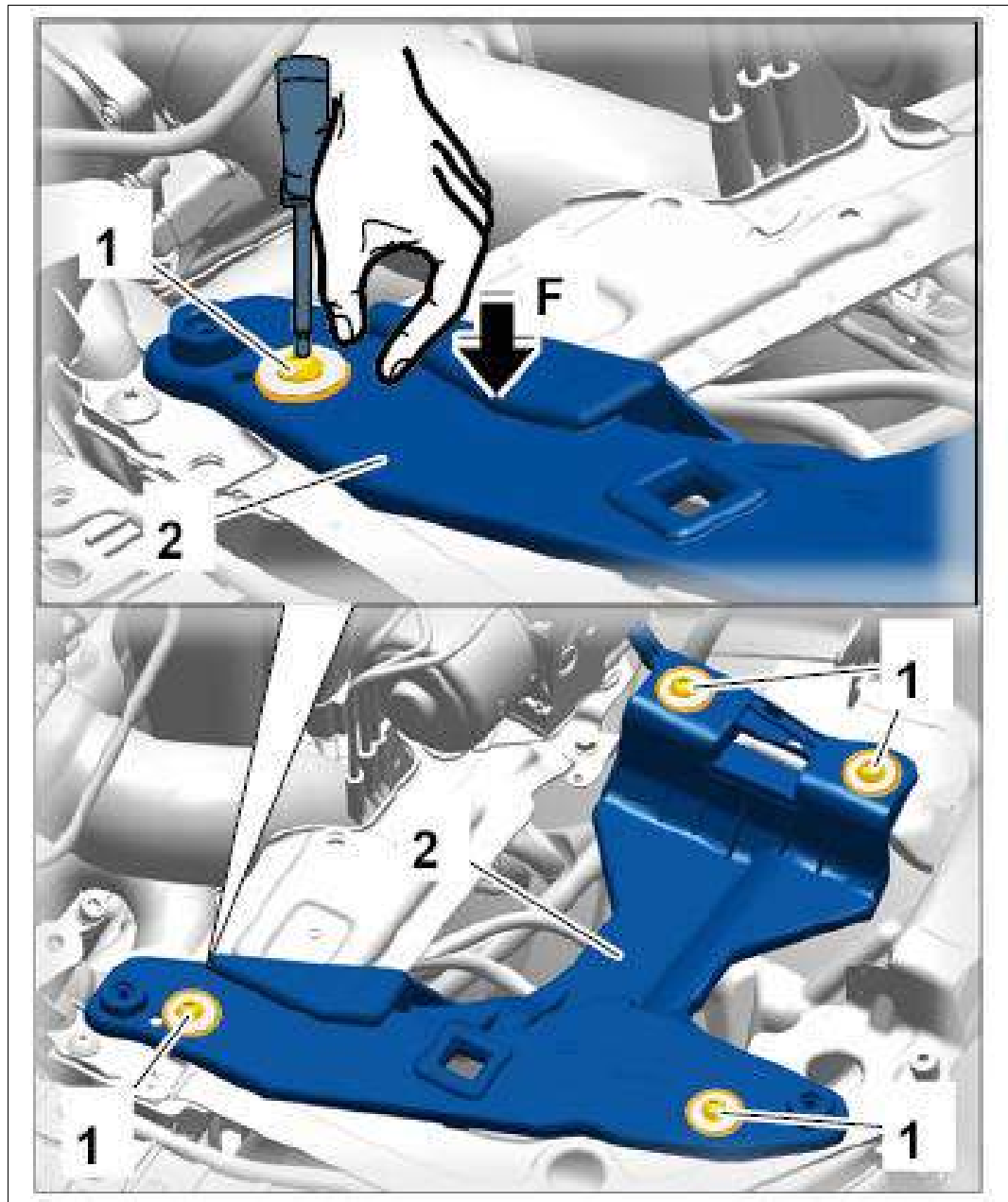
| Location | Description | Type | Basic value | Tolerance 1 | Tolerance 2 |
|---|---|---------------|-------------|-------------|-------------|
| Gap dimension between headlight and front lid | Gap dimension on headlight is the same all the way around | Gap dimension | 4.7 mm | +/-0.8 mm | |

3. Remove headlight.

4. Loosen fastening screws **-1-** .

1. 4.1. Press headlight mounting **-2-** in the adjusting element area down **-arrow F-** to ensure that the position of the adjusting element cannot be changed.

Fig 1: Loosening Fastening Screws



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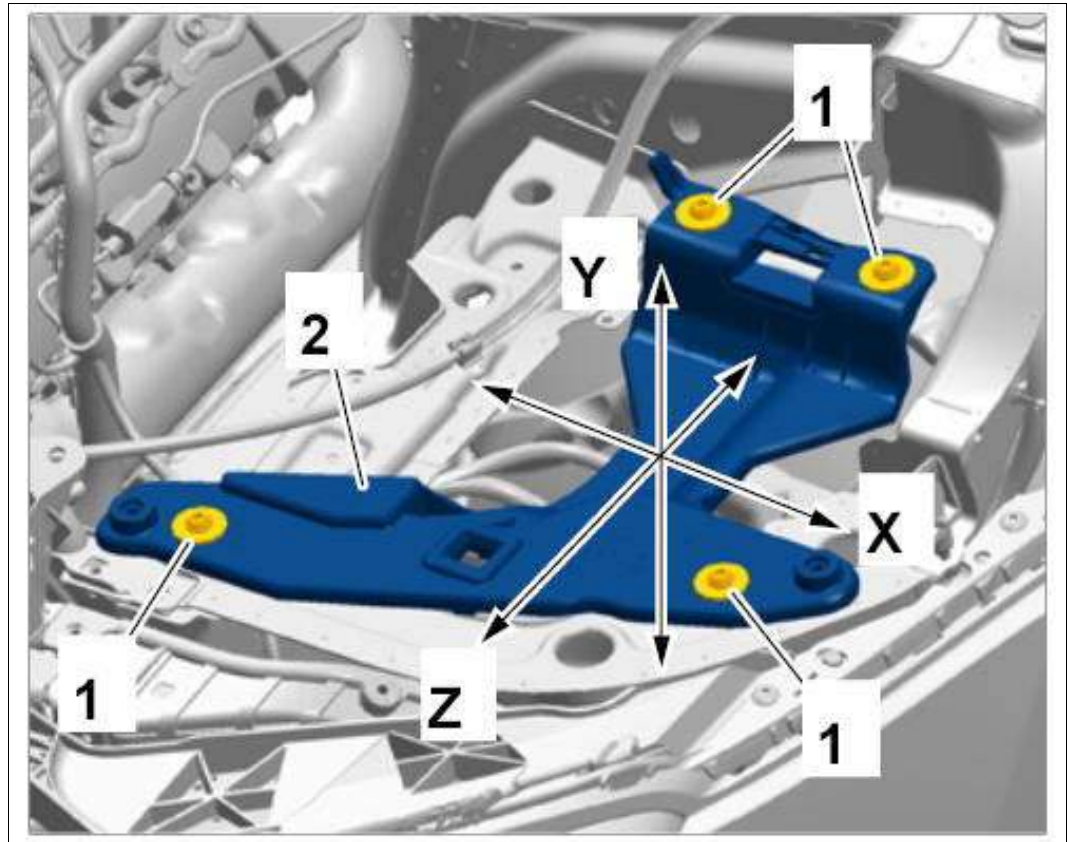
5. Move headlight mounting -2- in the required direction -X, Z- .

A scale is visible close to the fastening screws on the headlight mounting. The scale serves as a guide when the headlight is removed and makes adjustments easier.

6. Tighten fastening screws -1- .

1. 6.1. Press headlight mounting -2- in the adjusting element area down to ensure that the position of the adjusting element cannot be changed.

Fig 2: Positioning Headlight Mounting



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

7. Insert headlight into the mounting.
8. Close the front lid and check the gap dimensions between the headlight and front lid.
9. Repeat the adjustment procedure if necessary.

WM 941415 ADJUSTING HEADLIGHT MOUNTING (ALL MODELS) > ADJUSTING HEADLIGHT MOUNTING > ADJUSTING HEADLIGHT MOUNTING TOWARDS Y-AXIS

Information

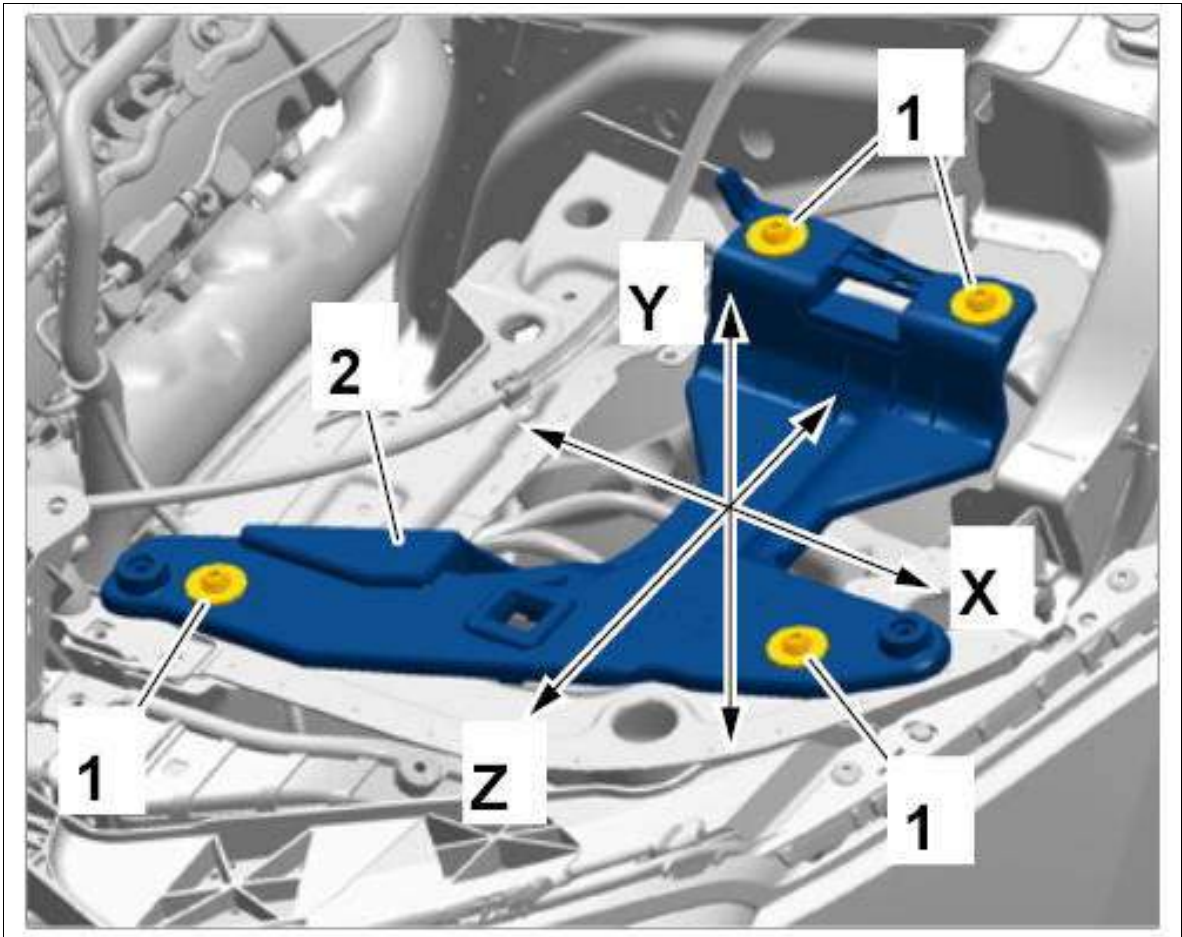
If work is carried out on the headlight or retainer plate, the installed fastening screws must be replaced by microencapsulated fastening screws .

Micro-encapsulated fastening screws must be tightened only once to the specified torque.

Micro-encapsulated fastening screws must be replaced after loosening them.

1. Insert headlight into the mounting.
2. Close the front lid and check the gap dimensions between the headlight and front lid. →
5X00IN41 GAP DIMENSIONS
3. Remove headlight.

Fig 1: Positioning Headlight Mounting



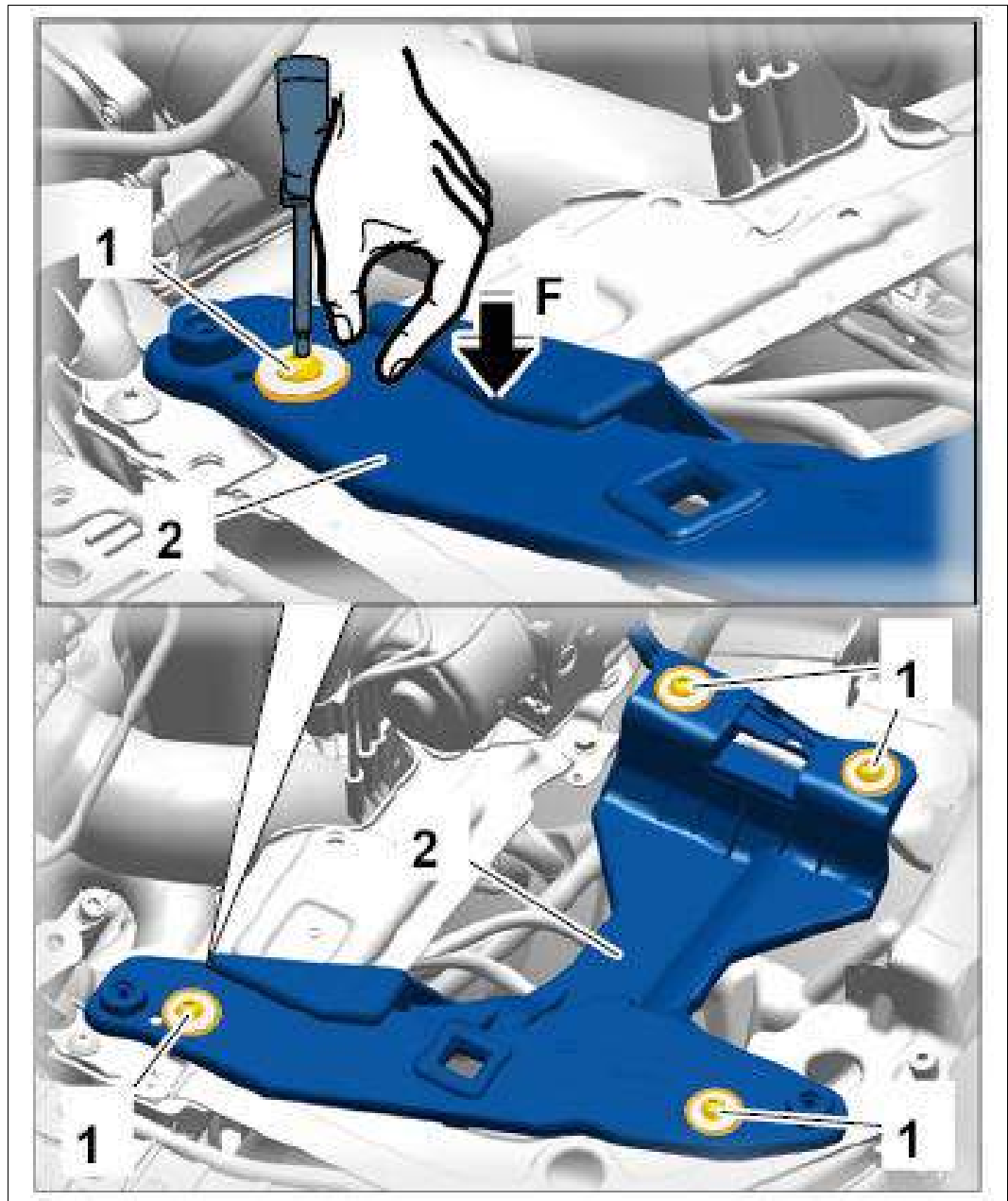
Courtesy of PORSCHE CARS NORTH AMERICA, INC.

Procedure for lowering the headlight:

4. Loosen fastening screws -1- .

1. 4.1. Press headlight mounting -2- in the adjusting element area down -arrow F- to ensure that the position of the adjusting element cannot be changed.

Fig 2: Loosening Fastening Screws



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

5. Screw in the adjusting ring -3- on the adjusting element to lower the headlight mounting -2- .

1. 5.1. Screw fastening screw -1- anti-clockwise.

2. 5.2. Do not exert pressure on the headlight mounting -2- during the adjustment process.

Fig 3: Identifying Lower Headlight Mounting



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

Once the required adjustment height is reached:

6. Tighten fastening screws.

1. 6.1. Press headlight mounting in the adjusting element area down to ensure that the position of the adjusting element cannot be changed.

Procedure for raising the headlight:

7. Loosen fastening screws -1- .

1. 7.1. Press headlight mounting -2- in the adjusting element area down to ensure that the position of the adjusting element cannot be changed.

8. Screw out the adjusting ring -3- on the adjusting element to raise the headlight mounting -2- .

1. 8.1. Screw fastening screw -1- clockwise.
2. 8.2. Do not exert pressure on the headlight mounting -2- during the adjustment process.

Fig 4: Raising Headlight Mounting



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

Once the required adjustment height is reached:

9. Tighten fastening screws.

1. 9.1. Press headlight mounting in the adjusting element area down to ensure that the position of the adjusting element cannot be changed.

10. Insert headlight into the mounting.

11. Close the front lid and check the gap dimensions between the headlight and front lid.

12. Repeat the adjustment procedure if necessary.

13. Remove headlight.

14. Tighten fastening screws to the specified torque. **Tightening torque 8 Nm (6 ftlb.)**

**WM 941419 REMOVING AND INSTALLING HEADLIGHT MOUNTING (ALL MODELS) >
PRELIMINARY WORK**

1. Remove headlights. → Removing Headlights

**WM 941419 REMOVING AND INSTALLING HEADLIGHT MOUNTING (ALL MODELS) >
REMOVING HEADLIGHT MOUNTING**

Information

To restore the original installation position, thereby minimizing the amount of adjustment work required, the following steps must be carried out prior to removal:

- Mark the position of the headlight mounting with respect to fastening screws.
- Measure and take note of the height of the headlight mounting with respect to the body.

Information

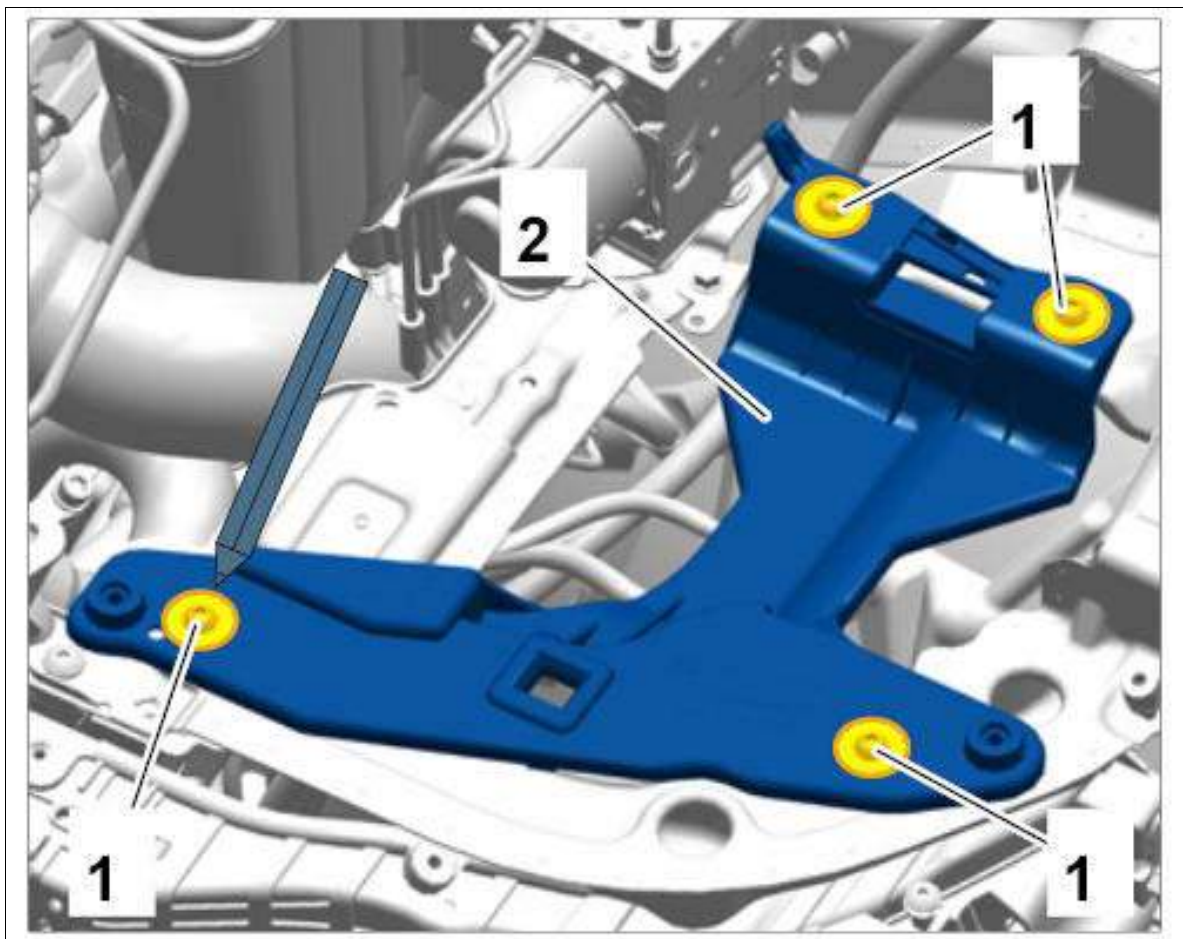
If work is carried out on the headlight or retainer plate, the installed fastening screws must be replaced by microencapsulated fastening screws .

Micro-encapsulated fastening screws must be tightened only once to the specified torque.

Micro-encapsulated fastening screws must be replaced after loosening them.

1. Mark the position of the washers -1- on the headlight mounting -2- using a water-resistant pen to make it easier to adjust the gap dimensions on the front lid when re-installing the headlight mounting.

Fig 1: Identifying Washers Mark Position



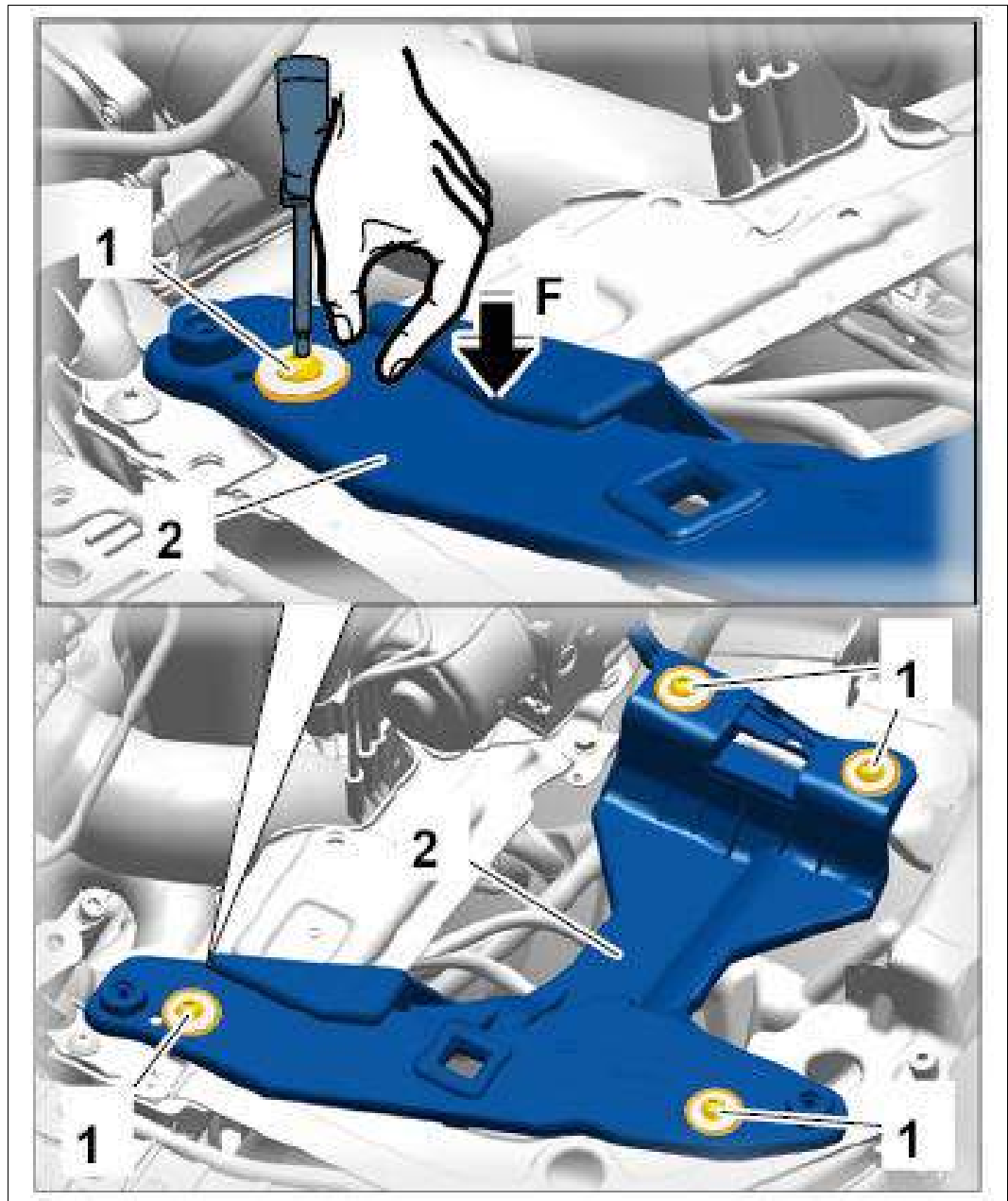
Courtesy of PORSCHE CARS NORTH AMERICA, INC.

2. Unscrew fastening screws -1- .

1. 2.1. Press the headlight mounting -2- down close to each fastening screw -F- (to prevent the adjusting elements from turning) and unscrew fastening screws from the body.

2. 2.2. Remove fastening screws from the adjusting elements.

Fig 2: Removing Fastening Screws

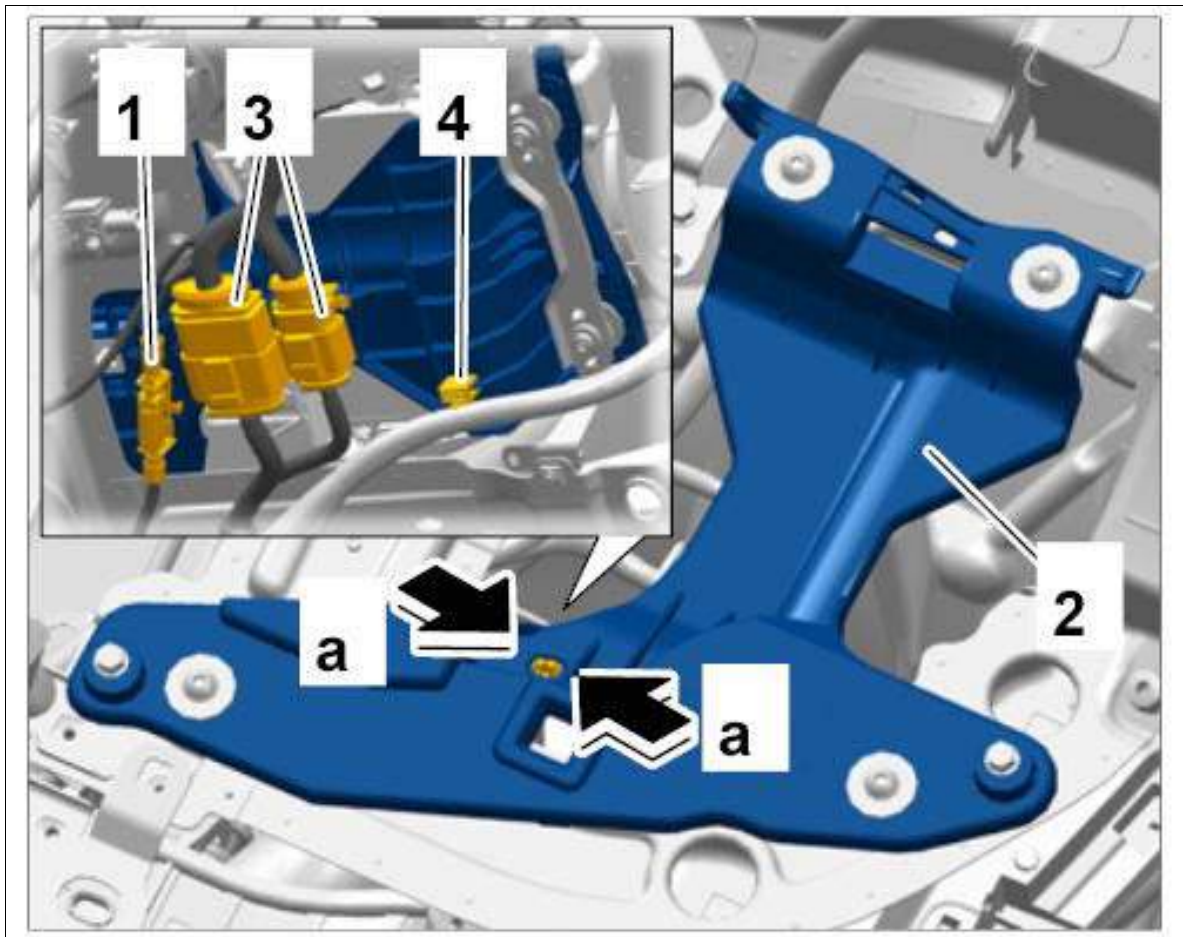


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Left headlight mounting

3. Unclip the antenna line holder -1- from the headlight mounting -2- in a downward direction -a-
4. Unclip electric plug connections -3- and holder -4- for the headlight cleaning system hose from the headlight mounting.

Fig 3: Removing Holder And Electric Plug Connections



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

Headlight mounting at the left and right

5. Remove headlight mounting.

WM 941419 REMOVING AND INSTALLING HEADLIGHT MOUNTING (ALL MODELS) > INSTALLING HEADLIGHT MOUNTING

1. Copy markings for the washers from the faulty headlight mounting to the new headlight mounting.
2. Installation is performed in reverse order to removal.
3. Tighten fastening screws securing headlight mounting to body.

WM 941419 REMOVING AND INSTALLING HEADLIGHT MOUNTING (ALL MODELS) > SUBSEQUENT WORK

1. Install headlights. → Installing Headlights

2. Close the front lid carefully and check gap dimensions between the headlights and front lid. Adjust gap dimensions if necessary. → 941415 ADJUSTING HEADLIGHT MOUNTING
3. Check headlight adjustment and correct it if necessary. → 941516 ADJUSTING HEADLIGHTS AND FOG LIGHTS

WM 941516 ADJUSTING HEADLIGHTS AND FOG LIGHTS (ALL MODELS) > ADJUSTING HEADLIGHTS

Information

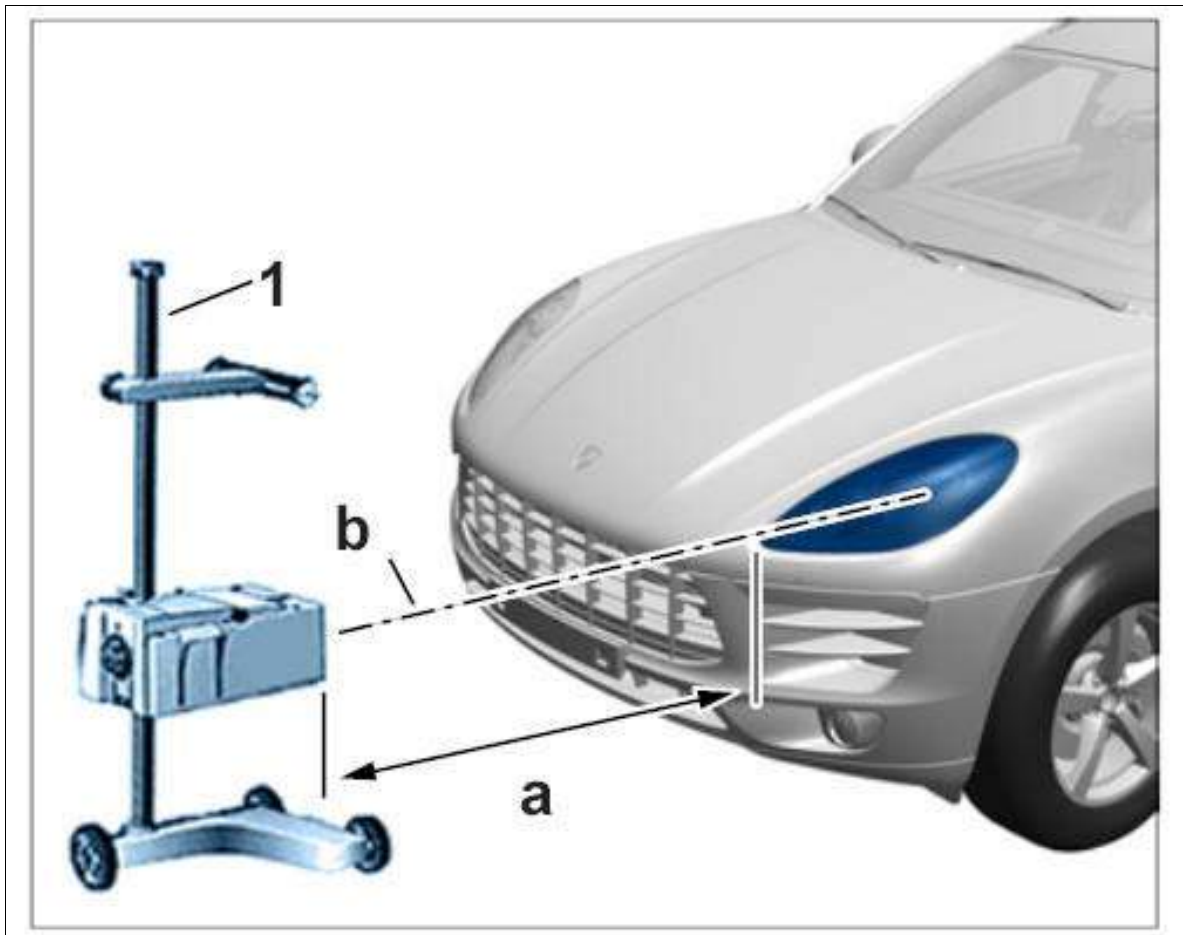
- Some of the repair illustrations show only one side of the vehicle.
- Naturally, some steps also have to be performed on the opposite side of the vehicle as well.

Information

Read the operating instructions for the headlight aiming device and observe the following test and adjustment conditions:

- Vehicle and headlight aiming device positioned on a horizontal, clean surface.
 - Vehicle parked safely and ready to drive, empty, including all fluids and fuel.
 - All doors and rear lid closed.
 - Tyre pressure corresponds to the specified values.
 - Driver's seat occupied by one person or a weight of 75 kg.
 - Steering in straight-ahead position.
 - For vehicles with air suspension: Vehicle level in center position.
 - Vehicle and chassis have been bounced.
1. Align the headlight aiming device **-1-** at a 90° angle to the longitudinal axis of the vehicle and position it at a distance of **-a-** in front of the left headlight.
 2. Set the tilt angle of the light/dark limit of the dipped beam headlight on the headlight aiming device and align the collecting box with the center axis **-b-** of the dipped beam headlight.

Fig 1: Positioning Headlight Aiming Device



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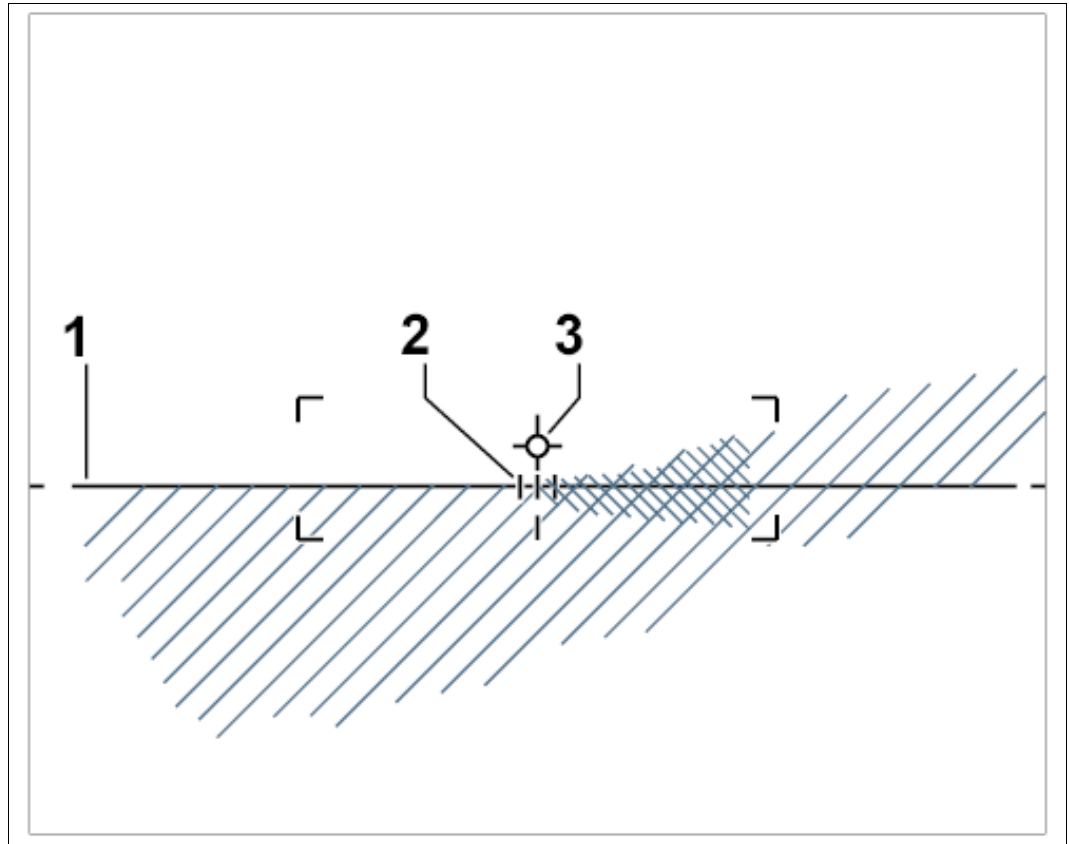
3. Switch on ignition and dipped beam headlights.

4. Check the headlight setting.

1. 4.1. The horizontal part of the light/dark limit must run along the dividing line -1- .

2. 4.2. The salient point -2- of the horizontal part and right-elevated part of the light/dark limit must be positioned along the vertical line running through the central mark -3- .
The bright core of the light beam is at the right of this vertical line.

Fig 2: Identifying Light Distribution Of Dipped Beam Headlight



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5. Correct the headlight setting if necessary.

1. 5.1. Adjust the height of the light/dark limit at the inner adjusting screw **-1-** using a 6-mm Allen key.
2. 5.2. Adjust the lateral setting of the light/dark limit at the outer adjusting screw **-2-** using a long 6-mm Allen key.

Fig 3: Turning Headlight Adjusting Screws



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For vehicles with Xenon headlights:

6. Switch the ignition off and on again with the dipped beam headlights on.
7. Check the headlight setting again.

All vehicles:

8. Repeat the test and adjustment procedure on the right headlight.
9. Switch off dipped beam headlights and ignition.

WM 941516 ADJUSTING HEADLIGHTS AND FOG LIGHTS (ALL MODELS) > ADJUSTING FOG LIGHTS

Information

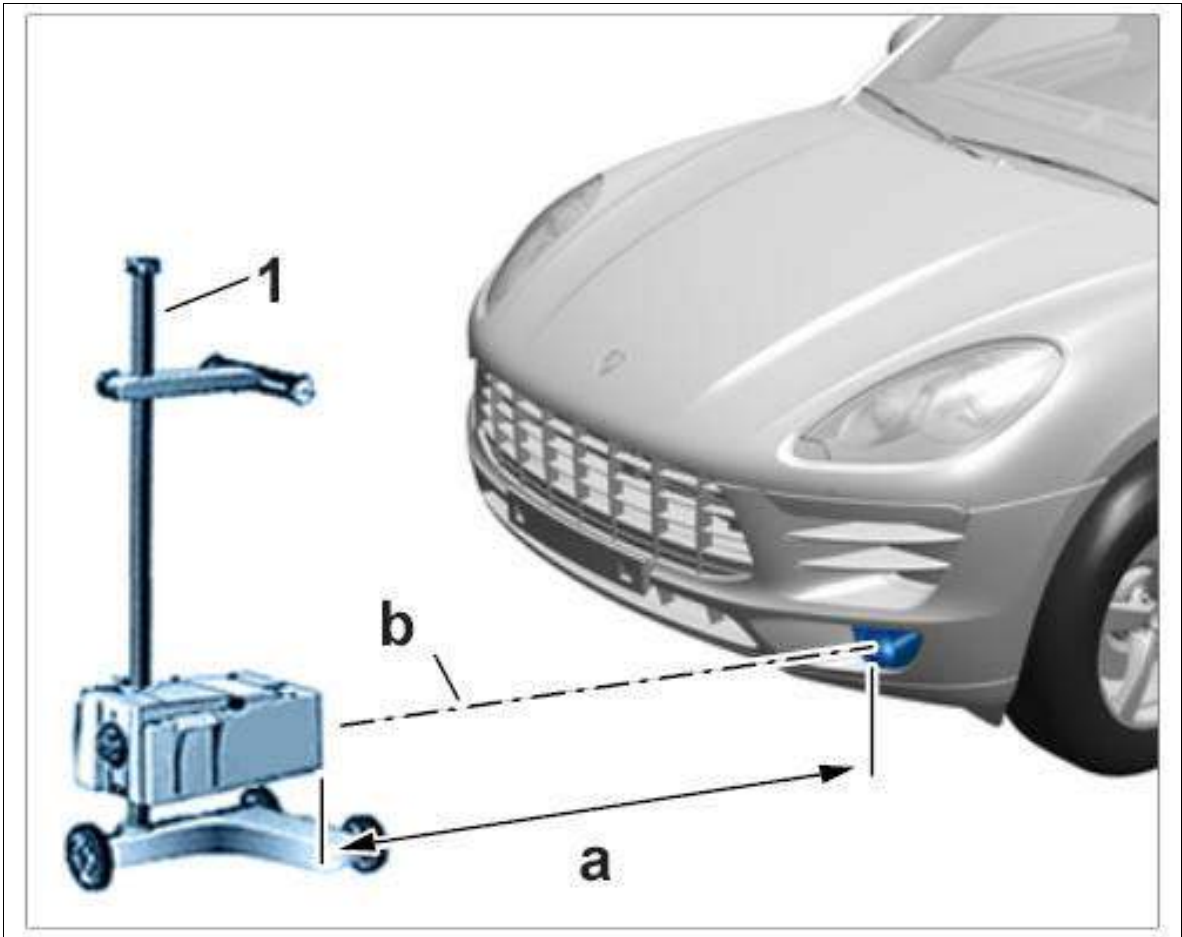
- Some of the repair illustrations show only one side of the vehicle.
- Naturally, some steps also have to be performed on the opposite side of the vehicle as well.

Information

Read the operating instructions for the headlight aiming device and observe the following test and adjustment conditions:

- Vehicle and headlight aiming device positioned on a horizontal, clean surface.
- Vehicle parked safely and ready to drive, empty, including all fluids and fuel.
- All doors and rear lid closed.
- Tyre pressure corresponds to the specified values.
- Driver's seat occupied by one person or a weight of 75 kg.
- Steering in straight-ahead position.
- For vehicles with air suspension: Vehicle level in center position.
- Vehicle and chassis have been bounced.
- For vehicles with halogen headlights: Switch for headlight levelling system at position "0".
 1. Align the headlight aiming device **-1-** at a 90° angle to the longitudinal axis of the vehicle and position it at a distance of **-a-** in front of the left fog light.
 2. Set the tilt angle of the light/dark limit of the fog light on the headlight aiming device and align the collecting box with the center axis **-b-** of the fog light.

Fig 1: Positioning Headlight Aiming Device



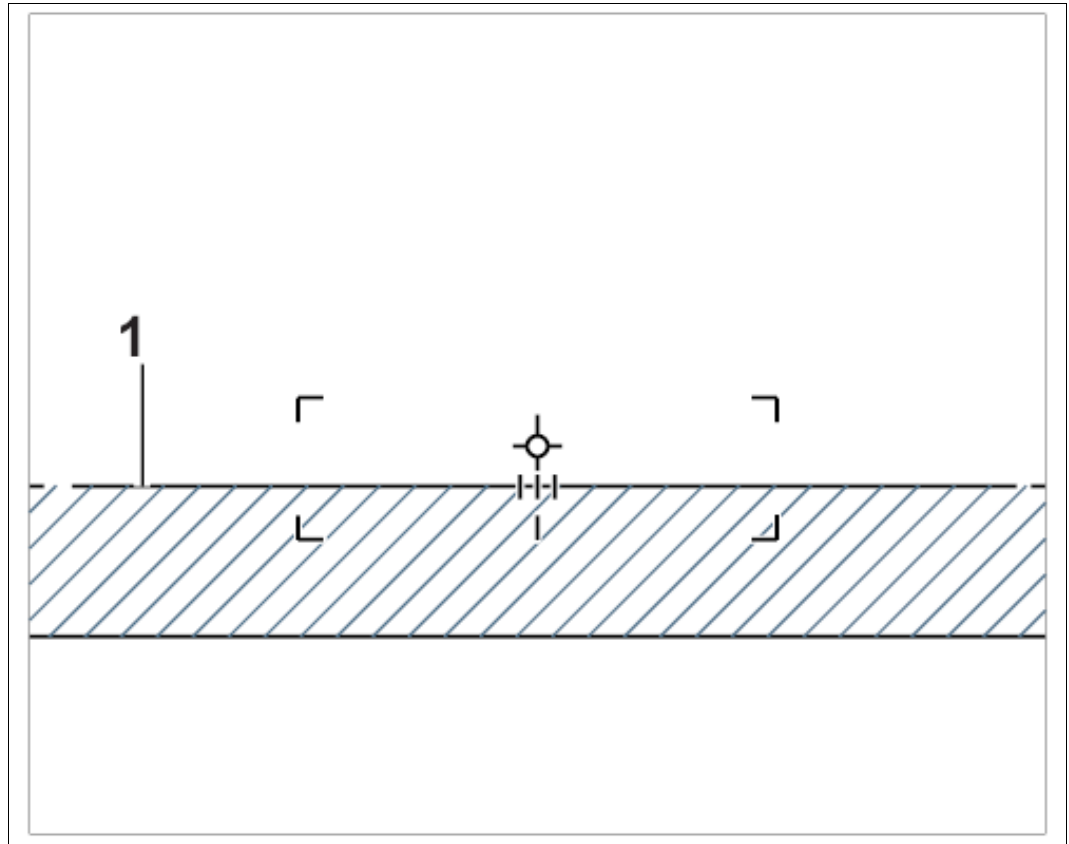
Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Switch on ignition and fog light.

4. Check the fog light setting.

1. 4.1. The light/dark limit must run along the dividing line -1- .

Fig 2: Identifying Light Distribution Of Fog Light

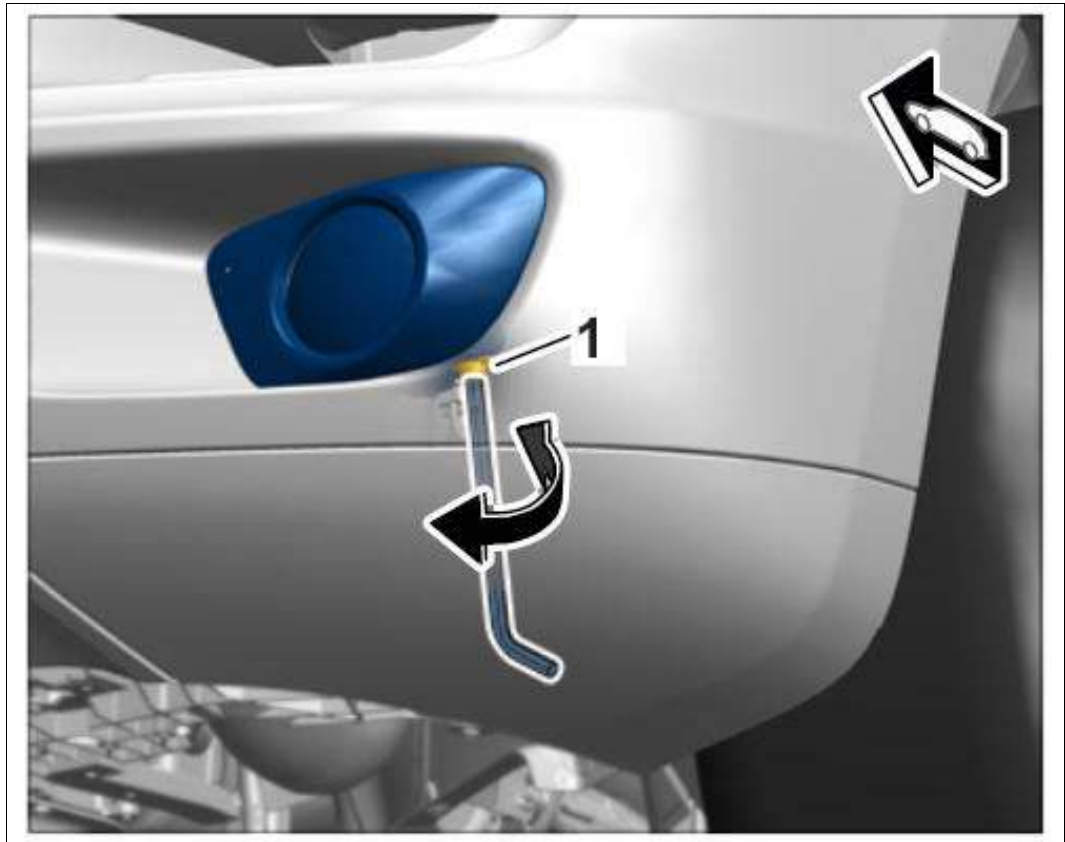


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5. Correct the fog light setting if necessary.

1. 5.1. Adjust the height of the light/dark limit at the adjusting screw -1- by inserting a long 6-mm Allen key through the front apron from below.

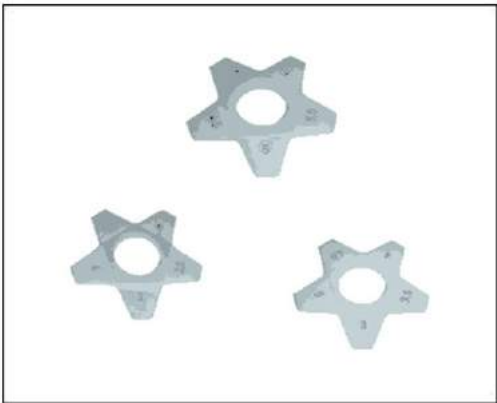
Fig 3: Turning Fog Light Adjusting Screw (Halogen Light Shown)



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

6. Repeat the test and adjustment procedure on the right fog light.
7. Switch off fog light and ignition.

WM 941516 HEADLIGHTS - BASIC SETTING IN THE BODY (ALL MODELS) > TOOLS

| Designation | Type | Number | Description |
|-------------------------------------|--------------|----------|--|
| Star gauges for body gap dimensions | Special tool | NR.127-1 |  |

WM 941516 HEADLIGHTS - BASIC SETTING IN THE BODY (ALL MODELS) > ADJUSTING HEADLIGHTS (BASIC SETTING IN THE BODY)

Information

- The headlights are fitted into the body at the factory!
- The headlights must only be re-adjusted during accident repairs or if the headlights are being replaced!

Information

If work is carried out on the headlight or retainer plate, the installed fastening screws must be replaced by microencapsulated fastening screws .

Micro-encapsulated fastening screws must be tightened only once to the specified torque.

Micro-encapsulated fastening screws must be replaced after loosening them.

Information

- Set gap dimensions on lid and accessories in accordance with the gap specifications.
- Given a clearance in the opening that is too great or too small, the accessories must be centered with respect to the body.
- Ensure that the gaps do not run in a wedge-shaped fashion or do not narrow at local points.
- The given values are guidelines, which should be observed as far as possible.
- The guidelines apply to repair and assembly work.
- Use star gauges to check the gap dimensions. Star gauges for body gap dimensions NR.127-1

The headlight is aligned in the body by adjusting the headlight mounting points. → 941415 ADJUSTING HEADLIGHT MOUNTING

WM 941519 REMOVING AND INSTALLING HEADLIGHTS (ALL MODELS) > PRELIMINARY WORK

1. Remove cover on front lock support. → Removing cover for front lock support
2. Remove rear and side trim panel on the headlight. → Removing front trim panel
3. Detach spray nozzle for headlight washer system with connected spray water hose at the headlight. → Removing Spray Nozzle For Headlight Washer System

WM 941519 REMOVING AND INSTALLING HEADLIGHTS (ALL MODELS) > REMOVING HEADLIGHTS



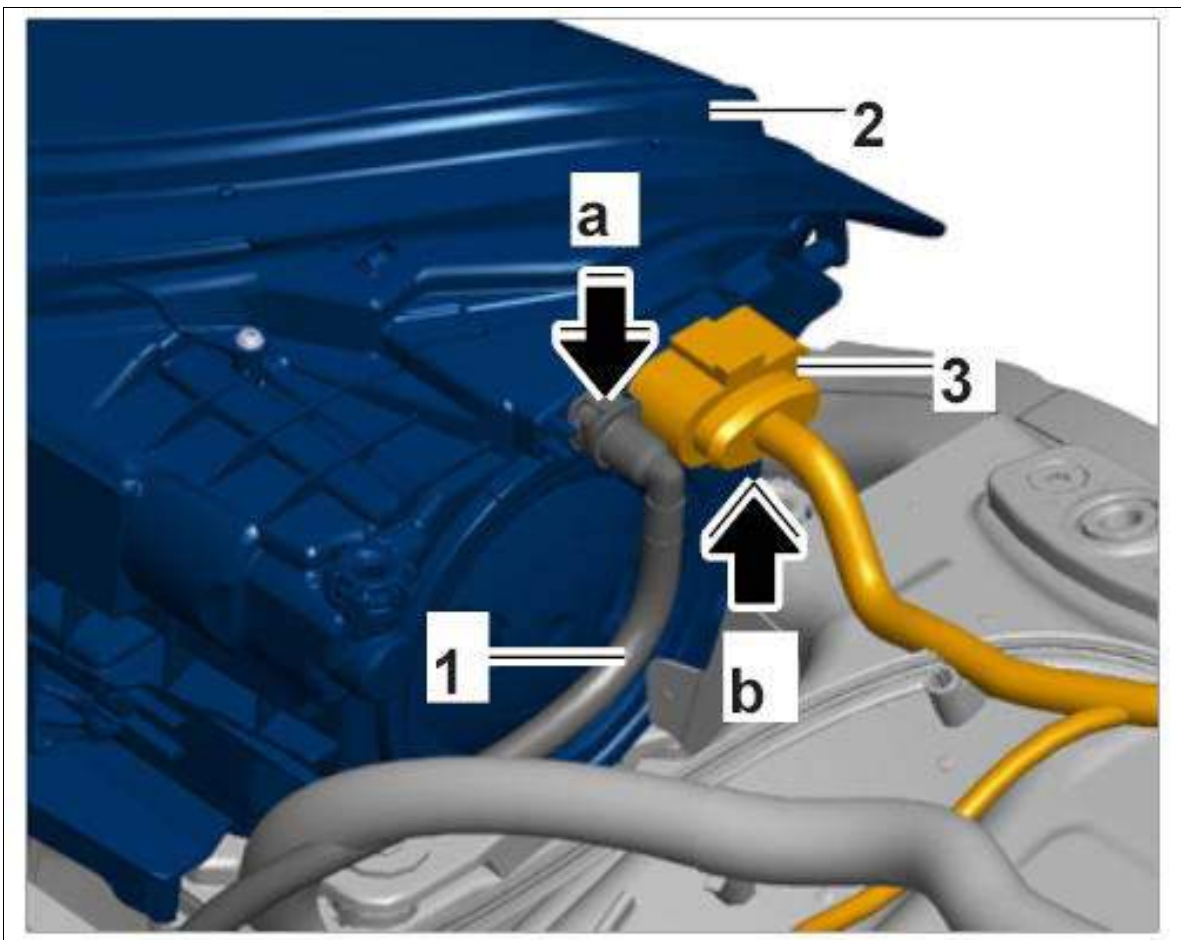
NOTE: Voltage peaks

- Risk of damage to load or to the control unit

→ Remove the ignition key and switch off load before disconnecting or removing load.

1. Switch off position lights.
2. Switch off ignition and pull remote control out of ignition lock.
3. Release hose connection for the breather hose -1- (-a-) and pull it off the headlight -2- .
4. Release electric plug connection -3- (-b-) and pull it off the headlight.

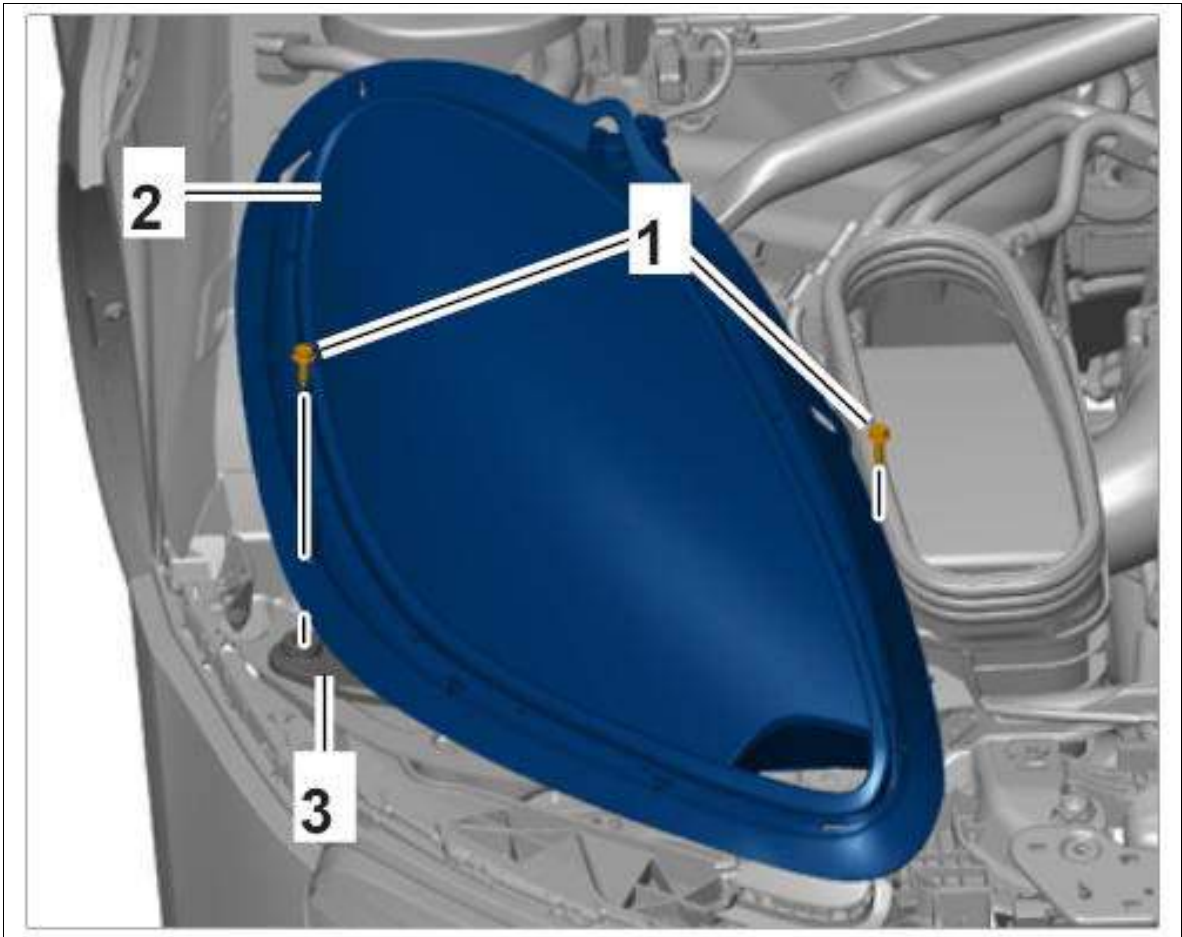
Fig 1: Disconnecting Hose Connection And Electric Plug Connection



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5. Unscrew fastening screws -1- .
6. Remove headlight -2- from the headlight mounting point -3- .

Fig 2: Removing Headlights

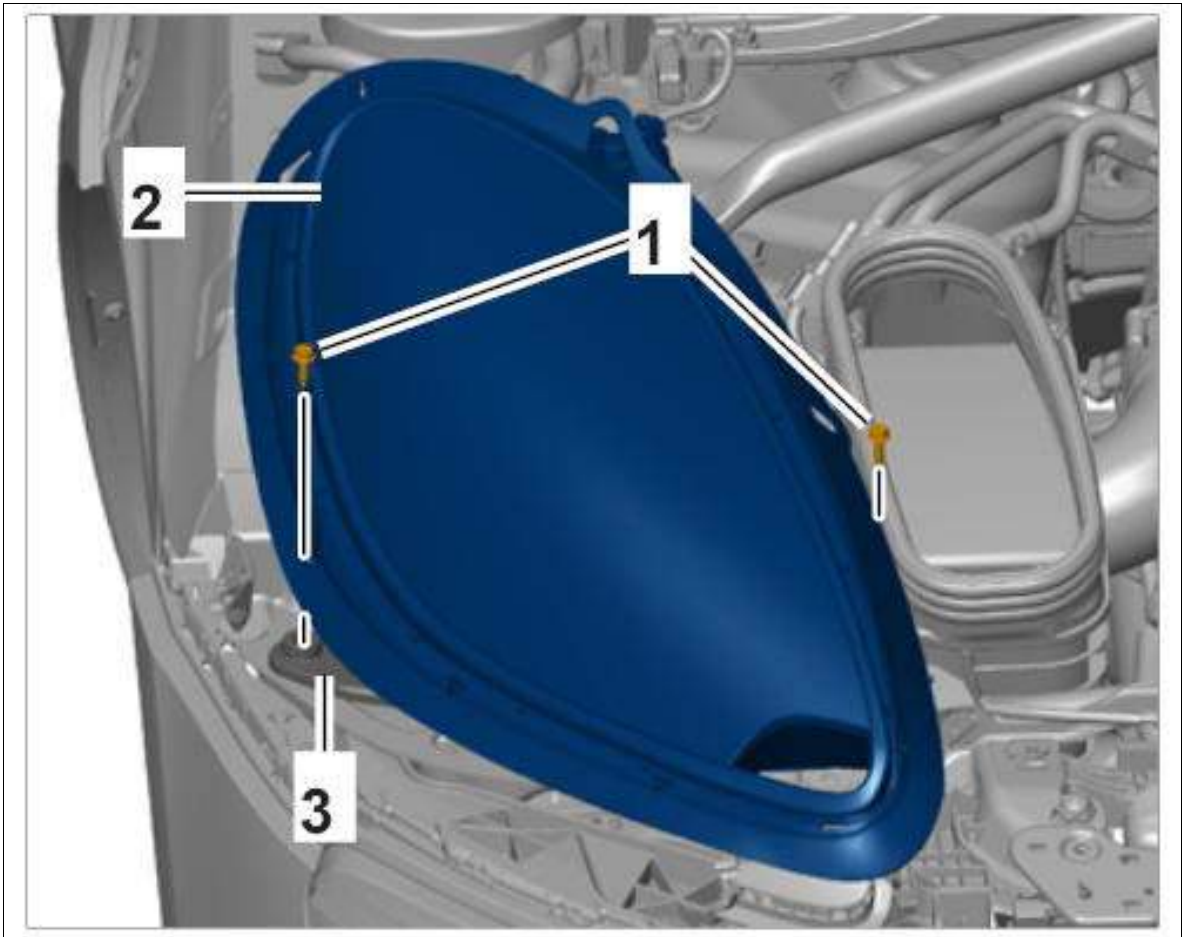


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WM 941519 REMOVING AND INSTALLING HEADLIGHTS (ALL MODELS) > INSTALLING HEADLIGHTS

1. Guide the headlight -2- back into the cut-out for the headlight mounting point -3- .
2. Tighten fastening screws -1- .

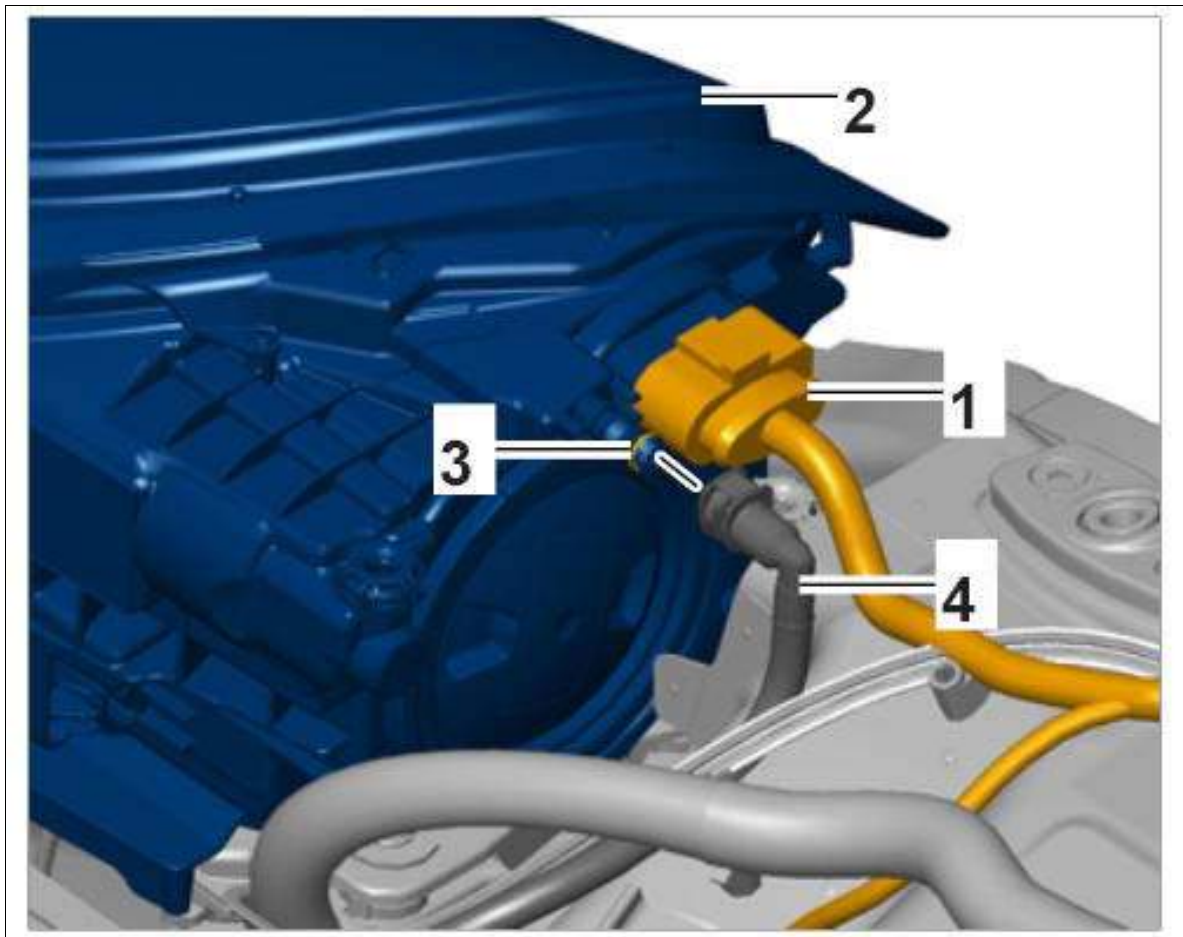
Fig 1: Removing Headlights



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3. Plug in electric plug connection **-1-** on the headlight **-2-** until it engages securely.
4. Check condition of O-ring **-3-** and check that it is seated correctly.
5. Connect hose connection for the breather hose **-4-** at the headlight until it engages securely.

Fig 2: Securing Hose Connection And Electric Plug Connection



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WM 941519 REMOVING AND INSTALLING HEADLIGHTS (ALL MODELS) > SUBSEQUENT WORK

1. Secure spray nozzle for headlight washer system at the main headlight. → Installing Spray Nozzle For Headlight Washer System
2. Install rear and side trim panels on the headlight. → Installing front trim panel
3. Install cover for front lock support. → Installing cover for front lock support

WM 941555 REPLACING BI-XENON HEADLIGHTS (ALL MODELS) > PRELIMINARY WORK

1. Remove headlights. → Removing Headlights

WM 941555 REPLACING BI-XENON HEADLIGHTS (ALL MODELS) > DISASSEMBLING BI-XENON HEADLIGHTS

1. Remove light bulb control unit. → Removing Light Bulb Control Unit
2. Remove light bulb igniter. → Removing Light Bulb Igniter
3. Remove gas-discharge headlight. → Removing Gas-Discharge Headlight

WM 941555 REPLACING BI-XENON HEADLIGHTS (ALL MODELS) > ASSEMBLING BI-XENON HEADLIGHTS

1. Assembly is performed in reverse order to disassembly.

WM 941555 REPLACING BI-XENON HEADLIGHTS (ALL MODELS) > SUBSEQUENT WORK

1. Install headlights. → Installing Headlights

WM 941555 REPLACING HALOGEN HEADLIGHTS (ALL MODELS) > PRELIMINARY WORK

1. Remove headlights. → Removing Headlights

WM 941555 REPLACING HALOGEN HEADLIGHTS (ALL MODELS) > DISASSEMBLING HALOGEN HEADLIGHTS

1. Remove light bulb control unit. → Removing Light Bulb Control Unit
2. Remove light bulb igniter. → Removing Light Bulb Igniter

WM 941555 REPLACING HALOGEN HEADLIGHTS (ALL MODELS) > ASSEMBLING HALOGEN HEADLIGHTS

1. Assembly is performed in reverse order to disassembly.

WM 941555 REPLACING HALOGEN HEADLIGHTS (ALL MODELS) > SUBSEQUENT WORK

1. Install headlights. → Installing Headlights

WM 941555 REPLACING BULB FOR CORNERING LIGHT (ALL MODELS) > PRELIMINARY WORK > PRELIMINARY WORK FOR REPLACING BULB FOR CORNERING LIGHT AT THE RIGHT

1. Remove front trim panel behind headlight. → Removing front trim panel
2. Remove air cleaner housing cover. → Removing air cleaner housing

WM 941555 REPLACING BULB FOR CORNERING LIGHT (ALL MODELS) > REMOVING BULB FOR CORNERING LIGHT



NOTE: Voltage peaks

- *Risk of damage to load or to the control unit*

→ Remove the ignition key and switch off load before disconnecting or removing load.

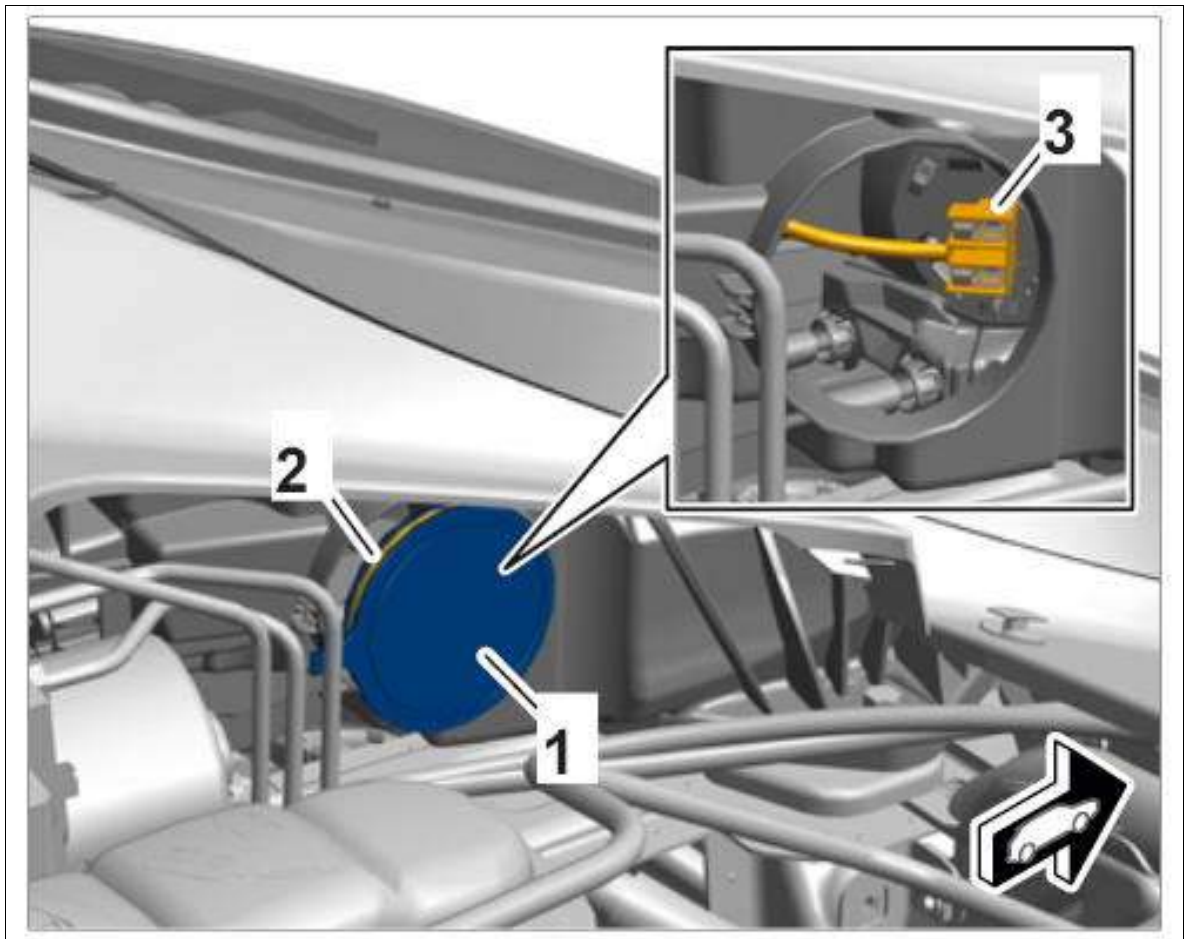


NOTE: Incorrect handling of bulbs

- *Risk of damage to bulbs and the bulb housing*

- Switch off ignition and remove ignition key.
- Switch off the relevant loads when changing bulbs.
- Only use bulbs listed in the bulb table.
- Only install clean bulbs that are free of grease.
- Always use a cloth or soft paper when working with bulbs.
- Observe the safety instructions when changing a bulb in a Bi-Xenon headlight.
- In certain states, it is compulsory to carry spare light bulbs.
1. Switch off position lights.
 2. Switch off ignition and pull remote control out of ignition lock.
 3. Release cover **-1-** and remove it from the headlight.
 4. Check condition of seal **-2-** and check that it is seated correctly.
 5. Pull electric plug connection **-3-** off the cornering light bulb.

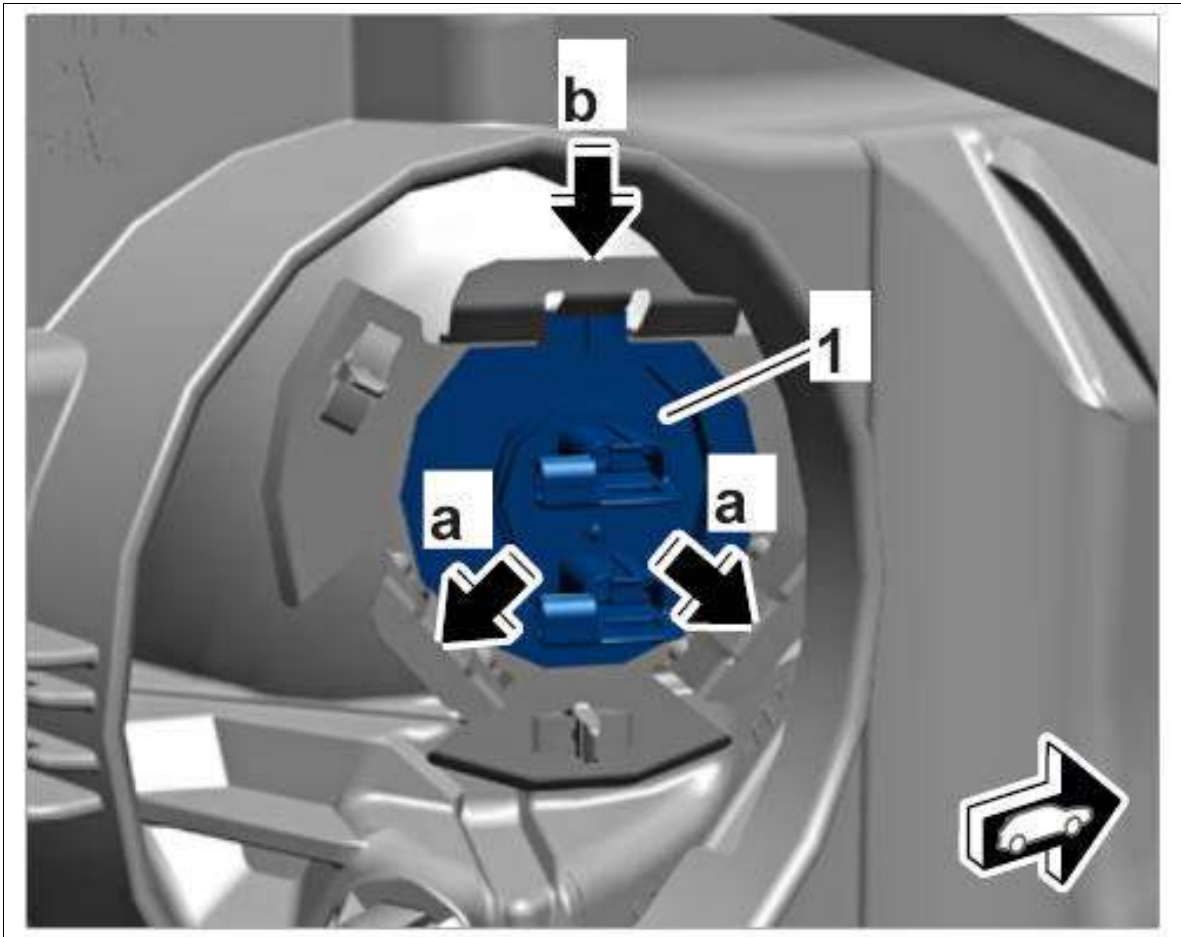
Fig 1: Disconnecting Electric Plug Connection



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

6. Disengage bulb for cornering light **-1-** at the bottom on both sides **-a-** .
7. Pull bulb for cornering light at the top out of the bracket **-b-** and remove it.

Fig 2: Removing Cornering Light Bulb



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 941555 REPLACING BULB FOR CORNERING LIGHT (ALL MODELS) > INSTALLING BULB FOR CORNERING LIGHT



NOTE: Incorrect handling of bulbs

- *Risk of damage to bulbs and the bulb housing*

- Switch off ignition and remove ignition key.
- Switch off the relevant loads when changing bulbs.
- Only use bulbs listed in the bulb table.
- Only install clean bulbs that are free of grease.
- Always use a cloth or soft paper when working with bulbs.
- Observe the safety instructions when changing a bulb in a Bi-Xenon headlight.

→ In certain states, it is compulsory to carry spare light bulbs.

1. Installation is performed in reverse order.

WM 941555 REPLACING BULB FOR CORNERING LIGHT (ALL MODELS) > SUBSEQUENT WORK > SUBSEQUENT WORK FOR REPLACING BULB FOR CORNERING LIGHT AT THE RIGHT

1. Install front trim panel behind headlight. → Installing front trim panel
2. Install air cleaner housing cover. → Installing air cleaner housing

WM 9415IN CONVERTING HEADLIGHTS FOR LEFT/RIGHT-HAND DRIVING (ALL MODELS) > CONVERTING HEADLIGHTS FOR LEFT/RIGHT-HAND DRIVING > INFORMATION

Information

For driving in countries in which vehicles drive on the other side of the road, it is important to adapt the headlights as soon as you cross the border. The dipped beam headlight then lights symmetrically so that oncoming traffic is not dazzled.

Headlights with dynamic cornering light must be adapted in the multi-function display. The message "Headlights adapted for LHD/RHD" appears in the multi-function display every time the ignition is switched on. Don't forget to reset the headlights for the return journey.

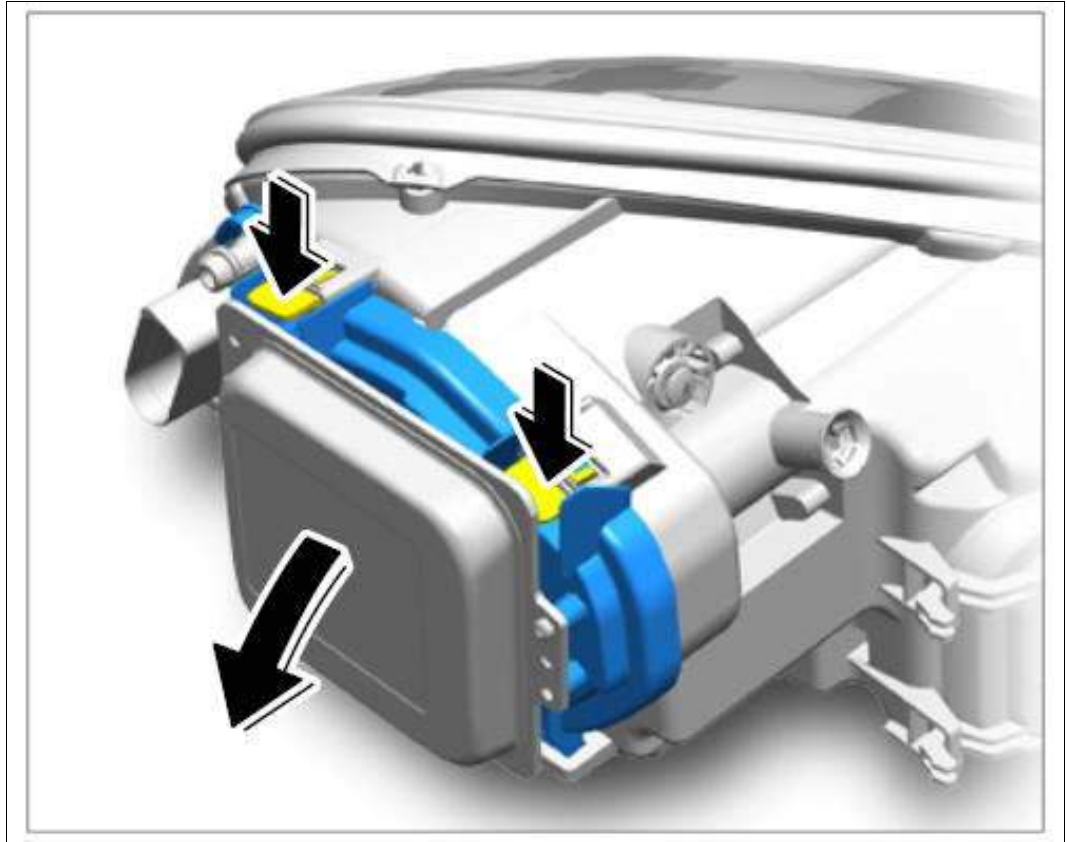
WM 9415IN CONVERTING HEADLIGHTS FOR LEFT/RIGHT-HAND DRIVING (ALL MODELS) > CONVERTING HEADLIGHTS FOR LEFT/RIGHT-HAND DRIVING > CONVERTING HEADLIGHTS WITHOUT DYNAMIC CORNERING LIGHT

1. Remove headlight.

→ Removing Headlights

1. 1.1. Remove cover.

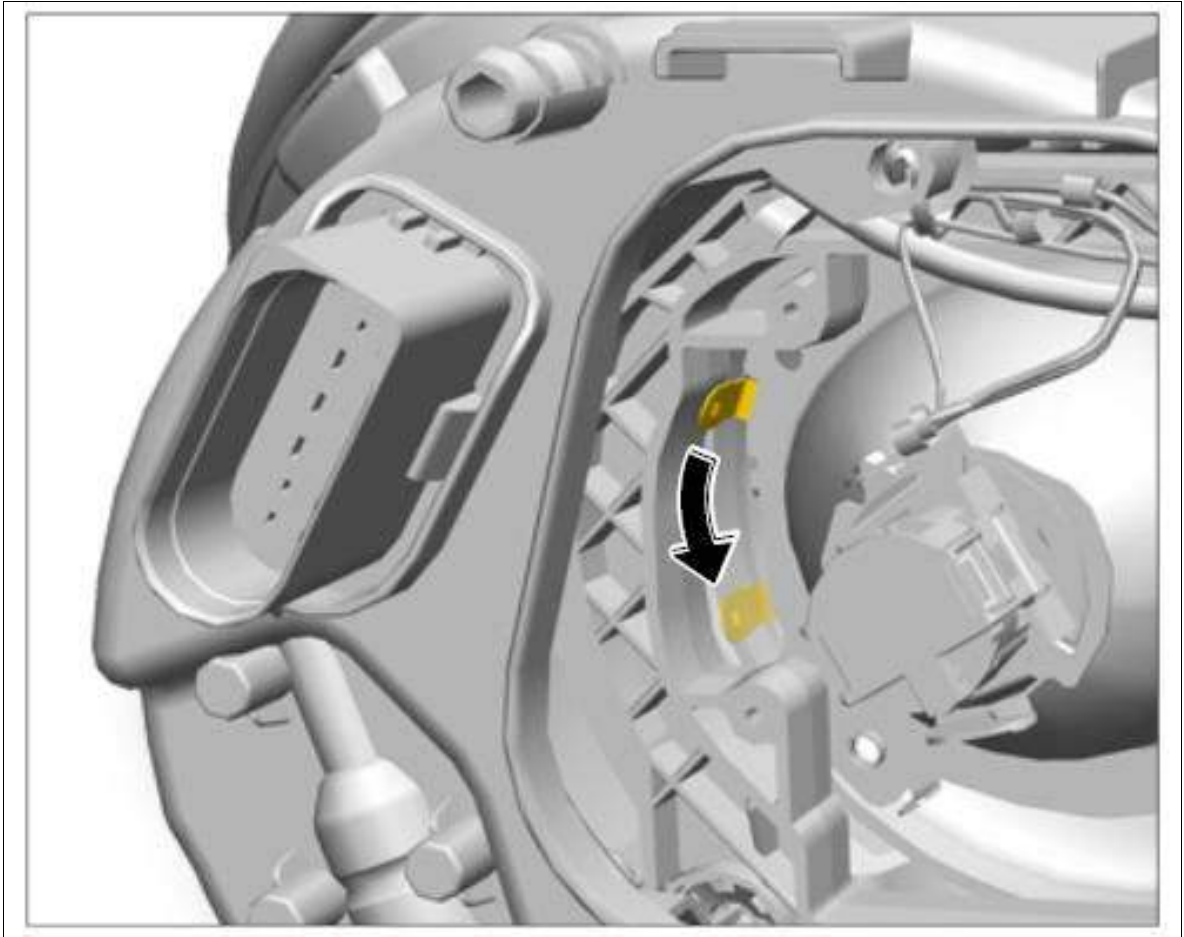
Fig 1: Removing Headlights (Shown On Panamera)



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

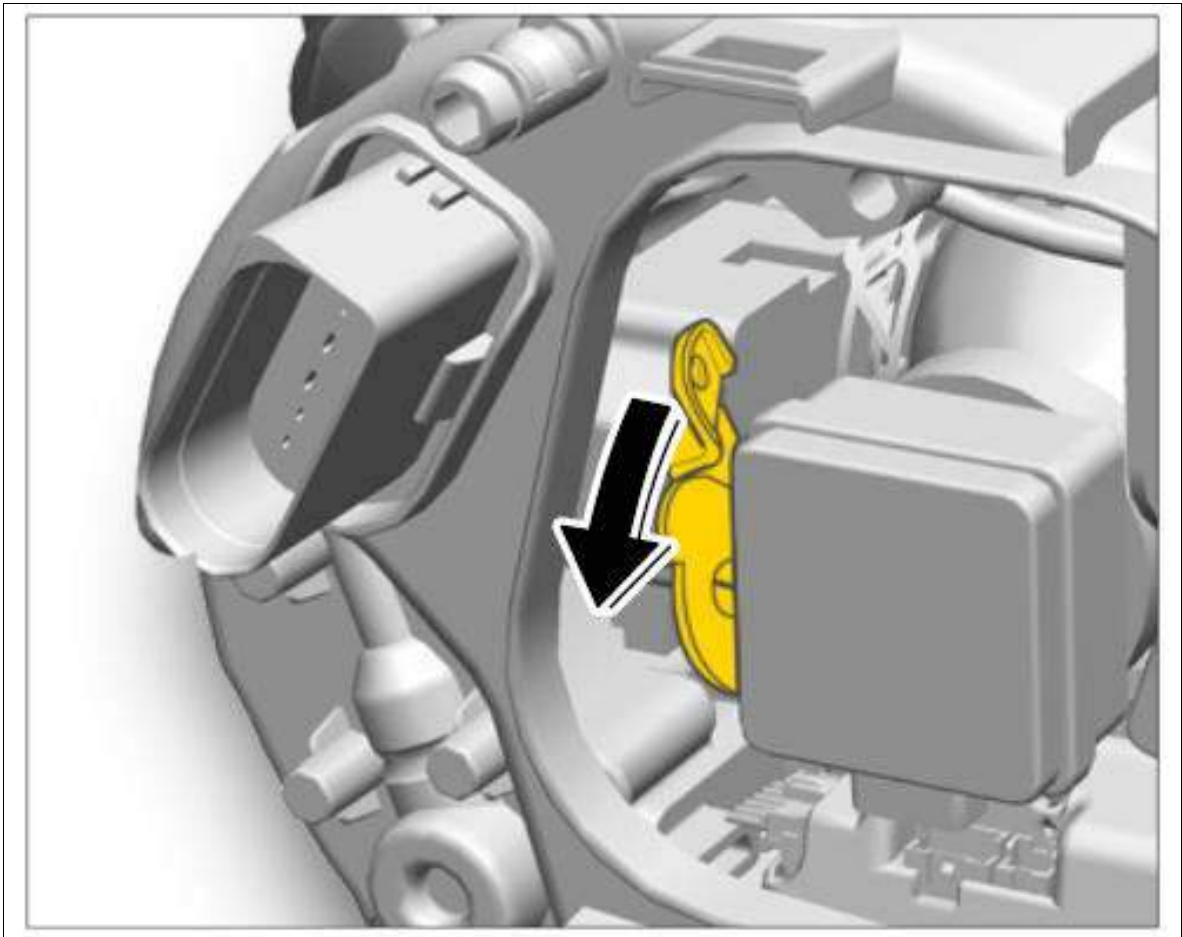
2. Turn the lever down as far as it will go.

Fig 2: Turning Halogen Headlights (Shown On Panamera)



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

Fig 3: Removing BI-Xenon Headlights (Shown On Panamera)



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Close the cover on the headlight. Both brackets must be fully engaged.
4. Install headlight.
→ Installing Headlights
5. Repeat conversion for the other headlight.

WM 941619 REMOVING AND INSTALLING (CENTRAL) HEADLIGHT CONTROL UNIT (ALL MODELS) > PRELIMINARY WORK

1. Remove rear seat. → Removing rear seat

WM 941619 REMOVING AND INSTALLING (CENTRAL) HEADLIGHT CONTROL UNIT (ALL MODELS) > REMOVING (CENTRAL) HEADLIGHT CONTROL UNIT



NOTE: Voltage peaks

- Risk of damage to load or to the control unit

→ Remove the ignition key and switch off load before disconnecting or removing load.

Information

Always comply with the regulations for handling ESD-sensitive components!

- Assembly work may only be carried out if the mechanic is wearing the working clothes and shoes approved by Porsche.
- The new part must only be removed from the ESD (electrostatic discharge) protective packaging just before installation and at the position at which the part is to be installed.
- Never touch the electric pins and plug contacts.

1. Switch off position lights.

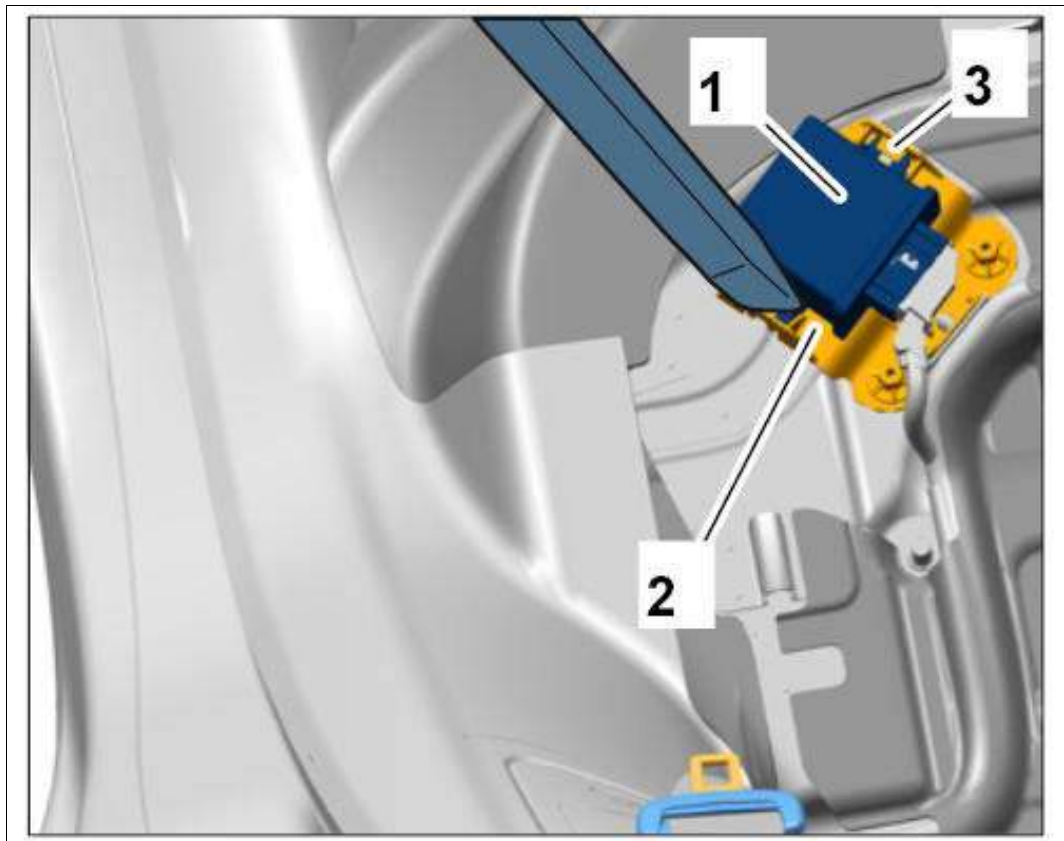
2. Switch off ignition and pull remote control out of ignition lock.

3. Remove (central) headlight control unit -1- .

1. 3.1. Press back locking lug on the holder -2- using a plastic wedge.

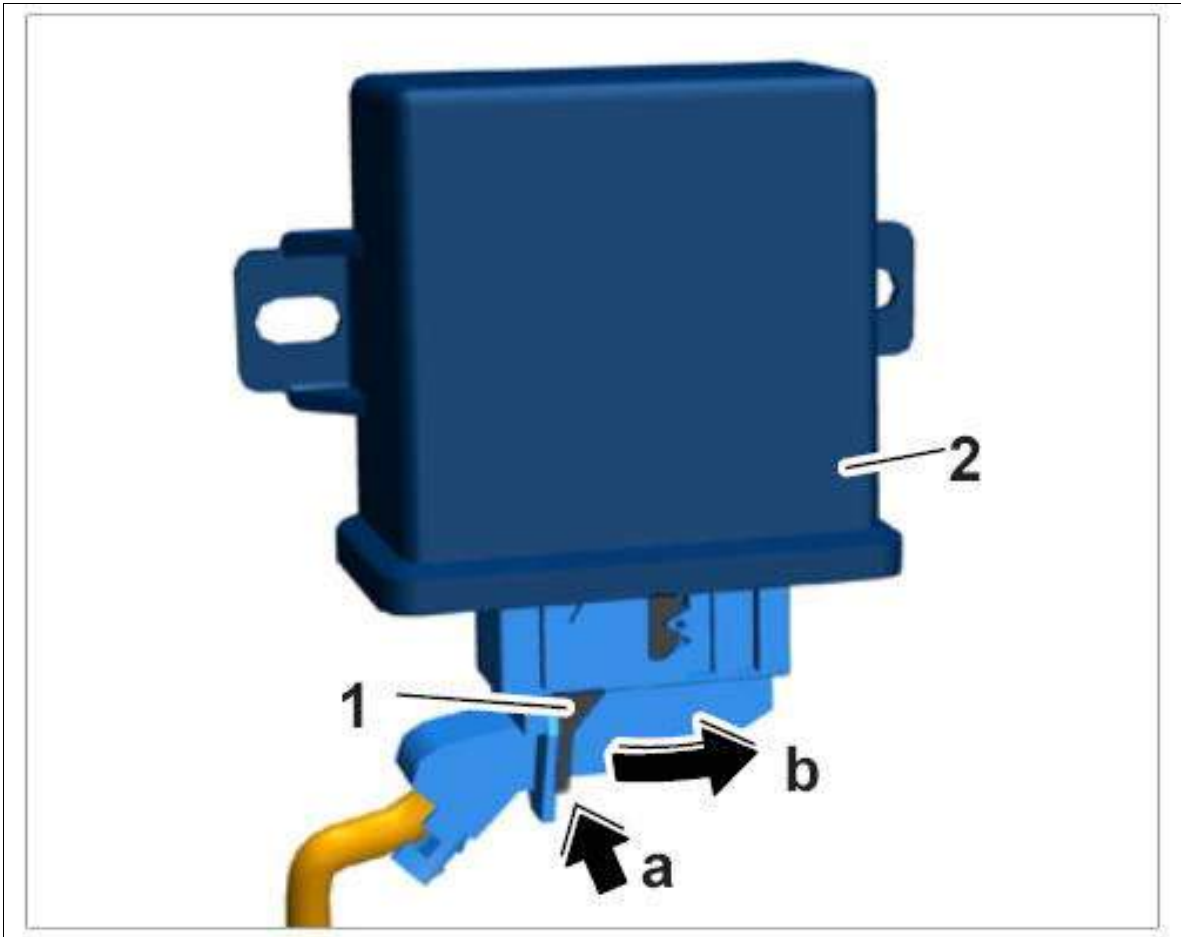
2. 3.2. Carefully lift up (central) headlight control unit at the left and pull it out of the right tab -3- on the holder.

Fig 1: Removing Central Headlight Control Unit



4. Release clip **-1-** (**-a-**), swivel it aside **-b-** and remove electric plug connection from the (central) headlight control unit **-2-** .

Fig 2: Disconnecting Electric Plug Connection



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

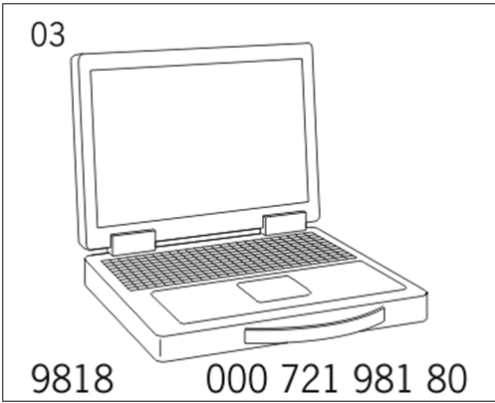
WM 941619 REMOVING AND INSTALLING (CENTRAL) HEADLIGHT CONTROL UNIT (ALL MODELS) > INSTALLING (CENTRAL) HEADLIGHT CONTROL UNIT

1. Installation is performed in reverse order to removal.

WM 941619 REMOVING AND INSTALLING (CENTRAL) HEADLIGHT CONTROL UNIT (ALL MODELS) > SUBSEQUENT WORK

1. Install rear seat. → Installing rear seat
2. Re-program (central) headlight control unit. → 941625 PROGRAMMING (CENTRAL) HEADLIGHT CONTROL UNIT


WM 941625 PROGRAMMING (CENTRAL) HEADLIGHT CONTROL UNIT (ALL MODELS) > TOOLS

| Designation | Type | Number | Description |
|-----------------|--------------|--------|--|
| PIWIS Tester II | Special tool | 9818 |  |

WM 941625 PROGRAMMING (CENTRAL) HEADLIGHT CONTROL UNIT (ALL MODELS) > TECHNICAL VALUES

| Location | Description | Type | Basic value | Tolerance 1 | Tolerance 2 |
|----------------|-------------|---------------|-------------|-------------|-------------|
| Current rating | | Nominal value | 40 A | | |

WM 941625 PROGRAMMING (CENTRAL) HEADLIGHT CONTROL UNIT (ALL MODELS) > PROGRAMMING (CENTRAL) HEADLIGHT CONTROL UNIT

 **NOTE:** Voltage drop

- Risk of irreparable damage to control unit
- Risk of damage to control unit
- Fault entries in the control unit
- Coding in the control unit is aborted
- Malfunctions in control unit, even during programming

→ Prior to disconnecting the control unit, switch off ignition and remove ignition key.

→ Ensure that the power supply is not interrupted during programming.

→ Connect a battery charger with a current rating of at least → **Nominal value: 40 A** to the vehicle battery.

Information

The **PIWIS Tester II 9818** instructions take precedence since the description may be different with later Tester releases.

The procedure described here has been structured in general terms. Different text or additional information may appear in **PIWIS Tester II 9818** .

1. **PIWIS Tester II 9818** must be connected to the vehicle and ignition switched on.
2. Start the diagnostic application and select the required vehicle type.
3. Select the **central headlight** control unit in the **overview** .
4. **Extended identification** must now be selected.
5. **Enter the vehicle identification number** and press [Enter].
6. **Maintenance/repairs** must then be selected.
7. **Control unit replacement** must now be selected. Then press [F12].
8. **Select Write data**, press [F12] and then press [F8] to start. The data is now loaded.
9. The Tester displays the message **Data has been written**. Press [F12] to continue.
10. **Maintenance/repairs** must now be selected.
11. **Select Headlight start-up** and press [F12] to continue.
12. **Read the preconditions** for start-up and press [F12] to continue.
13. **Headlight start-up** can now be started by pressing [F8].
14. Wait for confirmation that **coding was completed successfully**. Then press [F12] to continue.
15. Wait for confirmation that **start-up was completed successfully**. Press [F12] to continue.
16. Read out the fault memory and erase it if necessary.
17. Perform a function test on the control unit.

WM 942355 REPLACING HALOGEN BULB (ALL MODELS) > PRELIMINARY WORK

1. Remove trim panel behind headlight. → Removing front trim panel

WM 942355 REPLACING HALOGEN BULB (ALL MODELS) > REMOVING HALOGEN BULB



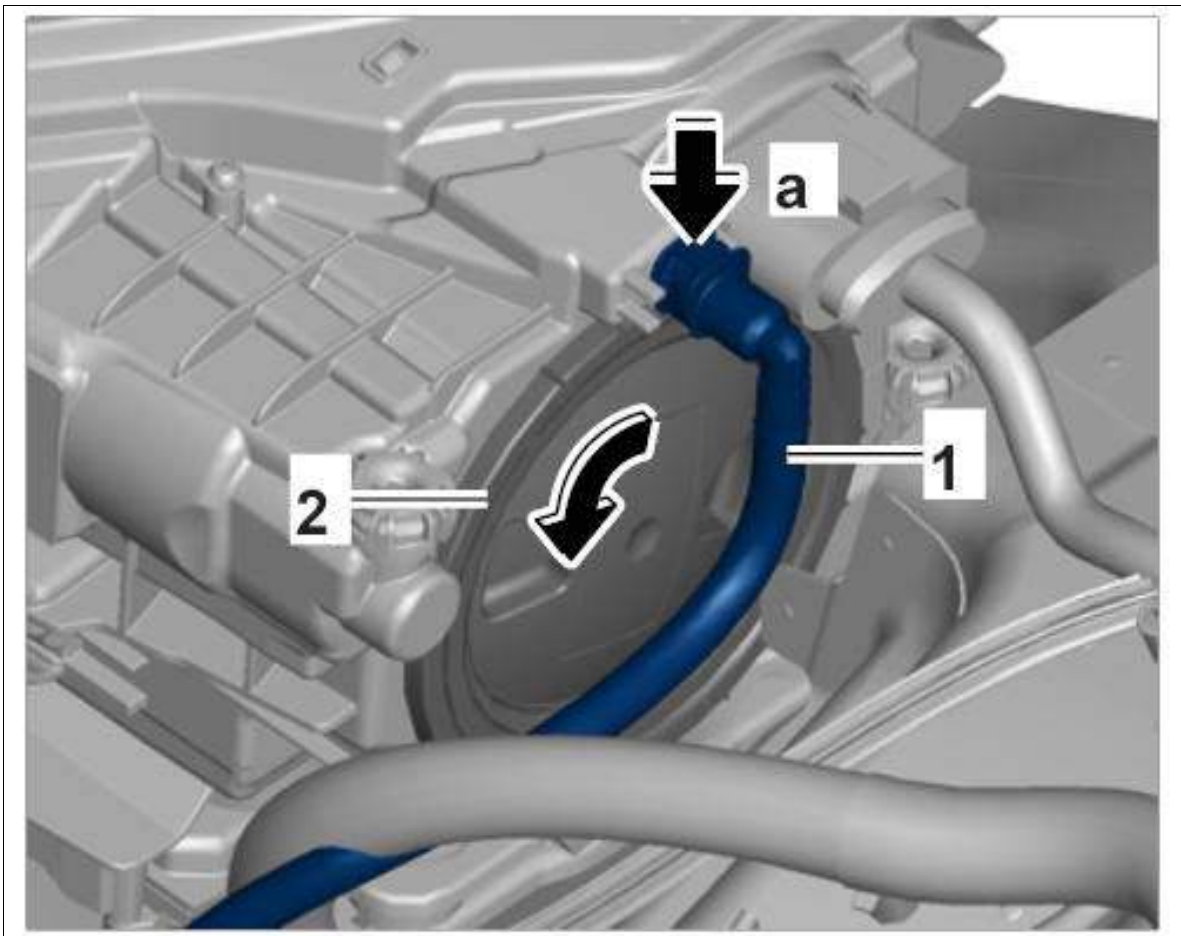
NOTE: Incorrect handling of bulbs

- Risk of damage to bulbs and the bulb housing

- Switch off ignition and remove ignition key.
- Switch off the relevant loads when changing bulbs.
- Only use bulbs listed in the bulb table.
- Only install clean bulbs that are free of grease.
- Always use a cloth or soft paper when working with bulbs.
- Observe the safety instructions when changing a bulb in a Bi-Xenon headlight.
- In certain states, it is compulsory to carry spare light bulbs.

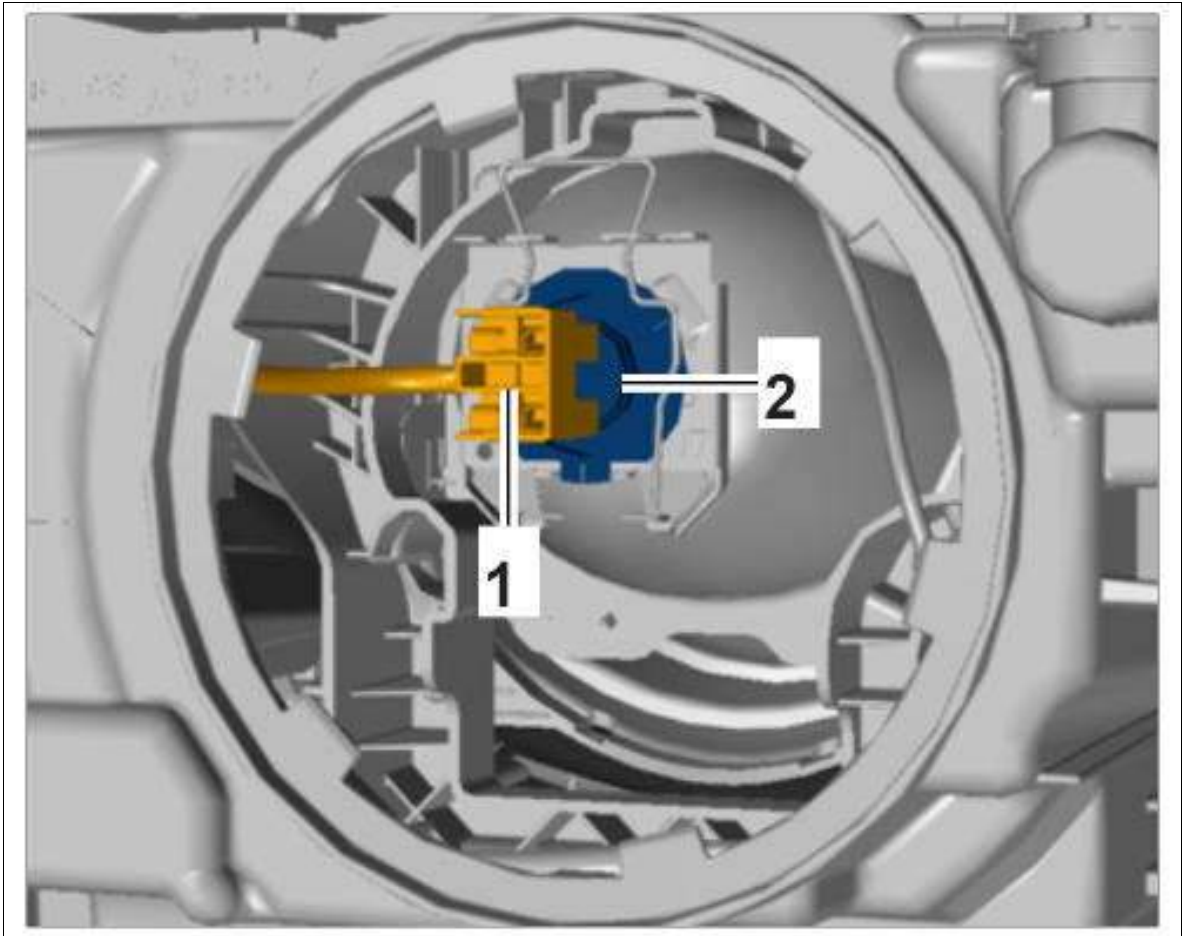
1. Switch off position lights.
2. Switch off ignition and pull remote control out of ignition lock.
3. Release hose connection for the breather hose **-1-** (**-a-**) and pull it off the headlight.
4. Turn the rear cover **-2-** in direction of arrow and remove it.

Fig 1: Removing Rear Cover



5. Pull electric plug connection **-1-** off the halogen bulb **-2-** .

Fig 2: Disconnecting Electric Plug Connection

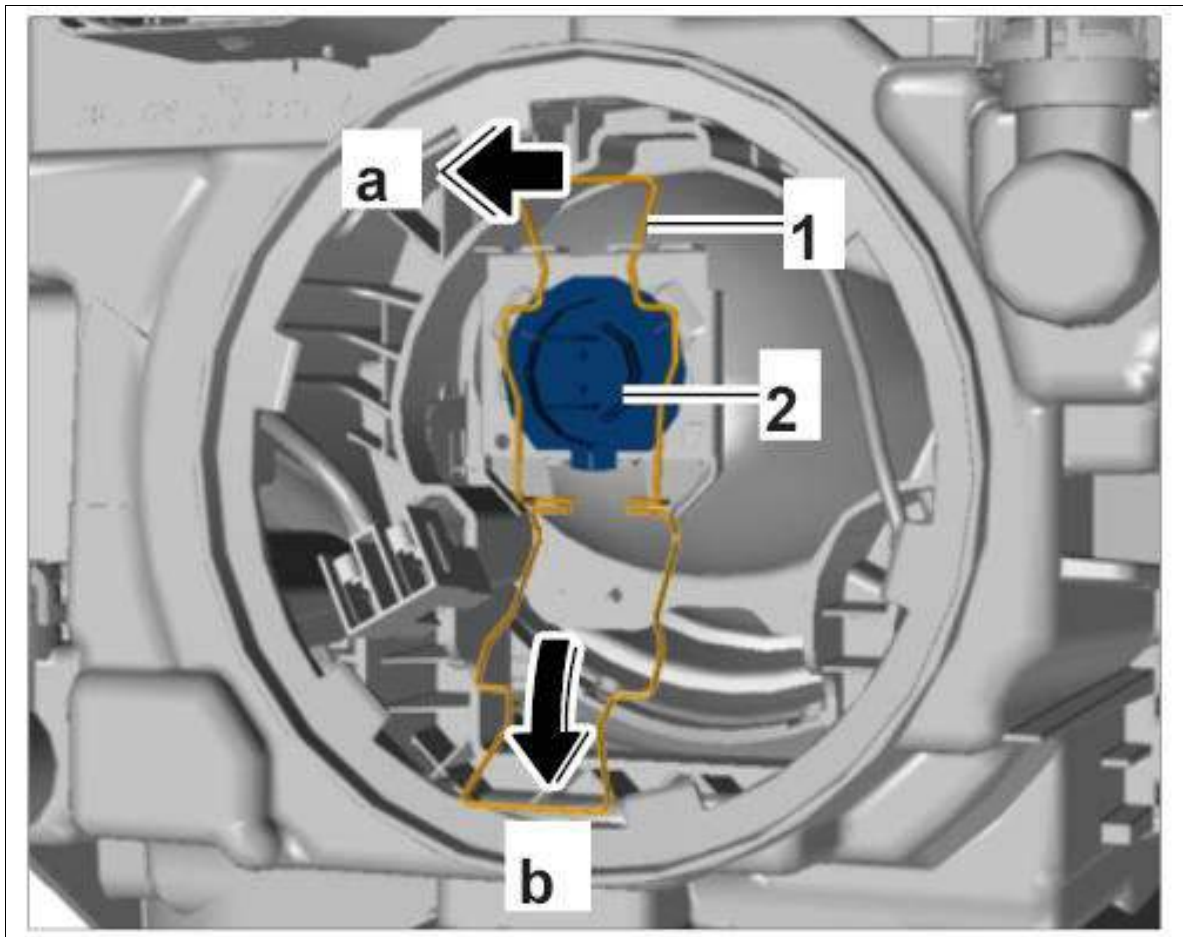


Courtesy of PORSCHE CARS NORTH AMERICA, INC.

6. Press clip **-1-** at the top forward, unhook at the sides **-a-** and bend it down **-b-** .

7. Remove halogen bulb **-2-** from the headlight.

Fig 3: Removing Halogen Bulb



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 942355 REPLACING HALOGEN BULB (ALL MODELS) > INSTALLING HALOGEN BULB



NOTE: Incorrect handling of bulbs

- *Risk of damage to bulbs and the bulb housing*

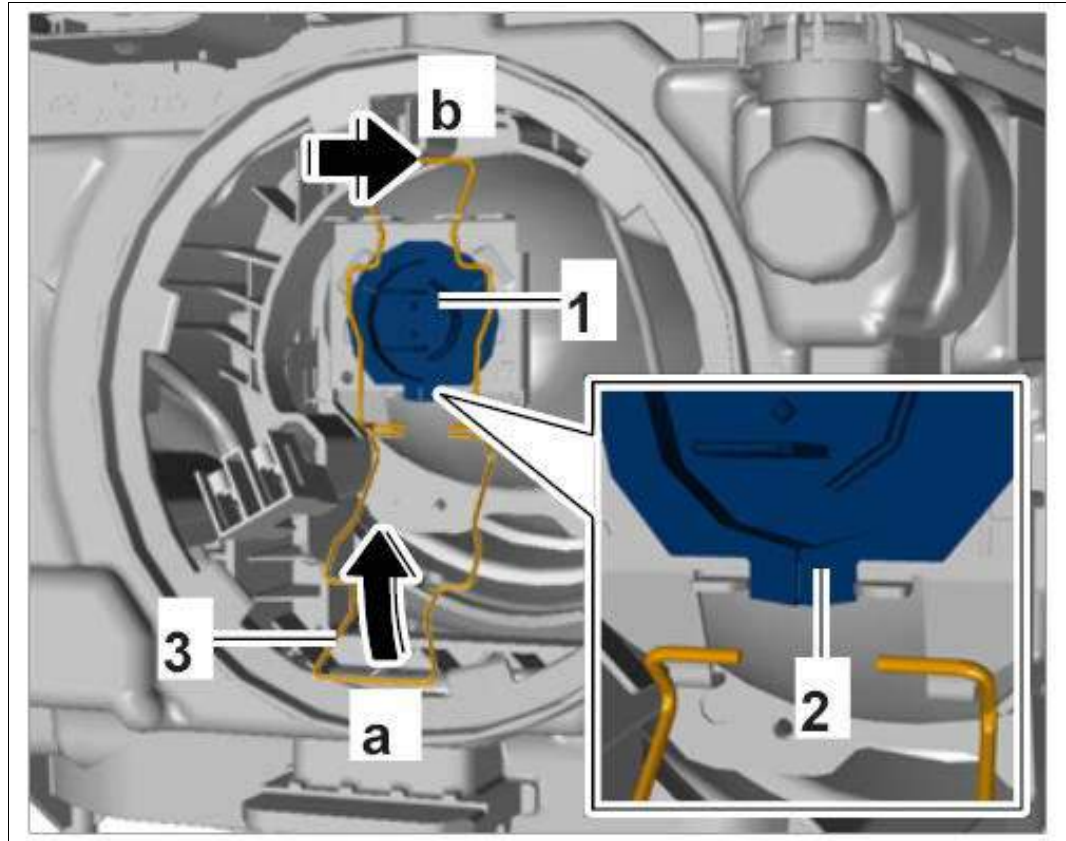
- Switch off ignition and remove ignition key.
- Switch off the relevant loads when changing bulbs.
- Only use bulbs listed in the bulb table.
- Only install clean bulbs that are free of grease.
- Always use a cloth or soft paper when working with bulbs.
- Observe the safety instructions when changing a bulb in a Bi-Xenon headlight.

→ In certain states, it is compulsory to carry spare light bulbs.

1. Install halogen bulb **-1-** in the headlight.

1. 1.1. Position halogen bulb in the socket on the headlight in such a way that the guide **-2-** is pointing downwards.
2. 1.2. Bend clip **-3-** up **-a-** and unhook it **-b-** .

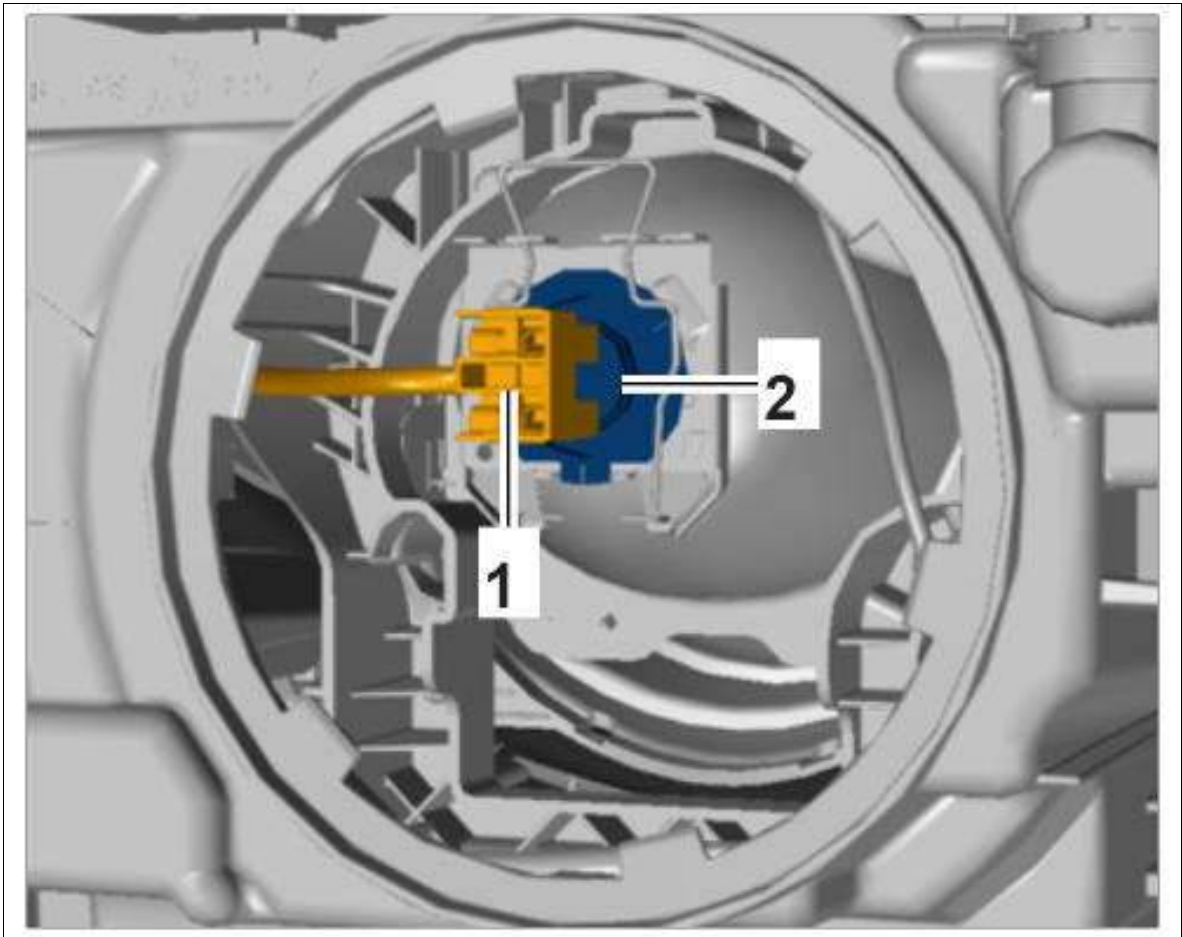
Fig 1: Installing Halogen Bulb



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

2. Connect electric plug connection **-1-** to the halogen bulb **-2-** .

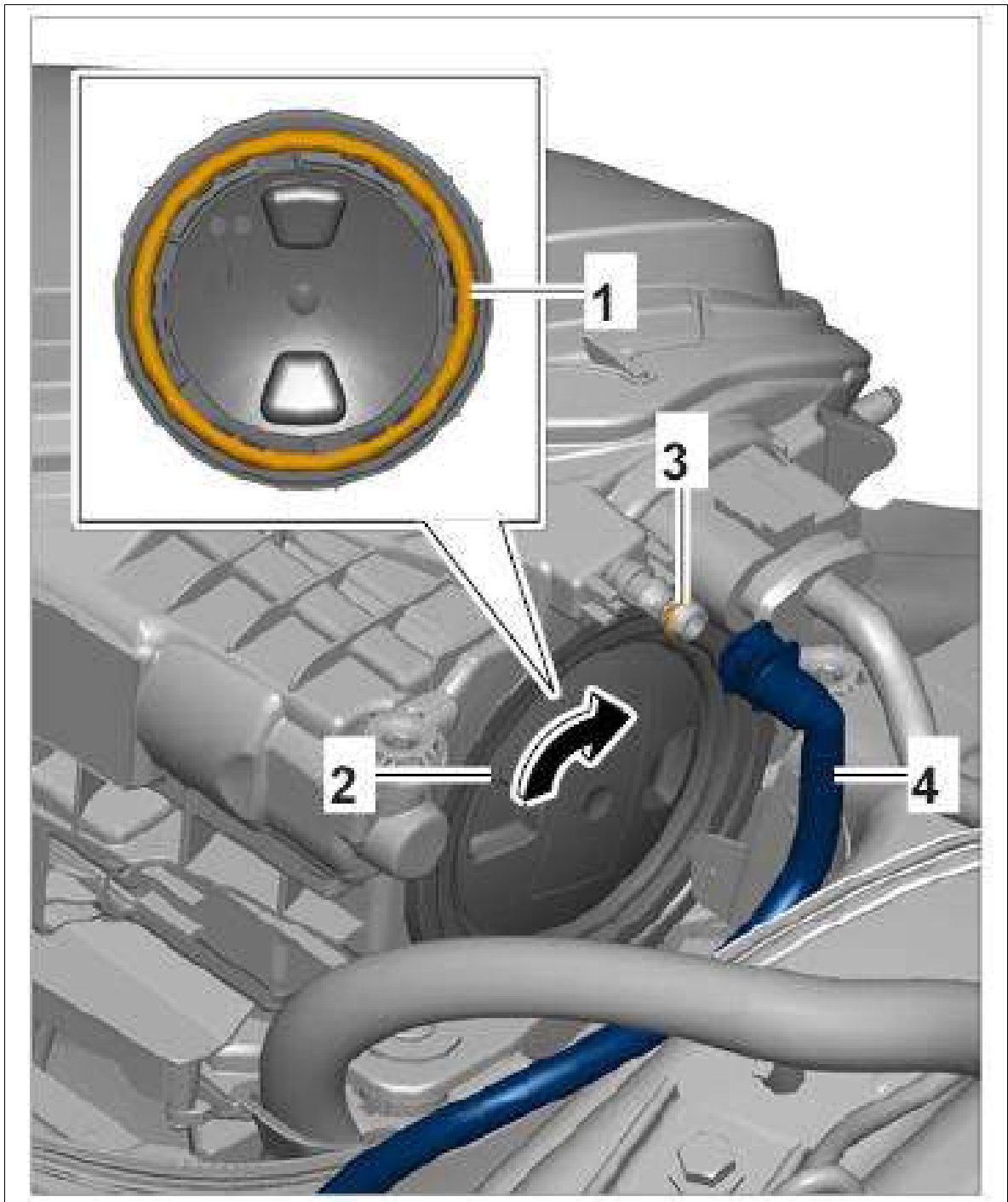
Fig 2: Connecting Electric Plug Connection



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Check condition of the seal **-1-** and check that it is fitted correctly on the rear cover **-2-** .
4. Position rear cover on the headlight and lock it by turning it in direction of arrow.
5. Check condition of O-ring **-3-** and check that it is seated correctly.
6. Connect hose connection **-4-** for the breather hose at the headlight until it engages securely.

Fig 3: Installing Rear Cover



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 942355 REPLACING HALOGEN BULB (ALL MODELS) > SUBSEQUENT WORK

1. Install trim panel behind headlight. → Installing front trim panel

WM 942919 REMOVING AND INSTALLING NUMBER PLATE LIGHT (ALL MODELS) > REMOVING NUMBER PLATE LIGHT

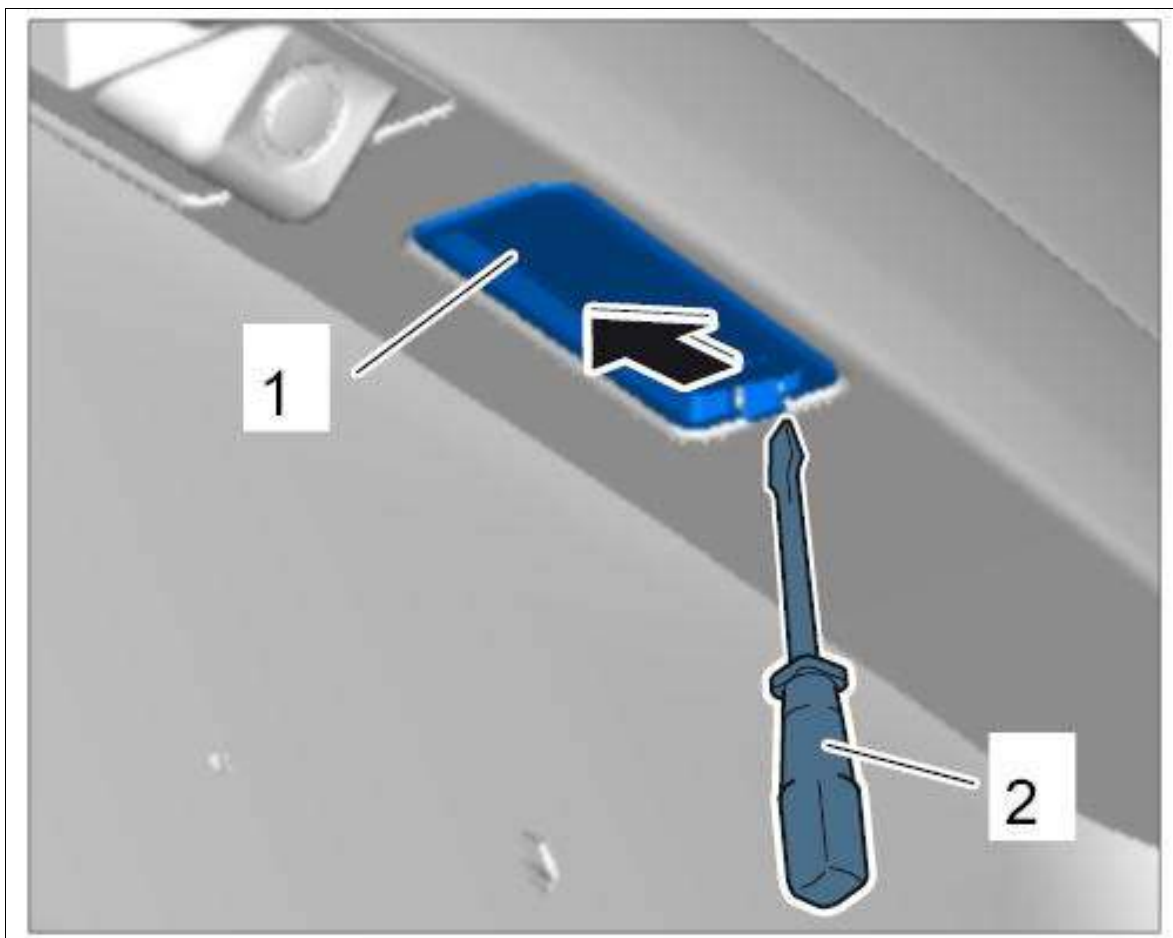
 *NOTE: Voltage peaks*

- *Risk of damage to load or to the control unit*

→ Switch off ignition and remove remote control before disconnecting or removing load.

1. Insert a screwdriver at the recess for the number plate light -1- and press in direction of arrow, then remove the number plate light.

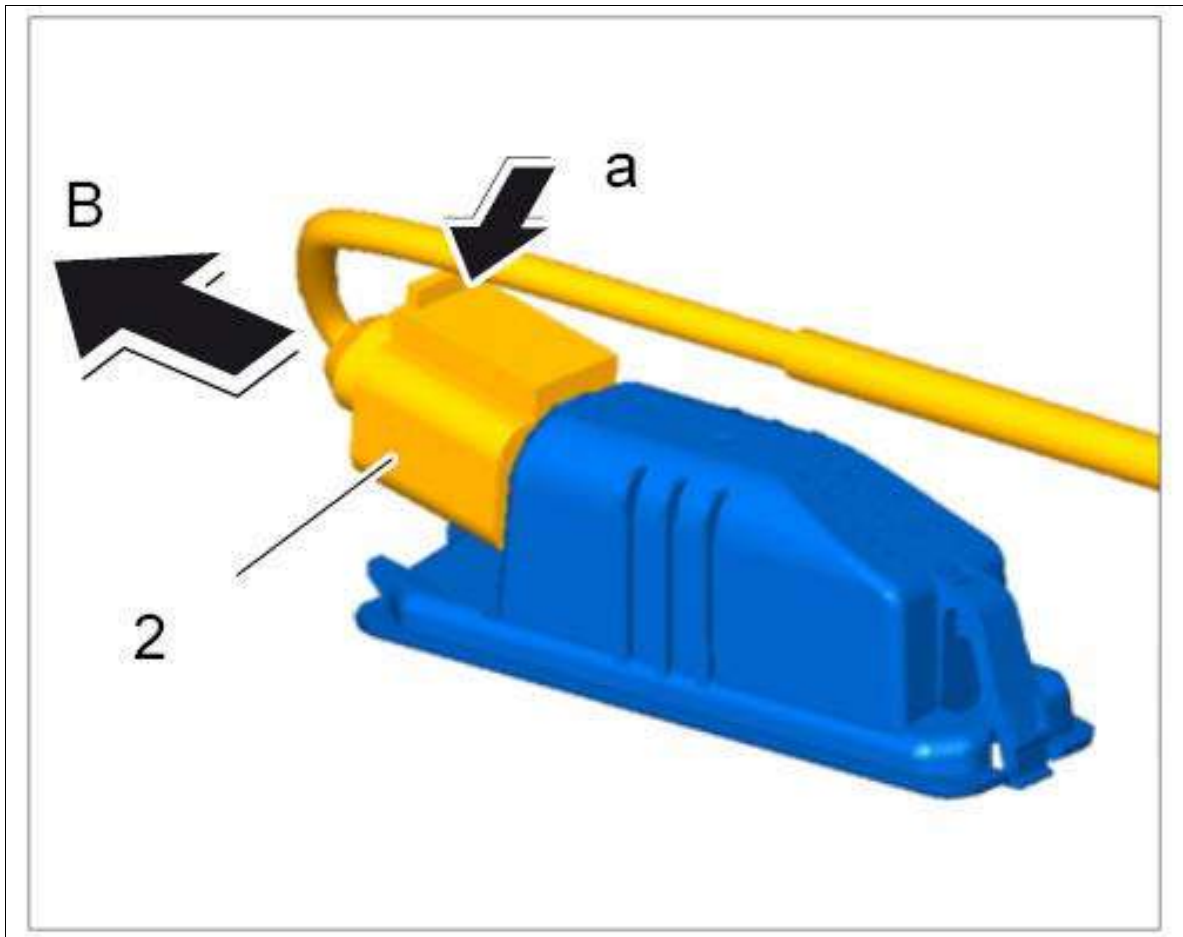
Fig 1: Removing Number Plate Light



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

2. Release plug connection -2- for number plate light -A- and pull it off -B- .

Fig 2: Releasing Number Plate Light Plug Connection



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 942919 REMOVING AND INSTALLING NUMBER PLATE LIGHT (ALL MODELS) > INSTALLING NUMBER PLATE LIGHT

1. The number plate light is installed in reverse order to removal.

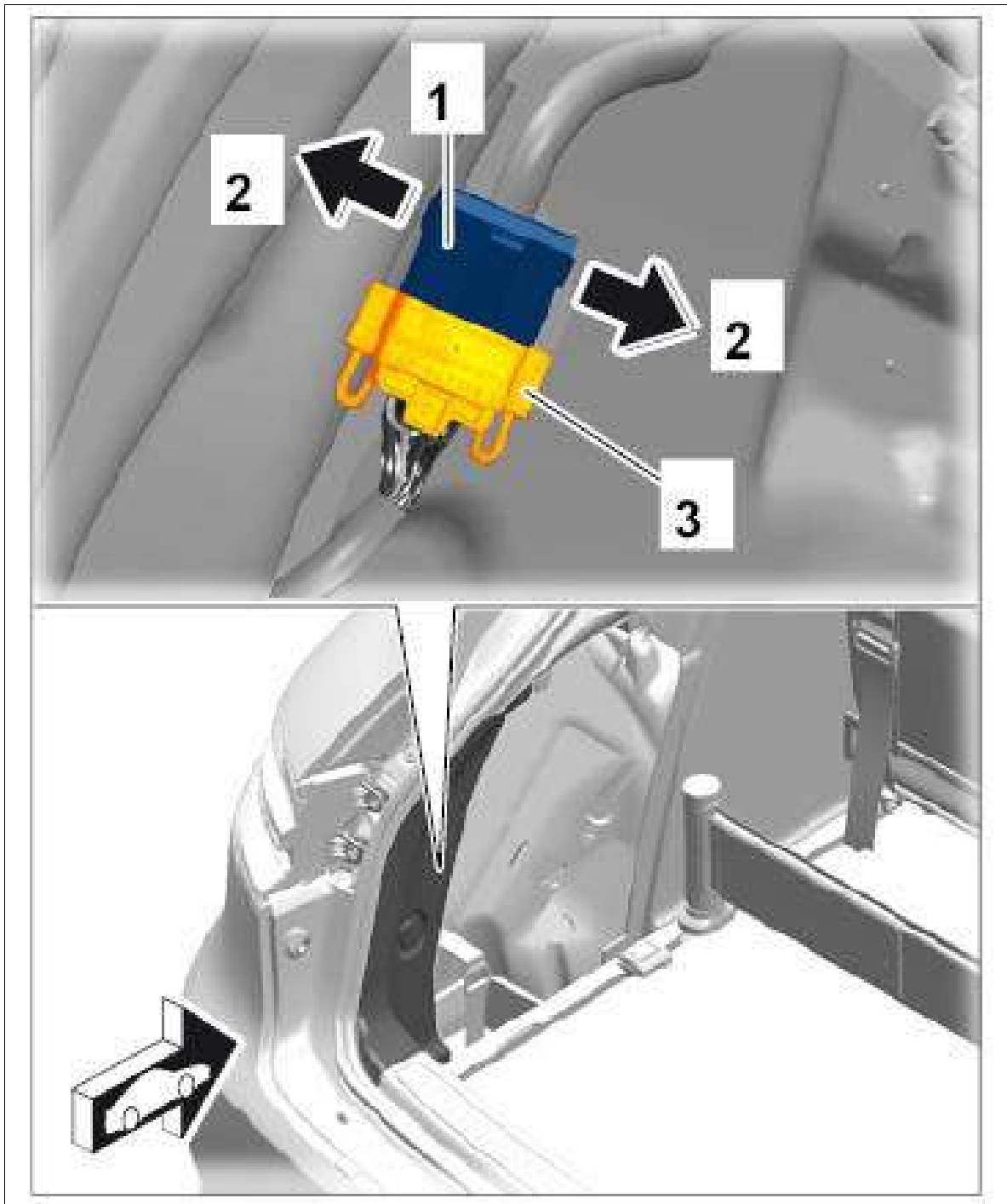
WM 943119 REMOVING AND INSTALLING TAIL LIGHT (ALL MODELS) > PRELIMINARY WORK

1. Remove rear apron. → REMOVING REAR APRON
2. Remove side trim panel for rear luggage compartment. → Removing side trim panel for rear luggage compartment

WM 943119 REMOVING AND INSTALLING TAIL LIGHT (ALL MODELS) > REMOVING TAIL LIGHT

1. Unclip electric plug connection **-1-** at the body. Then release **-2-** and disconnect it.
2. Remove connector holder **-3-** from the connector.

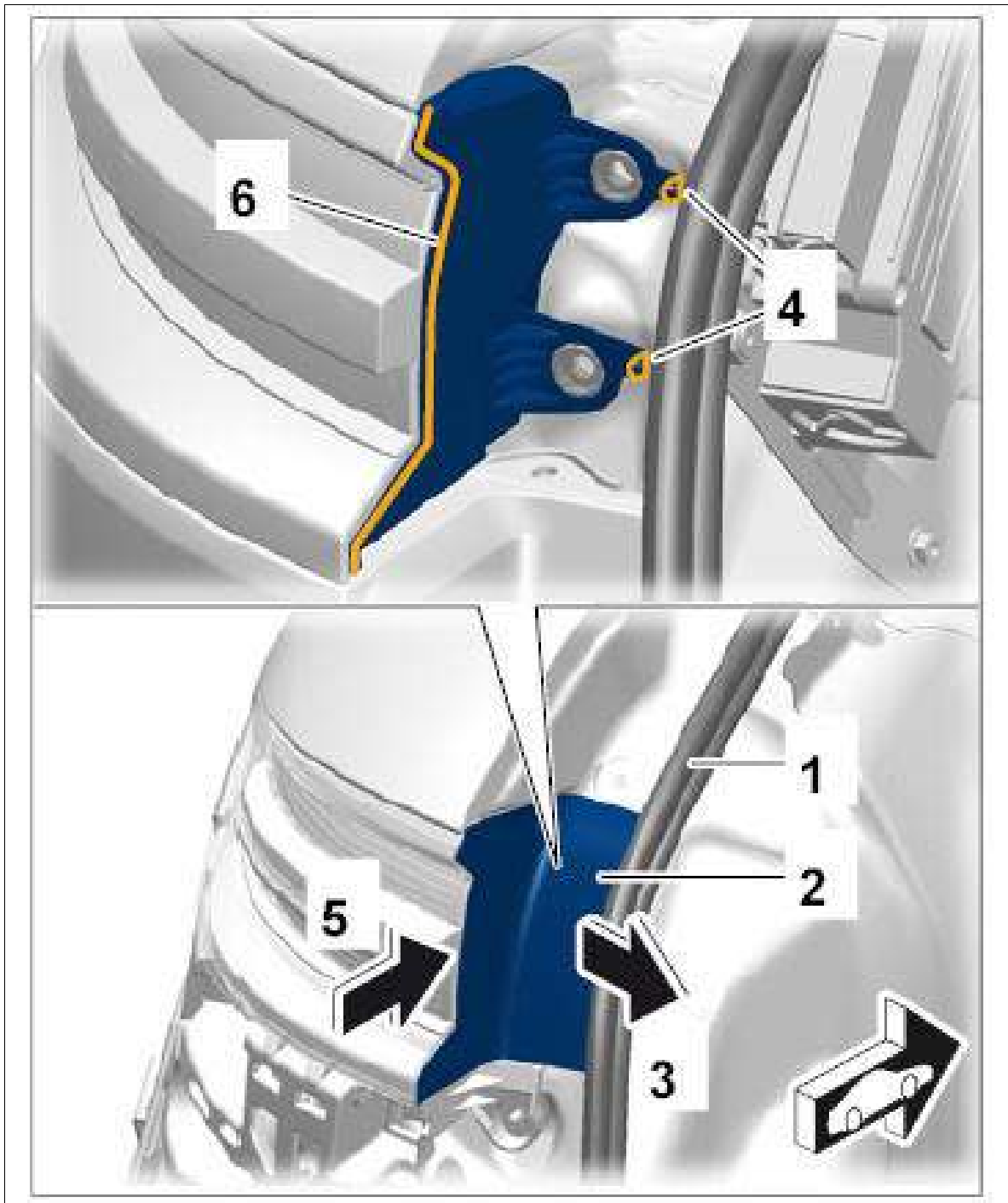
Fig 1: Disconnecting Electric Plug Connection



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Pull seal **-1-** in the tail light area off the body seam.
4. Disengage cover **-2-** at the sides **-3-** from the two clamps **-4-** .
5. Disengage cover by pulling it forward **-5-** out of the tail light seam **-6-** .

Fig 2: Removing Cover

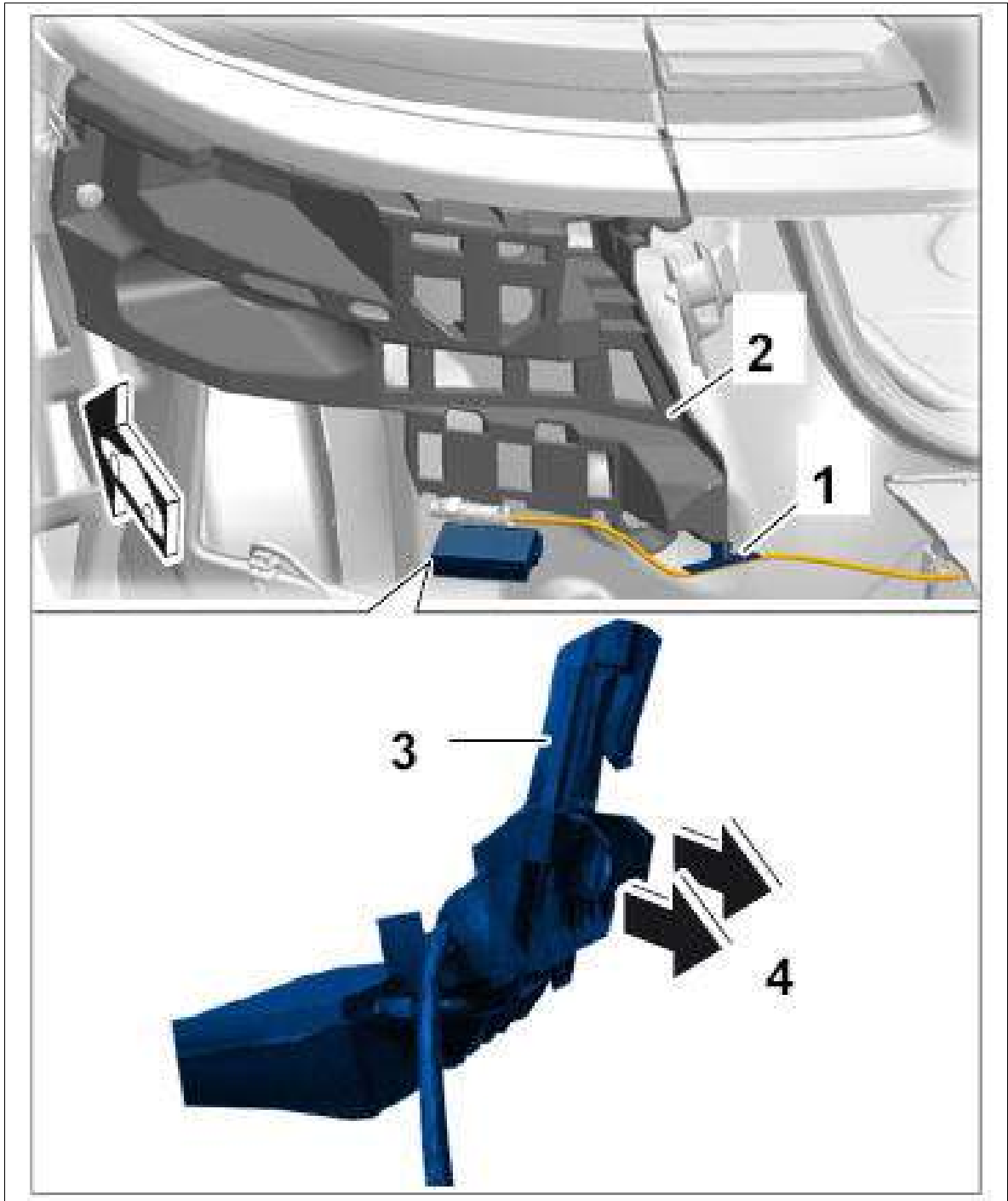


Courtesy of PORSCHE CARS NORTH AMERICA, INC.

When removing the left tail light:

6. Loosen holder -1- for the line from the rear retaining strip -2- .
7. Disengage holder -3- (-4-), remove it from the rear retaining strip and leave it hanging with the line connected.

Fig 3: Loosening Holder

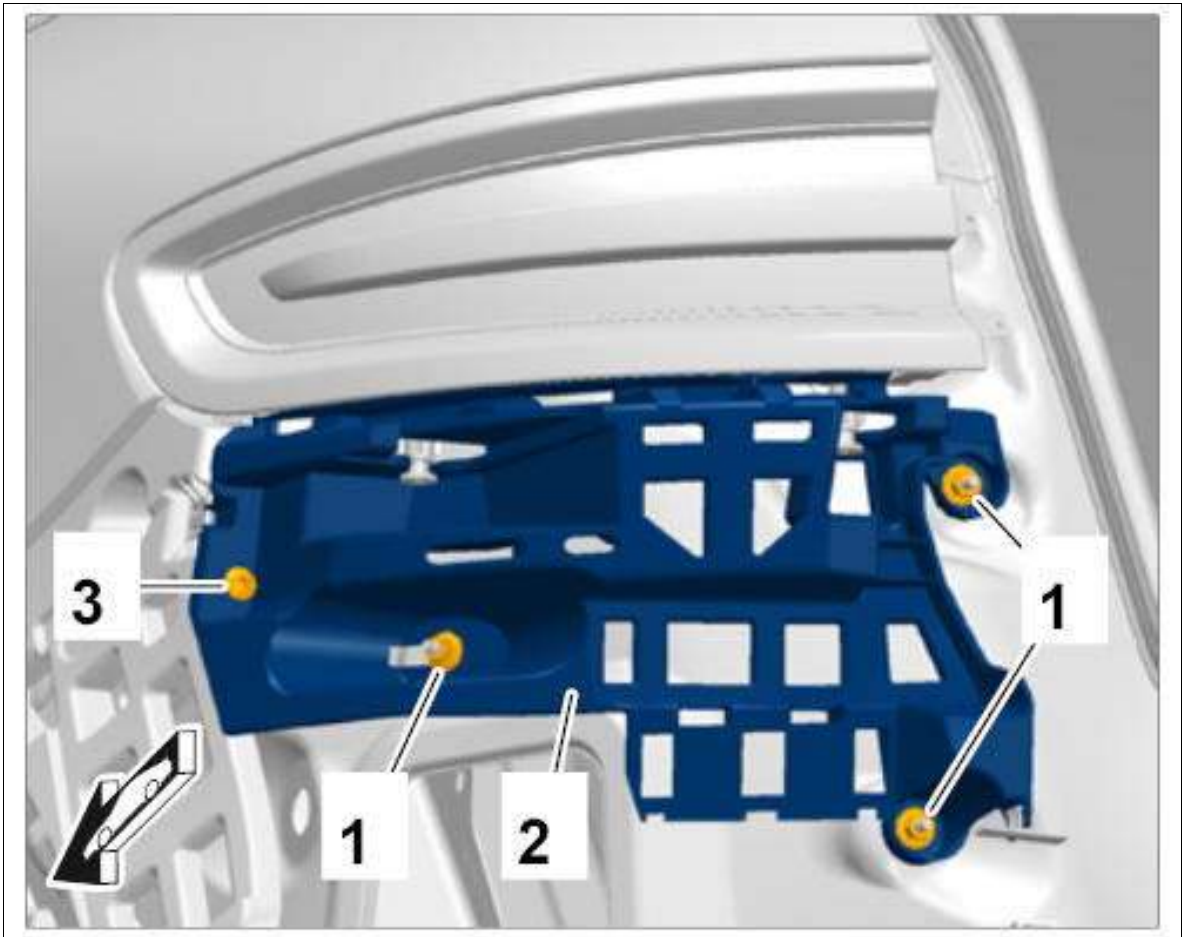


Courtesy of PORSCHE CARS NORTH AMERICA, INC.

All vehicles

8. Unscrew fastening nuts -1- on the rear retaining strip -2- and unscrew fastening screw -3- .

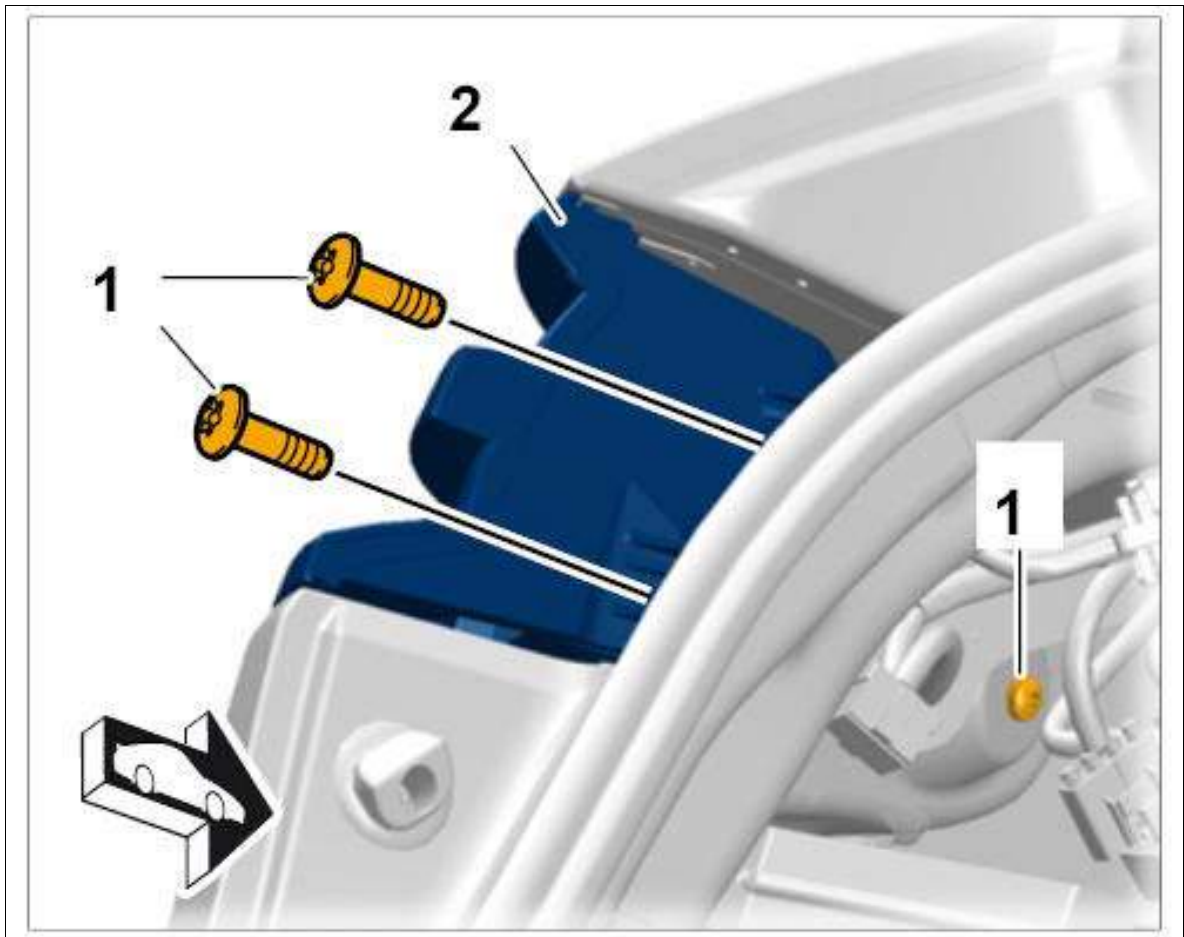
Fig 4: Loosening Rear Retaining Strip



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

9. Unscrew fastening screws -1- on the tail light -2- .
10. Remove tail light with rear retaining strip.

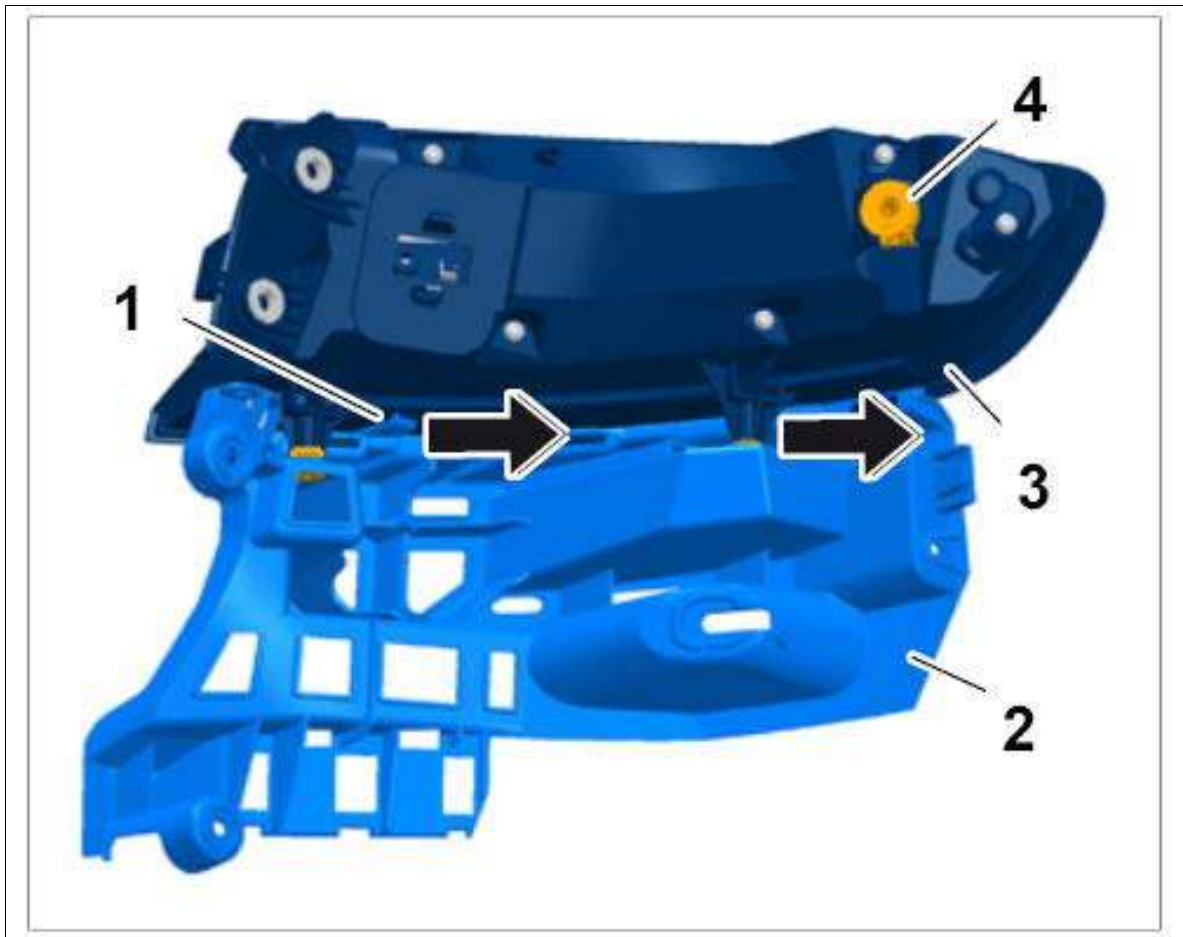
Fig 5: Removing Tail Light



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

11. Disengage locking mechanism -1- and remove rear retaining strip -2- from the tail light -3- .
12. If you are replacing the tail light, pull adjustment device -4- off the tail light.

Fig 6: Loosening Rear Retaining Strip From Tail Light



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 943119 REMOVING AND INSTALLING TAIL LIGHT (ALL MODELS) > INSTALLING TAIL LIGHT

1. Installation is performed in reverse order to removal.
2. If the tail light was replaced, set the gap dimensions by turning the adjustment device.
3. Tighten fastening screws on the tail light.
4. Screw on and tighten fastening nuts on the rear retaining strip.
5. Tighten fastening screw used to secure the rear retaining strip to the front retaining strip.

WM 943119 REMOVING AND INSTALLING TAIL LIGHT (ALL MODELS) > SUBSEQUENT WORK

1. Install side trim panel for rear luggage compartment. → Installing side trim panel for rear luggage compartment

2. Install rear apron. → INSTALLING REAR APRON

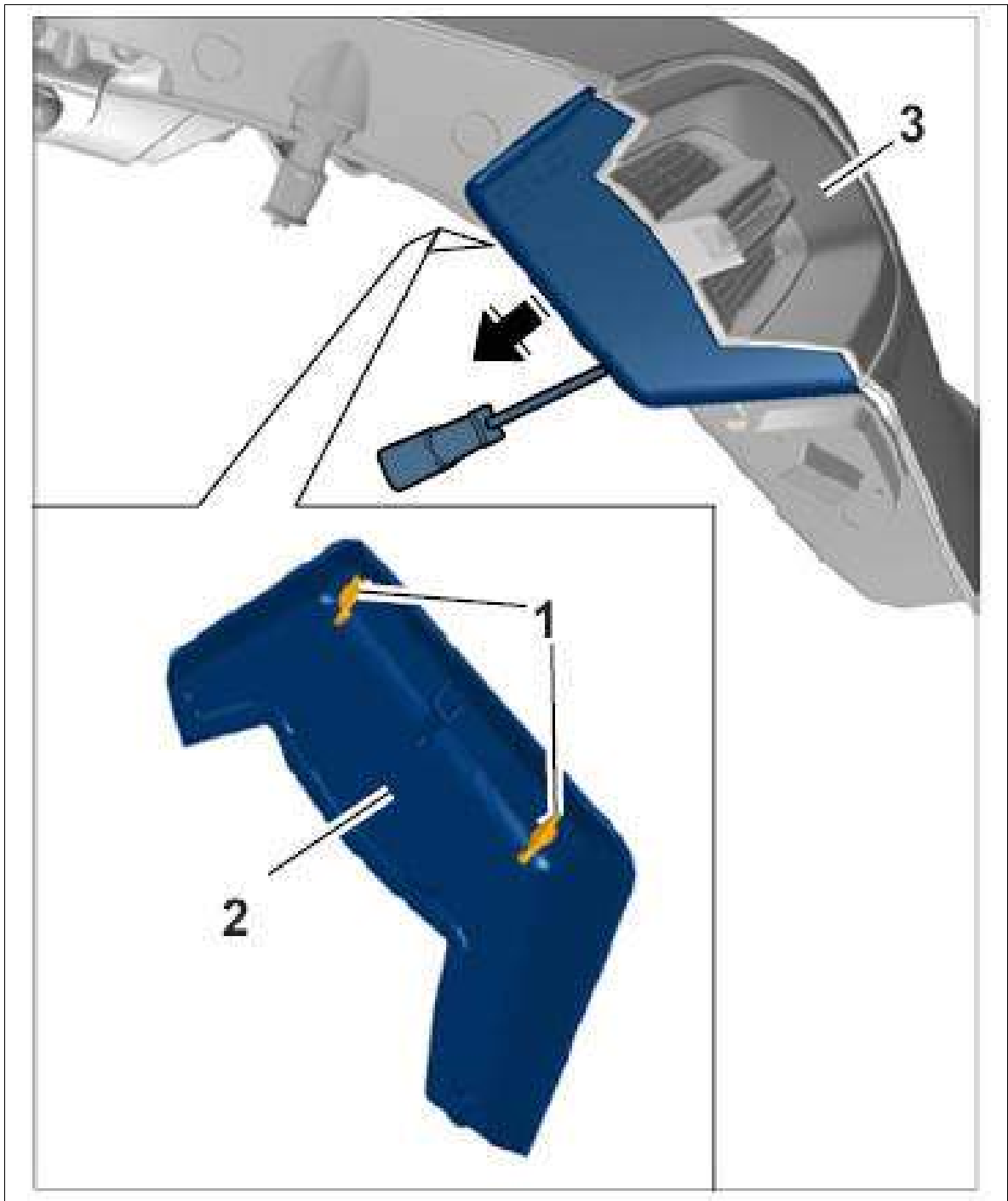
WM 943119 REMOVING AND INSTALLING TAIL LIGHT IN REAR LID (ALL MODELS) > PRELIMINARY WORK

1. Remove trim panel for rear lid. → Removing trim panel for rear lid

WM 943119 REMOVING AND INSTALLING TAIL LIGHT IN REAR LID (ALL MODELS) > REMOVING TAIL LIGHT IN REAR LID

1. Switch off ignition and pull remote control out of ignition lock.
2. Disengage locking lugs **-1-** on the cover **-2-** using a small screwdriver and pull cover off the tail light **-3-** in direction of arrow.

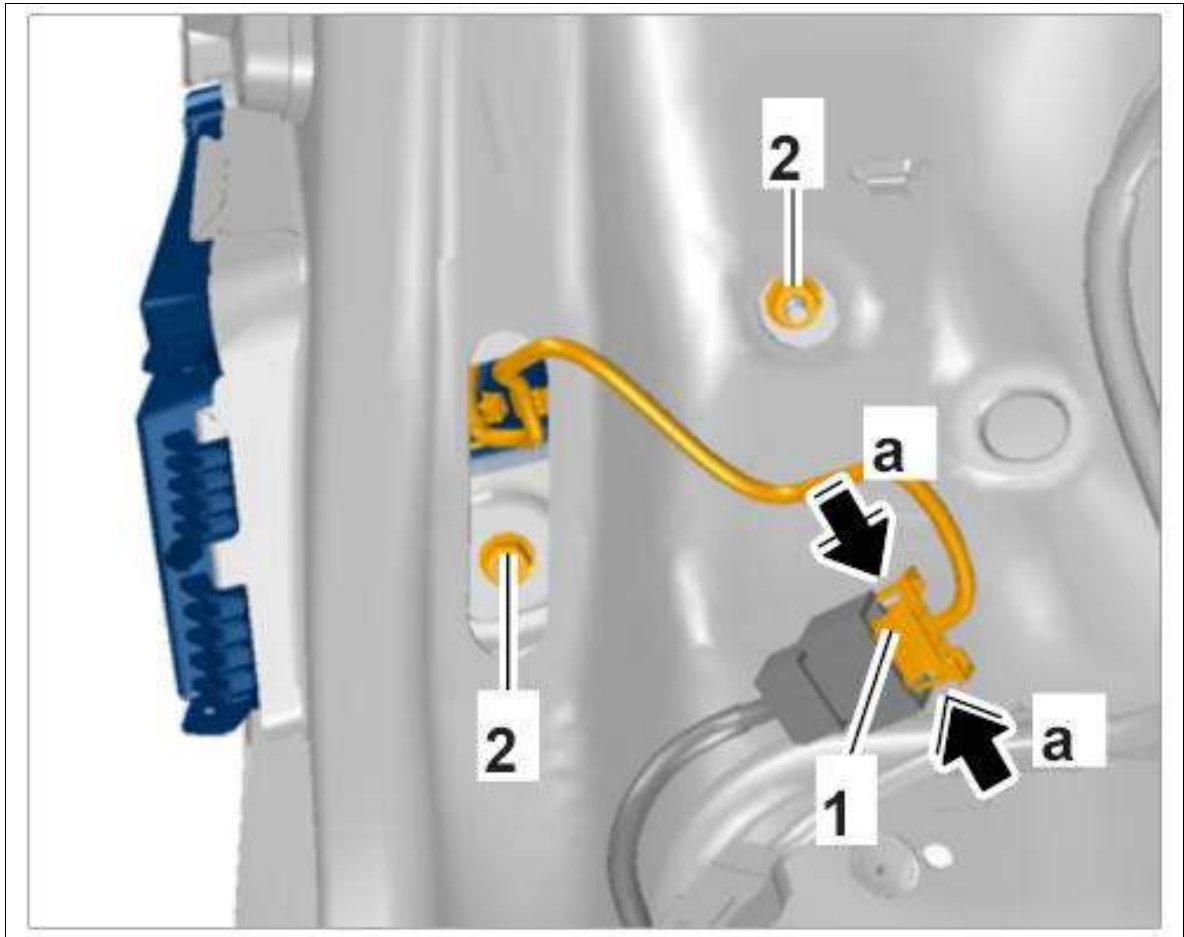
Fig 1: Removing Cover



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Release electric plug connection -1- (-a-) and disconnect it.
4. Screw off fastening nuts -2- .

Fig 2: Disconnecting Electric Plug Connection



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

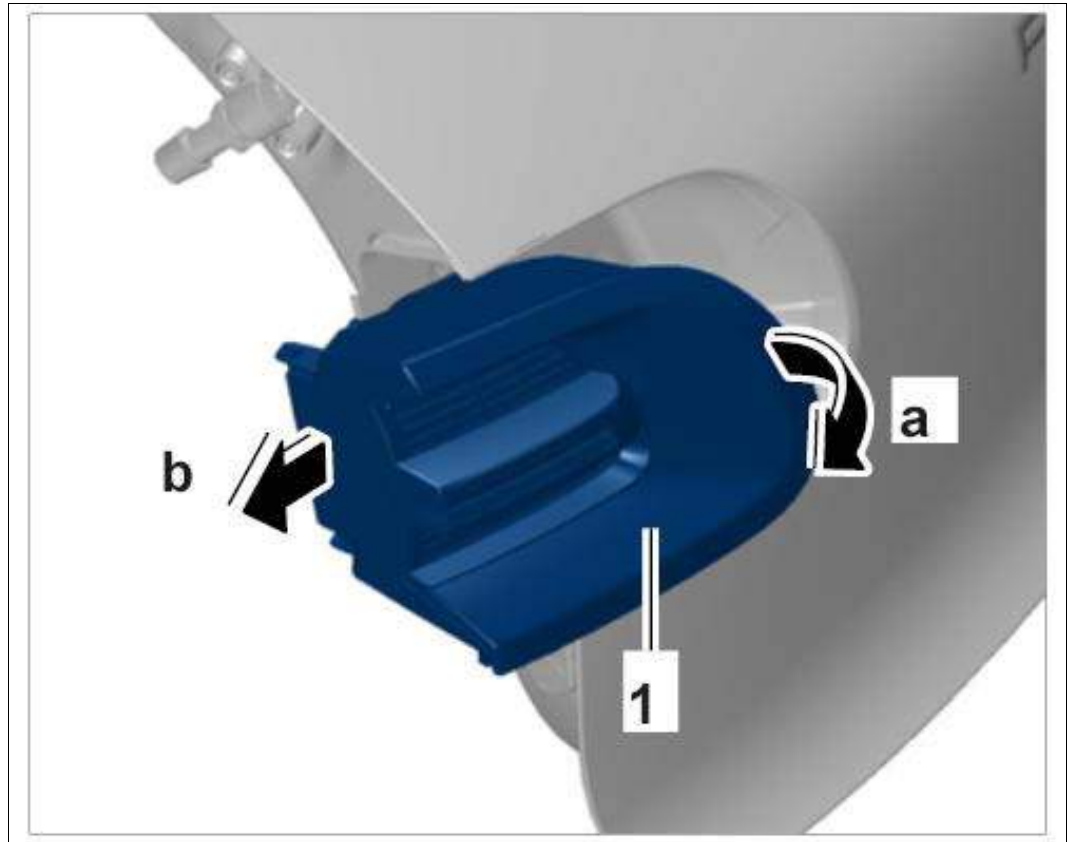
5. Remove tail light -1- .

1. 5.1. Swivel the tail light out of the rear lid slightly -a- .

2. 5.2. Carefully unhook the tail light at the sides from the seam of the rear lid -b- .

3. 5.3. Remove tail light and guide electric line out through the opening in the rear lid.

Fig 3: Removing Tail Light From Rear Lid



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 943119 REMOVING AND INSTALLING TAIL LIGHT IN REAR LID (ALL MODELS) > INSTALLING TAIL LIGHT IN REAR LID

1. Installation is performed in reverse order to removal.
2. Tighten fastening nuts.

WM 943119 REMOVING AND INSTALLING TAIL LIGHT IN REAR LID (ALL MODELS) > SUBSEQUENT WORK

1. Install trim panel for rear lid. → Installing trim panel for rear lid

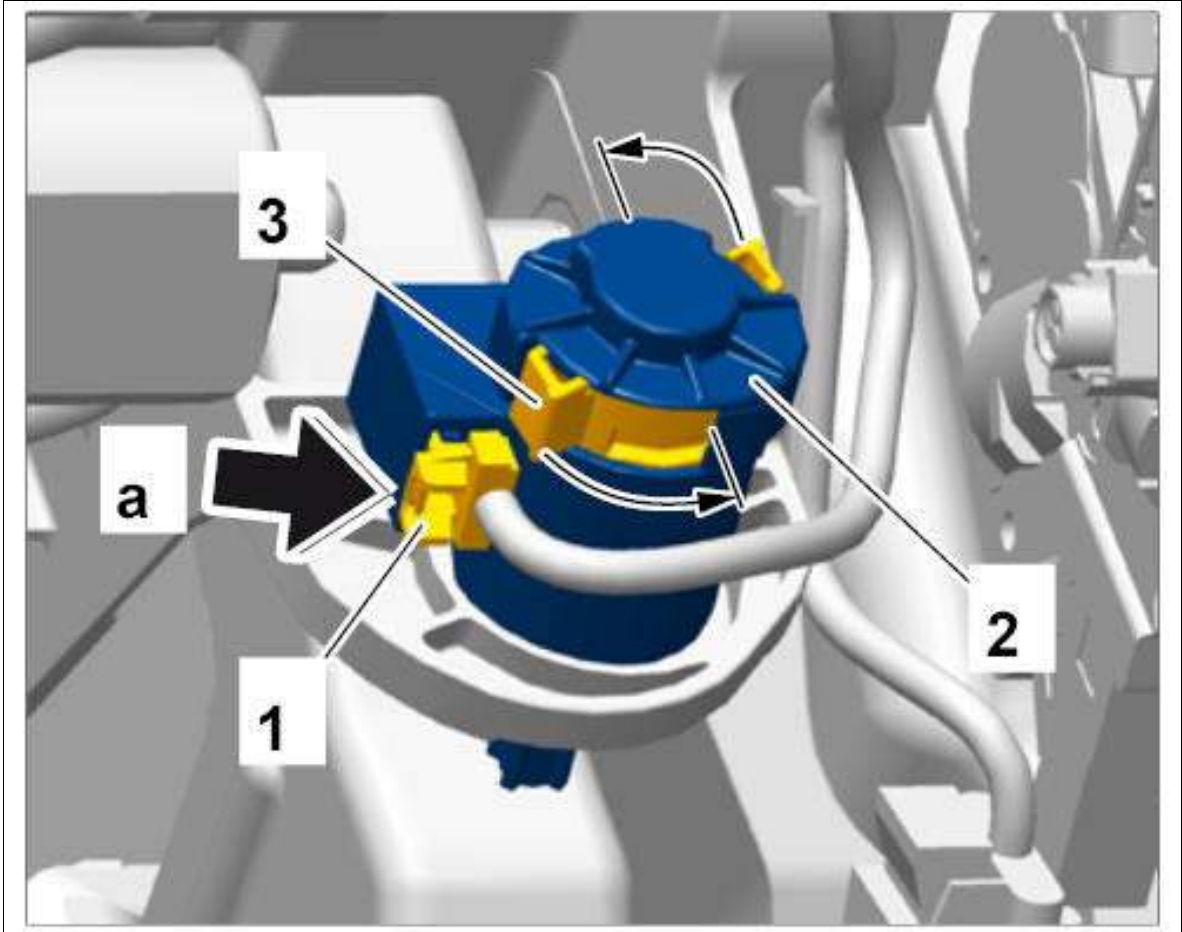
WM 943619 REMOVING AND INSTALLING BRAKE LIGHT SWITCH (ALL MODELS) > PRELIMINARY WORK

1. Remove trim panel under dashboard at the left. → Removing trim panel under dashboard at the left

WM 943619 REMOVING AND INSTALLING BRAKE LIGHT SWITCH (ALL MODELS) > REMOVING BRAKE LIGHT SWITCH

1. Release electric plug connection -1- (-a-) and pull it off the brake light switch -2- .

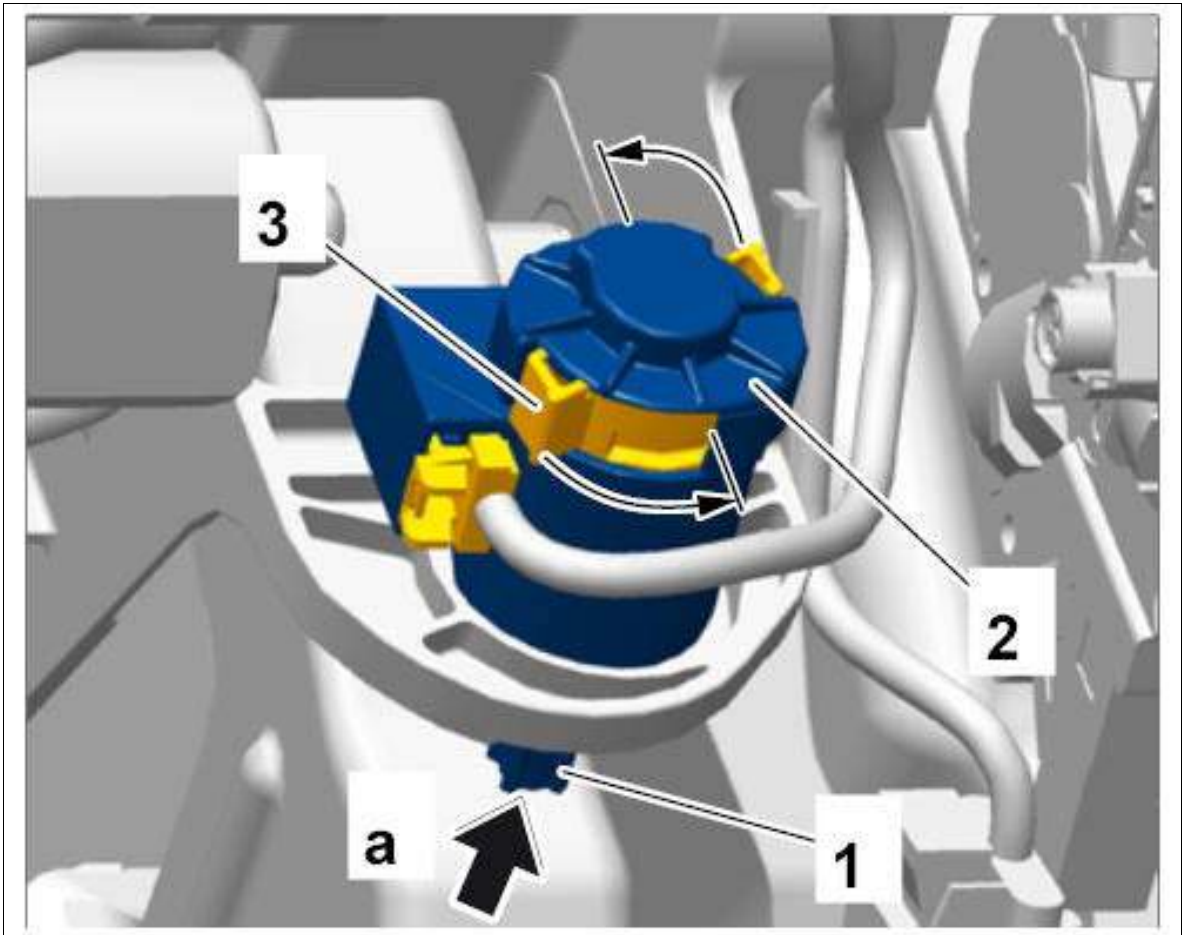
Fig 1: Loosening Brake Light Switch



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

2. Press tappet -1- fully into the brake light switch -2- (-a-).

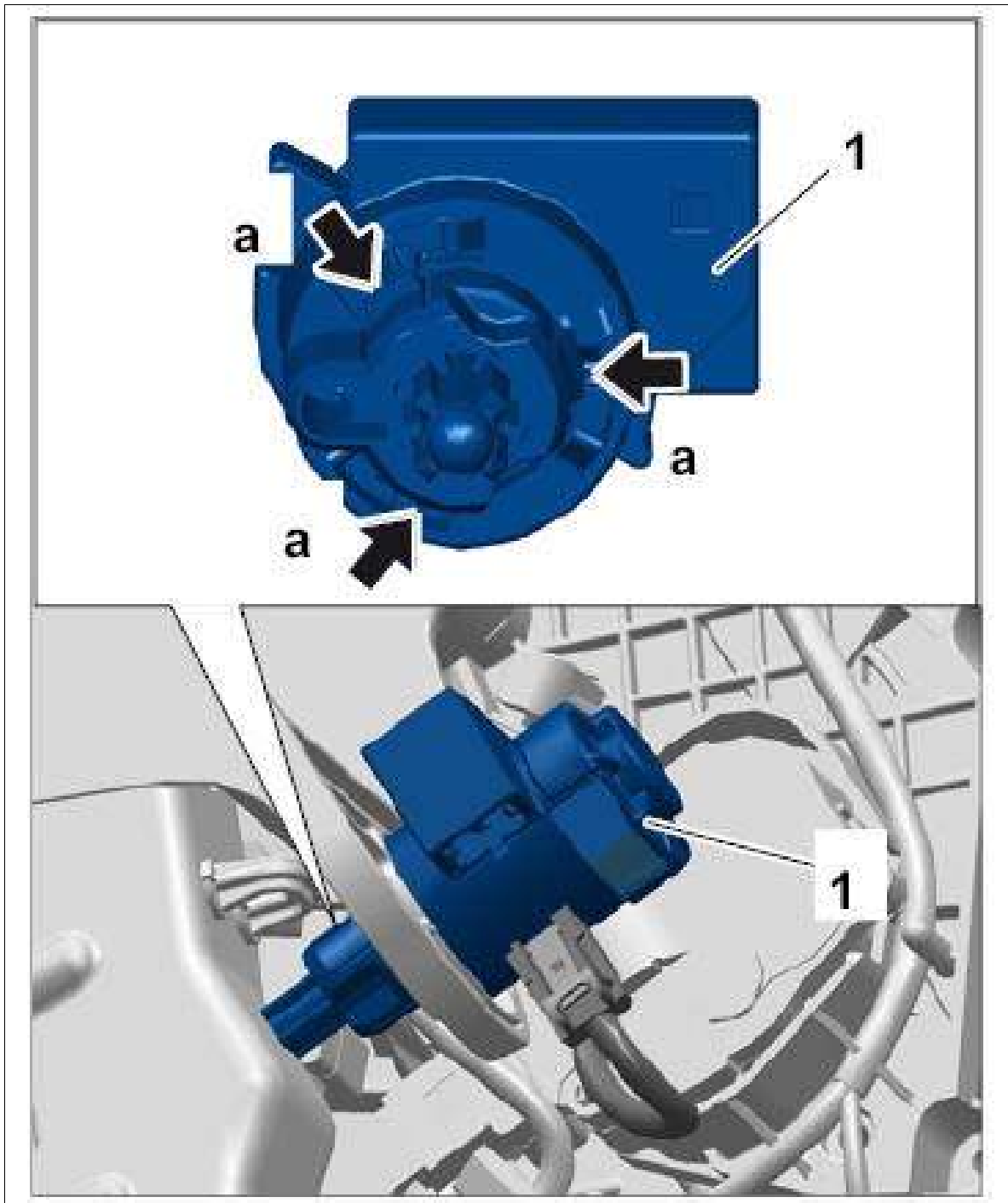
Fig 2: Pressing Brake Light Switch Tappets



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Disengage locking ring **-3-** and turn it approx. 60° anti-clockwise until it engages.
4. Press locking lugs **-a-** and pull the brake light switch **-1-** to the rear and out of the pedal bearing block.

Fig 3: Removing Brake Light Switch



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 943619 REMOVING AND INSTALLING BRAKE LIGHT SWITCH (ALL MODELS) > INSTALLING BRAKE LIGHT SWITCH

Information

The brake light switch must only be installed when the brake pedal is not actuated. The brake booster,

brake master cylinder and brake pedal must be ready to drive.

1. Installation is performed in reverse order to removal.

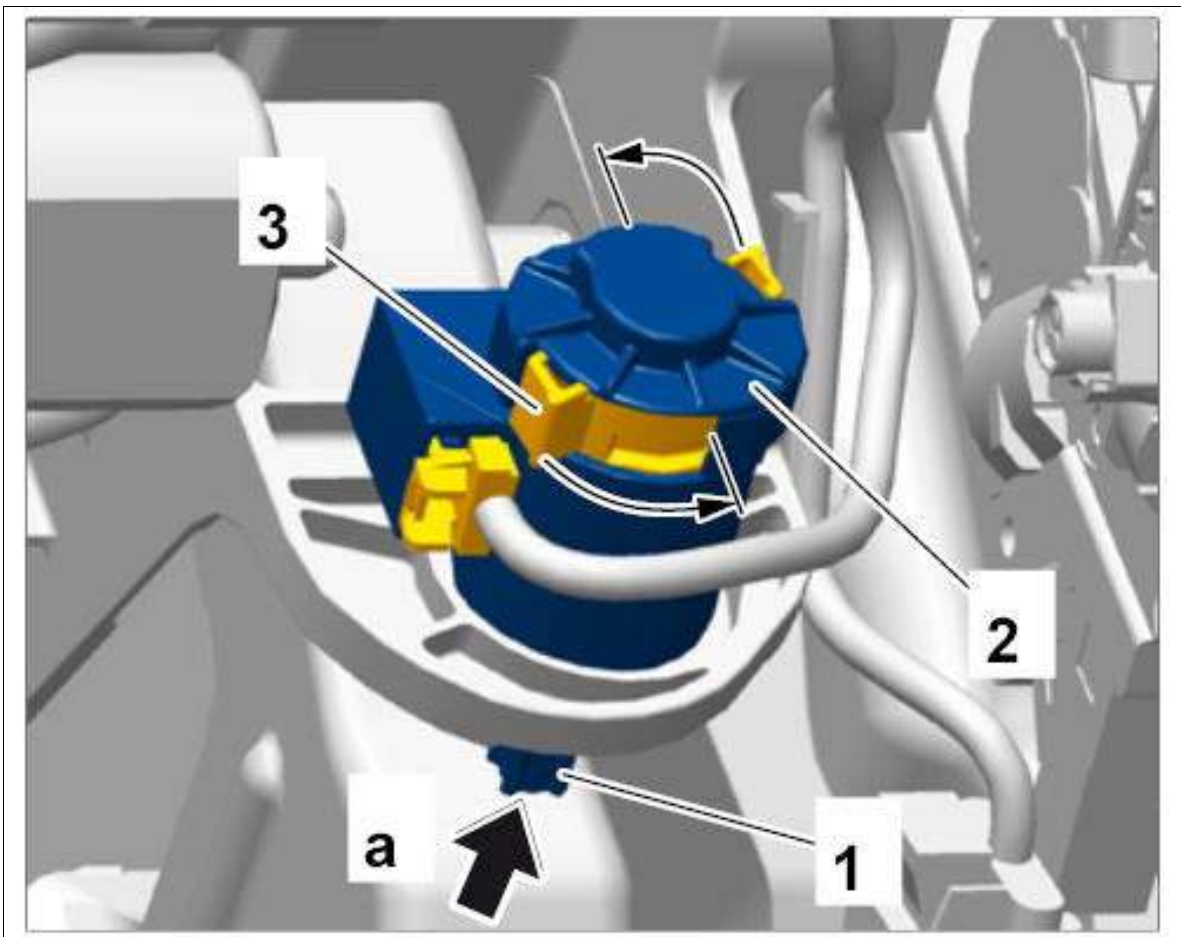
WM 943619 REMOVING AND INSTALLING BRAKE LIGHT SWITCH (ALL MODELS) > ADJUSTING BRAKE LIGHT SWITCH

Information

The brake light switch must be re-adjusted if the position of the brake pedal is changed after adjusting the brake light switch. The brake pedal must be unactuated at its end position when adjusting the brake light switch.

1. Press tappet **-1-** fully into the brake light switch **-2-** .
2. Disengage locking ring **-3-** and turn it approx. 60° anti-clockwise until it engages.

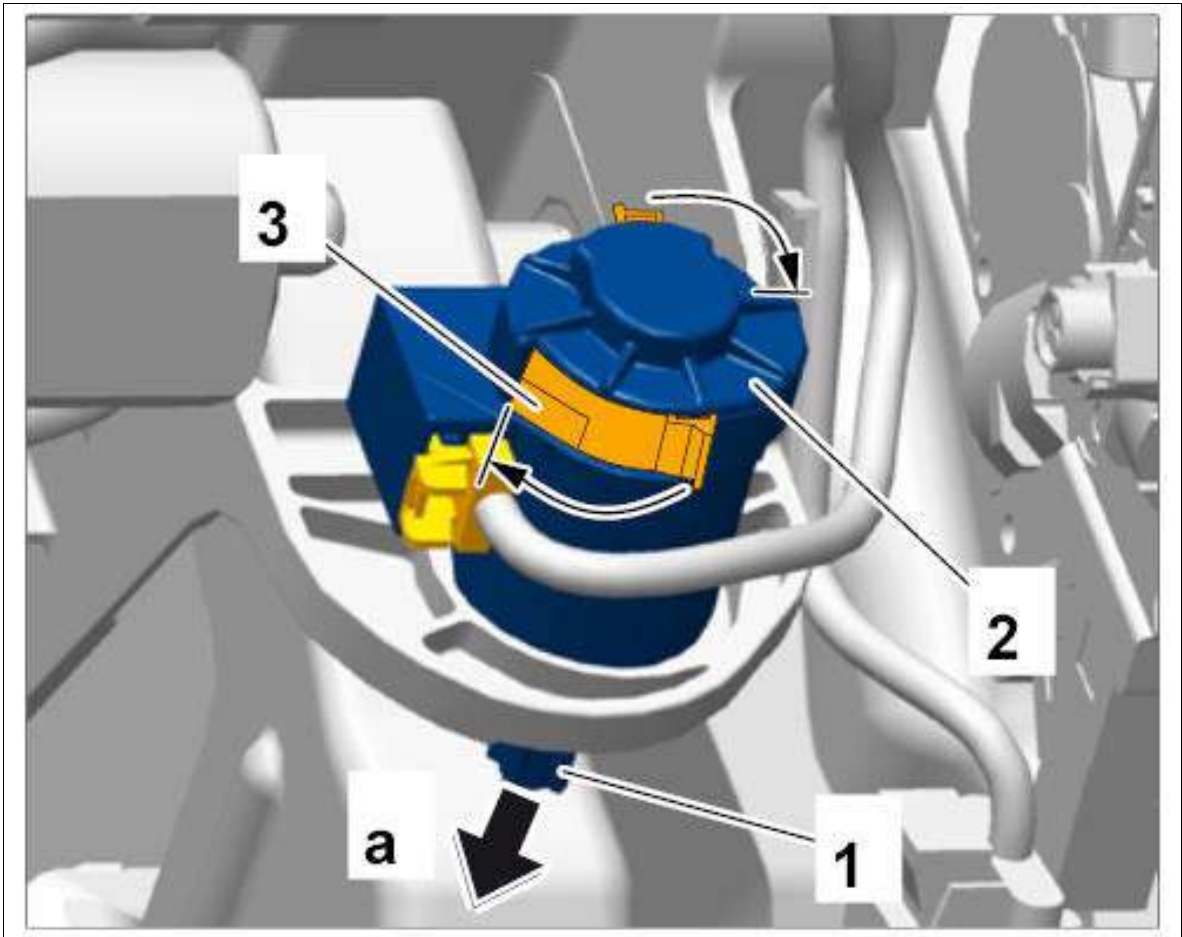
Fig 1: Adjusting Brake Light Switch



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Release tappet **-1-** on the brake light switch **-2-** .
4. Disengage locking ring **-3-** and turn it approx. 60° clockwise until it engages.

Fig 2: Adjusting Brake Light Switch




Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 943619 REMOVING AND INSTALLING BRAKE LIGHT SWITCH (ALL MODELS) > SUBSEQUENT WORK

1. Install trim panel under dashboard at the left. → Removing trim panel under dashboard at the left

WM 944919 REMOVING AND INSTALLING CONTROL UNIT FOR FRONT-END ELECTRONICS (ALL MODELS) > TOOLS

| Designation | Type | Number | Description |
|-------------|------|--------|-------------|
| | | | |

| | | | |
|-----------------|--------------|------|--|
| PIWIS Tester II | Special tool | 9818 |  |
|-----------------|--------------|------|--|

WM 944919 REMOVING AND INSTALLING CONTROL UNIT FOR FRONT-END ELECTRONICS (ALL MODELS) > PRELIMINARY WORK

1. Remove trim panel under dashboard at the left. → Removing trim panel under dashboard at the left

WM 944919 REMOVING AND INSTALLING CONTROL UNIT FOR FRONT-END ELECTRONICS (ALL MODELS) > REMOVING CONTROL UNIT FOR FRONT-END ELECTRONICS



NOTE: Voltage peaks

- Risk of damage to load or to the control unit

→ Remove the ignition key and switch off load before disconnecting or removing load.

Information

Always comply with the regulations for handling ESD-sensitive components!

- Assembly work may only be carried out if the mechanic is wearing the working clothes and shoes approved by Porsche.
- The new part must only be removed from the ESD (electrostatic discharge) protective packaging just before installation and at the position at which the part is to be installed.
- Never touch the electric pins and plug contacts.

1. Switch off ignition and pull remote control out of ignition lock.

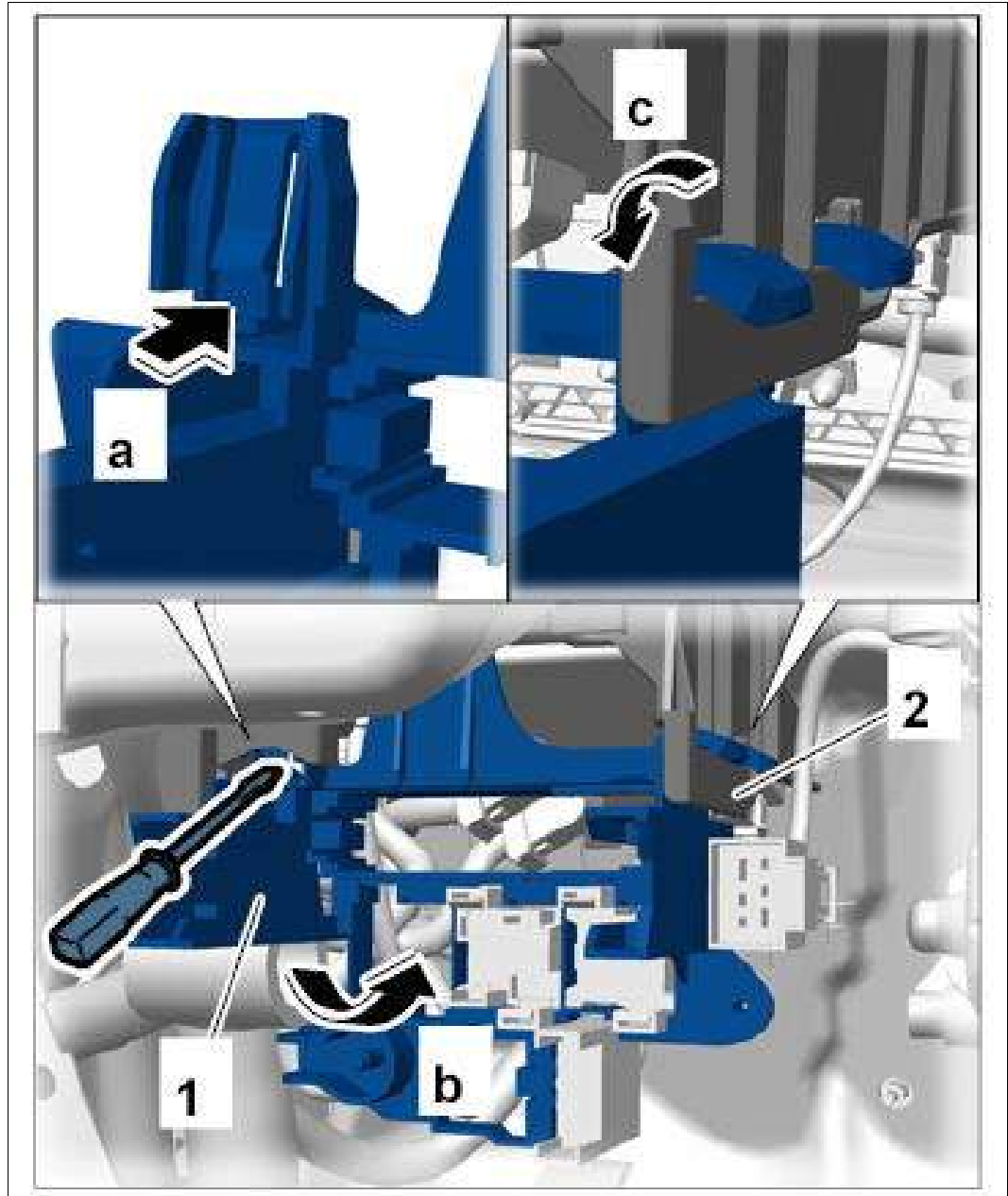
2. Loosen relay carrier **-1-** .

1. 2.1. Release the relay carrier **-a-** and swivel it down **-b-** .

2. 2.2. Pull the relay carrier out of the holder **-2-** (**-c-**) and set it aside with lines

connected.

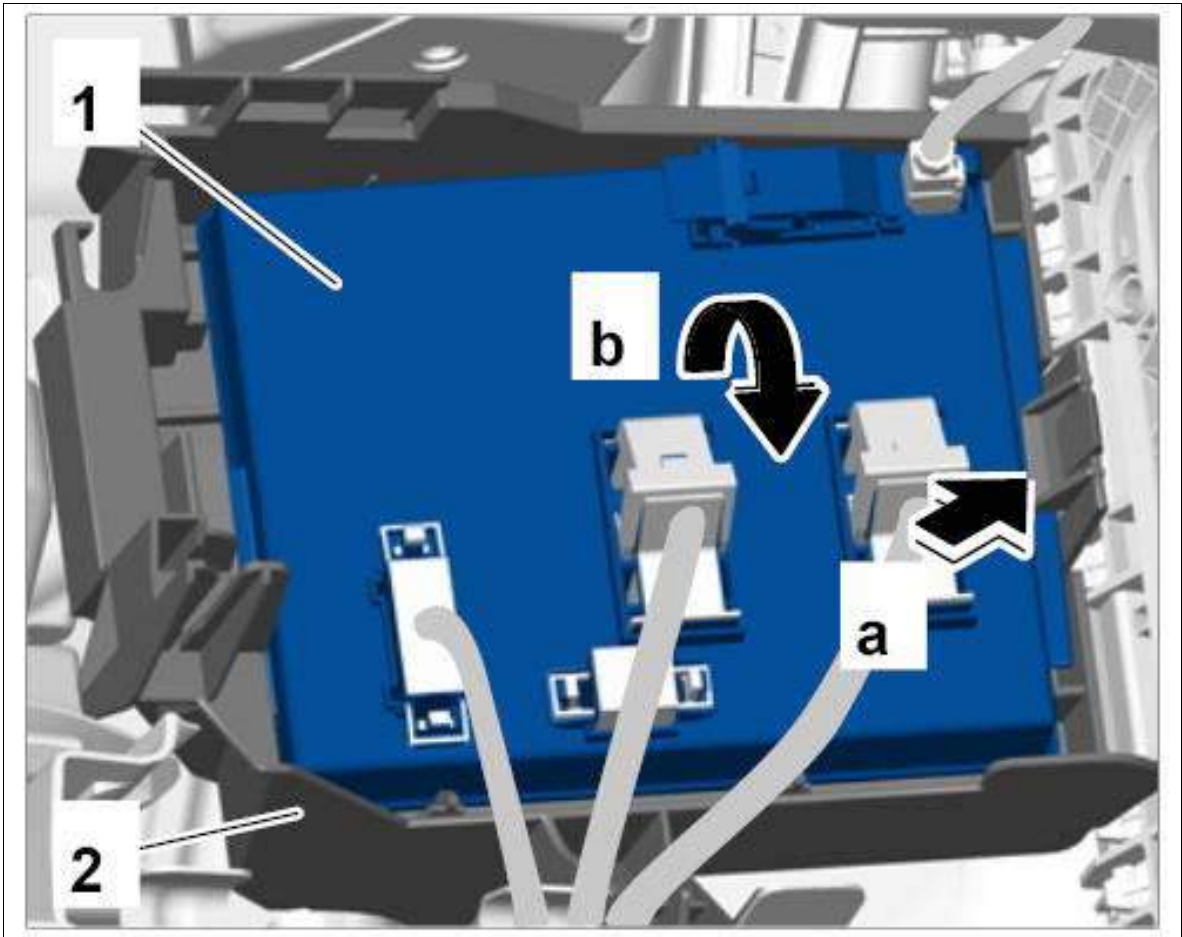
Fig 1: Loosening Relay Carrier



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Press release **-a-** , swivel the front-end electronics control unit **-1-** down at the front **-b-** and remove it from the holder **-2-** at the rear.

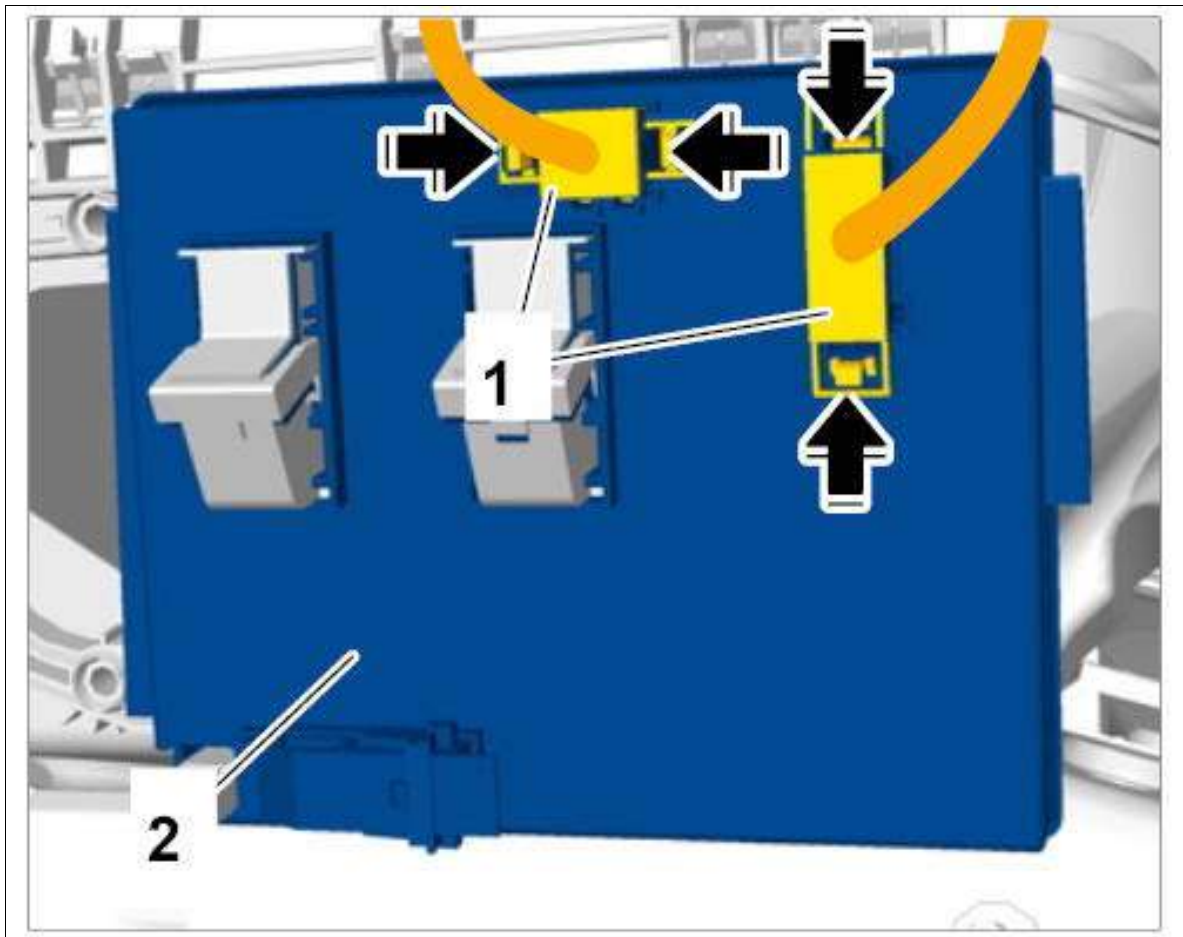
Fig 2: Loosening Front-End Electronics Control Unit



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

4. Release electric plug connections **-1-** (**-arrows-**) and disconnect them from the rear-end electronics control unit **-2-** .

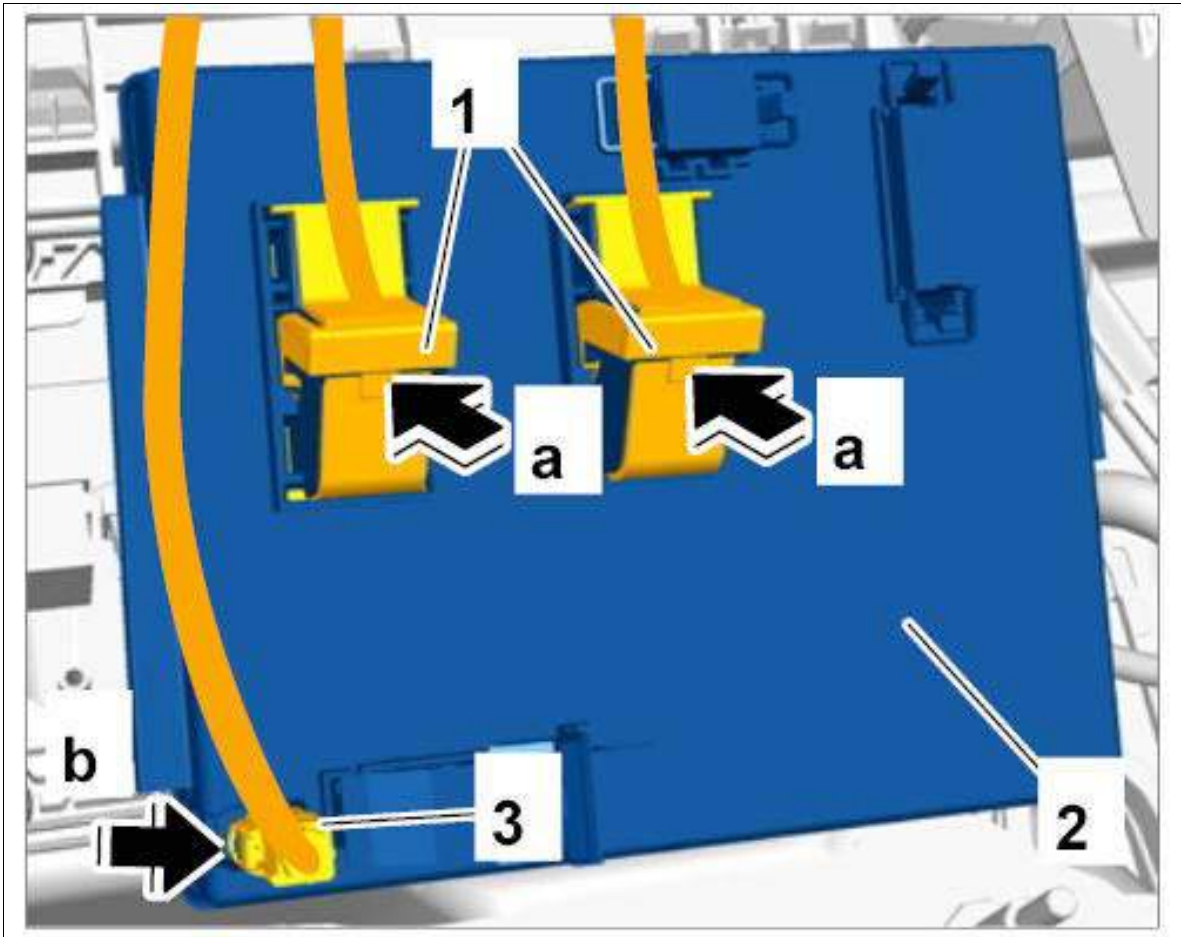
Fig 3: Disconnecting Electric Plug Connections



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

5. Release the swivel bar **-1-** (**-a-**), swivel it down and disconnect electric plug connections from the rear-end electronics control unit **-2-** .
6. Release electric plug connection **-3-** (**-b-**) and disconnect it from the rear-end electronics control unit.

Fig 4: Disconnecting Electric Plug Connections



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 944919 REMOVING AND INSTALLING CONTROL UNIT FOR FRONT-END ELECTRONICS (ALL MODELS) > INSTALLING CONTROL UNIT FOR FRONT-END ELECTRONICS

Information

Always comply with the regulations for handling ESD-sensitive components!

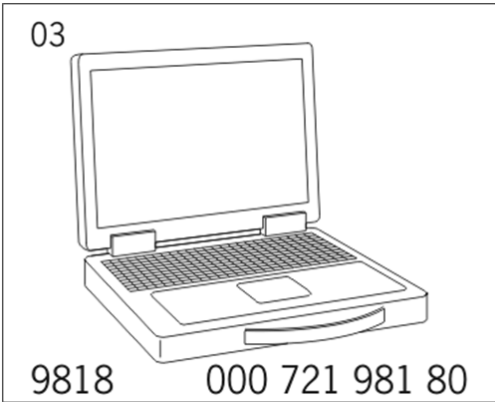
- Assembly work may only be carried out if the mechanic is wearing the working clothes and shoes approved by Porsche.
- The new part must only be removed from the ESD (electrostatic discharge) protective packaging just before installation and at the position at which the part is to be installed.
- Never touch the electric pins and plug contacts.

1. Installation is performed in reverse order to removal.

WM 944919 REMOVING AND INSTALLING CONTROL UNIT FOR FRONT-END ELECTRONICS (ALL MODELS) > SUBSEQUENT WORK

1. Install trim panel under dashboard at the left. → Installing trim panel under dashboard at the left
2. If the front-end electronics control unit was replaced, teach the new front-end electronics control unit to suit the vehicle using **PIWIS Tester II 9818**. → 944955 REPLACING CONTROL UNIT FOR FRONT-END ELECTRONICS

WM 944955 REPLACING CONTROL UNIT FOR FRONT-END ELECTRONICS (ALL MODELS) > TOOLS

| Designation | Type | Number | Description |
|-----------------|--------------|--------|---|
| PIWIS Tester II | Special tool | 9818 |  |

WM 944955 REPLACING CONTROL UNIT FOR FRONT-END ELECTRONICS (ALL MODELS) > TECHNICAL VALUES

| Location | Description | Type | Basic value | Tolerance 1 | Tolerance 2 |
|----------------|-------------|---------------|-------------|-------------|-------------|
| Current rating | | Nominal value | 40 A | | |

WM 944955 REPLACING CONTROL UNIT FOR FRONT-END ELECTRONICS (ALL MODELS) > PRELIMINARY WORK

1. Switch off ignition and replace control unit. → 944919 REMOVING AND INSTALLING CONTROL UNIT FOR FRONT-END ELECTRONICS .

WM 944955 REPLACING CONTROL UNIT FOR FRONT-END ELECTRONICS (ALL MODELS) > REPLACING CONTROL UNIT FOR FRONT-END ELECTRONICS

Information

All remote controls (keys) are required for teaching a DME, front-end electronics (front BCM), rear-end electronics (rear BCM), electronic steering lock (ELV) control unit or remote controls (keys) for example.

Remote controls (keys) that are not taught during this teaching procedure will no longer be recognized by the vehicle.



NOTE: Voltage drop

- *Risk of irreparable damage to control unit*
- *Risk of damage to control unit*
- *Fault entries in the control unit*
- *Coding in the control unit is aborted*
- *Malfunctions in control unit, even during programming*

→ Prior to disconnecting the control unit, switch off ignition and remove ignition key.

→ Ensure that the power supply is not interrupted during programming.

→ Connect a battery charger with a current rating of at least → **Nominal value: 40 A** to the vehicle battery.

Information

The **PIWIS Tester II 9818** instructions take precedence since the description may be different with later Tester releases.

The procedure described here has been structured in general terms; different text or additions may appear in **PIWIS Tester II 9818**.

1. **PIWIS Tester II 9818** must be connected to the vehicle before starting the Tester. Switch on ignition.
2. Select the vehicle type and start the diagnostic application.
3. **Select Front-end electronics.**
4. **Extended identification** must now be selected.
5. **Enter the vehicle identification number** and press [Enter] to confirm your entry.
6. **Maintenance/repairs** must then be selected.
7. **Control unit replacement** must now be selected. Then press [F12] to continue.
8. **Select Write values** and press [F12] to continue.
9. Press [F8] to start writing values.
10. When a message appears confirming that the **values were written and coded successfully**, press [F12] to continue.

11. Go back to the Start page on the Tester.
12. To activate the control units, switch on the hazard warning lights.
13. Select the menu **Diagnostics --> Online teaching function --> Engine immobilizer** on the Start page.
14. **Vehicle** must now be selected. Then press [F12] to continue. Vehicle data will be read out.
15. Follow the instructions on the Tester.
16. The vehicle identification number (VIN) is displayed. Change the vehicle identification number if necessary.
17. Enter the repair order number and press [F12] to continue.
18. Enter the PPN user name and password and press [F12] to continue.
19. Login is performed.
20. The Tester displays the message **Login successful** . Press [F12] to continue.
21. Follow the instructions on the Tester to select the required menu.
22. Once the teaching process is completed successfully, the Tester shows the following status, for example:
 - 2 keys taught
 - Front BCM: taught
 - ELV: taught
 - Rear BCM: taught
 - DME: taught
 - Overall vehicle status: taught. Press [F12] to continue.
23. Press [ESC] to exit the **Online teaching function** and select the **vehicle type** on the Start page.
24. Read out the fault memory and erase it if necessary.
25. Function test: Lock, open and start the vehicle using all remote controls (hand-held transmitters).

WM 945019 REMOVING AND INSTALLING STEERING-COLUMN SWITCH (ALL MODELS) > TECHNICAL VALUES

| Location | Description | Type | Basic value | Tolerance 1 | Tolerance 2 |
|---------------------------------------|-----------------------------------|-------------------|----------------|-------------|-------------|
| Clamp securing steering-column switch | Hexagon socket head bolt, M6 x 15 | Tightening torque | 4 Nm (3 ftlb.) | | |

| | | | | | |
|-----------------------|--|--|--|--|--|
| to steering column | | | | | |
|-----------------------|--|--|--|--|--|

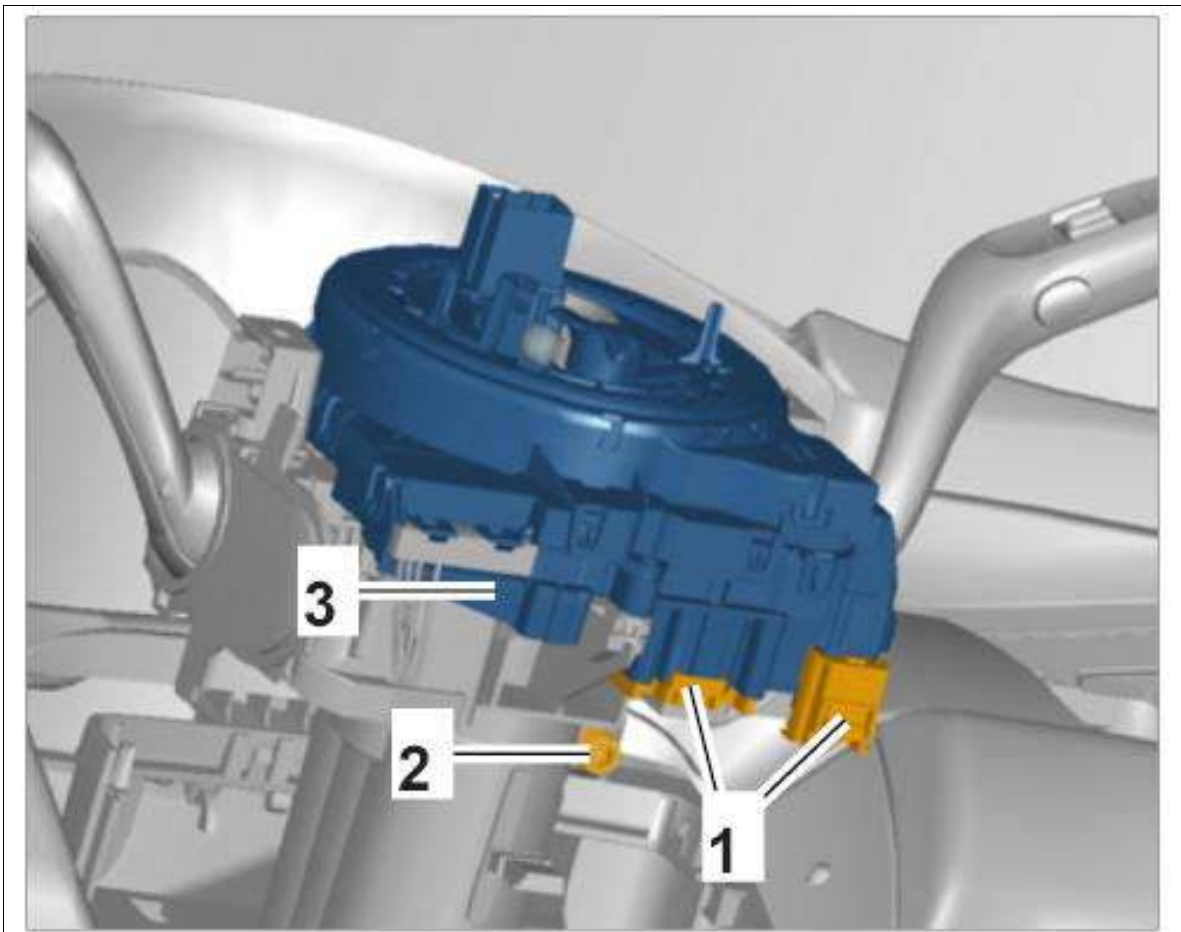
WM 945019 REMOVING AND INSTALLING STEERING-COLUMN SWITCH (ALL MODELS) > PRELIMINARY WORK

1. Remove steering wheel. → Removing And Installing Steering Wheel
2. Remove steering column casing. → Removing Steering Column Casing

WM 945019 REMOVING AND INSTALLING STEERING-COLUMN SWITCH (ALL MODELS) > REMOVING STEERING-COLUMN SWITCH

1. Release and disconnect electric plug connections -1- .
2. Loosen clamping screw -2- .
3. Remove steering-column switch -3- with control unit for steering wheel electronics from the steering column.

Fig 1: Removing Steering-Column Switch



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

When replacing the steering-column switch:

4. Remove steering wheel electronics control unit from the steering-column switch. → Removing Steering Column Casing

WM 945019 REMOVING AND INSTALLING STEERING-COLUMN SWITCH (ALL MODELS) > INSTALLING STEERING-COLUMN SWITCH

1. Installation is performed in reverse order to removal.
2. Tighten screw for the clamp on the steering-column switch. **Tightening torque 4 Nm (3 ftlb.)**

WM 945019 REMOVING AND INSTALLING STEERING-COLUMN SWITCH (ALL MODELS) > SUBSEQUENT WORK

1. Install steering column casing. → Installing Steering Column Casing
2. Install steering wheel. → Installing Steering Wheel

WM 945319 REMOVING AND INSTALLING SIDE DIRECTION INDICATOR LIGHT (ALL MODELS) > PRELIMINARY WORK

1. Remove rear-view mirror housing (upper part). → Removing Rear-View Mirror Housing (Upper Part)

WM 945319 REMOVING AND INSTALLING SIDE DIRECTION INDICATOR LIGHT (ALL MODELS) > REMOVING SIDE DIRECTION INDICATOR LIGHT



NOTE: Voltage peaks

- *Risk of damage to load or to the control unit*

→ Switch off ignition and remove remote control before disconnecting or removing load.

Information

- Some of the repair illustrations show only one side of the vehicle.
- Naturally, some steps also have to be performed on the opposite side of the vehicle as well.

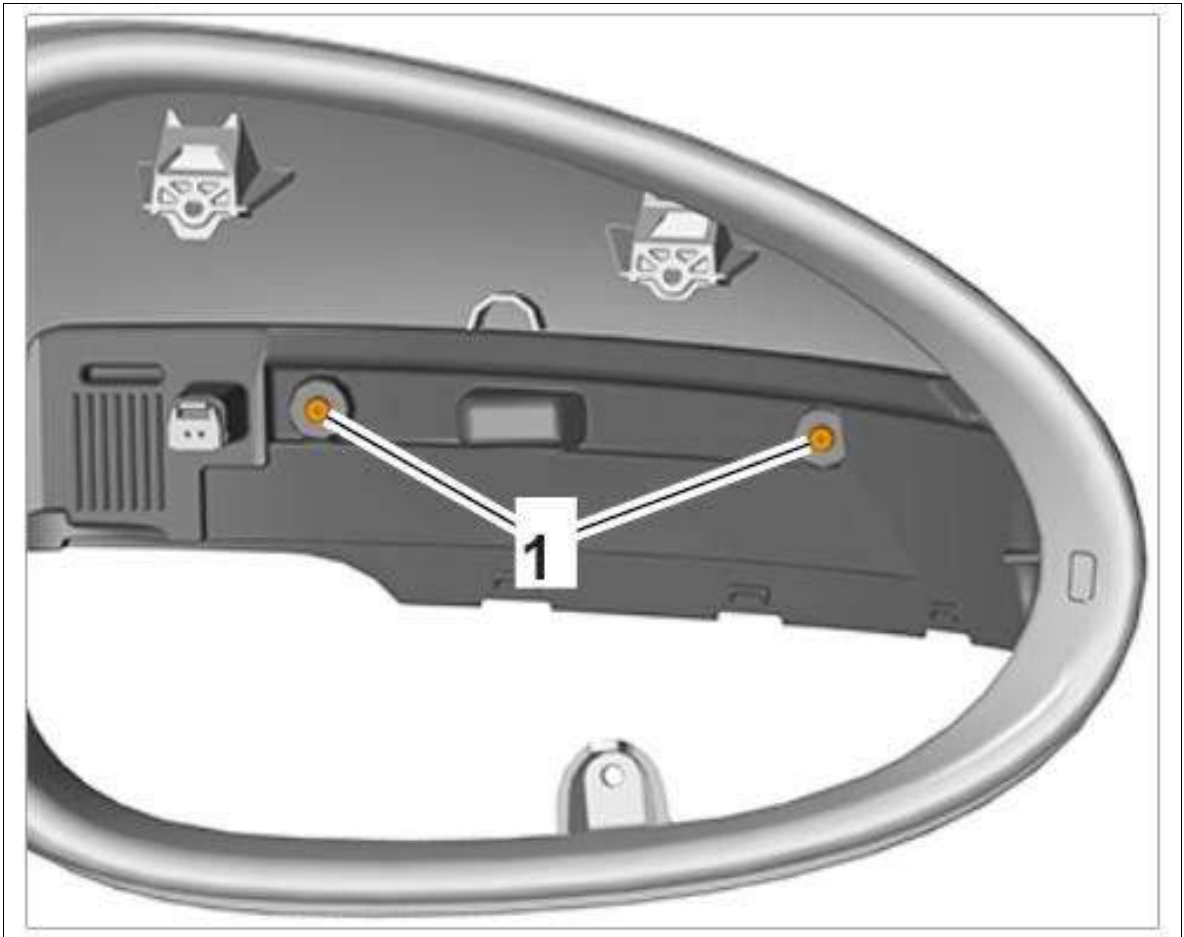
Fig 1: Identifying Side Direction Indicator Light Installation Position



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

1. Loosen fastening screws **-1-** on side direction indicator light.

Fig 2: Loosening Side Direction Indicator Light



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

2. Unclip side direction indicator light **-arrow-** and remove it from the rear-view mirror housing (upper part).

Fig 3: Removing Side Direction Indicator Light



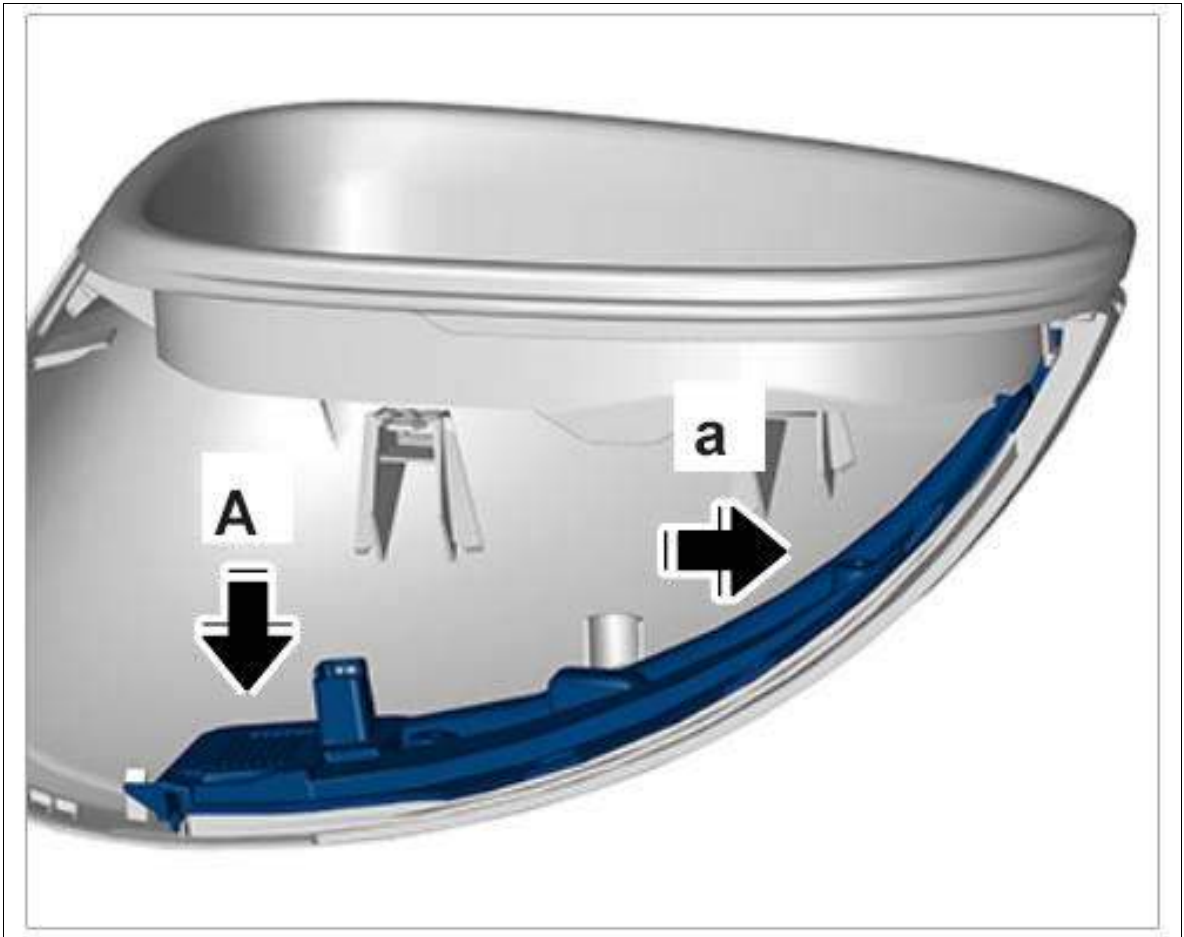
Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 945319 REMOVING AND INSTALLING SIDE DIRECTION INDICATOR LIGHT (ALL MODELS) > INSTALLING SIDE DIRECTION INDICATOR LIGHT

Information

- Some of the repair illustrations show only one side of the vehicle.
 - Naturally, some steps also have to be performed on the opposite side of the vehicle as well.
1. Push side direction indicator light into the rear-view mirror housing (upper part) **-a-** and clip it in **-A-** .

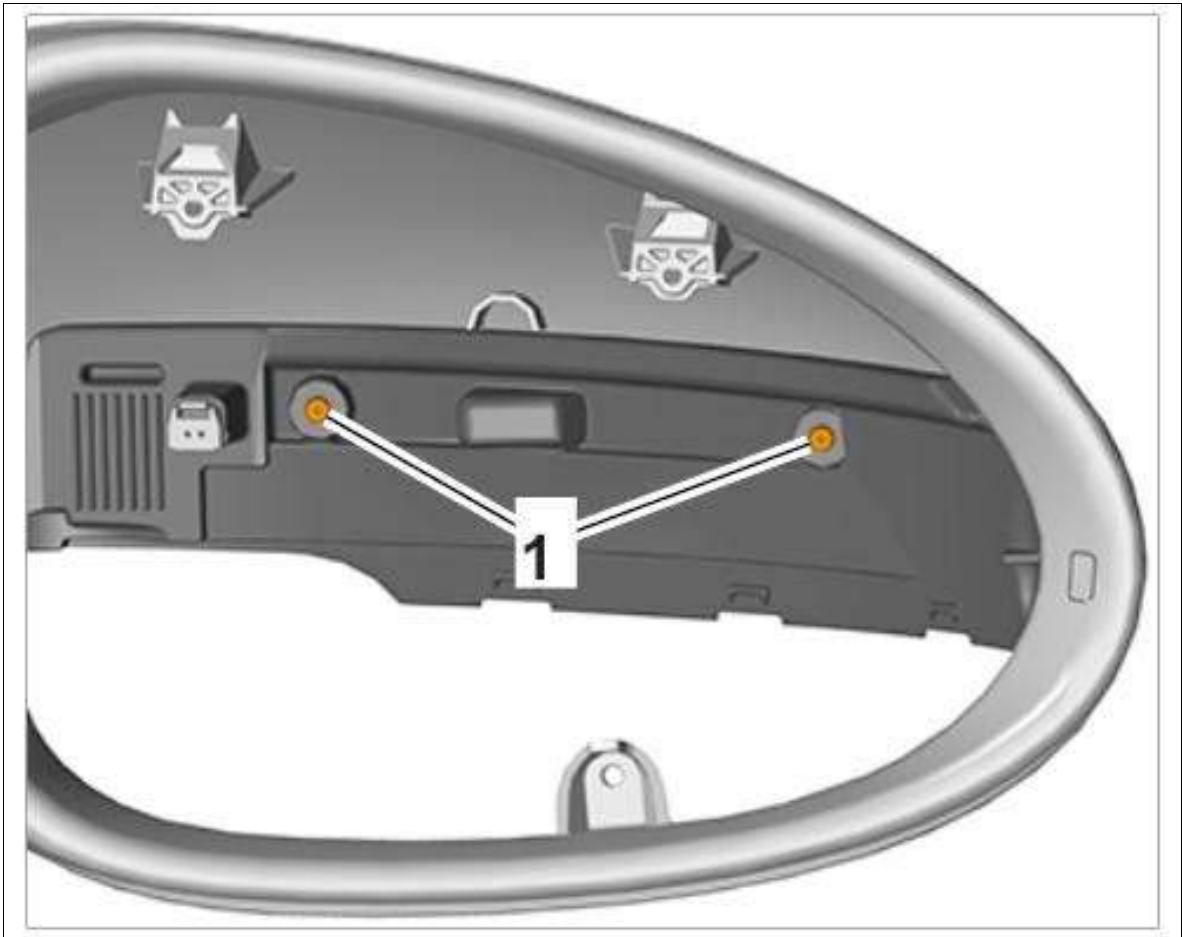
Fig 1: Installing Side Direction Indicator Light



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

2. Tighten fastening screws -1- for side direction indicator light.

Fig 2: Installing Side Direction Indicator Light



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 945319 REMOVING AND INSTALLING SIDE DIRECTION INDICATOR LIGHT (ALL MODELS) > SUBSEQUENT WORK

Install rear-view mirror housing (upper part). → Installing Rear-View Mirror Housing (Upper Part)

WM 945719 REMOVING AND INSTALLING LIGHT BULB CONTROL UNIT (ALL MODELS) > PRELIMINARY WORK

1. Remove headlights. → Removing Headlights

WM 945719 REMOVING AND INSTALLING LIGHT BULB CONTROL UNIT (ALL MODELS) > REMOVING LIGHT BULB CONTROL UNIT

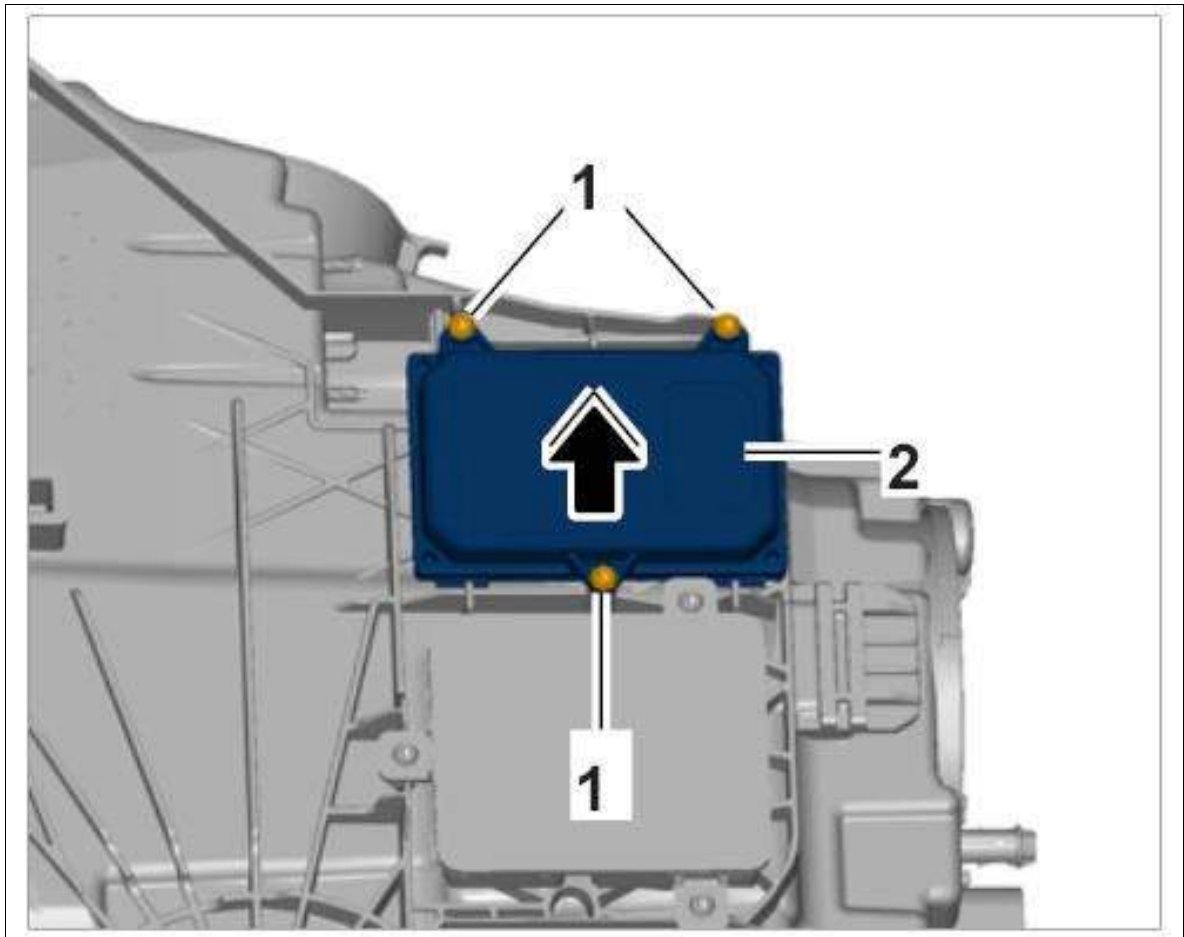
Information

Always comply with the regulations for handling ESD-sensitive components!

- Assembly work may only be carried out if the mechanic is wearing the working clothes and shoes approved by Porsche.
- The new part must only be removed from the ESD (electrostatic discharge) protective packaging just before installation and at the position at which the part is to be installed.
- Never touch the electric pins and plug contacts.

1. Unscrew fastening screws -1- .
2. Carefully remove light bulb control unit -2- from the headlight.

Fig 1: Removing Light Bulb Control Unit



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 945719 REMOVING AND INSTALLING LIGHT BULB CONTROL UNIT (ALL MODELS) > INSTALLING LIGHT BULB CONTROL UNIT

Information

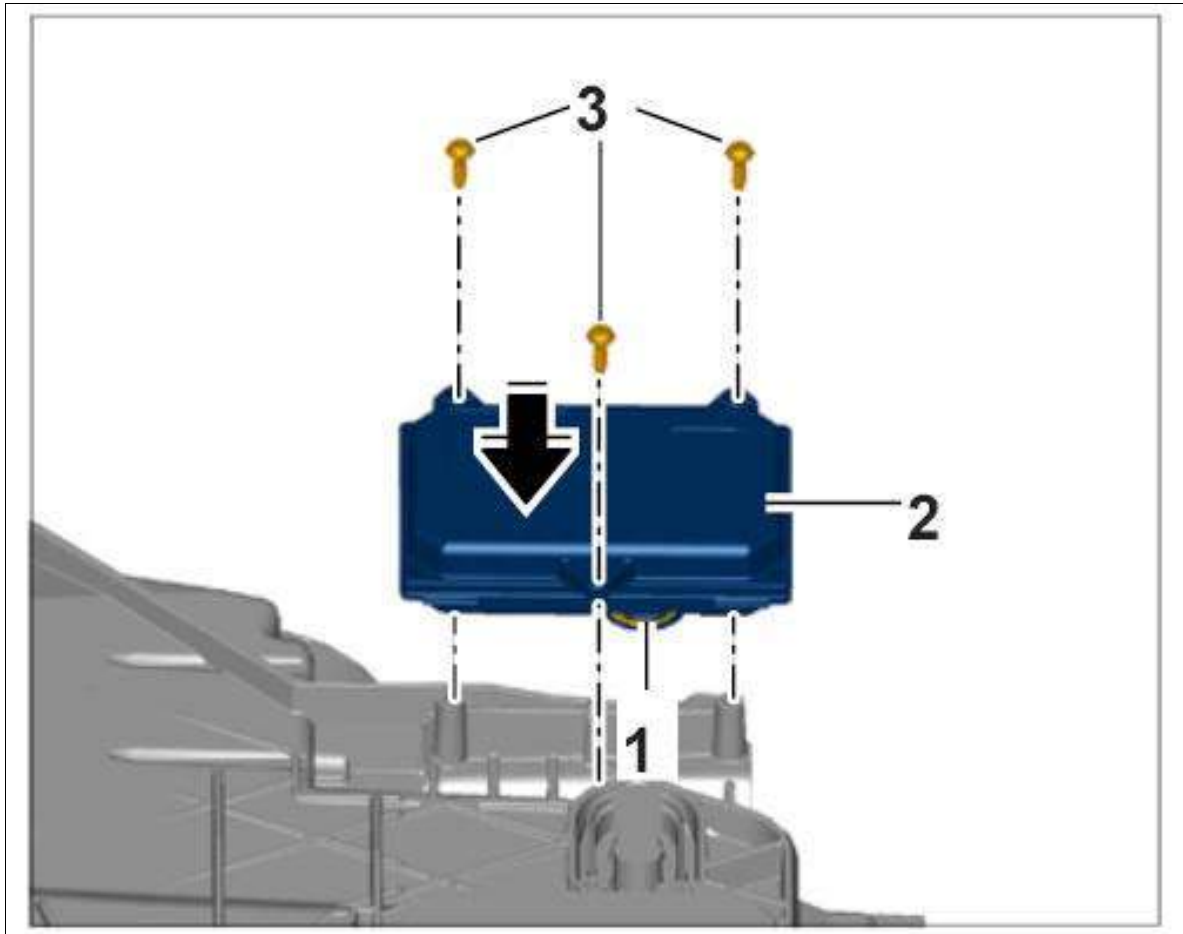
Always comply with the regulations for handling ESD-sensitive components!

- Assembly work may only be carried out if the mechanic is wearing the working clothes and shoes

approved by Porsche.

- The new part must only be removed from the ESD (electrostatic discharge) protective packaging just before installation and at the position at which the part is to be installed.
- Never touch the electric pins and plug contacts.
 1. Check that the seal -1- is fitted correctly on the light bulb control unit -2- .
 2. Carefully insert light bulb control unit into the headlight.
 3. Tighten fastening screws -3- .

Fig 1: Installing Light Bulb Control Unit



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 945719 REMOVING AND INSTALLING LIGHT BULB CONTROL UNIT (ALL MODELS) > SUBSEQUENT WORK

1. Install headlights. → Installing Headlights
2. After replacing the light bulb control unit, re-program the (central) headlight control unit. → 941625 PROGRAMMING (CENTRAL) HEADLIGHT CONTROL UNIT

WM 945819 REMOVING AND INSTALLING LIGHT BULB IGNITER (ALL MODELS) > PRELIMINARY WORK

1. Remove headlights. → Removing Headlights

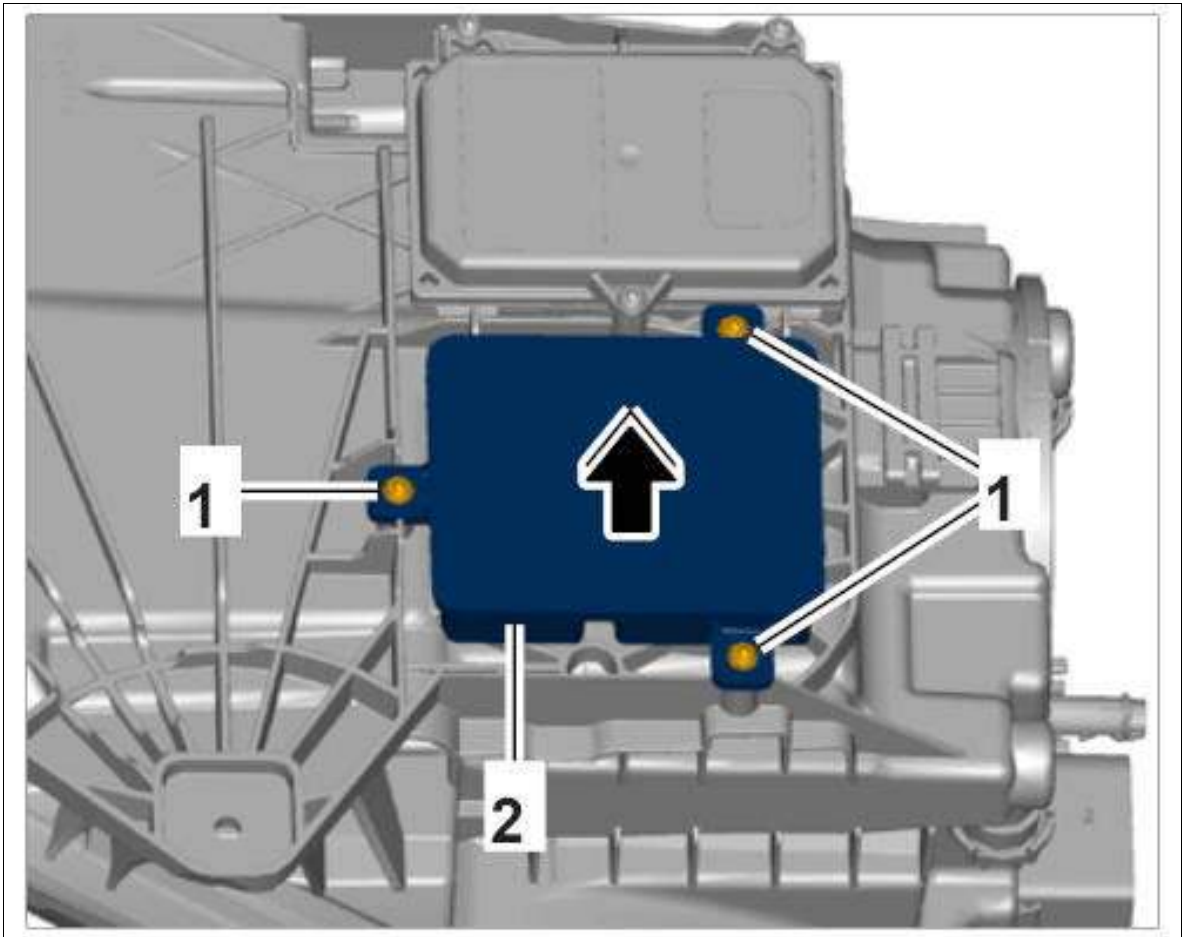
WM 945819 REMOVING AND INSTALLING LIGHT BULB IGNITER (ALL MODELS) > REMOVING LIGHT BULB IGNITER

Information

Always comply with the regulations for handling ESD-sensitive components!

- Assembly work may only be carried out if the mechanic is wearing the working clothes and shoes approved by Porsche.
- The new part must only be removed from the ESD (electrostatic discharge) protective packaging just before installation and at the position at which the part is to be installed.
- Never touch the electric pins and plug contacts.
 1. Unscrew fastening screws **-1-** .
 2. Carefully remove light bulb igniter **-2-** from the headlight.

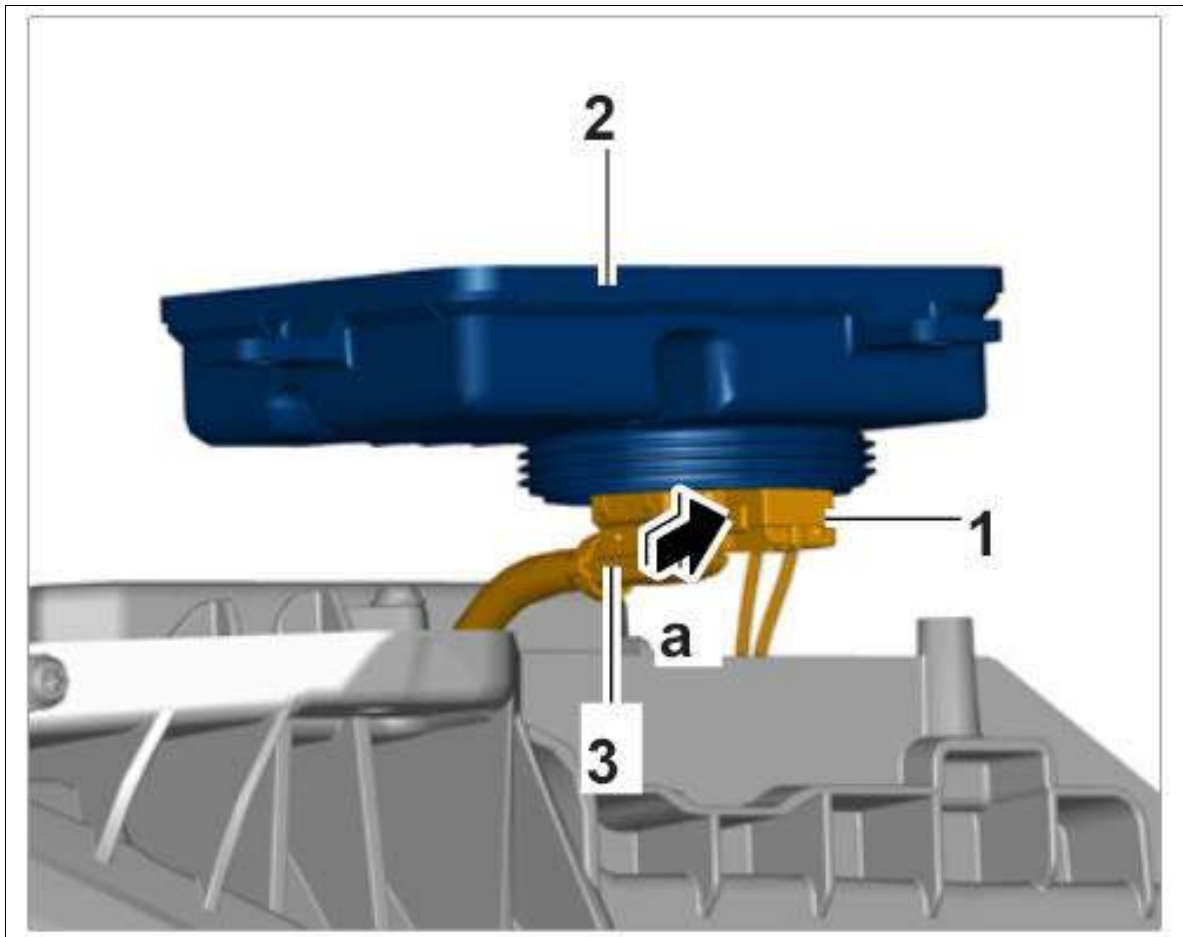
Fig 1: Removing Light Bulb Igniter



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Release electric plug connection -1- (-a-) and pull it off the light bulb igniter -2- .
4. Pull electric plug connection -3- off the light bulb igniter.

Fig 2: Disconnecting Electric Plug Connections



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

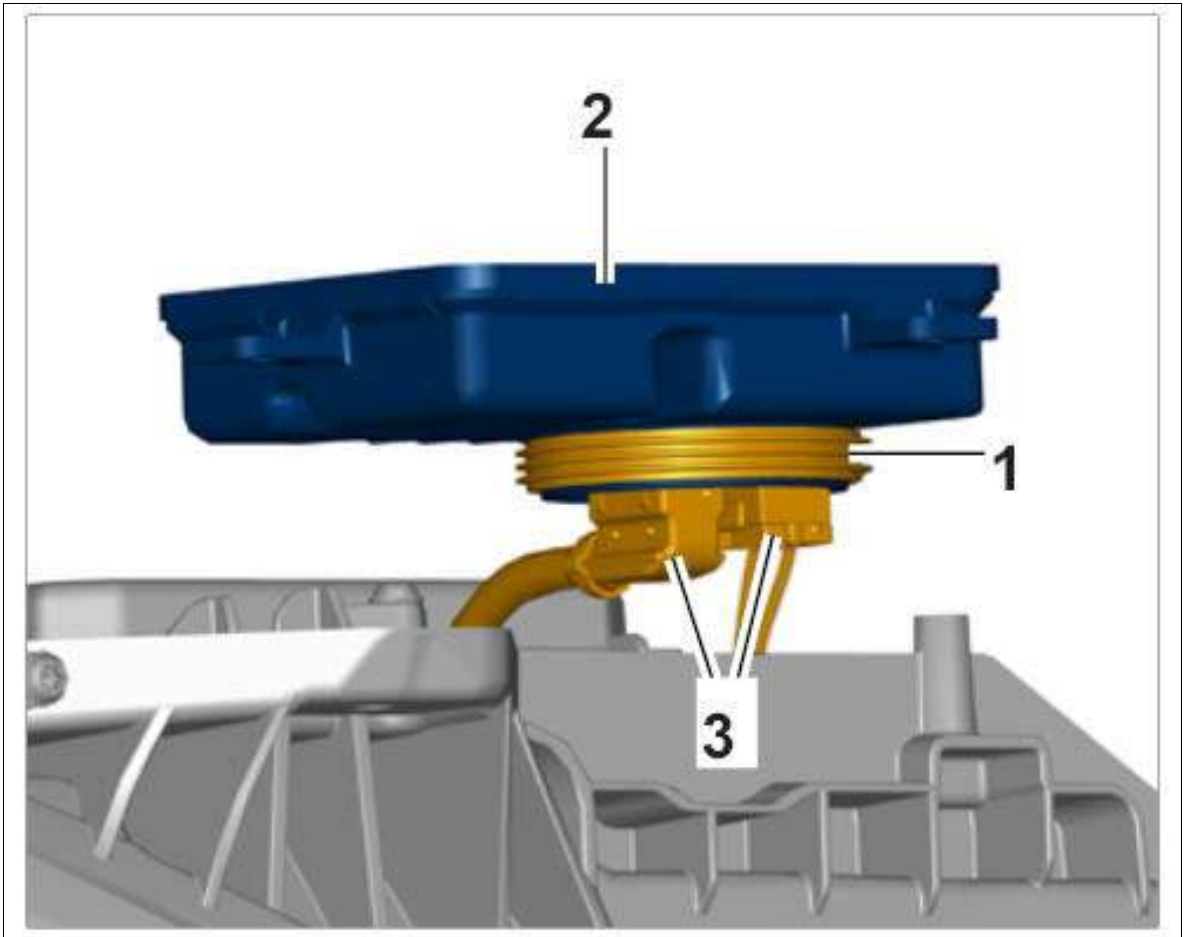
WM 945819 REMOVING AND INSTALLING LIGHT BULB IGNITER (ALL MODELS) > INSTALLING LIGHT BULB IGNITER

Information

Always comply with the regulations for handling ESD-sensitive components!

- Assembly work may only be carried out if the mechanic is wearing the working clothes and shoes approved by Porsche.
- The new part must only be removed from the ESD (electrostatic discharge) protective packaging just before installation and at the position at which the part is to be installed.
- Never touch the electric pins and plug contacts.
 1. Check the condition of the seal **-1-** and check that it is fitted correctly on the light bulb igniter **-2-**.
 2. Connect electric plug connections **-3-** on the light bulb igniter until they engage securely.

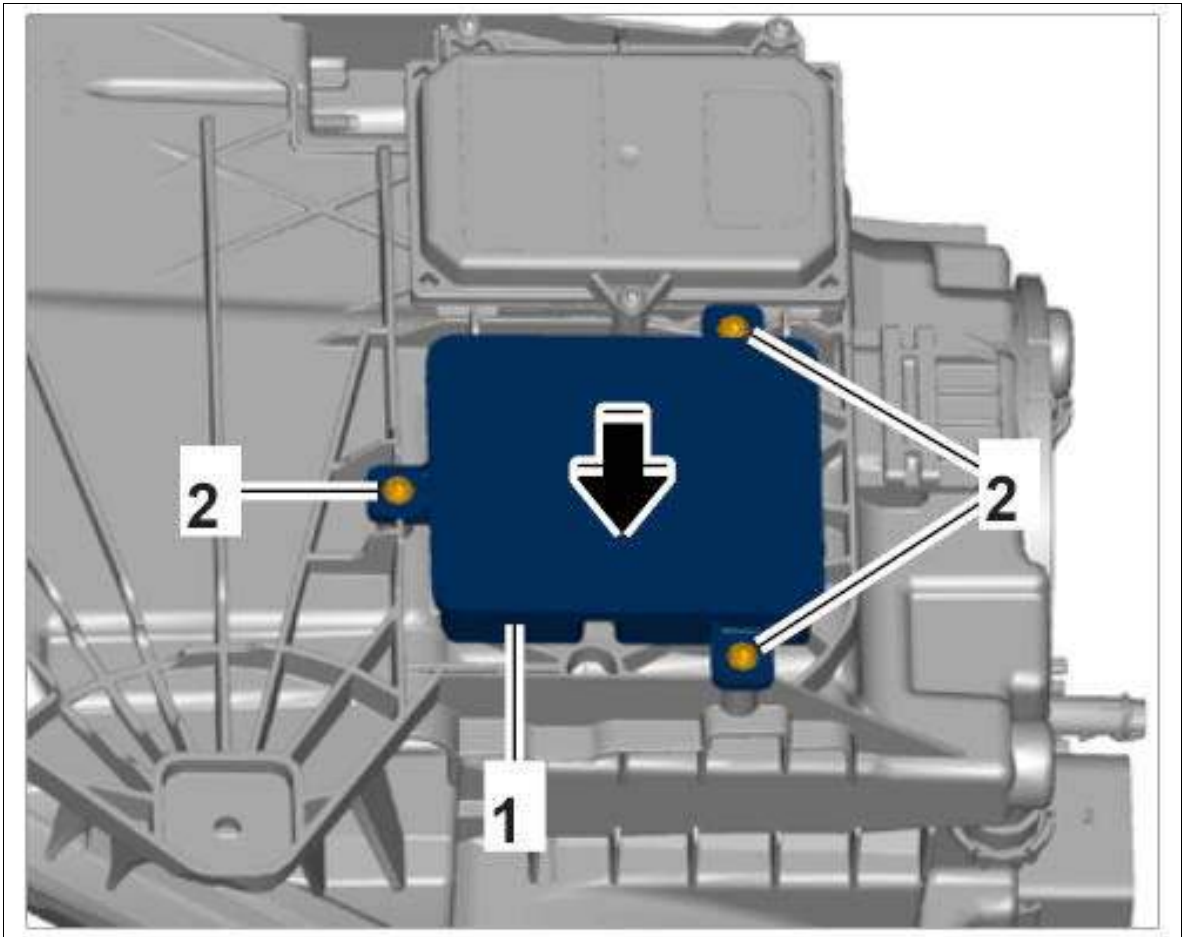
Fig 1: Connecting Electric Plug Connections



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Carefully insert light bulb igniter **-1-** into the headlight.
4. Tighten fastening screws **-2-** .

Fig 2: Installing Light Bulb Igniter



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 945819 REMOVING AND INSTALLING LIGHT BULB IGNITER (ALL MODELS) > SUBSEQUENT WORK

1. Install headlights. → Installing Headlights
2. After replacing the light bulb igniter, re-program the (central) headlight control unit. → 941625 PROGRAMMING (CENTRAL) HEADLIGHT CONTROL UNIT

WM 945955 REPLACING GAS-DISCHARGE HEADLIGHT (ALL MODELS) > PRELIMINARY WORK

1. Remove trim panel behind headlight. → Removing front trim panel

WM 945955 REPLACING GAS-DISCHARGE HEADLIGHT (ALL MODELS) > REMOVING GAS-DISCHARGE HEADLIGHT

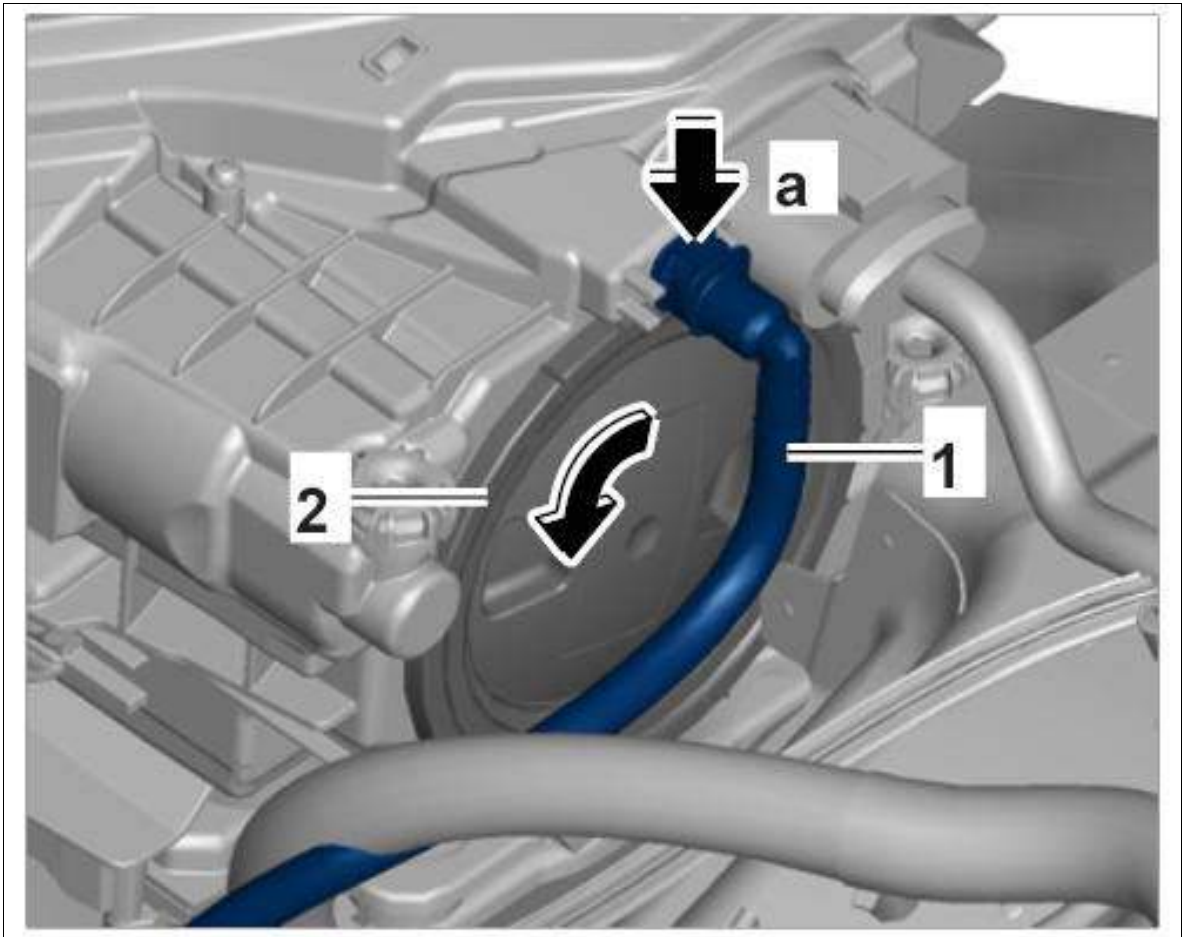


NOTE: Incorrect handling of bulbs

- *Risk of damage to bulbs and the bulb housing*

- Switch off ignition and remove ignition key.
- Switch off the relevant loads when changing bulbs.
- Only use bulbs listed in the bulb table.
- Only install clean bulbs that are free of grease.
- Always use a cloth or soft paper when working with bulbs.
- Observe the safety instructions when changing a bulb in a Bi-Xenon headlight.
- In certain states, it is compulsory to carry spare light bulbs.
 1. Switch off position lights.
 2. Switch off ignition and pull remote control out of ignition lock.
 3. Release hose connection for the breather hose **-1-** (**-a-**) and pull it off the headlight.
 4. Turn the rear cover **-2-** in direction of arrow and remove it.

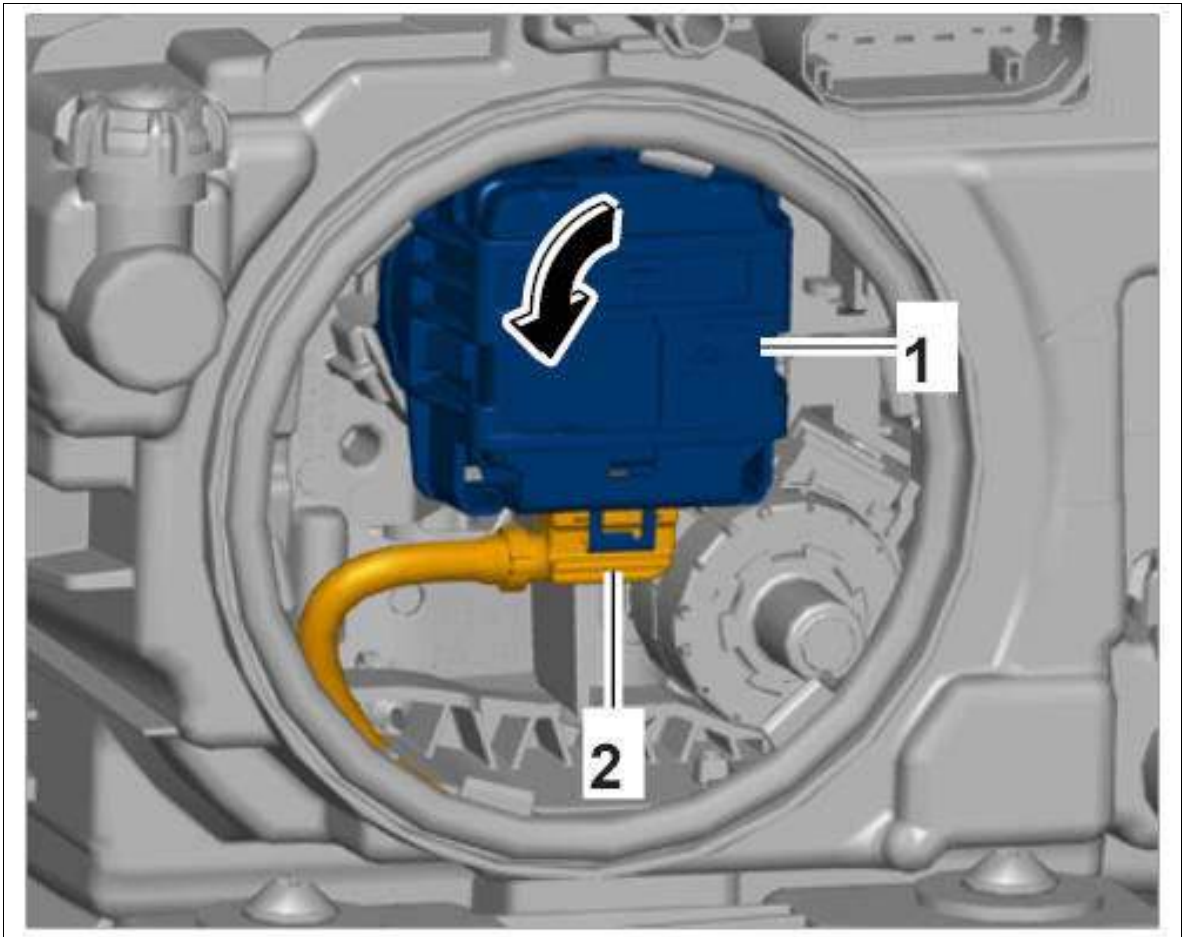
Fig 1: Removing Rear Cover



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

5. Turn gas-discharge headlight **-1-** in direction of arrow and carefully remove it from the headlight.
6. Disconnect electric plug connection **-2-** from the gas-discharge headlight.

Fig 2: Removing Gas-Discharge Headlight



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 945955 REPLACING GAS-DISCHARGE HEADLIGHT (ALL MODELS) > INSTALLING GAS-DISCHARGE HEADLIGHT



NOTE: Incorrect handling of bulbs

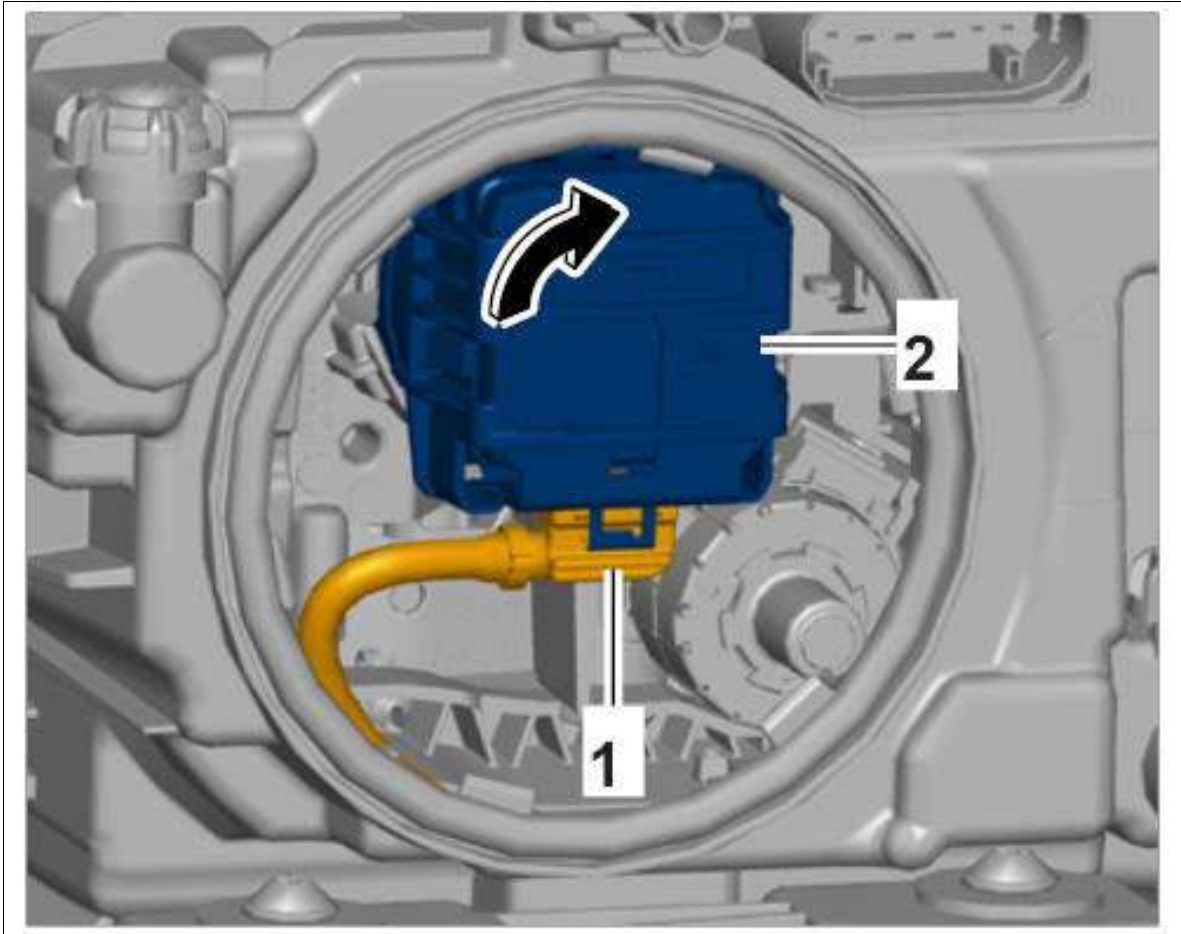
- *Risk of damage to bulbs and the bulb housing*

- Switch off ignition and remove ignition key.
- Switch off the relevant loads when changing bulbs.
- Only use bulbs listed in the bulb table.
- Only install clean bulbs that are free of grease.
- Always use a cloth or soft paper when working with bulbs.
- Observe the safety instructions when changing a bulb in a Bi-Xenon headlight.

→ In certain states, it is compulsory to carry spare light bulbs.

1. Connect electric plug connection **-1-** on the gas-discharge headlight **-2-** until it engages securely.
2. Position gas-discharge headlight in the headlight and lock it by turning it in direction of arrow.

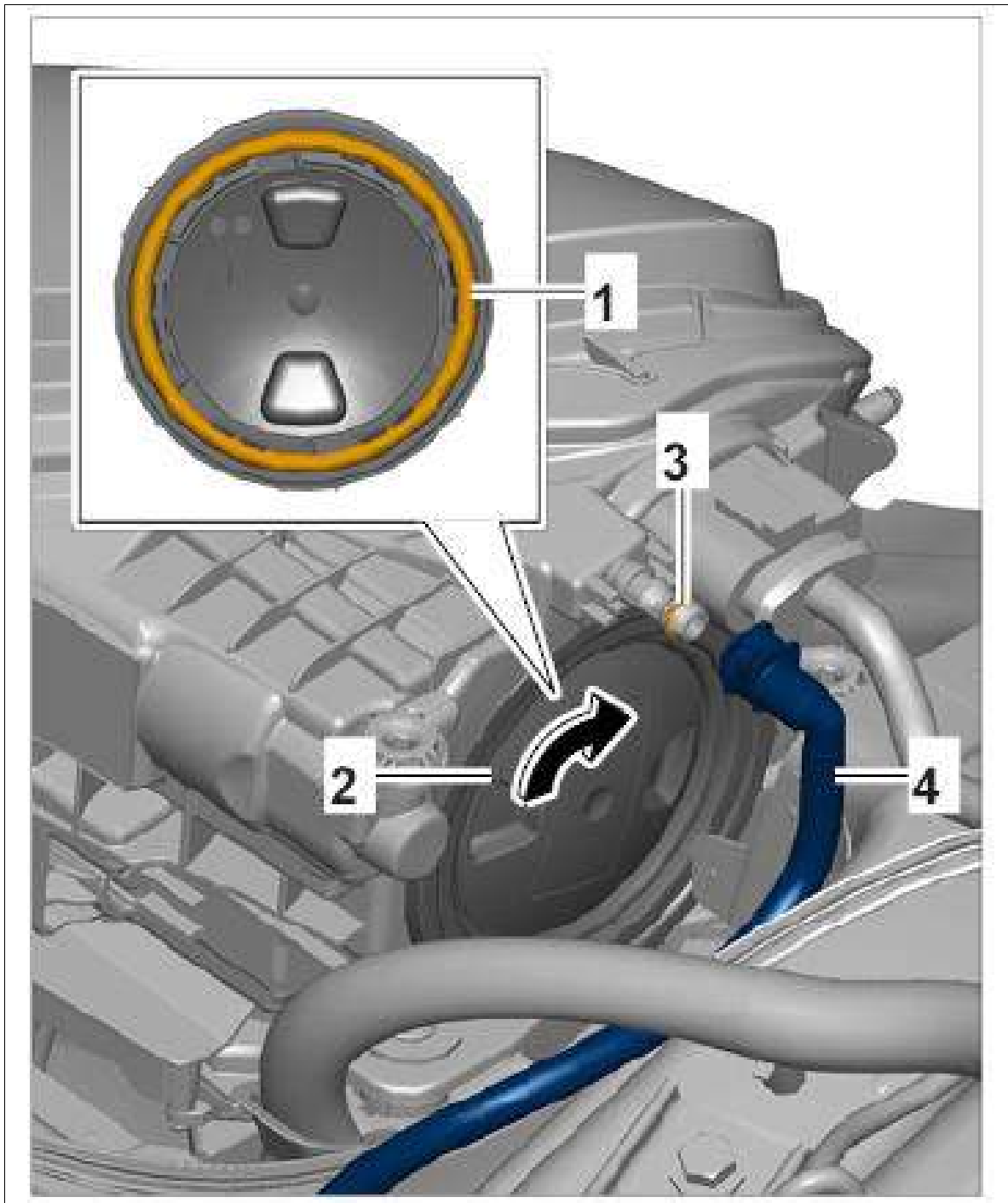
Fig 1: Installing Gas-Discharge Headlight



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Check condition of the seal **-1-** and check that it is fitted correctly on the rear cover **-2-** .
4. Position rear cover on the headlight and lock it by turning it in direction of arrow.
5. Check condition of O-ring **-3-** and check that it is seated correctly.
6. Connect hose connection **-4-** for the breather hose at the headlight until it engages securely.

Fig 2: Installing Rear Cover



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 945955 REPLACING GAS-DISCHARGE HEADLIGHT (ALL MODELS) > SUBSEQUENT WORK

1. Install trim panel behind headlight. → Installing front trim panel

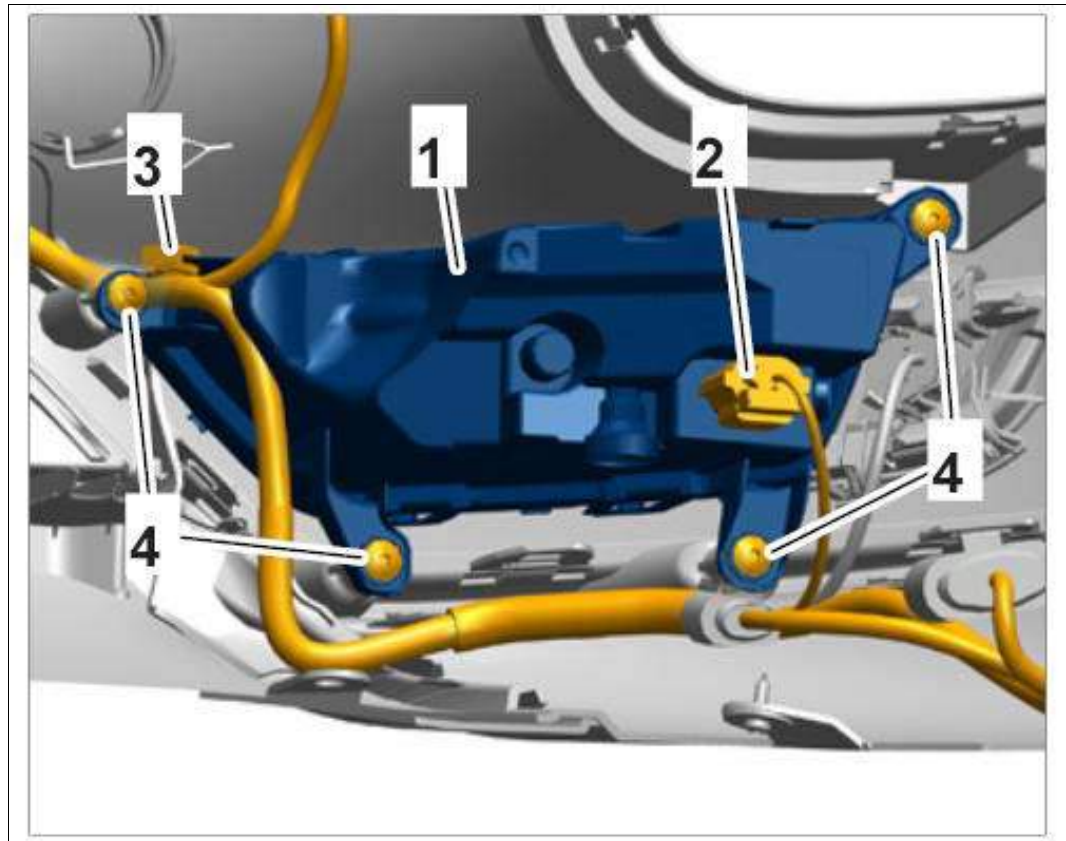
WM 946419 REMOVING AND INSTALLING FOG LIGHTS (EXCEPT MACAN) > PRELIMINARY WORK

1. Remove front apron. → Removing Front Apron

WM 946419 REMOVING AND INSTALLING FOG LIGHTS (EXCEPT MACAN) > REMOVING FOG LIGHTS

1. Remove fog light -1- .
 1. 1.1. Release and disconnect electric plug connection -2- .
 2. 1.2. Pull off holder -3- for the electric line at the fog light.
 3. 1.3. Unscrew fastening screws -4- and remove fog light.

Fig 1: Removing Fog Lights



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 946419 REMOVING AND INSTALLING FOG LIGHTS (EXCEPT MACAN) > INSTALLING FOG LIGHTS

1. Installation is performed in reverse order to removal.

2. Tighten fastening screws for the fog light.

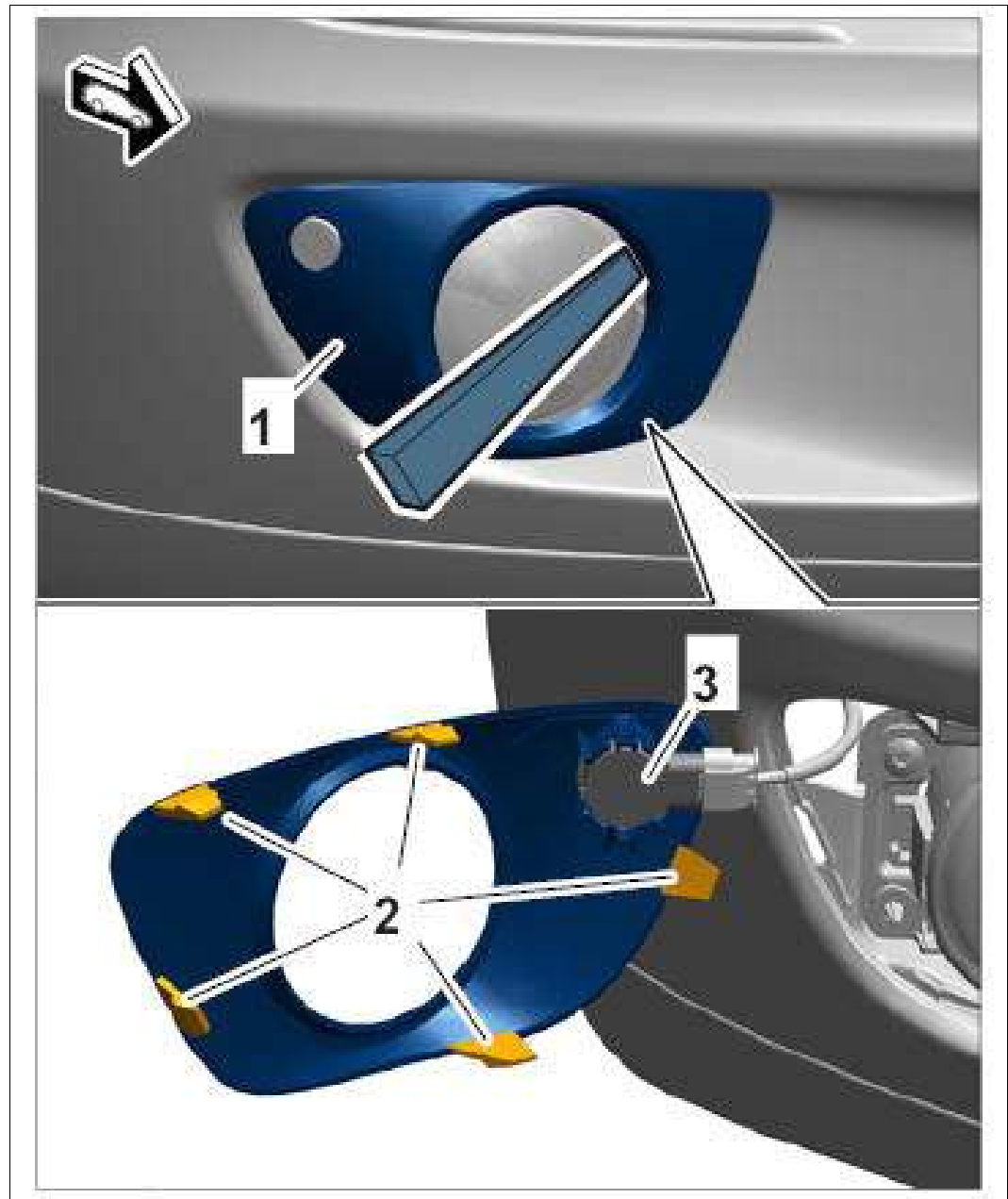
WM 946419 REMOVING AND INSTALLING FOG LIGHTS (EXCEPT MACAN) > SUBSEQUENT WORK

1. Install front apron. → Installing Front Apron
2. Check fog light setting. → WM 941516 ADJUSTING HEADLIGHTS AND FOG LIGHTS

WM 946419 REMOVING AND INSTALLING FOG LIGHTS (EXCEPT MACAN TURBO) > REMOVING FOG LIGHTS

1. Loosen trim **-1-** .
 1. 1.1. Carefully prise locking lugs **-2-** on the trim out of the front apron using a plastic wedge.
 2. 1.2. Leave electric plug connection on the ParkAssist sensor **-3-** .

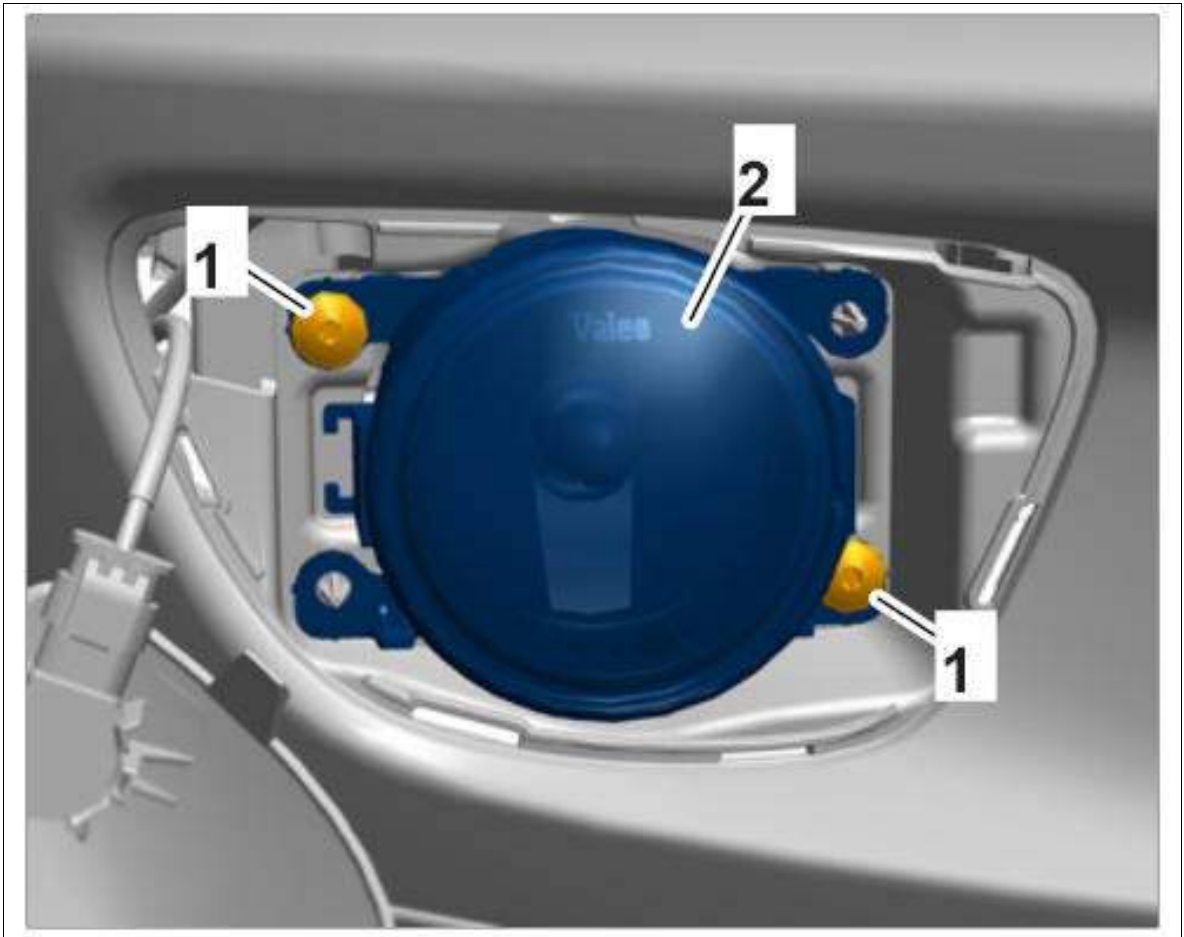
Fig 1: Loosening Trim



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

2. Unscrew fastening screws -1- and remove fog light -2- .

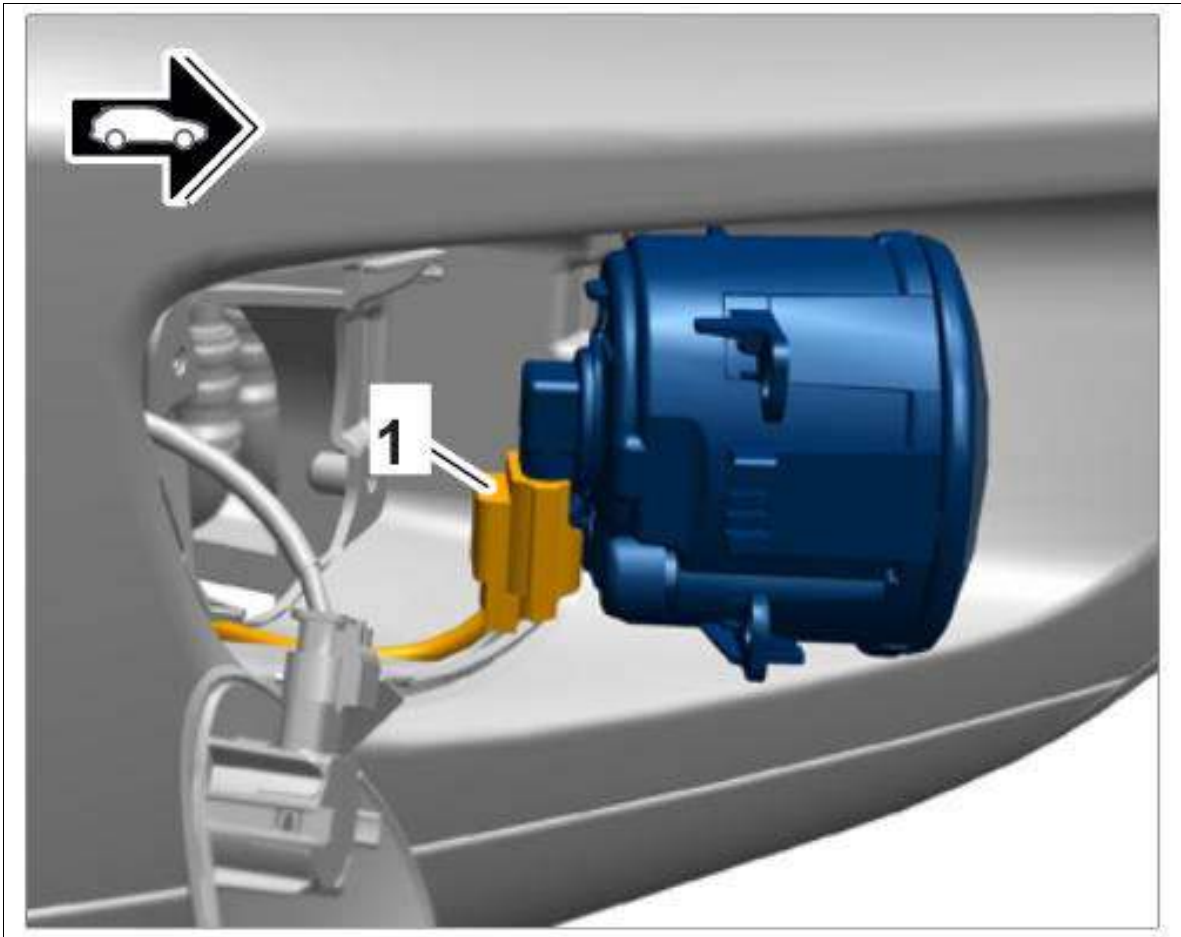
Fig 2: Loosening Fog Light



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

3. Release and disconnect electric plug connection -1- .

Fig 3: Disconnecting Electric Plug Connection



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

WM 946419 REMOVING AND INSTALLING FOG LIGHTS (EXCEPT MACAN TURBO) > INSTALLING FOG LIGHTS

1. Installation is performed in reverse order to removal.
2. Tighten fastening screws for the fog light.

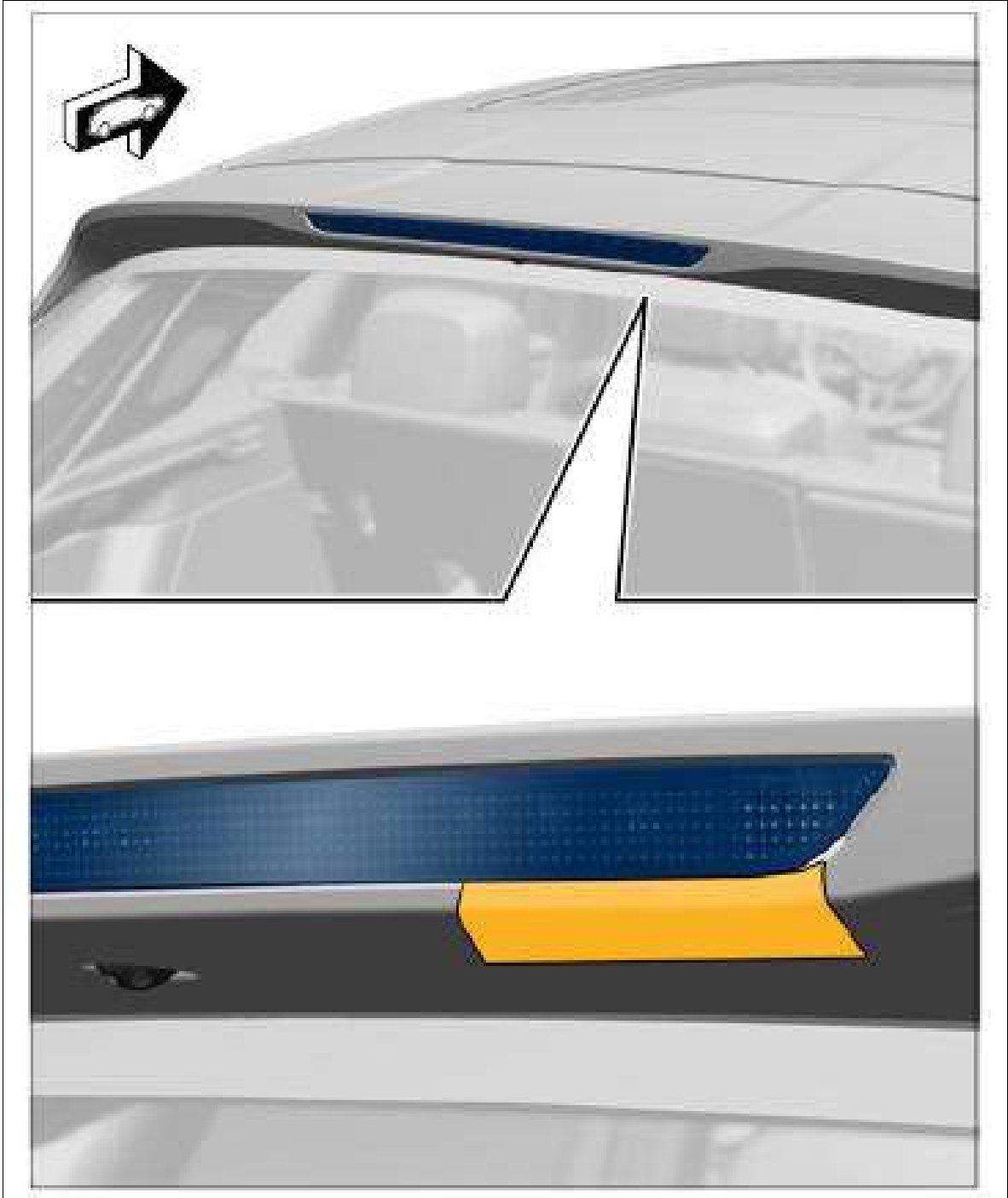
WM 946419 REMOVING AND INSTALLING FOG LIGHTS (EXCEPT MACAN TURBO) > SUBSEQUENT WORK

1. Check fog light setting. → WM 941516 ADJUSTING HEADLIGHTS AND FOG LIGHTS

WM 947019 REMOVING AND INSTALLING ADDITIONAL BRAKE LIGHT (ALL MODELS) > REMOVING ADDITIONAL BRAKE LIGHT

1. Remove additional brake light.

Fig 1: Masking Rear Spoiler



Courtesy of PORSCHE CARS NORTH AMERICA, INC.

1. 1.1. Mask the right-hand side of the rear spoiler underneath the additional brake light as shown → Masking rear spoiler using fabric adhesive tape.

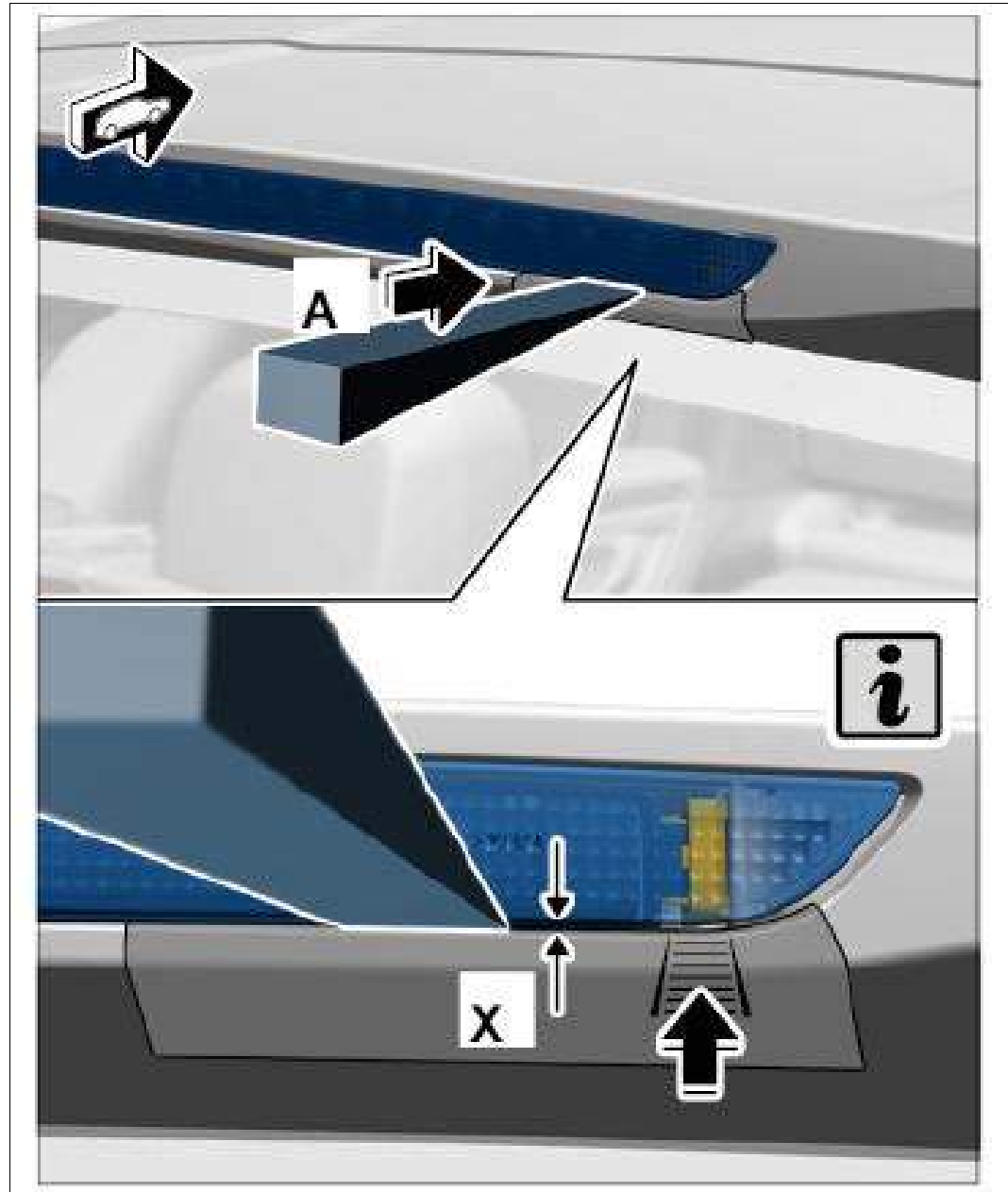
Information

To **prevent damage** to the **additional brake light**, always observe the following installation sequence and **never** use a plastic wedge or slotted screwdriver to **lever the additional brake light out of the rear spoiler**.

You will find a **video clip** showing how to remove the additional brake light as a PDF file in the PIWIS information system in the "Workshop Manual" information medium under ==> "**947019 Removing additional brake light - video clip**".

2. 1.2. Carefully insert a plastic wedge at a horizontal position between the rear spoiler and additional brake light **-arrow A-** until there is a gap of approx. **X = 3 mm** between the lower edge of the additional brake light and rear spoiler.

Fig 2: Removing Additional Brake Light



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Information

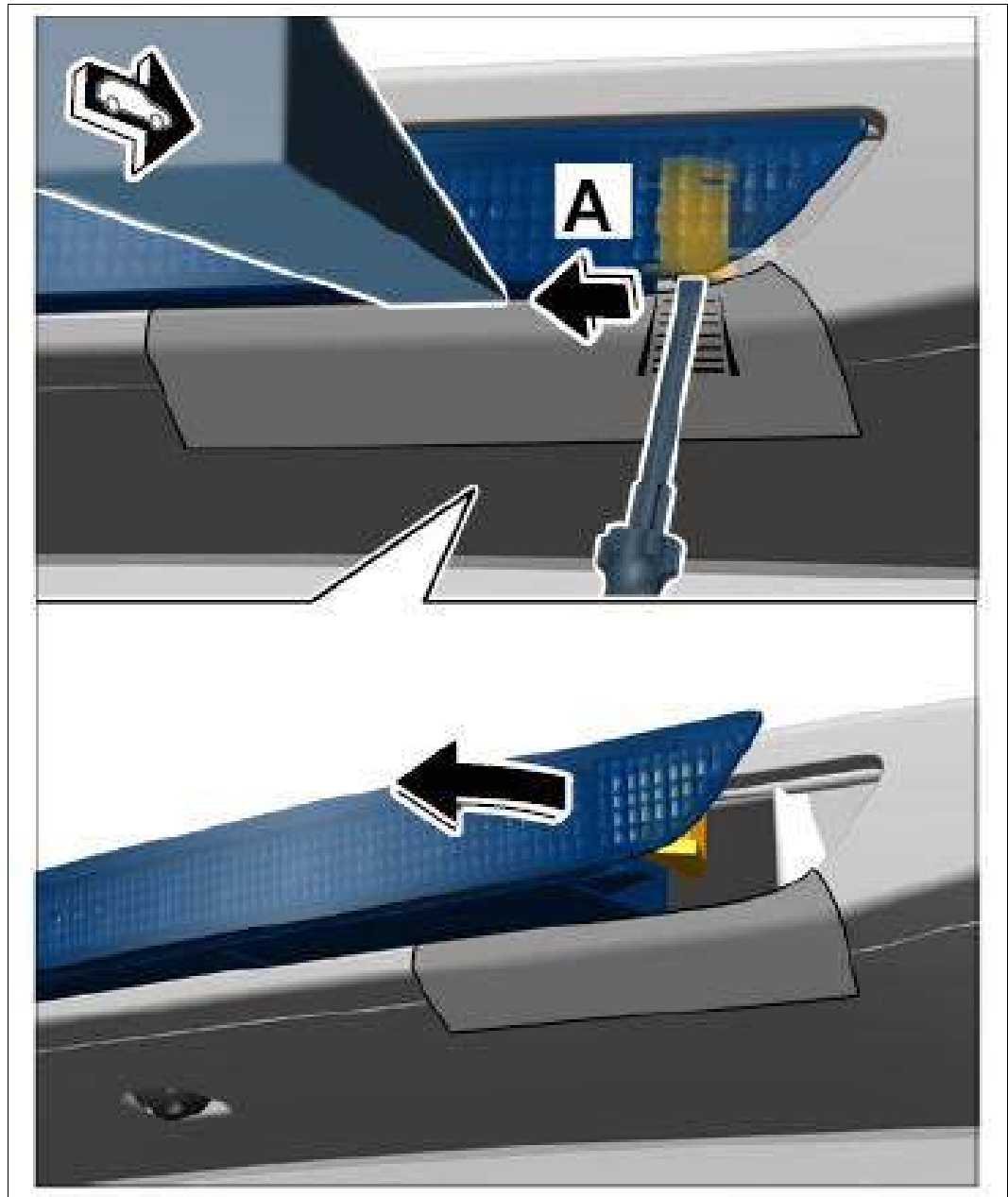
When removing the additional brake light, always use a small slotted screwdriver to move the locking lug to the left and unlock it through the widened gap.

Only release the additional brake light when part of the locking lug is visible through

the gap. Use a hand lamp to check this if necessary.

3. 1.3. Insert a narrow screwdriver in the marked area of the gap and push the additional brake light locking lug lying behind it to the left to unlock it **-arrow A-** until the additional brake light pops out slightly.

Fig 3: Removing Additional Brake Light



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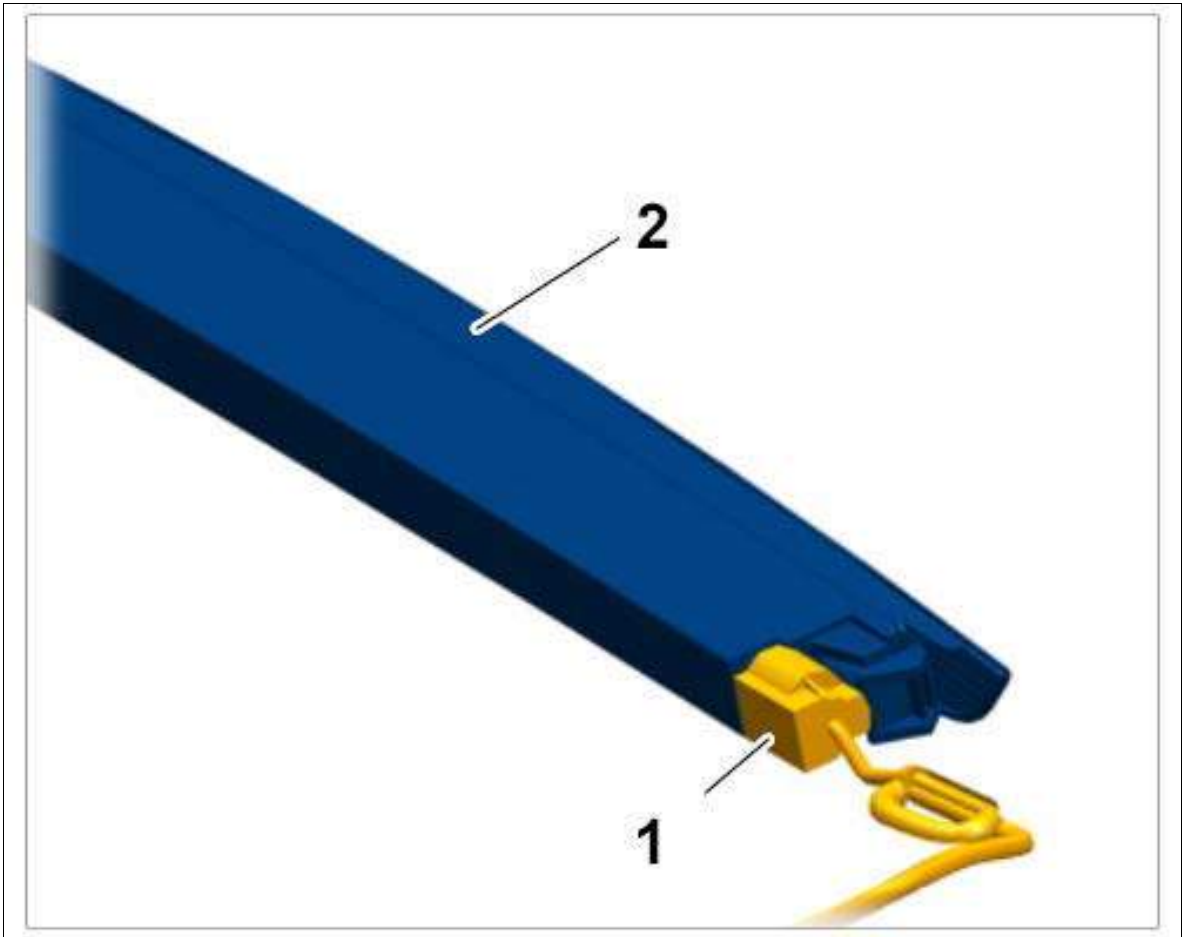
4. 1.4. Carefully pull the plastic wedge and additional brake light out of the rear spoiler **-arrow-** and leave the additional brake light hanging on the wire harness at the left.

5. 1.5. Remove the fabric tape you affixed to the rear spoiler earlier.

2. Remove additional brake light.

3. Release electric plug connection **-1-** and pull it off the additional brake light **-2-** .

Fig 4: Identifying Electric Plug Connection



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WM 947019 REMOVING AND INSTALLING ADDITIONAL BRAKE LIGHT (ALL MODELS) > INSTALLING ADDITIONAL BRAKE LIGHT

1. Installation is performed in reverse order to removal.

WM 947119 REMOVING AND INSTALLING AUXILIARY HEADLIGHTS (ALL MODELS) > TECHNICAL VALUES

| Location | Description | Type | Basic value | Tolerance 1 | Tolerance 2 |
|------------------------------------|-------------------------------|-------------------|------------------|-------------|-------------|
| Auxiliary headlight to front apron | Internal Torx screw, Ø 5 x 16 | Tightening torque | 6 Nm (4.5 ftlb.) | | |

WM 947119 REMOVING AND INSTALLING AUXILIARY HEADLIGHTS (ALL MODELS) >

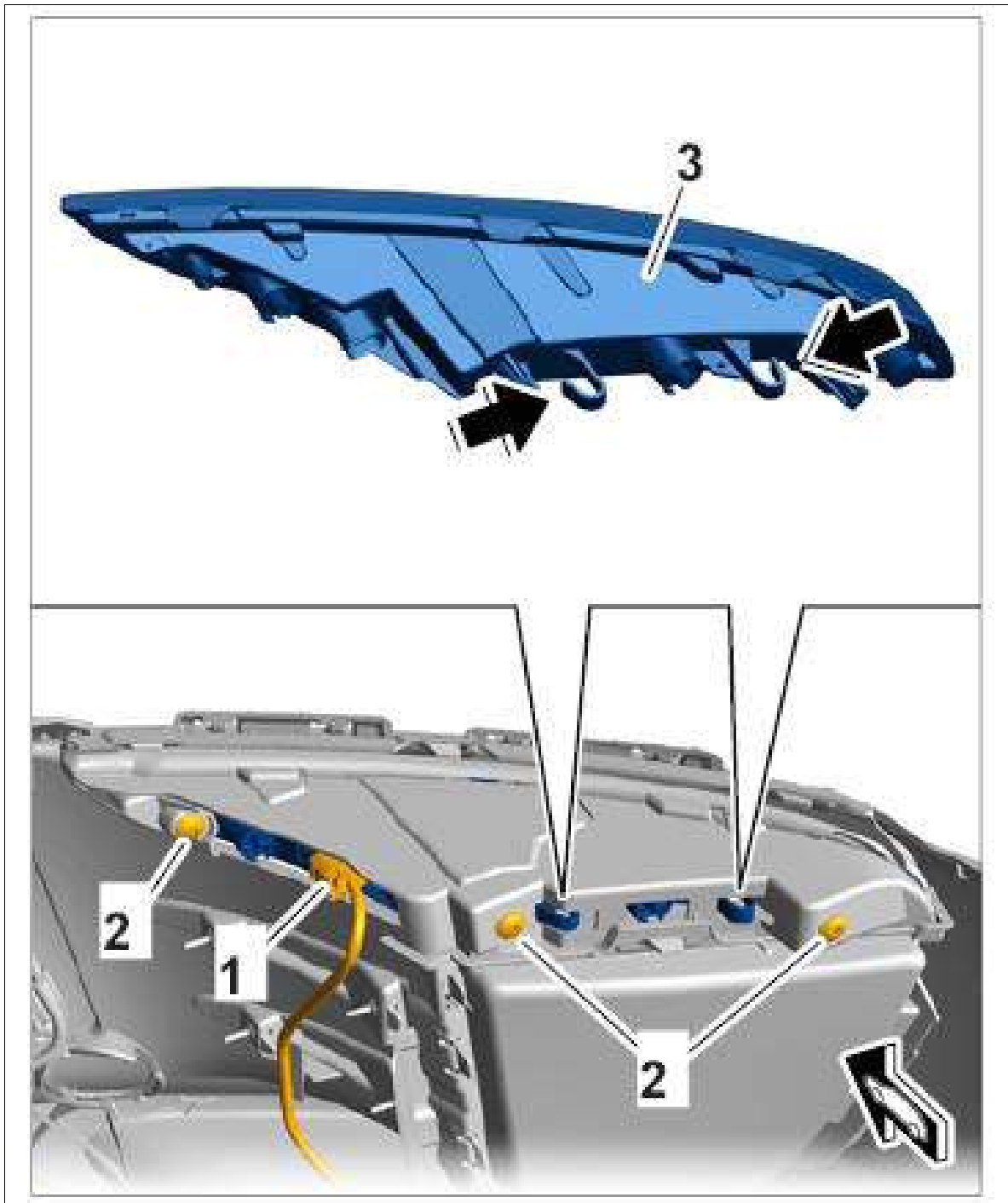
PRELIMINARY WORK

1. Remove front apron. → Removing Front Apron

WM 947119 REMOVING AND INSTALLING AUXILIARY HEADLIGHTS (ALL MODELS) > REMOVING AUXILIARY HEADLIGHTS

1. Release and disconnect electric plug connection **-1-** .
2. Unscrew fastening screws **-2-** .
3. Carefully disengage clips **-arrows-** and remove auxiliary headlight **-3-** by pulling it forward out of the front apron.

Fig 1: Removing Auxiliary Headlights



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WM 947119 REMOVING AND INSTALLING AUXILIARY HEADLIGHTS (ALL MODELS) > INSTALLING AUXILIARY HEADLIGHTS

1. Installation is performed in reverse order to removal.
2. Tighten fastening screws on the auxiliary headlights. **Tightening torque 6 Nm (4.5 ftlb.)**

WM 947119 REMOVING AND INSTALLING AUXILIARY HEADLIGHTS (ALL MODELS) > SUBSEQUENT WORK

1. Install front apron. → Installing Front Apron

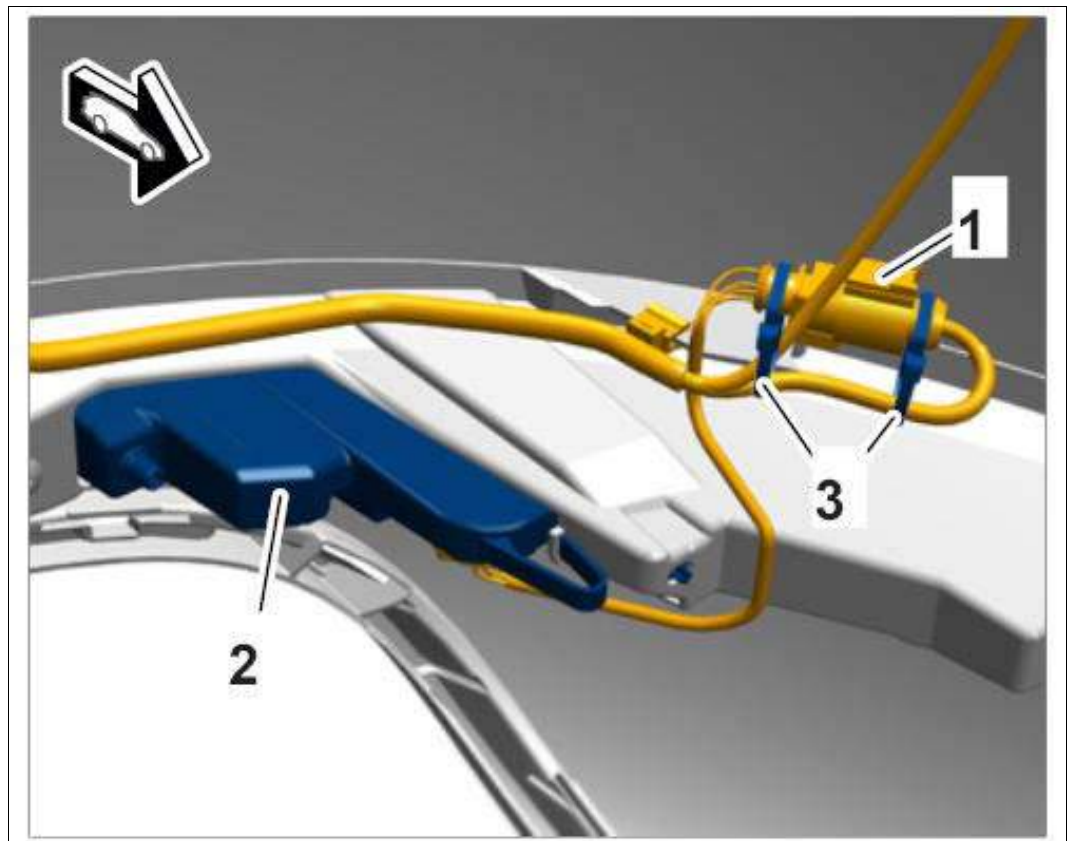
WM 947419 REMOVING AND INSTALLING REVERSING LIGHT (ALL MODELS) > PRELIMINARY WORK

1. Remove rear apron. → REMOVING REAR APRON

WM 947419 REMOVING AND INSTALLING REVERSING LIGHT (ALL MODELS) > REMOVING REVERSING LIGHT

1. Disconnect electric plug connection -1- for reversing light -2- .
 1. 1.1. Cut the tie-wraps -3- .
 2. 1.2. Release and disconnect electric plug connection.

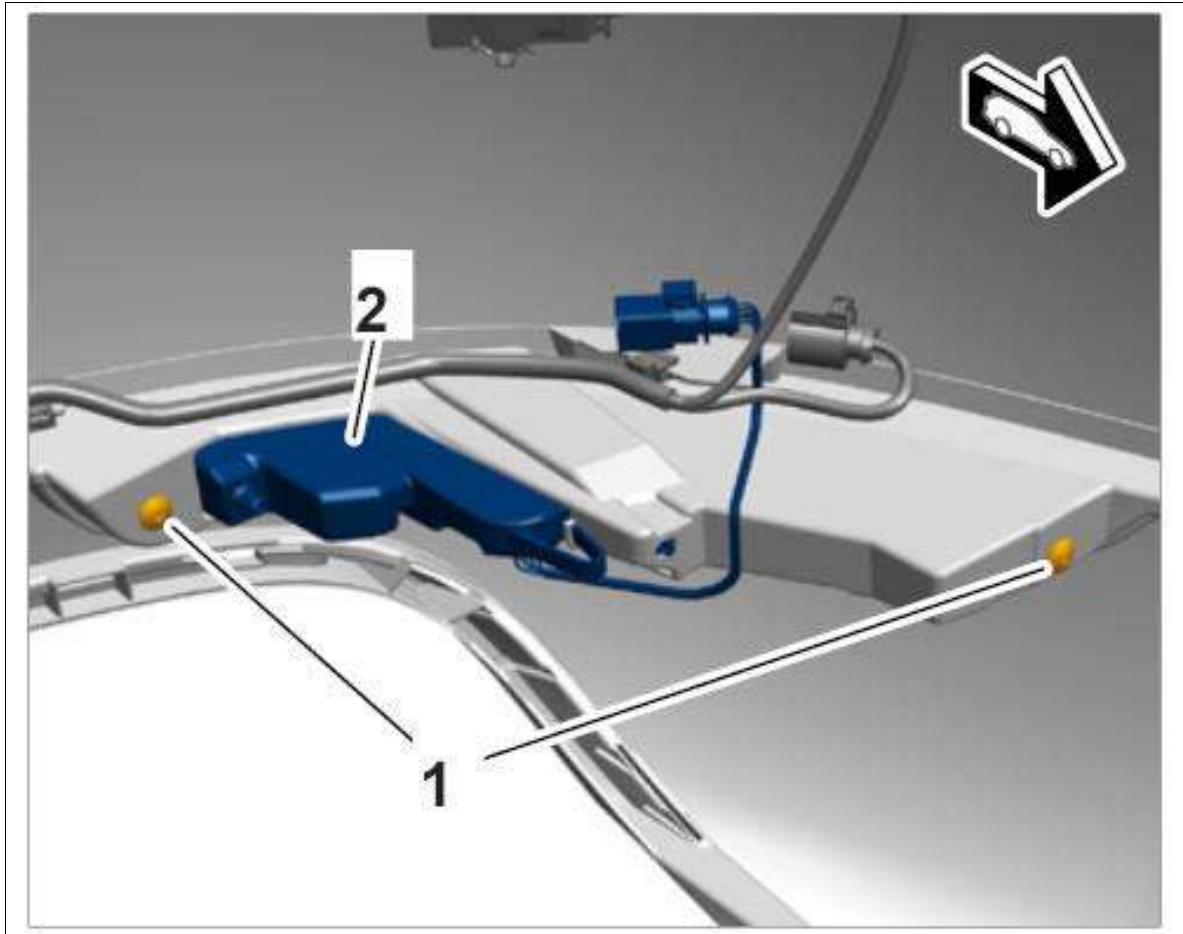
Fig 1: Disconnecting Reversing Light Electric Plug Connection



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2. Unscrew fastening screws -1- and remove reversing light -2- from the rear apron.

Fig 2: Removing Reversing Light



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WM 947419 REMOVING AND INSTALLING REVERSING LIGHT (ALL MODELS) > INSTALLING REVERSING LIGHT

1. Installation is performed in reverse order to removal.
2. Tighten fastening screws on the reversion light.

WM 947419 REMOVING AND INSTALLING REVERSING LIGHT (ALL MODELS) > SUBSEQUENT WORK

1. Install rear apron. → INSTALLING REAR APRON

WM 947819 REMOVING AND INSTALLING FRONT ANGLE SENSOR FOR HEADLIGHT BEAM ADJUSTMENT (ALL MODELS) > INFORMATION

1. The procedure for removing and installing the front angle sensor for headlight beam adjustment is described under → 431855 REPLACING FRONT LEVEL SENSOR .

WM 947919 REMOVING AND INSTALLING REAR ANGLE SENSOR FOR HEADLIGHT BEAM ADJUSTMENT (ALL MODELS) > INFORMATION

1. The procedure for removing and installing the rear angle sensor for headlight beam adjustment is described under → 431955 REPLACING REAR LEVEL SENSOR .

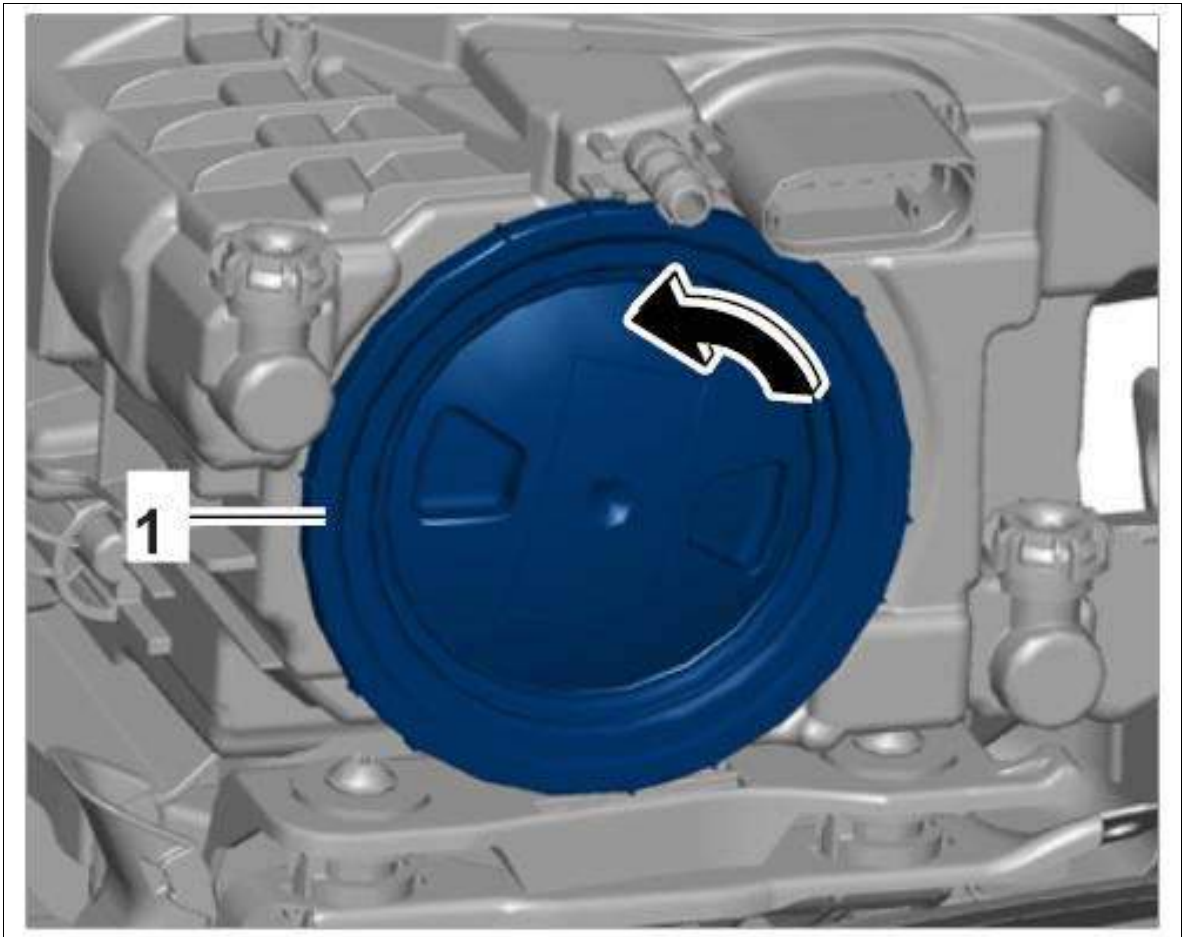
WM 949419 REMOVING AND INSTALLING SERVO MOTOR FOR HEADLIGHT BEAM ADJUSTMENT (ALL MODELS) > PRELIMINARY WORK

1. Remove headlights. → Removing Headlights

WM 949419 REMOVING AND INSTALLING SERVO MOTOR FOR HEADLIGHT BEAM ADJUSTMENT (ALL MODELS) > REMOVING SERVO MOTOR FOR HEADLIGHT BEAM ADJUSTMENT

1. Turn the rear cover -1- in direction of arrow and remove it.

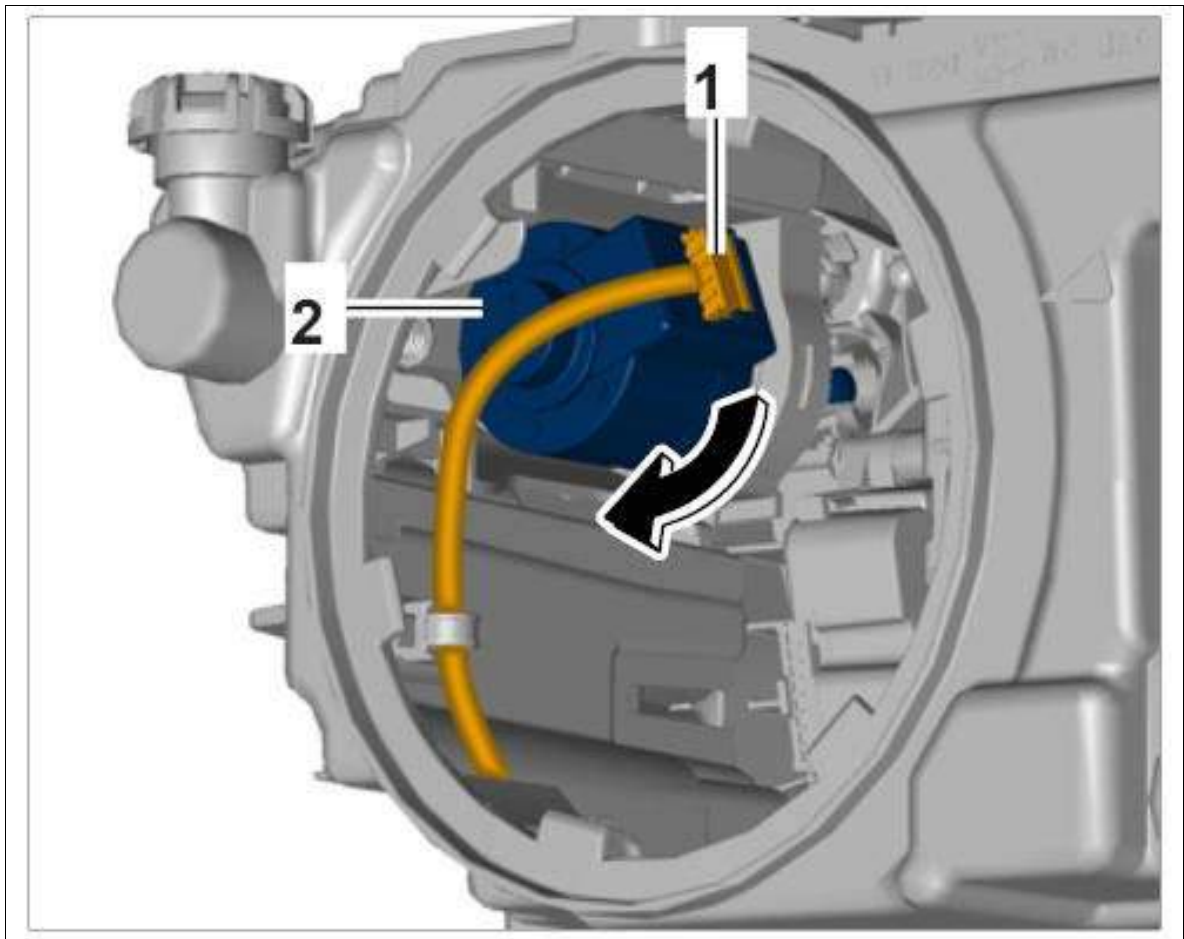
Fig 1: Removing Rear Cover



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2. Disconnect electric plug connection -1- on servo motor for headlight beam adjustment -2- .
3. Turn servo motor for headlight beam adjustment in direction of arrow, pull it off and remove it

Fig 2: Removing Headlight Beam Adjustment Servo Motor

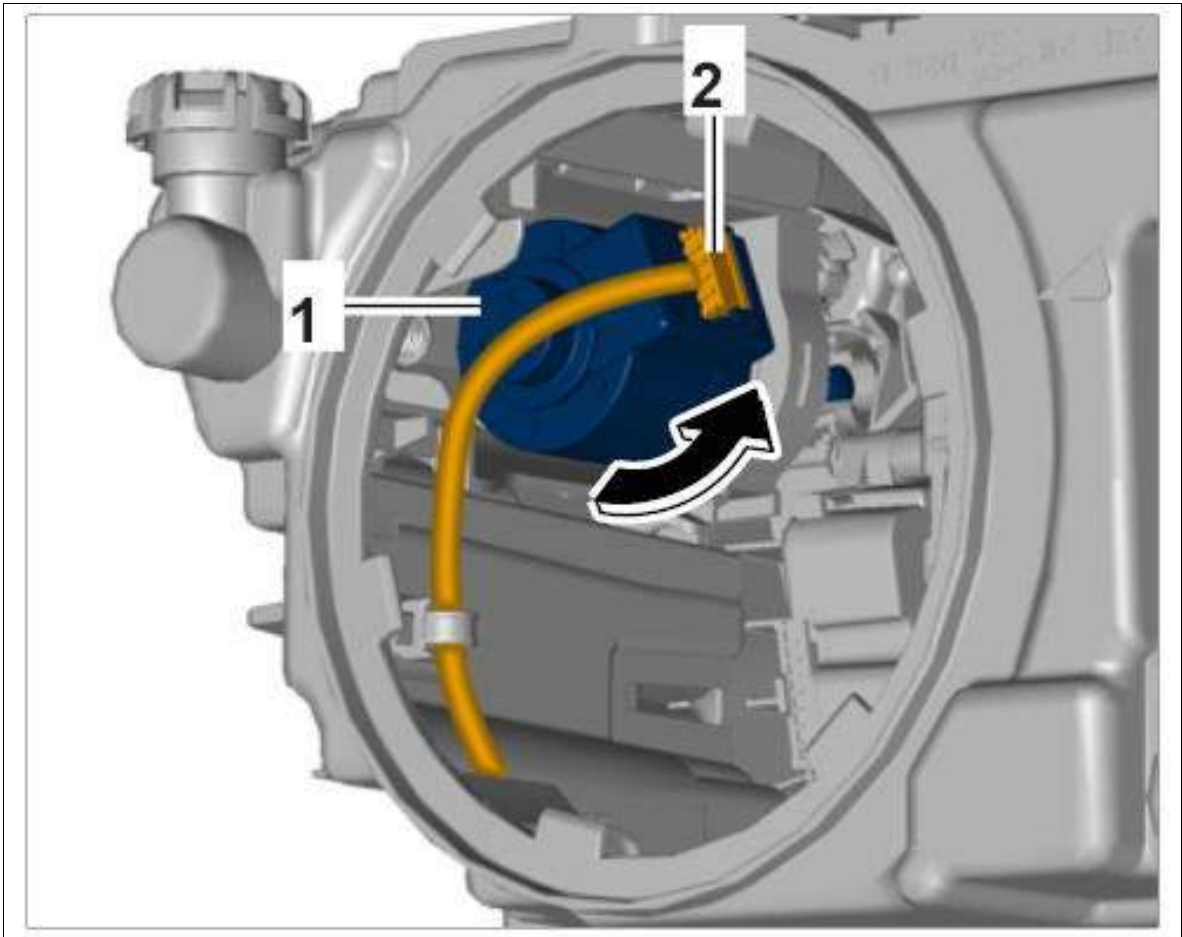


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WM 949419 REMOVING AND INSTALLING SERVO MOTOR FOR HEADLIGHT BEAM ADJUSTMENT (ALL MODELS) > INSTALLING SERVO MOTOR FOR HEADLIGHT BEAM ADJUSTMENT

1. Insert servo motor for headlight beam adjustment -1- into the mounting in the headlight and engage the ball joint in the mounting.
2. Lock servo motor for headlight beam adjustment by turning it in direction of arrow.
3. Plug in electric plug connection -2- on servo motor for headlight beam adjustment.

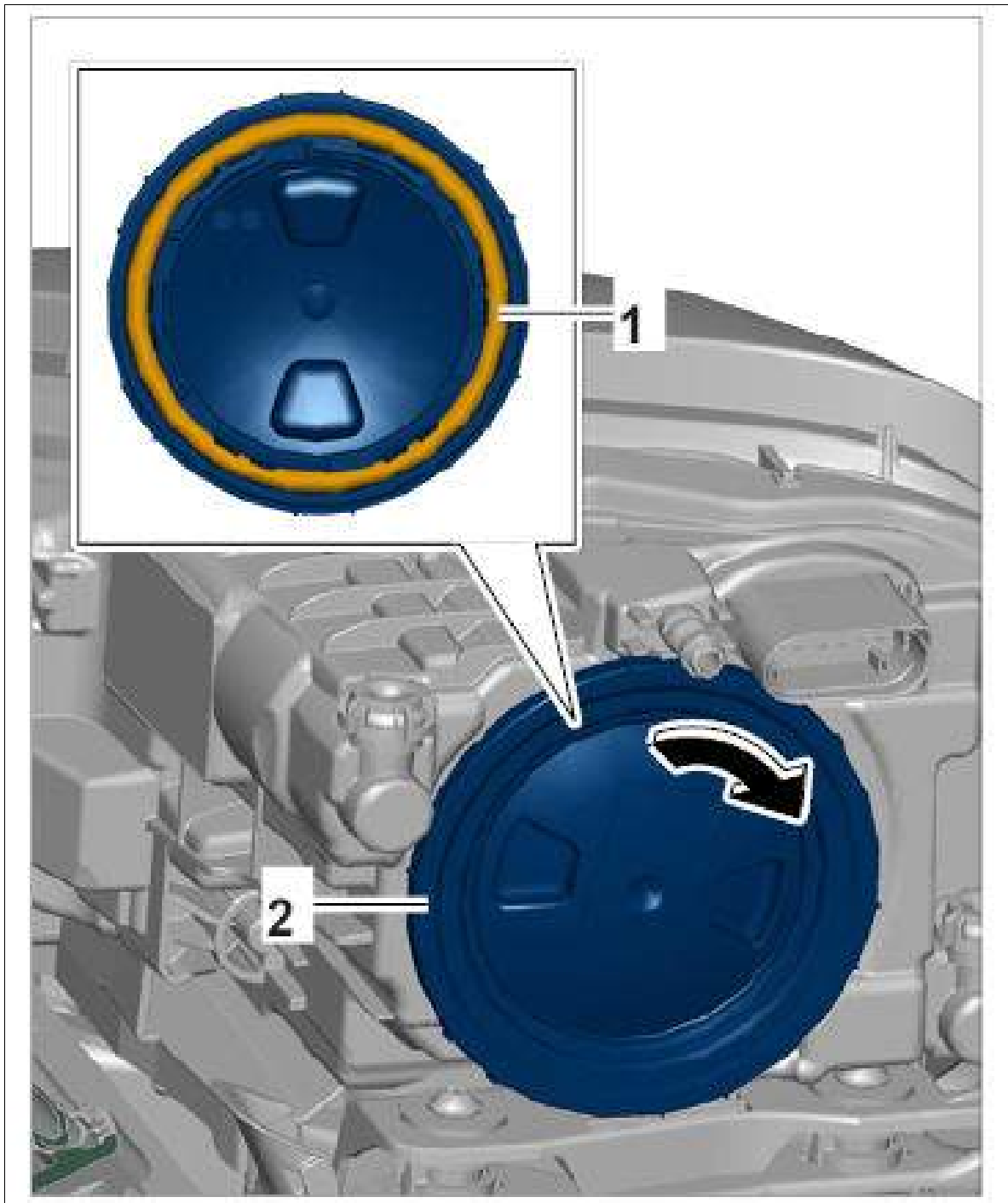
Fig 1: Installing Headlight Beam Adjustment Servo Motor



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4. Check condition of the seal -1- and check that it is fitted correctly on the rear cover -2- .
5. Position rear cover on the headlight and lock it by turning it in direction of arrow.

Fig 2: Installing Rear Cover



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WM 949419 REMOVING AND INSTALLING SERVO MOTOR FOR HEADLIGHT BEAM ADJUSTMENT (ALL MODELS) > SUBSEQUENT WORK

1. Install headlights. → Installing Headlights
2. If the servo motor for headlight beam adjustment was replaced, check the setting of the

headlights and correct it if necessary. → 941516 ADJUSTING HEADLIGHTS AND FOG LIGHTS