Parts and Accessories.
Installation Instructions.

Universal charger/hands-free kit retrofit
BMW 3 Series Saloon (E 90)

These installation instructions are only valid for cars with SA 606 (Business navigation system) or SA 609 (Professional navigation system) or SA 663 (BMW Professional radio).

Retrofit kit No.   84 64 0 398 228

Installation time
The installation time for cars with a roof function centre is approx. 6.0 hours, for cars without a roof function centre it is approx. 6.5 hours, although these times may vary depending on the condition of the car and the equipment in it. For cars without SA 606 or SA 609, the installation will increase by approx. 1,0 hours for the installation of the roof aerial.

Important information
These installation instructions are primarily designed for use within the BMW dealership organisation and by authorised BMW service companies.

In any event the target group for these installation instructions is specialist personnel trained on BMW cars with the appropriate specialist knowledge.

All work must be completed using the latest BMW repair manuals, circuit diagrams, servicing manuals and work instructions in a rational order using the prescribed tools (special tools) and observing current health and safety regulations.

To avoid unnecessary extra work and/or costs, if any installation or function problems occur, after a brief troubleshooting session (approx. 0.5 hours), an inquiry is to be sent straight away to the technical parts support via the Aftersales Assistance Portal (ASAP), quoting the chassis number, the part number of the retrofit kit and a precise description of the problem.

Do not archive the hard copy of these installation instructions since daily updates are made by ASAP.

See ASAP for details of the pictograms.

Pictograms

▷ Denotes instructions that draw your attention to special features.

◀ denotes the end of the instruction or other text.

Subject to technical modifications.

Before you install the retrofit system, test the control module status with the **CIP** (coding, customising, programming) test program. If the test detects incorrect statuses in one or more control modules, these must be updated first using the "Load software" function.

Installation information
When routing fibre optic cables, make sure the bending radius is no less than 25 mm.

If the specified PIN chambers are occupied, bridges, double crimps or twin-lead terminals must be used.

Ensure that the cables/lines are not kinked or damaged as you install them in the car. The costs incurred as a result of this will not be reimbursed by BMW AG.

Additional cables/lines that you install must be secured with cable ties.

After the installation work the retrofit must be programmed / coded using SSS (software service station) via the **CIP** path.

All the figures show LHD cars, proceed accordingly on RHD cars.

Before installing the roof aerial, clean and degrease the adhesion areas with conventional cleaning products.

To ensure a permanent bond allow the car to stand in an ambient temperature of at least 20 °C for approx. four hours.

Ordering instructions
The snap-in adapter is not supplied with the retrofit kit and must be ordered separately for the various telephones (see EPC for part number and documentation).

The template for cars without a roof function centre is not included in the retrofit kit and must be ordered separately (see EPC for part number and further details).

The roof aerial for cars without SA 606 or SA 609 is not supplied in the retrofit kit and must be ordered separately (see EPC for part number and details).

List of special equipment
The following special equipment must be taken into consideration when installing the retrofit kit:

SA 606   Business navigation system
SA 609   Professional navigation system
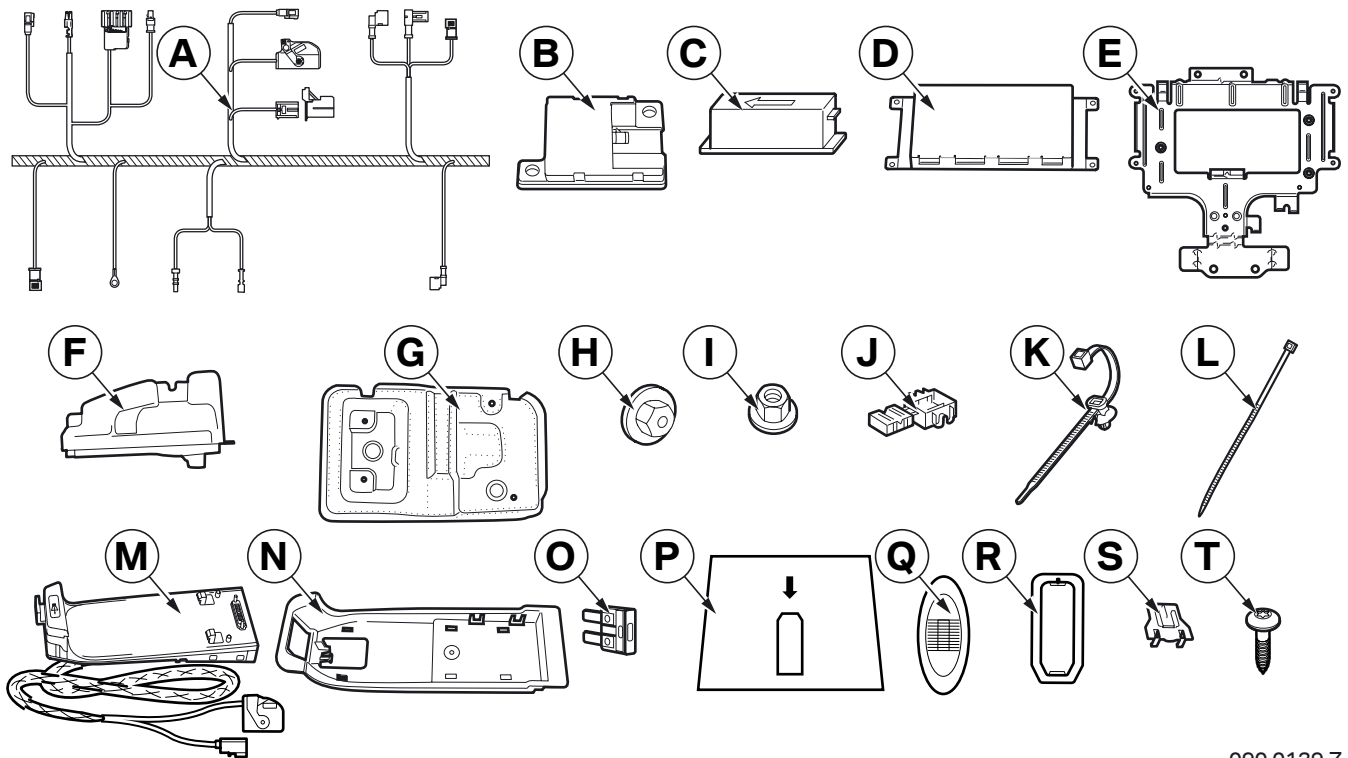**SA 663**   BMW Professional radio

Special tools required
00 9 317 Trim wedge
65 2 010, drawing knife kit (only for cars without SA 606 or SA 609)

Contents

1. Parts list

090 0139 Z

Legend

A   Wiring harness

B   Bluetooth aerial

C   Hands-free microphone

D   Universal charger/hands-free electronic control module (ULF)

E   ULF holder

F   Roof aerial (cars without SA 606 or SA 609 only, not supplied in the retrofit kit)

G   Rear axle differential heat insulation

H   Speed nut (4x)

I   Hexagonal nut (4x)

J   Miniature connector

K   Cable holder (2x)

L   Cable tie (30x)

M   Eject box

N   Telephone trim

O   Fusible link 10 A

P   Template (for cars without a roof function centre only, not supplied in the retrofit kit)

Q   Hands-free microphone trim (2x, dependent on colour, for cars without roof function centre only)

R   Installation frame (for cars without roof function centre only)

S   Plug connector holder

T   Speed nut (only for cars without SA 606 or SA 609)

2. Preparations

	TIS No.
Conduct a brief test	---
Disconnect the negative pole of the battery	12 00 ...
The following components must be removed first of all	
Left boot wheel arch trim	51 47 151
Roof pillar trim, rear left	51 43 251
Boot floor trim	51 47 101
Backrest side section on the left	52 26 008
Rear seat	52 26 005
Door pillar trim, left	51 43 150
Door sill covers strips, left	51 47 ...
Pedal trim	51 45 185
Side A pillar trim, left footwell	51 43 070
Lower the A pillar trim on the left	51 43 148
Roof function centre/Front interior light	---
Driver's seat	52 13 000
Oddments box	51 16 200
Glove compartment	51 16 366
Unfasten the fuse box	---
Roof aerial (for cars without SA 606/609 only)	65 20 035

## 3. Connection diagram
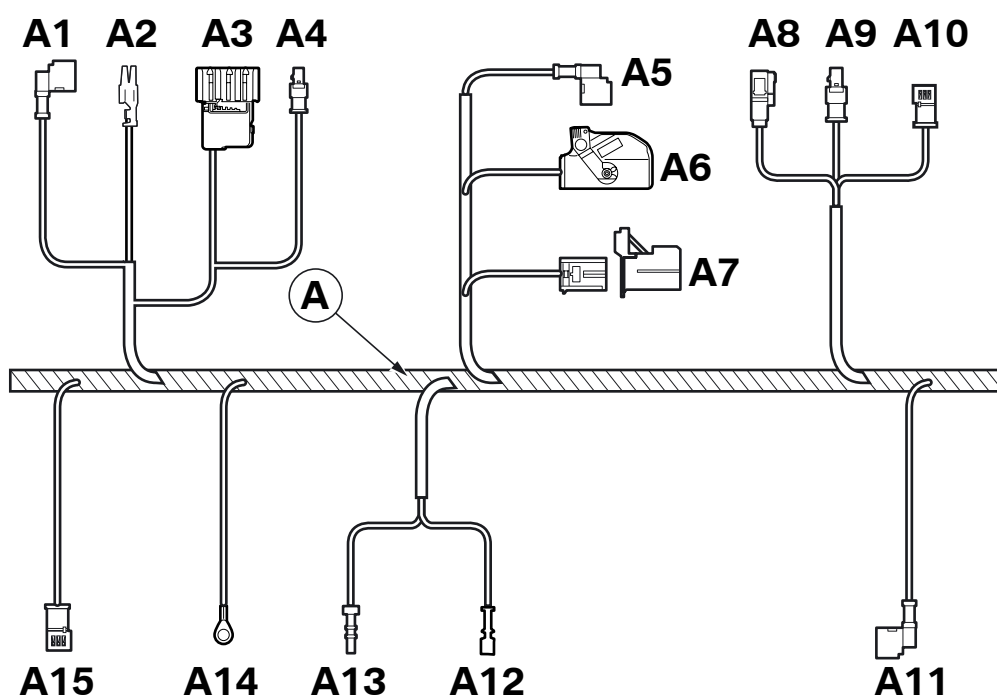
090 0138 Z

Item	Description	Signal	Cable colour / Cross-section	Connection location in the car	Abbreviation / Slot
A	Wiring harness	---	---	---	---
A1	Fakra socket casing, SW	BT Ant	---	To Bluetooth aerial **B**	X14080
A2	Spring contact	Terminal 30	RT/GE 0.75 mm^2	To fuse holder **A4010** behind the glove compartment	X11003 PIN 6
A3	18-pin SW socket casing	---	---	To eject box **M**	X4545
A4	Fakra plug casing, SW	Tel Ant	---	To eject box **M**	X13322
A5	Fakra socket casing, WS	BT Ant	---	To universal charger/electronic hands-free control module **D**	X14081
A6	54-pin WS socket casing		---	To universal charger/electronic hands-free control module **D**	X14133
A7	2-pin SW fibre optic cable casing	MOST	---	To universal charger/electronic hands-free control module **D**	X14134
A8	Fakra socket casing, SW	Tel Ant	---	To branch **A9**	X13323
A9	Fakra plug casing, SW	Tel Ant	---	To branch **A8**	X13337
A10	3-pin SW socket casing	---	---	For optional aerial booster	X1765
A11	Fakra socket casing, VI	Tel Ant	---	To roof aerial **F**	X13363
A12	Fibre optic cable jack	MOST	GN	To fibre optic cable distributor station before the left backrest side section	X14255
A13	Fibre optic cable pin	MOST	GN	To fibre optic cable distributor station before the left backrest side section	X14255
A14	Cable eyelet	Terminal 31	BR 0.35 mm^2	Earth post behind the left backrest side part	X13016
A15	3-pin SW socket casing	Mic	---	To hands-free microphone **C**	X3564

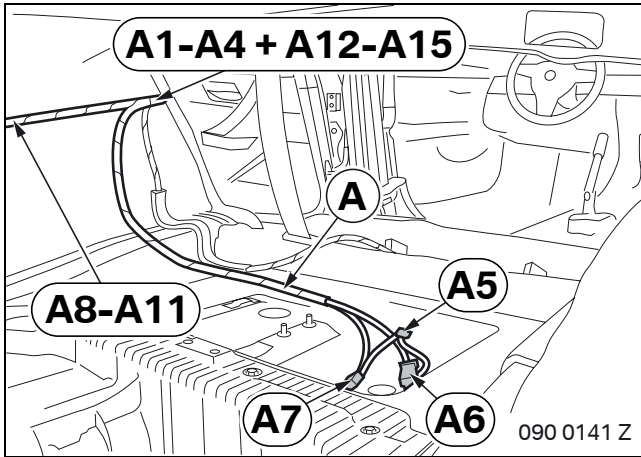## 4. Installation and cabling diagram
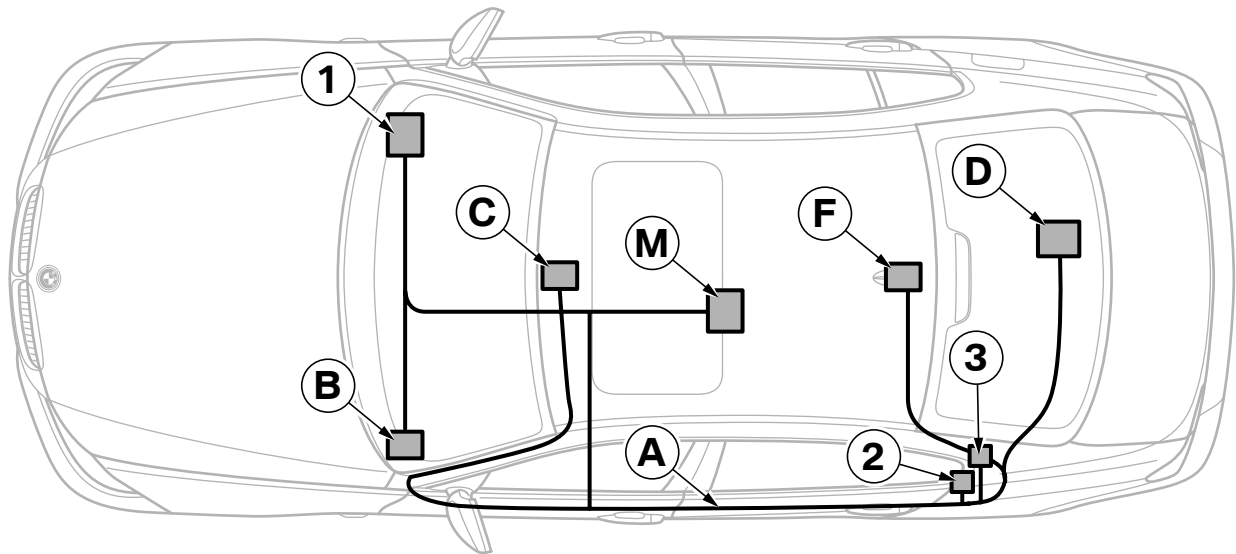
090 0140 Z

Legend

A	Wiring harness
B	Bluetooth aerial
C	Hands-free microphone
D	Universal charger/hands-free electronic control module (ULF)
F	Roof aerial (for cars without SA 606 or 609 only)
M	Eject box

|	
1	Fuse holder **A4010**
2	Main distributor station **X14255**
3	Earth post **X13016**

5. To install and connect the wiring harness

090 0141 Z

Route the wiring harness **A** from the installation site of the universal charger/electronic hands-free control module.

Secure branches **A5** – **A7** to the standard wiring harness using a cable tie **L**.

Route branches **A8** – **A11** to the side trim in the boot.

Route branches **A1** – **A4** and **A12** – **A15** to the left-hand side of the car.

090 0133 Z
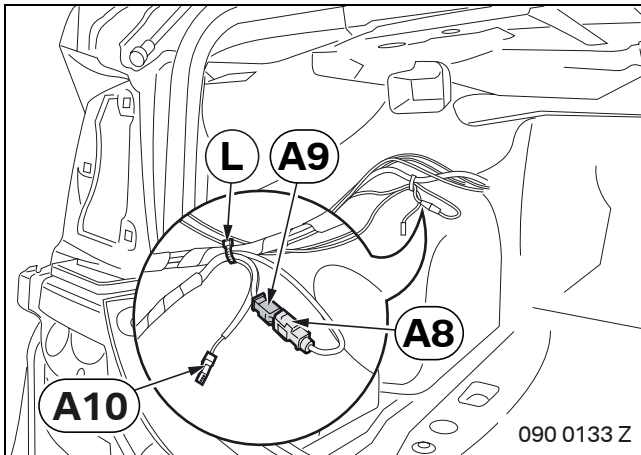
Connect branches **A8** and **A9** together.

Tie back branches **A8** – **A10** to the left side trim in the boot using a cable tie **L**.

090 0134 Z
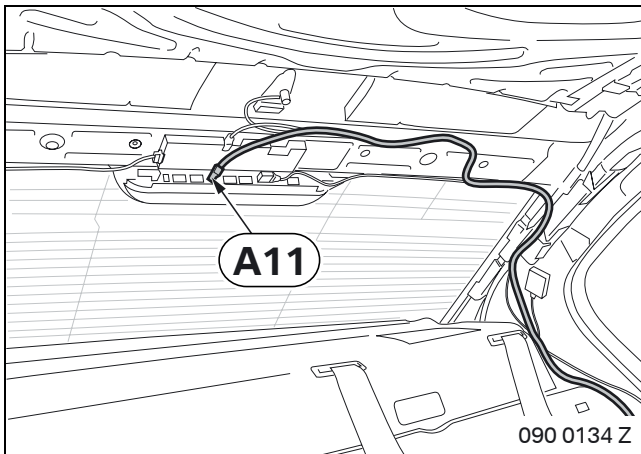
Route branch **A11** along the standard wiring harness to the roof aerial.

087 0028 Z
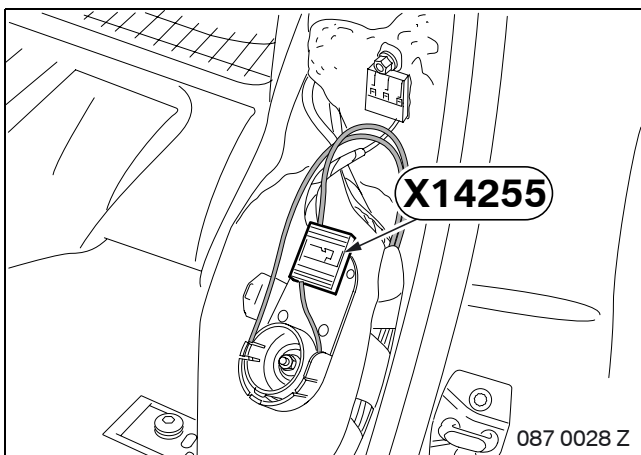
Release the main distributor station **X14255** behind the left backrest side section.

Remove the cap from the distributor station.

## 5. To install and connect the wiring harness

087 0405 Z
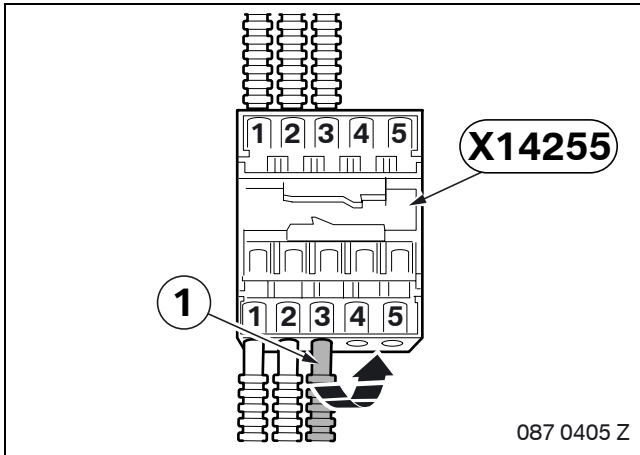
Disconnect any bottom fibre optic cable (1) from the main distributor station **X14255** and connect it to the nearest empty bottom slot.
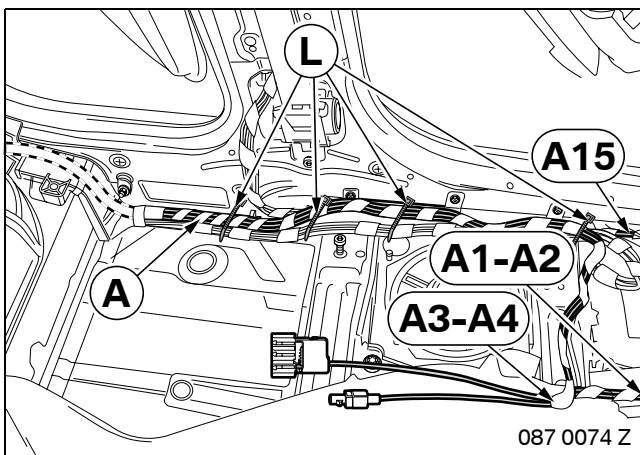

087 0071 Z
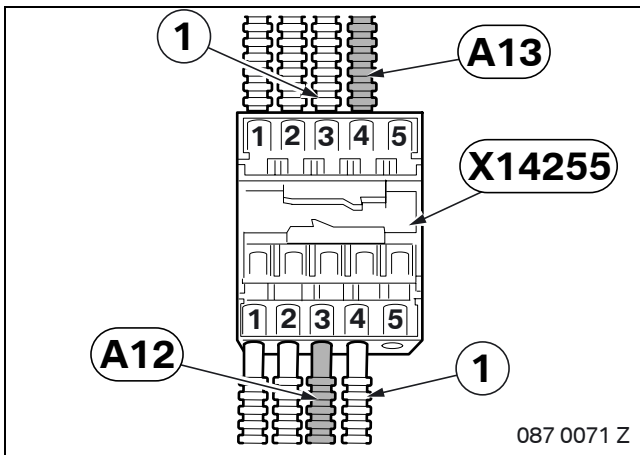
Connect branches **A12** and **A13** opposite the open fibre optic cables (1) on the main distributor station **X14255**.

Place the cap on the distributor station and secure the distributor station to the car.



087 0070 Z
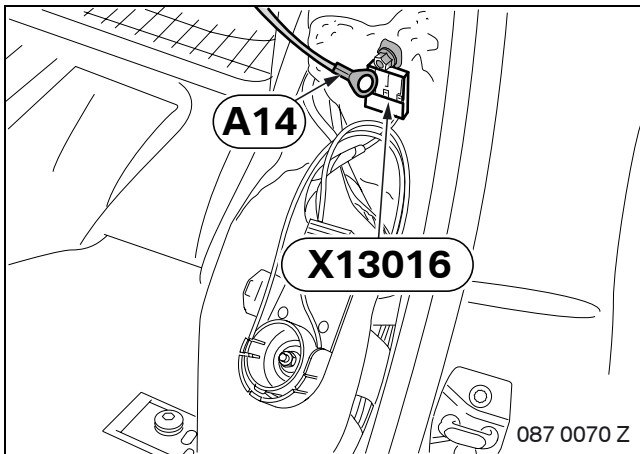
Route branch **A14** to earth post **X13016** and secure it.

087 0074 Z

Route wiring harness **A** forwards along the standard wiring harness on the left-hand sill and secure it with cable ties **L**.

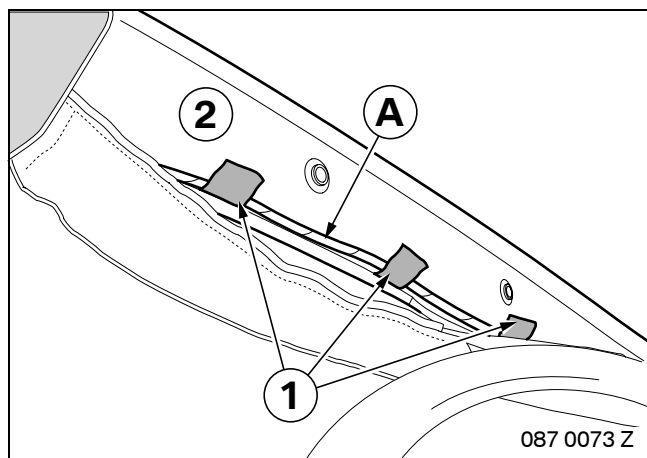Route branch **A15** to the left A pillar.

Route branches **A1** – **A2** to the instrument panel.

Route branches **A3** – **A4** to the centre armrest.
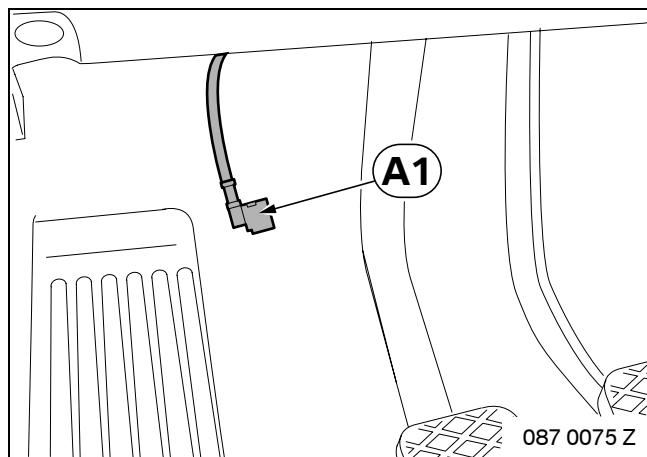
5. To install and connect the wiring harness

087 0072 Z
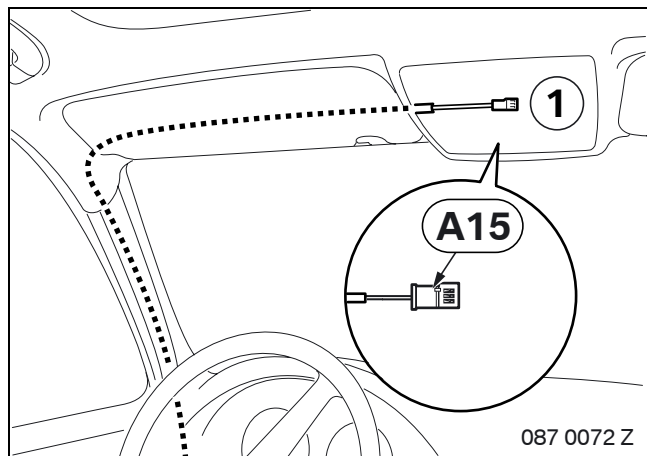
Route branch **A15** to the left A pillar through the lowered headlining to the roof trim opening (1).
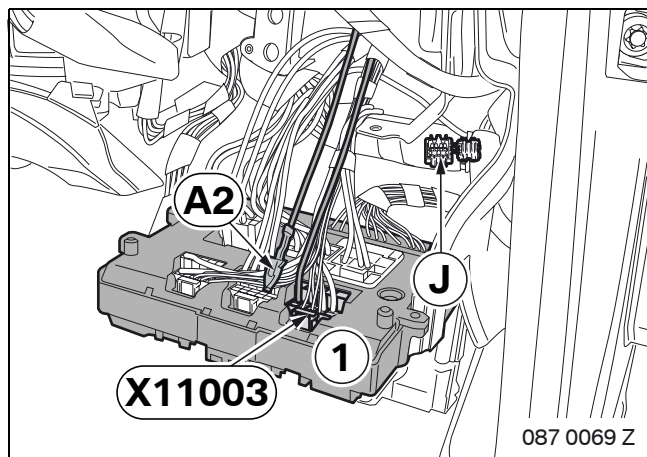

087 0073 Z

▷ Ensure that wiring harness **A** is routed and secured behind the head airbag. ◀

Secure wiring harness **A** to the left A pillar (2) using textile adhesive tape.

087 0075 Z

Route branches **A1** to the pedal trim.

087 0069 Z

Route branch **A2** to the fuse holder behind the glove compartment (1) and connect it to PIN 6 of plug **X11003**.

▷ If PIN 6 is already occupied, connect branch **A2** to the connected cable using a miniature connector **J**. ◀

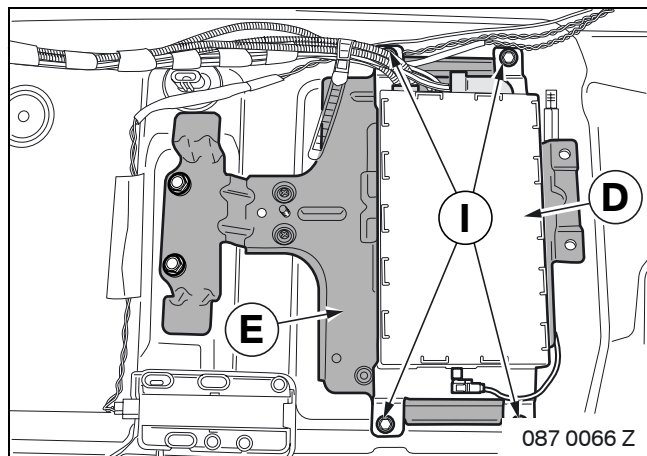5. To install and connect the wiring harness
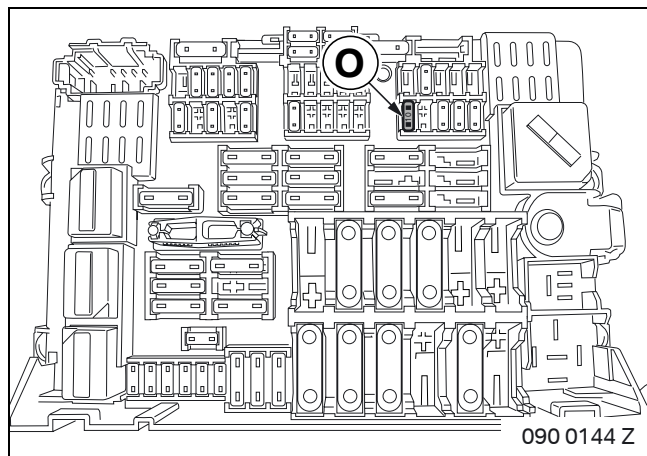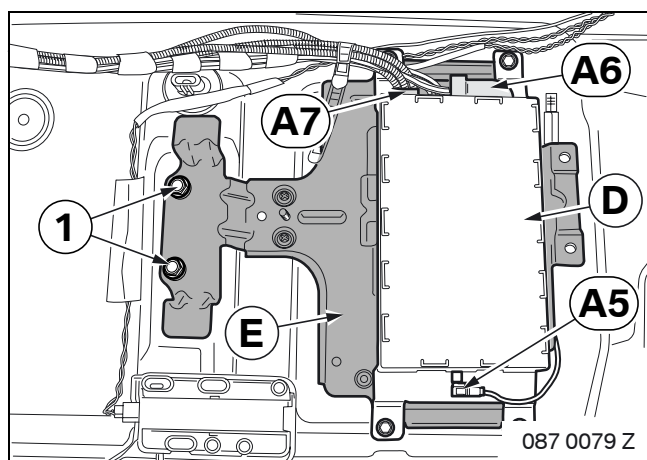
Insert fusible link **O** into slot 26.

▷ If slot 26 is already occupied, replace the fusible link. ◀

090 0144 Z

## 6. To install and connect the universal charger/electronic hands-free control module

087 0066 Z

Secure the universal charger/electronic hands-free control module **D** to the stud bolt on the ULF holder **E** using hexagonal nuts **I**.

087 0079 Z
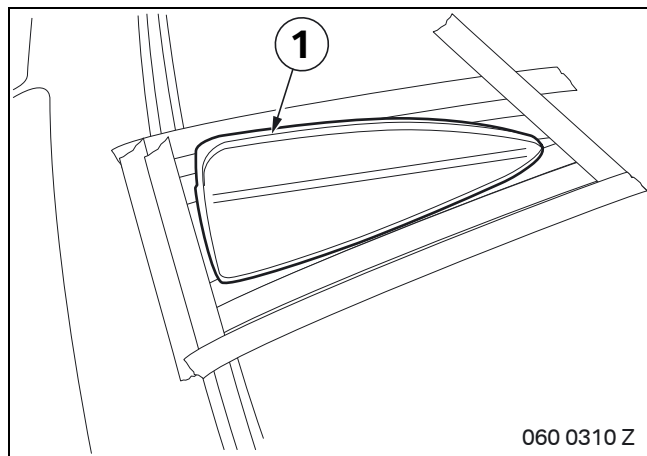
Attach the ULF holder **E** to the lugs in the car on the right-hand side and secure it with the existing nuts (1).

Connect branches **A5**, **A6** and **A7** to the universal charger/hands-free control module **D**.

087 0092 Z
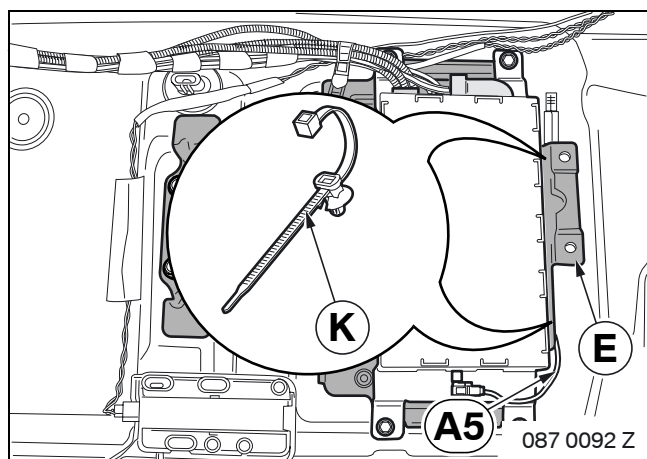
Secure the cable from branch **A5** to the side of the ULF holder **E** using a cable tie **K**.

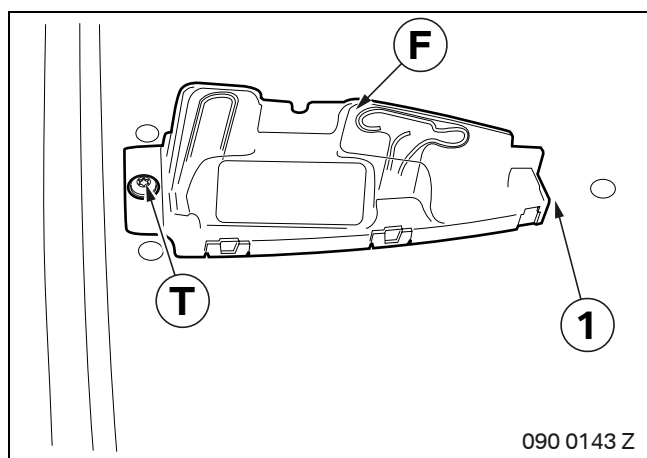## 7. To install and connect the roof aerial


060 0310 Z

Cars without SA 606/609 only

▷ Mask the area around the roof aerial to prevent damaging the paintwork. ◀

Carefully cut the empty casing (1) for the roof aerial off the roof with the special tool.

Clean the surfaces in the bonding areas on the empty casing (1) and roof.

090 0143 Z

Slide in the roof aerial **F** at the front (1) and secure it at the rear with a self-tapping screw **T**.

060 0312 Z
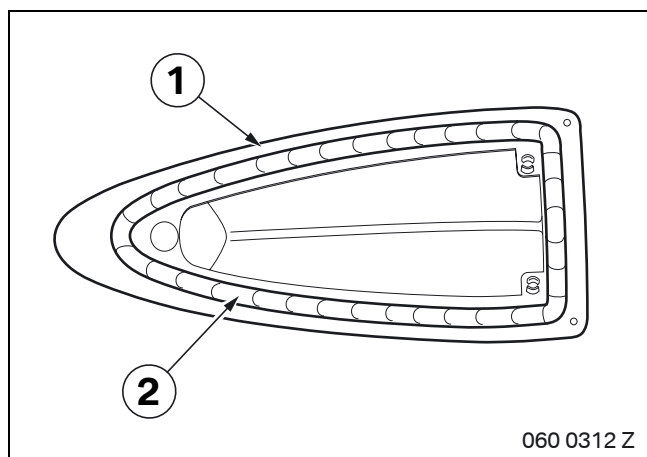
▷ The bonding surfaces must be clean and free of grease. The temperature of the adhesive must be at least 20 °C. The hardening time of the adhesive is at least 4 hours. ◀

Apply a bead of adhesive (2) around 8 mm wide and 8 mm high to the empty casing (1).

Carefully place the empty casing (1) in its original position , press lightly and secure it with adhesive tape.
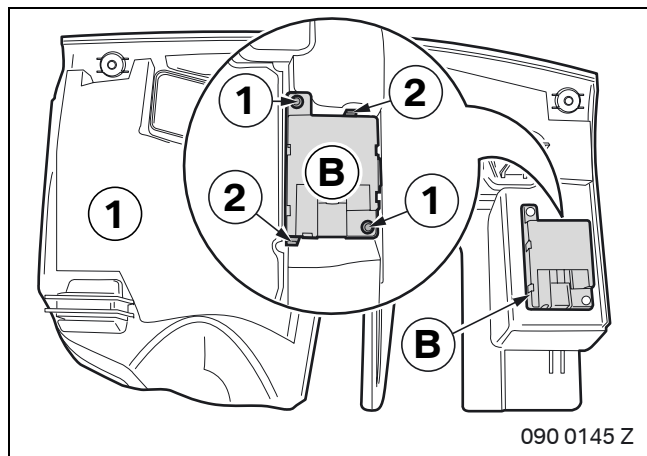


090 0142 Z
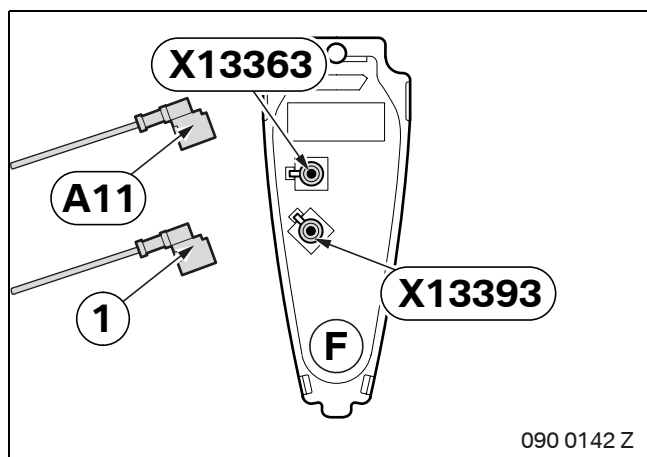
All cars

Connect branch **A11**, VI, to connector **X13363** on the roof aerial **F**.

▷ For cars with SA 606 or SA 609, the Fakra socket casing (1), BL, is to be connected to connector **X13393** on the roof aerial **F**. ◀
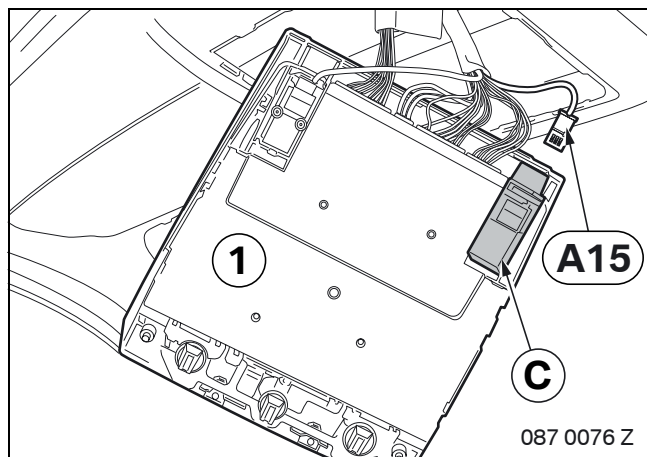
8. To install and connect the Bluetooth aerial and hands-free microphone

090 0145 Z

Place the Bluetooth aerial **B** on to the bolt on the pedal trim (1) until the retaining lugs (2) engage.

087 0043 Z
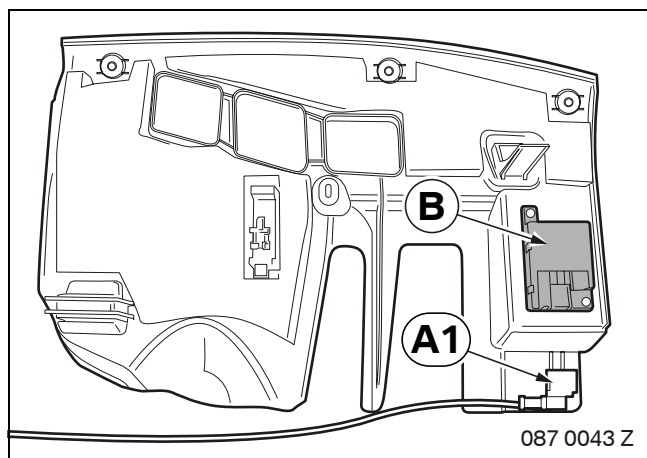
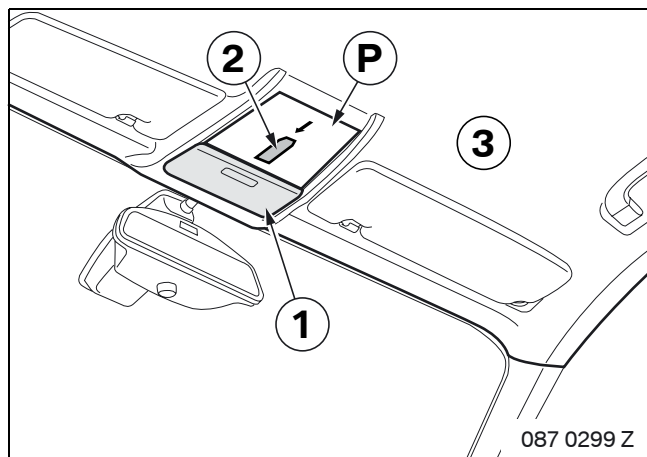Connect branch **A1** to the Bluetooth aerial **B**.

087 0076 Z

Cars with roof function centre only

▷ The arrow on the hands-free microphone **C** must point to the front of the car after it has been installed. ◀

Clip the hands-free microphone **C** into the roof function centre (1).

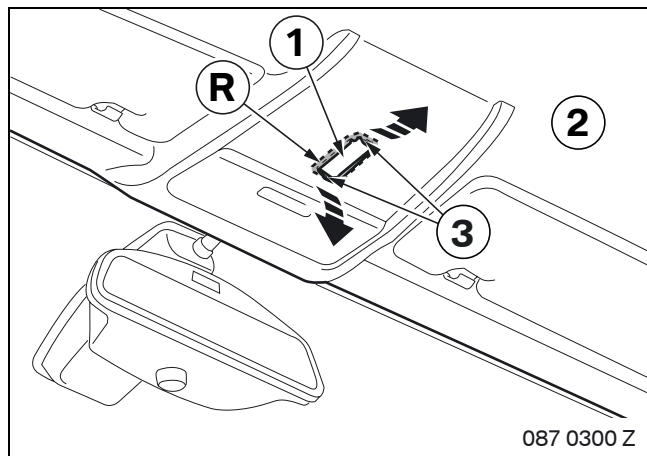Connect branch **A15** to the hands-free microphone **C**.

087 0299 Z

Cars without roof function centre only

▷ Use only template **P**. ◀

Cut out the marked area on template **P** and place it on the interior light (1).

Mark the contours of the cut-out (2) for the hands-free microphone and cut out the headlining (3).

8. To install and connect the Bluetooth aerial and hands-free microphone

087 0300 Z

Insert the installation frame **R** from above into the opening (1) in the headlining (2) and bend the retaining lugs (3).

087 0303 Z
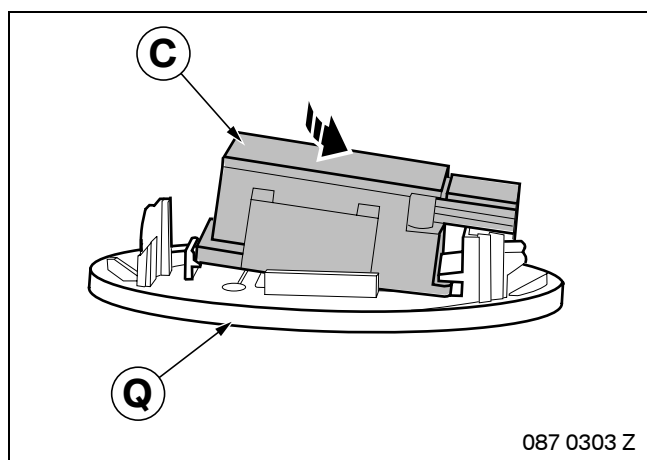
Clip hands-free microphone **C** into the hands-free microphone trim **Q**.
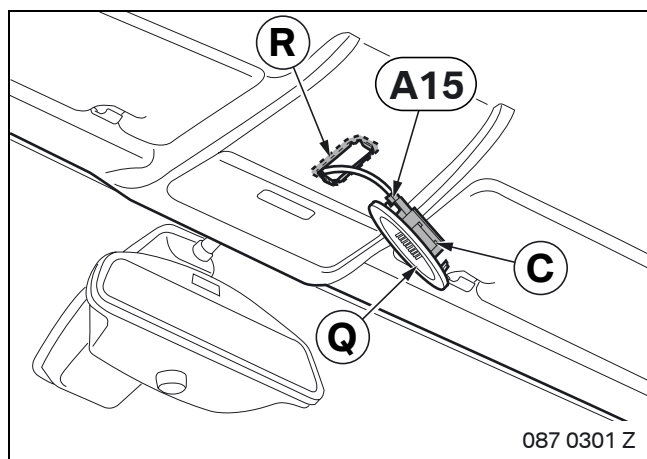
087 0301 Z

▷ The arrow on the hands-free microphone **C** must point to the front of the car after it has been installed. ◀

Route branch **A15** through the installation frame **R** and connect it to the hands-free microphone **C**.

Clip the hands-free microphone trim **Q** into installation frame **R**.

9. To install and connect the eject box

090 0135 Z

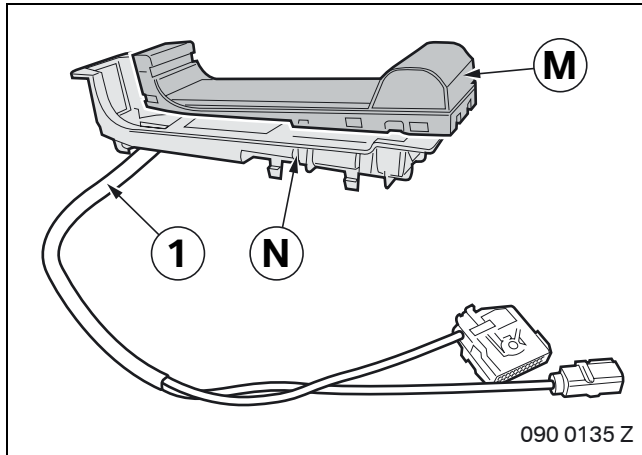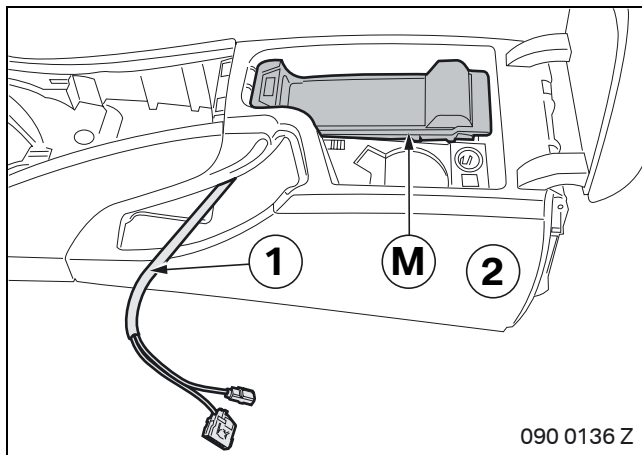Route the cable (1) from the eject box **M** through the rear of the telephone trim **N** and clip the eject box **M** into the telephone trim **N**.

090 0136 Z

Remove the cover from the centre console (2).

Route the cable (1) from the eject box **M** through the centre console (2) and clip the eject box **M** into the centre console (2).

090 0132 Z
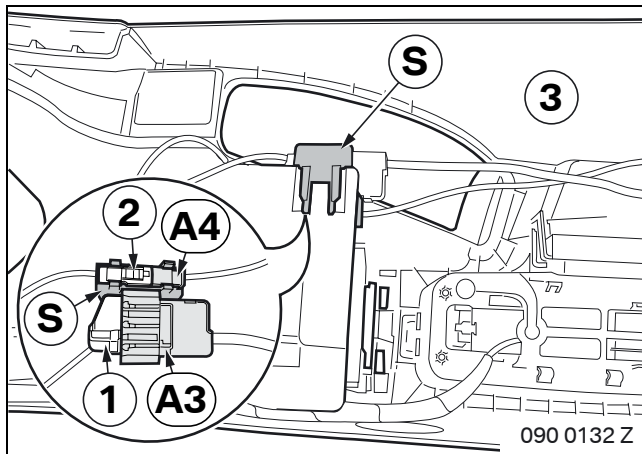
Connect branch **A3** to the plug (1) and branch **A4** to the Fakra plug (2) on the eject box.

Clip the plug connectors into the plug connector holder **S**.

Slide the plug connector holder **S** into the centre console (3).

10. Secure the heat insulation to the boot floor

090 0137 Z
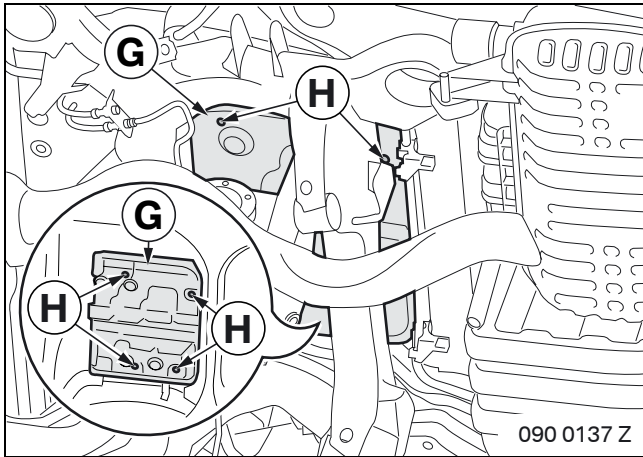
▷ For greater clarity, the illustration does not show the rear axle differential. ◀

Push the rear axle differential heat insulation **G** on to the stud bolt and secure it with speed nuts **H**.

11. Concluding work and coding

▷ This retrofit system requires coding. ◀

- Connect the battery
- Encode the retrofit with SSS (software service station) via the **CIP** path
- Conduct a brief test
- Register the mobile phone in the car (see section 12 or 13)
- Re-assemble the car

12. To register the mobile phone in the car (cars with SA 606 or SA 609 only)

▷ The registration, also known as "pairing" can only be carried out if the encoding has been successful. The Bluetooth code required for the pairing process, an arbitrary number with 1 – 16 figures, can be freely selected. ◂

After the installation of the ULF retrofit and the insertion of the mobile phone holder (snap-in adapter), the mobile phone must be registered as follows:

- Switch on the mobile phone
- Switch on the ignition, the main menu will appear in the on-board monitor
- Press the controller and select the **INFORMATION** menu point
- Select the **COMMUNICATION INTERFACE** menu point using the controller
- Press the controller, **BLUETOOTH COMMUNICATION ACTIVE** will appear in the on-board monitor
- Push the controller forwards, turn it anti-clockwise and select the **TELEPHONE** menu point
- Press the controller, **BLUETOOTH CONNECTABLE IN THIS MENU** will appear in the on-board monitor
- Select and activate the Bluetooth option on the mobile phone. (The steps required for this differ from phone to phone, see the manual supplied with the phone under searching for Bluetooth device, connecting BT device, pairing BT device)
- After a successful search the display on the phone will show **FOUND**, the car will register itself on the phone with a 5-digit number. Select the **SELECT** menu point
- Turn the controller and select the **ADD DEVICE** menu point
- Press the controller, **PASSKEY** will appear in the on-board monitor
- Enter a freely selectable 1 – 16-digit Bluetooth code using the controller
- Slide the controller downwards and select the **CONFIRM PASSKEY** menu point
- Press the controller
- Select **CONNECTION** or **REGISTRATION** on the mobile phone and confirm this
- **CONNECTED** will appear on the mobile phone

▷ You have a maximum of 10 seconds to enter the passkey or Bluetooth code. ◂

- Enter the same passkey and Bluetooth code in the mobile phone and confirm
- The message **HANDS-FREE ACCEPTED** will appear on the mobile.
- Press the menu button next to the controller twice
- Switch off the ignition for at least 30 seconds
- Quit the mobile phone sub-menu again

▷ If the registration process was not completed successfully, repeat the entire process quickly. ◂

13. To register the mobile phone in the car (cars with SA 663 only)

▷ The registration, also known as "pairing" can only be carried out if the encoding has been successful. The Bluetooth code required for the pairing process, an arbitrary number with 1 – 16 figures, can be freely selected. ◄

After the installation of the ULF retrofit and the insertion of the mobile phone holder (snap-in adapter), the mobile phone must be registered as follows:

- Switch on the mobile phone
- Switch on the ignition
- Press the menu key on the radio
- The menu will appear on the radio display
- Select **TEL** by pressing the key beneath it on the radio
- The radio display shows **Searching for connected devices**
- Select **BT** by pressing the key beneath it on the radio
- The radio display shows **BT devices**
- Select **SEARCH** by pressing the key beneath it on the radio
- The radio display shows **BT devices connectable**
- Select and activate the Bluetooth option on the mobile phone. (The steps required for this differ from phone to phone, see the manual supplied with the phone under searching for Bluetooth device, connecting BT device, pairing BT device)
- After a successful search the display on the phone will show **FOUND**, the car will register itself on the phone with a 5-digit number. Select the **SELECT** menu point
- The radio display shows **Ext. device ready!**
- Select **ADD** by pressing the key beneath it on the radio
- Enter a freely selectable 1 – 16-figure Bluetooth code on the radio using the number pad beneath it.
- Press the right-hand control knob on the radio to confirm the Bluetooth code
- Select **CONNECTION** or **REGISTRATION** on the mobile phone and confirm this
- **CONNECTED** will appear on the mobile phone

▷ You have a maximum of 10 seconds to enter the passkey or Bluetooth code. ◄

- Enter the same passkey and Bluetooth code in the mobile phone and confirm
- The message **HANDS-FREE ACCEPTED** will appear on the mobile.
- The radio display shows **Pairing succeeded**
- Select **OK** by pressing the key beneath it on the radio
- To exit the menu, select **"Arrow"** by pressing the key beneath it on the radio
- Switch off the ignition for at least 30 seconds – the registration/pairing process is complete

▷ If the registration process was not completed successfully, repeat the entire process quickly. ◄

14. Circuit diagram

087 0065 Z

14. Circuit diagram

Legend

A4010   Fuse holder behind the glove compartment

B402   Hands-free microphone **C***

U400   To universal charger/electronic hands-free control module **D***

W16   Roof aerial **F***
W18   Bluetooth aerial **B***
W604   Screen open

X209   Connector 30
X1765   3-pin plug SW, **A10***, tied back
X3313   Connector 31
X3564   3-pin plug SW, **A15***, to hands-free microphone **C***
X4545   18-pin plug, SW, **A3***, to eject box, **M***
X11003   10-pin plug, BL, to fuse holder behind the glove compartment, **A2***
X13016   Earth post behind the left backrest side part, **A14***
X13322   Aerial plug pin, SW, **A4***, to eject box, **M***
X13323   Aerial plug socket, SW, **A8***, to aerial plug pin **X13337**, SW, **A9***
X13337   Aerial plug pin, SW, **A9***, to aerial plug socket **X13323**, SW, **A8***
X13363   Aerial plug socket, VI, **A11***, to roof aerial, **F***
X14080   Aerial plug socket, SW, **A1***, to Bluetooth aerial, **B***
X14081   Aerial plug socket, WS, **A5***, to universal charger/electronic hands-free control module, **D***
X14133   54-pin plug, WS, **A6***, to universal charger/electronic hands-free control module, **D***
X14134   2-pin plug, SW, **A7***, fibre optic cable to universal charger/electronic hands-free control module, **D***
X14255   Main distributor station behind the left backrest side section, **A12*** + **A13***

All the designations marked with an asterisk (*) apply only to these installation instructions or this circuit diagram.

Cable colours

BL   Blue
BR   Brown
GE   Yellow
GR   Grey
RT   Red
SW   Black
WS   White