

# Parts and Accessories. Installation Instructions.



## Rear-view camera retrofit BMW 5 Series Touring (E39/2)

These installation instructions are only valid for cars with SA 601/602 (TV function) or with SA 609 (navigation system).

<b>Retrofit kit No.</b>	66 21 0 300 908
	66 21 0 301 007
	66 21 0 303 079
	66 21 0 303 083

### Installation time

The installation time for cars without SA 601/602 is approx. 3.0 - 3.5 hours, for cars with SA 601/602 it is approx. 4.0 - 4.5 hours. The installation time may vary depending on condition of the car and the equipment in it.

### 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.

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.

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

All the figures show LHD cars, proceed in exactly the same way on RHD cars.

## Pictograms



Denotes instructions that draw your attention to dangers.



Denotes instructions that draw your attention to special features.

◀ denotes the end of the instruction or other text.

Subject to technical modifications.

### Ordering instructions

The additional switchbox kit is required for cars without SA 601/602. The additional switchbox kit is not included in the retrofit kit and must be ordered separately (see EPC for part number and further details).

The handle strip seal **N** is not included in the installation 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 601** TV function

**SA 602** On-board monitor with TV function

**SA 609** Navigation system

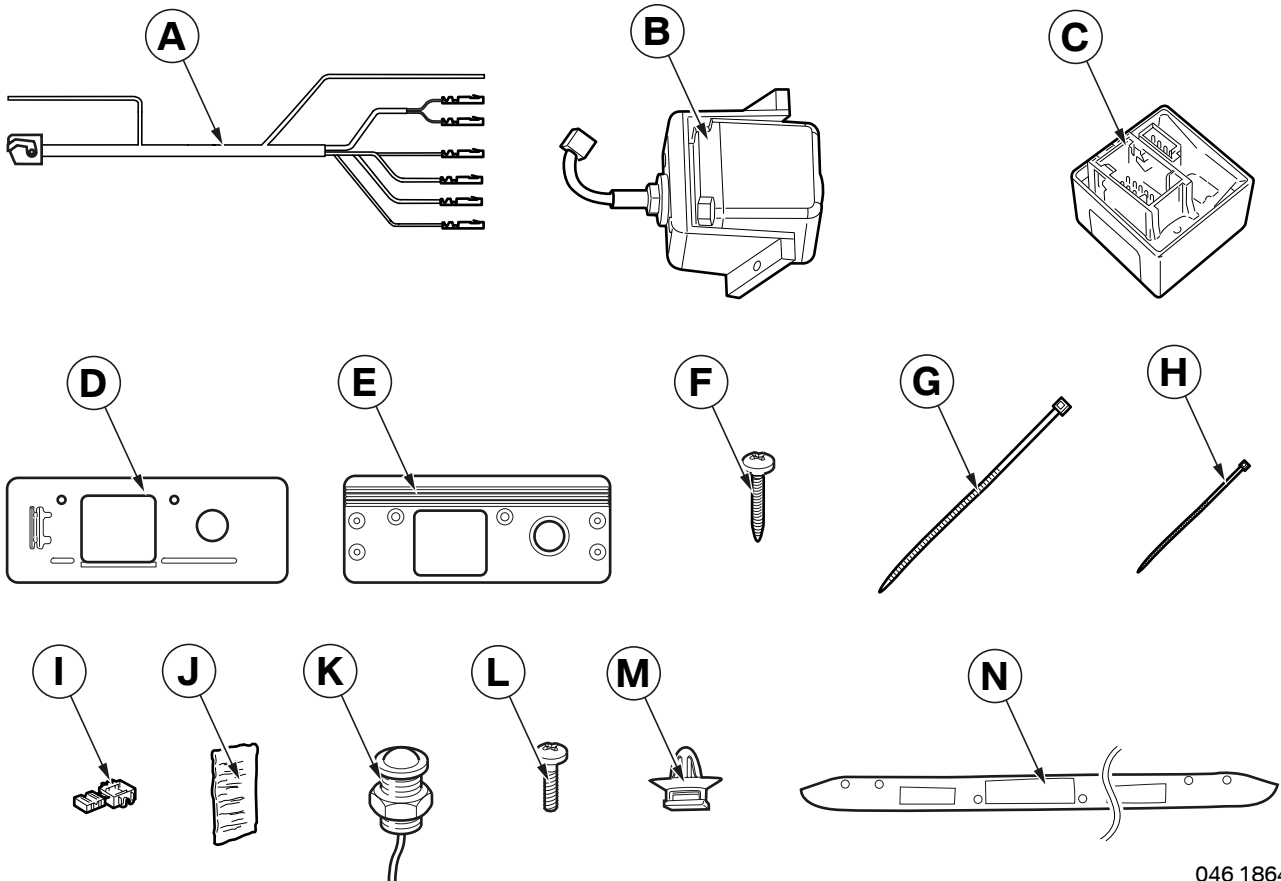
### Special tools required

None

## Contents

Section	Page
1. Rear-view camera parts list .....	4
2. Additional switchbox kit parts list .....	5
3. Preparations.....	6
4. Connection diagram (cars with SA 601/602 only) .....	7
5. Connection diagram (cars without SA 601/602 only) .....	8
6. Installation and cabling diagram (cars with SA 601/602 only) .....	10
7. Installation and cabling diagram (cars without SA 601/602 only) .....	11
8. To install the rear-view camera and button .....	12
9. To install and connect the control unit.....	14
10. To install and connect wiring harness A (cars with SA 601/602 only) .....	15
11. To install and connect wiring harness A (cars without SA 601/602 only) .....	17
12. To install and connect the switchbox (cars without SA 601/602 only).....	19
13. Concluding work and coding .....	21
14. Circuit diagram for rear-view camera (cars with SA 601/602 only) .....	22
15. Circuit diagram for rear-view camera (cars without SA 601/602 only) .....	23

## 1. Rear-view camera parts list

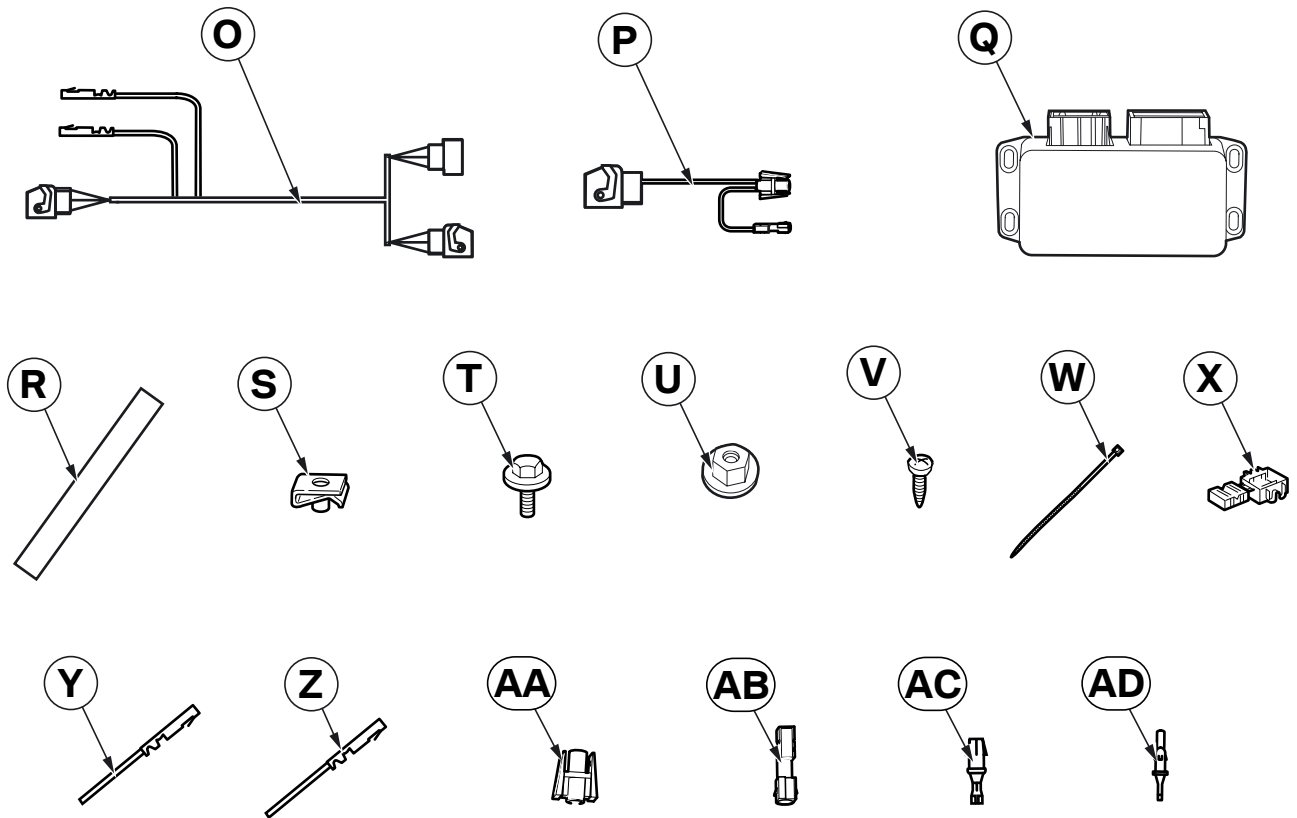


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### Legend

- A Wiring harness
- B Rear-view camera
- C Control module
- D Mounting plate (not required)
- E Mounting plate
- F Philips screw 3.5 x 16 (6x)
- G Cable tie 292 x 4.8 mm
- H Cable tie 200 x 3.6 mm (20x)
- I Miniature connector (5x)
- J Protective strip
- K Button
- L Philips screw 3.5 x 9.5 mm (4x)
- M Cable tie holder (5x, not required)
- N Handle strip seal (not supplied with retrofit kit)

## 2. Additional switchbox kit parts list



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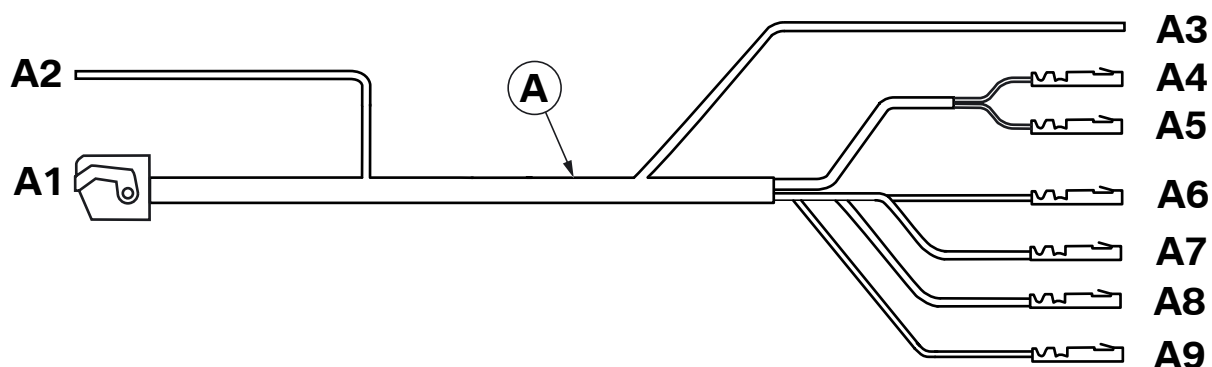
### Legend

O	Adapter cable	W	Cable tie 200 x 3.6 mm (10x)
P	Supply cable	X	Miniature connector (3x)
Q	Switchbox	Y	Connection cable, RT (not required)
R	Sealing strip (2x)	Z	Connection cable, BR (not required)
S	Speed nut M5 (4x)	AA	Socket casing
T	Hexagonal screw with washer M5 x 14 (4x)	AB	Plug casing
U	Hexagonal nut with washer M5 (4x, not required)	AC	Socket contact
V	Fillister head screw ST 4.2 x 13 mm (4x, not required)	AD	Plug contact

### 3. Preparations

	TIS No.
Conduct a brief test	---
Disconnect the negative pole of the battery	12 00 ...
<b>The following components must be removed first of all</b>	
Boot lid trim	51 49 000
Tailgate handle strip	51 13 402
Remove the boot lid handle strip seal	---
Tailgate trim, outside left	---
Tailgate hinge trim, left	---
Rear boot floor trim	51 47 131
Boot floor trim at the front (cars with SA 601/602 only)	51 47 102
Flap in the boot on the left	---
Roof pillar trim, rear left (D pillar)	51 43 252
Rear speakers	65 12 020
Lower the rear headlining	---
<b>Cars without SA 601/602 only</b>	
Navigation computer	65 90 510
Rear base holder	---

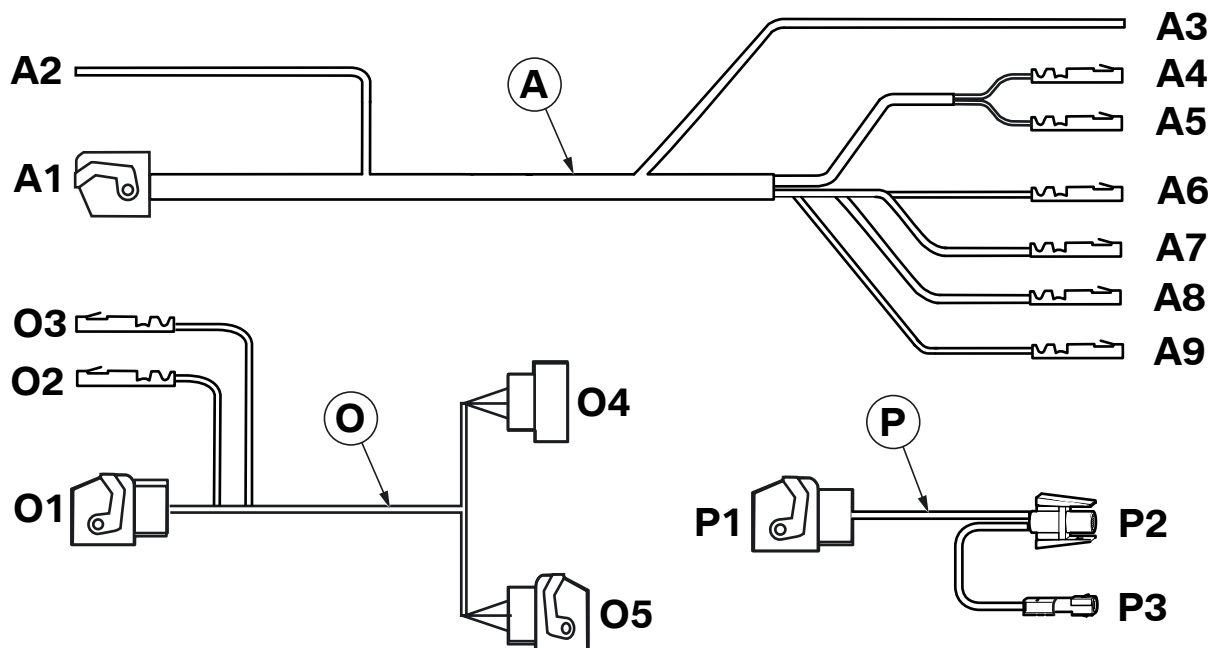
#### 4. Connection diagram (cars with SA 601/602 only)



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Branch/ Item	Description	Signal	Cable colour / Cross- section	Connection location in the car	Abbreviation / Slot
A	Wiring harness	---	---	---	---
A1	Black 12-pin socket casing	---	---	To control module <b>C</b>	---
A2	Cable open	RFS	GN 0.75 mm <sup>2</sup>	Insulate and tie back	---
A3	Cable open	RFS	GN 0.75 mm <sup>2</sup>	Under the left rear loudspeaker, with miniature connector on white/yellow cable	---
A4	Socket contact	Video +	transparent 0.14 mm <sup>2</sup>	To video module	X18806 PIN 13
A5	Socket contact	Video -	SW/BR 0.35 mm <sup>2</sup>	To video module	X18806 PIN 14
A6	Socket contact	RSF inv	SW 0.25 mm <sup>2</sup>	To video module	X18804 PIN 17
A7	Socket contact	Terminal 30	RT 0.75 mm <sup>2</sup>	To video module, with miniature connector to RT/GN cable	X18804 PIN 1
A8	Socket contact	Terminal 31	BR 0.75 mm <sup>2</sup>	To video module, with miniature connector to BR cable	X18804 PIN 10
A9	Socket contact	TA	WS 0.25 mm <sup>2</sup>	Insulate and tie back	---

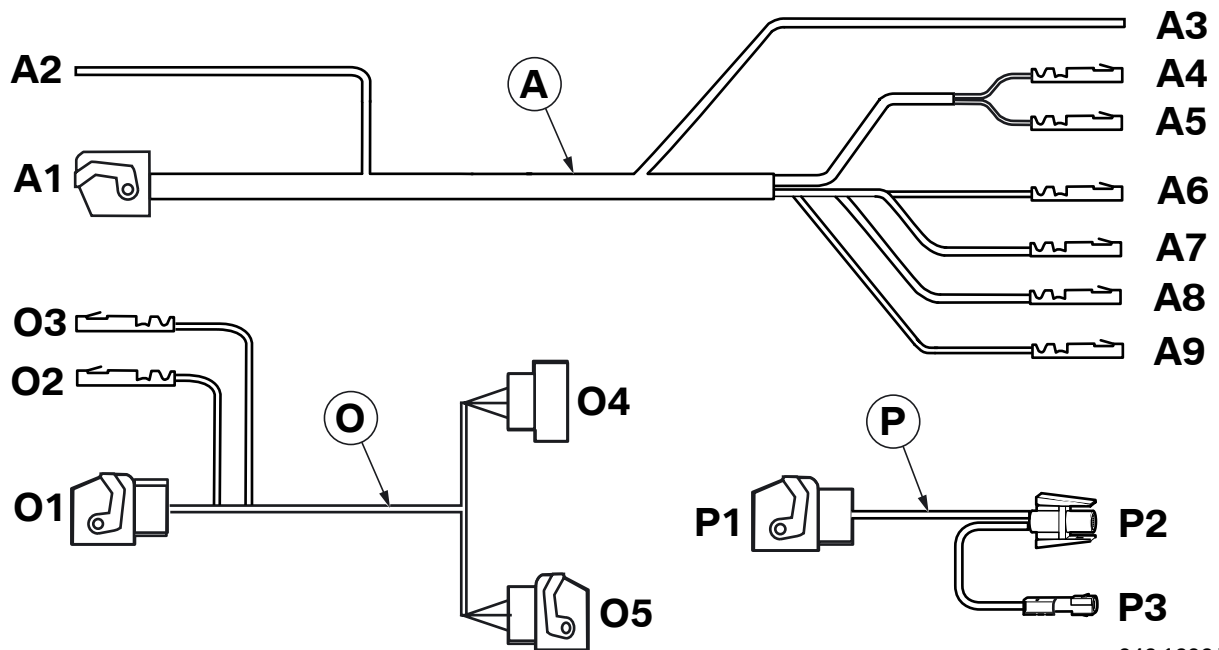
## 5. Connection diagram (cars without SA 601/602 only)



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Branch/Item	Description	Signal	Cable colour / Cross-section	Connection location in the car	Abbreviation / Slot
A	Wiring harness	---	---	---	---
A1	Black 12-pin socket casing	---	---	To control module <b>C</b>	---
A2	Cable open	RFS	GN 0.75 mm <sup>2</sup>	Insulate and tie back	---
A3	Cable open	RFS	GN 0.75 mm <sup>2</sup>	Under the left rear loudspeaker, with miniature connector on white/yellow cable	---
A4	Socket contact	Video +	transparent 0.14 mm <sup>2</sup>	To branch <b>P1</b>	PIN 24
A5	Socket contact	Video -	SW/BR 0.35 mm <sup>2</sup>	To branch <b>P1</b>	PIN 11
A6	Socket contact	RSF inv	SW 0.25 mm <sup>2</sup>	To branch <b>P1</b>	PIN 23
A7	Socket contact	Terminal 30	RT 0.75 mm <sup>2</sup>	To branch <b>P1</b>	PIN 25
A8	Socket contact	Terminal 31	BR 0.75 mm <sup>2</sup>	To branch <b>P1</b>	PIN 12
A9	Socket contact	TA	WS 0.25 mm <sup>2</sup>	Insulate and tie back	---

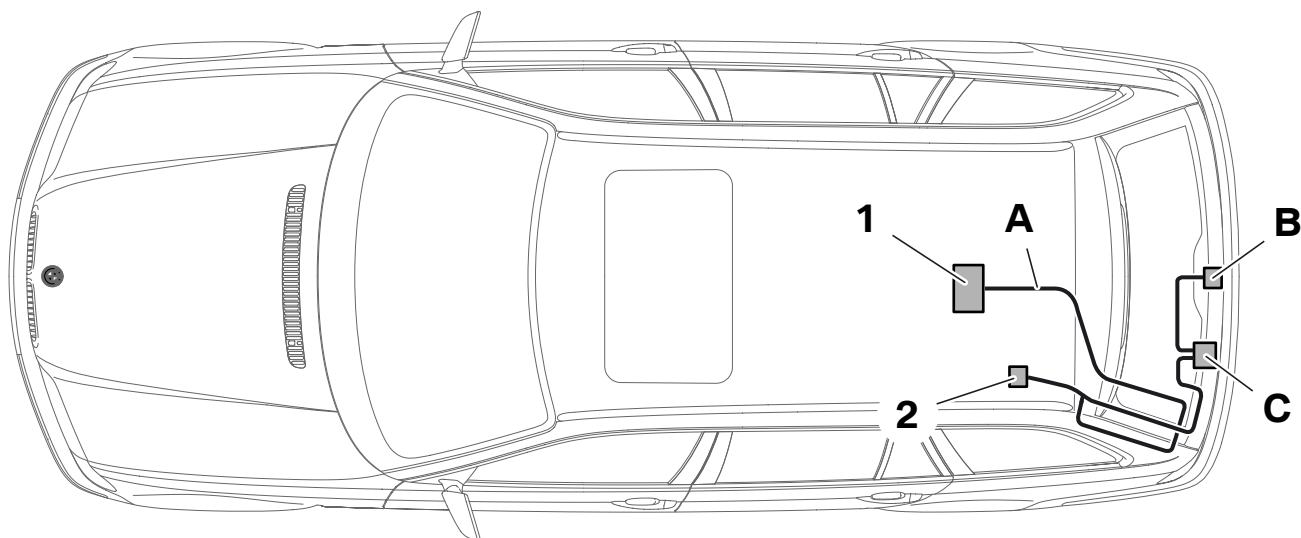
5. Connection diagram (cars without SA 601/602 only)



046 1606 Z

Item	Description	Signal	Cable colour / Cross-section	Connection location in the car	Abbreviation / Slot
O	Adapter cable	---	---	---	---
O1	18-pin natural socket casing	---	---	To the switchbox <b>Q</b>	---
O2	Socket contact	Terminal 30	RT/GE 0.75 mm <sup>2</sup>	To branch <b>P1</b>	PIN 26
O3	Socket contact	Terminal 31	BR 0.75 mm <sup>2</sup>	To branch <b>P1</b>	PIN 13
O4	18-pin BL plug casing	---	---	To standard wiring harness	X1313
O5	18-pin BL socket casing	---	---	To navigation computer	X1313
P	Supply cable	---	---	---	---
P1	26-pin BL socket casing	---	---	To the switchbox <b>Q</b>	---
P2	Black 1-pin socket casing	Terminal R	VI/WS 0.50 mm <sup>2</sup>	To radio receiver, twin-lead terminal with terminal parts <b>AA - AD</b> to the VI/WS cable	X18126 PIN 16
P3	SW 1-pin plug casing	Terminal R	VI/WS 1.50 mm	To radio receiver, twin-lead terminal with terminal parts <b>AA - AD</b> to the VI/WS cable	X18126 PIN 16

## 6. Installation and cabling diagram (cars with SA 601/602 only)



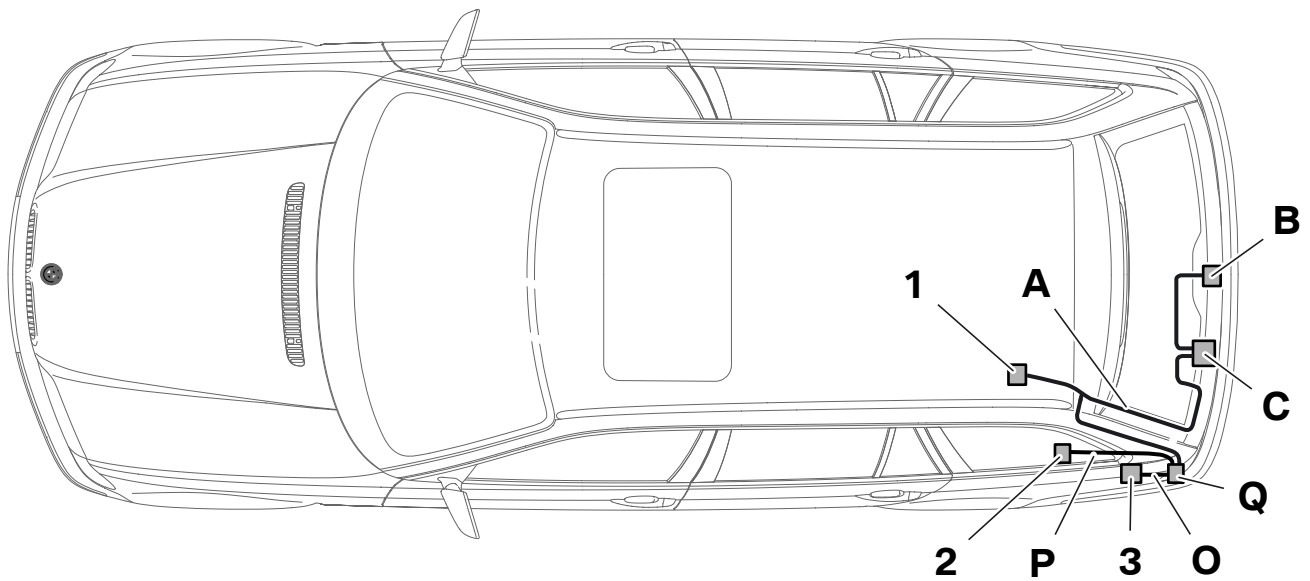
039 0530 Z

### Legend

- A Wiring harness
- B Rear-view camera
- C Control module

- 1 Video module
- 2 RFS terminal tap on the standard wiring harness

## 7. Installation and cabling diagram (cars without SA 601/602 only)



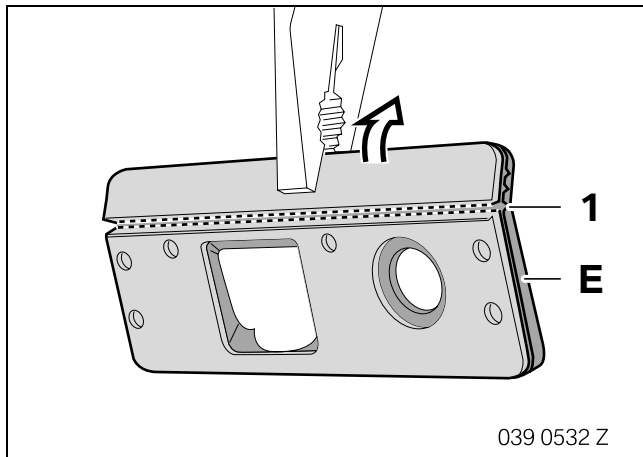
039 0616 Z

### Legend

- A Wiring harness
- B Rear-view camera
- C Control module
- O Adapter cable
- P Supply cable
- Q Switchbox

- 1 RFS terminal tap on the standard wiring harness
- 2 Terminal R tap on radio receiver, plug **X18126**
- 3 Navigation computer

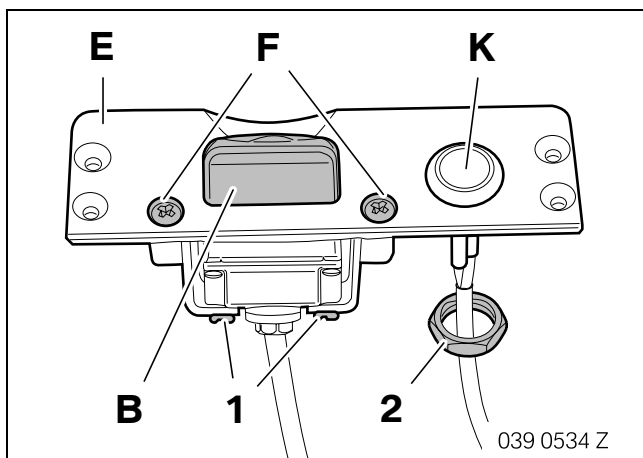
## 8. To install the rear-view camera and button



▶ The seal may have to be raised slightly to make the notches visible. ◀

Cut the seal and mounting plate **E** along the third notch (1) with a knife.

Break the mounting plate **E** and deburr it along the broken edge.

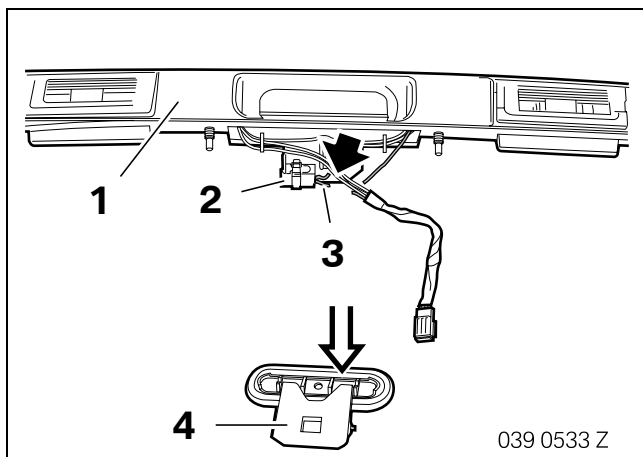


▶ There must be a seal between the mounting plate **E** and the rear-view camera **B**. ◀

Secure the rear-view camera **B** on the mounting plate **E** with screws **F**.

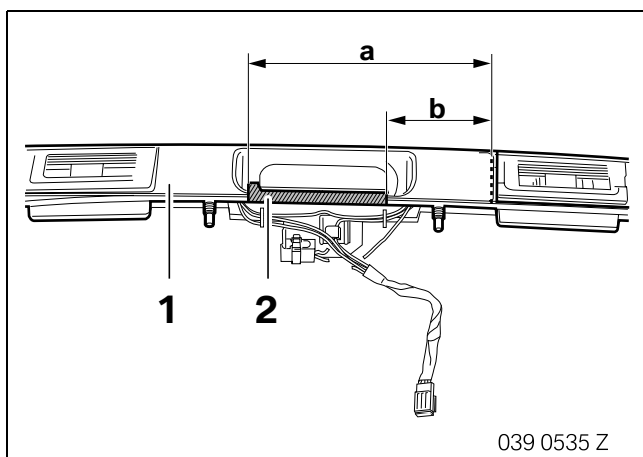
Align the rear-view camera **B** using the screws (1) if necessary, at right-angles to the mounting plate **E**.

Insert the button **K** into the trim **E** and secure it with a union nut (2).



Unclip the bottom for opening the tailgate gong (4) from the handle strip (1).

Cut both cables (3) on the micro switch (2).

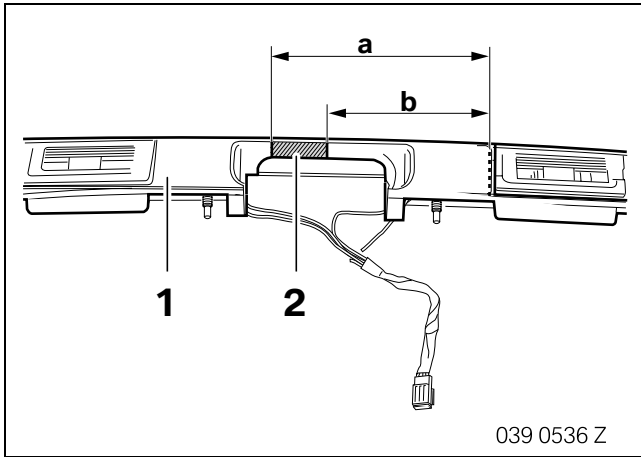


Mark dimensions **a** and **b** on the handle strip (1):

- Dimension **a** = 140 mm
- Dimension **b** = 60 mm

Saw out the handle strip (1) in the marked area (2).

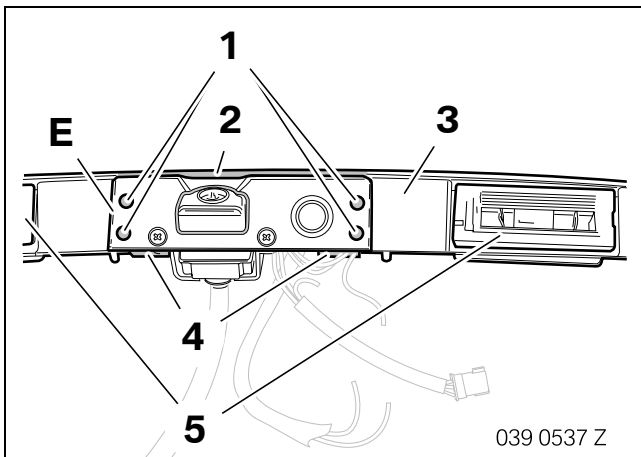
8. To install the rear-view camera and button



Mark dimensions **a** and **b** on the handle strip (1):

- Dimension **a** = 125 mm
- Dimension **b** = 95 mm

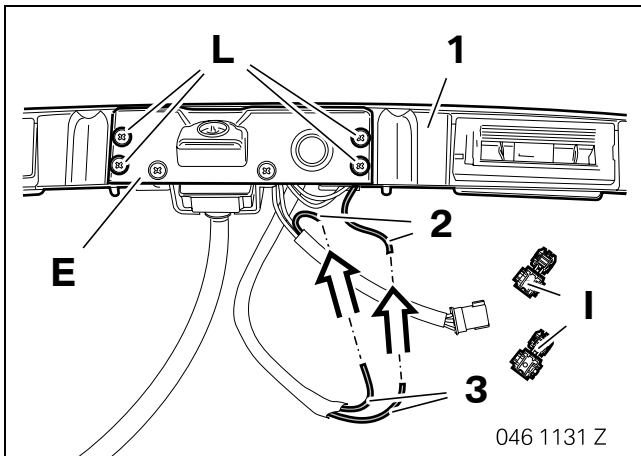
File off the edge of the handle strip (1) in the marked area (2), or cut it out with a knife.



Align the mounting plate **E** on the handle strip (3) as follows:

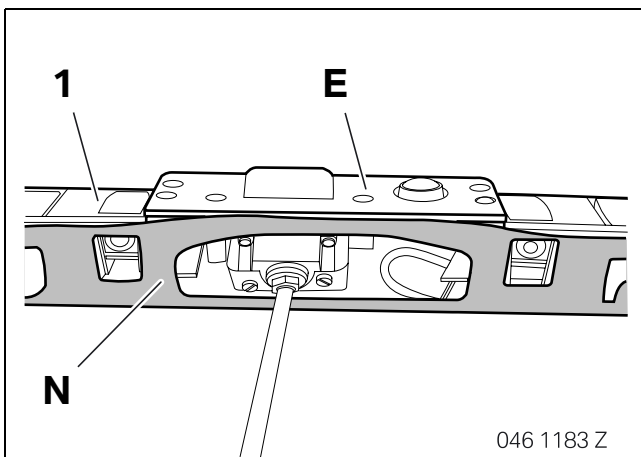
- Mounting plate **E** in the centre between the registration plate lights (5)
- The mounting plate seal **E** must be on the handle strip (3) at the rear (2)
- Edge (4) flush with the handle strip (3)

Mark the holes (1) from the mounting plate **E** on the handle strip (3) and drill them with a 3 mm twist drill bit.



Secure the mounting plate **E** on the handle strip (1) with screws **L**.

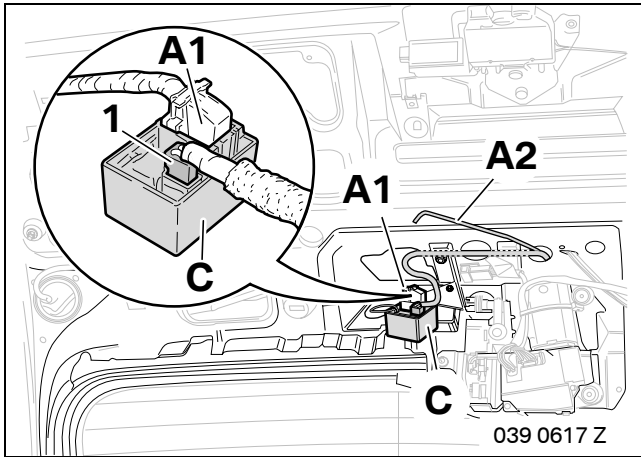
Connect the cable (3) for the button to the open cables (2) using miniature connectors **I**.



Affix the seal **N** on the handle strip (1) and affix the mounting plate **E**.

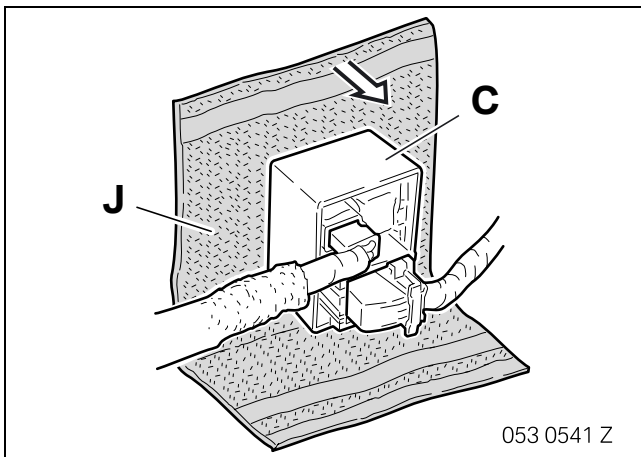
Fit the handle strip (1).

## 9. To install and connect the control unit



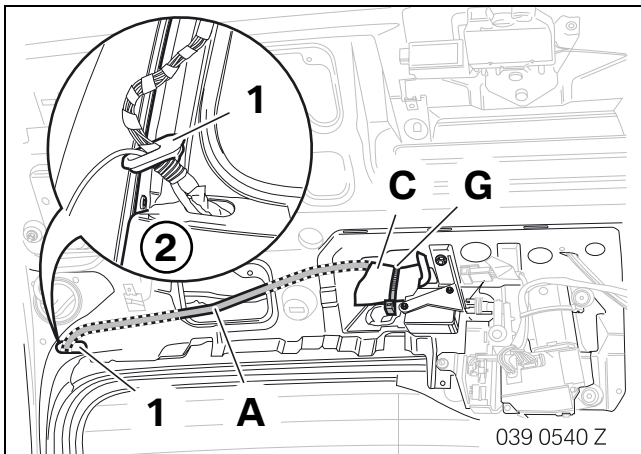
Connect the connection plug (1) of the rear-view camera and branch **A1** (socket casing, 12-pin SW) to the control unit **C**.

Insulate branch **A2**, GN cable, and tie it back.



Affix the protective strip **J** to the control unit **C**.

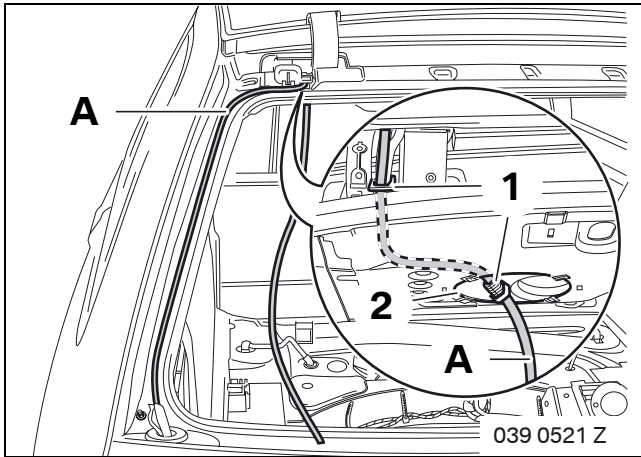
Cut off any excess lengths.



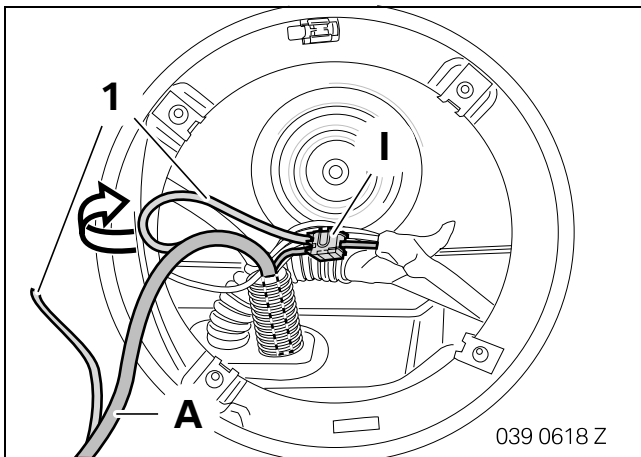
Use cable tie **G** to attach the control unit **C** to the web of the boot lid (2).

Thread the wiring harness **A** through the cable grommet (1) in the boot lid (2).

## 10. To install and connect wiring harness A (cars with SA 601/602 only)

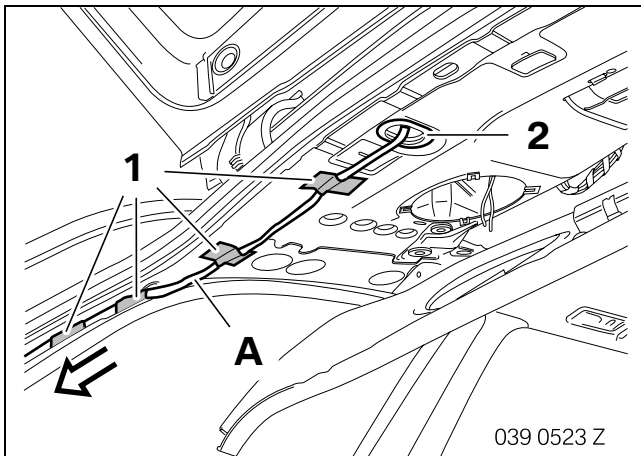


Thread the wiring harness **A** through the cable grommet (1) to the speaker opening (2).



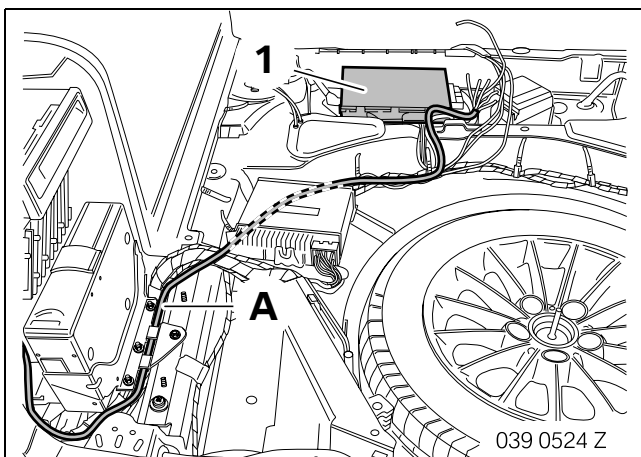
Connect the disconnected green cable (1) of wiring harness **A** as follows:

- Cut the GN cable (1)
- Connect the GN cable (1) coming from the boot lid to the WS/GE cable on the standard wiring harness using a miniature connector **I**



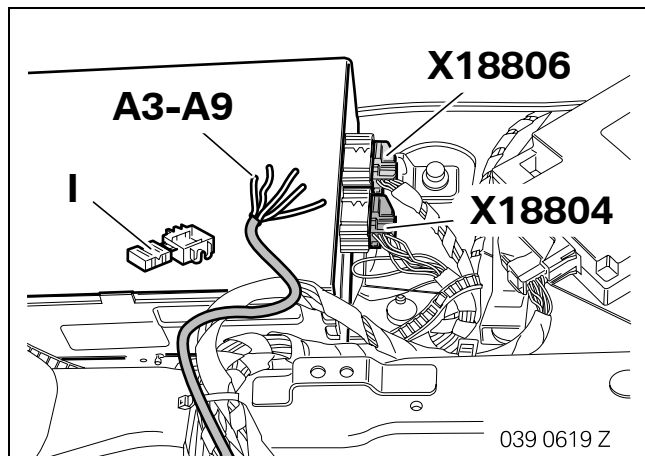
Thread the wiring harness **A** through the cable grommet (2).

Route the wiring harness **A** to the left-hand side of the boot and secure it with strips of adhesive tape (1).



Lay the wiring harness **A** to the video module (1).

10. To install and connect wiring harness A (cars with SA 601/602 only)



Remove the insertion tool and remove the rest of the GN cable (branch **A3**).

Insulate branch **A9**, white cable, and tie it back.

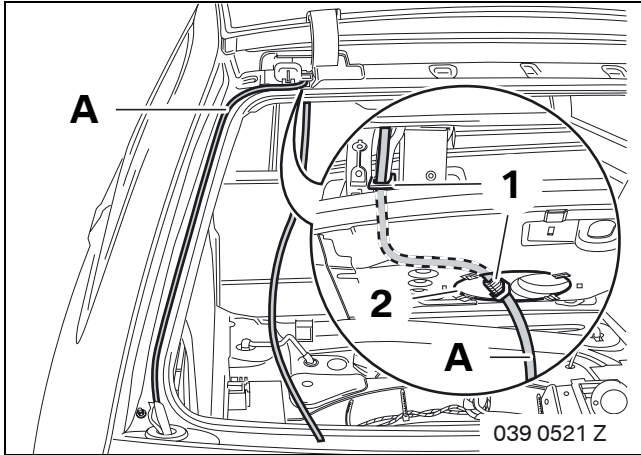
Connect branches **A4** and **A5** to the natural coloured plug **X18806** as follows:

- Branch **A4**, transparent cable, to PIN 13
- Branch **A5**, SW/BR cable, to PIN 14

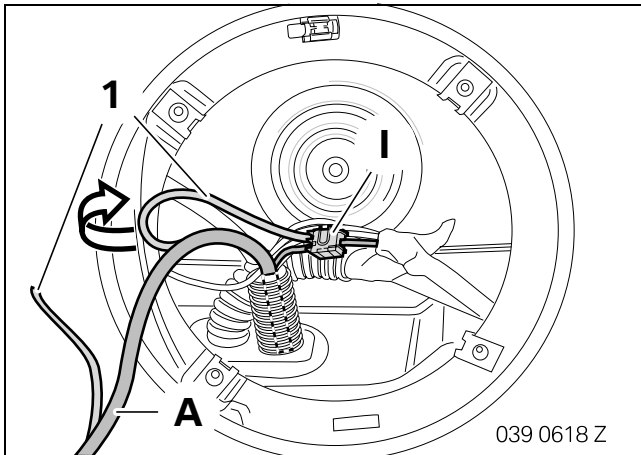
Connect branches **A6 - A8** to the blue plug **X18804** as follows:

- Branch **A6**, SW cable, to PIN 17
- Branch **A7**, RT cable, with miniature connector **I** to the RT/GN cable (PIN 1)
- Branch **A8**, BR cable, with miniature connector **I** to BR cable (PIN 10)

## 11. To install and connect wiring harness A (cars without SA 601/602 only)

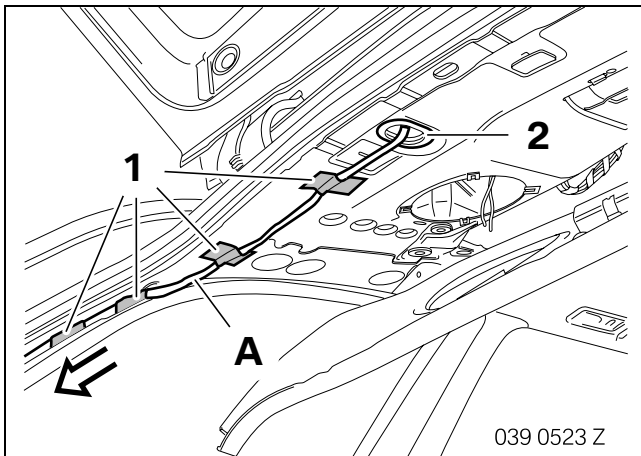


Thread the wiring harness **A** through the cable grommet (1) to the speaker opening (2).



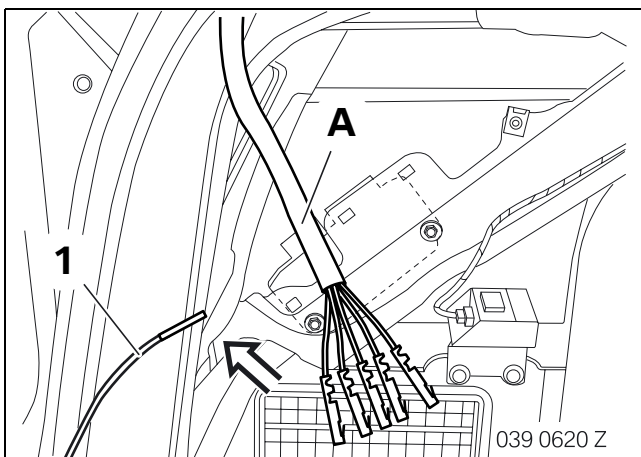
Connect the disconnected green cable (1) of wiring harness **A** as follows:

- Cut the GN cable (1)
- Connect the GN cable (1) coming from the boot lid to the WS/GE cable on the standard wiring harness using a miniature connector **I**



Thread the wiring harness **A** through the cable grommet (2).

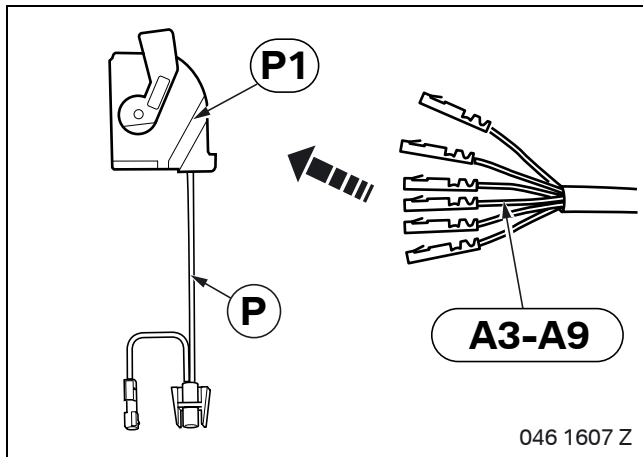
Route the wiring harness **A** to the left-hand side of the boot and secure it with strips of adhesive tape (1).



Route wiring harness **A** to the left side of the boot.

Remove the insertion tool (1).

11. To install and connect wiring harness A (cars without SA 601/602 only)

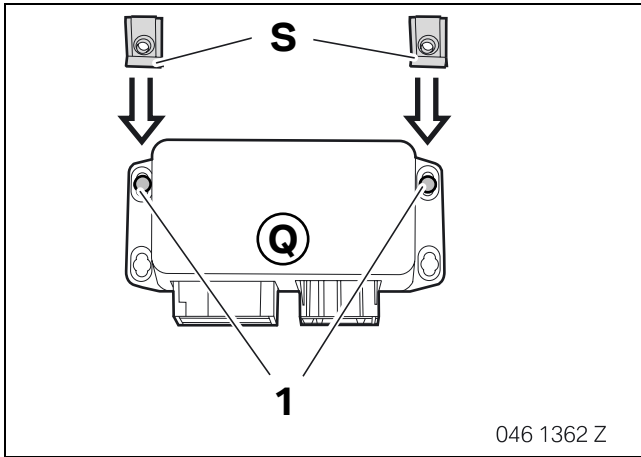


Remove the rest of the GN cable (branch **A3**).  
Insulate branch **A9**, white cable, and tie it back.

Connect branches **A4 - A8** into branch **P1** from supply cable **P** as follows:

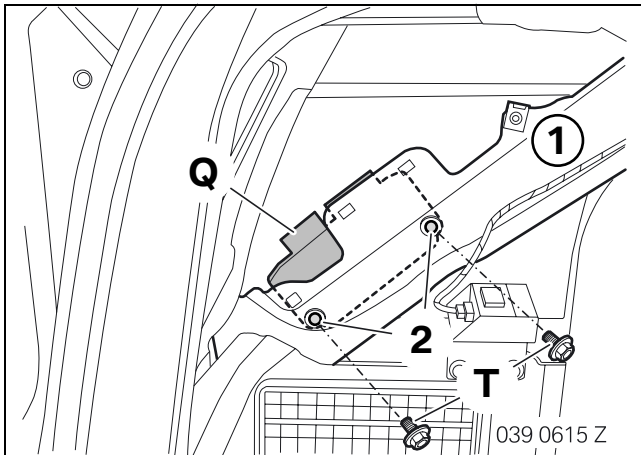
- Branch **A4**, transparent cable, to PIN 24
- Branch **A5**, SW/BR cable, to PIN 11
- Branch **A6**, SW cable, to PIN 23
- Branch **A7**, RT cable, to PIN 25
- Branch **A8**, BR cable, to PIN 12

## 12. To install and connect the switchbox (cars without SA 601/602 only)

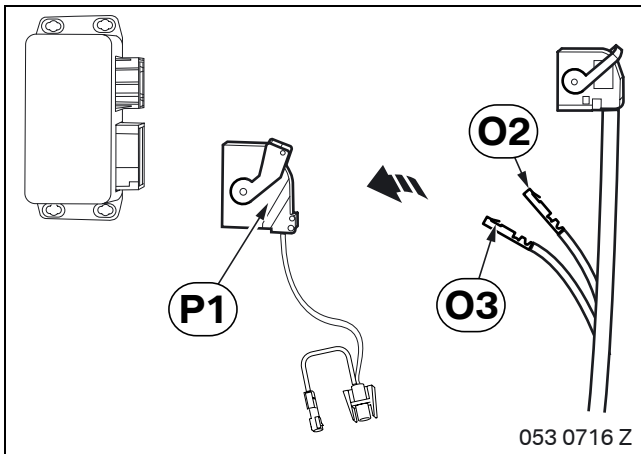


Enlarge the holes (1) in the switchbox **Q** with an 8 mm twist drill bit.

Position speed nuts **S**.

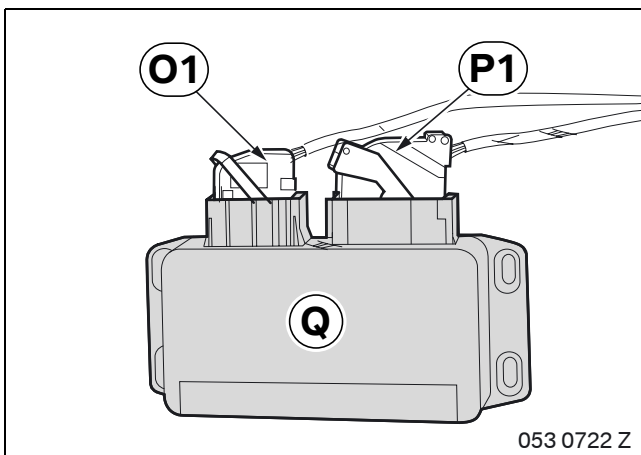


Secure the switchbox **Q** to the holes (1) in the boot strut (2) using hexagonal screws **T**.



Connect branches **O2** and **O3** into branch **P1** as follows.

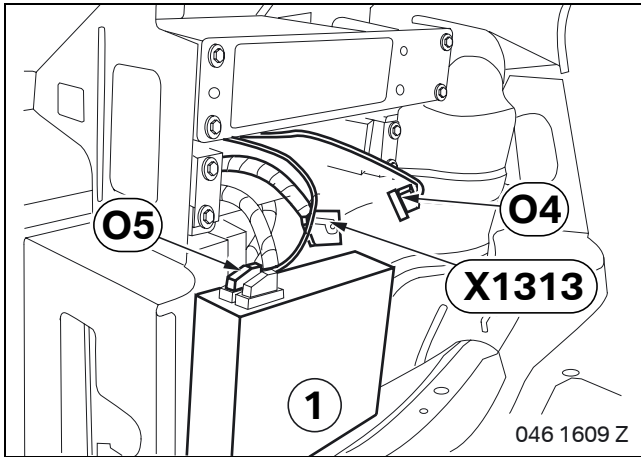
- Branch **O2**, RT/GE cable, to PIN 26
- Branch **O3**, BR cable to PIN 13



Connect branches **O1** and **P1** to switchbox **Q**.

Install the base holder.

12. To install and connect the switchbox (cars without SA 601/602 only)

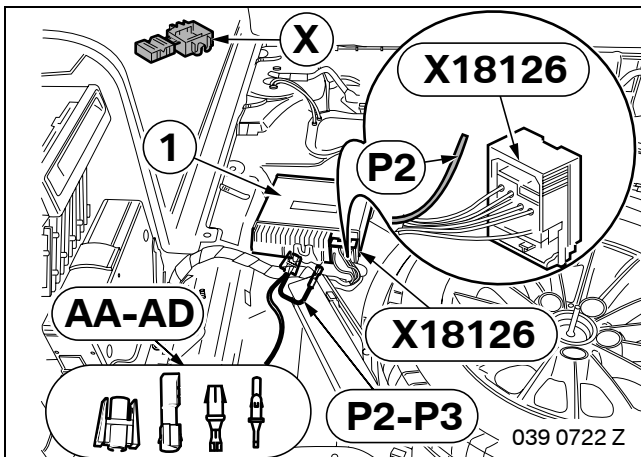


Route branches **O4** and **O5** to the navigation computer (1).

Disconnect the blue plug **X1313** on the navigation computer (1).

- Connect branch **O4** to plug **X1313**
- Connect branch **O5** to the navigation computer (1)

Install the navigation computer (1).



Route branches **P2** and **P3**, VI/WS cables to the radio receiver (1).

▣ If the VI/WS cable has a cross-section greater than 0.75 mm<sup>2</sup>, use a twin-lead terminal with the terminal parts **AA - AD**. ◀

Cut the socket contact off branch **P2** and connect it to the VI/WS cable from plug **X18126** (16-pin socket casing SW, PIN 16) using a miniature connector **I**.

### **13. Concluding work and coding**

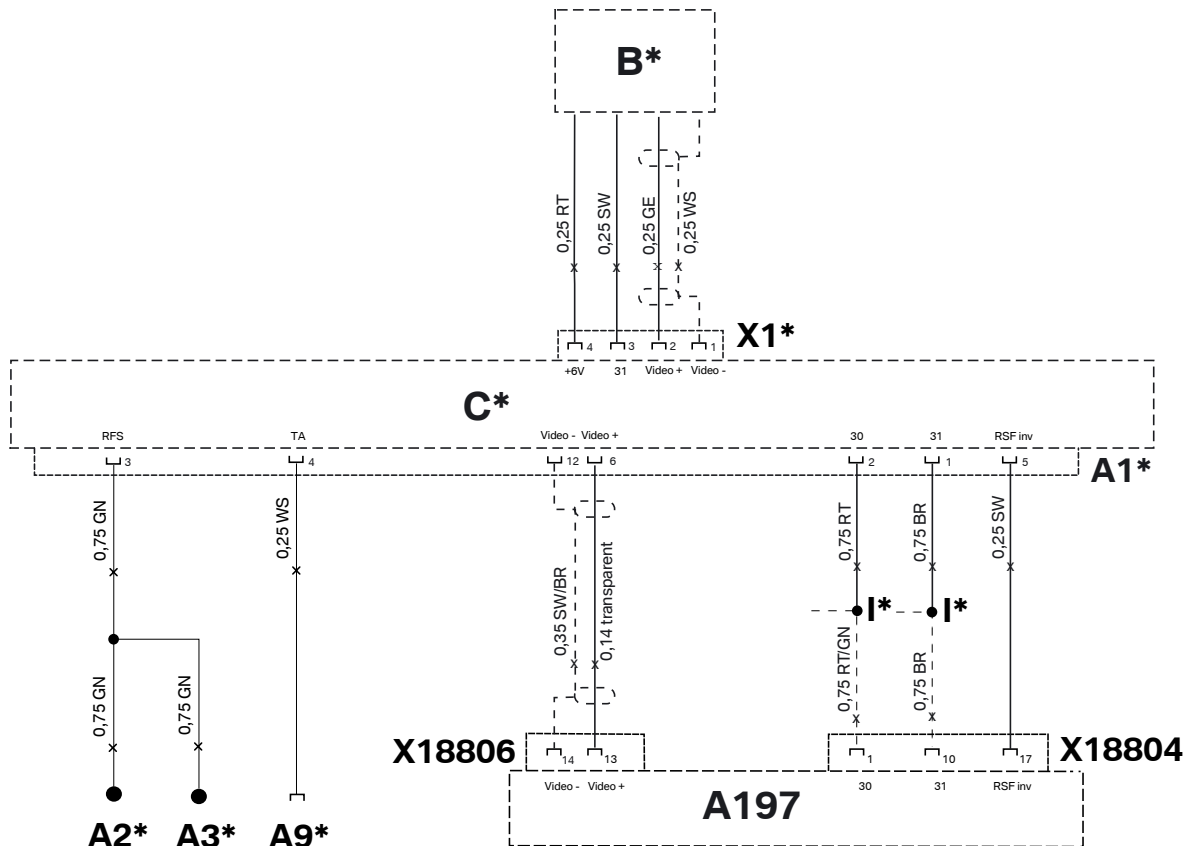
This retrofit system does not require coding.

- Connect the battery
- Conduct a brief test

Check the function of the rear-view camera as follows:

- Switch on the ignition
- Engage reverse; an image must appear on the on-board monitor
- Disengage reverse gear; the on-board monitor must switch over after approx. 5 seconds
  
- Re-assemble the car

## 14. Circuit diagram for rear-view camera (cars with SA 601/602 only)



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### Legend

<b>A197</b>	Video module	<b>A2*</b>	Open cable, insulate and tie back
<b>B*</b>	Rear-view camera	<b>A3*</b>	Open cable, RFS terminal pick-up
<b>C*</b>	Control module	<b>A9*</b>	Socket contact, insulate and tie back
<b>I*</b>	Miniature connector	<b>X1*</b>	SW 4-pin plug
<b>A1*</b>	Black 12-pin socket casing	<b>X18804</b>	BL 18-pin plug
		<b>X18806</b>	18-pin natural plug

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

### Cable colours

BL	Blue	RT	Red
BR	Brown	SW	Black
GE	Yellow	WS	White
GN	Green		



## 15. Circuit diagram for rear-view camera (cars without SA 601/602 only)

### Legend

<b>A112</b>	Navigation computer
<b>B*</b>	Rear-view camera
<b>C*</b>	Control module
<b>Q*</b>	Switchbox
<b>A1*</b>	Black 12-pin socket casing
<b>A2*</b>	Open cable, insulate and tie back
<b>A3*</b>	Open cable, RFS terminal pick-up
<b>A9*</b>	Socket contact, insulate and tie back
<b>O1*</b>	18-pin natural socket casing
<b>P1*</b>	26-pin BL socket casing
<b>P2*</b>	1-pin socket casing SW, terminal R tap
<b>P3*</b>	1-pin plug casing SW, terminal R tap
<b>X1*</b>	SW 4-pin plug
<b>X1313</b>	BL 18-pin plug

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
GN	Green
GR	Grey
RT	Red
SW	Black
VI	Violet
WS	White