

# Original BMW Accessories.

## Installation instructions.



### BMW Advanced Car Eye Retrofit

All BMW models

#### Retrofit kit number

66 21 2 288 544	BMW Advanced Car Eye front camera retrofit kit
66 21 2 288 543	BMW Advanced Car Eye front and rear camera retrofit kit, not for convertible
66 21 2 288 545	Rear view camera upgrade kit, not for convertible

#### Installation time

The installation time for the BMW Advanced Car Eye front and rear camera is **around 1.5 hours**.

If only the BMW Advanced Car Eye front camera retrofit kit is installed, the installation time reduces to **around 1 hour**.

If only the rear view camera upgrade kit is installed, the installation time is around **1.25 hours**.

On cars that have the rear windscreen in the tailgate (Touring, X cars and F20), the installation time increases by **0.5 hours**.

This may vary depending on the 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, wiring diagrams, servicing manuals and work instructions, in a rational order, using the prescribed tools (special tools) and observing current health and safety regulations.

#### **If you experience installation or function problems, restrict troubleshooting to approx. 0.5 hours for mechanical work and 1.0 hour for electrical work.**

To avoid unnecessary extra work and/or costs, an inquiry is to be sent straight away to the technical parts support via the Aftersales Assistance Portal (ASAP).

Quote the following information:

- Chassis number,
- Retrofit kit part number,
- A detailed description of the problem,
- Any work already carried out.

Do not archive the hard copy of these installation instructions since daily updates are provided via ASAP!

## 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.

## Installation information

Ensure that the cables and/or lines are not kinked or damaged as you install them in the car. Costs arising from 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 pictures show LHD cars; proceed accordingly on RHD cars.

Front camera **C** must not restrict the driver's field of vision. Front camera **C** must be installed within the windscreen wiper's wipe area and outside any dyed sun protection strip. It must not be installed in the direct field of vision and must also not extend more than 4 cm into the area cleaned by the windscreen wipers.

Ensure that the function of the sun visor and the adjustment range of the interior mirror are not restricted. After installing front camera **C**, all buttons, plugs and the SD card slot must be freely accessible.

GPS aerial **B** must be attached with a clear line of sight to the sky, however it must not be positioned in the area of the windscreen wipers.

It should be positioned as far away from front camera **C** as possible.

Rear view camera **G** (optional) is installed in the same way as front camera **C** on the rear windscreen, if present, in an area cleaned by the windscreen wiper.

Rear view camera **G** should be positioned in the centre with a horizontal view to the rear.

The arrow on rear view camera **G** must point upwards.

If the picture in the display of front camera **C** is back to front, the display must be changed using the small button on rear view camera **G**.

## Customer information

Print out the "Customer information" section at the end of the installation instructions and give it to the customer.

## Special tools required

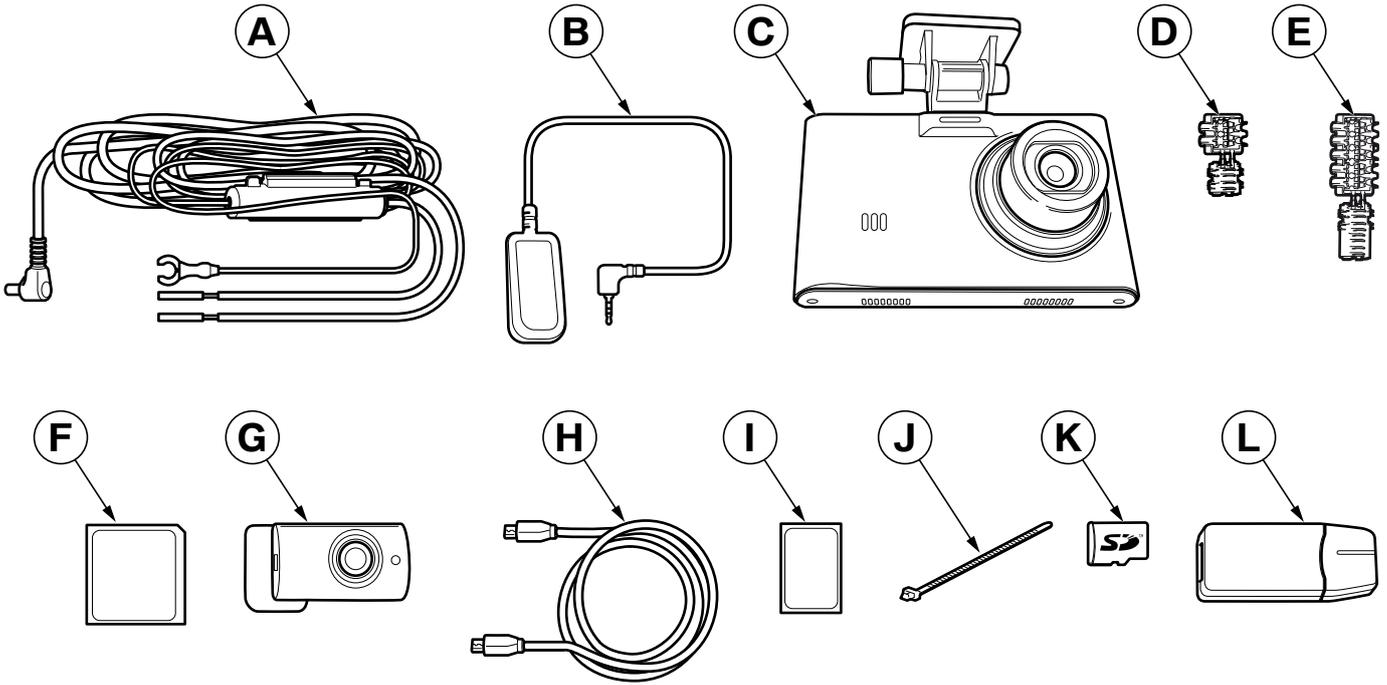
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## 1. Parts list for retrofit kit



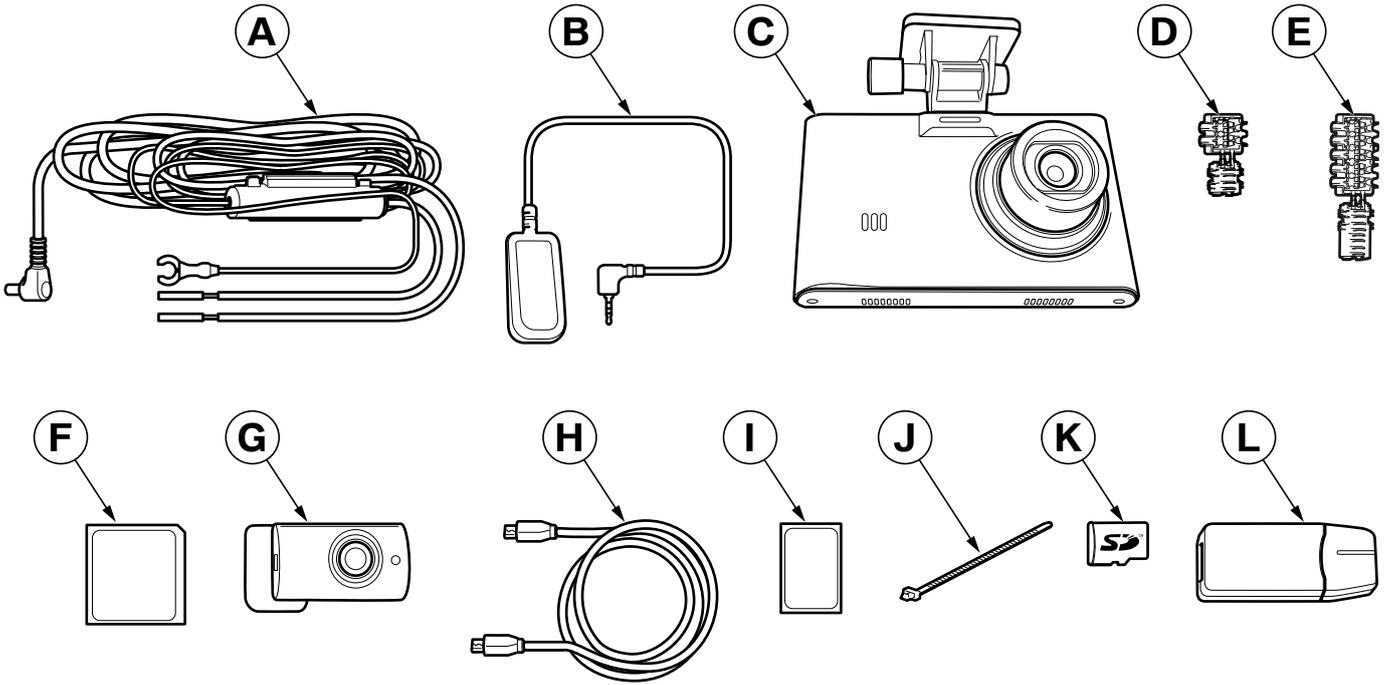
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### Legend

#### BMW Advanced Car Eye front and rear camera retrofit kit

- A** Wiring harness
- B** GPS aerial
- C** Front camera with bracket
- D** 2-way miniature connector (2 x)
- E** 5-way miniature connector
- F** Spare tape for front camera
- G** Rear view camera
- H** Rear view camera connecting cable
- I** Spare tape for rear view camera
- J** Cable tie (20 x)
- K** Micro SD card
- L** Micro SD card to USB adapter

## 1. Parts list for retrofit kit



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### Legend

#### BMW Advanced Car Eye front camera retrofit kit

- A** Wiring harness
- B** GPS aerial
- C** Front camera with bracket
- D** 2-way miniature connector (2 x)
- E** 5-way miniature connector
- F** Spare tape for front camera
- J** Cable tie (5 x)
- K** Micro SD card
- L** Micro SD card to USB adapter

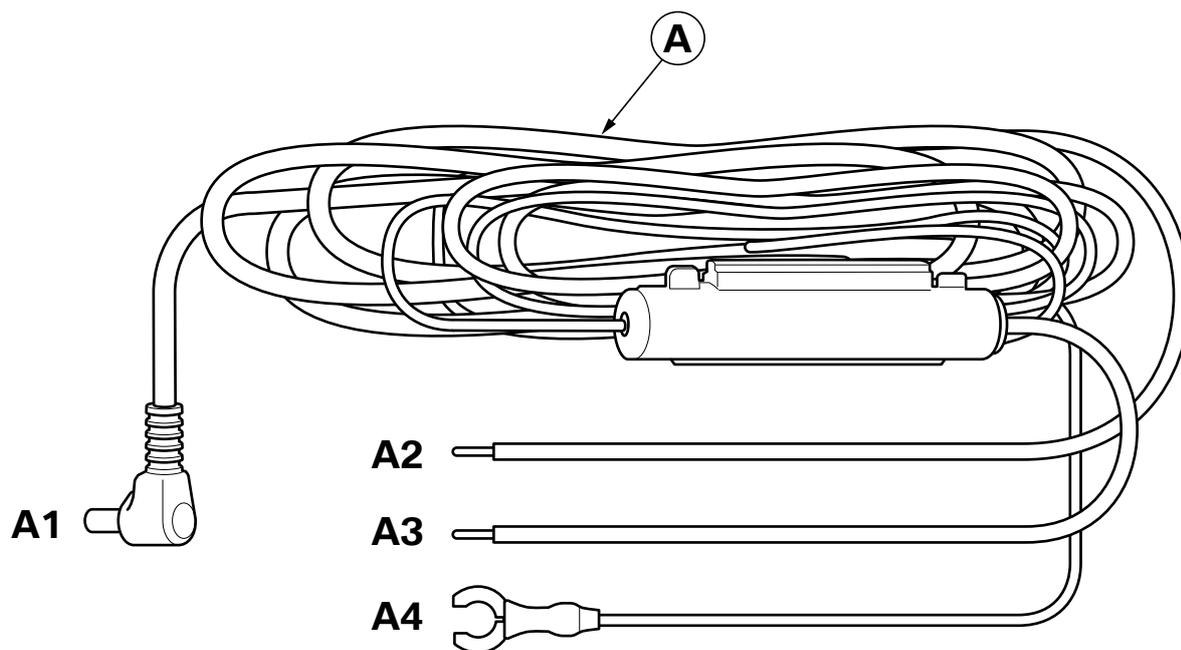
#### Rear view camera upgrade kit

- G** Rear view camera
- H** Rear view camera connecting cable
- I** Spare tape for rear view camera
- J** Cable tie (10 x)

## 2. Preparatory work

	<b>ISTA No.</b>
Disconnect the negative terminal of the battery	12 00 ...
<b>The following components must be removed first of all</b>	
<b>All cars in the E series, as well as F0x, F1x and F25 (cars with CAS)</b>	
Trim for front left A pillar	51 43 201
Pedal trim	51 45 184
Side footwell trim on the left A pillar	51 43 070
Finisher on bottom left B pillar (only where the rear camera is installed)	51 43 150
Back seat (only where the rear camera is installed)	52 26 ...
Rear left backrest side section (only where the rear camera is installed)	52 26 ...
Finisher on rear left roof pillar (only where the rear camera is installed)	51 43 ...
<b>Only cars from F2x onwards, except F25 (cars with FEM or BDC)</b>	
Trim for front right A pillar	51 43 201
Bottom right dashboard trim	51 45 181
Side footwell trim on right A pillar	51 43 075
Finisher on bottom right B pillar (only where the rear camera is installed)	51 43 150
Back seat (only where the rear camera is installed)	52 26 ...
Rear right backrest side section (only where the rear camera is installed)	52 26 ...
Finisher on rear right roof pillar (only where the rear camera is installed)	51 43 ...
<b>Also on cars with rear windscreen in the tailgate (Touring, X cars and F20)</b>	
Tailgate trim	51 49 000

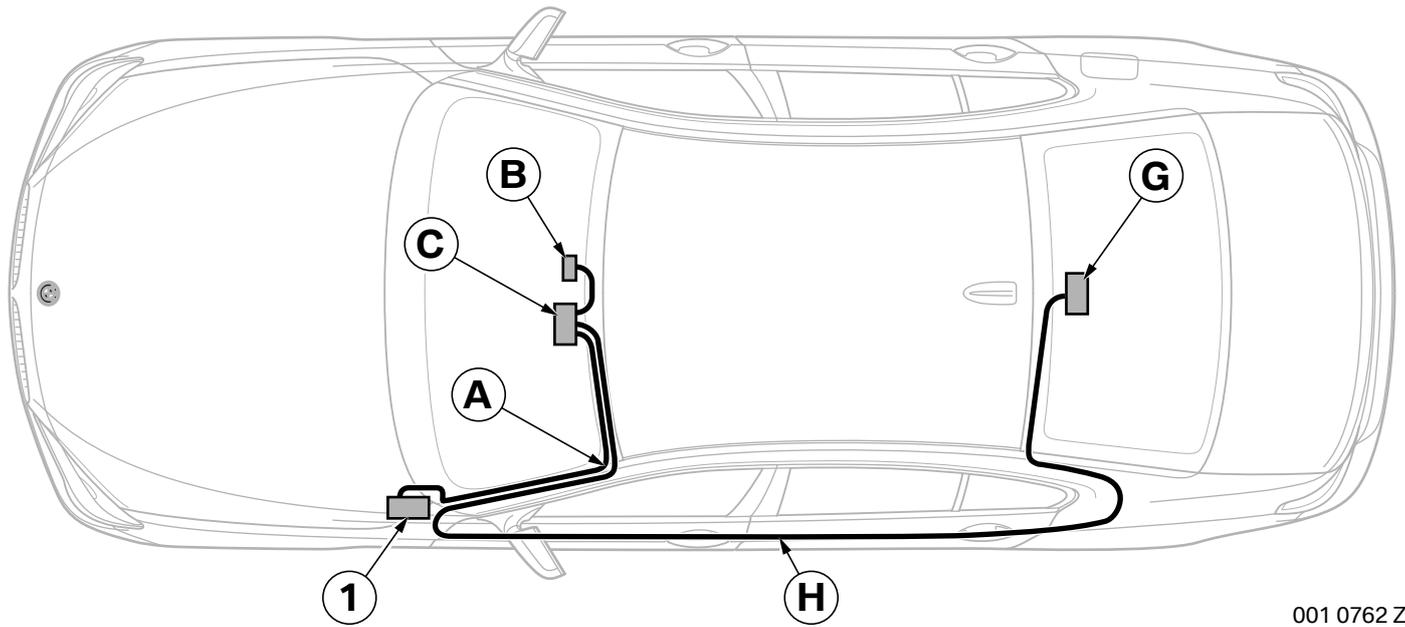
### 3. Retrofit wiring harness connection diagram



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Item	Designation	Signal	Cable colour / cross-section	Connection location in the car	Abbreviation / slot
A	Wiring harness	---	---	---	---
A1	Jack plug	---	---	To front camera <b>C</b>	---
A2	Open cable	Terminal 30	GE 0.75 mm <sup>2</sup>	<b>Only cars in the E series and F0x, F1x and F25</b> With miniature connector <b>E</b> to CAS control unit <b>A16</b> <b>Only cars from F2x onwards, except F25</b> With miniature connector <b>E</b> to FEM <b>A173</b> or BDC <b>A258</b>	X13376/A16*1B PIN 34  A173*3B/A258*3B PIN 33
A3	Open cable	Terminal 15	RT 0.75 mm <sup>2</sup>	<b>Only cars in the E series and F0x, F1x and F25</b> With miniature connector <b>D</b> to CAS control unit <b>A16</b> <b>Only cars from F2x onwards, except F25</b> With miniature connector <b>D</b> to FEM <b>A173</b> or BDC <b>A258</b>	X13376/A16*1B PIN 14  A173*3B/A258*3B PIN 20
A4	Open cable	Terminal 31	SW 0.75 mm <sup>2</sup>	<b>Only cars in the E series and F0x, F1x and F25</b> With miniature connector <b>D</b> to CAS control unit <b>A16</b> <b>Only cars from F2x onwards, except F25</b> With miniature connector <b>D</b> to FEM <b>A173</b> or BDC <b>A258</b>	X13376/A16*1B PIN 12  A173*3B/A258*3B PIN 24
H	Rear view camera connecting cable	---	---	---	---
H1	Mini-B USB plug	---	---	To rear view camera <b>G</b>	---
H2	Micro-B USB plug	---	---	To front camera <b>C</b>	---

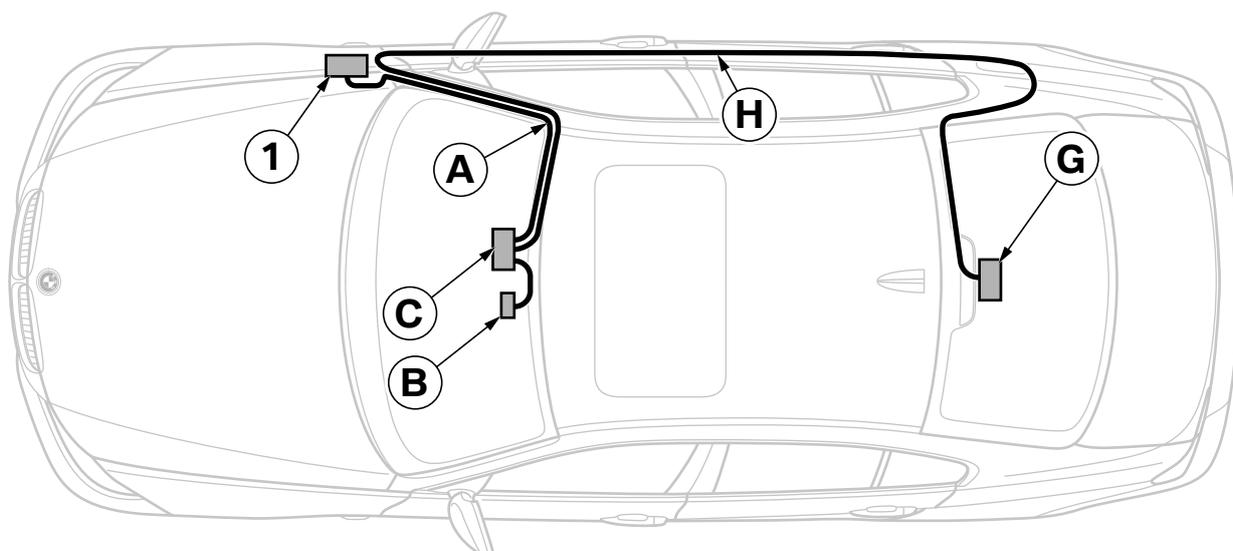
#### 4. Installation and cabling diagram for cars in the E series and F0x, F1x and F25



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- A** Wiring harness
- B** GPS aerial
- C** Front camera with bracket
- G** Rear view camera
- H** Rear view camera connecting cable
- 1** CAS control unit **A16**

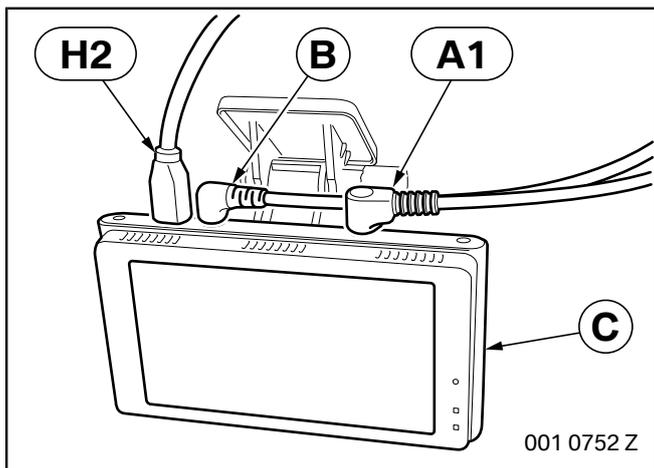
## 5. Installation and cabling diagram for cars from F2x onwards, except F25



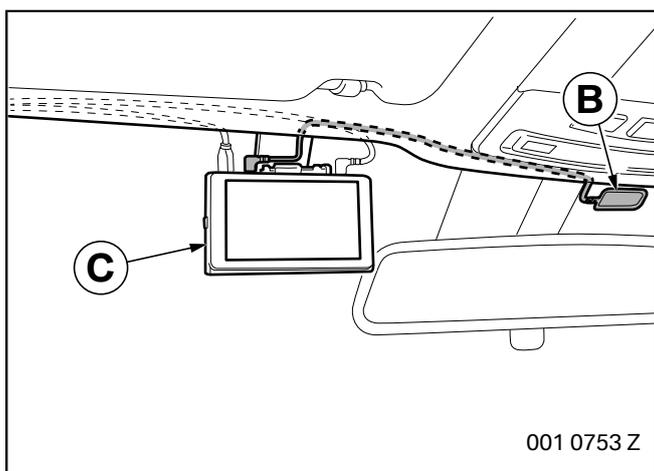
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- A** Wiring harness
- B** GPS aerial
- C** Front camera with bracket
- G** Rear view camera
- H** Rear view camera connecting cable
  
- 1** FEM **A173** or BDC **A258**

## 6. Installation



Connect branch **A1**, GPS aerial **B** and branch **H2** (optional) to front camera **C**.

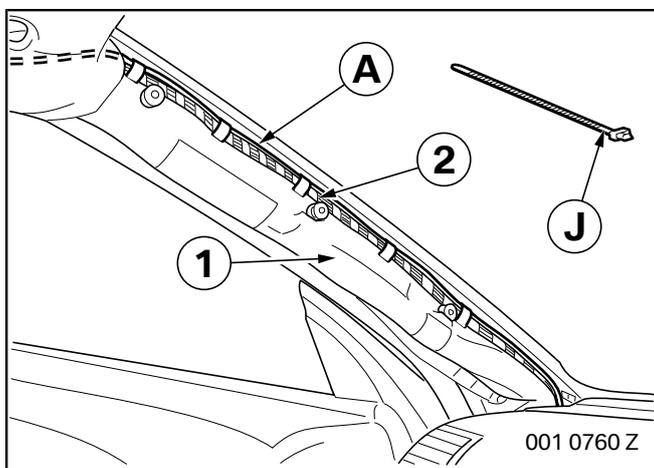


Front camera **C** must not restrict the driver's field of vision (see installation notes on page 2).

After installing front camera **C**, all buttons, plugs and the SD card slot must be freely accessible.

The bonding surfaces must be clean and free of grease. Working temperature at least 20 °C. ◀

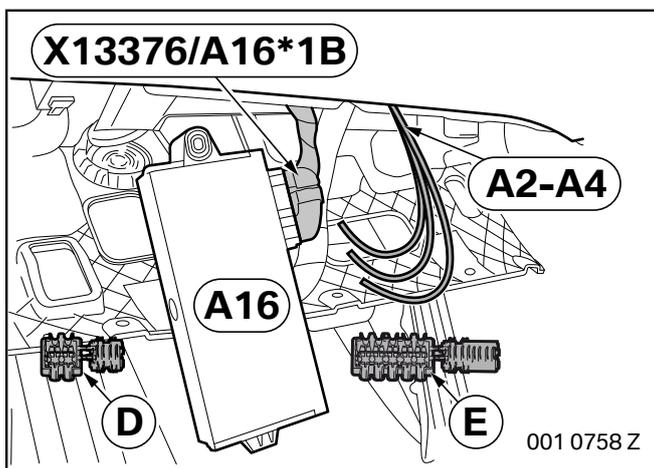
Stick front camera **C** and GPS aerial **B** to the front windscreen.



**Only cars in the E series and F0x, F1x and F25**

In order to not adversely affect the function of the airbag (1), secure wiring harness **A** to the standard wiring harness (2) with cable tie **J**. ◀

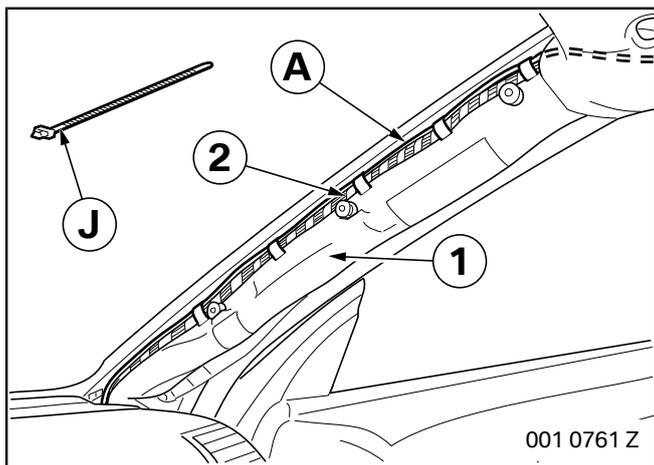
Route wiring harness **A** and rear camera connecting cable **H** (optional) along the left A pillar into the footwell.



Connect branches **A2-A4** as follows to CAS control unit **A16**, plug **X13376/A16\*1B**:

- Branch **A2**, GE cable, using miniature connector **E** to the cable from PIN 34
- Branch **A3**, RT cable, using miniature connector **D** to the cable from PIN 14
- Branch **A4**, SW cable, using miniature connector **D** to the cable from PIN 12

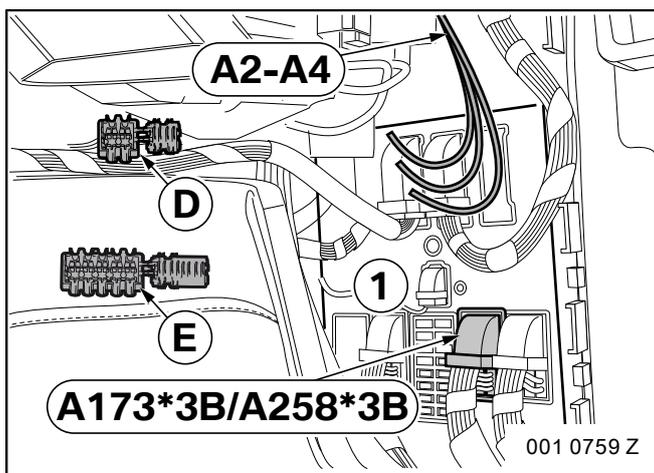
## 6. Installation



### Only cars from F2x onwards, except F25

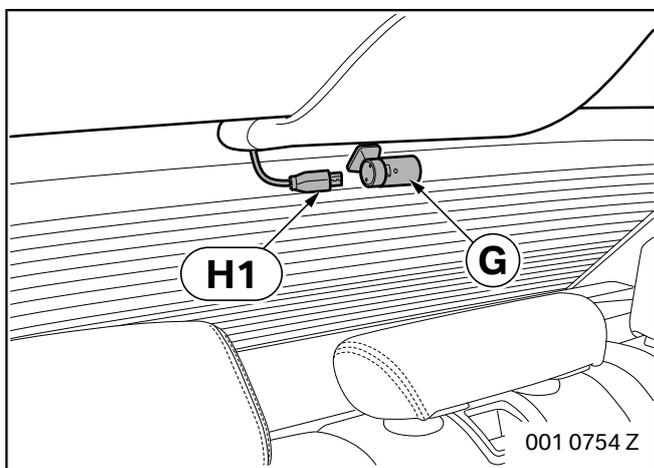
**!** In order to not adversely affect the function of the airbag (1), secure wiring harness **A** to the standard wiring harness (2) with cable tie **J**. ◀

Route wiring harness **A** and rear camera connecting cable **H** (optional) along the right A pillar into the footwell.



Connect branches **A2-A4** as follows to FEM **A173** or **A258**, plug **A173\*3B/A258\*3B**:

- Branch **A2**, GE cable, using miniature connector **E** to the cable from PIN 33
- Branch **A3**, RT cable, using miniature connector **D** to the cable from PIN 20
- Branch **A4**, SW cable, using miniature connector **D** to the cable from PIN 24



### Only where the rear view camera (optional) is installed

**▷** Rear view camera **G** must not restrict the driver's field of vision.

The bonding surfaces must be clean and free of grease. Working temperature at least 20 °C. ◀

Stick rear view camera **G** onto the windscreen.

Route branch **H1** along the standard wiring harness to the rear windscreen and connect to rear view camera **G**.

## 7. Concluding work and coding

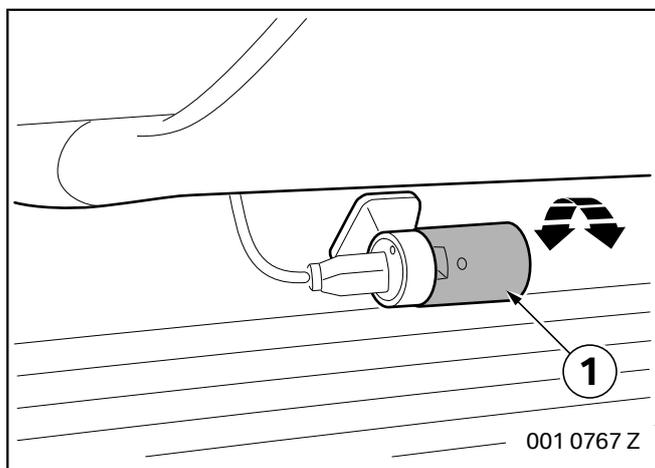
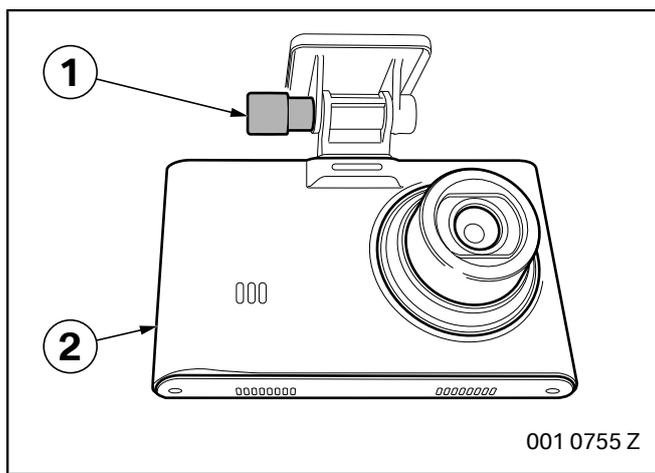
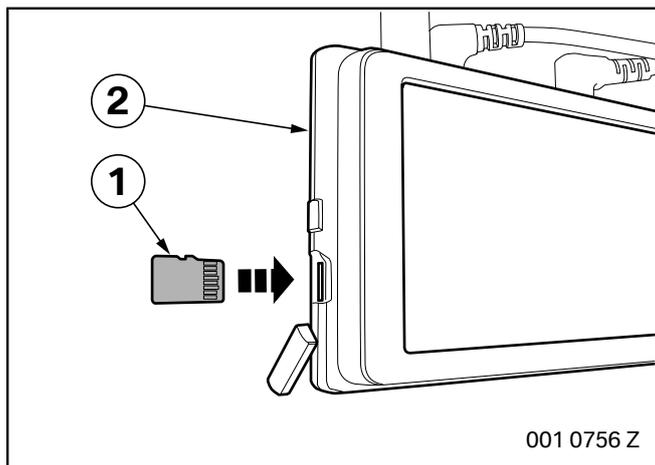
The retrofit system does not require programming / coding.

- Adjust the front and rear view camera as per the customer information
- Conduct a function test
- Re-assemble the car in a logical manner

The following parts must be given to the customer:

- Micro SD card **K**
- Micro SD card to USB adapter **L**
- Spare tape for front camera **F**
- Spare tape for rear view camera **I**
- Customer information

## 8. Customer information



### Commissioning

- ▶ The micro SD card (1) must only be inserted into and removed from the front camera (2) while the camera is switched off, since otherwise data can be damaged and malfunctions can occur. ◀

Slide the micro SD card (1) into the front camera (2).

### Adjusting the front camera

- ⚠ Risk of accident!  
All settings must only be carried out while the car is stationary. ◀

Only the upper quarter of the image should show sky over the horizon. The middle 2/4 display the traffic situation and the lowest quarter shows the near area, or the bonnet.

Undo the fastening screw (1) and adjust the angle of the front camera (2) until this corresponds to the definition set out above.

Tighten the fastening screw (1) again.

### Adjusting the rear view camera

- ⚠ Risk of accident!  
All settings must only be carried out while the car is stationary. ◀

Only the upper quarter of the image should show sky over the horizon. The middle 2/4 display the traffic situation and the lowest quarter shows the near area, or the bonnet.

Swivel the rear view camera (1) far enough until the angle of the rear view camera (1) corresponds to the definition described above.

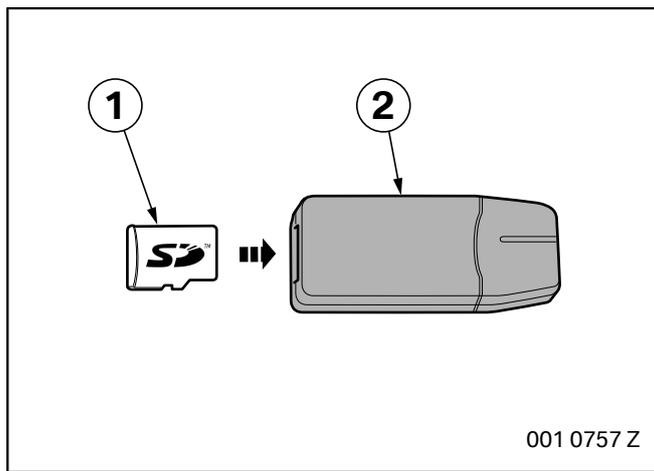
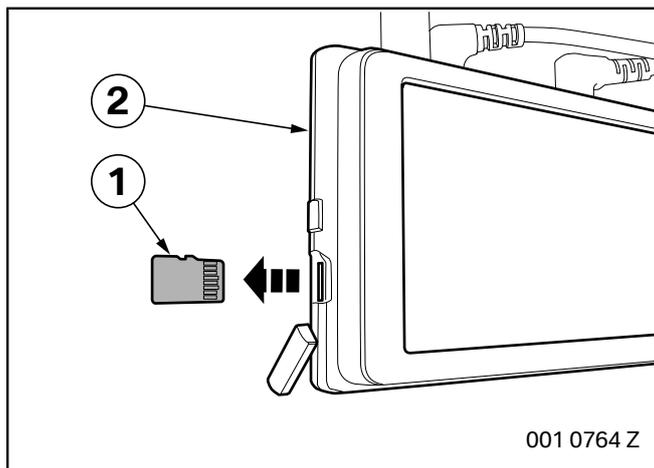
### Setting the time

- ▶ Setting a time makes finding a video sequence easier.

If the GPS aerial is connected, the time and date are set automatically. ◀

Adjust the time zone in the front camera; to do this, see the enclosed operating instructions.

## 8. Customer information



### Reading data via the PC

▶ The micro SD card (1) must only be inserted into and removed from the front camera (2) while the camera is switched off, since otherwise data can be damaged and malfunctions can occur. ◀

Slide the micro SD card (1) out of the front camera (2).

Slide the micro SD card (1) into the USB adapter (2).

Connect the USB adapter (2) to your PC.

The reference source for the required software can be found in the enclosed operating instructions.