

Original BMW Parts and Accessories. Installation Instructions.



BMW Advanced Car Eye 3.0 Retrofit.

BMW X5 (G05, G05 LCI)

BMW X6 (G06, G06 LCI)

BMW X7 (G07, G07 LCI)

BMW X5 M (F95, F95 LCI)

BMW X6 M (F96, F96 LCI)

BMW XM (G09 PHEV)

Retrofit kit number

BMW Advanced Car Eye 3.0 Pro (Pro version with display and radar)

66 21 5 A44 493

66 21 5 A44 495

66 21 5 A44 497

BMW Advanced Car Eye 3.0

66 21 5 A44 494

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66 21 5 A44 498

Installation time

The installation time for the BMW Advanced Car Eye front and rear window camera retrofit is **approx. 2.0 hours**.

If only the BMW Advanced Car Eye front camera retrofit with display is being installed, the installation time is reduced to **approx. 1.0 hour**.

On cars that have the rear window in the tailgate, the installation time increases by **0.5 hours**.

These times 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.

These installation instructions are intended for use by qualified specialist staff trained on BMW cars with the relevant expert knowledge.

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

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

To avoid unnecessary extra work and/or costs, please send an inquiry to the technical parts support team.

Quote the following information:

- VIN,
- retrofit kit part number,
- a detailed description of the problem,
- any work already carried out.

Please do not archive the printout of these installation instructions. The current version can be found in the EPC (electronic parts catalogue).

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 warning text.



Refer to safety instructions for working on electric/hybrid cars, see ISTA/AIR 61 00 ...

The high voltage system must be disconnected from the supply before starting the work.

Do not start the work if the KOMBI does not indicate that the power supply has been disconnected. Danger of death.

A certified electrician, qualified to work on 1000 V DC systems and using suitable measuring instruments and methods, must establish that the power supply has been disconnected before work is started.

In these cases, you must contact Technical Support. In addition, the car must be locked and cordoned off using tapes.

Installation information

Ensure that the cables and/or lines are not kinked or damaged as you install them in the car. Costs incurred by this will not be reimbursed by BMW AG.

Additional cables/wires that are installed must be secured with cable ties. If the specified PIN chambers are occupied, bridges, double crimps, or twin-lead terminals must be used.

All illustrations show LHD cars; proceed in the same way on RHD cars.

The front camera with display **C** or the front camera **D** must not restrict the driver's view. The lens on the front camera with display **C** or the front camera **D** must be within the wiper area of the windscreen wipers and outside the sun protection strip (screen-printed strip).

Ensure that the function of the sun visor and the adjustment range of the interior rear-view mirror are not restricted.


All buttons and the SD card slot must be freely accessible after the front camera with display **C** or the front camera **D** has been installed.


The rear window camera **E** must not restrict the driver's view. Ideally, the rear window camera **E** should be positioned in the area whose view is blocked by the headrests (or 3rd row of seats).

The rear window camera **E** must be installed in the same way as the front camera with display **C** or the front camera **D** on the rear window in an area cleaned by the windscreen wiper.

When affixing the front camera with display **C** or the front camera **D**, ensure that no excessive tension or pressure is exerted on the camera by the connection cable, as the front camera with display **C** or the front camera **D** may otherwise become detached.

The adhesive strip already installed on the front camera with display **C** or the front camera **D** may only be used once.

 The installation work is only shown for the front camera with display **C**, use the same procedure for the front camera **D**. ◀

 On cars where the rear window camera **E** is not installed, branch **B5** must be tied back and stowed so that it does not rattle. ◀

Ordering instructions

The 2-way miniature connector **F** is not included in the retrofit kit and must be ordered separately (see EPC for part number and further details).

The fuse **G** is not included in the retrofit kit and must be ordered separately (see EPC for part number and further details).

Socket contact MCP 2.8 x 0.8 **H** is not included in the retrofit kit and must be ordered separately (see EPC for part number and further details).

Customer information

Give the operating instructions (1 page) and, if there is one, the attachment to the declaration of conformity to the customer.

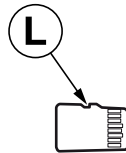
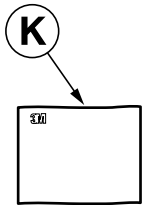
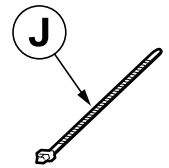
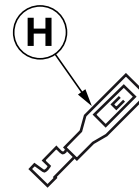
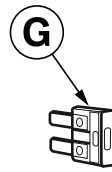
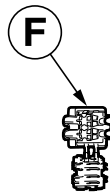
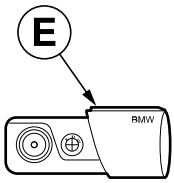
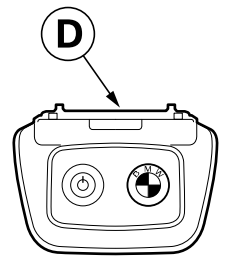
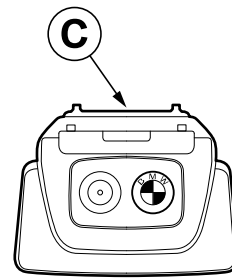
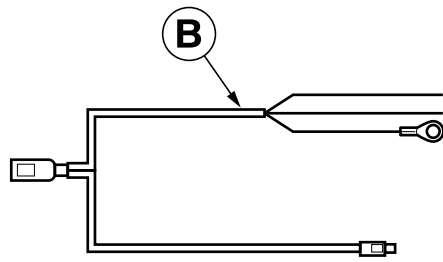
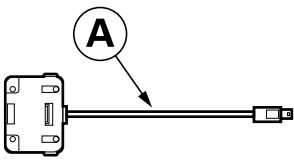
Special tools required

Refer to the relevant ISTA/AIR repair manual for details of the special tool required.

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1. Parts list



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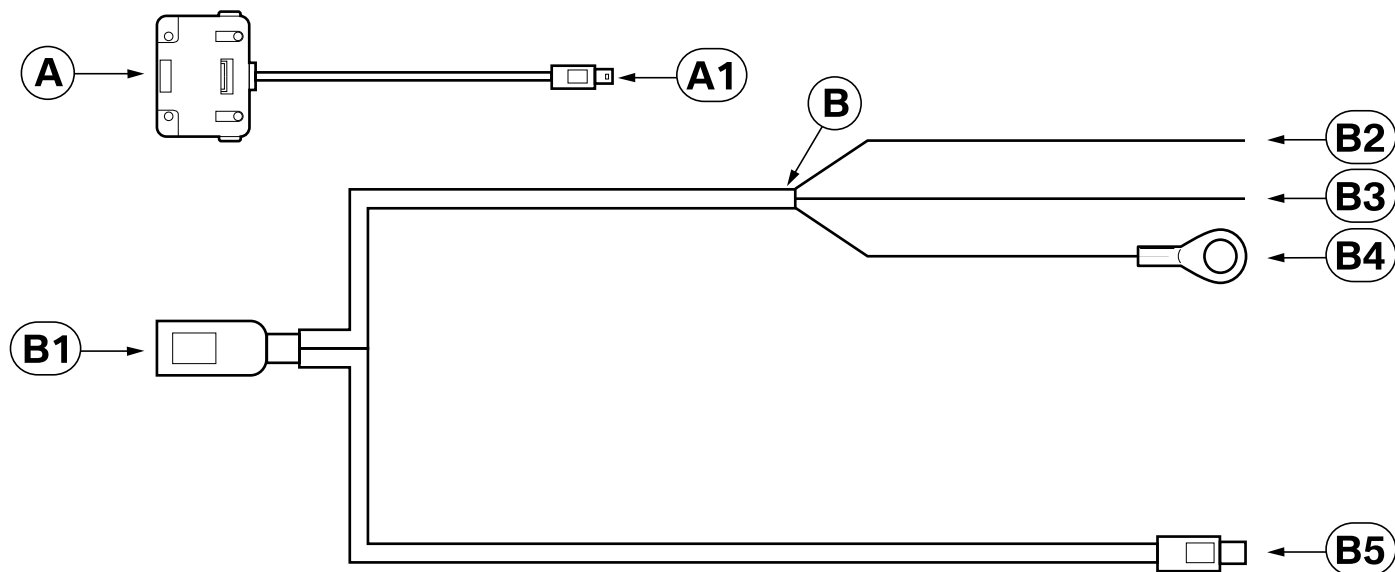
Legend

- A** Base
- B** Retrofit wiring harness
- C** Front camera with display
- D** Front camera
- E** Rear window camera
- F** 2-way miniature connector (not supplied with the retrofit kit)
- G** MINI 5A fuse (not included in the retrofit kit)
- H** Socket contact MCP 2.8 x 0.8 (not supplied with the retrofit kit)
- J** Cable ties (20 x)
- K** Cleaning cloth (2 x)
- L** Micro SD card

2. Preparatory work

	ISTA/AIR No.
Disconnect all negative battery cables	61 20 900
Release and disconnect various plug connections	61 13 ...
Cut, strip and crimp cables	61 11 ...
Open the plug housing and remove the contacts from various connection systems	61 13 ...
Instructions for handling wiring harnesses and cables	61 00 ...
Instructions for handling the documents: Repair manual, technical data, tightening torques	00 11 ...
The following components must be removed first of all	
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
Trim on bottom right B pillar (only if installing the rear window camera)	51 43 150
Rear seat (only if installing the rear window camera)	52 26 ...
Rear right backrest side section (only if installing the rear window camera)	52 26 ...
Trim on rear right roof pillar (only if installing the rear window camera)	51 43 ...
Release the front right-hand power distributor	---
Tailgate trim (only if installing the rear window camera)	51 49 000

3. Base and retrofit wiring harness connection diagram



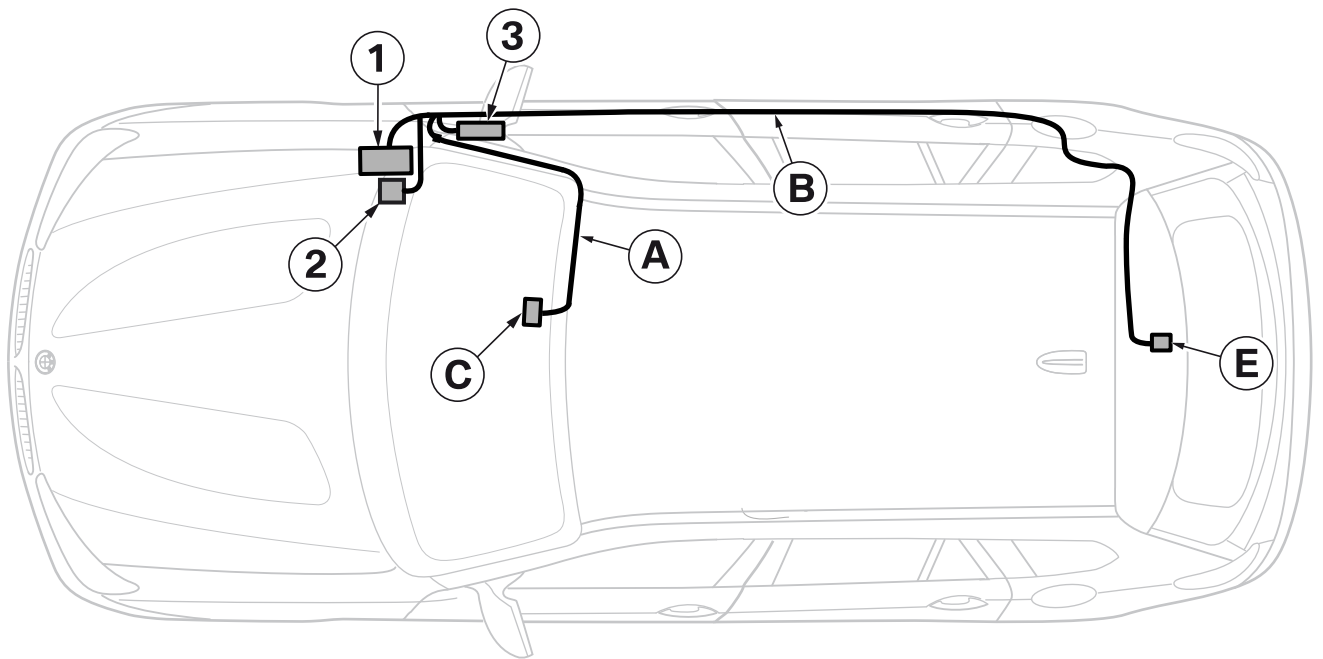
G20 0255 Z

Position	Designation	Signal	Cable colour/ cross-section	Connection location in the car	Abbreviation/ slot
A	Base	---	---	---	---
A1	Locking plug	---	---	To locking socket	B1
B	Retrofit wiring harness	---	---	---	---
B1	Locking socket	---	---	To locking plug	A1
B2	Open cable	Terminal 30	RED 0.5 mm ²	With socket contact H to power distributor Z44	Z44 PIN 23
B3	Open cable	Terminal 15	YELLOW 0.5 mm ²	With 2-way miniature connector F to BDC A258	A258*3B PIN 1
B4	Eyelet	Terminal 31	BLACK 0.5 mm ²	To earth terminal Z10	Z10*4B
B5	Connection cable for rear window camera	---	---	To rear window camera E	---

 Note cable colours. ◀

4. Installation and cabling diagram

 The car diagram is an example. ◀



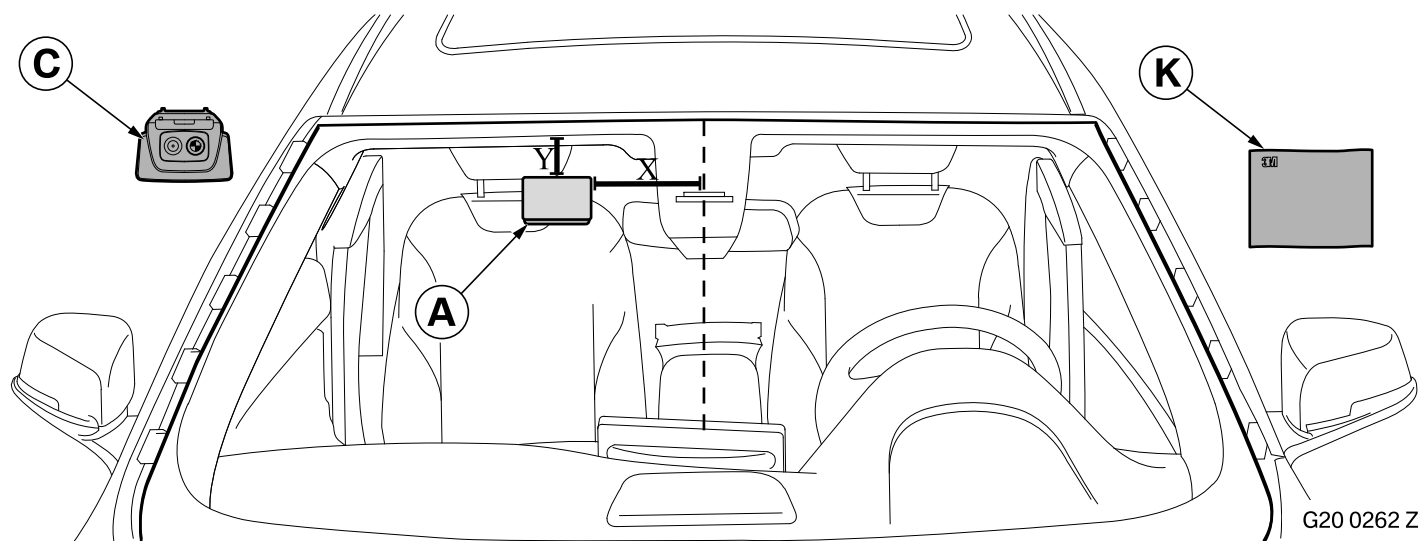
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- A** Base
- B** Retrofit wiring harness
- C** Front camera with display
- E** Rear window camera

- 1** Front right power distributor **Z44**
- 2** Ground support point, front right **Z10*4B**
- 3** BDC, front right **A258**

5. Installation position of front camera with display

▶ The car diagram is an example. ◀



▶ The front camera with display **C** must not restrict the driver's view. The front camera with display **C** must be installed within the windscreen wiper's wipe area and outside the coloured sun protection strip (screen printed strip).

All buttons, plugs and the SD card slot must be freely accessible when the front camera with display **C** has been installed.

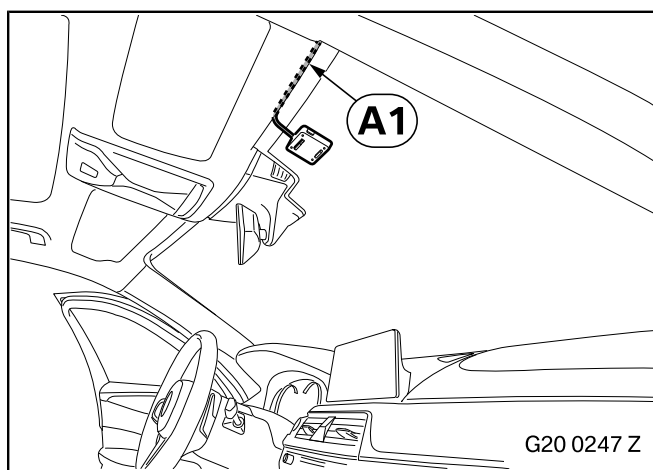
The bonding surfaces must be clean and free of grease. Clean the bonding surfaces with the cleaning cloth **K**. Apply at room temperature only (minimum 20 °C).

The adhesive strip already installed on the base **A** may only be used once. If the adhesive strip is positioned incorrectly once, it must be replaced. ◀

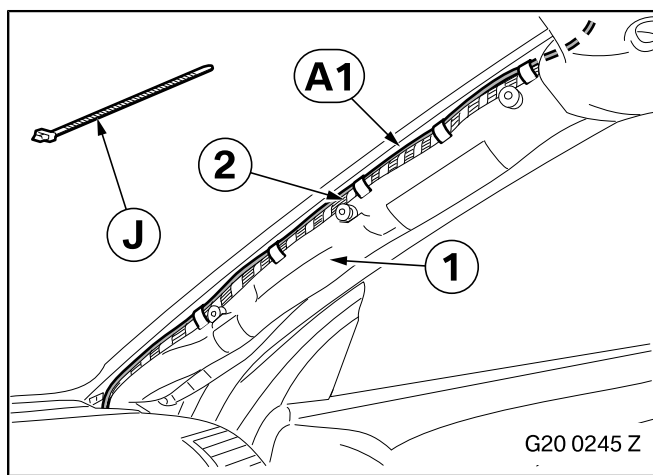
Affix base **A** to the specified position on the windscreen.


- Y = 20 mm
- X = 200 mm

6. Retrofit wiring harness connection

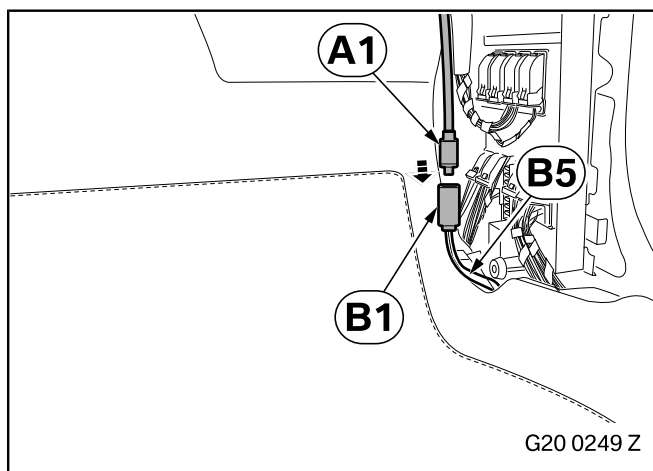


Route branch **A1** to the right-hand A pillar as shown.



 Secure branch **A1** to the standard wiring harness (2) with cable ties **J** so as not to adversely affect the function of the airbag (1). ◀

Route branch **A1** along the right-hand A pillar to the footwell.

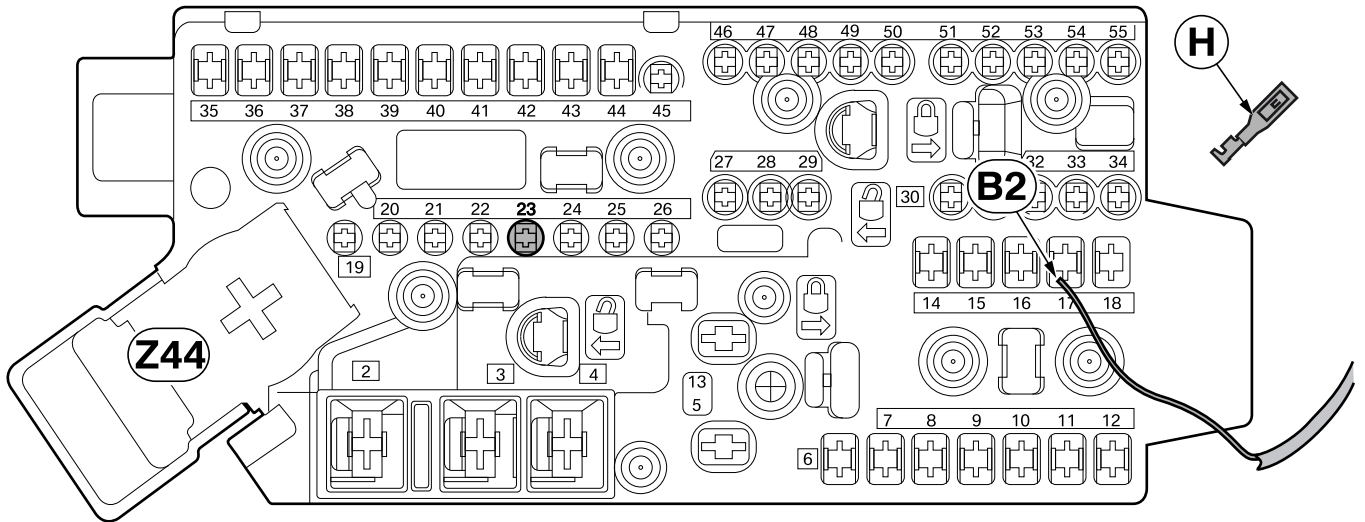


Insert branch **A1** into branch **B1** until it engages.

Only if installing the rear window camera

Route branch **B5** to the location of the rear window camera.

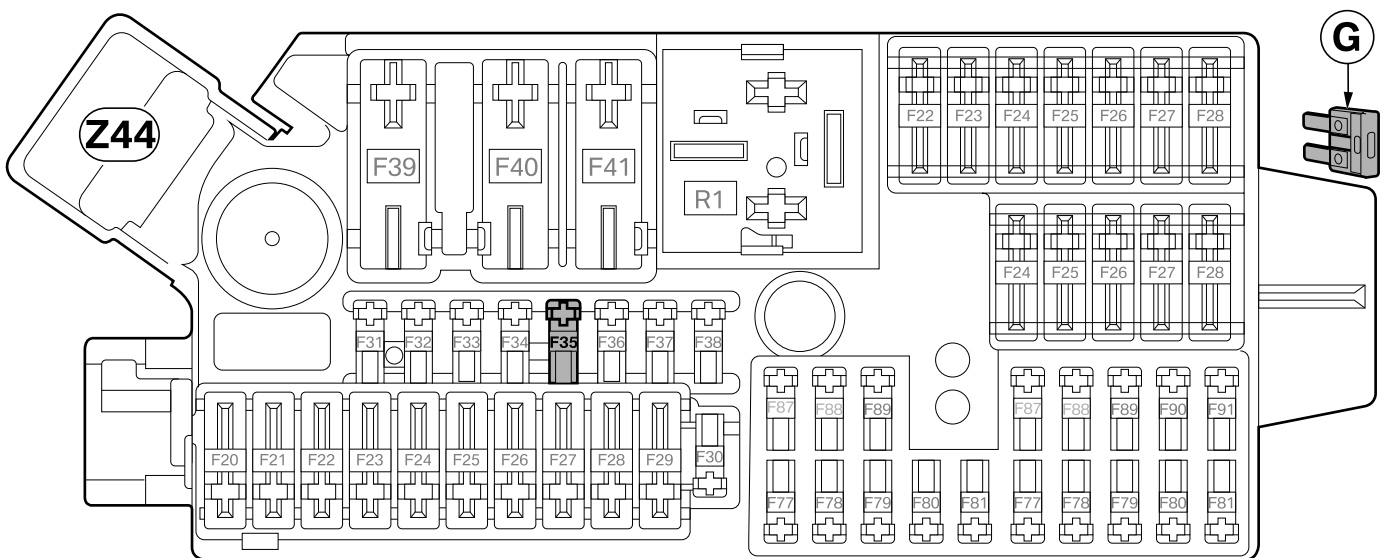
6. Retrofit wiring harness connection



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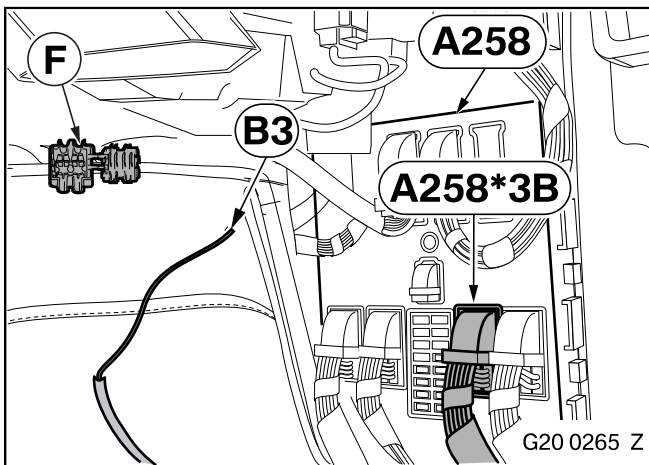
Route branch **B2**, RED cable, to the location of power distributor **Z44**.

Connect branch **B2** with crimped socket contact **H** to PIN 23.



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Insert fuse **G** into slot **F35** in power distributor **Z44**.

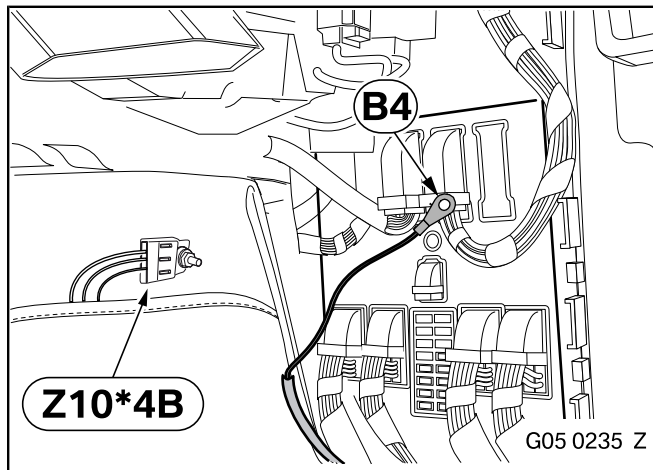


Route branch **B3**, YELLOW cable, to the location of BDC **A258**.

Connect branch **B3** to the cable from PIN 1, GREEN cable, from plug **A258*3B** using 2-way miniature connector **F**.

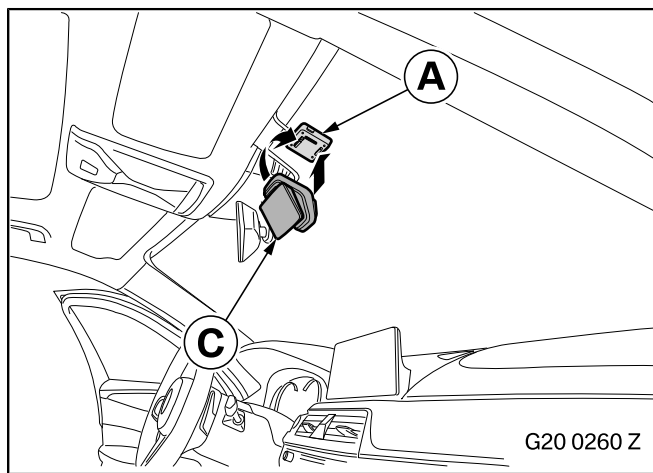
G20 0265 Z

6. Retrofit wiring harness connection



Route branch **B4**, BLACK cable, to the location of ground support point **Z10*4B**.

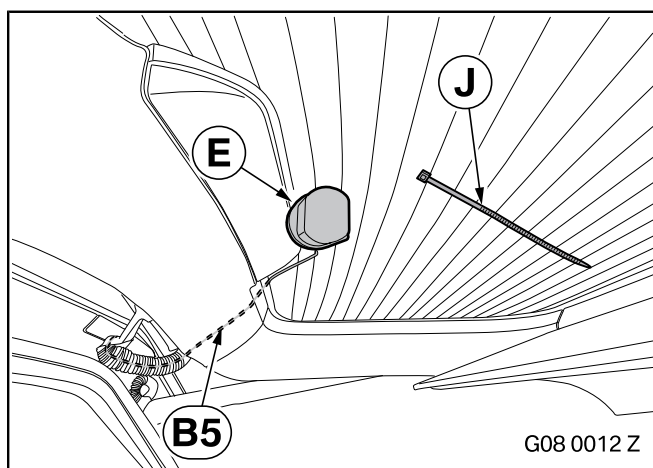
Secure branch **B4** to ground support point **Z10*4B**.



Fit front camera with display **C** as shown in the base **A**.

7. Connection and installation of the rear window camera in cars with a glued rear window in the tailgate

- ▶ The bonding surfaces must be clean and free of grease. Clean the bonding surfaces with the cleaning cloth **K**. Apply at room temperature only (minimum 20 °C). ◀



- ▶ The rear window camera **E** must not restrict the driver's view. ◀

Bond the rear window camera **E** to the rear window.

Route branch **B5** along the standard wiring harness to the rear window and connect to rear window camera **E**.

- ▶ Secure the cable from branch **B5** at multiple points behind the trim using cable tie **J** only when the rear window is fully open. ◀

8. Concluding work and coding

The retrofit system does not require programming/coding for F95 and F96 (before LCI).


The retrofit system requires programming/coding for cars built after **SP2021** (F95 LCI, F96 LCI, G05, G05 LCI, G06, G06 LCI, G07, G07 LCI and G09).

- Connect the battery
- Connect the battery charger to the car
- Connect the car to the ISTA workshop system
- Open the ISTA car programming system
- Please refer to the instructions provided in the ISTA/AIR application documentation for working with ISTA
- Select ‘BMW Advanced Car Eye 3.0 (Pro)’ retrofit using the – **Car treatment – Car modification – Retrofit** path and work through the created action plan
- If necessary, carry out a vehicle test using the ISTA system, and note, or work through, any errors that has been recorded
- Adjust the front and rear window camera as per the customer information
- Remove the protective film from the camera lens on the front and rear window cameras
- Conduct a function test
- Reassemble the car

The following parts must be given to the customer:

- Operating instructions (1 page) and, if there is one, the attachment to the declaration of conformity

Firmware update

 The firmware update must absolutely be carried out using the ACE app on the customer’s mobile phone. ◀

9. Customer information

Switch on the ignition

Model	Built in or after	Number of presses of the Start Stop button (in quick succession)
X5	2018	Press three times
X6	2019	Press three times
X7	2019	Press three times
XM	2022	Press three times