

# Original BMW Accessories.

## Installation Instructions.



### Alpine Hi-Fi System Retrofit

**BMW 1 Series 5-door (F20)**

**BMW 1 Series 3-door (F21)**

**BMW 3 Series Saloon (F30)**

**BMW 3 Series Touring (F31)**

**These installation instructions do not apply to RHD cars.**

**These installation instructions do not apply to cars with the SA 674/SA 688 (Harman Kardon surround sound system) or the SA 676 (Hi-fi speaker system).**

#### Retrofit kit number

65 41 2 293 994      Alpine hi-fi system retrofit kit

#### Installation time

The installation time is **approx. 2.25 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, send an inquiry straight away to the technical parts support team 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

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

Refer to the instructions for handling fibre optic cables acc. to ISTA No. 61 00 ....

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/wires 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.

## Ordering instructions

Logos **K** are not supplied in the retrofit kit and must be ordered separately depending on the car model (see EPC for part number and details).

### Ordering instructions for F21 cars

Inside corner panels **L** and **M** are not included in the retrofit kit and must be ordered separately (see EPC for part number and details).

### Ordering instructions for F20/F30/F31 cars

Window frame covers **J** and **K** are not included 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 688** Harman Kardon surround sound system (in F30/F31 cars)

**SA 674** Harman Kardon surround sound system (in F20/F21 cars)

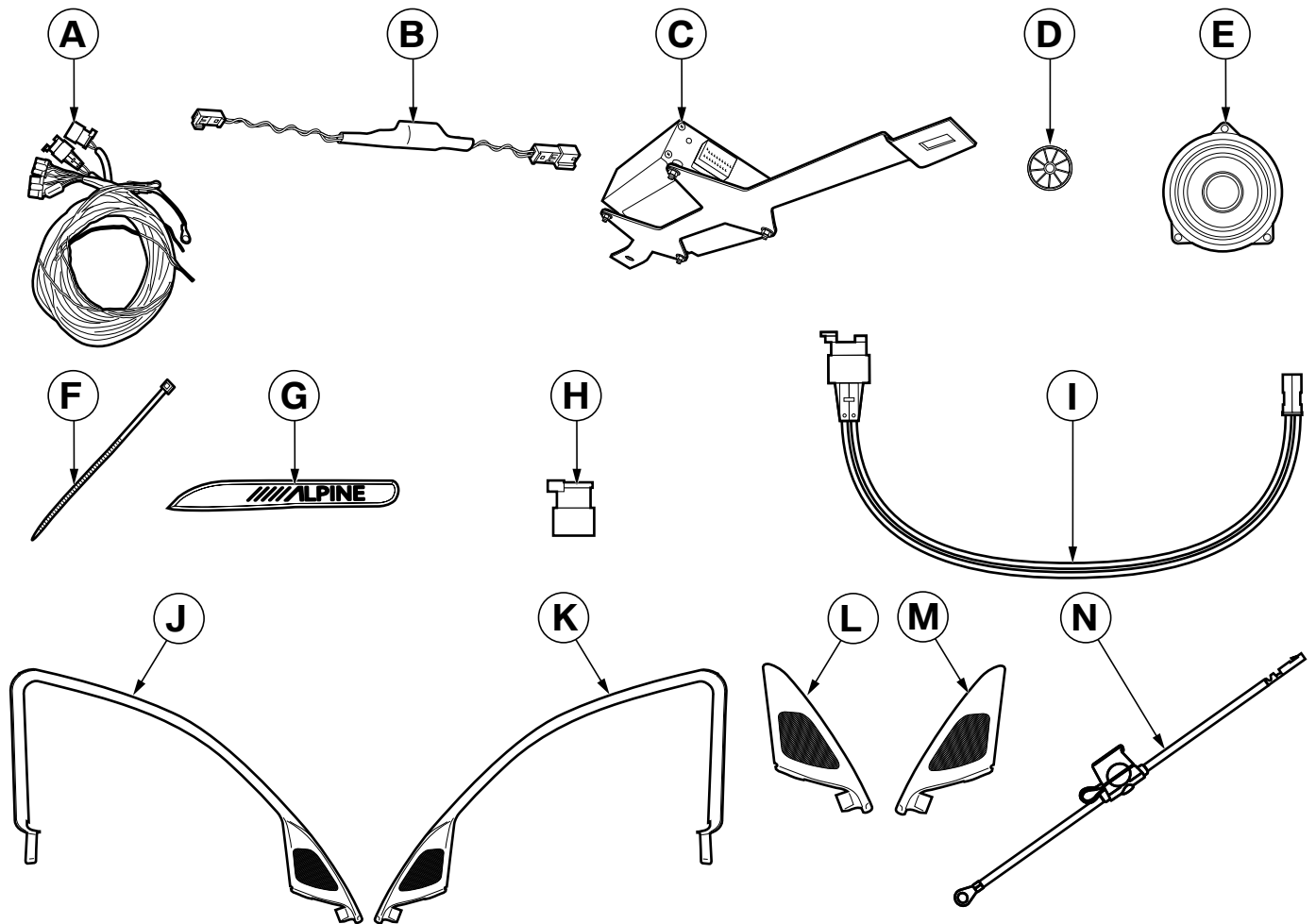
**SA 676** Hi-fi speaker system

## Special tools required

00 9 325, Panel wedge

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## 1. Parts list for retrofit kit



F20 0116 Z

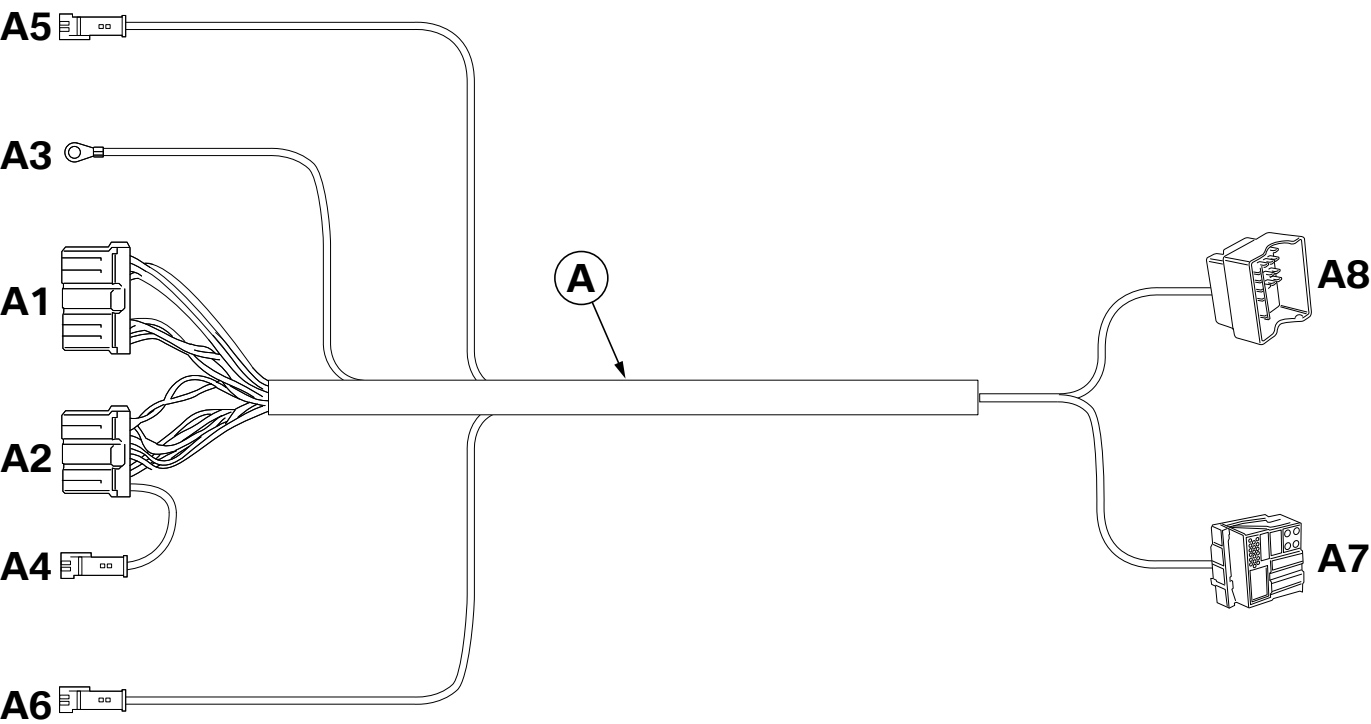
### Legend

- A** Retrofit cable set
- B** Diplexer (2x)
- C** Audio amplifier with holder
- D** Tweeter (2x)
- E** Mid-range speaker (2x)
- F** Cable tie (15x)
- G** Logo (2x, not supplied with the retrofit kit)
- H** Plug casing (only for cars with MOST fibre optic cable)
- I** MOST adapter (only for cars with MOST fibre optic cable)
- J** Left window frame cover (only for F20/F30/F31 cars, not supplied with the retrofit kit)
- K** Right window frame cover (only for F20/F30/F31 cars, not supplied with the retrofit kit)
- L** Inside left corner panel (E21 cars only, not supplied in the retrofit kit)
- M** Inside right corner panel (E21 cars only, not supplied in the retrofit kit)
- N** Positive cable

## 2. Preparatory work

	ISTA No.
Disconnect the negative terminal of the battery	12 00 ...
<b>The following components must be removed first of all</b>	
Front door trim, left and right	51 41 000
Left and right mid-range speakers (no longer required)	65 13 070
Radio receiver	65 11 080
Pedal trim	51 45 184
Bottom right dashboard trim	51 45 195
Front door sill strip (interior) on both sides	51 47 000
Side footwell trim on the A pillar left and right	51 43 075
Release the Front Electronic Module (FEM) control unit	61 35 270
<b>F20, F30, F31 cars only</b>	
Inside left and right window frame covers (no longer required)	51 32 160
<b>F21 cars only</b>	
Inside left and right corner panel (no longer required)	---

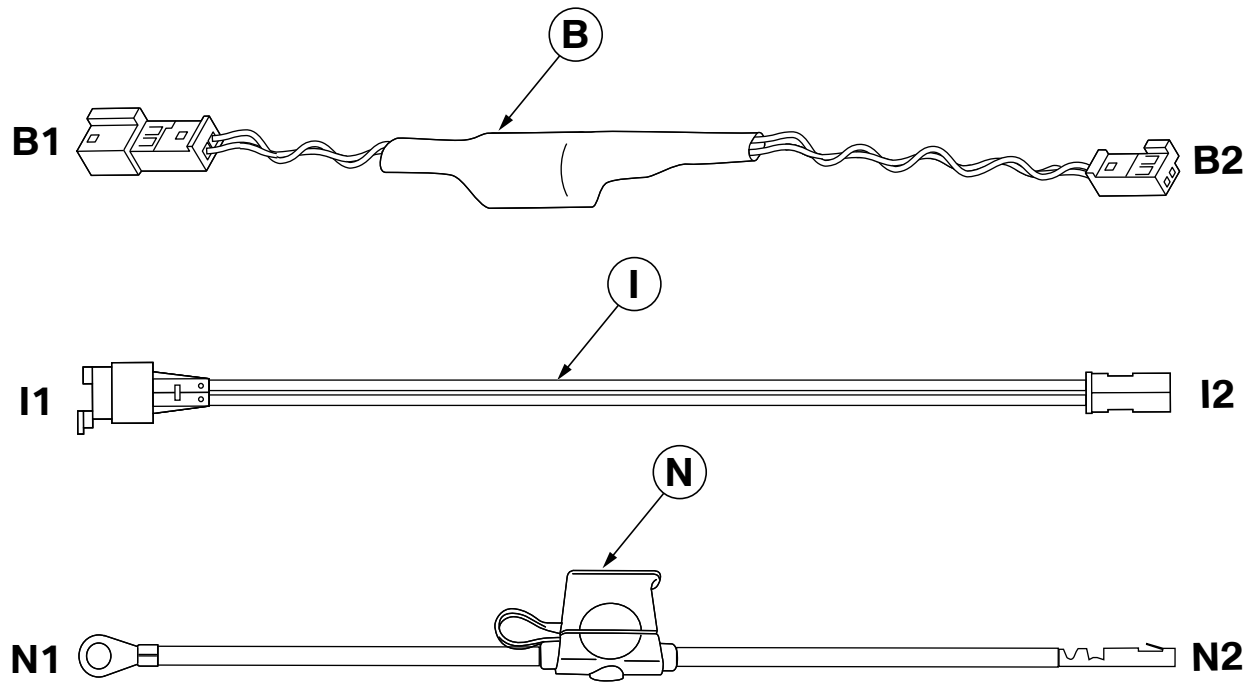
3.   Retrofit cable set connection diagram



F20 0101 Z

Item	Designation	Signal	Cable colour/ cross-section	Connection location in the car	Abbreviation/ slot
A	Retrofit cable set	---	---	---	---
A1	WS 22-pin socket casing	---	---	On audio amplifier with holder <b>C</b>	---
A2	SW 16-pin socket casing	---	---	On audio amplifier with holder <b>C</b>	---
A3	Ring eyelet M6	Terminal 31	BR 4.0 mm²	On earth post under the front passenger footwell carpet	Z10*5B
A4	BL 2-pin socket casing	---	---	Insulate and tie back	---
A5	SW 4-pin plug casing	---	---	On front right door isolation plug	X5*1B
A6	SW 4-pin plug casing	---	---	On front left door isolation plug	X28*1B
A7	SW 40-pin Quadlock plug	---	---	On radio receiver	A42
A8	SW 40-pin Quadlock plug	---	---	On car radio plug	A42*1B

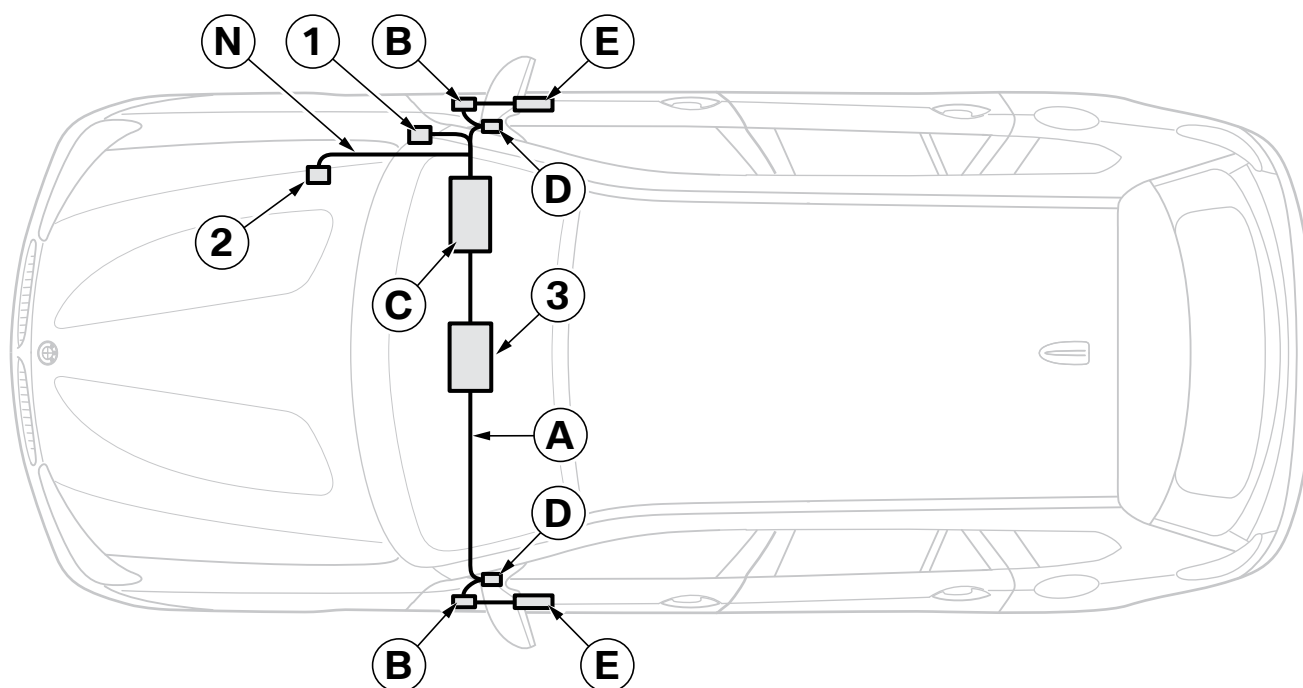
#### 4. Connection diagram of diplexer, MOST adapter and positive cable



F30 0304 Z

Item	Designation	Signal	Cable colour/ cross-section	Connection location in the car	Abbreviation/ slot
B	Diplexer	---	---	---	---
B1	BL 2-pin plug casing	---	---	On tweeter <b>D</b>	---
B2	BL 2-pin socket casing	---	---	On mid-range speaker <b>E</b>	---
I	MOST adapter	---	---	---	---
I1	Fibre optic cable	---	---	With plug casing <b>H</b> on disconnected fibre optic cable from radio plug <b>A42*1B</b>	---
I2	Fibre optic cable	---	---	To radio plug <b>A42*1B</b>	A42*2B
N	Positive cable	---	---	---	---
N1	Ring eyelet M6	Terminal 30	RT 4.0 mm <sup>2</sup>	On attachment point of power distributor in engine compartment <b>Z4</b>	---
N2	Socket contact	Terminal 30	RT 4.0 mm <sup>2</sup>	In branch <b>A1</b>	PIN 1

## 5. Installation and cabling diagram

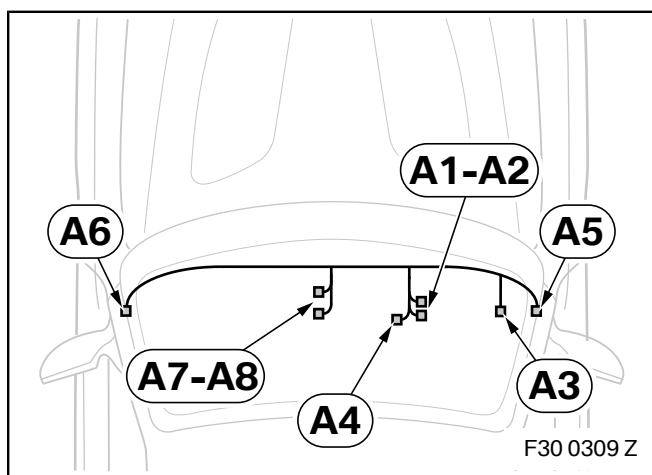


F20 0103 Z

- A** Retrofit cable set
- B** Diplexer
- C** Audio amplifier with holder
- D** Tweeter
- E** Mid-range speaker
- N** Positive cable
  
- 1** Earth post connection **Z10\*5B**
- 2** Power distributor in engine compartment **Z4**
- 3** Radio receiver **A42**

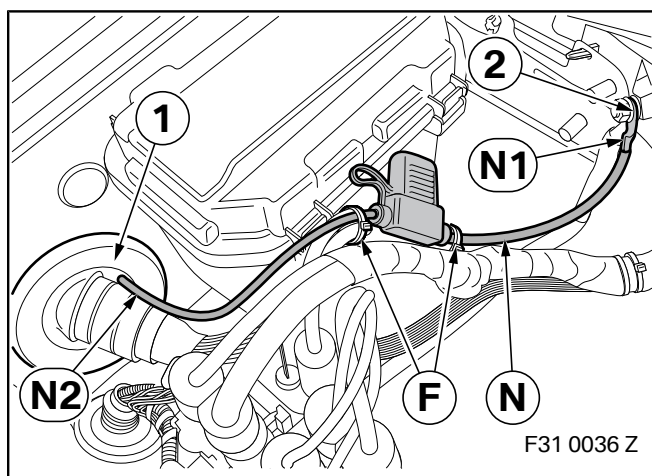


## 6. To install and connect the Alpine hi-fi system



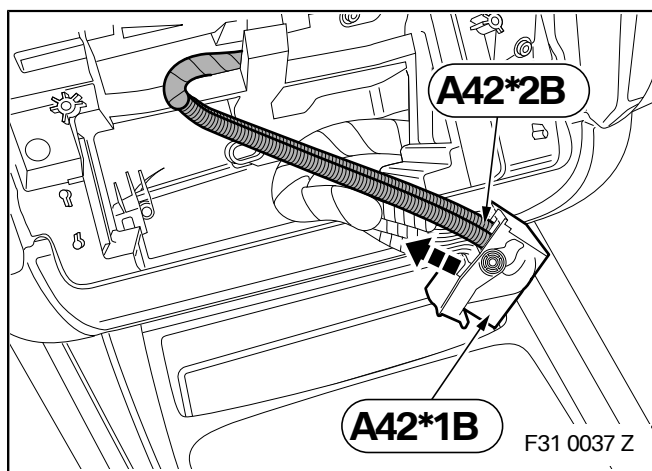
Route retrofit cable set **A** through the radio slot as follows:

- Branches **A7-A8** at the installation site of the radio receiver
- Branches **A1-A5** through the radio slot to the front passenger footwell
- Branch **A6** through the radio slot to the front left door isolation plug



Route positive cable **N** as follows from the engine compartment to the front passenger footwell and connect it:

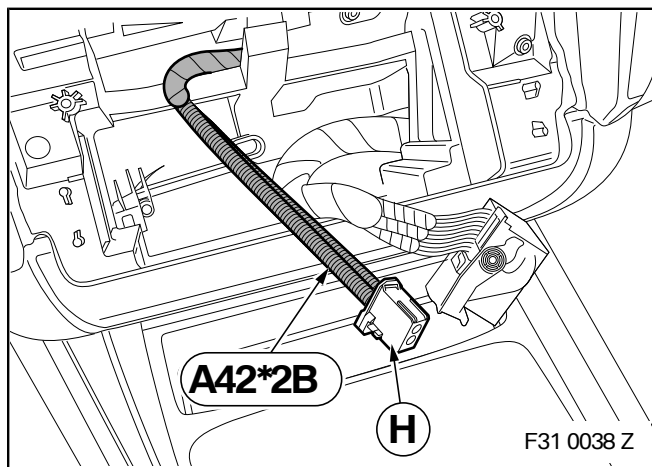
- Drill a hole in the rubber grommet (1) with an 8 mm drill bit
- Screw branch **N1**, ring eyelet M6, at the attachment point of the power distributor in engine compartment **Z4** (2)
- Route branch **N2**, socket contact, through rubber grommet (1) into the front passenger footwell
- Secure positive cable **N** to the original wiring harness using cable ties **F**
- Seal the rubber grommet



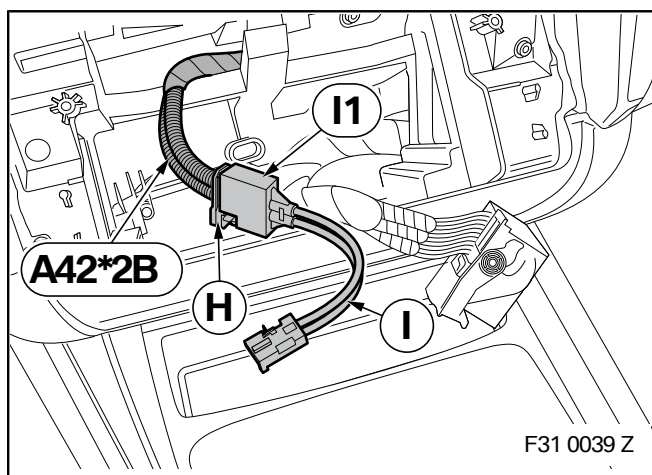
### Cars with MOST fibre optic cable only

Disconnect MOST fibre optic cable **A42\*2B** from radio plug **A42\*1B**.

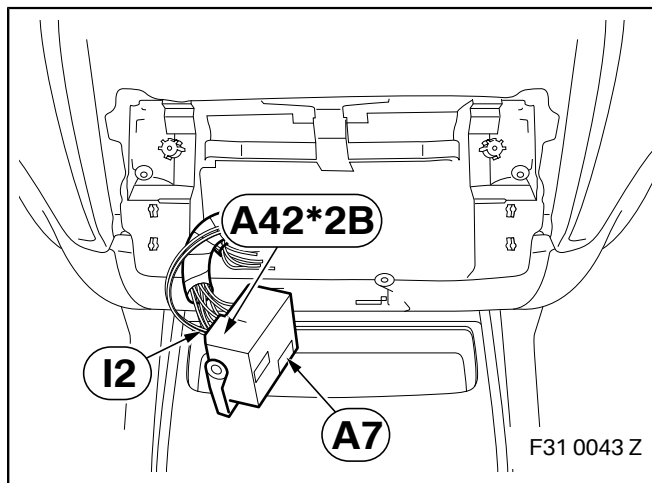
## 6. To install and connect the Alpine hi-fi system



Connect plug casing **H** to MOST fibre optic cable **A42\*2B**.

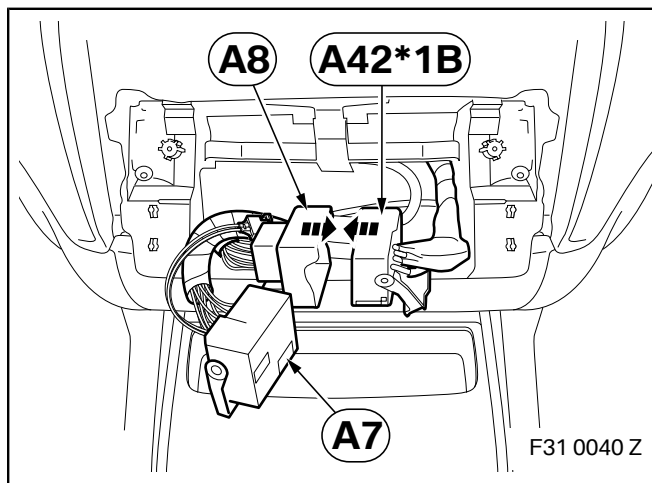


Connect branch **I1** of MOST adapter **I** to plug casing **H** of MOST fibre optic cable **A42\*2B**.



Connect branch **I2** to slot **A42\*2B** of branch **A7**.

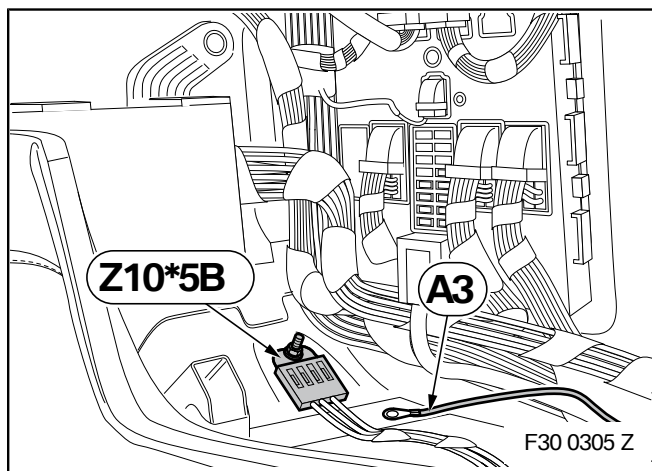
## 6. To install and connect the Alpine hi-fi system



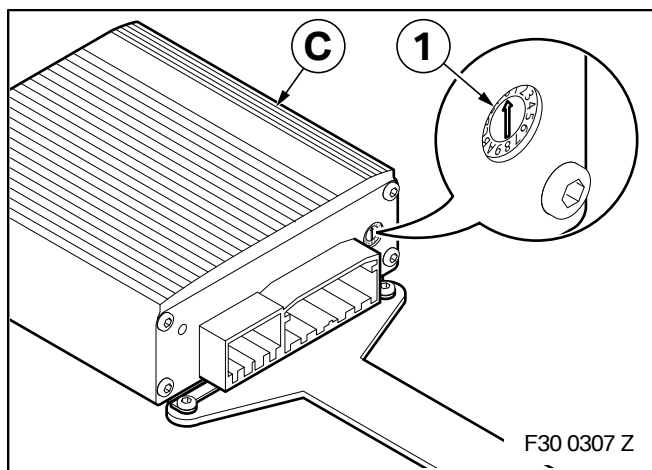
### All cars

Connect branch **A8** and radio plug **A42\*1B** together.

Connect branch **A7** to the radio receiver.



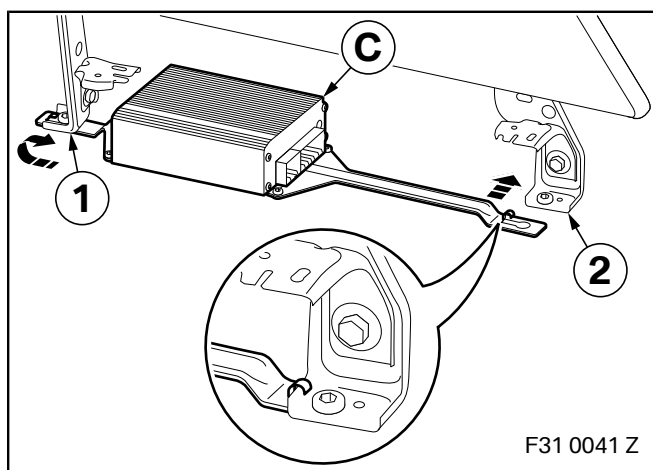
Screw branch **A3**, BR cable, onto earth post connection **Z10\*5B** under the front passenger footwell carpet.



Before installing audio amplifier with holder **C**, set switch (1) as follows, depending on the model:

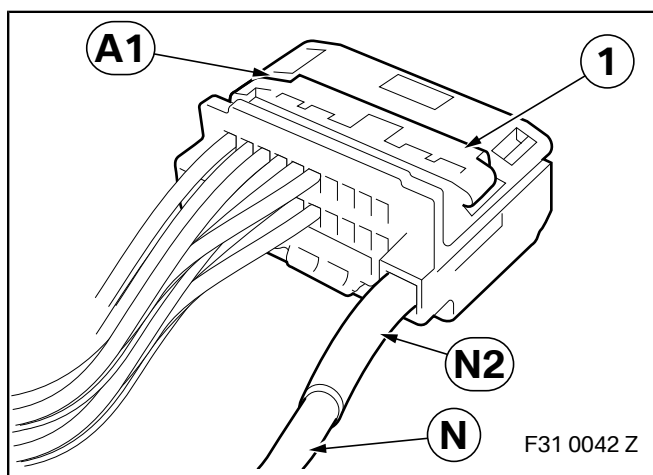
- F20/F21: Position 1
- F30/F31: Position 5

## 6. To install and connect the Alpine hi-fi system



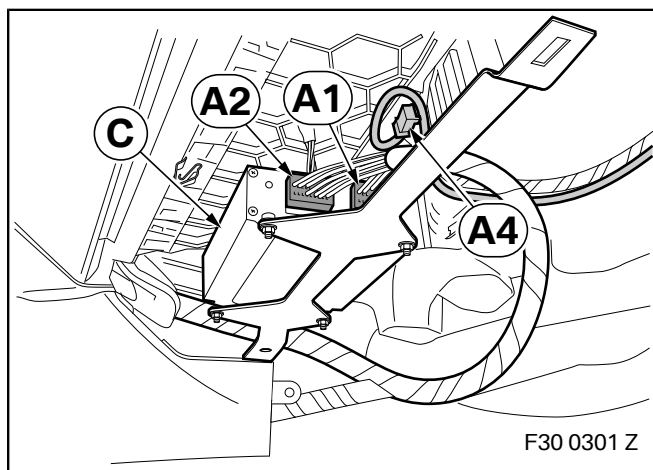
Install audio amplifier with holder **C** as shown under the glovebox.

First hook audio amplifier with holder **C** onto mounting (1) and then push onto mounting (2).



Connect positive cable **N** as follows to branch **A1**:

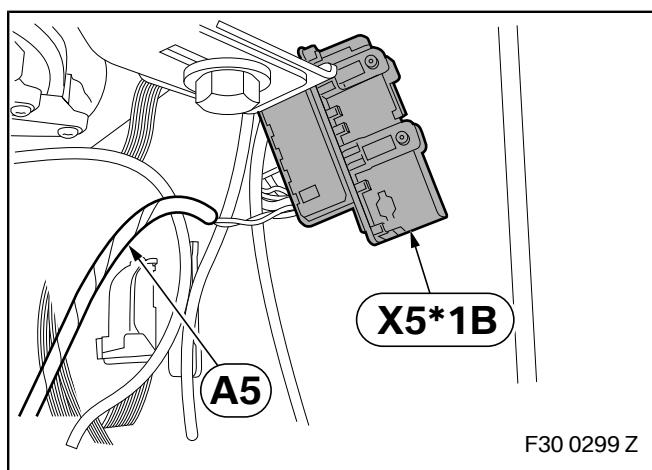
- Unlock secondary catch (1) of branch **A1**
- Connect branch **N2** of positive cable **N** into PIN 1 of branch **A1**
- Lock secondary catch (1) of branch **A1**



Connect branches **A1** and **A2** to audio amplifier with holder **C**.

Insulate branch **A4**, BL 2-pin socket casing, and tie it back.

## 6. To install and connect the Alpine hi-fi system



- ▶ The connection of branches **A5** and **A6** on the door isolation plug is only shown on the right-hand side of the car, proceed in a similar fashion on the left-hand side of the car. ◀

Route branch **A5** to right door isolation plug **X5\*1B** and connect it as follows:

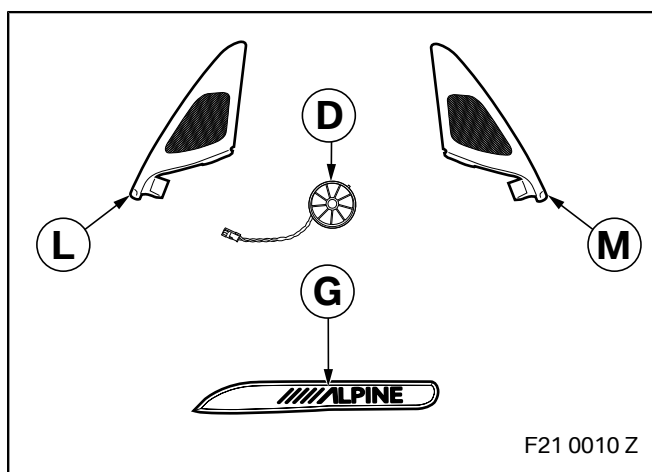
- Disconnect existing SW 2-pin plug from plug **X5\*1B**, insulate it and tie back
- Connect branch **A5** to the slot that is vacated

Route branch **A6** to left door isolation plug **X28\*1B** and connect it as follows:

- Disconnect existing SW 2-pin plug from plug **X28\*1B**, insulate it and tie back
- Connect branch **A6** to the slot that is vacated

### F21 cars only

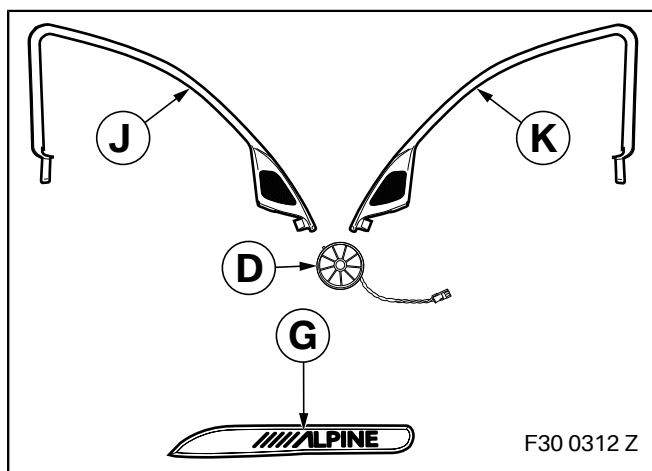
Insert tweeters **D** into inside corner panels **L** and **M** and apply logo **G**.



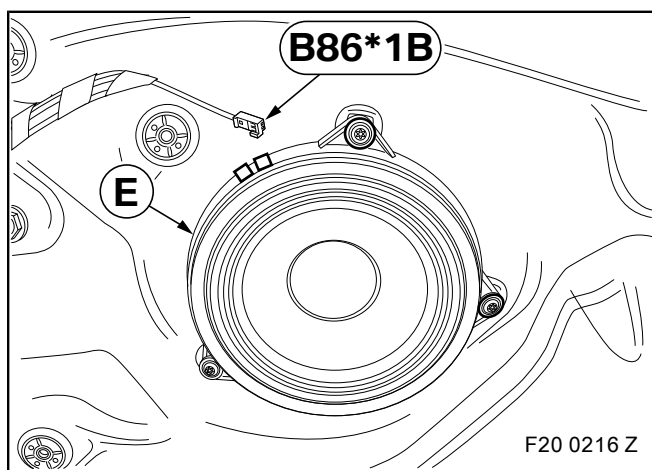
### F20/F30/F31 cars only

- ▶ Remove the existing Harman Kardon logos from window frame covers **J** and **K** for F30/F31 cars before applying logos **G**. ◀

Insert tweeters **D** into window frame covers **J** and **K** and apply logo **G**.



## 6. To install and connect the Alpine hi-fi system

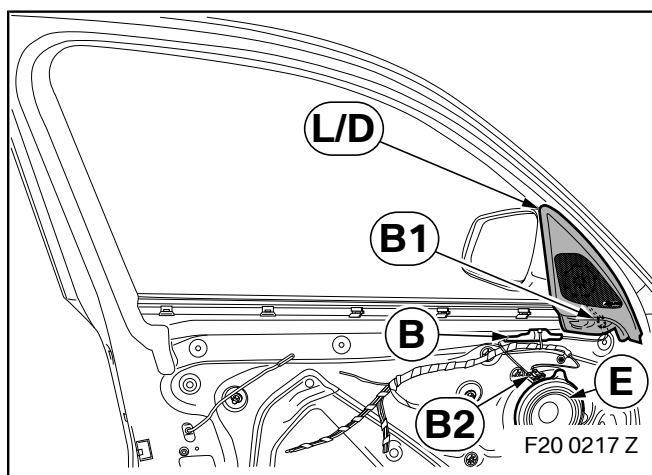


### All cars

▶ Installation of mid-range speaker **E** is shown only on the right-hand side of the car, proceed in the same way on the left-hand side of the car. ◀

Install mid-range speaker **E** using available fastening material.

Connect plug **B86\*1B** to mid-range speaker **E**.



### F21 cars only

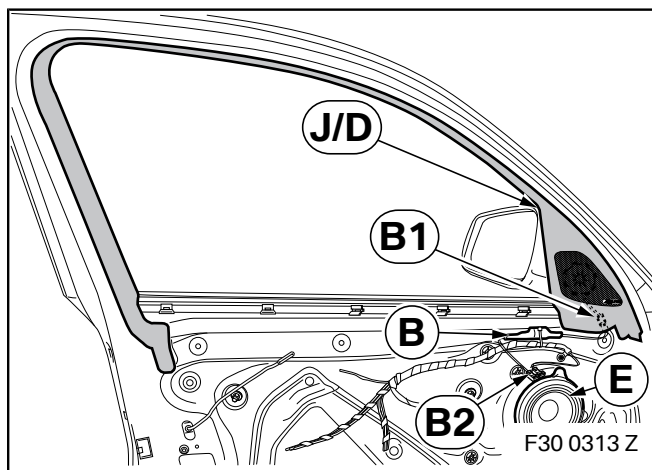
▶ The installation of diplexer **B** and inside corner cover **L** is shown only on the left-hand side of the car. Proceed in a similar fashion on the right-hand side of the car. ◀

Install inside corner cover **L** with tweeter **D**.

Connect diplexer **B** as follows:

- Connect branch **B1** to tweeter **D**
- Connect branch **B2** to mid-range speaker **E**

Secure diplexer **B** to original wiring harness using cable ties.



### F20/F30/F31 cars only

▶ The installation of diplexer **B** and window frame cover **J** is shown only on the left-hand side of the car. Proceed in a similar fashion on the right-hand side of the car. ◀

Install window frame cover **J** with tweeter **D**.

Connect diplexer **B** as follows:

- Connect branch **B1** to tweeter **D**
- Connect branch **B2** to mid-range speaker **E**

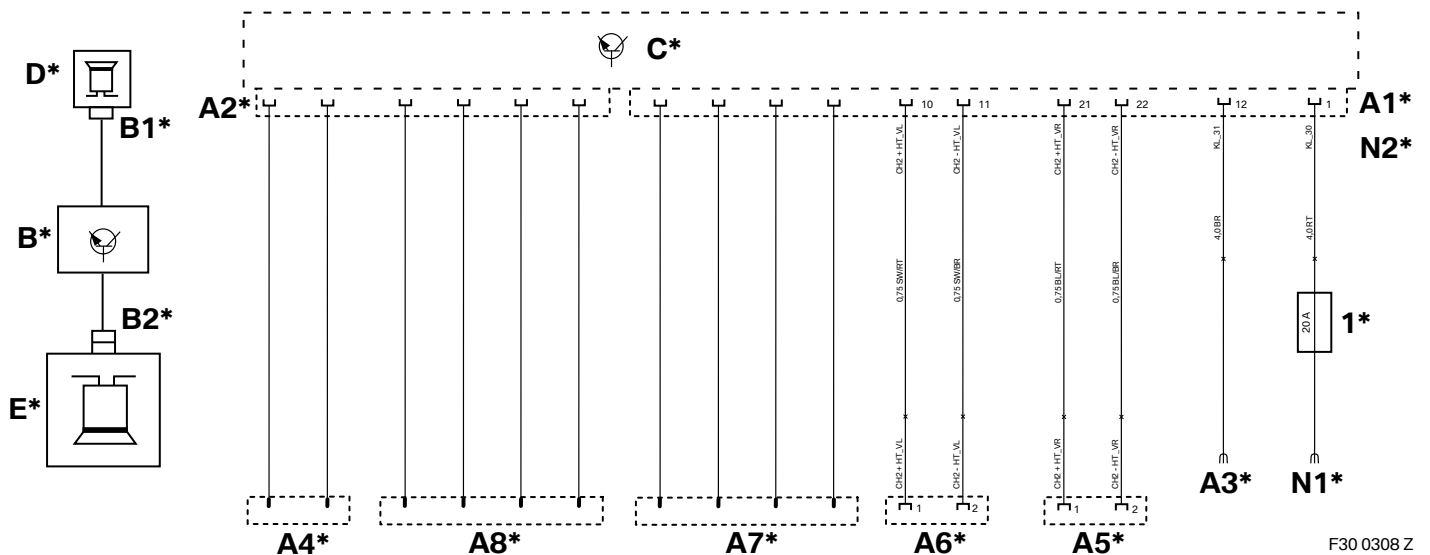
Secure diplexer **B** to original wiring harness using cable ties.

## 7. Concluding work and coding

The retrofit system requires programming / coding.

- Connect the battery
- Connect the battery charger to the car
- Connect the car to the ISTA workshop system
- Call up the ISTA/P car programming facility
- If using ISTA/P, please note the instructions provided in the ISTA/P application documentation
- Select "Alpine Hi-Fi System Retrofit" via the – **Conversion** – path and work through the created action plan
- If necessary, carry out a car test using the ISTA system and note or work through any entered error memory
- Conduct a function test
- Re-assemble the car in a logical manner

## 8. Wiring diagram



### Legend

- A1** WS 22-pin socket casing, on audio amplifier holder **C**
- A2\*** SW 16-pin socket casing, on audio amplifier holder **C**
- A3\*** M6 ring eyelet, to earth post connection **Z10\*5B**
- A4\*** BL 2-pin socket casing, insulate and tie back
- A5\*** SW 4-pin plug casing, on the front right door isolation plug
- A6\*** SW 4-pin plug casing, on the front left door isolation plug
- A7\*** SW 40-pin Quadlock plug, on radio receiver **A42**
- A8\*** SW 40-pin Quadlock plug, on car radio plug **A42\*1B**

- B1\*** BL 2-pin plug casing, on tweeter **D**
- B2\*** BL 2-pin socket casing, on mid-range speaker **E**

- N1\*** Ring eyelet M6, on attachment point of power distributor in engine compartment **Z4**
- N2\*** Socket contact, to branch **A1\***

- B\*** Diplexer
- C\*** Audio amplifier with holder
- D\*** Tweeter
- E\*** Mid-range speaker
- N\*** Positive cable
- 1\*** Fuse holder with fuse (20 A)

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

### Cable colours

BL	Blue	GR	Grey	RT	Red
BO	Bordeaux (Burgundy)	L-GN	Light green	SW	Black
BR	Brown	NT	Natural	TR	Transparent
GE	Yellow	OR	Orange	VI	Violet
GN	Green	RO	Pink	WS	White