

# Original BMW Accessories. Installation Instructions.



## Alpine Hi-Fi System Retrofit

**BMW 1 Series (E81, E82, E87, E88)**

**BMW 3 Series (E90, E91, E92, E93)**

### Installation instructions not applicable for cars with hi-fi system

**Retrofit kit no.** 65 41 0 445 684 Alpine hi-fi system retrofit kit

### Installation time

The installation time is **approx. 2.5 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, circuit diagrams, servicing manuals and work instructions, in a rational order, using the prescribed tools (special tools) and observing current 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.**

In order to reduce costs and avoid any additional expense, send a query immediately to the Technical Parts Support via the Aftersales Assistance Portal (ASAP).

Quote the following information:

- chassis number,
- part number of the retrofit kit,
- a precise description of the problem,
- work steps 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 special features.

◀ Denotes the end of the instruction text.

### Information for the customer

Print out the section entitled "Customer information for the Alpine hi-fi system" at the end of these installation instructions and give it to the customer.

### **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.

Only this EBA must be used for troubleshooting. The print on amplifier **C** does not correspond to the connector on the car.

### **Ordering instructions**

The corner panels on mirror quadrant **I, J** or covers on window frames **K, L** are not included in the retrofit kit and must be ordered separately (for part number and instructions, see EPC).

### **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 662** BMW Business CD radio
- SA 663** BMW Professional radio

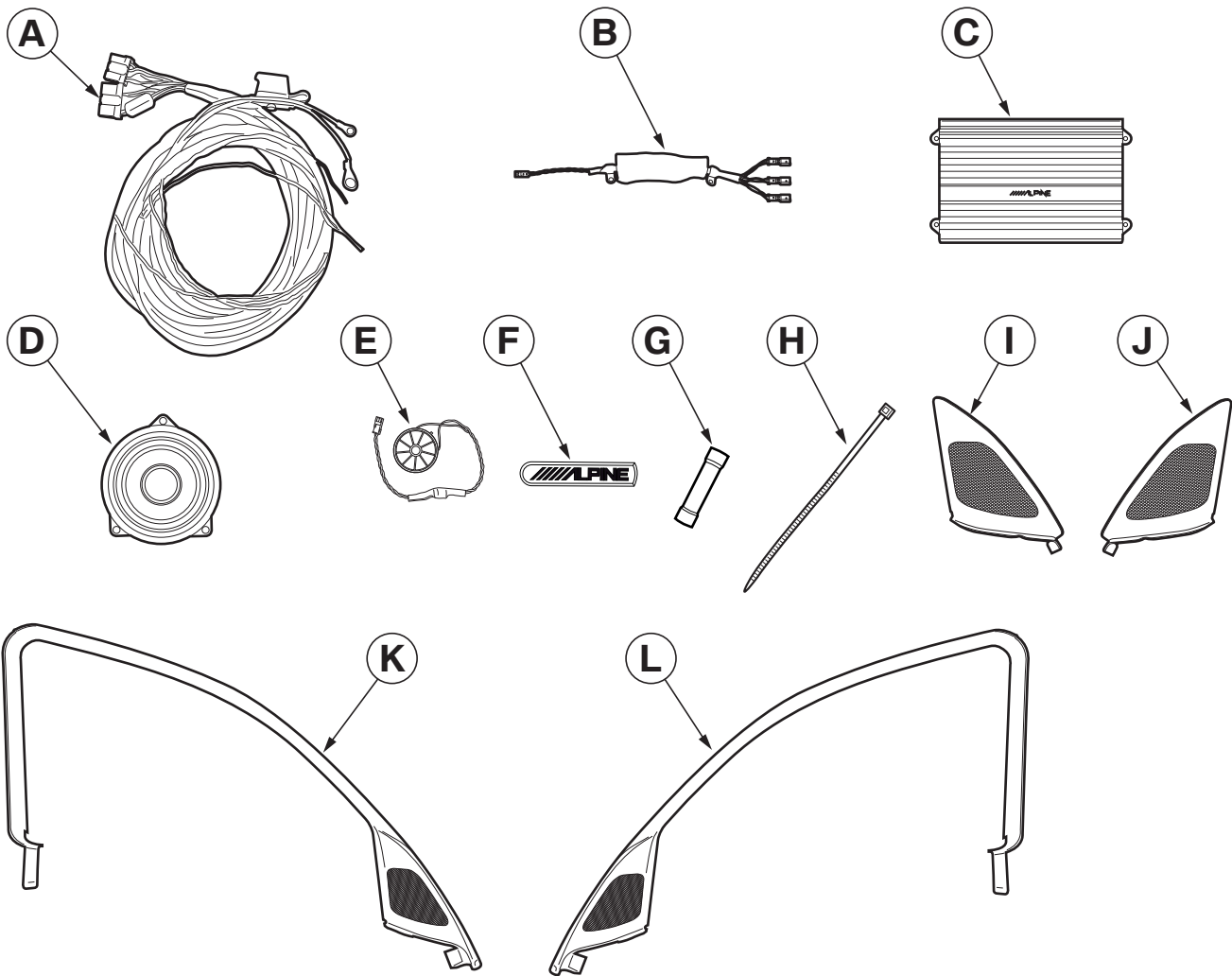
### **Special tools required**

00 9 310, Installation wedges

## Table of contents

Section	Page
1. Parts list .....	4
2. Preparatory work .....	5
3. Connection diagram (cars built before 3/09 only) .....	6
4. Connection diagram (cars built after 3/09 only) .....	7
5. Frequency switch connection diagram .....	8
6. Installation and cabling diagram .....	9
7. To install and connect the retrofit kit .....	10
8. Concluding work and coding .....	15
9. Circuit diagram .....	16
10. Customer information for the Alpine hi-fi system .....	18

## 1. Parts list



087 1028 Z

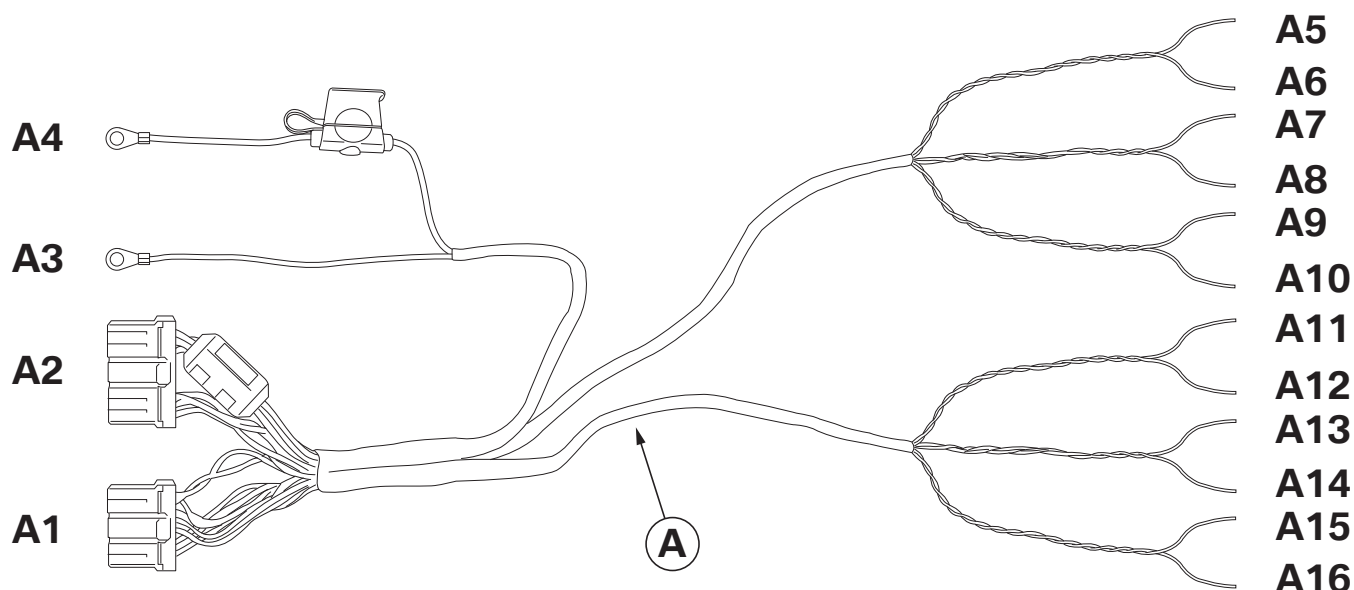
### Legend

- A** Retrofit cable set
- B** Frequency switch (2 x)
- C** Amplifier
- D** Mid-range speaker (2 x)
- E** Tweeter (2 x)
- F** Emblem (2 x)
- G** Crimp connector (red 5 x for cross-section 0.5 – 1 mm, blue 10 x for cross-section 1 – 2.5 mm)
- H** Cable ties (15 x)
- I** Corner panel on the left-hand mirror quadrant (for E82, E88, E92, E93 cars only, not supplied with the retrofit kit)
- J** Corner panel on the right-hand mirror quadrant (for E82, E88, E92, E93 cars only, not supplied with the retrofit kit)
- K** Left-hand window frame cover (for E81, E87, E90, E91 cars only, not supplied with the retrofit kit)
- L** Right-hand window frame cover (for E81, E87, E90, E91 cars only, not supplied with the retrofit kit)

## 2. Preparatory work

	<b>ISTA No.</b>
Conduct a brief test	---
Disconnect the negative pole of the battery	12 00 ...
<b>The following components must be removed first</b>	
Front door sill strip (interior) on both sides	51 47 000
Rear door sill strip (interior) on both sides (E87, E90, E91 cars only)	51 47 030
Rear seat	52 26 005
Luggage compartment floor trim	51 47 101
Front door trim, left and right	51 41 000
<b>Also for E81, E87, E90, E91, E92 cars</b>	
Backrest side section on the rear seat backrest, left and right	52 26 008
<b>Also for E81, E87, E90, E91 cars</b>	
Cover on door window frame interior left and right	51 32 160
<b>Also for E82, E88, E92, E93 cars</b>	
Inner panel on mirror quadrant left and right	51 16 000
<b>Additionally for cars after 3/09</b>	
Release the front seats	52 13 000
Remove the central bass cover	65 12 050

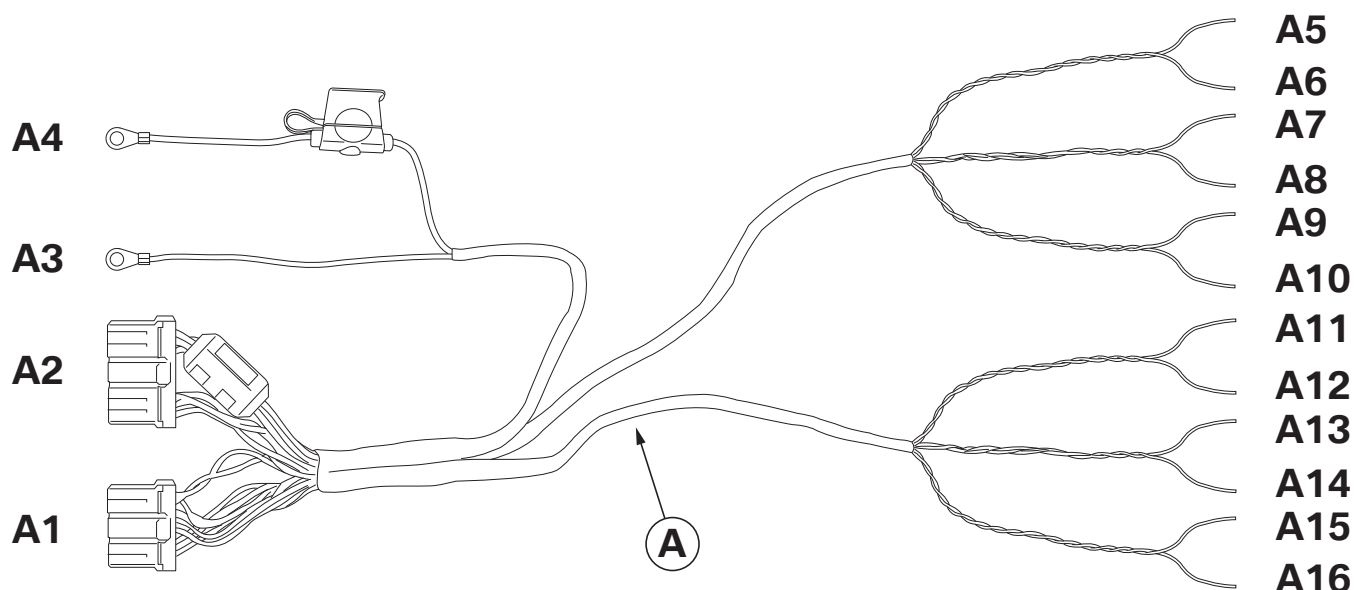
### 3. Connection diagram (cars built before 3/09 only)



087 1029 Z

Branch/Item	Designation	Signal	Cable colour/ cross-section	Connection location in the car	Abbreviation/ slot
A	Retrofit cable set	---	---	---	---
A1	WS 10-pin socket casing	---	---	On amplifier <b>C</b>	---
A2	WS 14-pin socket casing	---	---	On amplifier <b>C</b>	---
A3	Eyelet	Terminal 31	BR 4.0 mm <sup>2</sup>	On earth post	X498
A4	Eyelet	Terminal 30	RT 4.0 mm <sup>2</sup>	<b>E81, E82, E87, E88 cars only</b> On positive bolt of the luggage compartment liner battery terminal <b>E90, E91, E92, E93 cars only</b> On positive bolt of the rear fuse holder	---
A5	Cable open	INVR+	BL/SW 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/SW cable from radio	X9385
A6	Cable open	INVR-	BL/BR 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/BR cable from radio	X9386
A7	Cable open	MLVR+	RT/SW 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/SW cable from door speaker	X9385
A8	Cable open	MLVR-	RT/BR 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/BR cable from door speaker	X9386
A9	Cable open	ZBVR+	GN/SW 0.75 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/SW cable from central bass	X9385
A10	Cable open	ZBVR-	GN/BR 0.75 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/BR cable from central bass	X9386
A11	Cable open	INVL+	BL/WS 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/WS cable from radio	X9387
A12	Cable open	INVL-	BL/BR 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/BR cable from radio	X9388
A13	Cable open	MLVL+	RT/WS 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/WS cable from door speaker	X9387
A14	Cable open	MLVL-	RT/BR 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/BR cable from door speaker	X9388
A15	Cable open	ZBVL+	GN/WS 0.75 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/WS cable from central bass	X9387
A16	Cable open	ZBVL-	GN/BR 0.75 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/BR cable from central bass	X9388

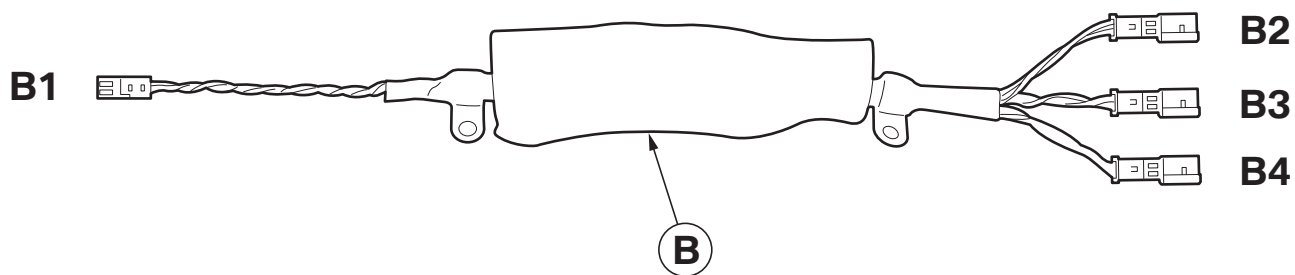
#### 4. Connection diagram (cars built after 3/09 only)



087 1029 Z

Branch/Item	Designation	Signal	Cable colour/ cross-section	Connection location in the car	Abbreviation/ slot
A	Retrofit cable set	---	---	---	---
A1	WS 10-pin socket casing	---	---	On amplifier <b>C</b>	---
A2	WS 14-pin socket casing	---	---	On amplifier <b>C</b>	---
A3	Eyelet	Terminal 31	BR 4.0 mm <sup>2</sup>	On earth post	X498
A4	Eyelet	Terminal 30	RT 4.0 mm <sup>2</sup>	<b>E81, E82, E87, E88 cars only</b> On positive bolt of the luggage compartment liner battery terminal <b>E90, E91, E92, E93 cars only</b> On positive bolt of the rear fuse holder	---
A5	Cable open	INVR+	BL/SW 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on RT/BL cable from radio	X10373 Pin 3
A6	Cable open	INVR-	BL/BR 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BR/WS cable from radio	X10373 Pin 2
A7	Cable open	MLVR+	RT/SW 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/SW cable from door speaker	X10373 Pin 4
A8	Cable open	MLVR-	RT/BR 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/BR cable from door speaker	X10373 Pin 1
A9	Cable open	ZBVR+	GN/SW 0.75 mm <sup>2</sup>	With crimp connector <b>G</b> on RT/BL cable to central bass	X10373 Pin 3
A10	Cable open	ZBVR-	GN/BR 0.75 mm <sup>2</sup>	With crimp connector <b>G</b> on BR/WS cable to central bass	X10373 Pin 2
A11	Cable open	INVL+	BL/WS 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on RT/WS cable from radio	X10372 Pin 3
A12	Cable open	INVL-	BL/BR 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BR/GE cable from radio	X10372 Pin 2
A13	Cable open	MLVL+	RT/WS 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/WS cable from door speaker	X10372 Pin 4
A14	Cable open	MLVL-	RT/BR 0.5 mm <sup>2</sup>	With crimp connector <b>G</b> on BL/BR cable from door speaker	X10372 Pin 1
A15	Cable open	ZBVL+	GN/WS 0.75 mm <sup>2</sup>	With crimp connector <b>G</b> on RT/WS cable to central bass	X10372 Pin 3
A16	Cable open	ZBVL-	GN/BR 0.75 mm <sup>2</sup>	With crimp connector <b>G</b> on BR/GE cable to central bass	X10372 Pin 2

## 5. Frequency switch connection diagram

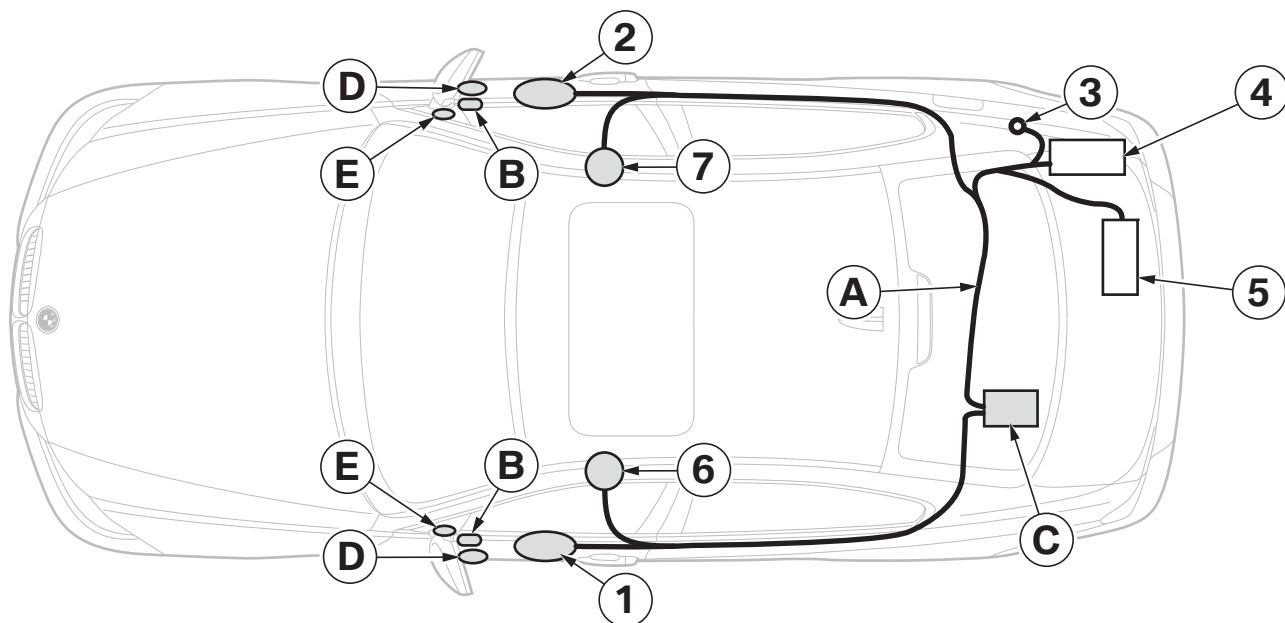


087 1042 Z

Branch/ Item	Designation	Signal	Cable colour/ cross-section	Connection location in the car	Abbreviation/slot
B	Frequency switch	---	---	---	---
B1	BL 2-pin socket casing	---	---	On mid-range speaker <b>D</b>	---
B2	BL 2-pin plug casing	---	---	<b>Cars with SA 662 only</b> On tweeter <b>E</b>	---
B3	BL 2-pin plug casing	---	---	On original socket casing to door speaker	---
B4	BL 2-pin plug casing	---	---	<b>Cars with SA 606, SA 609, SA 663 only</b> On tweeter <b>E</b>	---



## 6. Installation and cabling diagram



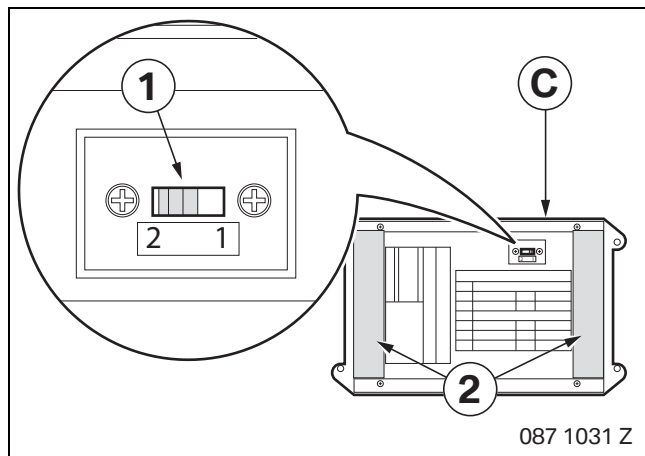
087 1091 Z

### Legend

- A** Retrofit cable set
- B** Frequency switch
- C** Amplifier
- D** Mid-range speaker
- E** Tweeter

- 1** Connectors **X9387**, **X9388** (cars before 3/09 only)
- 2** Connectors **X9385**, **X9386** (cars before 3/09 only)
- 3** Earth post connection **X498**
- 4** Battery (E90, E91, E92, E93 cars only)
- 5** Battery (E81, E82, E87, E88 cars only)
- 6** Central bass left, plug **X10372** (cars after 3/09 only)
- 7** Central bass right, plug **X10373** (cars after 3/09 only)

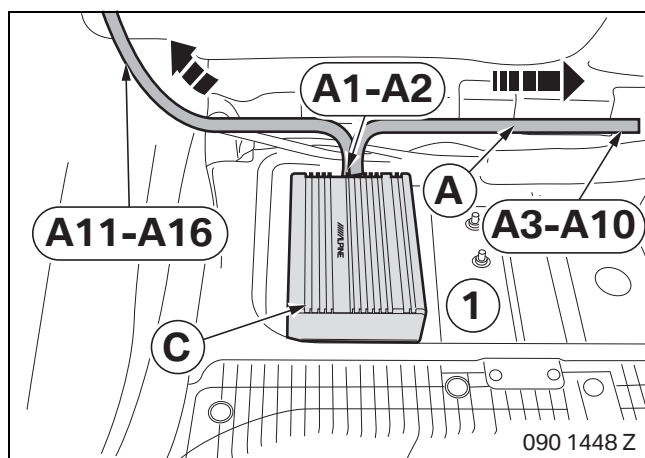
## 7. To install and connect the retrofit kit



- ▶ Before installing amplifier **C**, set switch (1). ◀  
Position 1 for SA 662.

Position 2 for SA 606, SA 609, SA 663.

Remove the backing foil from the adhesive strips (2).



- ▶ Do not route retrofit cable set **A** close to amplifier **C**. ◀

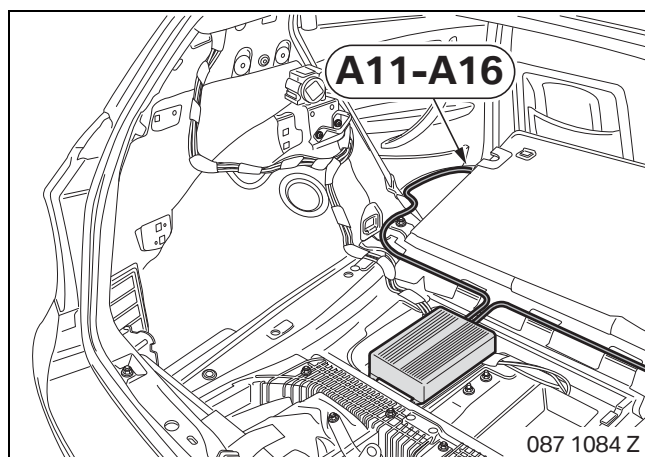
Glue amplifier **C** into the boot space well (1).

Connect branches **A1** and **A2** to amplifier **C**.

Route branches **A3** and **A4** to the battery.

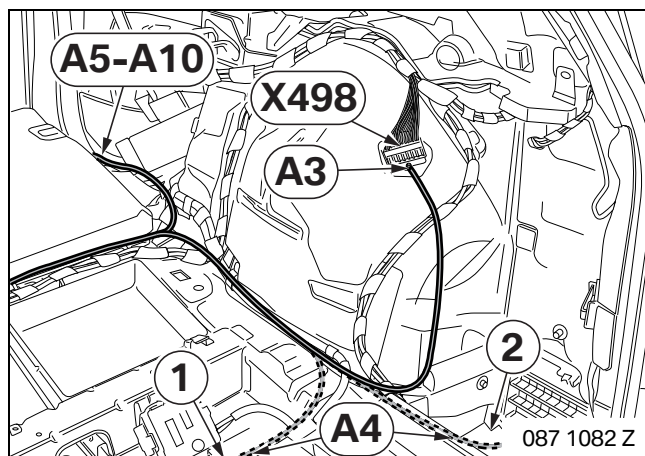
Route branches **A5-A10** to the right-hand side of the car.

Route branches **A11-A16** to the left-hand side of the car.



- ▶ Route the wiring harness as shown. ◀

Route branches **A11-A16** to the left-hand footwell.



- ▶ Route the wiring harness as shown. ◀

Route branches **A5-A10** to the right-hand footwell.

Route branch **A3** to earth post connection **X498**.

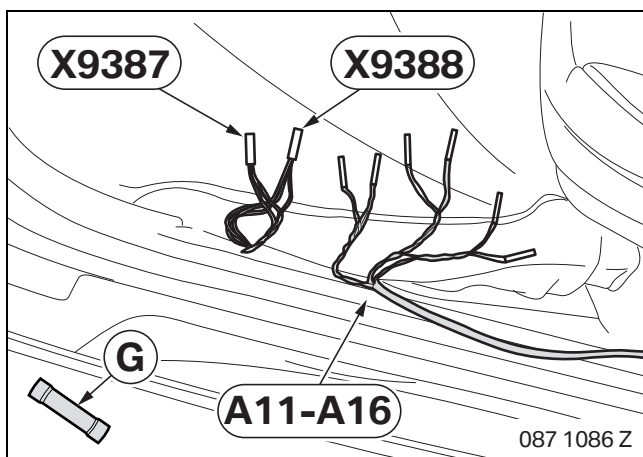
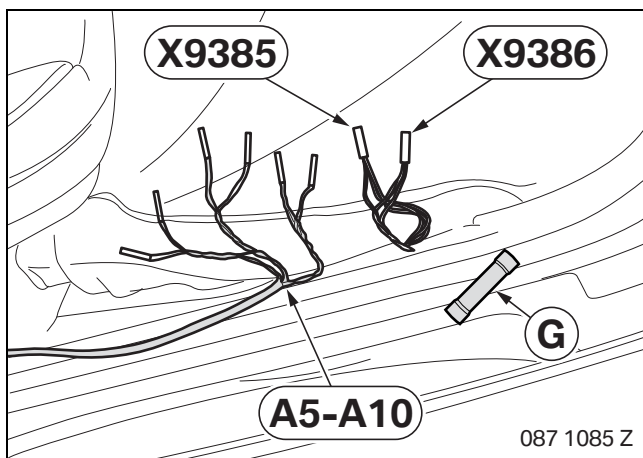
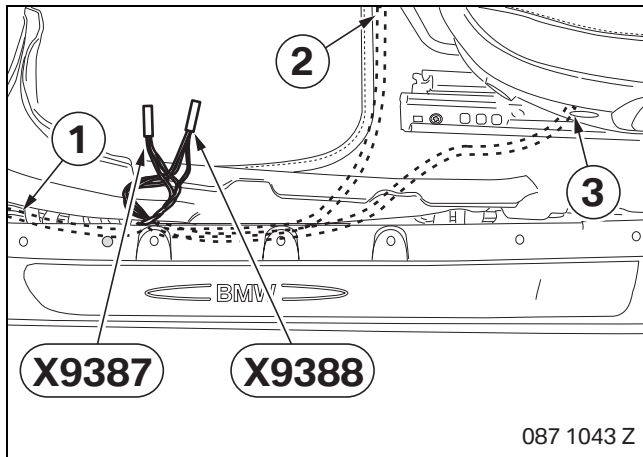
### **E81, E82, E87, E88 cars only**

Route branch **A4** to the positive bolt of the battery terminal (1).

### **E90, E91, E92, E93 cars only**

Route branch **A4** to the rear fuse holder (2).

## 7. To install and connect the retrofit kit



### Cars built before 03/09 only

Expose connectors **X9387** and **X9388** on the wiring harness.

Expose the wiring harness as much as is required to ensure the cables can be routed securely.

- (1) to the door speaker, 0.75 mm<sup>2</sup>
- (2) to the radio, 2.5 mm<sup>2</sup>
- (3) to the central bass, 2.5 mm<sup>2</sup>

Proceed in the same way with connectors **X9385** and **X9386** on the right-hand side.

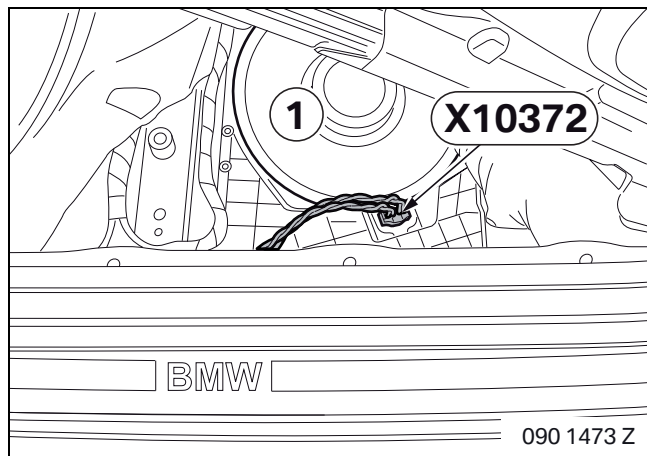
Connect branches **A5–A10** as follows with crimp connector **G** on connectors **X9385** and **X9386**:

- Branch **A5**, BL/SW cable, on BL/SW cable from radio
- Branch **A6**, BL/BR cable, on BL/BR cable from radio
- Branch **A7**, RT/SW cable, on BL/SW cable from door speaker
- Branch **A8**, RT/BR cable, on BL/BR cable from door speaker
- Branch **A9**, GN/SW cable, on BL/SW cable from central bass
- Branch **A10**, GN/BR cable, on BL/BR cable from central bass

Connect branches **A11–A16** as follows with crimp connector **G** on connectors **X9387** and **X9388**:

- Branch **A11**, BL/WS cable, on BL/WS cable from radio
- Branch **A12**, BL/BR cable, on BL/BR cable from radio
- Branch **A13**, RT/WS cable, on BL/WS cable from door speaker
- Branch **A14**, RT/BR cable, on BL/BR cable from door speaker
- Branch **A15**, GN/WS cable, on BL/WS cable from central bass
- Branch **A16**, GN/BR cable, on BL/BR cable from central bass

## 7. To install and connect the retrofit kit

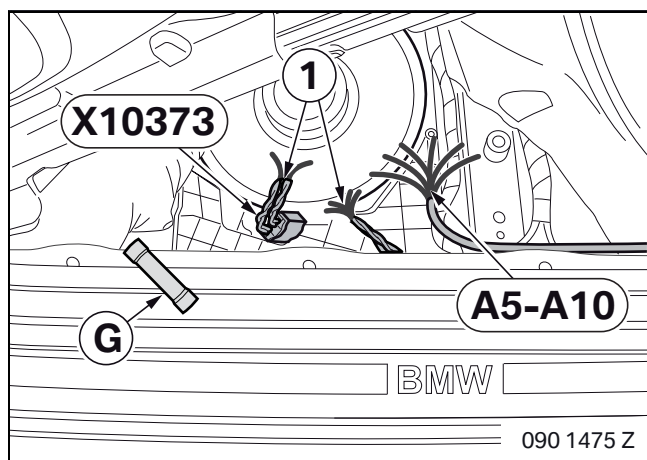


### Cars built after 03/09 only

Cut through all lines on plug **X10372** of central bass left (1).

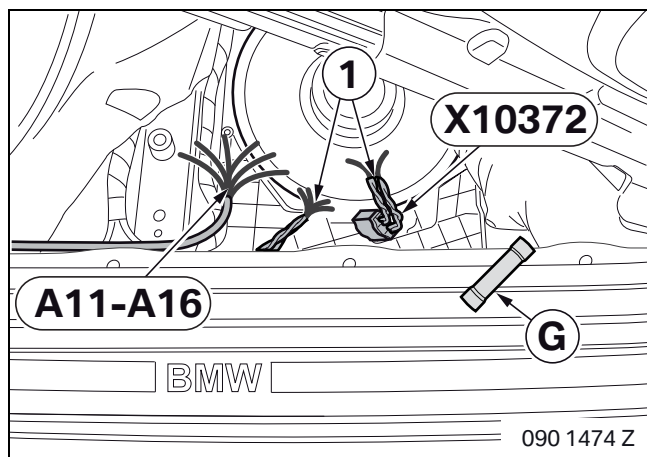
Proceed in the same way on plug **X10373** of the central bass right.

Insulate and tie back plug-side lines from pins 1 and 4 of plug **X10372** and **X10373**.



Connect branches **A5–A10** as follows with crimp connector **G** to separated lines (1) from plug **X10373**:

- Branch **A5**, BL/SW cable, on car-side RT/BL cable from radio
- Branch **A6**, BL/BR cable, on car-side BRWS cable from radio
- Branch **A7**, RT/SW cable, on car-side BL/SW cable to door speaker
- Branch **A8**, RT/BR cable, on car-side BL/BR cable to door speaker
- Branch **A9**, GN/SW cable, on plug-side RT/BL cable from central bass right (pin 3)
- Branch **A10**, GN/BR cable, on plug-side BRWS cable from central bass right (pin 2)

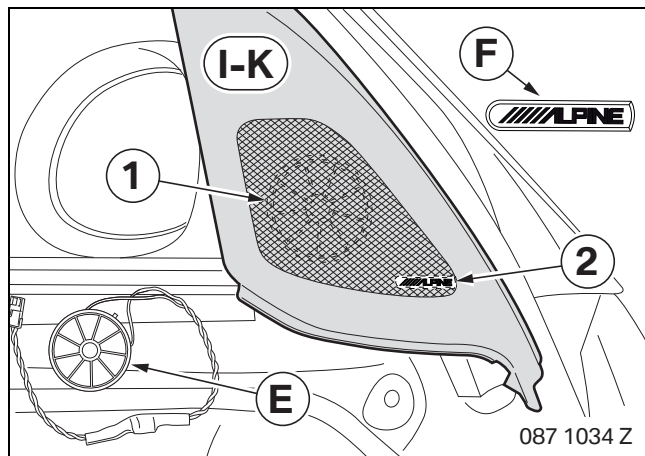


Connect branches **A11–A16** as follows with crimp connector **G** to separated lines (1) from plug **X10372**:

Branch **A11**, BLWS cable, on car-side RT/WS cable from radio

- Branch **A12**, BL/BR cable, on car-side BR/GE cable from radio
- Branch **A13**, RTWS cable, on car-side BL/WS cable to door speaker
- Branch **A14**, RT/BR cable, on car-side BL/BR cable to door speaker
- Branch **A15**, GNWS cable, on plug-side RT/WS cable from central bass left (pin 3)
- Branch **A16**, GN/BR cable, on plug-side BR/GE cable from central bass left (pin 2)

## 7. To install and connect the retrofit kit



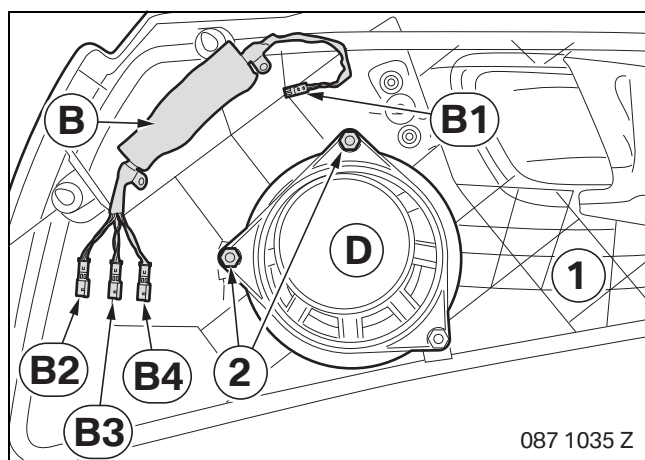
### All cars

▶ If required, use a corner panel on mirror quadrant **I** or window frame cover **K**. ◀

Replace the tweeter in the mirror quadrant (1) with tweeter **E**, see ISTA RA 65 13 050.

Suspend emblem **F** in the speaker grille (2) and stick in position.

Proceed in exactly the same way on the right-hand side.



### All cars E81, E82, E87, E88

Replace the speaker in the door trim (1) with mid-range speaker **D**, see ISTA RA 65 13 070.

Screw frequency switch **B** onto mid-range speaker **D** using nuts (2).

Connect branch **B1** to mid-range speaker **D**.

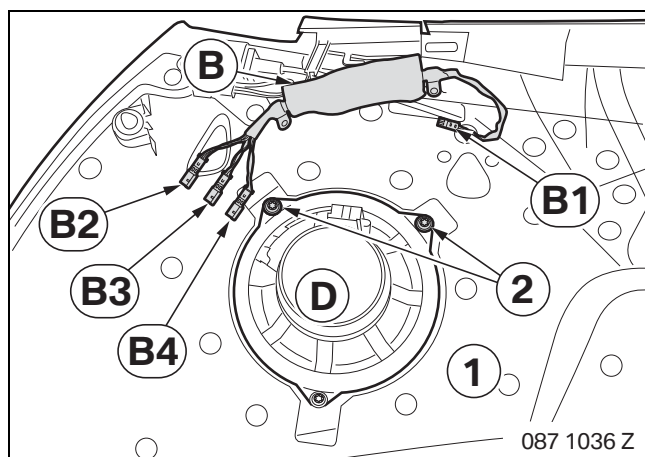
Connect branch **B3** to the original socket casing for the door speaker.

### Only cars E81, E82, E87, E88 with SA 662

Connect branch **B2** to tweeter **E**.

### Only cars E81, E82, E87, E88 with SA 606, SA 609, SA 663

Connect branch **B4** to tweeter **E**.



### All cars E90, E91, E92, E93

Replace the speaker in the door trim (1) with mid-range speaker **D**, see ISTA RA 65 13 070.

Screw frequency switch **B** onto mid-range speaker **D** using nuts (2).

Connect branch **B1** to mid-range speaker **D**.

Connect branch **B3** to the original socket casing for the door speaker.

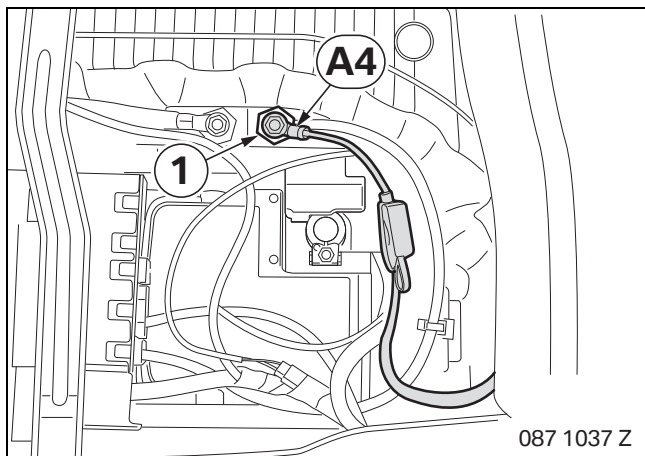
### Only cars E90, E91, E92, E93 with SA 662

Connect branch **B2** to tweeter **E**.

### Only cars E90, E91, E92, E93 with SA 606, SA 609, SA 663

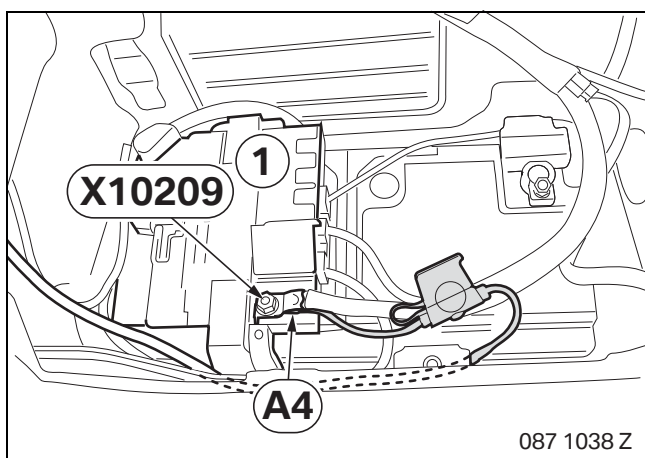
Connect branch **B4** to tweeter **E**.

## 7. To install and connect the retrofit kit



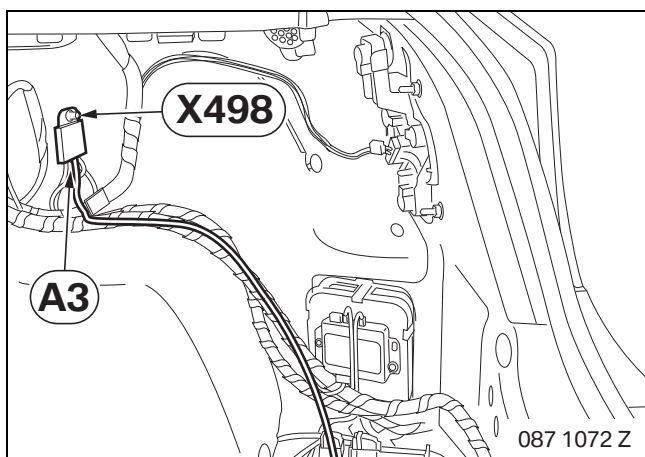
### **E81, E82, E87, E88 cars only**

Screw branch **A4** onto the positive bolt of the luggage space liner battery terminal (1).



### **E90, E91, E92, E93 cars only**

Screw branch **A4** with clamp **X10209** onto the rear fuse holder (1).



### **All cars**

Connect branch **A3** on earth post connection **X498** on the right wheel arch.

## **8. Concluding work and coding**

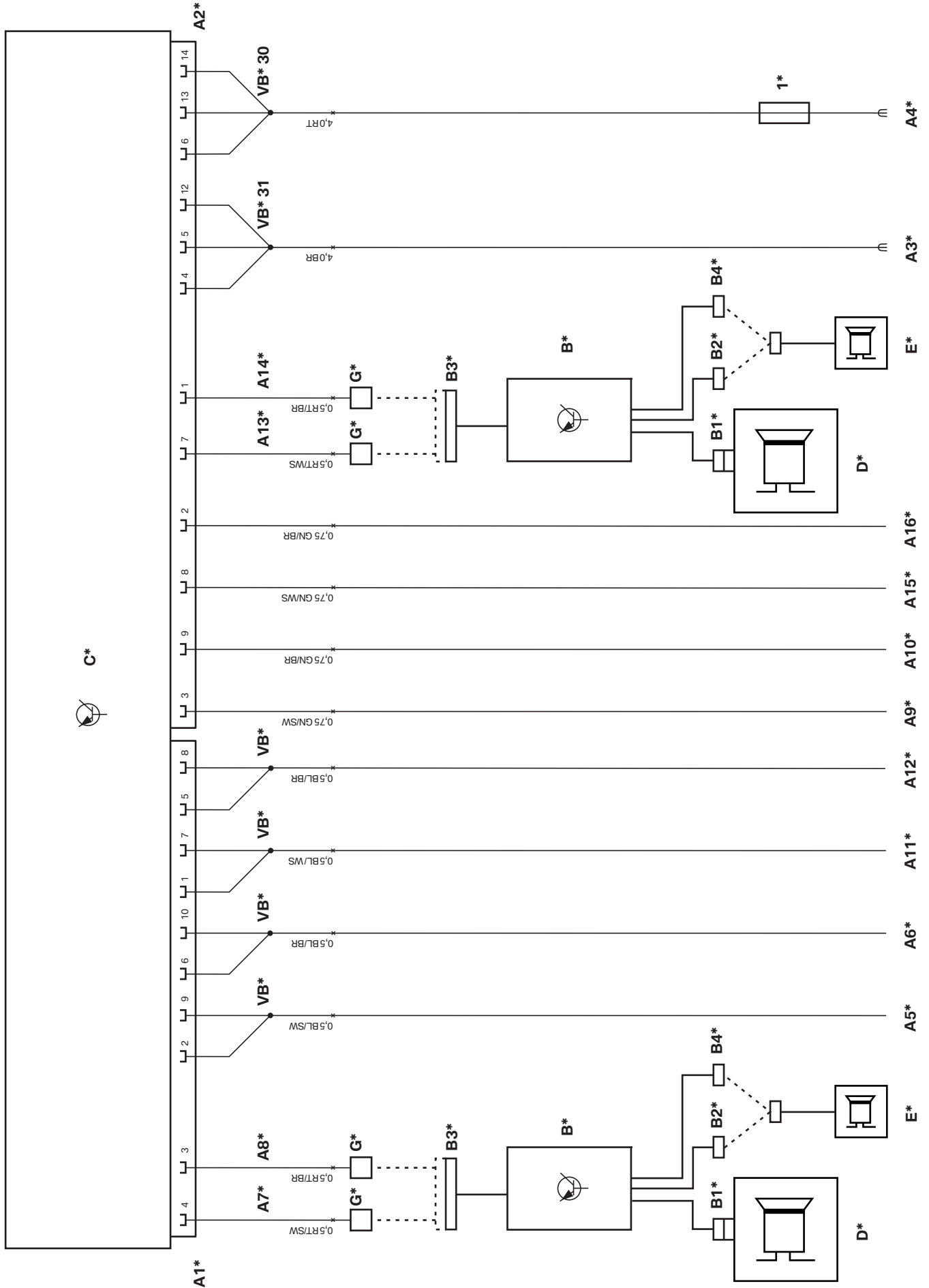
This retrofit system does not require coding.

- Connect the battery
- Conduct a brief test
- Conduct a function test
- Re-assemble the car

### **Information for the customer**

Print out the section entitled “Customer information for the Alpine hi-fi system” at the end of these installation instructions and give it to the customer.

# 9. System circuit diagram





## Legend

<b>A1*</b>	WS 10-pin plug casing
<b>A2*</b>	WS 14-pin plug casing
<b>A3*</b>	Ring eyelet M6, terminal 31 pick-up on earth post connection <b>X498</b>
<b>A4*</b>	Ring eyelet M6, terminal 30 pick-up
<b>A5*</b>	Cable open, positive radio signal pick-up, right-hand side
<b>A6*</b>	Cable open, negative radio signal pick-up, right-hand side
<b>A7*</b>	Cable open, on positive cable from door speaker, right-hand side
<b>A8*</b>	Cable open, on negative cable from door speaker, right-hand side
<b>A9*</b>	Cable open, on positive cable from central bass, right-hand side
<b>A10*</b>	Cable open, on negative cable from central bass, right-hand side
<b>A11*</b>	Cable open, positive radio signal pick-up, left-hand side
<b>A12*</b>	Cable open, negative radio signal pick-up, left-hand side
<b>A13*</b>	Cable open, on positive cable from door speaker, left-hand side
<b>A14*</b>	Cable open, on negative cable from door speaker, left-hand side
<b>A15*</b>	Cable open, on positive cable from central base, left-hand side
<b>A16*</b>	Cable open, on negative cable from central bass, left-hand side
<b>B*</b>	Frequency switch
<b>B1*</b>	On mid-range speaker <b>D</b>
<b>B2*</b>	On tweeter <b>E</b> (cars with SA 662 only)
<b>B3*</b>	On original socket casing of the speaker
<b>B4*</b>	On tweeter <b>E</b> (cars with SA 606, SA 609, SA 663 only)
<b>C*</b>	Amplifier
<b>D*</b>	Mid-range speaker
<b>E*</b>	Tweeter
<b>G*</b>	Crimp connector
<b>VB*</b>	Connector
<b>1*</b>	Fuse holder (20 amps)

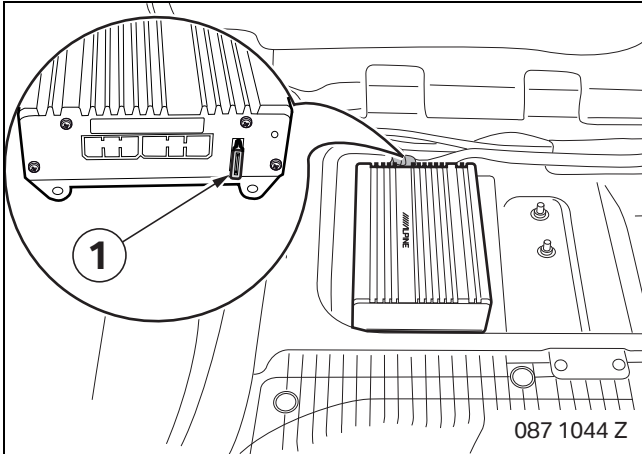
All the designations marked with an asterisk (\*) apply only to these installation instructions or this system circuit diagram.

## Cable colours

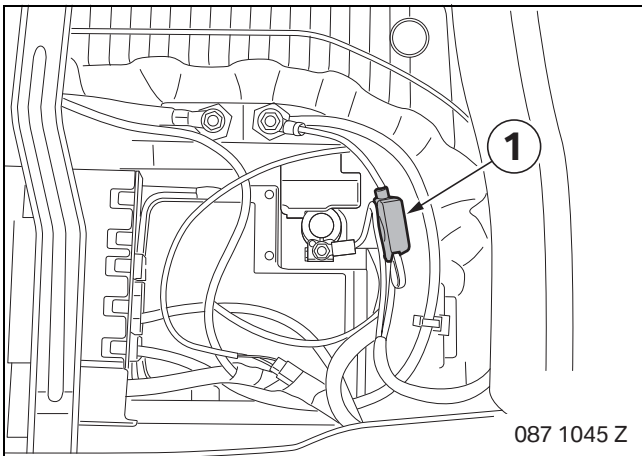
BL	Blue	RT	Red
BR	Brown	SW	Black
GN	Green	WS	White

## 10. Customer information for the Alpine hi-fi system

In the event of a system failure, check the power supply as follows:

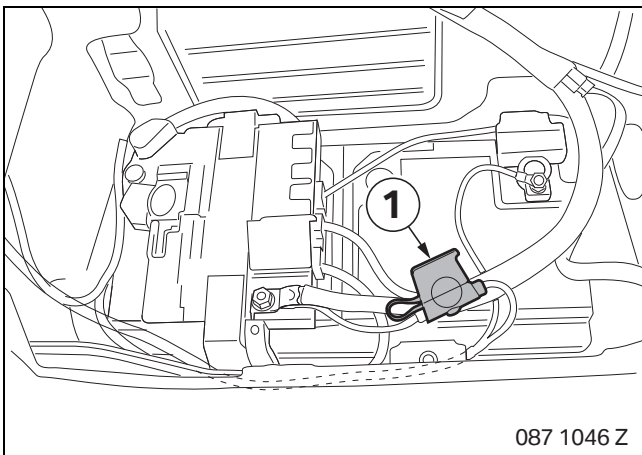


- Remove the luggage compartment floor trim
- Check the fuse (1) on the amplifier
- If necessary, replace with a new 20 amp fuse



### Only for 1 Series cars

- Remove the luggage compartment floor trim
- Check the fuse in the fuse holder (1)
- If necessary, replace with a new 20 amp fuse



### Only for 3 Series cars

- Remove the flap in the right-hand luggage compartment panel
- Check the fuse in the fuse holder (1)
- If necessary, replace with a new 20 amp fuse