

Original BMW Accessories. Installation Instructions.



Bi-xenon light with ALC BMW 1 Series (E81, E82, E87 LCI)

These installation instructions are valid only for cars with SA 502 (headlight washer system) and with SA 521 (rain sensor).

Retrofit kit no.: 63 13 0 443 694 Bi-xenon light retrofit kit with ALC

Installation time

The installation time is **approx. 4.0 hours**. This may vary depending on the condition of the car and the equipment in it.

The installation time will increase by **approx. 2.0 hours** for cars **without SA 502**.

The vehicle must be updated to the latest I-level status by flashing before installing the retrofit. Differing programming times may be necessary depending on the production age of the vehicle and on work previously performed on the vehicle.

The installation time given does not include time needed for programming/encoding.

The total costs for the programming time should be taken into account when calculating retrofitting costs (reimbursement through warranty is not permissible).

Important information

This retrofit kit may only be used in conjunction with **SA 502** (headlight cleaning system).

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.

If you experience installation or function problems, limit troubleshooting to approx. 0.5 hours for mechanical or 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).

Specify 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 made by 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. The costs thereby incurred 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.

After the installation work the retrofit must be programmed / coded using SSS (software service station) via the **CIP** path.

Ordering instructions

The following parts are not supplied in the retrofit kit and must be ordered separately (see EPC for part number and details).

- The footwell module **R**
- Light control **S**
- Right xenon headlight **D**, left **E**
- Rear light LED right **W**, left **X**

List of special equipment

The following special equipment must be taken into consideration when installing the retrofit kit:

SA 502 Headlight cleaning system

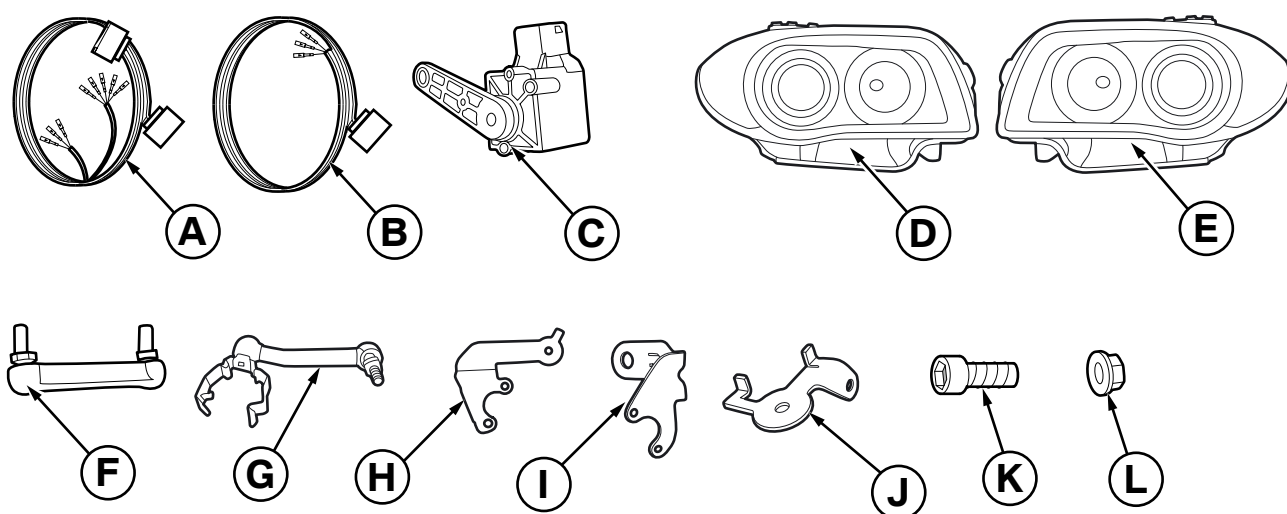
Special tools required

00 9 317 Installation wedges

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1. Parts list

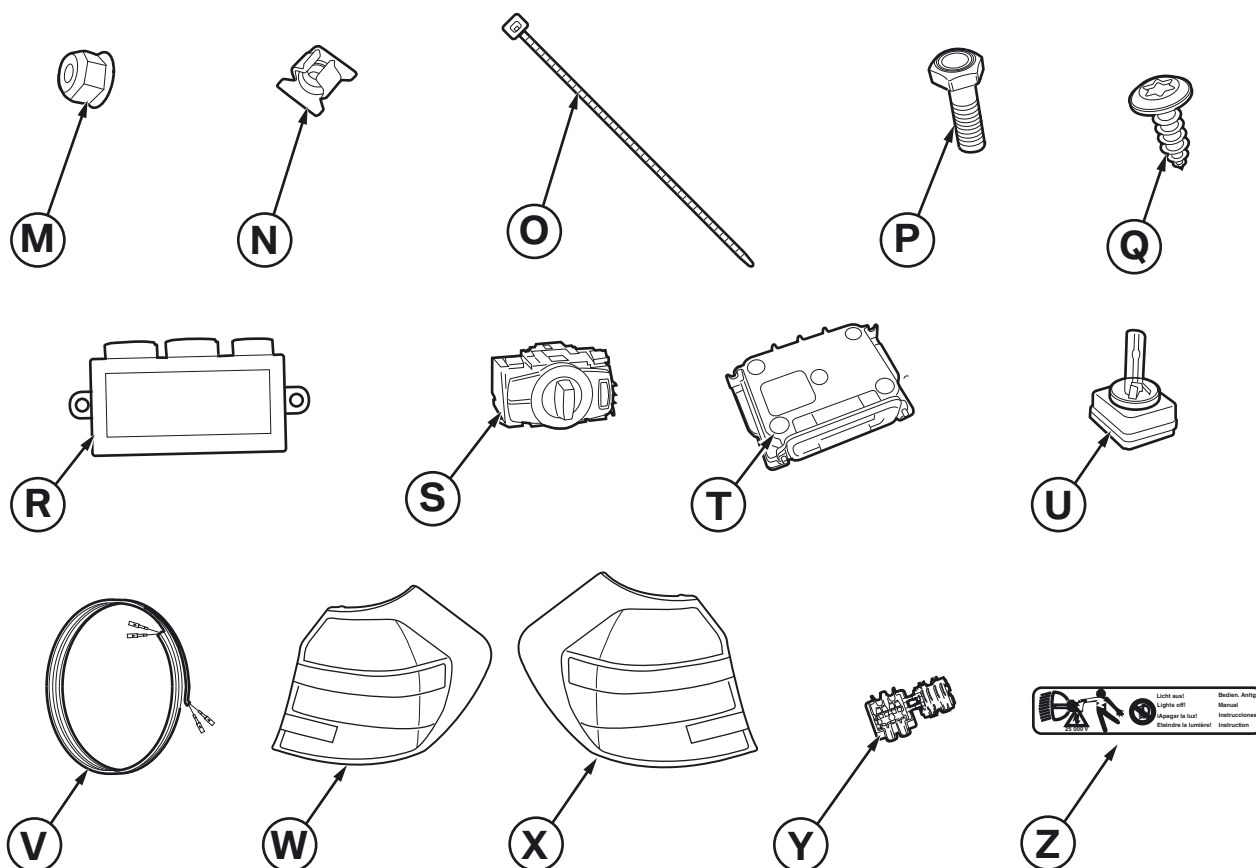


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Legend

- A** Xenon cable set
- B** Level sensor cable set
- C** Level sensor (2x)
- D** Right xenon headlight (not supplied in the retrofit kit)
- E** Left xenon headlight (not supplied in the retrofit kit)
- F** Rear control rod
- G** Front control rod
- H** Rear level sensor holder
- I** Front level sensor holder
- J** Rear control rod holder
- K** Allen screw M5 x 10 (4x)
- L** Hexagonal lock nut M6 (3x)

1. Parts list



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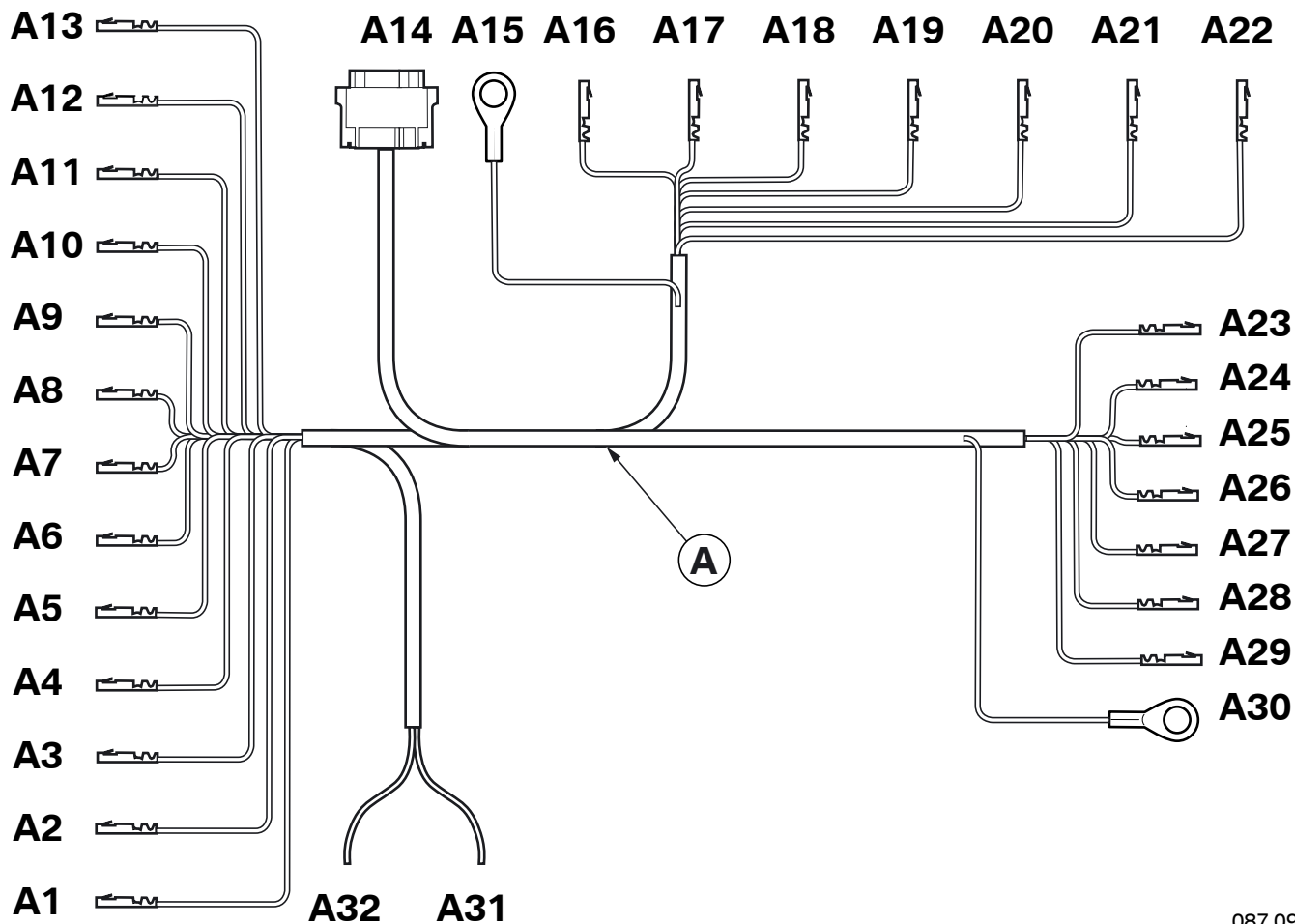
Legend

- M** Collar nut M12 x 1, self-locking
- N** Insert nut M6 (Prestol cage, 2x)
- O** Cable tie (15x)
- P** Hexagonal screw M6 x 16 mm (2x)
- Q** Torx screw (4x, supplied with xenon light control units)
- R** Footwell module (not supplied with the retrofit kit)
- S** Light control (not supplied in the retrofit kit)
- T** Xenon light control module (2x)
- U** Xenon bulb with ignition (2x)
- V** LED rear light cable kit (E81 and E87 cars only)
- W** Right LED rear light (not supplied in the retrofit kit)
- X** Left LED rear light (not supplied in the retrofit kit)
- Y** Miniature connector (2x)
- Z** Bi-xenon headlights sticker (2x)

2. Preparatory work

	ISTA no.
Conduct a brief test	---
Disconnect negative pole of battery	12 00 ...
The following components must be removed first of all	
Power unit bottom guard, front	51 47 490
Front bumper trim	51 11 156
Headlights, right and left (no longer required)	63 12 001
Door sill strip at the front left (interior)	51 47 000
Pedal trim	51 45 185
Side A pillar trim, left footwell	51 43 070
Light control (no longer required)	61 31 037
Footwell module (no longer required)	61 35 115
Glovebox	51 16 366
Rear window shelf	51 46 003
Luggage compartment floor trim	51 47 101
Backrest side section on the left rear seat backrest	52 26 008
Trim on top rear closing panel	51 46 050
Left luggage compartment wheel arch trim	51 47 151
Rear lights, left or right, exchanging	63 21 180
Left front wheel	36 10 300
Left rear wheel	36 10 300
E87 cars only	
Door sill strip at the rear left (interior)	51 47 030
E81, E87 cars with LED rear light cable kit retrofit only	
Right luggage compartment wheel arch trim	51 47 161

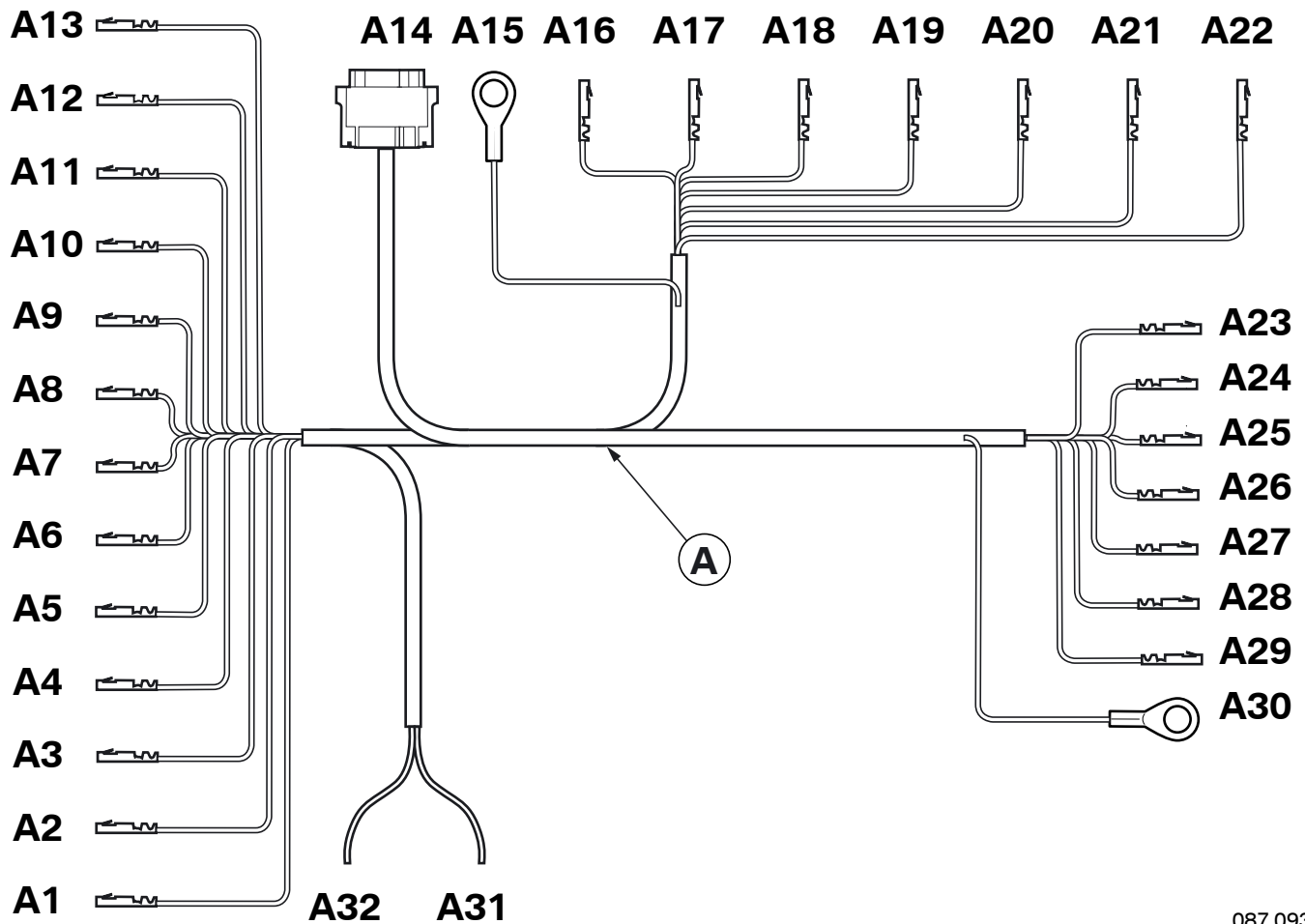
3. Connection diagram



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Branch/ Item	Designation	Signal	Cable colour/ Cross-section	Connection location in the car	Abbreviation/ Slot
A	Xenon cable set	---	---	---	---
A1	Socket contact	56 AR	WS/BL 1.0 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 4
A2	Socket contact	TFL_R	GR/GE 0.75 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 14
A3	Socket contact	LIN_R	WS/GE 0.35 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 24
A4	Socket contact	SMC	GN/SW 0.5 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 42
A5	Socket contact	HSV_L-	GR/WS 0.35 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 26
A6	Socket contact	HSV_L+	GR/BR 0.35 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 31
A7	Socket contact	Bi-xenon	BR/GE 0.35 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 41
A8	Socket contact	LIN_L	WS/RT 0.35 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 25
A9	Socket contact	PT-CAN_L	RT 0.35 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 43
A10	Socket contact	PT-CAN_H	BL/RT 0.35 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 44
A11	Socket contact	HSV_L	GR/GN 0.35 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 49

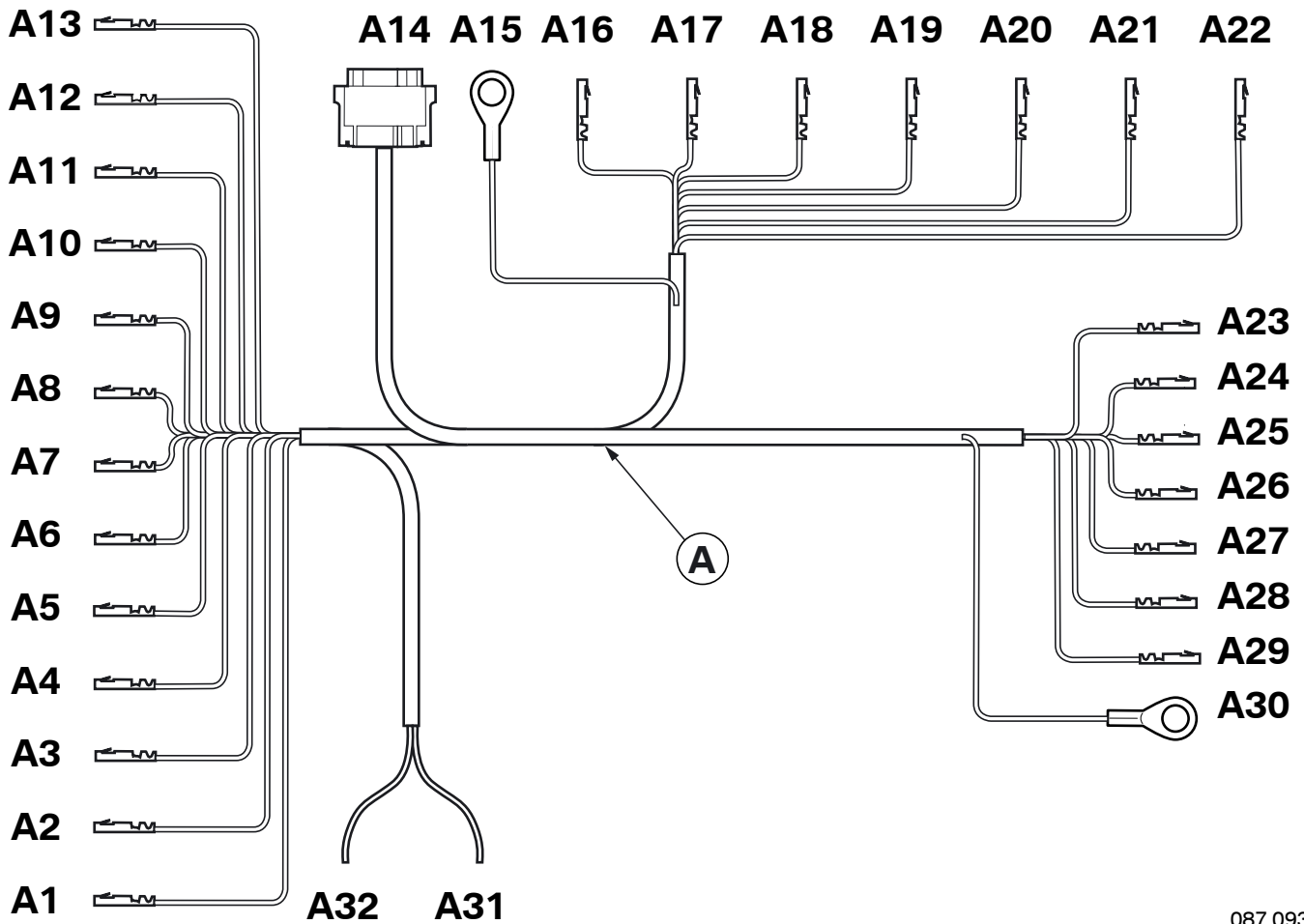
3. Connection diagram



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Branch/ Item	Designation	Signal	Cable colour/ Cross-section	Connection location in the car	Abbreviation/ Slot
A12	Socket contact	56 AL	WS/GN 1.0 mm ²	The footwell module R SW 51-pin plug	X14261 PIN 6
A13	Socket contact	TFL_L	GR/VI 0.75 mm ²	The footwell module R SW 51-pin plug	X14261 PIN 41
A14	BR 6-pin socket casing	---	---	On front left level sensor C	X18032
A15	Eyelet	Terminal 31	Brown 2.50 mm ² BR/SW 0.75 mm ²	Earth bolt on joint connector	X165
A16	Socket contact	TFL_L	GR/VI 0.75 mm ²	On left headlight E	X13420 PIN 1
A17	Socket contact	Terminal 31	Brown 2.50 mm ²	On left headlight E	X13420 PIN 2
A18	Socket contact	Bi-xenon	BR/GE 0.35 mm ²	On left headlight E	X13420 PIN 5
A19	Socket contact	56 AL	WS/GN 1.5 mm ²	On left headlight E	X13420 PIN 6
A20	Socket contact	SMC	GN/SW 0.5 mm ²	On left headlight E	X13420 PIN 9
A21	Socket contact	LIN_LEUC_L	WS/RT 0.35 mm ²	On left headlight E	X13420 PIN 10
A22	Socket contact	Terminal 31	BR/SW 0.75 mm ²	On left headlight E	X13420 PIN 11

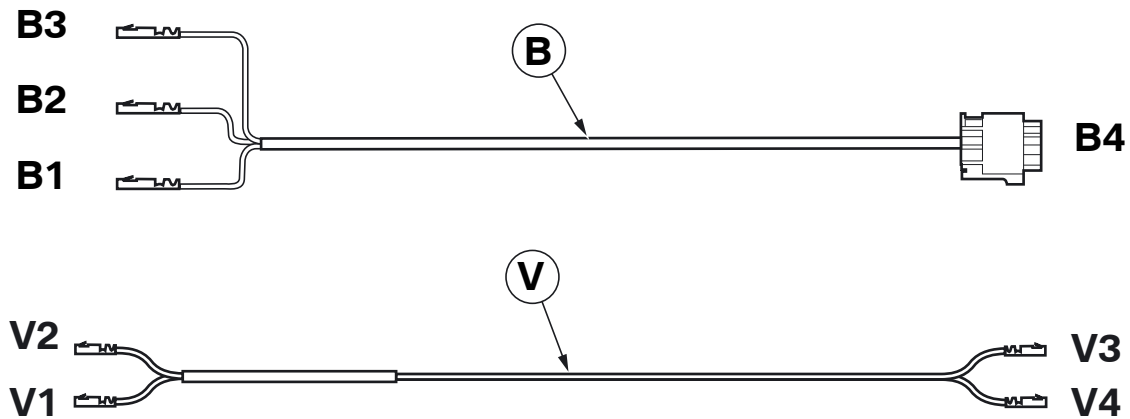
3. Connection diagram



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Branch/ Item	Designation	Signal	Cable colour/ Cross-section	Connection location in the car	Abbreviation/ Slot
A23	Socket contact	TFL_R	GR/GE 0.75 mm ²	On right headlight D	X13421 PIN 1
A24	Socket contact	Terminal 31	Brown 2.50 mm ²	On right headlight D	X13421 PIN 2
A25	Socket contact	Bi-xenon	BR/GE 0.35 mm ²	On right headlight D	X13421 PIN 5
A26	Socket contact	56 AR	WS/BL 1.5 mm ²	On right headlight D	X13421 PIN 6
A27	Socket contact	SMC	GN/SW 0.5 mm ²	On right headlight D	X13421 PIN 9
A28	Socket contact	LIN_R	WS/GE 0.35 mm ²	On right headlight D	X13421 PIN 10
A29	Socket contact	Terminal 31	BR/SW 0.75 mm ²	On right headlight D	X13421 PIN 11
A30	Eyelet	Terminal 31	Brown 2.50 mm ² BR/SW 0.75 mm ²	Earth bolt on joint connector	X166
A31	Cable open	PT-CAN_L	RT 0.35 mm ²	With miniature connector Y to RT cable from fuse box	X14271 PIN 2
A32	Cable open	PT-CAN_H	BL/RT 0.35 mm ²	With miniature connector Y on BL/RT cable from fuse box	X14271 PIN 1

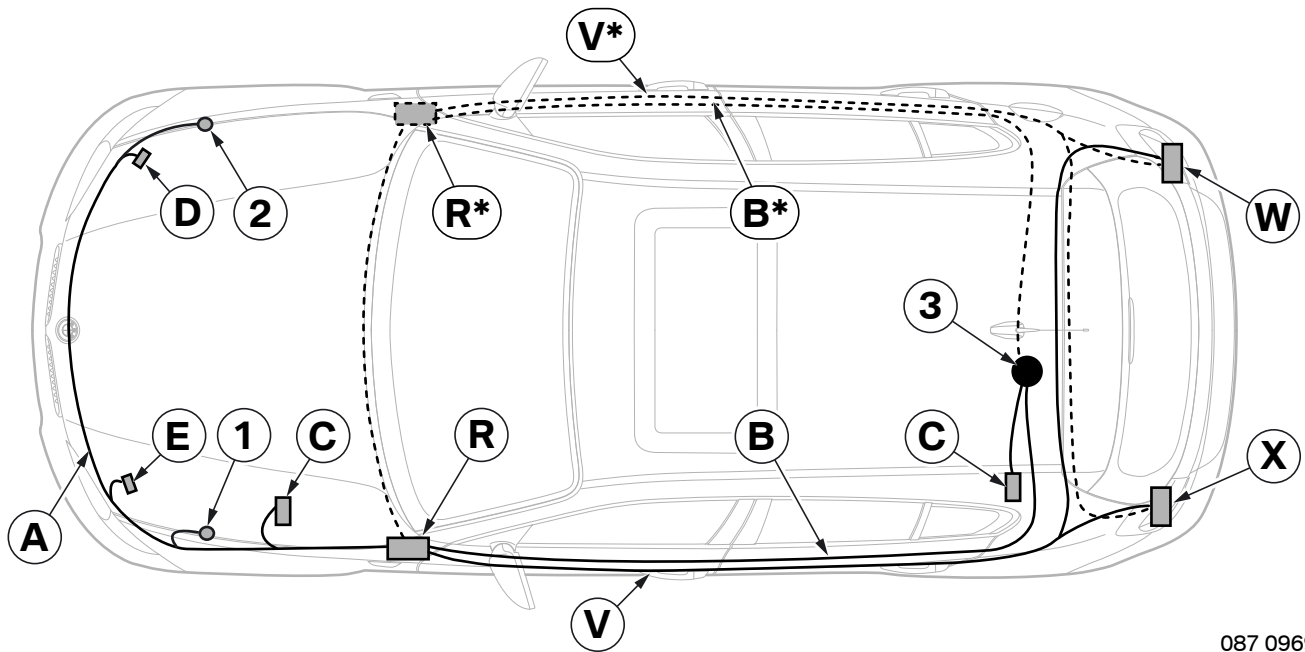
3. Connection diagram



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Branch/ Item	Designation	Signal	Cable colour/ Cross-section	Connection location in the car	Abbreviation/ Slot
B	Level sensor cable kit	---	---	---	---
B1	Socket contact	HSHL-	SW/WS 0.35 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 27
B2	Socket contact	HSHL+	SW/GR 0.35 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 29
B3	Socket contact	HSHL	SW/GN 0.35 mm ²	The footwell module R SW 51-pin plug	X14260 PIN 48
B4	BR 6-pin socket casing	---	---	On rear left level sensor C	X1450
V	Rear light cable kit	---	---	E81, E87 cars only	---
V1	Socket contact	58 HL	GE/SW 0.75 mm ²	On footwell module R , SW 51-pin plug	X14260 PIN 16
V2	Socket contact	58 HR	GE/VI 0.75 mm ²	On footwell module R , SW 51-pin plug	X14260 PIN 18
V3	Socket contact	58 HR	GE/VI 0.75 mm ²	On right rear light W	X339 PIN 4
V4	Socket contact	58 HL	GE/SW 0.75 mm ²	On left rear light X	X338 PIN 4

4. Installation and cabling diagram



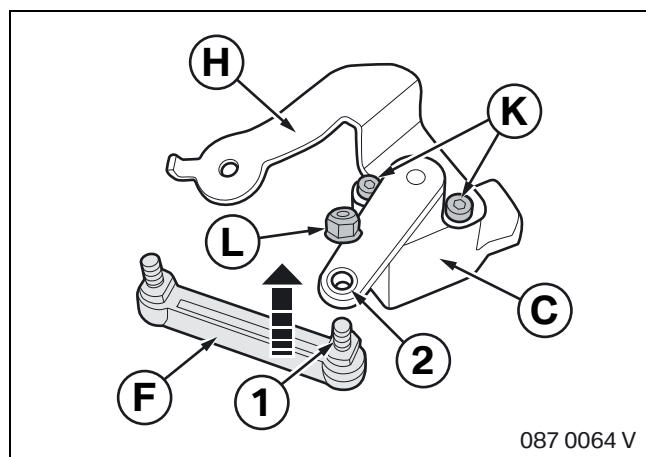
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Legend

- A** Xenon cable set
- B** Level sensor cable kit for LHD cars
- B*** Level sensor cable kit for RHD cars
- C** Level sensor
- D** Right headlight, plug **X13421**
- E** Left headlight, plug **X13420**
- R** Footwell module **A4011** in LHD cars
- R*** Footwell module **A4011** in RHD cars
- V** LED rear light cable kit in LHD cars (E81, E87 cars only)
- V*** LED rear light cable kit in RHD cars (E81, E87 cars only)
- W** Right LED rear light
- X** Left LED rear light

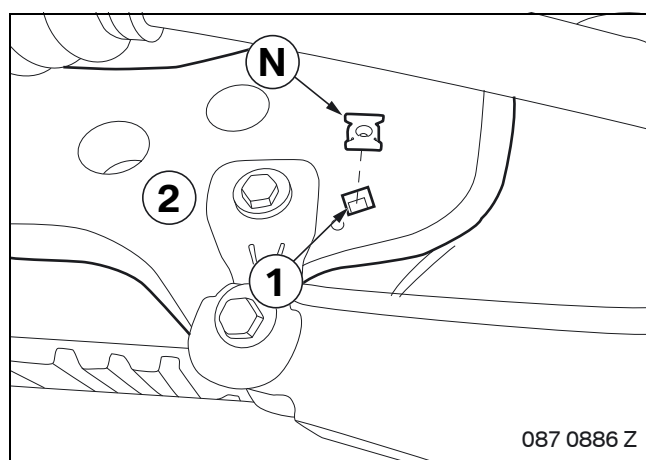
- 1** Earth joint connector **X165**
- 2** Earth joint connector **X166**
- 3** Grommet

5. To install level sensors

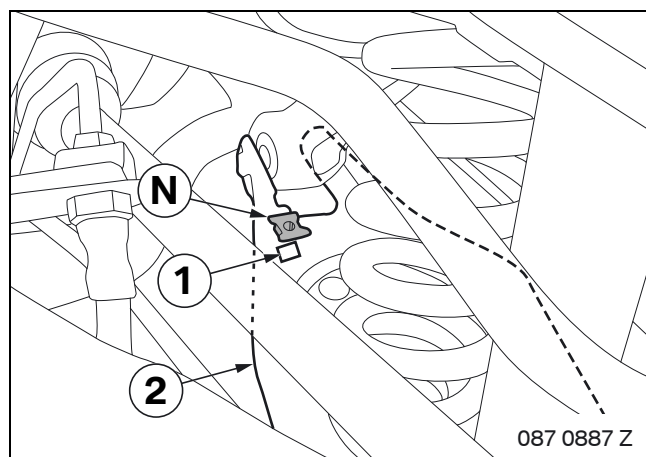


Secure rear level sensor holder **H** to level sensor **C** using Allen bolts **K** (tightening torque: 5 Nm).

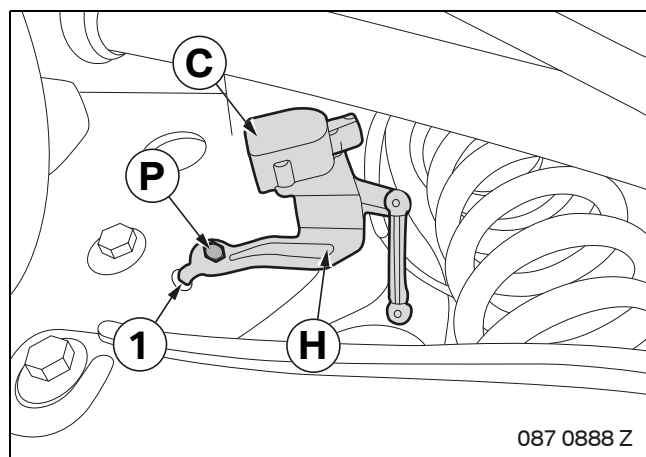
Guide the grub screw (1) of control rod **F** through the hole (2) on level sensor **C** and screw on with hexagonal nut **L** (tightening torque: 8 Nm).



Insert the insert nut **N** in the recess (1) on the left rear axle bracket (2).



Insert the insert nut **N** in the recess (1) on the left rear camber control arm (2).

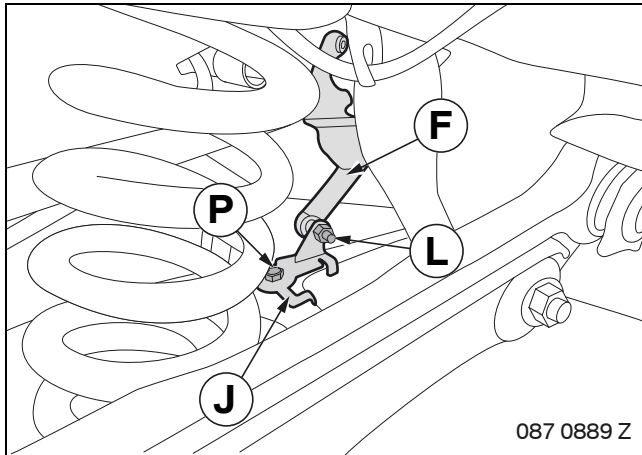


Make sure that the torsion lock (1) of level sensor holder **H** engages in the hole provided. ◀

Install level sensor **C**.

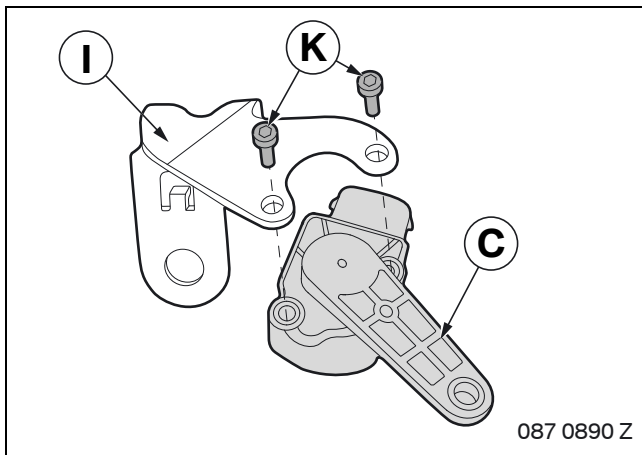
Secure level sensor holder **H** onto left rear axle bracket using hexagonal screw **P** (tightening torque: 8 Nm).

5. To install level sensors

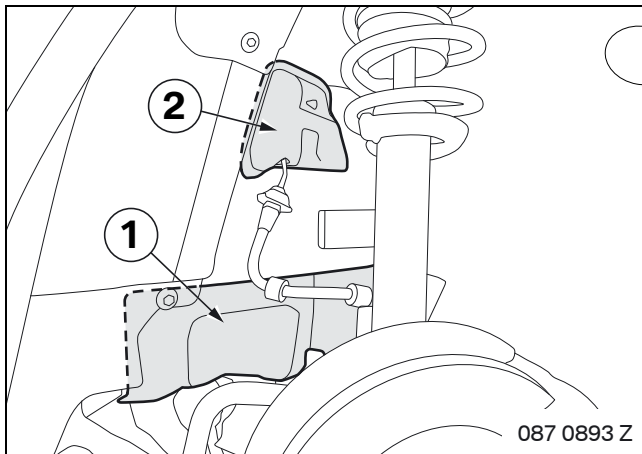


Secure control rod holder **J** onto left rear camber control arm using hexagonal screw **P**.

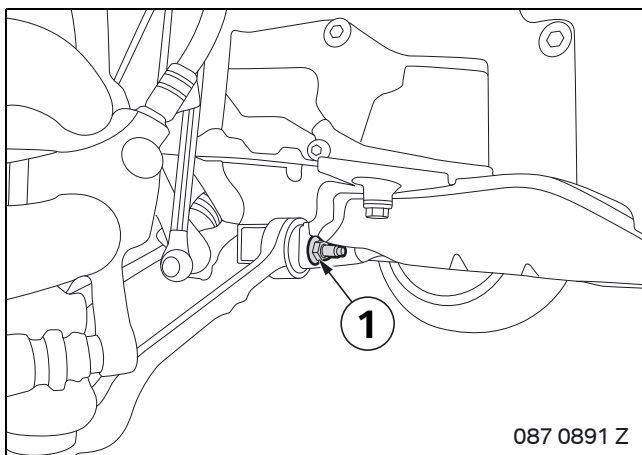
Secure control rod **F** to control rod holder **J** using hexagonal nut **L** (tightening torque: 8 Nm).



Secure level sensor **C** to front level sensor holder **I** using Allen bolts **K** (tightening torque: 5 Nm).

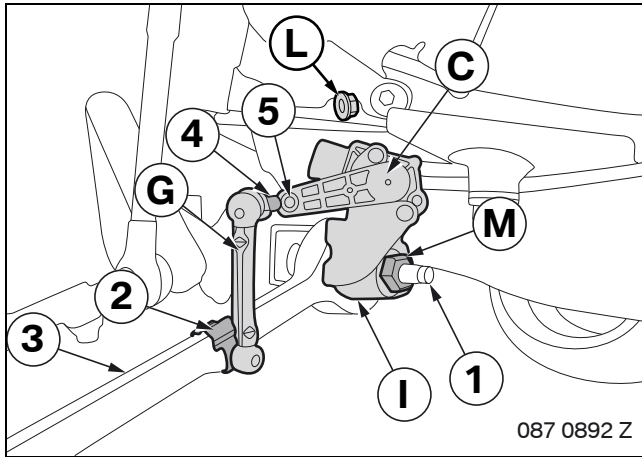


Remove covers (1) and (2) in the front left wheel arch.



Undo the nut (1) on the front left transverse control arm.

5. To install level sensors

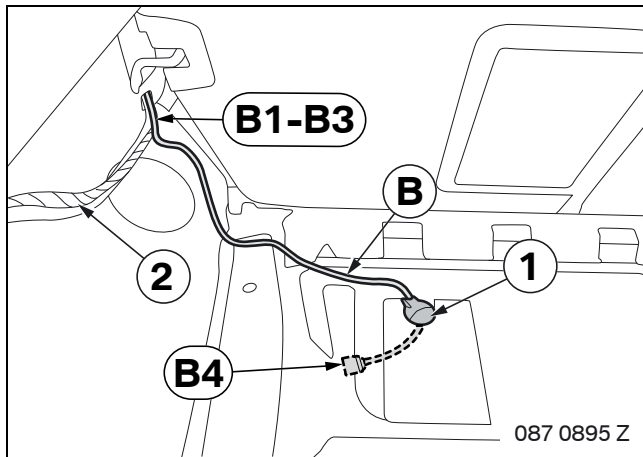


Push level sensor **C** with holder **I** onto transverse control arm pin (1) and secure with nut **M** (Torque: see ISTA No.: 31 12 000).

Place clip (2) from control rod **G** around recess on transverse control arm (3) and lock.

Guide the grub screw (4) of control rod **G** through the hole (5) on level sensor **C** and screw on with nut **L** (tightening torque: 8 Nm).

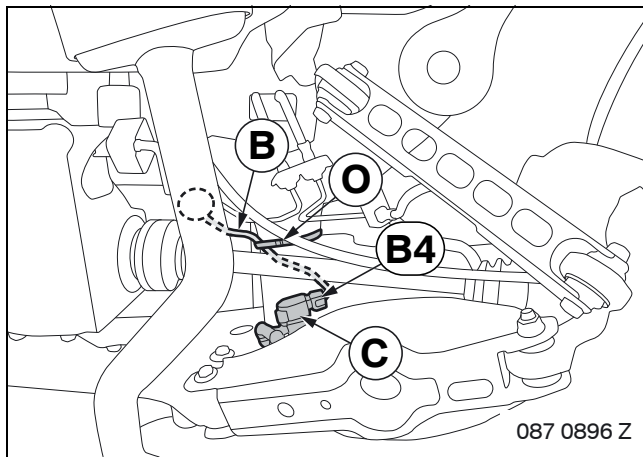
6. To install the cable kit




Route level sensor cable kit **B** through the grommet (1) provided.

Route branch **B4** outwards.

Route branches **B1-B3** on standard wiring harness (2) to the footwell module.



 Route cable kit **B** so there is no contact with moving parts of the rear axle. ◀

Route branch **B4** to level sensor **C** and connect it.

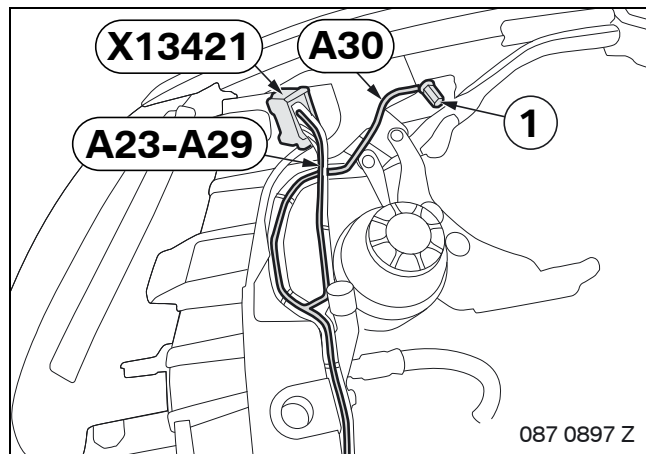
Secure cable kit **B** to the rear axle bracket using cable tie **O**.

6. To install the cable kit

Attach control units **T** with Torx screws **Q** (see ISTA No.: 63 12 860) and install xenon bulbs **U** (see ISTA No.: 63 12 870) into xenon headlights **D** and **E**.

Install Xenon headlights **D** and **E** in the car (see ISTA No.: 63 12 012).

Install light control **S** in the car (see ISTA No.: 61 31 037).

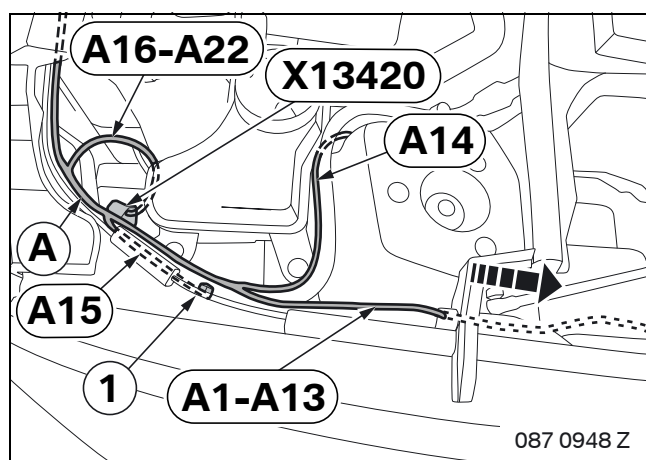


Start with branches **A23–A30** on front right headlight. ◀

Screw branch **A30** to the earth bolt (1) of earth joint connector **X166**.

Connect branches **A23–A29** to socket casing **X13421** as follows:

- Disconnect the cable from pins 1, 9, 10 and 11, insulate and tie back
- Branch **A23**, GR/GE cable, to PIN 1
- Branch **A24**, BR cable, to PIN 2
- Branch **A25**, WS/BL cable, to PIN 6
- Branch **A26**, BR/GE cable, to PIN 5
- Branch **A27**, GN/SW cable, to PIN 9
- Branch **A28**, WS/GE cable, to PIN 10
- Branch **A29**, BR/SW cable, to PIN 11



Route xenon cable kit **A** along the wiring harness to the left headlight.

Screw branch **A15** to the earth bolt (1) from earth joint connector **X165**.

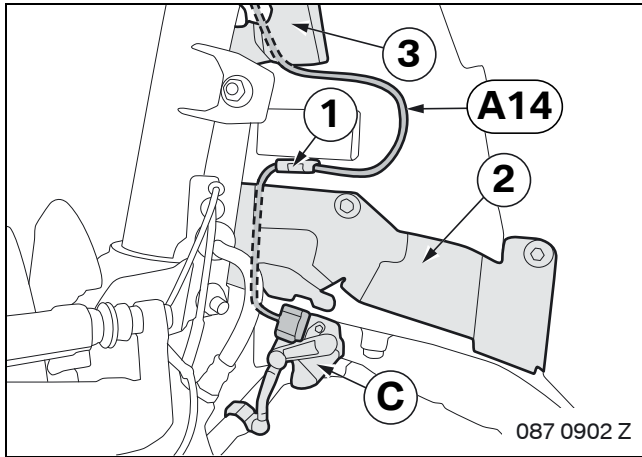
Connect branches **A16–A22** to socket casing **X13420** as follows:

- Disconnect the cable from pins 1, 9, 10 and 11, insulate and tie back
- Branch **A16**, GR/VI cable, to PIN 1
- Branch **A17**, brown cable, to PIN 2
- Branch **A18**, BR/GE cable, to PIN 5
- Branch **A19**, WS/GN cable, to PIN 6
- Branch **A20**, GN/SW cable, to PIN 9
- Branch **A21**, WS/RT cable, to PIN 10
- Branch **A22**, BR/SW cable, to PIN 11

Route branch **A14** along the standard wiring harness to the wheel arch feed-through.

Route branches **A1–A13** along the standard wiring harness to the bulkhead.

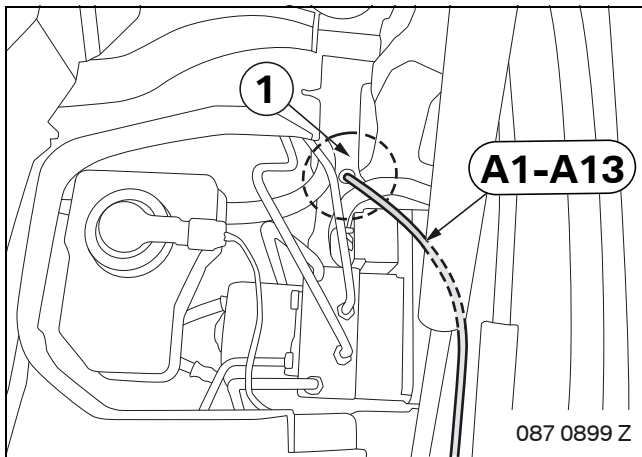
6. To install the cable kit



Route branch **A14** along the standard wiring harness to level sensor **C** and connect it.

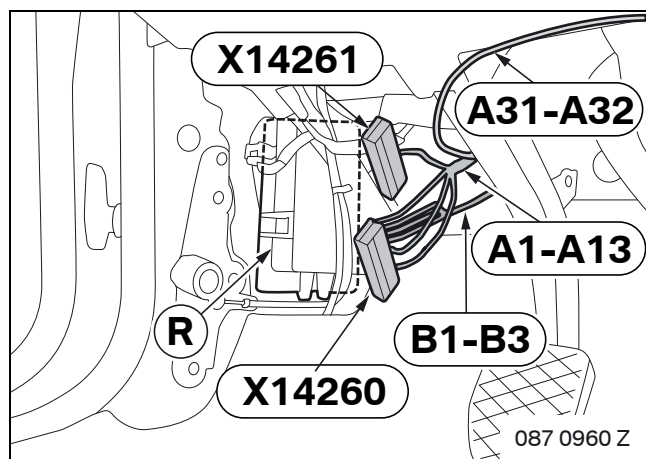
Engage the clip (1) in the hole provided.

Re-attach the covers (2) and (3).



Route branches **A1-A13** from the engine compartment through rubber grommet (1) into the inside of the car.

6. To install the cable kit



Install footwell module **R** for xenon light (see ISTA No.: 61 35 153). Tie back excess length of wiring harness in LHD cars. ◀

Route branches **A1-A13** and **B1-B3** to footwell module **R**.

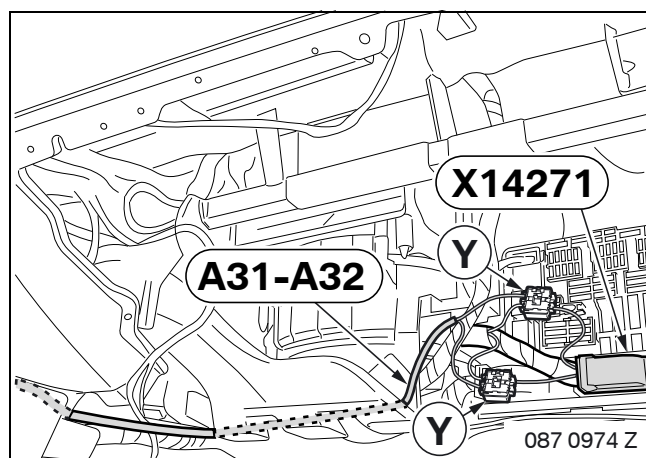
Connect branches **A1-A11** and **B1-B3** to socket casing **X14260** as follows:

- Branch **A1**, WS/BL cable, to PIN 4
- Branch **A2**, GR/GE cable, to PIN 14
- Branch **A3**, WS/GE cable, to PIN 24
- Branch **A4**, GN/SW cable, to PIN 42
- Branch **A5**, GR/WS cable, to PIN 26
- Branch **A6**, GR/BR cable, to PIN 31
- Branch **A7**, BR/GE cable, to PIN 41
- Branch **A8**, WS/RT cable, to PIN 25
- Branch **A9**, RT cable, to PIN 43
- Branch **A10**, BL/RT cable, to PIN 44
- Branch **A11**, GR/GN cable, to PIN 49
- Branch **B1**, SW/WS cable, to PIN 27
- Branch **B2**, SW/GR cable, to PIN 29
- Branch **B3**, SW/GN cable, to PIN 48

Connect branch **A12**, WS/GN cable, to PIN 6 of socket casing **X14261**.

Connect branch **A13**, GR/VI cable, to PIN 41 of socket casing **X14261**.

Route branches **A31-A32** to the passenger footwell.

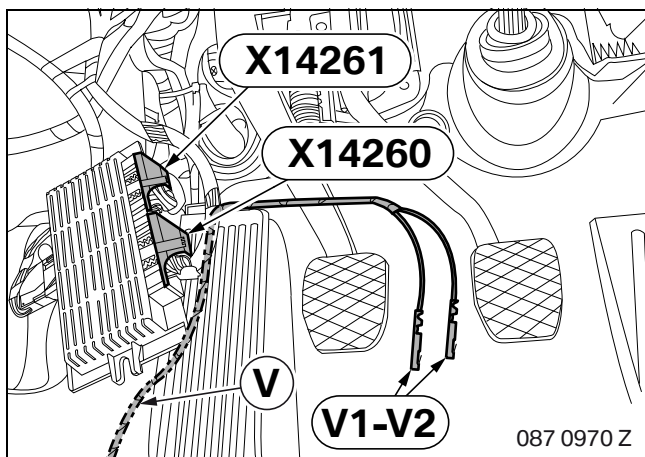


Route branches **A31-A32** to the fuse box.

Use miniature connector **Y** to connect branch **A31**, RT cable, to the RT cable from plug **X14271**, PIN 2.

Use miniature connector **Y** to connect branch **A32**, BL/RT cable, to the RT cable from plug **X14271**, PIN 1.

7. To install LED rear light cable kit (E81, E87 cars only)

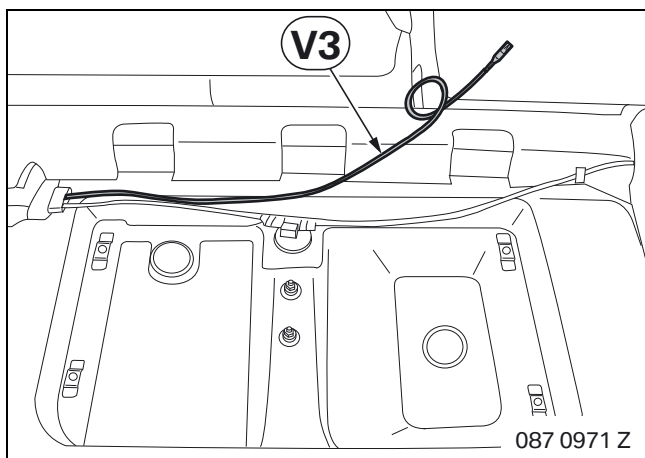


Disconnect GR/VI cable from socket casing **X14260**, PIN 16 and connect to socket casing **X14261**, PIN 43.

Disconnect GR/GE cable from socket casing **X14260**, PIN 18 and connect to socket casing **X14261**, PIN 9.

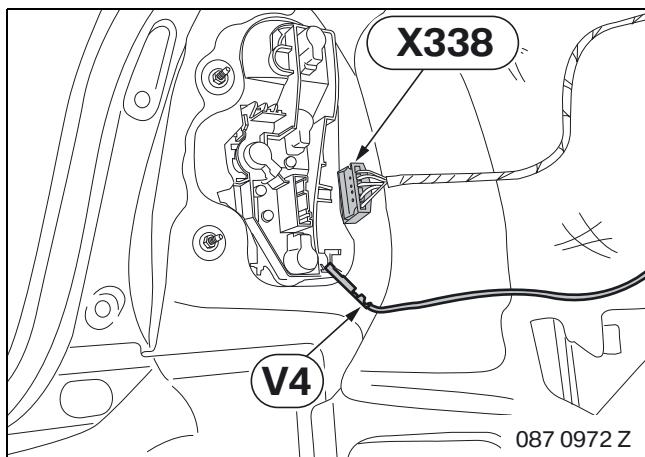
Connect branches **V1-V2** to socket casing **X14260** as follows:

- Branch **V1**, GE/SW cable, to PIN 16
- Branch **V2**, GE/VI cable, to PIN 18

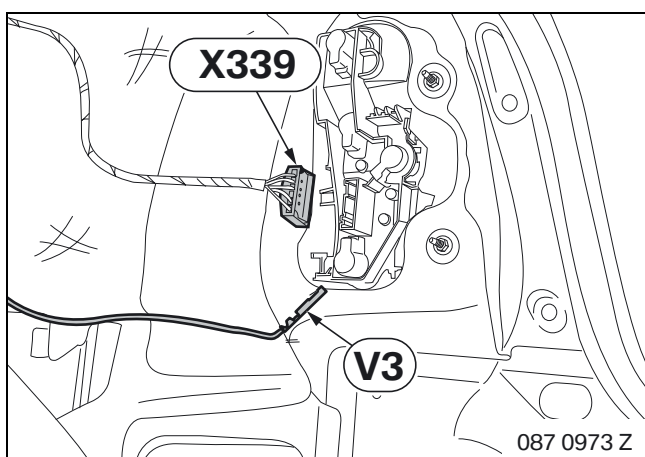


Route LED rear lights cable kit **V** along the standard wiring harness to the rear seat bench.

Route branch **V3** along the standard wiring harness to the luggage compartment floor.



Route branch **V4** to the left rear light and connect GE/SW cable to PIN 4 of plug **X338**.

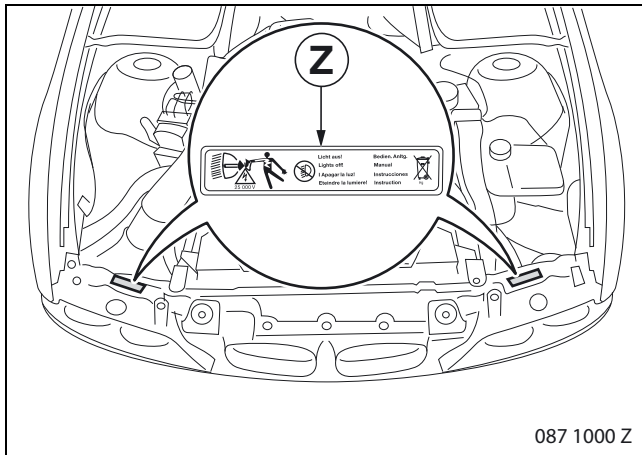


Route branch **V3** to right rear light and connect GE/VI cable to PIN 4 of plug **X339**.

8. Concluding work and coding

This retrofit system requires coding.

- Connect the battery
- Encode/program the retrofit with SSS (software service station) via the **CIP** path
- Conduct a brief test
- Conduct a function test
- Adjust the headlights
- Re-assemble the car

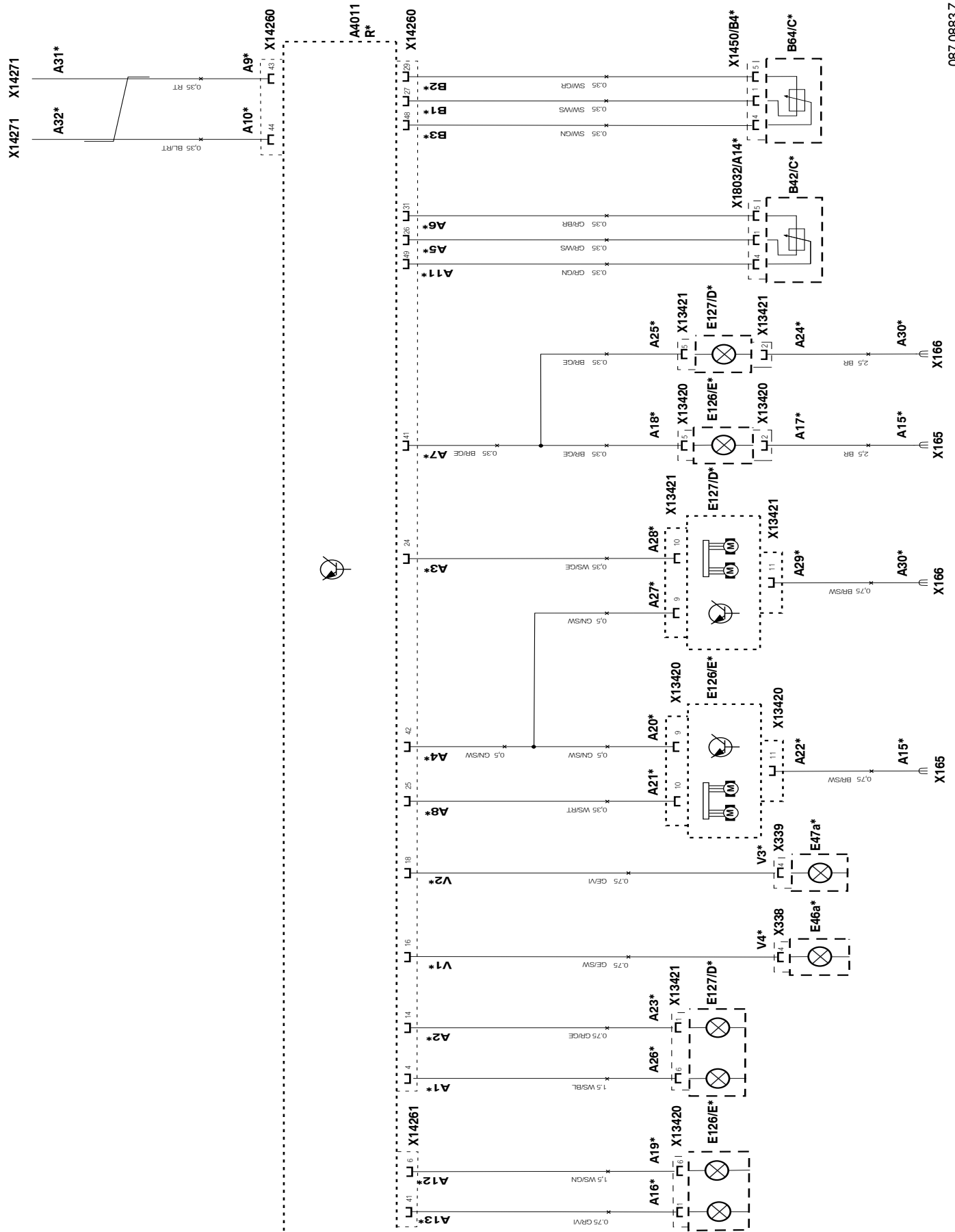


Clean the base support arms near the headlights and affix the bi-xenon headlights sticker **Z**.

Function test of the level sensors

When the dipped headlight switch is activated the headlights must adjust automatically. Test the function of the automatic headlight adjustment control by loading the front and then the rear of the car.

9. Circuit diagram



9. Circuit diagram

Legend

A4011	Footwell module R*
B42	Front left level sensor C*
B64	Rear left level sensor C*
E126	Left headlight E*
E127	Right headlight D*
X165	Joint connector earth A15*
X166	Joint connector earth X30*
X338	Left rear light V4*
X339	Right rear light V3*
X1450	6-pin plug B4*
X13420	12-pin plug A16*–A22*
X13421	12-pin plug A23*–A29*
X14260	51-pin plug A1*–A11*, V1*–V2*
X14261	51-pin plug A12*–A13*
X14271	54-pin plug A31*–A32*
X18032	6-pin plug A14*

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