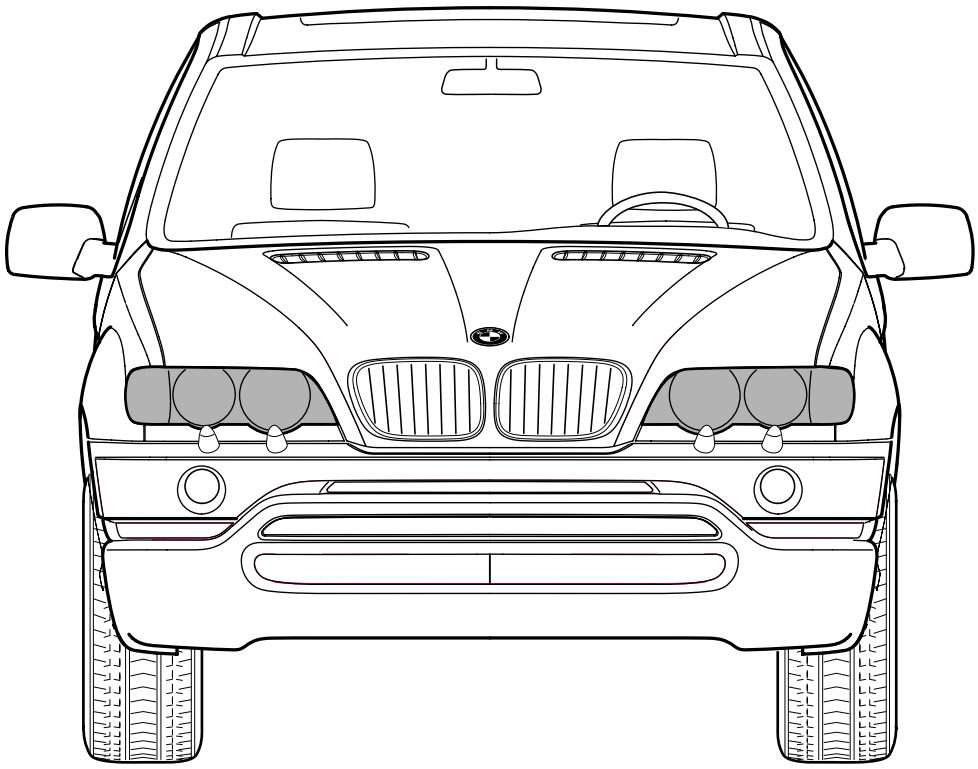
Teile und Zubehör - Einbauanleitung



F 53 0054 EVA

BMW Parts and Accessories – Installation Instruction
Xenon lights with automatic headlight adjustment control system
for the BMW X5 (E53), LHD

Best.-Nr. 01 29 0 007 010 XI/99 Printed in Germany

Contents **Page**

1 Important information

(Only for use within the BMW dealer organisation.)
Installation time approx. 7.5 hours.
The installation times may differ depending on the condition of the car and the equipment in it.

This retrofit system may only be installed with a headlight cleaning system.

All servicing, repair, installation and adjustment work on cars is conducted on your own responsibility.
All work is to be completed using the latest BMW
- Repair instructions,
- Service manuals,
- Diagnostics manuals
- Circuit diagrams,
- Work instructions,

in a rational sequence using the prescribed tools (special tools) and pursuant to the relevant health and safety regulations.

Safety notes

An optional equipment wiring harness is used on the E53. This means that if a car is fitted as standard with at least one of the following pieces of special equipment (SA), the other modules (MD) for the special equipment on this level will also be integrated in the vehicle wiring harness.
The modules for the special equipment for the lower levels will then also be available.
Example: If a car is fitted with SA 536 (auxiliary heating system), all models on level 3, level 2 and level 1 will be available.

Level 2
SA 235 (MD AHM) (trailer hitch)
SA 502 (MD SRA)
SA 508 (MD PDC)
SA 609 (MD navigation system)
SA 624 to 629 (US SA 640 (MS car telephone / radio)

Level 3
SA 248 (MD steering wheel heating system)
SA 261 (MD rear airbag)
SA 265 (MD RDC) (tyre pressure control module)
SA 461 (MD backrest heating system in the rear)
SA 496 (MD seat heating system in the rear)
SA 533 (MD rear air conditioning)
SA 536 (MD auxiliary heating system)

Level 4
SA 220 (MS single axle level control)

Level 5
SA 522 (MD automatic headlight adjustment control system / xenon lights)

Safety information

These installation instructions are only valid for LHD cars.

All lock nuts are to be replaced.
All tightening torque values are to be taken from the current repair instructions and must be observed at all times.

Ensure that cables and other lines are not kinked or damaged when they are being installed in the car and that they do not impair the freedom of movement of other components.
If the specified pins or chambers are already in use, bridges, double crimps or parallel end stops are to be used.
Do not use so-called "Scotchlock connectors" since they may cause faults in the vehicle's electrical system.

Tools and equipment required

Philips screwdriver
Straight slot screwdriver
Sockets, sizes 8 mm and 10 mm
Ring spanner, size 10 mm
Open-ended spanner, size 9 mm
Torque wrench
1/2 inch reversible ratchet
1/2 inch extension
1/2 inch sockets, sizes 16 mm, 17 mm and 19 mm
1/4 inch reversible ratchet
1/4 inch extension
1/4 inch sockets, sizes 7 mm, 8 mm and 10 mm
Angle cutter
Crimping pliers
Anti-corrosive paint
Drill with drill bits
Torch

2. Installation

Contents ..... **Page**

21 Preparation

Print out the error memory.
Disconnect the battery.
Remove the door sill strips on the right-hand side.
Remove the bottom A pillar trim on the right-hand side.
Remove the glove box.
Remove the footwell trim on the right-hand side.
Remove the air guide in front of the module holder.
Remove the B pillar trims on the right-hand side.
Remove the front passenger seat.
Remove the cable covers in the right-hand sill area.
Remove the backrest side section on the right-hand side and the rear seat bench.
Remove the boot cover.
Remove the spare wheel.
Remove the wheel wrench mounting.
Remove the cover from the electrics box in the engine compartment.
Remove the air filter casing.
Remove the halogen headlights and holders.
Remove the wheels at the front right and rear right.

Only on cars without a standard navigation system (see section 1) or on US cars:
Remove the A pillar trim on the left-and side.
Remove the cover for the pedals and steering column.

Fold out folded page 2-33.

All lock nuts are to be replaced. All tightening torque values are to be taken from the current repair instructions and must be observed at all times.◄

2.2 To install the level sensor at the front right

Cars with an air suspension front axle already have a level sensor. This is to be replaced with the level sensor supplied with the parts kit.◄

A
Only for cars without an air suspension front axle.
Mounting points for the level sensor at the front right:
The holder with the fitted level sensor is to be installed using the mounting screw (1) on the control arm (3).
The hole (2) is used as a locking device
The angle joint is mounted on the control arm (3).

B
Only for cars without an air suspension front axle.
Install the level sensor (4) on the holder (6) using two Allen bolts, M5 x 10 (5).

See the position of the locking device (7) and the threaded sleeve (see magnified view).◄

C
Only for cars without an air suspension front axle.
Remove the nut SW16 mm from the mounting screw (1) on the control arm (3) and pull out the mounting screw (1).
Position the holder (6) with the level sensor (4) and secure the control arm (3) with the mounting screw (1) and the lock nut SW 16 mm supplied in the parts kit.
Install the angle joint (8) on the control arm (3) and secure it with a nut SW10 mm.
Connect the angle joint (8) to the lever on the level sensor (4) and secure it with a nut SW10 mm (9).

Only for cars with an air suspension front axle.
Undo the nut SW10 mm (9) and release the angle joint (8). remove the level sensor (4) in the car (see Figure B) and replace it with the one supplied in the parts kit.

2.3 To install the level sensor at the rear right

Only for cars without a level control system.

D
Mounting points for the level sensor at the rear right:
The holder with the fitted level sensor and the threaded plate is to be installed on the holes (10). Fit the clip on the holder (11) on the rear axle swinging arm and secure the control rod.

E
Install the level sensor (12) on the holder (14) using two Allen bolts, M5 x 10 (13).

See the position of the threaded sleeve (see magnified view).◄

F
Fit the threaded plate (15) into the holes (10) in the frame from the rear.

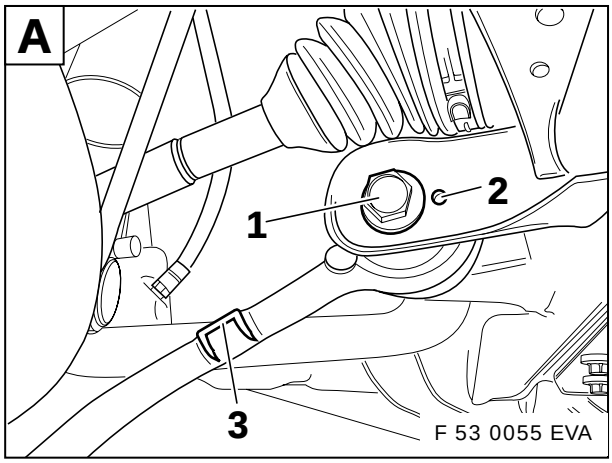
G
Fit the holder (14) wit the level sensor (12) on to the thread and the journal of the threaded plate and secure it with a lock nut SW 10 mm (16).
Place the clip (17) on the holder (11) for the rear axle swinging arm.
Connect the lever on the level sensor (12) to the holder (11) for the rear axle swinging arm using the control rod (18). Secure the control rod (18) with the lock nuts SW 10 mm (19 and 20).

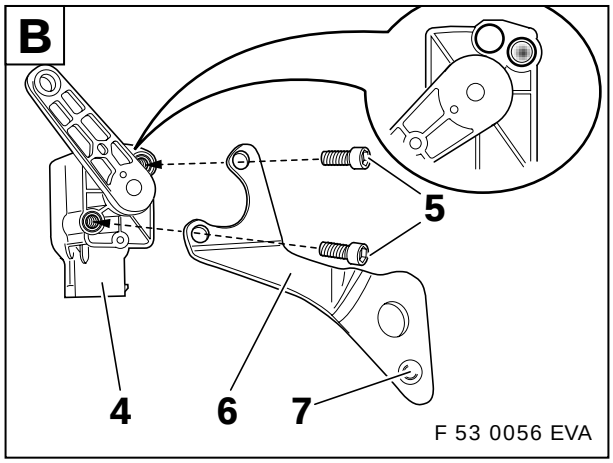
Only for cars with an air suspension front axle.

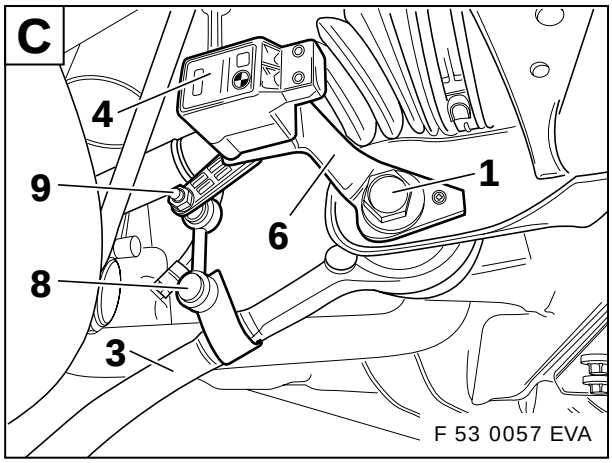
G
Disconnect the connection plug from the level sensor (12).
Undo the nut SW 10 mm (20) and release the control rod (18).
Undo the nut SW 10 mm (16) and remove the holder (14) with the level sensor (12).
Replace the level sensor fitted in the car with the level sensor supplied with the parts kit.

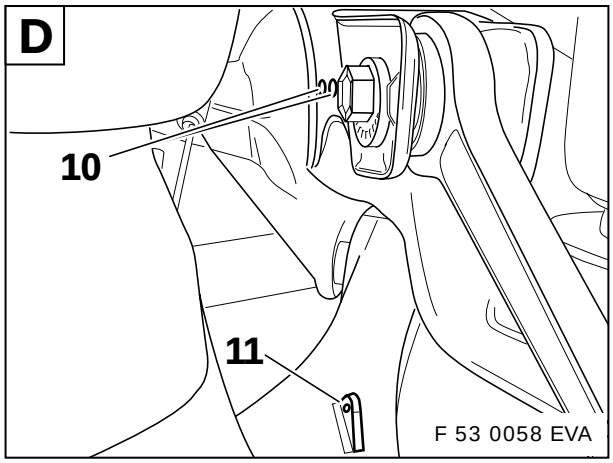
 See the position of the threaded sleeve (see magnified view).◄

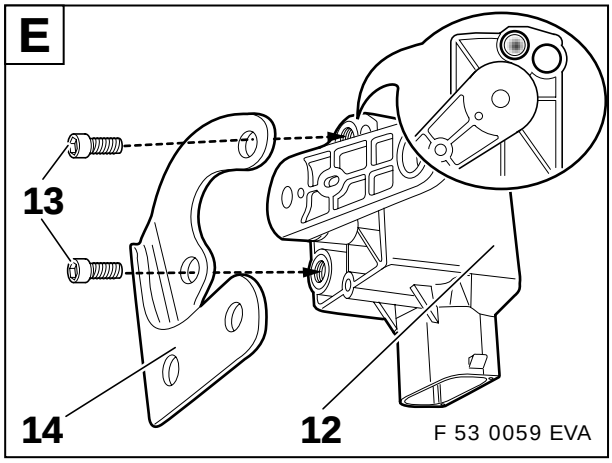
The installation work is to be completed using new lock nuts SW 10 mm (16 and 20), in reverse order.
Do not reconnect the connection plug yet.

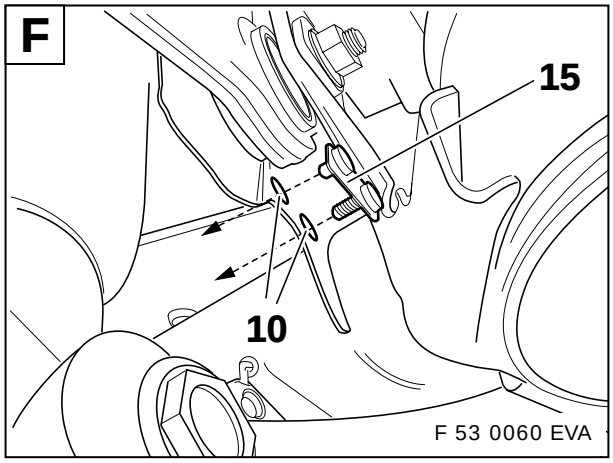

A
1
2
3
F 53 0055 EVA

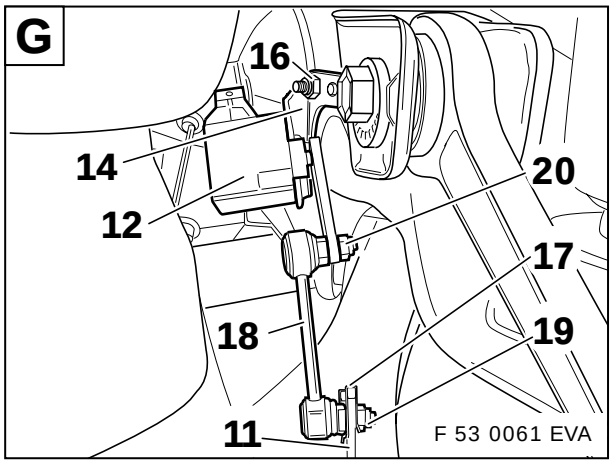

B
5
4
6
7
F 53 0056 EVA


C
4
9
1
6
8
3
F 53 0057 EVA


D
10
11
F 53 0058 EVA


E
13
14
12
F 53 0059 EVA


F
15
10
F 53 0060 EVA


G
16
14
20
12
17
18
19
11
F 53 0061 EVA

2.4 Connection overview of the xenon wiring harness (ECE cars only)

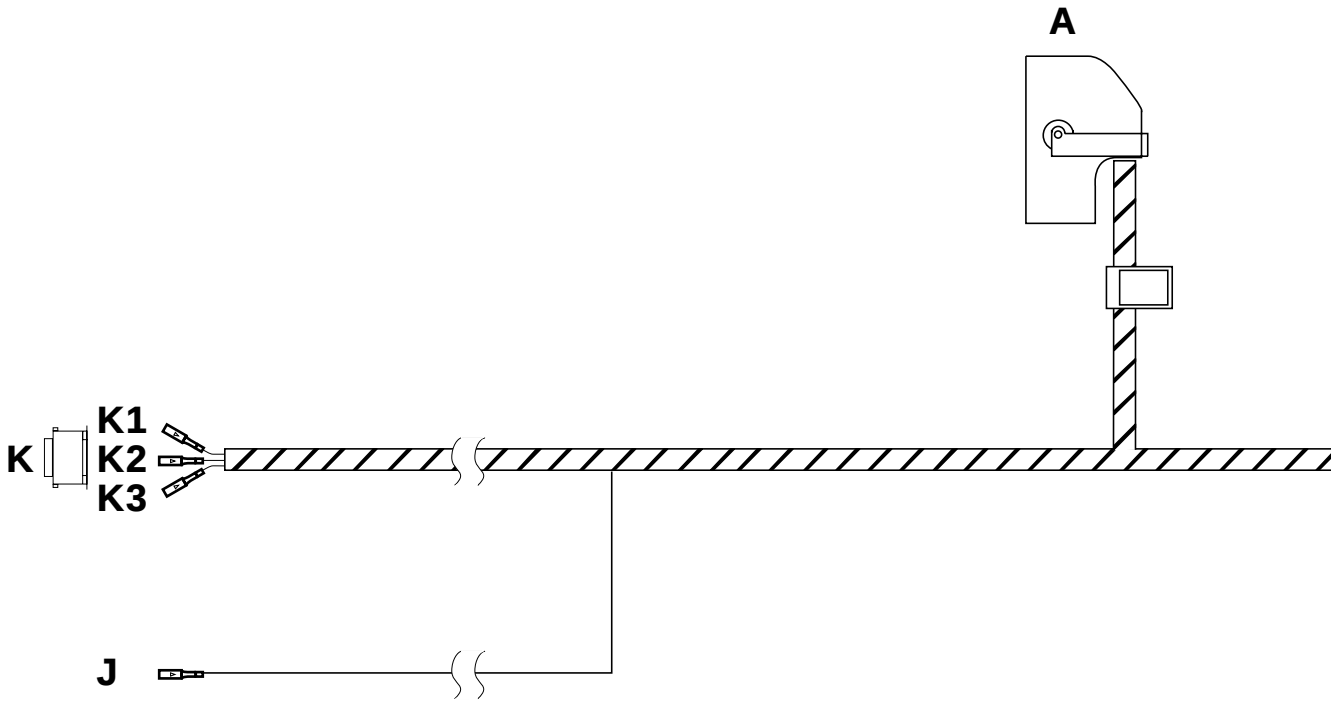
Fold out folded page 2-43

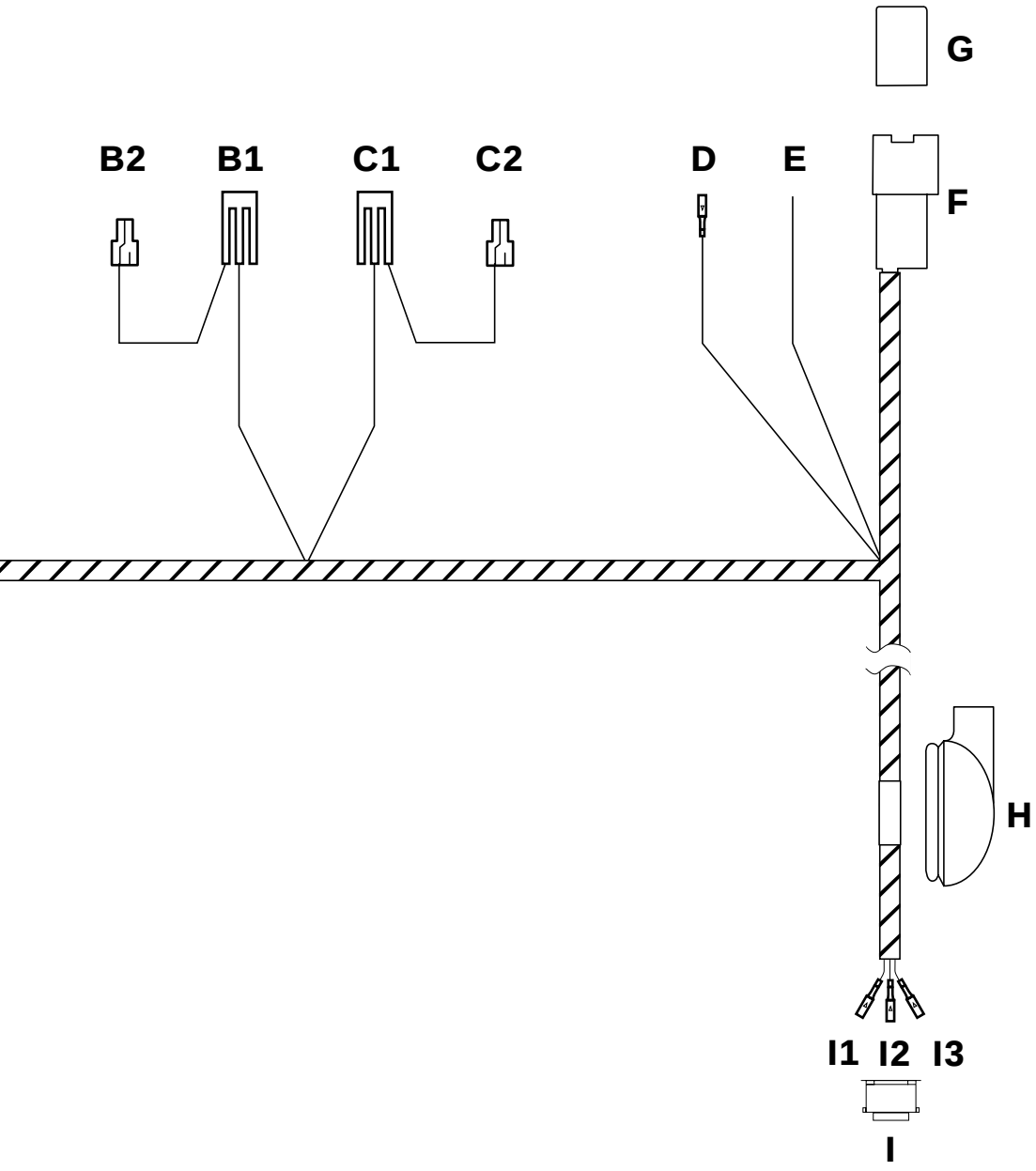
Item	Description	Cable colour	Connection location in the car	Abbreviation / Slot
A	26-pin plug (Bordeaux)	-	Con. mod. for autom. headlight adjust. cont. sys.	X991
B1	Triple joint connector	-	Connector box behind the glove box	X10466*
B2	Joint connector contact	white/red/yellow	K-bus connector behind the glove box	X10116
C1	Triple joint connector	-	Connector box behind the glove box	X1608*
C2	Joint connector contact	brown/black	Terminal 31 connector behind the glove box	X596
D	Blade terminal contact	yellow/red	54-pin plug on light module on passenger side	X10117/27
E	Cable	blue/red	54-pin plug on light module on passenger side	X10117/25**
F	10-pin plug (black)	-	Connect to branch G	X1S*
G	10-pin plug (black)	-	Connect to branch F	X1B*
H	Cable grommet	-	Cable passage to boot	-
I	6-pin plug (black)	-	Level sensor at rear right	X1451
I1	Blade terminal contact	grey/white	Level sensor at rear right	X1451/2
I2	Blade terminal contact	grey/brown	Level sensor at rear right	X1451/3
I3	Blade terminal contact	grey/green	Level sensor at rear right	X1451/6
J	Blade terminal contact	yellow /white	ABS/DSC cont. mod. in the engine compart., front left	X1170/18***
K	6-pin plug (black)	-	Level sensor at front right	X10275
K1	Blade terminal contact	black/white	Level sensor at front right	X10275/2
K2	Blade terminal contact	black/grey	Level sensor at front right	X10275/3
K3	Blade terminal contact	black/green	Level sensor at front right	X10275/6


Branch **E** (marked "**") is to be connected to the cable in the car using a double connector.
Branch **J** (marked "***") is to be connected to plug X1310S at the rear left of the boot on cars with optional equipment wiring harness from level 2 (see section 1). See section 2.5-G.◄


The components marked "*" are only used for this retrofit kit, all other components refer to the application of the BMW dealer organisation.
Eight cables must be disconnected from the light module C (X10117, 54-pin, black) and fitted with new contacts. With casing X1B* (branch **G**), these then provide the connector for branch **F** (see section 2.5-D).◄

ECE





F 53 0062 EVA

2.5 To install the xenon wiring harness (ECE cars only)

The xenon wiring harness is to be secured using cable ties.
Ensure that cables and other lines are not kinked or damaged when they are being installed in the car and that they do not impair the freedom of movement of other components.
If the specified pins or chambers are already in use, bridges, double crimps or parallel end stops are to be used. ◄

Fold out folded page 2-77.

A
Overview of connection points
Branch **A** (X991, 26-pin plug, Bordeaux) is to be connected to the control module for the automatic headlight adjustment control system on the module holder behind the glove box.
Branch **B1** (triple joint connector X10466*) is to be fitted in the connector box behind the glove box.
Branch **B2** (white/red/yellow cable) is to be connected to the K-BUS terminal connector (X10116) behind the glove box.
Branch **C1** (triple joint connector X1608*) is to be fitted in the connector box behind the glove box.
Branch **C2** (brown/black cable) is to be connected to the terminal 31 connector (X596) behind the glove box.
Branch **D** (yellow/red cable) is to be connected to slot 27 in the light module (X10117, 54-pin, black) on the A pillar on the passenger side.
Branch **E** (blue/red cable) is to be connected to the blue/red cable from pin 25 on the light module (X10117, 54-pin, black) using a double mini connector.
Branch **F** is to be placed next to the light module on the A pillar on the passenger side.
Eight cables must be disconnected from the light module (X10117, 54-pin, black) and fitted with new contacts. With casing X1B* (branch **G**), these then provide the connector for branch **F** (see section 2.5-D).
The rubber grommet **H** is used to seal the cable passage on the floor of the boot.
Cable **I1**, grey/white cable, is to be connected to slot 2 of branch **I** (X1451, 6-pin, black), cable **I2**, grey/brown cable, to slot 3 and cable **I3**, grey/green cable, to slot 6. Any cables in the car for the level sensor are to be repinned (see section 2.5-F). Branch **I** is then to be connected to the level sensor at the rear right.
Branch **J** (yellow/white cable) is to be connected to slot 18 of the ABS/DSC control module in the front left of the engine compartment in cars with an optional equipment wiring harness up to level 2. In cars with an optional equipment wiring harness above level 2, there is a yellow/white cable in the boot at the rear left on the 6-pin plug X1310S on slot 2, which comes from the ABS/DSC control module, slot 18. Connect branch **J** (yellow/white cable) to this cable using a double mini connector.
Cable **K1**, black/white cable, is to be connected to slot 2 of branch **K** (X10275, 6-pin, black), cable **K2**, black/grey cable, to slot 3 and cable **K3**, black/green cable, to slot 6. Any cables in the car for the air suspension are to be repinned (see section 2.5-F). Branch **K** is then to be connected to the level sensor at the front right.

B
Connect the control module for the automatic headlight adjustment control system (1) to the module holder behind the glove box. Connect branch **A** (X991, 26-pin plug, Bordeaux) to the control module for the automatic headlight adjustment control system (1) and secure it. The xenon wiring harness goes to the right and splits near the A pillar.

Branches **B1** to **I3** go downwards along the vehicle wiring harness, branches **B1** to **C2** then go to the connector box (2). Branches **J** to **K3** go upwards along the vehicle wiring harness. ◄

C
Release the connector box (2) and swing it forwards.
Unclip the K bus multiple connector (X10116, white/red/yellow cables) (3) and terminal 31 multiple connector (X596, brown/black cables) (4).
If there are any unoccupied slots in the multiple connectors X10116 (3) and X596 (4), connect branches **B2**, white/red/yellow cable, and **C2**, brown/black cable, to the corresponding cable colours.

The procedure if all the slots are occupied is described for multiple connector X10116 (3). If necessary proceed accordingly for multiple connector X596 (4). ◄

Disconnect a white/red/yellow cable from multiple connector X10116 (3) and connect it to the triple connector X10466* (**B1**). Connect branch **B2**, white/red/yellow cable, to the now unoccupied slot on multiple connector X10116 (3).

Clip multiple connectors X10116 (3), X10466* (**B1**), X596 (4) and X1608* (**C1**) into the connector box (2) and mount the connector box (2) on the module holder.

D

Disconnect the 54-pin black plug X10117 (5) from the light module (6) on the A pillar on the passenger side and take the plug strip off the casing. Lay branches **D** and **E**, yellow/red and blue/red cables, to there. Connect branch **D**, yellow/red cable, to slot 27 of the 54-pin plug X10117 (5).
Connect branch **E**, blue/red cable, to the blue/red cable from slot 25 of the 54-pin plug X10117 (5) using a double mini connector from the parts kit (7).

⚠ Ensure that the casing and plug strip can be assembled and connected to the light module (6) after the mini connector (7) has been connected. ◄

Disconnect the following cables from the plug strips of plug X10117 (5), fit the contact parts to them supplied in the parts kit and connect them to the 10-pin casing (**G**).

⚠ Two yellow/brown and two blue/brown cables are to be disconnected but must not be mixed up. Keep to the order described to avoid confusion. ◄

First disconnect the following four cables:
Slot 2, blue/red cable;
Slot 3, blue/brown cable;
Slot 4, yellow/red cable;
Slot 5, yellow/brown cable.
Remove the contact parts from these cables, strip the cables and fit the contact parts supplied in the parts kit to them.
Connect the cables as follows to the black 10-pin plug X1B* (**G**) supplied with the kit:
Connect the blue/red cable to slot 1 of the black 10-pin plug X1B* (**G**).
Connect the blue/brown cable to slot 2 of the black 10-pin plug X1B* (**G**).
Connect the yellow/red cable to slot 3 of the black 10-pin plug X1B* (**G**)
Connect the yellow/brown cable to slot 4 of the black 10-pin plug X1B* (**G**)

Now disconnect the following four cables:
Slot 20, blue/black cable;
Slot 21, blue/brown cable;
Slot 22, yellow/black cable;
Slot 23, yellow/brown cable.
Remove the contact parts from these cables, strip the cables and fit the contact parts supplied in the parts kit to them.
Connect the cables as follows to the black 10-pin plug X1B* (**G)** supplied with the kit:
Connect the blue/black cable to slot 7 of the black 10-pin plug X1B* (**G**).
Connect the blue/brown cable to slot 8 of the black 10-pin plug X1B* (**G**).
Connect the yellow/black cable to slot 9 of the black 10-pin plug X1B* (**G**)
Connect the yellow/brown cable to slot 10 of the black 10-pin plug X1B* (**G**)

Connect the 10-pin black plug X1B* (**G**) to branch **F** of the xenon wiring harness and stow the plug connector so that it does not interfere with any other components.

Assemble the 54-pin plug X10117 (5), connect it to the light module (6) and secure it.

▷ Branches **I1** to **I3** go further back along the vehicle wiring harness towards the rear. ◄

E

▷ In cars with a vehicle wiring harness above level 2 (see section 1), branch **J** (yellow/white cable) on the xenon wiring harness goes parallel to branches **I1** to **I3** into the boot. ◄

Lay branches **I1** to **I3** (grey/white, grey/brown and grey/green cables) along the right-hand sill wiring harness to the rear, along the vehicle wiring harness behind the right-hand boot trim and then along the vehicle wiring harness to the floor of the boot.
Remove the 20 mm sealing stopper from the floor of the boot (the hole in Figure **E** is already sealed with the grommet (**H**)), deburr the hole and treat it with the normal BMW anti-corrosion coatings.
Place grommet **H** on cables **I1** to **I3**, grey/white, grey/brown and grey/green cables, and thread cables **I1** to **I3** through the holes to the underside of the car.

⚠ The rear axle is beneath the hole. ◄

F
Lay branches **I1** to **I3** (grey/white, grey/brown and grey/green cables) forwards a little on the rear axle, secure them to the cable holder (8) and lay them to the level sensor (9).

Only for cars without a level control system:
Connect cables **I1** to **I3** on the xenon wiring harness as follows:
Connect branch **I1**, grey/white cable, to slot 2 of the black 6-pin plug X1451 (**I**).
Connect branch **I2**, grey/brown cable, to slot 3 of the black 6-pin plug X1451 (**I**).
Connect branch **I3**, grey/green cable, to slot 6 of the black 6-pin plug X1451 (**I**).

Seal slots 1, 4 and 5 using the supplied blind grommets.

Only for cars with a level control system:

 Cars with a level control system already have a branch of the vehicle wiring harness to the level sensor at the rear right and a black 6-pin plug X1451. ◄

Disconnect the three cables in the car (yellow/brown, yellow/grey and yellow/white or yellow/black) and connect them as follows to the black 6-pin plug X1451 (I) supplied with the parts kit:

On cars with air suspension on one axle:
Connect the yellow/black cable to slot 1 of the black 6-pin plug X1451 (**I**).
Connect the yellow/brown cable to slot 4 of the black 6-pin plug X1451 (**I**).
Connect the yellow/grey cable to slot 5 of the black 6-pin plug X1451 (**I**).

On cars with air suspension on both axles:
Connect the yellow/brown cable to slot 1 of the black 6-pin plug X1451 (**I**).
Connect the yellow/grey cable to slot 4 of the black 6-pin plug X1451 (**I**).
Connect the yellow/white cable to slot 5 of the black 6-pin plug X1451 (**I**).

Connect cables **I1** to **I3** on the xenon wiring harness as follows:
Connect branch **I1**, grey/white cable, to slot 2 of the black 6-pin plug X1451 (**I**).
Connect branch **I2**, grey/brown cable, to slot 3 of the black 6-pin plug X1451 (**I**).
Connect branch **I3**, grey/green cable, to slot 6 of the black 6-pin plug X1451 (**I**).

All cars:
Connect the black 6-pin plug X1451 (**I**) to the level sensor (9).
Seal the hole in the floor of the boot with the grommet (**H**).

 Ensure that the grommet (**H**) is fitted so that the car is watertight and that the cables do not interfere with any other components. ◄

G
Only for cars with an optional equipment wiring harness above level 2 (see section 1):
Lay branch **J**, yellow/white cable, parallel to branches **I1** to **I3** (see Figure **E**) into the boot. Lay branch **J** on the wiring harness along the battery positive distributor, continue behind the boot trim (10) to the 6-pin plug X1310S (11). Cut branch **J**, yellow/white cable, to size and connect it to the yellow/white cable from slot 2 of the 6-pin plug X1310S (11) using the double mini connector supplied in the parts kit (see magnified view).
Drill two holes in the boot trim (10) and secure branch **J** to them using cable ties (12) (see magnified view).

 Ensure that the spare wheel cannot chafe on branch J (yellow/white cable). ◄

H, I
Only for cars with an optional equipment wiring harness up to level 2 (see section 1):
Lay branch **J**, yellow/white cable, along the vehicle wiring harness behind the module carrier in the passenger side footwell to the left-hand side of the car, through the additional passage hole in the front bulkhead grommet (13) and the grommet (14) into the engine compartment and then along the vehicle wiring harness on the inside wing to the 42-pin blue plug X1170 (15) on the ABS/DSC control module.

 The left front bulkhead grommet (13) does not have an additional passage hole for retrofit wiring harnesses in the first cars in the series. In this case the cable **J** is to be laid along vehicle wiring harness through the front bulkhead grommet (13). ◄

Disconnect the 42-pin blue plug X1170 (15) from the ABS/DSC control module, release the plug strip, remove the blind stopper from slot 18 and connect branch **J**, yellow/white cable, to slot 18.
Engage the plug strip, connect the 42-pin blue plug X1170 (15) to the ABS/DSC control module and secure it.

J
Lay branches **K1** to **K3**, black/white, black/grey and black/green cables, through the additional passage hole in the right front bulkhead grommet near the electrics box and then through the grommet (16) into the engine compartment. Lay branches **K1** to **K3** along the vehicle wiring harness on the inside wing towards the front and to the engine near the washer water tank.


The right front bulkhead grommet does not have an additional passage hole for retrofit wiring harnesses in the first cars in the series. In this case the cables **K1** to **K3** are to be laid along vehicle wiring harness through the front bulkhead grommet.◄

K
Lay branches **K1** to **K3** parallel to the cables for the ABS sensor into the wheel arch and connect them to the black 6-pin plug X10275 (K) as follows:

Cars without air suspension on both axles only:
Connect branch **K1**, black/white cable, to slot 2 of the black 6-pin plug X10275 (**K**).
Connect branch **K2**, black/white cable, to slot 3 of the black 6-pin plug X10275 (**K**).
Connect branch **K3**, black/white cable, to slot 6 of the black 6-pin plug X10275 (**K**).
Seal slots 1, 4 and 5 with the blind grommets supplied.

Cars with air suspension on both axles only:

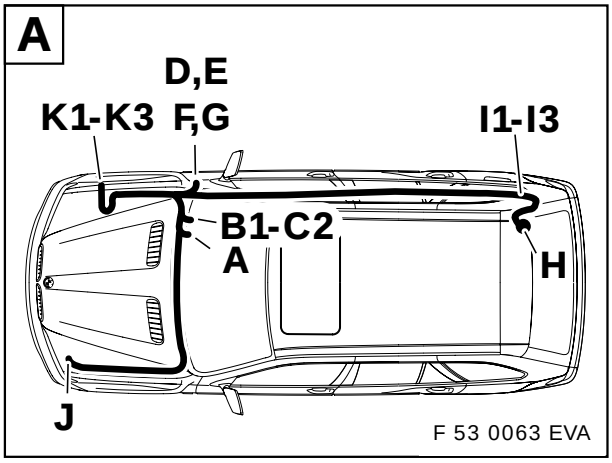

Two black/white and two black/grey cables are used. it is therefore essential to keep to the order described to avoid confusion.◄

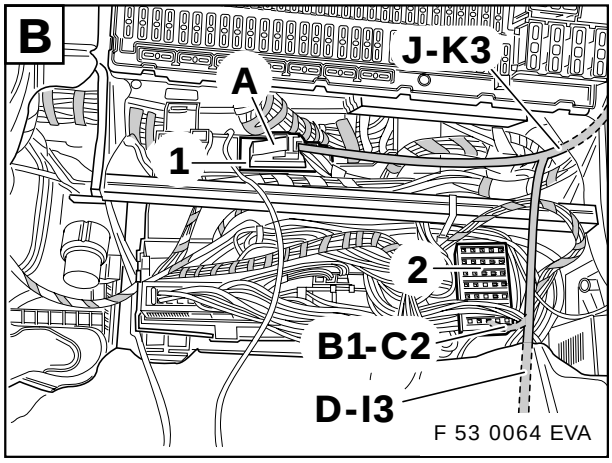
There is already a black 6-pin plug X10275 in the car. Disconnect the three cables (black/brown, black/grey and black/white) from these plugs and connect them to the black 6-pin plug X10275 (**K**) supplied in the parts kit as follows:
Connect the black/brown cable for the air suspension to slot 1 of the black 6-pin plug X10275 (**K**).
Connect the black/grey cable for the air suspension to slot 4 of the black 6-pin plug X10275 (**K**).
Connect the black/white cable for the air suspension to slot 5 of the black 6-pin plug X10275 (**K**).

Connect the cables on the xenon wiring harness as follows:
Connect branch **K1**, black/white cable, to slot 2 of the black 6-pin plug X10275 (**K**).
Connect branch **K2**, black/white cable, to slot 3 of the black 6-pin plug X10275 (**K**).
Connect branch **K3**, black/white cable, to slot 6 of the black 6-pin plug X10275 (**K**).

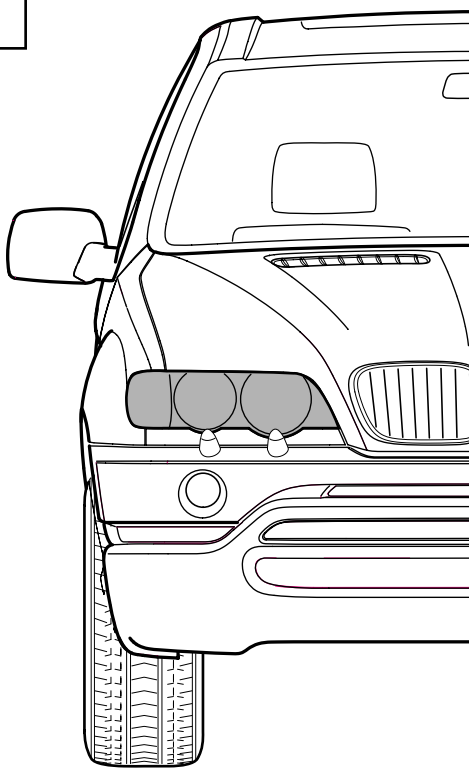
All cars:
Connect the black 6-pin plug X10275 (**K**) to the level sensor at the front right (17) and secure the wiring harness to the hole in the axle with a cable tie (18).

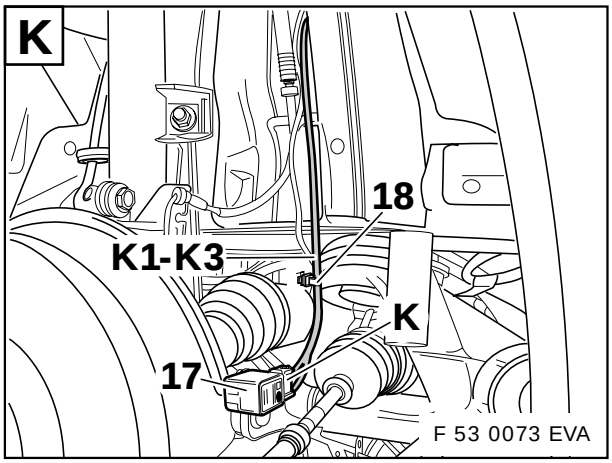

Check again that the entire xenon wiring harness has been installed in such a way that none of the cables are kinked or damaged and that it has been secured with the cable ties so that it does not interfere with any other components.◄

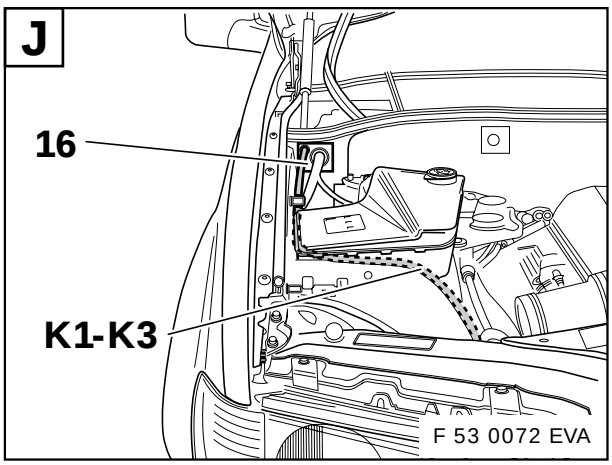

A
D,E
K1-K3
F,G
I1-I3
B1-C2
A
H
J
F 53 0063 EVA

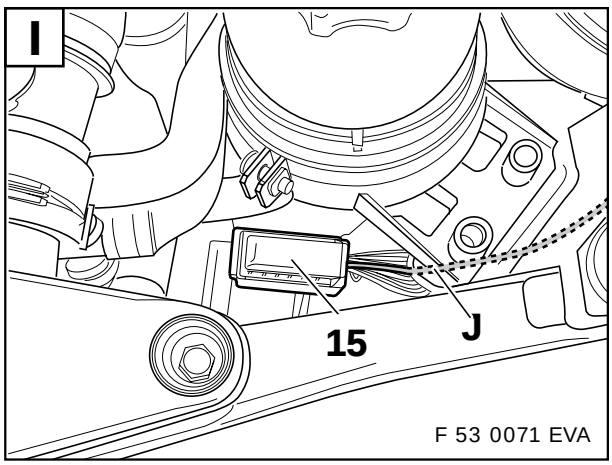

B
J-K3
A
1
2
B1-C2
D-I3
F 53 0064 EVA

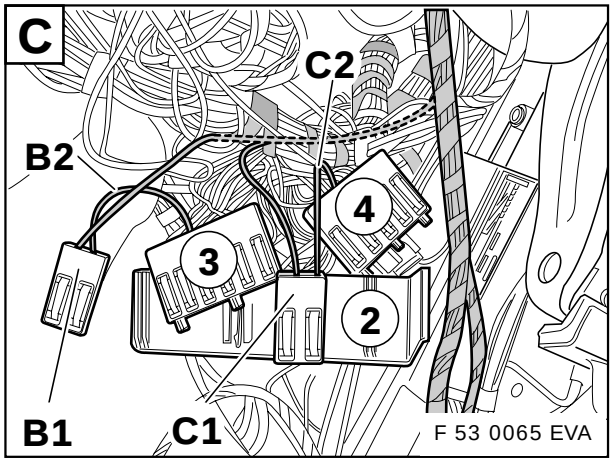
ECE

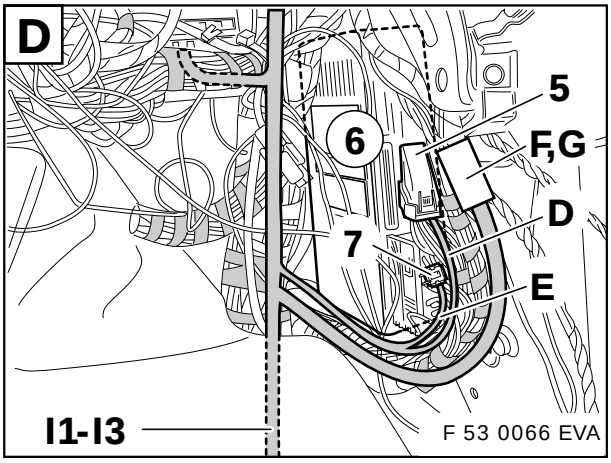


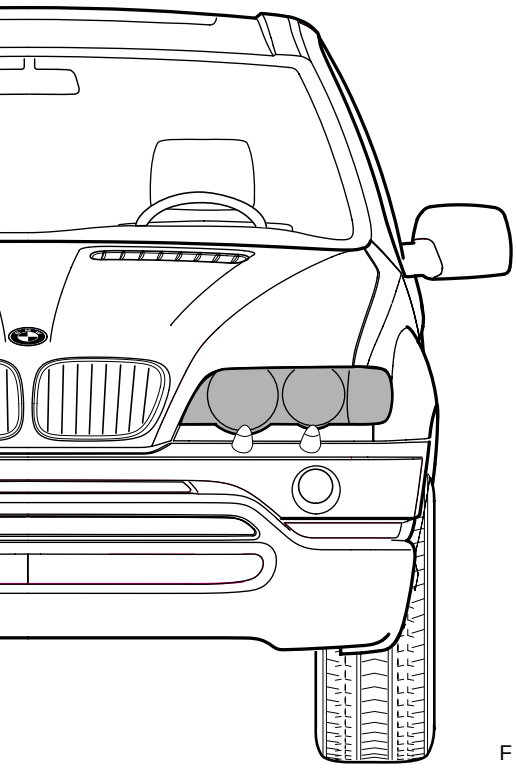

K
18
K1-K3
K
17
F 53 0073 EVA

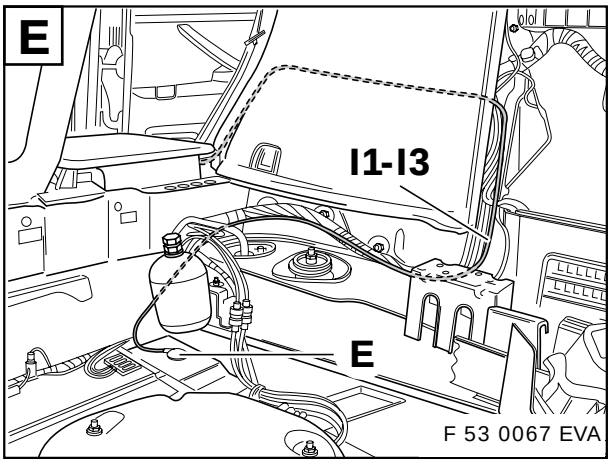

J
16
K1-K3
F 53 0072 EVA

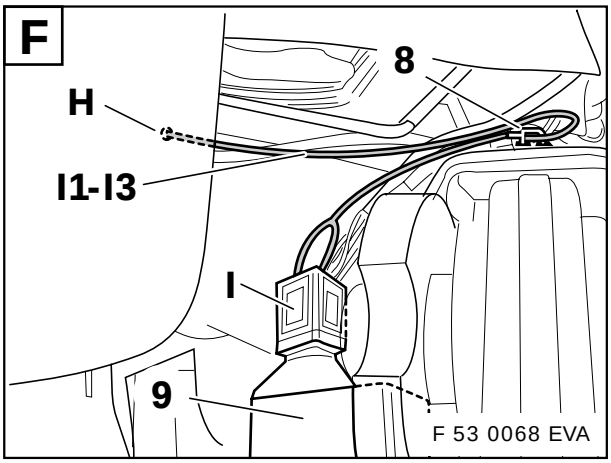

I
15
J
F 53 0071 EVA

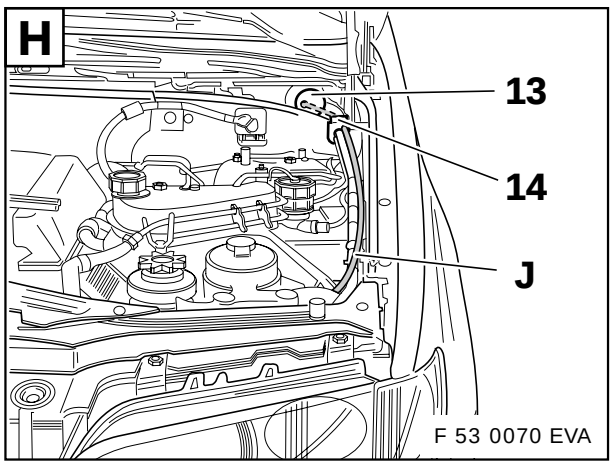

C
C2
B2
4
3
2
B1
C1
F 53 0065 EVA

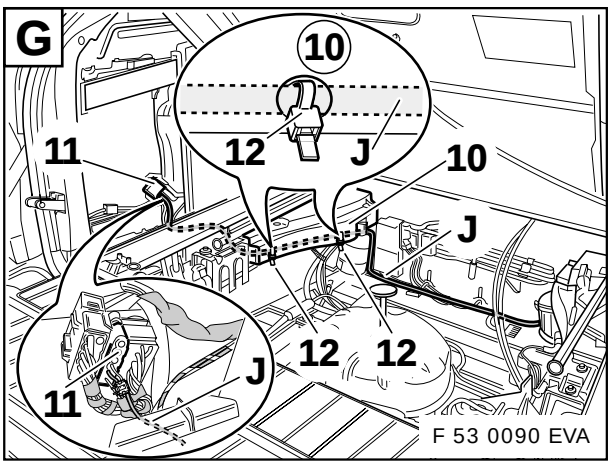

D
5
6
F,G
D
7
E
I1-I3
F 53 0066 EVA


F 53 0054 EVA


E
I1-I3
E
F 53 0067 EVA


F
8
H
I1-I3
I
9
F 53 0068 EVA


H
13
14
J
F 53 0070 EVA


G
10
11
12
J
10
J
12
12
J
11
F 53 0090 EVA

2.6 Connection overview of the xenon wiring harness (ECE cars only)

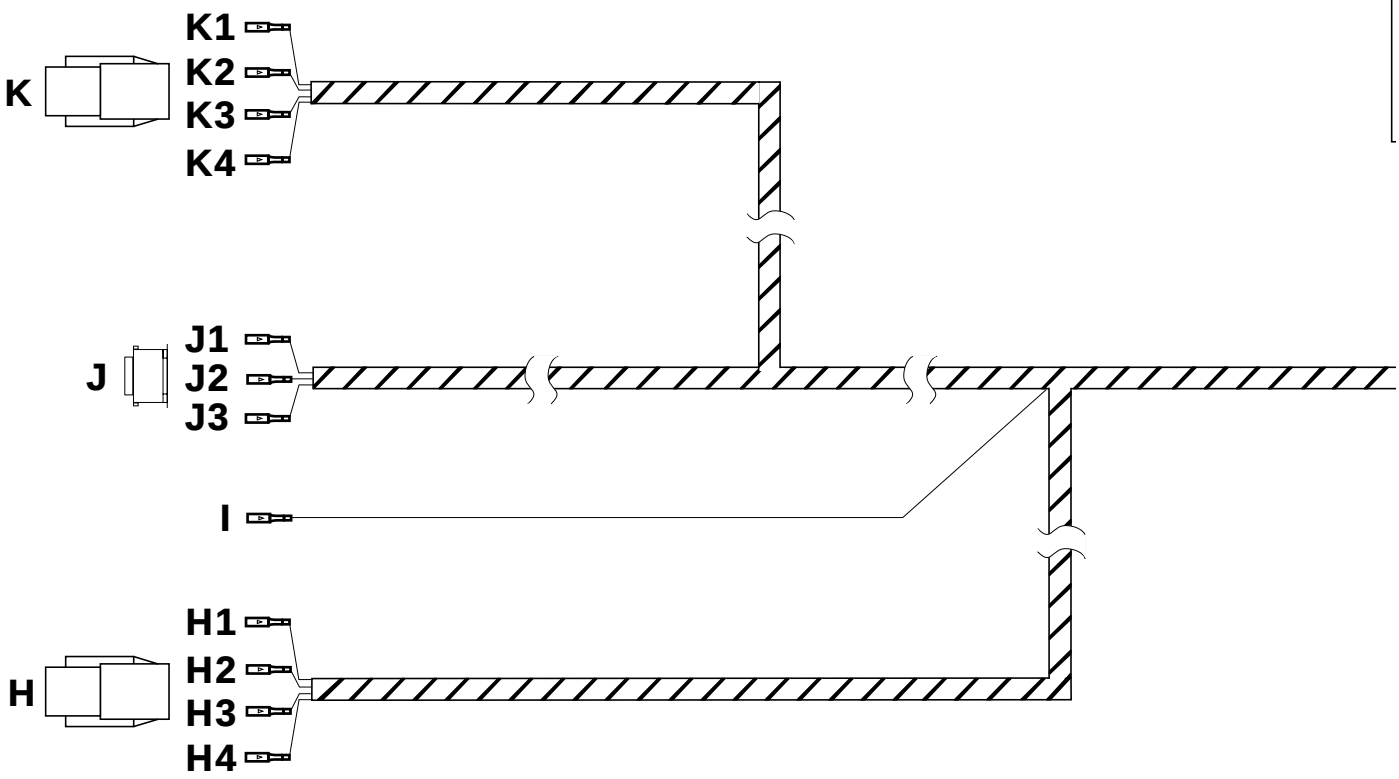
Fold out folded page 2-95

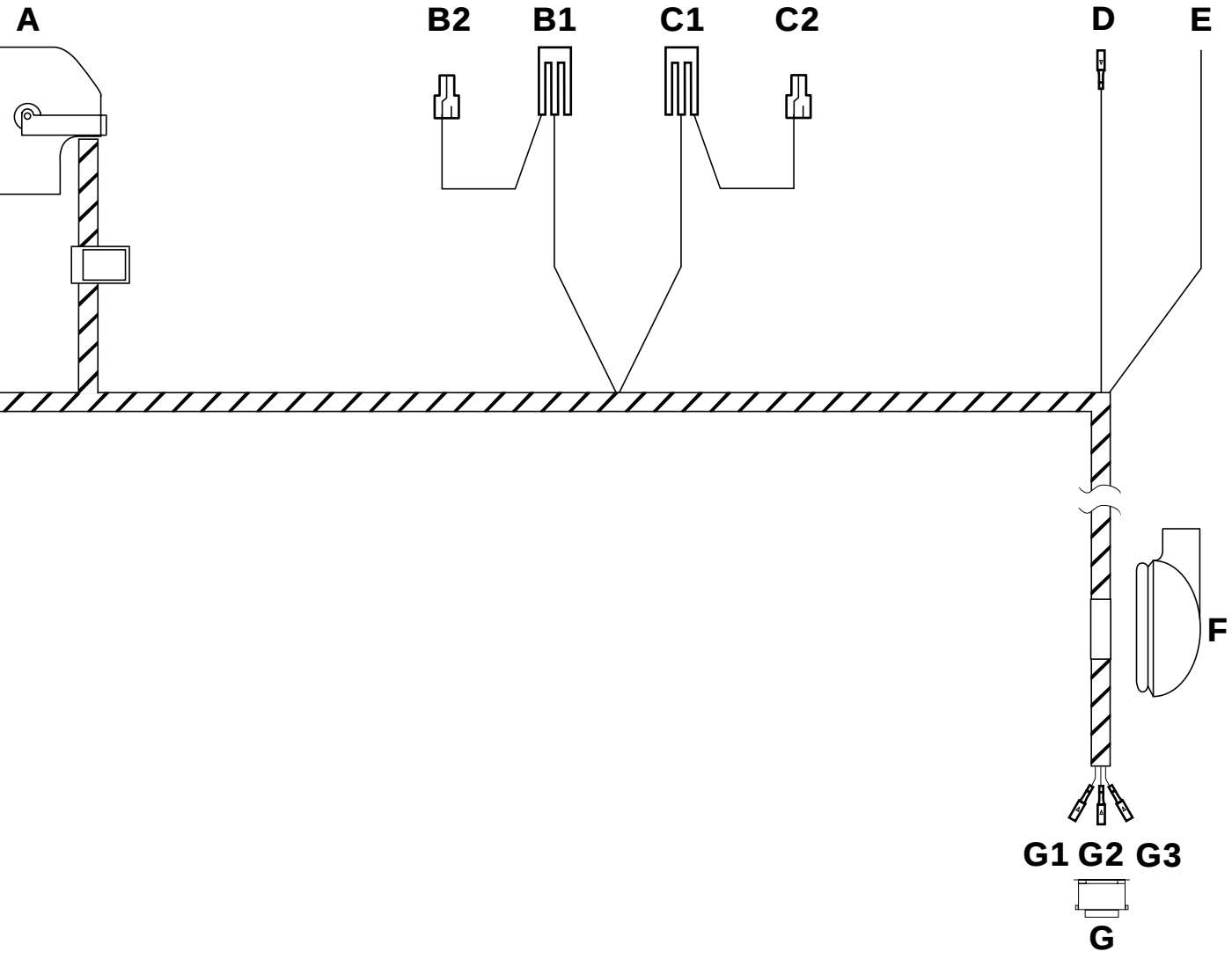
Item	Description	Cable colour	Connection location in the car	Abbreviation / Slot
A	26-pin plug (Bordeaux)	-	Con. mod. for autom. headlight adjust. cont. sys.	X991
B1	Triple joint connector	-	Connector box behind the glove box	X10466*
B2	Joint connector contact	white/red/yellow	K-bus connector behind the glove box	X10116
C1	Triple joint connector	-	Connector box behind the glove box	X1608*
C2	Joint connector contact	brown/black	Terminal 31 connector behind the glove box	X596
D	Blade terminal contact	yellow/red	54-pin plug on light module on passenger side	X10117/27
E	Blade terminal contact	blue/red	54-pin plug on light module on passenger side	X10117/25**
F	Cable grommet	-	Cable passage to boot	-
G	6-pin plug (black)	-	Level sensor at rear right	X1451
G1	Blade terminal contact	grey/white	Level sensor at rear right	X1451/2
G2	Blade terminal contact	grey/brown	Level sensor at rear right	X1451/3
G3	Blade terminal contact	grey/green	Level sensor at rear right	X1451/6
H	4-pin plug (natural)	-	Servo motor for left headlight	X1034
H1	Blade terminal contact	yellow/red	Servo motor for left headlight	X1034/1
H2	Blade terminal contact	yellow/brown	Servo motor for left headlight	X1034/2
H3	Blade terminal contact	blue/red	Servo motor for left headlight	X1034/3
H4	Blade terminal contact	blue/brown	Servo motor for left headlight	X1034/4
I	Blade terminal contact	yellow/white	ABS/DSC cont. mod. in the engine compart., front left	X1170/18***
J	6-pin plug (black)	-	Level sensor at front right	X10275
J1	Blade terminal contact	black/white	Level sensor at front right	X10275/2
J2	Blade terminal contact	black/grey	Level sensor at front right	X10275/3
J3	Blade terminal contact	black/grey	Level sensor at front right	X10275/6
K	4-pin plug (natural)	-	Servo motor for right headlight	X1035
K1	Blade terminal contact	yellow/black	Servo motor for right headlight	X1035/1
K2	Blade terminal contact	yellow/brown	Servo motor for right headlight	X1035/2
K3	Blade terminal contact	blue/black	Servo motor for right headlight	X1035/3
K4	Blade terminal contact	blue/brown	Servo motor for right headlight	X1035/4

Branch **E** (marked "**") is to be connected to the cable in the car using a double connector.
Branch **I** (marked "***") is to be connected to plug X1310S at the rear left of the boot on cars with optional equipment wiring harness from level 2. See section 2.7-G.◄

The components marked "*" are only used for this retrofit kit, all other components refer to the application of the BMW dealer organisation.◄

USA





F 53 0074 EVA

2.7 To install the xenon wiring harness (US cars only)

The xenon wiring harness is to be secured using cable ties.
Ensure that cables and other lines are not kinked or damaged when they are being installed in the car and that they do not impair the freedom of movement of other components.
If the specified pins or chambers are already in use, bridges, double crimps or parallel end stops are to be used. ◄

Fold out folded page 2-129

A
Overview of connection points
Branch **A** (X991, 26-pin plug, Bordeaux) is to be connected to the control module for the automatic headlight adjustment control system on the module holder behind the glove box.
Branch **B1** (triple joint connector X10466*) is to be fitted in the connector box behind the glove box.
Branch **B2** (white/red/yellow cable) is to be connected to the K-BUS terminal connector (X10116) behind the glove box.
Branch **C1** (triple joint connector X1608*) is to be fitted in the connector box behind the glove box.
Branch **C2** (brown/black cable) is to be connected to the terminal 31 connector (X596) behind the glove box.
Branch **D** (yellow/red cable) is to be connected to slot 27 in the light module (X10117, 54-pin, black) on the A pillar on the passenger side.
Branch **E** (blue/red cable) is to be connected to the blue/red cable from pin 25 on the light module (X10117, 54-pin, black) using a double mini connector.
The rubber grommet (**F**) is used to seal the cable passage on the floor of the boot.
Cable **G1**, grey/white cable, is to be connected to slot 2 of branch **G** (X1451, 6-pin, black), cable **G2**, grey/brown cable, to slot 3 and cable **G3**, grey/green cable, to slot 6. Any cables in the car for the level sensor are to be repinned (see section 2.7-F). Branch **G** is then to be connected to the level sensor at the rear right.
Cable **H1**, yellow/red cable, is to be connected to slot 1 of branch **H** (X1034, 4-pin, natural), cable **H2**, yellow/brown cable, to slot 2, cable **H3**, blue/red cable, to slot 3 and cable **H4**, blue/brown cable, to slot 4. Branch **H** is to be connected to the servo motor on the left Xenon headlight.
Branch **I** (yellow/white cable) is to be connected to slot 18 of the ABS/DSC control module in the front left of the engine compartment in cars with an optional equipment wiring harness up to level 2. In cars with an optional equipment wiring harness above level 2, there is a yellow/white cable in the boot at the rear left on the 6-pin plug X1310S on slot 2, which comes from the ABS/DSC control module, slot 18. Connect branch **I** (yellow/white cable) to this cable using a double mini connector.
Cable **J1**, black/white cable, is to be connected to slot 2 of branch J (X10275, 6-pin, black), cable **J2**, black/grey cable, to slot 3 and cable **J3**, black/green cable, to slot 6. Any cables in the car for the air suspension are to be repinned (see section 2.7-F). Branch **J** is then to be connected to the level sensor at the front right.
Cable **K1**, yellow/black cable, is to be connected to slot 1 of branch K (X1035, 4-pin, natural), cable **K2**, yellow/brown cable, to slot 2, cable **K3**, blue/black cable, to slot 3 and cable **K4**, blue/brown cable, to slot 4.
Branch **K** is to be connected to the servo motor on the right Xenon headlight.

B
Connect the control module for the automatic headlight adjustment control system (1) to the module holder behind the glove box. Connect branch **A** (X991, 26-pin plug, Bordeaux) to the control module for the automatic headlight adjustment control system (1) and secure it. The xenon wiring harness goes to the right and splits near the A pillar.

Branches **B1** to **G3** go downwards along the vehicle wiring harness, branches **B1** to **C2** then go to the connector box (2).
Branches **H** to **K4** go upwards along the vehicle wiring harness. ◄

C
Release the connector box (2) and swing it forwards.
Unclip the **K** bus multiple connector (X10116, white/red/yellow cables) (3) and terminal 31 multiple connector (X596, brown/black cables) (4).
If there are any unoccupied slots in the multiple connectors X10116 (3) and X596 (4), connect branches **B2**, white/red/yellow cable, and **C2**, brown/black cable, to the corresponding cable colours.

The procedure if all the slots are occupied is described for multiple connector X10116 (3). If necessary proceed accordingly for multiple connector X596 (4). ◄

Disconnect a white/red/yellow cable from multiple connector X10116 (3) and connect it to the triple connector X10466* (**B1**). Connect branch **B2**, white/red/yellow cable, to the now unoccupied slot on multiple connector X10116 (3).

Clip multiple connectors X10116 (3), X10466* (**B1**), X596 (4) and X1608* (**C1**) into the connector box (2) and mount the connector box (2) on the module holder.

D
Disconnect the 54-pin black plug X10117 (5) from the light module (6) on the A pillar on the passenger side and take the plug strip off the casing. Lay branches **D** and **E**, yellow/red and blue/red cables, to there. Connect branch **D**, yellow/red cable, to slot 27 of the 54-pin plug X10117 (5).
Connect branch **E**, blue/red cable, to the blue/red cable from slot 25 of the 54-pin plug X10117 (5) using a double mini connector from the parts kit (7).

Ensure that the casing and plug strip can be assembled and connected to the light module (6) after the mini connector (7) has been connected. ◄

Assemble the black 54-pin plug (5), connect it to the light module (6) and secure it.

Branches **G1** to **G3** go further back along the vehicle wiring harness towards the rear. ◄

E

In cars with a vehicle wiring harness above level 2 (see section 1), branch **I** (yellow/white cable) on the xenon wiring harness goes parallel to branches **G1** to **G3** into the boot. ◄

Lay branches **G1** to **G3** (grey/white, grey/brown and grey/green cables) along the right-hand sill wiring harness to the rear, along the vehicle wiring harness behind the right-hand boot trim and then along the vehicle wiring harness to the floor of the boot.
Remove the 20 mm sealing stopper from the floor of the boot (the hole in Figure E is already sealed with the grommet (**F**)), deburr the hole and treat it with the normal BMW anti-corrosion coatings.
Place grommet **F** on cables **G1** to **G3**, grey/white, grey/brown and grey/green cables, and thread cables **G1** to **G3** through the holes to the underside of the car.

The rear axle is beneath the hole. ◄

F
Lay branches **G1** to **G3** (grey/white, grey/brown and grey/green cables) forwards a little on the rear axle, secure them to the cable holder (8) and lay them to the level sensor (9).

Only for cars without a level control system:
Connect cables **G1** to **G3** on the xenon wiring harness as follows:
Connect branch **G1**, grey/white cable, to slot 2 of the black 6-pin plug X1451 (**G**).
Connect branch **G2**, grey/brown cable, to slot 3 of the black 6-pin plug X1451 (**G**).
Connect branch **G3**, grey/green cable, to slot 6 of the black 6-pin plug X1451 (**G**).
Seal slots 1, 4 and 5 using the supplied blind grommets.

Only for cars with a level control system:

Cars with a level control system already have a branch of the vehicle wiring harness to the level sensor at the rear right and a black 6-pin plug X1451. ◄

Disconnect the three cables in the car (yellow/brown, yellow/grey and yellow/white or yellow/black) and connect them as follows to the black 6-pin plug X1451 (**G**) supplied with the parts kit:

On cars with air suspension on one axle:
Connect the yellow/black cable to slot 1 of the black 6-pin plug X1451 (**G**).
Connect the yellow/brown cable to slot 4 of the black 6-pin plug X1451 (**G**).
Connect the yellow/grey cable to slot 5 of the black 6-pin plug X1451 (**G**).

On cars with air suspension on both axles:
Connect the yellow/brown cable to slot 1 of the black 6-pin plug X1451 (**G**).
Connect the yellow/grey cable to slot 4 of the black 6-pin plug X1451 (**G**).
Connect the yellow/white cable to slot 5 of the black 6-pin plug X1451 (**G**).

Connect cables **G1** to **G3** on the xenon wiring harness as follows:
Connect branch **G1**, grey/white cable, to slot 2 of the black 6-pin plug X1451 (**G**).
Connect branch **G2**, grey/brown cable, to slot 3 of the black 6-pin plug X1451 (**G**).
Connect branch **G3**, grey/green cable, to slot 6 of the black 6-pin plug X1451 (**G**).

All cars:
Connect the black 6-pin plug X1451 (**G**) to the level sensor.
Seal the hole in the floor of the boot with the grommet (**F**).

Ensure that the grommet (**F**) is fitted so that the car is watertight and that the cables do not interfere with any other components. ◄

G
Only for cars with an optional equipment wiring harness above level 2 (see section 1):
Lay branch **I**, yellow/white cable, parallel to branches **G1** to **G3** (see Figure E) into the boot. Lay branch **I** on the wiring harness along the battery positive distributor, continue behind the boot trim (10) to the 6-pin plug X1310S (11). Cut branch **I**, yellow/white cable, to size and connect it to the yellow/white cable from slot 2 of the 6-pin plug X1310S (11) using the double mini connector supplied in the parts kit (see magnified view).
Drill two holes in the boot trim (10) and secure branch **I** to them using cable ties (12) (see magnified view).

Ensure that the spare wheel cannot chafe on branch **I** (yellow/white cable). ◄

H, I
Figures H and I shows the cable positions for cars with an optional equipment wiring harness up to level 2 (see section 1). In cars with an optional equipment wiring harness above level 2, branch **I**, yellow/white cable, is to be connected to the 6-pin plug X1310S at the rear left of the boot (see Figure G). ◄

Lay branches **H1** to **H4**, yellow/red, yellow/brown, blue/red and blue/brown cables, and branch **I**, yellow/white cable(branch **I** only on cars with an optional equipment wiring harness up to level 2), along the vehicle wiring harness behind the module holder in the passenger footwell to the left-hand side of the car, through the additional passage hole in the front bulkhead grommet (13) and through the grommet (14) into the engine compartment.
Lay the cables along the vehicle wiring harness on the inside wing to near the left headlight.

The left front bulkhead grommet (13) does not have an additional passage hole for retrofit wiring harnesses in the first cars in the series. In this case the cables **H1** to **H4** and **I** (only on cars with an optional equipment wiring harness up to level 2) are to be laid along vehicle wiring harness through the front bulkhead grommet (13). ◄

Connect branches **H1** to **H4** to the casing **H** (X1034, 4-pin. natural) as follows:
Connect branch **H1**, yellow/red cable, to slot 1 of the 4-pin plug X1034 (**H**).
Connect branch **H2**, yellow/brown cable, to slot 2 of the 4-pin plug X1034 (**H**).
Connect branch **H3**, blue/red cable, to slot 3 of the 4-pin plug X1034 (**H**).
Connect branch **H4**, blue/brown cable, to slot 4 of the 4-pin plug X1034 (**H**).
After the xenon headlight has been installed, the 4-pin plug X1034 (**H**) is to be connected to the servo motor for the headlight.

Disconnect the 42-pin blue plug X1170 (15) from the ABS/DSC control module, release the plug strip, remove the blind stopper from slot 18 and connect branch **I**, yellow/white cable, to slot 18.
Engage the plug strip, connect the 42-pin blue plug X1170 (15) to the ABS/DSC control module and secure it.

J
Lay branches **J1** to **J3**, black/white, black/grey and black/green cables, and cables **K1** to **K4**, yellow/black, yellow/brown, blue/black and blue/brown cables, through the additional passage hole in the right front bulkhead grommet near the electrics box and then through the grommet (16) into the engine compartment. Lay branches **J1** to **J3** and **K1** to **K4** along the vehicle wiring harness on the inside wing towards the front.

The right front bulkhead grommet does not have an additional passage hole for retrofit wiring harnesses in the first cars in the series. In this case the cables **J1** to **J3** and **K1** to **K4** are to be laid along vehicle wiring harness through the front bulkhead grommet. ◄

Lay branches **J1** to **J3** to the engine near the washer water tank.

Lay branches **K1** to **K4** further along the vehicle wiring harness to the plugs for the right headlight and connect them to the supplied casing **K** (X1034, 4-pin natural) as follows:
Connect branch **K1**, yellow/black cable, to slot 1 of the 4-pin plug X1035 (**K**).
Connect branch **K2**, yellow/brown cable, to slot 2 of the 4-pin plug X1035 (**K**).
Connect branch **K3**, blue/black cable, to slot 3 of the 4-pin plug X1035 (**K**).
Connect branch **K4**, blue/brown cable, to slot 4 of the 4-pin plug X1035 (**K**).

After the xenon headlight has been installed, the 4-pin plug X1035 (**K**) is to be connected to the servo motor for the headlight.

K
Lay branches **J1** to **J3** parallel to the cables for the ABS sensor into the wheel arch and connect them to the black 6-pin plug X10275 (**J**) as follows:

Cars without air suspension on both axles only:
Connect branch **J1**, black/white cable, to slot 2 of the black 6-pin plug X10275 (**J**).
Connect branch **J2**, black/white cable, to slot 3 of the black 6-pin plug X10275 (**J**).
Connect branch **J3**, black/white cable, to slot 6 of the black 6-pin plug X10275 (**J**).
Seal slots 1, 4 and 5 with the blind grommets supplied.

Cars with air suspension on both axles only:

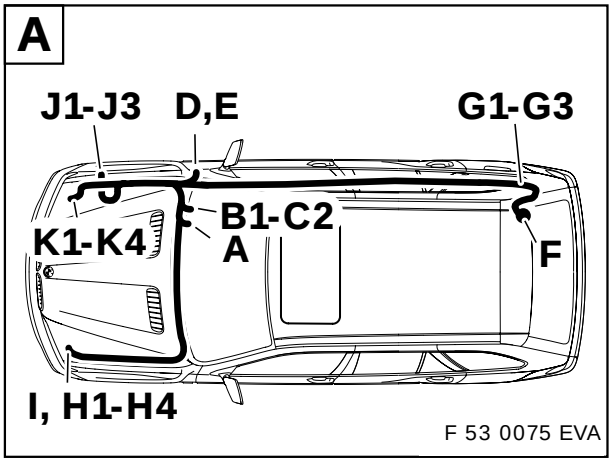
 Two black/white and two black/grey cables are used. it is therefore essential to keep to the order described to avoid confusion.◄

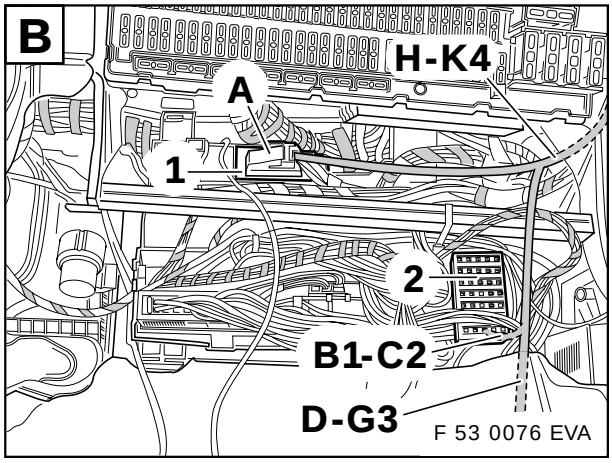
There is already a black 6-pin plug X10275 in the car. Disconnect the three cables (black/brown, black/grey and black/white) from these plugs and connect them to the black 6-pin plug X10275 (**J**) supplied in the parts kit as follows:
Connect the black/brown cable for the air suspension to slot 1 of the black 6-pin plug X10275 (**J**).
Connect the black/grey cable for the air suspension to slot 4 of the black 6-pin plug X10275 (**J**).
Connect the black/white cable for the air suspension to slot 5 of the black 6-pin plug X10275 (**J**).

Connect the cables on the xenon wiring harness as follows:
Connect branch **J1**, black/white cable, to slot 2 of the black 6-pin plug X10275 (**J**).
Connect branch **J2**, black/white cable, to slot 3 of the black 6-pin plug X10275 (**J**).
Connect branch **J3**, black/white cable, to slot 6 of the black 6-pin plug X10275 (**J**).

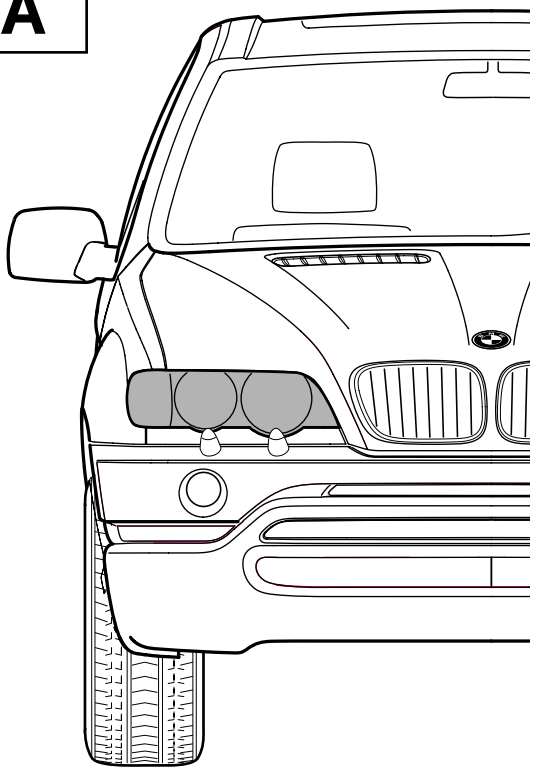
All cars:
Connect the black 6-pin plug X10275 (**J**) to the level sensor at the front right (17) and secure the wiring harness to the hole in the axle with a cable tie (18).

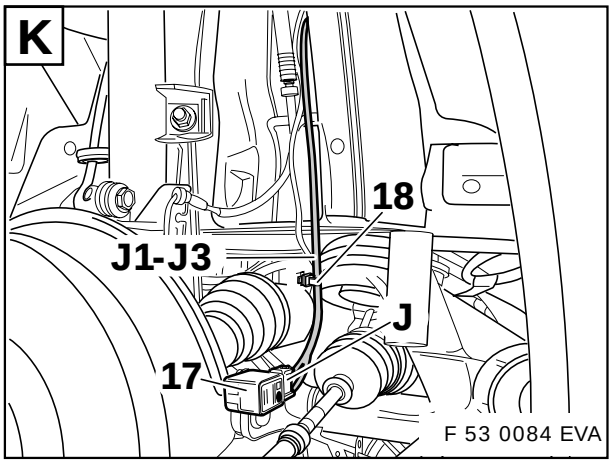
 Check again that the entire xenon wiring harness has been installed in such a way that none of the cables are kinked or damaged and that it has been secured with the cable ties so that it does not interfere with any other components.◄

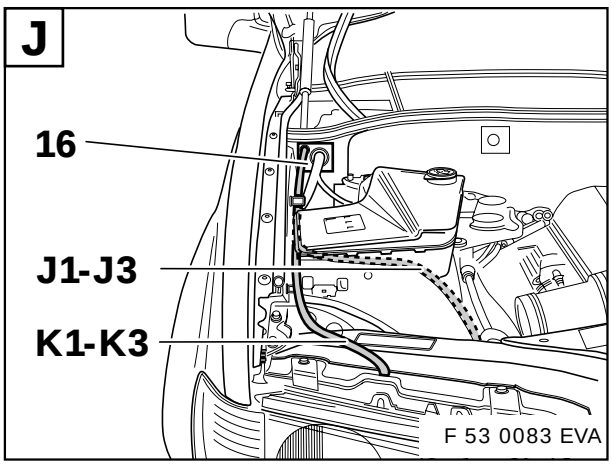

A
J1-J3
D,E
G1-G3
J
B1-C2
A
K1-K4
F
I, H1-H4
F 53 0075 EVA

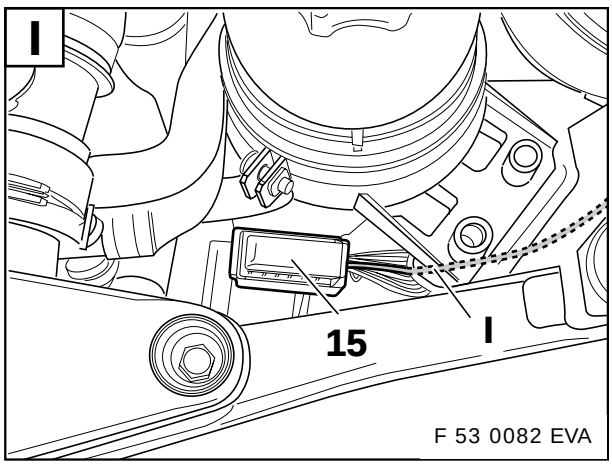

B
H-K4
A
1
2
B1-C2
D-G3
F 53 0076 EVA

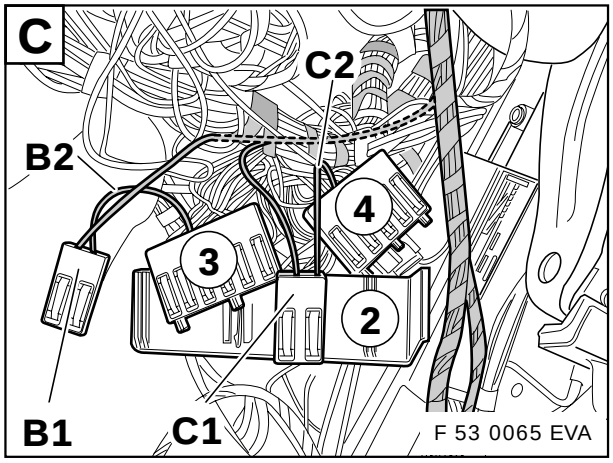
USA

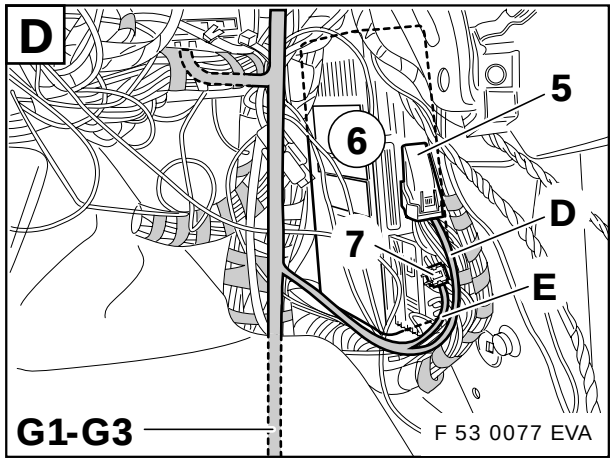


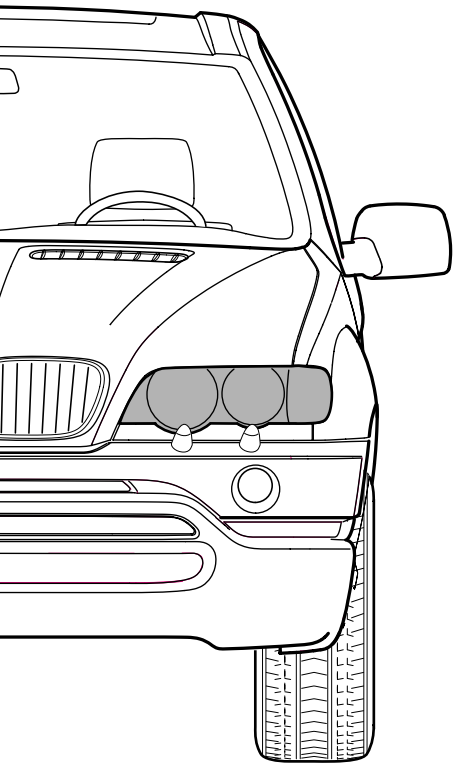

K
18
J1-J3
J
17
F 53 0084 EVA


J
16
J1-J3
K1-K3
F 53 0083 EVA

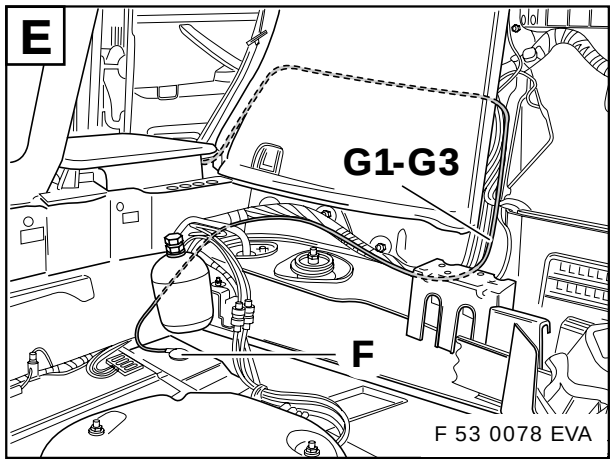

I
15
I
F 53 0082 EVA

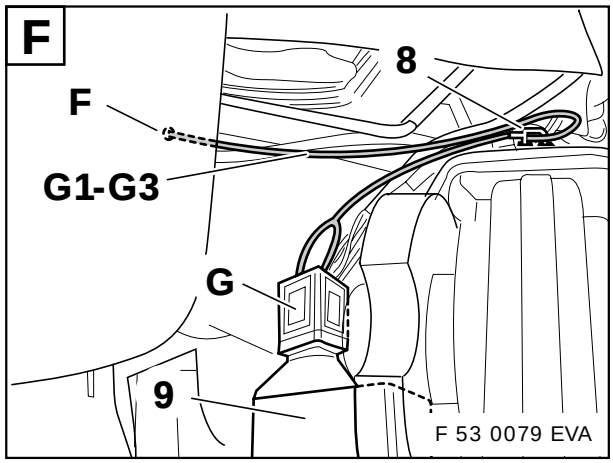

C
C2
B2
4
3
2
B1
C1
F 53 0065 EVA

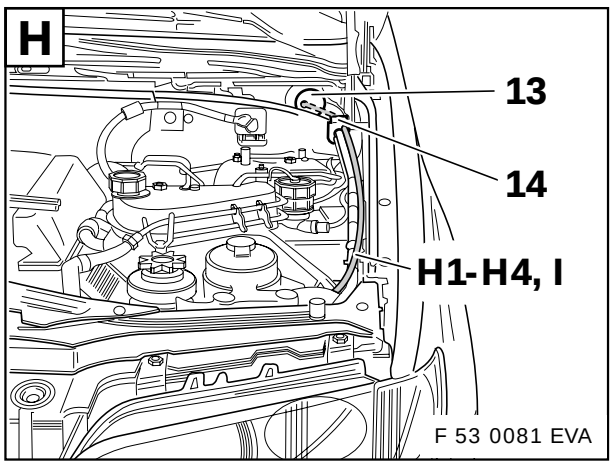

D
5
6
D
7
E
G1-G3
F 53 0077 EVA

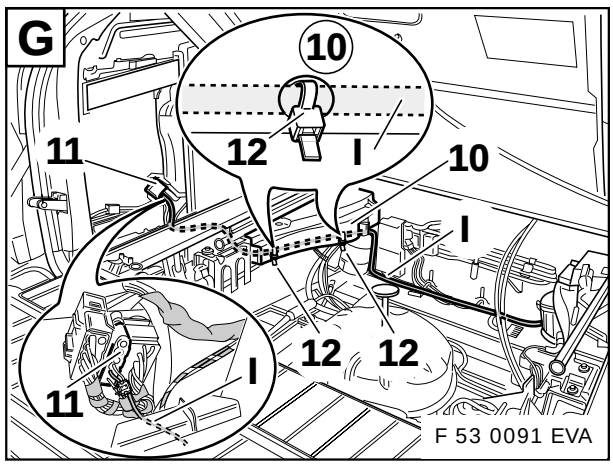


F 53 0054 EVA


E
G1-G3
F
F 53 0078 EVA


F
8
F
G1-G3
G
9
F 53 0079 EVA


H
13
14
H1-H4, I
F 53 0081 EVA


G
10
11
12
I
10
I
12
12
11
I
F 53 0091 EVA

Fold out folded page 2-147.

2.8 To remove the manual headlight adjustment control system (ECE cars only)

A
Remove the fresh air grille (1).
Remove the light control (2) with the manual headlight adjustment control system (3) and replace it with the light control in the parts kit.
To install the parts proceed in reverse order.

2.9 To install the xenon headlights

The procedure is shown for the right-hand side of the car, proceed accordingly on the left-hand side.◄

B
Take the holder with the integral control module (4) off the xenon headlight (5).

The control module (4) is connected to the headlight by a cable (6).◄

Position the holder and integral control module (4) in the car with the screws (7), position. Align and secure the xenon headlight (5).
Connect all the plug connectors.

On US cars also connect the 4-pin plugs X1034 and X1035 (branches **H** and **K** on the xenon wiring harness) to the servo motors.◄

210 To affix the warning sticker

C

The procedure is shown for the right-hand side of the car, proceed accordingly on the left-hand side.◄

Clean the cross traverse (8) and affix the warning sticker (9).

211 To assemble the car

Assemble the car by replacing all the parts you removed, but in reverse order.

212 Coding

This retrofit system is coding-relevant.
The coding is required to ensure that the retrofit system is fully functional and to rule out the possibility of malfunctions and faults when it works in conjunction with other electrical systems in the car.
In addition the retrofit system is saved in the central code of the IKE (integrated combination electronics)/ instrument combination.
The coding work is to be completed using the DIS/MoDIC and is performed automatically in the "Retrofit" path using the latest coding program.
The procedure is user-guided. Refer to the text instructions as you go through the various stages.
Print out the error memory and conduct a function test.

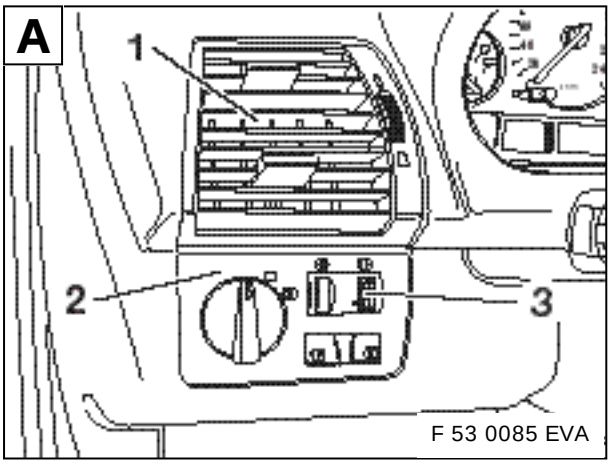
213 Function test

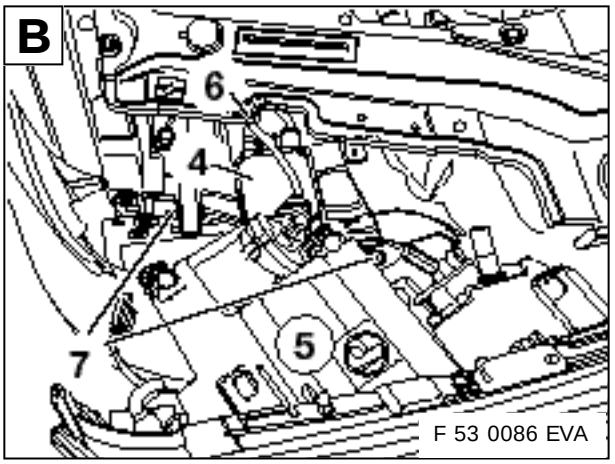
When you switch on the dipped headlights, the headlights must adjust automatically.◄

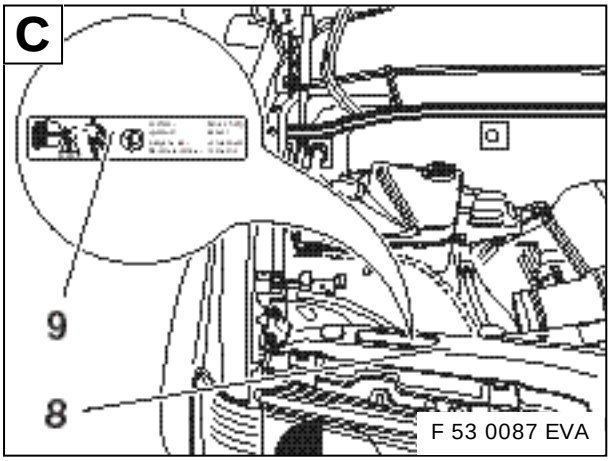
Check the function of the automatic headlight adjustment control system by loading the front and rear of the car.

214 To adjust the xenon headlights

Check the standard adjustment of the headlights as described by the manufacturer and adjust it if necessary.


A
1
2
3
F 53 0085 EVA


B
6
4
7
5
F 53 0086 EVA


C
9
8
F 53 0087 EVA

3. Circuit diagram

31 Circuit diagram (for ECE cars only)

Fold out folded page 3-9.

A3	Light module
A52	ABS/DSC control module
A53	Headlight adjustment control system (LWR) control module
B42	Load sensor at the rear right
B64	Load/level sensor at the front right
M80	Headlight servo motor, left
M81	Headlight servo motor, right
X1B*	Black 10-pin plug
X1S*	Black 10-pin plug
X596	Terminal 31 connector
X991	26-pin plug, Bordeaux
X1034	4-pin plug, natural (left headlight)
X1035	4-pin plug, natural (right headlight)
X1170	42-pin plug, natural (ABS/ASC control module)
X1451	6-pin plug, black (level sensor, rear right)
X1608*	Terminal 31 connector
X10116	K-bus connector
X10117	54-pin plug, black (light module)
X10275	6-pin plug, black (level sensor, front right)
X10466*	K-bus connector

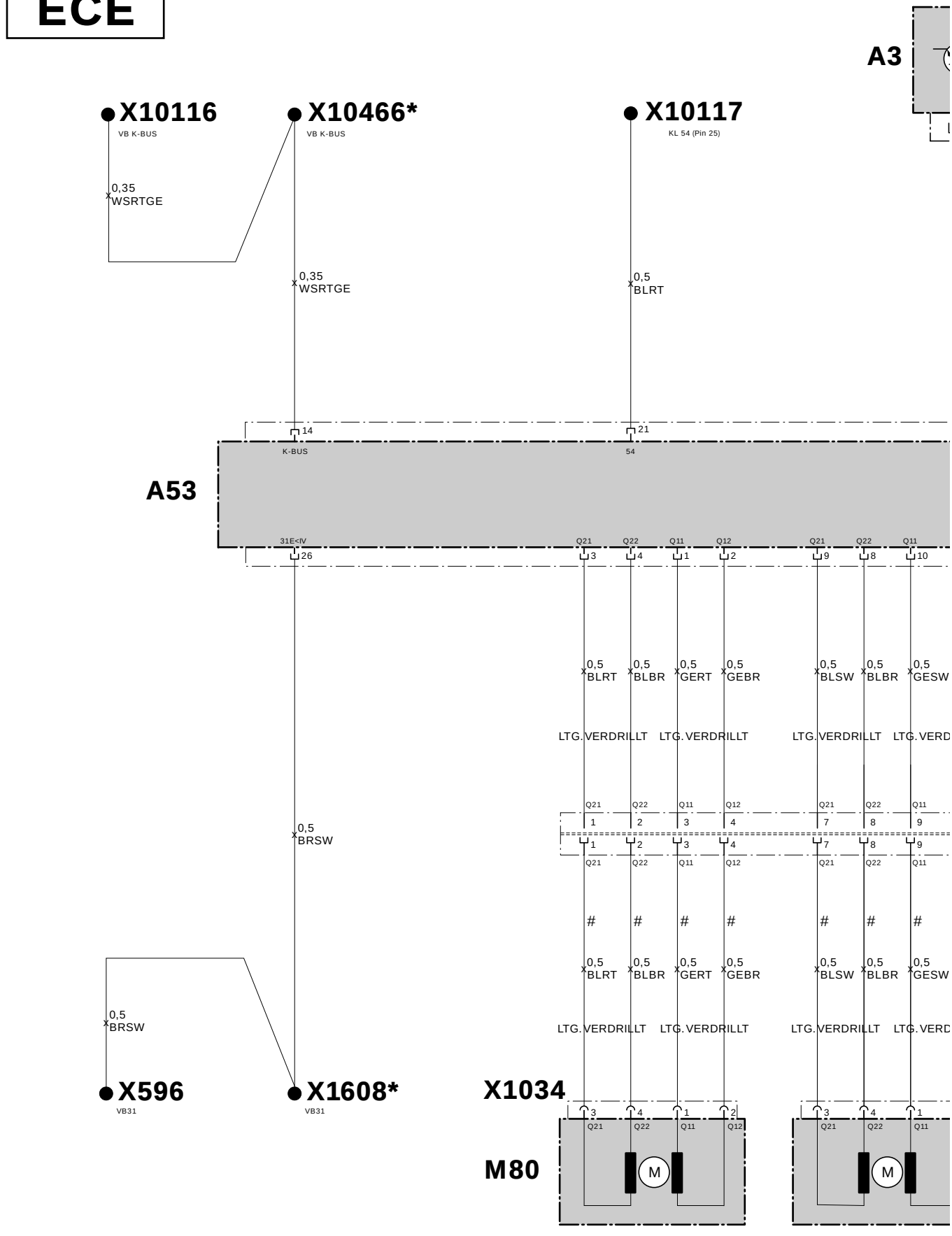
 The components marked "*" only refer to this circuit diagram, all other components refer to the BMW dealer organisation circuit diagram.

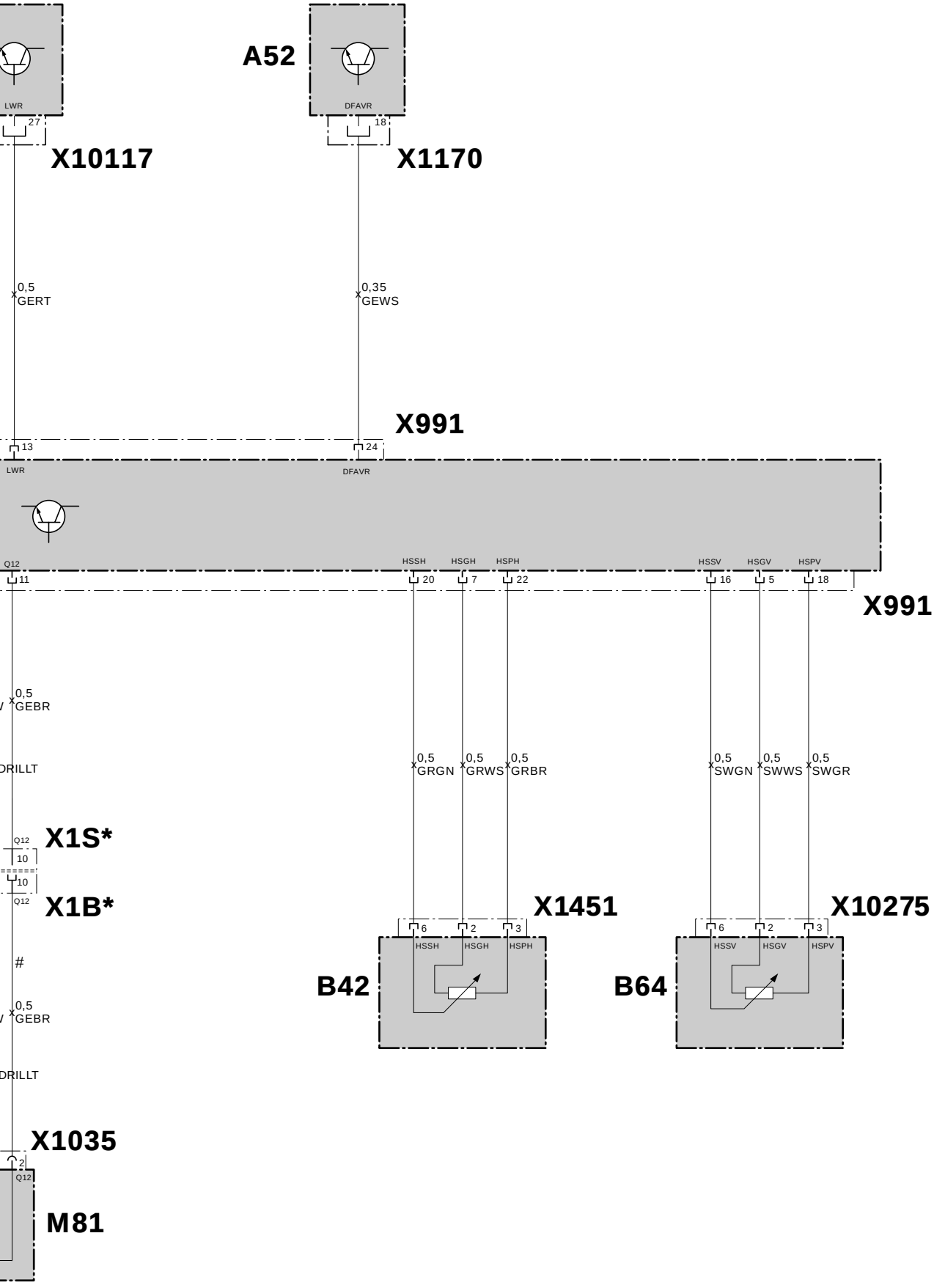
The cables marked "#" are in the vehicle wiring harness and are not supplied with the xenon light retrofit kit.◄

Cable colours

BL	=	blue
BR	=	brown
GE	=	yellow
GN	=	green
GR	=	grey
RT	=	red
SW	=	black
WS	=	white

ECE


A3
X10116
VB K-BUS
X10466*
VB K-BUS
X10117
KL 54 (Pin 25)
0,35
WSRTGE
0,35
WSRTGE
0,5
BLRT
A53
14
K-BUS
21
54
31E<IV
26
Q21
Q22
Q11
Q12
3
4
1
2
9
8
10
0,5
BLRT
0,5
BLBR
0,5
GERT
0,5
GEBR
0,5
BLSW
0,5
BLBR
0,5
GESW
LTG. VERDRILLT
LTG. VERDRILLT
LTG. VERDRILLT
LTG. VERD
0,5
BRSW
#
0,5
BRSW
X596
VB31
X1608*
VB31
X1034
M80
M


A52
LWR
27
X10117
DFAVR
18
X1170
0,5
GERT
0,35
GEWS
X991
13
24
LWR
DFAVR
Q12
11
HSSH
HSGH
HSPH
20
7
22
HSSV
HSGV
HSPV
16
5
18
X991
0,5
GEBR
DRILLT
0,5
GRGN
0,5
GRWS
0,5
GRBR
0,5
SWGN
0,5
SWWS
0,5
SWGR
X1S*
Q12
10
X1B*
10
Q12
#
X1451
X10275
6
2
3
HSSH
HSGH
HSPH
B42
HSSV
HSGV
HSPV
B64
0,5
GEBR
DRILLT
X1035
2
Q12
M81

F 53 0088 EVA

3.2 Circuit diagram (for US cars only)

Fold out folded page 3-19.

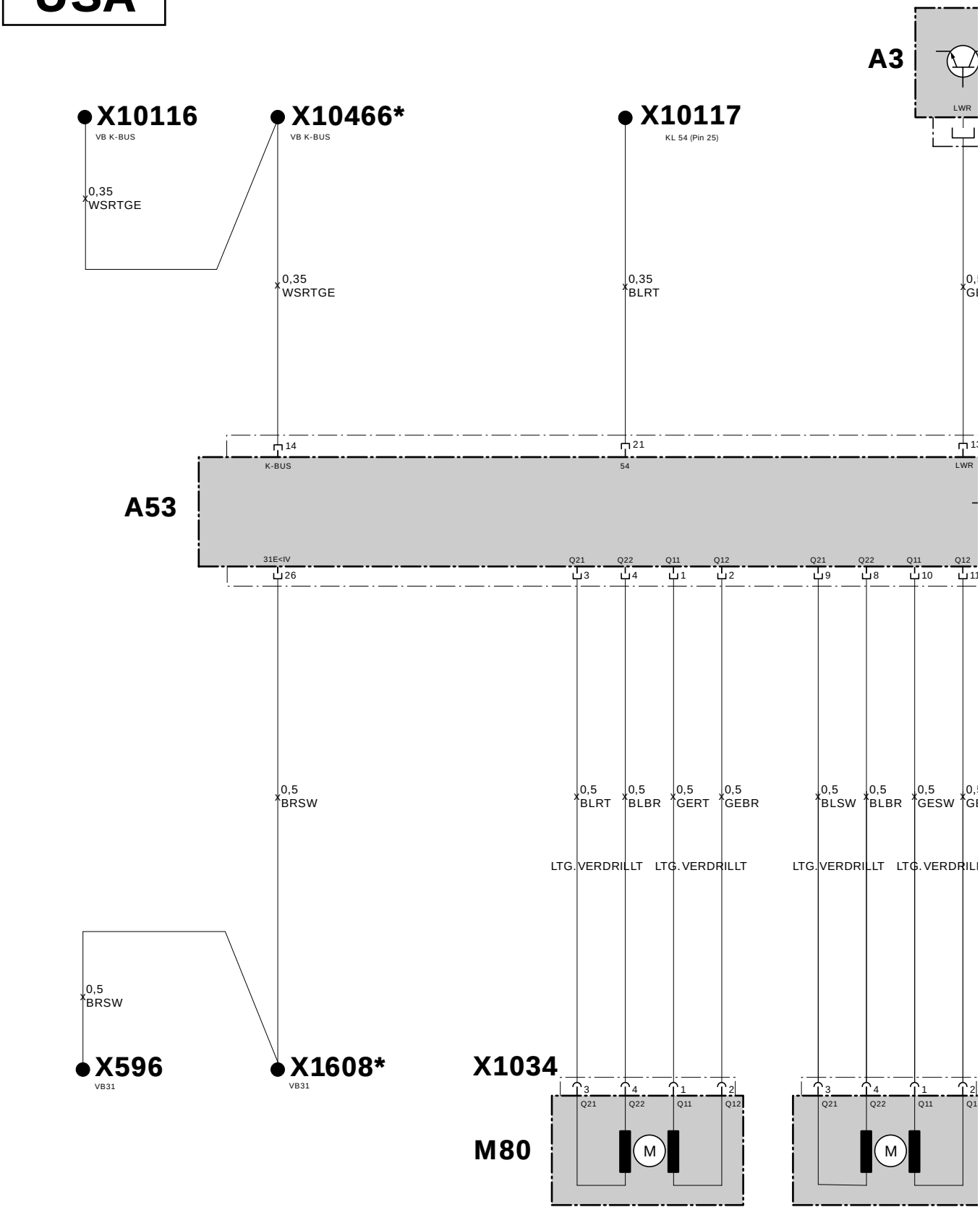
A3	Light module
A52	ABS/DSC control module
A53	Headlight adjustment control system (LWR) control module
B42	Load sensor at the rear right
B64	Load/level sensor at the front right
M80	Headlight servo motor, left
M81	Headlight servo motor, right
X596	Terminal 31 connector
X991	26-pin plug, Bordeaux
X1034	4-pin plug, natural (left headlight)
X1035	4-pin plug, natural (right headlight)
X1170	42-pin plug, natural (ABS/ASC control module)
X1451	6-pin plug, black (level sensor, rear right)
X1608*	Terminal 31 connector
X10116	K-bus connector
X10117	54-pin plug, black (light module)
X10275	6-pin plug, black (level sensor, front right)
X10466*	K-bus connector

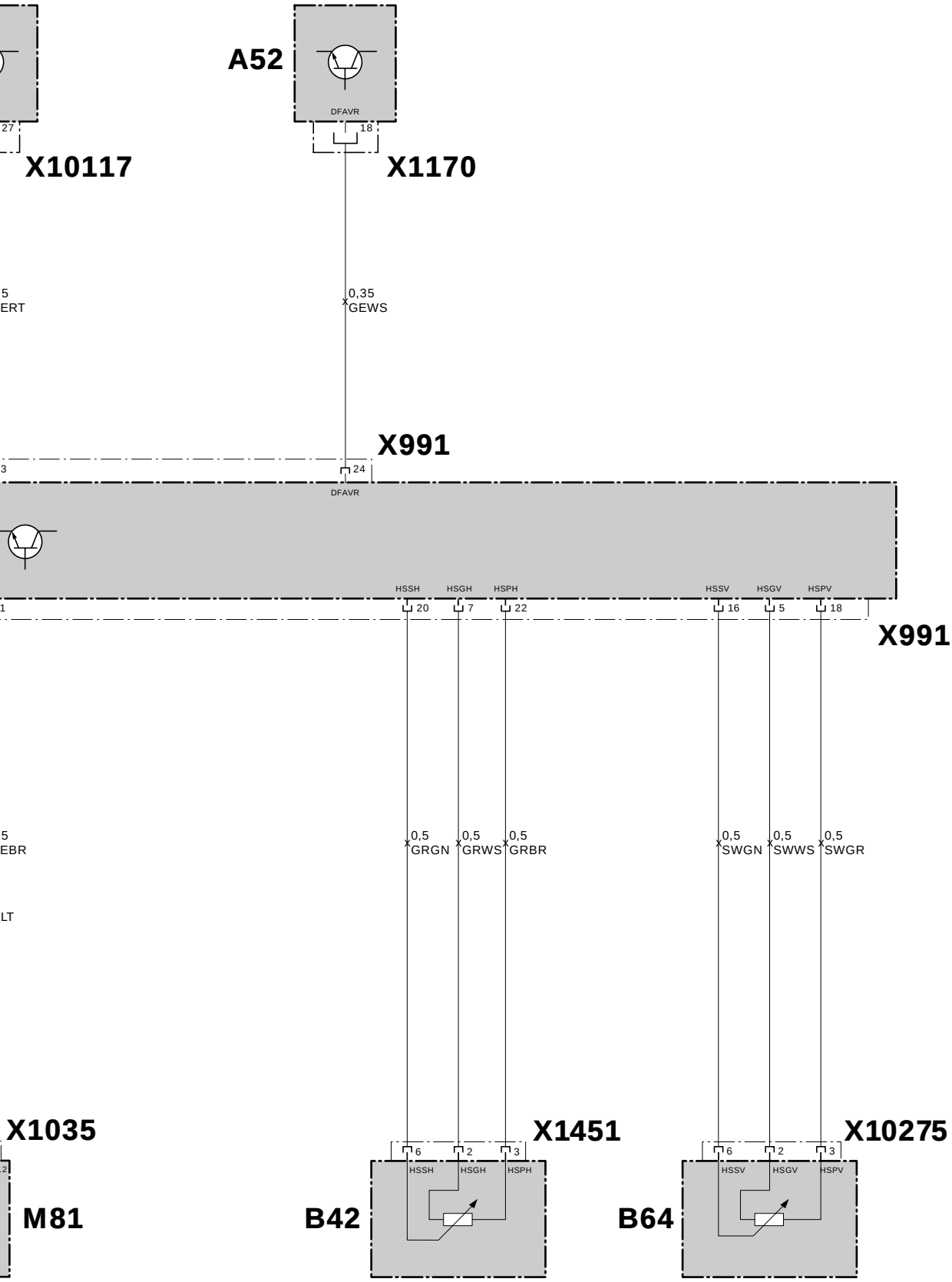
▷ The components marked "*" only refer to this circuit diagram, all other components refer to the BMW dealer organisation circuit diagram.◀

Cable colours

BL	=	blue
BR	=	brown
GE	=	yellow
GN	=	green
GR	=	grey
RT	=	red
SW	=	black
WS	=	white

USA


A3
LWR
X10116
VB K-BUS
X10466*
VB K-BUS
X10117
KL 54 (Pin 25)
0,35
WSRTGE
0,35
WSRTGE
0,35
BLRT
A53
14
K-BUS
21
54
LWR
31E<IV
26
Q21
3
Q22
4
Q11
1
Q12
2
Q21
9
Q22
8
Q11
10
Q12
0,5
BRSW
0,5
BLRT
0,5
BLBR
0,5
GERT
0,5
GEBR
0,5
BLSW
0,5
BLBR
0,5
GESW
LTG. VERDRILLT
LTG. VERDRILLT
LTG. VERDRILLT
0,5
BRSW
X596
VB31
X1608*
VB31
X1034
M80
M
M


A52
DFAVR
18
X1170
27
X10117
0,35
GEWS
X991
24
DFAVR
HSSH
HSGH
HSPH
HSSV
HSGV
HSPV
20
7
22
16
5
18
X991
0,5
GRGN
0,5
GRWS
0,5
GRBR
0,5
SWGN
0,5
SWWS
0,5
SWGR
X1035
M81
X1451
B42
X10275
B64
6
2
3
HSSH
HSGH
HSPH
HSSV
HSGV
HSPV

F 53 0089 EVA