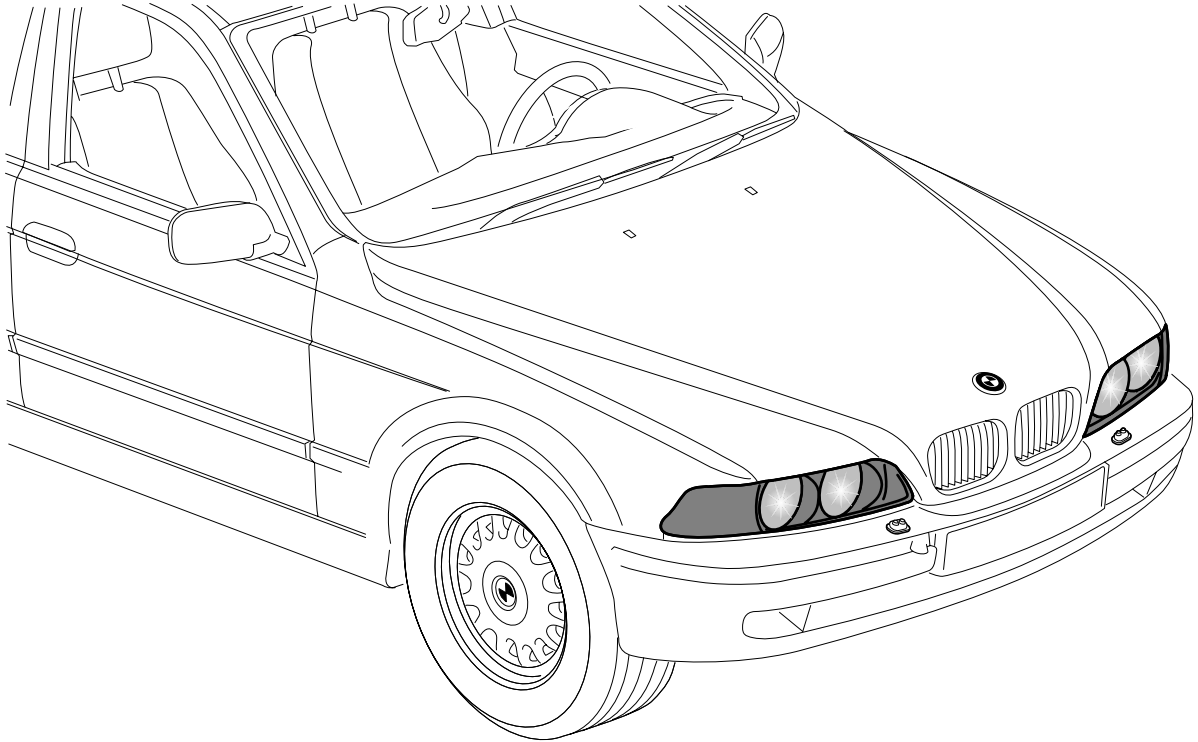




Teile und Zubehör - Einbauanleitung



F 39 0196 B

Installation kit - xenon headlights with automatic headlight range adjustment
BMW 5 Series (E39) LHD
BMW 5 Series (E39/2) LHD

	Contents	Page
1	Important Information	1-2
2	Installation	2-1
3	Circuit diagram of xenon headlight wiring harness	3-1
4	Information leaflet (to be detached and kept in vehicle)	4-2

1. Important Information

Intended for use in BMW dealership network only.

Specialist knowledge as well as knowledge of the vehicle electrical system required.

These installation instructions apply only to left-hand drive (LHD) vehicles.

Installation time required 2.0 hours.

The installation time may vary depending on the condition and equipment of the vehicle.



- This installation kit may only be installed in connection with a headlight washer system.
- Option **SA 500** headlight washer system must be retrofitted first if the vehicle was not equipped with this optional extra in series production or if **SA 500** headlight washer system has not been retrofitted, as the installation kit xenon headlight with automatic headlight range adjustment must **only be installed in conjunction with SA 500** headlight washer system.
- If installed, the latent heat accumulator must also be removed from the vehicle. The latent heat accumulator must be removed and installed in accordance with the instructions provided in the currently applicable Repair Instructions.
- Make sure that the warning sticker provided in the installation kit is affixed to the cross member above the headlight.
- This xenon headlight installation kit does **not require encoding**. Instructions for checking the level sensor and the cold light scan module are provided in Section 2.4 and in the information leaflet (Section 4).
- If changes are made to the running gear or repairs conducted on the rear axle, the adjustment procedure for the level sensor **must** be carried out as described in Section 2.4 and in the information leaflet (Section 4).
- Place the **information leaflet** (Section 4) and the **white 2-pin socket housing (wire jumper, red wire)** unplugged during the adjustment procedure in the car's glovebox so that **readjustment** can be carried out if necessary. ◀

Safety notes

Particular care must be taken when installing cables/lines to ensure they are not kinked, bent or damaged. Additionally installed cables/lines must be secured with cable straps.

On no account use "Scotchlock quick-action connectors" as they can cause interference and disturbances in the vehicle electrical system.

If specified pins or slots are already used, corresponding jumpers, double crimp or parallel connections are to be used. To avoid problems, make sure you follow the specified cable routes in the vehicle precisely.

Subject to technical modifications

2. Installation

	Contents	Page
2.1	Connections overview of xenon headlight wiring harness	2-5
2.2	Installation of xenon headlight	2-22
2.3	Installation of level sensor	2-32
2.4	Installation of xenon headlight wiring harness	2-44

2.1 Connections overview of xenon headlight wiring harness

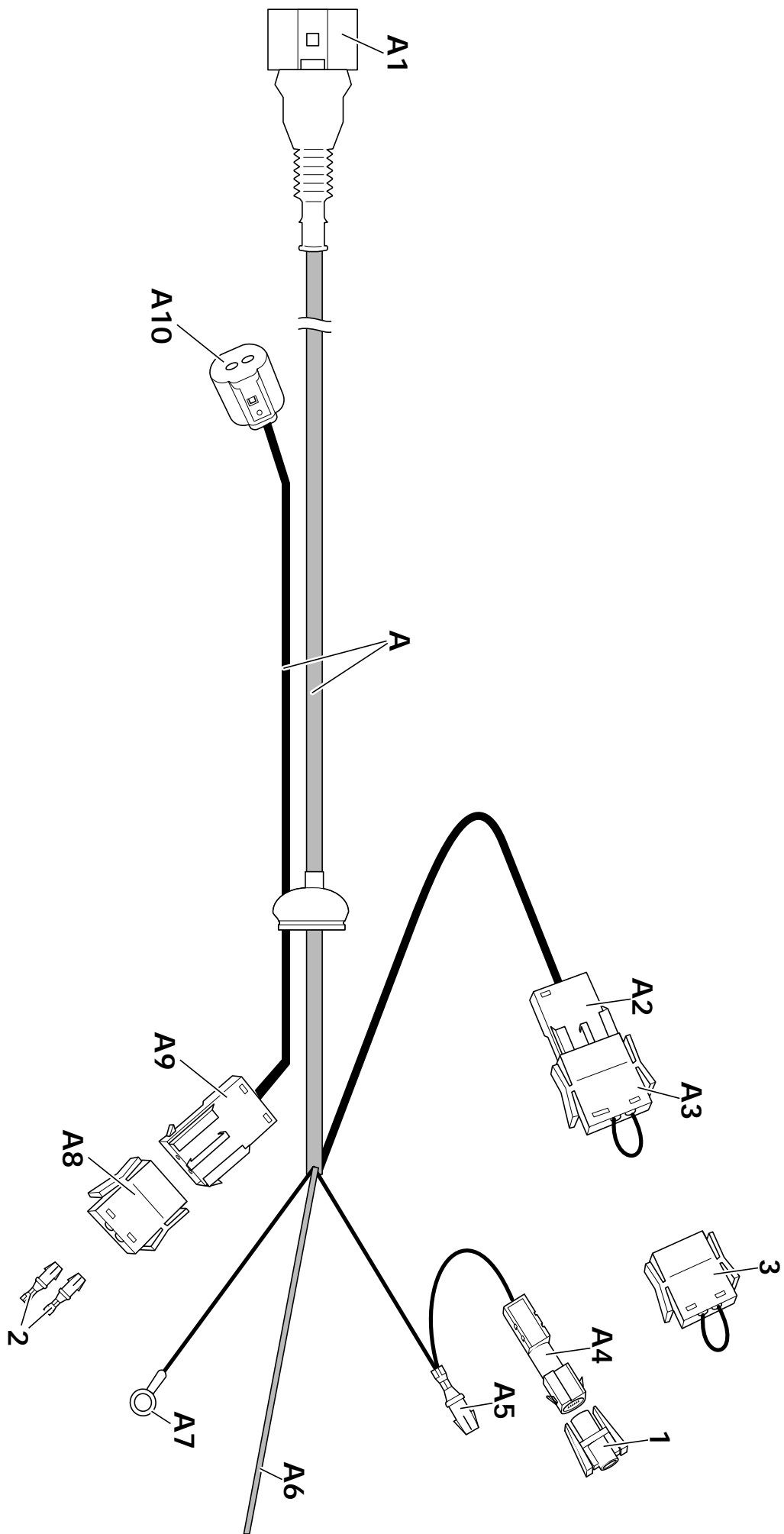
Notes

Refer to general information as well as safety notes in **Section 1**.

Open out fold-out page! (Page 2-20)

Item	Description	Cable colour	Connection location in vehicle
A	Xenon headlight wiring harness	-	-
A1	Black 8-pin socket housing	-	At level sensor in rear right wheelhouse
A2	White 2-pin pin housing	White Brown	Connected to branch A3 , white 2-pin socket housing, with red wire jumper from xenon headlight wiring harness A (after adjustment connected to white 2-pin socket housing 3 (dummy, green wire))
A3	White 2-pin socket housing (wire jumper)	Red	Connected to branch A2 , white 2-pin pin housing from xenon headlight wiring harness A (unplugged as part of adjustment procedure and replaced by white 2-pin socket housing 3 (dummy, green wire) (see Section 2.4))
A4	Black 1-pin pin housing, terminal 56 BR	Yellow/blue	At black 1-pin socket housing 1 provided, with released, plugged-in socket contact PIN 3 from white 15-pin light module connector X38
1	Black, 1-pin socket housing	-	With released, plugged-in socket contact PIN 3 from white 15-pin light module connector X38 at branch A4 of xenon headlight wiring harness A
A5	1-pin socket contact, terminal 56 BR	Yellow/blue	In released plug-in slot PIN 3 of white 15-pin light module connector X38
A6	Connection cable, terminal LWRP	Yellow/red	With insulation displacement connector at wiring loom of black 54-pin light module connector X10117 , yellow/red wire, PIN 34
A7	Cable eye dia. 6 mm terminal 31 ground	Brown	At ground terminal point X10012 in front area of right-hand entrance
2	Free 1-pin socket contact	-	<p>On vehicles equipped with SA 500 headlight washer system in series production Free 1-pin socket contacts are not required.</p> <hr/> <p>On vehicles with retrofitted SA 500 headlight washer system Free 1-pin socket contacts are crimped onto free wire ends of disconnected headlight washer system pump connector X1011</p>
A8	Black 2-pin socket housing	-	<p>On vehicles equipped with SA 500 headlight washer system in series production Branch A8 is not required.</p> <hr/> <p>On vehicles with retrofitted SA 500 headlight washer system With crimped and connected socket contacts 2, PIN 1, brown wire and PIN 2, black/brown wire from headlight washer system pump connector X1011, at branch A9 of xenon headlight wiring harness A</p>

Item	Description	Cable colour	Connection location in vehicle
A9	Black 2-pin pin housing	Brown Black/brown	On vehicles equipped with SA 500 headlight washer system in series production Branch A9 is not required (tie back)
			On vehicles with retrofitted SA 500 headlight washer system At branch A8 black 2-pin socket housing with crimped and connected socket contacts 2 , PIN 1 , brown wire and PIN 2 , black/brown wire from headlight washer system pump connector X1011
A10	Black 2-pin socket housing	Brown Black/brown	On vehicles equipped with SA 500 headlight washer system in series production Branch A10 not required (insulate and tie back)
			On vehicles with retrofitted SA 500 headlight washer system At washer fluid pump for headlight washer system in front right wheelhouse
3	White 2-pin socket housing (Dummy)	Green	After carrying out adjustment, at branch A2 from xenon headlight wiring harness A (remains connected to branch A2 of xenon headlight wiring harness A)



F 39 0206 B

2.2 Installation of xenon headlight

Notes

Refer to general information as well as safety notes in **Section 1**.

Open out fold-out page! (Page 2-30)



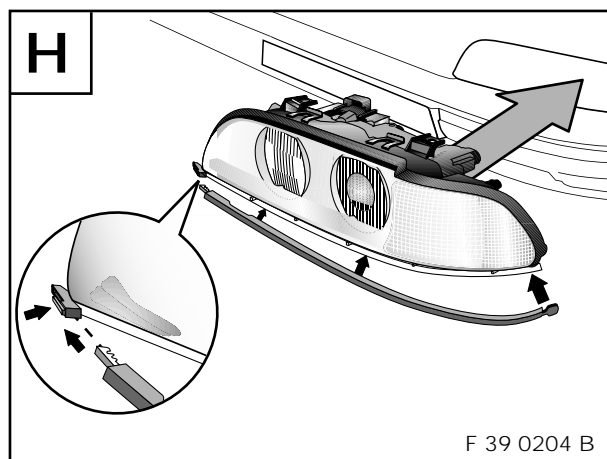
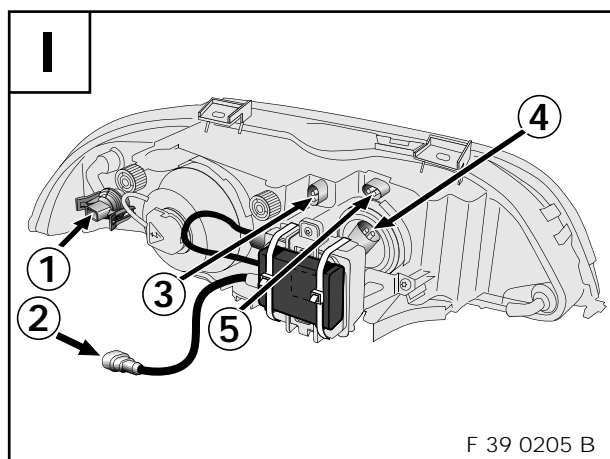
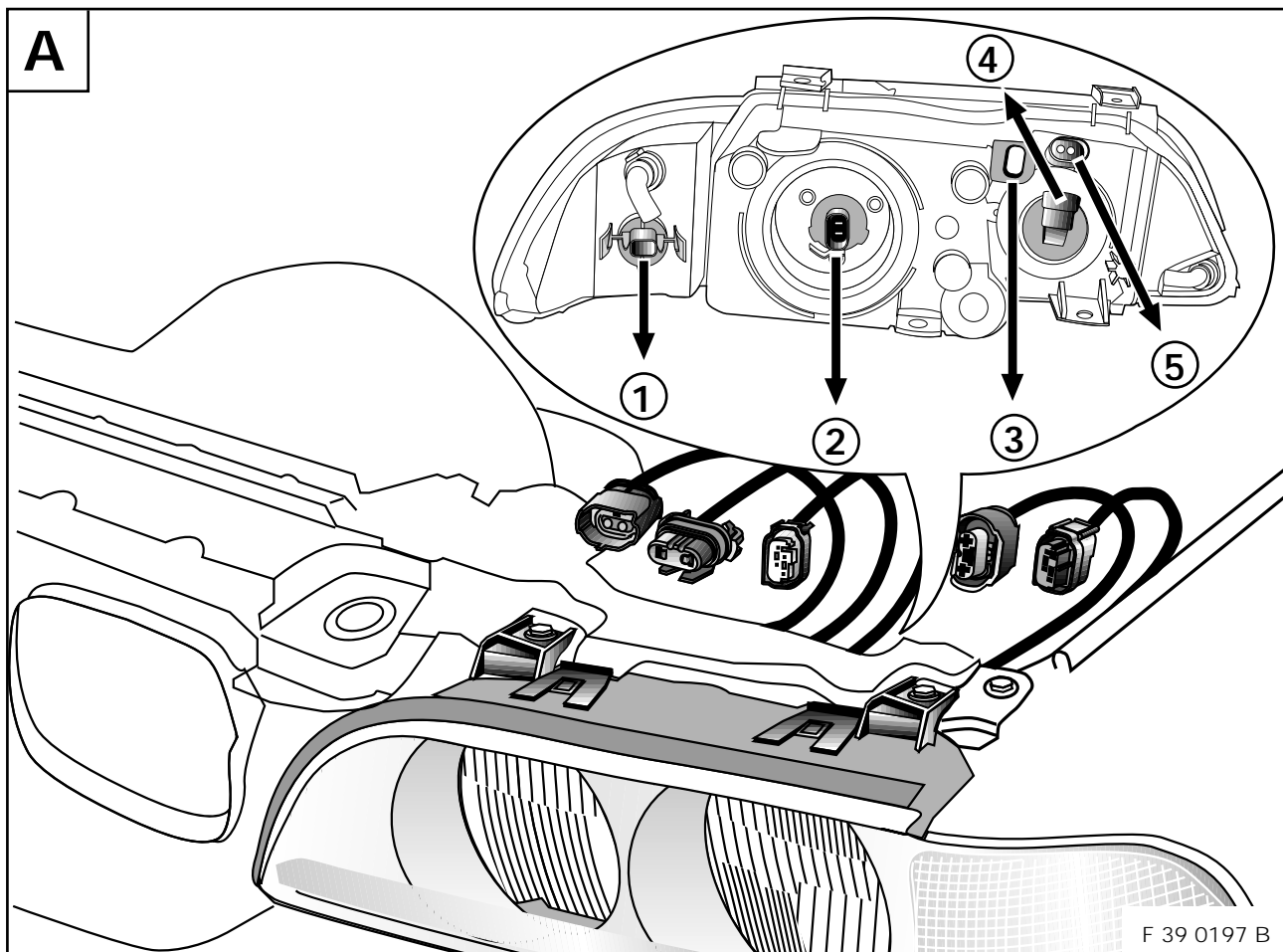
The description of the installation procedure refers to the left-hand side of the vehicle. The same procedure is to be carried out analogously when installing on the right-hand side of the vehicle. ◀

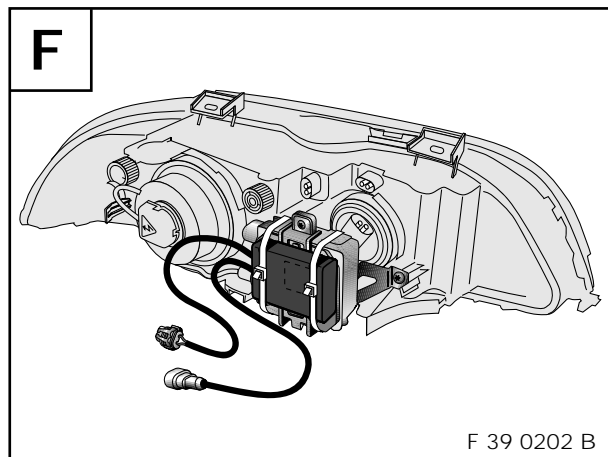
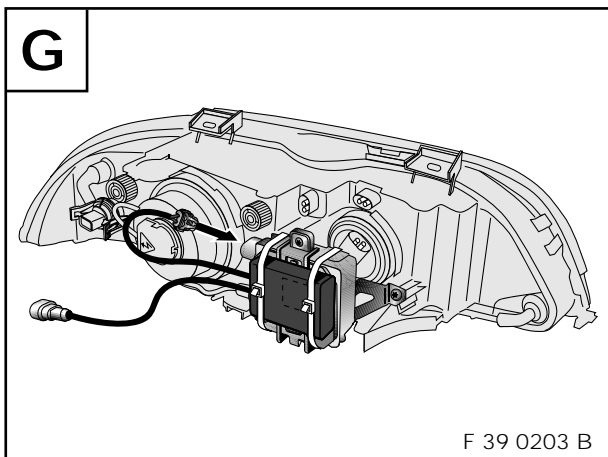
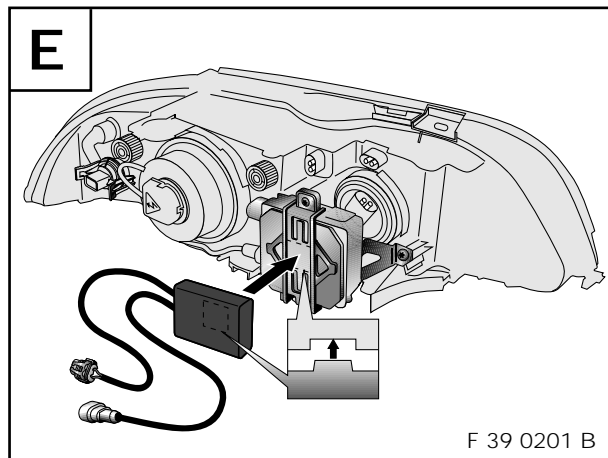
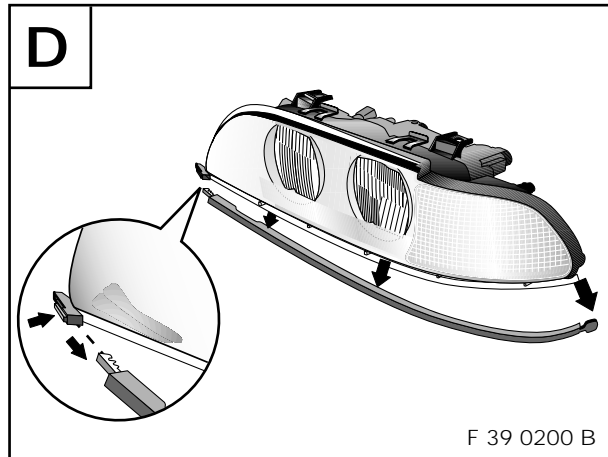
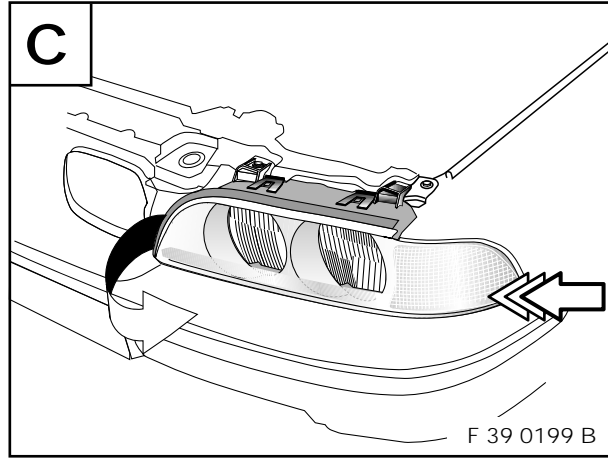
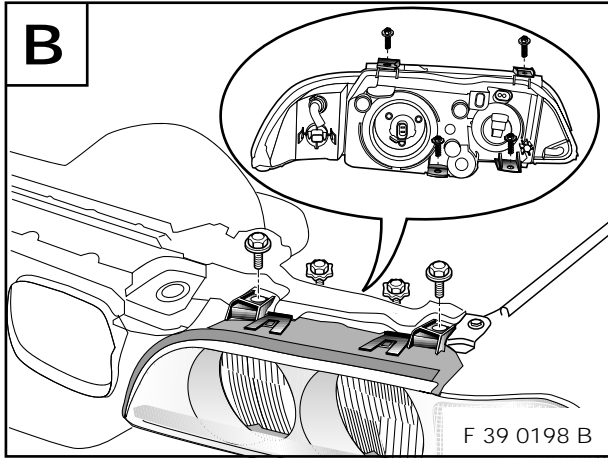
Fig. A to **Fig. D** shows the removal of the halogen headlights.

Fig. E to **Fig. G** shows the mounting of the cold light scan module on the xenon headlights

Fig. H to **Fig. I** shows the installation of the xenon headlights

Continue with Section 2.3





2.3 Installation of level sensor

Notes

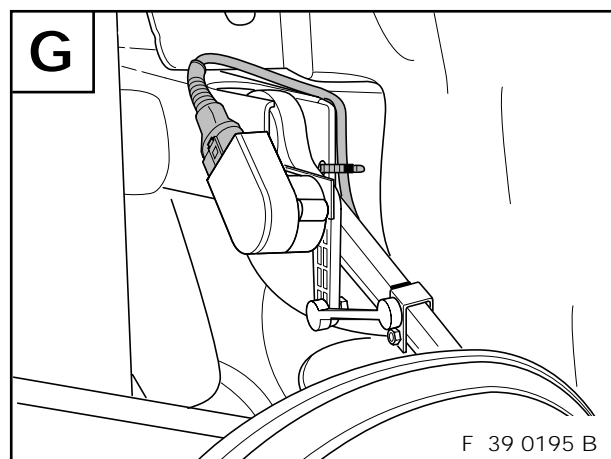
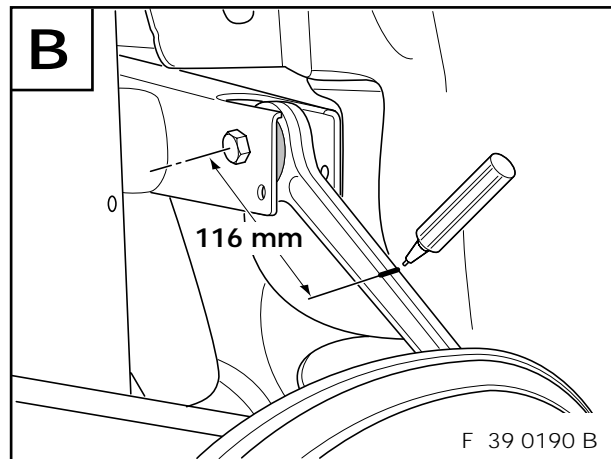
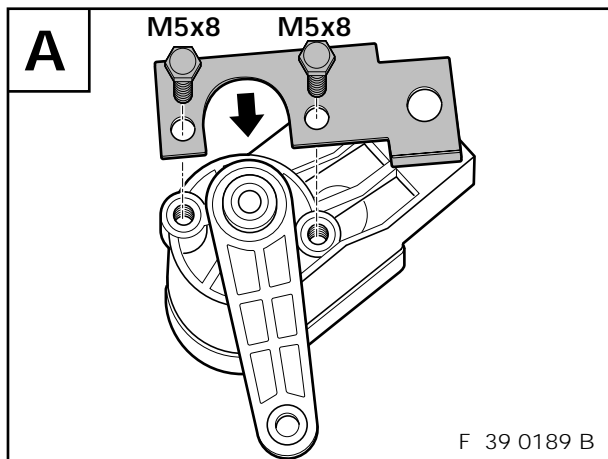
Refer to general information as well as safety notes in **Section 1**.

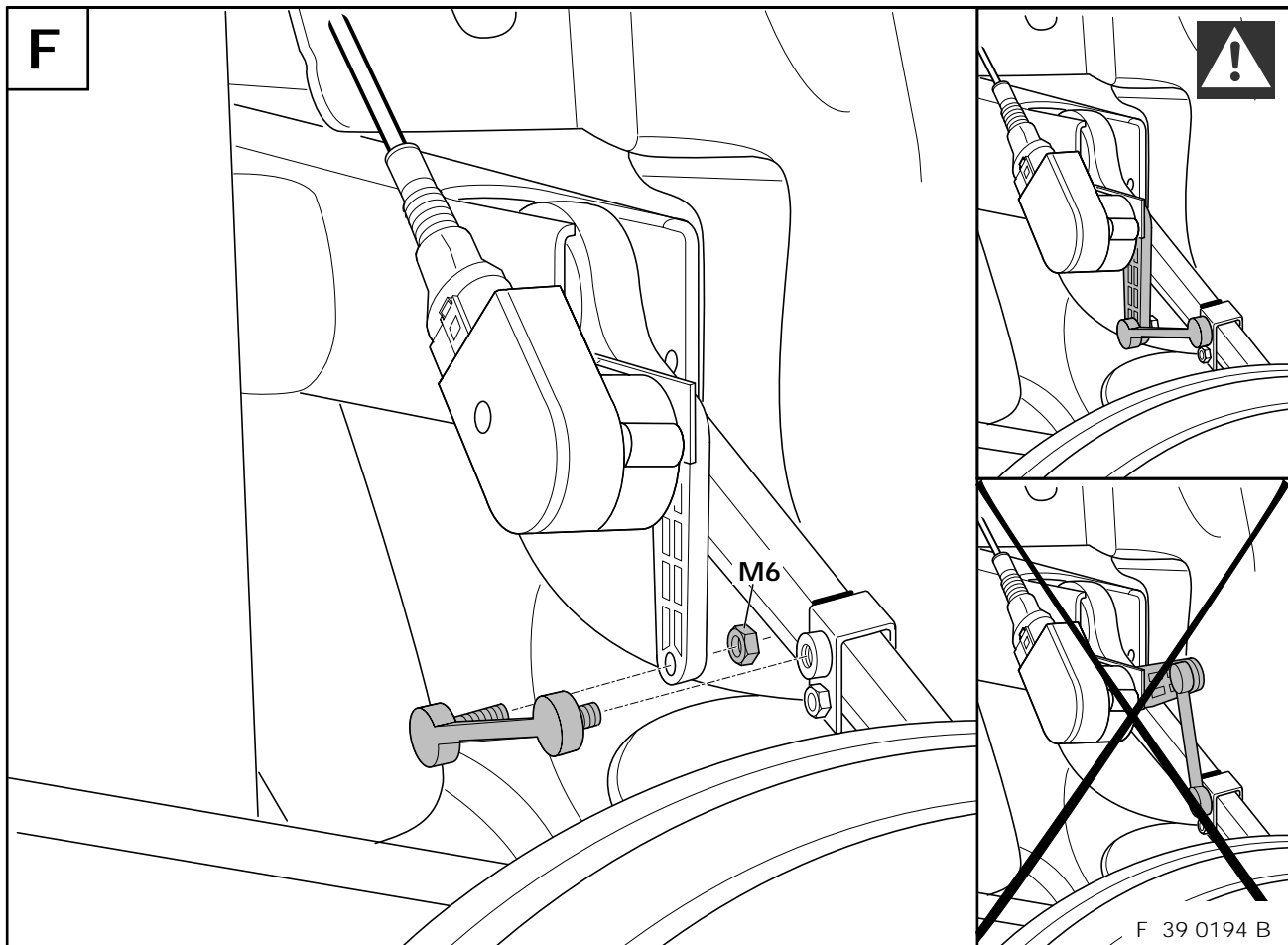
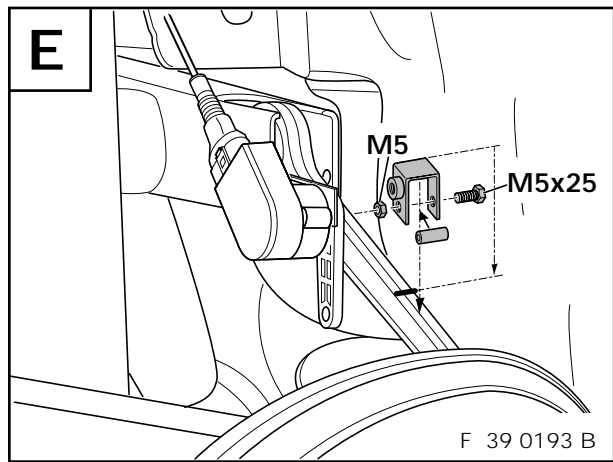
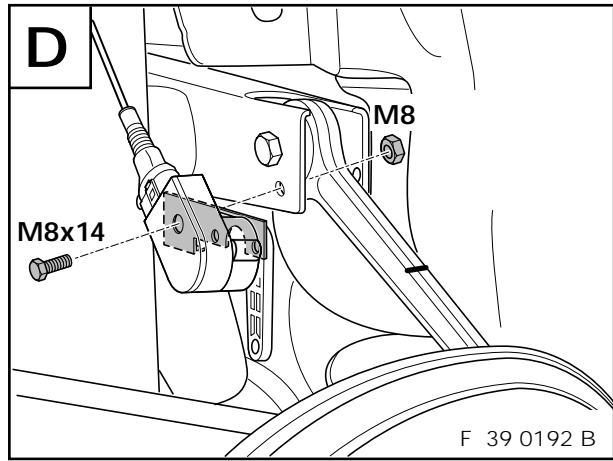
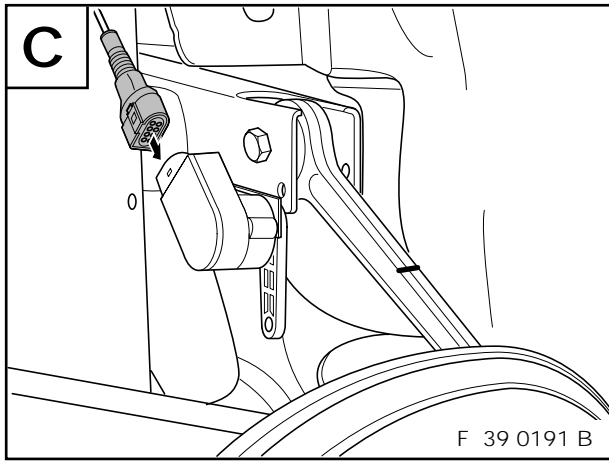
Preparation

Remove rear right wheel

Open out fold-out page! (Page 2-40)

Continue with Section 2.4





2.4 Installation of xenon headlight wiring harness

Notes

Refer to general information as well as safety notes in **Section 1**.

Preparation

Print out fault code memory

Disconnect battery

Remove front right wheel

Expose wipe/wash reservoir on right-hand A-pillar behind the wheelhouse cover and remove wipe/wash reservoir

Expose light module at right-hand A-pillar in vehicle interior

Expose ground terminal point in front area of right-hand entrance

Open out fold-out page! (Page 2-66)

Fig. A

The figure shows the front passenger's footwell. Fold back carpet (1) in front passenger's footwell on left next to A-pillar and remove cover (2).

Fig. B

Only for vehicles up to production date 9/98 equipped with SA 500 headlight washer system in series production.

Mark hole (1) at distance **A** and in centre with respect to existing rubber grommet (2), centre punch and drill a 30 mm dia. hole (1) using a step drill. Debur hole, carefully remove drill swarf and treat blank points with BMW approved corrosion protection measures.

A = 25 mm



Take particular care while drilling to ensure that the cables and hoses in the front right wheelhouse are not damaged. ◀

Fig. C

Only for vehicles from production date 9/98 equipped with SA 500 headlight washer system in series production.

Mark hole (1) in centre of recess (2), centre punch and drill a 30 mm dia. hole (1) using a step drill. Debur hole, carefully remove drill swarf and treat blank points with BMW approved corrosion protection measures.



Take particular care while drilling to ensure that the cables and hoses in the front right wheelhouse are not damaged. ◀

Fig. D

Only on vehicles with retrofitted SA 500 headlight washer system.

Press grommet (1) into vehicle interior and then push back connector (2) for washer fluid pump of headlight washer system through opening into vehicle interior.

Fig. E

Route xenon headlight wiring harness **A** from level sensor (1) along the brake line on the right-hand side of the vehicle to the front right wheelhouse and secure with cable straps. Route branches **A2** to **A9** through the 30 mm dia. hole (3) in the wheelhouse into vehicle interior. Fit rubber grommet (2) on xenon headlight wiring harness **A** in the 30 mm dia. hole (3) and install the wipe/wash reservoir.

Connect branch **A10**, black 2-pin socket housing of xenon headlight wiring harness **A**, to washer fluid pump for headlight washer system.



On vehicles equipped in series production with **SA 500** headlight washer system insulate and tie back branch **A10**, black 2-pin socket housing of xenon headlight wiring harness **A** (not required). ◀

Fig. F

Using side cutter (3) cut off displaced connector 1 shown in Fig. **D** for washer fluid pump of headlight washer system. Strip insulation from the two free wire ends (4) and crimp on 1-pin socket contacts (2) provided. Now plug socket contacts (2) into provided black 2-pin socket housing, plug in branch **A8** and lock socket housing.

Brown wire in PIN 1

Black/brown **wire in PIN 2**

Connect branch **A8**, black 2-pin socket housing with connected socket contacts (2) to branch **A9**, black 2-pin pin housing of xenon headlight wiring harness **A**.

Fig. G

Unplug white 15-pin connector **X38** from light module (2), open and release. Unplug existing 1-pin socket contact (3) from plug-in slot **PIN 3**, yellow/blue wire, of white 15-pin light module connector **X38**. Connect unplugged 1-pin socket contact (3), yellow/blue wire, to supplied black 1-pin socket housing (1). Plug branch **A5**, 1-pin socket contact, yellow/blue wire, of xenon headlight wiring harness **A** into white 15-pin connector **X38** at plug-in slot **PIN3**. Lock white 15-pin connector **X38**, close and connect to the light module. Connect black 1-pin socket housing (1) with connected 1-pin socket contact (3), yellow/blue wire, from white 15-pin connector **X38** to branch **A4**, black 1-pin pin housing, yellow/blue wire of xenon headlight wiring harness **A**.

Fig. H

Unplug and open black 54-pin connector **X10117** of light module (1). Connect branch **A6**, free wire end, yellow/red wire, of xenon headlight wiring harness **A** with double insulation displacement connector (2) to yellow/red wire, plug-in slot **PIN 34**, of black 54-pin connector **X10117** (if necessary, open up the wiring loom of black 54-pin connector **X10117** a little to facilitate the insulation displacement connection). Close black 54-pin connector **X10117** and connect to the light module.



The free wire end of branch **A6** must not protrude from the insulation displacement connection. ◀

Fig. I

Firmly secure branch **A7**, 6 mm diameter cable eye, brown wire of xenon headlight wiring harness **A** at ground terminal point **X10012** in front area of right-hand entrance.

Fig. J

Remove instrument cluster cover (1). Unclip the control unit for manual headlight range adjustment (2), disconnect and replace by the supplied cover (3). Insulate unplugged wiring loom and tie back. Reinstall instrument cluster cover (1).

Adjustment

Reassemble vehicle in reverse order of removal and connect battery as it **must** be moved for the adjustment procedure.



The footwell on the right-hand side of the vehicle, however, **must** remain open for the adjustment. ◀

Now move vehicle and carry out the adjustment procedure described under Fig. **K**.

Fig. K

The vehicle should be parked unladen on a flat and even surface for the purpose of automatic adjustment of the level sensor. Disengage gear or selector lever in position "N". Release handbrake and start vehicle. Make sure that the battery voltage is not below 13.0 V for the adjustment of the level sensor (battery must be charged). Unplug branch **A3**, white 2-pin socket housing (wire jumper, red wire) from branch **A2**, white 2-pin pin housing of xenon headlight wiring harness **A**. The adjustment is now completed. Now connect white 2-pin socket housing (3) (Dummy, green wire) to the now free branch **A2**, white 2-pin pin housing of xenon headlight wiring harness **A**.

Electrical adjustment is now functional.

Park vehicle and switch off ignition.

Install light module and tie back branches **A2** to **A9** of xenon headlight wiring harness **A** with cable straps.



Place disconnected branch **A3**, white 2-pin socket housing (wire jumper, red wire) and the information leaflet (Section 4) in the car's glovebox as the adjustment procedure must be repeated in the event of any changes made to the chassis or repairs carried out on the rear axle. ◀

Fig. L

This figure contains information for checking the cold light scan module

If the message "check low beam headlight or the symbol" appears in the instrument cluster display, it is possible that fuse (1) in the cold light scan module (2) is defective (500 mA slow-blow fuse). After replacing the fuse, there still may be a fault in the cold light scan module or in the xenon headlight (replace cold light scan module or xenon headlight).

Fig. M

This figure contains information for checking the level sensor

The level sensor in the rear right wheelhouse is checked as follows:

- Expose light module (1) in right-hand A-pillar.
- Park unladen vehicle on flat and even surface.
- Disengage gear or selector lever in position "N" and release handbrake.
- Connect voltmeter between branch **A6**, yellow/red wire of xenon headlight wiring harness **A** and ground.
- Start vehicle.
- Measure voltage (setpoint 1.0 V).
- Luggage compartment laden with 150 kg (2 persons).
- The voltage value **must** increase (approx. 1.2 to 2 Volt) after 20 seconds.
- If the voltage does not increase, either the control rod is detached (fixed) or the level sensor is defective.

Concluding operations

Reassemble footwell on right-hand side of vehicle.

Reconnect battery.

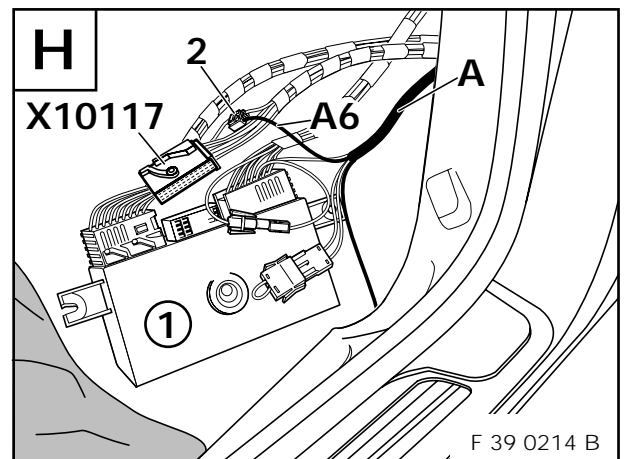
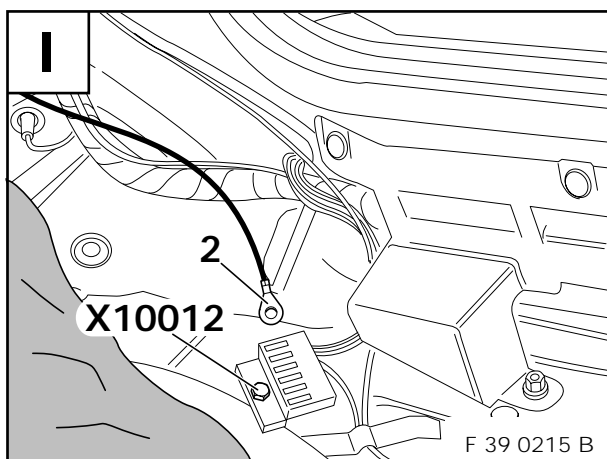
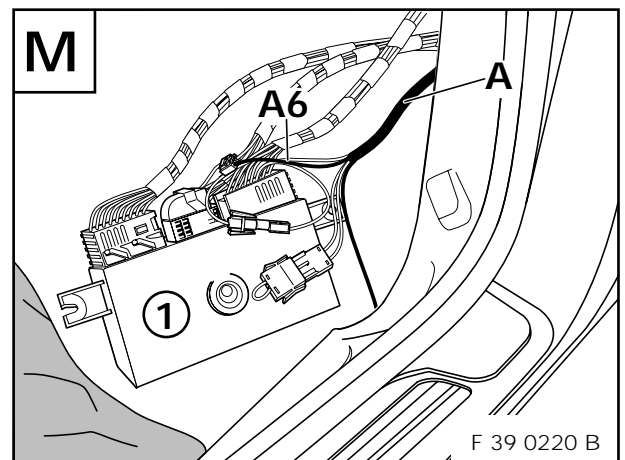
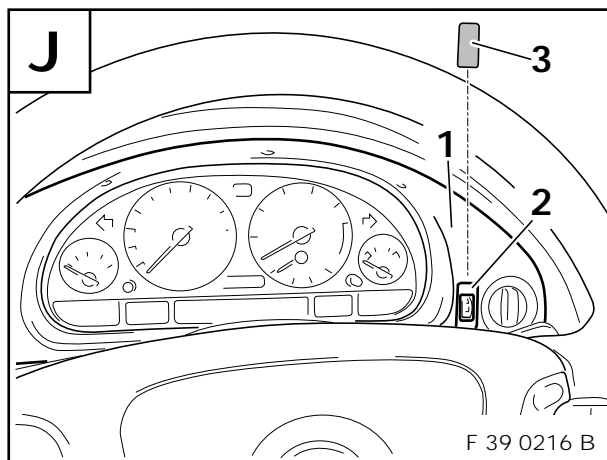
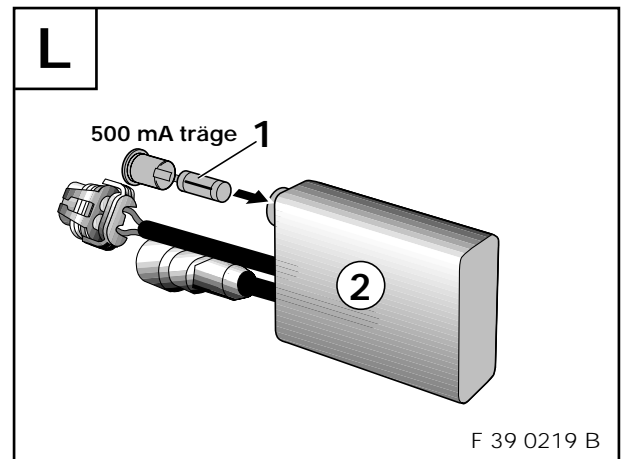
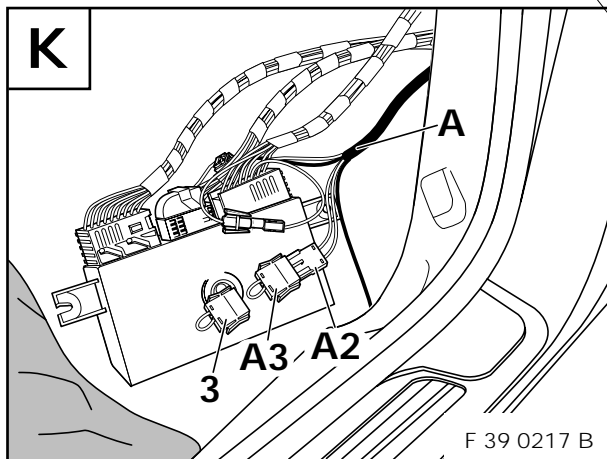
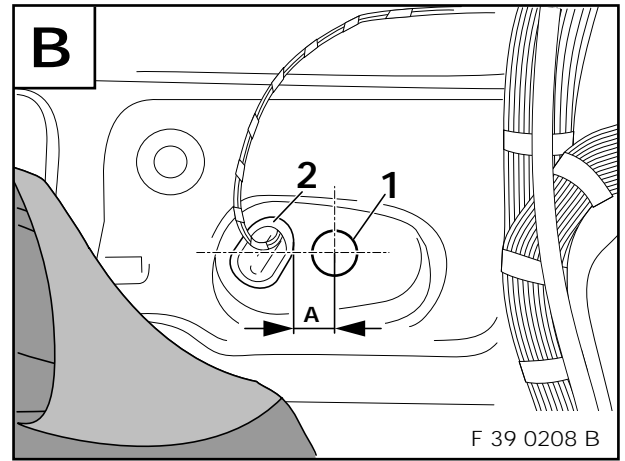
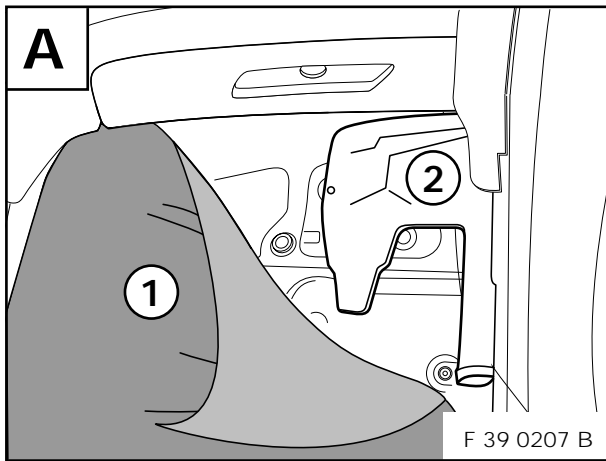
Carry out function check.

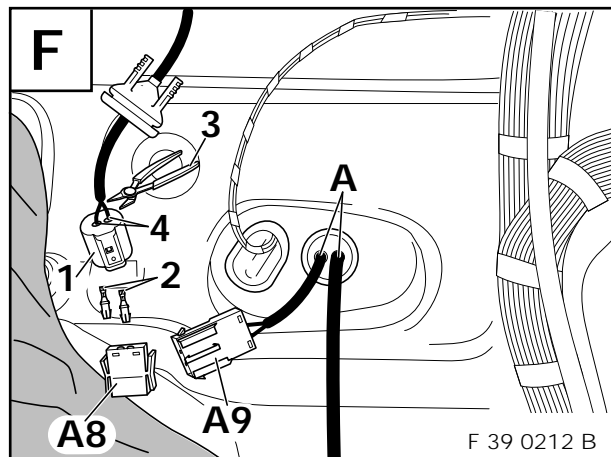
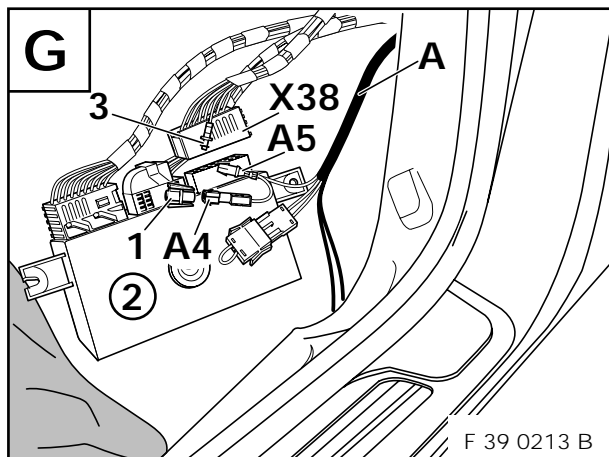
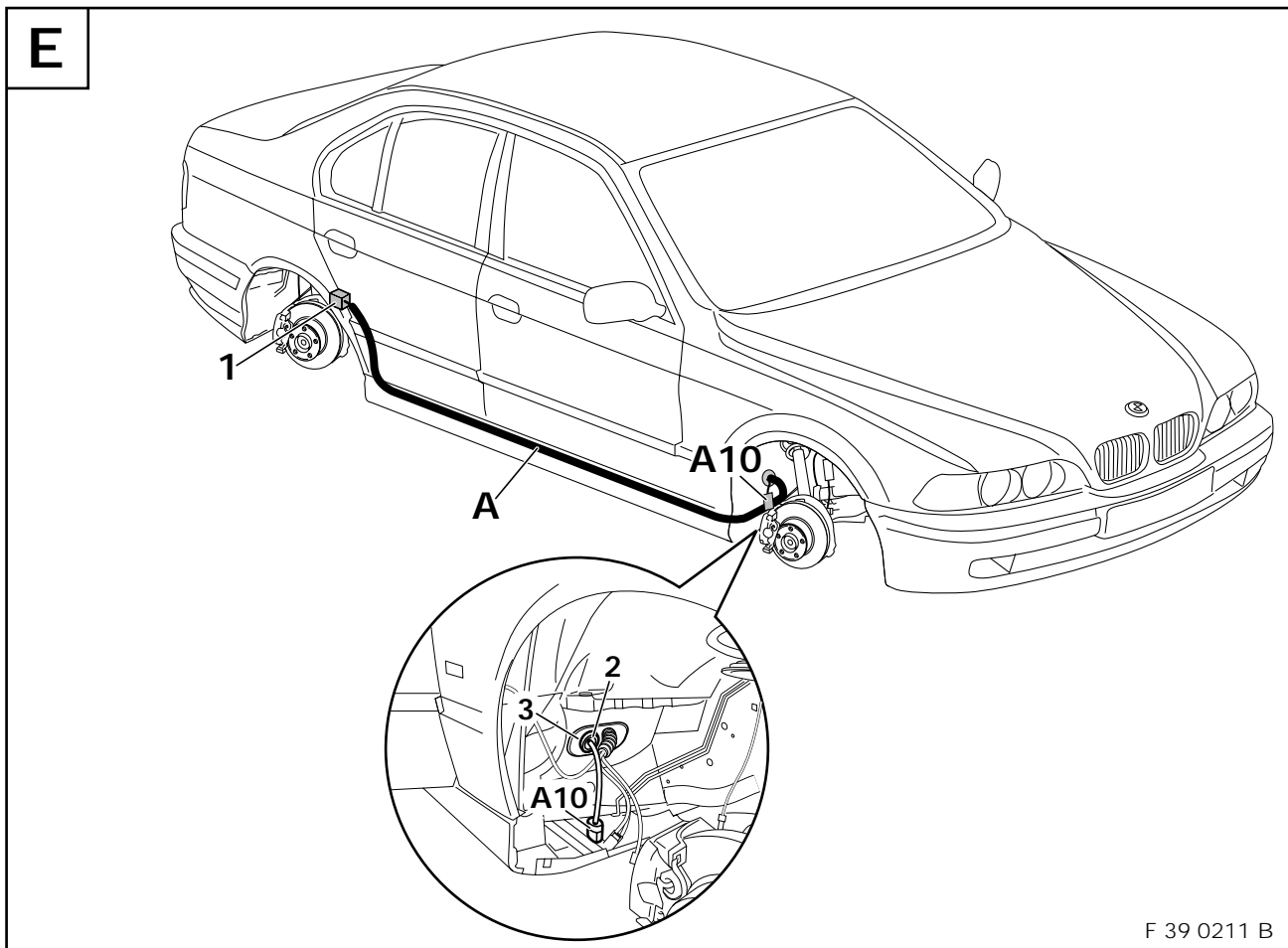
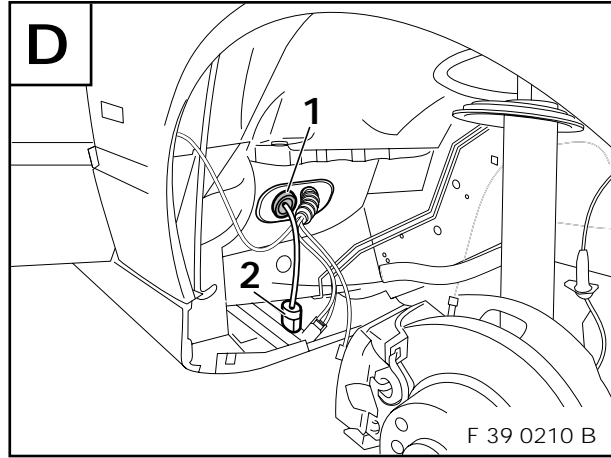
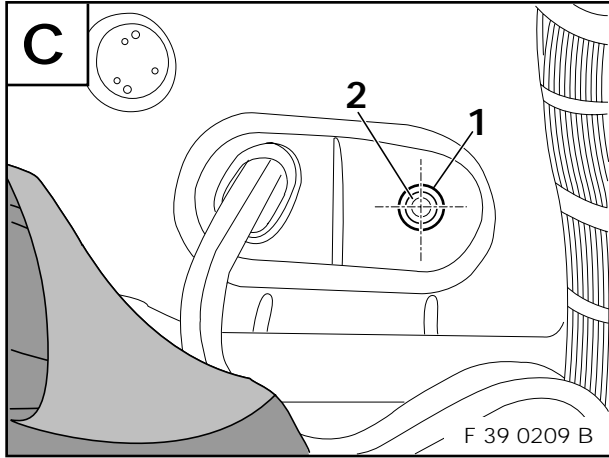
Print out fault code memory.

Adjust headlight with headlight adjuster (the headlights must be set mechanically to H-1%).

Encoding

This system **does not require encoding**.



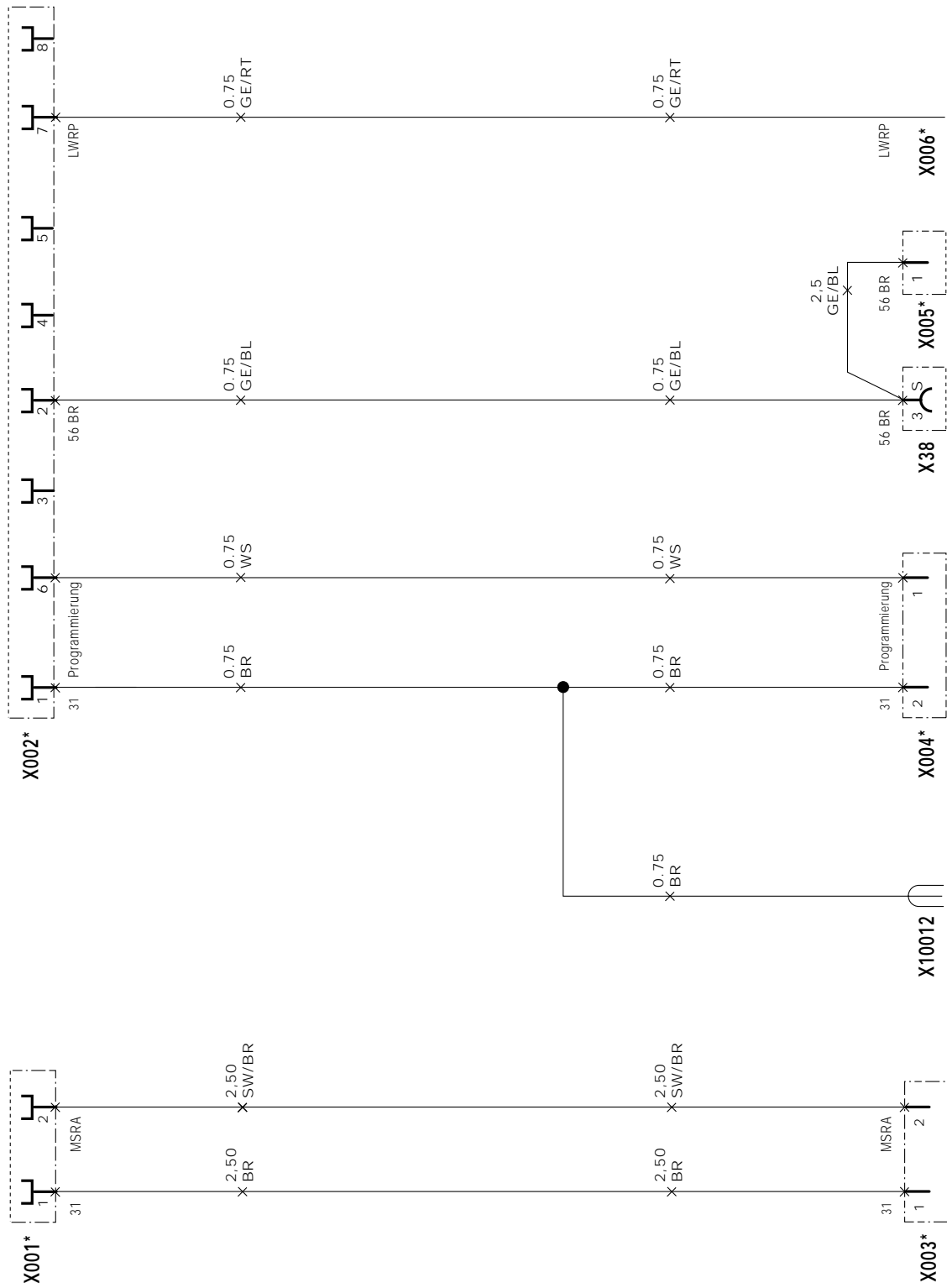


3 Circuit diagram of xenon headlight wiring harness

Open out fold-out page! (Page 3-8)

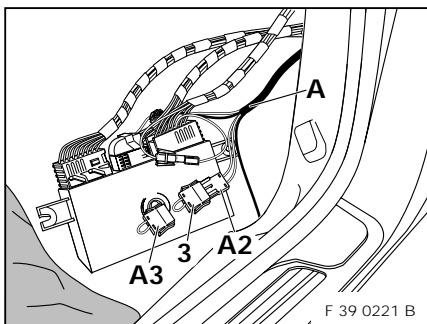
X001*	Black 2-pin socket housing, connection washer fluid pump
X002*	Black 8-pin socket housing, level sensor connection
X003*	Black 2-pin pin housing, adapter connection for washer fluid pump
X004*	White 2-pin pin housing, coding loop connection
X005*	Black 1-pin pin housing, light module connection, connector X38 , white 15-pin socket housing
X006*	Free wire end, light module connection, connector X10117 , black 54-pin socket housing, PIN 34 (insulation displacement connection)
X38	1-pin socket contact, light module connection, connector X38 , white 15-pin socket housing PIN 3
X10012	6 mm dia. cable eye, ground connector X10012

The items marked with * refer only to this circuit diagram. All other items correspond to the BMW Service circuit diagrams.



4. Information leaflet (to be kept in vehicle)

Adjustment



Before carrying out the adjustment, the vehicle must be moved and the light module at the bottom of the right-hand A-pillar exposed. Disconnect white 2-pin socket housing (3) (Dummy, green wire) from branch **A2**, white 2-pin pin housing of xenon headlight wiring harness **A** and connect white 2-pin socket housing branch **A3** (wire jumper, red wire) kept in the glovebox to branch **A2**, white 2-pin pin housing of xenon headlight wiring harness **A**. The vehicle should be parked unladen on a flat and even surface for the purpose of automatic adjustment of the level sensor. Disengage gear or selector lever in position "N". Release handbrake and start vehicle. Make sure that the battery voltage is not below 13.0 V for the adjustment of the level sensor (battery must be charged). Disconnect branch **A3**, white 2-pin socket housing (wire jumper, red wire) from branch **A2**, white 2-pin pin housing of xenon headlight wiring harness **A**.

The adjustment is now completed. Reconnect white 2-pin socket housing (3) (Dummy, green wire) to free branch **A2**, white 2-pin pin housing of xenon headlight wiring harness **A**.

Electrical adjustment is now functional.

Park vehicle and switch off ignition.



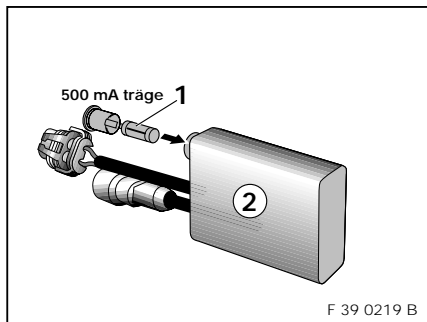
Place disconnected branch **A3**, white 2-pin socket housing (wire jumper, red wire) and the information leaflet (Section 4) in the car's glovebox as the adjustment procedure must be repeated in the event of any changes made to the running gear or repairs carried out on the rear axle. ◀

Reinstall the light module and adjust headlights with headlight adjuster (the headlights must be set mechanically to H-1%).

Encoding

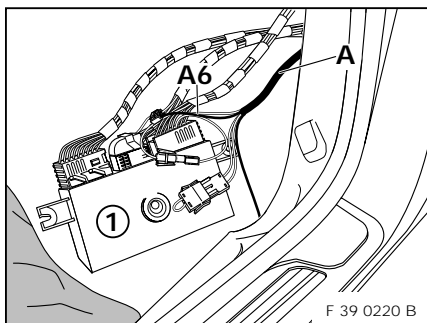
This system **does not require encoding**.

Notes on checking cold light scan module



If the message "check low beam headlight or the symbol" appears in the instrument cluster display, it is possible that fuse (1) in the cold light scan module (2) is defective (500 mA slow-blow fuse). After replacing the fuse, there still may be a fault in the cold light scan module or in the xenon headlight (replace cold light scan module or xenon headlight).

Notes on checking the level sensor



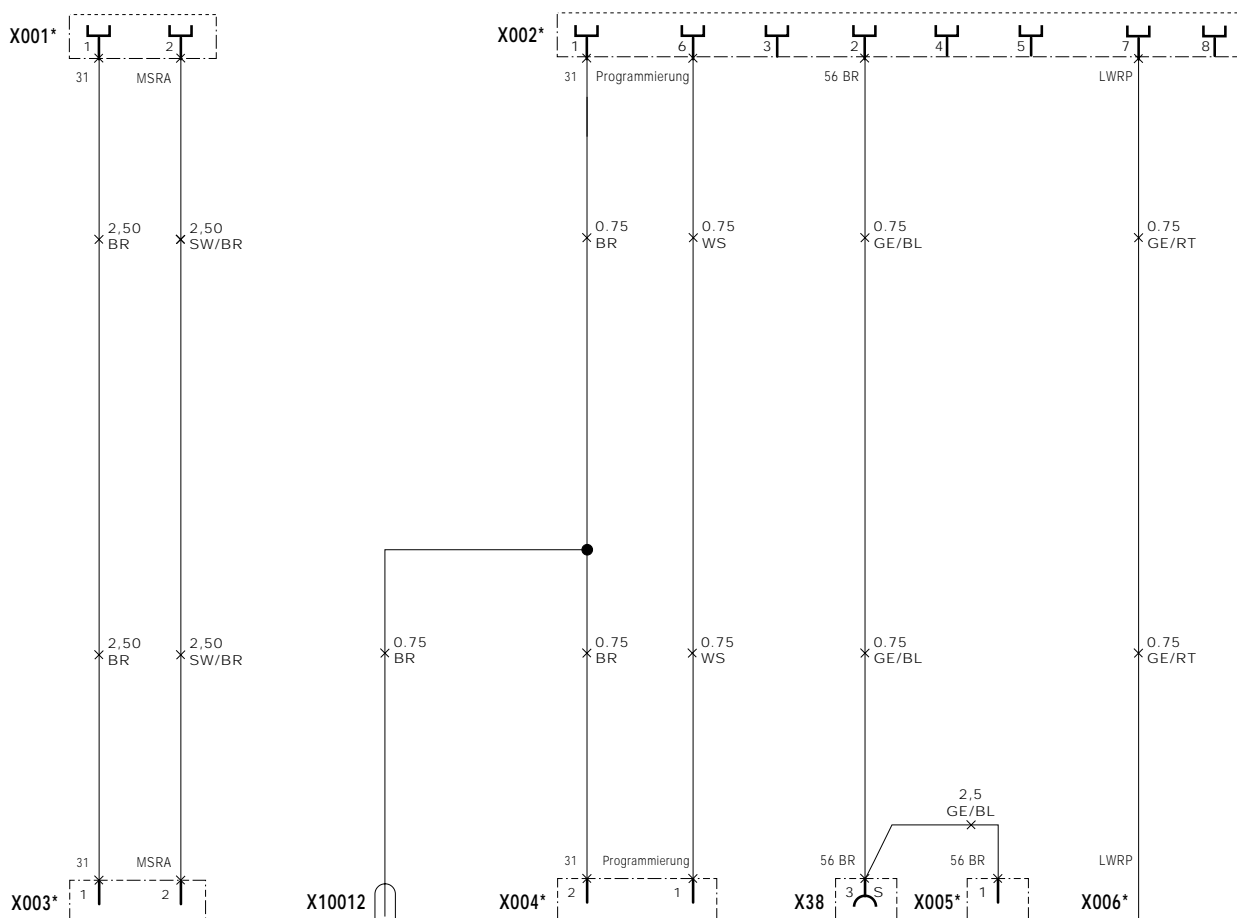
The level sensor in the rear right wheelhouse is checked as follows:

- Expose light module (1) in right-hand A-pillar
- Park unladen vehicle on flat and even surface
- Disengage gear, release handbrake
- Connect voltmeter between branch **A6**, yellow/red wire of xenon headlight wiring harness **A** and ground.
- Start vehicle
- Measure voltage (setpoint 1.0 V)
- Luggage compartment laden with 150 kg (2 persons)
- The voltage value **must** increase (approx. 1.2 to 2 Volt) after 20 seconds.
- If the voltage does not increase, either the control rod is detached (fixed) or the control sensor is defective.

Circuit diagram of xenon headlight wiring harness

X001*	Black 2-pin socket housing, connection washer fluid pump
X002*	Black 8-pin socket housing, level sensor connection
X003*	Black 2-pin pin housing, adapter connection for washer fluid pump
X004*	White 2-pin pin housing, coding loop connection
X005*	Black 1-pin pin housing, light module connection, connector X38 , white 15-pin socket housing
X006*	Free wire end, light module connection, connector X10117 , black 54-pin socket housing, PIN 34 (insulation displacement connection)
X38	1-pin socket contact, light module connection, connector X38 , white 15-pin socket housing PIN 3
X10012	6 mm dia. cable eye, ground connector X10012

The items marked with * refer only to this circuit diagram. All other items correspond to the BMW Service circuit diagrams.



F 39 0218 B