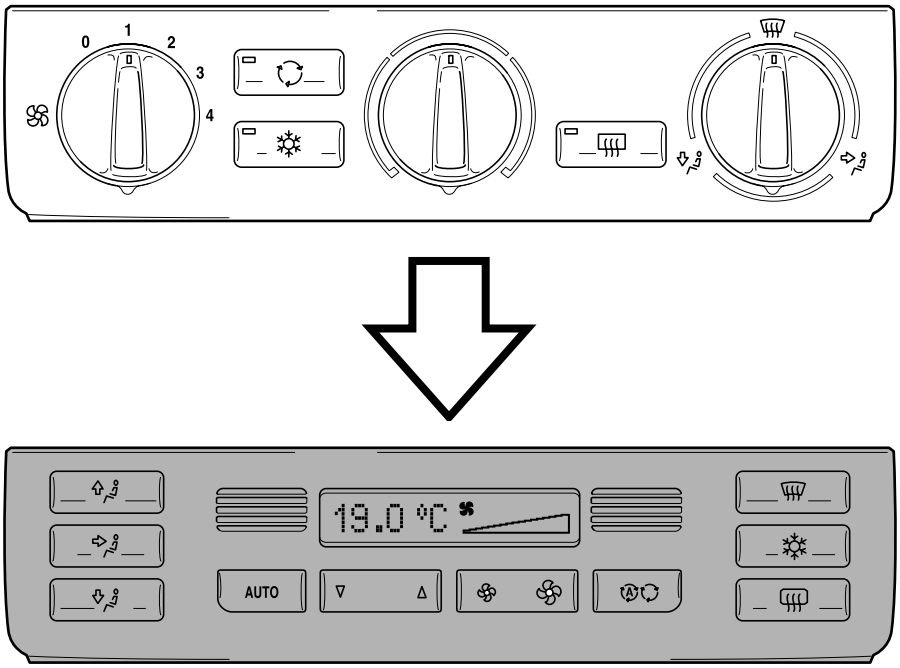
BMW Parts and Accessories Installation Instructions



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Conversion from IHKR (integrated heater and air conditioner control) to IHKA (automatic heating and air conditioning)

BMW 3 Series (E46)

Technical knowledge is required.
Only for use within the BMW trading organisation.
Installation time approx. 6 hours, which can vary according to the condition and fittings of the vehicle.

Conversion/Installation Kit no. 64 50 0 029 507

Contents

Important notes

Safety instructions

The current accident prevention regulations should be observed.
When dealing with component parts of the airbag system safety instructions should be complied with.
For more detailed information please refer to the TIS under RA no. 32 34 ... .
Non-observance of the safety instructions can lead to erroneous activation and injury from the airbag system. ◂

Assembly instructions

When installing cables, do not kink or damage them otherwise faults may occur which can only be localised and remedied later by extensive reworking. Costs arising in this way will not be reimbursed by BMW.

The procedures, Convert heater/air-conditioner and Install IHKA wiring harness, are best shown on a dismantled heater/air-conditioner.

Should specified pins be assigned, bridges, double crimping or parallel connections will have to be made. All operations are shown on a left-hand drive vehicle.

Target Group

Target group for these installation instructions is technical personnel who have been trained on BMW vehicles and who have specialised knowledge of vehicle electrical systems.

Tasks:
Carry out all maintenance, repair and installation work on BMW vehicles on own account.
All operations should be carried out with the aid of the current BMW
- repair instructions
- circuit diagrams

in a rational sequence with the prescribed tools (special tools) whilst observing the current safety regulations.

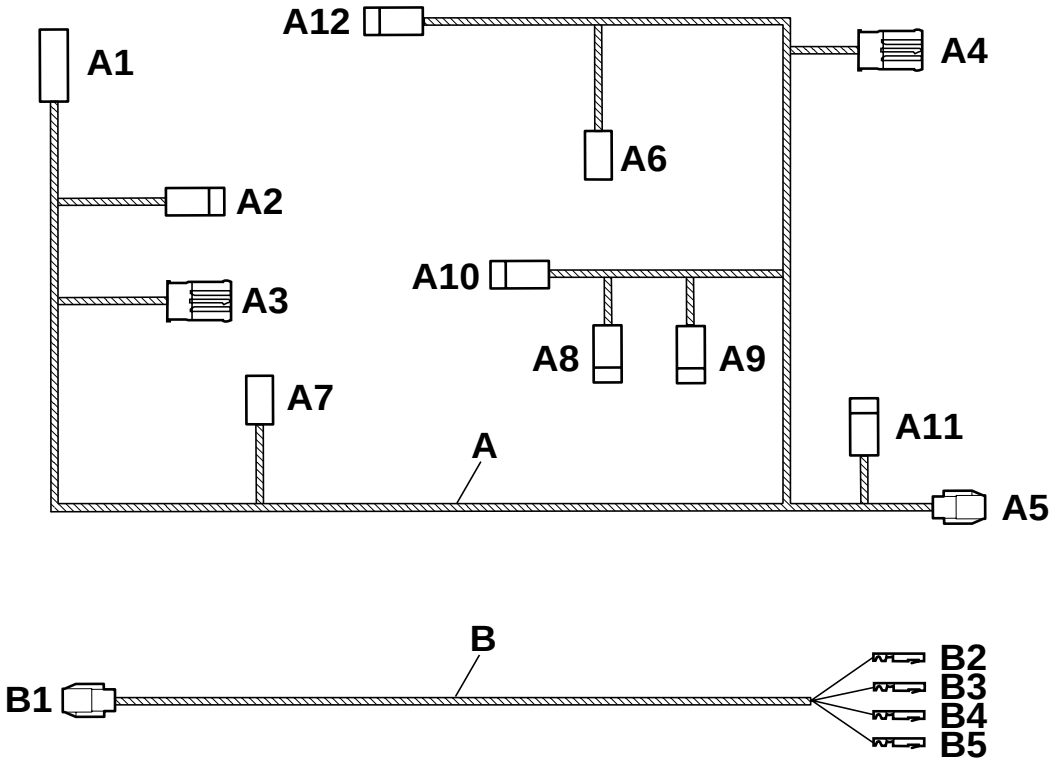
Required tools and auxiliary materials

MoDiC or DIS
Set of flat-tip screwdrivers
Set of Phillips screwdrivers
Set of Torx screwdrivers
Set of 1/2 inch socket wrenches
Set of fork wrenches/ring wrenches
Side-cutting pliers
1/2 inch torque spanner
Hand lamp

1. Preliminary work

	TIS AW no.
Carry out short test	
Disconnect negative terminal of the battery	12 00 ...
The following components should be disassembled first:	
Trim panel for instrument panel	51 45 030
Cross-bracing	
Battery (only vehicles with 4-cylinder petrol engine)	

2. Connection overview IHKA and AUC wiring harness



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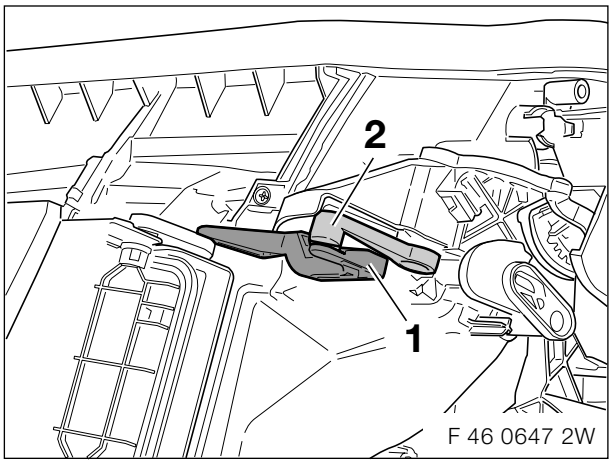
Item	Designation	Signal	Cable colour/ cross-section	Anschlussort im Fahrzeug	Code desig. plug-in place
A	IHKA wiring harness			---	---
A1	Connector, 6-pole, black			At IHKA operating unit	X18341
A2	Connector, 3-pole, black			At IHKA operating unit	X18348
A3	Connector, 2-pole, black			At heater/air-conditioner	X18722
A4	Connector, 2-pole, black			With butt-joint connector at blower cable	X816
A5	Connector, 5-pole, black			At the blower output stage	X671
A6	Connector, 2-pole, black			At temperature sensor of evaporator	X771
A7	Connector, 2-pole, black			At temperature sensor of heat exchanger	X772
A8	Connector, 3-pole, black			At actuator, footwell	X18788
A9	Connector, 3-pole, black			At actuator, defrosting	X664
A10	Connector, 3-pole, black			At actuator, air distribution	X18347
A11	Connector, 3-pole, black			At actuator, fresh/recirculating air left	X18346
A12	Connector, 3-pole, black			At actuator, fresh/recirculating air right	X18345
B	AUC wiring harness			---	---
B1	Connector, 4-pole, black			At AUC sensor	X3211
B2	Socket contact		BL Ø 0,5 mm^2	At IHKA operating unit	X610, Pin 18
B3	Socket contact		BR/BL Ø 0,5 mm^2	At IHKA operating unit	X610, Pin 11
B4	Socket contact		GE Ø 0,5 mm^2	At IHKA operating unit	X610, Pin 16
B5	Socket contact		BR/GE Ø 0,5 mm^2	At IHKA operating unit	X610, Pin 15

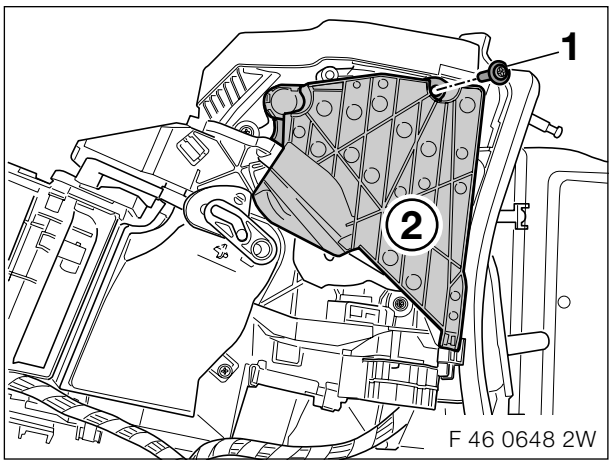
3. Convert heater/air-conditioner

Der The procedure, Convert heater/air-conditioner, is best shown on a dismantled heater/air-conditioner.
The connection to the blower motor, connector **X816**, remains connected for the time being. ◂

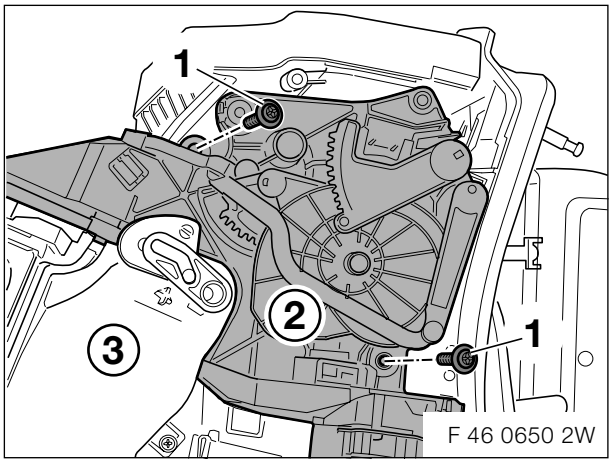
Disconnect the existing IHKR wiring harness from the individual components and lay it aside.



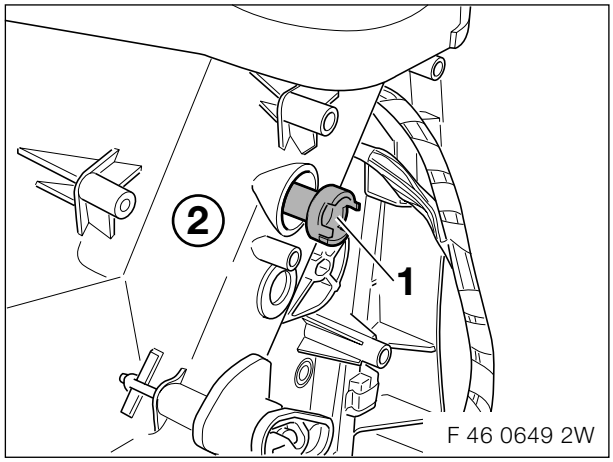
Unclip deflection lever (1) from mechanical flap actuator (2).



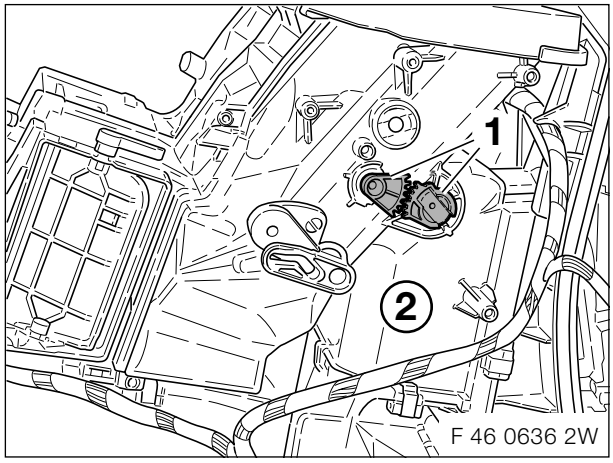
Screw out Torx screw (1) and remove cover plate (2).



Screw out Torx screws (1) and remove complete flap mechanism (2) from the heater/air-conditioner (3).

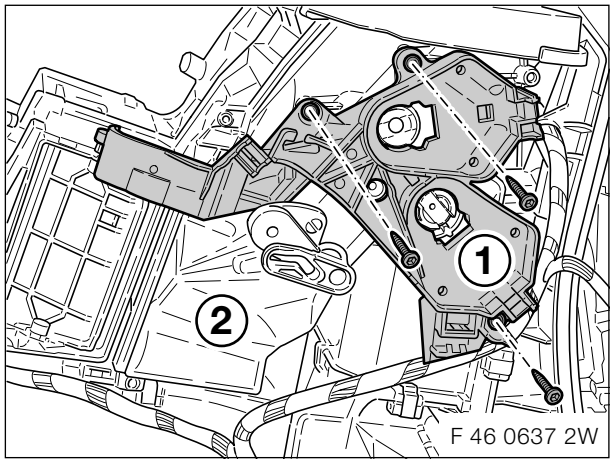


Insert supplied new flap spindle (1) in the heater/ air-conditioner (2) until it engages.

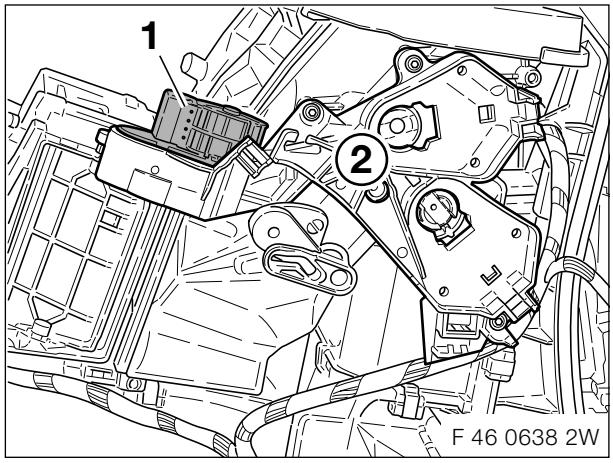


Make sure the teeth are in synchronisation. ◂

Insert supplied gear shafts (1) in the heater/air-conditioner (2) until they engage.

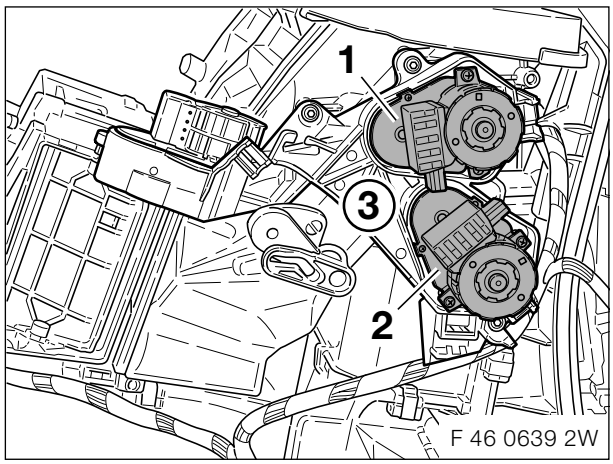


Screw base plate (1) with supplied Torx screws to the heater/air-conditioner (2).



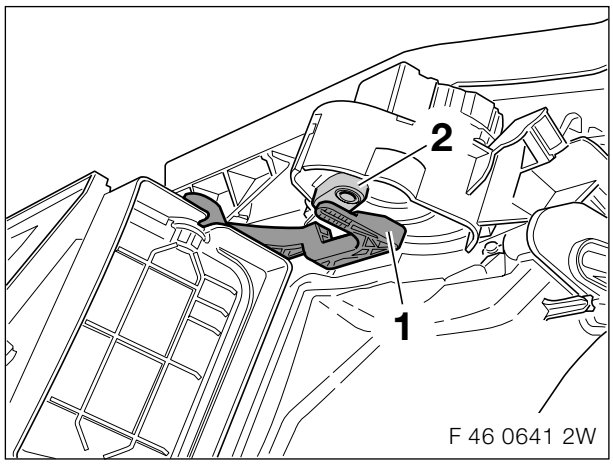
Clip actuator (1) into base plate (2).

3. Convert heater/air-conditioner



Clip actuators (1 and 2) as shown into base plate (3).

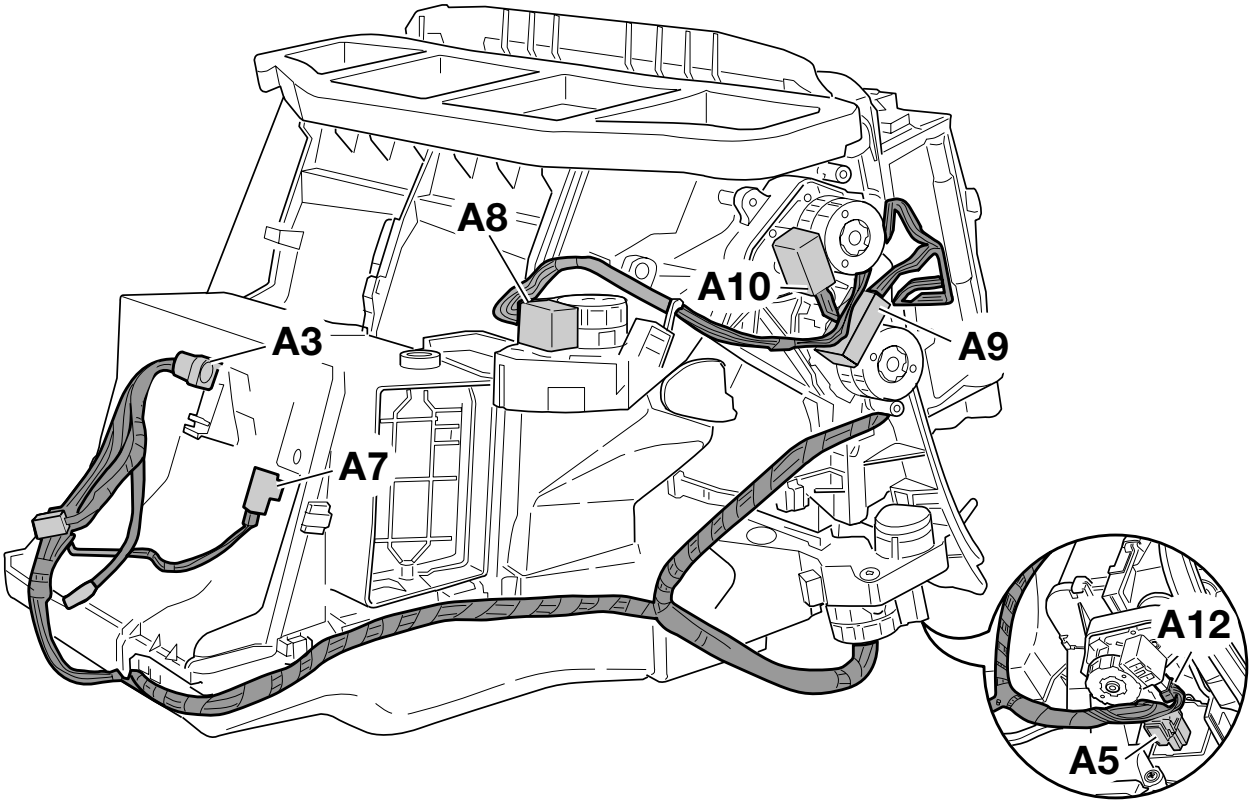
Die The electrical connections of the actuators (1 and 2) must point towards each other as shown. ◂



Clip deflection lever (1) into actuator (2).

4. Install and connect IHKA wiring harness

The procedure, Install IHKA wiring harness, is best shown on a disassembled heater/air-conditioner. ◂



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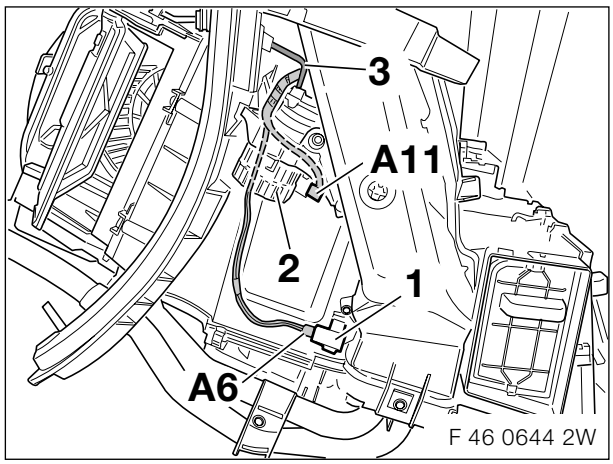
Connect IHKR wiring harness as follows:

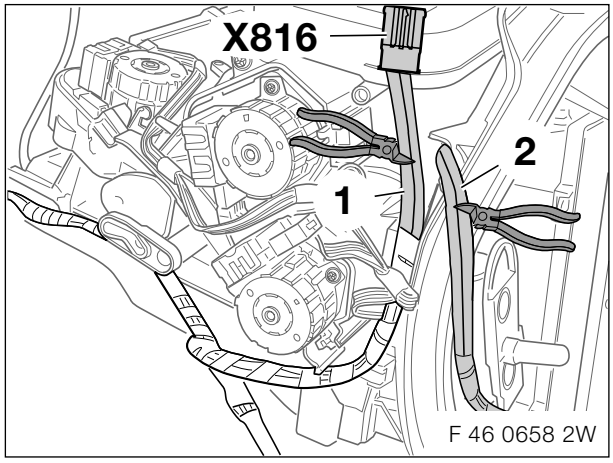
Item	Code designation	Connection point
A3	X18722	Clip into heater/air-conditioner
A5	X671	At the blower output stage
A7	X722	At the temperature sensor, heat exchanger
A8	X18788	At the actuator, footwell
A9	X664	At the actuator, defrosting
A10	X18347	At the actuator, air distribution
A12	X18345	At the actuator, fresh/recirculating air, right

4. Install and connect IHKA wiring harness

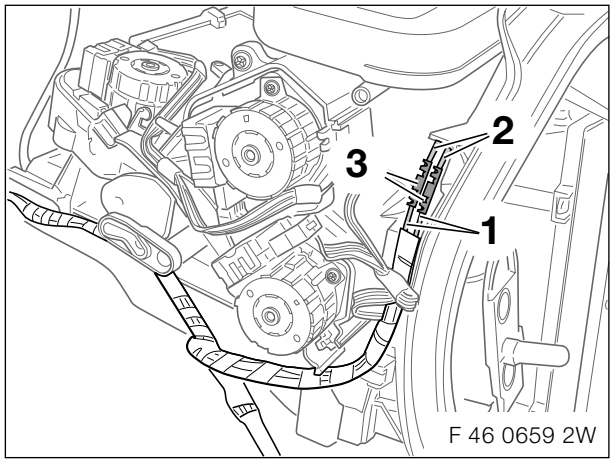


Install branch cables **A6** and **A11** along the IHKR wiring harness to the left side of the heater/air-conditioner and connect as follows:
- **A6**, connector **X711**, to temperature sensor, evaporator (1).
- **A11**, connector **X18346**, to actuator, fresh/re-circulating air left (2).

Take care to see that the branch cables **A6** and **A11** are not lying against the adjustment lever (3). ◂



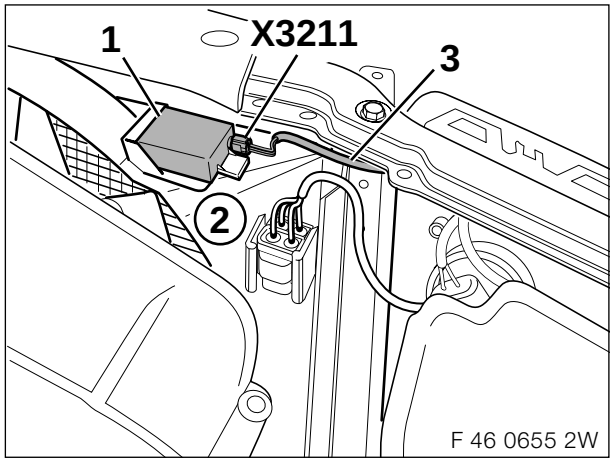
At a suitable place, cut the two cables to connector **X816** (cable colours BR and GR/BR) coming from the IHKA wiring harness (1) and the IHKR wiring harness (2) and insulate the cable ends.



Connect the open cable ends (cable colours BR and GR/BR) from the IHKA wiring harness (1) and the IHKR wiring harness (2) with the supplied butt-joint connectors (3) and shrinkage tubing.

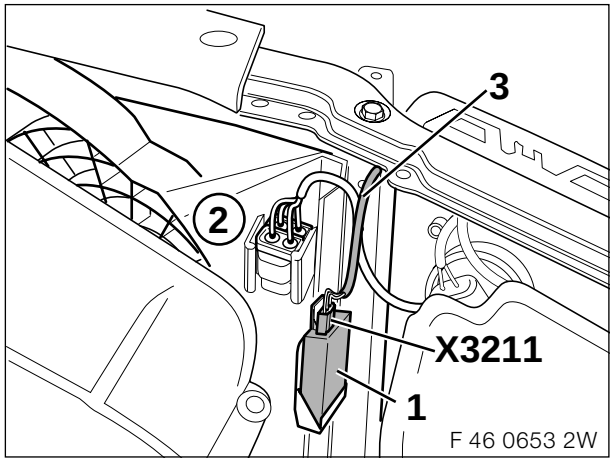
See TIS RA no. 61 13 ... ◂

5. Install and connect AUC sensor



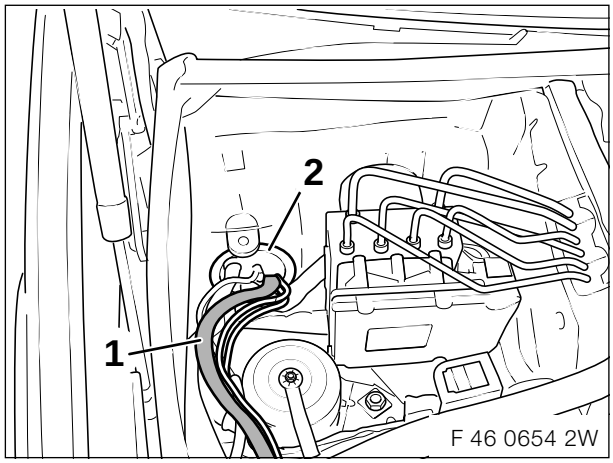
Only vehicles with 4 or 6-cylinder petrol engine

Clip AUC sensor (1) into the radiator casing (2) and connect connector **X3211**.
Install AUC wiring harness (3) in the engine compartment, right, to the end panel.



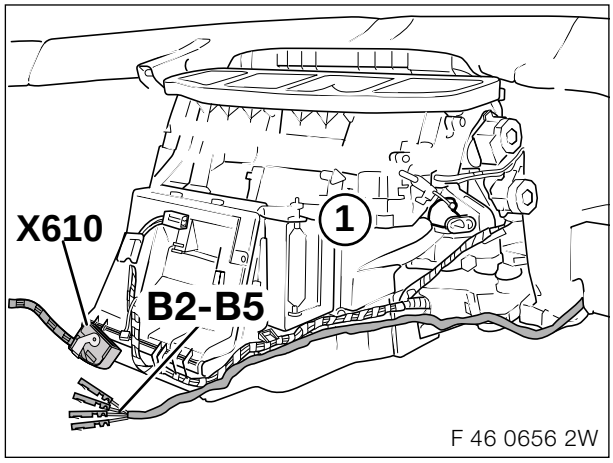
Only vehicles with 4 or 6-cylinder diesel engine

Clip AUC sensor (1) into the radiator casing (2) and connect connector **X3211**.
Install AUC wiring harness (3) in the engine compartment, right, to the end panel.



All vehicles

Install AUC wiring harness (1) through the rubber grommet (2) into the interior.



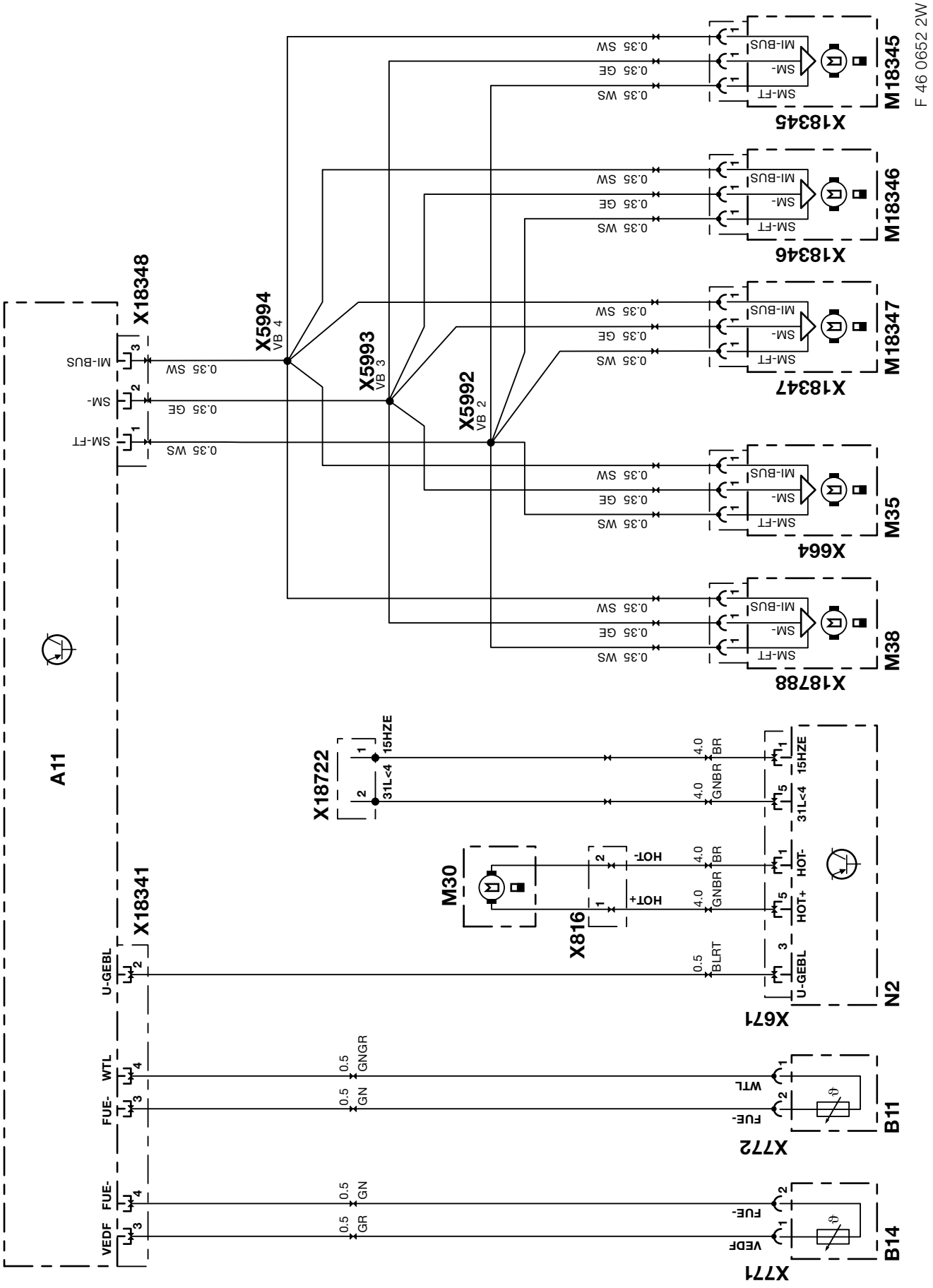
Install branch cables **B2** - **B5** along the heater/air-conditioner (1) to the 18-pole white connector **X610** and pin in as follows:

BL	PIN 18
BR/BL	PIN 11
GE	PIN 16
BR/GE	PIN 15

6. Finalising operations

- Reassemble vehicle in the reverse order of disassembly using the supplied IHKA operating unit.
- Connect battery.
- Code the conversion via the path "Retrofit IHKA".
- Carry out short test.
- Carry out function test of the IHKA.

7. Circuit diagram IHKA wiring harness



7. Circuit diagram IHKA wiring harness

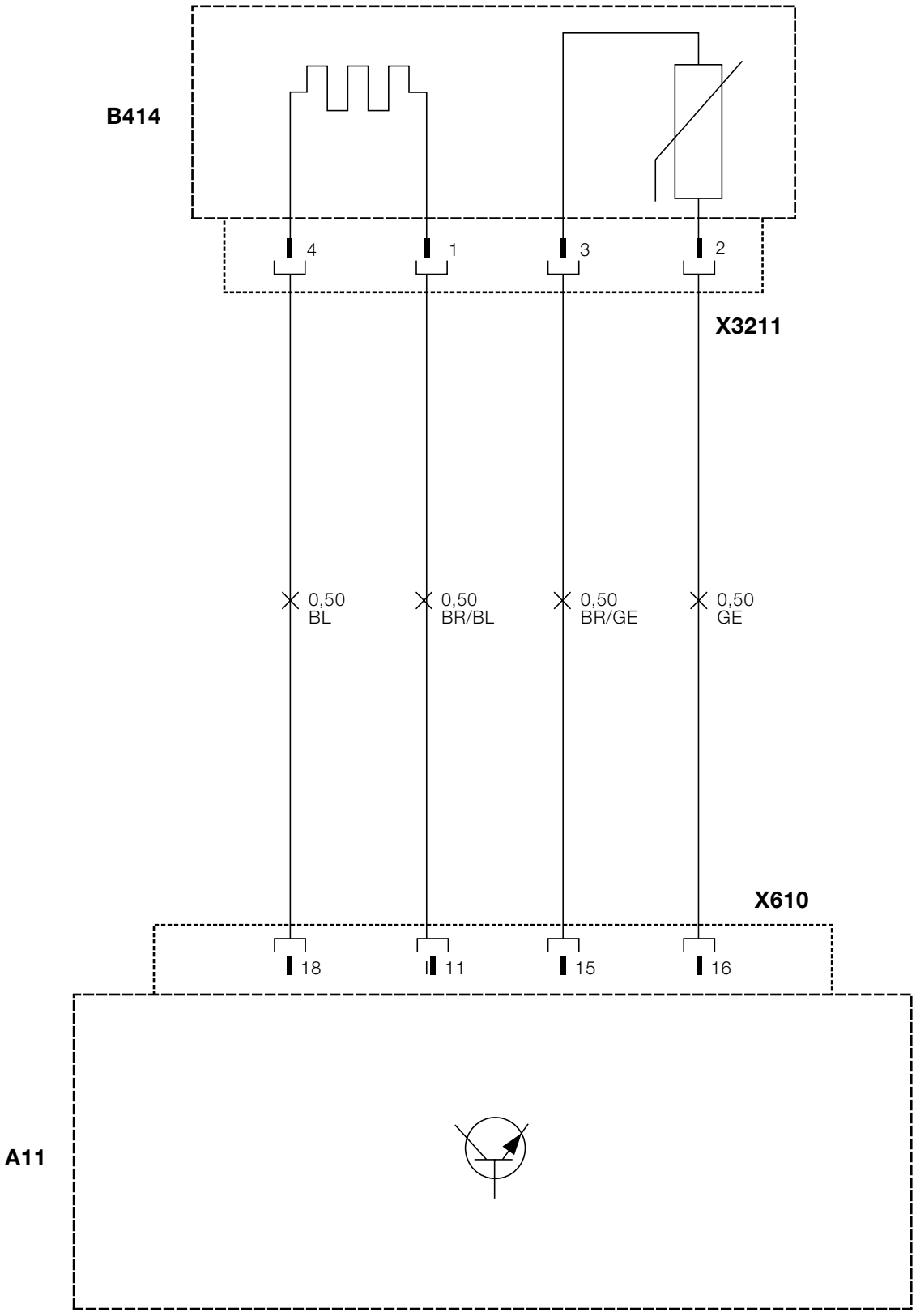
Key

A11	IHKA operating unit
B11	Temperature sensor, heat exchanger
B14	Temperature sensor, evaporator
M30	Blower motor
M35	Actuator, defrosting
M38	Actuator, footwell
M18345	Actuator, fresh/recirculating air left
M18346	Actuator, fresh/recirculating air right
M18347	Actuator, air distribution
N2	Blower output stage
X664	Actuator, defrosting
X671	Blower output stage
X771	Temperature sensor, evaporator
X772	Temperature sensor, heat exchanger
X816	Blower motor
X5992	Soldered connector 2
X5993	Soldered connector 3
X5994	Soldered connector 4
X18341	IHKA operating unit
X18345	Actuator, fresh/recirculating air left
X18346	Actuator, fresh/recirculating air right
X18347	Actuator, air distribution
X18348	IHKS operating unit
X18722	Blower
X18788	Actuator, footwell

Cable colours

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

8. Circuit diagram AUC wiring harness



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8. Circuit diagram AUC wiring harness

Key

A11	IHKR operating unit
B414	AUC sensor
X610	IHKR operating unit
X3211	AUC sensor

Cable colours

BR	brown
GE	yellow
BL	blue