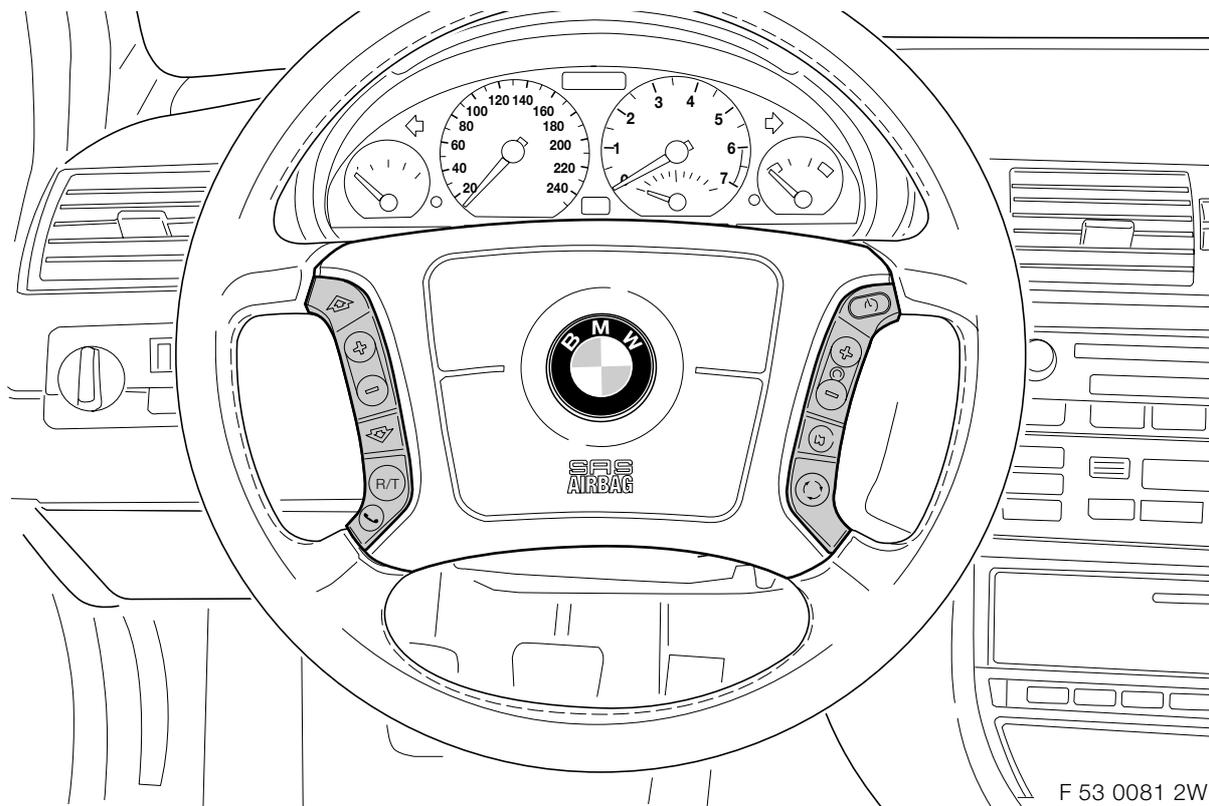




# BMW Parts and Accessories – Installation Instructions



F 53 0081 2W

## **Retrofit Multi-Function Steering Wheel (MFL) Cruise Control System (GRA) series-identical retrofit for BMW 5 Series (E 39) left and right-hand drive vehicles**

Installation time approx. 1.5 hours, which can vary according to the condition and fittings of the vehicle.

Retrofit/Installation Kit No. 65 71 0 026 292/293/286

Retrofit/Installation Kit No. 65 71 0 025 425 / 65 71 0 141 897

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## Important notes

### Target Group

Target group for these installation instructions are technical personnel trained on BMW vehicles, who have special knowledge of body electronics.

### Tasks:

Carry out all maintenance, repair and installation work on BMW vehicles on own authority. All operations should be carried out with the aid of the current BMW

- repair instruction manuals
- circuit diagrams

in a logical sequence using the prescribed tools (special tools) whilst observing the applicable health and safety regulations.

### Assembly notes

All operations are shown on a left-hand drive vehicle. On right-hand drive vehicles, proceed in the same sequence but in mirror image.

Should specified pin spaces be already assigned, bridges, double crimping or parallel connections will have to be made.



Take care to see that cables do not get kinked or damaged when they are being installed as otherwise faults may occur which can only be localised later by extensive reworking. Costs arising in this way will not be reimbursed by BMW. ◀



Tightening torques for screwed connections should be observed. Please refer to the parts information system (TIS) for the required tightening torques. ◀

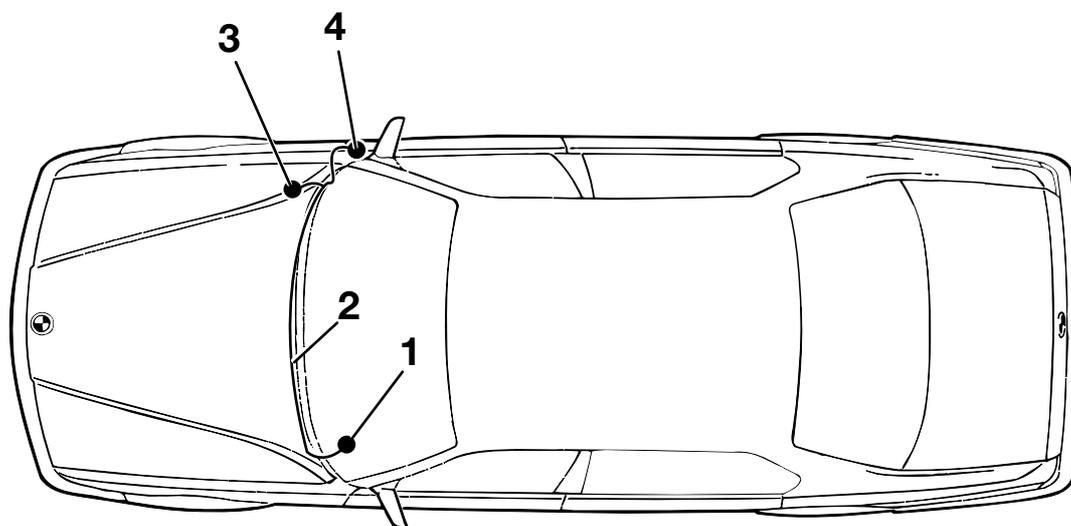
### Required tools and ancillary materials

Set of flat-tip screwdrivers  
Set of Phillips screwdrivers  
Set of TORX wrenches  
Hand lamp  
Drilling machine  
Set of hexagon-socket screw keys (Allen keys)  
Set of 1/2 inch socket wrenches  
Crimping pliers for AMP contacts

## 1. Preparatory work

	<b>TIS AW no.</b>
 Note safety regulations on dealing with components of the airbag system. ◀	32 34
<b>Carry out short test</b>	
Disconnect negative terminal of the battery	12 00 ...
<b>The following components should be disassembled in advance:</b>	
Steering wheel	32 33 00
Glove box	51 16 360
Lower side trim panel of the A-pillar in the front passenger footwell	
Trim panel of foot controls	
Shroud of lower part of steering column	
Side trim panels of the centre console	
Lid of the E box	

## 2. Installation and cable-laying diagram

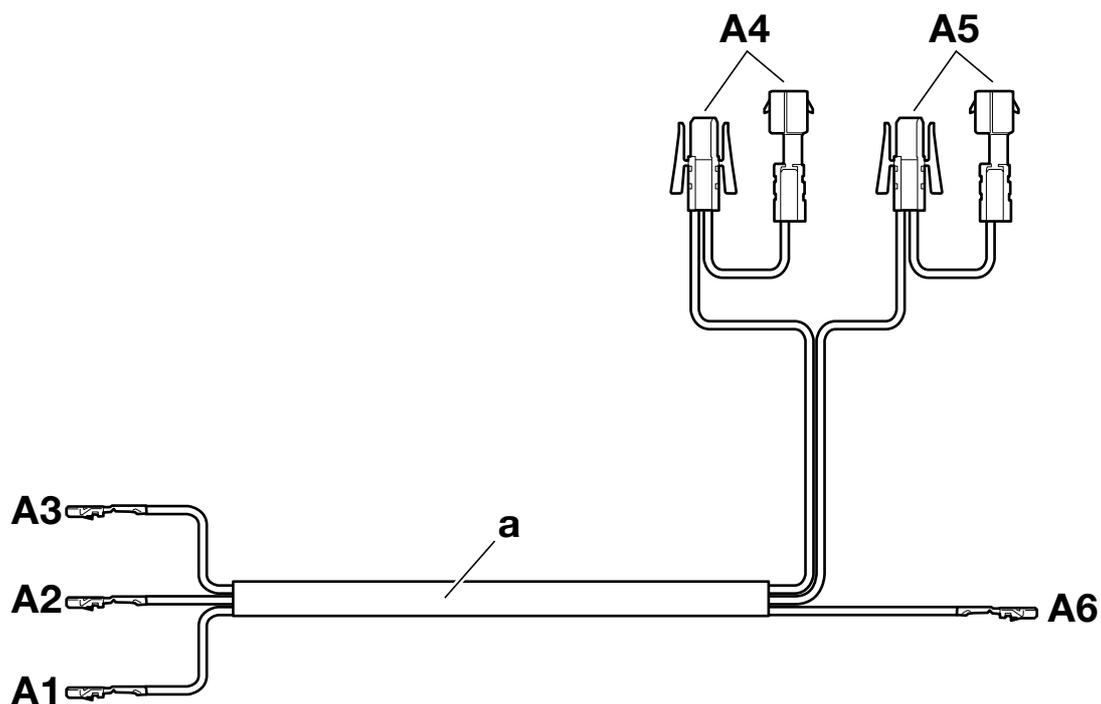


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### Key

- 1 Connection multi-functional steering wheel
- 2 Cable set GRA/MFL
- 3 E box
- 4 Light module A3

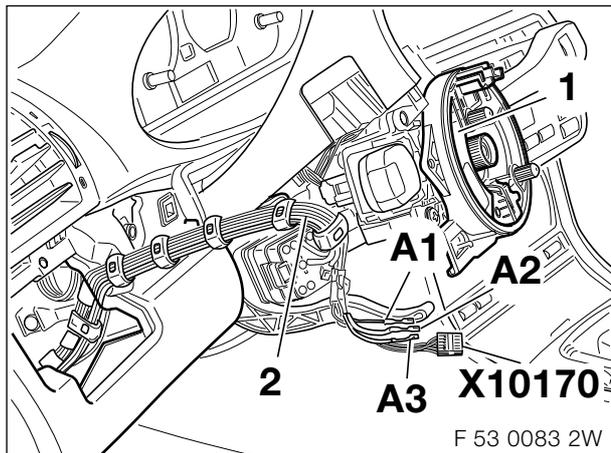
### 3. Connection overview of cable set GRA/MFL



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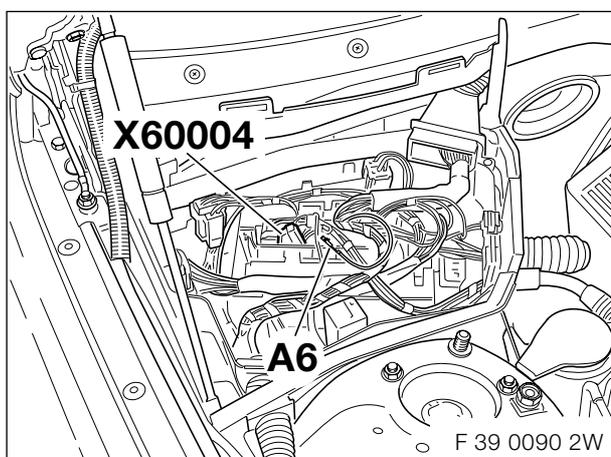
Item	Designation	Signal	Cable colour/ cross section	Connection point in vehicle	Code design./ plug-in place
a	Cable set GRA/MFL	—	—	—	—
A1	Blade terminal contact	DME/ DDE	ye/bk Ø 0.35 mm <sup>2</sup>	At 10-pole green connector underneath the steering column	X10170, PIN 8
A2	Blade terminal contact	I-/KBus	wh/gr/ye Ø 0.35 mm <sup>2</sup>	At 10-pole green connector underneath the steering column	X10170, PIN 9
A3	Blade terminal contact	Term. R	vi/ye Ø 0.50 mm <sup>2</sup>	At 10-pole green connector underneath the steering column	X10170, PIN 10
A4	Twin-lead terminal	Term. R	vi/ye Ø 0.50 mm <sup>2</sup>	At light module A3, 56-pole connector	X10117, PIN 13
A5	Twin-lead terminal	I-/KBus	wh/gr/ye Ø 0.35 mm <sup>2</sup>	At light module A3, 56-pole connector	X10117, PIN 36
A6	Blade terminal contact	DME/ DDE	ye/bk Ø 0.35 mm <sup>2</sup>	At control unit DME/DDE A60004 40-pole connector	X60004, PIN 27

#### 4. Install cable set GRA/MFL and connect

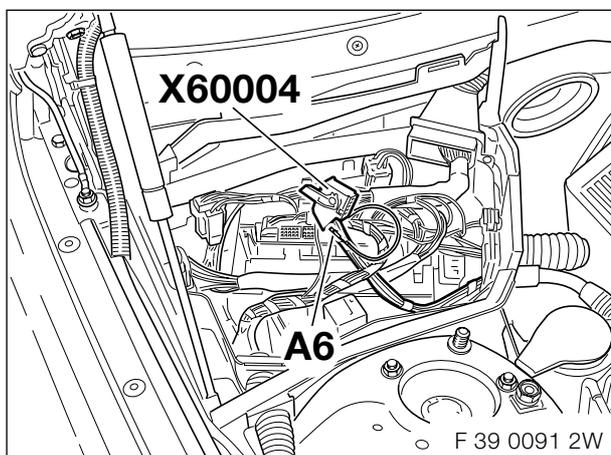


Unplug green, 10-pole connector X10170 from the switch support (1). Install cable set GRA/MFL along the series wiring harness (2) to the connector X10170. Decouple connector X10170 and plug in branch cables **A1 – A3** as follows:  
**A1**, cable colour yellow/black, in Pin 8  
**A2**, cable colour white/grey/yellow, in Pin 9  
**A3**, cable colour violet/yellow, in Pin 10

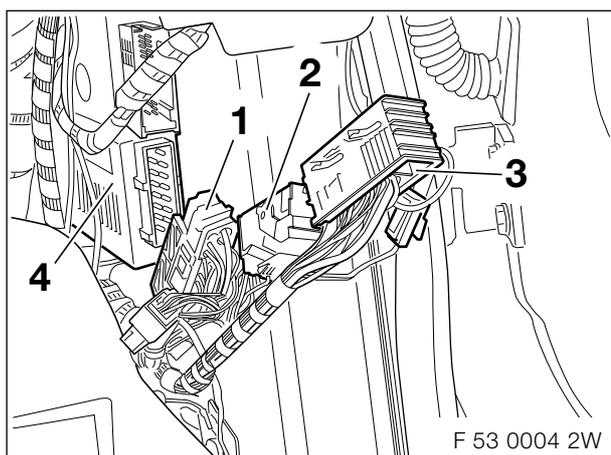
Install branch cables **A4 – A6** behind the heater/air conditioner to the glove box.



Install branch cable **A6** behind the glove box through the rubber grommet into the E box. Pull out 40-pole connector X60004 from the DME/DDE control unit and decouple it.



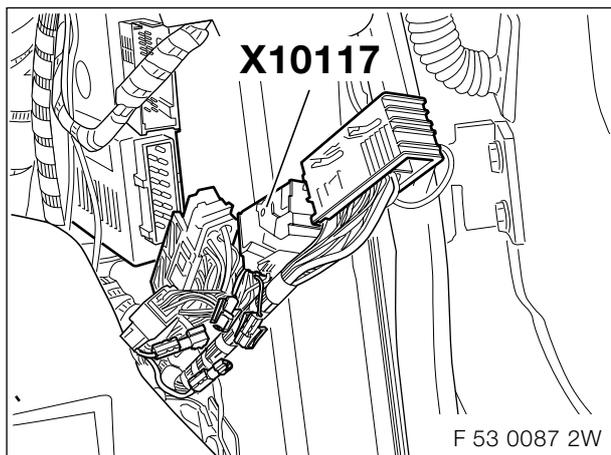
Plug branch cable **A6**, cable colour yellow/black, into Pin 27. Couple connector X60004 again and connect to the DME/DDE control unit.



Install branch cables **A4** and **A5** to the light module.

Unplug connectors (1, 2 and 3) from the light module (4).

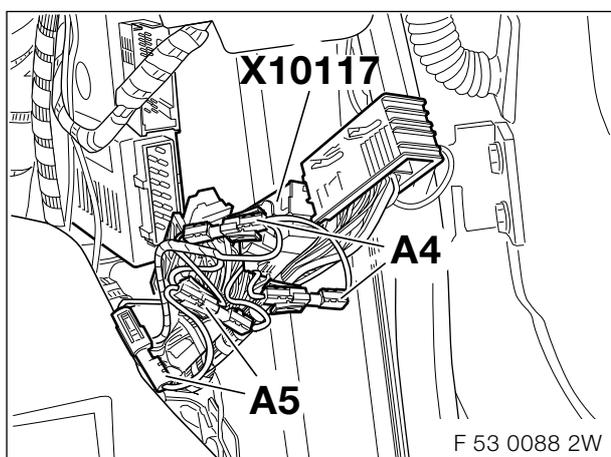
4. Install cable set GRA/MFL and connect



At the 56-pole connector X10117, cut the following cables approx. 10 cm away from the connector:

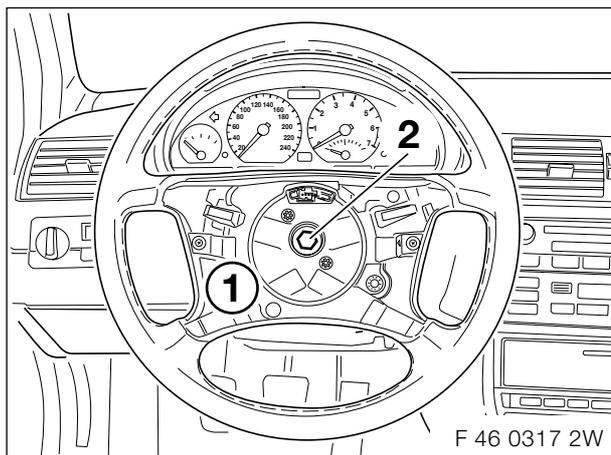
Violet/yellow cable (terminal R) coming out of Pin 13 and white/grey/yellow cable (I/K Bus) coming out of Pin 36.

In each case provide the cable ends with an AMP annular and pin contact and put on housing.



Connect branch cable **A4**, cable colour violet/yellow, to the violet/yellow cable coming out of Pin 13 and connect branch cable **A5**, cable colour white/grey/yellow, to the white/grey/yellow cable coming out of Pin 36.

## 5. Install MFL steering wheel

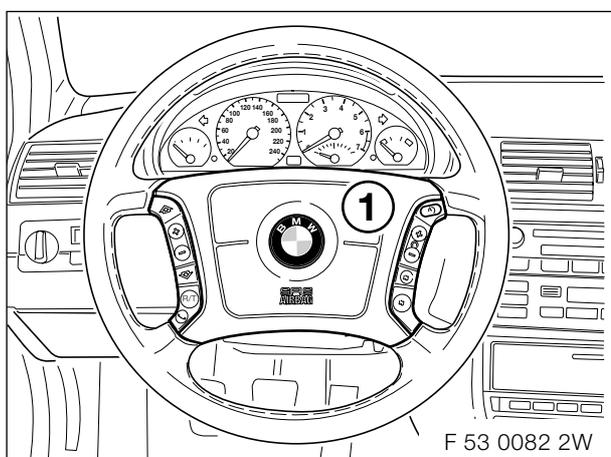


### Vehicles with four-spoke steering wheel only

 The markings on the steering wheel and steering shaft must match. ◀

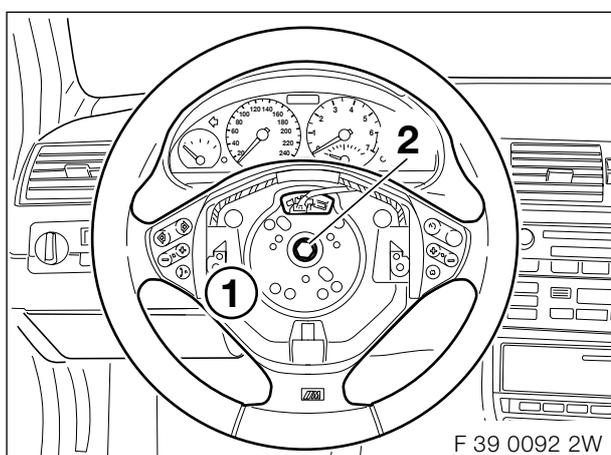
Put on existing four-spoke steering wheel (1) and fasten with screw (2).

 Observe tightening torque as per TIS. ◀



Put on airbag unit (1) which is supplied with the installation kit and screw it on.

 Observe tightening torque as per TIS. ◀

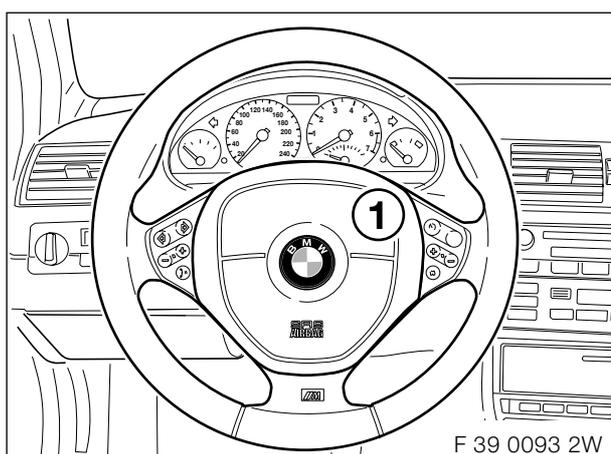


### Vehicles with three-spoke steering wheel only

 The markings on the steering wheel and the steering shaft must match. ◀

Put on existing three-spoke steering wheel (1) and fasten with screw (2).

 Observe tightening torque as per TIS. ◀



Fit existing airbag unit (1).

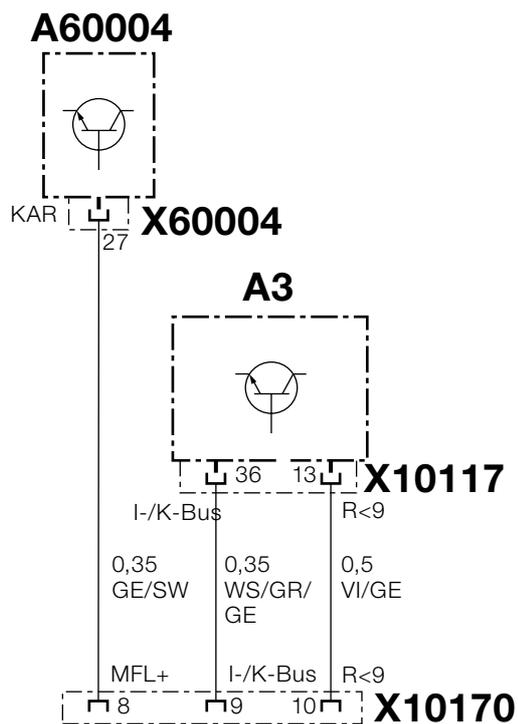
 Observe tightening torque as per TIS. ◀

## 6. Finalising operations/coding

Fasten all plug-in connectors again and put on connectors.  
Reassemble the vehicle in the reverse sequence of disassembly.  
Carry out a function test.

 This retrofit package is not coding-relevant. ◀

## 7. Circuit diagram of cruise control system BMW 5 Series (E39)



### Key

- A3 Light modul
- A60004 Control unit DME/DDE
- X10117 Connector, 56-pole, on the light module
- X10170 Connector, 10-pole, on the switch support
- X60004 X60004 Connector, 40-pole, on the control unit DME/DDE