

Original BMW Accessories.

Installation Instructions.



M Performance Alcantara Steering Wheel Retrofit

BMW 1 Series (F20/F21)

BMW 2 Series (F22/F23)

BMW 3 Series (F30/F31/F34/F35)

BMW 4 Series (F32/F33/F36)

Retrofit kit number

32 30 2 230 186	M Performance steering wheel (with Race Display) without shift paddles
32 30 2 230 187	M Performance steering wheel (with Race Display) with shift paddles
32 30 2 230 190	M Performance steering wheel (without Race Display) without shift paddles
32 30 2 230 197	M Performance steering wheel (without Race Display) with shift paddles

Installation time

The installation time for the M Performance steering wheel (with Race Display) is **approx. 1.5 hours**. The installation time for the M Performance steering wheel (without Race Display) is **approx. 0.5 hours**. This may vary depending on the condition of the vehicle and the equipment in it.

Important information

These installation instructions are primarily designed for use within the BMW dealership organisation and by authorised BMW service companies.

These installation instructions are intended for use by qualified specialist staff trained on BMW vehicles with the relevant expert knowledge.

All work must be completed using the latest BMW repair manuals, wiring diagrams, servicing manuals and work instructions, in a rational order, using the prescribed tools (special tools) and observing current health and safety regulations.

If you experience installation or function problems, restrict troubleshooting to approx. 0.5 hours for mechanical work and 1.0 hour for electrical work.

To avoid unnecessary extra work and/or costs, send an inquiry straight away to the technical parts support team via the Aftersales Assistance Portal (ASAP).

Quote the following information:

- Chassis number,
- Retrofit kit part number,
- A detailed description of the problem,
- and any work already carried out.

Do not archive the hard copy of these installation instructions since daily updates are provided via ASAP.

Pictograms



Denotes instructions that draw your attention to dangers.



Denotes instructions that draw your attention to special features.

- ◀ Denotes the end of the instruction or other text.

Installation information

Ensure that the cables and/or lines are not kinked or damaged as you install them in the car. Costs arising from this will not be reimbursed by BMW AG.

Additional cables/lines that you install must be secured with cable ties.

If the specified PIN chambers are occupied, bridges, double crimps or twin-lead terminals must be used.

All pictures show LHD cars; proceed accordingly on RHD cars. Installation is shown using the M Performance steering wheel (with Race Display). Proceed accordingly with the steps for the M Performance steering wheel (without Race Display).

Once the installation work is complete, basic settings need to be carried out on the M Performance steering wheel.

Ordering instructions

Airbag module **H** is not included with the retrofit kit and can be adopted from the Sport steering wheel (1 and 3 Series) or from the Sport steering wheel or M Sport steering wheel (1 Series only).

Can generally be installed in all vehicles. The parts listed below can be adopted from the existing steering wheel or must be ordered and exchanged for the vehicle-specific SAs. See the relevant table entitled "Sport steering wheel" and the associated add-on parts for more information.

When exchanging the airbag unit, it does not require decoding.

If fitted with SA 248 (heated steering wheel), the heating function will not work, the heating key on the steering column will have no function when fitted. An error memory entry is made in the control unit but this can be ignored. If necessary, a blind cover can be ordered (see EPC for information and part number).

Ordering instructions for 1 and 2 Series cars

1 Series cars built before 03/2014:

- Basic or leather steering wheel (SA 240)

Adopted parts: Steering wheel cable and possibly electronics and vibration generator.

Not adopted parts: Airbag unit and multi-function keys.

- **Sport steering wheel (SA 255)** All parts can be adopted.

- **M leather steering wheel (SA 710)** All parts can be adopted.

1 Series cars built after 03/2014 and 2 Series cars built after 11/2013:

- Basic or leather steering wheel (SA 240)

Adopted parts: Steering wheel cable and possibly electronics and vibration generator.

Not adopted parts: Airbag unit and multi-function keys.

- **Sport steering wheel (SA 255)** All parts can be adopted.

- **M leather steering wheel (SA 710)** It is recommended that the M Performance steering wheel be installed since all parts can be adopted. See product information SZ_073_07_13 for more details.

Ordering instructions for 3 and 4 Series cars

- Basic or leather steering wheel (SA 240)

Adopted parts: Steering wheel cable and possibly electronics and vibration generator.

Not adopted parts: Airbag unit and multi-function keys.


- **Sport steering wheel (SA 255)** All parts can be adopted.

- **M leather steering wheel (SA 710)** It is recommended that the M Performance steering wheel be installed since all parts can be adopted. See product information SZ_073_07_13 for more details.

Special tools required

00 9 317, panel wedge

Information for the workshop and customer

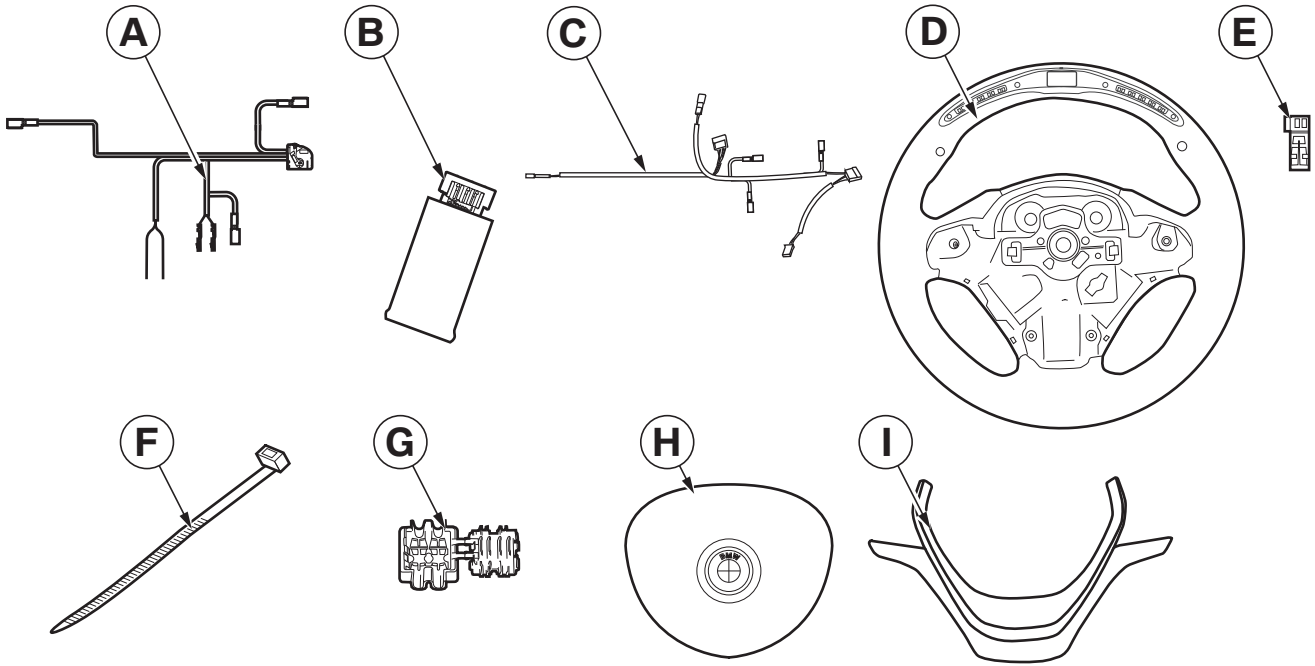
 No entry is required in the vehicle's paperwork, and no operating permit needs to be carried for the M Performance steering wheel. The approval is included in the general EC approval for the relevant vehicles from BMW.

The customer must be notified that if SA 248 (steering wheel heating) is installed, the heating function will not work. The switch on the steering column trim for steering wheel heating has no function. ◀

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1. M Performance steering wheel (with Race Display) parts list

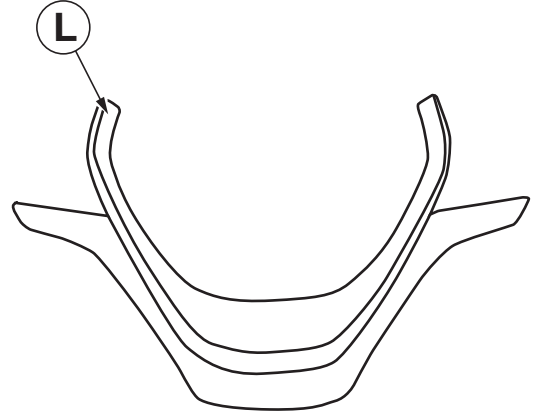
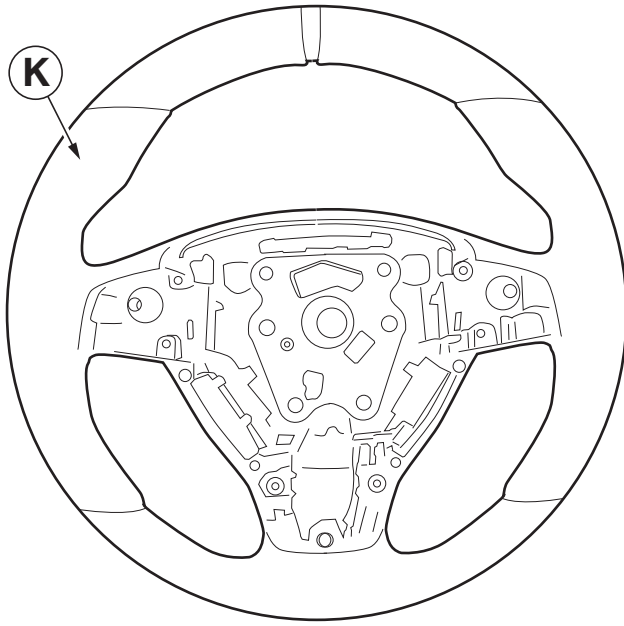


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Legend

- A** Retrofit cable
- B** Control unit
- C** Adapter cable for Power steering wheel pick-up (already pre-installed in the steering wheel)
- D** M Performance steering wheel
- E** SW 2-pin socket casing
- F** Cable ties (15 x)
- G** Miniature connector (2 x)
- H** Airbag module (not supplied with the retrofit kit)
- I** Trim for M Performance steering wheel

2. M Performance steering wheel (without Race Display) parts list



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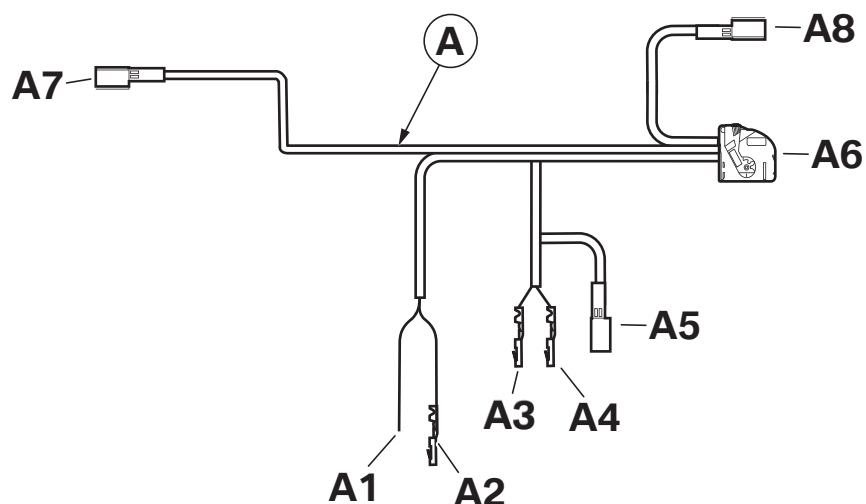
Legend

- K** M Performance steering wheel
- L** Trim for M Performance steering wheel

3. Preparatory work

	ISTA No.
Conduct a brief test	---
Disconnect the negative pole of the battery	12 00 ...
Airbag module	32 34 020
Steering wheel	32 33 ...
The following components must also be removed for the M Performance steering wheel (with Race Display)	
Trim for door pillar at the bottom right	51 43 150
Bottom right dashboard trim	51 45 181
Door sill cover strip trim at the bottom right	51 47 000
Steering column trim lower section	32 31 020
Steering column trim upper section	32 31 003
Steering column switch cluster (SCSC)	61 31 008
Front Electronic Module (FEM) control unit	61 35 270
Expose the wiring harness plug on the right	---

4. M Performance steering wheel (with Race Display) connection diagram

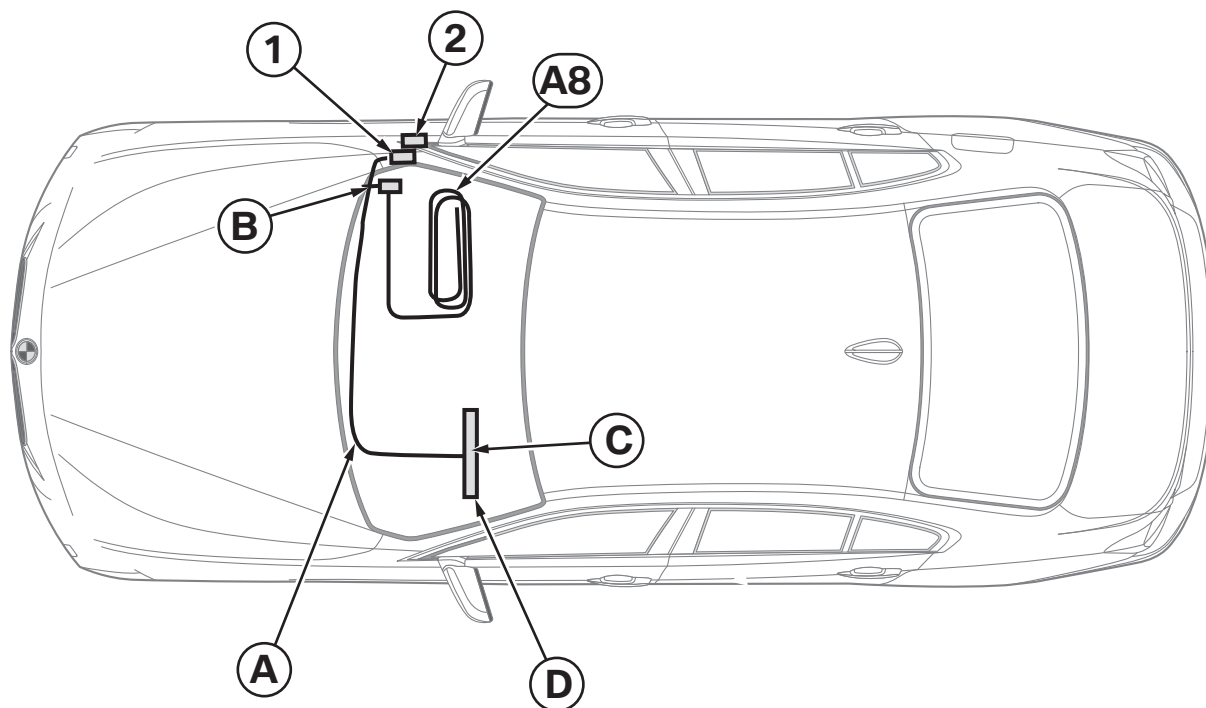


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Legend

Item	Designation	Signal	Cable colour/ cross-section	Connection location in the car	Abbreviation/ slot
A	Retrofit cable				
A1	Cable open	Terminal 30b	GN/GR 0.5 mm ²	With miniature connector G to the right door wiring harness plug	(X5*1B) PIN 14
A2	Socket contact	Terminal 31	BR 0.5 mm ²	With miniature connector G to the right door wiring harness plug	(X5*1B) PIN 27
A3	Socket contact	FA-Can High	BL/RT 0.35 mm ²	FEM to the side in the right-hand footwell	CON2 PIN 19
A4	Socket contact	FA-Can Low	RT 0.35 mm ²	FEM to the side in the right-hand footwell	CON2 PIN 18
A5	SW 2-pin plug casing		BL/RT RT 0.35 mm ²	With socket casing E to the disconnected cables from plug CON2	
A6	SW 12-pin socket casing			To control unit B	
A7	Socket contact		WS/BL 0.35 mm ²	To steering column switch cluster SCSC	
A8	3-pin socket casing			Optionally to lap trigger measuring sensor	

5. M Performance steering wheel (with Race Display) installation and cabling diagram



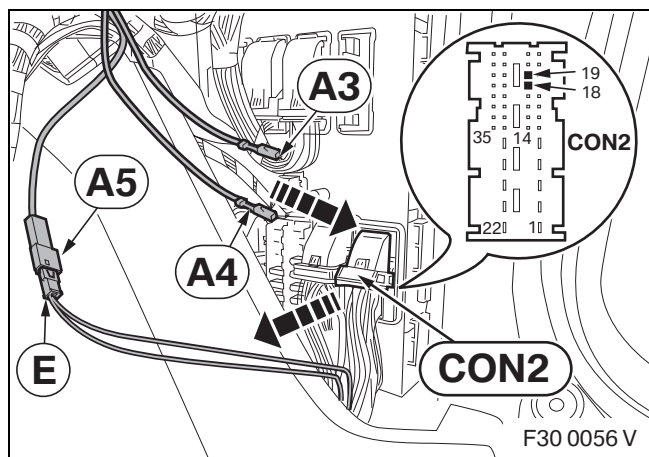
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Legend

- A** Retrofit cable
- B** Control unit
- C** Adapter cable for Power steering wheel pick-up
- D** M Performance steering wheel

- A8** Connecting cable for optional LAP trigger measuring sensor
- 1** FEM at the bottom to the side of the right-hand footwell
- 2** Right door wiring harness plug

6. Installing the M Performance steering wheel retrofit kit



Route branches **A3-A5** to the FEM in the right-hand footwell.

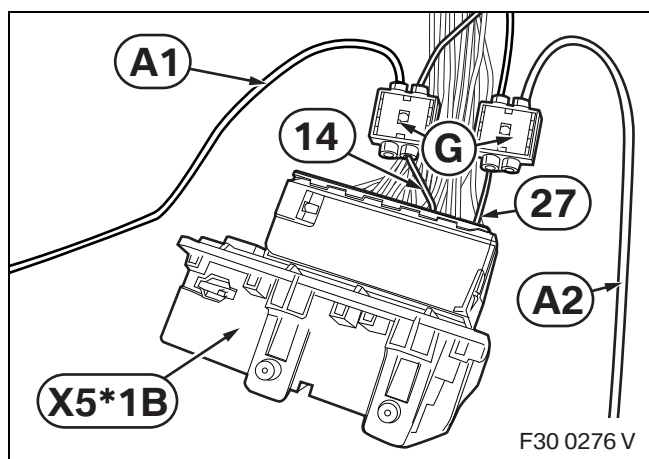
Disconnect the cables from PIN 18 and PIN 19 of plug **CON2**, 42-pin, and connect as follows to socket casing **E**:

- Cable from PIN 19 to PIN 1 (BL/RT)
- Cable from PIN 18 to PIN 2 (RT)

Connect branches **A3** and **A4** as follows to plug **CON2**:

- Branch **A3**, BL/RT cable, to PIN 19
- Branch **A4**, RT cable, to PIN 18

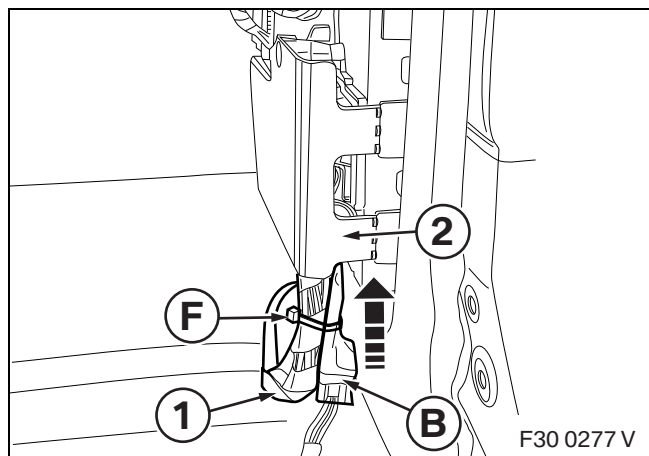
Connect branch **A5** to socket casing **E**.



Connect branch **A1**, GN/GR cable, with RT/GR cable from **PIN 14** to right door wiring harness **X5*1B** using miniature connector **G**.

☞ Remove socket contact **A2** using suitable tools. ◀

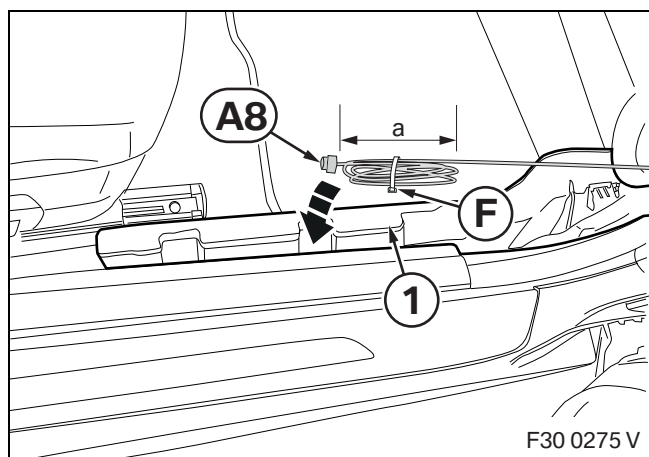
Connect branch **A2**, BR cable, with BR cable from **PIN 27** to right door wiring harness **X5*1B** using miniature connector **G**.



⚠ Control unit **B** must not have any contact with conductive sheet metal parts or body parts. It must definitely not touch the floor pan. The control unit **B** must not be subjected to mechanical stresses or moisture. ◀

Secure the control unit **B** at a suitable place on the wiring harness (1) using cable tie **F**, then push the control unit **B** as far as possible under the FEM cover (2) and then tighten the cable tie **F**.

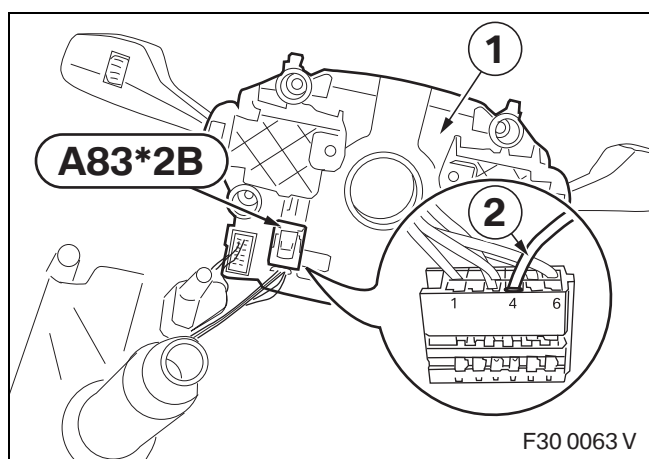
6. Installing the M Performance steering wheel retrofit kit



Coil up the connection cable for the optional LAP trigger measuring sensor **A8** in a length of **a = 20 to 30 cm**, tie it up with cable ties **F** and then store it under the floor trim on the door sill strip (1).

☐ Notify the customer about the location of the LAP trigger cable **A8**.

An optional measurement trigger can be connected to the LAP trigger cable. The measurement trigger is used to automatically record lap times at the start/finish point of a race track. Refer to the information in the owner's manual. ◀

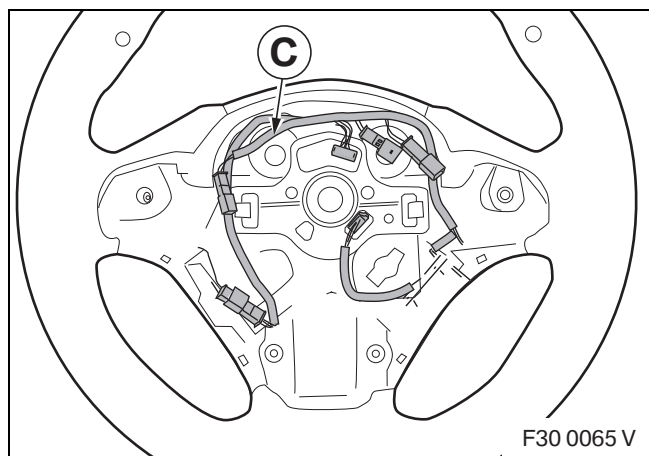


Route WS/BL cable to the driver's side.

Uninstall the steering column switch cluster (1) as per ISTA from the standard steering wheel.

Connect cable WS/BL (2) to plug **A83*2B** PIN 4.

Install the steering column switch cluster (1) in the M Performance steering wheel.



M Performance steering wheel (with Race Display):

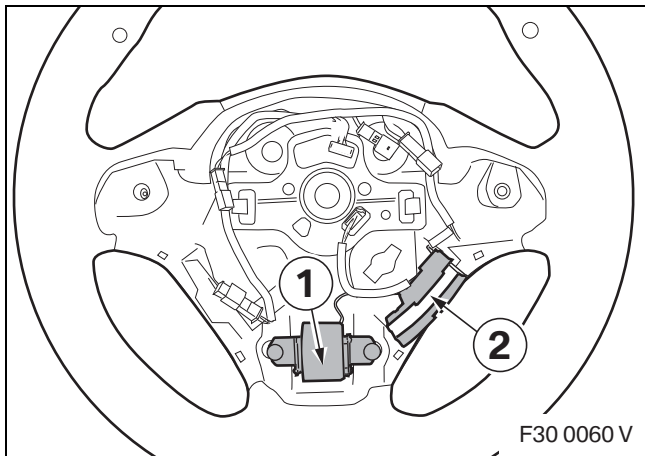
Adapter cable **C** is already pre-installed.

☐ All plugs should be connected up again in exactly the same way as they were before. The already-installed adapter cable **C** contains the correct number of plugs required for all possible SAs (shift paddles, lane departure warning with electronics module). Individual plugs are not required if the corresponding SA is not installed. These plugs should then be stored at a suitable location; they must not collide with the airbag module. ◀

M Performance steering wheel (without Race Display):

The adapter cable from the standard steering wheel must be adopted identically into M Performance steering wheel **K**.

7. Concluding work, coding and initial setting of the M Performance steering wheel (with Race Display)

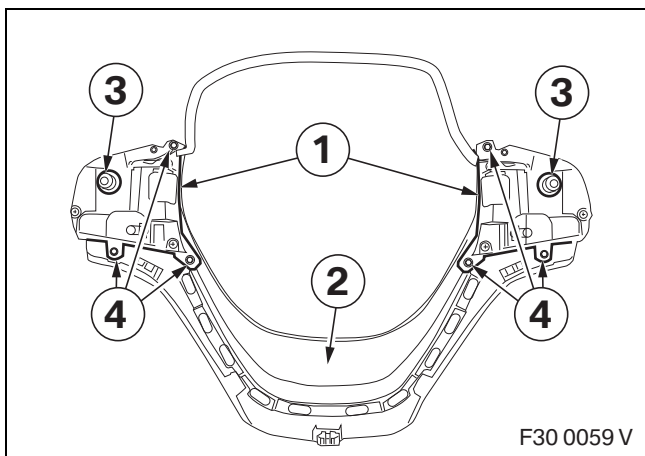


Only for cars with SA 5AD (lane departure warning):

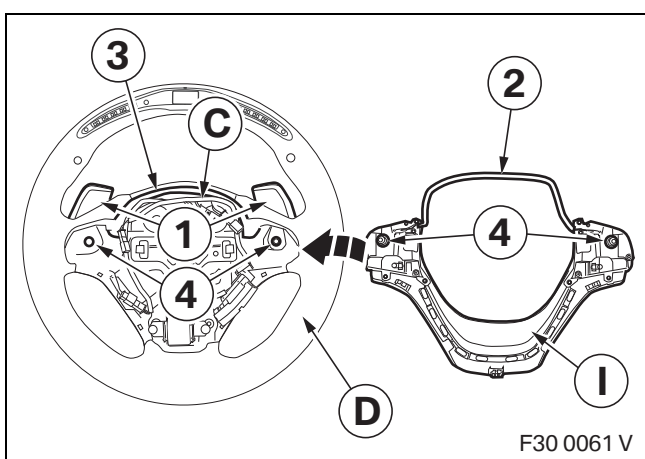
Use the self-tapping screws of the vibration generator (1) from the standard installation. When first installed, there are no threads in M Performance steering wheel **D/K**; these are only cut when the self-tapping screws are inserted for the first time. Consequently, more force is required when installing the screws for the first time. ◀

⚠ In the case of subsequent installations, the self-tapping screw must be carefully positioned and screwed into the existing thread. If the screws fail to achieve the required tightening torque of **4 Nm ± 0.5 Nm** each time they are inserted, the M Performance steering wheel must not be installed. ◀

Remove the vibration generator (1) and the control module (2) from the standard steering wheel and install them into M Performance steering wheel **D/K**. Tighten the screws on the vibration generator (1) to **4 Nm ± 0.5 Nm**.



Remove MFT multi-function keys (1) together with the standard trim (2) via the two screws (3) on the back of the steering wheel. Unscrew the MFT (1) using the three screws (4) and screw it onto new M Performance trim **I/L** using the existing screws (4).



If necessary, re-install the shift paddles (1).

Press the cable (2) into the cable gap (3) of M Performance steering wheel **D/K**.

Connect all of the connections on the adapter cable for the Power pick-up **C** with the newly-installed parts (control module, MFT, shift paddles, etc.).

Allow the M Performance trim **I/L** screwed into place with the MFT to engage on M Performance steering wheel **D/K**. Screw the two existing screws from the back into the threaded holes (4) of the M Performance steering wheel **D/K**.

8. M Performance steering wheel (with Race Display) wiring diagram

The retrofit system does not require coding.

- Connect the battery
- Conduct a brief test
- Conduct a function test
- Re-assemble the car
- Make basic settings

Basic settings

To ensure correct functioning, two basic settings must be performed once installation is complete:

- While switching on the ignition, hold the left key **L** and right key **R** down simultaneously on the M Performance steering wheel
- Use the **R** key to toggle between diesel and petrol cars (the box around the symbol means selected)
- Press the **R** key to save the setting and to switch to the "Speed correction factor" setting
- Start the engine and keep it at a constant, easily-readable speed (e.g. 1000 rpm)
- Compare the display on the steering wheel with the display on the speedometer
- A long press of the **R** key allows you to increase the correction factor or, by pressing the **R** key briefly several times, reduce it until the two displays match
- Switch the ignition off. The settings are saved automatically

Cars with heated steering wheel

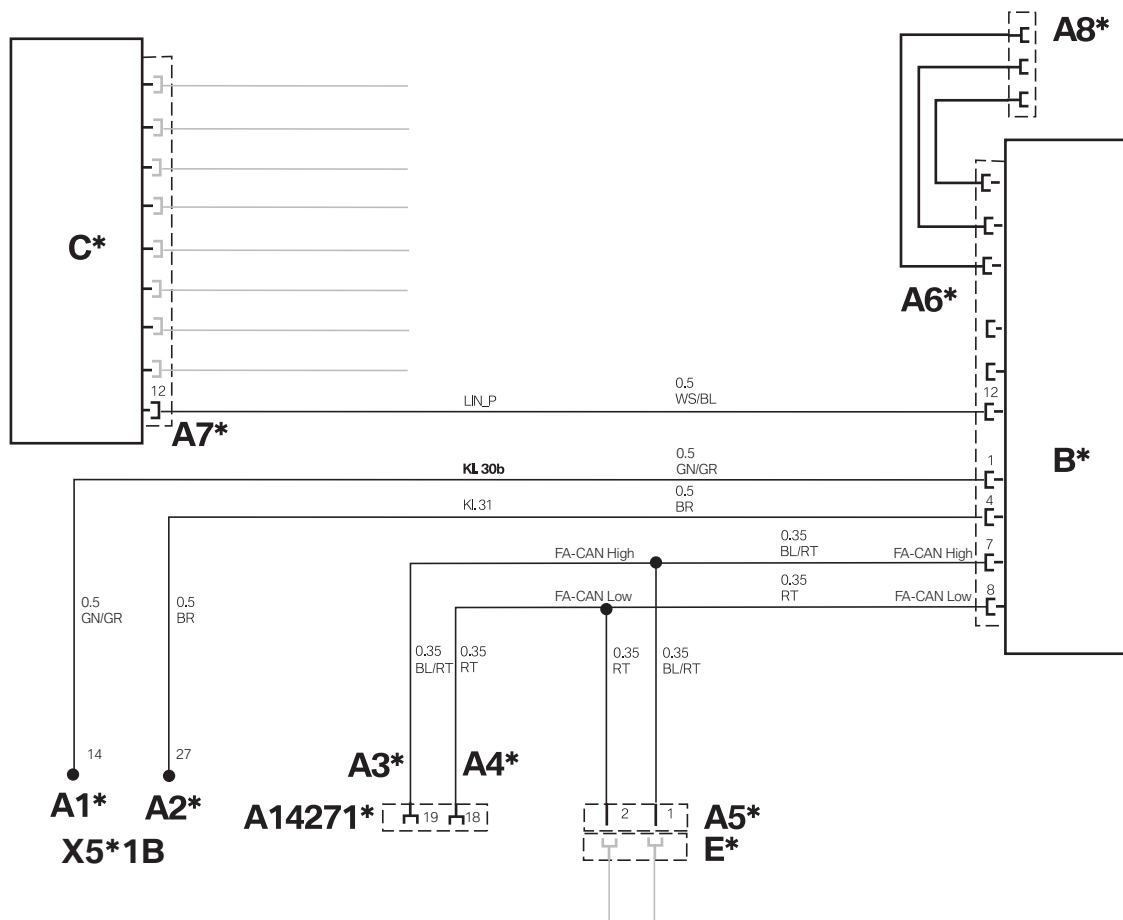
If fitted with SA 248 (heated steering wheel), the heating function will not work, the heating key on the steering column will have no function when fitted. An error memory entry be made in the control unit but this can be ignored. If necessary a blind cover can be ordered (see EPC for information and part number).

Demo mode

To provide an overview of the functions of the M Performance steering wheel, a demo mode of around 120 seconds can be enabled in an endless loop.

- While switching on the ignition, hold the left key **L** and right key **R** down simultaneously on the M Performance steering wheel
- In the Basic Settings menu, press the left key **L** and right key **R** on the M Performance steering wheel simultaneously for around 2 seconds. Demo mode begins in an endless loop.
- To end demo mode, switch off the ignition

8. M Performance steering wheel (with Race Display) wiring diagram



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Legend

- A1*** Cable open, with miniature connector **G** to the cable on right door wiring harness **X5*1B**, PIN 14
- A2*** Socket contact, with miniature connector **G** to the cable on right door wiring harness **X5*1B**, PIN 27
- A3*** Socket contact, to FEM, plug BL 42-pin **CON2**, PIN 19
- A4*** Socket contact, to FEM, plug BL 42-pin **CON2**, PIN 18
- A5*** SW 2-pin plug casing, to socket casing **E***
- A6*** SW 12-pin socket casing, to control unit **B***
- A7*** Socket contact, to steering wheel switch cluster SCSC
- A8*** 3-pin socket casing for optional LAP trigger measuring sensor

All of the designations marked with an asterisk (*) apply only to these installation instructions or this wiring diagram.

Cable colours

BL	Blue	GR	Grey	RT	Red
BO	Bordeaux (Burgundy)	L-GN	Light green	SW	Black
BR	Brown	NT	Natural	TR	Transparent
GE	Yellow	OR	Orange	VI	Violet
GN	Green	RO	Pink	WS	White