

Original BMW Accessories. Installation Instructions.



Retrofit M Performance Alcantara steering wheel with Race Display BMW M5 Saloon (F10M) BMW M6 Grand Coupé/Convertible/Coupé (F06M/F12M/F13M)

Retrofit kit number

32 30 2 344 136 M Performance steering wheel with Race Display

Installation time

The installation time for the M Performance steering wheel with Race Display is **approx. 1.5 hours**. This may vary depending on the condition of the car 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.

In any event, the target group for these installation instructions is specialist personnel trained on BMW cars with the appropriate specialist 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,
- 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.

The cable for the optional LAP trigger measuring sensor can be stowed with a cable tie behind the glove compartment under the floor trim.

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

When installing with SA 248 (steering wheel heating), the heating function no longer works and no decoding is required. The switch for on the steering column trim for the steering wheel heating remains non-functional.

Ordering instructions

The airbag module **H** is not part of the retrofit kit and may be taken from the M sport steering wheel.

The heating key on the steering column remains non-functional after the installation work. If necessary a blind cover can be ordered (see EPC for information and part number).

Ordering instructions for F10M and F06M/F12M/F13M cars:

- M5 cars built before 07/13

Airbag unit, multi-function keys and possibly shift paddles as well as steering wheel electronics (cable, control unit and vibration generators) must be ordered for a new M Sport steering wheel (from 07/13) and replaced.

- M5 cars built after 07/13

Adoption of all parts possible.

- M6 cars

Adoption of all parts possible.

Special tools required

00 9 317, Panel wedge

Information for the workshop and customer



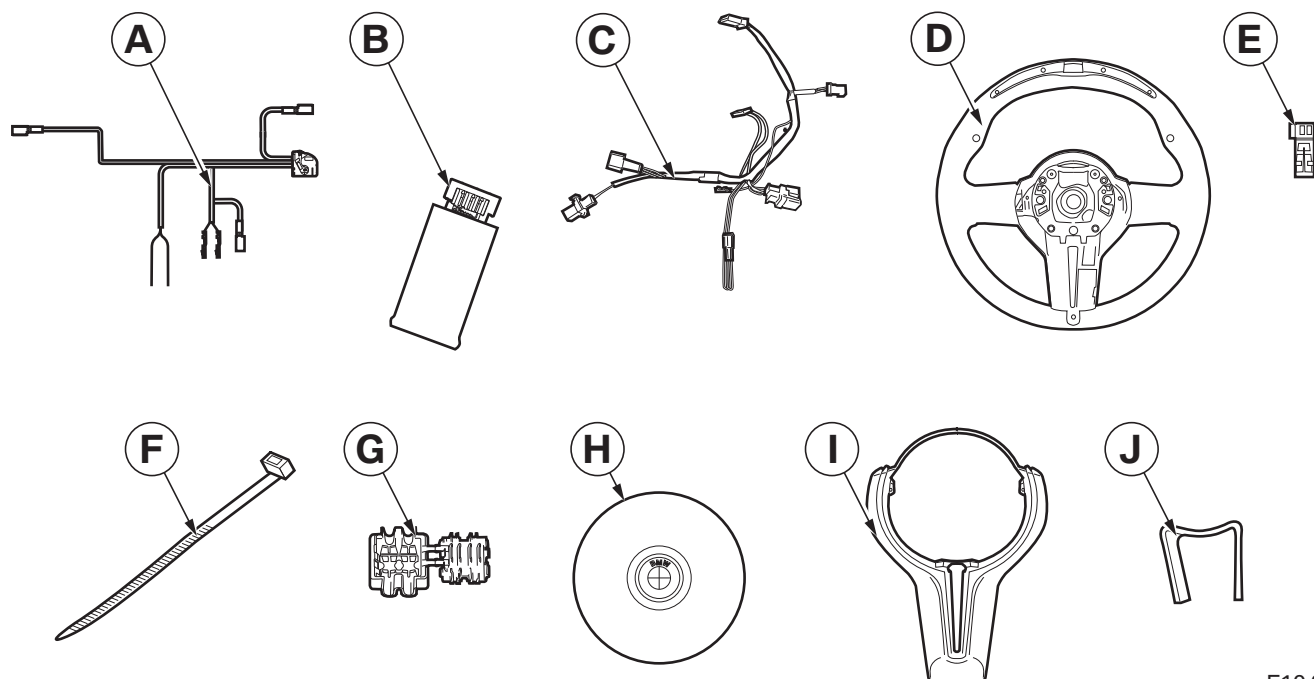
No entry is required in the vehicle's paperwork, and no operating permit needs to be carried for the M Performance steering wheel. The approval is included in general EC approval for the relevant vehicles from BMW.

The customer must be notified that if SA 248 (steering wheel heating) is installed, the heating function will not work. The switch for on the steering column trim for the steering wheel heating remains non-functional. ◀

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1. Parts list for M Performance steering wheel with Race Display



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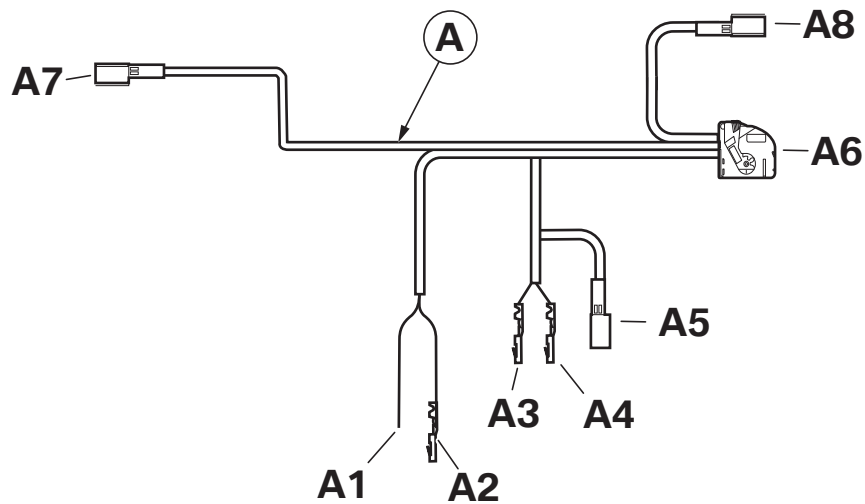
Legend

- A** Retrofit cable
- B** Control unit
- C** Steering wheel adapter cable (already fitted to M Performance steering wheel)
- D** M Performance steering wheel
- E** 2-pin socket casing, SW
- F** Cable tie (15x)
- G** Miniature connector (2 x)
- H** Airbag module (not supplied with the retrofit kit)
- I** Trim for M Performance steering wheel
- J** Clamp spring

2. Preparatory work

	ISTA No.
Conduct a brief test	---
Disconnect the negative pole of the battery	12 00 ...
The following components must be removed first of all	
Airbag module	32 34 020
Steering wheel	32 33 ...
Steering column trim, lower section	32 31 020
Steering column trim, upper section	32 31 003
Steering column switch cluster (SZL)	61 31 008
Pedal trims (also for US cars)	51 45 184

3. Connection diagram for M Performance steering wheel with Race Display

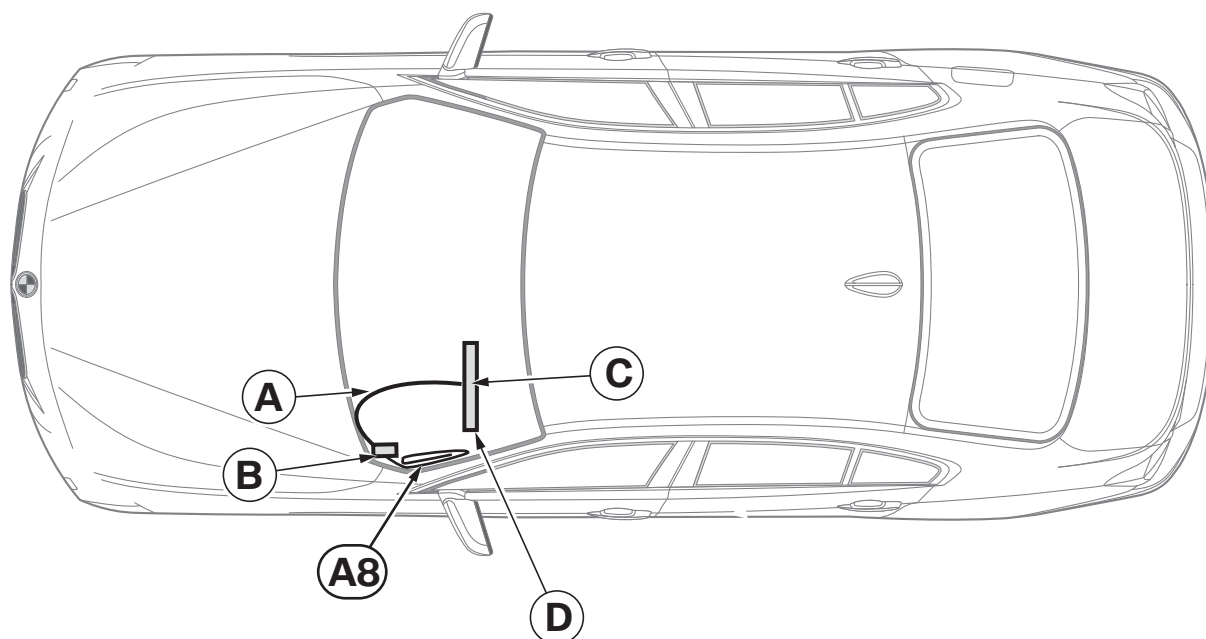


F10 0141 V

Legend

Item	Designation	Signal	Cable colour cross-section	Connection location in the car	Abbreviation/ Slot
A	Retrofit cable				
A1	Cable open	Terminal 30b	GN 0.5 mm ²	With miniature connector G to the CAS	A16*1B PIN 2
A2	Socket contact	Terminal 31	BR 0.5 mm ²	With miniature connector G to the CAS	A16*1B PIN 12
A3	Socket contact	PT CAN High	BL/RT 0.35 mm ²	CGW	A51*1B PIN 46
A4	Socket contact	PT CAN Low	RT 0.35 mm ²	CGW	A51*1B PIN 47
A5	SW 2-pin plug casing		BL/RT RT 0.35 mm ²	With socket casing E to the disconnected cables from plug A51*1B	
A6	12-pin socket casing, SW			To control unit B	
A7	Socket contact		WS/BL 0.35 mm ²	To steering column switch cluster SZL	A2*1B PIN 11
A8	3-pin socket casing			Optionally to 2D lap trigger measuring sensor	

4. Installation and cabling diagram for M Performance steering wheel with Race Display



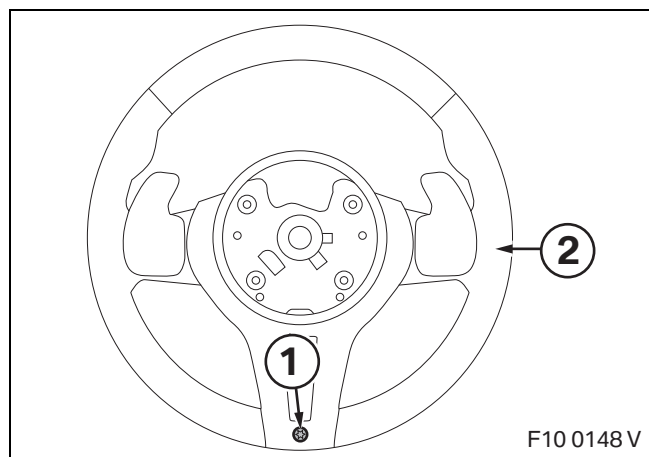
F10 0142 V

Legend

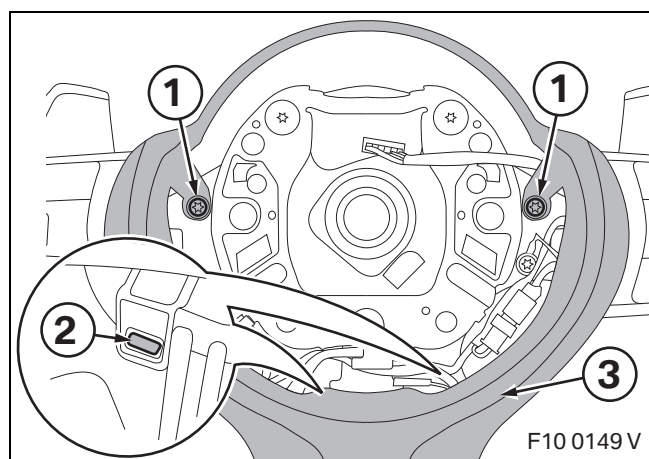
- A** Retrofit cable
- B** Control unit
- C** Steering wheel adapter cable
- D** M Performance steering wheel

- A8** Connecting cable for optional LAP trigger measuring sensor

5. Removal of the steering wheel

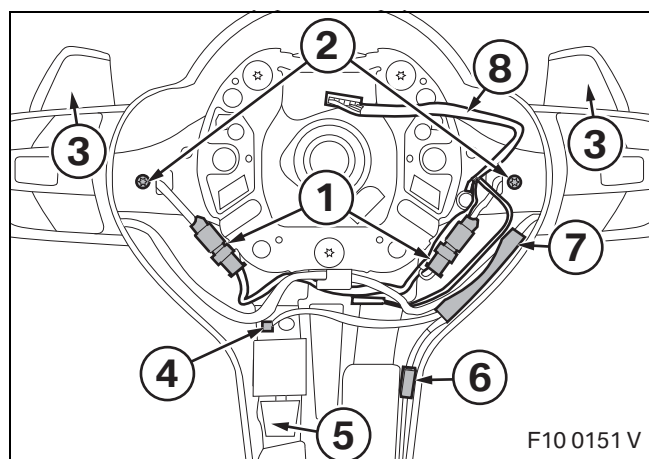


Loosen and remove the screw (1) on the back of the steering wheel (2).



Loosen and remove the screws (1).

Slightly press in the clip (2) on both sides and remove the finisher (3).



▶ The control module (7) will only be present if a lane departure or lane change warning or DRIVING ASSISTANT and/or a steering wheel heating system are fitted. This control module (7) must be included in the new steering wheel. ◀

Only if Sport automatic shift paddles (SA 2TB) are installed:

Loosen the plugs (1) from the holders and pull them out.

Remove the screws (2) from the shift paddles (3) and remove the shift paddles (3).

Only if lane change warning (SA 5AG) or lane departure warning (SA 5AD) or DRIVING ASSISTANT (SA 5AS) is installed:

disconnect the plug (4) from the vibration generator (5).

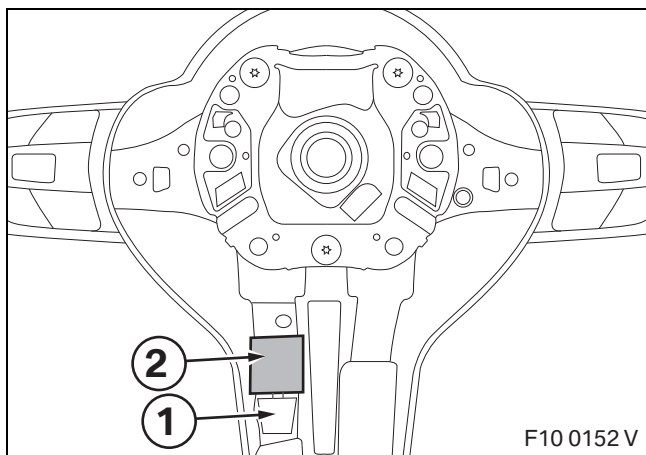
Only if steering wheel heating (SA 248) is installed:

remove the plug (6) from the control module (7).

For all cars:

The wiring harness (8) remains in the standard steering wheel is not required.

5. Removal of the steering wheel



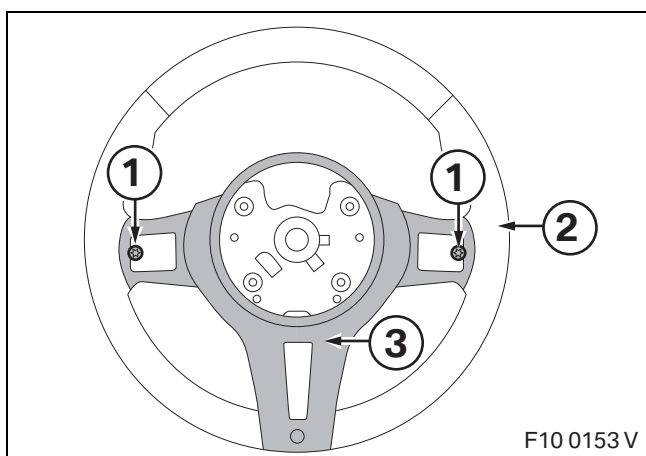
Only if lane change warning (SA 5AG) or lane departure warning (SA 5AD) or DRIVING ASSISTANT (SA 5AS) is installed:

▶ If there is a piece of foam on the vibration generator (1), this must be removed and replaced during installation. To remove the clamp spring (2) press forcefully from the top on the clamp spring (2) so that the mating hook at the bottom releases itself from the clamp spring (2). ◀

Remove the clamp spring (2) from the vibration generator (1) and remove the vibration generator (1).



The clamp spring (2) must not be re-used. ◀



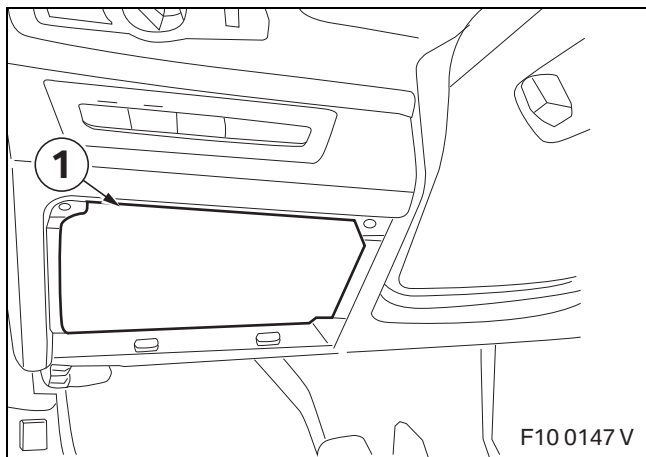
For all cars:

Loosen and remove the screws (1) on the back of the steering wheel (2).

Remove the rear cover (3).

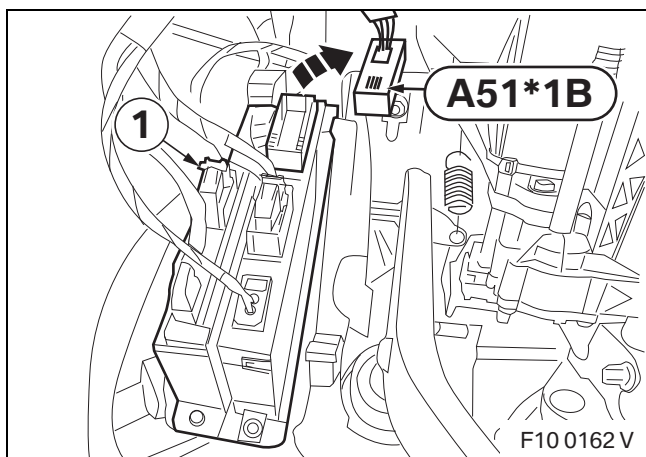
Remove the steering wheel (2).

6. Installation of M Performance steering wheel with Race Display retrofit kit



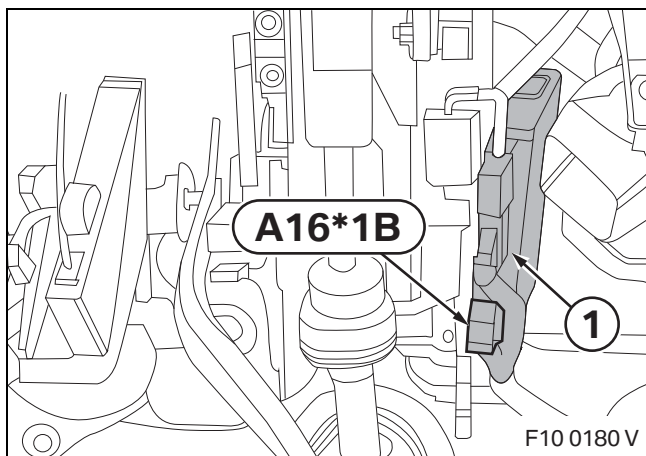
Only for M5 cars:

▶ To make access to the Central Gateway (CGW) in the left footwell easier, the cover (1) can be removed if fitted. ◀

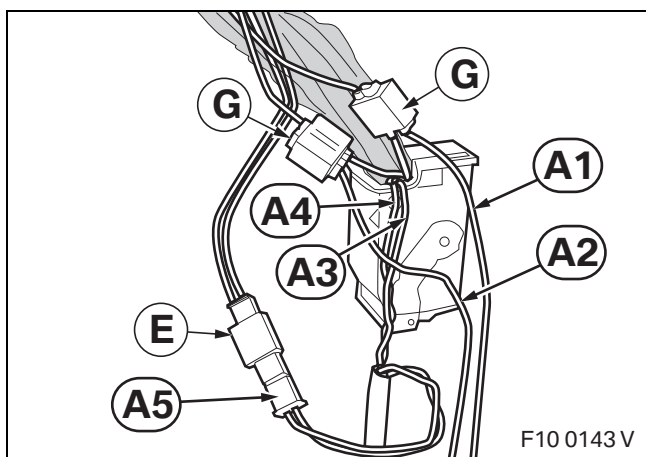


For all cars:

Remove plug **A51*1B** from the CGW (1) in the left footwell.



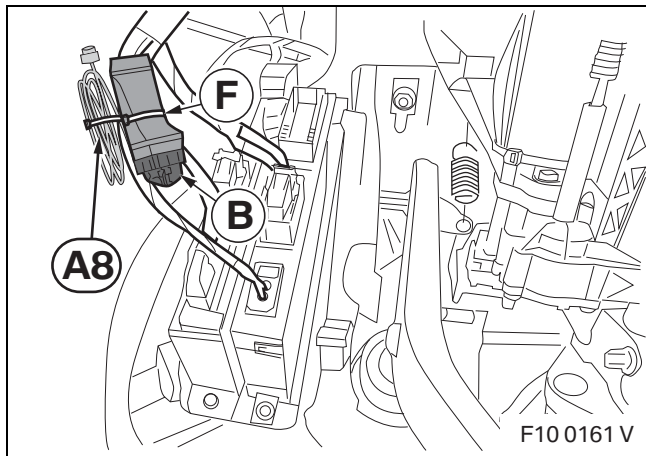
Remove plug **A16*1B** from the CAS (1) in the right footwell.



- Connect branch **A1** GN, using RT/BL cable to **PIN 2** on **A16*1B**, using miniature connector **G**
- Connect branch **A2** BR, using BR/SW cable to **PIN 12** on **A16*1B**, using miniature connector **G**
- Disconnect **PIN 46** and **PIN 47** from **A51*1B** and connect to plug **E** so that plug **A5** can be connected using the same colours to plug **E**
- Connect branch **A3**, BL/RT cable, to **A51*1B** **PIN 46**
- Connect branch **A4**, RT cable, to **A51*1B** **PIN 47**

The connect plug **A51*1B** to the CGW and plug **A16*1B** to the CAS.

6. Installation of M Performance steering wheel with Race Display retrofit kit

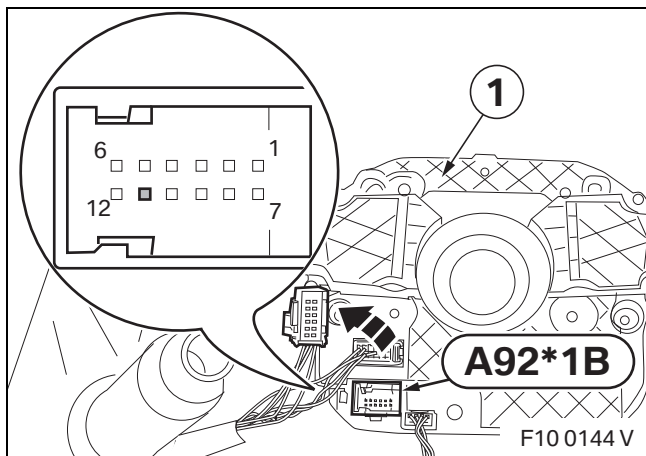


Secure control unit **B** to a suitable point on the wiring harness using cable tie **F**.

Tie back LAP trigger cable **A8** and also secure it to the same point on the wiring harness using cable tie **F**.

☐ 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. ◀



Remove the steering column switch cluster (1) as described in **ISTA**.

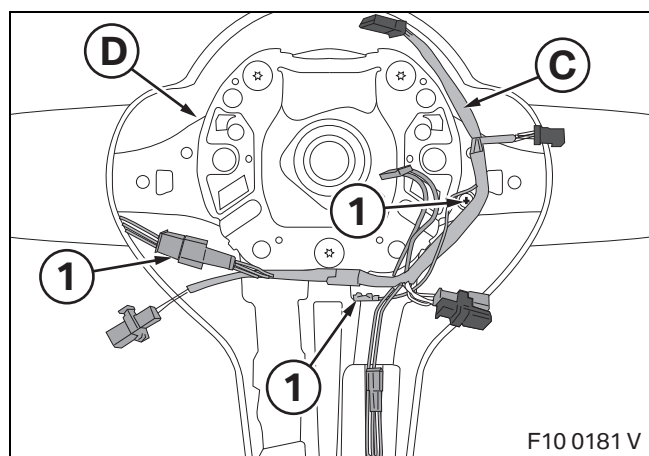
Disconnect plug **A92*1B**. Disconnect **PIN 11** (earth) from plug **A92*1B**, insulate it and tie it back.

Connect WS/BL cable in the retrofit kit to plug **A92*1B** **PIN 11**.

☐ Tie the WS/BL cable along the wiring harness using cable tie **F**. Ensure that the steering column can still be adjusted. ◀

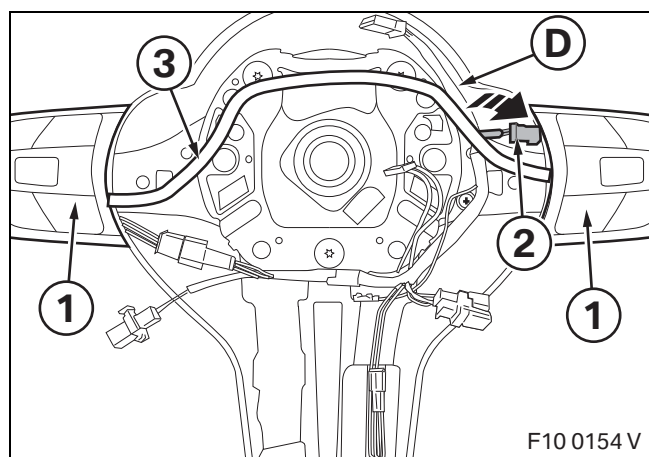
Install the steering column switch cluster (1) as described in **ISTA**.

7. Installation of M Performance steering wheel with Race Display

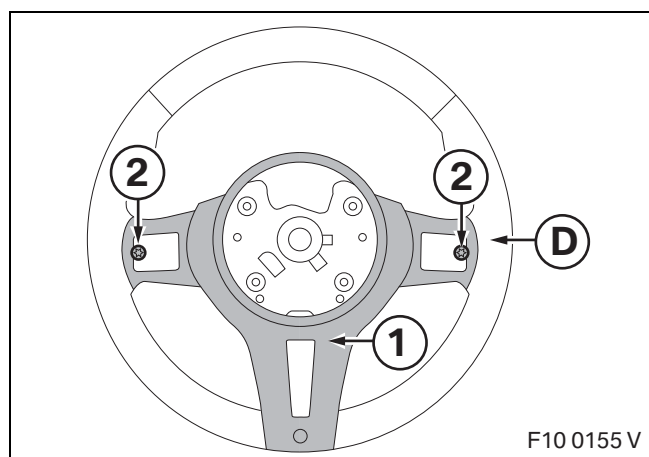


► There is also already a special steering wheel adapter cable **C** fitted in the M Performance steering wheel **D** which is designed to ensure that in addition to the steering wheel electronics, any options can also be connected. ◀

The steering wheel adapter cable **C** is connected to the M Performance steering wheel **D** at three points (1).

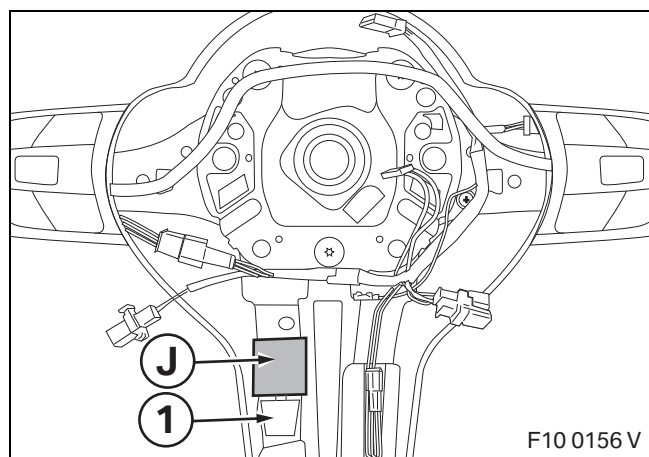


Position the multi-function keys (1) on the left and right of the M Performance steering wheel **D**. Connect the plug (2) on the right to the socket. Initially move the connection cable (3) away at the top.



► Do not crush or jam the cables. ◀

Position the rear cover (1) and secure the screws (2) into the multi-function keys through the M Performance steering wheel **D**.

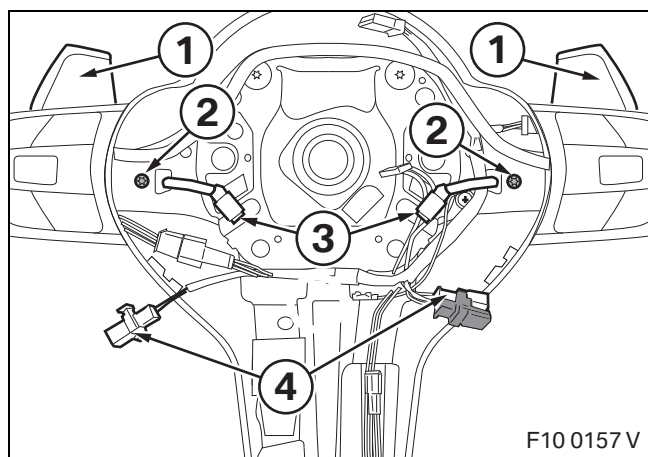


Only if lane change warning (SA 5AG) or lane departure warning (SA 5AD) or DRIVING ASSISTANT (SA 5AS) is installed:

► If there was a piece of foam on the vibration generator (1), this must be replaced. ◀

Fit the vibration generator (1) and secure it with the enclosed clamp spring **J**.

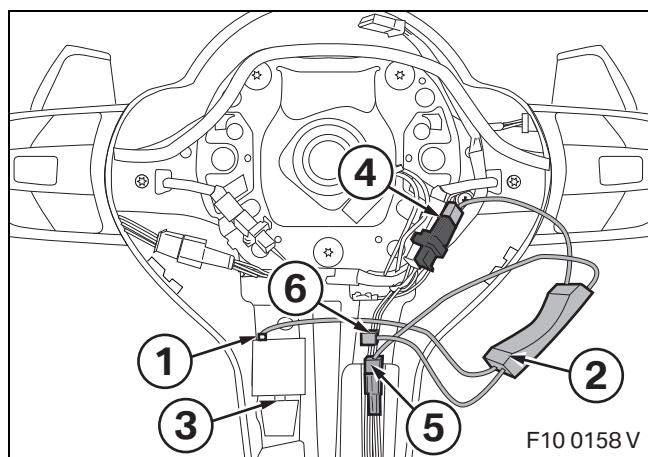
7. Installation of M Performance steering wheel with Race Display



Only if Sport automatic shift paddles (SA 2TB) are installed:

Secure shift paddles (1) with screws (2).


Thread the plugs (3) through the openings and connect them to the plugs of the same colours (4).



Only if lane change warning (SA 5AG) or lane departure warning (SA 5AD) or DRIVING ASSISTANT (SA 5AS) is installed:

Connect the plug (1) from the control module (2) to the vibration generator (3).

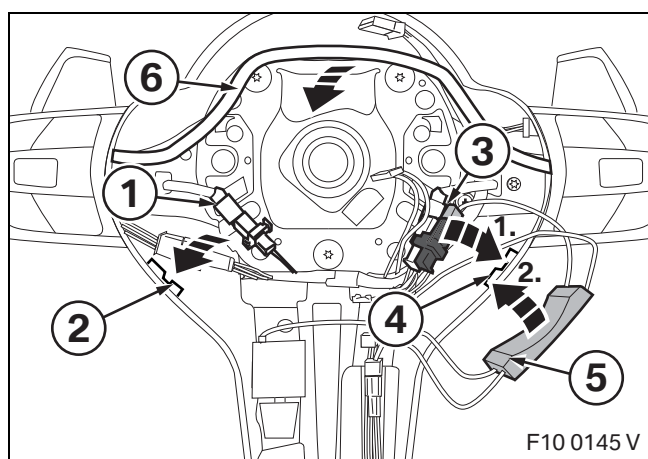
Connect the small black plug (4) from the control module (2) to the black double socket.

 Do not connect the plug (5) to the shrouded plug on the coil spring as on the standard steering wheel. ◀

Connect the plug (5) from the control module to the steering wheel cable clamped in the groove.

Only if steering wheel heating was installed:

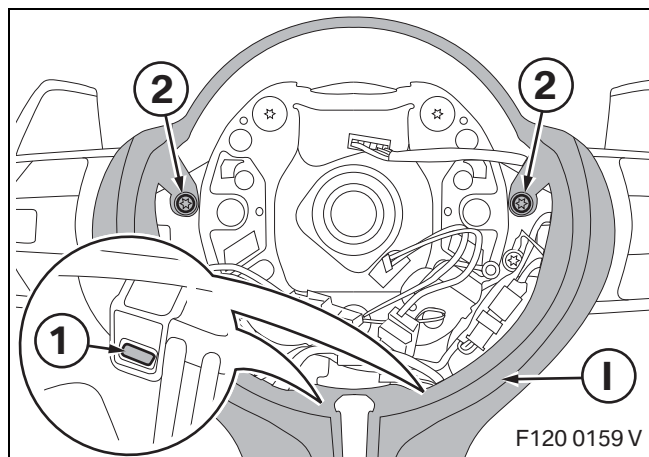
route the cable (6) for the steering wheel heating from the control module to the space in front of the foam. Do not connect it.



For all cars:

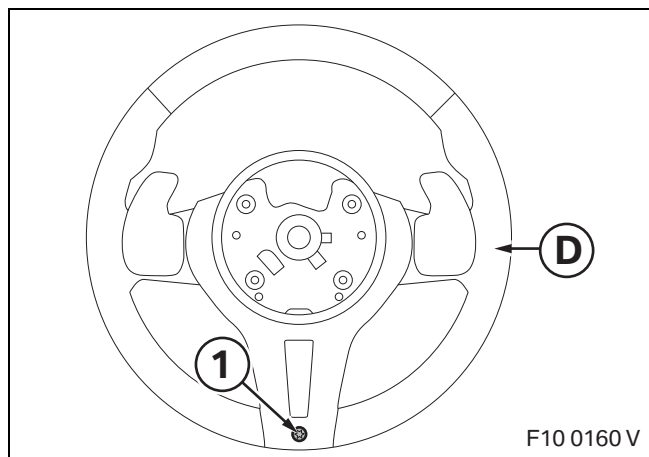
Clip the plug (1) into the guide (2). Clip the double plug (3) into the guide (4). Then press the control module (5) into the guide (4). Route the multi-function cable (6) along the bottom over the control module (5).

7. Installation of M Performance steering wheel with Race Display



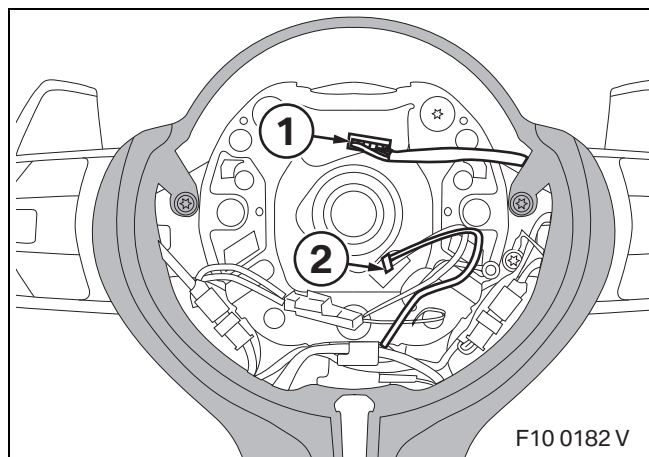
Position the M Performance finisher **I** and secure the clip (1) on both sides.

Position the M Performance finisher **I** with two screws (2).



Do not crush or jam the cables. ◀

Secure the screw (1) on the rear of the M Performance steering wheel **D**.



Do not crush or jam the cables. The cables must not deviate in front of the openings through which the spring for the airbag can be released. If necessary tie the cables with mini cable ties or adhesive tape. ◀

Install the steering wheel in the car as described in **ISTA**.

Place plug (1) and plug (2) on the installed steering wheel cable through the openings into the shrouded plug for the coil spring.

Install the airbag module as described in **ISTA**.

8. Concluding work, coding and initial setting of M Performance steering wheel with Race Display

This retrofit system does not require coding.

- Connect the battery
- Conduct a brief test
- Conduct a function test
- Re-assemble the car in a logical manner
- 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

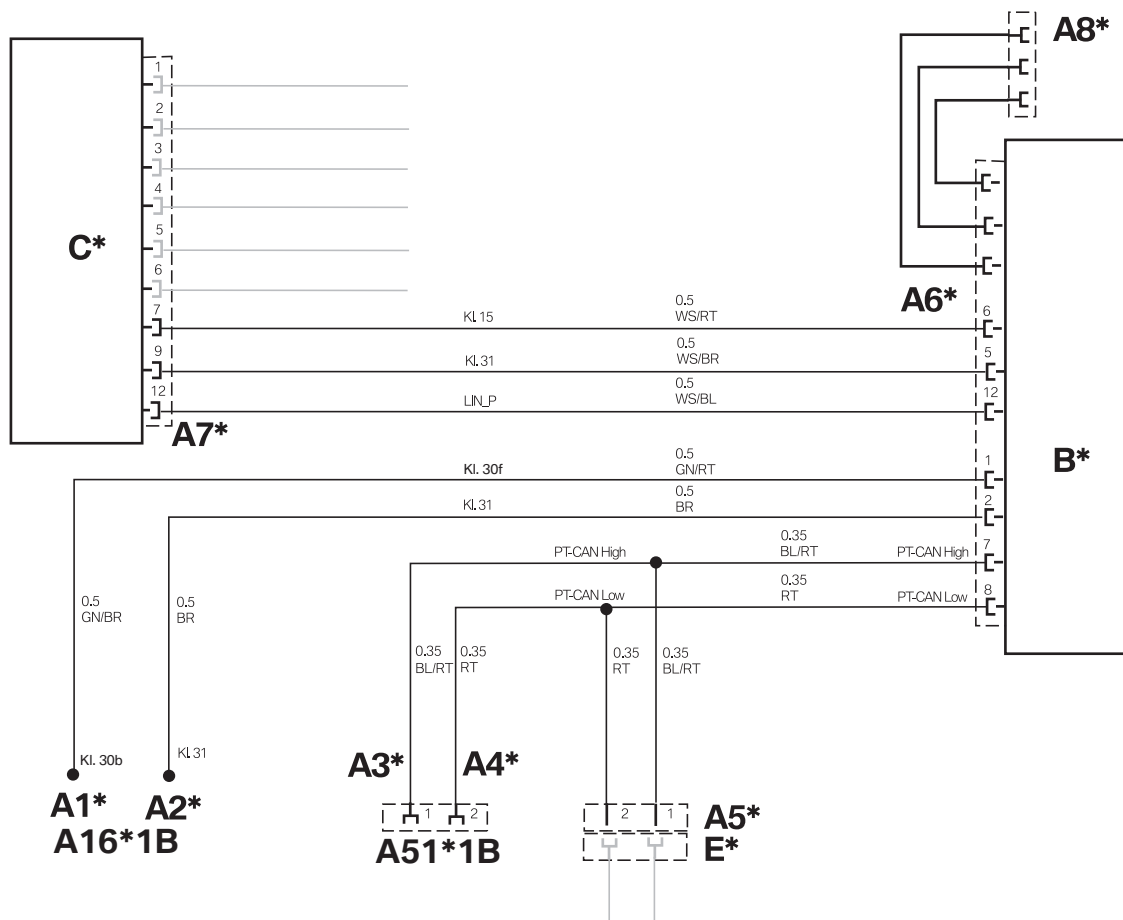
The heating key on the steering column remains non-functional after the installation work. If necessary a blind cover can be ordered (see EPC for information and part number).

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 initial setting menu, hold the left key **L** and right key **R** down simultaneously on the M Performance steering wheel for approx. 2 seconds. Demo mode begins in an endless loop.
- To end demo mode, switch off the ignition.

9. Circuit diagram for M Performance steering wheel with Race Display



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Legend

- A1*** with miniature connector **G** to cable for A16*1B, PIN 2
- A2*** with miniature connector **G** to cable for A16*1B, PIN 12
- A3*** Socket contact to A51*1B, PIN 46
- A4*** Socket contact to A51*1B, PIN 47
- A5*** SW 2-pin pin housing, to socket casing **E***
- A6*** SW 12-pin socket casing, to control unit **B***
- A7*** Socket contact, to steering wheel switch cluster
- A8*** 3-pin socket casing for optional LAP trigger measuring sensor

All 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