Performance Steering Wheel Retrofit
BMW 1 series (E81, E82, E87, E88)
BMW 3 Series (E90, E91, E92, E93)

These installation instructions are only valid for cars without SA 248 (steering wheel heating).

Retrofit kit No. 32 30 0 443 170 Performance Steering Wheel Retrofit
32 30 0 445 258 Performance Steering Wheel Retrofit Kit

Installation time
The installation time is about 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, circuit diagrams, servicing manuals and work instructions in a rational order using the prescribed tools (special tools) and observing current health and safety regulations.

In the event of any installation or function problems, restrict the troubleshooting session to about 0.5 hours for mechanical work or 1 hour for electrical work.

In order to reduce costs and avoid any additional expense, send a query immediately to the Technical Parts Support via the Aftersales Assistance Portal (ASAP).

Specify the following information:
- Chassis number
- Part number of the retrofit kit
- A precise description of the problem
- Work steps already carried out

Do not archive the hard copy of these installation instructions since daily updates are made by 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. The costs thereby incurred 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.
On completion of the installation work, an initial setting must be performed on the performance steering wheel.

Special tools required
00 9 317 Trim wedge
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1. Parts list

Legend

A Retrofit cable
B Control module
C Coil spring cartridge
D Performance steering wheel (with trim)
E 2-pin socket casing SW
F Cable tie (x 15)
G Miniature connector (2x)
## 2. Preparatory work

<table>
<thead>
<tr>
<th>Conduct a brief test</th>
<th>TIS no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disconnect negative pole of battery</td>
<td>12 00 ...</td>
</tr>
</tbody>
</table>

### The following components must be removed first of all

<table>
<thead>
<tr>
<th>Component</th>
<th>TIS no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trim at the bottom right of the door pillar</td>
<td>51 43 150</td>
</tr>
<tr>
<td>Trim at the bottom right of the dashboard</td>
<td>51 45 181</td>
</tr>
<tr>
<td>Pedal trim</td>
<td>51 45 185</td>
</tr>
<tr>
<td>Bottom section of steering column trim</td>
<td>32 31 020</td>
</tr>
<tr>
<td>Top section of steering column trim</td>
<td>32 31 003</td>
</tr>
<tr>
<td>Steering wheel</td>
<td>32 33 ...</td>
</tr>
<tr>
<td>Coil spring cartridge</td>
<td>61 31 011</td>
</tr>
</tbody>
</table>
### 3. Connection diagram

![Connection Diagram]

**Legend**

<table>
<thead>
<tr>
<th>Item</th>
<th>Designation</th>
<th>Signal</th>
<th>Cable colour / Cross-section</th>
<th>Connection location in the car</th>
<th>Abbreviation / Slot</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Retrofit cable</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>A1</td>
<td>Cable open</td>
<td>Terminal 15</td>
<td>GN/BR 0.5 mm²</td>
<td>With miniature connector G</td>
<td>X19527 PIN 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>To the cable of the OBD socket in the driver's footwell</td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>Cable open</td>
<td>Terminal 31</td>
<td>BR 0.5 mm²</td>
<td>With miniature connector G</td>
<td>X19527 PIN 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>To the cable of the OBD socket in the driver's footwell</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>Socket contact</td>
<td>PT-Can High</td>
<td>BL/RT 0.35 mm²</td>
<td>To junction box behind glove box</td>
<td>X14271 PIN 1</td>
</tr>
<tr>
<td>A4</td>
<td>Socket contact</td>
<td>PT-Can Low</td>
<td>RT 0.35 mm²</td>
<td>To junction box behind glove box</td>
<td>X14271 PIN 2</td>
</tr>
<tr>
<td>A5</td>
<td>2-pin plug casing SW</td>
<td>---</td>
<td>---</td>
<td>With socket casing E to disconnected cable from connector X14271</td>
<td>---</td>
</tr>
<tr>
<td>A6</td>
<td>12-pin socket casing SW</td>
<td>---</td>
<td>---</td>
<td>To control unit B</td>
<td>---</td>
</tr>
<tr>
<td>A7</td>
<td>12-pin socket casing WS</td>
<td>---</td>
<td>---</td>
<td>To coil spring cartridge C</td>
<td>X10170</td>
</tr>
</tbody>
</table>
4. Installation and cabling diagram

Legend

A  Retrofit cable
B  Control module
C  Coil spring cartridge
D  Performance Steering Wheel

1  OBD socket
2  Junction box on passenger side
5. Installing the retrofit kit

Route branches A3–A5 to the junction box.
Disconnected cable (1) from PIN 1 and PIN 2 of plug X14271, 54-pin SW and connect to following pins in socket casing E:
- BL/RT cable from Pin 1 to Pin 1
- RT cable from Pin 2 to Pin 2

Connect branches A3 and A4 to plug X14271 as follows:
- Branch A3, BL/RT cable, to PIN 1
- Branch A4, RT cable, to PIN 2

Connect branch A5 to socket casing E.

Connect branch A6 (12-pin SW socket casing) to the control module B.

Attach control unit B to the standard wiring harness using cable ties F.

Route branch A1+A2 to the OBD socket and branch A7 to the steering column.

Remove about 100 mm of the winding (1) from the cable to the OBD socket (2).

Connect branch A1, GN/BR cable, using mini-connectors G to the same colour cable from PIN 1 of plug X19527.

Connect branch A2, BR cable, using mini-connectors G to the same colour cable from PIN 4 of plug X19527.

Remove transportation lock (1) from coil spring cartridge C.

Install coil spring cartridge C in car in accordance with TIS-RA: 61 31 011.
5. Installing the retrofit kit

Disconnect all cables from plug X10170 and connect to branch A7 as follows:
- BR cable from PIN 1 to PIN 1
- BR/GE cable from PIN 2 to PIN 2
- GE/BR cable from PIN 3 to PIN 3
- GE/SW cable from PIN 4 to PIN 4
- GR/BR cable from PIN 5 to PIN 5
- GR/SW cable from PIN 6 to PIN 6

Connect branch A7 to the coil spring cartridge C.

Secure retrofit cable with cable ties F to existing cable harnesses.

Connect the plug (1) to coil spring cartridge C.

Connect 3-pin SW socket casing (2) of the performance steering wheel D to 3-pin SW pin casing (3) of the coil spring cartridge C.

Refer to the safety instructions for handling the airbag.

Install the centre console as described in TIS RA 32 33.
6. **Concluding work, coding and initial setting**

This retrofit system does not require coding.

- Connect the battery
- Conduct a brief test
- Conduct a function test
- Re-fit the car components as required
- Making basic settings

**Basic settings**

To ensure the unit functions properly, two basic settings must be performed on completion of the installation:

- Simultaneously hold down the left (\(L\)) and right (\(R\)) keys on the performance steering wheel while switching on the ignition
- Using the key \(R\), select either diesel or petrol-engined car
  (the small box around the text signifies that the option is selected)
- Press the key \(L\) to save the setting and to advance to the setting “Correction factor for speed”
- Start the engine and maintain a constant, easily readable engine speed (e.g. 1000 rpm)
- Compare the display on the steering wheel with that on the rev counter
- You can increase the correction factor by holding the key \(R\) down, or reduce it by tapping the key \(R\) briefly several times until the two displays correspond
- When you switch the ignition off again, the settings are stored
Legend

A1* Line open, with mini connector to plug X19527, PIN 1
A2* Line open, with mini connector to plug X19527, PIN 4
A3* Socket contact to junction box SW 54-pin plug X14271
A4* Socket contact to junction box SW 54-pin plug X14271
A5* SW 2-pin casing to socket casing E*
A6* SW 12-pin socket casing on control module B*
A7* WS 12-pin casing to coil spring cartridge C*/X10170

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

Cable colors

BL   Blue
BR   Brown
Green Green
GR   Grey
RT   Red
SW   Black
WS   White