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# dÄHLer Competition Line

## BMW M3 G80 G81

## BMW M4 G82 G83

## & Competition

### *Install Guide*



## EXPERIENCE THE POWER OF dÄHLer



### ***Scope of delivery***

- dÄHLer Performance Module RX1087 with app function and special mapping
- dÄHLer Wiring Harness LLRN2
- Adapter plug (bypass) for workshop appointments
- Install Guide (install video QR code)

### ***Read carefully before installation***

The dÄHLer Performance Module is specifically programmed for the S58 engine. Due to production variations and current BMW software status, the expected results of the dÄHLer Performance Module can turn out differently (higher or lower results). Also, the increased performance always depends on the maintenance condition and mileage of the vehicle as well as other aftermarket modifications done to the car.

Other very important aspects are:

Outside temperature and humidity (better results when dry and cool), quality of the gas you pump (we highly recommend 98 octane or higher in Europe | 93 octane or higher in the USA and Canada)

If you are not able to get this gas quality in your country, ensure to go for the highest available octane rating there is. Lower octane ratings than mentioned above result in less nominal output. Here you need to reduce the mapping of the dÄHLer Performance Module by using the dÄHLer App to change the individual program to avoid the knock sensor reaches its limits.

After market modifications like open air filters, cat less downpipes (no more catalytic convertors), or exhaust systems with no more resonators can result in less power!

We recommend to run downpipes that still offer a catalyst from 200 up to 300 CPSI for the best results.

If the power caused by the dÄHLer mapping is too high for your S58 stock engine shown by: Not pulling smoothly in higher gears (4-5-6-7-8), disturbed engine run when full throttle in the max torque range, car stops accelerating in higher gears at a certain RPM, CEL (check engine light), engine does not rev higher than 3,000 RPM, fault codes -> boost pressure too high, etc.

You need to reduce the power by changing the mapping of the dÄHLer Performance module by using the dÄHLer App.

Before changing the mapping contact dÄHLer Competition Line (Germany) or dÄHLer USA.

It is also possible to do remote updates for the dÄHLer Performance Module.

On one of the silver stickers under the bar code you will find the serial number next to the hashtag # (The hashtag is not required, however). You may write down before the install.

### General instructions

**Read this installation guide carefully before starting the installation so that you will be able to use all the technical advantages of the systems and do not start with the installation before you have read and understood the instructions.**

If you comply with the advices given below you will avoid an early termination of the product guarantee and you will be enjoying your product for years to come.

- ✓ Never install the system while the ignition is on. Pull the ignition key.
- ✓ After switching off the ignition, wait for 15 minutes until all electric devices are turned off.
- ✓ Don't open a door, the trunk or turn on any electrical device of the car while it is in sleep mode.
- ✓ Put the key away from the car during installation (10 yards | 9 m or more).
- ✓ Install the performance module in a dry area in the engine or adequate compartment. Humidity and wetness contain minerals which cause corrosion to the electronic circuits.
- ✓ Fix the harness with zip ties and protect it from humidity and direct heat sources.
- ✓ Before every engine wash, remove the entire tuning system.
- ✓ Do not fix tuning systems to engine parts that could heat up.
- ✓ Never fix the module directly or close to the engine (engine block). High temperatures can reduce the lifespan of electronic devices and can deform or melt specific plastics materials.
- ✓ Take care that the harness does not touch the parts in motion and the metal parts to avoid friction.
- ✓ Do not make any changes to the harness (do not make it any longer or shorter).
- ✓ In case of the malfunctioning of the system due to any non-compliance with the instructions during the installation of the performance module, the product guarantee will be terminated.
- ✓ After installation always use a higher-octane fueled (98 ROZ or higher - US Models 93 ROZ or higher)
- ✓ After connecting the wiring harness to all sensors, connect the main plug to the dÄHLer engine performance module and stow the module well protected against shock, heat or water. In case you are going to use the app connect your phone before stowing the module
- ✓ Double-check all connections and secure the wiring harness with cable straps and refit all covers and bars.

①



Note the following hints!

②



Switch off the ignition!

③



Wait 5 Minutes.

④



Install splash proof!

⑤



Attention when  
Engine wash!

⑥



No installation  
on hot engine parts!

⑦



Do not make any changes!

⑧

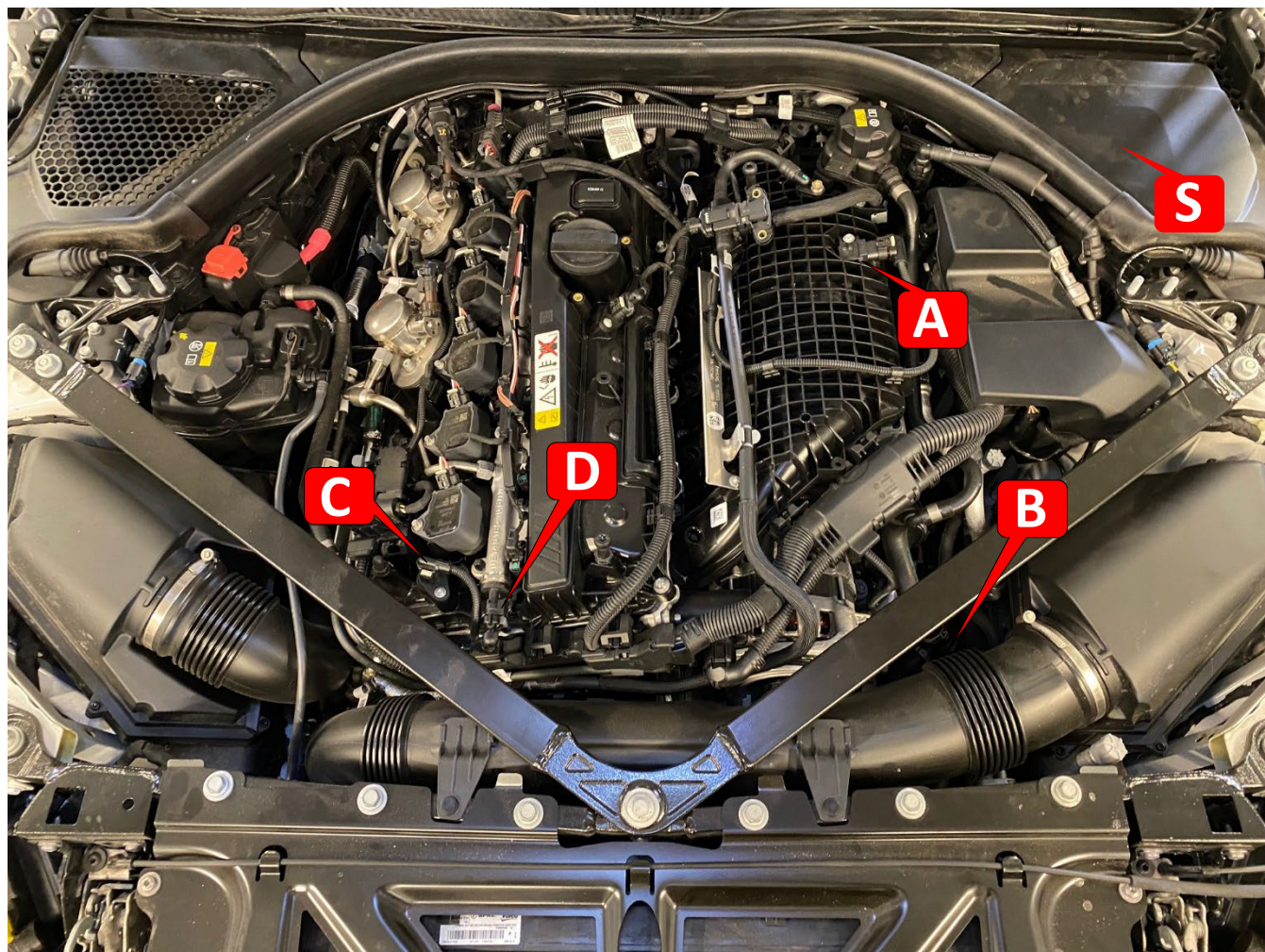


Disregard may  
cause malfunction!

Error descriptions*	Problem solution?
„The engine doesn't start.“	<ul style="list-style-type: none"> <li>Check all connected components. Are the adapter plugs in the right position?</li> <li>Is a plug twisted connected? If possible?</li> <li>Do the LED's work properly?</li> </ul> <p><i>Error persists</i> &gt; Replace module with enclosed adapter and start again.  <i>Error fixed?</i> Module is defective: Contact the vendor / dÄHLer Competition Line</p>
„The engine doesn't run smoothly. The engine is bucking.“	<ul style="list-style-type: none"> <li>Check all connected components. Are the adapter plugs in the right position?</li> <li>Has the program been changed?</li> <li><i>Error persists</i> &gt; Contact the vendor / manufacturer</li> </ul>
„The fail-save program runs immediately. The Malfunction Indication Light (MIL) flashes in the Instrument Cluster.“	<ul style="list-style-type: none"> <li>Check all connected components. Are the adapter plugs in the right position?</li> <li>Reduce the Performance Pack by one or two levels (contact dÄHLer Competition Line for assistance).</li> <li><i>Error persists</i> &gt; Contact the vendor / manufacturer</li> </ul>
„The fail-save runs in higher RPM.“	<ul style="list-style-type: none"> <li>Check all connected components. Are the adapter plugs in the right position?</li> <li>Reduce the Performance by one or two levels (contact dÄHLer Competition Line for assistance).</li> <li><i>Error persists</i> &gt; Contact the vendor / manufacturer</li> </ul>
„The engine shows no extra performance.“	<ul style="list-style-type: none"> <li>To obtain the maximum benefit, use a higher-octane fueled (98 ROZ or higher - US Models 93 ROZ or higher)</li> <li>Reduce the Performance by one or two levels (contact dÄHLer Competition Line for assistance).</li> <li><i>Error persists</i> &gt; Contact the vendor / manufacturer</li> </ul>
„The engine produces too much soot (diesel).“	<ul style="list-style-type: none"> <li>Check all connected components. Are the adapter plugs in the right position?</li> <li>Reduce the Performance by one or two levels (contact dÄHLer Competition Line for assistance).</li> <li><i>Error persists</i> &gt; Contact the vendor / manufacturer</li> </ul>
„How can I get back to the original performance of the engine?“	<ul style="list-style-type: none"> <li>Follow the steps below:               <ol style="list-style-type: none"> <li>Turn off the ignition.</li> <li>Wait until all electrical consumers are off.</li> <li>Remove the Performance Module of all connected components <b>or</b> use included adapter plug.</li> </ol> </li> </ul>

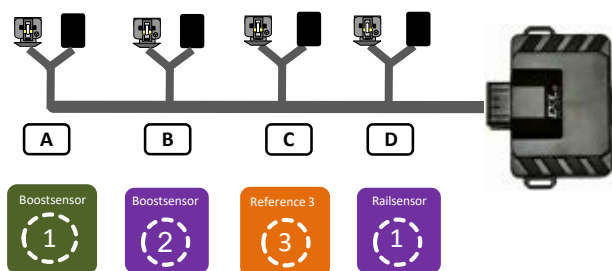


### Installation principle



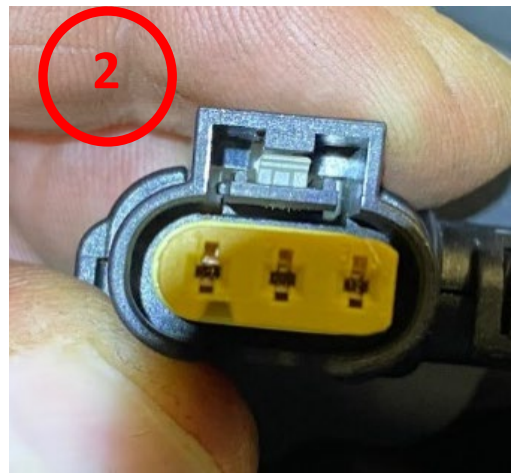
- A** Intake pressure sensor(4 pin)
- B** Boost pressure sensor (3 pin)
- C** Camshaft sensor(3 pin) + Adapter if required:
- D** Rail sensor(3 pin)
- S** Stow module here

Harness Stickers:



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### *What's up with the camshaft adapter?*



There are two camshaft plug variants. If it looks like variant **1** you can use the harness without the camshaft adapter. If it looks like variant **2** you have to use the camshaft adapter. Simply connect the camshaft adapter in between both connections.

*Installation Video - Please scan QR Code below*



## **VEHICLE MANUFACTURER WARRANTY, EMISSIONS DISCLAIMER AND SAFETY INSTRUCTIONS**

dÄHLer makes no guarantees to the lawfulness of any parts used for “on highway vehicles” and accepts no responsibility for compliance with the vehicle’s OEM warranty.

dÄHLer will not be responsible for poor installation practices.

We highly recommend having the assembly carried out by a professional workshop.

We recommend to watch the detailed installation video before the installation or during the installation.

The product should not be installed by a private individual.

Any modification of the product leads to the automatic cancellation of the warranty



# Original dÄHLer development dyno chart - Stock vs. dÄHLer

dÄHLer Competition Line AG  
Fährhubelweg 3  
CH 3123 Belp



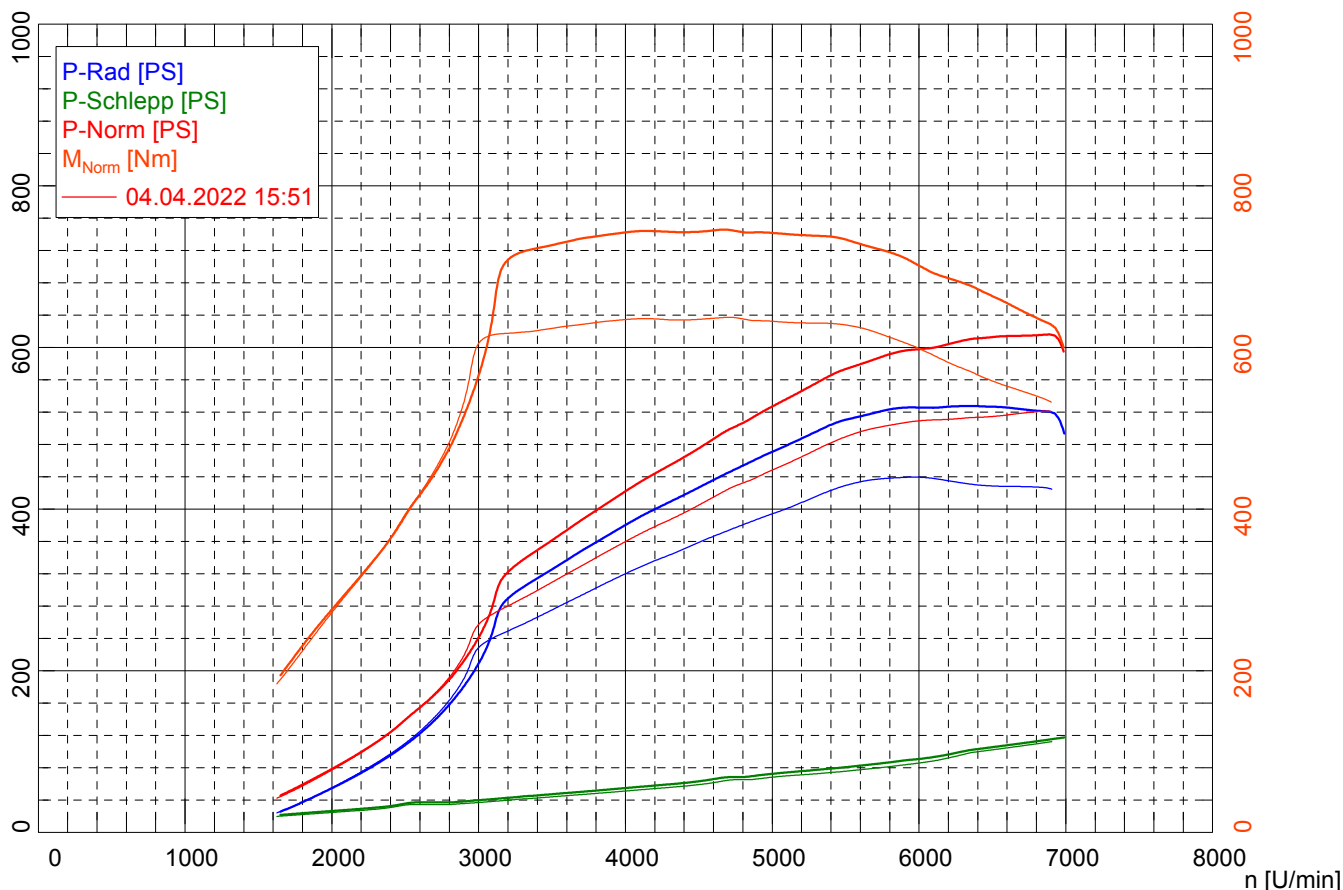
Fahrzeug-Typ: BMW M4 Competition xDrive - 510 PS

Otto-Motor / Turbolader (luftgekühlt)  
Schaltgetriebe  
Allrad-Antrieb

PG:5 mod. + org.

Meßdatum: 04.04.2022 (16:17)

Seite 1



## Leistungsdaten

Norm-Leistung <sup>1)</sup>  $P_{\text{Norm}}$  615,7 PS / 452,9 kW  
 Motorleistung  $P_{\text{Mot}}$  634,9 PS / 467,0 kW  
 Radleistung  $P_{\text{Rad}}$  520,2 PS / 382,6 kW  
 Schleppleistung  $P_{\text{Schlepp}}$  114,7 PS / 84,4 kW  
 Max. Leistung bei 6880 U/min/ 196,4 km/h  
 Drehmoment <sup>1)</sup>  $M_{\text{Norm}}$  745,4 Nm  
 Max. Drehmoment bei 4670 U/min/ 133,3 km/h  
 Max. erreichte Drehzahl 6990 U/min/ 199,3 km/h

<sup>1)</sup> Korrektur nach EWG 80/1269  
 Korrektur-Faktoren:  $Q_v = 0,00 \%$

## Umgebungsdaten

Umgebungs-Temperatur  $T_{\text{Umgebung}}$  6,8 °C  
 Ansaugluft-Temperatur  $T_{\text{Ansaugluft}}$  9,0 °C  
 Relative Luftfeuchte  $H_{\text{Luft}}$  71,7 %  
 Luftdruck  $p_{\text{Luft}}$  995,1 hPa  
 Dampfdruck  $p_{\text{Dampf}}$  7,1 hPa  
 Öl-Temperatur  $T_{\text{Öl}}$  97,0 °C  
 Kraftstoff-Temperatur  $T_{\text{Kraftstoff}}$  ---, - °C

## Schlupf

Geschwindigkeit unbelastet  $v_{\text{unbelastet}}$  ---, - km/h  
 Drehzahl unbelastet  $n_{\text{unbelastet}}$  --- U/min  
 Geschwindigkeit Vollast  $v_{\text{Vollast}}$  ---, - km/h  
 Drehzahl Vollast  $n_{\text{Vollast}}$  --- U/min  
 Schlupf ---, - %

## Rotierende Masse

$a_{1-VA}$  ---, - m/s<sup>2</sup>  $a_{1-HA}$  ---, - m/s<sup>2</sup>  
 $F_{1-VA}$  ---, - N  $F_{1-HA}$  ---, - N  
 $a_{2-VA}$  ---, - m/s<sup>2</sup>  $a_{2-HA}$  ---, - m/s<sup>2</sup>  
 $F_{2-VA}$  ---, - N  $F_{2-HA}$  ---, - N  
 $F_{\text{rot-Gesamt-VA}}$  ---, - N  $F_{\text{rot-Gesamt-HA}}$  ---, - N  
 $m_{\text{rot-Gesamt-VA}}$  350,0 kg  $m_{\text{rot-Gesamt-HA}}$  375,0 kg  
 $m_{\text{rot-Prüfstand-VA}}$  280,0 kg  $m_{\text{rot-Prüfstand-HA}}$  305,0 kg  
 $m_{\text{rot-Fahrzeug-VA}}$  70,0 kg  $m_{\text{rot-Fahrzeug-HA}}$  70,0 kg

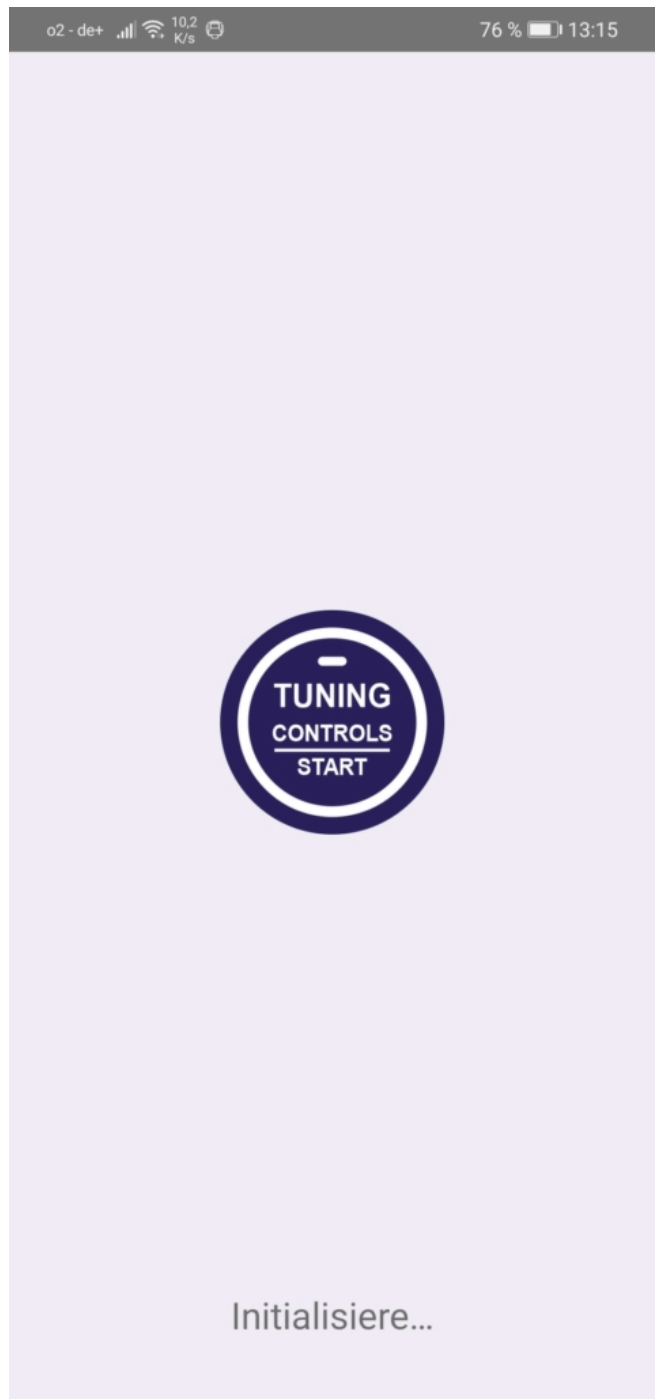
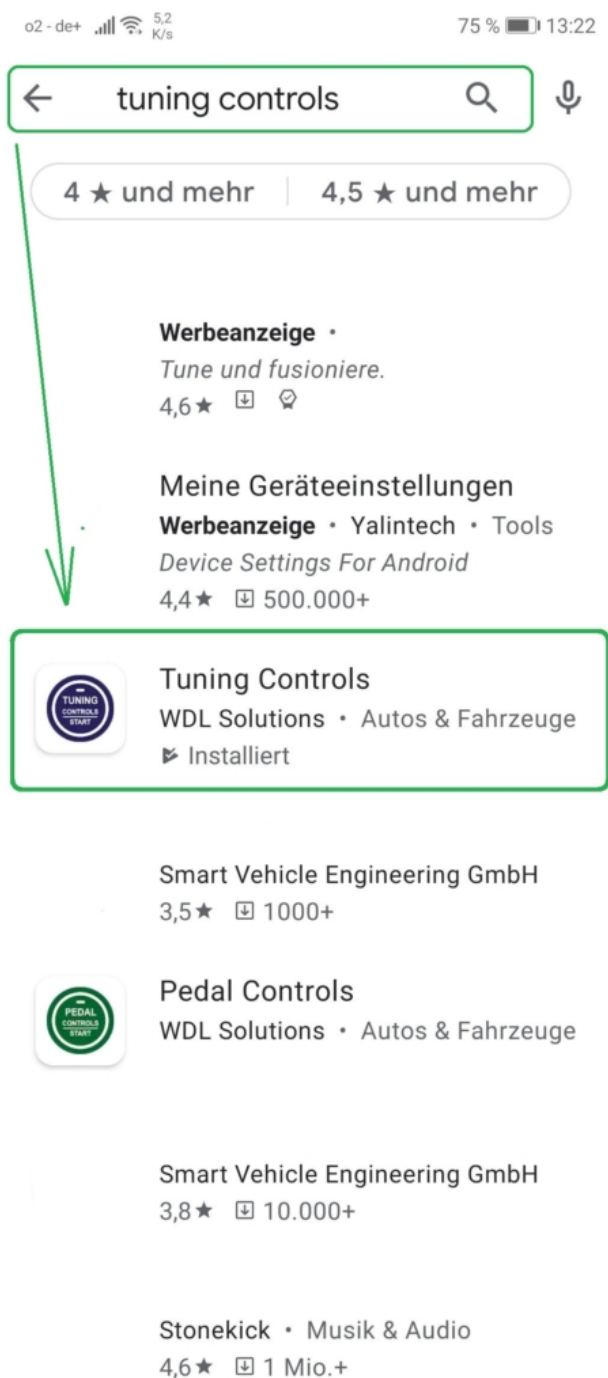




## How to get the Tuning Mobile App?

The dÄHLer Tuning Mobile App is available free of charge in the Google Play Store as well as in Apple's App Store.

We work in partnership with WDL Solutions. Search for Tuning Controls (see photos)



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## How to register and connect the tuning module?

An e-mail address and the six-digit serial number of the tuning module are required for this.

You will find the serial number on the reverse of the tuning module (you may write down before installation).

On one of the silver stickers under the bar code you will find the serial number next to the hashtag # (The hashtag is not required, however).

After registration with the app do the following steps to connect the module with your cell:  
(The prerequisite for this is that the module has been completely installed)

- switch on Bluetooth on the smart phone
- start the engine
- make sure that no objects between the mobile phone and the module can interfere
- press both buttons on the module for approx. 3 to 4 seconds at the same time  
(The two slight bumps – see picture)



- the module starts to flash and is for 20 seconds in pairing mode
- now open the app on the smart phone
- the app now automatically searches for available devices
- the connection should be made relatively quickly
- after a successful connection, the module re-connects automatically after opening the app

## App features

With our tuning module you have the option to choose your own and fully customizable driving program. Wirelessly connect the dÄHLer engine tuning performance module to your Bluetooth 4.0 compatible iOS and Android device via the free dÄHLer Mobile app.

This option allows you to change 3 different performance maps:

RACE – delivery status and performance information on our website

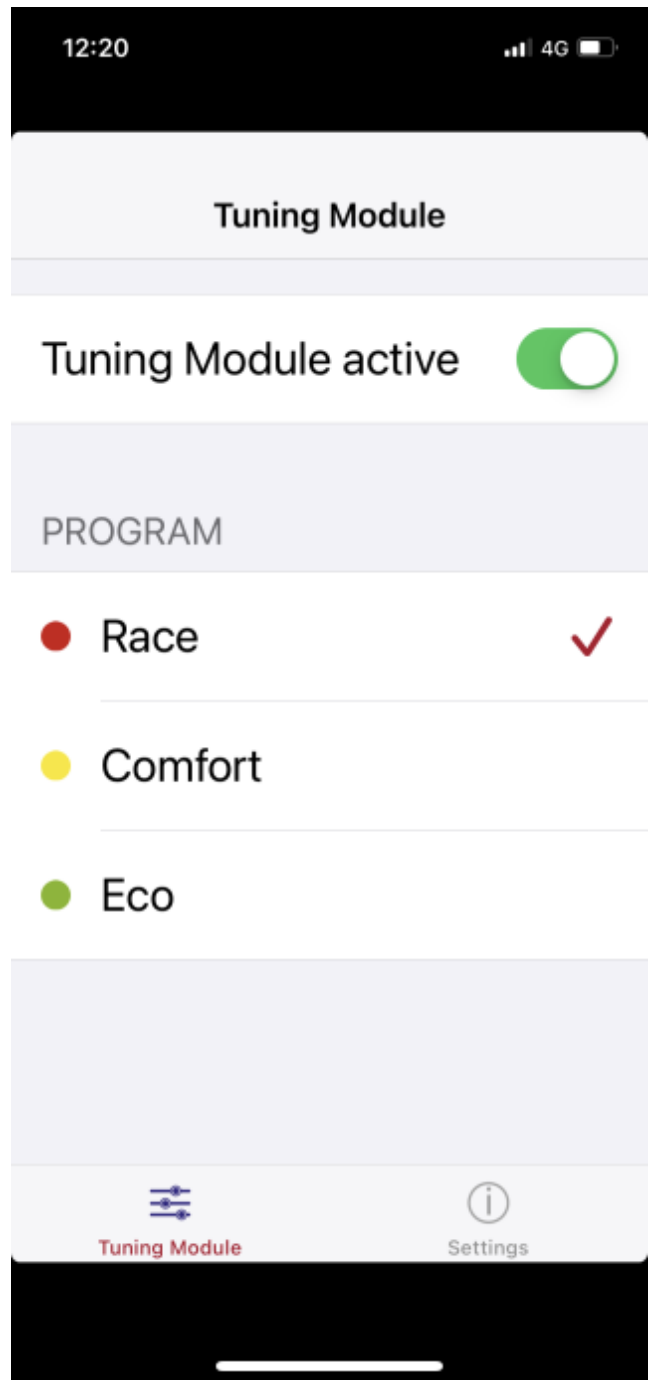
COMFORT – approx. 20% less (all values) compared to RACE with a later onset of performance and an earlier drop

ECO – approx. 30% less (all values) compared to RACE with a later and softer onset of performance and an earlier drop compared to COMFORT

If desired the extra power can be easily switched on or off with your smartphone, even while driving. Also switching the different performance maps while driving is possible.

Our app includes a configurable warm-up timer, so the pilot can decide how long warming up is needed before using the engine tuning.

It is also possible to update the firmware worldwide.





## **Pairing the dÄHler Engine Performance Module**

To activate the pairing mode there must be voltage on the device.

You can either start the engine, switch on the ignition or connect the device to the programming tool (with the computer on the desk) without a vehicle, so, you can check every single device in stock for the correct Bluetooth function.

Press both buttons for 5 seconds to put the device into pairing mode. The device is in pairing mode for approx. 25 seconds.

To display the device on the mobile phone or to find it in pairing mode, there are two things to consider:

### 1. iPhone

Unfortunately, an iPhone cannot display the device. To do so, the app must be opened after activating the pairing mode. Only the app can display the device when using an iPhone.

### 2. Android

This should be different for an Android device. Android phones usually show all Bluetooth devices that are currently in the vicinity.

We therefore recommend testing the devices and their visibility in advance with the programming tool connected to the computer and using an Android device.

### Info:

Theoretically you can connect and list over 200 devices with the app. As soon as you get into a different vehicle the app should search and find the matching device which was connected before.

### Trouble shooting:

Uninstall the app, restart the phone, reinstall the app and sign in again (don't register again – note email and password, in case you use one).

Clear all Bluetooth logs on the phone and try again.

Delete all Bluetooth logs on the device:

To do this, supply the device with voltage. Press both buttons for 5 seconds to put the device into pairing mode. Wait approx. 1 second and press both buttons again for 5 seconds. The device is closed again and all logs are deleted. The software remains completely unaffected by this process.