GÄN

SCHWARZ. SCHNELL. SICHER.

# GÄN GTL

SCHWARZ. SCHNELL. SICHER.

# *TABLE OF CONTENTS*

INTRODUCTION.....5

SCOPE OF DELIVERY.....6

GANTUNING APP DOWNLOAD.....7

BEFORE INSTALLATION.....9

CONNECTING TO SENSORS.....11

COMMON RAIL ENGINE. 1 CHANNEL CONNECTION.....13

COMMON RAIL ENGINE. 2 CHANNEL CONNECTION.....16

COMMON RAIL ENGINE. 3 CHANNEL CONNECTION.....19

TURBO PETROL ENGINE. 1 CHANNEL CONNECTION.....23

TURBO PETROL ENGINE. 2 CHANNEL CONNECTION.....26

TURBO PETROL ENGINE. 3 CHANNEL CONNECTION.....29

CONNECTING GAN GTL TO THE WIRING HARNESS.....33

CONNECTING GAN GTL TO A SMARTPHONE.....34

**INSTALLING GAN GTL UNDER THE HOOD OF THE CAR.....36**

**COMPLETING THE INSTALLATION.....37**

**USING THE GAN APP.....38**

USING THE GAN APP.....38

DRIVING MODES.....39

SETTINGS: MY VEHICLE.....40

SETTINGS: WARM-UP.....40

SETTINGS: ENGINEERING MENU/CUSTOM BY GAN.....41

SETTINGS: ENGINEERING MENU/CUSTOM BY USER.....41

**TECHNICAL CHARACTERISTICS.....43**

# *INTRODUCTION*

Dear customer,
Welcome to the GAN high tech world. You can feel like a racing car driver with a whole team working for you. We are this team and we are always beside you. The team of designers tried to create an ideal and beautiful device that deserves to be called GAN GTL and to belong to you. The team of engineers tuned the software for your vehicle as precise as possible, so that you could always be the first.

***Your GAN team***

# SCOPE OF DELIVERY

## TUNING MODULE GAN

individually customized

## WIRING HARNESS

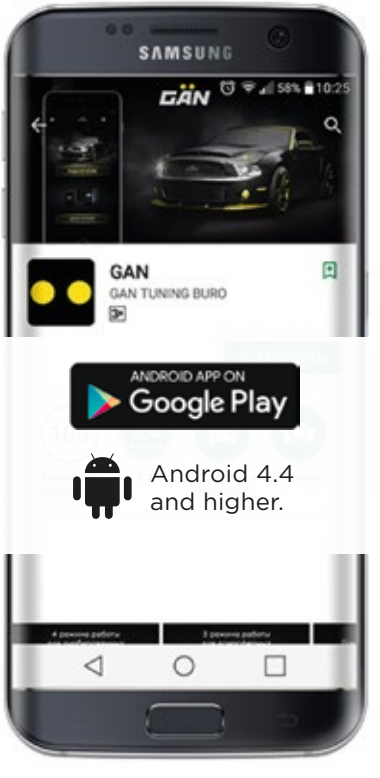
Individually customized wiring harness*

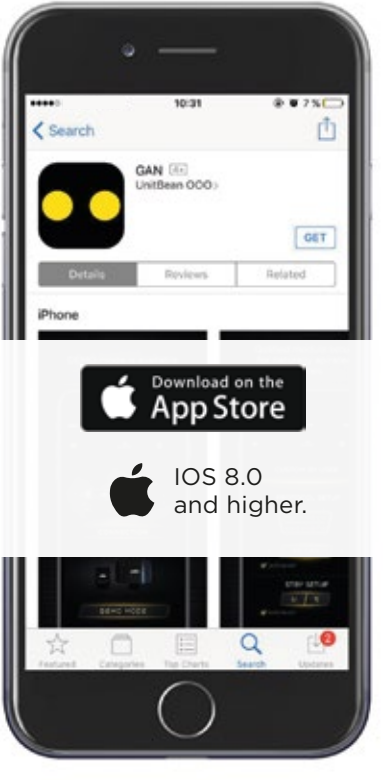
- 2 free tune files**
- *INSTALLATION GUIDE*
- *DEACTIVATION PLUG*
  for restoring the vehicle to its factory settings without removing the wiring harness.
- *CABLE TIES*
  designed to install GAN GTL and wiring harness under the hood.

* The picture of the wiring harness may differ from the delivered product as it is customized for your car.
* * GAN GTL can be re-tuned to five different cars; tune files are stored on the server.

## *GANTUNING APP DOWNLOAD*

1. The GANTUNING APP is free for downloading from the APP Store and Google Play and is compatible with the following operating systems: iOS 8.0 and higher and Android 4. 4 and higher.



2. For Apple (iPhone), open the APP Store and enter GANTUNING in the search box. For Android, open Google Play and enter GANTUNING in the search box.

3. Download and install the GANTUNING App on your Smartphone.

4. Start the GANTUNING App by clicking the icon on your Smartphone.

5. Further work with the application will continue after GAN GTL has been installed in your vehicle (page 34).

# *BEFORE INSTALLATION*

## *ATTENTION! IMPORTANT INFORMATION*

1. If the engine is hot, wait until the engine cools down to avoid the risk of injury.

2. Open the hood, close and lock the doors of the vehicle. For vehicles with a keyless system, place the key at the distance of 7- 10 meters from the car.

3. Wait 5-10 minutes after you have locked your vehicle. It will put the car in "sleeping mode" and will cut off the power. If you don't wait 5-10 minutes, the engine control unit can detect a circuit break and activate a Check Engine light on the dashboard. This is not a problem, but it's better to avoid it!

4. Before connecting the wiring harness to the sensors, it is necessary to remove the engine cover. The engine cover can be attached in three ways:

– With bolts. Loosen the bolts counter clockwise.

– With clips, invisibly located on the bottom of the cover. Just jiggle the cover and pull it up. It will get released from special ball pins.

– With latch clips, located on the top of cover. In this case press the inner part of the clip to loosen the latch. Then jiggle the cover and pull it up.

5. In some cars, the engine cover can be additionally fixed with the oil-filler cap. In this case loosen the oil-filler cap, remove the engine cover and place the oil-filler cap back so that dirt and foreign objects don't get into the engine.

# CONNECTING TO SENSOR/SENSORS

**ATTENTION! IMPORTANT INFORMATION**

1. The tuning module connection scheme is individual for each car. Take the wiring harness from the box and determine how many sensors you need to connect to. It can be 1, 2, or 3 channel connection. Find further instructions specifically for your connection scheme in the installation guide.

2. Installation guides for common-rail and turbo petrol engines are different, that's why find instructions particularly for your type of engine.

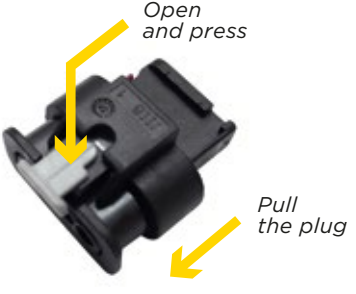
3. The engine in the car can be mounted both longitudinally and transversely. The image of the engine in this manual may differ from the one in your car. However, the installation steps are no different. Please check your e-mail box as we will send you the images of your particular engine.

4. There are several types of plugs with different locking clips:
   - Press locking clip.
   - Pull locking clip.

## *Variant **A** – press locking clip:*

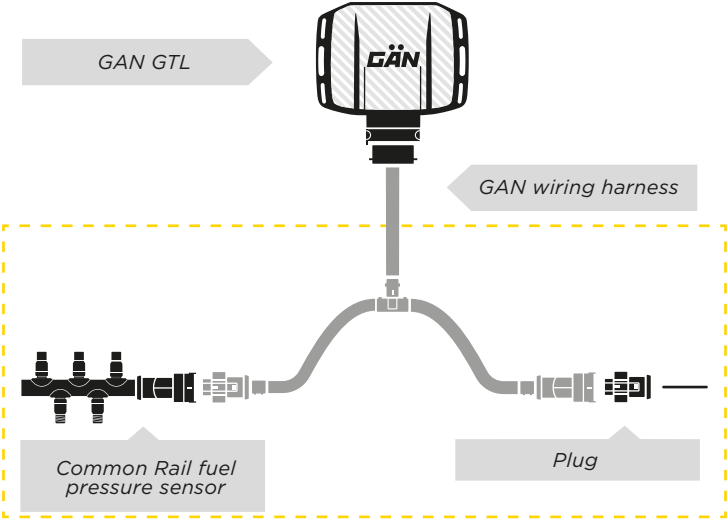
## *Variant **B** – pull locking clip:*

*Locking clip is closed*




*Locking clip is open*

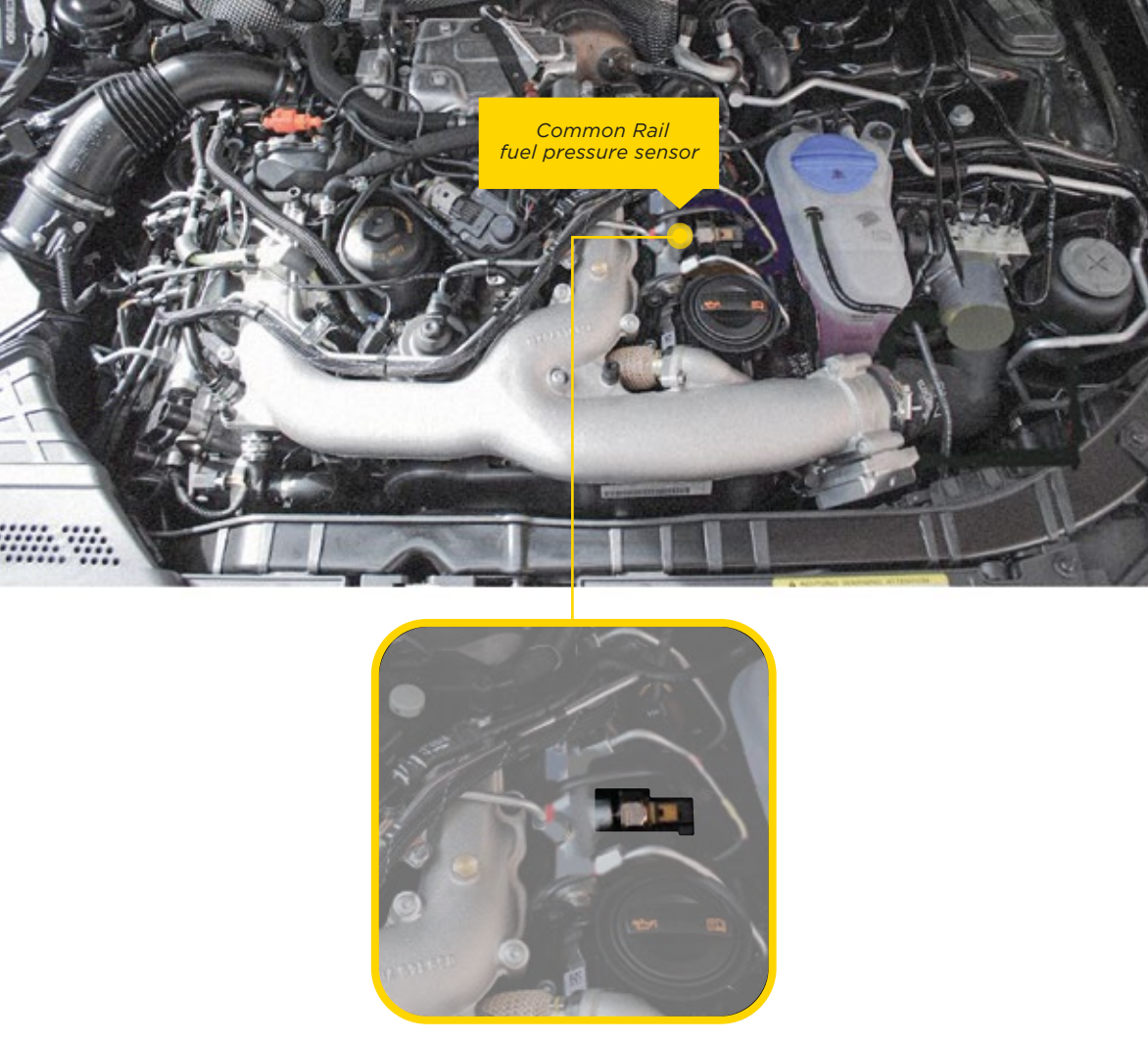
# COMMON RAIL ENGINE
# 1 CHANNEL CONNECTION



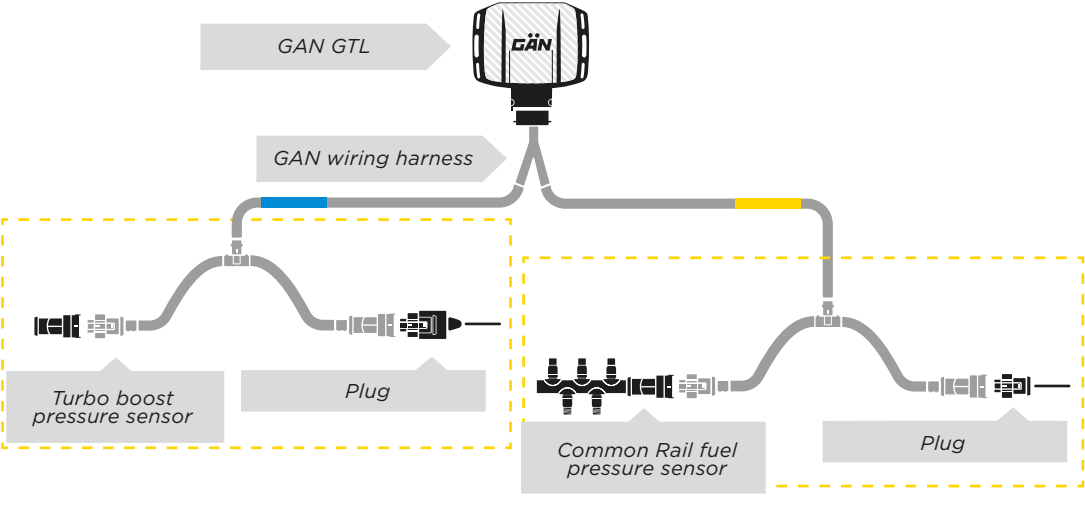
In this case, you will be connecting your device to the ***Common Rail fuel pressure sensor***. This sensor is located on the fuel rail that looks like a long thick tube. This rail can be easily found because it has a few metal tubes of a smaller diameter attached to it from each cylinder. Often times the sensor is located in the end of the fuel rail and looks like a large nut with the connector in the middle (see picture).

Now remove the plug from the fuel pressure sensor by gently pressing the locking clip (see page 12) while removing the plug from the sensor. Take the ***GAN wiring harness*** from the GAN delivery kit. It has one channel for connection. Now connect one part of the ***GAN wiring harness*** to the fuel pressure sensor and the second part to the disconnected plug. Make sure the plugs are properly fixed. A "Click" sound should be heard when you connect the plugs. In this way, the GAN module will be connected to the first sensor. Check the connection by pulling the connector.

*Further installation steps are on page 33 (Section "Connecting GAN GTL to the wiring harness")*

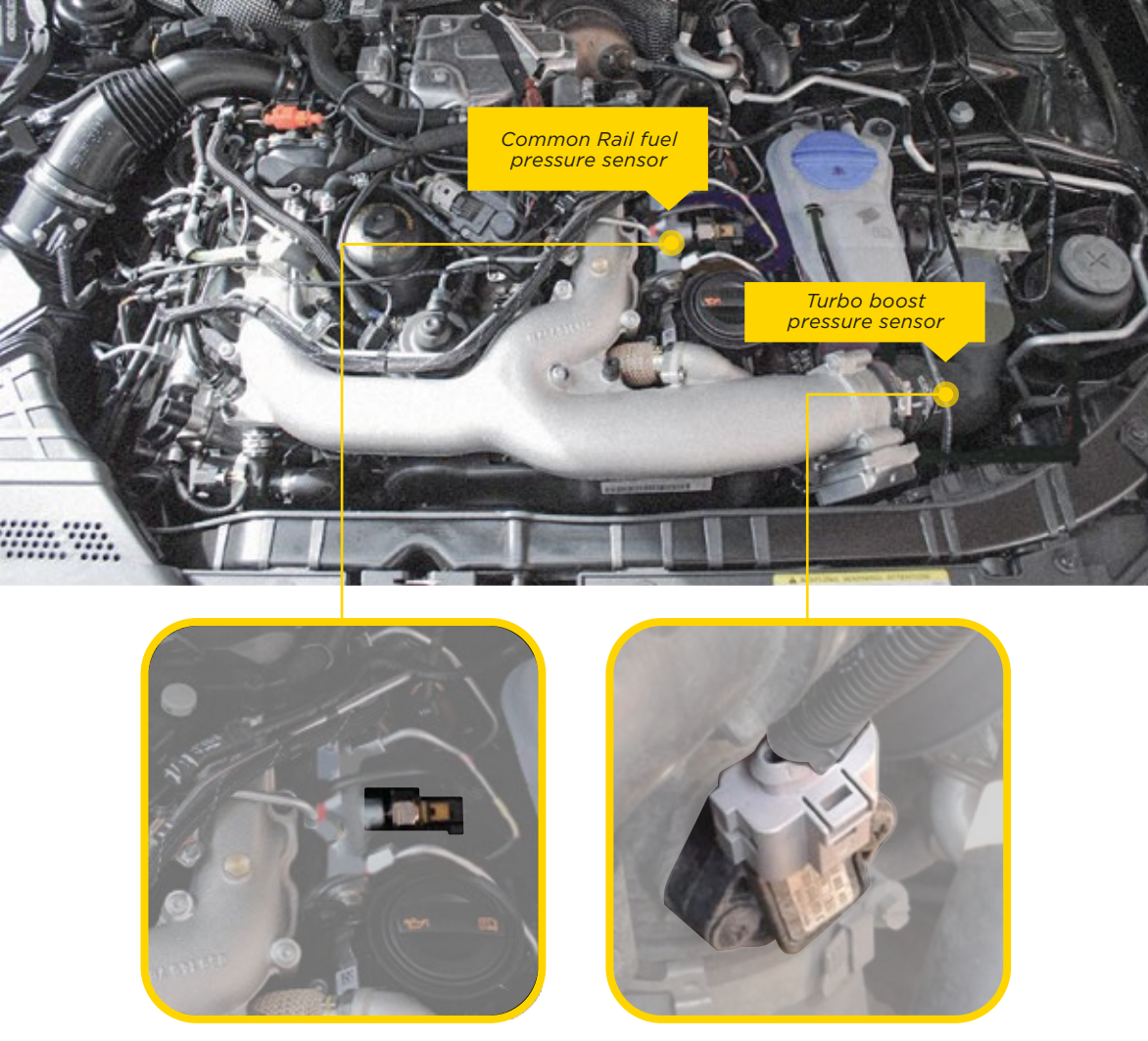

Common Rail
fuel pressure sensor

# COMMON RAIL ENGINE 2 CHANNEL CONNECTION

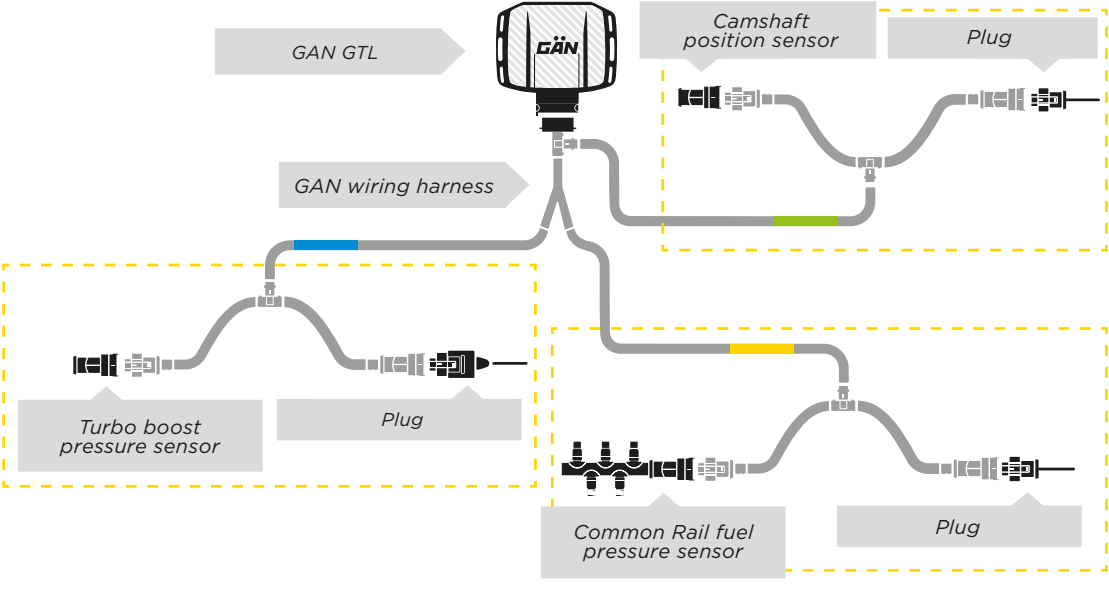


In this case, you will be connecting your device to the ***Common Rail fuel pressure sensor*** and ***turbo boost pressure sensor***. The ***Common Rail fuel pressure sensor*** is located on the fuel rail that looks like a long thick tube. This rail can be easily found because it has a few metal tubes of a smaller diameter attached to it from each cylinder. Often times the sensor is located in the end of the fuel rail and looks like a large nut with the connector in the middle (see picture).
Now remove the plug from the fuel pressure sensor by gently pressing the locking clip (see page 12) while removing the plug from the sensor. Take the ***GAN wiring harness*** from the GAN delivery kit. This wiring harness has two channels for connection: ***Yellow*** and ***Blue***. Now connect one ***yellow*** part of the ***GAN wiring harness*** to the fuel pressure sensor and the second part of the ***yellow*** plug to the disconnected plug. Make sure the plugs are properly fixed. A "Click" sound should be heard when you connect the plugs. In this way, the GAN tuning module will be connected to the first sensor. Then find the ***turbo boost pressure sensor***. It is located on the plastic pipe (of approximate diameter of 80 mm), coming from the turbine to the intake manifold up to the throttle. Remove the plug from the ***turbo boost pressure sensor***. Connect one part of the blue ***GAN wiring harness*** to the ***turbo boost pressure sensor*** and the second blue part to the disconnected plug. Make sure the plugs are properly fixed. A "Click" sound should be heard when you connect the plugs. In this way, the GAN tuning module will be connected to the second sensor. Check the connection by pulling the connector.

*Further installation steps are on page 33 (Section "Connecting GAN GTL to the wiring harness")*


Common Rail fuel pressure sensor
Turbo boost pressure sensor

# COMMON RAIL ENGINE
# 3 CHANNEL CONNECTION



Camshaft position sensor

Common Rail fuel pressure sensor

Turbo boost pressure sensor

**20** *Common rail engine. 3 channel connection*

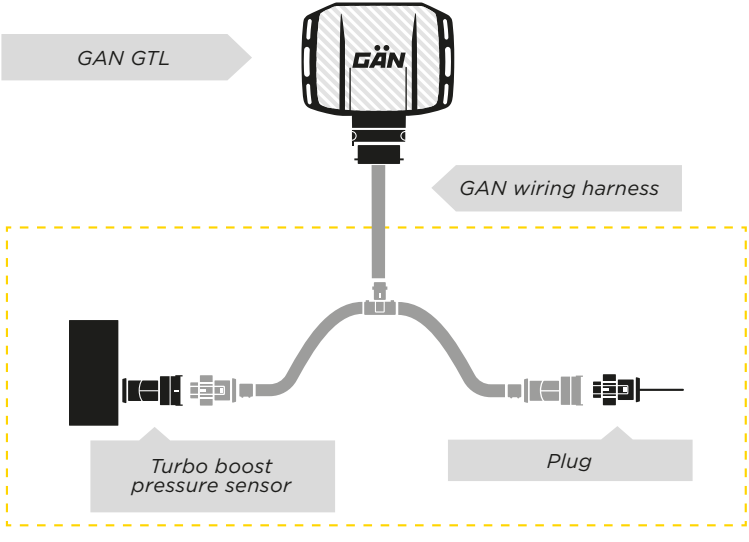
In this case, you will be connecting your device to the ***Common Rail fuel pressure sensor*** and ***turbo boost pressure sensor*** and ***camshaft position sensor***. The ***Common Rail fuel pressure sensor*** is located on the fuel rail that looks like a long thick tube. This rail can be easily found because it has a few metal tubes of a smaller diameter attached to it from each cylinder. Often times the sensor is located in the end of the fuel rail and looks like a large nut with the connector in the middle (see picture).

Now remove the plug from the fuel pressure sensor by gently pressing the locking clip (see page 12) while removing the plug from the sensor. Take the GAN wiring harness from the GAN delivery kit. This wiring harness has three channels for connection: ***Yellow***, ***Blue*** and ***Green***. Now connect one yellow part of the ***GAN wiring harness*** to the fuel pressure sensor and the second part of the ***yellow*** plug to the disconnected plug. Make sure the plugs are properly fixed. A “Click” sound should be heard when you connect the plugs. In this way, the GAN tuning module will be connected to the first sensor. Then find the ***turbo boost pressure sensor***. It is located on the plastic pipe (of approximate diameter of 80 mm), coming from the turbine to the intake manifold up to the throttle.

Remove the plug from the ***turbo boost pressure sensor***. Connect one part of the ***blue GAN wiring harness*** to the ***turbo boost pressure sensor*** and the second blue part to the disconnected plug. Make sure the plugs are properly fixed. A "Click" sound should be heard when you connect the plugs. In this way, the GAN tuning module will be connected to the second sensor. Check the connection by pulling the connector. Next, locate the third sensor, ***camshaft position sensor***. Remove the series plug from the ***camshaft positon sensor***. Connect one ***green*** part of the GAN wiring harness to the ***camshaft position sensor*** and the second ***green*** part to the disconnected plug. Make sure the plugs are properly fixed. A "Click" sound should be heard when you connect the plugs. In this way, the GAN tuning module will be connected to the third sensor.

*Further installation steps are on page 33 (Section "Connecting GAN GTL to the wiring harness")*

# TURBO PETROL ENGINE
# 1 CHANNEL CONNECTION

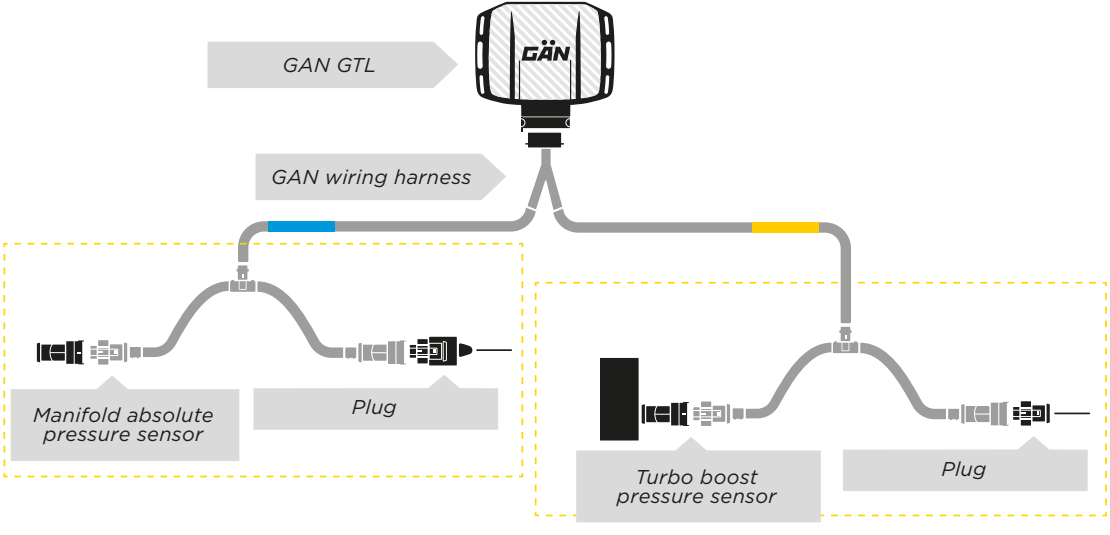


In this case, you will be connecting your device to the ***turbo boost pressure sensor***. It is located on the plastic pipe (of approximate diameter of 80 mm), coming from the turbine to the intake manifold up to the throttle. Remove the plug from the ***turbo boost pressure sensor*** by gently pressing the locking clip (see page 12) while removing the plug from the socket. Take the ***GAN wiring harness*** from the delivery kit. It has one channel for connection. Connect one part of the ***GAN wiring harness*** to the sensor and the second part to the disconnected plug. Make sure the plugs are properly fixed. A “Click” sound should be heard when you connect the plugs. In this way, the GAN tuning module will be connected to the first sensor. Check the connection by pulling the connector.

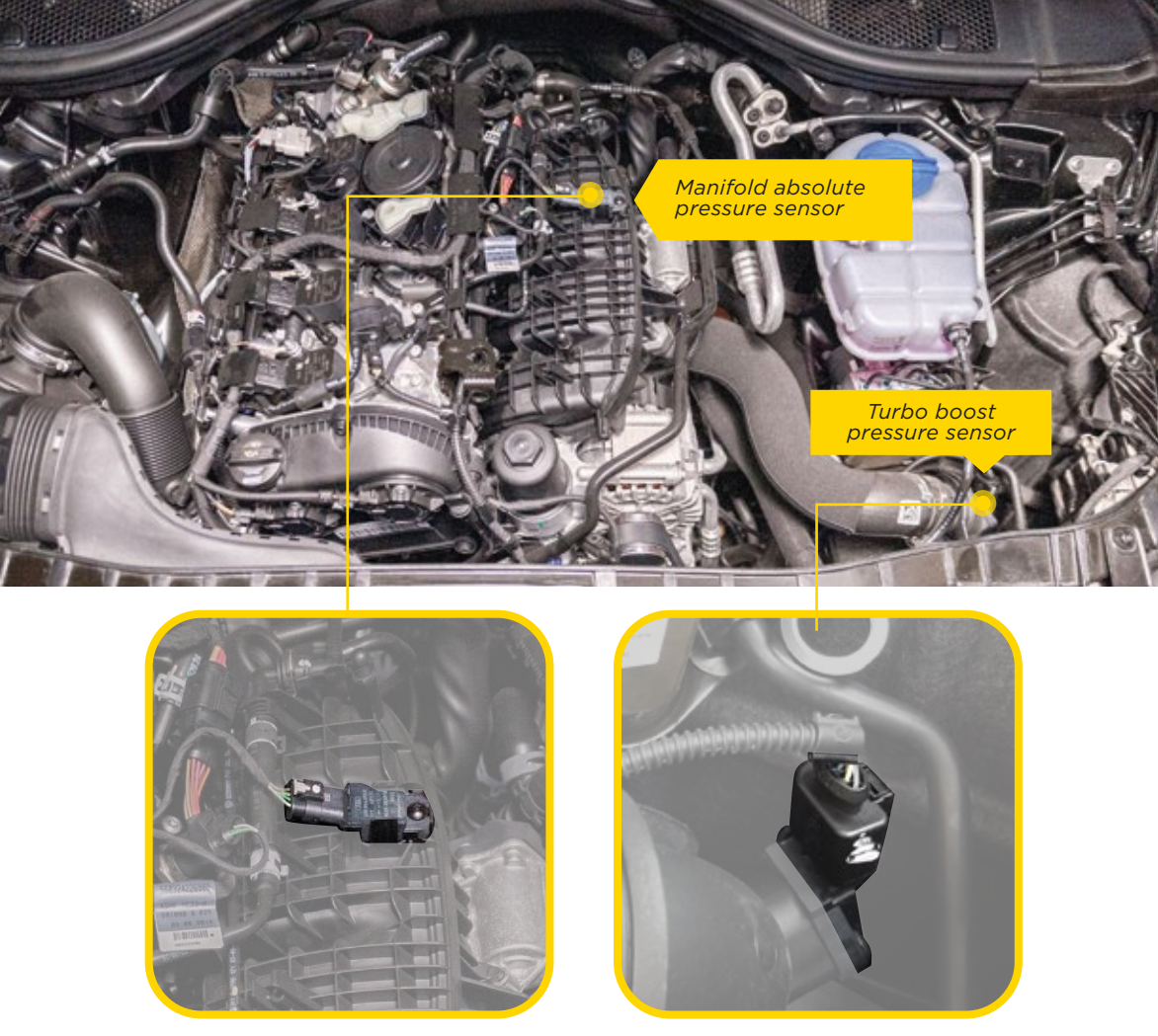
*Further installation steps are on page 33 (Section “Connecting GÄN GTL to the wiring harness”)*

Turbo boost
pressure sensor

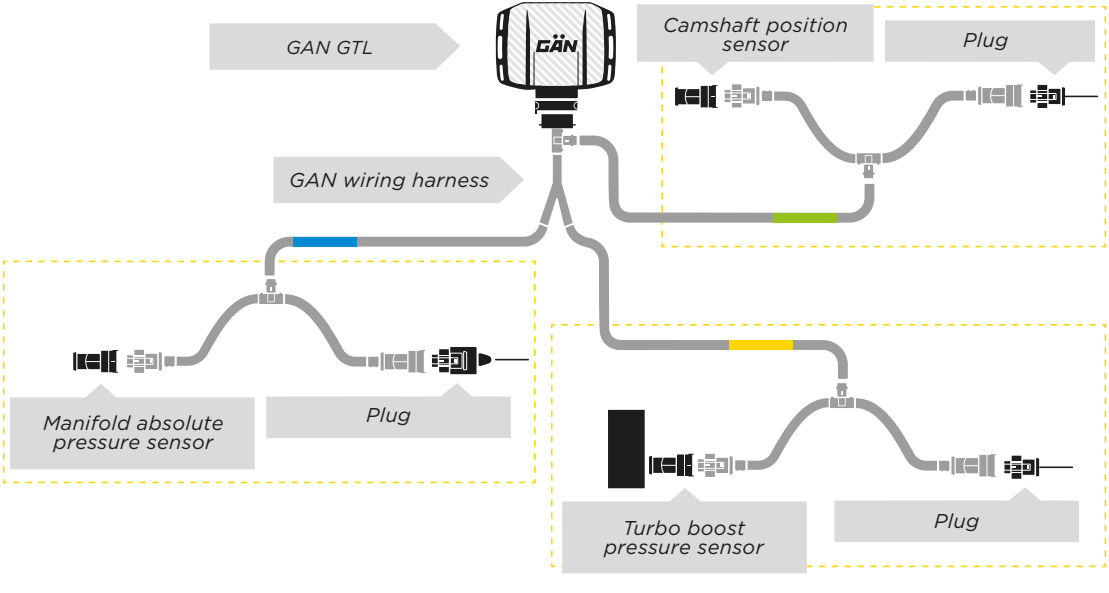
# TURBO PETROL ENGINE
# 2 CHANNEL CONNECTION



In this case you will be connecting your device to the ***turbo boost pressure sensor*** and ***manifold absolute pressure sensor***.
It is located on the plastic pipe (of approximate diameter of 80 mm), coming from the turbine to the intake manifold up to the throttle. Remove the plug from the ***turbo boost pressure sensor*** by gently pressing the locking clip (see page 12) while removing the plug from the socket. Take the ***GAN wiring harness*** from the delivery kit. It has a two channel connection: ***yellow*** and ***blue***. Connect one ***yellow*** part of the ***GAN wiring harness*** to the ***turbo boost pressure sensor*** and the second ***yellow*** part to the disconnected plug. Make sure the plugs are properly fixed. A “Click” sound should be heard when you connect the plugs. In this way, the GAN tuning module will be connected to the first sensor. Check the connection by pulling the connector. Then, find the ***manifold absolute pressure sensor.*** It is located on the intake manifold behind the throttle. Remove the plug from the ***manifold absolute pressure sensor***. Connect one blue part of the GAN wiring harness to the manifold absolute pressure sensor and the second blue part to the disconnected plug. Make sure the plugs are properly fixed. A “Click” sound should be heard when you connect the plugs. In this way, the GAN tuning module will be connected to the second sensor. Check the connection by pulling the connector.


Manifold absolute pressure sensor
Turbo boost pressure sensor

# TURBO PETROL ENGINE
# 3 CHANNEL CONNECTION



Camshaft position sensor

Manifold absolute pressure sensor

Turbo boost pressure sensor

In this case, you will be connecting your device to the ***turbo boost pressure sensor, manifold absolute pressure sensor*** and ***camshaft position sensor***.
It is located on the plastic pipe (of approximate diameter of 80 mm), coming from the turbine to the intake manifold up to the throttle. Remove the plug from the ***turbo boost pressure sensor*** by gently pressing the locking clip (see page 12) while removing the plug from the socket. Take the ***GAN wiring harness*** from the delivery kit. It has a three channel connection: ***yellow***, ***blue*** and ***green***. Connect one ***yellow*** part of the GAN wiring harness to the ***turbo boost pressure sensor*** and the second ***yellow*** part of the wiring harness to the disconnected plug. Make sure the plugs are properly fixed. A “click” sound should be heard when you connect the plugs. In this way, the GAN tuning module will be connected to the first sensor. Check the connection by pulling the connector. Then, find the ***manifold absolute pressure sensor***. It is located on the intake manifold behind the throttle. Remove the plug from the ***manifold absolute pressure sensor***. Connect one ***blue*** part of the ***GAN wiring harness*** to the ***manifold absolute pressure sensor*** and the second ***blue*** part of the wiring harness to the disconnected plug. Make sure the plugs are properly fixed. A “click” sound should be heard when you connect the plugs.

In this way, the GAN tuning module will be connected to the second sensor. Check the connection by pulling the connector. Next, find the third sensor, the ***camshaft position sensor***. As a rule, this sensor is located on the top or alongside of the engine cylinder head. Remove the plug from the ***camshaft position sensor***. Connect one ***green*** part of the ***GAN wiring harness*** to the ***camshaft position sensor*** and the second ***green*** part to the disconnected plug. Make sure the plugs are properly fixed. A “click” sound should be heard when you connect the plugs. In this way, the GAN tuning module will be connected to the third sensor.

*Further installation steps are on page 33 (Section “Connecting GAN GTL to the wiring harness”)*

## CONNECTING GAN GTL TO THE WIRING HARNESS

After connecting the wiring harness to all of the sensors, it is necessary to connect your GAN GTL module to the wiring harness. To do so, you need to pull out the locking clip on the big FCI plug and remove the “deactivation plug”. Replace the “Deactivation plug” with the GAN tuning module and push the lock

**ATTENTION! IMPORTANT INFORMATION!**

back. The “Deactivation plug” is used for restoring the vehicle to its factory settings without removing the wiring harness. In order to restore the car to its factory settings, just replace GAN GTL with the “Deactivation plug”. If you deactivate your tuning module, wait 5-10 minutes after you have turned the ignition off (see page 9).

# *CONNECTING GAN GTL TO A SMARTPHONE*

1. Turn the ignition on. Don't start the engine.

2. You need internet connection in order to set up GAN GTL in the application on your Smartphone.

3. Start the GANTUNING App on your Smartphone.

4. You will be asked to switch Bluetooth on (if switched off), click OK.

5. Click the "Connection" button on your main screen. .

6. After searching for devices (it can take up to two minutes), your GAN GTL will be available on the screen. The last three digits of the serial number can be found in the device name. Choose it and click OK.

7. When connecting, use the last six digits of the serial number of the device as a password. The serial number is located on the backside of the device's plug, as well as in the installation guide and on the box.

| ***Serial number*** | | ***Bluetooth PIN*** |
|---|---|---|
| 210117**912745** | → | **912745** (example) |

8. If your device has no vehicle specific data installed or you would like to program it for another vehicle, choose your vehicle in the program, then necessary settings will be sent to the device.

9. After all the settings have been downloaded, your Smartphone will display the driving modes of the device. Your car will be displayed on the screen. The Dynamic mode will be activated.

10. Turn the ignition off and finish the installation process (see Section “GAN GTL Installation under the hood of the car”, page 36).

The device has a limit of five tune files for different vehicles. Retuning to the previously selected vehicle doesn’t count.

***ATTENTION!*** *In order to use GAN GTL on another vehicle, you may need another wiring harness which should be purchased separately.*

* *The device can be tuned only for a car available in the database for this particular type of device.*

## *INSTALLING GAN GTL UNDER THE HOOD OF THE CAR*

Find a suitable place under the hood of the car for your GAN GTL. Keep in mind that the wiring harness and GAN GTL must be placed away from the hot engine components (exhaust manifold, turbine) and rotating parts (drive belts, cooling fan).

Attach the wiring harness and GAN GTL using the cable ties, included in the delivery kit. It is forbidden to attach the wiring harness and GAN GTL to the tubes (brake, hydraulic booster, cooling system, air conditioning system), as this could result in abrasion. It is recommended to attach the device to the cabling or elements of the carbody using the supplied cable tie. Cut off the excess of the cable tie with a wire cutter.

## *COMPLETING THE INSTALLATION*

Install the cover back on the engine and close the hood (see Section Before Installation). The installation process is now complete and your device is ready to use.

# USING THE GANTUNING APP

## OPERATING MODES

You can control the power of your car with one click. Thanks to the app you can change the settings of your GAN GTL upon your desire. GAN GTL device has 3 main driving modes.

*DYNAMIC* – mode of optimal power increase (by default)*;*

*ECO* – mode of fuel saving*;*

*STOCK (OFF)* – the device is off.

You can change the driving mode in the GANTUNING mobile APP on your Smartphone. To learn more about how to connect, see Section “CONNECTING GAN GTL TO A SMARTPHONE”. If the “Warm up” function is activated, your Smartphone displays a countdown timer. The warm up is designed to protect the engine from overloading. When the “Warm up” is on, GAN GTL doesn’t communicate with the engine, allowing it to reach the optimal operating temperature.

### *MENU*

The menu consists of the following sections:

*START* – start screen for connecting the application to the GAN GTL device.

*DRIVING MODES* – main screen for controlling the driving modes of the device.

*SETTINGS* – additional and advanced settings of the device.

*INSTALLATION GUIDE* – short installation guide.

*REFERENCE* – frequently asked questions.

*STORE* – link to the OLINE – STORE.

### *SETTINGS > MY VEHICLE*

In this section you can change tuning files of GAN GTL in case if you installed your device on another vehicle. You can give a name to your device so you can easily find it from the list of available devices. Just click on the current name on MY VEHICLE screen and enter a new name.

### *SETTINGS > WARM UP*

You can adjust the time frame (from 1 to 20 minutes) for GAN GTL to keep the power low. It is necessary for the engine protection in cold seasons.
At temperatures lower than 0° C the recommended warm up time is minimum 10 min. If the function “Warm up” is activated, your Smartphone displays a countdown timer.

### *SETTINGS > ENGINEERING MENU > CUSTOM BY GAN*

If you have any issues with the device operation and you can't set it up in the manual mode, our technicians can set up vehicle specific settings, which can be downloaded and applied by clicking this button. You can use this function only after you consult with our technical support.

### *SETTINGS > ENGINEERING MENU > CUSTOM BY USER*

This option is used to manually adjust your device to increase or decrease the power gain as well as in case of malfunction.
At the top of the screen, you can choose the channel (loop) of regulation, and below, with the help of control instruments, you can do necessary fine tuning. The "Synchronization" check mark allows you to apply the same settings for all of the channels.

*POWER.* By moving the regulator from left to right, you can increase power and reduce fuel economy.

*START OF ADJUSTMENT.* . With this regulator you can move the starting point of the adjustment range. The more the regulator is set to the right, the later the zone of power increase begins.

*END OF ADJUSTMENT.* With this regulator you can move the end point of the adjustment range. The more the regulator is set to the right, the later the zone of power increase finishes.

The letter D corresponds to the settings for this channel.

***ATTENTION! IMPORTANT INFORMATION***

Use of manual settings is allowed only after a consultation with the GAN technical support. Improper adjustment can activate a Check engine light and turn the mode for engine power limit on. If this happened, please return to the recommended settings by clicking ***"DYNAMIC"*** button on the ***"DRIVING MODES"*** screen.

## *TECHNICAL CHARACTERISTICS*

1. Dimensions (L x W x H): 97 mm x 111 mm x 36 mm;

2. Nett weight: 205 g.;

3. Material- aluminum housing with carbon lid;

4. Voltage Range - 5 V-25 V;

5. Current: in operating mode- 20 mA;

6. Water resistance- IP 67;

7. Operating temperature: -40 °C - + 125°C*

**Stable operation of Bluetooth -10 °C – + 65°C*

## CONTACTS

Business hours:
Monday to Friday from 9:00 to 18:00

Headquarters address:
Torstraße 177 10115 Berlin Germany
**e-mail: support@gantuning.com**
**www.gantuning.com**

USA and Canada:
45704 Winding Branch Terrace Sterling
VA USA, 20166
tel: +1 402 866 01 58
**e-mail: support@gantuning.us**
**www.gantuning.us**

UM-GTL-ENG-V1