Installation Notes

Universal complete set active sound incl. Sound Booster
Audi, BMW, Hyundai, Mercedes, Opel, Seat, Skoda, VW
and Other

v1.10 (15.04.2020)

Contents

1 Liability Exclusion

Dear Customer,

Our cable sets are developed according to the connection- and circuit diagrams of the corresponding car manufacturers. Before the serial production, the cable sets will be adjusted and tested on an original vehicle. Therefore, the integration into the vehicle electronics follows the guidelines provided by the car manufacturer. Our installation instructions correspond to what is common in the vehicle electric/electronic regarding the required pre-understanding and the accuracy of the description in text and picture. They have proven its worth in practice hundreds of times.

If you should experience any difficulties while installing one of our products, we are available to provide support via phone or email. Additionally, we offer you to execute the installation in our workshop in Bad Segeberg.

Costs, arising from third parties assigned with the installation of our products, are not being covered by us. We will only compensate the proven costs of the assembly and the costs of the disassembly of the defective product, if it turns out that there is an issue with our product. We limit the reimbursement of costs up to 110 Euro gross and reserve the right to verify the claim in our workshop in Bad Segeberg. The costs for shipping will be refunded if the claim is justified.

We made the experience, that every professional workshop that is equipped with the necessary diagnostic devices, the diagnostic software and the manufacturer's circuit diagrams, is able to find any possible defects in one of our products in a short period of time. The assembly and disassembly including troubleshooting the issue should therefore only take up to 60 minutes.

We also made the experience, that many professional workshops are not able to cope with the manufacturer's circuit diagrams and can't read common wiring schemes, which results in the calculation of several hours for the simplest installations. You will understand the fact, that we can neither take the risk of finding a reliable workshop for you, nor can we finance the training of the employees of your trusted workshop.

Costs, arising from purchasing missing parts or replacements for defective parts from other suppliers, are covered by us up to the amount that the subsequent delivery would have caused (saved expenses). According to the legal warranty law, there would be no reimbursement right, if there was no deadline for the subsequent fulfilling set or the deadline for a subsequent fulfilling hasn't expired.

That being said, if you have any problems during the installation or operation of one of our products call us, write us an email, send us the product or come by our workshop in Bad Segeberg with your vehicle. We are certain, that we can find a solution for any kind of concern.

Kind regards,
Your Kufatec GmbH & Co. KG Team

2 Copyright

Our installation and operation instructions, installation plans, software and other written and/or pictured documentations are protected by copyright.

The publication or distribution of these documentations is only permitted with a written approval of Kufatec GmbH & Co. KG.

3 General notes

While developing this product, your personal safety combined with the best operating service, modern design and an up-to-date production technique was especially taken into account.

Unfortunately, despite the utmost care injuries and/or damages might occur due to improper installation and/or use.

Therefore, please read the following instruction manual fully and thoroughly and keep it!

All articles of our production line pass through a 100% check – for your safety and security.

We reserve the right to carry out technical changes which serve the improvement at any time.

Depending on each product and purpose, it might be necessary to check each country's legal regulations before installing and starting it.

In case of warranty claims, the product has to be sent back to the seller in the original packaging with the attached bill of purchase and detailed defect's description. Please, pay attention to the manufacturers return requirements (RMA). The legal warranty directions are valid.

The warranty claim as well as the operating permission becomes invalid due to:

- unauthorized changes to the device or accessories which have not been approved or carried out by the manufacturer or its partners
- opening the casing of the device
- repairing the device on one's own
- improper use/operation
- brute force to the device (drop, willful damage, accident etc.)

During the installation, please pay attention to all safety relevant and legal directions. The device should only be installed by trained personnel or similarly qualified people.

In case of installation problems or problems concerning the functionality of the device, limit the time to approx. 0,5 hours for mechanical or 1,0 hours for electrical troubleshooting.

To avoid unnecessary costs and time-loss, send in an immediate support-request, via the Kufatec-contact-form (http://www.kufatec.de/shop/de/infocenter/).
In case of, let us know the following:

- Car chassis number/vehicle identification number
- Five-digit part number of the device
- Exact description of the problem
- Steps you have taken to solve the problem

4 Safety Instructions

The installation should only be performed by trained personnel. Only perform installations while in a voltage-free state. For example, disconnect the battery. Please pay attention to the instructions provided by the manufacturer.

- Never use bolts or nuts form the car's safety devices for installation. If bolts or nuts form the steering wheel, brakes or other safety devices are used for installation of the device, it may cause an accident.
- Use the device with a DC 12V negative ground car. This device cannot be used in large trucks which use a DC 24V battery. If it is used with a DC 24V battery, it may cause a fire or accident.
- Avoid installing the device in places that would restrict you from driving safe or where it could damage the car's other fittings.
- This device should only be used in combination with the mentioned vehicles. Only connections described within this instructions guide are allowed or required to use for installation.
- For damages caused by faulty installation, unsuitable connections or inappropriate vehicles, Kufatec GmbH & Co. KG assumes no liability.
- We advise you that these devices process data from the MOST – protocol of the vehicle. As the supplier of this device we don't know the overall system you are working with. If your device causes damage, due to other changes made to the vehicle, Kufatec GmbH & Co. KG assumes no liability.
- Kufatec GmbH & Co. KG supplier does not guarantee the use of the product for changes within a new vehicle series.
- If the car manufacturers don't agree with the installation of our device by reason of warranty, Kufatec GmbH & Co. KG assumes no liability. Please, check conditions and warranty before you begin the installation.
- Kufatec GmbH & Co. KG reserves the right to change the device specifications without notice.
- Subject to errors and changes.

5 Requirements for the intended use

Only use this device in its intended area.

In case of unprofessional installation, improper use or modification, the permission for the operation and the warranty claim will expire.

6 How to connect a cable to another

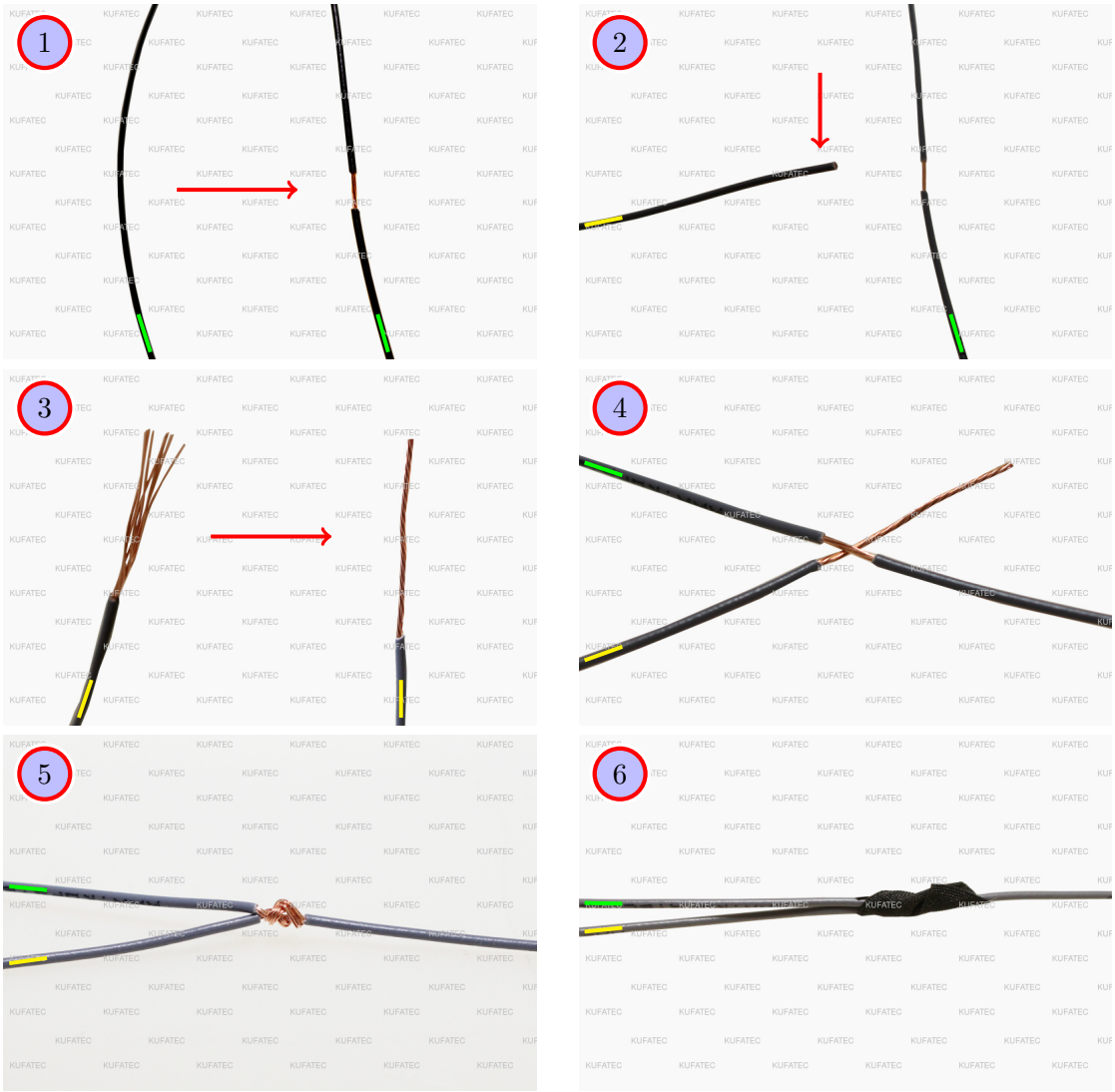


Figure 1: How to connect a cable to another

Table 1: How to connect a cable to another

No.	Work step	Note
1	Take the cable of the vehicle, to which you want to connect, (green marked here) and strip the insulation at one point with a suitable tool (cable stripper/cutter knife).	
2	Now take the cable of the cable set, which you want to connect, (yellow marked here) and strip the insulation at the end.	
3	Twirl the wires of the stripped cable together.	
4	Place the end of the cable you want to connect under the stripped point of the cable of the vehicle...	
5	... and wrap the cable you want to connect around the cable of the vehicle.	
6	Lastly, stick insulating tape around the connection point. Make sure that the isolation is put onto the connection professionally to prevent corrosion.	

7 Note Cable Inscription/Color

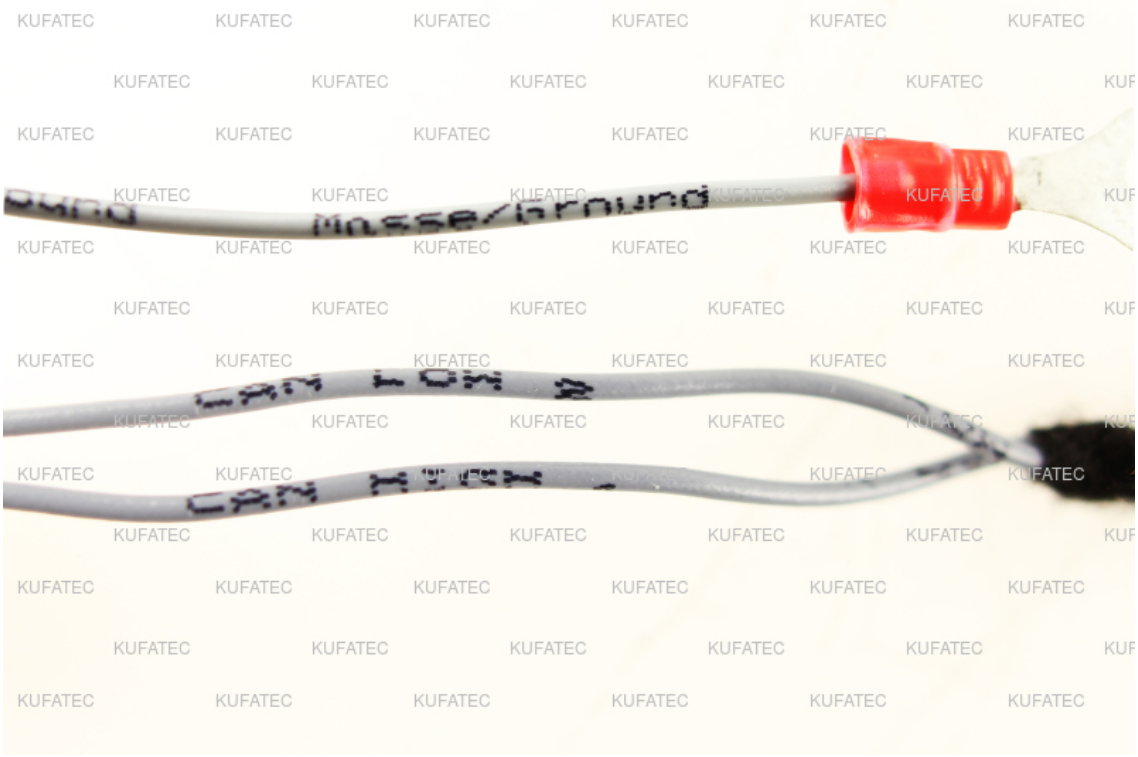


Figure 2: Cable Inscription

If the cable set consists of colored cables, connect the cables according to the color. If all cables of the cable set have the same color, connect the cables according to the cable inscription.

8 Important information for the Connection

Before connecting the control unit for engine noise generation and the sound booster module, you need to have done all cable connections. If this is not observed, it may lead a defect in the control unit for engine noise generation.

9 Connection Wiring set

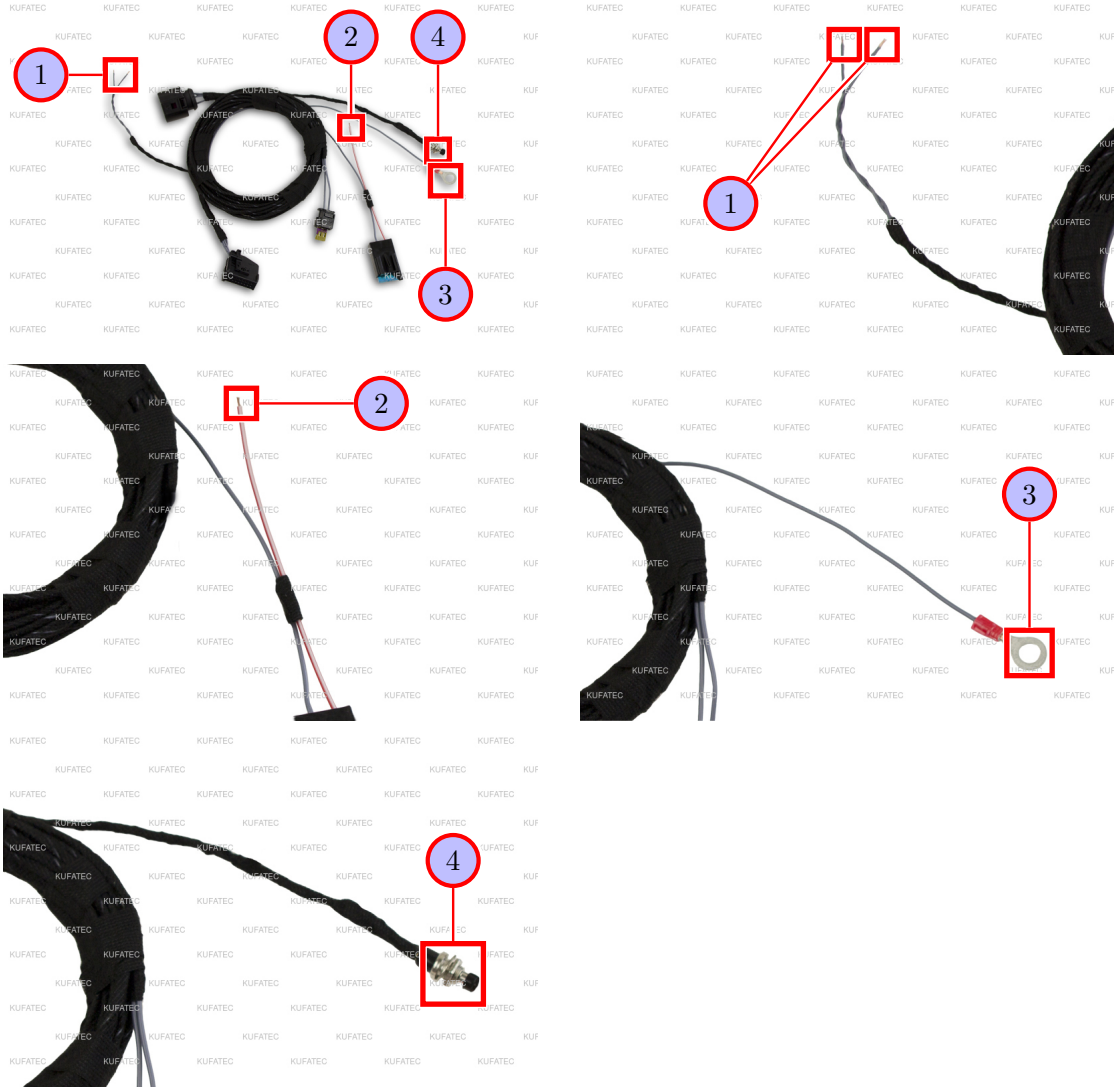


Figure 3: Connection Wiring set

Table 2: Instruction for the connection of the wiring set

No	Workstep	Note
1	These two cables must be connected to CAN High and CAN Low from the vehicle. It should be noted that it have to be connected to the engine CAN.	
	CAN High (black/white - or by imprint)	
	CAN Low (black/yellow - or by imprint	
2	This cable is used to connect to ignition plus/clamp 15 (red/white - or by imprint). Please measure by using a multimeter, which fuse place or which cable maintains ignition plus (clamp 15). If you have found place you need to connect this cable to this place.	
3	The ground cable (brown - or by imprint) must be mounted to a suitable ground point in the vehicle.	
4	This button is used to switch the sound profiles and can be mounted at any point. One of the favorit places is to mount thiss button on the driver's side in the footwell.	

10 Connection Wiring set PRO & EXTENDED

Figure 4: Connection Cable Set PRO & EXTENDED

Table 3: Connection Cable Set PRO & EXTENDED - Instructions

Nr.	Workstep	Note
1	This connection cable need to be layed and connected to the sound generator.	
2	Connect this cable to the sound module which is part of the scope of delivery.	
3	**PRO Variant**: Connect this plug to the control unit for engine sound generation.	
4	**EXTENDED Variant**: This adapter cable servers as a connection between the 8-pin connector (3) and the Maserati control unit for engine sound generation.	
5	**EXTENDED Variant**: Connect this plug to the Maserati control unit.	
6	**EXTENDED Variant**: External-Sound Module (ESM), this is the control unit for engine sound generation by Maserati.	

11 Installation Sound Generator

Figure 5: Installation Sound Generator

Table 4: Installation Sound Generator - Instructions

Nr.	Workstep	Note
1	Only if you have ordered the set inclusive the sound generator (**Outside Installation**).	
	This sound generator need to be mounted underneath the vehicle. For this purpose it is necessary to attach brackets to the sound generator to mount this at the underbody of the vehicle. For welding and grinding work on the sound generator must be noted, that the sound generator don't get too hot, otherwise the membrane could be damaged.	
2	Only if you have ordered the set inclusive the sound generator (**Inside Installation**).	
	The sound generator will be placed inside the vehicle (example: spare wheel recess). For this purpose it is necessary to drill / cut a matching hole for the outlet into the car body. After that the sound generator will be installed by using the marked flange.	
3	Only if you have ordered the set inclusive the Sound Generator Mini (**Installation at the bonnet**).	
	The Sound Generator Mini will be placed at the inside of the bonnet. Be sure that there is enough space, even if the bonnet is closed. The dimensions of the Sound Generator Mini are 6cm in diameter and 4cm in height. To attach it, you need the adhesive **Loctite EA 9492 Epoxy Adhesive** which is not included in the scope of delivery. Use the adhesive only on the white areas at the sound generator!	

12 Important Information on Connection Variants

- **The connection of the cable set must be carried out according to the manufacturer's wiring diagram. Please note the following note:**

  - **power supply** is connected to **Kl.15 ignition plus**.
  - **CAN line** must be connected to the motor CAN.

- **The following connections refer explicitly to the vehicle variant mentioned in the heading!**
  - Variant Range Rover
  - Variant Range Velar Rover
  - Variant Mercedes W203 (C-Class)
  - Variant Ford Raptor
  - Variant Jaguar (Fpace, XE, XF)
  - Variant Crafter 2F (VW)
  - Variant A6 4F (Audi)

13 Variation Range Rover: Connection CAN High/CAN Low

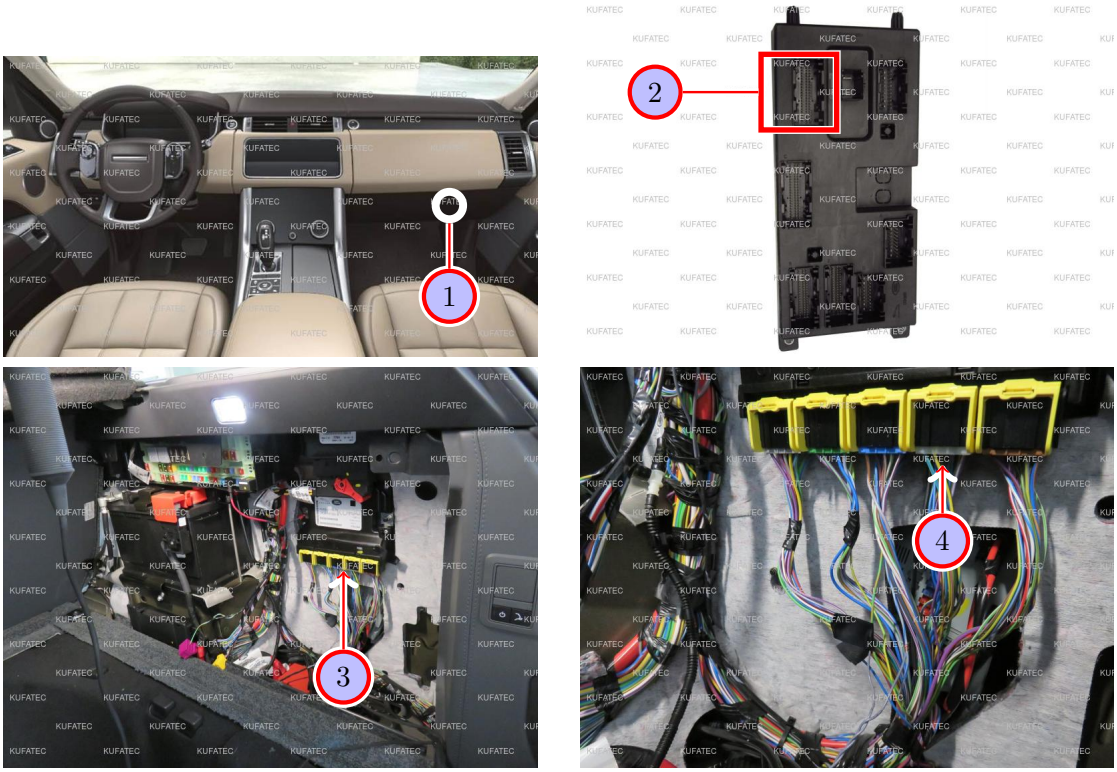


Figure 6: Connection CAN High/CAN Low (Variation Range Rover)

Table 5: Instructions to connect CAN High/CAN Low (Variation Range Rover)

No.	Work step	Note
	Variation A: Range Rover/Sport	
1	Connect the two CAN cables to the **PT-CAN**. It is located at the **plug C2BP01H** of the **body control module**. The body control module is located behind the glove compartment at the front bulkhead (interior).	
	In order to reach the control unit, reach behind the glove compartment from below. Alternatively, the glove compartment can be removed for a better access to the control unit.	
2	Loosen the **plug C2BP01H** from the body control module. Connect the two CAN cables as follows:	
	Connect **CAN-High (black/white)** to the cable **orange/green** in **Pin 42**.	
	Connect **CAN-Low (black/yellow)** to the cable **grey/blue** in **Pin 43**.	
!!	**Note:** Be aware that the colors of the CAN cables in Pin 42 and 43 can vary depending on the model year or the amenities.	
!!	**Important Note:** Vehicles from **model year 2019**. For some vehicles you have to select Range Rover **Velar** in the ESM module (instead of Range Rover Sport).	
	Variation B: Range Rover/Sport	
3	Connect the two CAN cables to the **PT-CAN**. It is located at the marked control unit. The control unit is located behind the side covering on the passenger's side (trunk).	
4	Loosen the marked white plug from the control unit.	
	Connect **CAN-High (black/white)** to the cable **blue** in **Pin 8**.	
	Connect **CAN-Low (black/yellow)** to the cable **blue/green** in **Pin 9**.	

14 Variation Range Rover Velar: Connection CAN High/CAN Low

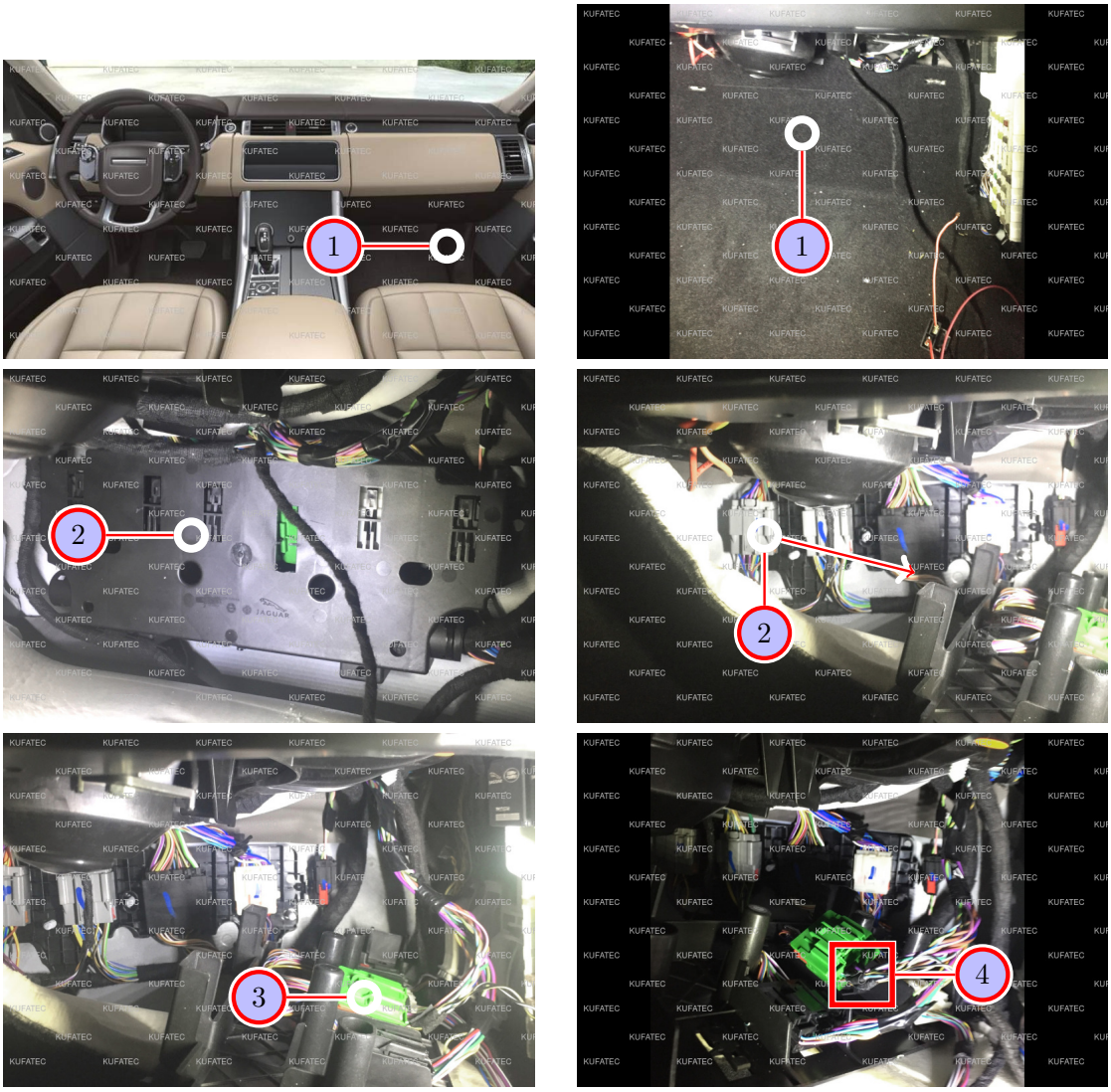


Figure 7: Connection CAN High/CAN Low (Variation Range Rover Velar)

Table 6: Instructions to connect CAN High/CAN Low (Variation Range Rover Velar)

No.	Work step	Note
	Variation: Range Rover Velar	
1	Lay the two CAN cables to the passenger's footwell. Pull the carpet in the passenger's footwell slightly backwards. A distribution box is located directly at the A-column.	
2	Loosen the cover of the distribution box and pull it into the passenger's footwell.	
3	Loosen the marked **green plug** that is located in the loosened cover. Connect the two CAN cables as follows:	
	Connect **CAN-High (black/white)** to the cable **green/orange**.	
	Connect **CAN-Low (black/yellow)** to the cable **grey/blue**.	

15 Variation Mercedes W203: Connection CAN High/CAN Low

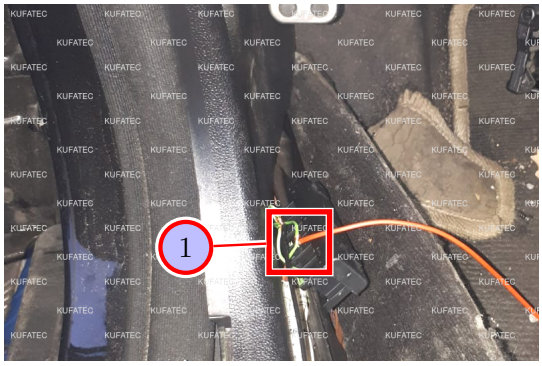
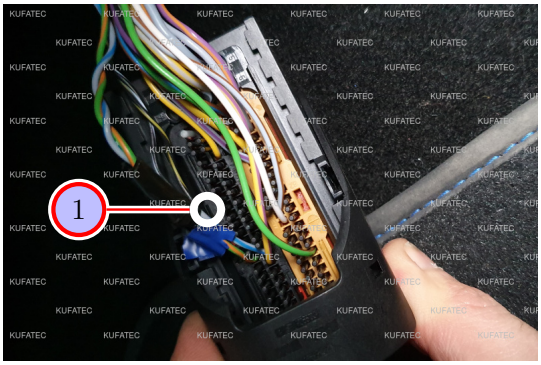


Figure 8: Connection CAN High/CAN Low (Variation Mercedes W203 (C-Class))

Table 7: Instructions to connect CAN High/CAN Low (Variation Mercedes W203 (C-Class)

No.	Work step	Note
	Variation: Mercedes W203 (C-Class)	
1	The two CAN cables must be connected to the CAN partition plug. This is located on the A-column on the driver's side.	
2	Pull the partition plug a little upwards. Connect the two CAN cables as follows.	
	CAN High (black/white) is connected to the cable **green/white**.	
	CAN Low (black/yellow) is connected to the cable **green**.	

16 Variation Ford Raptor: Connection CAN High/CAN Low



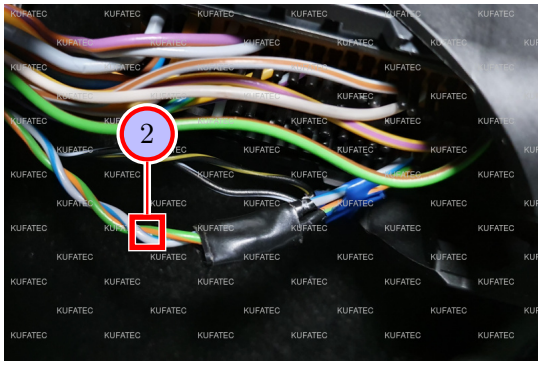
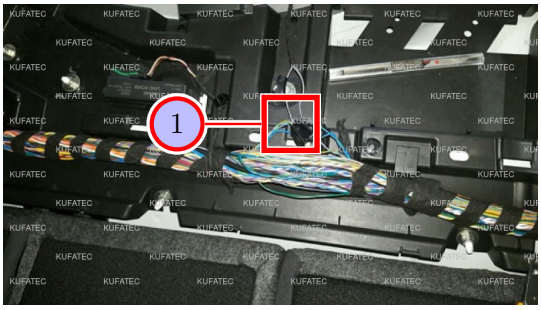


Figure 9: Connection CAN High/CAN Low (Variation Ford Raptor)

Table 8: Instructions to connect CAN High/CAN Low (Variation Ford Raptor)

No.	Work step	Note
	Variation: Ford Raptor	
1	Connect the two **CAN cables to the motor CAN**. You can tap these two cables as follows:	
	Loosen the black elongated plug. This is located on the passenger side under the dashboard, next to a large white cover.	
2	Inside the plug there are two plug inserts in the **colours black and curry**. Connect the two CAN leads as follows (black plug insert):	
	CAN High (black/white) is connected to the cable **orange/green**.	
	CAN Low (black/yellow) is connected to the cable **grey/blue**.	

17 Variation Jaguar: Connection CAN High/CAN Low



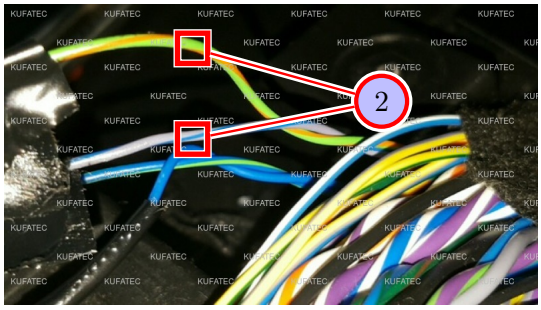
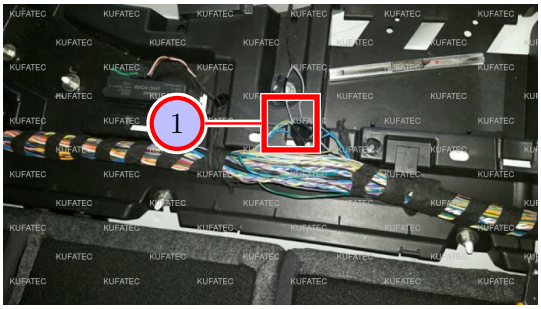


Figure 10: Connection CAN High/CAN Low (Variation Jaguar)

Table 9: Instructions to connect CAN High/CAN Low (Variation Jaguar)

No.	Work step	Note
	Variation: Jaguar XE	
1a	Connect the two **CAN cables to the motor CAN**. You can tap those cables as follows:	
	Loosen the marked grey plug. It is located on the passenger's side under the carpet covering.	
2a	Connect the two CAN cables as follows:	
	Connect **CAN High (black/white)** to the cable **orange/green (light green)**	
	Connect **CAN Low (black/yellow)** to the cable **grey/blue**	
	Important Note: If the retrofit doesn't work after connecting CAN, the vehicle has to be switched in the Sound Booster software to **Range Rover Sport 2017+** .	
	Variation: Jaguar XF up to model year 2016	
1b	Connect the two **CAN cables to the motor CAN**. You can tap those cables as follows:	
	Loosen the plug with the **label C2MC01A** from the body control module. It is located at the instrument cluster.	
2b	Connect the two CAN cables as follows:	
	Connect **CAN High (black/white)** to the cable **white/blue** in Pin 1	
	Connect **CAN Low (black/yellow)** to the cable **white** in Pin 2	
	Variation: Jaguar XF as of model year 2017	
1c	Connect the two **CAN cables to the motor CAN**. You can tap those cables as follows:	
	Loosen the plug with the **label C3BP01H** from the body control module. It is located under the dashboard/glove compartment on the passenger's side.	
2c	Connect the two CAN cables as follows:	
	Connect **CAN High (black/white)** to the cable **yellow/green** in Pin 42	
	Connect **CAN Low (black/yellow)** to the cable **blue** in Pin 43	



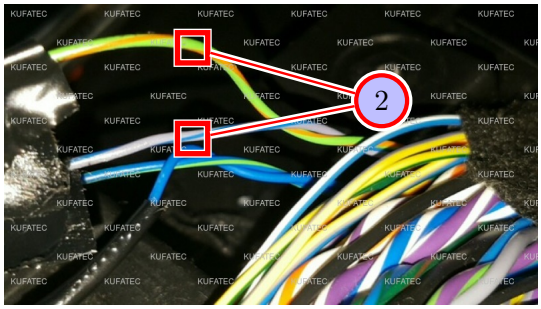


Figure 11: Connection CAN High/CAN Low (Variation Jaguar)

Table 10: Instructions to connect CAN High/CAN Low (Variation Jaguar)

No.	Work step	Note
	Variation: Jaguar Fpace as of model year 2017	
1d	Connect the two **CAN cables to the motor CAN**. You can tap those cables as follows:	
	Loosen the plug with the **label C3BP01H** from the body control module. It is located under the dashboard/glove compartment on the passenger's side.	
2d	Connect the two CAN cables as follows:	
	Connect **CAN High (black/white)** to the cable in Pin 9	
	Connect **CAN Low (black/yellow)** to the cable in Pin 8	

18 Variation VW Crafter 2F: Connection CAN High/CAN Low

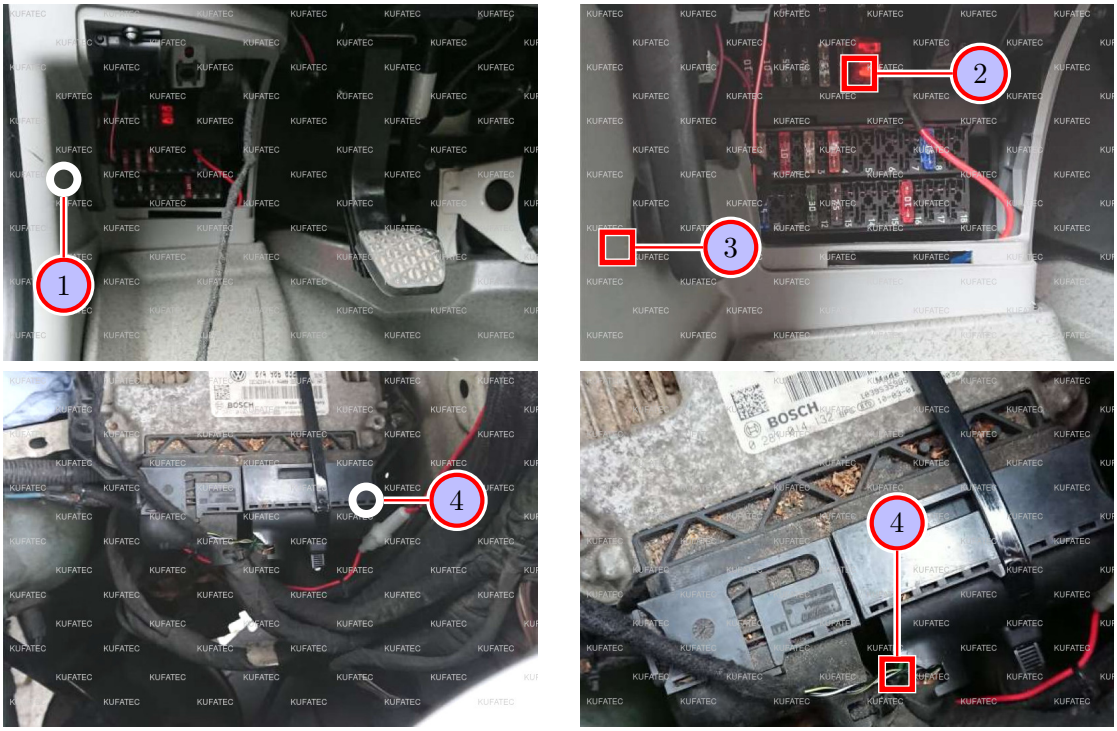


Figure 12: Connection CAN High/CAN Low (Variation VW Crafter 2F)

Table 11: Instructions to connect CAN High/CAN Low (Variation VW Crafter 2F)

No.	Work step	Note
	Variation: VW Crafter 2F	
1	Lay the ends of the cable set to the A-column. Lay the cable imprinted with Zuendungplus/ignition plus Kl.15 to the fuse box.	
2	Look for an ignition plus Kl. 15 leading slot by using a multimeter. Secure the slot with a 10A fuse afterwards.	
3	Connect the ground cable to the ground pin. The ground pin is located at the A-column.	
4	Lay the two CAN cables forward to the engine control unit. The engine control unit is located in the engine compartment. Connect the two **CAN cables to the Motor-CAN**. You can tap these two cables as follows:	
	Loosen the marked plug **(EDC16 CP43)**.	
	Connect the two CAN cables as follows:	
	Connect **CAN High (black/white)** to the cable **green/white** in **Pin 89**	
	Connect **CAN Low (black/yellow)** to the cable **green** in **Pin 66**	

19 Variation Audi A6 4F: Connection CAN High/CAN Low

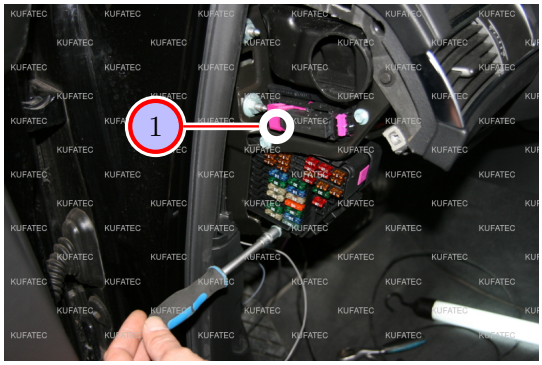


Figure 13: Connection CAN High/CAN Low (Variation Audi A6 4F)

Table 12: Instructions to connect CAN High/CAN Low (Variation Audi A6 4F)

No.	Work step	Note
	Variation: Audi A6 4F	
1	Route the two CAN lines on the A-pillar upwards to the marked CAN connector. This is located behind the side instrument panel on the driver's side. Connect the two **CAN lines to the motor CAN**. These two lines can be tapped as follows:	
	Remove the marked plug (black) and the cover cap.	
	Connect the two CAN lines as follows	
	CAN-High (black/white) is connected to the line **orange/black** in **pin 6H**.	
	CAN-Low (black/yellow) is connected to the line **orange/brown** in **pin 6L**.	
2	Lay the ends of the cable set to the A-column. Lay the cable imprinted with Zuendungplus/ignition plus Kl.15 to the fuse box.	
	Look for an ignition plus Kl. 15 leading slot by using a multimeter. Secure the slot with a 10A fuse afterwards.	
3	Connect the ground cable to the ground pin. The ground pin is located at the A-column.	

20 Important Information Sound Booster

Please use suitable screws that can withstand high loads of impact to attach the sound generator. In order to avoid losening of the screws due to the vibration, please secure the screws with appropriate factory material e.g threadlock. Please additionally check the stability of the Sound Booster regularly and if necessary retighten the screws. In case of non-compliance we do not assume liability for possible damages.
After a successful installation we recommend to cover the sound generator with a zinc spray. Make sure that you cover the opening of the sound generator so that the zinc spray can't get inside the sound generator.

As additional safety the delivered steel cable and the retaining clips have to be attached to the Sound Booster as well as at a suitable position to the car. This safety cable is an additional security should the tightening screws be released due to the vibration.

21 Configuration

Configuration

If a Bluetooth enabled module is available, the app **„Kufatec-Link"** is required for the configuration. The app is available to download for free for IOS as well as for Android.

- **For IOS in the Apple Store:**
  `https://apps.apple.com/app/kufatec-link/id1401203449`

- **For Android in the Google Play Store:**
  `https://play.google.com/store/apps/details?id=com.kufatec.ktcLink`

22 Software

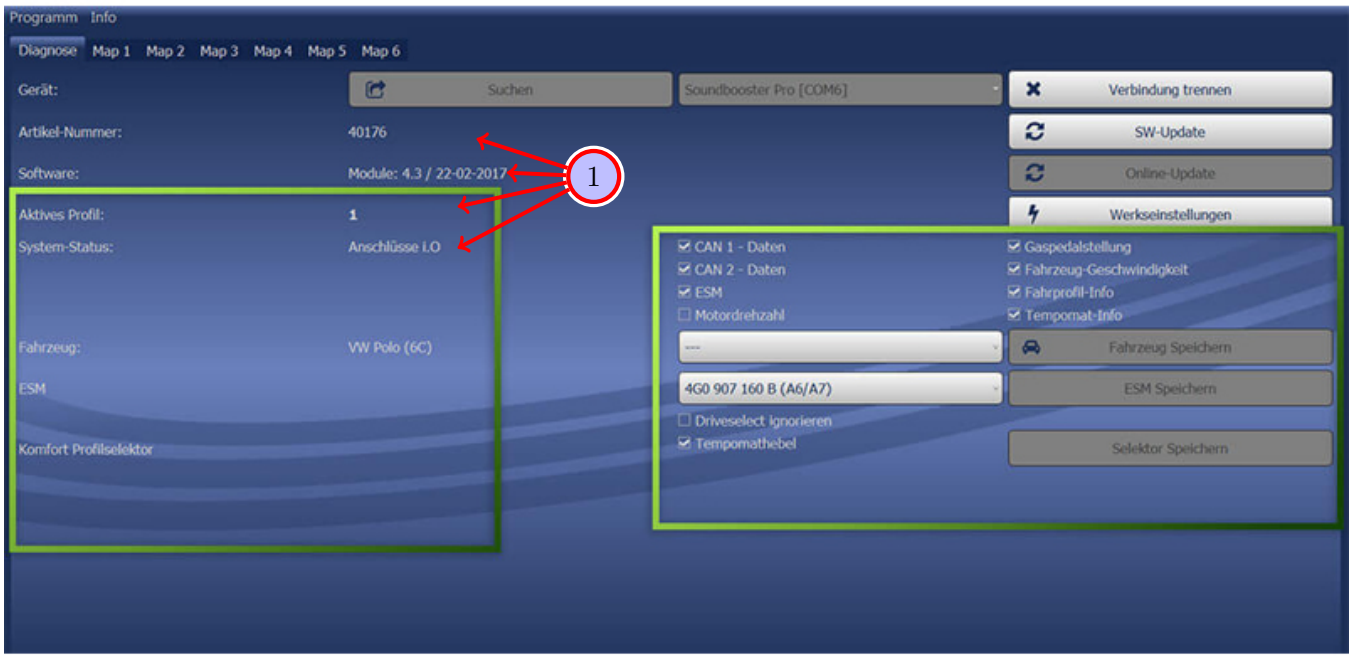


Figure 14: Software

Table 13: Notes for the software

No.	Work step	Note
1	If the system does not work after the installation, please check if the system was installed correctly by having a look on the following link: `https://www.sound-booster.com/en/debugging.html`. Our Sound Booster Software for PC / Mac should be used for the commissioning or further debugging:	
	Step 1: Download the appropriate software via the following link: `https://www.sound-booster.com`.	
	Step 2: Turn the ignition of the vehicle on and only then connect the PC / Mac with a USB-cable to our module. It is important to check beforehand if plus and minus are connected correctly. If this is not the case, it could result in a damage to the computer or to the control unit.	
	Step 3: Start the downloaded software and click on search first and then on connect.	
	You will be automatically forwarded to the diagnosis site, on which you can see the following things at a glance:	
	Software: Software version / creation date	
	Active profile: The actually activated profile is indicated here.	
	Vehicle: The automatically identified vehicle is indicated here.	
	System status: Here you can tell, if the connections are correct.	

23 Software

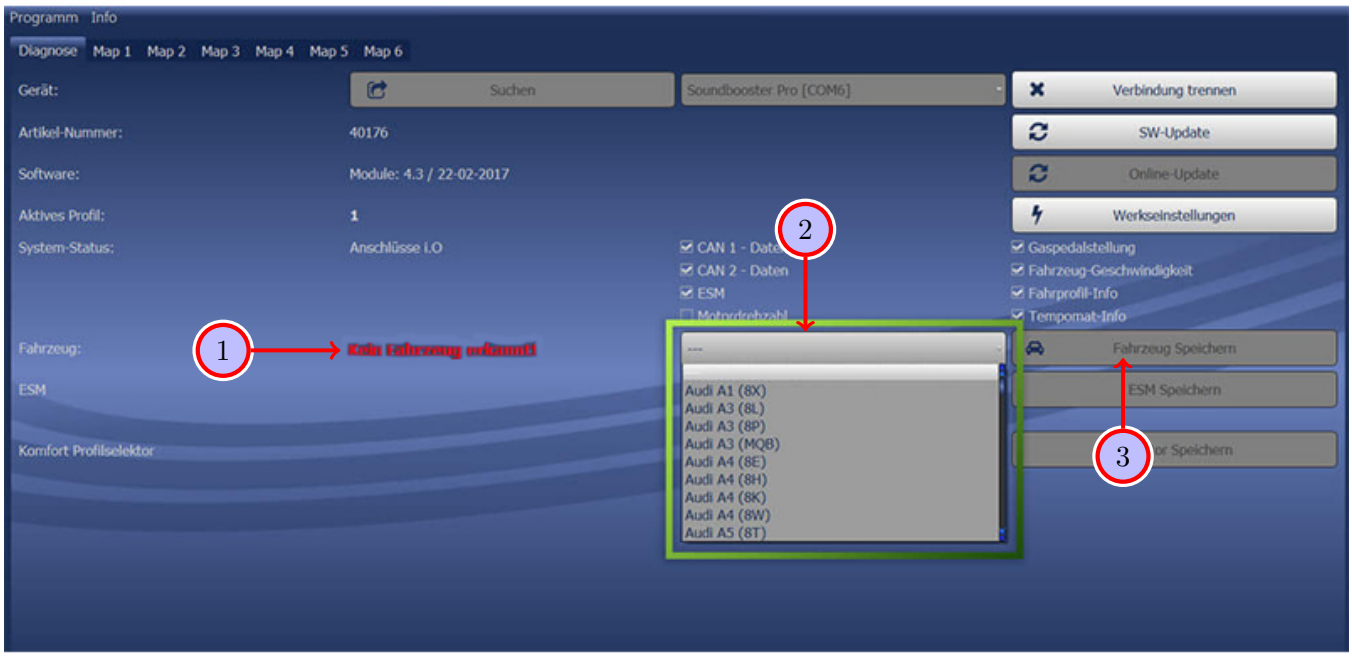


Figure 15: Software

Table 14: Notes for the software

No.	Work step	Note
1	If no current vehicle is identified, you have to select the vehicle via the manual selection as follows:	
2	Open the dropdown-menu, search for your vehicle and select it.	
3	Click on Save Car to permanently save the vehicle to the module.	
	If you don't find your vehicle in the list, it might be necessary that the software has to be adapted to your vehicle. In that case, please contact us via e-mail: info@kufatec.de or by phone: +49 (0) 4551 / 80 810 888. We will make an appointment with you, where we will adapt the software to your vehicle per Team Viewer (remote maintenance).	

24 Software

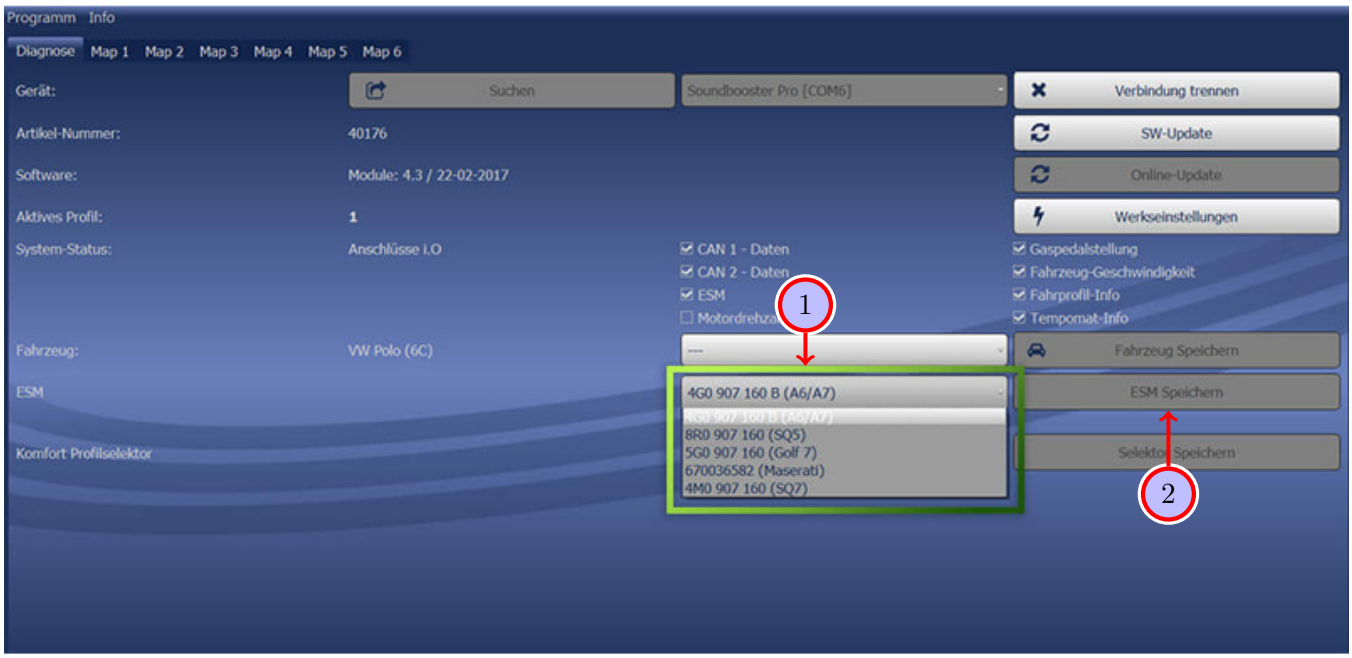


Figure 16: Software

Table 15: Notes for the software

No.	Work step	Note
1	You also need to check if the right ESM is selected in our software:	
	Open the dropdown-menu, search for the correct ESM and select it.	
2	Click on Save ESM to permanently save the ESM to the module.	
3	For example, if you ordered a complete set with a Audi control unit you need to select the ESM **4G0 907 160 B (A6/A7**. If you installed the Maserati control unit instead of the Audi control unit you need to select the ESM **670036582 (Maserati)**.	
	If the system does not work after all please get in contact with us via e-mail: info@kufatec.de or by phone: +49 (0) 4551 / 80 810 888. We will check the issue as soon as possible.	

25 LED Status Display / Troubleshooting

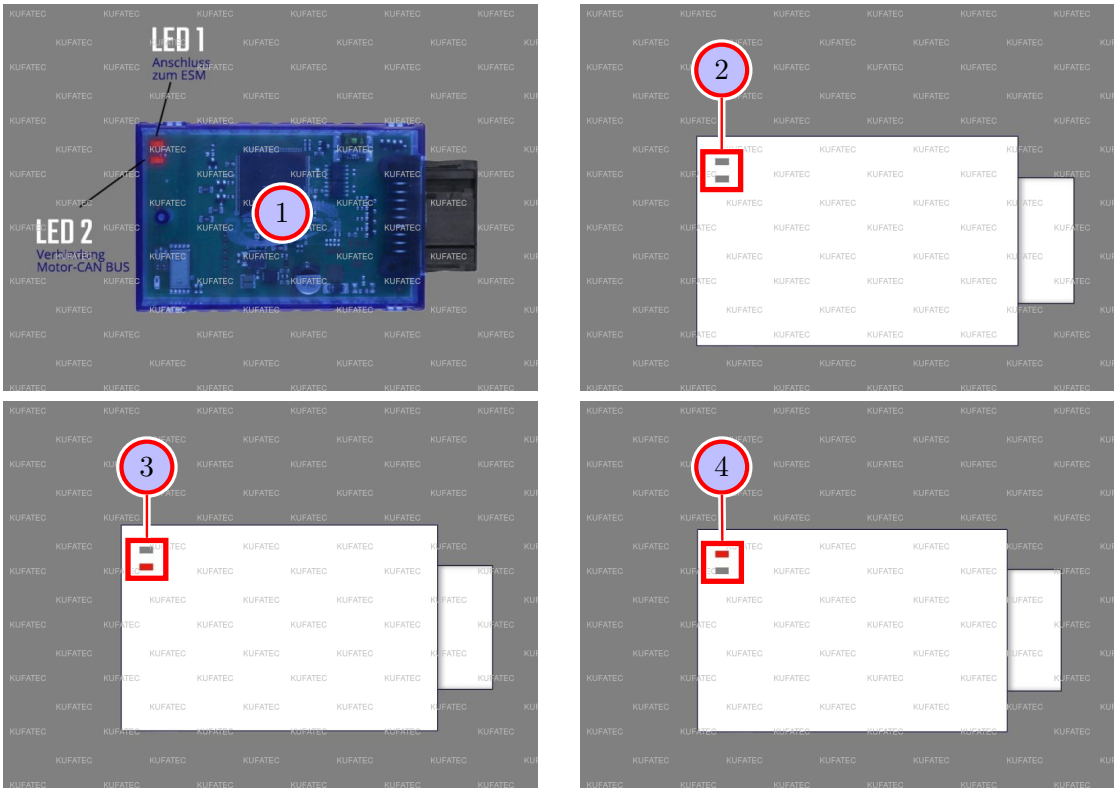


Figure 17: LED Status Display / Troubleshooting

Table 16: Instructions for the LED Status Display / Troubleshooting

No.	Work step	Note
1	If the system has been installed as described, the ignition can be switched on. After switching on the ignition, LED 1 lights up every second and LED 2 flickers very quickly. If this is the case, the system is ready to be used.	
!	**First of all check whether the plug connection is connected correctly.** The bracket of the plug must be vertical and the plug must be sunk in to the horizontal marking.	
2	**If no LED is shining on our module, proceed as follows:**	
	Option 1: "Check if the module is connected to a power source.	
	Option 2: Update the firmware via our software.	
	Option 3: Check if the module is connected to the right CAN-Bus (Powertrain-/Motor-CAN).	
	Option 4: The module has been damaged during the installation. In this case, please contact us at the following e-mail address, quoting the invoice number and a brief description of the error: info@kufatec.de.	
3	**If LED 1 is not flashing, proceed as follows:**	
	Option 1: Check the connection to the ESM (External Sound Module) (error message: connection CAN 2).	
	Option 2: Check if the module is connected to a power source.	
4	**If LED 2 is not shining, proceed as follows:**	
	Option 1: Check if the module is connected to a power source.	
	Option 2: Check if the module is connected to the right CAN-Bus (Powertrain-/Motor-CAN) (error message: connection CAN 1).	

List of Figures

List of Tables