



Installation instruction Universal Maxhaust Active Sound System

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1 General information

1.1 What is the Maxhaust Active Sound System?

The MAXHAUST SOUND SYSTEM generates a realistic engine sound in real time through external sound speakers using the vehicle characteristics (rpm, load, accelerator pedal position etc.).

This creates a unique, bulky and aggressive sound signature.

The system can be operated with your smartphone via Bluetooth using the app AND by using the original vehicle buttons.

1.2 Which vehicles can be retrofitted with the Sound System?

The Maxhaust Sound System can be installed in any vehicle which comprises of a CAN BUS whether it has a gasoline engine, diesel engine or an electric engine. Usually, these are vehicles with a construction year starting at 2000.

- I. The actuator "OUT SOUND" can be installed in the spare wheel well or on the underside of the vehicle. The installation requires sufficient space in both cases.
- II. Usually there is enough space for the actuators "IN SOUND" and "ENGINE".

1.3 Can I install the system myself?

The installation of the system is not difficult for someone with manual skills. But the correct tools are a prerequisite.

When installing the system on the underside of the vehicle welding is necessary. This should be done by a professional at all times. Our team is delighted to give you advice over the phone.

1.4 Does a technical inspection certificate ("TÜV") or a General Operating Permit ("ABE") exist for this system?

No, there is no technical inspection certificate or any General Operating Permit for the Sound System. An entry is thus not possible.

Please note that this system is not admissible according to the German Road Traffic Act (StVO). System use is at one's own risk.



2 Maxhaust Active Sound System consists of:

2.1 Bluetooth Soundbooster

The Soundbooster is the interface between your vehicle and your smartphone via Bluetooth. The data, e.g. rpm signal and gas pedal position is read and processed by using the CAN BUS.



2.2 „ESM“- External Sound Module

This control unit generates the sound for your vehicle, boosts it and then distributes it through the actuators.



2.3 T-Adapter cable

Connecting cable between vehicle, Bluetooth Soundbooster and the external Sound Module.



2.4 Vehicle cable set

Vehicle cable set for the installation of the Sound System in or underneath the vehicle.

- 1 x ground cable
- 1 x power cable
- 2 x speaker cable
- 2 x CAN BUS cable (twisted)





2.5 Actuator “OUT SOUND” (speaker) including attachments

A speaker suitable for internal and external installation.

The actuator Out Sound has a perimeter of approx. 64 cm and its height is approx. 16 cm. The pipe diameter is 6 cm.

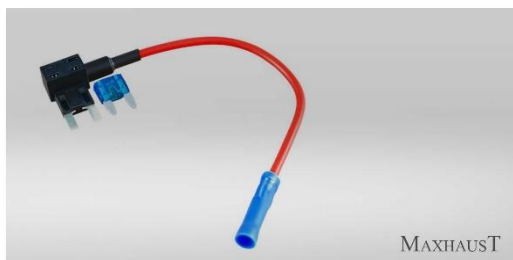
Metal sheet works and welding works might be necessary.

- 3x steel strips for external installation of actuator (welding works necessary)
- 1x flange and 1x rubber grommet for inside installation of actuator "OUT SOUND" with flat surface. (body adhesive, hole saw and driller necessary)
- 4x screws for attachment of flange
- 1x bent end pipe and 1x clamp for the optimum positioning of the actuator during the installation.



2.6 Electrical parts

- Fuse holder for fuse box
- Can Bus connector



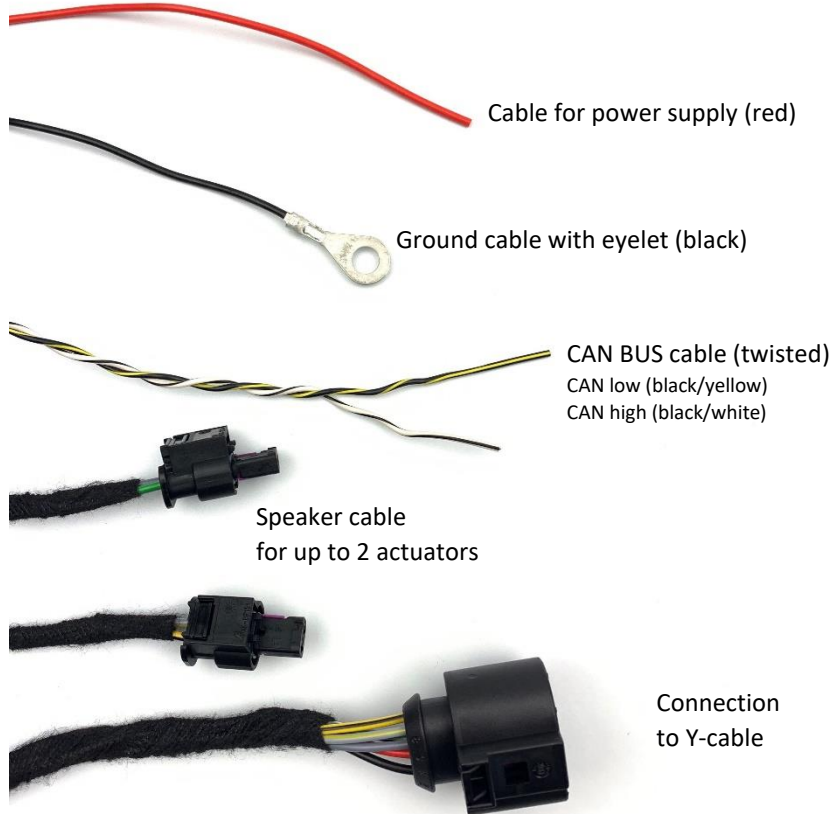


3 Installation vehicle cable set

Vehicle specific information can be found on our Maxhaust app in “Car/Downloads”.

INFORMATION

Ignition must be switched off during all works on vehicle electronics!

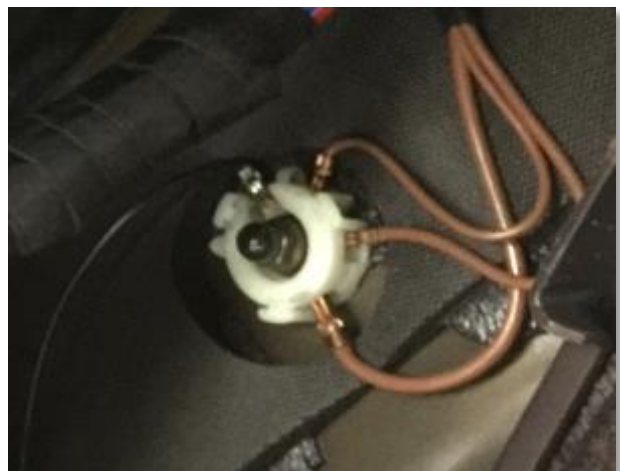


3.1 Ground connection

The black cable (ground) must be connected to the vehicle bodywork. During this step, it is important to have a good connection between the vehicle bodywork and the cable eyelet. Existing ground pins in the vehicle are to be used preferably.



Example: bodywork in vehicle



Example: ground pin in vehicle



3.2 Power supply

The red cable of the vehicle cable set must be connected to the on-board ignition plus (clamp 15).

For this step, clamp the ignition plus in the fuse box by using the fuse holders.

Connect the red cable of the universal cable set using the crimp connector which is attached to the fuse holder. Alternatively the fuse holder can also be soldered to the red cable of the universal cable set.



Strip the end of the red cable.



Insert cable in crimp connector.



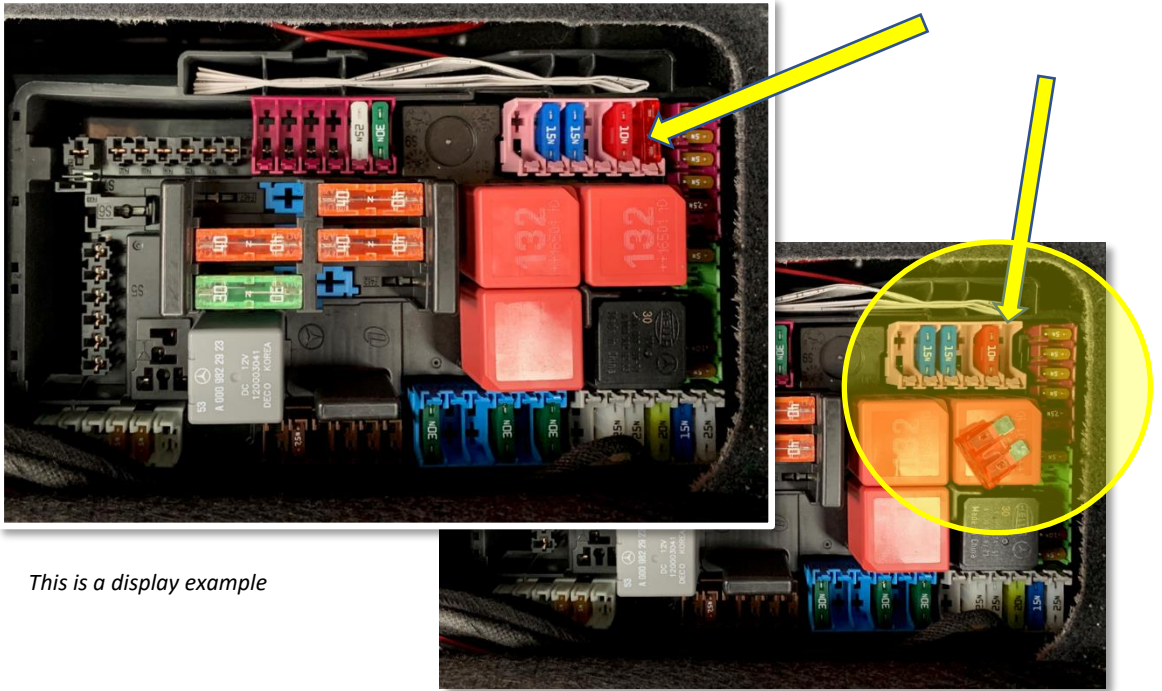
Crimp the crimp connector with pliers.

INFORMATION

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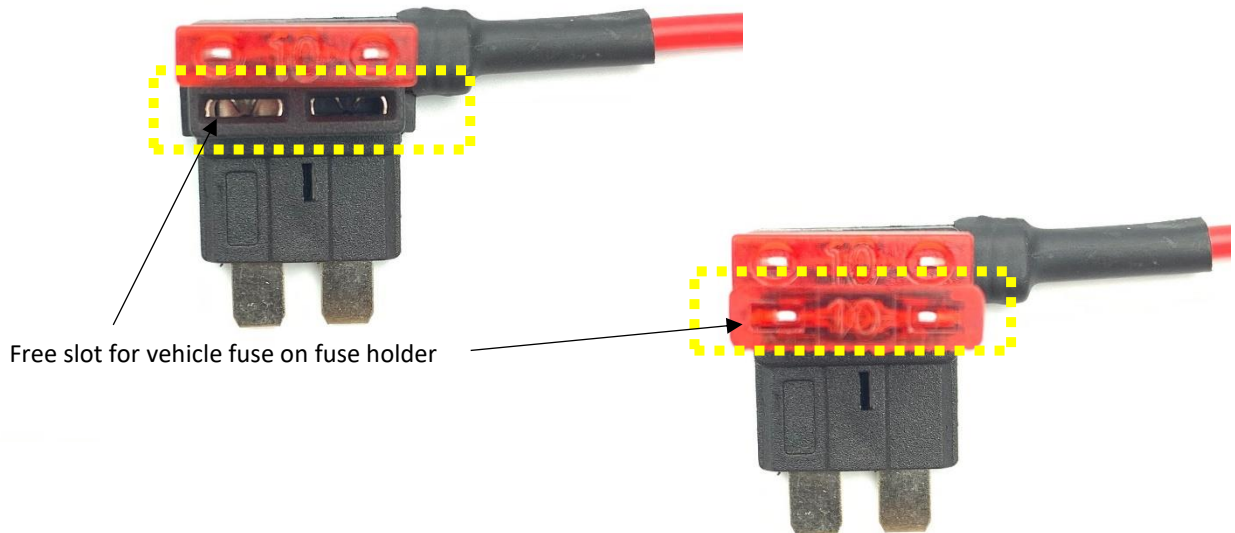


Remove original fuse in fuse box where ignition plus (clamp 15) is located.



This is a display example

Insert original fuse in the supplied fuse holder.



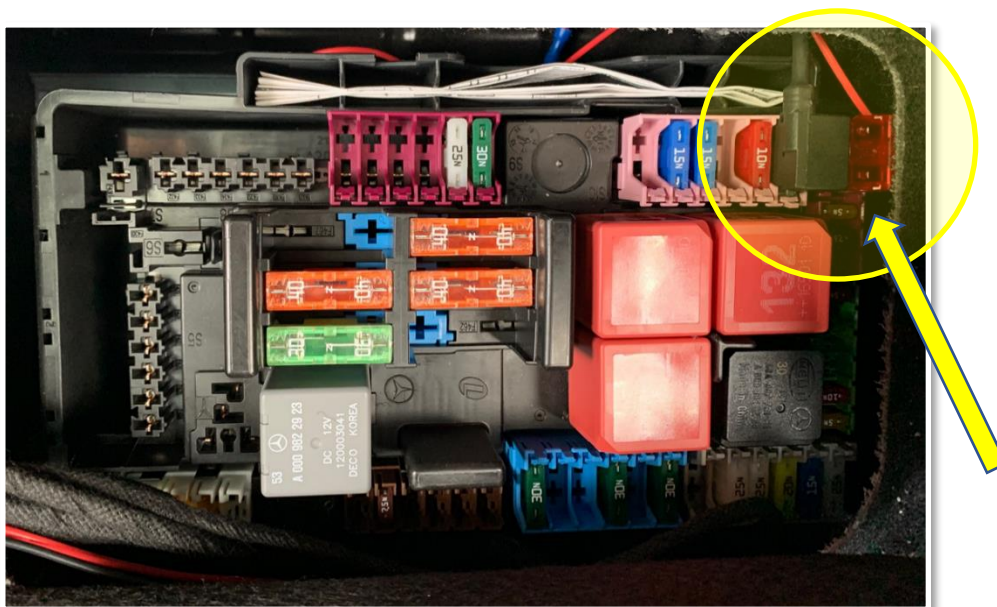
Free slot for vehicle fuse on fuse holder

INFORMATION

Ignition must be switched off during all works on vehicle electronics!



Reinsert the fuse holder in the slot of the fuse box where the original vehicle fuse was removed beforehand.



Example: ignition plus (clamp 15) in vehicle fuse box

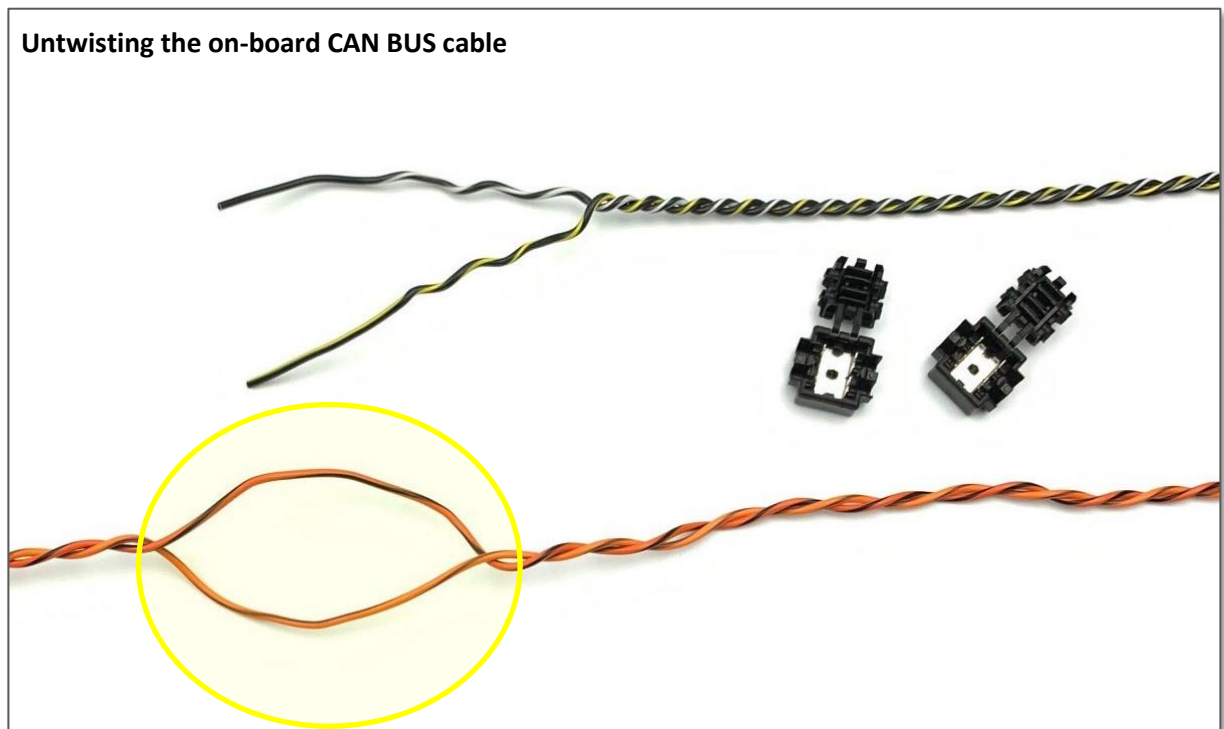
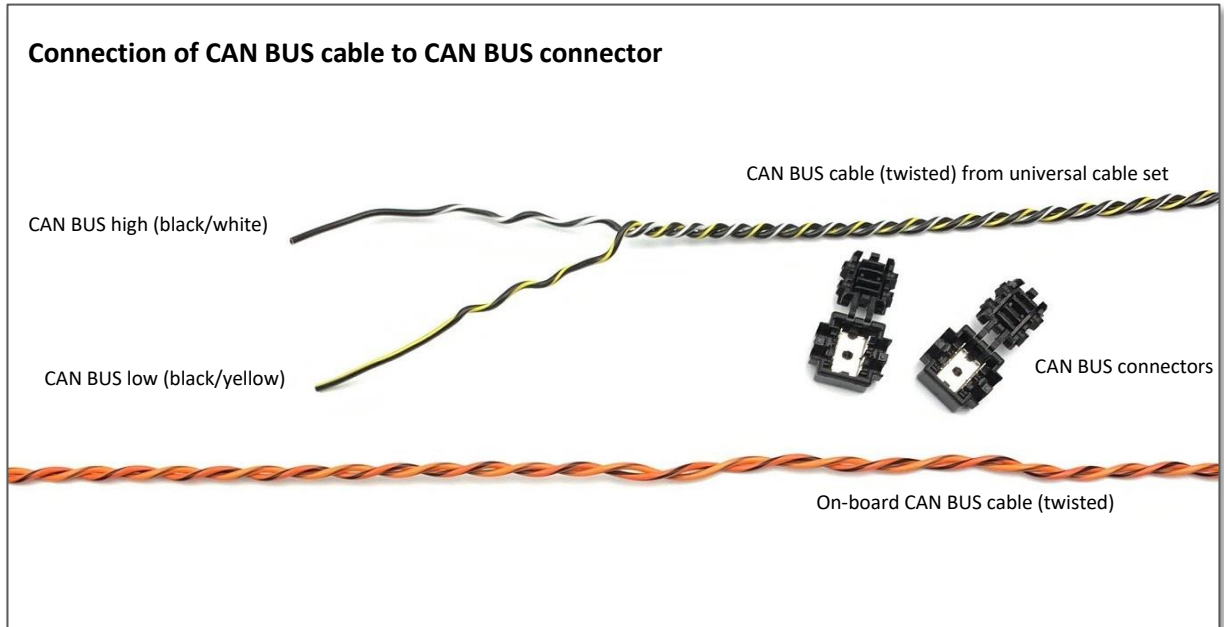
INFORMATION

Ignition must be switched off during all works on vehicle electronics!



3.3 CAN BUS

The black/yellow cable (CAN low) and the black /white cable (CAN high) must be connected to the CAN BUS vehicle system using the supplied CAN BUS connectors. CAN BUS cables in a vehicle are specific to each vehicle and have different colors. But the CAN BUS cable (high and low) are twisted in all vehicles.

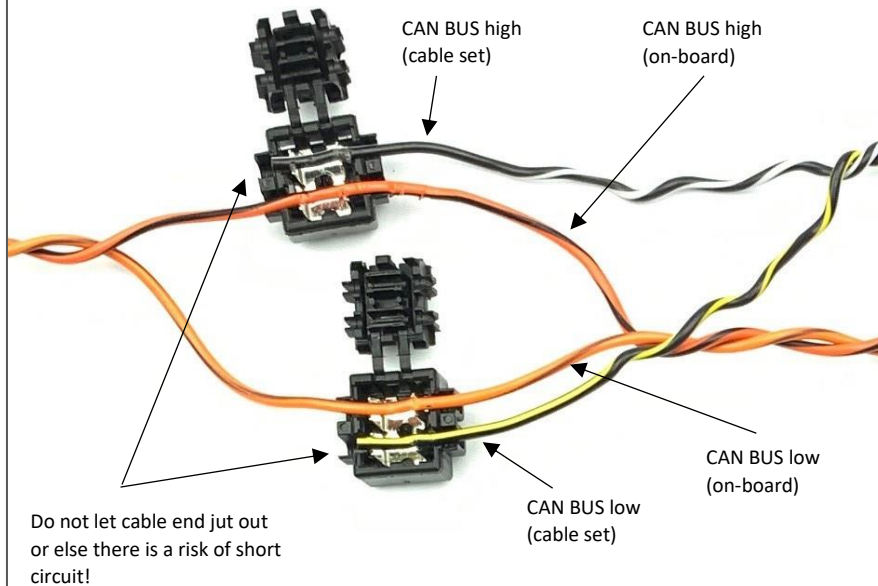


INFORMATION

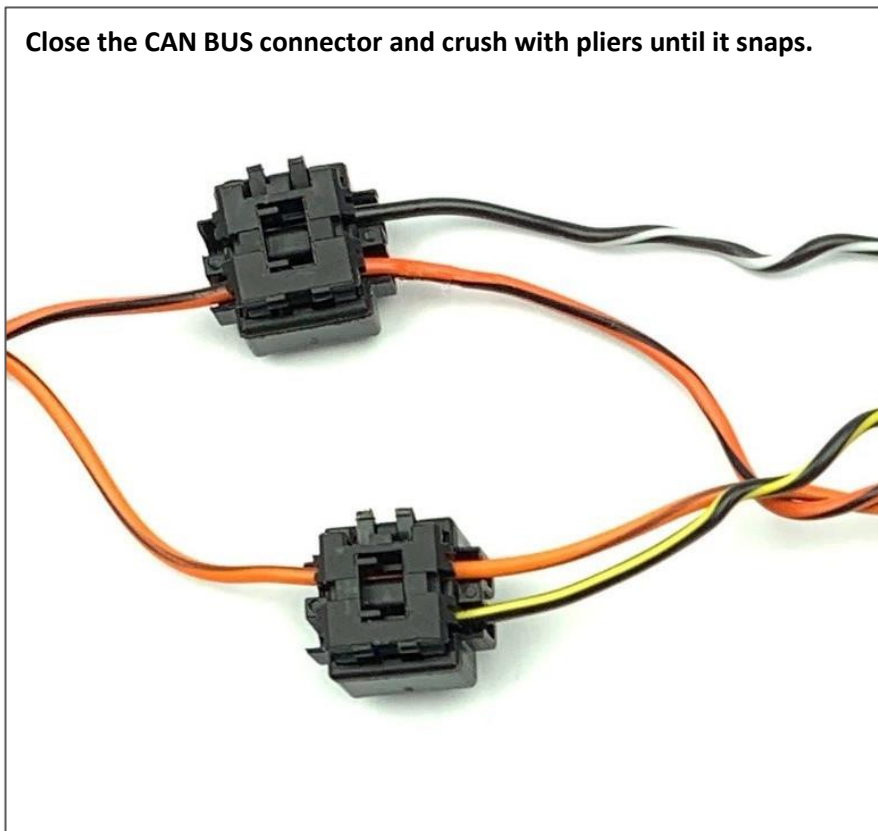
**This is a display example. CAN BUS cable colors are specific to vehicles.
Ignition must be switched off during all works on vehicle electronics!**



Inserting the CAN BUS cable in the CAN BUS connector



Close the CAN BUS connector and crush with pliers until it snaps.



INFORMATION

**This is a display example. CAN BUS cable colors are specific to vehicles.
Ignition must be switched off during all works on vehicle electronics!**



3.4 Speaker cable

The universal cable set includes two speaker cables for the connection of up to two actuators.

Connect speaker cable of universal cable set to actuator.



Connect speaker.



Make sure that the connector is snapped in thoroughly.



4 Installation actuator “OUT SOUND” (speaker)

Depending on the vehicle type, the actuator can be installed in the spare wheel well or to the underside of the vehicle.

4.1 Underside installation

✓		Always install the actuator with the end pipe slightly downwardly inclined and facing towards the vehicle rear.
✓		The actuator can be slightly turned in the horizontal position.
✗		Do <u>not</u> install the actuator with the pipe opening facing the direction of travel in order to avoid water ingress.
✗		Do <u>not</u> install the actuator with the end pipe on top.
✗		Do <u>not</u> install the actuator with the end pipe upwardly inclined in order to avoid water ingress.
✗		Do not install the actuator underneath the required ground clearance.



In order to avoid water ingress in the vehicle interior, a rubber grommet should be used when mounting the speaker cable from the interior to the exterior.

When installing the speaker, you must make sure to avoid any points of contact with other vehicle components e.g. bodywork, heat shields, exhaust gas system etc.

The actuator must be attached securely using the supplied attachments.

For this step welding works are necessary. Avoid any damages to the speakers caused by welding.

The firm hold of the speakers must be checked regularly. Media-Car Tec GmbH shall assume no liability for loose or dropped components and their repercussions.

4.1.1 Example: Underside installation

<p>Find a suitable place for the underside installation. Make sure to have sufficient space around the speaker in order to avoid vibration sounds.</p>	
<p>Adjust the stainless steel strips by bending and cutting.</p> <p>Drill holes at the ends of the metal strips.</p> <p>Weld stainless steel strips on the speakers. <i>(information on welding works 4.1.2)</i></p>	
<p>Screw speaker on the vehicle bodywork.</p>	



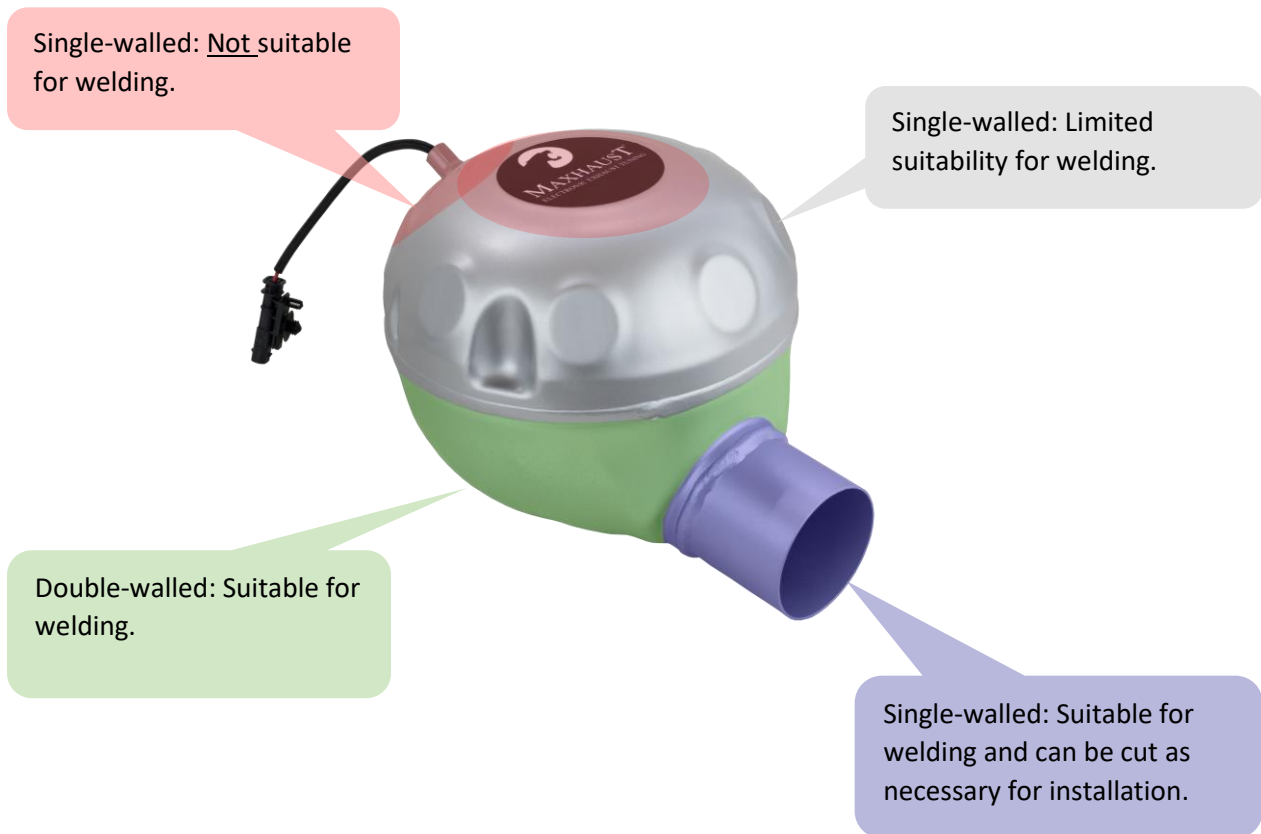
4.1.2 Information on welding works on speakers

Welding works in the red area are to be avoided at all times.

The green areas are double-walled and can be used to weld on the holders.

The upper side (in this image grey) has a limited suitability for welding because it is single-walled and there is thus a risk of burning through it and damaging the speaker.

The end pipe (in this image blue) can be cut as necessary during the installation.





4.2 Installation in spare wheel well

Here are some possibilities on how to install the speaker in the spare wheel well.

4.2.1 Example 1: Installation with rubber grommet

For this step welding works on the speaker and drilling of 83 mm on the vehicle bodywork are necessary.

The supplied pipe bend and clamp **1** can be used for the best possible positioning of the actuator.

The rubber grommet **2** is located between the speaker end pipe and vehicle bodywork and serves as a sealing to the exterior.

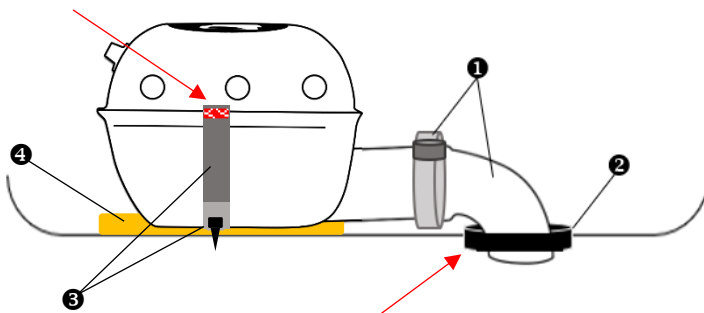
The three stainless steel strips with tapping screws **3** can be used for the attachment of the actuator to the vehicle bodywork.

For this step, the stainless steel strips have to be adjusted (cutting, bending and drilling holes) and welded to the speakers.

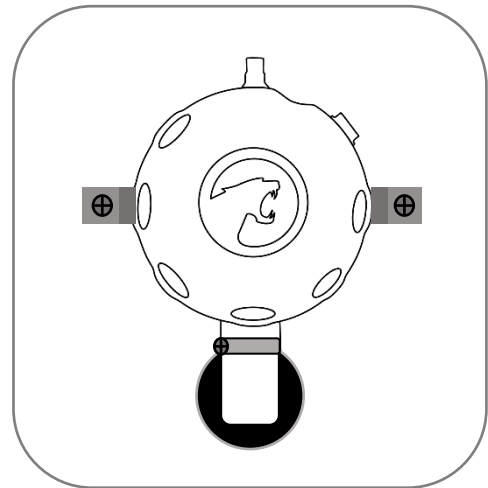
Using the self-cutting tapping screws, the strip is screwed to the vehicle bodywork.

The actuator should be placed on a foam cushion **4** in order to avoid vibration noises.

Welding of stainless steel strip
(see information on welding works 4.1.2)



Drill a hole in the vehicle bodywork using a hole saw HSS 83mm (Art.No.: 7708)





Example 1: Installation with rubber grommet

<p>Attach pipe bend with clamp to the speaker.</p>		
<p>Position speaker in spare wheel well and mark pipe bend on base plate. Use the hole saw to drill a hole of a 83 mm diameter into the sheet metal. <small>Art.No.: 7708 – Hole saw HSS 83mm</small></p>		
<p>Deburr edges in the sawn hole with a file and apply corrosion protection. Insert rubber grommet in the cutout.</p>		
<p>Insert speaker and adjust stainless steel strips in such a manner that it can be screwed on to the vehicle bodywork on the one side and welded on to the speaker on the other.</p>		
<p>Execute drilling on the end of the metal strip. Remove speaker and weld stainless steel strip onto it. <small>(see information on welding works 4.1.2)</small></p>		
<p>Place carpet back into the vehicle, insert speaker and attach it to the vehicle bodywork.</p>		



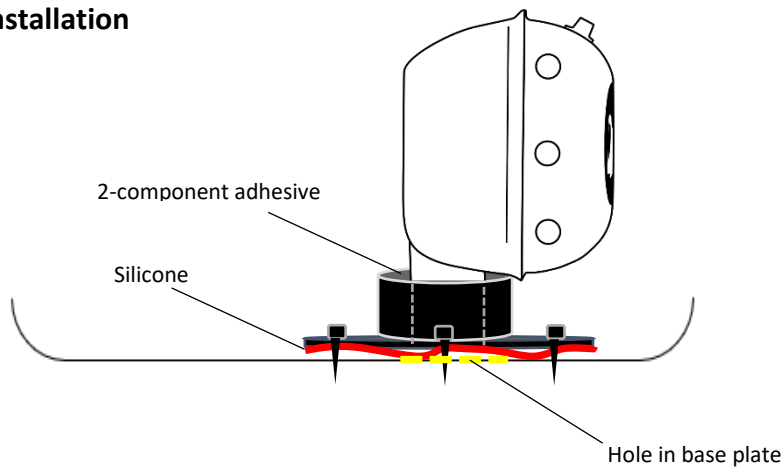
4.2.2 Example 2: Installation with flange (vertical and horizontal)

If a hole already exists in the base plate, drilling and welding works on the vehicle bodywork might not be necessary.

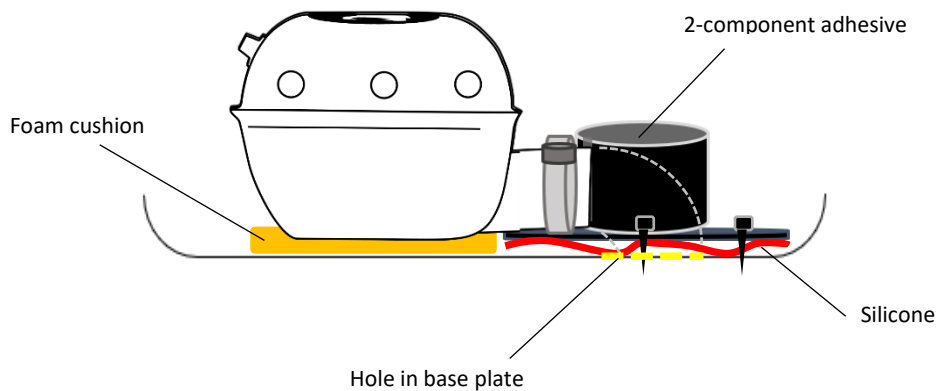
An even surface is a prerequisite for the flange.

The spare wheel might have to be removed and left out due to lack of space when installing the speaker in the spare wheel well.

Vertical installation



Horizontal installation





Example 2: Installation with flange (vertical and horizontal)

<p>Remove trim and carpet from the spare wheel well.</p> <p>Remove existing rubber plug or use the hole saw to drill a hole of a 83 mm diameter into the sheet metal.</p> <p>Art.No.: 7708 – Hole saw HSS 83mm</p>		
<p>In certain installation situations the flange has to be adjusted individually. This means that cutting or notching of the flange shaft or cutting of the flange foot might be necessary.</p>		
<p>Insert speaker into flange in a vertical or horizontal position and glue with 2-c adhesive and let dry.</p> <p>Art.No.: 6345 - Dual cartridge gun for 2-c Art.No.: 6347 - 2-component adhesive</p>		
<p>Attach flange foot with sufficient silicone. Insert speaker with flange and screw flange foot to the vehicle bodywork. Mount removed carpets and trims. It might be necessary to adjust the carpets or trims accordingly.</p>		
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5 Connection overview

