



Operating Instructions

Veigel Universal Accelerator
Pedal Module
BLFXXXXX



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Contents

Revision history	4
Symbols used	5
General information	6
Safety information	8
Product description	9
Assembly	16
VEA control unit	20
VAS control unit	30
Universal adapter	35
Operation	39
Maintenance and care	40
Transport, storage and disposal	41
Installation record	42



Revision history

Edition	Revisions	Chapter
1	Initial version	-

Symbols used

The following symbols are used in these operating instructions:



This symbol refers to information that, if not observed, will pose a risk to your health or the functionality of the device.



This symbol refers to important additional information.



This symbol refers to tips and recommendations.

Individual images contained in these instructions may deviate from the received product!

Veigel hotline:

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General information

General safety information

The Veigel universal accelerator pedal module is a pre-assembled component that comes ready to install. It was designed and built in line with carefully chosen standards that must be observed, as well as further technical specifications. Consequently, it is a state-of-the-art product and provides the best possible level of safety while in operation. The accelerator pedal left the factory in a flawless condition in terms of technical safety. However, safety can only be achieved in practice if all the required actions have been taken. The person responsible for operation and the installation partner have a duty to plan these actions and monitor their implementation.

Observe the following in particular during assembly:

- Installation and maintenance work may only be performed by specialist staff using suitable tools!
- Please read these installation and operating instructions carefully before installing the accelerator pedal.
- You can download documents such as the installation instructions and operating instructions at any time from the download area on our website. <https://www.veigel-automotive.de/downloads/>
- Observe the applicable accident prevention and safety provisions when installing and maintaining the accelerator pedal!
- Only accessories obtained from the manufacturer may be used with the accelerator pedal.

Observe the following in particular as a user:



- Comply with generally accepted codes of practice when using and operating the accelerator pedal!
- Observe the applicable accident prevention and safety provisions when operating the accelerator pedal!



The driver's aid will restrict the space available on the driver's side to a certain extent once installed.



If this information is not observed, this will void the warranty, the manufacturer's liability and, in certain situations, the type approval. As a consequence, no claims can then be made against us.

Safety information



Please read this safety information carefully.

Only people who are familiar with the accelerator pedal and have been instructed in how to use the left accelerator pedal may drive the vehicle.

- It is recommended for people with disabilities who are unfamiliar with using the left accelerator pedal to practise at a driver training area or similar the first few times they drive the vehicle.
- The accelerator pedal restricts the space available in the driver's footwell. Therefore, extreme care must be taken when driving the vehicle.



If a person has reduced mobility in their right leg, use of a prosthetics guard is recommended. This is to prevent the driver from operating or jamming the brake pedal accidentally.

The responsible expert at a technical services office decides whether a prosthetics guard is required and documents the decision in an expert report. This expert report forms the basis for a corresponding entry on the driver's licence.

This prosthetics guard is not included in the scope of delivery of the accelerator pedal or the universal installation kit. The prosthetics guard must be ordered separately for the vehicle type in question.

Product description

General function

The Veigel universal accelerator pedal module is an accelerator pedal with universal application that can be fitted with just a few adaptations to the conditions of the specific vehicle.

In the standard configuration, the accelerator pedal is used with our Veigel VAS or VEA control units and can thus be used with almost any vehicle.

The adjustable pedal arm allows the pedal to be installed in almost any position.

In addition, the pedal arm can be removed by undoing two threaded pins.

Function of VEA/VAS electronics kit

The VEA and VAS electronics kits consist of a cable assembly, which is connected to the original accelerator pedal via the safety electronics.

Before setting off, the driver must decide whether they will use the original accelerator pedal or the Veigel additional accelerator. The electronics make it impossible to switch between the original accelerator pedal and the Veigel additional accelerator while driving.

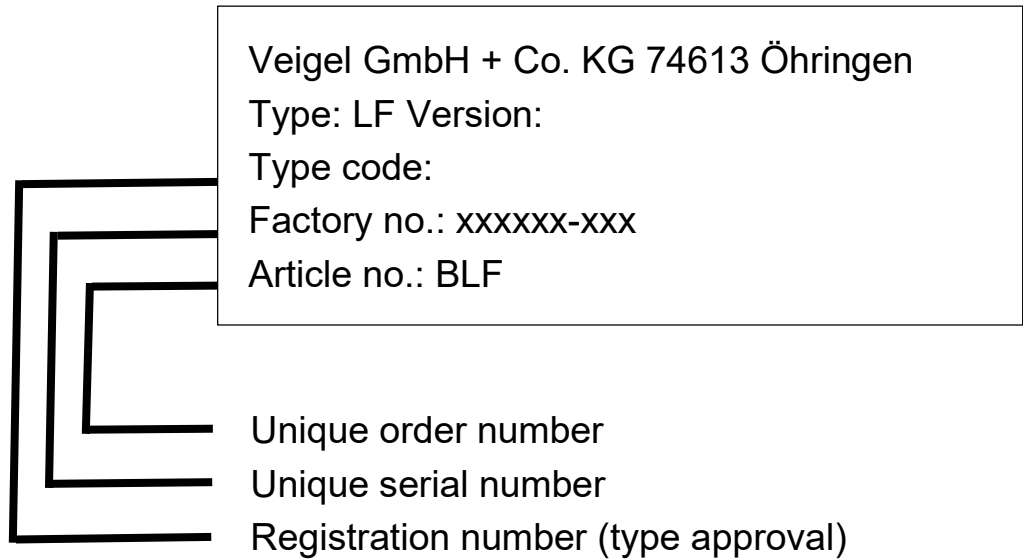
If the additional pedal is active, the driver can depress the original accelerator pedal fully and it will have no function.

If the original accelerator pedal is activated, then the Veigel additional accelerator will have no function.



Please contact our Sales department for information on which control unit you need for your vehicle.

Type plate



The type plate is located on the back of the main body.

Please enter the factory number of the driving aid here:

Factory no.:



The type plate with the factory number is important when it comes to uniquely identifying the scope of delivery.

Intended use

The accelerator pedal is used to control acceleration. It is designed for customers with neurological malfunction symptoms or paralysis of the right foot. It must only be used by drivers with a suitable disability. The requirement to use the device must be indicated on the driver's licence.

The universal accelerator pedal module must be installed by a specialist workshop suited to the task.

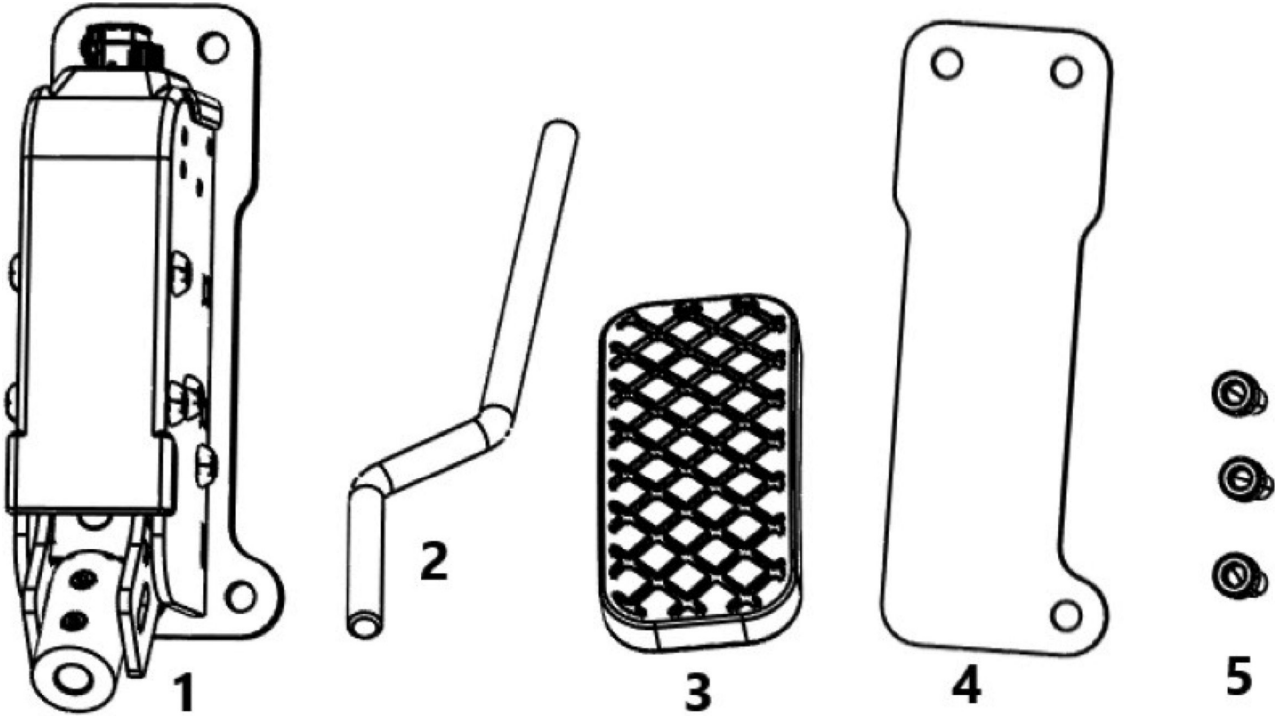
By performing a proper installation and observing the accepted codes of practice, the specialist workshop ensures that the installation is safe and that the pedal will also operate safely.

The parts are mostly assembled at fastening points already available inside the vehicle. Any holes drilled in the vehicle must be sealed to prevent corrosion and water ingress in the vehicle.



Please observe the "Assembly" section in these installation and operating instructions.

Accelerator pedal scope of delivery



Item	Description	Item	Description
1	Main body	4	Base plate
2	Pedal arm	5	Fastening screws
3	Pedal plate	6	

The accelerator pedal is pre-assembled and adjusted.
The cable set is packaged separately and included.

VEA electronics kit scope of delivery

Item	Description	Art. no.
1	VEA electronics kit	230820-001



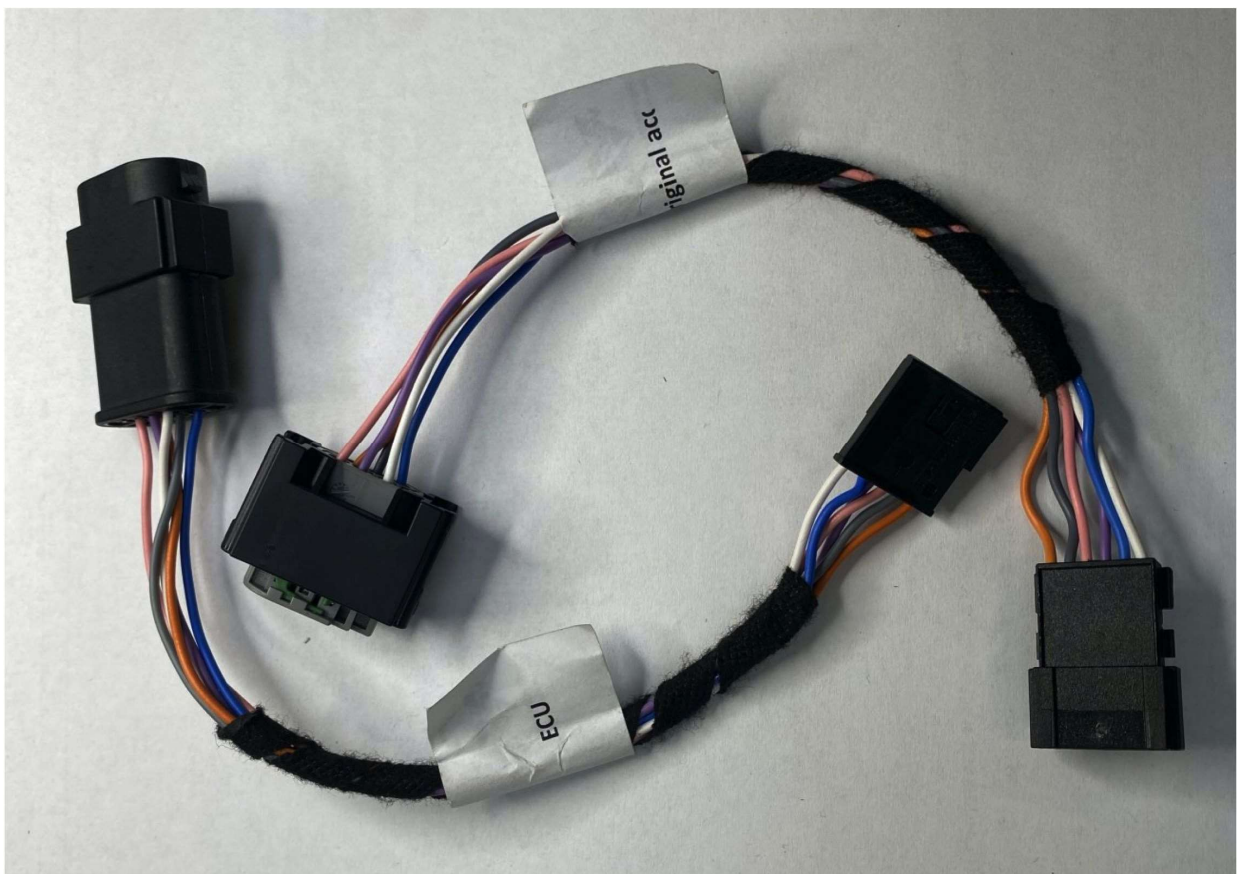
VAS electronics kit scope of delivery

Item	Description	Art. no.
1	VAS electronics kit	230821-001
1	VAS electronics kit, PSA	230821-002



Not included in scope of delivery: adapter cable set

The adapter cable set must be ordered separately since it must be selected for the specific vehicle.



Assembly

Safety information



- Installation and maintenance work may only be performed by specialist staff using suitable tools.
- Please read these operating instructions carefully before installing the accelerator pedal.
- You can find the installation and operating instructions in the download area of our website at <https://www.veigel-automotive.de/downloads/>.
- Observe the applicable accident prevention and safety provisions when installing and maintaining the accelerator pedal!
- Only accessories approved by Veigel GmbH +Co. KG may be used with the accelerator pedal.
- Structural modifications to the accelerator pedal may only be performed following consultation with the manufacturer.
- If the accelerator pedal is installed in an authorised workshop, the installation record must be filled in (see appendix). If it is installed at the factory, a separate installation record will be prepared and archived at the factory.

Tightening torques

The tightening torques as specified by the vehicle manufacturer apply when converting vehicles using Veigel driving aids.

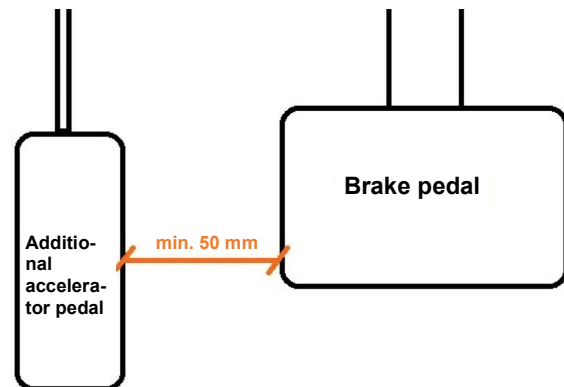
Unless otherwise stated in the text, the usual DIN tightening torques provided in the table below apply for Veigel parts.

Course thread			Fine thread		
Dimension	Tightening torque [Nm]		Dimension	Tightening torque [Nm]	
	8.8	10.9		8.8	10.9
M4	3	4.4	M8x1	27	39
M5	5.9	8.7	M10x1	55	81
M6	10	15	M10x1.25	52	76
M8	25	36	M12x1.25	93	135
M10	49	72	M12x1.5	89	130
M12	85	125	M14x1.5	145	215
M14	135	200	M16x1.5	225	330
M16	210	310			

Mechanical installation

Find a suitable location in the driver's footwell for fastening the additional pedal.

Select the location such that the pedal plate of the accelerator pedal module is at least 50 mm from the brake pedal and sits somewhat deeper than the brake pedal.



Install the adapter plate at a suitable location. You may need to screw or weld parts such as flat steel sheets or spacers to the adapter plate to do so.

It is best to fasten the adapter plate at points already available, e.g. stud bolts or threaded holes.

If this is not possible, the fastening set also contains M6 rivet nuts which can be riveted in.



Once the adapter plate has been firmly installed, the Veigel accelerator pedal module can be adapted to it.

In the best case scenario, the current position is the desired position. But if you want to make some adjustments, you have the following options:

You can rotate the pedal arm by loosening the threaded pins at the top and bottom end of the pedal arm.

You can also turn the pedal arm around and insert it the other way.

If none of this leads to the desired result, you can also bend the pedal arm. Do not bend it too much, however, as this could weaken the round material.

When you have achieved the desired position, fix the position with a threaded pin.

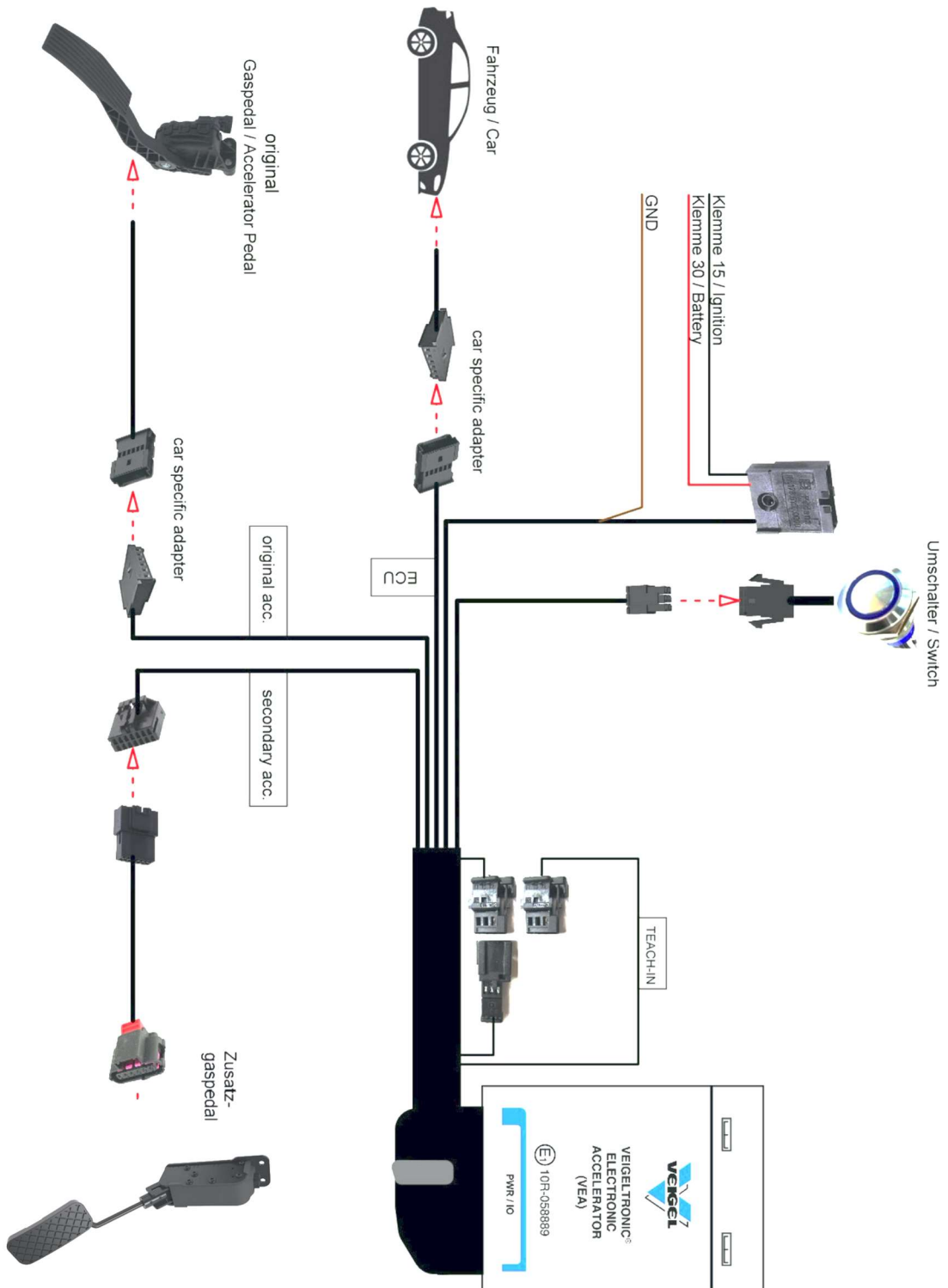
Partially drill the second hole ($\text{Ø}4.5$, approx. 1-2 mm deep) and screw the second threaded pin into the hole. (Make sure not to damage the threads during drilling; if necessary, mark the hole and drill in the uninstalled state.)

Now the pedal arm and the pedal plate have been secured against rotating.



VEA control unit

VEA block diagram



Connecting the accelerator pedal to the VEA control unit

1. The ignition must be switched off. Now disconnect the original accelerator pedal.
2. Using the adapter cable (original Acc.), connect the original accelerator pedal to the connector of the VEA cable set (original Acc.).
3. Connect the previously disconnected connector of the original accelerator pedal to the adapter cable (ECU) and the other end to the VEA cable set on the ECU connector.
4. Connect the additional accelerator pedal to the connector (secondary ACC.) of the VEA cable set.

Assembling the VEA control unit

1. Connect the plug to the VEA box. Fasten all loose cables and check that the relevant plugs are seated securely.



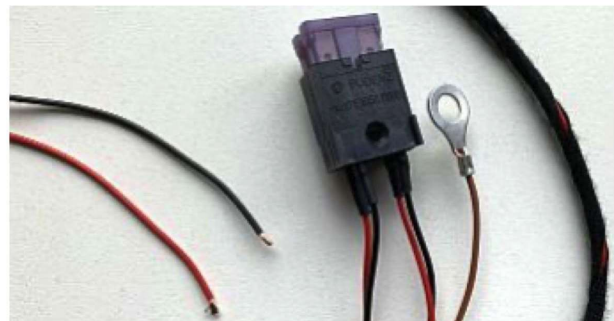
2. Connect the power supply between the VEA and the vehicle:

Terminal 15 – black cable

Terminal 30 – red cable

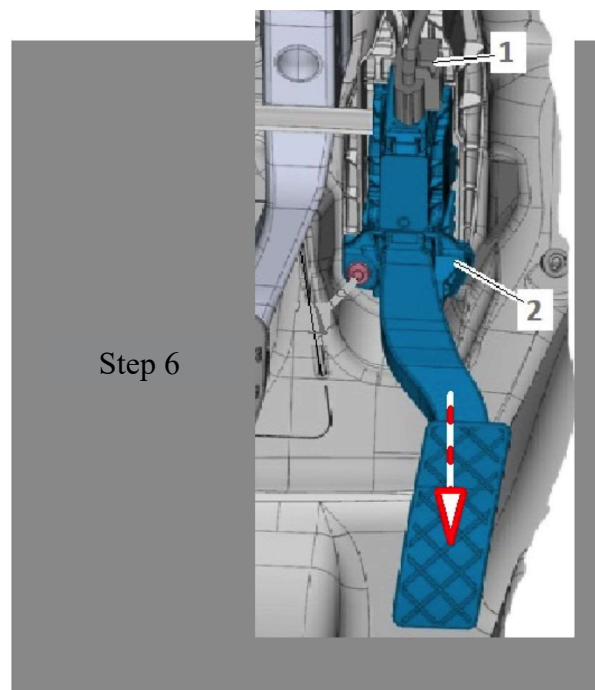
Earth – brown cable

It is recommended to disconnect terminals 15 and 30, preferably in the fuse box.



Teaching in the VEA control unit

1. Ignition off.
2. Plug the TEACH-IN adapter into the black mating connector.
(delivered state)
3. Ignition on (stage 2/"car ready" in an electric vehicle cockpit)
4. Status LED flashes slowly (ready for teach-in) -> point 6.
5. Status LED flashes quickly (cabling error; start from point 1 to rectify it).
6. Fully depress the original accelerator pedal module (hold down for approx. 1-2 s and then release again).
7. Fully depress the additional accelerator pedal (hold down for approx. 1-2 s and then release again).
8. Press the button for approx. 1 s to confirm the teach-in process. (5x slow flashing means teach-in was successful, go to point 10/fast flashing means teach-in was unsuccessful)



9. If teach-in was unsuccessful, start from point 1. If the process fails again, perform troubleshooting and, after rectifying the error, go to point 1.
10. Ignition off
11. Unplug the TEACH-IN adapter
12. Plug in the mating connector.
13. Ignition on and test.



Button with integrated status LED

1. Drill a hole with a minimum 19.2 mm diameter in a suitable place. Note the length of the button and plan for a minimum depth of 40 mm.
2. Insert and screw down the button, then connect it to the wiring harness supplied.



VEA functional check

1. Start the vehicle.
The VEA should be adjusted to the original accelerator pedal. Make sure that the original accelerator pedal is active and working correctly. Switch the vehicle off. (Ignition completely off)
2. Start the vehicle again and, within the next 6 seconds, press the switchover button once for 1 second to change the pedal. (Attention: The 6-second window begins when ignition stage 1 is switched on.)
3. If controlled accelerating is not working properly, check all plugs and make sure that the cabling is correct.
4. If you do not find any faults in the wiring, repeat the teaching procedure.
5. If this does not solve the problem, please call our hotline.



Operation of the electronic switchover

To change the mode, proceed as follows:

1. Ignition off
2. De-energise the VEA by pulling both fuses and re-inserting them.
3. Fully depress and hold down the original accelerator pedal. At the same time, press and hold down the switchover button as well.
4. Ignition on. At the same time, continue to hold down the accelerator pedal and the button.
5. Hold the button down for approx. 10 s longer, until the LED starts to flash.
6. Release the button and the accelerator pedal.
7. The LED on the button flashes once slowly and once quickly (mode 1).
8. Briefly press the button once.
9. The LED on the button should now flash once slowly and twice quickly (mode 2).
10. Do not press anything and wait for approx. 30 s until there are no more flashes (mode saved).
11. Ignition off
12. Ignition on and test



Change operation mode, and thus the selection between mode 1 and mode 2 are only available after assembly.

When delivered, the VEA is in mode 1.



Mode 1 = The original accelerator pedal is active each time the vehicle restarts.



Mode 2 = the last accelerator pedal used remains stored.

In Mode 1

1. Ignition on.
2. Status LED flashes quickly once. (LED indicating that the original pedal is active is not lit)
3. Press the button within 6 s to switch the accelerator pedal. (Attention: This can only be done once, after that the ignition needs to be switched off and switched on again.)
4. If the left accelerator pedal module is active, the status LED lights up continuously. Otherwise, the LED goes out and the original accelerator module is active.



In Mode 2

1. Ignition on
2. Status LED flashes quickly once. (LED indicating that the original pedal is active is not lit.) (LED indicating that the additional pedal is active flashes.)
3. Press the button within 6 s to switch the accelerator pedal. (Attention: This can only be done once, after that the ignition needs to be switched off and switched on again.)
4. If the left accelerator pedal module is active, the status LED lights up continuously. Otherwise, the LED goes out and the original accelerator module is active.
5. The most recently active accelerator module has been saved and preselected for the next start.



If the switchover button lights up but the additional accelerator pedal does not respond, take the vehicle to a workshop.

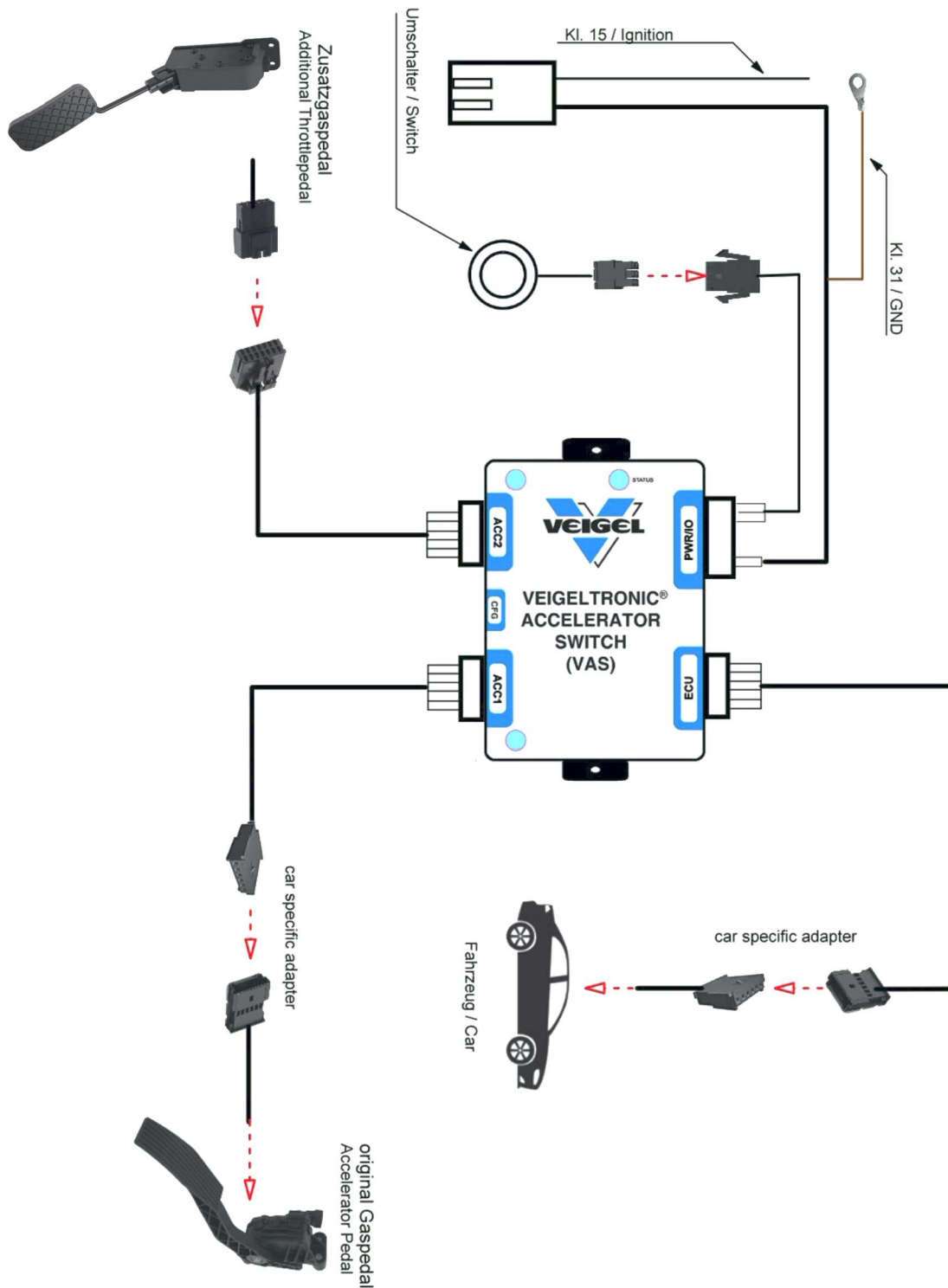


If the additional accelerator pedal responds incorrectly or with a delay, stop using the vehicle.



VAS control unit

VAS block diagram



Connecting the accelerator pedal to the VAS control unit

1. Disconnect the original accelerator pedal.
2. Using the adapter cable (original Acc.), connect the original accelerator pedal to the connector of the VAS cable set (original Acc.).
3. Connect the previously disconnected connector of the original accelerator pedal to the adapter cable (ECU) and the other end to the VAS cable set on the ECU connector.
4. Connect the additional accelerator pedal to the connector (secondary ACC.) of the VAS cable set.

Assembling the VAS control unit

1. Connect the plugs to the VAS box. Fasten all loose cables and check that the relevant plugs are seated securely.
2. Connect the power supply between the VAS and the vehicle:
Terminal 15 – black cable
Earth – brown cable

It is recommended to disconnect terminal 15, preferably in the fuse box.



The VAS control unit does not need to be taught in.

The mode that always activates the last pedal driven is automatically active.

Button with integrated status LED

1. Drill a hole with a minimum 19.2 mm diameter in a suitable place. Note the length of the button and plan for a minimum depth of 40 mm.
2. Insert and screw down the button, then connect it to the wiring harness supplied.



Operation of the electronic switchover

1. Ignition ON
2. Status LED flashes once (status LED indicating that the original pedal is active is not lit) (status LED indicating that the additional pedal is active flashes).
3. Press the button briefly within 6 s to switch the accelerator pedal. (Attention: This can only be done once, after that the ignition needs to be switched off and switched on again.)
4. If the additional pedal is active, the status LED lights up continuously.
If the original pedal is active, the status LED is not lit.
5. The most recently active accelerator module is saved and is pre-selected for the next vehicle start.





Universal adapter

If there are no adapter cable sets for your vehicle, proceed as follows.

- Set the multimeter to direct current (DC).
- Connect the earth to the vehicle chassis earth.
- Vehicle ignition on, stage 2 ("car ready" in an electric vehicle cockpit)
- Measure all contacts in the connected state (using a measuring needle is recommended).
- Enter the measured values in the table below in the appendix.

Attention: The pin assignment of the accelerator pedal connectors may vary for each vehicle.

Your measured values should look as follows:

Analogue accelerator pedal

- Power supply 1 (+5 V) -> purple
- Power supply 2 (+5 V) -> orange (If you only measure a 5 V voltage once, please connect both the orange and the purple cable there.)
- Earth 1 (0 V) -> blue
- Earth 2 (0 V) -> grey
- Signal 1 high (high voltage value) -> white (measured when the accelerator pedal is pressed)
- Signal 2 low (low voltage value) -> pink (measured when the accelerator pedal is pressed)

Digital accelerator pedal SENT (oscilloscope is recommended)

- Power supply 1 (+5 V) -> purple
- Power supply 2 (+5 V) -> orange (If you only measure a 5 V voltage once, please connect both the orange and the purple cable there.)
- Earth 1 (0 V) -> blue
- Earth 2 (0 V) -> grey
- Signal 1 -> white / signal 2 -> pink
- ❄ Measured voltage on multimeter very low and change is hardly noticeable when accelerator pedal is pressed. Using an oscilloscope is recommended here to make the voltage change visible and to differentiate it from earth.
- ❄ If the vehicle does not function properly after the functional check, please switch the two signal lines.

Digital accelerator pedal PWM

- Power supply 1 (+5 V) -> purple
- Power supply 2 (+12 V) -> orange
- Earth 1 (0 V) -> blue
- Earth 2 (0 V) -> grey
- Signal 1 analogue (0 V - 5 V) -> pink (measured when the accelerator pedal is pressed)
- Signal 2 PWM (0 V - 12 V) -> white (measured when the accelerator pedal is pressed)

Signal	Cable colour	Measured voltage	Pin number
Power supply 1			
Power supply 2			
Earth 1			
Earth 2			
Signal 1			
Signal 2			

Signal	Cable colour	Measured voltage	Pin number
Power supply 1			
Power supply 2			
Earth 1			
Earth 2			
Signal 1			
Signal 2			



Operation

Safety information

The accelerator pedal will restrict the space available in the footwell on the driver's side to a certain extent once installed. Installing the accelerator pedal alters vehicle operation. When lending the vehicle to another person or when taking it to the workshop, please ensure that you make them aware of the accelerator pedal and tell the respective person how to use it.

Take a moment to familiarise yourself with the converted vehicle. It may be advisable to visit a driver training area to adapt to the unfamiliar mode of operation.



Check these things carefully, as if these conditions are not met, there can be no guarantee the driving aid will function properly.



Checks before setting off on any journey, action

Pedal seated securely, pedal plate and pedal arm must not rotate

You have fitted a high-quality, carefully manufactured Veigel driving aid in your vehicle. Observe the information given above to make sure your driving aid keeps working properly for a long time to come.



Arrange for any irregularities to be examined by a workshop without delay.

Accelerate:

Pressing down the accelerator pedal with your foot accelerates the vehicle.

Maintenance and care

Safety information



Maintenance and repair work on the accelerator pedal may only be performed by authorised and appropriately trained staff!

Arrange for functional faults to be remedied immediately by a specialist workshop!

Maintenance and care

Every 10,000–15,000 km

Action

Parts

Check

- All screw connections, tighten as needed
- Return spring OK
- Functional check
- Alle components for corrosion
- Axle

Grease



These jobs can also be integrated into the customer service.

Transport, storage and disposal



Transport and storage

Transport and storage are only permitted in the original packaging.



Disposal

Always comply with national and regional waste disposal directives.

We ensure that the majority of the materials used to make our products are recyclable, right from the design phase. The packaging consists of cardboard boxes, paper and, in some instances, films that can be handed in at recycling centres or public cardboard collection points.



In case of uncertainty, please contact your county waste consultancy department.

Installation record



This record is completed if the dual control is installed at a specialist workshop. If it is installed at the Veigel factory, a separate installation record will be prepared and archived there.

Customer: _____	
Article number: _____	Installation date: _____
Factory number: _____	Time: _____
Article: new <input type="checkbox"/>	Vehicle: _____
Article: supplied <input type="checkbox"/>	Licence plate no.: _____

- Installation:
- | | |
|--|--|
| <input type="checkbox"/> All screws/bolts are tight and have been sealed | <input type="checkbox"/> Distance to the brake pedal is maintained |
| <input type="checkbox"/> Drivers/connecting parts have a firm seat | <input type="checkbox"/> All plugs have a firm seat |
| <input type="checkbox"/> Pedal travel is smooth | <input type="checkbox"/> Trim panels have been installed |
| <input type="checkbox"/> Pedal travels are sufficient | <input type="checkbox"/> All cables have been laid abrasion-free |
| <input type="checkbox"/> Full throttle/idling positions are reached | <input type="checkbox"/> Type plate has been attached |
| <input type="checkbox"/> Pedal arm and pedal plate have been firmly attached and secured. (drilled off centre) | <input type="checkbox"/> Factory number has been entered in the documentation |
| | <input type="checkbox"/> Customer has received the installation and operating instructions |

Specific features: _____ Test drive performed

_____ Installation OK

Signature: _____
Fitter

Signature: _____
Supervisor



Blank page for your notes

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