INSTALLATION RECOMMENDATION
AIRTRONIC S2 - D2L IM MAXUS E DELIVER 9 (SV63)



THIS INSTALLATION RECOMMENDATION APPLIES TO 2022 MODEL YEAR AND LATER VEHICLES WITH THE FOLLOWING DRIVE TRAINS:

Permanent Magnet Synchronous, 150 kW / 204 HP, 310 Nm (HSN: 2184 / TSN: AAD)

⚠ DANGER!

High voltage – Danger!

Danger! Electric shock!

Contact with live high-voltage systems or components can have life-threatening or serious health consequences.

➔ Only certified persons who have received electrical instruction for work on motor vehicles with high-voltage systems or certified electricians for high-voltage systems in motor vehicles (specialist firms with qualified personnel for work on automotive high-volt systems) may work on high-voltage systems or components.

CONTENTS

CHAPTER	CHAPTER DESCRIPTION	PAGE
1	Introduction	3-5
2	Pre-assembly	6-11
3	Installation	12-31
4	Following installation	32
5	Parts overview	33
6	Leaflet for the customer (please print)	35
Appendix	Technical Report fuel tank No. 234XS0022-01	

This installation recommendation documents the installation of the Airtronic S2 heater in a 2022 model year vehicle of the following trim level:

- **VAN L3 H2 with 3 seats and cargo space**
- **VAN L3 H3 with 3 seats and cargo space**

PLEASE NOTE!

We provide this installation recommendation for the vehicle mentioned above without assuming any liability.
Different model years and/or trim levels may necessitate changes to this installation recommendation.
Prior to installing the heater in a vehicle, always check the feasibility of such an installation.
Any liability claims resulting from changes made to the vehicle are excluded.

Installation time ca. 8 hours

1 INTRODUCTION

SPECIAL TEXT STRUCTURE, PRESENTATION, AND PICTURE SYMBOLS

Special text formats and picture symbols are used in this installation recommendation to emphasise different situations and subjects. Please refer to the following examples for their meanings and appropriate action.

SPECIAL TEXT FORMATS AND PRESENTATIONS

- This dot (▪) indicates a list, which is introduced by a heading.
  – If an indented dash (–) follows a "dot", this list is a sub-section of the black dot.

PICTURE SYMBOLS

DANGER!

This information points out a potential serious or fatal danger. Ignoring this information can result in severe injuries.

➔ This arrow indicates the appropriate precaution to take to avert the danger.

ATTENTION!

This information points out a dangerous situation for a person and / or the product. Failure to comply with these instructions can result in injuries to people and / or damage to machinery.

➔ This arrow indicates the appropriate precaution to take to avert the danger.

PLEASE NOTE!

These remarks contain recommendations for use and useful tips for the operation, installation and repair of the heater.

SAFETY INSTRUCTIONS FOR INSTALLATION AND REPAIR

DANGER!

Improper installation or repair of Eberspächer heaters can cause a fire or result toxic exhaust entering the inside of the vehicle.
This can cause serious and even fatal risks.

➔ The heater may only be installed according to the specifications in the technical documents or repaired using original spare parts by authorised and trained persons.

➔ Installation and repairs by unauthorised and untrained persons, repairs using non-original spare parts and without the technical documents required for installation and repair are dangerous and therefore are not permitted.

➔ Installation according to this installation recommendation may only be carried out in connection with the respective unit-related technical descriptions, installation instructions, operating instructions, and maintenance instructions.
This document must be carefully read through before / during installation and repair and followed throughout. Particular attention is to be paid to the official regulations, the safety instructions and the general information.

PLEASE NOTE!

- The relevant rules of sound engineering practice and any information provided by the vehicle manufacturer are to be observed during the installation and repair.
- When carrying out electric welding on the vehicle, the positive cable at the battery should be disconnected and placed at ground to protect the control box.

LIABILITY CLAIM / WARRANTY

Eberspächer does not accept any liability for defects and damage, which are due to installation or repair by unauthorised and untrained persons. Compliance with the official regulations and the safety instructions is prerequisite for liability claims.
Failure to comply with the official regulations and safety instructions leads to exclusion of any liability of the heater manufacturer.

ACCIDENT PREVENTION

General accident prevention regulations and the corresponding workshop and operating safety instructions are to be observed.

1 INTRODUCTION

ADDITIONAL INFORMATION ON THE VALIDITY OF THIS INSTALLATION RECOMMENDATION

This installation recommendation only applies to vehicles with the engine and transmission variants listed below.

ENGINE AND TRANSMISSION VARIANT

Cubic capacity	kW / hp	Drive train
E-motor (Permanent Magnet Synchronous)	150 / 204	2WD front

PLEASE NOTE!

- This installation recommendation does not apply to RHD vehicles.
- Vehicle models, engine types, and trim levels not listed in this installation recommendation have not been tested.
  However, installation according to this installation recommendation may be possible.

INITIAL START-UP OF THE HEATER OR FUNCTIONAL TEST

- After installation or carrying out a repair on the heater, the coolant circuit and the whole fuel supply system must be vented carefully. Comply with the instructions issued by the vehicle manufacturer.
- Open all heating circuits before the trial run (set the temperature control to "warm").
- During the heater trial run, all water and fuel connections must be checked for leaks and secure, tight fit.
- If faults occur while the heater is running, use a diagnostic unit to correct the cause of the fault.

PARTS REQUIRED FOR INSTALLATION

QUANTITY	DESIGNATION	ORDER NO.
1	Airtronic S2 D2L	25 2721 05 0000
1	Vehicle-specific installation kit	24 8000 89 0012
Selected EasyStart control panel:		
1	EasyStart Pro	22 1000 35 2200
1	EasyStart Web	22 1000 35 4000
1	EasyStart Remote+	22 1000 34 1700
1	EasyStart Remote	22 1000 34 8100
1	EasyStart Timer	22 1000 34 1500

SPECIAL TOOLS/MATERIAL REQUIRED

- required torque wrench
- Reducing die for blind rivet nuts
- Drill, angle drill
- Core drill bits Ø 26, 55, 68, 92 mm
- Crimping pliers
- Anti-corrosion agent
- Body sealer

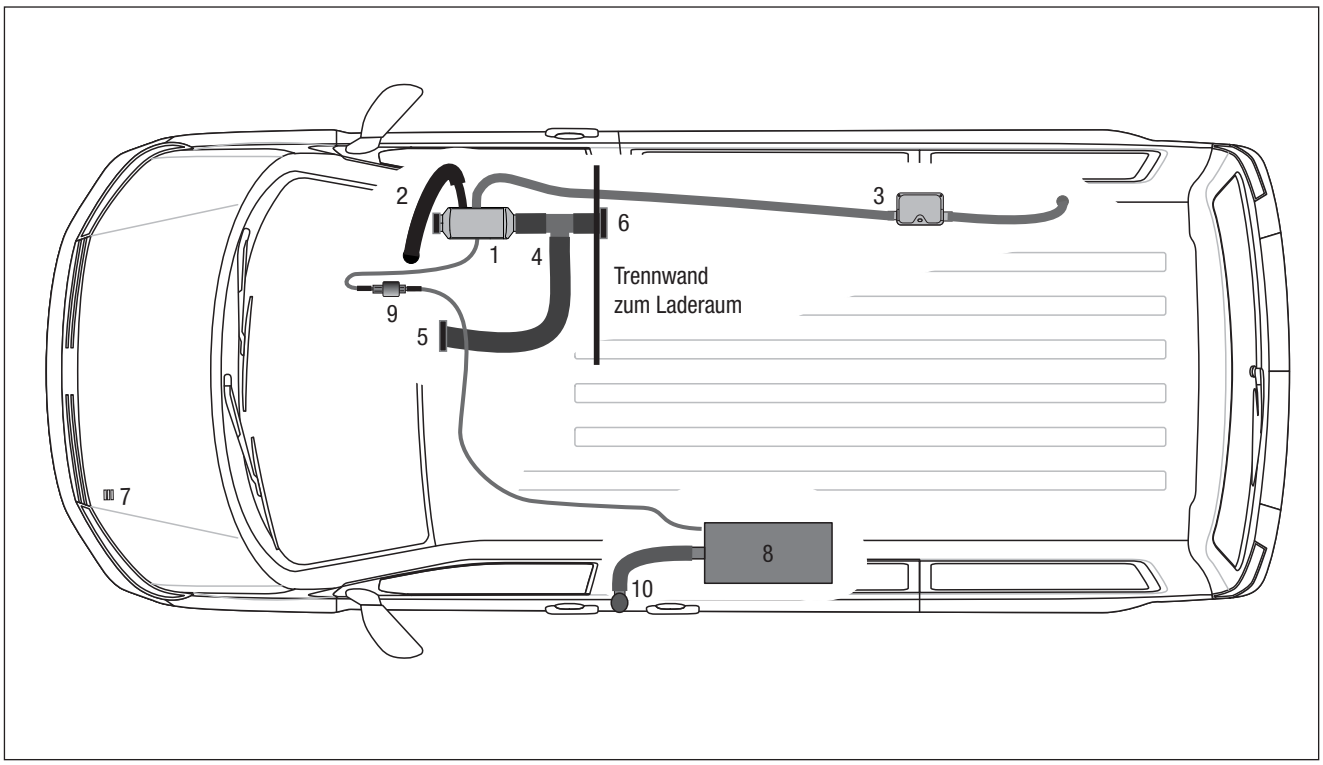
TIGHTENING TORQUES

Tighten screw connections according to the following table if no tightening torques are specified:

Component designation	Tightening torques
Hex head bolt M6	10 $^{+1}$ Nm
Hex head bolt M8	20 $^{+2}$ Nm
Hex head bolt M10	45 $^{+2}$ Nm
Torx screw M6 x 14.5	6$^{+0.5}$ Nm
Screw M4 x 16	3 $^{+0.5}$ Nm
Screw M5 x 10	5$^{+0.5}$ Nm
Pipe clamp for exhaust pipe	7 $^{+1}$ Nm
Hose clamp for water hose	3 $^{+0.5}$ Nm
Hose clamp for combustion air pipe	3 $^{+0.5}$ Nm
Hose clamp for fuel pipe	1 $^{+0.2}$ Nm

1 INTRODUCTION

INSTALLATION DRAWING



1 Airtronic S2 D2L
2 Combustion air pipe
3 Exhaust pipe with exhaust silencer
4 T-piece heater air pipe
5 Front passenger seat air outlet
6 Air outlet in the cargo space
7 Fuse holder
8 Metering pump
9 Fuel tank
10 Filler neck

PREPARATORY WORK ON THE VEHICLE

- Disconnect the battery
- Dismantle the passenger seat group
- Fold up the carpeting under the passenger seating group
- Dismantle the running board cover on the passenger side
- Dismantle the lower left dashboard panel
- Remove the left dashboard

2 PRE-ASSEMBLY

PREPARE HEATER AND ATTACH DUPLICATE NAMEPLATE
(see Fig. 1 and 2)

Mount the air scoop Ø 60 mm on the heater as shown in the figure.

Mount the grille Ø 60 mm on the intake manifold of the heater.

Remove the duplicate nameplate from the heater.

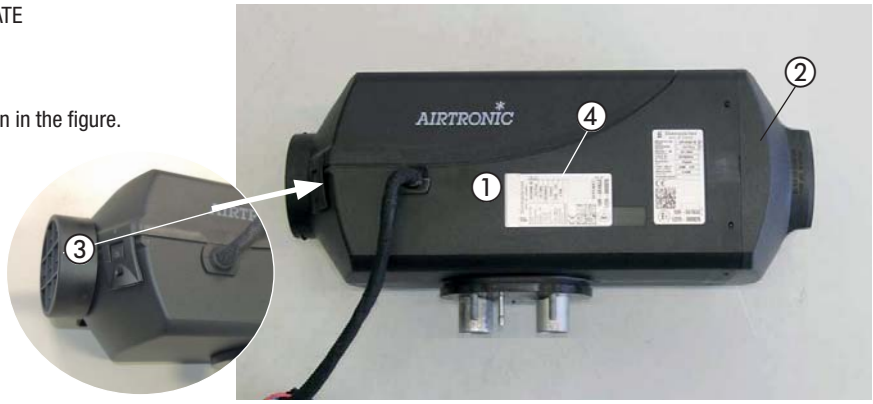


Fig. 1
① Airtronic S2 heater
② Mount the air scoop Ø 60 mm
③ Grille Ø 60 mm on the intake side of the heater
④ Remove the duplicate nameplate from heater

Adhere the duplicate nameplate to the B-pillar on the passenger side.

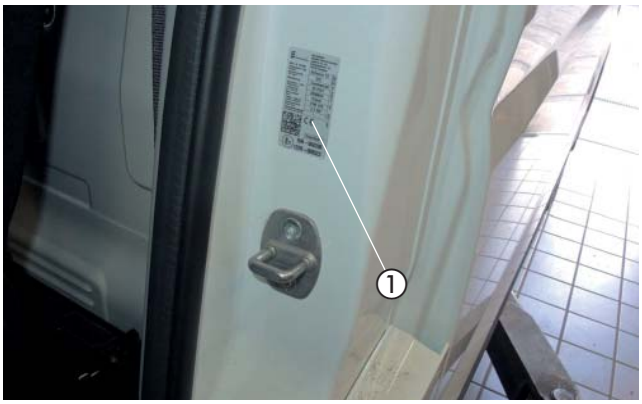


Fig. 2
① Attach the duplicate nameplate

2 PRE-ASSEMBLY

PREPARE EXHAUST SYSTEM
(see Fig. 3 and 5)

Enlarge the hole in the silencer bracket to Ø 8.5 mm as shown in the figure.

Mount the prepared bracket to the silencer using an M6 x 12 screw as shown in the figure.

The arrow on the silencer marks the direction of flow.

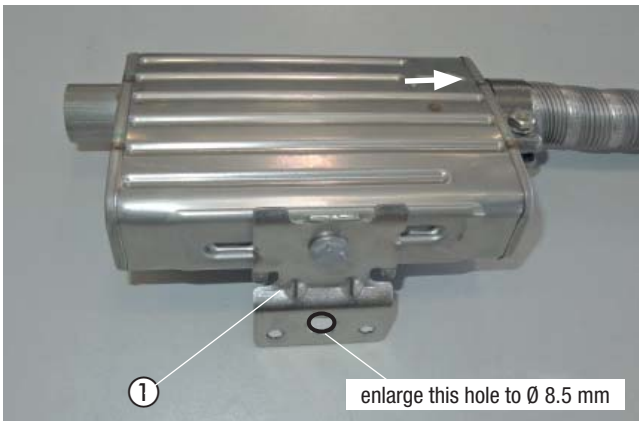


Fig. 3
① Bracket mounted to the silencer

Slide the exhaust pipe bend onto the exhaust pipe (L = 1250 mm) and fasten with a clamp.

Slide two Ø 26 mm clamps onto the exhaust pipe and fasten bracket 6400 and bracket 0108 to one of the clamps with a screw M6 x 12.

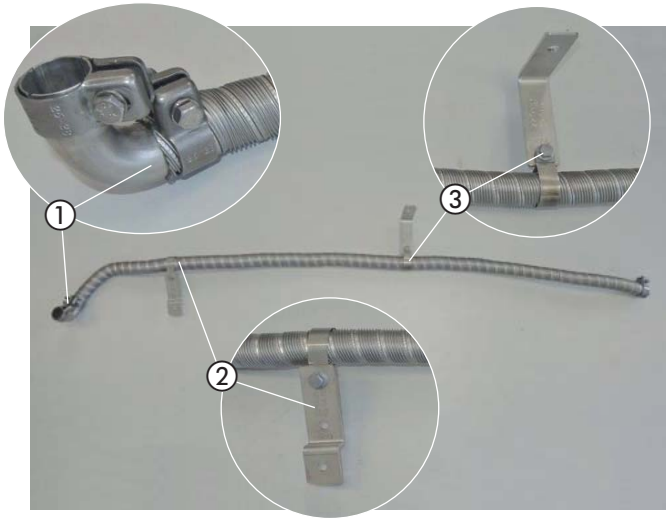


Fig. 4
① Exhaust pipe (L = 1250mm) with exhaust pipe bend installed
② Bracket 6400 with clamp Ø 26 mm
③ Bracket 0108 with clamp Ø 26 mm

Cut the tail pipe to a length of 500 mm.

Slide a Ø 26 mm clamp onto the exhaust pipe and fasten the holder 6400 with a M6 x 12 screw as shown in the figure.

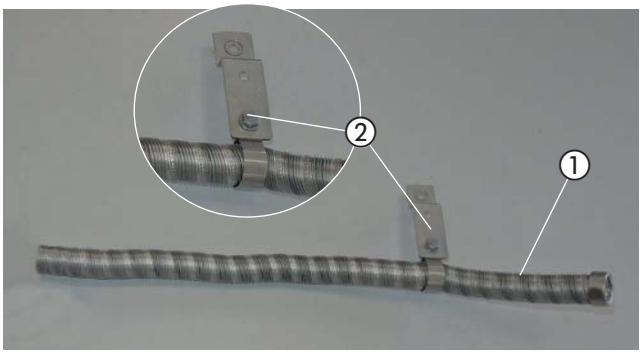


Fig. 5
① Tail pipe (L = 500 mm)
② Bracket 6400 with clamp Ø 26 mm

2 PRE-ASSEMBLY

PREPARE METERING PUMP
(see Fig. 6)

Insert the metering pump into the rubber holder as shown in the figure.

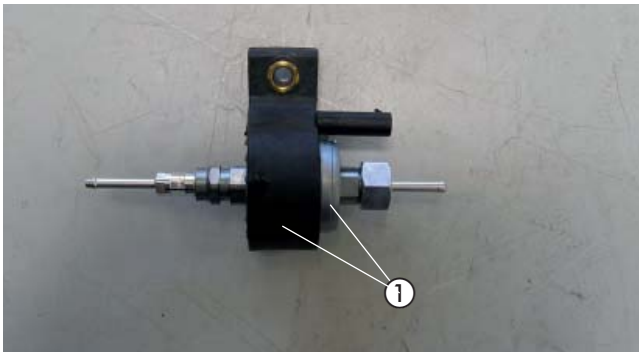


Fig. 6
① Metering pump inserted into the rubber holder

PREPARE FUEL PIPE (SUCTION + PRESSURE LINE)
(see Fig. 7 and 8)

Pre-assemble the fuel pipe Ø 4 x 1 mm (suction pipe) with the following parts as shown in the figure:

– Cut 1 x fuel pipe Ø 4 x 1 mm to L = 2200 mm
– Cut 1 x foam rubber hose to L: 2190mm
– Cut 1 x fuel hose Ø 5 mm to length (L: 50 mm)
– 1 x adapter 5.5 / 3.5 mm
– Cut 1 x fuel hose Ø 3.5 mm to length (L: 50 mm)
– 1 x fuel filter
– 4 x hose clamps (2x Ø 9 mm, 2x Ø 11 mm)

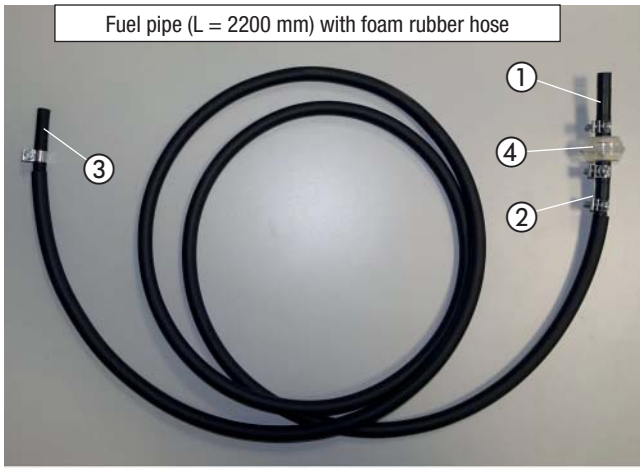


Fig. 7
① Fuel hose Ø 5 mm
② Adapter 5.5 / 3.5 mm
③ Fuel hose Ø 3.5 mm
④ Fuel filter

Pre-assemble the fuel pipe Ø 4 x 1 mm (pressure line) with the following parts as shown in the figure:

– Cut 1 x fuel pipe Ø 4 x 1 mm to L = 1050 mm
– Cut 1 x foam rubber hose to length (L: 1000 mm)
– 1x fuel hose bend 105°
– Cut 1 x fuel hose Ø 3.5 mm to length (L: 50 mm)
– 2 x hose clamps Ø 9 mm

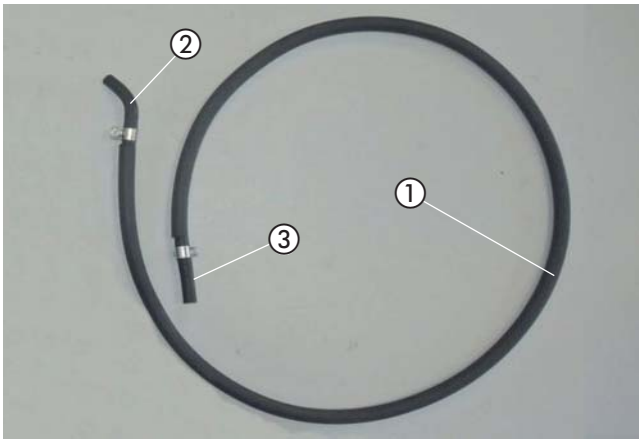


Fig. 8
① Fuel pipe (L = 1050 mm) with foam rubber hose
② Fuel hose bend 105°
③ Fuel hose Ø 3.5 mm

2 PRE-ASSEMBLY

PREPARE AIR HOSES
(see Fig. 9)

Cut the warm air hoses to length and slide them onto the T-piece as shown in the figure, and attach each with a clamp Ø 50 -70 mm.
– Cut 1 x warm air hose Ø 60 mm to L = 1050 mm
– Cut 1 x warm air hose Ø 60 mm to L = 500 mm
– Cut 1 x warm air hose Ø 60 mm to L = 100 mm
– 1 x T-piece Ø 60/60/60 mm
– 3 x clamp Ø 50-70 mm

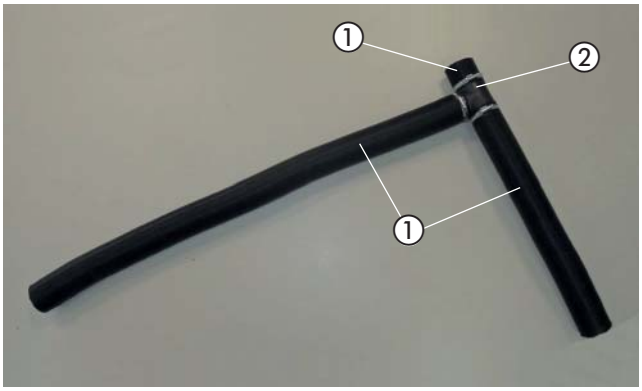


Fig. 9
① Prepared warm air hoses
② T-piece Ø 60/60/60 mm

PREPARE FUEL TANK
(see Fig. 10)

Thread the level sensor through the opening in the filler neck and mount it in the fuel tank hole (Ø 16 mm) with a plastic nut M16.

PLEASE NOTE!
The sensor thread groove must point upwards.



Pull a Ø 3 mm insulating tube over the connection wires.

Mounted level sensor

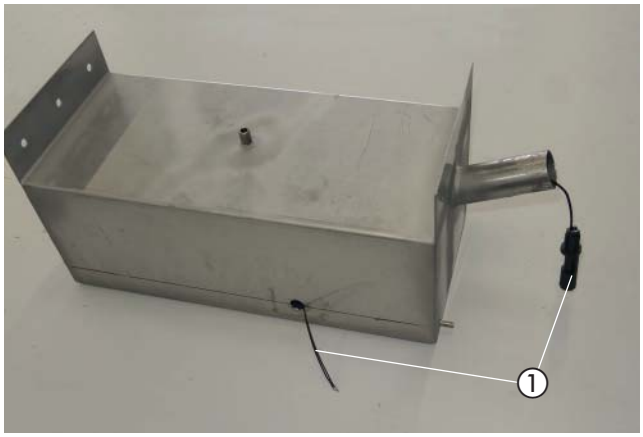


Fig. 10
① Mounting the level sensor

PREPARE THE VENT HOSE
(see Fig. 11)

Slide the ventilation element onto the ventilation hose Ø 7 mm and fasten it with a hose clamp Ø 14 mm.



Fig. 11
① Ventilation hose prepared with ventilation element

2 PRE-ASSEMBLY

PREPARE EARTH CABLE
(see Fig. 12)

Attach the ring terminal ends A5 and A8 to the 1.5 mm² brown earth wire.

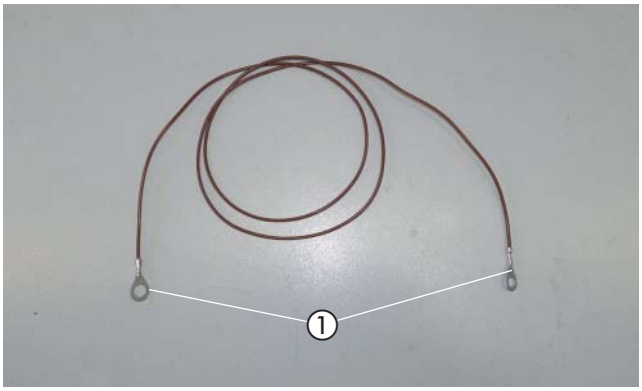


Fig. 12
① Earth cable with ring terminal ends A5 and A8

PREASSEMBLE HEATER WIRING HARNESS
(see Fig. 13 to 16)

Push the cable grommet Ø 25 mm (use the original vehicle cable grommet, see Figure 19) onto the heater wiring harness as shown in the figure.

To do this, disconnect the lines from the 4-pin diagnostic connector (Figure 14).

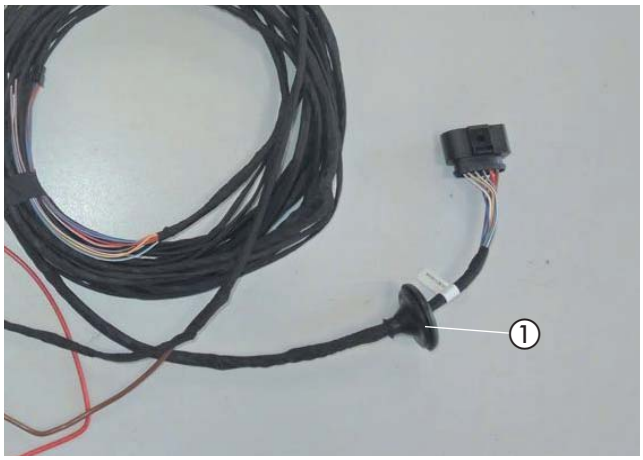


Fig. 13
① Mount cable grommet

Disconnect the contacts from the 4-pin diagnostic connector.

To disengage the contacts, push the contact lock and press down the contact springs.

Reconnect the wires to the diagnostic connector after pushing the cable grommet Ø 25 mm onto the heater wiring harness.

Cable colour	Chamber
brown	1
blue/red	2
red	3
blue/black	4

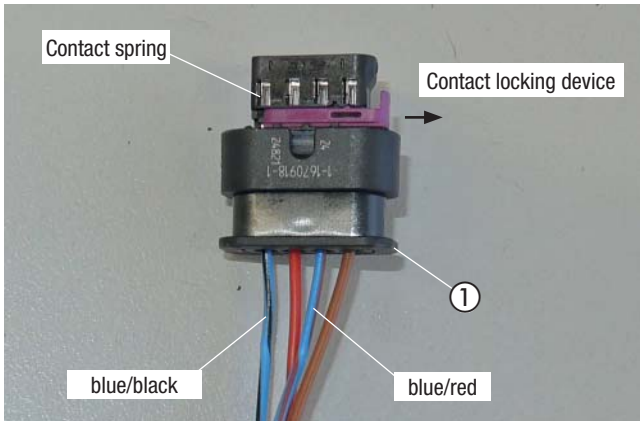


Fig. 14
① 4-pin diagnostic connector

2 PRE-ASSEMBLY

Heater wiring harness power supply
- Cable 0.5 mm² red -> plug contact with seal (white)
- Cable 2.5 mm² red -> plug contact with seal (blue)
- Earth wire 4.0 mm² brown -> ring terminal end A6

Plug the power supply cable harness into the fuse holder.

The 20 A and 5 A fuses are inserted only after the electrical system has been installed.

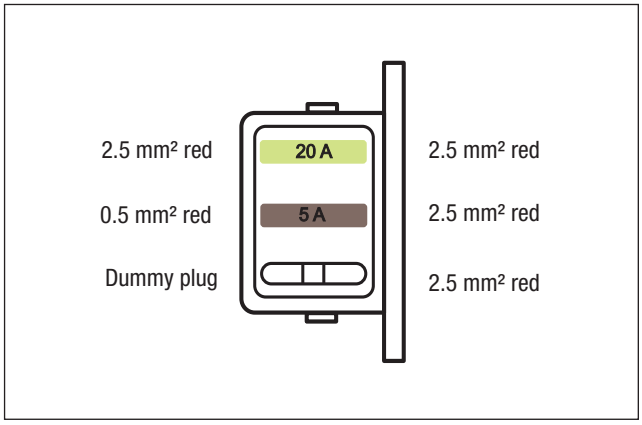


Fig. 15
View of the fuse base from the fuse side

Attach the fuse base with two M4 plastic expanding rivets to the fuse holder bracket as shown in the figure.

Fasten the diagnostic connector to the connector holder and plug it into the holder.

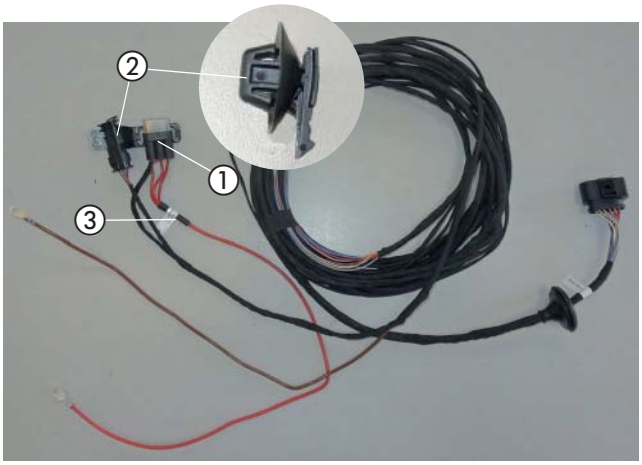


Fig. 16
① Fuse base mounted on the holder
② Connector holder with diagnostic connector
③ Cable harness power supply

PREASSEMBLE THE STATIONARY PART OF THE CONTROL ELEMENT (see Fig. 17)

WHEN INSTALLING THE EASYSTART REMOTE / REMOTE+

Mount the stationary part of the EasyStart Remote/Remote+ to bracket 0069 using two M4 x 16 screws as shown in the figure.

WHEN INSTALLING THE EASYSTART WEB

Mount the stationary part of the EasyStart Web to bracket 0069 using two M4 x 16 screws as shown in the figure.

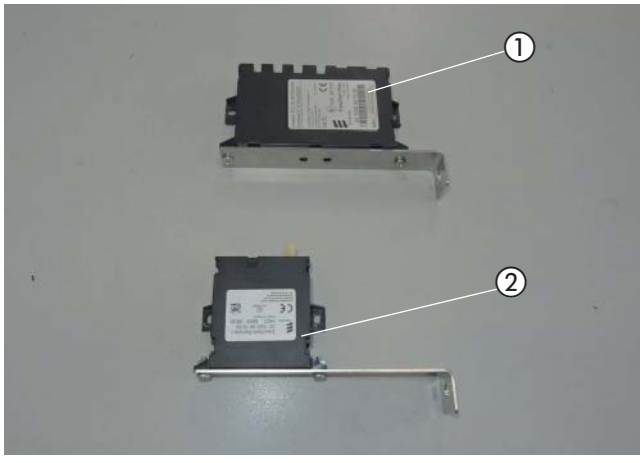


Fig. 17
① Assembling the stationary part of the EasyStart Remote/Remote+
② Assembling the stationary part of the EasyStart Web

3 INSTALLATION

MOUNTING LOCATION OF THE HEATER
(see Fig. 18 to 21)

The heater is installed on the passenger side in the storage compartment of the running board.

Remove the contents of the storage compartment.

Remove the vinyl trim.

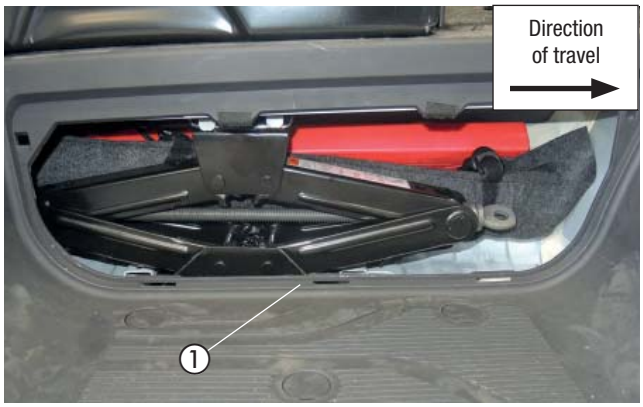


Fig. 18
① Installation position of the heater

Bend the two tabs in the storage compartment slightly to the side and cut off the front eyelet just above the vehicle floor as shown in the figure.

Take out the on-board cable grommet and prepare the heater wiring harness (see Figure 13).

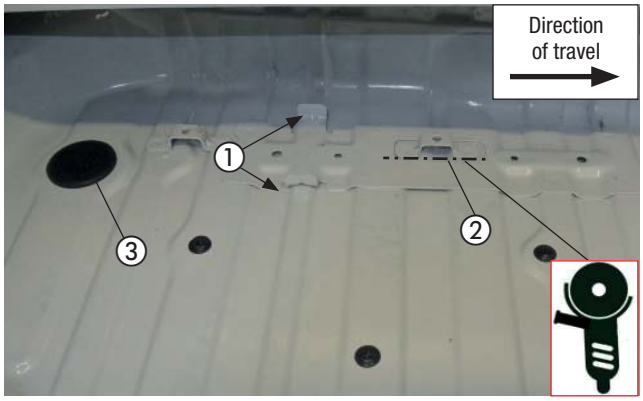


Fig. 19
① Bend tabs outward
② Cut eyelet
③ Cable grommet

Use the heater flange seal to transfer the hole pattern.

Determine the center of the vehicle's own punching around the severed eyelet, and position the heater flange seal as a drilling template and transfer the hole pattern of the flange seal.

Alternatively, use the drill template from the Airtronic S2/M2 Technical Description, Installation section, page 18.

If necessary, level the underbody with the Eberspächer leveling tool.

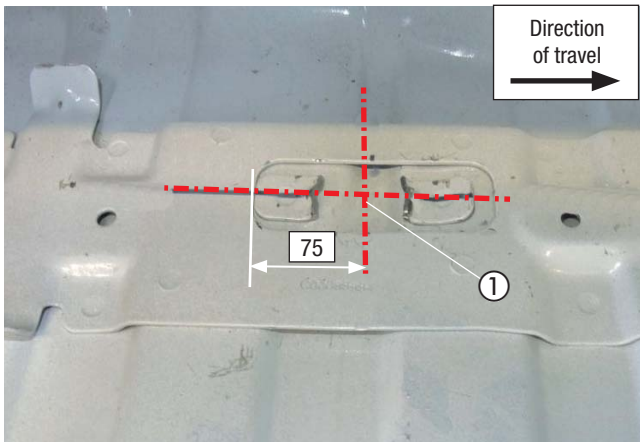


Fig. 20
① Mark the center line

Flange seal, transfer 7x bore hole positions



3 INSTALLATION

Drill the following holes.
- 4 x Ø 7 mm
- 2 x Ø 26 mm
- 1 x Ø 10 mm

ATTENTION!
Deburr all drilled holes and apply anti-corrosion agent.

PLEASE NOTE!
Use an angle drill for drilling the holes.

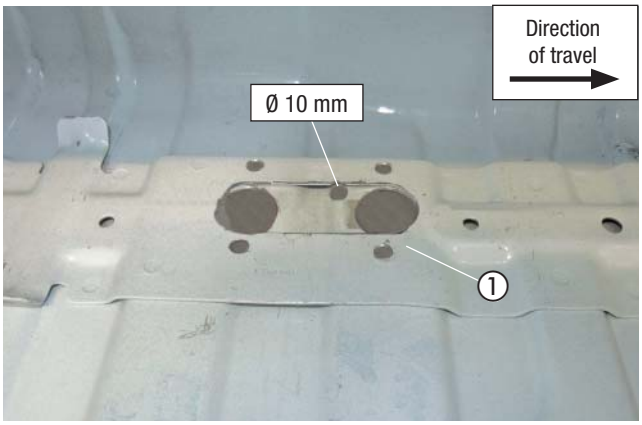


Fig. 21
① 7x drilled bore holes

CREATE AN AIR INLET IN THE FLOOR PANEL
(see Fig. 22 and 23)

Drill a Ø 68 mm hole in the floor panel on the passenger side according to the dimensions shown in the figure.

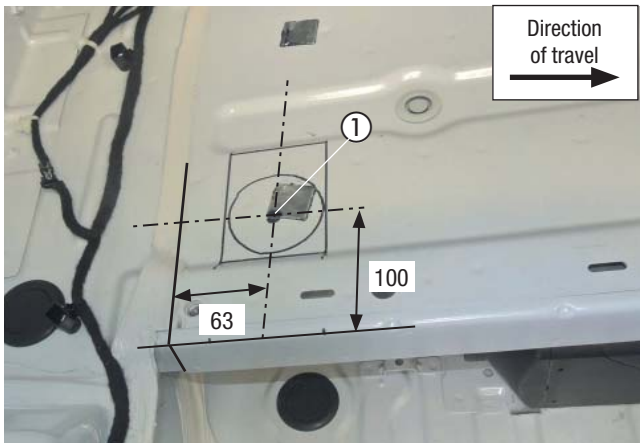


Fig. 22
① Drill 1x hole Ø 68 mm in the floor panel

Drill a Ø 68 mm hole in the floor panel.

ATTENTION!
Deburr the bore hole and apply anti-corrosion agent.



Fig. 23
① Hole Ø 68 mm drilled in the floor panel

3 INSTALLATION

CREATE AN AIR INLET IN THE BULKHEAD
(see Fig. 24 and 25)

Drill a Ø 68 mm hole in the bulkhead behind the passenger seat on the passenger side according to the dimensions shown in the figure.

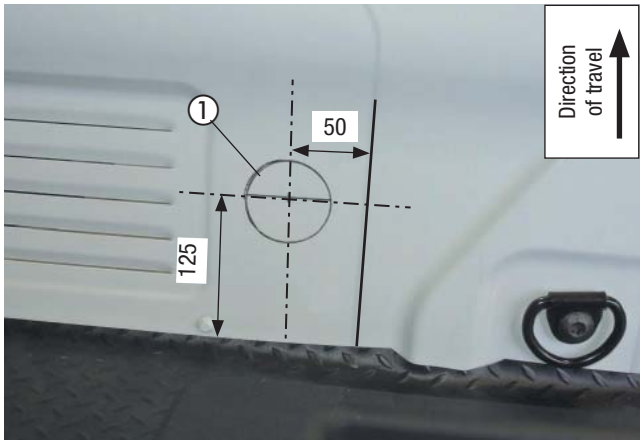


Fig. 24
① Drill 1 x hole Ø 68 mm in the bulkhead

Insert the Ø 60 mm socket from the rear into the prepared Ø 68 mm hole and mount with 3x M4 x 10 screws.

Glue in place or seal the intake manifold with body sealer.

ATTENTION!
Deburr all drilled holes and apply anti-corrosion agent.

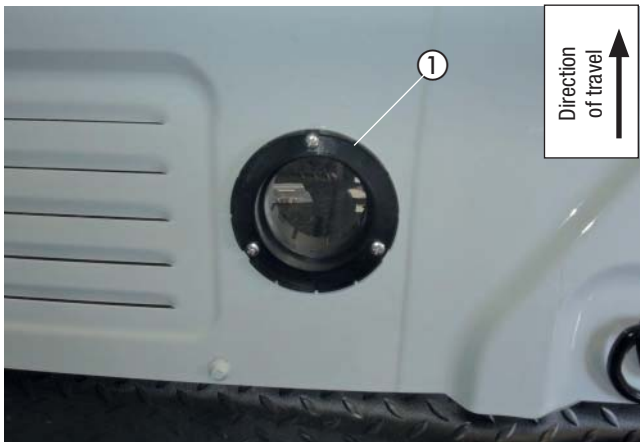


Fig. 25
① Socket Ø 60 mm mounted

CREATE A PASSENGER SEAT AIR INLET
(see Fig. 26)

Drill a Ø 68 mm hole in the front passenger seat lining according to the dimensions shown in the figure.

Insert the Ø 60 mm socket from the front into the prepared Ø 68 mm hole and mount with 3x M4 x 10 screws.

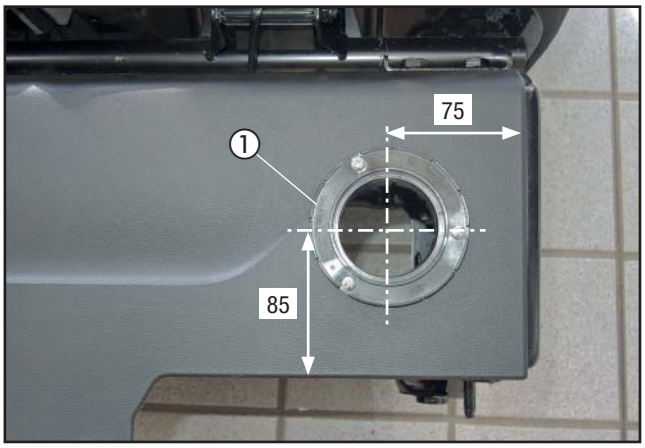


Fig. 26
① Socket on the passenger side mounted

3 INSTALLATION

INSTALL THE HEATER
(see Fig. 27)

Insert the heater with the flange seal into the drilled holes.

The intake air inlet points to the front.

Mount the heater to the underbody with 4x M6 nuts and a torque of 5^{+1} Nm.

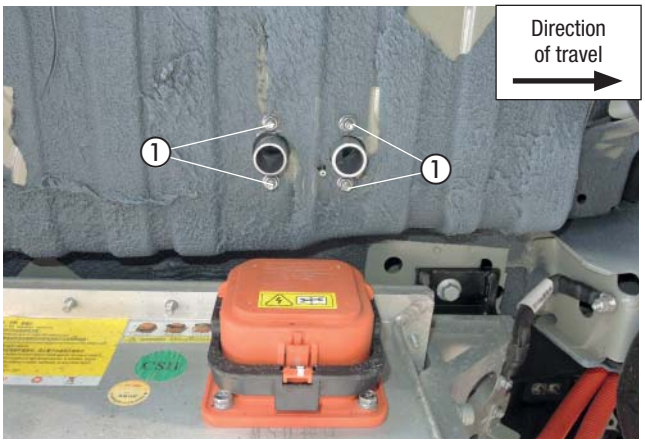


Fig. 27
① Heater mounted on the underbody

CONNECT THE AIR TUBES
(see Fig. 28 to 30)

Fold back the carpeting and cut out the opening for the air channeling. Reinstall the passenger seat frame.

Route the warm air hose (L = 500 mm) through the drilled hole to the heater.

Connect the warm air hose (L = 100 mm) with a hose clamp Ø 50-70 mm to the socket already installed on the bulkhead to the cargo space.

Route the warm air hose (L = 1050 mm) inside the seat frame to the socket that has already been installed.

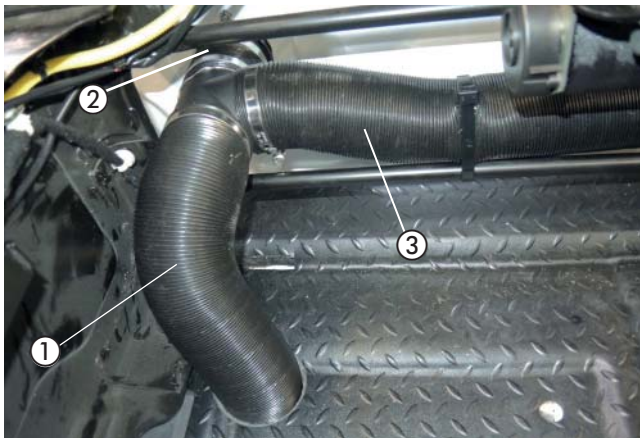


Fig. 28
① Warm air hose (L = 500 mm)
② Warm air hose (L = 100 mm)
③ Warm air hose (L = 1050 mm)

Route the warm air hose (L = 500 mm) to the heater as shown in the figure and attach it to warm air exit of the heater with a hose clamp Ø 50-70 mm.

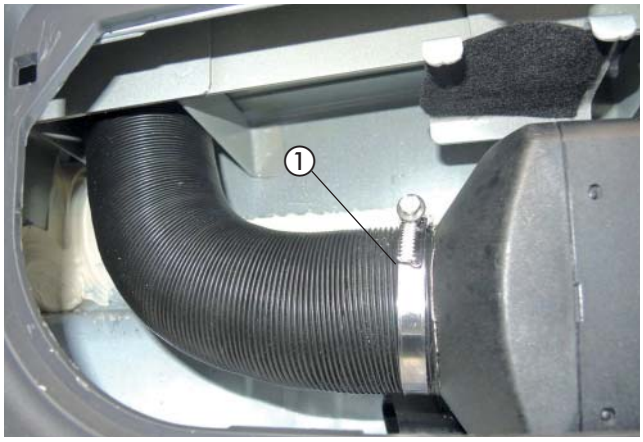


Fig. 29
① Warm air hose L = 500 mm mounted to the heater

3 INSTALLATION

Route the warm air hose L = 1050 mm inside the seat frame of the front passenger seat.

Attach the warm air hose (L = 1050 mm) with a hose clamp Ø 50-70 mm to the socket installed on the front passenger seat.

Using two cable ties, attach the warm air hose to the front passenger seat as shown in the figure.

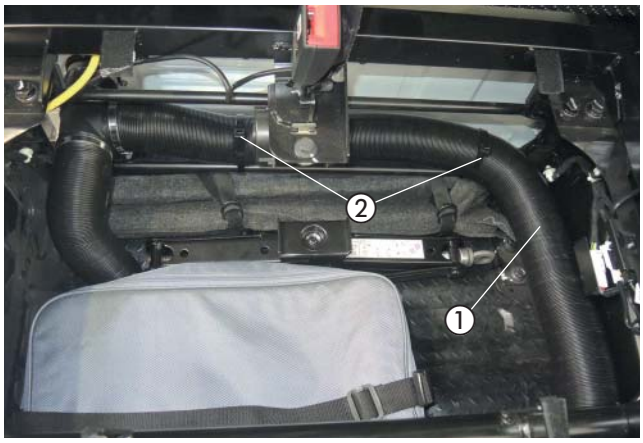


Fig. 30
① Routing of the warm air hose L = 1050 mm
② Cable tie

CONNECTING AND ROUTING THE COMBUSTION AIR PIPE
(see Fig. 31 and 32)

Using a hose clamp Ø 20-32 mm, attach the combustion air pipe with the attached combustion air pipe elbow to the heater, and route the combustion air pipe assembly to the front right and around the heater as shown in the figure.

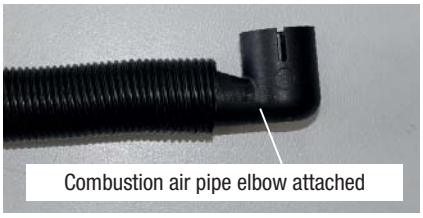

Combustion air pipe elbow attached



Fig. 31
① Combustion air pipe connected

Route the combustion air pipe according to the figure to the left front side of the high-voltage battery (HV battery) and fasten it to the vehicle's bracket with a wide cable tie as shown in the figure.

ATTENTION!
Route the combustion air pipe in such a way that heater can only draw dry and clean combustion air.

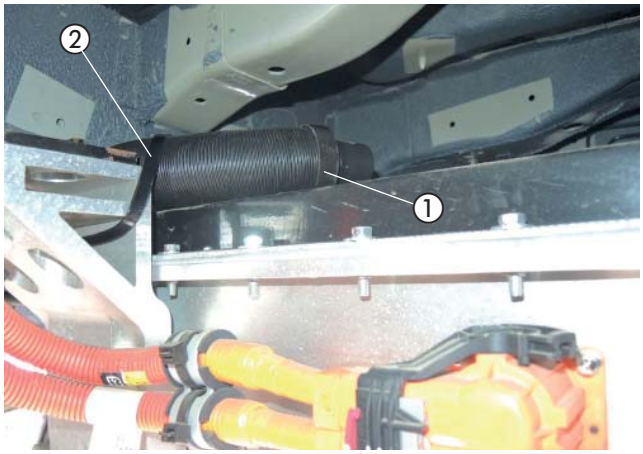


Fig. 32
① Combustion air pipe routed
② Cable tie

3 INSTALLATION

MOUNTING AND CONNECTING THE EXHAUST SYSTEM
(see Fig. 33 to 37)

Mount the exhaust system on the right side of the underbody.

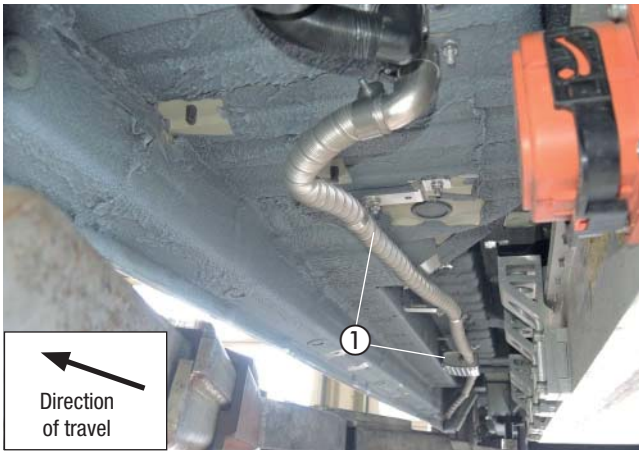


Fig. 33
① Installation location of the exhaust system

Mount the prepared silencer with an M8 nut on the existing M8 stud bolt inside the right side rail.

Connect the exhaust pipe to the silencer and route it to the heater.

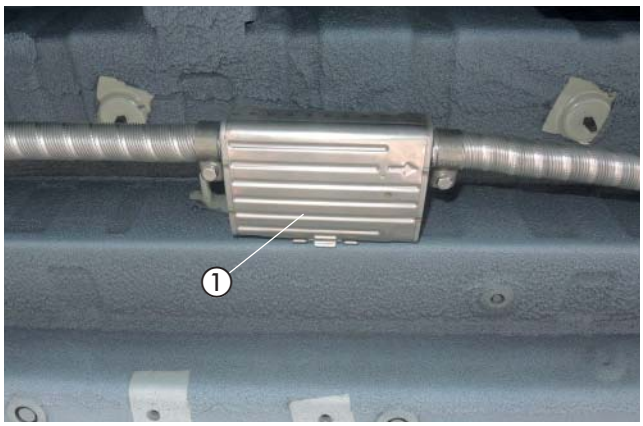


Fig. 34
① Mounted silencer

Route the exhaust pipe to the heater as shown in the figure and connect it to the heater with the exhaust pipe bend.

Mount and align the prepared bracket 6400 with an M6 nut on the existing M6 stud bolt.

ATTENTION!
When installing the exhaust pipes, maintain sufficient clearance to adjacent body components.



Fig. 35
① Connected exhaust pipe
② Mounted bracket 6400

3 INSTALLATION

Mount the exhaust pipe with the bracket 0108 to the existing M8 stud bolt using an M8 nut as shown in the figure.

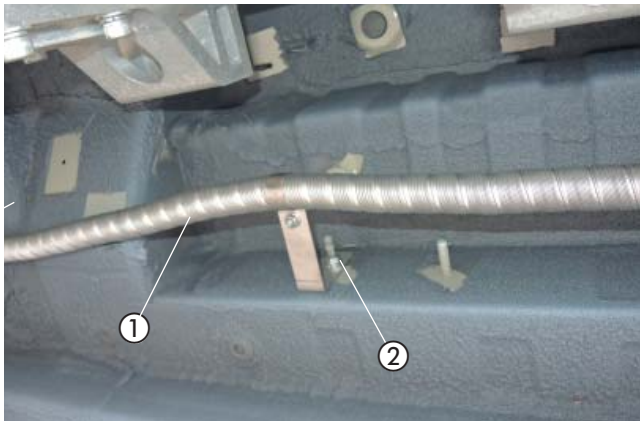


Fig. 36
① Exhaust pipe mounted with bracket 0108

Connect the tailpipe to the silencer and route it to the rear.

Using an M6 x 12 screw, mount the tailpipe with the installed bracket 6400 in the existing bore hole.

Shape the tailpipe as shown in the figure.

ATTENTION!
When installing the exhaust pipes, maintain sufficient clearance to adjacent body components.

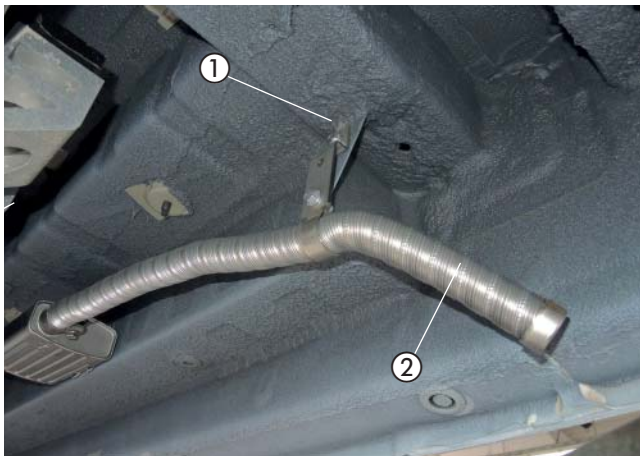


Fig. 37
① Bracket 6400
② Shaping the tailpipe

3 INSTALLATION

MOUNTING THE FILLER NECK
(see Fig. 38 to 44)

Drill a hole for the fuel hose on the driver's side on the back of the cross member behind the running board (2nd cross member).

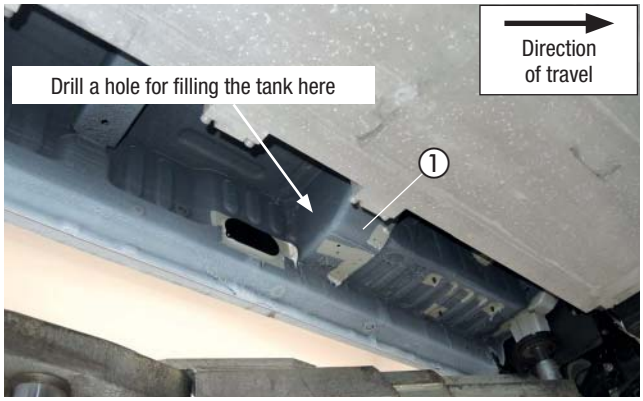


Fig. 38
① Cross member behind the running board (2nd cross member)

Drill a Ø 92 mm hole in the 2nd cross member according to the dimensions shown in the figure.

ATTENTION!
Deburr all drilled holes and apply anti-corrosion agent.

Slide the edge protection onto the edge of the drilled hole.

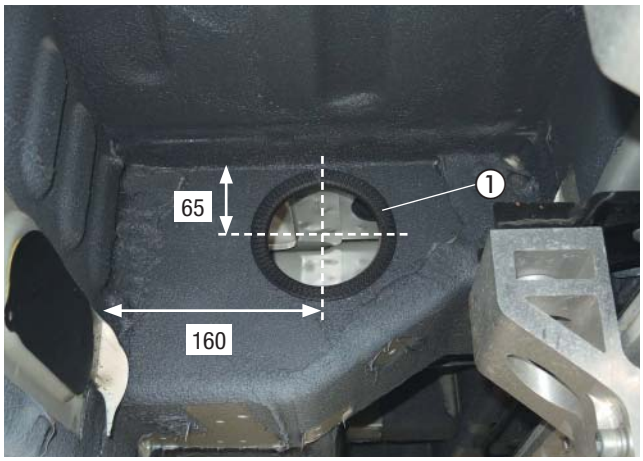


Fig. 39
① Bore hole Ø 92 mm with edge protection

Remove the filler cap cover from the vehicle.

Drill a Ø 55 mm hole in the filler cap cover according to the dimensions shown in the figure.

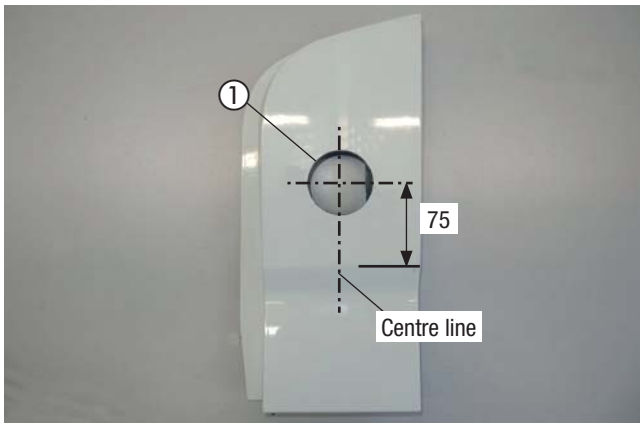


Fig. 40
① Bore hole Ø 55 mm drilled in the filler cap cover

3 INSTALLATION

Push the filler neck through the Ø 55 mm bore hole and remove the three mounting holes in the cover. The mounted filler neck points towards the bottom of the vehicle.

Drill three Ø 5.5 mm holes in the cover.

Mount the filler neck together with the mounting ring and 3 countersunk M5 x 12 bolts.

Mount the prepared earth wire with the ring terminal end on one of the 3 countersunk M5 x 12 bolts.

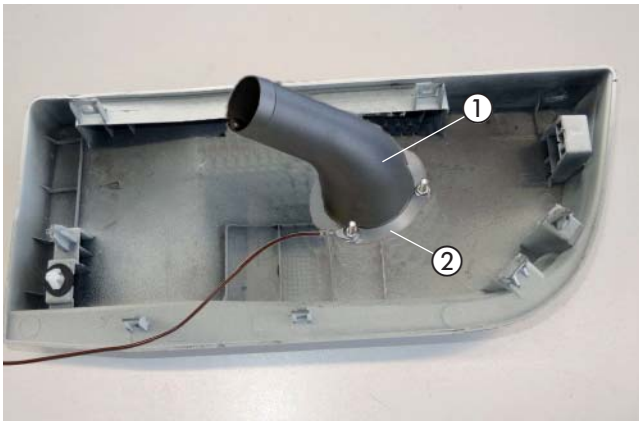


Fig. 41
① Filler neck mounted with 3 countersunk M5 x 12 bolts
② Mounting ring

Push the Ø 38 mm fuel hose onto the filler neck and secure it with a Ø 32-50 mm hose clamp.

Using a cable tie, fasten the prepared venting hose with the ventilation element and the assembled earth cable to the fuel hose.

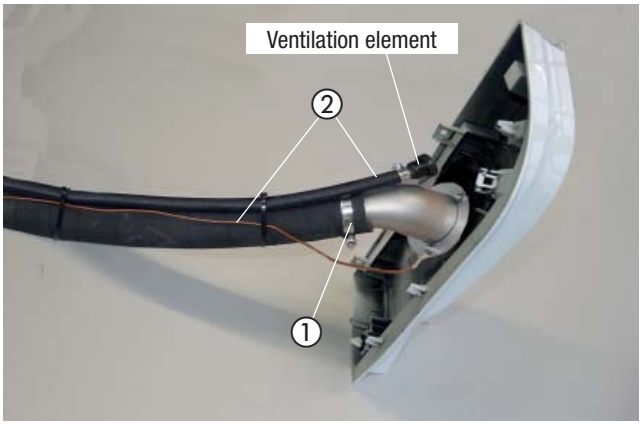


Fig. 42
① Connected fuel filler hose
② Fixed vent hose and earth cable

Reinstall the vehicle's filler cap cover.

Route the fuel hose with the vent hose and the earth cable through the bore hole Ø 92 mm in the 2nd cross member to the underbody.

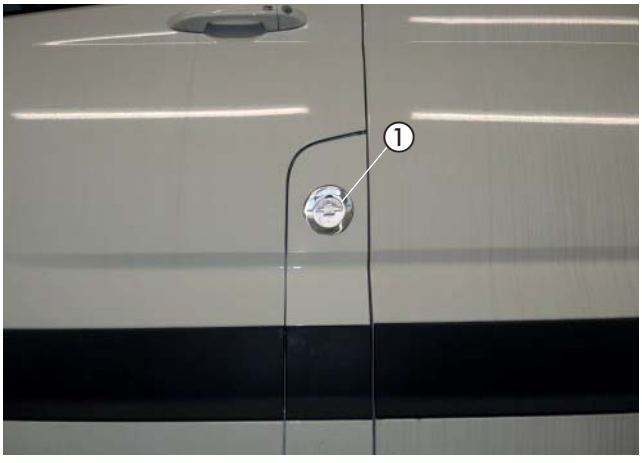


Fig. 43
① Installed filler cap cover with filler neck

3 INSTALLATION

Route the fuel hose Ø 38 mm with the vent hose and the earth cable through the bore hole Ø 92 mm in the 2nd cross member to the underbody.



Fig. 44
① Fuel hose Ø 38 mm routed to the underbody

MOUNTING THE FUEL TANK
(see Fig. 45 to 48)

The fuel tank is installed on the 3rd and 4th cross member on the left side of the underbody (driver's side).

Hold the fuel tank against the 3rd and 4th cross member (filler neck pointing to the front of the vehicle) and mark the 6 attachment points (3 attachment points each on the front and rear side of the cross member).

Drill Ø 12 mm holes into the 3rd cross member (front) at the marked attachment points and insert blind M8 rivet nuts in each.

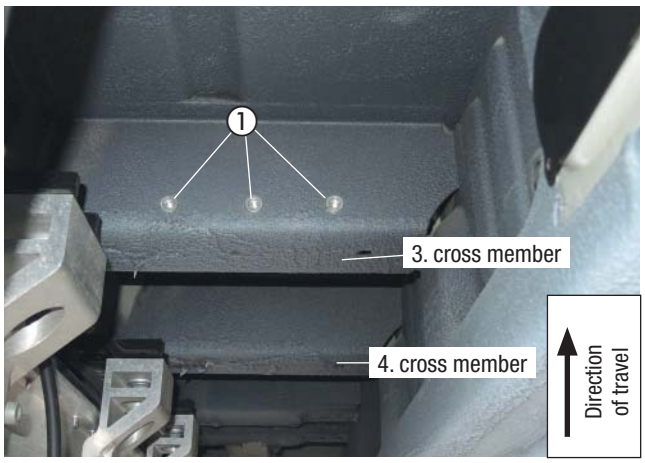


Fig. 45
① 3x blind M8 rivet nut on the 3rd cross member

Drill Ø 12 mm holes into the 4th cross member (rear) at the marked attachment points and insert blind M8 rivet nuts in each.

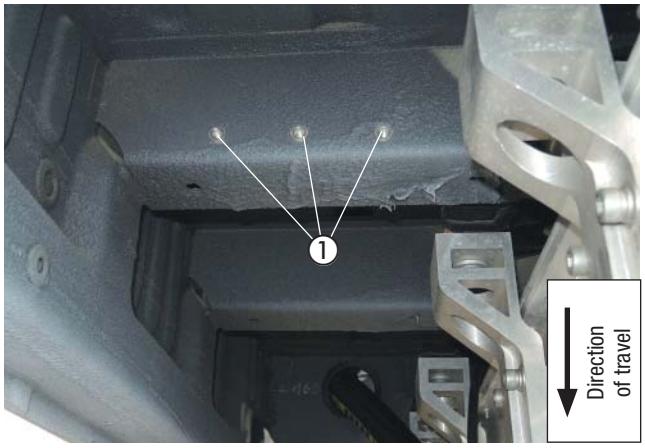


Fig. 46
① 3x blind M8 rivet nuts on the 4th cross member

3 INSTALLATION

Route the Ø 7 mm vent hose to the vent socket on the fuel tank and connect with a Ø 14 mm clamp.

Mount the fuel tank to the inserted blind M8 rivet nuts on the 4th cross member with 3x M8 x 20 bolts.

Connected vent hose Ø 7 mm



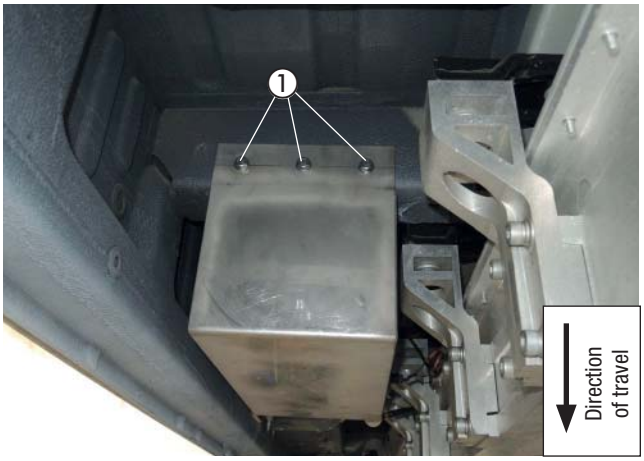


Fig. 47
① Fuel tank mounted on the 4th cross member with 3x M8 bolts

Mount the fuel tank to the inserted blind M8 rivet nuts on the 3rd cross member with 3x M8 x 20 bolts.

Mount the filler neck earth cable to one of the M8 x 20 mounting bolts.

Connect the Ø 38 mm fuel hose to the filler neck of the fuel tank and secure with 2 hose clamps Ø 32-50 mm.

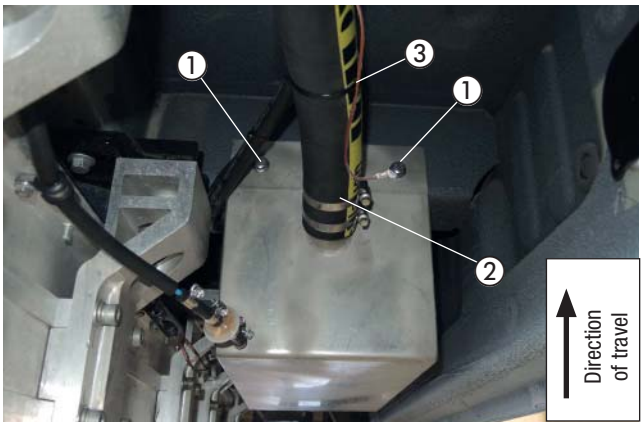


Fig. 48
① Fuel tank mounted on the 3rd cross member with 3x M8 bolts
② Connected fuel hose Ø 38 mm
③ Ground cable

CONNECTING THE LEVEL SENSOR
(see Fig. 49)

Connect the sheathed cable 2 x 1 mm² with the (red) butt connector to the level sensor cable and route it above the fuel hose Ø 38 mm to the passenger compartment.

Support the sheathed cable with 2 rubber-lined clamps Ø 10 mm on the existing M6 stud bolts of the battery housing.

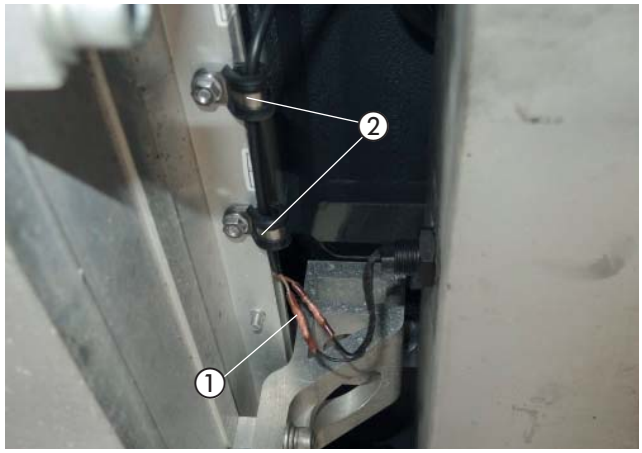


Fig. 49
① Connected sheathed cable
② Sheathed cable supported with 2 x rubber-lined clamps

3 INSTALLATION

ROUTING FUEL PIPE SUCTION LINE
(see Fig. 50 to 52)

Connect the fuel pipe (suction line), including fuel filter and fuel hose Ø 5 mm, to the fuel tank socket and route to the front.

ATTENTION!
Check the fuel socket at the fuel tank for tight fit (tightening torque 7 $^{+0.5}$ Nm).

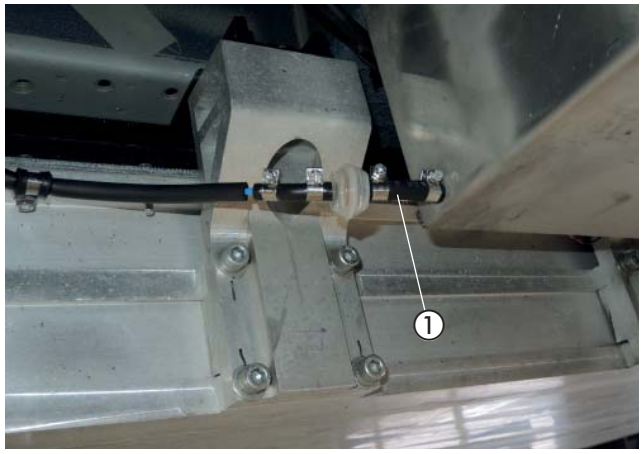


Fig. 50
① Connected fuel pipe (suction line)

Route the fuel pipe (suction line) along the battery housing to the front.

Support the fuel pipe with a rubber-lined clamp Ø 20 mm on the existing M6 stud of the battery housing.

As you proceed, route the fuel pipe along the existing vehicle wiring and fix it with cable ties.

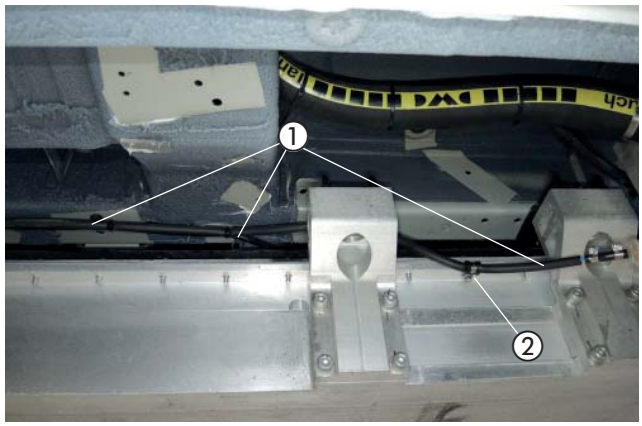


Fig. 51
① Installed fuel pipe (suction line)
② Rubber-lined clamp Ø 20 mm

Route the fuel pipe (suction line) in front of the HV battery on the right-hand side of the vehicle.

Support the fuel pipe with 2 rubber-lined clamps Ø 20 mm on the existing M6 stud bolts in the center of the underbody.

Route the fuel pipe (suction line) along the right-hand side of the vehicle forward to the mounting position of the metering pump.

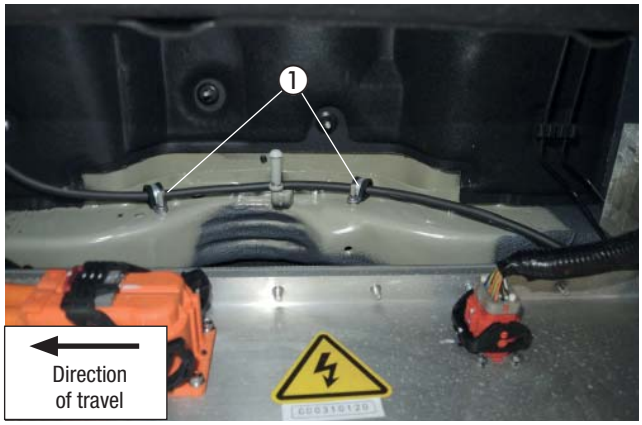


Fig. 52
① Fuel pipe supported by 2 rubber-lined clamps Ø 20 mm

3 INSTALLATION

MOUNTING AND CONNECTING THE METERING PUMP
(see Fig. 53)

The metering pump is installed on the existing M6 stud bolt on the right-hand side of the underbody (in the front area of the car at the height of the front axle).
Mount the pre-assembled metering pump with an M6 nut and a large diameter B6 washer.

Pay attention to the installation position and allow for a gradient of at least 15° on the pressure side.

Connect the fuel pipe (suction line), including the fuel hose Ø 3.5 mm, with a clamp Ø 9 mm on the intake manifold of the metering pump.

Connect the fuel pipe (pressure line, length L = 1050 mm) to the discharge port of the metering pump with a clamp Ø 9 mm and route it to the rear of the heater.

Connect the metering pump cable to the metering pump and route it to the rear of the heater.

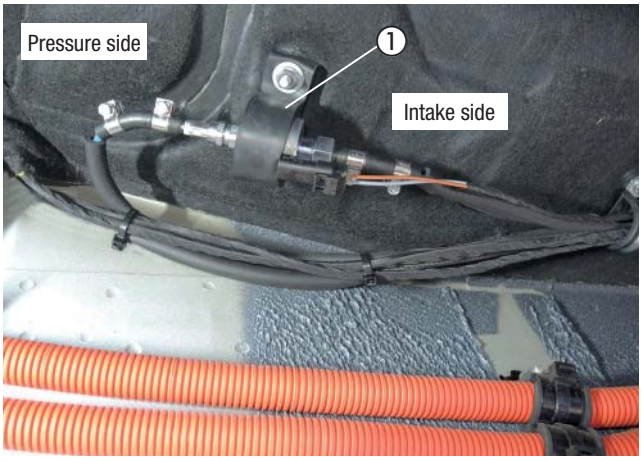
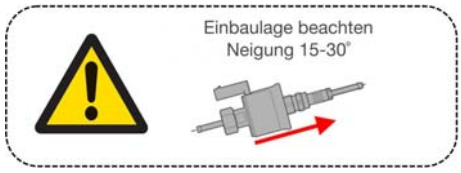


Fig. 53
① Installed and connected metering pump



PLEASE NOTE!
Secure all connections with clamps Ø 9 mm.

CONNECTING AND ROUTING THE PRESSURE LINE
(see Fig. 54)

Connect the fuel pipe (pressure line), including fuel hose bend 105°, with a hose clamp Ø 10 mm to the fuel socket of the heater.

ATTENTION!
When routing fuel lines, always ensure sufficient clearance to moving and hot vehicle and heating parts.



Fig. 54
① Fuel pipe connected to the heater

3 INSTALLATION

MOUNTING THE FUSE HOLDER
(see Fig. 55)

Mount the holder, including the fuse base, with an M6 nut on the existing stud bolt behind the left headlight as shown in the figure.

Route the heater wiring harness, including the 10-pin connector and the 2-pin wiring harness of the metering pump, to the rear of the vehicle towards the heater or the metering pump.

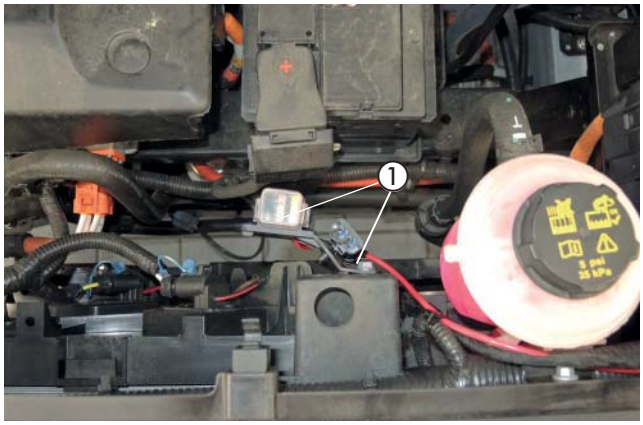


Fig. 55
① Mounted fuse base bracket

CONNECTING AND ROUTING THE HEATER WIRING HARNESS
(see Fig. 56 to 59)

Route the 10-pin connector of the heater wiring harness through the bore hole for the cable grommet in the underbody and connect it to the mating connector of the heater.

Fasten the heater wiring harness to the existing M6 studs of the HV battery with two rubber-lined clamps Ø 10 mm and two M6 nuts.

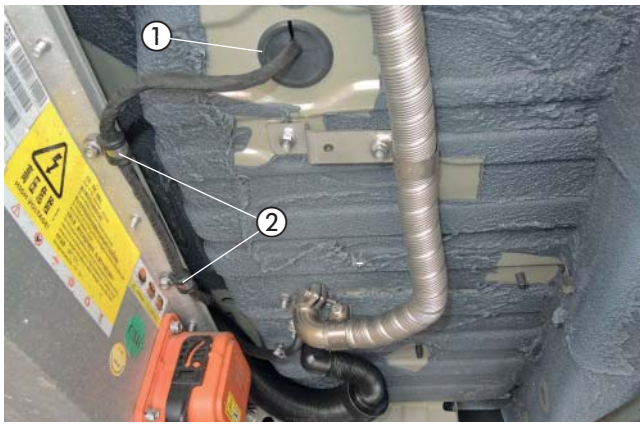


Fig. 56
① Main wiring harness with cable grommet
② 2x rubber-lined clamps Ø 10 mm

Secure the cables of the heater wiring harness with two rubber-lined clamps
Ø 20 mm to the existing M6 studs on the right side of the vehicle underbody, as shown in the figure.



Fig. 57
① Wiring harness fixed with 2x rubber-lined clamps Ø 20 mm

3 INSTALLATION

Route the “control unit” wiring harness along the engine bulkhead on the left-hand side of the vehicle.

Secure the wiring harness with cable ties at suitable points.



Fig. 58
① Installed “control unit” wiring harness

Route the “control unit” wiring harness through the vehicle's on-board cable grommet along the left-hand side of the engine compartment and into the
passenger compartment.

ATTENTION!
When routing wiring harnesses, always ensure sufficient clearance to moving vehicle parts. Secure the wiring harness
with cable ties at suitable points.



Fig. 59
① On-board cable grommet inside the passenger compartment

POWER SUPPLY
(see Fig. 60)

Route the red 4 mm² positive cable to the fuse box and connect it to the positive pole with the cable terminal A6 as shown in the figure.

Route the brown 2.5 mm² earth cable to the earthing point on the left of the fuse box and connect it with the cable terminal A6.

ATTENTION!
Insert fuses only after the installation has been completed.



Fig. 60
① Connected red positive cable 4 mm²
② Connected brown earth cable 2.5 mm²

3 INSTALLATION

INSTALLING THE FUEL RESERVE INDICATOR
(see Fig. 61 to 65)

Install the indicator light into the panel below the light control module as shown in the figure.

To do this, drill a Ø 20 mm hole and insert the indicator light.

PLEASE NOTE!
Determine the installation location of the indicator light in consultation with the customer.



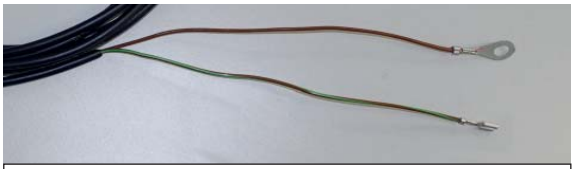
Fig. 61
① Installed indicator light

Route the sheathed cable 2 x 1 mm² under the cabin carpeting towards the front of the vehicle to the fuse block on the driver's side.

Remove ca. 20 cm sheathing from the sheathed cable. Attach a ring terminal end A6 to the brown cable and a 4.8 mm socket to the brown/green cable.

Connect the ring terminal end A6 to the existing earth point.

Insert the 4.8 mm socket into the indicator light.



Prepared sheathed cable with ring terminal end A6 and socket

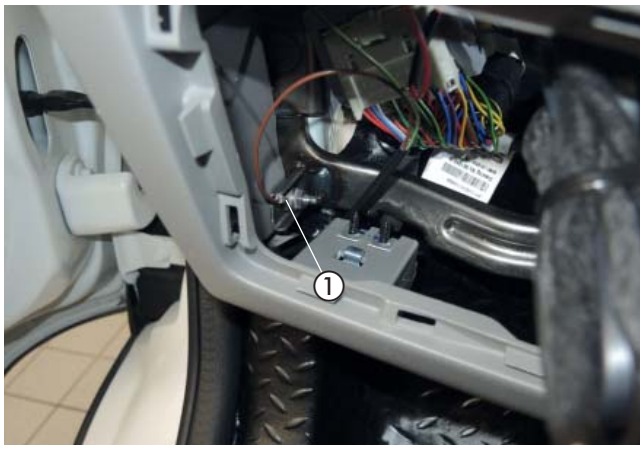


Fig. 62
① Connected brown cable 1 mm²

Cut off the existing socket at the fuse splice and attach a 4.8 mm socket.

Insert the mini fuse 5A into the slot with the outlet.

Find a slot with terminal 15 (+12 V switched) on the fuse block and remove the fuse.

Insert the fuse into the slot of the fuse splice.

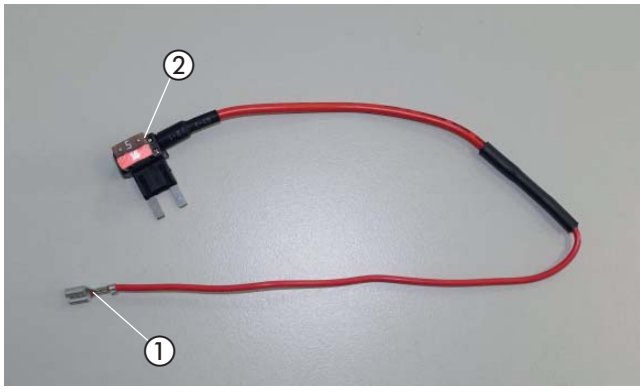


Fig. 63
① Attached 4.8 mm socket
② Fuses inserted

3 INSTALLATION

Insert the prepared fuse splice into the free fuse block slot (with terminal 15).

Insert the 4.8 mm socket into the indicator light.

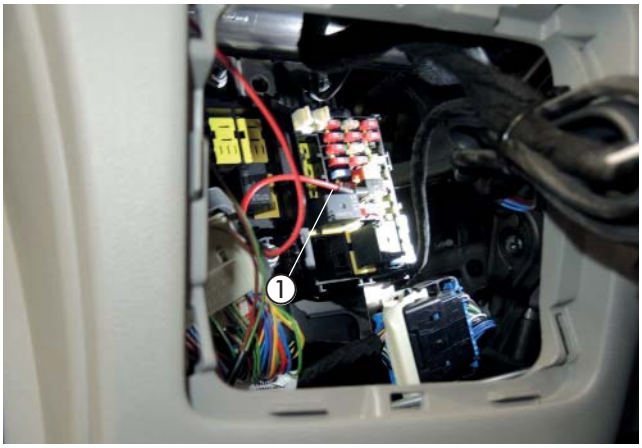


Fig. 64
① Fuse splice inserted

Connect the fuel reserve indicator light and the level sensor according to the wiring diagram.

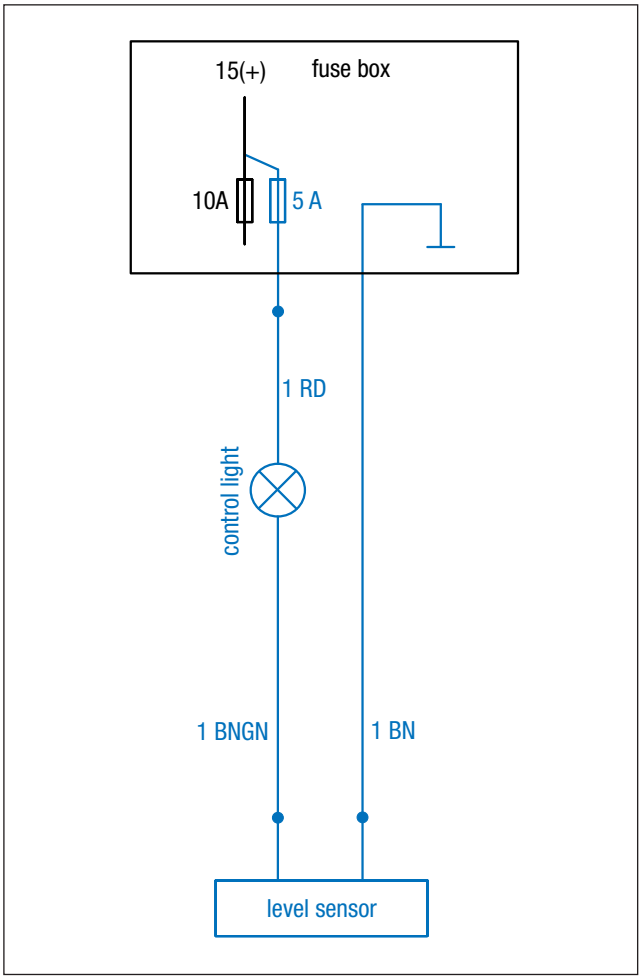


Fig. 65
① Level sensor wiring diagram with indicator light

3 INSTALLATION

INSTALLING THE AIR OUTLET
(see Fig. 66 and 67)

Attach the cover grille (fixed) according to the figure on the already installed passenger seat hose connector.

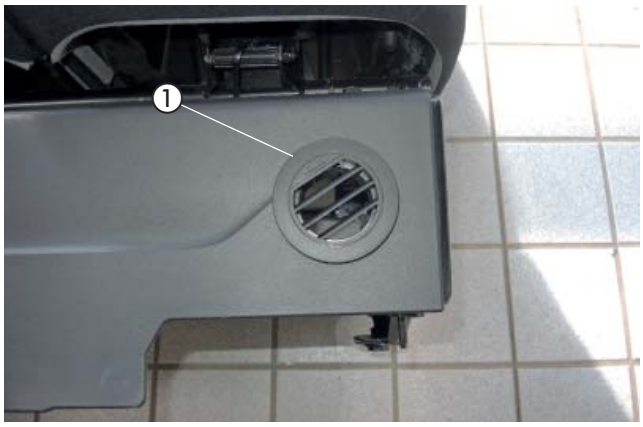


Fig. 66
① Cover grille (fixed)

Attach and align the cover grille (adjustable) on the already installed bulkhead hose connector.

⚠ ATTENTION!
Install the flat cover grille if there is a lack of space because the rear row of seats has been moved. Consult with the customer and show customer both covers.

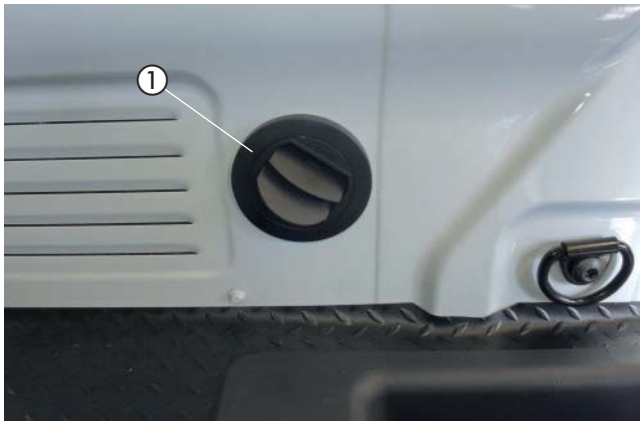


Fig. 67
① Cover grille (adjustable)

ADJUSTING THE STORAGE COMPARTMENT PANEL
(see Fig. 68)

Shorten the storage compartment panel where the intervention occurred as shown in the figure.

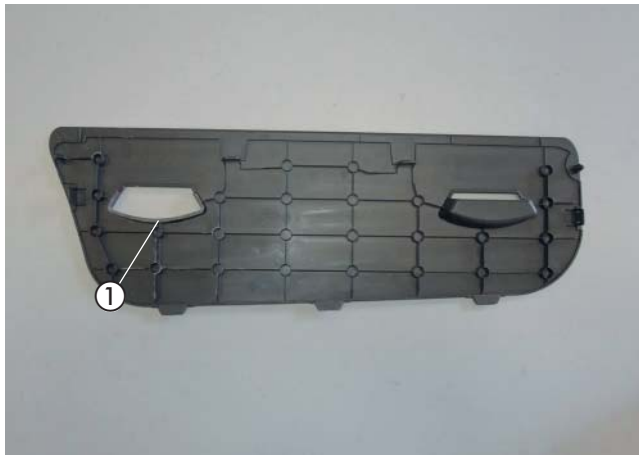


Fig. 68
① Shortening the storage compartment panel

3 INSTALLATION

INSTALLING THE REMOTE CONTROL EASYSTART REMOTE/REMOTE+ OR EASYSTART WEB
(Alternatively, consult with the customer)
(see Fig. 69 to 71)

The installation follows the radio remote control Easy Start Remote+ technical description or the EasyStart Web technical description. See the "Installation Instructions" section.

Mount the button for the control element on the dashboard panel next to the shift lever.

To do this, drill a Ø 10 mm hole and insert the button into the bore hole.



Fig. 69
① Installed remote control button

Attach the temperature sensor to the panel in the driver's footwell.



Fig. 70
① Installed temperature sensor

Mount the stationary part of the control unit on the dashboard strut to the right of the steering wheel.

Route the cables from the mounted button and temperature sensor, including "control unit" wiring harness, to the installation location of the stationary part and connect to the stationary part.

ONLY WHEN INSTALLING AN EASYSTART REMOTE+ RADIO REMOTE CONTROL Connect the antenna cable of the EasyStart Remote+ to the stationary part. Route it to the left and install it in the door's rubbers seal on the driver's side.

⚠ ATTENTION!
Secure any excess antenna cable under the dashboard with cable ties.

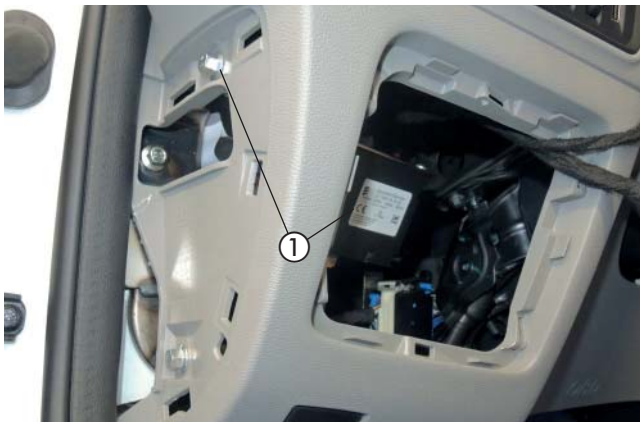


Fig. 71
① installed stationary part of EasyStart Web

3 INSTALLATION

INSTALLING THE EASYSTART PRO CONTROL ELEMENT
(Alternatively, consult with the customer)
(see Fig. 72)

The EasyStart Pro is installed according to the relevant installation instructions.

Install the control element on the free panel space to the right of the shift lever.



Fig. 72
① Installed Easy Start Pro

4 AFTER THE INSTALLATION

AFFIX THE “REFUEL” INFORMATION STICKER
(see Fig. 73)

Affix the "Refuelling" information sticker in the near of the fuel reserve indicator light as shown in the illustration.



Fig. 73
① Affix the “Refuel” information sticker

COMPLETING THE VEHICLE

- Assemble all removed parts in reverse order.
- Reconnect the battery.
- Check the hose lines, hose and pipe clamps and all electrical connections for tight fit.
- Secure all loose cables with cable ties.
- Restore all programming in the vehicle (radio, power windows, etc.):
- Observe the legal regulations and safety instructions in the technical descriptions.
- Program the control element and put the operating instructions in the glove compartment.

PLEASE NOTE!

Deposit the contents of the storage compartment in a suitable vehicle place.

COMMISSIONING THE HEATER

- Switch on the heater at the control element.
  See Operating Instructions – Control Element.

FUNCTIONAL TEST

- Turn on the heater until warm air exits from the air outlet
  .

5 PARTS OVERVIEW

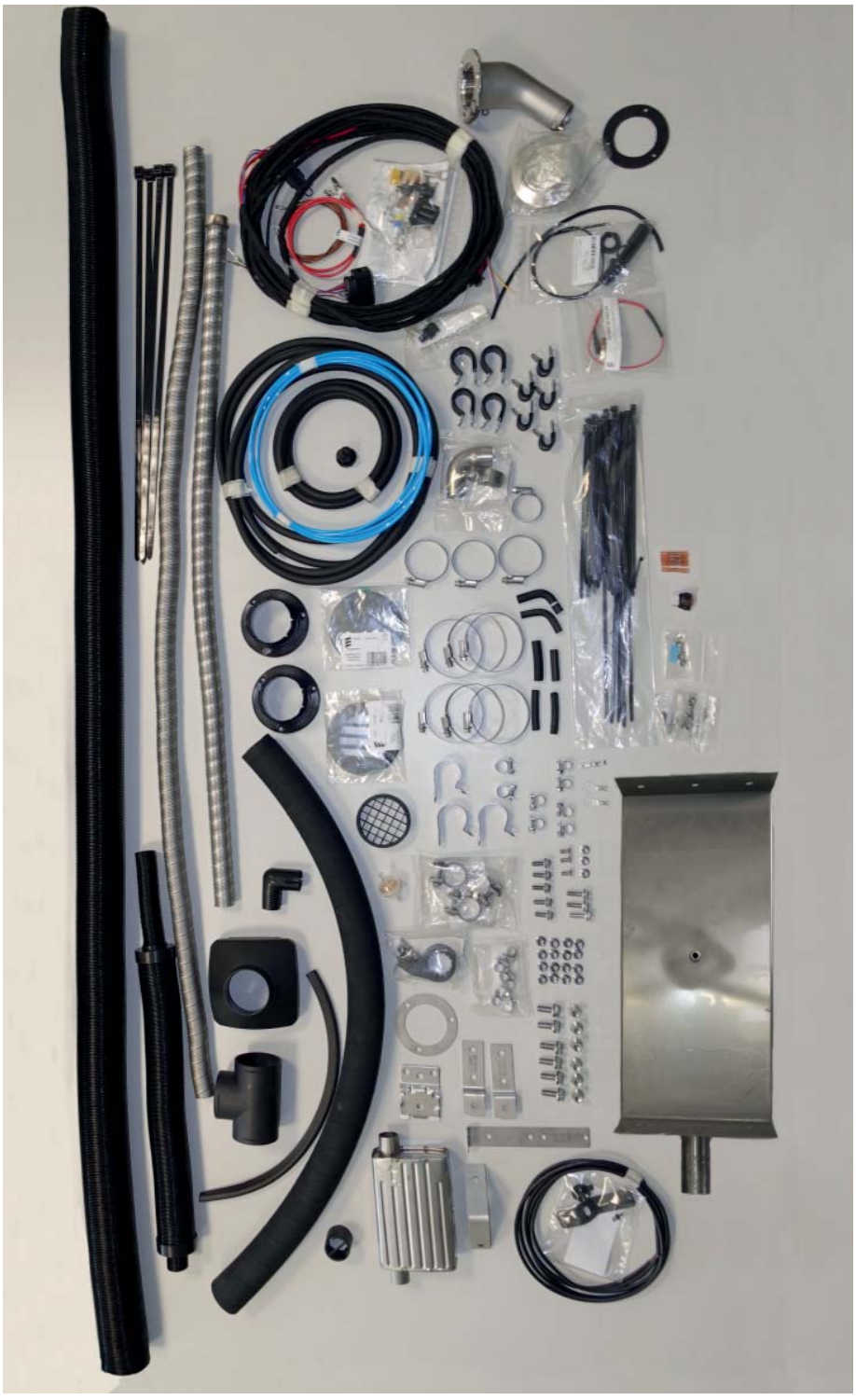


Fig. 74

LEAFLET FOR THE CUSTOMER (please print)

NOTE ON THE FUEL RESERVE INDICATOR LIGHT

The fuel tank has a capacity of approx. 14 liters.
The fuel reserve indicator lights up when the fuel level is less than 3.5 liters.



① Fuel reserve indicator

NOTE FOR THE TEMPERATURE SETTING ON THE CLIMATE CONTROL UNIT

When using the parking heater while driving, switch off the vehicle's air conditioning system or set the same temperature setting as on the heater.



① Climate control panel of the vehicle

PLEASE NOTE!

- The pre-heater should be switched on at least once a month for at least 10 minutes (also in the summer months). This prevents the fuel from separating and ensures correct operation in the winter months.

Headquarters:
Eberspächer Climate Control Systems GmbH & Co. KG
Eberspächerstraße 24
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Hotline: 03976 2350 235
Fax hotline: 01805 262624
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Eberspächer

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25 2721 95 3332 11.2023 EN

Test object : fuel tank made in stainless steel
Type of vehicle : n.a.
Applicant : Eberspächer Torgelow GmbH & Co. KG

Technical Report No. 234XS0022-01

Fuel tank made in stainless steel of company
Kraftstoffbehälter aus Edelstahl der Firma

Eberspächer Torgelow GmbH & Co. KG
Wilhelmstraße 47
D-17358 Torgelow

Our reference	: KT-mm/ms	This report consists:	
Originator	: Dipl.-Ing. Markus Meyer	Number of pages	: 8
Version	: PDF	Enclosures	: 4

Berlin, 2023-07-03

Testing of a fuel tank made in stainless steel
Prüfung eines Kraftstoffbehälters aus Edelstahl

according to UN Regulation No. 34 including Supplement 02 to Amendment 03 of 2019-05-28
gemäß den Anforderungen der UN Regelung Nr. 34
einschließlich Ergänzung 02 zu Änderung 03 vom 2019-05-28

according to Japanese testing standard TRIAS 15-J016-02 "Plastic fuel tank test procedure for passenger motor vehicle"
gemäß japanischer Prüfvorschrift TRIAS 15-J016-02

Applicant Antragsteller	:	Eberspächer Torgelow GmbH & Co. KG Wilhelmstraße 47 D-17358 Torgelow

1. Description of vehicle
Technische Daten zum Fahrzeug

Name or trademark of vehicle Fabrikmarke (Firmenbezeichnung)	:	Eberspächer
Type(s) of vehicle Typ(en)	:	n.a.
Commercial descripton(s) Handelsbezeichnung(en)	:	n.a.
Versions Ausführungen	:	Variante 1 – Kurzes Einfüllrohr Variante 2 – Langes Einfüllrohr
Kind of engine Antriebsart	:	diesel/Diesel petrol/Benzin
Kind Art	:	n.a.
Class of vehicle Klasse des Fahrzeuges	:	n.a.

Name and address of manufacturer Name und Anschrift des Herstellers	:	Torgelower Metallwaren GmbH Wilhelmstraße 47 D-17358 Torgelow

2. Description of the tank versions
(Beschreibung der Behälterausführungen)

Drawing from the tank (Der untersuchte Behälter entsprach in seiner Formgebung und in seinen Abmessungen den Zeichnungen)

Zeichnungsnr. / Drawing no. Artikelnr. / Part no.	Beschreibung / Description	Änderungsindex/ Change index
22.9000.20.0471.A	Fuel Tank, Pressure-Tank	2023-02-02
10002906	Filler Pipe long	2023-04-14
421451	Filler Pipe short	190910/HH
421910-422944	Filler Cap	190912/HH
992001	Sealing ring for filler cap	211006/LW
8620307	Connecting hose	EN 12115:11
22.9000.52.0117.0A	Cover Cargo Area	18.04.2023

Description of the tank ***Beschreibung des Behälters***	
Variant(s) *Variante(n)*	n.a.
Name of fuel tank manufacturer *Hersteller des Behälters*	Torgelower Metallwaren GmbH Wilhelmstraße 47 D-17358 Torgelow
Name of material manufacturer *Werkstoffhersteller*	n.a.
Trademark of material *Handelsname des Werkstoffes*	Edelstahl 1.4301
Density of material *Werkstoffdaten (DIN 53 479)* *Dichte Material*	7,9 kg/dm³
Tank weight inclusive accessories *Behältergewicht mit Zubehör* *Var. 1* *Var. 2*	 6,74 kg 7,41 kg
Nominal capacity of fuel tank *Nennvolumen in Liter*	14 l

Mounting of the tank assembly Behälterunterbringung und -befestigung	:	according to the manufacturers instructions nach Vorgaben des Fahrzeugherstellers

Colour of the tank Farbe des Behälters	:	silver silber
Manufacturing method Herstellungsverfahren	:	welded

3. Test proportions
Prüfumfang

3.1 Test objects and generell informations
Prüfobjekt(e) und allgemeine Angaben zur Prüfung

Test period(s) Prüfungszeitraum	:	27th of February 2023
Test place(s) Ort(e) der Prüfung	:	TÜV Rheinland Kraftfahrt GmbH Pichelswerderstrasse 9 D-13597 Berlin Germany
Description of test objects Kennzeichnung der Prüfobjekte	:	23-930-TL-11-59

3.2 Resistance to corrosion (Korrosionsfestigkeit)

The resistance to corrosion of the fuel tank is ensured by the following measures:

Der Korrosionsschutz des Kraftstoffbehälters wird durch folgende Maßnahmen gewährleistet

Inside and outside Innen und außen	:	Stainless steel Edelstahl

The materials of the accessory parts are to be judged as sufficient corrosion resistant to the filling medium and also outside environmental influences.

Die verwendeten Zubehörteile können als korrosionsfest gegen das Betriebsmedium und äußere Beeinflussungen angesehen werden.

3.3 Hydraulic test (Hydraulische Prüfung)

The isolated tank version fitted with all necessary accessories was subjected to a hydraulic test.

Die mit allen notwendigen Ausrüstungsteilen versehene Kraftstoffbehälterausführung wurde einer hydraulischen Prüfung unterzogen.

Ambient temperature Umgebungstemperatur	:	+ 23 +/- 2 degrees Centigrade + 23 +/- 2 Grad Celsius
Test liquid Prüfflüssigkeit	:	water Wasser
Temperature of test liquid Temperatur der Prüfflüssigkeit	:	+ 23 +/- 2 degrees Centigrade + 23 +/- 2 Grad Celsius
Filling capacity Füllmenge	:	100 % 100 %
Gauge pressure Druck	:	min. 300 mbar resp. double the system working pressure min. 300 mbar bzw. doppelter max. Betriebsarbeitsdruck
Period of test Versuchsdauer	:	in minimum 1 minute mind. 1 Minute

The fuel tank did not leak or crack and was not permantely deformed resp. the operating security of the tank wasn`t reduced.

Der Behälter blieb dicht und unbeschädigt. Verformungen bildeten sich nach der Prüfung zurück bzw. bedeuteten keine Beeinträchtigung der Betriebssicherheit.

The requirements of UN Regulation No. 34 and TRIAS 15-J016-02 are hereby fulfilled.

Die Anforderungen gemäß UN Regelung Nr. 34 und TRIAS 15-J016-02 sind damit erfüllt.

(**see photographs 1 to 2, Appendix 1** / siehe Fotos 1 bis 2, Anlage 1)

3.4 Overturn-Safety (Umsturzsicherheit)

The tank was turned from its installed positions around the vehicle longitudinal axis.

Der Behälter wurde in verschiedenen Positionen um die Fahrzeuglängsachse gekippt.

Mounting Befestigung	:	corresponding to the mode of installation on the vehicle in einem die tatsächlichen Einbaubedingungen simulierendes Prüfgestell
Kind of liquid Füllmedium	:	water (Wasser)
Capacity Füllmenge	:	1. 30 % of its nominal capacity 30 % des Nennvolumens 2. 90 % of its nominal capacity 90 % des Nennvolumens
Fuel-tank position Behälterneigung um Fahrzeuglängsachse	:	A 90 degrees/Grad B 180 degrees/Grad C -90 degrees/Grad D -180 degrees/Grad
Testing time Prüfdauer	:	5 min. in every position (A-D) in Position A-D jeweils 5 Minuten
Staffing fuel tank Rüstzustand Tank	:	Tankdeckel-Nr./tank cap No.: 421910-422944 (V2 200527/AG)

The overturn-safety test is performed once without pressurization and once with pressurization.

Der Drehversuch wird einmal ohne Druckbaufschlagung und einmal mit Druckbeaufschlagung gefahren

No leakages

Es traten keine Leckagemengen aus dem Behälter aus.

The requirements of UN Regulation No. 34 and TRIAS 15-J016-02 are hereby fulfilled.

Die Anforderungen gemäß UN Regelung Nr. 34 und TRIAS 15-J016-02 sind damit erfüllt.

(**see photographs 3 to 6, Appendix 1** / siehe Fotos 3 bis 6, Anlage 1)

4. Test results (Prüfergebnisse)

On the basis of these results it is not to expect that the mechanical, chemical or thermal influences by the operation of the vehicle will cause any damage of the fuel tanks.

The tested fuel tanks made in stainless steel of company Eberspächer Torgelow GmbH & Co. KG, Germany, meet in the tested positions the requirements of UN Regulation No. 34 and of Japanese testing standard TRIAS 15-J016-02.

Nach dem Ergebnis ist nicht damit zu rechnen, dass die beim Betrieb des für den Einbau vorgesehenen Fahrzeuges zu erwartenden mechanischen, thermischen und chemischen Beanspruchungen zur Schädigung der Behälter führen werden.

Die von uns geprüften Kraftstoffbehälter aus Edelstahlblech der Fa. Eberspächer Torgelow GmbH & Co. KG, Deutschland, genügen hinsichtlich der durchgeführten Untersuchungen den Anforderungen der UN Regelung Nr. 34 und der japanischen Prüfvorschrift TRIAS 15-J016-02.

The following tests have not been made or modified:
Folgende Untersuchungen wurden nicht bzw. modifiziert durchgeführt:

Flame impact security (Flammendurchschlagsicherheit)

As a result of technical construction and diameters of fuel pipes all vent openings must be evaluated to be well protected against flame impact.

Die Be- und Entlüftungsöffnungen sind aufgrund der technischen Ausführung und der Leitungsquerschnitte als ausreichend gesichert gegen Flammendurchschlag zu bewerten.

Electrostatic charge (Elektrostatische Aufladung)

The fuel tank and its equipment is bonded in a manner that there is no potential of explosion due to sparks from the tank material. The metallic filler pipe and the tank shell are in conductive manner bonded with the bodywork of the vehicle.

Der Kraftstoffbehälter mit seinen Zubehörteilen ist so gestaltet und eingerichtet, dass unter normalen Betriebsumständen keine Ladungstrennungen auftreten können, die zu gefährlichen Funkenbildungen führen. Der metallische Einfüllstutzen und der Tankkorpus sind leitend mit der Karosserie verbunden.

The requirements of UN Regulation No. 34 and TRIAS 15-J016-02 are hereby fulfilled.

Die Anforderungen gemäß UN Regelung Nr. 34 und TRIAS 15-J016-02 sind damit erfüllt.

5. Remarks (Schlußbemerkungen)

If essential parts of the vehicle - especially concerning the installation of the fuel tanks – or material, manufacturing method, dimensions or mounting of the tanks have been changed, a new approval by the TÜV Rheinland Kraftfahrt GmbH is necessary.

Die Gebrauchsfähigkeit der Behälter ist zu überprüfen, wenn wesentliche Teile des Fahrzeuges, die zu einer Veränderung der Einbauverhältnisse führen, die Behälterunterbringung, die Behälterbefestigung, die Behälterabmessungen, der Behälterwerkstoff oder das Herstellungsverfahren geändert werden. Hierüber ist ein Nachtragsgutachten der TÜV Rheinland Kraftfahrt GmbH einzuholen.

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6. List of Appendices (Verzeichnis der Anhänge)

0 List of modifications (Liste der Änderungen)

1 Photo documentation (Fotodokumentation) : Photos 1 – 6 / Fotos 1 - 6

2 Description Sheet No. (Beschreibungsbogen Nr.) : n.a.

The test laboratory is designated for the above mentioned tests by the Kraftfahrt-Bundesamt, Federal Republic of Germany, with Designation-number: KBA-P 00010-96.

Das Prüflaboratorium ist für das o.g. Prüfverfahren benannt durch das Kraftfahrt-Bundesamt, Bundesrepublik Deutschland, unter der Benennungs-Nummer: KBA-P 00010-96.

Berlin, 2023-07-03

Dipl.-Ing. Markus Meyer

List of modifications (Liste der Änderungen) **Appendix** (Anlage) **0**

Correction of / Berichtigung : --*

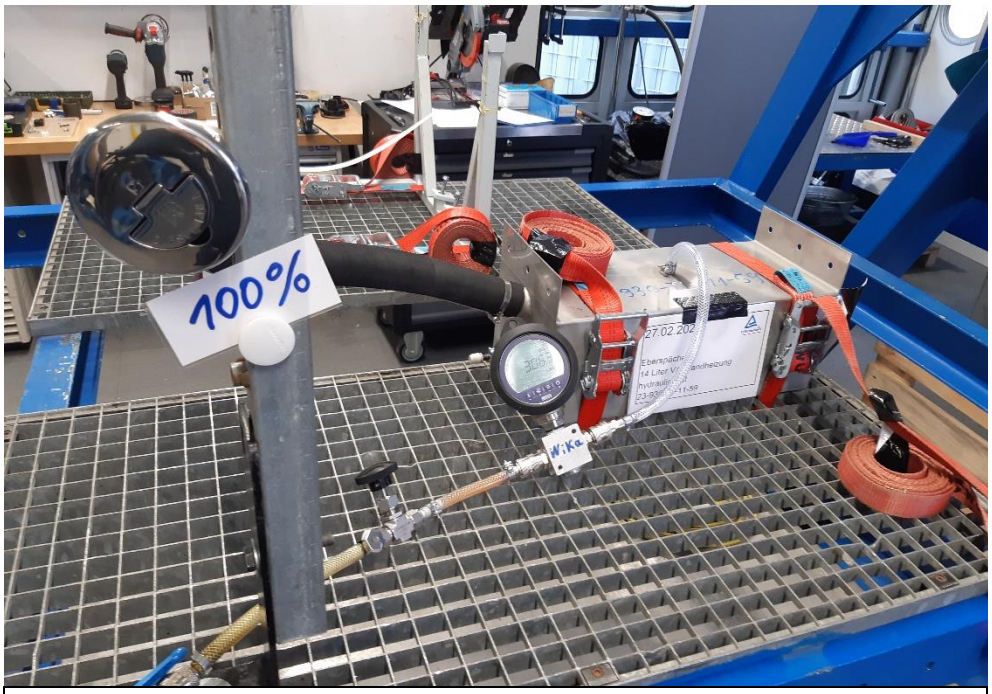
Modification of / Änderung : - Discription of the vehicle (Item 1.)
- Discription of the tank (Item 2.)

Addition of / Hinzufügung : --*

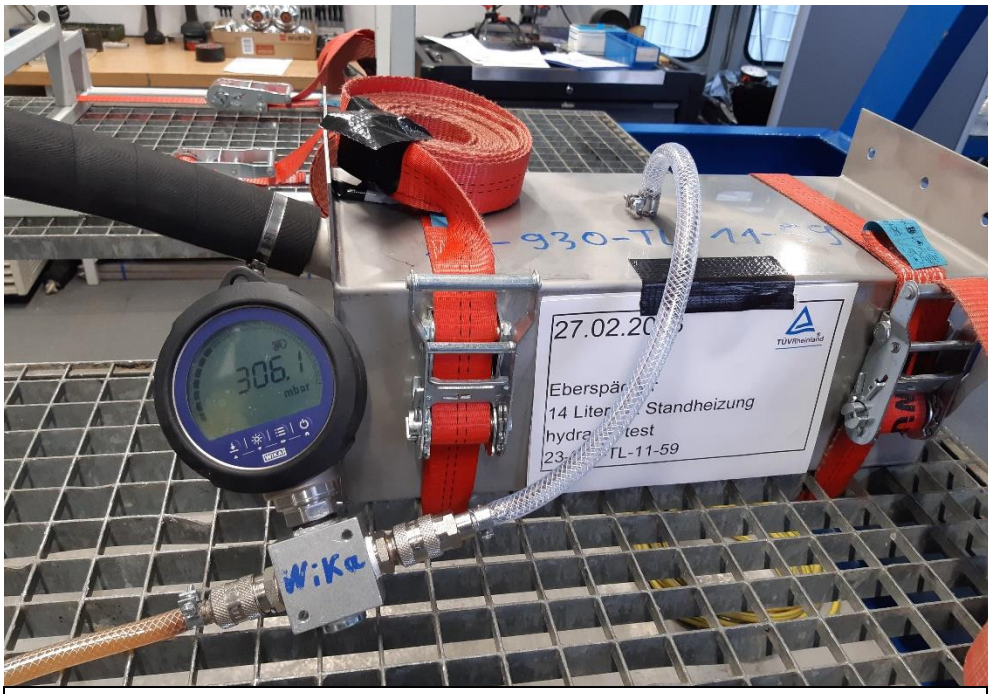
Deletion of / Entfernung : --*

Test object : **fuel tank made in stainless steel**
Type of vehicle : **n.a.**
Applicant : **Eberspächer Torgelow GmbH & Co. KG**

Photo documentation (Fotodokumentation) **Appendix** (Anlage) **1**



Photograph 1: Fuel Tank System in Hydraulic Test



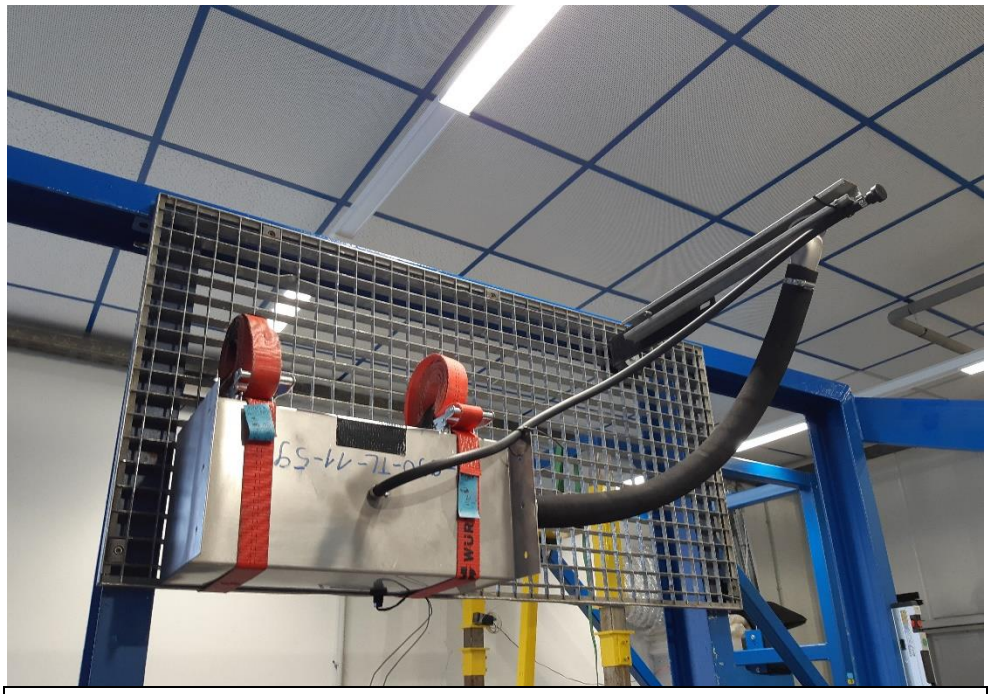
Photograph 2: Fuel Tank System in Hydraulic Test

Test object : **fuel tank made in stainless steel**
Type of vehicle : **n.a.**
Applicant : **Eberspächer Torgelow GmbH & Co. KG**

Photo documentation (Fotodokumentation) **Appendix** (Anlage) **1**



Photograph 3: Fuel Tank System in Roll-over-Test



Photograph 4: Fuel Tank System in Roll-over-Test

Test object : **fuel tank made in stainless steel**
Type of vehicle : **n.a.**
Applicant : **Eberspächer Torgelow GmbH & Co. KG**

Photo documentation (Fotodokumentation) **Appendix** (Anlage) **1**



Photograph 5: Fuel Tank System in Roll-over-Test



Photograph 6: Fuel Tank System in Roll-over-Test