Installation Instructions

ELECTRICALLY OPERATED STEP

Mercedes Benz Sprinter / Volkswagen Crafter

The vehicle manufacturer's body fitting guidelines must be adhered to during installation of the Electrically Operated Step !

AMF BRUNS

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Foreword

Dear Reader,

these Installation Instructions serve to provide information for the correct installation of the Electrically Operated Step.

Having read these Installation Instructions thoroughly for the first time, keep them in a safe place for the entire life of the Electrically Operated Step so that they are available for a possible future re-installation.

In case of a change of ownership of the Electrically Operated Step, the Installation Instructions must be handed over to the new owner.

The Electrically Operated Step must never be converted or modified in any way, without seeking the prior, written permission of the manufacturer. The manufacturer will not be held responsible in any way whatsoever if conversions or modifications are carried out without authorisation.

Explanation of symbols and signs

To improve understanding, the following conventions should be met for these Installation Instructions:

1.

The following conventions are used to highlight important information:

DANGER!

- warns of a situation of immediate danger, which will lead to severe or fatal injuries, if not avoided.

WARNING!

- warns of a potentially dangerous situation, which will lead to severe or fatal injuries, if not avoided.

CAUTION!

- warns of a potentially dangerous situation, which will lead to slight or minor injuries or material damage if not avoided.

ATTENTION!

...warns of a potentially dangerous situation, which can cause material damage, if not avoided.

...contains general notes and useful information.

...gives a reference to important information in other sections and documents.

2.

Some texts serve a particular purpose. These are identified as follows:

- Lists.

⇨ Instructional text, e.g. a sequence of activities.

Contents

1 Safety

The installation company itself is responsible for adherence to the safety regulations when installing the Electrically Operated Step.

Installation is insofar carried out at the sole risk installation company. The manufacturer will accept no liability whatsoever for damage caused during installation. Unless such damage is caused by grossly negligent or intentional breach of contract on the part of the manufacturer.

In addition to the information given in these Installation Instructions, local legislative regulations must be taken into consideration, in particular those regarding safety and accident prevention.

Detailed information regarding safety when operating the Electrically Operated Step can be found in the Operating Instructions. The Operating Instructions are also available in PDF format on our Internet site, www.amf-bruns.de.

Personnel Requirements

The Electrically Operated Step must only be installed by specialist personnel,

- who have read and understood these Installation Instructions,
- of whom it can be expected, that they will execute the job entrusted to them in a responsible and reliable manner and
- who have been assigned to install the Electrically Operated Step by the owner of the vehicle.

2 Installation

2.1 Safety Information for Installation

WARNING!

Danger through incorrect installation.

An incorrectly installed step can become loose during operation or when the vehicle is travelling. Faults in the electrical connection can cause the step to extend when the vehicle is travelling. This can cause serious accidents.

Therefore:

- The Electrically Operated Step must only be installed in a vehicle by specialist personnel under adherence to these Installation Instructions.
- The vehicle manufacturer's body fitting guidelines must be adhered to.
- The installation material provided must be used to install the Electrically Operated Step.
- All screws/bolts must be tightened to the tightening torques specified in Section 2.5, page 19.
- If any of the vehicle's original screws are loosened or removed to install the Electrically Operated Step, they must be re-tightened to the torque specified by the vehicle manufacturer.
- To ensure that the Electrically Operated Step has been installed correctly, it must be inspected by a technical expert.
- The Electrically Operated Step must not be used until this has been done.

ATTENTION!

Material damage can be caused by incorrect installation.

Therefore:

- Read these Installation Instructions thoroughly before installation, so that you are familiar with the entire installation procedure.
- Secure the vehicle, to prevent it from rolling away.
- Do not start installation until this has been done.

2.2 Installation Work

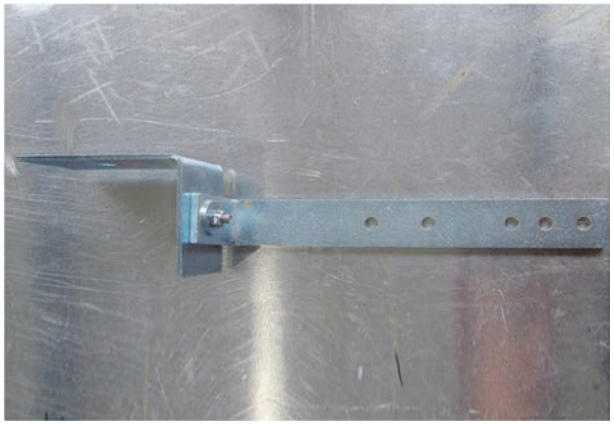


Figure 1: Pre-Assembly, Bracket 1

⇨ Pre-assemble bracket 1.

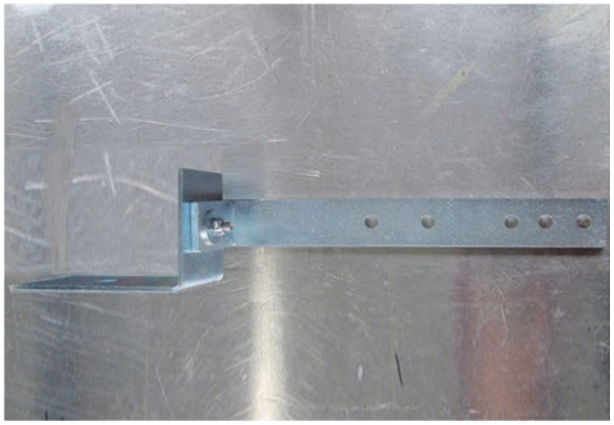


Figure 2: Pre-Assembly, Bracket 2

⇨ Pre-assemble bracket 2.

⇨ Raise the vehicle on a vehicle lift.

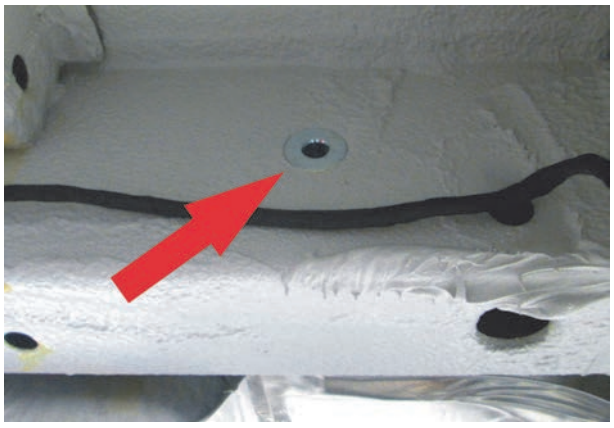


Figure 3: Inserting the Spacer Sleeves (1)

⇨ Push the spacer sleeves horizontally into the existing holes.
See Figure 3 and Figure 4, page 9.

Figure 4: Inserting the Spacer Sleeves (2)

Figure 5: Bolting Bracket 1 (1)

Figure 6: Bolting Bracket 1 (2)

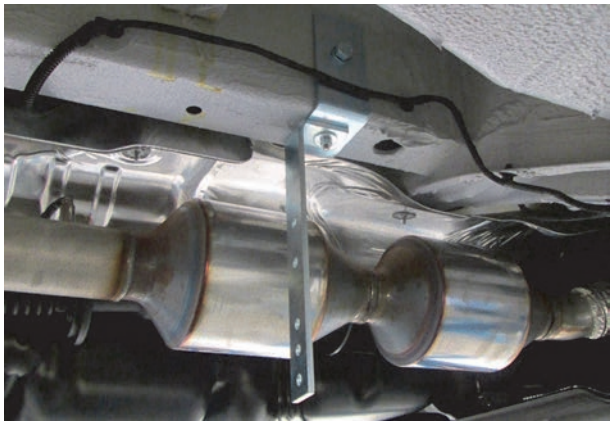


Figure 7: Bolting Bracket 2

⇨ Bolt the pre-assembled brackets to the vehicle, through the spacer sleeves (see Figure 5 to Figure 7).
Use the hexagonal-headed bolts, self-locking nuts and washers provided to do this.

Figure 8: Positioning the Step

- ⇨ Bring the Electrically Operated Step into position under the vehicle with the aid of a lifting device.
- ⇨ Position the Electrically Operated Step such that its fastening edge is located on the outer side of the sill.
  The Electrically Operated Step must be at the height of the holes in the brackets.

Figure 9: Marking the Holes

- ⇨ Mark the positions of the six fastening holes for the Electrically Operated Step on the edge of the door sill.

Figure 10: Drilling the Holes

- ⇨ Remove the Electrically Operated Step from beneath the vehicle.
- ⇨ Drill the Ø = 6.5 mm fastening holes in the edge of the sill.
- ⇨ Deburr the holes.
- ⇨ Remove all traces of swarf.
- ⇨ Apply corrosion protection to the holes.
- ⇨ Wait until the corrosion protection has dried.
- ⇨ Bring the Electrically Operated Step into position beneath the vehicle.

Figure 11: Fitting the Screws

⇨ Apply assembly paste to the threads of the M 6 fastening bolts provided so that the bolts do not seize up.

⇨ Insert the fastening bolts through the holes in the step and the sill.
Place washers under the bolts.

Figure 12: Bolting the Step to the Sill

⇨ Bolt the step to the sill.
Use the self-locking nuts and washers provided to do this.

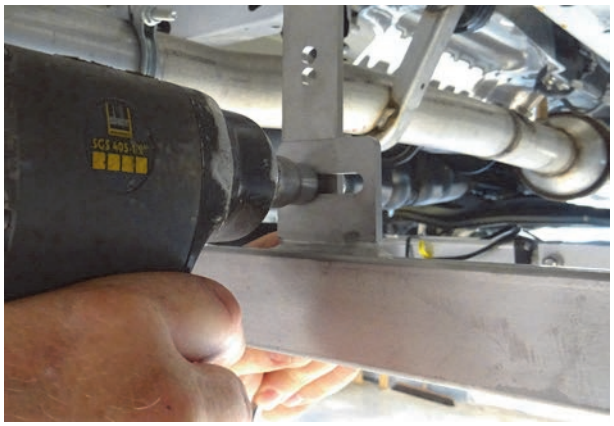


Figure 13: Bolting the Step to the Brackets (1)

⇨ Bolt the step to the brackets underneath the vehicle (see Figure 13 to Figure 15, page 12).
Use the hexagonal-headed bolts, self-locking nuts and washers provided to do this.

Figure 14: Bolting the Step to the Brackets (2)

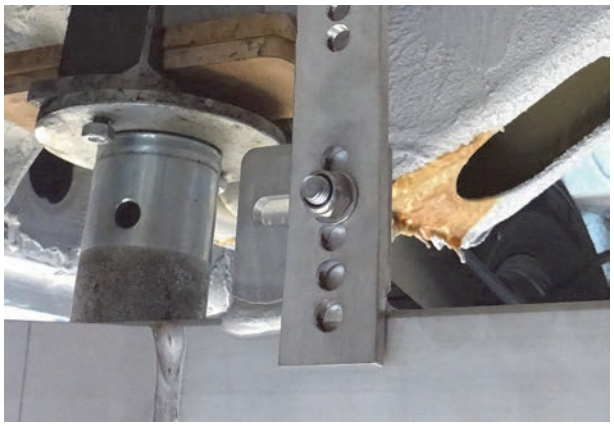


Figure 15: Bolting the Step to the Brackets (3)

⇨ Check that all bolts are tight.
Adhere to the tightening torques given in Section 2.5, page 19 when doing so.

⇨ Apply corrosion protection to all fastening parts.

2.3 Electrical Connection

The Electrically Operated Step can be connected for one of two operating modes.

In the automatic operating mode, the step automatically extends when the side door is opened. It automatically retracts when the side door is closed. The door contact switch and control unit provided must be installed for the automatic operating mode.

In the manual operating mode, the step is extended and retracted using a toggle switch installed in the B-pillar.

WARNING!

Risk of accidents through an extended step.

If, in the manual operating mode, the toggle switch is operated when the vehicle is travelling, the step can be extended. This can cause serious accidents.

Therefore, for an Electrically Operated Step with manual operating mode:

- Install the toggle switch in the B-pillar, such that is concealed by the side door when it is closed.
- It must be impossible to operate the toggle switch when the side door is closed.

ATTENTION!

If the toggle switch is under stress when installed, it can jam. The Electrically Operated Step's drive motor can suffer irreparable damage.

Therefore:

- Make certain that the toggle switch is stress-free when installed.
- After installation, check that the toggle switch automatically returns to the mid-position when released.

Refer to the electrical circuit diagram when carrying out any work on the electrical system (see Figure 30, page 18).

Figure 16: Removing the Floor Covering

⇨ Remove the floor covering in front of the driver's seat.

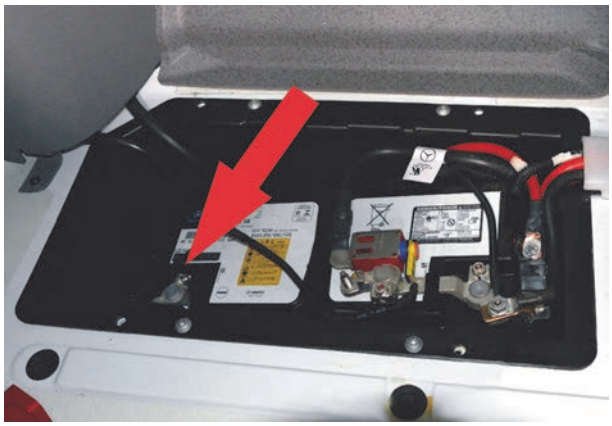


Figure 17: Disconnecting the Negative Pole

⇨ Disconnect the cable from the negative pole of the starter battery.

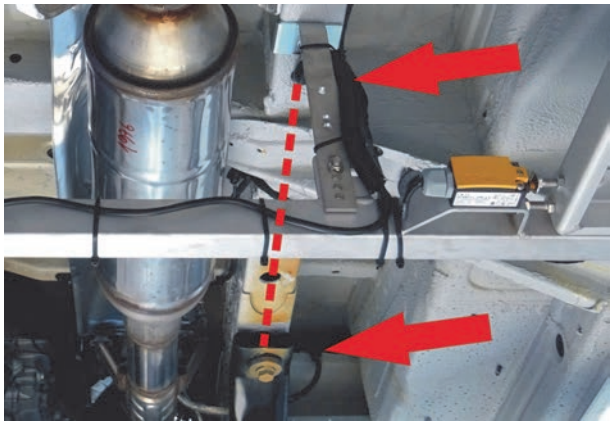


Figure 18: Laying the Cable (1)

⇨ Lay the cable through a flexible conduit from the step, through the longitudinal member to a position under the front passenger seat (see Figure 18 to Figure 21, page 15).
Lay all cables so that they cannot chafe and are adequately fastened.
Use the flexible conduit and cable ties provided to do this.
Make certain that the cable insulation remains fully intact. The power supply cable conductors must not be bare at any point.

Figure 19: Laying the Cable (2)

Figure 20: Laying the Cable (3)

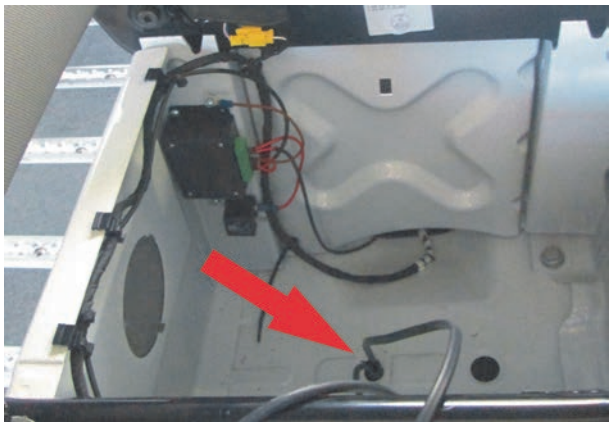


Figure 21: Laying the Cable (4)

⇨ Feed the cable into the interior of the vehicle under the front passenger seat.
If necessary, drill cable entry holes to pass the cables through.
Seal the holes with corrosion protection.
Allow the corrosion protection to dry.
Seal the cable entry holes.

Figure 22: Fitting the Door Contact Switch (1)

For automatic operation:

⇨ Fit the door contact switch provided (see Figure 22 and Figure 23).

Figure 23: Fitting the Door Contact Switch (2)

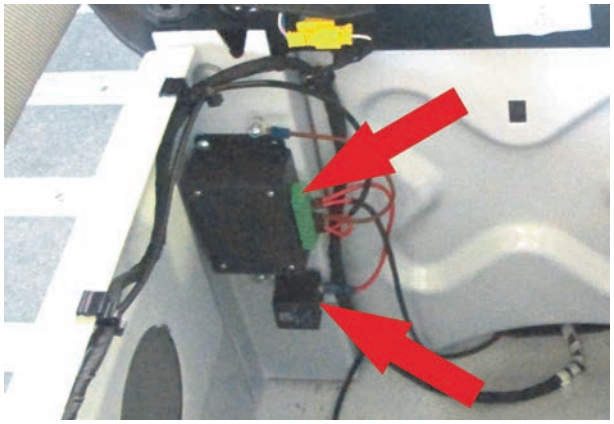


Figure 24: Fitting the Control Unit and Buzzer

For automatic operation:

⇨ Install the control unit and the buzzer under the front passenger seat.

⇨ Make the cable connections.
Refer to the circuit diagram when doing so (see Figure 30, page 18).

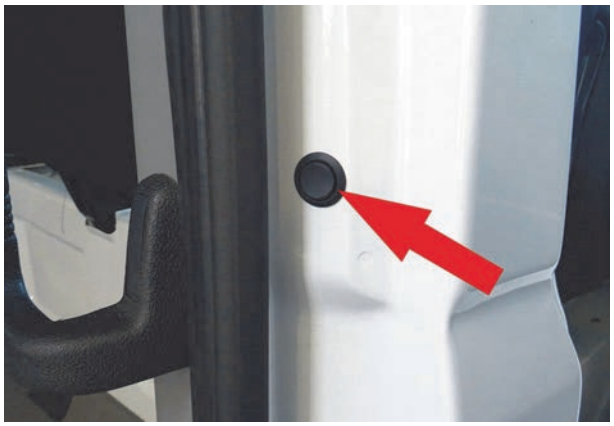


Figure 25: Fitting the Rocker Switch

For manual operation:

⇨ Install the toggle switch provided in the B-pillar, such that is concealed by the side door when it is closed.

Figure 26: Fitting the Buzzer

For manual operation:

⇨ Install the buzzer under the front passenger seat.

⇨ Make the cable connections.
Refer to the circuit diagram when doing so (see Figure 30, page 18).

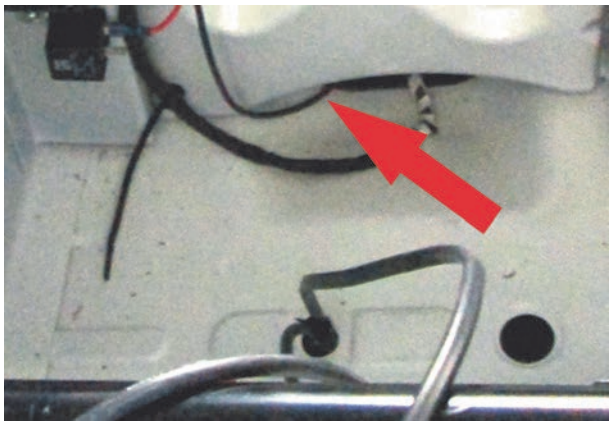


Figure 27: Laying the Power Supply Cable

⇨ Lay the power supply cable from the front passenger seat to a position under the driver's seat.

Figure 28: Removing the Cover

⇨ Remove the cover under the driver's seat.

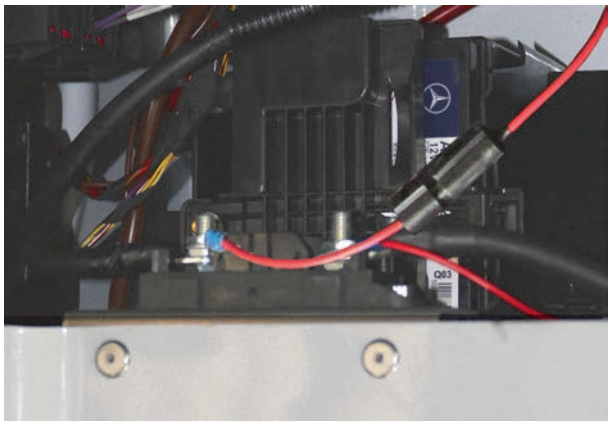


Figure 29: Connecting the Power Supply Cable

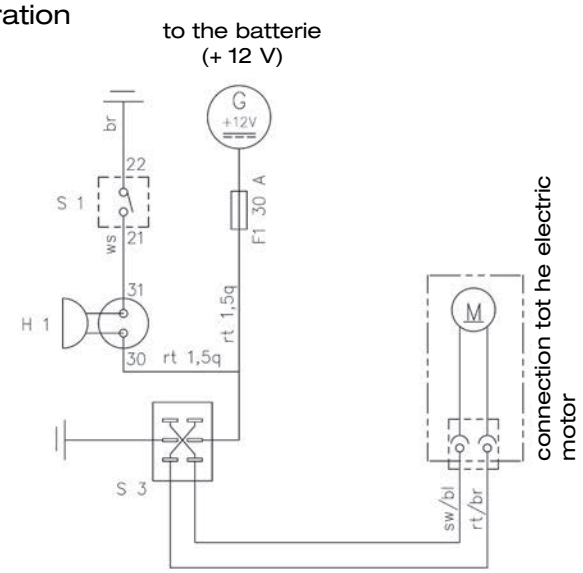
⇨ Connect the power supply cable to the positive pole under the driver's seat via the 40 A fuse provided.

⇨ Re-connect the cable to the negative pole of the starter battery.

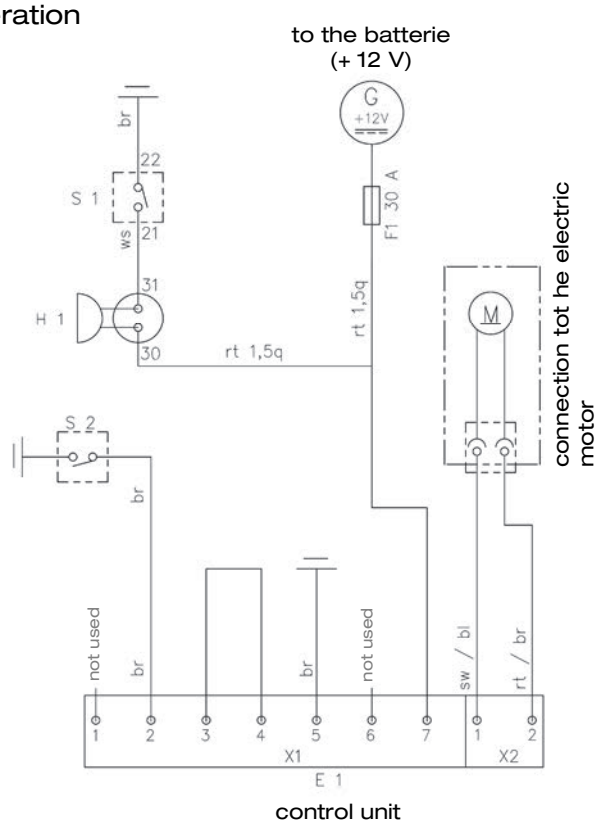
⇨ Replace the floor covering in front of the driver's seat.

2.4 Electrical Circuit Diagram

Manual Operation



Automatic Operation



rt	red
sw	black
br	brown
ws	white
bl	blue

F1	fuse 30 A
M	motor
H1	buzzer
S1	limit switch
S2	door contact switch
S3	rocker switch
E1	control unit
G	to battery (+ 12 V)

Figure 30: Electrical Circuit Diagram

2.5 Tightening Torques

NOTE

The tightening torques specified here do not apply to original vehicle-specific screws.

All screws must be tightened to the standard tightening torques (+/- 15 %).

If deviating tightening torques and tolerances are required for individual screws, a note to this effect will be included in the respective installation steps.

The specified tightening torques are recommendations. The company responsible for the conversion is also responsible for making certain that all screws are tightened to the correct tightening torque.

2.5.1 Standard Threaded Steel Screws

Property Class	8.8		10.9
Screw connection	Steel in steel	Steel in aluminium	Steel in steel
M6	10 Nm	7 Nm	15 Nm
M8	25 Nm	18 Nm	36 Nm
M10	50 Nm	30 Nm	72 Nm
M12	85 Nm	50 Nm	125 Nm
M14	135 Nm		200 Nm
M16	210 Nm		310 Nm

2.5.2 Standard Threaded Stainless-Steel Screws

Property Class	A2/A4-70
Screw connection	Steel in steel
M5	3.5 Nm
M6	10 Nm
M8	20 Nm
M10	35 Nm
M12	60 Nm
M16	135 Nm

2.5.3 Deviating Tightening Torques

Airline rails Smartfloor profile installation	M10; A2-70	18 Nm
Airline rails, floor installation	M8; A2-70	20 Nm
Mono-Fitting, (bottom part)	M12; 10.9-zn	50 Nm
Belt screws / E-belt	7/16“ 20–UNF	40 Nm
Floor Pocket		47 Nm
T-Bolt	M8	25 Nm
	M10	35 Nm
AMF seat installation	M8; 10.9	36 Nm
Battery cable		8 Nm
Nuts on cable lugs and terminal blocks	M5	5 Nm
	M6	8 Nm
	M8	12 Nm
Seat fastening	Manufacturer’s specifications	
Wheel nuts / bolts		

NOTE

The current tables of the tightening torques can be found under https://www.amf-bruns-mobility.com/service/downloads/.

3 Faults

WARNING!

Risk of severe injury and material damage if repair work is carried out incorrectly.

Therefore:

- Only allow specialist personnel to carry out repair work.

If faults occur when operating the Electrically Operated Step, proceed as described in the troubleshooting table in the Operating Instructions. The Operating Instructions are also available in PDF format on our Internet site (www.amf-bruns.de). Contact the customer service department if faults are encountered which cannot be remedied using the information given there (see Chapter 4, page 22).

4 Customer Service

The AMF-Bruns customer service department will be more than pleased to assist in ordering spare parts, maintenance and repair work and help with general problems or queries.

See also the service page on our Internet platform.

The address is:

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D – 26689 Apen

Tel.: +49 (0) 44 89 / 72 72-30
Fax: +49 (0) 44 89 / 62 45

service.hubmatik@amf-bruns.de
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NOTE

Guarantee work on the Electrically Operated Step must only be carried out with the prior agreement of AMF-Bruns GmbH & Co. KG.

The costs of such work will not be accepted by AMF-Bruns without prior agreement.

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