

# Operating Instructions

## EASYPULL 2.0



[www.amf-bruns.de](http://www.amf-bruns.de)



## Foreword

Dear Reader,

These Operating Instructions serve to provide all information required for the safe use of the EasyPull 2.0.

The EasyPull 2.0 is designed and constructed in accordance with state-of-the-art technology and recognised safety standards. Persons and material assets can however still be at risk, as not all danger areas can be eliminated if the functional capability is to be maintained. Accidents caused by these risks can however be prevented by strictly observing these Operating Instructions. Over and above this, the operational efficiency of your EasyPull 2.0 can be used to the full and unnecessary faults can be prevented.

These Operating Instructions only apply to the EasyPull 2.0 specified on the cover page and in the footnotes. Compare the data given on the rating plate on your EasyPull 2.0 with the images provided in these Operating Instructions (see Section 2.4, page 20).

After reading these Operating Instructions for the first time, keep them in a safe place for future reference over the entire lifetime of the EasyPull 2.0. If you sell the EasyPull 2.0, hand these Operating Instructions over to the new owner.

Keep these Operating Instructions in the vehicle so that they can be referred to at any time when problems or questions arise.

All details, figures and dimensions given in these Operating Instructions are non-binding. They cannot be used as the basis for any claims whatsoever.

This document must not be reproduced or duplicated, in full or in part, without the prior, written permission of the manufacturer.

The EasyPull 2.0 must be converted or modified in any way, without seeking the prior, written permission of the manufacturer. Unauthorised modifications will render the manufacturer's liability and guarantee null and void.

Use only original spare parts or spare parts which have been approved of by the manufacturer. If spare parts other than these are used, this can have a negative effect on the specified characteristics, the

functionality and safety of the EasyPull 2.0. If other spare parts are used, liability for consequential damage will be rendered null and void. Contact the AMF-Brunns GmbH & Co. KG customer service department or your local dealer to order spare parts or accessories (see Chapter 14, page 90).

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## NOTE

The current version of these Operating Instructions as well as the current versions of supplementary documents (e.g. the instructions for optional equipment) can be found under:

[www.amf-bruns-behindertenfahrzeuge.de/service/download-portal/](http://www.amf-bruns-behindertenfahrzeuge.de/service/download-portal/)

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## Explanation of symbols and signs

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

1.

The following conventions are used to highlight important information:

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### DANGER

...warns of a situation of immediate danger, which can cause severe or fatal injuries if not avoided.

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### WARNING!

...warns of a potentially dangerous situation, which can cause severe or fatal injuries if not avoided.

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### CAUTION

...warns of a potentially dangerous situation, which can cause slight injuries, if not avoided

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**ATTENTION**

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

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...contains general notes and useful information.

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

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2.

Some text passages serve a special purpose. These are identified as follows:

- Lists.

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

3.

Meaning of directions:

If directions are given in the text (in front of, front, behind, rear, right, left), these directions relate to the normal direction of travel of the vehicle.

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# 1 Safety

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## WARNING

There are a number of risks of suffering personal injury and material damage involved in the operation and maintenance of the EasyPull 2.0.

Therefore:

- It is imperative, that these Operating Instructions are read thoroughly before operating the EasyPull 2.0. Always observe the notes and information contained herein, in particular the Safety Instructions.
  - If these Operating Instructions or parts thereof are lost or become illegible, please request a new copy from the manufacturer.
- 



For safety information regarding the vehicle and other equipment, refer to the relevant Operating Instructions.

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Prerequisite to the safe handling and trouble-free operation of the EasyPull 2.0 is a thorough knowledge of the applicable safety information and the safety regulations.

It is therefore imperative that this Chapter is read thoroughly before operating the EasyPull 2.0 and that the instructions and warnings herein are strictly observed. The safety instructions and warnings, given at the appropriate places in the following Chapters, must also be strictly observed. The manufacturer will not be held responsible if safety information and warnings are not strictly adhered to.

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

## 1.1 Proper Use

The operational reliability of the EasyPull 2.0 is only guaranteed if it is put to proper use. It must therefore only be used for the purpose for which it is intended.

The EasyPull 2.0 is only deemed to be in proper use when it is used to pull wheelchair-bound persons or unoccupied wheelchairs into vehicles that are specifically designed or converted to transport disabled persons. The EasyPull is operated by an accompanying person who guides the wheelchair when it is being pulled in. The vehicle must be fitted with an access ramp for this purpose. The EasyPull 2.0 only secures the front of the wheelchair. For transportation, the wheelchair must be secured with additional belts at the rear. Wheelchairs must be equipped with the necessary equipment for attaching the restraint systems. Wheelchairs that are used to carry passengers in vehicles must conform with ISO 7176-19. The passenger must be secured in the wheelchair by their own restraint systems

Proper use also includes strictly adhering to the information given in these Operating Instructions.



### WARNING

If the EasyPull 2.0 is used for any other purpose than that described above, this may result in dangerous situations for persons or material damage being caused.

Therefore:

- Only use the EasyPull 2.0 for the purpose for which it was intended.
- Always adhere to information given in these Operating Instructions.
- Do not use the EasyPull 2.0 for any other purpose, particularly those given in Section 1.2, page 11. These are deemed to be improper use.

## 1.2 Improper Use

Any use other than that described in Section 1.1, page 10, is deemed to be improper use.

The EasyPull 2.0 is deemed to be improperly used for example if:

- it is used to move any objects other than occupied or unoccupied wheelchairs,
- it is used to transport wheelchairs that are not fitted with the equipment necessary for attaching restraining systems,
- it is used to pull a wheelchair that is facing towards the rear,
- it is used to transport wheelchairs that are not tied down in the vehicle at the front and at the rear,
- wheelchair-bound passengers are not secured in the wheelchair by their own personal restraint systems.
- It is used to secure loads,
- It is operated outside of its specified limits (see Section 2.5, page 21),
- it is used in a faulty state or with safety-relevant malfunctions,
- unauthorised modifications have been made to the EasyPull 2.0,
- it is operated by persons who do not fulfil the necessary requirements (see Section 1.3, page 12).
- It is operated by a person in a wheelchair.

## 1.3 Operator Requirements

The EasyPull 2.0 must only be used and operated by persons:

- who have read and understood these Operating Instructions and
- who have the technical knowledge to operate the parking brakes on wheelchairs.
- who are physically and mentally capable of accompanying the passenger safely by guiding the wheelchair when it is being pulled into and wheeled out of the vehicle.

Over and above this, the following applies if the EasyPull 2.0 is used commercially or communally:

The EasyPull 2.0 must only be used and operated by persons:

- who are of legal age,
- who have been instructed in how to operate the EasyPull 2.0,
- who have been expressly assigned to do so by the owner and
- who are in a position to adapt themselves to the behaviour and needs of disabled persons.

Transportation, installation, commissioning, maintenance, repair, fault finding and disposal of the EasyPull 2.0 must only be carried out by persons with the corresponding technical training and experience.

## 1.4 Product Monitoring

Please contact AMF-Bruns GmbH & Co. KG immediately if faults or problems are encountered when operating the EasyPull 2.0 or if accidents or "near-misses" occur.

AMF-Bruns will effect a solution to the problem with your help and the knowledge gained will flow into future projects.



### NOTE

Guarantee work on the EasyPull 2.0 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.

## 1.5 Safety and Accident Prevention Regulations

Adhere to the following notes in order to prevent personal injuries and material damage. For commercial use, also adhere also to the relevant safety and accident prevention regulations laid down by the trade associations.

- The EasyPull 2.0 must only be used for the purpose for which it is intended, otherwise dangerous situations, with resultant injuries, may occur (Proper use: see Section 1.1, page 10).
- The owner is responsible for ensuring that proper use is adhered to, in particular that the EasyPull 2.0 is only operated by authorised persons.
- If the EasyPull 2.0 is used commercially or communally, the owner must ensure that operating personnel are familiar with the operation of the EasyPull 2.0 under all operating conditions by giving training and familiarisation courses.
- Proper use of the EasyPull 2.0 also includes adherence to the specified maintenance and repair work, in particular the strict adherence to the maintenance intervals (see Chapter 7, page 61). If such work is not carried out, trouble-free operation cannot be guaranteed. There is a risk of personal injury and material damage being caused. We recommend that maintenance records are kept.
- After installation, the EasyPull 2.0 must be inspected by a technical expert. During inspection, faults affecting the safety should be systematically identified and remedial action taken.
- An inspection must also be carried out by a technical expert if modifications are made to the construction or major repairs are carried out on load-bearing parts of the EasyPull 2.0.
- If the EasyPull 2.0 is used commercially or communally, it must be inspected by a technical expert at intervals of not more than one year after first commissioning. During inspection, faults affecting the safety should be systematically identified and remedial action taken (see Chapter 12, “Inspection Log”, page 77).

- The EasyPull 2.0 must not be operated in a faulty condition, as severe injuries may be caused by this. If faults occur, do not use the EasyPull 2.0 until repairs have been effected (see Chapter 8, page 68).
- When moving around inside the vehicle after tying the wheelchair down, beware of the belts that are used to tie the wheelchair down. There is a risk of tripping over the belts.
- Switch the vehicle's engine OFF before carrying out maintenance or repair work, this includes cleaning work. Secure the vehicle, to prevent it from rolling away.
- Do not repair of bridge defective fuses but replace them with fuses of the same Ampere rating.
- Do not open the control unit. Do not modify any electronic components, particularly those inside the control unit. This can render safety functions inoperative.
- Use only original spare parts and accessories that have been approved of by the manufacturer. If non-original or non-approved spare parts are used, liability for the consequences will be rendered null and void.

## 2 Description



For information regarding the vehicle and other equipment, refer to the relevant Operating Instructions.

Wheelchairs are pulled into a vehicle by the EasyPull 2.0. To enable this, the vehicle must be equipped with an access ramp

The main components of the EasyPull 2.0 are:

- the control unit,
- the winch with belts and
- the remote control.

The aim of this Chapter is to illustrate the construction and function of the EasyPull 2.0. For this purpose, the individual assemblies and components are described in the Sections that follow.

### 2.1 Control unit

The control unit (see Figure 1, page 16) contains the receiver for the remote control and the electronics to control the winch.

In vehicles fitted with the AMF-Bruns rear cut-out, the position switch on the Easy or Easy-Flex ramp switches the power supply to the control unit ON and OFF. The control unit is switched ON when the ramp is deployed and switches it OFF when the ramp is stowed.

The door contact switch assumes the function of switching the power supply ON and OFF in all other vehicles. The control unit is switched ON when the rear doors or tailgate are/is opened and the control unit is switched OFF when the rear doors or tailgate are/is closed.

A label, attached to the control unit, gives the serial number and hardware status.

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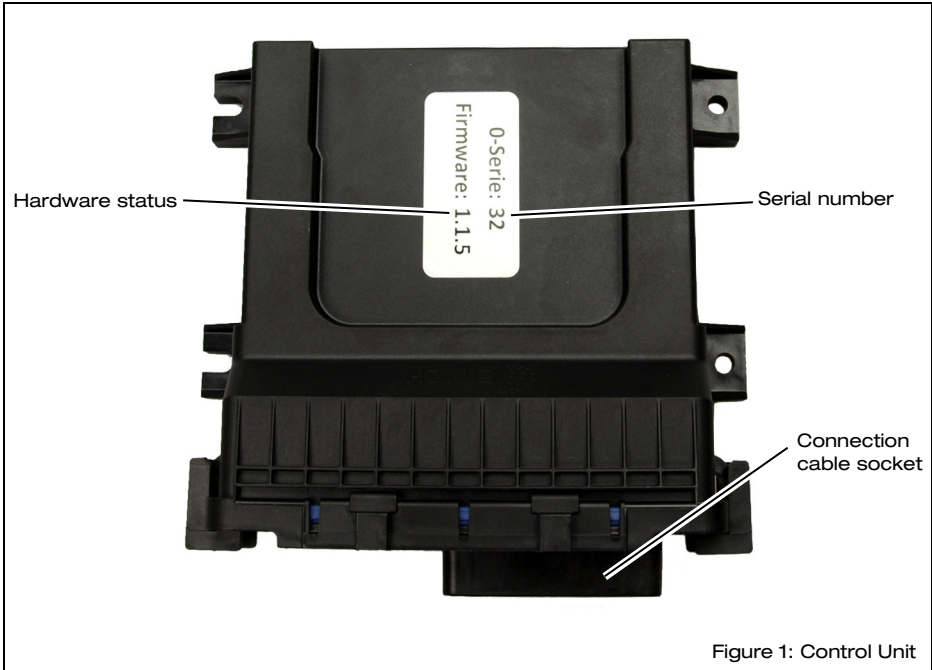
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## 2.2 Winch with belts

The winch (see Figure 2, page 17) pulls the wheelchair into the vehicle. It comprises the winch housing with the motor and interlocks. Two sensors in the winch housing signal the control unit when the adjustable magnets on the belts are in their proximity. As soon as at least one of the magnets is in the proximity of a sensor, the winch stops and the belts are latched in position.

Beeping sounds provide the operator with feedback on the current status of the winch.

The belts can be fitted with belt locks and loops (see Figure 2, page 17) or with hooks (see Figure 3, page 17) for attaching them to the wheelchair.



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Figure 2: Winch with Loops

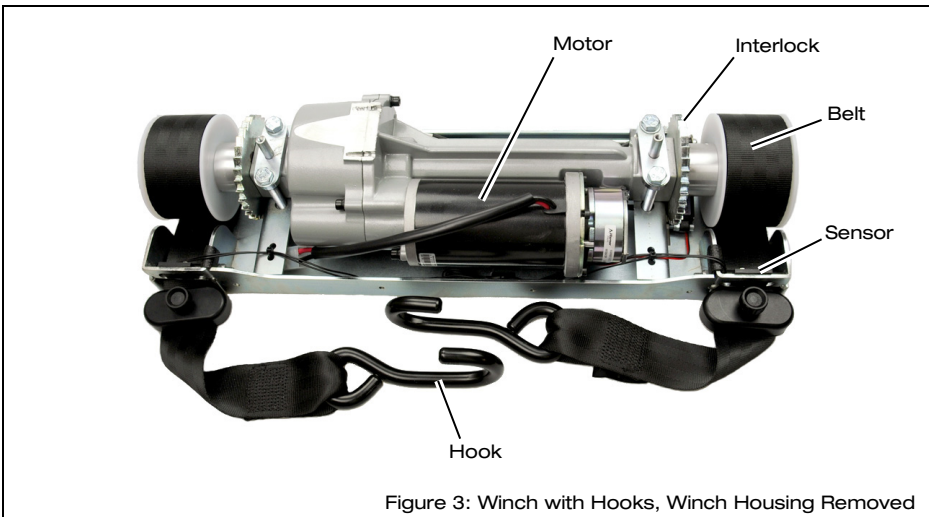


Figure 3: Winch with Hooks, Winch Housing Removed

## 2.3 Remote Control

The push-buttons on the remote control are used to control the Easy-Pull 2.0 functions (see Figure 4 and the table that follows).

The LED blinks whenever a button is pressed.

If the LED blinks without a button having been pressed, the battery must be replaced (see Section 10.4, page 73).

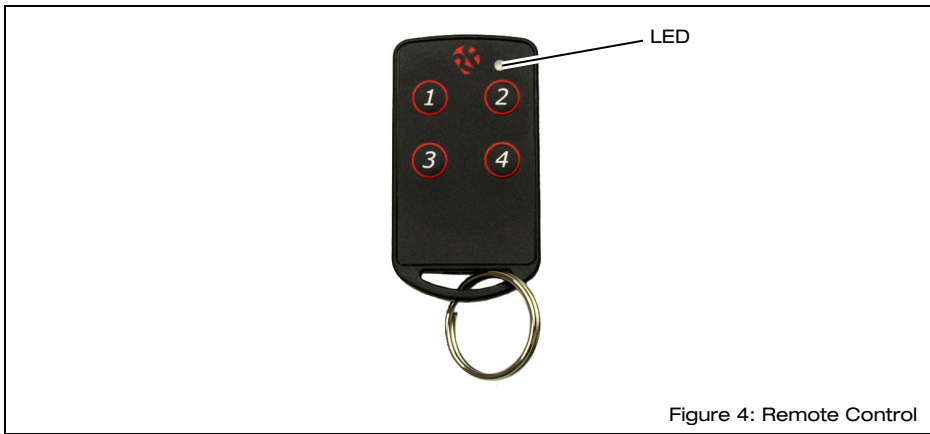


Figure 4: Remote Control

Push-button	Function
“1”	The belts reel out slowly when the operator guides the wheelchair backwards out of the vehicle.
“2”	Reels the belts in.
“3”	Reels the belts out quickly when the operator pulls them out of the vehicle.
“4”	Resets the control unit in case of a fault (press button “4” for at least 15 seconds).
“1” and “4” for 2 seconds	Connects the remote control with the control unit.
“1” and “4” for 10 seconds	Disconnects the remote control from the control unit.

A label attached to the battery compartment gives the type designation and serial number of the remote control (see Figure 5).

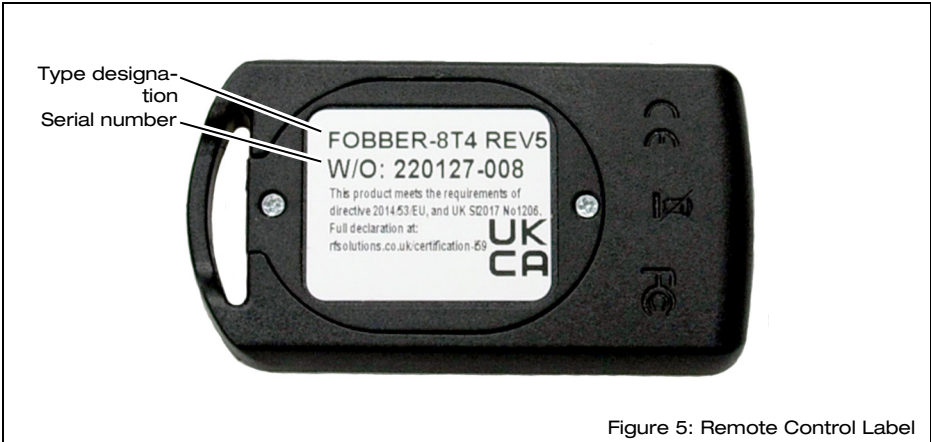


Figure 5: Remote Control Label



#### NOTE

A remote control for the EasyPull 2.0 is not compatible with the previous model.

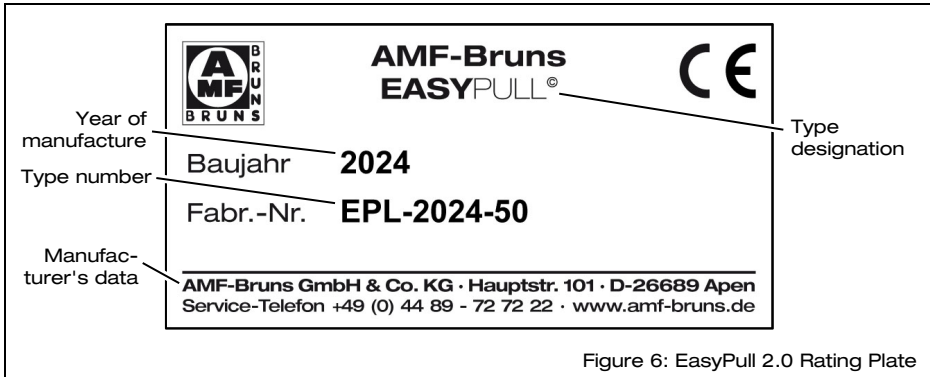
A remote control for the previous model is not compatible with the EasyPull 2.0.

A remote control for the previous model can be identified by the buttons being lettered, not numbered.

A previous model can be identified by the serial number on the label (see Section 2.4, page 20, and Section 2.5, page 21) and also by the fact that another control unit in combination with a voltage converter is fitted.

## 2.4 Rating Plate

A rating plate, which contains the fundamental data, is attached to the EasyPull 2.0 (see Figure 6). The year of manufacture and serial number shown in Figure 6 serve merely as an example. The rating plate is located on the base plate of the winch, under the winch housing.



## 2.5 Technical Data

Designation	EasyPull 2.0
Information on the rating plate and winch housing	EasyPull
Type numbers of the EasyPull 2.0	from: EPH-2024-01 (belts with hooks) from: EPL-2024-01 (belts with loops) from: EPH-2024-4001 (belts with hooks, USA version) from: EPL-2024-4001 (belts with loops, USA version)
Width	520 mm
Depth	158 mm
Height	110 mm
Rated voltage	12 V DC
Current consumption	approx. 28 A
Weight	approx. 16 kg
Extendible belt length	approx. 4400 mm
Maximum weight of the wheelchair with passenger	approx. 160 kg (at a ramp incline of $\leq 20\%$ )

Designation	Remote Control
Battery	Button cell CR2032
Quiescent current	<0.00001 mA
Range	up to 10 m
Transmission frequency	433 MHz or 869.8 MHz

## 3 Shipping

The EasyPull 2.0 is either shipped by the manufacturer or by a logistics company assigned by the manufacturer.

## 4 Installation



### NOTE

The vehicle manufacturer's body fitting guidelines must be adhered to when installing the EasyPull 2.0.

For a detailed overview of removing and fitting original parts of the vehicle, we recommend viewing the relevant repair manuals provided on the Internet by the respective vehicle manufacturer.

The AMF-Bruns installation instructions apply for deviating descriptions.

The installation company itself is responsible for adherence to the safety regulations when installing the EasyPull 2.0.

Installation is insofar carried out at the sole risk of the installation company. The manufacturer will accept no liability whatsoever for damage caused during installation of the EasyPull 2.0. 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, standard ISO 10542 must also be adhered to when installing the EasyPull 2.0 on the floor of the vehicle. The anchorage points provided in a vehicle fitted with the AMF-Bruns rear cut-out and Easy ramp or EasyFlex ramp fulfil the requirements of the standard.

In addition to this, local legislative regulations must be taken into consideration, in particular those regarding safety and accident prevention.

The EasyPull 2.0 must only be installed in vehicles with a 12 V DC electrical system.

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## 4.1 Safety Regulations for Installation

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### **DANGER**

Danger through incorrect installation work.

A number of risks of personal injury and material damage can be caused if the EasyPull 2.0 is incorrectly installed in the vehicle.

Such risks of danger cannot only occur during installation but also as a result of installation not being carried out correctly.

Therefore:

- The EasyPull 2.0 must only be installed by trained, specialist personnel.
  - The respective vehicle manufacturer's body fitting guidelines must be adhered to.
  - The EasyPull 2.0 must only be fitted to vehicles that are intended to carry disabled persons in accordance with DIN 75078-1.
  - Carry out the safety procedures specified by the manufacturer of the vehicle prior to starting installation (e.g. rendering the high voltage system of an electric vehicle voltage-free).
  - A technical expert must be called in to inspect the EasyPull 2.0 for correct installation and the effectiveness of the safety devices.
  - The technical expert must confirm the fact that operational safety of the EasyPull 2.0 has been established by making a corresponding entry in the inspection log (see Chapter 12, page 77).
  - The EasyPull 2.0 must not be used until this has been done.
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### **WARNING**

General risk of injuries through using unsuitable installation materials.

Unsuitable installation materials are unable to withstand the loads encountered during operation of the EasyPull 2.0. Multiple risks of injury for operators and passengers can arise as a result of this. Material damage can be caused.

Therefore:

- Only use the installation materials provided for installation.
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## WARNING

General risk of injuries if screw connections come loose or suffer corrosion.

If screwed connections are not tightened to the specified torque, they can become loose or fail during operation. Screwed connections that are not adequately protected can be weakened by corrosion. This can result accidents causing severe injuries. Material damage can be caused.

Stainless-steel screwed connections can cold weld (“seize”) when being fitted.

Therefore:

- Tighten all screwed connections to the specified tightening torques.
  - Original screwed connections on the vehicle that are removed or loosened during installation work must be re-tightened in accordance with the vehicle manufacturer’s specifications (e.g. tightening torques, tightening angles, use of screw locking agents or renewal of fastening components used).
  - Use the fastening materials provided to do this.
  - Seal the fastening components on the exterior of the vehicle (e.g. using a corrosion protection agent or underseal).
  - Use a suitable assembly paste or Teflon tape for stainless-steel screwed connections.
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## WARNING

Risk of burns through incorrect installation of the battery cable.

If the battery cable is not installed correctly, there is a risk of fire. This can result in cause serious injuries to the passengers in the vehicle and material damage.

Therefore:

- Secure the cable adequately, such that it will not chafe at any point.
  - Do not fasten cables to the brake lines.
  - Lay the cables with double insulation where necessary, e.g. in the vicinity of the axles.
  - Fuse the cables in the immediate vicinity of the vehicle's starter battery using the fuse provided.
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## ATTENTION

Risk of injury and of material damage during installation work.

Severe material damage can be caused if installation is not carried out correctly.

Therefore:

- Read these Installation Instructions thoroughly, so that you are familiar with the entire conversion procedure.
  - Secure the vehicle, to prevent it from rolling away.
  - Disconnect the cable from the negative pole of the vehicle battery and auxiliary battery.
  - Raise the vehicle on a vehicle lift prior to carrying out work underneath the vehicle.
  - Do not start installation until this has been done.
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## ATTENTION

Risk of material damage to the control unit.

The control unit can suffer damage when connecting or disconnecting the vehicle battery or the power supply cable, if the door contact switch or position switch is not actuated at this point in time.

Therefore:

- Close the tailgate or rear doors of the vehicle before you connect or disconnect the vehicle battery.
  - Always disconnect the vehicle battery before carrying out any work on the EasyPull 2.0 electrical system.
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## ATTENTION

Risk of damage through corrosion when operating the vehicle.

If corrosion protection work is not carried out correctly, this can cause the vehicle to corrode prematurely.

Therefore, after any work on the bodywork:

- Deburr all edges.
  - Remove all drilling, cutting and grinding swarf.
  - Prime and paint all bare metal parts.
  - Take measures to protect underbody and frame parts from corrosion.
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## NOTE

Only use corrosion protection materials that are recommended and approved of by the vehicle manufacturer for any corrosion protection measures need to be taken. Carry out ALL of the specified work steps.

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## NOTE

Keep all components and fasteners that were removed until the installation has been completed.

Always use the fasteners (screws, bolts, rivets, washers, nuts, etc.) provided by AMF-Brunns unless otherwise specified in the following installation instructions. The fasteners are packaged to correspond with each installation work step and are marked accordingly. Screw types and sizes are therefore not always specified in the installation instructions. The screws shown can differ from the screws supplied. Always use the screws provided. Always use self-locking nuts.

If fasteners are not provided for a work step, the reason will be specified in the Installation Instructions (e.g. when the original screws or bolts must be re-used)

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## 4.2 Fitting the Winch

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## NOTE

In a vehicle that is already equipped with an AMF-Brunns Easy ramp or EasyFlex ramp, anchorage points for the EasyPull 2.0 winch normally already exist in the frame construction of the rear cut-out.

In this case, proceed as described in Section 4.2.1, page 28. The holes in the original floor of the vehicle do not need to be drilled.

Also observe the information in the current vehicle-related Installation Instructions for the AMF-Brunns rear cut-out. Contact the customer services department, if these Installation Instructions are not available to you (see Chapter 14, page 90).

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## WARNING

Dangers due to improper anchorage of the winch to the vehicle bodywork.

If the winch is not properly fastened to the vehicle bodywork, accidents can occur during operation because the fastenings cannot withstand the loads imposed upon them. If the bodywork of the vehicle is weakened, it may not be able to withstand the loads imposed during operation.

Therefore:

- Use the existing anchorage points, if available (e.g. on the AMF-Brunns rear cut-out).
- Always anchor the winch to the vehicle bodywork using all four anchorage points.
- Never make any modifications (e.g. drill holes or cut recesses) to load-bearing or reinforcing components of the bodywork (e.g. members and traverses).
- Position the anchorage holes on flat areas of the floor of the vehicle without corrugations, ribs, gaps, folds, welding seams or similar.
- The winch and the large diameter washers of the anchorage bolts must be in direct contact with the bodywork to ensure a force-locked connection.
- Make certain that the base plate of the winch is not distorted when installed. Distortion (e.g. caused by the anchorage points being at different heights on the floor of the vehicle) can cause malfunctions at a later point in time.
- Position the anchorage points in the vicinity of load-bearing parts or reinforcements of the bodywork. This will improve the load bearing capability of the anchorages.
- Fit additional reinforcements (e.g. U-shaped steel profiles) under the floor of the vehicle, if the holes cannot be positioned in the vicinity of load-bearing parts or reinforcements.
- The screwed connections must be accessible from below using appropriate tools. The holes must not be positioned above inaccessible cavities.
- No other vehicle components (e.g. cables or lines) must be damaged during installation.
- The function of other vehicle components (e.g. parking brake operation) must not be impaired or restricted by the fastenings.

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## NOTE

If the winch base plate is distorted by fastening it to the vehicle, malfunctions can occur at a later point in time.

Make sure that the winch base plate is not distorted during installation, particularly when tightening the screwed fastenings.

- ⇒ Carry out all safety procedures specified by the vehicle manufacturer before starting installation.
- ⇒ Disconnect the cable from the negative pole of the vehicle battery.
- ⇒ Disconnect the cable from the negative pole of the auxiliary battery, if fitted.
- ⇒ Raise the vehicle on a vehicle lift.
- ⇒ Remove the winch cover (see Figure 2, page 17, and Figure 3, page 17).

### 4.2.1 Installation in vehicles with AMF-Bruns rear cut-out

The EasyPull 2.0 is normally installed in the front area of the floor section in vehicles with an AMF-Bruns rear cut-out (Easy ramp or EasyFlex ramp). In this case, the threaded holes already exist underneath the floor section, in the rear cut-out frame construction. The position of the threaded holes are marked by small pre-punched holes in the floor section.

There are also vehicles in which the EasyPull 2.0 is positioned in front of the floor section. In this case, the necessary fastening components are provided.

- ⇒ Find the anchorage points for the EasyPull 2.0 on the rear cut-out.
  - Observe the information in the current vehicle-related Installation Instructions for the AMF-Bruns rear cut-out or contact the customer service department (see Chapter 14, page 90).
- ⇒ Expose the anchorage points.
- ⇒ Deburr the holes.
- ⇒ Remove the drilling swarf, if necessary.

- ⇒ Fit the fastening components or sub-frame, if available.
- ⇒ Fasten the winch to the anchorage points.  
Do this using the M10 hexagon headed bolts with washers provided.
- ⇒ Tighten the screwed connections to the tightening torque specified in Section 4.3, page 31.

#### 4.2.2 Installation in vehicles without AMF-Bruns rear cut-out



##### NOTE

Adhere to standard ISO 10542 when selecting the EasyPull 2.0 anchorage points.

- ⇒ Place the winch in the position where it is to be installed.  
Make certain that when the belts are unreeled they are of sufficient length as to allow them to be attached to a wheelchair standing behind the vehicle.  
All four winch anchorage points must lie flat on the floor of the vehicle.
- ⇒ Check the position of the anchorage points on the underside of the vehicle.  
The positions must be suitable for screwing the winch to the vehicle floor of the vehicle and creating a force-locked connection with the floor of the vehicle.  
The large diameter washers and nuts must be unreeled, able to be fitted later and accessible to tighten.
- ⇒ Correct the position of the winch, if necessary.

- ⇒ Mark the positions of the anchorage holes (see Figure 7).

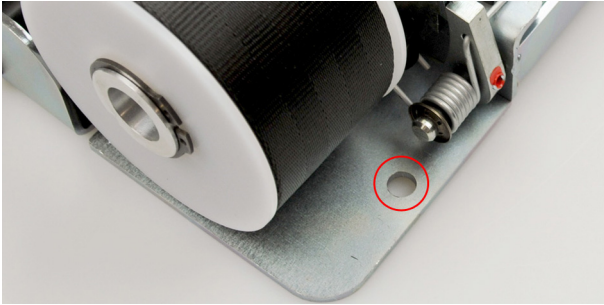


Figure 7: Front Right-Hand Anchorage Point

- ⇒ Drill the  $\varnothing = 11$  mm fastening holes.
- ⇒ Check once again that the positions of the holes are suitable for fastening the EasyPull 2.0.
- ⇒ Deburr the holes.
- ⇒ Remove all drilling swarf, e. g. using a vacuum cleaner.
- ⇒ Fit additional reinforcements to the floor of the vehicle, if the holes cannot be positioned in the vicinity of load-bearing parts or bodywork reinforcements.  
 These reinforcements (e.g. U-shaped steel profiles) must be fitted in a fore-and-aft direction, such that they each cover two anchorage points on each side of the EasyPull 2.0. The reinforcements must be a minimum 3 mm thick. The contact area of the reinforcements must be a minimum 100 cm<sup>2</sup>.
- ⇒ Remove any unevenness, caused by underseal or bodywork adhesive, from the contact areas for the fasteners or reinforcements on the underside of the vehicle.
- ⇒ Apply corrosion protection to all bare metal areas.
- ⇒ Allow the corrosion protection to dry.

- ⇒ Fit the winch to the floor of the vehicle.

Insert the M10 hexagon headed bolts and washers provided through the anchorage holes from the above.

Place the reinforcements under them, if necessary.

Use nuts (property class 8) and large diameter washers (neither of which are provided) from below.

- ⇒ Tighten the four screwed connections to the tightening torque specified in Section 4.3.

## 4.3 Tightening Torques

**Tightening torques for steel screws/bolts with standard threads:**

Thread size	Property Class	
	8.8	10.9
M8	25 Nm	36 Nm
M10	50 Nm	72 Nm
M12	85 Nm	125 Nm

## 4.4 Fitting the Electrical System



Always refer to the electrical circuit diagrams when carrying out work on the electrical system in Chapter 13, page 88).

- ⇒ Make certain that the vehicle battery and auxiliary battery are disconnected, if fitted.

## 4.4.1 Fitting the control unit



### NOTE

The position in which the control unit is fitted must be close enough to the winch that the winch can be connected to it using the cable harness provided with the control unit. Take the length required to lay the cable harness into consideration.

- ⇒ Position the control unit in the close vicinity of the winch, behind one of the side cladding panels

Remove the relevant side cladding panel to do this.

Choose the position such that the control unit can readily dissipate the heat generated by it. The control unit should not be fitted in the close proximity of any heat-sensitive components.

Make certain that the control unit is orientated such that the electrical connections on the cable harness are readily accessible.

- ⇒ Fasten the control unit by the four lugs using suitable fasteners (e.g. self-tapping screws, not provided).

Drill suitable holes in the vehicle, if necessary.

If holes are drilled in the bodywork, treat them with corrosion protection.



## 4.4.2 Connecting the power supply



### ATTENTION

Risk of malfunctions in the vehicle electrical system if the voltage is not tapped properly.

If the power supply connection affects other electrical systems in the vehicle, this can cause malfunctions in the vehicle. It is possible that not all vehicle functions will be available.

Therefore:

- Adhere to the vehicle manufacturer's specifications regarding voltage tapping for additional electrical consumers.
- Connect the positive battery cable of the control unit to a point that is directly connected to the positive pole of the vehicle battery.
- Connect the earth cable of the control unit to the bodywork (vehicle earth). Make certain that the connection is electrically conductive.
- Do not tap the voltage off any supply lines to other electrical consumers in the vehicle.
- Do not connect the power supply cable to an auxiliary battery.
- Use the connection materials provided.

- ⇒ Connect the pre-assembled battery cable to the positive pole of the vehicle battery or to a suitable on-board power distribution point.

Adhere to the vehicle manufacturer's specifications regarding voltage tapping.

Do this using the pre-assembled ring terminal (see Figure 8, page 34).

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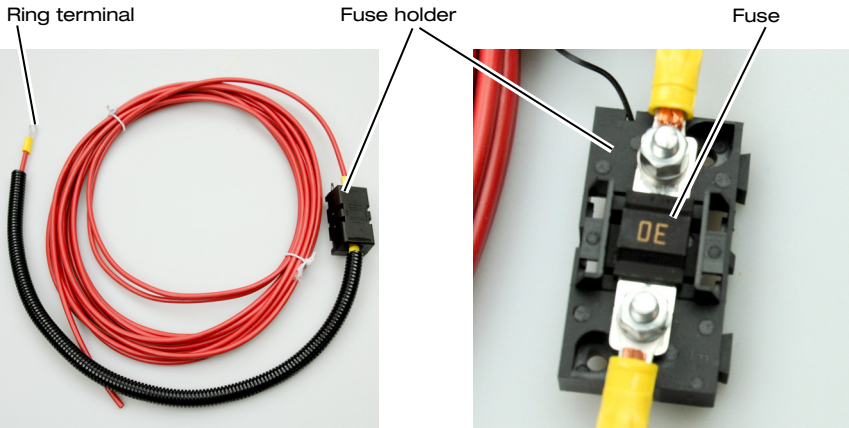
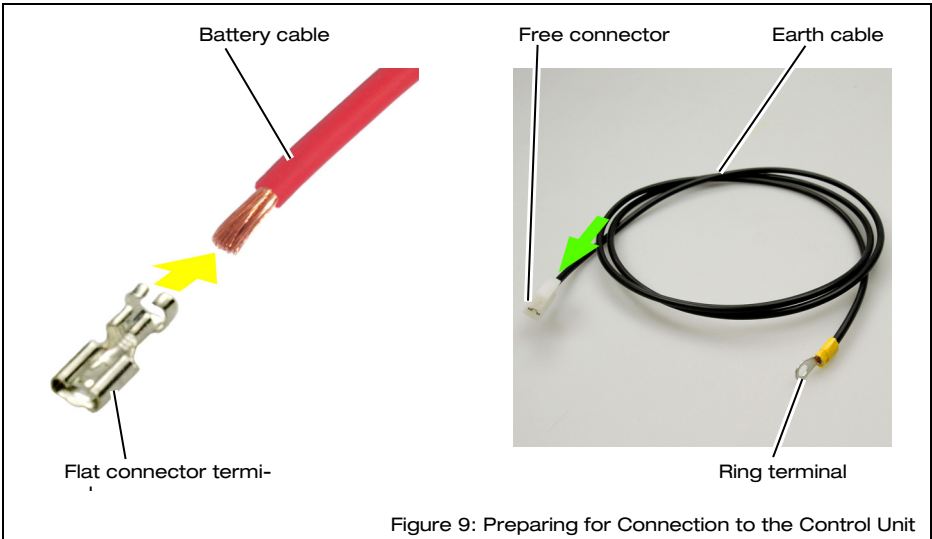


Figure 8: Battery Cable with Ring Terminal

- ⇒ Fit the fuse holder provided in the vicinity of the vehicle battery or the on-board power distribution point.  
Use the fastening holes under the fuse holder cover and suitable fastening screws (not provided).
- ⇒ Make certain that the fuse holder is fitted with a 30 A fuse (see Figure 8).
- ⇒ Lay the battery cable to the control unit.  
When doing this, use the flexible protective conduit provided, especially in external areas and through cable inlets in the bodywork or cladding.  
Lay the battery cable under the cladding or floor covering in the interior of the vehicle.
- ⇒ Fasten the battery cable at suitable points along its run.
- ⇒ Cut the battery cable to length before connecting it to the control unit.

- ⇒ Crimp the flat connector terminal provided onto the battery cable (see yellow arrow, on the left in Figure 9).
- ⇒ Insert the flat connector terminal to the free connector on the earth cable (see green arrow, on the right in Figure 9).



- ⇒ Connect the earth cable to a suitable earthing point.  
Use the pre-assembled ring terminal and a suitable fastening screw to do this.  
Make certain that the connection is electrically conductive.

### 4.4.3 Connecting the winch

- ⇒ Connect the black, multi-pole connector on the connection cable harness to the corresponding socket on the control unit (see Figure 10, page 36).  
Fasten it in place by tightening the screw on the connector.

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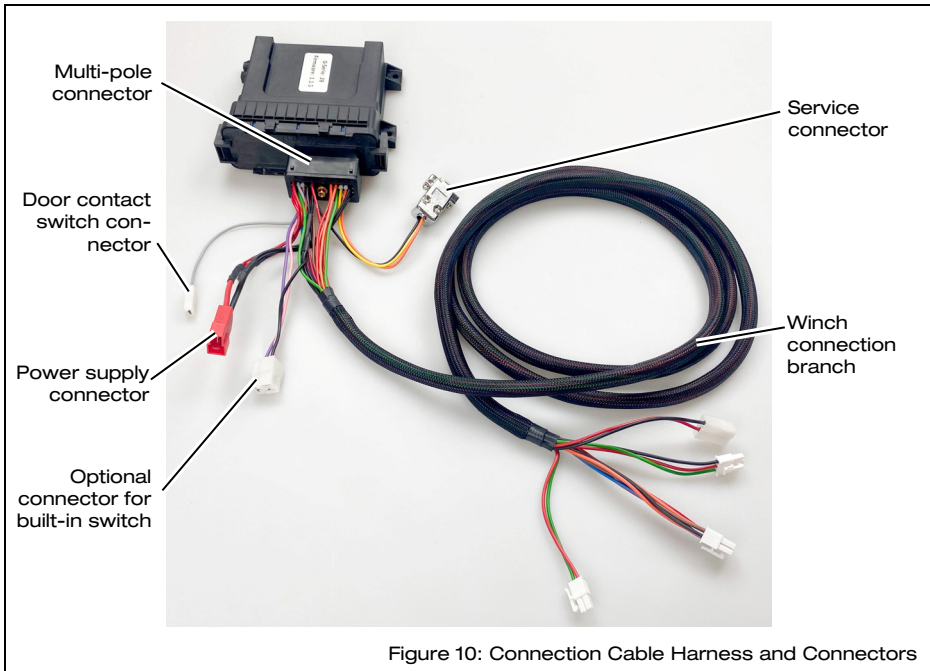


Figure 10: Connection Cable Harness and Connectors

- ⇒ Connect the connectors from the battery and earth cables to the power supply connector on the connection cable harness (see Figure 10).
- ⇒ Lay the winch connection branch cable in the interior of the vehicle to the winch.  
Lay the winch connection branch cable under claddings or floor coverings where possible.
- ⇒ Connect the three connectors on the winch connection branch cable to the connectors on the winch (see Figure 11, page 37).  
The connectors are coded to prevent them from being interchanged.  
The connector, marked with a violet circle in Figure 11, page 37, need not be connected.

**NOTE**

The connector, marked with a violet circle in Figure 11 is provided to enable the EasyPull 2.0 to be equipped with status LEDs. Contact the customer services department, if you intend using this connector (see Chapter 14, page 90).

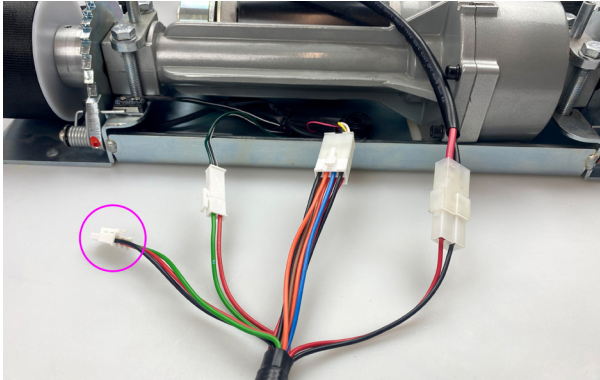


Figure 11: Connecting the Winch Branch Cable

- ⇒ Fasten the connectors in place inside the winch housing using cable ties.  
Make sure that the function of the winch is not impaired when doing this.
- ⇒ Fit the winch housing.
- ⇒ Fasten the winch connection branch cable at suitable points along its run.

#### 4.4.4 Connecting the position switch in vehicles with AMF-Brunns rear cut-out

**NOTE**

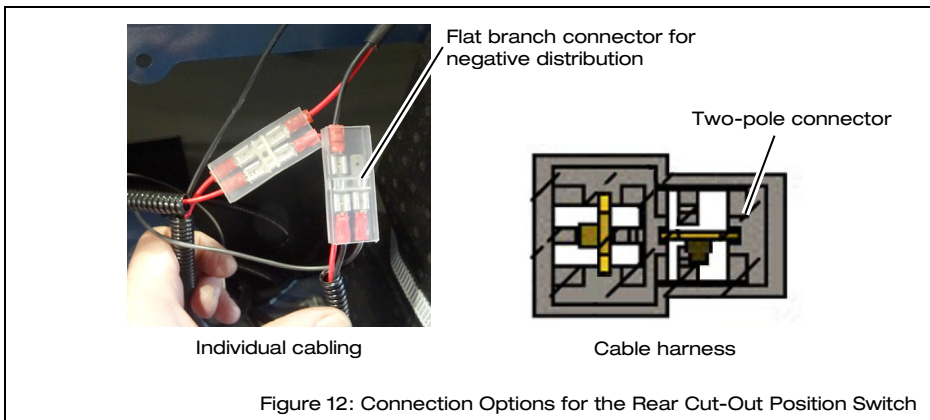
The position switch on the rear cut-out switches to earth.

In a vehicle that is already equipped with an AMF-Bruns Easy ramp or EasyFlex ramp, the EasyPull 2.0 winch is controlled via the ramp position switch. To enable this, the door contact cable from the EasyPull 2.0 must be connected to the switched contact or the ramp position switch. This does away with the need to fit a separate door contact switch.

The AMF-Bruns rear cut-out can either be cabled using individual cables or, as of September 2023, with a pre-assembled cable harness. The cable harness can be recognised by an AMF identification marking near the fuse in the vicinity of the vehicle battery or the on-board power distribution point.

Observe the information in the current vehicle-related Installation Instructions for the rear cut-out. Contact the customer service department if clarification is required (see Chapter 14, page 90).

- ⇒ Remove the cladding, on which the rear cut-out rocker switch is installed. The standard installation position is at the rear right-hand side.
- ⇒ Follow the rocker switch connection cable. If individually cabled, there is a flat branch connector in the area as a negative distributor, or a two-pole connector with one free connection if cabled using a cable harness (see Figure 12).



- ⇒ Connect the EasyPull 2.0 door contact switch cable to the negative distributor, or to the two-pole connector.
- ⇒ Lay the door contact switch cable to the control unit.
- ⇒ Connect the door contact switch cable to the single grey cable on the cable connection harness (see Figure 10, page 36).

#### 4.4.5 Fitting the door contact switch in vehicles without AMF-Brunns rear cut-out



##### NOTE

The door contact switch on the EasyPull 2.0 switches to earth.

- ⇒ Position the door contact switch in the frame of the tailgate or rear doors.

Choose the position such that the switch will be actuated when the tailgate or rear doors are closed and is not actuated when the tailgate or rear doors are opened.

Avoid a position on the bottom part of the frame, as the switch can be damaged when getting into or out of the vehicle at a later point in time.

- ⇒ Drill the holes necessary to fasten the door contact switch in its position in the door frame.
- ⇒ Apply corrosion protection, if necessary.
- ⇒ Allow the corrosion protection to dry, if necessary.
- ⇒ Connect the door contact switch cable to the single grey cable on the cable connection harness (see Figure 10, page 36).
- ⇒ Lay the door contact switch cable to the door contact switch.

When doing this, use flexible protective conduit (especially in external areas and through cable inlets in the bodywork or cladding).

Lay the door contact switch cable under the cladding or floor covering in the interior of the vehicle as far as possible.

- ⇒ Feed the door contact switch cable into the rear frame at a suitable point and out of the hole that was drilled for the door contact switch.
- ⇒ Connect the door contact switch cable to the door contact switch.
- ⇒ Fit the door contact switch into the frame of the tailgate or rear doors.
- ⇒ Fasten the door contact switch cable at suitable points along its run.

## 4.4.6 Completion work

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### NOTE

The service connector on the cable harness allows the manufacturer access to the control unit (see Figure 10, page 36).

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### NOTE

The optional connection on the cable harness allows the EasyPull 2.0 to be operated by a built-in switch (see Figure 10, page 36).

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- ⇒ Fasten all cables and connectors in the area of the control unit using cable ties, in particular the service connector.
- ⇒ Fit all parts that were removed from the vehicle, claddings, floor coverings, etc.
- ⇒ Check that the path of the belts over the floor of the vehicle, the floor section and the ramp are free of sharp edged or pointed obstacles that could damage the belts.
- ⇒ Seal all of the screwed fastenings on the exterior of the vehicle (e.g. nuts and large diameter washers underneath the vehicle).
- ⇒ Take the appropriate measures to protect the belts (e.g. protectors on sharp metal edges), if necessary.
- ⇒ Carry out the commissioning procedure and trial run (see Section 5.1, page 41).



## 5 Commissioning

### 5.1 Commissioning and Trial Run

- ⇒ Close the rear doors or tailgate of the vehicle.
- ⇒ Connect the cable to the negative pole of the auxiliary battery, if fitted.
- ⇒ Re-connect the cable to the negative pole of the vehicle's battery.
- ⇒ Open the rear doors or tailgate of the vehicle.
- ⇒ Deploy the ramp of a vehicle with AMF-Bruns rear cut-out.
- ⇒ Simultaneously press and hold push-buttons "1" and "4" on the remote control for approx. 2 seconds, in order to establish a connection between the remote control and the control unit.
- ⇒ Adjust the magnets, such that they make contact with the winch housing (see Figure 17, page 47).

Do this by releasing and tightening the magnet clamping screws.

- ⇒ Press and hold push-button "3" on the remote control to unreel the belts quickly.

A continuous beep signals that the magnets are in the vicinity of the sensors.

- ⇒ Pull the belts out of the winch.

An intermittent beep sounds as soon as both magnets have left the vicinity of the sensors.

- ⇒ Release the push-button.

The beeping sound stops.

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- ⇒ Adjust both magnets, such that they are as close to the belt locks as possible (see Figure 15).



Figure 13: Magnet Near the Belt Lock

- ⇒ Press and hold push-button “2” on the remote control.  
An intermittent beep sounds.  
The EasyPull 2.0 reels the belts into the vehicle.
- ⇒ Keep the belts under tension whilst they are being reeled in.  
When doing this, make sure that the belts are not twisted do not crossed over.
- The winch stops and the latch is applied when at least one magnet reaches the winch housing.  
A continuous beep sounds.
- ⇒ Release push-button “2”.
- The beeping sound stops.
- ⇒ If the EasyPull 2.0 does not function or does not function correctly, check the electrical connections as described in this Section.
- ⇒ Carry out the commissioning procedure with a wheelchair (see Section 5.2, page 43).
- ⇒ Have a technical expert inspect the EasyPull 2.0 for correct installation and the effectiveness of the safety devices.
- ⇒ Have a technical expert confirm the fact that the operational safety of the EasyPull 2.0 has been established by making a corresponding entry in the inspection log (see Chapter 12, page 77).

## 5.2 Commissioning with a Wheelchair

Commissioning with a wheelchair must be carried out by the owner or operator.

It mainly consists of adjustment work to adapt the EasyPull 2.0 to the wheelchair and the conditions in the vehicle.

The EasyPull 2.0 will only stop and latch in the correct position if it is adjusted correctly. This is achieved when the wheelchair can be secured by the belts available at the rear.



### WARNING

Risk of injury if the EasyPull 2.0 is incorrectly adjusted.

If the EasyPull 2.0 is not adjusted correctly, the winch will not latch in position. The wheelchair can roll backwards out of control.

Therefore:

- Carry out the commissioning procedure with a wheelchair when it is used to transport a wheelchair for the first time.
- Carry out the commissioning procedure with a wheelchair again if it is used to transport another wheelchair.
- Carry out the commissioning procedure with a wheelchair again if the rear belts are significantly changed.
- Always carry out the commissioning procedure with an unoccupied wheelchair.

### 5.2.1 Making the basic settings

⇒ Park the vehicle at a suitable and safe location.

This location should be well away from public traffic, it must be level, horizontal and paved.

⇒ Apply the vehicle's handbrake.

⇒ Switch the vehicle's engine OFF.

⇒ Remove the ignition key.

⇒ Open the rear doors or the tailgate

⇒ Prepare both the vehicle and the ramp for loading the wheelchair.

⇒ Make certain that there are no obstacles that could impair the movement of the wheelchair.

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- ⇒ Push or drive the unoccupied wheelchair up to the ramp in a forward-facing direction.

The wheelchair should now be standing outside the vehicle at the foot of the ramp but not on it.

- ⇒ Apply the wheelchair parking brake.
- ⇒ Take hold of the EasyPull 2.0 belts.
- ⇒ Press and hold push-button “3” on the remote control to unreel the belts quickly.

A beep sounds.

- ⇒ Pull the electrically-operated belts out to the wheelchair.
- ⇒ Release the push-button.

The beeping sound stops.



## NOTE

Inform yourself about the attachment points specified by the wheelchair manufacturer if AMF-Bruns power knot adapters are not available. The attachment points must fulfil the requirements of standard ISO 7176-19.

- ⇒ Attach the belts to both of the designated attachment points on the front of the wheelchair.

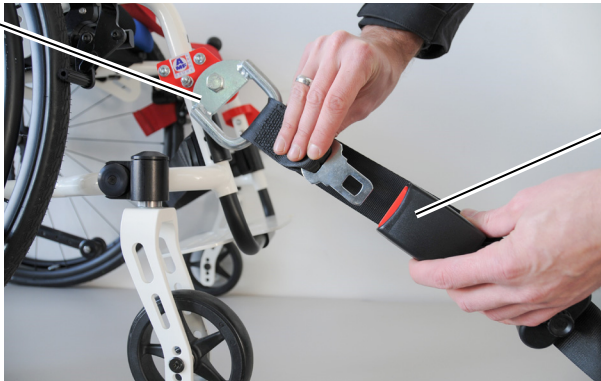
When doing this, make sure that the belts are not twisted do not crossed over.

Attach the belt loops or hooks to the AMF-Bruns power knot adapters, if these are fitted to the wheelchair (see Figure 14, page 45).

or

Attach the belt loops or hooks to the attachment points specified by the wheelchair manufacturer, if there are no AMF-Bruns power knot adapters fitted to the wheelchair (see Figure 15, page 45).

AMF-Bruns  
power knot  
adapter



Belt lock

Figure 14: Fastening to AMF-Bruns Power Knot Adapters

Belt loop

Belt lock

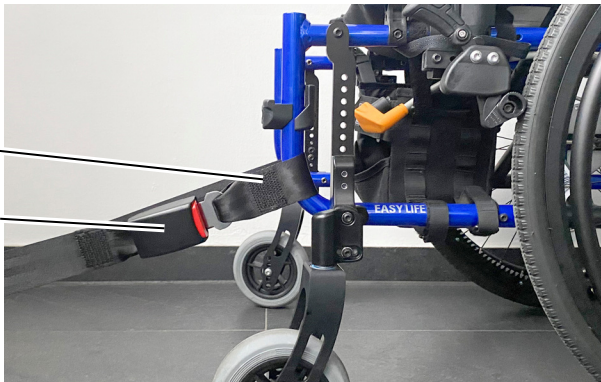


Figure 15: Fastening to the Attachment Points Specified by the Wheelchair Manufacturer

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- ⇒ Loosen the magnets by turning the clamping screws in an anti-clockwise direction.
  - ⇒ Move the magnets as close to the wheelchair as possible (see yellow arrow in Figure 16).
  - ⇒ Fasten the magnets in place by turning the clamping screws in a clockwise direction.



Figure 16: Adjusting the Magnets

- ⇒ Switch the drive unit of an electrically-driven wheelchair OFF.
- ⇒ Uncouple the drive unit of an electrically-driven wheelchair.
- ⇒ Take up a position behind the wheelchair and keep a firm hold of it.
- ⇒ Release the wheelchair's parking brake.
- ⇒ Press and hold push-button "2" on the remote control.

An intermittent beep sounds.

The EasyPull 2.0 pulls the wheelchair into the vehicle.

- ⇒ Walk behind the wheelchair to guide it whilst it is being pulled into the rear of the vehicle.

Position the wheelchair as centrally as possible to the EasyPull 2.0 winch and make sure that the belts are evenly, slightly tensioned.

When the wheelchair has reached the position in the vehicle in which it can be secured using the existing rear belts:

- ⇒ Release push-button “2”.

The beeping sound stops.

- ⇒ Apply the wheelchair parking brake.
- ⇒ Adjust the magnets, such that they make contact with the winch housing (see Figure 17).

Do this by releasing and tightening the magnet clamping screws.

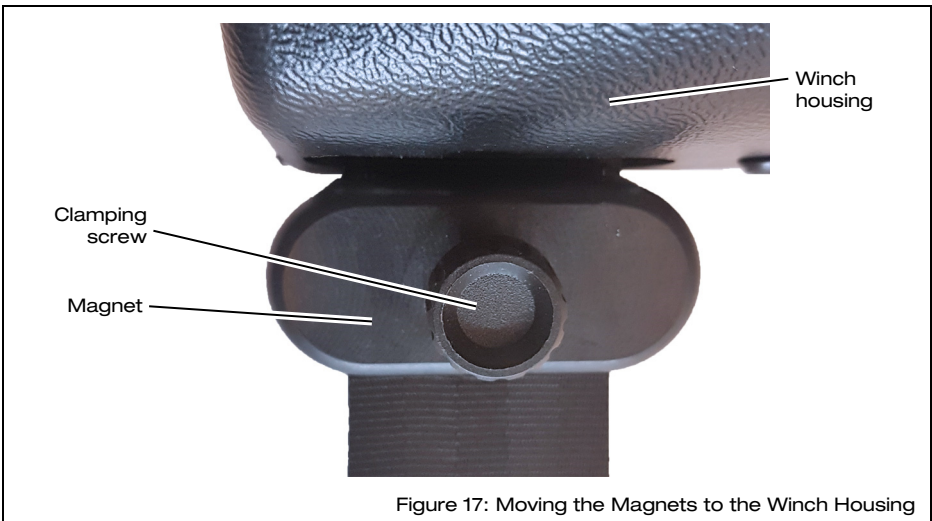


Figure 17: Moving the Magnets to the Winch Housing

## 5.2.2 Checking the setting

- ⇒ Take up a position behind the wheelchair and keep a firm hold of it.
- ⇒ Release the wheelchair's parking brake.
- ⇒ Press and hold push-button “1” on the remote control.

A beep sounds.

- ⇒ Pull or drive the wheelchair backwards by approx. 1 m.
- ⇒ Release push-button “1”.

The beeping sound stops.

⇒ Press and hold push-button “2” on the remote control.

An intermittent beep sounds.

The EasyPull 2.0 pulls the wheelchair into the vehicle once again.

⇒ Walk behind the wheelchair to guide it whilst it is being pulled into the rear of the vehicle.

Position the wheelchair as centrally as possible to the EasyPull 2.0 winch and make sure that the belts are as evenly tensioned as possible.

The EasyPull 2.0 stops as soon as at least one magnet is in the proximity of the winch housing.

A continuous beep sounds.

⇒ Try to pull the wheelchair backwards to make certain that the latch has been applied to the winch.

⇒ Release push-button “2”.

The beeping sound stops.

⇒ When the beeping sound stops, after releasing push-button “2”, try to pull the wheelchair backwards once again to latch the winch.

The wheelchair must now be in its foreseen position.

⇒ Finely adjust the magnets, if necessary (see Section 5.2.3).

The EasyPull 2.0 is correctly adjusted when the wheelchair has reached the position in the vehicle in which it can be secured using the existing rear belts.

If the wheelchair is to be transported in the vehicle:

⇒ Apply the wheelchair parking brake.

⇒ Secure the rear of the wheelchair with the belt systems provided in the vehicle for this purpose.

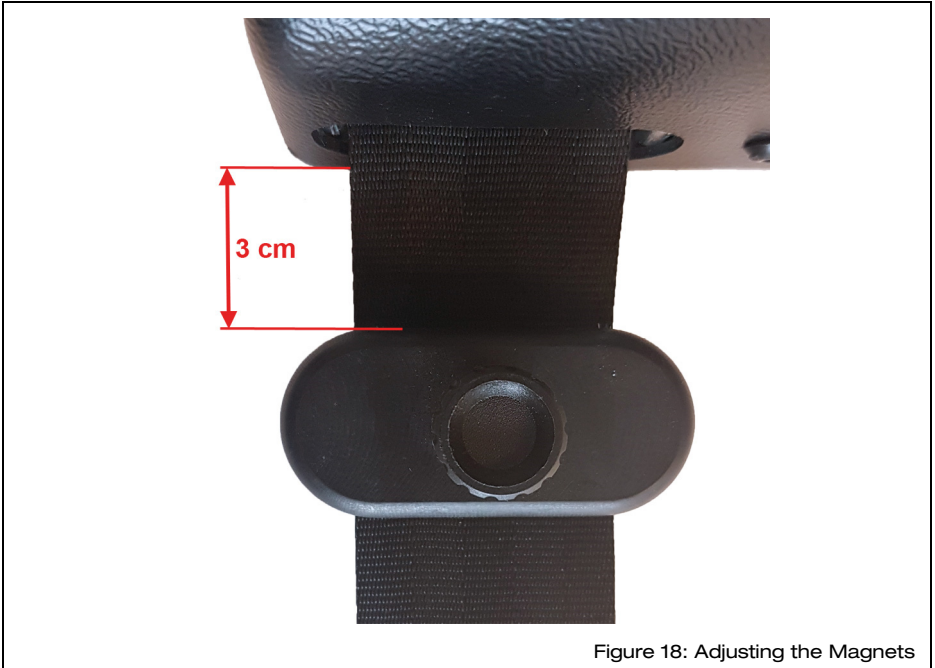
⇒ Make the vehicle ready to drive (e.g. stow the ramp).

⇒ Close the rear doors or the tailgate



### 5.2.3 Making the fine adjustment

- ⇒ Adjust both magnets, such that they are approx. 3 cm from the winch housing (see Figure 18).



- ⇒ Check the adjustment once again (see Section 5.2.2, page 47).

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## 5.3 Recommissioning

For information regarding decommissioning: see Chapter 8, page 68.



### ATTENTION

Risk of material damage to the control unit.

The control unit can suffer damage when connecting or disconnecting the vehicle battery or the power supply cable, if the door contact switch or position switch is not actuated at this point in time.

Therefore:

- Close the tailgate or rear doors of the vehicle before you connect or disconnect the vehicle battery.
- Always disconnect the vehicle battery before carrying out any work on the EasyPull 2.0 electrical system.

- ⇒ Apply the vehicle's handbrake.
- ⇒ Switch the vehicle's engine OFF.
- ⇒ Remove the ignition key.
- ⇒ Close the rear doors or tailgate of the vehicle.
- ⇒ Disconnect the cable from the negative pole of the vehicle battery.
- ⇒ Disconnect the cable from the negative pole of the auxiliary battery, if fitted.
- ⇒ Open the cap on the fuse holder (see Figure 8, page 34).
- ⇒ Fit the 30 A fuse.
- ⇒ Secure the fuse using the corresponding nuts.
- ⇒ Tighten the nuts.
- ⇒ Close the cap on the fuse holder.
- ⇒ Close the rear doors or tailgate of the vehicle.
- ⇒ Connect the cable to the negative pole of the auxiliary battery, if fitted.
- ⇒ Re-connect the cable to the negative pole of the vehicle's battery.
- ⇒ Establish a connection between the remote control and the control unit, if necessary (see Section 10.5, page 74).

## 6 Operation



For information regarding the basic functions of the vehicle and other equipment, refer to the relevant Operating Instructions.

### 6.1 Safety Regulations for Operation



The safety information given in the Safety chapter must have been read prior to operation (see Chapter 1, page 9).



#### **WARNING**

Risk of injury and of material damage if the EasyPull 2.0 is in a faulty condition.

If the EasyPull 2.0 is operated when in a faulty condition, there is a risk of personal injury and of material damage being caused.

Therefore:

- Always visually inspect the EasyPull 2.0 for signs of external damage before use (see Chapter 7, page 61).
- For communal or commercial use: Have the EasyPull 2.0 inspected at intervals of not more than one year by a technical expert.



#### **WARNING**

Risk of injury and material damage if the EasyPull 2.0 is operated by unauthorised persons.

Dangerous operating conditions may be caused if the EasyPull 2.0 is operated by unauthorised persons.

Therefore:

- The EasyPull 2.0 must only be operated by persons who are familiar with its operation.
- The EasyPull 2.0 must never be operated by the passenger.
- Lock the vehicle's doors when the EasyPull 2.0 is not in use.



## WARNING

Risk of injury through obstacles or persons within the range of movement of the EasyPull 2.0.

Persons standing between the winch and the wheelchair being pulled by it can be crushed by the wheelchair. Objects left between the winch and the wheelchair being pulled by it can crush the passenger in the wheelchair. Objects left between the winch and the wheelchair can cause the wheelchair to behave erratically. This poses a general risk of injury.

Therefore:

- Before pulling a wheelchair into the vehicle, always make certain that there are no persons or obstacles within the range of movement of the wheelchair.
  - Stop pulling the wheelchair into the vehicle immediately if there is a risk of crushing or if the wheelchair behaves erratically.
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## WARNING

Risk of injury if the winch is not latched in position.

If the EasyPull 2.0 winch is not latched in position the wheelchair can roll backwards out of control. The passenger in the wheelchair can suffer injury.

Therefore:

- Always make certain that the EasyPull 2.0 is latched in position before driving off. To this end, try to pull the wheelchair backwards with the brake off as soon as the continuous beep sounds when the wheelchair has been pulled into the vehicle. The winch is latched if the wheelchair cannot be pulled backwards.
  - Pull the wheelchair backwards once again if an intermittent beep sounds when the remote control has not been operated. The winch is not latched if the intermittent beep sounds continually.
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## CAUTION

Risk of injury to the passenger through the belt fastening loops.

If the belts are secured to the wheelchair by means of the fastening loops, there is a risk of the passenger reaching into the loops. This presents a risk of crushing when the belts are reeled in.

Therefore:

- Make sure that the passenger does not reach into the fastening loops.
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### WARNING

General risk of injury through incorrect use of the safety systems.

If a road traffic accident occurs, there is a risk of severe injury for all occupants in the vehicle if the wheelchair safety systems and the safety systems for the passenger in the wheelchair are used incorrectly.

Therefore:

- When securing with the EasyPull 2.0, make sure that its belts are evenly tensioned and are not twisted or crossed over one other.
- Always carry the passenger or transport the wheelchair facing forwards in the direction of travel of the vehicle.
- Never place the EasyPull 2.0 belts over the passenger's limbs.
- Secure the rear of the wheelchair with the belt systems provided in the vehicle. Make sure that the belts are equally tensioned.
- Only secure the wheelchair in the vehicle using the fastening points foreseen for this purpose.
- Only ever secure the person in the wheelchair using the safety systems provided for this purpose.
- Always secure the person in the wheelchair using all of the safety systems foreseen for this purpose (e.g. lap belt and shoulder belt, head and back supports).
- Always use the safety systems, even for short journeys.
- Make sure that all belts securing the passenger fit snugly.



### WARNING

Risk of personal injury and material damage if the belts are not reeled in when not in use.

If no wheelchair is being transported by the EasyPull 2.0, the belts must be reeled in up to the magnets. If the belts are reeled out to their full length, they can be thrown around in the vehicle when driving. This poses a risk of personal injury to people in the vehicle and the risk of material damage.

Therefore:

- Allow the winch to reel the straps in when the EasyPull 2.0 is not required to secure a wheelchair.
- Before setting off on a journey, make sure that the belts are reeled in if not in use.



## ATTENTION

Risk of material damage to the control unit.

The control unit can suffer damage when connecting or disconnecting the vehicle battery or the power supply cable, if the door contact switch or position switch is not actuated at this point in time.

Therefore:

- Close the tailgate or rear doors of the vehicle before you connect or disconnect the vehicle battery.
  - Always disconnect the vehicle battery before carrying out any work on the EasyPull 2.0 electrical system.
- 



## ATTENTION

Risk of overloading the EasyPull 2.0 when pulling electric wheelchairs.

The EasyPull 2.0 is designed to pull free-rolling wheelchairs into a vehicle via ramp. Pulling an electric wheelchair with the drive coupled can overload the EasyPull 2.0. This can cause material damage to the EasyPull 2.0.

Therefore:

- Adhere to the load limits of the EasyPull 2.0 (see Section 2.5, page 21).
  - Switch an electric wheelchair OFF.
  - Uncouple the drive unit of an electrically-driven wheelchair.
- 



## NOTE

The EasyPull 2.0 is equipped with an overload protection system. This switches the winch OFF automatically and relaxes the tension of the belts if it is overloaded.

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## NOTE

In order to function, the EasyPull 2.0 requires electrical current. Prolonged use can discharge the vehicle battery and cause problems when starting the internal combustion engine. Even when the internal combustion engine is idling, there is no guarantee that the vehicle battery will always recharge.

Make sure that the vehicle battery is always in a good state of charge, e.g. by driving longer distances between usage of the EasyPull 2.0.

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## 6.2 Taking up an Occupied or Unoccupied Wheelchair



### NOTE

If you are using the EasyPull 2.0 for the first time or if a different wheelchair than that which was previously transported is used:

Carry out the commissioning procedure with a wheelchair (see Section 5.2, page 43).



### WARNING

Risk of injury or material damage when loading an occupied or unoccupied wheelchair.

When an occupied or unoccupied wheelchair is pulled into the vehicle, uncontrolled movements of the wheelchair can cause injuries and material damage.

Therefore:

- Guide the occupied or unoccupied wheelchair up to its final position by hand whilst it is being pulled into the vehicle.
- Always make sure that the wheelchair is facing forwards when it is being pulled into the vehicle.

⇒ Park the vehicle at a suitable and safe location.

The location must be level, horizontal and paved.

⇒ Apply the vehicle's handbrake.

⇒ Switch the vehicle's engine OFF.

⇒ Remove the ignition key.

⇒ Open the rear doors or the tailgate

⇒ Prepare both the vehicle and the ramp for loading the wheelchair.

⇒ Make certain that there are no obstacles that could impair the movement of the wheelchair.

⇒ Push or drive the unoccupied wheelchair up to the ramp in a forward-facing direction.

The wheelchair should now be standing outside the vehicle at the foot of the ramp but not on it.

⇒ Apply the wheelchair parking brake.

- ⇒ Switch the drive unit of an electrically-driven wheelchair OFF.
- ⇒ Uncouple the drive unit of an electrically-driven wheelchair.
- ⇒ Take hold of the EasyPull 2.0 belts.
- ⇒ Press and hold push-button “3” on the remote control to unreel the belts quickly.

An intermittent beep sounds.

- ⇒ Pull the electrically-operated belts out to the wheelchair.
- ⇒ Release the push-button.

The beeping sound stops.



## NOTE

Inform yourself about the attachment points specified by the wheelchair manufacturer if AMF-Bruns power knot adapters are not available. These must fulfil the requirements of standard ISO 7176-19.

- ⇒ Attach the belts to both of the designated attachment points on the front of the wheelchair.

When doing this, make sure that the belts are not twisted do not crossed over.

Attach the belt loops or hooks to the AMF-Bruns power knot adapters, if these are fitted to the wheelchair (see Figure 14, page 45).

or

Attach the belt loops or hooks to the attachment points specified by the wheelchair manufacturer, if there are no AMF-Bruns power knot adapters fitted to the wheelchair (see Figure 15, page 45).

- ⇒ Take up a position behind the wheelchair and keep a firm hold of it.
- ⇒ Release the wheelchair's parking brake.
- ⇒ Press and hold push-button “2” on the remote control.





## NOTE

If push-button “2” on the remote control is released before the intended position is reached, the winch will stop and be latched. A wheelchair that is attached will thus be held in position, even if it is occupied and standing on an incline.

Press push-button “2” once again, to continue pulling the wheelchair into the vehicle.

An intermittent beep sounds.

The EasyPull 2.0 pulls the wheelchair into the vehicle.

- ⇒ Walk behind the wheelchair to guide it whilst it is being pulled into the rear of the vehicle.

Position the wheelchair as centrally as possible to the EasyPull 2.0 winch and make sure that the belts are evenly, slightly tensioned.



## WARNING

Risk of injury if the winch is not latched in position.

If the EasyPull 2.0 winch is not latched in position the wheelchair can roll backwards out of control. The passenger in the wheelchair can suffer injury.

Therefore:

- Always make certain that the EasyPull 2.0 is latched in position before driving off. To this end, try to pull the wheelchair backwards with the brake off as soon as the continuous beep sounds when the wheelchair has been pulled into the vehicle. The winch is latched if the wheelchair cannot be pulled backwards.
- Pull the wheelchair backwards once again if an intermittent beep sounds when the remote control has not been operated. The winch is not latched if the intermittent beep sounds continually.

When the wheelchair has reached its foreseen position in the vehicle, the EasyPull 2.0 will stop and the latch will be applied to the winch.

A continuous beep sounds.

- ⇒ Try to pull the wheelchair backwards to make certain that the latch has been applied to the winch.
- ⇒ Release push-button “2”.

The beeping sound stops.

- ⇒ When the beeping sound stops, after releasing push-button “2”, try to pull the wheelchair backwards once again to latch the winch.
- ⇒ Apply the wheelchair parking brake.
- ⇒ Secure the rear of the wheelchair with the belt systems provided in the vehicle for this purpose.

If the wheelchair is occupied by a passenger:

- ⇒ Always secure the passenger using all of the safety systems foreseen for this purpose (e.g. belts, head and back supports).
- ⇒ Make the vehicle ready to drive (e.g. stow the ramp).
- ⇒ Close the rear doors or the tailgate.

## 6.3 Unloading an Occupied or Unoccupied Wheelchair



### WARNING

Risk of injury or material damage when unloading an occupied or unoccupied wheelchair.

When unloading an occupied or unoccupied wheelchair, personal injuries and material damage can be caused if the wheelchair rolls backwards out of control.

Therefore:

- When unloading an occupied or unoccupied wheelchair, always guide the wheelchair by hand until it has reached its final position.



### NOTE

The belts are not driven when they are reeled out. The belts reel out slowly or quickly by braking the winch to a greater or lesser extent. If necessary, the operator must pull the wheelchair out of the vehicle.

- ⇒ Park the vehicle at a suitable and safe location.  
The location must be level, horizontal and paved.
- ⇒ Apply the vehicle's handbrake.
- ⇒ Switch the vehicle's engine OFF.
- ⇒ Remove the ignition key.

- ⇒ Open the rear doors or the tailgate.
- ⇒ Prepare the vehicle and its ramp to disembark the passenger or unload the wheelchair.
- ⇒ Release all passenger restraint systems.
- ⇒ Make certain that there are no obstacles that could impair the movement of the wheelchair.
- ⇒ Make sure that an electric wheelchair's drive is switched OFF.
- ⇒ Make sure that an electric wheelchair's drive is switched OFF.
- ⇒ Take up a position behind the wheelchair and keep a firm hold of it.
- ⇒ Release the wheelchair's parking brake.
- ⇒ Press and hold push-button "1" on the remote control.



#### NOTE

If push-button "1" on the remote control is released before the intended position is reached, the winch will stop and be latched. A wheelchair that is attached will thus be held in position, even if it is occupied and standing on an incline.

Press push-button "1" once again, to continue moving the wheelchair backwards.

A continuous beep sounds.

- ⇒ Pull or drive the wheelchair out of the vehicle.

Stay behind the wheelchair and guide it backwards, in a straight line, until it has completely left the ramp.

- ⇒ Release the push-button.

The beeping sound stops.

- ⇒ Apply the wheelchair parking brake.
- ⇒ Detach the EasyPull 2.0 belts from the wheelchair.
- ⇒ Hold the belts up.
- ⇒ Press and hold push-button "2" on the remote control.

An intermittent beep sounds.

1 ⇒ The EasyPull 2.0 reels the belts into the vehicle.

2 Keep the belts under tension whilst they are being reeled into the vehicle.

3 When doing this, make sure that the belts are not twisted do not crossed over.

4 The winch stops and the latch is applied when at least one magnet reaches the winch housing.

5 A continuous beep sounds.

6 ⇒ Release push-button "2".

The beeping sound stops.

7 ⇒ Make the vehicle read to drive (e.g. stow the ramp).

8 ⇒ Close the rear doors or the tailgate

## 7 Maintenance and Repair



For information regarding the basic maintenance of the vehicle and other equipment, refer to the relevant Operating Instructions and service documents.

### 7.1 Safety Regulations for Maintenance and Repair



Read the safety information before carrying out maintenance and repair work (see Chapter 1, page 9).



#### **WARNING**

Risk of injury through the vehicle rolling away.

If the vehicle is not secured against rolling away when maintenance and repair work is being carried out on the EasyPull 2.0, there is a risk of injury through inadvertent movement of the vehicle.

Therefore:

- Secure the vehicle to prevent it from moving when carrying out maintenance and repair work.



#### **WARNING**

Risk of injury and material damage if maintenance and repair work is not carried out correctly.

Therefore:

- Only allow specialist personnel to carry out maintenance and repair work.
- If repair work has been carried out on load bearing parts, this must be inspected by a technical expert.

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## CAUTION

Risk of burns being caused by the hot winch.

The motor and flanged-on drive components can become hot during operation. If the winch housing is removed, there is a risk of burns being caused by hot components.

Therefore:

- Allow the winch to cool down before the winch housing is removed.
- 



## WARNING

Personal injury and material damage can be caused if spare parts of inferior quality are used.

Neither the manufacturer nor the distribution partner will accept any liability whatsoever for any consequential damage or injury caused by the use of non-original spare parts or spare parts that have not been approved of by them.

Therefore:

- Use only original spare parts or spare parts that have been approved of by the manufacturer.
- 



## WARNING

There is a risk of injury if the EasyPull 2.0 is used after the vehicle has been involved in an accident.

The EasyPull 2.0 can suffer damage, which is not immediately evident, if involved in an accident. This can adversely affect the safety of the passenger in the wheelchair.

Therefore:

- The EasyPull 2.0 must be replaced if involved in an accident.
  - Contact the customer service department if in doubt as to whether the EasyPull 2.0 must be replaced if the vehicle is only involved in a slight accident (see Chapter 14, page 90).
-



## ATTENTION

Risk of material damage to the control unit.

The control unit can suffer damage when connecting or disconnecting the vehicle battery or the power supply cable, if the door contact switch or position switch is not actuated at this point in time.

Therefore:

- Close the tailgate or rear doors of the vehicle before you connect or disconnect the vehicle battery.
- Always disconnect the vehicle battery before carrying out any work on the EasyPull 2.0 electrical system.

## 7.2 Routine Maintenance Work

The maintenance schedule below lists the maintenance work that must be carried out on the EasyPull 2.0 at regular intervals.

Contact the AMF-Brunns GmbH & Co. KG customer service department or your local dealer for maintenance work that must be carried out by a specialist (see Chapter 14, page 90).

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## 7.2.1 Maintenance schedule

Interval	Activity	see
Every time used	Carry out a visual inspection for damage and deficiencies (in particular to the winch and belts). Initiate repairs if necessary.	
	Make sure that the belts locks latch reliably. Initiate repairs if necessary.	
	Listen for unusual noises when operating the EasyPull 2.0. Initiate repairs if necessary.	
Daily	Check that the magnet clamping screws are tight. If necessary, turn them clockwise.	Chapter 5, page 41.
	Before the wheelchair is secured in the vehicle by means of the rear belts, check the function of the latching system by pulling the wheelchair backwards. Initiate repairs if necessary.	
	Check the function of the door contact switch. Initiate repairs if necessary.	
Yearly	Check all fastening bolts for tightness and re-tighten, if necessary Initiate repairs if necessary.	Section 4.2, page 26. Section 4.3, page 31.
	If used communally or commercially: Have the EasyPull 2.0 inspected by a technical expert.	Section 7.4, page 66. Chapter 12, page 77.
As required	Clean the winch housing and belts.	Section 7.3, page 65.

## 7.2.2 Maintenance records

Enter maintenance and repair work that has been carried out into the maintenance record provided for this purpose (see Section 7.5, page 67). This provides a traceable record of maintenance work.

For records of maintenance work over and above this, it is recommended that you keep your own lists.



## 7.3 Cleaning

### ATTENTION

Risk of material damage through incorrect cleaning.

The use of aggressive cleaning agents, pressurised or hot water can cause damage to the EasyPull 2.0.

Therefore:

- Never use aggressive cleaning agents.
- Never use a high-pressure cleaner.
- Use warm water.
- Do not allow water to ingress any of the EasyPull 2.0 components.

Clean the EasyPull 2.0 winch housing and belts as required.

- ⇒ Apply the vehicle's handbrake.
- ⇒ Close the rear doors or the tailgate
- ⇒ Clean the winch housing using a soft, lint-free cloth.

Moisten the cloth with warm water, if necessary and use a mild detergent (e.g. washing-up liquid).

Make certain that no water is allowed to enter the EasyPull 2.0.

- ⇒ Dry the winch housing immediately using a dry cloth.
- ⇒ Open the rear doors or the tailgate
- ⇒ Deploy the ramp of a vehicle with AMF-Brunns rear cut-out.
- ⇒ Take hold of the EasyPull 2.0 belts.
- ⇒ Press and hold push-button “3” on the remote control to unreel the belts quickly.

An intermittent beep sounds.

- ⇒ Pull the electrically-operated belts out to their full extent.
- ⇒ Release the push-button.

The beeping sound stops.

- ⇒ Clean the belts using a soft, lint-free cloth.

Moisten the cloth with warm water, if necessary and use a mild detergent (e.g. belt care product).

1 ⇒ Allow the belts to dry completely.

2 ⇒ Hold the belts up.

3 ⇒ Press and hold push-button “2” on the remote control.

4 An intermittent beep sounds.

5 ⇒ The EasyPull 2.0 reels the belts into the vehicle.

6 Keep the belts under tension whilst they are being reeled into the vehicle.

7 When doing this, make sure that the belts are not twisted do not crossed over.

8 The winch stops and the latch is applied when at least one magnet reaches the winch housing.

9 A continuous beep sounds.

10 ⇒ Release push-button “2”.

11 The beeping sound stops.

## 12 7.4 Yearly Inspection

13 The yearly inspection by a technical expert is basically a visual inspection and functional test. It extends to:

- 14 • the condition of all components and devices,
- 15 • an inspection for modifications that have been made to the Easy-Pull 2.0,
- the completeness and effectiveness of protective and safety devices and
- the completeness of the inspection log.



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For detailed information regarding the yearly inspection by a technical expert: see Chapter 12, "Inspection Log", page 77.

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## 7.5 Maintenance and Repair Record

Maintenance Work Carried Out		
Date	Signature	Remarks / work carried out

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## 8 Decommissioning and Conservation

Decommission the EasyPull 2.0 if there is a malfunction or if it is not to be used for a longer period of time. For information regarding recommissioning: see Chapter 5.3, page 50.



### ATTENTION

Risk of material damage to the control unit.

The control unit can suffer damage when connecting or disconnecting the vehicle battery or the power supply cable, if the door contact switch or position switch is not actuated at this point in time.

Therefore:

- Close the tailgate or rear doors of the vehicle before you connect or disconnect the vehicle battery.
- Always disconnect the vehicle battery before carrying out any work on the EasyPull 2.0 electrical system.

- ⇒ Apply the vehicle's handbrake.
- ⇒ Switch the vehicle's engine OFF.
- ⇒ Remove the ignition key.
- ⇒ Clean the EasyPull 2.0 belts and the belt housing, if necessary (see Section 7.3, page 65).
- ⇒ Close the rear doors or tailgate of the vehicle.
- ⇒ Disconnect the cable from the negative pole of the vehicle battery.
- ⇒ Disconnect the cable from the negative pole of the auxiliary battery, if fitted.
- ⇒ Open the cap on the fuse holder (see Figure 8, page 34).
- ⇒ Remove the two nuts from the fuse.
- ⇒ Remove the 30 A fuse.
- ⇒ Close the cap on the fuse holder.
- ⇒ Keep the nuts and 30 A fuse in a safe place for recommissioning.

- ⇒ Close the rear doors or tailgate of the vehicle.
- ⇒ Connect the cable to the negative pole of the auxiliary battery, if fitted.
- ⇒ Re-connect the cable to the negative pole of the vehicle's battery.

Contact the AMF-Bruns GmbH & Co. KG customer service department or your local dealer if you have any further questions regarding decommissioning (see Chapter 14, page 90).

## 9 Disposal

When the useful life of the EasyPull 2.0 has expired, it must only be disposed of by qualified specialists. Neither the manufacturer nor the distribution partner will accept liability for damage caused by incorrect disposal.

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## 10 Faults and Troubleshooting



For fundamental safety information regarding the vehicle and other equipment, refer to the relevant Operating Instructions.

### 10.1 Safety Regulations for Troubleshooting



#### 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.



#### ATTENTION

Risk of material damage to the control unit.

The control unit can suffer damage when connecting or disconnecting the vehicle battery or the power supply cable, if the door contact switch or position switch is not actuated at this point in time.

Therefore:

- Close the tailgate or rear doors of the vehicle before you connect or disconnect the vehicle battery.
- Always disconnect the vehicle battery before carrying out any work on the EasyPull 2.0 electrical system.

### 10.2 Troubleshooting Table

If faults occur when operating the EasyPull 2.0, proceed as described in the following troubleshooting table. Contact the AMF-Bruns GmbH & Co. KG customer service department or your local dealer if faults are encountered which cannot be remedied using the information and measures given in the table (see Chapter 14, page 90).

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Fault	Possible Cause	Remedial Measures
The EasyPull 2.0 does not stop and latch automatically.	The EasyPull 2.0 is not adjusted correctly.	Carry out commissioning with a wheelchair (see Section 5.2, page 43).
The EasyPull 2.0 makes noises when driving.	The EasyPull 2.0 fastenings have become loose.	Check the fastening bolts for damage and tightness, re-tighten if necessary (see Section 4.2, page 26, and Section 4.3, page 31).
The EasyPull 2.0 belts cannot be reeled out even though the latching system release signal has been given.	The latching mechanism is defective.	Decommission the EasyPull 2.0. Initiate repairs.
The EasyPull 2.0 beeps after latching.	The latching levers are not fully engaged.	Pull both safety belts hard, so that the latches fully engage.
The EasyPull 2.0 remains latched, even though push-button “1” or “3” on the remote control has been pressed.	The magnets are not in the proximity of the sensors.	Press push-button “2” on the remote control until the continuous beep signals that at least one magnet is in the vicinity of the sensors.
The EasyPull 2.0 is disturbed with by another remote control.	The other remote control uses partially the same coding as the EasyPull 2.0 remote control.	Change the programming of the remote control. Contact the customer service department for this (see Chapter 14, page 90).
The EasyPull 2.0 latches, even though the wheelchair has not reached its position.	The EasyPull 2.0 is not adjusted correctly.	Carry out commissioning with a wheelchair (see Section 5.2, page 43).
	Another magnet in the vicinity of the winch has activated the latches.	Remove the other magnet.
	The winch is defective. The control unit is defective.	Decommission the EasyPull 2.0. Initiate repairs.

Fault	Possible Cause	Remedial Measures
The EasyPull 2.0 does not function or does not function as expected.	The control unit does not function correctly.	Carry out a reset: Operated the door contact switch by hand or open the rear doors / tailgate and close them / it again. Press button "4" on the remote control for at least 15 seconds.
	The remote control is not connected to the control unit.	Establish a connection between the remote control and the control unit (see Section 10.5, page 74).
	The LED blinks on the remote control without a push-button having been pressed. The remote control battery is weak.	Fit a new battery (see Section 10.4, page 73).
	The remote control battery is discharged.	
	The remote control is defective.	Purchase a new remote control. Establish a connection between the new remote control and the control unit (see Section 10.5, page 74).
	The fuse has blown.	Replace the fuse (see Section 10.3).
	The vehicle battery is discharged.	Charge the starter battery or fit a new battery.
	The door contact switch is defective. The control unit is defective.	Decommission the EasyPull 2.0. Initiate repairs.

## 10.3 Fitting a New Fuse

In order to replace a blown fuse, carry out a decommissioning procedure (see Chapter 8, page 68), replace the fuse, and carry out a commissioning procedure (see Section 5.3, page 50). Always replace the fuse with a like-for-like 30 A fuse.



If the fuse blows a short time after it has been replaced, decommission the EasyPull 2.0 and have it repaired. This may be due to a fault in the EasyPull 2.0 electrical system.

## 10.4 Fitting a New Battery

- ⇒ Remove the rear cover from the remote control.
- ⇒ Remove the old battery.
- ⇒ Fit the new battery: button cell, type CR2032.

The positive pole of the battery must be on top (see Figure 19).



Figure 19: Fitting a Battery

- ⇒ Fit the cover to the rear of the remote control.
- ⇒ Test the function of the remote control.

Do this by pressing random push-buttons on the remote control several times. The red LED in the remote control must light up whenever a push-button is pressed

## 10.5 Connecting the Remote Control with the Control Unit

In the following cases, it will be necessary to connect the remote control with the control unit:

- When first commissioning.
- If the remote control loses its connection with the control unit (see Section 10.6, page 75).
- If the remote control is to be used in conjunction with another EasyPull 2.0.



### NOTE

Before establishing a connection, make sure that there is no other vehicle with an EasyPull 2.0 switched ON within the range of the remote control. Otherwise, the remote control will connect with more than one control unit and malfunctions can occur at a later point in time.

- ⇒ Apply the vehicle's handbrake.
- ⇒ Open the rear doors or the tailgate.
- ⇒ Deploy the ramp of a vehicle with AMF-Bruns rear cut-out.
- ⇒ Simultaneously press and hold push-buttons “1” and “4” on the remote control for approx. 2 seconds, in order to establish a connection between the remote control and the control unit.

## 10.6 Decoupling the Remote Control from the Control Unit

Decouple the remote control from the control unit if the remote control is to be used in a different vehicle with an EasyPull 2.0 for example.

- ⇒ Apply the vehicle's handbrake.
- ⇒ Open the rear doors or the tailgate.
- ⇒ Deploy the ramp of a vehicle with AMF-Bruns rear cut-out.
- ⇒ Simultaneously press and hold push-buttons “1” and “4” on the remote control for approx. 10 seconds, in order to decouple the remote control from the control unit.

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## 11 Spare Parts

Figure	Designation	Article No.
	Remote Control	200665619
	Winch housing	10022145
	Belt with magnet	10024400
	Controller	200665618
	Fuse 30 A	10014307
	Connection cable harness	200665617

## 12 Inspection Log

Before using the EasyPull 2.0 for the first time, it must be inspected by a technical expert.

If the EasyPull 2.0 is used commercially or communally, this inspection must be repeated at intervals of not more than one year.

During inspection, faults affecting the safety should be systematically identified and remedial action taken.

The items to be inspected are listed in the inspection list (see Section 12.2, page 79).



A technical expert is someone who, by virtue of their technical training and experience, has sufficient knowledge in the field of restraint systems for vehicles equipped for disabled persons and is sufficiently familiar with the relevant national occupational health and safety regulations, accident prevention regulations and recognised rules of sound engineering practice (e.g. BG rules, DIN standards, VDE provisions, technical rules and regulations of other member states of the European Union or Turkey or other signatory states of the Agreement of the European Economic Area) that they are able to assess the safe working condition of such access ramps for disabled vehicles.

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## 12.1 Inspection Log Master Data Sheet

### Master Data Sheet for EasyPull 2.0

Chassis Number (VIN)\* .....

Owner .....

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Year of manufacture .....

First commissioned on .....

\* see vehicle rating plate

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## 12.2 Inspection List

For a routine, yearly inspection by a technical expert (see information on page 77).

Scope of Inspection	Required Inspection Results
Condition of the winch.	<p>Base plate not distorted or cracked, motor and gearing housing undamaged, latching teeth not worn, belts are reeled in tightly and tidily, seals on screwed connections are intact.</p> <p>All parts are in place, are not deformed and are not damaged by corrosion.</p>
Condition of the belts and belt fasteners.	<p>Belts not damaged (e.g. not frayed, no open seams) or twisted, belt locks and belt latches are undamaged and close and open reliably, hooks undamaged and not deformed.</p>
Winch fasteners on the vehicle.	<p>The fastening bolts are all in place, undamaged and tight.</p>
Function of the EasyPull 2.0.	<p>The EasyPull 2.0 functions perfectly, particularly the latching mechanism.</p>
Paths of the belts over the floor of the vehicle, the floor section and the ramp.	<p>The paths of the belt are free of sharp edges and points that could cause damage to the belts during their movement.</p>
Condition of the electrical system.	<p>All electrical cables are undamaged, securely fastened and adequately insulated. The cap is fitted to the fuse holder and is not damaged.</p> <p>All electrical connectors are tight and not corroded.</p>



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## 12.3 Inspection Results

**Results of the inspection prior to using for the first time.**

To be observed if installed by a third-party company

Installation inspection for .....

Chassis Number (VIN)\* .....

Installation has been carried out correctly!

Place /date .....

.....  
Installation company/Company stamp

.....  
Technical expert/Signature

\* see vehicle rating plate





## Inspection result of a yearly inspection

Chassis Number (VIN)\* .....

Sheet No. ....

The EasyPull 2.0 was subject to a routine inspection on .....

No/the following defects were found:

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There are no issues to preclude continued operation.

Place/date .....

..... Company/Company stamp Signature (technical expert)

### All defects have been remedied.

Confirmation by the owner or his representative with date and signature

..... Place/date Signature (owner)

\* see vehicle rating plate



# Inspection Log

## Inspection result of a yearly inspection

Chassis Number (VIN)\* .....

Sheet No. ....

The EasyPull 2.0 was subject to a routine inspection on .....

No/the following defects were found:

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There are no issues to preclude continued operation.

Place/date .....

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Company/Company stamp

Signature (technical expert)

### All defects have been remedied.

Confirmation by the owner or his representative with date and signature

.....

Place/date

Signature (owner)

\* see vehicle rating plate



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**Inspection result of a yearly inspection**

Chassis Number (VIN)\* .....

Sheet No. ....

The EasyPull 2.0 was subject to a routine inspection on .....

No/the following defects were found:

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There are no issues to preclude continued operation.

Place/date .....

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Company/Company stamp	Signature (technical expert)
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**All defects have been remedied.**

Confirmation by the owner or his representative with date and signature

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Place/date	Signature (owner)
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\* see vehicle rating plate



# Inspection Log

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Place/date .....

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Company/Company stamp	Signature (technical expert)

**All defects have been remedied.**

Confirmation by the owner or his representative with date and signature

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Place/date	Signature (owner)

\* see vehicle rating plate



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There are no issues to preclude continued operation.

Place/date .....

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Company/Company stamp

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Signature (technical expert)

**All defects have been remedied.**

Confirmation by the owner or his representative with date and signature

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Place/date

.....  
Signature (owner)

\* see vehicle rating plate



# Inspection Log

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## Inspection result of a yearly inspection

Chassis Number (VIN)\* .....

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Company/Company stamp

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Signature (technical expert)

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Confirmation by the owner or his representative with date and signature

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Place/date

.....  
Signature (owner)

\* see vehicle rating plate



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**Inspection result of a yearly inspection**

Chassis Number (VIN)\* .....

Sheet No. ....

The EasyPull 2.0 was subject to a routine inspection on .....

No/the following defects were found:

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There are no issues to preclude continued operation.

Place/date .....

..... Company/Company stamp                  Signature (technical expert)

**All defects have been remedied.**

Confirmation by the owner or his representative with date and signature

..... Place/date                  Signature (owner)

\* see vehicle rating plate

## 13 Electrical Circuit Diagrams

### 13.1 Electrical Connection Plan

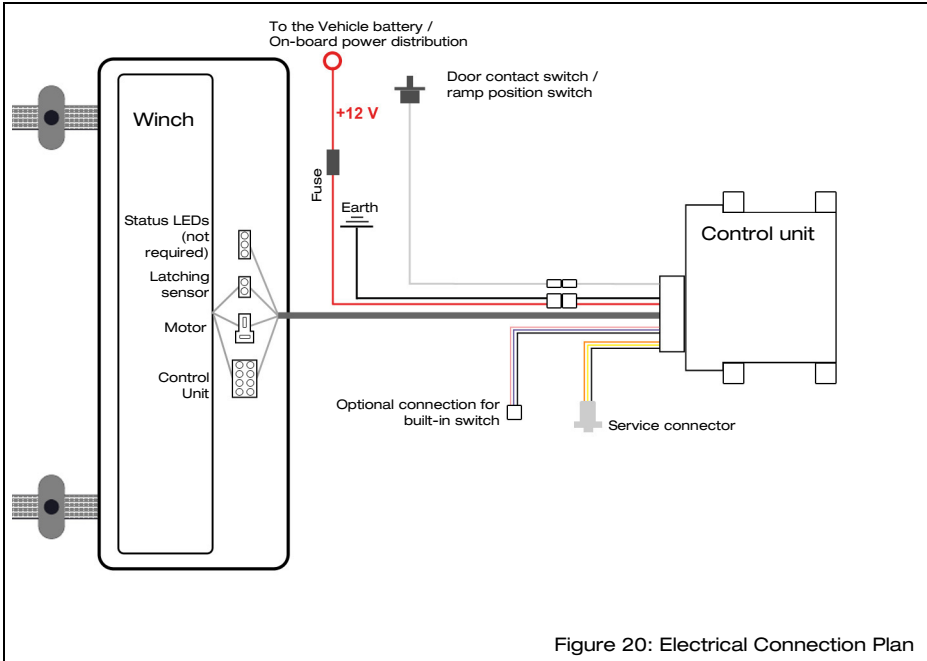


Figure 20: Electrical Connection Plan



## 13.2 Electrical Circuit Diagram

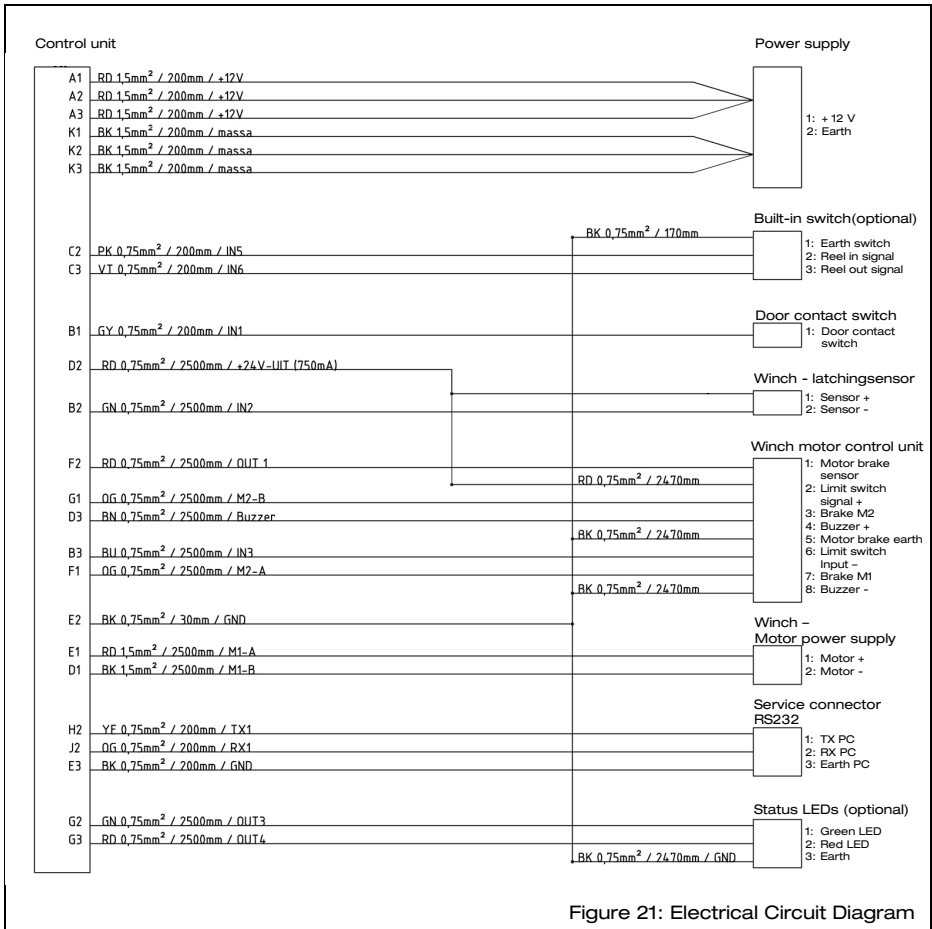


Figure 21: Electrical Circuit Diagram

Colour	Abbreviation (acc. to IEC 60757)
orange	OG
Grey	GY
Red	RD
Black	BK
Violet	VT
White	WH

Colour	Abbreviation (acc. to IEC 60757)
Brown	BN
Yellow	YE
Green	GN
Blue	BU
Pink	PK
Tur-	TQ

## 14 Customer Service

Contact your local dealer to order spare parts, for maintenance and repair work or if you have any problems or queries.

In addition to this, the AMF-Bruns GmbH & Co. KG customer service is also available to you. Enquiries can be made in either the German or English language.

The address of the customer service is:

AMF-Bruns GmbH & Co. KG

Hauptstraße 101

D - 26689 Apen

Tel.: +49 (0) 44 89 / 72 72-22

Fax: +49 (0) 44 89 / 62 45

[service.hubmatik@amf-bruns.de](mailto:service.hubmatik@amf-bruns.de)

[www.amf-bruns.de](http://www.amf-bruns.de)



### NOTE

Guarantee work on the EasyPull 2.0 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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## 15 Declaration of Conformity



### EC Declaration of Conformity

according to EC Machine Directive 2006/42/EC, Annex II A

We, the manufacturer, hereby declare, that the design and construction of the machine designated below complies with the fundamental health and safety requirements of the EC Machinery Directive 2006/42/EC. This declaration is rendered null and void if unauthorised modifications are made to the machine.

Designation            **Wheelchair Winch**  
Type:                    **EasyPull**  
Serial number:        from: EPH-2024-01 (belts with hooks)  
                              from: EPL-2024-01 (belts with loops)  
                              from: EPH-2024-4001 (belts with hooks, USA version)  
                              from: EPL-2024-4001 (belts with loops, USA version)

Manufacturer:  
Company:              **AMF-Brunns GmbH & Co. KG**  
Address:               **Hauptstraße 101**  
                              **26689 Apen**

Harmonised standards applied:  
**DIN EN 1756-2, DIN EN ISO 12100**

Other technical standards and specifications applied:  
**DIN 32983, DIN 75078-1, DGUV Regel 100-500**

Conformation with the following directives applicable to the machine is declared:  
**EMC Directive 2014/30/EU**

Authorised representative for the technical documentation:  
**Thomas Lakewand** (address: see manufacturer's address)

Apen, 30.01.2024

Place, date



Signature

Gerit Bruns, managing director

Details of the signatory

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Fax +49 (0) 44 89 / 62 45  
service.hubmatik@amf-bruns.de

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DIN EN ISO 9001  
REG.-NR. 01 0105027