

SHERPA SLIM

Universal electronically controlled
assisted loading system for stretchers

INSTRUCTIONS FOR USE AND WARNINGS



ORIGINAL INSTRUCTIONS
SHERPA SLIM Rev.04 - 02/2026



EMS

FOREWORD

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The manufacturer is in no way liable for the consequences of any incorrect operations carried out by the user.

EDITOR'S NOTE

This documentation is expressly intended for technicians; therefore some information easily deduced from reading the texts and examining the drawings may not have been further specified.

The publisher is in no way responsible for the information and data contained in this manual: all information contained herein has been provided, checked and approved during verification by the Manufacturer.

The publisher is in no way liable for the consequences of any incorrect operations carried out by the user.

GENERAL CONSIDERATIONS

All operating and maintenance instructions and recommendations described in this manual must be complied with. For best results, the manufacturer recommends regular cleaning and maintenance to keep the system in top condition.

It is of particular importance that the personnel in charge of the device are trained in its use, as well as in its maintenance and in monitoring compliance with the operating procedures and all the safety rules indicated in this manual.

INDEX OF REVISIONS

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1. IDENTIFICATION

1.1 Manufacturer identification

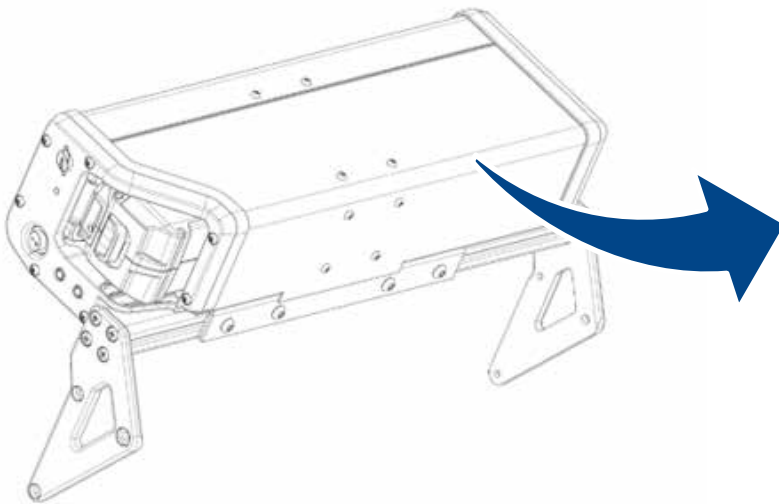
Manufacturer	STEM S.r.l.
Address	Strada Ghiaie, 12/D 43014 Medesano (PR) - Italy Tel. + 39 0525 430102 - Fax +39 0525 421341 stem@stem.it - www.stem.it




1.2 Device identification

Device	SHERPA SLIM
---------------	-------------

1.3 Identification plate

The device is provided with an **identification plate** placed on the bottom of the device.
The plate bears the identification details of the device to be communicated to **STEM S.r.l.** in case of any requirement.



STEM 		Strada Ghiaie, 12/D I-43014 MEDESANO (PR) ITALY
TYPE	SHERPA SLIM	
MODEL	SHERPA SLIM	
 10 R - 06 6586		
Serial N° XXXXXXXXXX		13.7 kg DC 25.2 V 30 A



WARNING!

It is absolutely forbidden to remove the CE identification plate and/or replace it with other plates.
If, for accidental reasons, the plate is damaged or removed, the customer must inform the Manufacturer.


1.4 CE Declaration of Conformity



Stem S.r.l.
Strada Ghiaie, 12D
43014 MEDESANO (PR)
ITALY

DECLARATION OF CONFORMITY



OBJECT	Universal electrically controlled assisted loading system for stretchers
TYPE	SHERPA SLIM
MODELS	SHERPA SLIM SHERPA SLIM 071
TYPE APPROVAL	 10 R – 06 6586

We hereby declare that the machine in question is manufactured in compliance with:

- Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC.
- Regulation No. 10 Rev. 6 of the Economic Commission for Europe of the United Nations (UN/ECE) - Uniform provisions concerning the approval of vehicles with regard to their electromagnetic compatibility.
- Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonization of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.
- Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility (recast)

The technical file is kept at the STEM offices, and the person authorized to compile this file is:

Ezio Menna
Medesano,

The Legal Representative
Menna Ezio



1.5 Reference Directives

The device supplied by **STEM S.r.l.** is not included into any of the categories of machinery listed in Annex IV of the Directive; therefore, for the purposes of attesting the conformity of the device with the provisions of this directive, **STEM S.r.l.** applies the conformity assessment procedure, including the internal checks on the manufacture of the device, referred to in Annex VIII.

To certify the conformity of the device with the provisions of the Directive, before placing the device on the market, **STEM S.r.l.** has carried out a risk assessment in order to verify compliance with the essential health and safety requirements stipulated by the Directive as well as the tests and verifications required by the reference standards applied.

The manufacturing technical file has been drafted in accordance with the provisions of Annex VII of **Directive 2006/42/EC** and is available for inspection by the supervisory bodies upon justified application, as provided for in the relevant legal provisions.

STEM S.r.l. has subsequently placed the device on the market providing it with:

- CE Marking
- CE Declaration of Conformity
- Instruction manual and warnings (Documentation drafted according to point 1.7.4 of the **Machinery Directive 2006/42/EC**)

Please also note that the device has been designed in accordance with the following Directives:

2006/42/EC	Machinery Directive
UN/ECE Reg. 10 - Rev.06	Regulation relating to the approval of vehicles with regard to their electromagnetic compatibility
2014/30/EU	Electromagnetic compatibility Directive
2014/53/EU	Radio equipment Directive
2012/19/EU	RAEE (Waste Electrical and Electronic Equipment) Directive

and that the following harmonised standards have been applied:

EN 1865-5:2012 (4.4)	Patient handling equipment used in road ambulances. Part 5: Stretcher support
EN 301-489-1 V2.2.3 (2019)	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard for ElectroMagnetic Compatibility
EN 301-489-17 V3.2.4 (2020)	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard for ElectroMagnetic Compatibility
EN 300-328 V2.2.2 (2019)	Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum

2. PRELIMINARY INFORMATION

2.1 Recipients

The manual is intended for operators in charge of using and managing the device in all its technical life stages.

It contains topics that refer to the correct use of the device in order to keep its functional and qualitative characteristics unaltered over time. All information and warnings for correct use in total safety are also provided.

The manual, as well as the CE conformity certificate, is an integral part of the device and must always be kept with it whenever it is moved or resold. It is the user's responsibility to keep this documentation intact for reference throughout the life of the device.

2.2 Supply and storage

The manual is supplied in **printed** format.

All additional documentation (wiring diagrams, sub-suppliers manuals) are provided as annexes to this manual.

Keep this manual with the device so that it can be easily consulted by the operator.

The manual is an integral part for safety purposes, therefore:

- It **must be kept intact** (in all its parts). If it is lost or damaged, a copy should be requested immediately.
- It **must follow the device until it is dismantled** (even if it is moved, sold, rented, etc. ...);
- The enclosed manuals are an integral part of this **documentation** and the same recommendations/prescriptions apply to them as to this manual.

The **manufacturer** accepts no liability for improper use of the device and/or for damage caused as a result of operations not covered in the technical documentation.

2.3 Updates

If the device needs functional modifications or replacement, the revision or updating of the manual is the responsibility of the manufacturer. The manufacturer is responsible for delivering the updated manual.

It is also the user's responsibility to ensure that, should this document be modified by the manufacturer, only updated versions of the manual are actually available at the point of use.

2.4 Language

The original manual was written in **Italian**.

Any translations into additional languages must be made from the original instructions.

The manufacturer is responsible for the information contained in the original instructions; translations into different languages cannot be fully verified. Therefore, if an inconsistency is detected, the original language text must be followed or our Technical Documentation Department must be contacted.

2.5 Operators



In order to define with certainty the competences and qualifications of the operators assigned to the various tasks (commissioning, cleaning, routine maintenance), please refer to the following table:

Qualification	Definition
Operator	<p>User personnel trained and qualified to use and operate the device for production purposes for the activities for which it was constructed and supplied.</p> <p>Personnel must be able to carry out all operations necessary for the proper functioning of the device, for personal safety and the safety of any co-workers. They must own proven experience in the correct use of these types of machines and be trained, informed and instructed accordingly.</p> <p>In case of doubt, they must report any anomaly to their supervisor.</p> <p>Note: they are only allowed to carry out routine maintenance operations.</p>
Mechanical maintenance technician	<p>Qualified technician capable of carrying out preventive/corrective maintenance on all mechanical parts of the device subject to maintenance or repair.</p> <p>Qualified technician able to have access to all parts of the device for visual analysis, equipment status check, adjustments and calibrations.</p> <p>Qualified technician capable of:</p> <ul style="list-style-type: none"> operating the device as the operator; acting on mechanical components for adjustments, maintenance and repairs; reading pneumatic and hydraulic diagrams, technical drawings and spare parts lists. <p>In extraordinary cases, they are trained to operate the device with reduced safety. Where necessary, they can give operators instructions on how to use the device properly for production purposes.</p> <p>Note: they are not allowed to work on live electrical systems (if fitted).</p>
Electrical maintenance technician	<p>Qualified technician capable of carrying out preventive/corrective maintenance on all electric parts of the device subject to maintenance or repair.</p> <p>Qualified technician able to have access to all parts of the device for visual analysis, equipment status check, adjustments and calibrations.</p> <p>Qualified technician capable of:</p> <ul style="list-style-type: none"> operating the device as the operator; acting for adjustments and electrical installations for maintenance, repair and replacement of worn parts; reading wiring diagrams and verify the correct functional cycle. <p>Where necessary, they can give operators instructions on how to use the device properly for production purposes.</p> <p>Only if eligible person (PEI), they can operate under the presence of voltage in electric panels, junction boxes, control equipment etc. (Refer to EN50110-1 standard).</p> <p>They do not program software for systems such as: PLC (logic or safety), cannot change system passwords.</p>
Technician of the Manufacturer	<p>Technician qualified by the manufacturer and/or its distributor for complex operations, due to familiarity with the device manufacturing cycle.</p> <p>This technician operates in accordance with the user's requests.</p> <p>Mechanical skills required.</p>

The qualifications listed in the table on this page involve compulsorily a category of persons referred to as **“trained person”**.

Type	Definition
Trained person	<p>Anyone having been informed, instructed and trained about the work and the possible dangers of improper use. These persons also know the importance of safety equipment, accident prevention regulations and safe working conditions.</p>




2.6 Symbols used within the manual

Symbol	Definition
	Symbol used to identify important warnings for operator and/or device safety.
	Symbol used to identify information of particular importance within the manual. The information also covers the safety of personnel involved in the use of the device.

2.7 Personal protective equipment

When working near the device, both for assembly and for maintenance and/or adjustment operations, the general anti-accident rules must be strictly adhered to. This is the reason why it is important to use the personal protective equipment (PPE) required for each individual operation.

Here is the complete list of **personal protective equipment (PPE)** that may be required for the various procedures:

Symbol	Description
	Obligation to use protective or insulating gloves. Using protective or insulating gloves is prescribed for personnel.
	Obligation to use protective goggles. Wearing eye protection goggles is prescribed for personnel.
	Obligation to wear safety shoes. Wearing safety shoes is prescribed for personnel to protect their feet.
	Obligation to use noise protection devices. Using ear muffs or ear plugs is prescribed for personnel for hearing protection.
	Obligation to wear protective clothing. Wearing the specific protective clothing is prescribed for personnel.

The clothing of anybody operating or maintaining the line must comply with the essential safety requirements defined by **Reg. EU 2016/425** and the laws in force in the country where it is installed.

2.8 Warranty

The full warranty clauses are set out in the general terms and conditions of sale.

The terms and conditions set out in the sales contract (if different) take priority over what is stated in this section.

The device has been designed and manufactured for multiple year use without any problems. However, should faults occur during the warranty period, **STEM S.r.l.** undertakes to replace – free of charge – parts that have broken or worn out prematurely due to: defective materials, processing defects or incorrect assembly.

The guarantee **is not recognised** for parts whose premature wear and tear or breakage is due to:

- use or maintenance not in accordance with the instructions in this manual
- tampering or modifications not specifically approved by **STEM S.r.l.**
- use of non-original spare parts
- lack of maintenance or incorrect maintenance
- use of unsuitable tools for routine and extraordinary maintenance
- maintenance or service carried out by unqualified personnel

With regard to assembled electrical material and commercial material purchased from external suppliers, **STEM S.r.l.** grants the purchaser the same warranty that **STEM S.r.l.** is granted by its suppliers.

The warranty lasts 24 months from the shipping date. The term is fixed and not subject to extension as a result of replacements or repairs carried out during the guarantee period.

In order to determine the causes of faults and to apply the warranty, defective components must be returned to **STEM S.r.l.**

Repair or replacement of parts under warranty shall be carried out, upon the decision of **STEM S.r.l.**, at their factory, by a third party or on site. In the case of on-site work, the customer will be charged for the costs of the power supply, extraordinary equipment, auxiliary personnel, **STEM S.r.l.** personnel and accommodation and boarding costs.

Before shipping parts for replacement or repair under warranty, written approval by **STEM S.r.l.** technical service office is required.

Should **STEM S.r.l.** authorise the return of replaced components, they must be packed correctly to avoid damage during transport, together with:

- serial number and model indicated on the identification plate
- part number and position of the component as per the spare parts list
- exact description of the defect and how it occurred

Parts recognised as being under warranty are delivered free of charge; replaced parts remain the property of **STEM S.r.l.**

The warranty does not include parts and materials subject to ordinary wear and tear and those whose durability cannot be determined in advance.

The absence of the identification plate on the product implies the immediate expiry of the warranty.



IMPORTANT!

Further details can be found in the sales contract.

The terms and conditions set out in the sales contract (if different) take priority over what is stated in this section.

3. SAFETY DEVICES

3.1 Noise

Noise measurements were carried out in accordance with **UNI EN 11200** and **UNI EN ISO 3746**.

During operating cycles, **personnel noise exposure is lower than 75 dB**.

The actual noise level of the installed device during operation on the vehicle is different from the measured noise level because noise is influenced by certain factors such as:

- type and characteristics of the vehicle;
- other adjacent machines in operation.

It is the user's responsibility to apply the relevant preventive and protective measures in accordance with the legislation of the country in which the device is installed and used.

3.2 Vibrations

The vibrations produced by the device, depending on how it is used, **are not hazardous** for the health of the operators.



WARNING!

Excessive vibration can only be caused by a mechanical fault, which must be reported and rectified immediately so as not to jeopardise the safety of the device and the operators.

3.3 Residual risks

The design of the device was carried out in such a way as to guarantee the essential safety requirements for the operator.

Safety, as far as possible, has been integrated into the design and construction of the device; however, there are still risks from which operators must be protected, especially during:

- installation;
- operation;
- adjustment and tuning,
- maintenance and cleaning;
- disassembly and dismantling.

For each residual risk, a description of the risk and the area or part of the device subject to the residual risk is given (unless the risk applies to the entire device).

Procedural information is also provided on how to avoid the risk and on the correct use of the personal protective equipment provided and prescribed by the manufacturer.

Hazard	Description and procedure information
<p>Crushing hazard for upper limbs</p>	<p>During the loading and unloading of the stretcher, there is still a residual risk of crushing the upper limbs while the stretcher is moved onto the support tray. It is prohibited to place and/or rest hands on the stretcher sliding surface during loading and unloading. Make sure that no one outside the loading/unloading operators is in the immediate vicinity of the stretcher and its support during these operations.</p>



WARNING!

Do not carry out any maintenance activities until the energy sources have been de-energized.

4. DEVICE DESCRIPTION

4.1 Intended use (correct)

This device is intended for **healthcare use** for:

Operation	Permitted	Prohibited	Working environment
Assisted loading of:	Stretchers	Any device other than those listed among the permitted devices.	Vehicle



IMPORTANT!

For the types of stretcher supports on which the device can be installed, please refer to the “Technical data” section of this manual.

The device was created to:

- meet the specific requirements mentioned in the sales contract;
- be used in accordance with the instructions and limits of use given in this manual.

The device was designed and built to work safely if:

- it is used within the conditions stated in the sales contract and in this manual;
- the procedures in the user manual are complied with;
- routine maintenance is carried out at the specified times and in the specified manner;
- extraordinary maintenance is carried out promptly if necessary;
- safety devices are not removed and/or bypassed.

4.2 Reasonably foreseeable misuse

Reasonably foreseeable misuse is listed below:

- loading of equipment other than the permitted stretchers;
- use the device differently from what is stipulated under “**Intended use (correct)**”.

Any use of the device other than the intended use must be authorised in advance in writing by the manufacturer. In the absence of such written authorisation, use is to be considered “**improper use**”; the manufacturer therefore declines all liability for any damage caused to property or persons and considers any type of warranty on the device to be void.



IMPORTANT!

Improper use of the device excludes any liability by the manufacturer.

4.3 Obligations and prohibitions

4.3.1 Obligations of users

The **user** (entrepreneur or employer) **must**:

- take into account the capabilities and conditions of the operators in relation to their health and safety;
- provide the appropriate personal protective equipment for individual procedures;
- train personnel on procedures in the event of an accident;
- train personnel on the devices provided for the safety of operators;
- train personnel on the risks of noise emissions in the work environment;
- train personnel on the general accident prevention rules laid down by European directives and the legislation of the country of destination of the device.

Only personnel who have read this manual and been properly trained should operate the device.

4.3.2 Operators' obligations

The operator **must**:

- carry out routine maintenance work in accordance with the schedule indicated;
- when the device is in operation, do not work in the vicinity wearing chains, bracelets, ties, or other clothing that could get caught in the mechanisms;
- collect long hair to prevent it from getting tangled;
- make appropriate use of the protective equipment provided by the employer;
- immediately report deficiencies in safety systems to the employer, manager or supervisor.

4.3.3 Operators' prohibitions

In particular, operators **must not**:

- use the device improperly, i.e. for uses other than those indicated in the section "**Intended use (correct)**";
- remove or modify security or warning systems without authorisation;
- carry out operations or manoeuvres on their own initiative which are not within their competence or which may endanger their own safety or the safety of other workers;
- replace or change the speeds of the device components without being allowed to do so by a supervisor;
- modify connections;
- use the device if it has not been installed according to the current regulations;
- use the device as a point of support even when not operating (risk of falling and/or damaging the machines);
- use the device outside the permitted environmental conditions (see "**chapter 5**").



WARNING!

STEM S.r.l. shall not be liable for damage caused to property or persons in the event that the device is found to have been used in one of the non-permitted environments.

4.4 Technical Data

General Data	
Towing capacity	300 kg
Device weight	13.7 kg
Max. power consumption	30 A
Max. battery charging consumption	5 A

Battery data	
Rated voltage	25.2 VDC
Rated capacity	7,5 Ah - 189 Wh (POWER-PACK189) 5,0 Ah - 126 Wh (POWER-PACK126)
Max. discharge current:	Peak (2sec.): 90 A - Direct: 60 A (POWER-PACK189) Peak (2sec.): 60 A - Direct: 40 A (POWER-PACK126)
End-of-discharge voltage	Direct: 60 A
Charging voltage	17.5 V
Max. charging current	29.4 V
Charging method	8 A
Min/max operating temperature	-20 / +75 °C
Min/max charging temperature	0 / +50 °C

Type of applicability	
Type of stretchers	To be requested from STEM S.r.l.
Type of stretcher supports	All STEM S.r.l. supports

4.5 General description

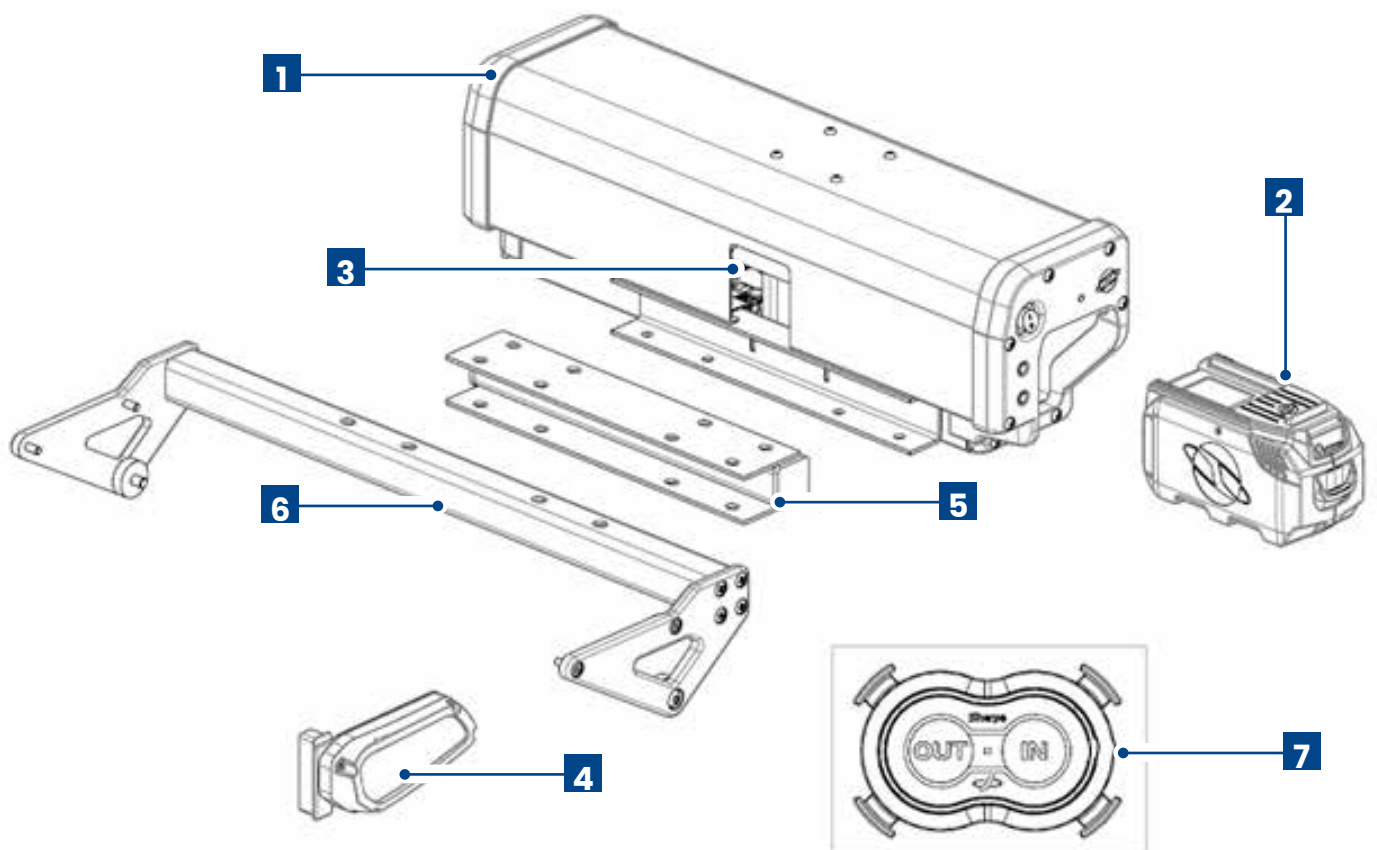
The device is used to assist healthcare professionals during the loading and unloading of the stretcher to/from rescue vehicles.

It is equipped with a belt, connected to a roll-up system and to be connected to the stretcher frame, which allows the stretcher to be accompanied on and off the supports for transport.

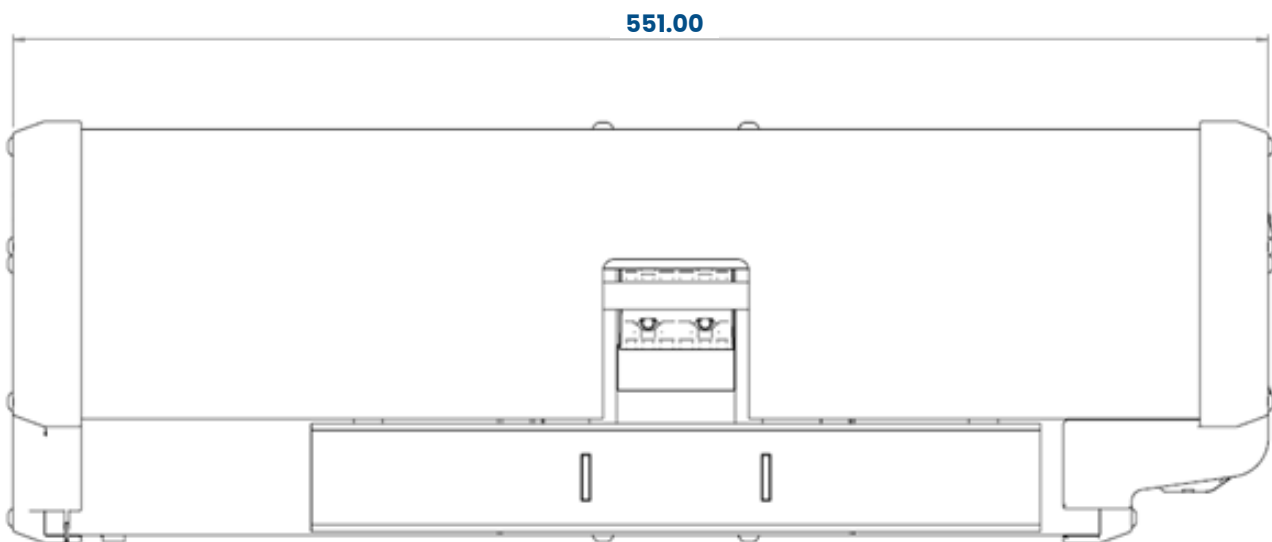
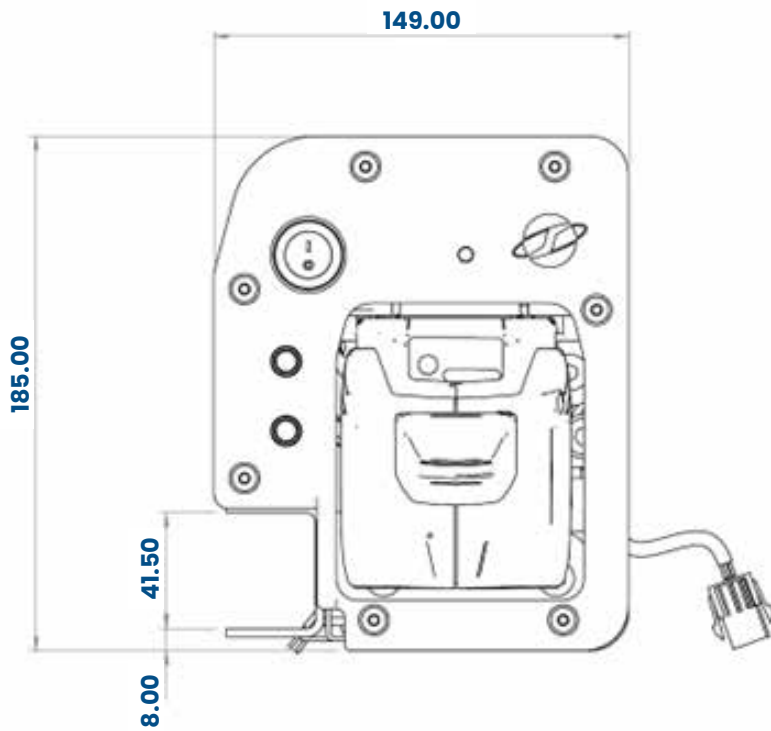
4.6 Main Components

The device consists of the following **basic parts**:

Pos.	Description
1	MAIN BODY
2	BATTERY
3	BELT
4	CONTROL PUSH-BUTTON PANEL
5	SPACER UNIT
6	SUPPORT CROSSBEAM
7	REMOTE CONTROL (OPTIONAL)



4.7 Overall dimensions



5. TRANSPORT AND INSTALLATION



IMPORTANT!

Lifting and handling operations must only be carried out by specialised and trained personnel who are qualified to carry out such activities.

5.1 Packaging

Depending on the transport distance, the Customer's specific requirements and the time the device remains packed, it can be shipped with:

- normal protective packaging for short and medium distance transports;
- special protective packaging for long distance transports.

Upon receipt of the device, the customer must obligatorily check that there is no damage caused by the mode of transport or by the personnel in charge of specific operations.



IMPORTANT!

In the event that damage is found, leave the involved packaging as it was found and immediately have the damage acknowledged by the competent forwarding company. Then notify the competent transport insurance company and the point of sale with a damage certificate.

5.2 Transport and handling

Depending on the mode of transport, **STEM S.r.l.** uses appropriate packaging to ensure integrity and preservation during transport. Upon receipt of the device, check that no parts have been damaged during transport and/or handling.

If damage is found, it is mandatory to report it to the Manufacturer immediately.

Due to the small size and relatively low weight of the device, there are no special handling procedures to follow, as the device can be easily moved manually by any operator.



WARNING!

STEM S.r.l. accepts no liability for any damage to the device resulting from accidental falls or impacts of the device during handling.

5.3 Installation

5.3.1 Permitted environmental conditions

The device was designed and built to operate safely in the following environmental conditions:

Permitted environmental conditions	
Ambient temperature	-20 / +45 °C
Maximum relative humidity	80 %
Working environment	Rescue vehicle
Ambient lighting	Neon light



WARNING!

Environmental conditions other than those specified can cause serious damage to the device. If the device is placed in an environment whose features do not comply with those indicated the warranty will become null for the parts to be replaced.



IMPORTANT!

The working environment must be sufficiently well lit. In the event of shadowy areas or differences in height at the workplace, it is the user's responsibility to provide suitable lighting devices.

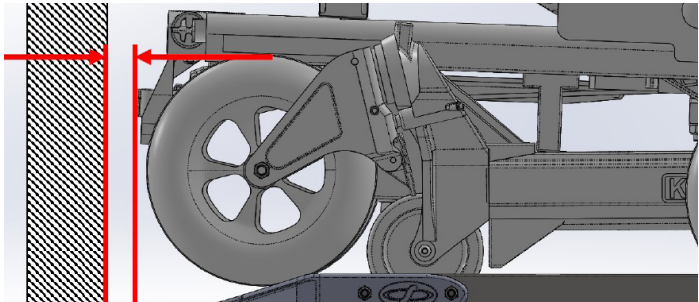
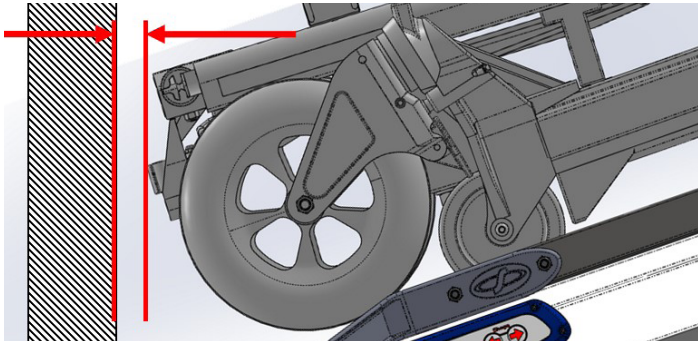
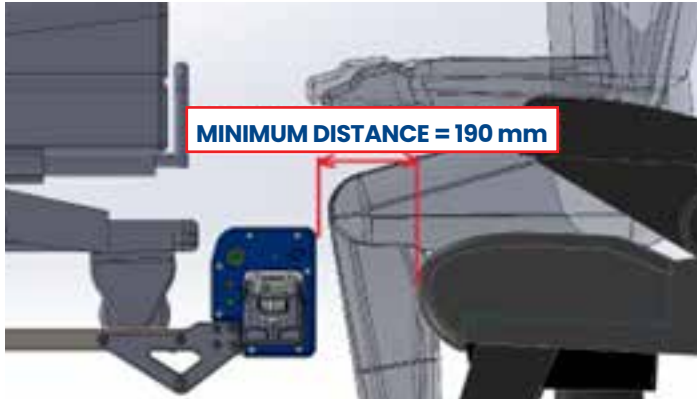
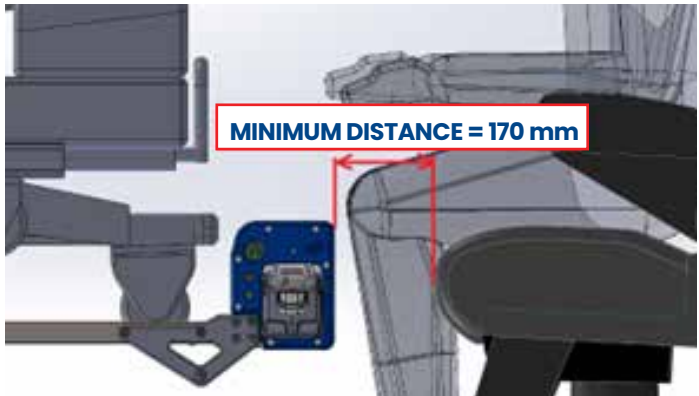
If these requirements are not met, the manufacturer declines all liability.

5.3.2 Installation dimensions

Before installing the device, it is necessary to check that certain minimum distances/conditions are respected, as they are useful to ensure the correct operation of the device, in relation to the elements that make up its working environment (vehicle, stretcher support, doctor's seat, etc.).

In particular, the **following measures/conditions must be verified:**

Description	Image
<p>The distance between the stretcher in the final locked position and the device is not less than 20 mm.</p>	

Description	Image
<p>With the stretcher installed, there is still space to close the tailgate of the transport vehicle.</p>	
<p>In the case of tilting stretcher supports, there is enough space to close the tailgate of the transport vehicle, even when the support is fully tilted.</p>	
<p>In case of supports with TRENDELENBURG tilt (head / feet up to 15°), the distance between SHERPA SLIM and the doctor's seat (lowered) is not less than 190 mm.</p>	
<p>For all other types of support without TRENDELENBURG tilt, the distance between SHERPA SLIM and the doctor's seat (lowered) is not less than 170 mm.</p>	



IMPORTANT!

If the device cannot be installed under the minimum required conditions listed in this section, contact STEM S.r.l. to evaluate possible solutions.

5.3.3 Spacer type to be used

The standard supply of the device includes a number of metal plates that act as spacers during the installation of the device.

They allow a proper distance to be maintained between the device and the stretcher (including the patient, if any), so as to avoid accidental contact between the different components, which could cause damage and/or malfunctions.

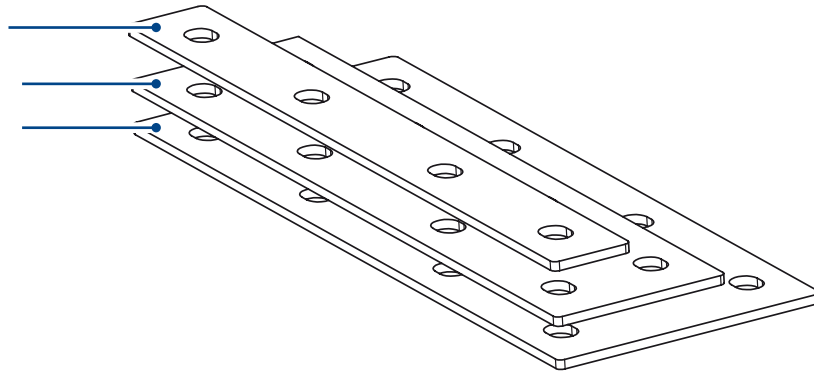
The supply includes the following **types of spacers**:

- 0 mm spacer;
- +37 mm spacer;
- +65 mm spacer.

"0 mm" SPACER

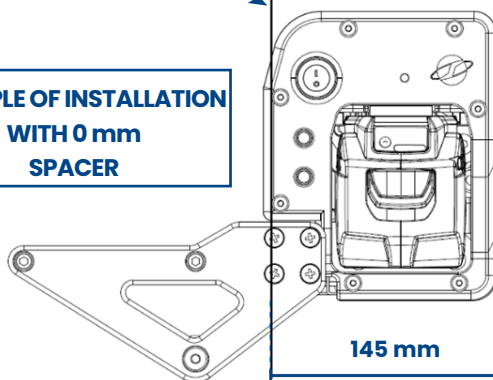
+37 mm SPACER

+65 mm SPACER



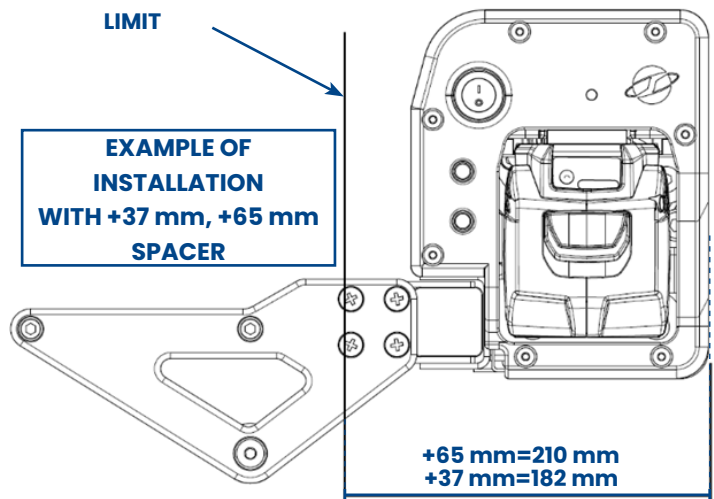
**LOADING
SURFACE
LIMIT**

**EXAMPLE OF INSTALLATION
WITH 0 mm
SPACER**

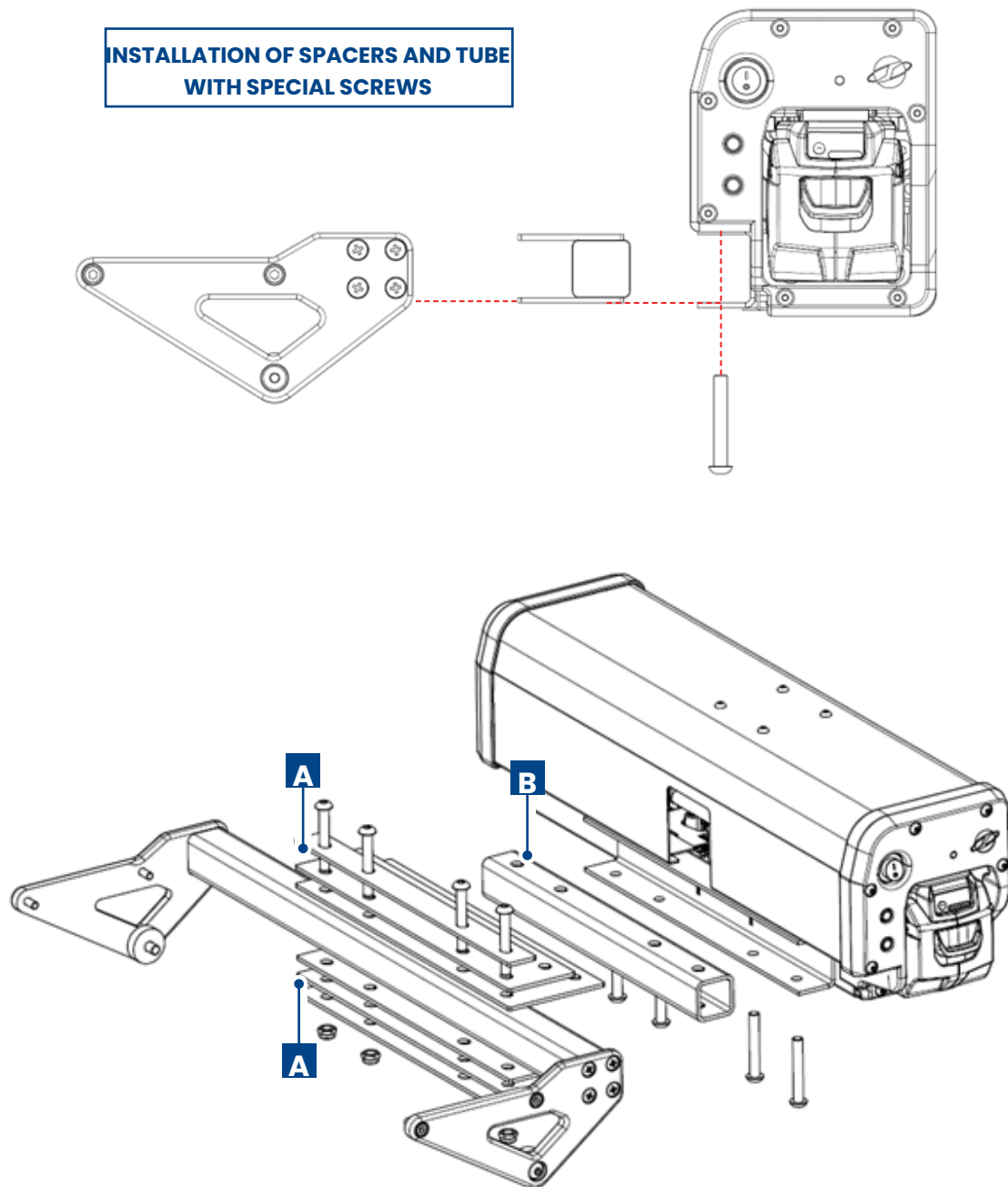


**LOADING
SURFACE
LIMIT**

**EXAMPLE OF
INSTALLATION
WITH +37 mm, +65 mm
SPACER**



If +37 and +65 mm spacers are used, a special tube (**B**) must be inserted between the two plates (**A**), which serves as a shim for a correct fastening between device and the stretcher support.



5.3.4 Connections

To start the device, secure the necessary connections:

- **electrical connection to the vehicle battery.**



CAUTION!

Qualified and authorised staff must set up the required connections.



CAUTION!

The connection to the battery must be made with 16 mm² section cables. The red (+) cable must be connected to an 80 A fuse near the battery.

While making the connection, be careful not to reverse the battery polarity.

The battery must have 100 Ah minimum power and 12 V DC voltage.



CAUTION!

The electronic unit connecting cables (+/-12V) have to be connected directly to the battery terminals by interposing a 30 A fuse.

5.3.5 Device installation on stretcher support



WARNING!

The device can only be installed on certain types of stretchers and stretcher supports.

For the limits of applicability, refer to the "Technical data" section of this manual.



WARNING!

It is prohibited to install the wiring between the device and the fixed push-button panel outside the frame of the stretcher support. In case of difficulties during installation, contact STEM S.r.l.



WARNING!

In case of installation of the SHERPA SLIM 071 model, which is itself equipped with a push-button panel, it is still mandatory to also install the push-button panel supplied with the stretcher support.



IMPORTANT!

The installation procedure in this section is intended for mounting the device on standard stretcher supports.

If you have supports other than those described, contact STEM S.r.l. before installation.



WARNING!

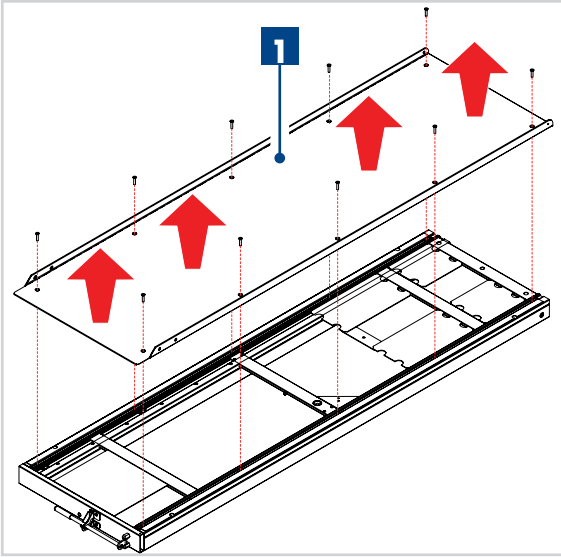
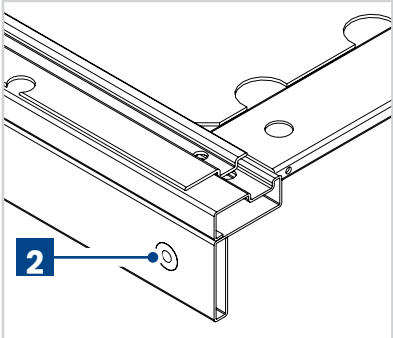
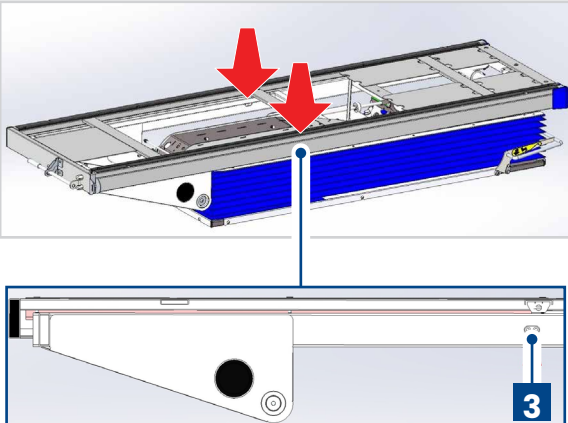
During the installation, the qualified technician must ensure that during stretcher loading/unloading operations the belt does not interfere with other devices (stretcher hooks, etc.) or other support accessories (ramp, tray).

Stretcher supports are divided into two macro-categories:

- stretcher supports **with extractable tray**;
- stretcher supports **with NON-extractable tray**.



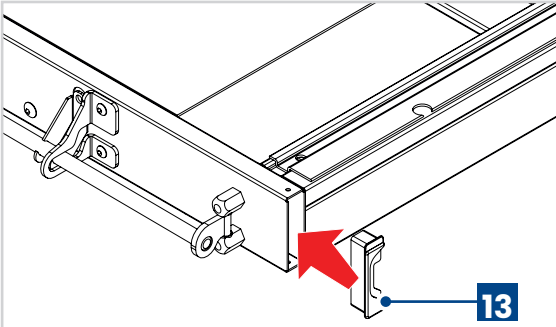
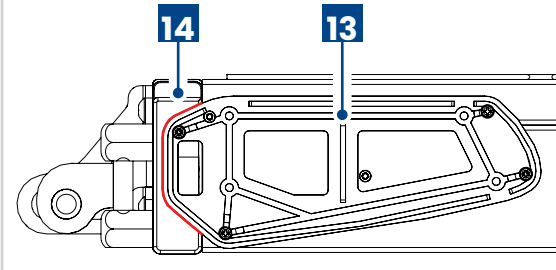
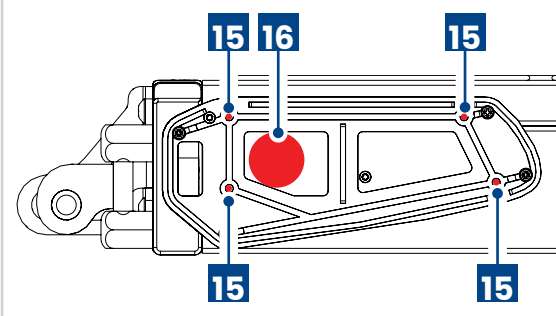
The SHERPA SLIM device can be installed on both support types.

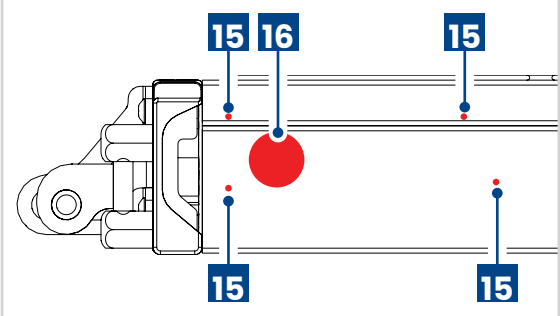

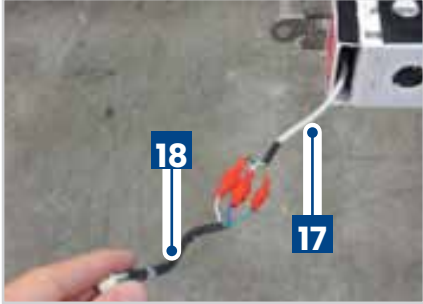
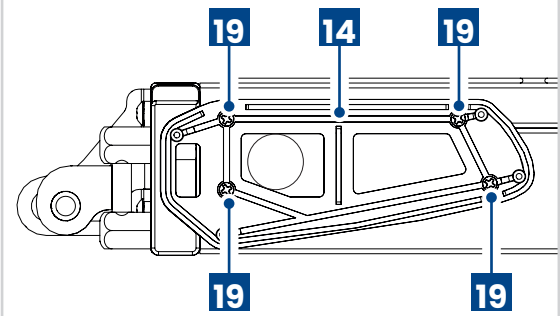
To **install the device on a stretcher support with extractable tray**, proceed as described below:

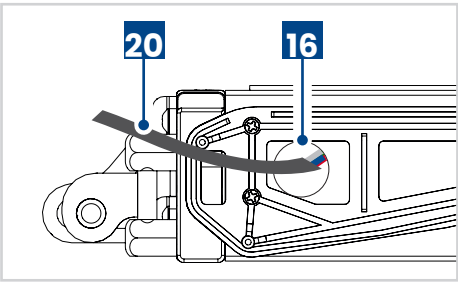
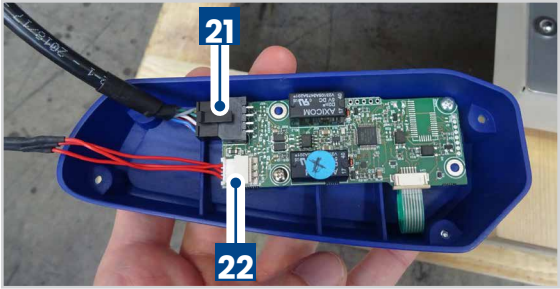
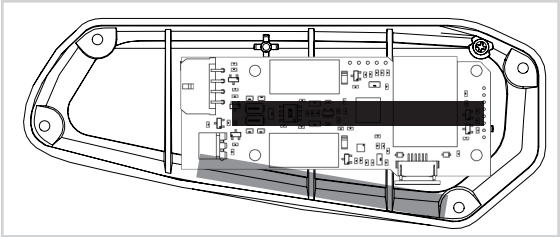
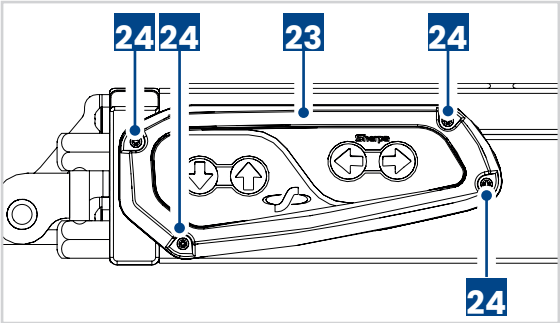
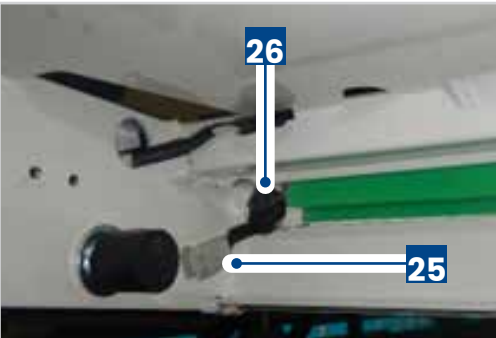
Step	Action	Image
1	<p>Make sure that the minimum required distances / conditions are observed. Note: see "Minimum required distances".</p>	
2	<p>Remove the stretcher locking hook, installed on the support. Note: refer to the relevant component manual.</p>	
3	<p>Remove the stretcher fastening tray (1). Note: refer to the stretcher support manual.</p>	
4	<p>Follow the instructions, in relation to the type of extractable tray you have:</p> <ul style="list-style-type: none"> • with unthreaded hole (2) (visible screw head), follow the instructions from step 3 below; • with threaded hole (2), follow the instructions from step 11 below. 	
5	<p>Remove the screws (3).</p>	

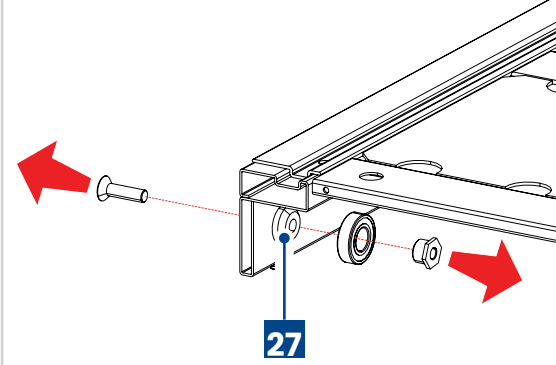
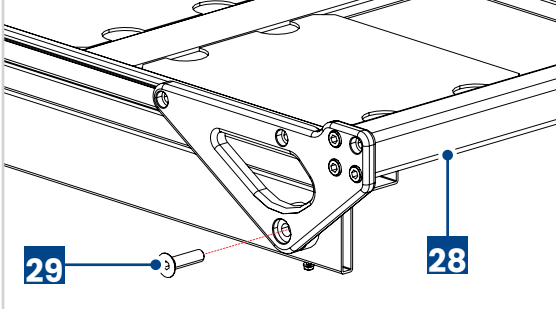
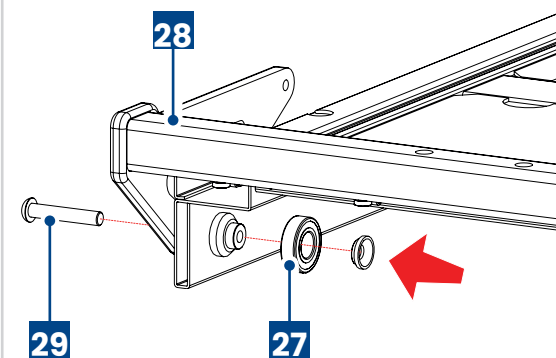
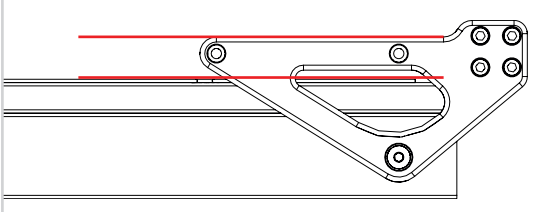
Step	Action	Image
6	Remove the pads (4) from the extractable tray by sliding them downwards.	
7	Remove the circlip (5) from the pin at the foot-end.	
8	Remove the pin (6) to unlock the extractable tray.	
9	Unscrew the 4 screws (7) securing the limit switch.	

Step	Action	Image
10	Remove the limit switch (8).	
11	Remove the cable (9) from the limit switch.	
12	Remove the extractable tray from the support, pulling it slightly and lifting it up, then place it on a work surface.	
13	Remove the cap (10).	

Step	Action	Image
14	<p>Remove the cap (11).</p> <p>Note: if the stretcher support handling button is installed on the cap, disconnect the stretcher cables from it.</p>	
15	<p>Remove the stretcher support handling cables (12) (if any).</p>	
16	<p>Position the cap (13) supplied.</p>	
17	<p>Position the push-button panel support (13), using the seat on the cap (14).</p>	
18	<p>On the extractable tray, mark the seat of the holes (15) to be made to fix the push-button panel and the hole (16) for routing cables. Use the push-button panel as a template, then remove it.</p>	

Step	Action	Image
<p>19</p>	<p>Drill the following holes:</p> <ul style="list-style-type: none"> • no.4 of 2.5 mm diameter (15); • no.1 of 25 mm diameter (16) (if not present). 	
<p>20</p>	<p>Thoroughly clean the extractable tray to remove any residue of material resulting from drilling.</p>	
<p>21</p>	<p>Insert the cable (17) inside the profile of the extractable tray and make the other end come out of the hole provided.</p>	
<p>22</p>	<p>Connect the adapter cable (18) to the cable (17).</p>	
<p>23</p>	<p>Fix the push-button panel support (14) using the 4 screws (19).</p>	

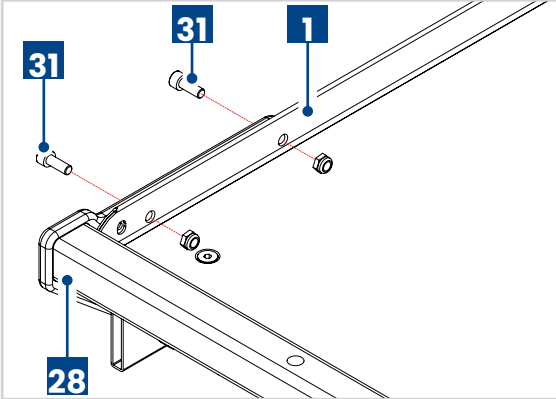


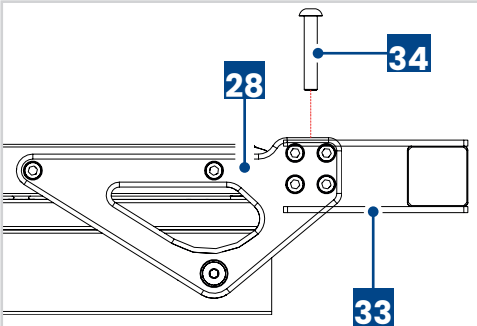
Step	Action	Image
24	Insert the appropriate control cable (20) through the hole (16) of the extractable tray tube until it comes out from the opposite side of the tube. If necessary, use a wire puller to facilitate the operation.	
25	Connect the device cable to the 8x socket (21) and the stretcher support control cable (if any) to the 3x socket (22).	
26	Make sure that the device cable passes through the area of the card shown in the figure, so that it cannot damage the contacts on the card.	 <p data-bbox="879 1167 1473 1234"> AREA WHERE THE CABLE MUST PASS THROUGH AREA WHERE THE CABLE MUST NOT PASS THROUGH </p>
27	Fix the push-button panel (23) to the relevant support, using screws (24). Note: make sure that during push-button panel positioning, the device cable remains in the position described in the previous step.	
28	Insert the charging cable (25) into the tube of the extractable tray, through the suitable hole (26) until it comes out on the opposite side of the tube. If necessary, use a wire puller to facilitate the operation.	

Step	Action	Image
29	<p>UNTHREADED HOLE Remove the bearing unit (27) on both sides of the support.</p> <p>Note: this operation must be carried out only in case of unthreaded hole. In the case of threaded hole, go directly to step 30a.</p>	
30a	<p>THREADED HOLE Fix the support crossbeam (28) using the relevant screw (29) and the spacers provided.</p> <p>Note: perform the operation on both sides of the support; wait for the next step before tightening the screw (29).</p>	
30b	<p>UNTHREADED HOLE Fix the support crossbeam (28) using the relevant screw (29) and the spacers provided. At the same time, assemble the bearing unit (27) on the opposite side of the screw.</p> <p>Note: perform the operation on both sides of the support; wait for the next step before tightening the screw (29).</p>	
31	<p>Check that the upper part of the side panels supporting the support crossbeam and the extractable tray are parallel to each other.</p>	

Step	Action	Image
32	<p>Fit the stretcher fastening tray (1).</p> <p>Note: refer to the stretcher support manual; it is recommended that only a few of the tray fastening screws are placed in order to ensure that it is correctly positioned; do not tighten the screws as the tray will need to be removed again later.</p>	
33	<p>Drill no.2 holes (30) of 6.5 mm diameter on the stretcher fastening tray, for fixing the support crossbeam, using the latter as a reference template.</p> <p>Note: perform the operation on both sides of the support.</p>	
34	<p>Remove the stretcher fastening tray (1).</p> <p>Note: refer to the stretcher support manual.</p>	
35	<p>Thoroughly clean the extractable tray and the fastening tray to remove any residue of material resulting from drilling.</p>	

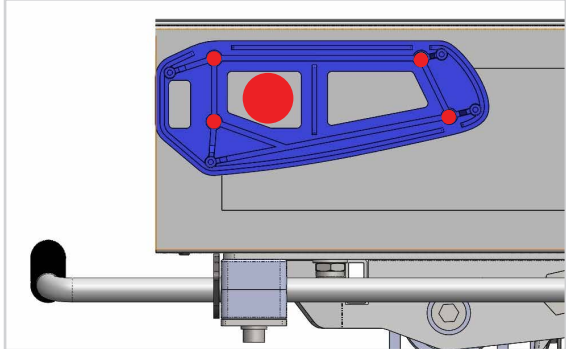
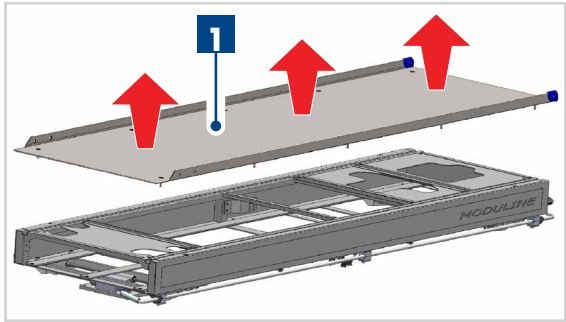
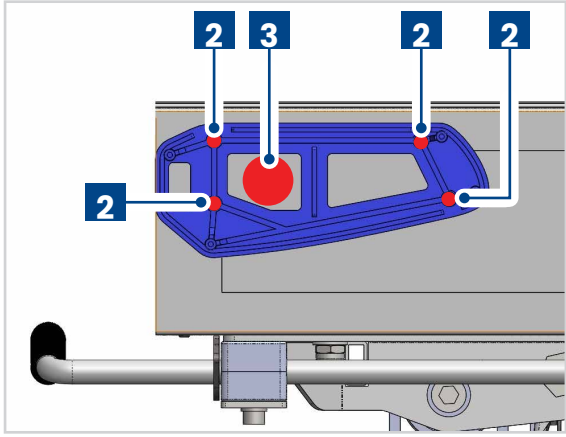
Step	Action	Image
36	<p>Place the extractable tray on the support.</p> <p>IMPORTANT: Valid only if the tray has been removed (tray with through-hole).</p>	
37	<p>Secure the limit switch again using the 4 fastening screws (7).</p>	
38	<p>Connect the cable (9) of the limit switch.</p>	
39	<p>Insert the pads (4) in the special seat of the extractable tray.</p>	

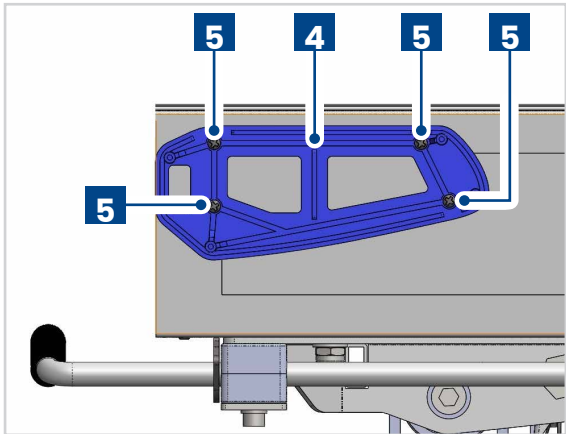
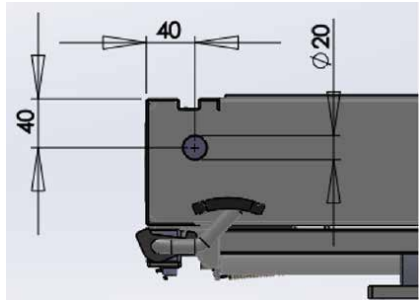
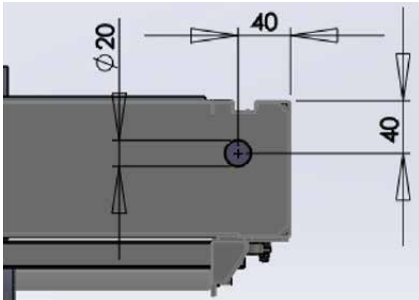
Step	Action	Image
40	Fasten the screws (3).	
41	Insert the pin (6) in the relevant seat to lock the extractable tray. IMPORTANT: Valid only if the tray has been removed (tray with through-hole).	
42	Position the circlip (5). IMPORTANT: Valid only if the tray has been removed (tray with through-hole).	
43	Fit the stretcher fastening tray (1), tightening the relevant fastening screws. Note: refer to the stretcher support manual.	

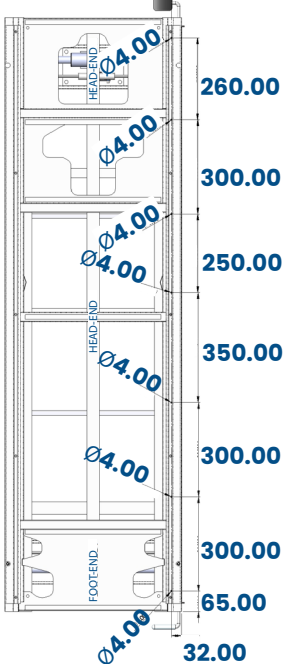

Step	Action	Image
44	Fit the stretcher locking hook on the support. Note: refer to the relevant component manual.	
45	Secure the support crossbeam (28) to the stretcher fastening tray (1), using the appropriate screws (31) and relevant nuts.	
46	Connect the coiled control and supply cable (32) to the special connector positioned near the limit switch sensor.	
47	Connect the second end of the coiled cable (32) to the support control (17) and supply (25) cables. At the end of the operation, insert the connectors into the tubes of the extractable tray.	
48	Fasten the spacer unit (33) to the support crossbeam (28), using the appropriate screws (34). Note: carry out this step only if +30 mm e +65 mm spacers are used; if 0 mm spacers are used, skip this step and carry out the next step directly.	



Step	Action	Image
<p>49</p>	<p>Place the device (32) on the support crossbeam (26), making sure that the holes on the two elements are aligned.</p> <p>Note: in this case, two plates (33) of the 0 mm spacer must be placed between the device and the support crossbeam, above and below the support crossbeam.</p>	
<p>50</p>	<p>Connect the device to the push-button panel cable inserted into the tube of the extractable tray.</p>	
<p>51</p>	<p>Insert the connectors inside the tube of the extractable tray and fix the cap (38).</p> <p>Note: route the cable through the special groove on the cap.</p>	
<p>52</p>	<p>Repeat steps 50 and 51 for the charging wiring inside the extractable tray tube on the side opposite to the push-button panel.</p>	

To **install the device on a stretcher support with NON-extractable tray**, proceed as described below:

Step	Action	Image
1	<p>Make sure that the minimum required distances / conditions are observed. Note: see "Minimum required distances".</p>	
2	<p>Remove the stretcher locking hook, installed on the support. Note: refer to the relevant component manual.</p>	
3	<p>With the stretcher support tray still installed, use the push-button panel support as a drilling template and mark on the extractable tray the seat of the holes to be made to fix the push-button panel and the hole for routing the wiring cables. Note: consider the overall dimensions of any side panel of the ramp.</p>	
4	<p>Remove the stretcher fastening tray (1). Note: refer to the stretcher support manual.</p>	
5	<p>Drill the following holes:</p> <ul style="list-style-type: none"> • no.4 of 2.5 mm diameter (2); • no.1 of 25 mm diameter (3). 	

Step	Action	Image
6	Fix the push-button panel support (4) using the 4 screws (5) .	
7	Drill the cable outlet hole on the head-end, dimensioned as shown in the figure.	
8	Drill the cable outlet hole on the head-end, dimensioned as shown in the figure.	

Step	Action	Image
<p>9</p>	<p>Drill no.7 holes of 4 mm diameter on the right side member of the stretcher support, to allow the fastening of cable clamps.</p>	
<p>10</p>	<p>Insert the wiring from the push-button panel cable routing hole and fix it to the side member using no. 7 cable clamps with no. 7 M4x12 screws and relevant washers and nut.</p>	

Step	Action	Image
11	Make the control wiring from the push-button panel come out of the hole drilled on the head-end.	
12	Make the recharging wiring from the support come out of the second hole drilled on the head-end.	
13	Thoroughly clean any residue of material resulting from drilling.	
14	Reposition the anti-vibration profiles and fix the stretcher support tray in place again.	

Step	Action	Image
15	<p>On both head-ends of the frame, drill a hole of 11 mm diameter (as per indicated dimensions) to allow the support side panels to be fastened.</p> <p>Note: depending on the size of the stretcher fastening hook, the highlighted dimension can be reduced by up to 25 mm to allow the crossbeam to be moved away from the tray.</p>	 <p>Technical drawing of a side panel showing a hole with a diameter of 11 mm. The distance from the edge to the hole is 32.00 mm, which can be reduced to 25.00 mm. The height of the hole is 45.00 mm.</p>
16	<p>Fit an M8 threaded insert (6) into the hole.</p>	 <p>Photograph showing an M8 threaded insert (6) being inserted into the hole in the side panel.</p>
17	<p>Fasten the support crossbeam (7) with an M8 screw (8) in the insert.</p>	 <p>Photograph showing the support crossbeam (7) being fastened to the side panel using an M8 screw (8) inserted into the threaded insert.</p>
18	<p>Check that the upper part of the side panels supporting the support crossbeam and the extractable tray are parallel to each other.</p>	 <p>Technical drawing of the side panel assembly showing the support crossbeam and the extractable tray. Red lines indicate that the upper part of the side panels supporting the support crossbeam and the extractable tray should be parallel to each other.</p>

Step	Action	Image
19	<p>Drill no.2 holes (9) of 6.5 mm diameter on the stretcher fastening tray, for fixing the support crossbeam, using the latter as a reference template.</p> <p>Note: perform the operation on both sides of the support.</p>	
20	<p>Secure the support crossbeam (7) to the stretcher fastening tray (1), using the appropriate screws (10) and relevant nuts.</p>	
21	<p>Fasten the spacer unit (11) to the support crossbeam (7), using the appropriate screws (12).</p> <p>Note: carry out this step only if +30 mm e +65 mm spacers are used; if 0 mm spacers are used, skip this step and carry out the next step directly.</p>	
22	<p>Place the device (13) on the support crossbeam (7), using the appropriate fastening screws (14).</p> <p>Note: in this case, two plates (15) of the 0 mm spacer must be placed between the device and the support crossbeam, above and below the support crossbeam.</p>	
23	<p>Connect the device control and recharging cables and insert the relevant connectors into the holes drilled on the support head-end.</p>	

5.3.6 Device programming

Once the device has been installed on the stretcher support, it must be programmed according to the type of stretcher and support to which it is combined.

The device is designed to be used with **3 main types of stretchers**, listed below:

- stretchers with **two-control leg release** (one release control per leg);
- stretchers with **single-control leg release** (one release control for both legs);
- stretchers with **automatic leg release**.

The programming procedure must be carried out using the STEM App “Global Service”.



IMPORTANT!

Download the STEM “Global Service” app from the Google Play Store or Apple Store. To connect to the device via the app, enable Bluetooth and GPS.

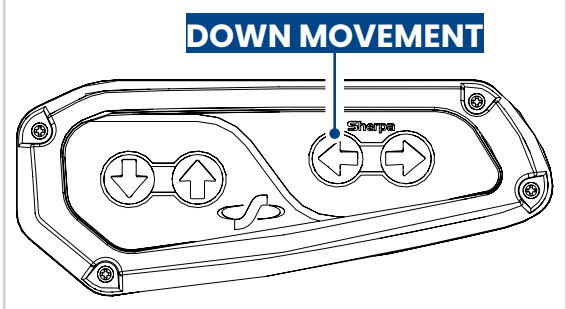
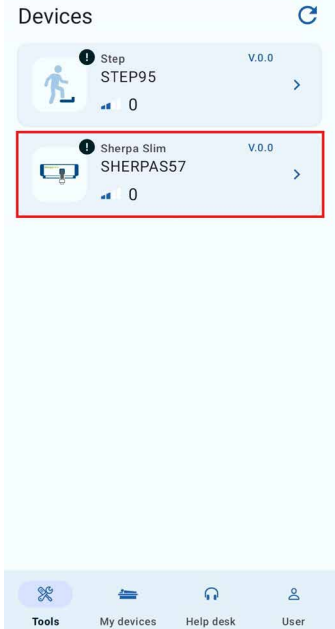
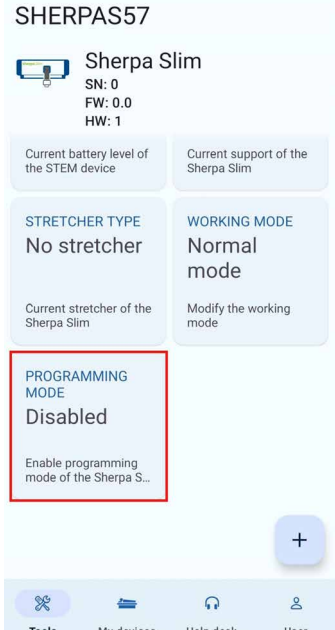


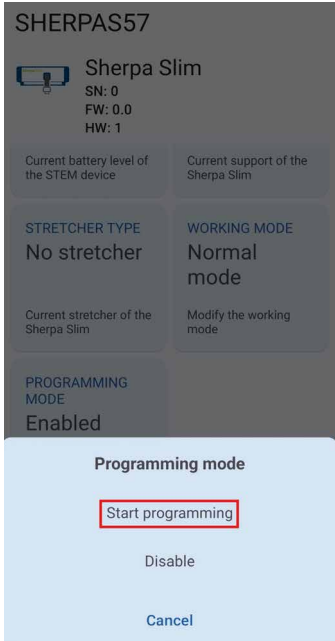
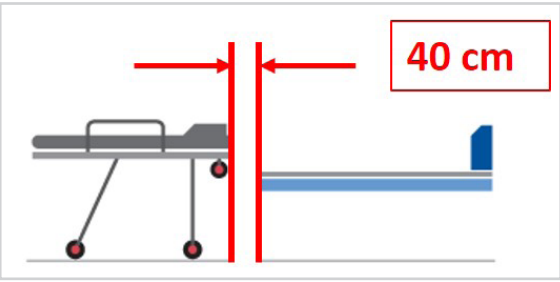
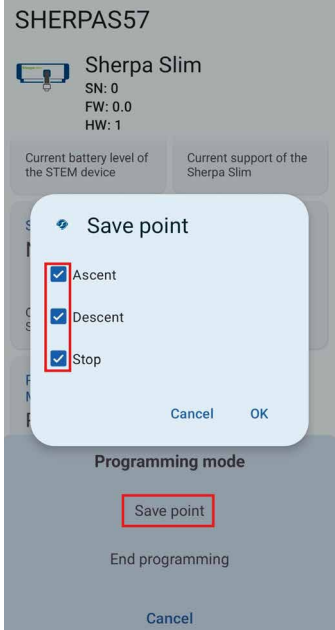
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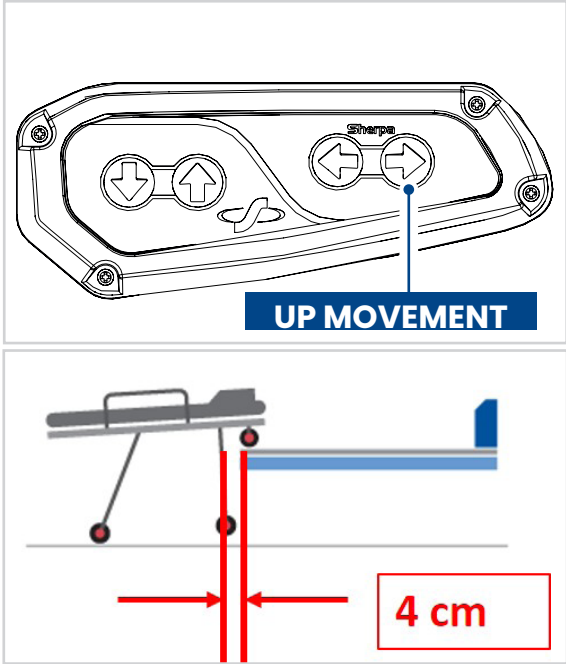
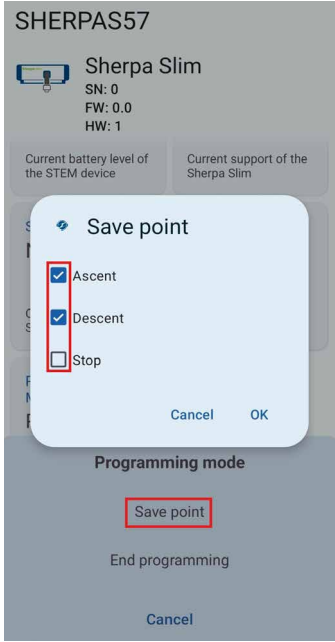
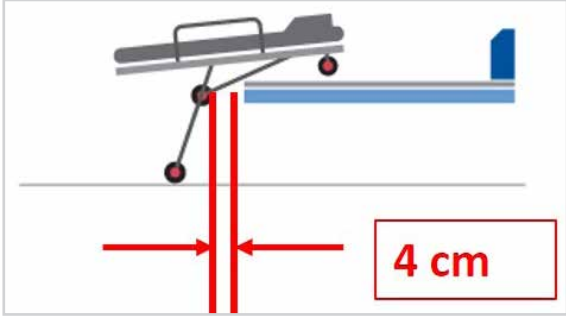
During the programming phase, the safety belt locking system are disabled in order to facilitate operations, therefore it is recommended to pay particular attention to any sudden movements of the stretcher.

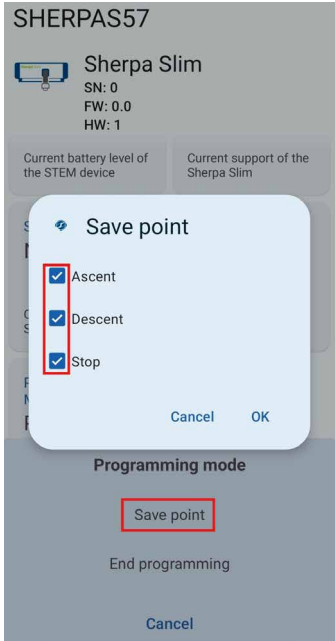
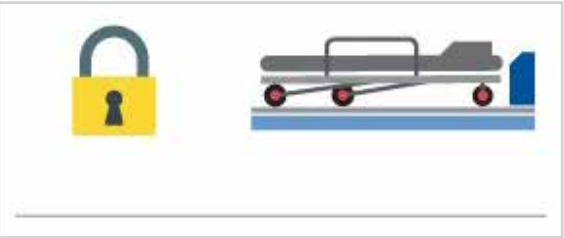
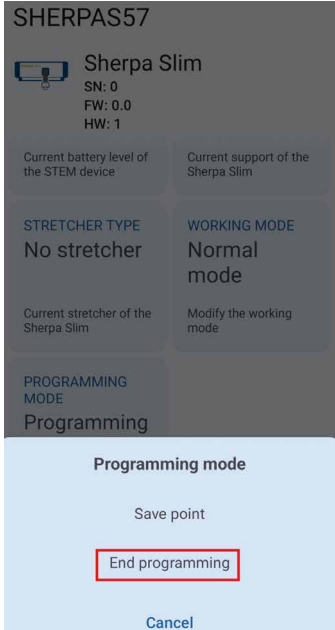
To **program the device**, proceed as described below:

Step	Action	Image
1	Make sure that you have adjusted the support to the correct stretcher loading height. Note: refer to the support manual.	
2	Place the stretcher on the ground, in front of the support.	
3	Place the stretcher support in loading/unloading position. Note: refer to the relevant support manual.	
4	Switch on the device using the special ON/OFF button (A) . When switching on, an audible signal is emitted.	

Step	Action	Image
5	<p>Press the “Down movement” button on the push-button panel installed on the side of the stretcher support. Unwind the belt until it reaches the stretcher. Note: during unwinding, the belt must be kept tensioned.</p>	
6	<p>Connect the device belt to the stretcher. Note: refer to the section “Connecting the stretcher to the device”.</p>	
7	<p>Enter the STEM “Global Service” app. Once the scan for nearby devices is complete, click on the Sherpa Slim device you want to program.</p>	
8	<p>Click on “Programming mode”: from “Disabled” status, select “Enable”.</p>	

Step	Action	Image
<p>9</p>	<p>Click "Programming mode" again (now "Enabled") and select "Start programming".</p> <p>Note: the device emits an audible signal to indicate it has entered "Programming mode". The ON/OFF button LED turnsoff and the red and green LEDs start flashing.</p>	
<p>10</p>	<p>Move the stretcher to a distance of about 40 cm from the support.</p> <p>Note: the stretcher support must be in the loading position.</p>	
<p>11</p>	<p>Store the position by clicking on "Save point" and check all three options: "Ascent," "Descent," and "Stop."</p> <p>Confirm by clicking "Ok."</p> <p>Note: when saving is complete, the device will emit an audible signal.</p>	

Step	Action	Image
<p>12</p>	<p>Using the device, lift the stretcher up onto the relevant support, until the first leg is at a distance of approximately 4 cm from the support edge.</p>	
<p>13</p>	<p>Store the position by clicking on "Save point" and check all three options: "Ascent," "Descent," and "Stop."</p> <p>Confirm by clicking "Ok."</p> <p>Note 1: when saving is complete, the device will emit an audible signal.</p> <p>Note 2: the "Ascent", "Descent" and "Stop" options must be selected or not depending on whether you want the movement to stop or only slow it down (in the latter case DO NOT select "Stop") and whether this should occur only during the loading phase, only during the unloading phase or in both phases.</p>	
<p>14</p>	<p>Continue to lift the stretcher until the second leg is at a distance of approximately 4 cm from the support edge.</p>	

Step	Action	Image
15	<p>Store the position by clicking on “Save point” and check all three options: “Ascent,” “Descent,” and “Stop.”</p> <p>Confirm by clicking “Ok.”</p> <p>Note 1: when saving is complete, the device will emit an audible signal.</p> <p>Note 2: the “Ascent”, “Descent” and “Stop” options must be selected or not depending on whether you want the movement to stop or only slow it down (in the latter case DO NOT select “Stop”) and whether this should occur only during the loading phase, only during the unloading phase or in both phases.</p> <p>Note 3: 9 more positions can be stored in this way, for a total of 11 intermediate positions in addition to the start and end points (stretcher completely out -point 10- and stretcher fully loaded -point 16- respectively).</p>	
16	<p>Complete the lifting of the stretcher, until the latter reaches the final locking position.</p> <p>Then the stretcher support plane must be brought to a horizontal position.</p>	
17	<p>Store the position by clicking “End programming”.</p> <p>Note: If the device emit a double audible signal and the red and green LEDs on the side of the device stop flashing, the programming procedure has been completed successfully.</p>	



IMPORTANT!

The status of the ON/OFF button LED indicates the presence or absence of a program in the device’s memory:

- LED on: programming completed and stored.
- LED off: no program.

**IMPORTANT!**

Once programmed, the SHERPA SLIM device always behaves in the same way, stopping only in the memorized positions and in the modes specified during programming.

The operator only needs to control the loading and unloading operations using the device controls (see section 6).

IMPORTANT!

If the programming has been performed in the presence of one of the automatic or semi-automatic stretcher supports, such as "Eden-XP", "R-3L" and "Compact-EL" (support type appropriately set in the "Support type" section of the Global Service App), the movement of the stretcher support tray is also managed by the Sherpa Slim.

EXAMPLE 1:

In the case of a stretcher support with an automatic tray, for example "Eden-XP", during programming, in addition to the position of the Sherpa Slim's belt, the tray height is also stored. Therefore, during operation, the Sherpa Slim will communicate with the stretcher support to make the tray move to the corresponding stored height for each saved point.



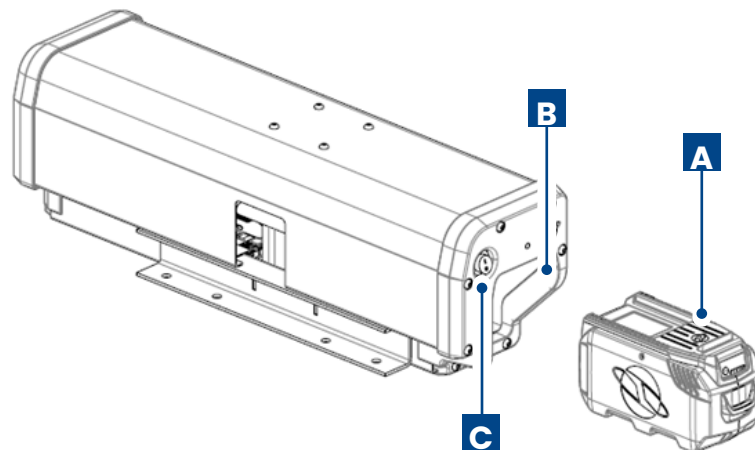
In case of need, it is possible to manually adjust the stretcher support height to a different height than the programmed one. The manually set position will remain active for one full cycle (until the Sherpa Slim's belt reaches zero). After one cycle, the previously set programming will return to its original setting.

EXAMPLE 2:

With semi-automatic stretcher supports, such as the "R-3L" and "Compact-EL", during programming it is necessary to memorize a final "virtual" point before "zero" by selecting only the "Ascent" option, at which point you want the stretcher tray to straighten towards the horizontal. Normally this "last point" (before "zero") coincides with the point for releasing the foot-end legs (but it could also be a subsequent point in its own right). It is therefore possible to program the same point twice without moving the stretcher: the first with the desired options (typically all three "Ascent", "Descent" and "Stop") and the second with only "Ascent". In this way, during loading, after having released the foot-end legs, once loading has restarted, the tray will also move to the horizontal position.

5.4 Battery connection

To operate the device, insert its rechargeable battery (A) into the battery compartment (B) and then press the **ON/OFF button (C)**.



Switching-on is signalled by an audible signal.

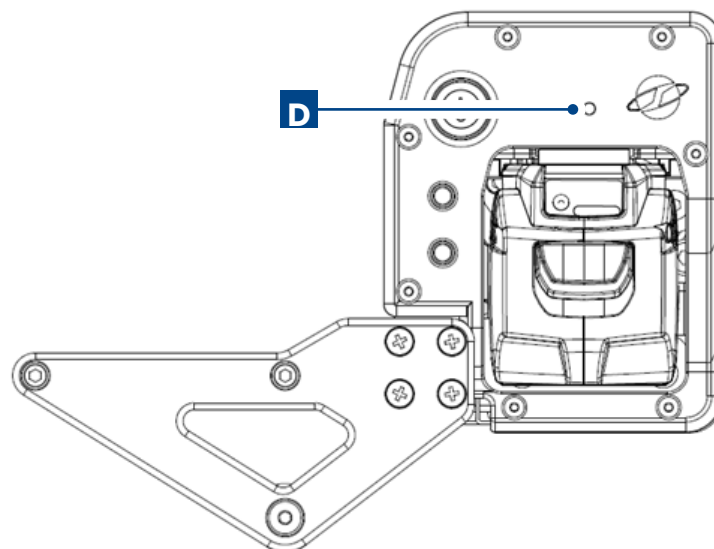
To turn off the device, just press the **ON/OFF button (C)** again.

The device is equipped with a built-in battery charger that is powered directly from the stretcher support, so the battery is always kept charged.

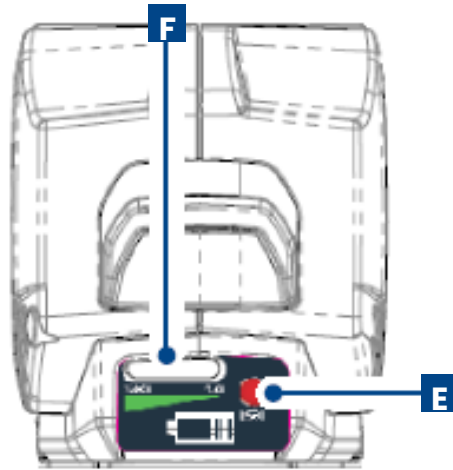
The battery is charged even when the device is off, provided that the stretcher support is correctly powered from the vehicle service battery.

Note: refer to the stretcher support manual for information on the relevant switching-on and off.

The device is equipped with an indication LED (D) that indicates the battery charge status.



If the LED is on with a green light, the battery is fully charged; if the LED is on with a red light, the battery is charging. The charge status of the battery can be checked also by means of the special button **(E)** and relevant indication LEDs **(F)**.

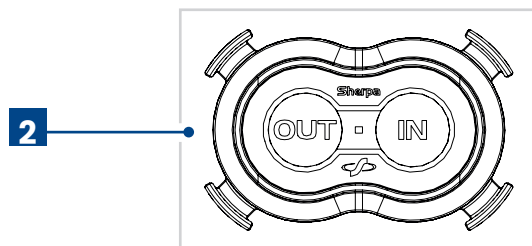
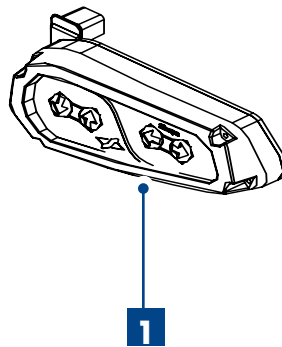


6. CONTROLS AND USE

6.1 Controls

The device controls are listed below:

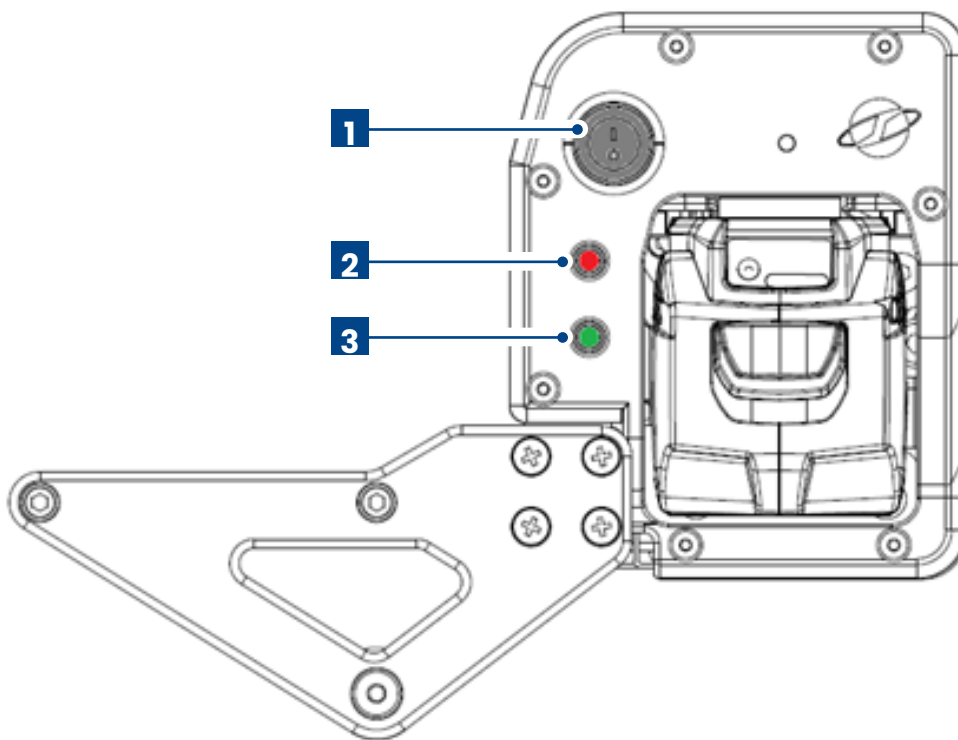
Pos.	Control
1	FIXED PUSH-BUTTON PANEL TO BE INSTALLED ON THE STRETCHER SUPPORT
2	REMOTE CONTROL



6.1.1 ON/OFF button and indication LEDs

The SHERPA SLIM device is equipped with an ON/OFF button for switching on and off and two red and green LEDs indicating the operating statuses of the device.

Pos.	Item
1	ON/OFF BUTTON
2	RED LED
3	GREEN LED



Device statuses:

- During loading and unloading of the stretcher, the green LED lights up.
- In the event of a fault, an audible signal sounds and the red LED lights up (steady).

Note:

When the device is in an error state, it will not execute any commands from the keypad or remote control. In this situation, it is necessary to reset the device by turning it off and on again using the ON/OFF button.

- When the device is in programming state, both the green and red LEDs flash simultaneously.



IMPORTANT!

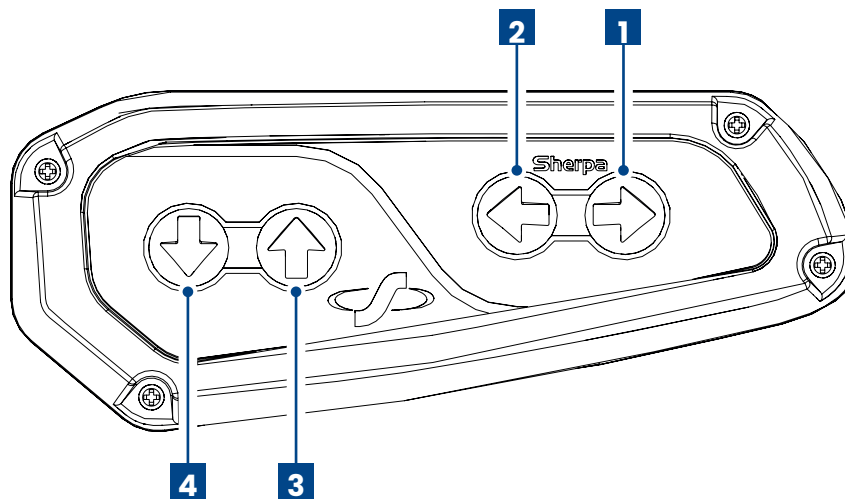
If the error status persists after resetting the device, contact STEM S.r.l. service to diagnose the malfunction and evaluate corrective actions.

6.1.2 Fixed push-button panel

The device operating phases (stretcher up/down movement) can be controlled using the **fixed push-button panel**, to be installed on the stretcher support (see the section “**Device installation on stretcher support**”).

It includes the following elements:

Pos.	Control
1	“STRETCHER LOADING” BUTTON
2	“STRETCHER UNLOADING” BUTTON
3	“STRETCHER SUPPORT UP MOVEMENT” BUTTON
4	“STRETCHER SUPPORT DOWN MOVEMENT” BUTTON



IMPORTANT!

The stretcher support up/down movement buttons can be used only when using supports with an automated lifting/lowering system.

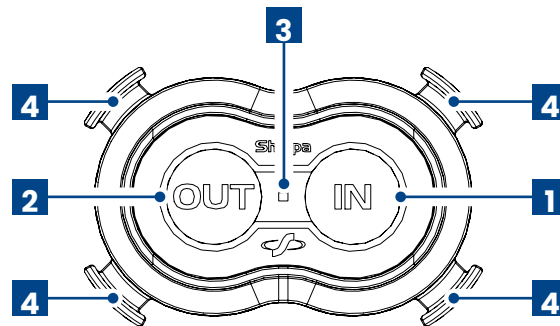
For more information on compatibility, contact STEM S.r.l.

6.1.3 Remote control

In addition to the use of the fixed push-button panel, the stretcher can be lifted and lowered also by means of a remote control, supplied with the SHERPA SLIM device.

It includes the following elements:

Pos.	Control
1	STRETCHER LOADING - "IN" BUTTON
2	STRETCHER UNLOADING - "OUT" BUTTON
3	INDICATION LEDS
4	O-RING COUPLING SUPPORTS



To **enable the remote control**, proceed as described below:

Step	Action
1	Press and hold the "IN" and "OUT" buttons of the remote control at the same time. Note: the LED between the two buttons will turn steadily on.
2	When the LED between the two buttons starts flashing, it is possible to release the buttons, as the remote control has been paired with the device.



IMPORTANT!

It is possible to pair more than one remote control to the same SHERPA SLIM device. For safety reasons, after pressing one of the buttons on a specific remote control, you will have to wait at least 10 seconds before a second remote control can be used.



IMPORTANT!

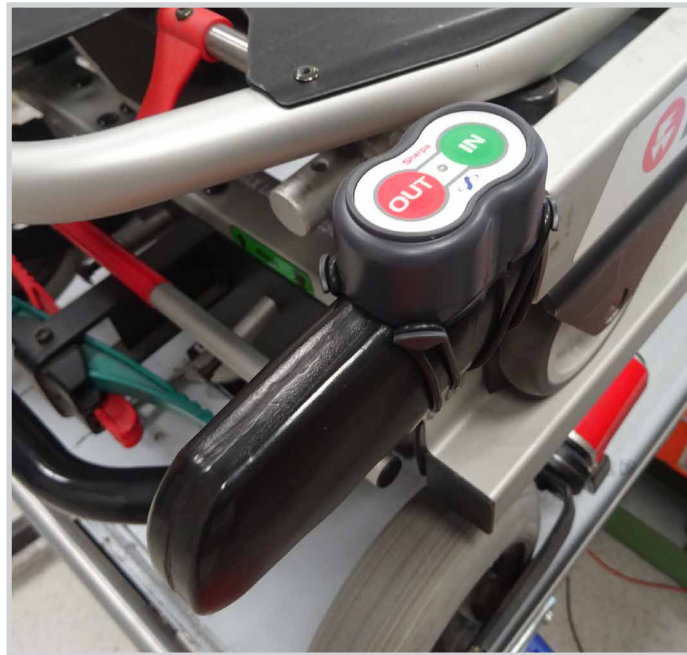
When pairing the remote control to the SHERPA SLIM device, any other STEM devices equipped with Bluetooth (for example the EDEN04-XP stretcher support) must be turned off to avoid the remote control from mistakenly pairing with them and not with the SHERPA SLIM device.

**IMPORTANT!**

To check the remote control battery charge status, simultaneously press both buttons on it and check that the LED turns steadily on.

If not, replace the remote control battery.

It is recommended to fasten the remote control directly to the stretcher, as shown in the figure, using the suitable O-rings supplied with the device.



6.2 Procedures for use

The device, during operation, requires the constant presence of **two operators**, in order to perform the following functions:

- SHERPA SLIM device control;
- stretcher command/control.



WARNING!

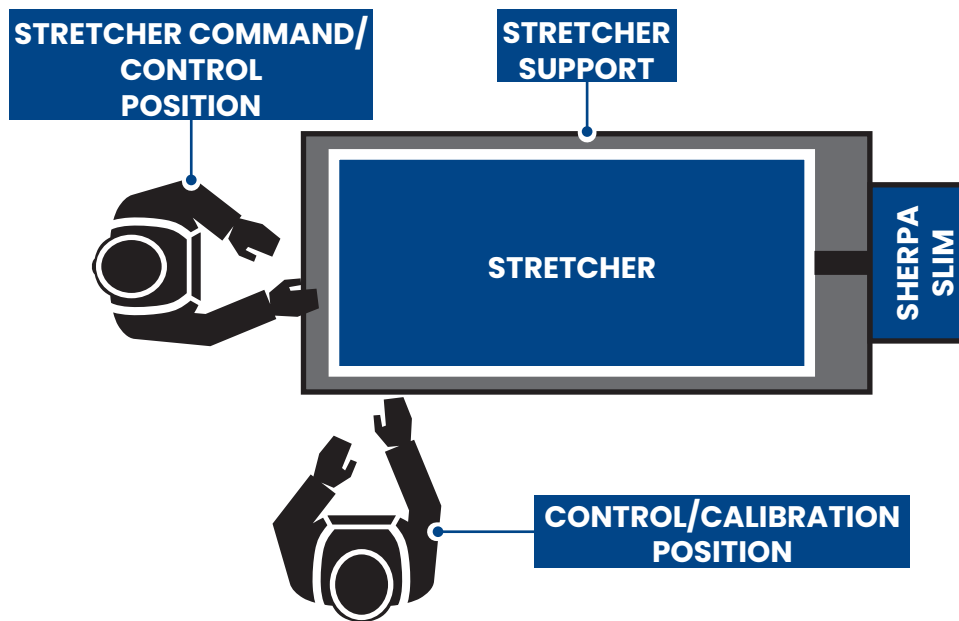
Using the device for purposes other than those intended by the manufacturer could result in serious damage to persons and/or property and/or animals.

The company STEM S.r.l. is not liable for damage caused by improper use of the device.

The device is used to assist and help the operator during the loading and unloading of stretchers to/from the special supports installed on rescue vehicles.

6.2.1 Working positions

Below are the operator's positions during the device calibration and stretcher loading/unloading.



6.2.2 Checks before commissioning

Before commissioning the device, the following checks must be carried out.

- Check that the device is correctly installed on the relevant stretcher support.
- Check that the battery is present inside the device and is correctly charged by the battery charger.
- Check that the calibration has been carried out according to the type of stretcher and supports used.
- Check that the space around the device is free of objects and/or obstacles.
- Check that the remote control battery (if used) is charged.
- Check that the device is not in "ERROR" status.
- Check that scissors are present on the rescue vehicle to cut the belt of the SHERPA SLIM in case of failure.



IMPORTANT!

Before commissioning the device, fully charge the battery.

6.2.3 Connecting the stretcher to the device

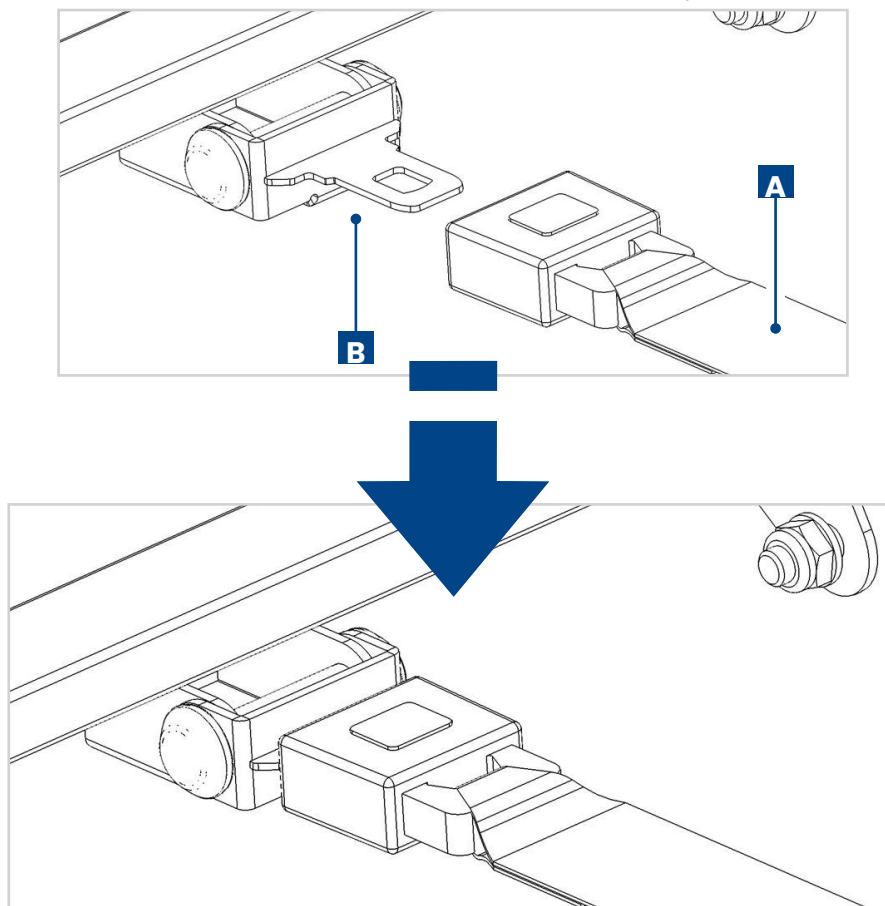
Before performing loading and unloading operations, the stretcher must be connected to the device, using the special belt.



WARNING!

Check the belt daily for wear and, once connected to the stretcher, make sure that it does not interfere with other devices.

To connect the stretcher to the device, unwind the belt (A) and connect it to the special buckle (B), as shown in the figure:



To connect the device belt to the stretcher, install on the latter a suitable coupling system (FITKIT), which can be supplied in the following versions:

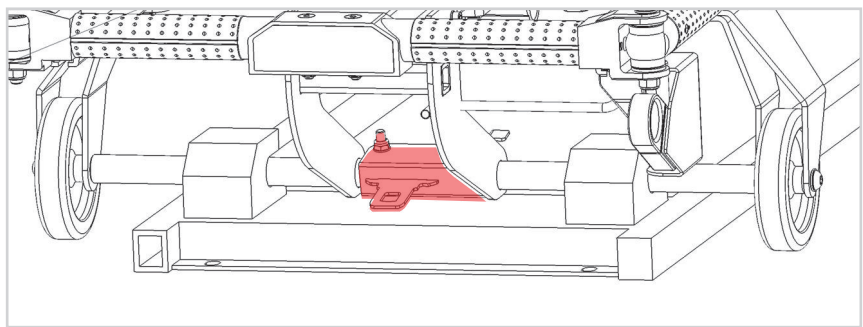
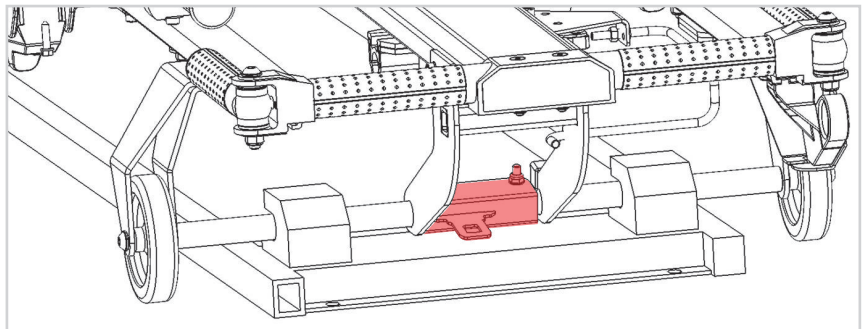


WARNING!
Crushing hazard for upper limbs.
Crushing hazard for lower limbs.

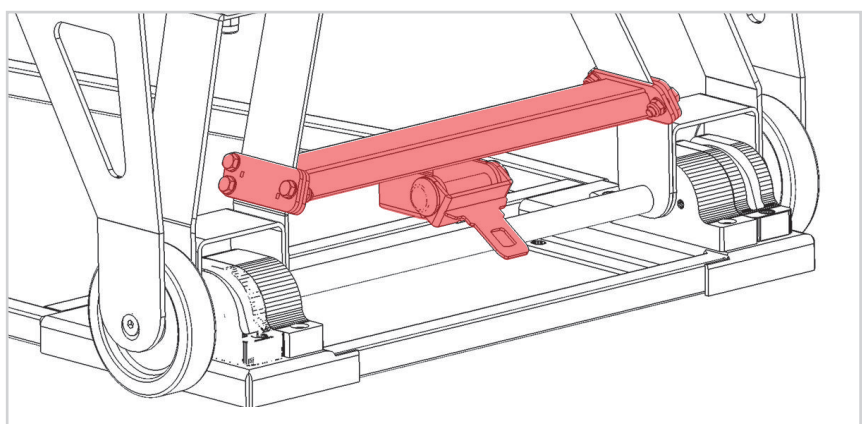
The connection of the coupling system (FITKIT) to the stretcher is divided into two macro-categories:

- **fastening to the structural part of the stretcher;**
- **fastening to the crossbeam supplied by STEM S.r.l.**

EXAMPLE OF FITKIT FASTENING TO STRETCHER STRUCTURAL PART



EXAMPLE OF FITKIT FASTENING TO CROSSBEAM SUPPLIED BY STEM S.r.l.



WARNING!
It is mandatory to install only STEM S.r.l. original FITKIT systems, as provided for in the documentation attached to the FITKIT. STEM S.r.l. shall not be liable for damage to property and/or persons due to incorrect installation of the FITKIT system by the Customer.

6.2.4 Stretcher unloading



WARNING!
Crushing hazard for upper and lower limbs.



WARNING!
Make sure that the device belt is correctly attached to the stretcher before unloading the latter.



IMPORTANT!
At least two operators are required to perform the stretcher unloading operations.



IMPORTANT!
During stretcher unloading, the belt must be tensioned to allow movement; if the belt is not tensioned, the SHERPA SLIM will stop.

To **unload the stretcher from the device**, proceed as described below:

Step	Action	Image
1	Attach the device belt to the stretcher. Note: refer to the section “Connecting the stretcher to the device” .	
2	Place the stretcher support in the unloading position. Note: refer to the relevant support manual.	
3a	Press and hold the “DOWN MOVEMENT” button, located on the fixed push-button panel to start unloading the stretcher.	
3b	Press and hold the “OUT” button, located on the remote control (if used) to start unloading the stretcher.	
4	When unloading is complete, it will be possible to release the device belt from the stretcher.	



IMPORTANT!

If stretchers with manual leg release control (single or double) are used, when lowering the legs, the device will stop the stretcher unloading to allow the operator to press the relevant leg release control and check that legs have been correctly lowered into position. To resume the unloading procedure, press the device controls again

6.2.5 Stretcher loading



WARNING!

Crushing hazard for upper and lower limbs.



WARNING!

Make sure that the device belt is correctly attached to the stretcher before loading the latter.



IMPORTANT!

At least two operators are required to perform the stretcher loading operations.

To load the stretcher onto the support, proceed as described below:

Step	Action	Image
1	Place the stretcher support in the loading position. Note: refer to the relevant support manual.	
2	Attach the device belt to the stretcher. Note: refer to the section “Connecting the stretcher to the device” .	
3a	Press and hold the “LOADING” button, located on the fixed push-button panel to start loading the stretcher.	
3b	Press and hold the “IN” button, located on the remote control (if used) to start loading the stretcher.	

Step	Action	Image
4	Place the stretcher support in the horizontal position. Note: refer to the relevant support manual.	
5	When loading is complete and the stretcher is in the final locking position, the belt will release the tension.	

WARNING!

When loading is complete and the stretcher is in the final locking position, the belt will release the tension. Although it is now possible to release the belt and disconnect the stretcher from the device, this is not recommended in order to prevent an operator unaware of the disconnection from being crushed by the stretcher during unloading.

**IMPORTANT!**

If stretchers with manual leg release control (single or double) are used, when lifting the first leg, the device will stop the stretcher loading to allow the operator to press the relevant leg release control. To resume the loading procedure, press the device controls again.

7. MAINTENANCE

7.1 Introduction



WARNING!

Perform maintenance operations when the device is switched off and the battery is removed from its seat.



WARNING!

Maintenance operations must be carried out by qualified and authorised personnel.

Maintenance of the device includes operations (inspection, verification, check, adjustment and replacement) that becomes necessary as a result of normal use.

For good maintenance:

- only use original spare parts and tools suitable for the purpose and in good condition.
- observe the service intervals indicated in the scheduled (preventive and periodic) maintenance manual. The interval (indicated in time or work cycles) between one maintenance and the next one is intended as the maximum acceptable; therefore it must not be exceeded; however it can be shorter.
- good preventive maintenance requires constant attention and continuous monitoring of the device. Promptly check the cause of any faults such as excessive noise, overheating, fluid leaks, etc. and remedy them.
- timely removal of any causes of failure or malfunctioning prevents further damage to equipment and ensures the safety of operators.

The personnel responsible for maintaining the device must be well trained and have a thorough knowledge of accident prevention regulations; unauthorised personnel must remain outside the work area during operations.

Device cleaning and adjustment activities are also only and exclusively carried out during maintenance and when the device is stopped and de-energised, with the electrical panel disconnected as indicated in the use and maintenance manual.



IMPORTANT!

In case of doubt, it is forbidden to operate. Contact the manufacturer for clarification.



WARNING!

Maintenance or repair operations not explained in this manual may only be carried out with the prior authorisation of STEM S.r.l..

No liability for damage to persons or property can be attributed to STEM S.r.l. for operations other than those described or carried out in a manner other than indicated.

From an operational point of view, device maintenance can be divided into two main categories:

<p>Ordinary maintenance</p>	<p>All the operations that the operator must preventively perform to ensure the proper functioning of the device over time; ordinary maintenance includes inspection, check, adjustment and cleaning.</p>
<p>Extraordinary maintenance</p>	<p>This refers to all operations that the operator has to perform on the device when required. Extraordinary maintenance includes overhaul, repair, restoration of standard operating conditions or the replacement of a faulty, defective or worn-out unit.</p>

7.2 Safety Warnings

Maintenance technicians must:

- Wear all necessary personal protective equipment (gloves, goggles, overalls) for the operation to be carried out.
- Make sure that during maintenance operations unauthorised personnel is outside the area of operation.
- Carry out work only and exclusively when the device is stopped and the battery is removed.
- Carry out operations within their competence (Mechanical, Electrical) for which they are authorised to act.
- Be able to use the most suitable and appropriate instrumentation for troubleshooting and know the most suitable tools for maintenance work.

If the device has to be put into operating condition and/or with disabled protections, adequate skill and knowledge are required and the maintenance technician has to be extremely cautious, so s/he must be adequately instructed on the possible and present hazards.

The accident prevention precautions contained in this section must always be strictly complied with during maintenance of the device in order to avoid injury to personnel and damage to equipment.

7.3 Routine maintenance

The device, when delivered to the user, is already set to work properly; however, in order to ensure its proper functioning over time, periodic checks and preventive maintenance must be carried out.

Routine maintenance includes inspections, checks and measures to prevent breakdowns and verify:

- mechanical condition of the device
- lubrication of the device
- cleanliness of the device.

The following tables list a series of checks and actions to be carried out according to a recommended timetable. The intervals for routine maintenance operations indicated refer to normal operating conditions, i.e. in accordance with the intended conditions of use. The following table lists a set of ordinary maintenance procedures that apply to all types of devices manufactured by STEM S.r.l..

The operator shall only consider the procedures related to the device covered by this manual

7.3.1 Checks and verifications

Operation	Intervals				
	Every day	Every week	Every month	Every six months	Every year
Check the correct operation of the device.	◆				
Check the integrity and correct operation of safety and warning devices.		◆			
Check the condition of the belt.	◆				
Check that all bolts and screws are correctly tightened.				◆	

7.3.1.1 Hardware check

To **check the hardware**, proceed as described below:

Step	Action
1	Check the fastening of the device to the stretcher support and the tightening of all bolts and screws.

7.3.2 Cleaning



WARNING!
Cleaning operations must be carried out only by qualified and authorised personnel.



IMPORTANT!
The frequency of cleaning operations will depend on the pathology of patients, the environment and the frequency of use.



WARNING!
Comply with the regulations in force in the country of installation regarding the treatment of wash water.

Operation	Intervals				
	Every day	Every week	Every month	Every six months	Every year
General cleaning of the device	This varies based on the type of environment in which the device is used and of the type of rescue intervention.				

7.3.2.1 General cleaning procedure



WARNING!
Use only mild soap and water to clean the belt. Care should be taken to avoid contaminating the belt with polishes, oils, chemicals and alcohol.



WARNING!
Do not use any kind of solvent, petrol or diluent to clean painted surfaces.
Do not use water jets.

To perform a **general cleaning of the device**, proceed as described below:

Step	Action
1	Proceed with cleaning with a damp sponge or cloth using detergents/disinfectants or just water as required. IMPORTANT: for dosage and contact time of cleaning/disinfecting agents, strictly follow the manufacturer's recommended doses.
2	Dry all components of the device as carefully as possible.

7.4 Extraordinary maintenance

**WARNING!**

Extraordinary maintenance and repair of the device are reserved for qualified, trained and authorised technicians employed by the manufacturer or the authorised service centre. These operations require in-depth and specialised knowledge of the devices, the actions required, the risks involved and the correct procedures for safe operation.

In case of exceptional events requiring extraordinary maintenance, the user's maintenance personnel must follow these procedures:

- check the condition of damaged or misaligned components;
- if the operations to be carried out are not covered in this manual, send the Manufacturer the report of the events that occurred, the result of the inspection and any remarks, adding photos/videos showing the problem.

The manufacturer or authorised service centre will assess the situation on a case-by-case basis. They will then agree with the user's maintenance personnel on the type of work to be carried out, choosing the most suitable solution from among those listed below:

- the manufacturer sends an authorised, trained and qualified technician to carry out the necessary work;
- or the Manufacturer authorises the user's routine maintenance personnel to carry out the work and sends them any additional instructions.

**WARNING!**

Replacement parts are to be ordered from STEM S.r.l.. If the customer does not use original spare parts or parts authorised in writing by the manufacturer, the latter is released from all liability for the operation of the device and the safety of the operators. The authorisation and/or instructions must always be communicated in writing. Without written authorisation it is forbidden to operate and the manufacturer declines all liability.

**WARNING!**

Maintenance operations must be carried out only by qualified and authorised personnel.

**IMPORTANT!**

In the event that extraordinary maintenance operations are required, contact STEM S.r.l.

8. TROUBLESHOOTING

8.1 Anomalies and the relative solutions



WARNING!

Works on the electrical parts must only be carried out by authorised and adequately trained personnel..



WARNING!

If a failure/problem persists or is not described in this chapter, do not attempt to solve the problem but contact the Technical Assistance Department of STEM S.r.l.



IMPORTANT!

Warnings and Alarms can be viewed on the STEM “Global Service” app on the SHERPA SLIM device page (in the ALARMS box, “Current Errors and Warnings”).



IMPORTANT!

In case of anomalies or alarms, contact STEM Technical Support and report the alert displayed on the Global Service App.

Num.	Warning message	Description
1	Not original battery	Not reading the battery from STEM S.r.l.
2	Low battery	Battery level low, but sufficient for device operation.
3	Lack of SM bus	Failure to communicate with the battery.
4	Tension sensor	Belt not tensioned during stretcher extraction.
5	Position saving error	The current belt position was not saved. Reprogramming is required.

Num.	Alarm message	Description
6	Fuse open	Internal protection fuse broken due to overload.
7	Overcurrent	Overload recorded on the electronic board.
8	Discharged battery	Battery level too low for device operation.
9	Motor error	Failure to draw current to the motor. Possible failure to operate.
10	Encoder error	Error reading signals from the engine encoder.
11	High bridge temperature	Temperature too high on the board corresponding to the engine control part. Likely due to overload.

9. DECOMMISSIONING AND DISPOSAL

9.1 Device storage (when not in use)

If the device **is not to be used for a long period of time**, it must be secured and stored. Proceed as described:

Step	Action
1	Make sure the environment is clean, dry and protected from the weather.
2	Ensure that: <ul style="list-style-type: none"> • the device is away from direct light sources; • the humidity of the storage area is below 80%; • the temperature of the storage area is between -10° and +50° C .
3	Place the device at a minimum height of 100/150 mm from the ground.

9.2 Lithium battery storage (when not in use)

If batteries **are not to be used for a long period of time**, it is necessary to secure and store them. Proceed as described:

Step	Action
1	Make sure the environment is clean, dry, cool and protected from the weather and direct sunlight.
2	Regularly monitor the temperature in the storage area and the state of charge of the batteries: <ul style="list-style-type: none"> • Ideal temperature = +15°C; • Temperature range = -20 / +60°C; • Battery charging range in storage = min 20 % / max 40 %. Note: storing batteries at temperatures above 38°C for prolonged periods can significantly reduce their expected service life
3	If possible, store in the original packaging away from flammable materials.
4	Keep track of the storage time, relating it to the date of production. <ul style="list-style-type: none"> • Do not store batteries for more than 10 years. • Do not store used batteries for more than 3 months before disposal.
5	Ventilate and protect the storage area from fire.

9.3 Decommissioning and disposal

WARNING!

Decommissioning and dismantling operations must be entrusted to personnel specialised in these activities. In particular, only the person in charge of dismantling and end-of-life disposal can carry out:



- mechanical and electrical disconnection of parts according to disassembly instructions and design diagrams.
- transporting the parts from the plant location to the disposal site for separation of the parts.

WARNING!

The device contains no hazardous components or substances requiring special removal procedures. Please remember to comply with the disposal laws in force in the country of installation of the device.



At the end of its service life, this device must be decommissioned.

When **the device is to be disposed of**, it must be secured. Proceed as described:

Step	Action
1	Make sure that the device has been disconnected from any kind of electrical, pneumatic connection, etc.
2	Proceed with the separation of the various components by removing the frames from their connected parts.
3	Destroy the CE plate.



Pursuant to Article 26 of Italian Legislative Decree No. 49 of 14 March 2014 "Implementation of Directive 2012/19/EU on waste electrical and electronic equipment (WEEE)"

The crossed-out wheellie bin symbol on the equipment or its packaging indicates that the product at the end of its useful life must be collected separately from other waste in order to allow for proper treatment and recycling.

WARNING!

Do not dispose of WEEE together with mixed municipal waste.



In particular, the separate collection, transport, appropriate treatment, recovery and environmentally compatible disposal of this professional equipment that has reached the end of its life is the responsibility of the manufacturer of the equipment if it was placed on the market after 31 December 2010. However, the professional user is free to take care of the end-of-life management of the discarded equipment, complying with all legal obligations and in this case releasing the manufacturer from any liability.

Please note that the equipment contains the following types of portable batteries or accumulators that can be removed by the end user: lithium battery. These batteries or accumulators can be removed as per the instructions in the "Battery" section. Portable batteries or accumulators at the end of their life, removed from the equipment, must not be disposed of as municipal waste, as they are subject to separate collection to avoid damage to the environment and human health, in compliance with Directive 2006/66/EC and national transposing laws.

Appropriate separate collection for subsequent recycling, treatment and environmentally sound disposal of the disused equipment and batteries or accumulators contributes to avoiding possible negative effects on the environment and human health and promotes the reuse and/or recycling of the materials from which the equipment and batteries or accumulators are made.

In case of unauthorised disposal of the product and the batteries or accumulators contained therein, the user shall be imposed sanctions in accordance with current legislation.

9.3.1 Lithium battery disposal

To **dispose of lithium batteries**, proceed as described:

Step	Action
1	Fully discharge the batteries.
2	Visually check the battery casing for damage or electrolyte leakage
3	Insulate the terminals using insulation tape.
4	Dispose of used batteries according to the regulations in force in the country of use.



WARNING!

If the batteries are damaged, wear the appropriate P.P.E. (goggles, gloves, respiratory mask), follow these instructions and ventilate the area to disperse any fumes.



WARNING!

Do NOT collect damaged batteries with bare hands as the lithium can cause burns. If toxic or corrosive battery materials come into contact with eyes or skin, wash thoroughly with plenty of water and seek medical advice immediately.

10. TECHNICAL ASSISTANCE

10.1 Technical Assistance Contacts

If maintenance service, product repair or information are required during the warranty period, please contact the **STEM S.r.l.** Technical Service Department at the following contacts:



**STEM S.r.l. - Strada Ghiaie, 12/D
43014 Medesano - (Parma) - Italy**

	TELEPHONE	TELEFAX	E-MAIL
STEM ITALY (EUROPE - ASIA - AFRICA)	0525 - 430102 + 39-0525 - 430102	0525 - 421341 + 39-0525 - 421341	stem@stem.it



**1655 Avenue de la Méditerranée
13180 Gignac-la-Nerthe
France**

	TELEFONO	TELEFAX	E-MAIL
STEM FRANCE	+33 0486641260 +33 0486641258	+33 0486641259	info@france.stem.it

Some technical problems can be solved by simple operations, so it is advisable to consult the manual carefully before contacting the Service Department.

If technical assistance is required, please specify:

- Model and product number;
- Type and characteristics of the problem.

11. SPARE PARTS

11.1 Ordering spare parts

To order spare parts, the following information must be provided:

- Model;
- Identification number;
- Component name and relevant position and code.

Transport will be provided by **STEM S.r.l.**

STEM S.r.l. guarantees delivery of spare parts in the shortest possible time, depending on stock availability and complexity of the spare part.



WARNING!

Use only original spare parts.

By replacing original parts with poor quality or self-manufactured components, the consumer exposes him/herself to the risk of injury and possible permanent failure of certain product functions.

STEM S.r.l. can also provide, on request, accessories related to the use of the product as well as medical equipment for emergency relief.

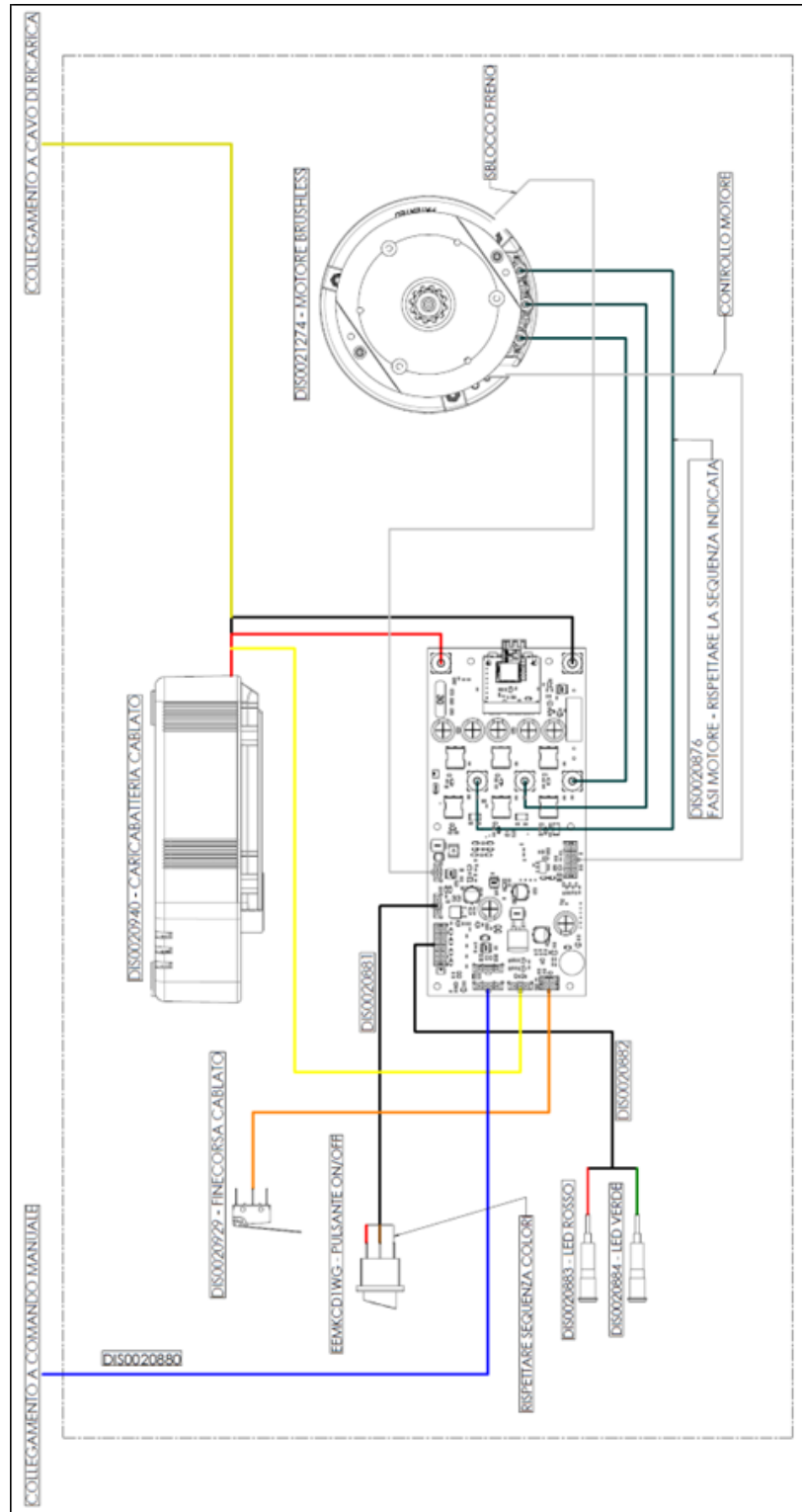
11.2 Spare part tables

The SHERPA SLIM spare parts catalogue can be downloaded by framing the following QRcode.



12. WIRING DIAGRAMS

ELECTRICAL CONNECTION DIAGRAM – SE000009



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