HOSPITAL BED
ARIA range

Models
3900 - 3905
3910 – 3915
3960 – 3965

MALVESTIO®
Made in Italy

FURNITURE FOR HEALTHCARE FACILITIES

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CE

Read the instructions carefully before commissioning

USER AND MAINTENANCE MANUAL

INDEX

SYMBOLS AND LABELS IN THIS MANUAL			
	**GENERAL WARNING ATTENTION!**		**WARNING: DANGEROUS VOLTAGE**
	**PAY ATTENTION TO WHAT IS WRITTEN IN THE FOLLOWING PARAGRAPH**		**COMPLIANCE WITH REGULATION (EU) 2017/745**
	**OPERATOR TYPE A Appliance user**		**OPERATOR TYPE B Appliance maintainer**
	**EQUIPOTENTIAL CONNECTION**		**PROTECTIVE EARTH**
	**ALTERNATING CURRENT**		**READ THE INSTRUCTIONS FOR USE AND MAINTENANCE**
	**DATE OF MANUFACTURE**		**MANUFACTURER**
	**MEDICAL DEVICE INDICATION**		**MODEL**
	**DEVICE SERIAL NUMBER**		**RAEE symbol** **The device must not be disposed of as waste but is subject to separate collection.** **Refer to the DISPOSAL chapter for more information.**

ATTENTION

For the sake of clarity, from now on (unless otherwise stated), bed codes mod. 3900, 3905, 3910, 3915, 3960, 3965 will be referred to as ARIA beds.

This manual must be read very carefully before transporting, installing or using the ARIA range beds.

- It must be stored carefully in a place known to persons those are responsible for its transport, installation, use, maintenance, repair, eventual final disposal, etc
- This manual indicates the intended use of the equipment and provides instructions for its transport, installation, assembly and use. It provides information for the replacement of accessories, the presence of residual risks, etc.
- It should be remembered that the instruction manual is never a substitute for adequate user experience; for some particularly demanding operations, this manual is a reminder of the main operations to be performed by operators with specific training acquired, for example, by attending training courses at the manufacturer.
- This manual is to be considered an integral part of the equipment and must be kept until the final demolition of the equipment. In case of loss, ask the manufacturer for a new copy.
- Ensure that all users are familiar with the operating instructions and the meaning of the symbols on the equipment.
- Possible accidents can be avoided by following these technical instructions compiled with reference to the relevant European Medical Device Regulation.
- In the event of a serious accident, notify the competent authorities in the country where the device is used and the manufacturer.
- In any case, always comply with national safety regulations.

Do not remove or deteriorate protections, labels and markings.

The information contained in this document may be subject to change; MALVESTIO S.p.A. reserves the right not to notify you of such changes.

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1 WARNINGS

1.1 Congratulations

Dear customer, we would like to congratulate you for choosing one of our products.
Each **MALVESTIO S.p.A.** product has been manufactured in accordance with current safety regulations for the protection of the operator and the service user.
This manual describes and illustrates the various transport, operation and adjustment operations required to use and maintain your equipment in the best possible way.

Please read the instructions and cautions in this manual carefully.

1.2 Assistance

MALVESTIO S.p.A. technicians are available for any ordinary or extraordinary maintenance work.
The request for intervention must be forwarded to **MALVESTIO S.p.A.** by sending an email to service@malvestio.it, calling or sending a fax to the numbers on the cover.
If your hospital equipment has been purchased from an authorised dealer and requires service or repair, please contact the dealer or another authorised service centre.

1.3 Warranty

"**MALVESTIO S.p.A.** warrants its equipment for a period of 1 year from delivery, unless otherwise agreed by the parties".

The warranty begins on the date of delivery of the equipment.

The guarantee will only be acknowledged if the equipment has been used correctly following the instructions given in this manual.
Defective parts will be repaired or replaced free of charge by **MALVESTIO S.p.A.** at its factory in Villanova (PD) or at the authorised dealer.
In case of replacement of defective parts **MALVESTIO S.p.A.** may collect the same after their replacement. Transport and shipping costs of the spare parts are at purchaser's expense.
If labor is required at the purchaser's premises for the installation and/or replacement of defective parts, **MALVESTIO S.p.A.** shall bear the costs of the services rendered and the purchaser shall bear the costs of travel and subsistence.
Any special interventions of **MALVESTIO S.p.A.'**s technicians will be agreed on a case by case basis.

Excluded from the warranty are all consumable and periodic maintenance materials and parts damaged due to improper use of the equipment.

Repairs and/or replacements made during the warranty period do not extend the warranty period except for the replaced part.

Acknowledgement of the guarantee excludes any request for provisional replacement with similar equipment, except by prior agreement between the parties.

2 INFORMATION

2.1 Operator profile

Type of operator	Description
Healthcare operator	This is the primary user of the device. He must have the physical condition and the cognitive and comprehension skills to perform the various functions. He must also have learnt the instructions in this manual and be able to carry out all operations correctly and safely.
Patient	It is the person who is accommodated on the bed. They must have learned the notions transmitted by health professionals on the use of the functions dedicated to them and know how to perform these functions correctly and safely.
Technical operator	This is the person in charge of maintenance and service work on the device as well as its transport, installation, commissioning and storage. He/she must have a solid technical background enabling him/her to perform the tasks listed above. He/she must also have a good command of the different controls and functions of the bed. He/she generally attends to specific training and refresher courses on the device. Finally, they must have the physical condition and cognitive and comprehension skills that enable them to perform the various functions correctly and safely.

2.2 Patient group profile

The group of patients who can use the **ARIA** range medical bed must be adults with a weight of 40 kg or more, a height of 146 cm or more and a BMI of 17 or more.

WARNING: The use of the ARIA medical bed is limited to a specific group of patients.

2.3 Intended use

The **ARIA** bed is intended to assist the patient during their stay in the medical facility. It also allows the transfer of the patient between the different rooms and/or wards of the medical facility.
The **ARIA** bed is intended for use in the following application environment, according to IEC 60601-2-52:

APPLICATION ENVIRONMENT 1
Intensive/critical care provided in a hospital where 24 h medical supervision and constant monitoring is required and provision of life support system/equipment used in medical procedures is essential to maintain or improve the vital functions of the PATIENT.

APPLICATION ENVIRONMENT 2
Acute care provided in a hospital or other medical facility where medical supervision and monitoring is required and ME EQUIPMENT used in medical procedures is often provided to help maintain or improve the condition of the PATIENT.

APPLICATION ENVIRONMENT 3
Long-term care administered in a medical infrastructure, for which medical surveillance and monitoring are required, when considered necessary, and in which EM APPLIANCES, used in medical procedures, are provided to facilitate the maintaining or improvement of the conditions of the PATIENT.
NOTE: This includes use in nursing homes, rehabilitation centres and geriatric centre.

Before using the bed, the user must ensure that it is in good condition and that any accessories are in good condition by visual inspection.

Intended use

The **ARIA** range beds are intended for use in professional environments for healthcare facilities such as medical offices, clinics, nursing homes, multiple treatment facilities, hospitals, assisted living facilities and nursing homes with the exception of:

- areas in the vicinity of HF surgical instruments;
- outside and near RF shielded rooms used for MRI where the intensity of electromagnetic disturbances is very high.

Any use not in accordance with **MALVESTIO S.p.A.**'s instructions relieves **MALVESTIO S.p.A.** from any liability for damage to persons or property.

2.4 Product description

The beds of the **ARIA** range, produced by **MALVESTIO S.p.A.**, have been created with the needs of various departments in mind. They have been created to meet the requirements of the various departments and are suitable for patients undergoing examinations or medication.

CLASSIFICATION
Medical Device, Class I, compliant with Regulation (EU) 2017/745. Insulation class I, with applied part type B, according to EN 60601-1. Device with intermittent operation.

The design of the structural elements and the study of the safety distances between moving parts were carried out in full compliance with the safety regulations in force.

The features, listed below, have been specially designed for use, patient care and staff control situations.

2.5 Frequently used functions

2.5.1 Functions frequently used by doctors and nurses

1. Switching on and off;
2. Locking and unlocking of the patient handset/control panels;
3. Raising and lowering the backrest;
4. Synchronised backrest and knee-break section raising and lowering;
5. Knee-break section raising and lowering;
6. Legrest raising and lowering;
7. Safe exit position;
8. Raising and lowering the mattress platform;
9. Trendelenburg and reverse Trendelenburg positioning;
10. Examination position;
11. Armchair position;
12. CPR position;
13. Tilt function (Mod. 3960, 3965);
14. Locking/unlocking the brakes;
15. Using the side rails;
16. Detachment and removal/re-positioning of the headboard/footboard;
17. Use of the bed lengthener;
18. Using the backrest quick release;
19. Remove and reposition the panels on the mattress platform;
20. Cleaning and sanitising;

2.5.2 Functions frequently used by technical operator

1. Switching on and off;
2. Raising and lowering the backrest;
3. Synchronised raising and lowering of backrest and knee-break section;
4. Knee-break section raising and lowering;
5. Legrest raising and lowering;
6. Safe exit position;
7. Raising and lowering the mattress platform;
8. Trendelenburg and reverse Trendelenburg positioning;
9. Examination position;
10. Armchair position;
11. CPR position;
12. Tilt function (mod.3960, 3965);
13. Locking/unlocking the brakes;
14. Use of the side rails;
15. Detachment and removal/re-positioning of the headboard/footboard;
16. Use of the bed lengthener;
17. Using the backrest quick release;
18. Removal and repositioning of the panels on the mattress platform;
19. Transport;
20. Cleaning and sanitising;
21. Installation;
22. Maintenance;
23. Replacing batteries;
24. Storage.

2.5.3 Functions frequently used by patients

1. Switching on and off;
2. Raising and lowering the backrest;
3. Synchronised raising and lowering of backrest and knee-break section;
4. Knee-break section raising and lowering;
5. Safe exit position;
6. Raising and lowering the mattress platform;
7. Armchair position;
8. Use of side rails;
9. Use of the bed lengthener;
10. Nurse call.

3 SECURITY

3.1 General safety rules

Compliance with safety rules enables the operator to work productively, without risk of harm to himself or others.

It is forbidden to use the medical device for reasons other than those described above (Intended use) and by personnel who have not been properly trained.

Before starting work, the operator must be fully aware of the function and position of all the controls and of the technical characteristics acquired by carefully and completely reading the text contained in this manual.

It is a good idea for the healthcare operator to thoroughly inform the residents using the bed about the operation of each individual movement control they can perform.

This information should be confirmed, if possible, by a practical test of bed handling by the patient.

ATTENTION: If it is necessary to move obese patients, this must be done with manoeuvres that do not overload the bed, distributing the staff on both sides of the bed so that the movement of the patient can be controlled at every stage, avoiding as much as possible abrupt load transfers.

All operators must comply with international accident prevention regulations and those of the country of destination of the equipment in order to avoid possible accidents.

3.2 Specific safety standards

Tampering with or replacing parts of the equipment not expressly authorised by **MALVESTIO S.p.A.** is prohibited.
The use of accessories, or spare parts other than those recommended and/or listed in this document may constitute a danger to the operators and/or damage the bed.

Any modification of the equipment, not expressly authorized by MALVESTIO S.p.A., relieves MALVESTIO S.p.A. from any civil and criminal liability.

It is strictly forbidden to remove any of the safety and protective devices on the equipment; periodically, every week, check their integrity and proper functioning.

Any ordinary or extraordinary maintenance operations must be carried out with the equipment disconnected from the power supply.

Before starting any maintenance or repair work on the equipment, the operator must have read and understood all the technical information contained in this manual.

All maintenance and repair work must be carried out by qualified personnel; see section Qualified personnel.

Improper repair or maintenance may result in danger to the user.

!!! ATTENTION !!! The mains plug must be switched off:

- In case of inconvenience during use,
- Before any cleaning or maintenance,

Never remove the plug out by pulling the cable.

WARNING: To avoid the risk of electric shock, this appliance must only be connected to a power supply network with protective earth.

Ensure that during normal use of the medical device the cable does not bend, pass through sharp edges, twist or suffer mechanical damage.

If there are cables from other equipment inside the bed, all necessary precautions must be taken to prevent these cables from being damaged or crushed between parts of the bed.

The use of extension cords is not recommended.

The equipment must never be operated when:

- The electrical cable is damaged,
- There is obvious damage,
- Moving parts (levers, actuators, pivots, etc.) make strange noises that do not conform to correct operation;
- During operation and handling, a non-conforming instability of the structure is felt;
- The control unit or electrical parts emit fumes.

Never place the equipment near heat sources.

Place and secure the equipment firmly on a horizontal floor.

Replace the electrical cable immediately when damaged.

The movement area of the bed must be kept clean, tidy and free of objects that could restrict free movement.

The instructions, accident prevention rules and warnings contained in this manual must be observed at all times.

CAUTION: do not modify this equipment without the manufacturer's authorisation.

CAUTION: If the equipment is modified, appropriate examinations and tests must be carried out to ensure its continued safe use.

3.3 Residual risk zones

In some areas of the equipment there are residual risks that cannot be eliminated at the design stage. Each operator must be aware of the risks present in this equipment in order to prevent possible accidents. These hazards are listed below:

Electrical hazards:

The use of an electrical system powered by mains voltage involves residual risks due to the cable and equipment.

Crushing hazards:

When moving the mattress platform’s sections and during the emergency operation of quick lowering of the backrest, there are residual risks of crushing hands between the moving parts of the bed base and the fixed bed frame. During transport and handling, the wheels can crush people's feet if the handling manoeuvre is not carried out correctly

When positioning the bed, take care not to crush people or objects between the headboard and the wall. When handling the side rails there is a residual risk of crushing hands and limbs between the moving parts of the rail. Therefore, before handling the side rails, make sure that the patient is in a non-threatening position. Furthermore, when lowering the side rails, if there is no cushioning, the panel

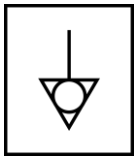
could hit the operator's feet. There is a possibility of fingers being crushed when handling the bed lengthener during shortening. Refer to the chapter "Manual controls" and pay attention to the warnings on the device for instructions on the correct use of the manual controls.

Accidental fall hazards:

When getting in and out of bed, make sure that the height of the bed is in the most favourable conditions for the patient's motor skills and physical condition. In addition, if the patient is left alone, place the bed at a minimum height and, if necessary, inhibit the control buttons for the various bed movements on the patient hand control.

Finally, it is advisable to raise the safety rails if the patient's physical and psychological condition requires it to prevent accidental falls from the bed. The described use of the side rails does not constitute protection against falls caused by the patient deliberately stepping down (e.g. by climbing over them).

3.4 Equipotential bonding



The bed can be connected to a potential equalisation system (node). It is equipped with an equipotential connector, which is located at the head of the bed and is indicated by the symbol in the figure.

If the bed is used in conjunction with medical equipment that is connected intravascularly or intracardially to the patient, the electrical potential of all accessible metal parts must be equalised. A lack of equipotential bonding can lead to a risk of injury (microshock hazard).

To equalise the potentials, if the room does not have an equipotential bonding system, the equipotential bonding cable (code 305099) must be connected between the connection terminal on the bed and the connection terminal on the equipment. How to make the connection is described in the Installation chapter.

3.5 Abnormal use

Abnormal use of the device may entail risks of deterioration or danger for users.

Some examples of incorrect use are:

- Use the bed for a purpose other than indicated in the user manual;
- Use of the bed outside the buildings;
- Use of the bed to transport the patient in vehicles;
- Use of the bed and its functions by unauthorised persons;
- Lifting a load of more than 300 kg in total (patient + mattress + accessories + load applied to accessories);
- Connection to an electrical main other than that indicated on the label;
- Move the bed by pulling it by the power cable;
- Use of accessories or components other than those authorised;
- Try to use several electrical functions at the same time;
- Moving the bed on uneven surfaces;
- Use at temperatures higher than those indicated in the user manual;
- Using the bed to lift objects other than patients;
- Connect other electrical equipment to the bed;
- Use of electric actuators too intensively (see application modes in the technical data);
- Using the bed without observing the instructions in this user manual.

3.6 Qualified personnel

ARIA range beds must be used by the following professionals.

OPERATOR

The **Operator** is the person appointed to use the equipment (healthcare operator and/or patient); operations should be restricted to the controls indicated in chapters marked with the symbol aside. This person should be perfectly aware of all the precautions and operating instructions indicated in this manual.

The operator is forbidden from performing operations other than those indicated in Chapters marked with the specific symbol.

TECHNICAL OPERATOR

The **Technical operator** is the person appointed to transport, install, start, adjust, clean, repair the equipment and perform maintenance on the equipment.
This person shall have attended specific training courses and have experience as regards the functions mentioned above.

3.7 Labelling

The beds of the **ARIA** range are equipped with the following safety and identification labels:

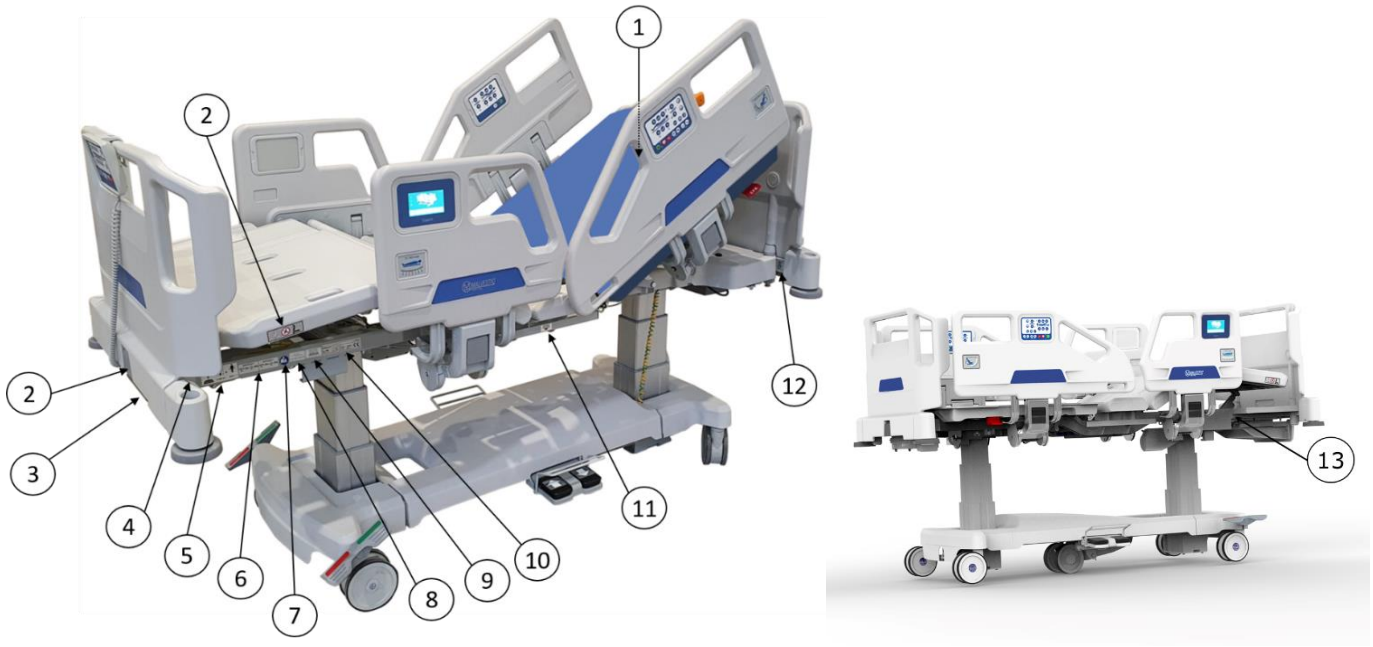
Labels serve to inform the operators of the possible risks. Each operator must read and recognise the meaning of the symbols on the labels.

The data on the CE plate should always be quoted for any service or spare parts requirements.

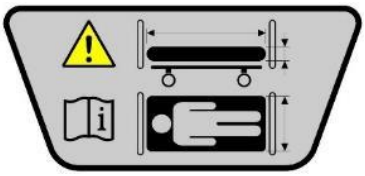
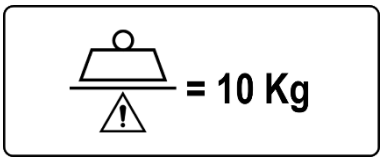
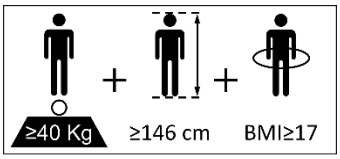
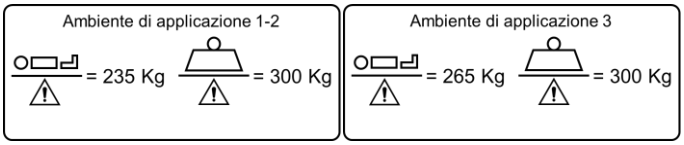
Adhesive labels and tags must not be detached, tampered with or destroyed.

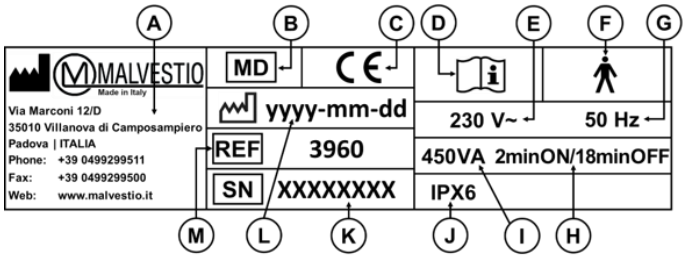
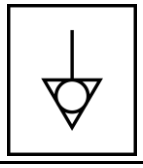
The company security officer is obliged to replace them if they are damaged or illegible.

MALVESTIO S.p.A. is at your disposal for any replacement plates or labels.



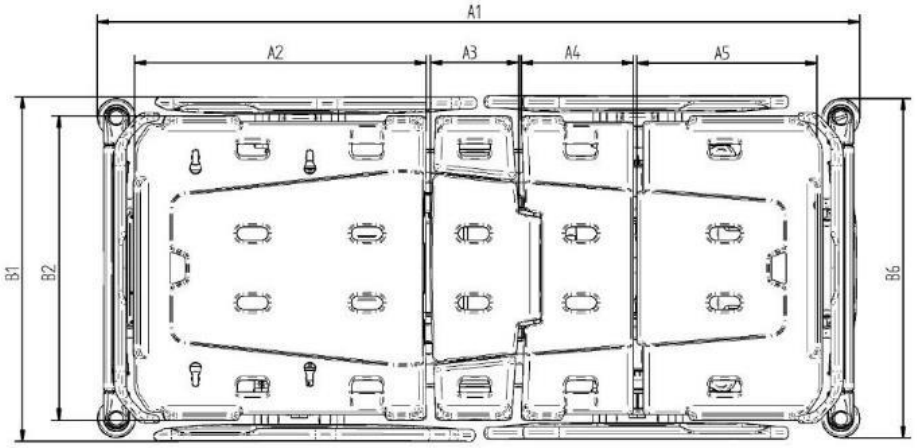
Pic. 1

POS.	LABEL	DESCRIPTION
1		Marking for the selection of recommended mattresses
2		Indicates that it is forbidden to sit on the bed lengthener when it is extracted
3		Indicates the maximum load applicable to the bed-stripper/ supervisor-control holder (only available with accessory 337156)
4		Indicates a warning of a possible residual risk of crushing
5		Physical description of an adult person
6		Indicates maximum patient weight and safe working loads
7		Refer to the instruction manual

POS.	LABEL	DESCRIPTION
8	Duty cycle – 5th motorized wheel 30 min ON / 30 min OFF	Indicates the mode of use of the motorized 5th wheel (only with accessory 339045)
9	SERIE / RANGE / SÉRIES / SERIE ARIA	Indicates the trade name of the device
10	 Indicative label	A. Manufacturer information B. Medical Device indication C. Symbol of CE conformity mark D. Obligation to read the instructions for use E. Input voltage F. Insulation class and Applied part type G. Input voltage frequency H. Duty cycle I. Absorbed power J. Protection degree K. Serial number L. Date of Manufacture M. Article code
11	SUPPORTO ACCESSORI ACCESSORIES SUPPORT SUPPORT ACCESSOIRES	Indicates the position of the accessory-holder bar
12		Indicates the position of the equipotential connector
13	XX REP Name Address Indicative label	Indicates the authorised representative (if any). **XX** indicates the country for which it is authorised (e.g. **CH** for Switzerland)

4 TECHNICAL DATA

MALVESTIO S.p.A.'s products are subject to continuous improvement, for this reason the technical characteristics of the product may be changed without notice.



4.1 Dimensional and geometric characteristics

	LENGTH (A) [mm]	WIDTH (B) [mm]	Degrees [°]
1. OVERALL BED DIMENSIONS (mod. 3900, 3910, 3960)	**2200 ± 10**	**990 ± 10**	
1. OVERALL BED DIMENSIONS (Mod. 3905, 3915, 3965)	**2230 ± 10**	**990 ± 10**	
2. BACKREST DIMENSIONS	**840**	**880**	
3. CENTRAL SECTION DIMENSIONS	**250**	**880**	
4. KNEE-BREAK SECTION DIMENSIONS	**320**	**880**	
5. LEGREST DIMENSIONS	**520**	**880**	
6) OVERALL BED DIMENSIONS WITHOUT SIDE RAILS (mod. 3900, 3910, 3960)	**2200 ± 10**	**980 ± 10**	
6) OVERALL BED DIMENSIONS WITHOUT SIDE RAILS (Mod. 3905, 3915, 3965)	**2230 ± 10**	**980 ± 10**	
MATTRESS PLATFORM DIMENSIONS	**2000**	**880**	
RECOMMANDED MATTRESS DIMENSIONS	**1950**	**850**	
MATTRESS PLATFORM MINIMUM HEIGHT (TWIN WHEELS D.150mm)	**460 ± 10**		
MATTRESS PLATFORM MAXIMUM HEIGHT (TWIN WHEELS D.150mm)	**820 ± 10**		
SPACE BELOW THE BASE FRAME (TWIN WHEELS D.150mm)	**155 ± 5**		
BACKREST INCLINATION			**63° ± 2°**
BACKREST INCLINATION IN RELATION TO THE CENTRAL SECTION - WITH INCENTRO SYSTEM			**74° ± 2°**
CENTRAL SECTION INCLINATION - WITH INCENTRO SYSTEM			**12° ± 1°**
KNEE-BREAK SECTION INCLINATION			**30° ± 1°**

	LENGTH (A) [mm]	WIDTH (B) [mm]	Degrees [°]
LEGREST INCLINATION: - MANUAL HANDLING - ELECTRICAL HANDLING			**20° ± 1°** **16° ± 1°**
TRENDELENBURG			**13° ± 1°**
REVERSE-TRENDELENBURG			**13° ± 1°**
LATERAL TILT (Mod. 3960, 3965)			**(+18°/-18°) ± 1°**
BED LENGTHENER EXTENSION	**300**		

4.2 Technical and electrical data

TECHNICAL DATA			
SAFE WORKING LOAD (SWL)	**300 kg**		
MAXIMUM LIFTING LOAD	**300 kg**		
MAXIMUM PATIENT WEIGHT* (application environment 1-2)	**235 kg***		
MAXIMUM PATIENT WEIGHT** (application environment 3)	**265 kg****		
DUTY CYCLE	**Intermittent (not continuous) 2 min ON / 18 min OFF**		
PROTECTION DEGREE	**IPX6**		
LINE VOLTAGE	**100 V AC**	**120 V AC**	**230 V AC**
LINE FREQUENCY	**50/60 Hz**	**60 Hz**	**50 Hz**
PERMISSIBLE VOLTAGE VARIATION	**± 10%**		
OUTPUT VOLTAGE	**24V DC**		
MAXIMUM POWER	**450 VA**		
INSULATION CLASS	**I**		
APPLIED PART TYPE	**B** 		
WEIGHT (WITHOUT SIDE RAILS)	**165 kg**		
EXPECTED SERVICE LIFE	**10 years**		
** maximum patient weight considering the use of a 20 kg mattress and accessories for a total weight of 45 kg (see available accessories chapter)* *** maximum patient weight considering the use of a 20 kg mattress and accessories for a total weight of 15 kg (see available accessories chapter)*			
BUFFER BATTERY			
BATTERY	**24V continuous - 1.3 Ah**		
FULL RECHARGE TIME	**48 hours approximately**		

4.3 Characteristics of side rails

The side rails that can be used are exclusively those indicated in the accessories list:

Code	Description	Available on
339170	Short 4-section side rails	mod. 3900, 3905
339110	Long 4-section side rails	mod. 3900, 3905
339175	Short 4-section side rails with integrated controls	Standard on mod. 3960, 3965
339160	Long 4-section side rails with integrated controls	Not available on mod. 3960, 3965
339180	Nurse call with integrated control	Only with side rails with integrated controls

Incompatible side rails can cause hazards to the patient (risk of entrapment or falling).

4.4 Characteristics of mattresses

The beds are prepared to use mattresses with the following dimensions and characteristics:

Length = from 1950 to 2000 mm
Width = from 850 to 900 mm
Thickness = from 140 to 190 mm (side rails cod. 339110, 339160)
Thickness = from 140 to 230 mm (side rails cod. 339170, 339175)

The minimum density of the mattress must be 30 kg/m3 ± 5% (in the case of an air mattress, if any, the internal pressure must be sufficient to simulate the indicated density unless it needs to be modified for special therapies).
In order to avoid the risk of the mattress slipping, it must be ensured that it is firmly placed on the bed base and positioned between the integrated mattress retainers on the bed base cover.
The use of mattresses that are thicker than intended (greater than 190 mm or 230 mm) may reduce the effectiveness of side rail restraint.
When using other mattress sizes than those indicated, it is recommended to check compatibility with the beds on which they are used and that they do not reduce patient safety.
It is advisable to use specific sheets to be placed between the patient and the mattress.

Incompatible mattresses can cause hazards to the patient (risk of entrapment or falling).

4.5 Applied parts

The bed is to be considered as a fully applied part.
The parts with which practitioners and patients mainly come into contact are:

- Headboard and footboard;
- Side rails;
- Mattress platform;
- Patient control handset/panel;
- Operator control panel;
- Lifting system;
- Base.

5 TRANSPORT AND INSTALLATION

5.1 Lifting

Lifting operations must be carried out by specialised personnel trained in this type of manoeuvre.

It is the client's responsibility to provide the equipment necessary for lifting the bed.

Before lifting the bed, make sure that there are no persons within the manoeuvring range.

The weight to be lifted is given by the weight of the equipment (see technical data table) plus any packaging plus accessories.
Check the suitability of the equipment used, such as ropes, bands, hooks, crane trucks or overhead cranes, which must have a load capacity of more than **300 kg.**
Make sure that the lifting ropes or straps form an angle of more than 60° with the equipment to be lifted (Pic. 2).
When lifting with a forklift truck, place the lifting forks at the points indicated by the arrows in Pic. 3.

Pic. 2

Pic. 3

When lifting, make sure that the bed remains perfectly balanced and avoid any manoeuvres that could make the bed unstable.

5.2 Transport

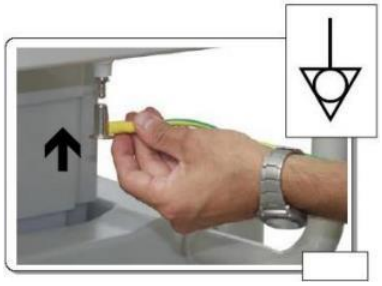
The **ARIA** range beds are shipped to the customer fully assembled and ready to be lifted from the means of transport using: overhead crane, crane truck or forklift.
Transport is generally by lorry.

The temperature, humidity and atmospheric pressure values during transport must be within the following parameters:
Temperature from 0° C to + 40° C.
Atmospheric pressure between 700 mB and 1060 mB.
Max. air humidity 70%.

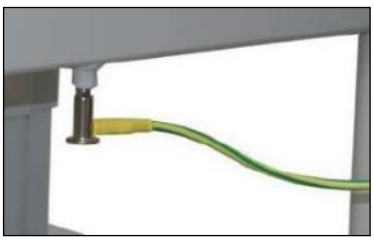
5.3 Installation

For installation, ensure that:

The supply current is compatible with that required for the bed;
If equipotential connection is required (see section 3.4), connect the equipotential connector of the bed (see Pic. 4) to the potential equalisation system (Pic. 5) using a cable with a suitable cross-section (code 305099).



Pic. 4



Pic. 5

- The power cord is not stretched once the socket is plugged in;
- The bed does not interfere with any obstacles (e.g. bedside tables, wall cabinets) during the lifting, Trendelenburg or Reverse-Trendelenburg movements;
- The cables of the hand control and the power cable cannot get caught in the moving parts of the bed.
- Connect the battery cable to the control unit if disconnected.

If the brake is not activated and the power cable is connected to the mains (control unit powered), the control unit emits an acoustic signal to inform you of the danger of moving the bed by tearing the power cable.

5.4 Storage

When storing for a long period (more than 6 months) follow the instructions below:

- Set all bed joints, including the height, to zero;
- Disconnect the power cable and wrap it in the hook provided and disconnect the battery cable from the control unit;
- Ensure that the wheels are on a flat surface;
- Make sure that the environment in which the bed is stored is dry and that the temperature, humidity and air pressure values are within the following parameters:
  Temperature from 0° C to + 40° C.
  Atmospheric pressure between 700 mB and 1060 mB.
  Max. air humidity 70%.

Do not stack beds on top of each other.

5.5 Putting back into service

- Check that the bed is properly secured in the braking position;
- Unwind the power cable and connect it to the power socket;
- Check that all bed movements function correctly;
- Check the condition of the bed's power cable;
- Check the condition of all electrical cables (motors, control units, etc.);
- Connect the battery to the control unit and check the charging condition, leaving it to charge for 24 h before putting the bed back into service.
- The temperature, humidity and atmospheric pressure values during use must be within the following parameters:
  Temperature from +5° C to + 40° C.
  Atmospheric pressure between 700 mB and 1060 mB.
  Max. air humidity 70%.

6 CONTROLS

Before using the bed, read all the instructions on the controls carefully. Learning the controls correctly ensures the proper and safe use of the bed.

Before controlling the various movements of the bed, make sure that the patient does not have his or her arms caught in any openings, e.g. in the side rails or head/foot board

6.1 Electrical controls

Disconnect and/or connect the handsets only when the control box is not powered (first disconnect the power cable from the power socket and any battery cable).

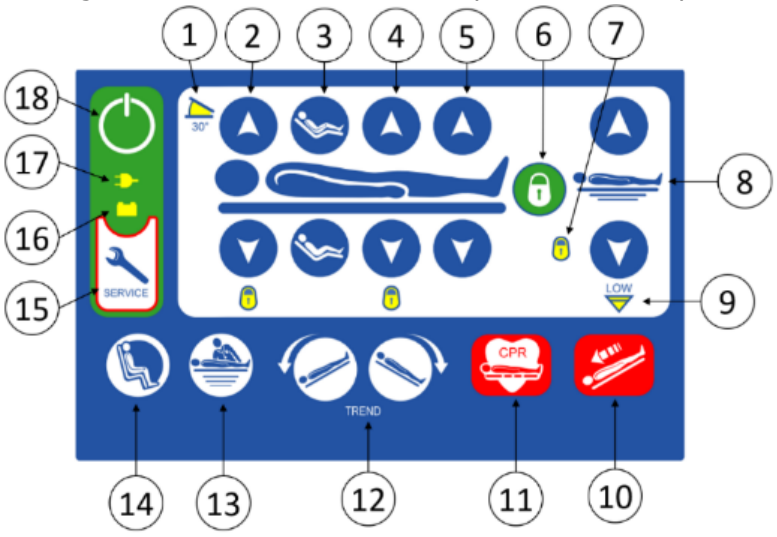
The buttons control movements ONLY IF PRESSED. Therefore, if a movement in progress may pose a danger to the patient, the operator or the environment, STOP THE MOVEMENT IMMEDIATELY BY RELEASING THE BUTTON.

It is mandatory to check periodically (at least once a week) that the buttons for reaching the emergency Trendelenburg position function correctly. This guarantees the performance of the function in those situations where this manoeuvre is required.

If during normal use of the device abnormalities are observed in the operation of the lift/lowering system, contact technical assistance as soon as possible. Incorrect operation of one of the lifting columns could make the emergency Trendelenburg manoeuvre impossible.

6.1.1 Operator control panel (Supervisor)

Through the "Supervisor" control panel the operator can perform all the needed adjustments but also enabling or not the functions on the patient control panel.



1) Led indicating, if lit, that the backrest inclination has reached 30°.
2) Buttons for adjusting the inclination of the backrest.
3) Buttons for simultaneous movement of the backrest and knee-break section.
4) Buttons for adjusting the knee-break section.
5) Buttons for adjusting the legrest inclination (**buttons not available on models 3900, 3905**)
6) Lock" button for enabling/disabling patient control panel functions.
7) Status LED "enabled (off) / disabled (on)" of functions on patient control panel.

8) Buttons for adjusting the height of the bed platform.
9) Led indicating, if lit, that the bed is positioned at minimum height.
10) Button for resetting mattress platform with emergency Trendelenburg (Anti-Shock position).
11) Button for resetting mattress platform with descent to minimum height (CPR position).
12) Buttons for Trendelenburg and reverse Trendelenburg adjustments.
13) Button for resetting mattress platform with lift to examination position.
14) Button for armchair position.
15) Service button to cancel maintenance requests.
16) Battery status LED.

17) Mains power led.
18) On/off button.

When the control panel is turned off, none of the controls described above are possible.

To **ACTIVATE THE CONTROL PANEL,** press the power button. After a period of inactivity, the control PANEL will automatically deactivate. To switch off the system, press and hold the power button for a few seconds, release it when the LEDs flash.
When the bed has reached a pre-set number of operating cycles, LEDs 16 and 17 start to switch on and off alternately. To deactivate the LEDs, press the SERVICE button (No. 15) and contact the service centre.

To **INHIBIT FUNCTIONS ON THE PATIENT HANDSET/CONTROL PANEL** hold down the padlock button (button N°6) and press the down arrow button corresponding to the function you wish to inhibit (+). The corresponding padlock LED (N°17) will light up to confirm that the operation was successful. LED on function disabled, LED off function enabled. The system will emit an acoustic signal (three beeps) if the patient presses a button whose function has been locked. Please also note that inhibiting a single function will also inhibit all other functions it is involved in.

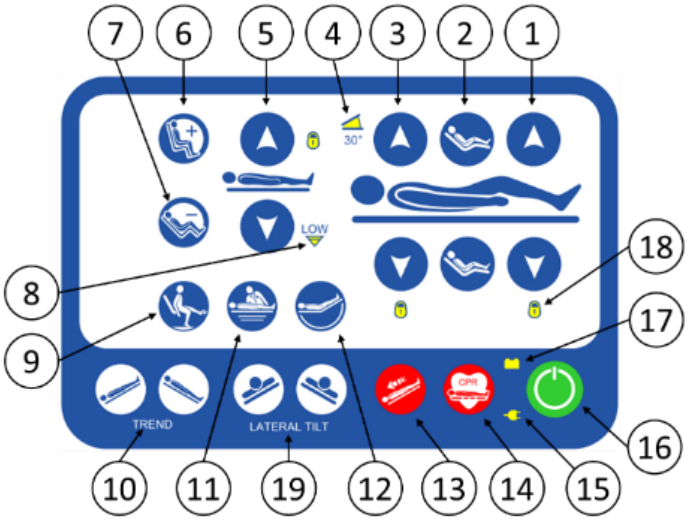
ACTIVATION/DEACTIVATION OF 30° BACKREST MOVEMENT LOCK
While moving the back section, when the 30° position is reached, the movement is blocked and the corresponding LED no. 1 lights up.
To enable/disable this function, press the padlock button and the up-arrow button on the backrest movement. One beep identifies activation, three beeps for deactivation of this function.

BATTERY STATUS DISPLAY
Refer to the illuminated symbols on the operator controls:

		Meaning
On	On	Powered by main, battery present and charged
On	Flashing	Powered by main, battery charging
On	Off	Powered by main, low battery or absent
Off	On	Powered by battery (no main)
Off	Flashing	No main and powered by low battery
Off	Off	No main and low battery or absent

6.1.2 Control panels integrated in the side rails

Operator integrated control panel (on the outside of side rails)



1) Buttons for adjusting the knee-break section.
2) Buttons for simultaneous movement of the backrest and knee-break section.
3) Buttons for adjusting the inclination of the backrest.
4) Led indicating, if lit, that the backrest inclination has reached 30°.
5) Buttons for adjusting the height of the bed platform.
6) Button for reaching the armchair position.
7) Button for resetting the mattress platform and returning to horizontal.

8) Led indicating, if lit, that the bed is positioned at minimum height.
9) Button for reaching the preset safe exit position.
10) Buttons for Trendelenburg and reverse Trendelenburg adjustments.
11) Button for resetting mattress platform with lift to examination position.
12) Button for reaching the preliminary anti-shock position.
13) Button for resetting mattress platform with emergency Trendelenburg (Anti-Shock position).
14) Button for resetting mattress platform with descent to minimum height (CPR position)
15) Mains power led.
16) Button for switching the control panel on/off.
17) Battery status LED.
18) Status LED "enabled (off) / disabled (on)" of patient control panel functions;
19) Button for lateral tilt movement (**Buttons present only on models 3960 and 3965**).

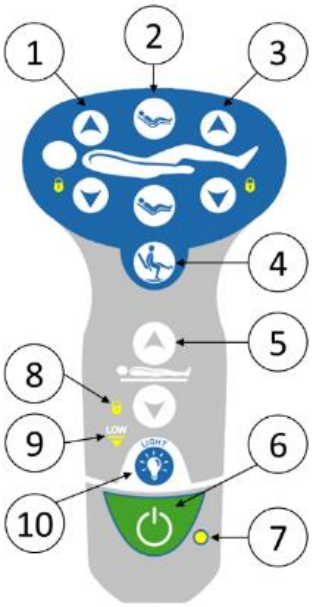
Patient integrated control panel (on the inside of side rail)

1) Buttons for adjusting the inclination of the backrest.
2) Buttons for simultaneous movement of the backrest and knee-break section.
3) Buttons for adjusting the knee-break section.
4) Buttons for adjusting the height of the bed platform.
5) Status LED "enabled (off) / disabled (on)" of patient controls functions.
6) Led indicating, if lit, that the bed is positioned at minimum height.
7) Button for switching the control panel on/off.
8) Mains power led.
9) Battery status LED.
10) Button for reaching the preset safe exit position.
11) Nurse call button (**only with accessory 339180**)

If any function is disabled (backrest, knee-break section, mattress platform height), the coordinated "Safe Exit" function on the patient controls is automatically disabled.

To silence the warnings generated by the pressure of the nurse call button, press the service button (nr. 15) of the Supervisor control panel.

Patient control handset



Standard for models 3900, 3905
Accessory for other codes

1) Buttons for adjusting the inclination of the backrest.
2) Buttons for simultaneous movement of the backrest and knee-break section.
3) Buttons for adjusting the inclination of the knee-break section;
4) Button for reaching preset safe exit position
5) Buttons for adjusting the height of the mattress platform;
6) Button for switching the handset on/off;
7) Led indicating the activation status of the push button panel;
8) Status LED "enabled (off) / disabled (on)" of patient controls functions;
9) Led indicating, if lit, minimum bed height positioning
10) Button that turns on the LED light on the control handset.

If any function is disabled (backrest, knee-break section, mattress height), the coordinated "Safe Exit" function on the patient controls is automatically disabled.

6.1.3 Electric pedal controls

Accessory

- The height of the bed can be adjusted using the controls on the electric pedal controls
- Electrical pedal controls are positioned on the base on both sides of the bed

The control panels and the electric pedal controls can be activated by pressing a pedal 2 times in a row.

Pic. 6

6.1.4 Minimum height indication LED

This is indicated by a high-brightness green and orange LED under the bed in the foot area:

The function of the LEDs is to provide the patient and operator with the following information:

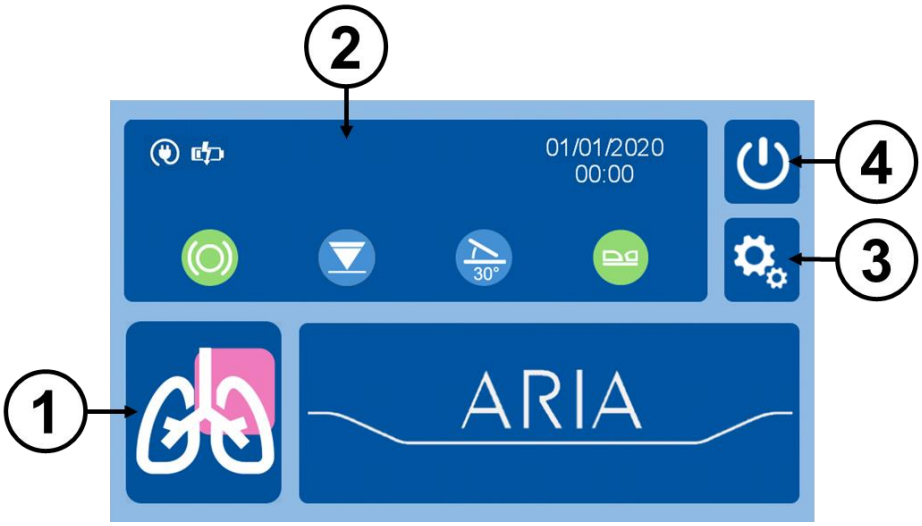
- with bed at MINIMUM HEIGHT the **GREEN LED** lights up.
- When the bed is NOT at MINIMUM HEIGHT, the **ORANGE LED** lights up.

To disable the operation of the LEDs, press on the operator (supervisor) control panel the "Lock" buttons and then "Reverse-trend": beeps are emitted (as for enabling/disabling the functions of the patient controls) and if the LEDs are on they go off, if they are off they go on.

The minimum height indicator LEDs underneath the bed are lit even when the bed is powered by the battery only. To avoid unnecessary battery discharge make sure to connect the bed to the mains or switch off the LEDs.

6.1.5 User Interface

Only for mod. 3960 - 3965
The system consists of a pair of touch screen displays integrated into the foot end side rails.



The functions and information accessible from the home page are:

1. Tilt control function;
2. Bed status, battery charge status and mains connection (if any);
3. System settings;
4. Button for switching off the display.

Read carefully the user interface manual before using the bed's functions. Learning the controls correctly ensures that the bed is used properly and safely.

6.2 Manual controls

Before controlling the various movements of the bed, make sure that the patient does not have his or her arms caught in any openings, e.g. in the side rails or head/foot board.

Before using some functions (bed height drop-down, backrest drop-down) make sure that nothing and nobody (especially children) is below the bed platform.

6.2.1 Wheel locking/unlocking and directional engagement

The beds of the **ARIA** range are equipped with a central braking system and 2 brake pedals located at the foot end; it is sufficient to act on one of these to
lock/unlock all 4 wheels simultaneously or enter "directional wheel" mode.

Caution! Always make sure that the bed is not connected to the mains before releasing the brake.

Once the power cable has been disconnected, it can be wrapped around the hook to prevent it getting in the way during transport (see figure opposite).

To brake the bed, the operator must press the brake pedal to the position shown in the figure on the right.

If the wheels are not braked and the power cable is connected to the electric mains, the control box utters an acoustic alarm to advise about the danger of moving the bed with power cable still connected to the electric mains.

In order **to move the bed in all directions** the operator must press the brake pedal until it is in the position described in the figure on the right, if the bed is still connected to the mains an acoustic alarm will automatically sound. If the bed is still connected to the mains, an acoustic alarm will automatically sound until the mains plug is disconnected or the brake is applied again.

In order to move the bed more easily along corridors or straight lines (only in the direction of thrust) the operator must press the brake pedal until it is in the position described in the figure on the right. The "directional wheel" mode is activated.

In this way the operator will be facilitated in guiding the bed, as one part will be guided while the part on which the hands rest will be free to rotate to guide the bed.

6.2.2 Monitor holder

Accessory

The monitor holder must only be used on the foot end of the bed.
Use of the monitor holder:
- Place the monitor holder on the footboard of the bed as shown in pic. 7.
- Rotate the bracket until it is positioned as in Pic. 8.

Safe working load: 10 kg

Pic. 7

Pic. 8

Attention! During Trendelenburg and Reverse-Trendelenburg movements and lateral tilt movements it is necessary to secure with straps or remove what has been placed on the monitor holder. Failure to do so may lead to injury or damage to persons and property.

6.2.3 5th Wheel

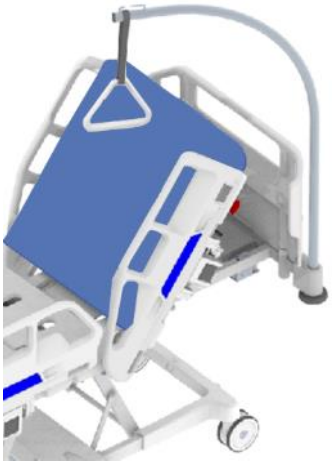
Accessory
The beds of the **ARIA** range can be equipped with the 5-wheel accessory. When fitted it improves the bed's manoeuvrability and makes it easier to drive along corridors.
To engage the 5th wheel the operator has to actuate the brake pedal as in Pic. 9 (With the 5th wheel engaged it is not possible to move the bed sideways).
To disengage the 5th wheel, the operator must operate the brake pedal as in Pic.10.

Pic. 9

Pic. 10

6.2.4 Lifting pole

Accessory



The lifting pole must **only** be positioned on the head side of the bed.

Warning! Do not place the lifting pole on the outside of the bed. The correct position is shown in the picture above. Any other position could cause damage to the patient or the equipment.

Pay attention to the lifting pole when moving the bed, especially during the lateral tilt movement.

Safe working load: see label

6.2.5 IV pole

Accessory

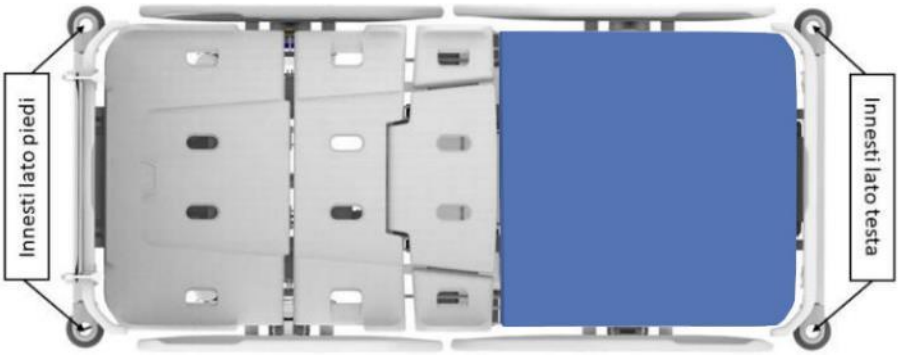
The IV pole can be placed on the hooks at the 4 corners of the bed as shown in the picture.
Safe working load: 5 kg (1.25 kg per hook) - (see label)

Pay attention to the IV pole when moving the bed, especially during the lateral tilt movement.

Height adjustment

In the case of height-adjustable (telescopic) IV poles, the pole can be brought to the desired height:

- grip the top of the rod;
- slacken the threaded handwheel shown in the picture;
- adjust to the desired height;
- tighten the threaded handwheel.



Rod adjustment handle

6.2.6 Bed-stripper / Supervisor-control holder

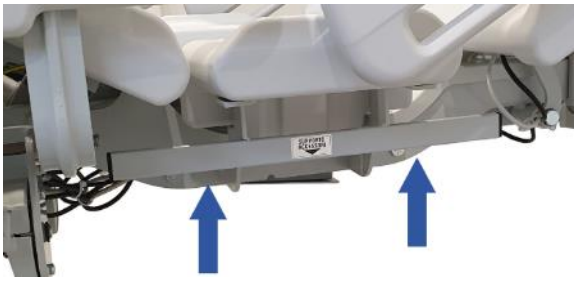
Accessory

The bed stripper is placed on the foot-side of the bed.
To use it, just pull out the tray (see the picture aside); inside it there is a seat for storing the supervisor control panel.
When it is no longer used, store the bed stripper under the mattress platform of the bed

Safe working load: 10Kg– check the label

6.2.7 Hooks for accessory-holder bar

On both sides of the bed, fixed on the intermediate frame, there is an accessories holder bar with 2 universal supporting hooks.
The plastic hooks can slide and can be repositioned.
Each hook has a safe working load of 3Kg.
The urine sack holder and the urine bottle holder can be hooked onto these supports.



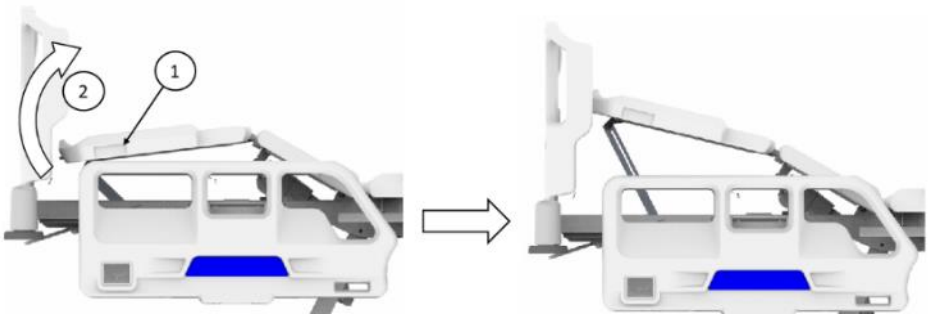
6.2.8 Legrest section movement

only for mod. 3900, 3905

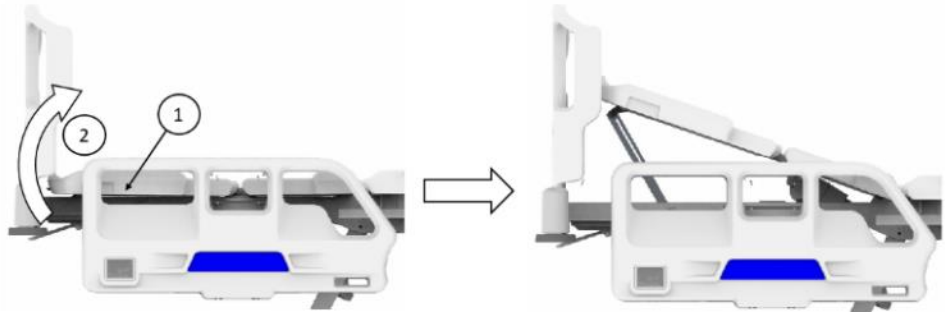
The position of the leg section is controlled by a rack system that allows for its adjustment to different positions. It is possible to raise the legrest section, either by first raising the knee-break section (Pic. 11), or by starting from a horizontal position of the mattress platform (Pic. 12).

 # To lift the legrest section the operator must:

1) Grip the perimeter of the legrest laterally.
2) Raise the legrest to the desired position, making sure you hear the racks click into place).
3) Release the legrest



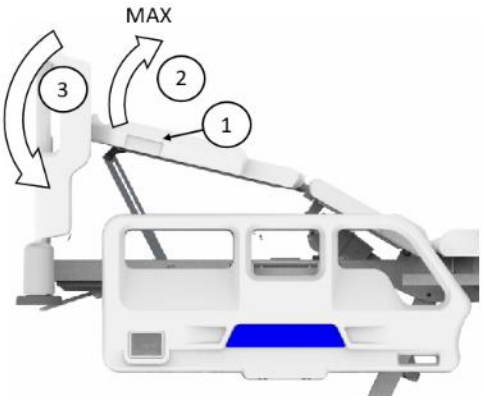
Pic. 11



Pic. 12

To lower the legrest section the operator must:

1) Grip the perimeter of the legrest laterally;
2) Raise the legrest to its maximum extension;
3) Lower the legrest while accompanying it during the descent (during the descent phase the legrest will not stop in the various locking positions, accompany it until the rack is completely closed).



6.2.9 Quick Release Backrest

In case of an emergency, the backrest can be quickly lowered by means of the handle underneath the mattress platform, on both sides of the bed.

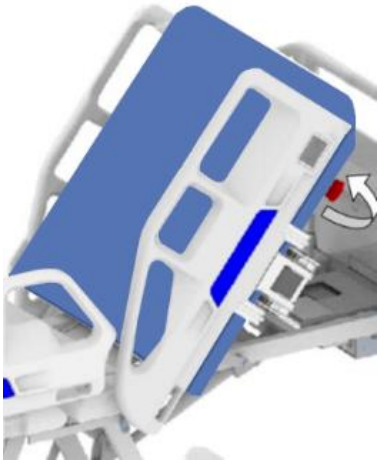
The quick backrest release operation must only be performed in case of emergency; for normal use, to lower or raise the backrest, use the control panels. Prolonged and improper use of the quick release could result in breakage or malfunction of the backrest actuator. In this case, the actuator must be replaced.

Customers are warned that the lowering movement of the backrest, with the bed empty, might be difficult and it might even get stuck.
This is because the lever mechanisms and the dimensions of the various components of the backrest have been calculated for the bed loaded with the weight of the mattress and the patient supine.
So, to restart the downward movement of the backrest the operator need only press with the hand on the surface of the backrest to make it go down into horizontal position (see figure).

1) Grip the backrest.
2) Without using excessive strength, pull up the handle at the side of the mattress platform (see pic 13).
3) Accompany the backrest to the desired position.

First release the handle and then the backrest.

Make sure that nothing prevents the backrest returning to the horizontal position (power cable, foreign objects).



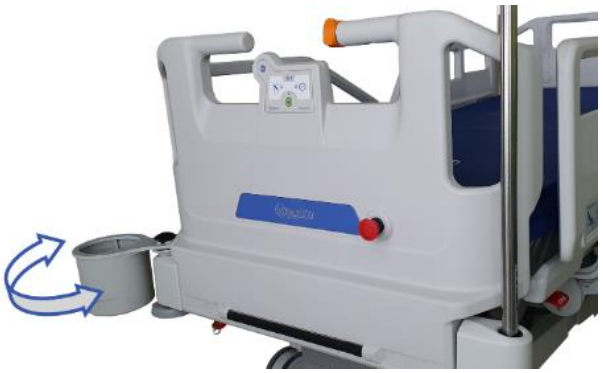
Pic. 13

6.2.10Swivel Oxygen cylinder holder

Accessory

The Swivel Oxygen cylinder holder is mounted on one of the two corners on the head end. It can rotate until disappearing under the mattress platform so as not to increase the overall dimensions of the bed.
When used, it can be rotated and positioned:
- head-side
- side rail side (latereal)

It can contain both small and large cylinders.



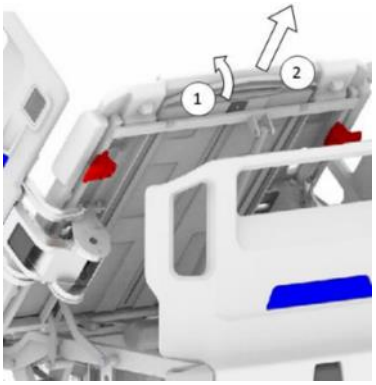
Pic. 14

6.2.11X-ray cassette

Accessory

The backrest of the bed is made of radio-transparent laminate material. It is possible to insert a plate in the cassette positioned under the backrest and perform a chest X-ray.
#To remove the X-ray plate, the operator must:
1) Grip the surround of the tray and lift it towards the backrest as indicated by arrow 1.
2) Pull out the tray as shown by arrow 2.

The x-ray plate can also be removed with the backrest lowered by removing the bed end at the head

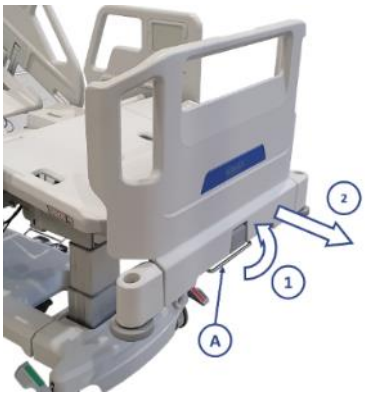


6.2.12Bed lengthener

Pay attention to the patient's limbs when extending and shortening the bed.

 # To extend the bed, the operator must:
1) Pull the release lever (arrow A) up as indicated in Pic - pos. 1
2) Pull the foot end out as illustrated in Pic. - pos. 2
3) Release the release lever in the new position.

 # To shorten the bed, the operator must:
1) Pull the release lever (arrow A) up as indicated in Pic. - pos. 1
2) Push the foot end in completely.
3) Release the release lever in the new position



Pic. 15

Do not sit on the bed lengthener when the bed is extended.

6.2.13Side rail movement

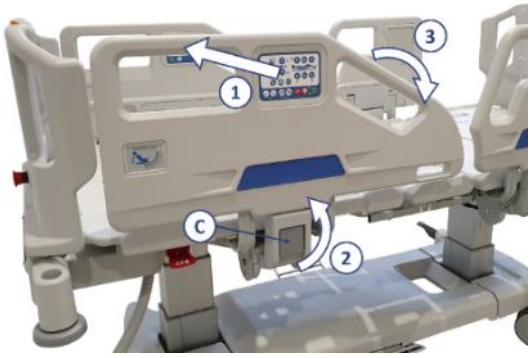
Pay attention to the patient's limbs when raising or lowering the side rails.

Always accompany the side rail during the descent phase.

To lower and raise the side rails, the operator must:

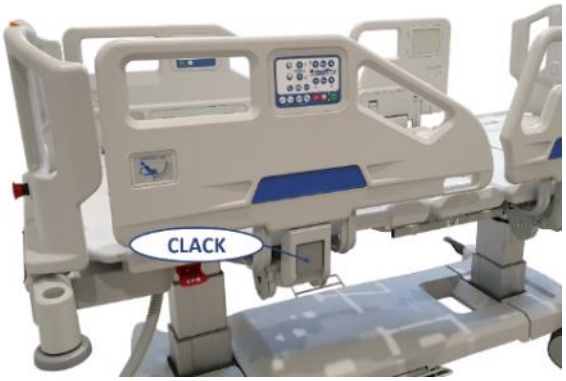
1) Slightly push the top part of the side rail towards the bed
2) Operate the release lever C (see arrow 2 Pic. 16).
3) Lower the side rail.
4) To raise the side rail, grip its top part and rotate it as shown in Pic. 17.

Make sure you hear the locking sound of the release lever when the side rail is raised (see Pic. 18).



Pic. 16

Pic. 17



Pic. 18

6.2.14Headboard and footboard

To remove the headboard and the footboard, lift lever **B** as shown by arrow **1**, grip the board by its top edge and then pull it in a balanced way vertically upwards as shown in pic. 19.
If there is no motorized 5th wheel accessory, the headboard is unlocked in the same way as the footboard.

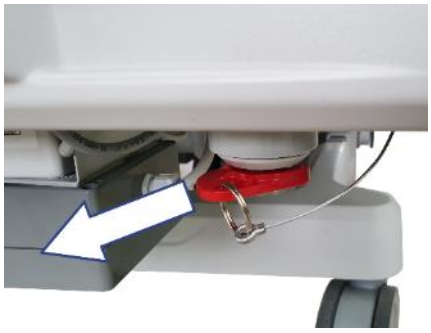
Pic. 19

Headboard

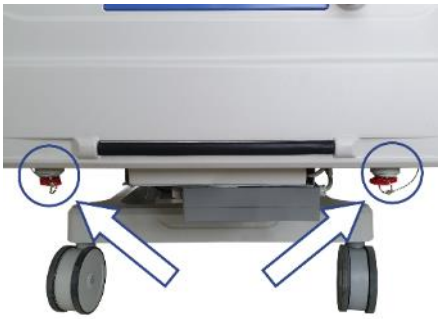
Only for beds with motorized 5th wheel accessory - Mod. 3900, 3910, 3960

To remove the head/foot board at the ends of the bed:

- Pull the red locking levers, releasing them and freeing the head/foot board tubes from the coupling (Pictures 20, 21).
- hold the panel on the push handles
- Pull upwards in a balanced vertical direction as shown in Pic. 22.



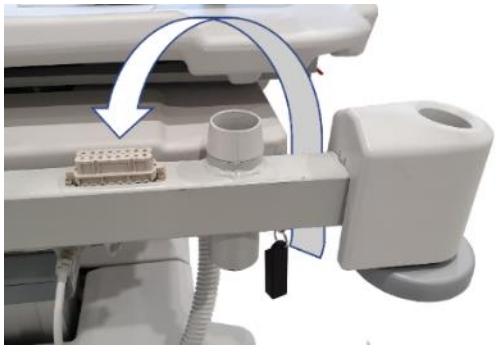
Pic. 20



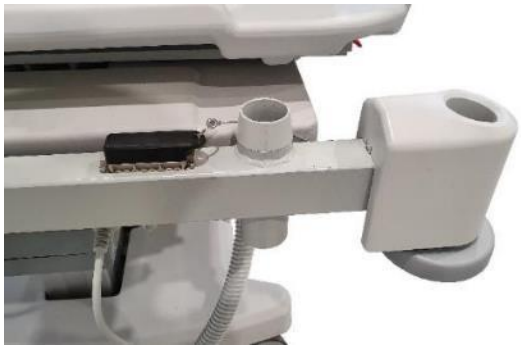
Pic. 21

Pic. 22

If the headboard is removed, cover the connector with its cap (Pic. 23, 24). This guarantees the stated protection degree against water



Pic. 23



Pic. 24

6.2.15Motorized 5th wheel

Not compatible with mod. 3905, 3915, 3965

The system is made of a pair of wheels with non-marking tread. The wheels are activated by an electric motor with gearmotor and safety electro-brake and the system can be assembled to the base frame through mechanical fastening.

The command that controls the descent of the wheel and its activation is placed on the movable push button panel with fast insert plug & play.

The auxiliary (supporting) batteries of the system allows to move the bed for about 9 – 10 km in normal use condition (this means moving the bed through the different hospital environment with pauses between each transport and with an average load of 100 kg). The charging of the battery takes places through the specific battery charger.

The system can overtake slopes up to 10% and give assistance in braking during hills. Furthermore, the system is equipped with electronic safety parking brake.

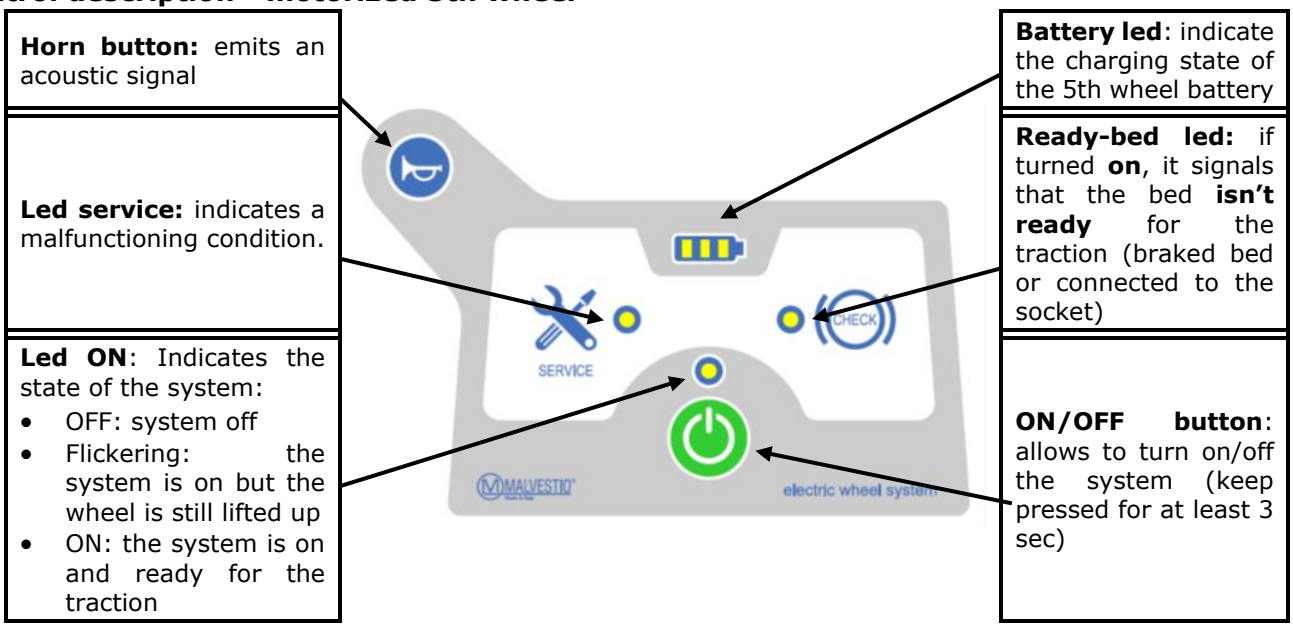
Traction system	Pair of wheels with non-marking PU tread, driven by electric motor with geared motor and safety brake.
Battery pack	Pair of batteries with 24 V nominal voltage
Reachable distance with fully charged AC battery.	9-10 km (normal use, i.e. movement that is not continuous but includes normal breaks between transfers in different hospital environments and with an average load of about 100 kg)
Maximum service speed	Forward => up to 4.5 km/h Backward => up to 2.5 km/h
Maximum surmountable slope	10% slope both in ascend and in descend
Protection class against electric shock	See electrical protection class of the medical bed
Safe working load	Equal to the safe working load of the bed.
Duty Cycle	30 min ON / 30 min OFF

If the bed is still braked or if the cable is connected to the mains socket, the motorized 5th wheel is automatically inhibited.

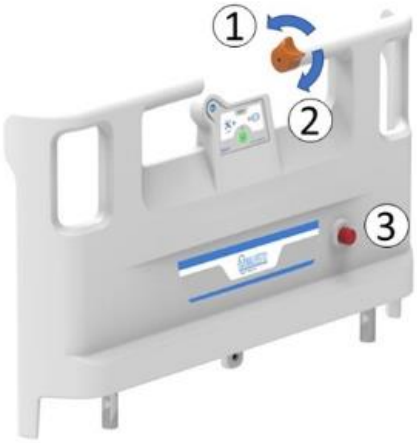
A red and mushroom-shaped emergency button is placed near the specific push-button panel. Its pressing immediately stops the movement of the wheel.
A multicolour warning Led placed on the base frame signals the state of the system (ready, alarm, etc.), but also it lights up the proximity area for the bed.

The motorized 5th wheel integrally replace the 5th directional wheel, standard equipment on medical beds.

Control description - motorized 5th wheel



1) Moving forward (incremental)
2) Moving backward (incremental)
3) Emergency button. **Press the red button in case of emergency;** the power supply of the motorized 5th wheel stops and the led emits a flickering red light while the bed brakes. **Rotate clockwise the button to restore the operation.**



ATTENTION: before moving the bed make sure that no one or no object stands on its acting range or along its way.

During the transportation of the bed along the hospital corridors, pay attention to blind spots due to walls or objects; there is a high likelihood that persons may be not visible since hide by these things. Is recommended to signal the presence of the bed (e.g. by playing the horn) to warn these persons.

The operator shall brake the bed wheels through the simultaneous brake system when he move away from the control commands of the motorized 5th wheel.

Rotate the brake release lever through the opening on the base frame (see the figures below) to unlock the motorised wheel electric brake in case of control unit malfunctioning or lack of power supply (exhausted batteries)

6.3 Accessories list

Code	Description	Available on mod.	Weight (kg)**
346002	Lifting pole	All mod.	4.8
346004	Lifting pole with adjustable handle	All mod.	4.8
346006	Shaped I.V. pole	All mod.	1.3
346007	Telescopic and Shaped I.V. pole	All mod.	1.65
346008	Telescopic I.V. pole	All mod.	1.5
346012	Urine bag holder	All mod.	0.5
346014	Urine bottle holder	All mod.	0.1
346018	Oxygen cylinder holder	All mod.	1.2
346019	Hooks for accessory-holder bar	All mod.	---
337018	Swivelling oxygen cylinder holder	All mod.	2.5
337027	Monitor holder	All mod.	2
346036	Privacy graph-holder	All mod.	3.5
339042	5th wheel	All mod.	---
339045	Motorized 5th wheel	3900, 3910, 3960	---
339180	Nurse call (on 4-section side rail) with integrated controls	All mod.	---
339056	Electric pedal controls	3900, 3905 3910, 3915	
337546	X-ray cassette	All mod.	2
337840	Static anti-decubitus mattress	All mod.	---
337841	Static anti-decubitus mattress extender	All mod.	---
339185	Additional patient control handset	3910–3915 3960-3965	---
337156	Bed-stripper/"supervisor"-control holder	All mod.	2
339170	Short 4-section side rails	3900, 3905	30
339110	Long 4-section side rails	3900, 3905	30
339175	Short 4-section side rails with integrated controls	3900, 3905 3910, 3915	30
339160	Long 4-section side rails with integrated controls	3900, 3905 3910, 3915	30

*** Value of the weight of accessories to be taken into account for the calculation of the maximum patient weight*

7 CLEANING AND DISINFECTION

7.1 Bed cleaning and disinfection

IMPORTANT! Before cleaning or maintaining the bed, make sure that the power plug is disconnected.

The bed can be cleaned by washing with water, neutral detergents and a sponge; rinsing can be done with water and a sponge.

NEVER USE:

- Pressure washers;
- Steam cleaning appliances;
- Excess liquid;
- Acids, solvents, corrosives and abrasive substances;
- Abrasive powders, sponges or cloths;
- Detergents containing chlorine, phosphates, phosphorous or formaldehyde.

Disinfection of the bed must be carried out with suitable non-corrosive products.
Disinfectants must not contain chlorine, phosphates, phosphorous or formaldehyde and must have a pH between 6 and 8.
NB: The temperature of the washing water must not exceed 40° C.
Cleaning and disinfecting the touch screen
Before cleaning and sanitising the screen, it is **necessary to put the system on stand-by** using the appropriate button - no. 5 on the Home page. This operation will switch off the display. Only then will it be possible to proceed with cleaning and sanitising operations.

It is recommended that you DO NOT spray/wipe any products directly onto the display, especially foams or gels.

Make sure that the display is switched off before cleaning/sanitising it.

It is advisable to spray/wipe the product on a damp cloth and then clean or sanitise the display.

After the procedure, wipe with a damp cloth to remove any residue of the product used and then dry the display.

Contact technical assistance if any abnormal behaviour of the display persists after cleaning/disinfection.

7.2 Tips for cleaning and disinfection

Attention! Before carrying out any cleaning or maintenance work on the bed, make sure that the power supply is switched off.

7.2.1 Daily cleaning

Clean the following parts:

- Patient and operator handset;
- Headboard and footboard;
- Side rails;
- Handles on the bed;
- Bars and accessory holders.

7.2.2 Cleaning after discharge

Clean the following parts:

- Patient and operator controls;
- Headboard and footboard;
- Side rails;
- Handles on the bed;
- Bars and accessory holders;
- Plastic mattress platform tops;
- Mattress surface;
- Electric actuators;
- Metal parts of the bed accessible to the patient;
- Unlocking cables;
- Basement covers.

7.2.3 Thorough cleaning and possible disinfection

Clean the following parts:

- Patient and operator controls;
- Headboard and footboard;
- Side rails;
- Handles on the bed;
- Bars and accessory post holders;
- Plastic mattress platform tops;
- Mattress surface;
- Electric actuators;
- Metal parts of the bed accessible to the patient;
- Unlocking cables;
- Basement covers;
- Side bumpers;
- Wheels;
- Brake system operating levers;
- Mattress platforms;
- Intermediate frame;
- Lifting system;
- Base.

These indications are only suggestions for better cleaning but do not replace any specific internal hospital protocol.

8 MAINTENANCE 

The frequency of checks should take into account the way the medical device is used and its usual conditions of use at the customer's premises on a case by case basis.

It is mandatory to check periodically (at least once a week) that the buttons for reaching the emergency Trendelenburg position function correctly. This guarantees the performance of the function in those situations where this manoeuvre is required.

However, it is advisable to carry out a thorough check at least once a year to ensure that the equipment is working properly.
The elements that need to be checked carefully are:

Maintenance operation	Frequency	Operational guidelines
Emergency Trendelenburg	At least once a week	• Check the correct functioning of the lifting columns and the buttons for reaching this position
Side rail movement	at least once a year	• Lifting and hooking the side rails: they must lock properly • Unlocking and lowering the side rails: the descent must not be abrupt and the movement must be cushioned.
joints of the different bed movements and their fixing systems		• operate the various sections of the bed (backrest, knee-break section, lifting, etc.) from the controls: the movement must be smooth and without any particular noise • when stationary, the sections must be stable
the condition of the electrical and operating cables of the locks		• check the condition of the power cable and the plug: it must not be crushed or kinked • visually check the condition of the hand control and quick release cables
the correct functioning of the electrical controls		• check that the movement controls are working properly • check the on/off controls • check the lock/unlock controls
the condition of the wheels and the braking system		• try to release the brake and move the bed: the movement must be smooth and fluid • braking the bed: it must not move
the head/foot board and their locking system		• Insert and remove the head and foot panels: the operation must not be problematic • Once locked in position they must be stable
Any signs of wear of the mechanical components		• On the bed there must be no signs of corrosion, leakage of lubricant, abnormal noises during movements

These indications are only suggestions for more correct maintenance but do not replace any specific internal hospital protocol.

8.1 Electric system maintenance

IMPORTANT! Before performing any maintenance operations on the electric components, disconnect the plug from the socket.

All maintenance operations must be performed by skilled personnel.

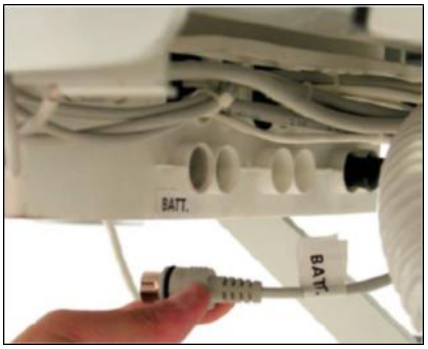
8.1.1 Battery maintenance

Batteries must be recharged at least every 3 months otherwise they will become damaged and self-discharging.

Batteries must only be replaced by original models supplied by the manufacturer.

Batteries must be replaced according to use at least every 4 years.
Frequent charging and discharging will reduce battery life.
If the batteries are exhausted, do not open the container to replace them, but disconnect the connector from the unit and change the entire battery group.
The maintenance technician have to:

1) raise the backrest;
2) disconnect the battery fast connector from the control unit;
3) Unscrew the battery fastening screws from the support bracket and take out the battery;
4) Fit the new battery and perform operations in reverse sequence



Indications for correct use
The buffer battery is connected to the bed power control system; they are therefore always in charge when the system is powered from the mains.

When the bed is stored, disconnect the battery from the control unit, otherwise, even if the bed is not used, the battery will discharge. Also, during long transport, if not necessary, it is suggested to disconnect the battery.

If the batteries are exhausted, do not open the container for replacement, but disconnect the connector from the control unit and replace the entire battery pack.

Never open, burn or soak in water a used battery.

Batteries shall only be replaced by trained personnel.

Never leave the power supply unit disconnected from the battery.

Here are some suggestions on how to use the battery in the best way so that these last longer. The graph below shows the relation between the presumed battery life and the battery charge expressed in number of cycles.

The curves can be explained as follows:

100 % depth of discharge

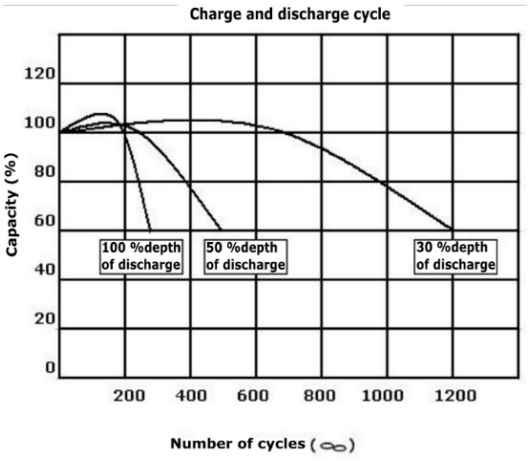
- from the diagram it appears there are 260 cycles available at 100% depth of battery discharge

50 % depth of discharge

- from the diagram it appears there are 500 cycles available at 50% depth of battery discharge

30 % depth of discharge

- from the diagram it appears there are 1200 cycles available at 30% depth of battery discharge



To achieve long battery life, always discharge the batteries as little as possible and at the same time charge them frequently.

Always remember to keep the control unit connected, so the batteries are always fully charged.

Temperature conditions and the constant charging without use, could limit the capacity of the batteries. After 18 months at 20°C, the batteries will have about a 55% capacity even if they have not been used. It should therefore be remembered that the batteries have a limited life-span even if they are not used and constantly kept charged.
If the batteries are used at temperatures above 20 °C, their life-span will be shorter.

Because of this self-discharge, the batteries may not be fully charged when you receive the bed.

Customers are strongly advised to charge the batteries immediately upon receipt and in any case at least after 3 months from the date of manufacture as indicated on the label. The quicker the batteries are charged, the longer they will last.

Charge characteristics:
if the battery is 50% discharged, about 10-20 hours are needed to reach an 80% charge.
if the battery is 100% discharged, about 16-24 hours are needed to reach an 80% charge.

A charging time of about 32-48 hours is recommended to reach 100% capacity.

The fully charged battery will discharge less quickly compared to a battery with 80% charge.
To optimise the battery life, we recommend discharging the batteries as little as possible.
Battery discharge time and their capacity depend on the charge characteristics of the application and on the way the batteries are used.

Using batteries with capacities greater than those supplied by the manufacturer is not recommended so as not to overload the internal battery charger.

MALVESTIO cannot accept liability for any damage caused by using batteries different from those recommended or by maintenance performed by unauthorised personnel.

8.1.2 Power plugs and sockets

IMPORTANT! Before performing any maintenance operations on the electric components, disconnect the plug from the socket.

All maintenance operations must be performed by skilled personnel.

Periodically check that the retention rings of the plugs on the power unit (control box) are properly fitted in their housing; change them if they get loose. Ask the Manufacturer for spare parts.

8.2 Lubrication

IMPORTANT! Before performing any maintenance operations on the electric components, disconnect the plug from the socket.

All maintenance operations must be performed by skilled personnel.

After each sanitisation operation, in particular by washing, it is advisable to lubricate the joints and moving parts (bed and accessories) with silicone-based lubricants.

8.3 Checking fasteners

IMPORTANT! Before performing any maintenance operations on the electric components, disconnect the plug from the socket.

All maintenance operations must be carried out by qualified personnel.

Periodically (at least every 12 months), check the tightness of the fasteners (screws, pins, nuts, etc.) and the condition of the joints.

9 TROUBLESHOOTING

9.1 Foreword

IMPORTANT! Before performing any maintenance operations on the electric components, disconnect the plug from the socket.

All maintenance operations must be carried out by qualified personnel.

This chapter lists some of the most probable problems that could affect proper bed operation. Solutions to these problems have been offered in the troubleshooting guide.
If the problems persist or repeat frequently even after applying the remedies suggested in this chapter, please contact our after-service department.

9.2 Inconveniences - causes - remedies

PROBLEMS (P)	CAUSES (C) e REMEDIES (R)
P) The bed doesn't respond to any commands	C) The device is not connected to the power supply. R) Connect to power supply. C) The fuse has burnt out. R) Change the fuses or send the system to be repaired C) Faulty power cable R) Replace cable, C) Faulty control box. R) Send the control box to be repaired.
P) The contol box turn on but the actuator does not work	C) The control panel plug is not fitted properly in the corresponding socket on the control box. R) Fit the plug properly in the control box. C) Faulty control panel. R) Replace the control panel or send the control panel to be repaired. C) The actuator plug is not fitted properly in the corresponding socket on the control box. R) Fit the actuator plug properly in the control box. C) Faulty actuator. R) Replace the actuator or call in the after-sales service C) Faulty control box. R) Replace the control box or call in the after-sales service
P) The battery is dead.	C) Dead battery. R) Recharge the battery C) Faulty battery R) Replace the battery
P) The control box allows the actuator movement only in one direction.	C) Faulty control panel R) Repair the control panel. C) Faulty control box. R) Repair the control box.

9.3 Acoustic signals

The control box unit emits some acoustic signals to supply information to the users. In particular:

1) If the brake is released and the power supply cable is still connected to the socket, an intermittent Beep will play to warn of the risk of moving the bed and pulling the cable;
2) When the battery is almost out of power and someone tries to use the bed's functions, an acoustic signal (3 Beeps), repeated every 5 seconds, will play to warn the operator of the battery's near discharge. Attention: such signal does not mean that functions cannot be used any longer, but only that movements might not be completely performed;
3) If, while performing a movement, the control box unit has problems in reading one or more position sensors, the movement is stopped and a single Beep is played.
4) If there is a problem with the battery charging circuit, the device plays an acoustic and continuous signal, while on the operator control panel, the LED "Battery" flashes quickly and the "Service" LED (if present) lights. In this situation, unplug the power supply cable and contact the after-sales service. When you remove the plug, the sound signal stops but the LEDs will continue flashing and the bed does not turn into standby mode (it turns off only manually through the control panel). The bed will move only thanks to the battery. When the plug is reconnected to the socket, the acoustic signal plays again.

In case of problems with the battery charging circuit resulting in audible and visual signals, disconnect the power plug of the bed and contact the service.

10 DISPOSAL

MALVESTIO has achieved the ISO 14001 Environmental Certification, implementing on products, services and company processes, the principles from which the standard draws inspiration, i.e. the sharing of responsibility in the management of environmental issues, the control of activities generating an environmental impact and the use of market mechanisms that seek environmental excellence as a source of competitive advantage.
Most of the materials used in our products and packaging are recyclable and have minimal impact on the environment.

 # Disposal:

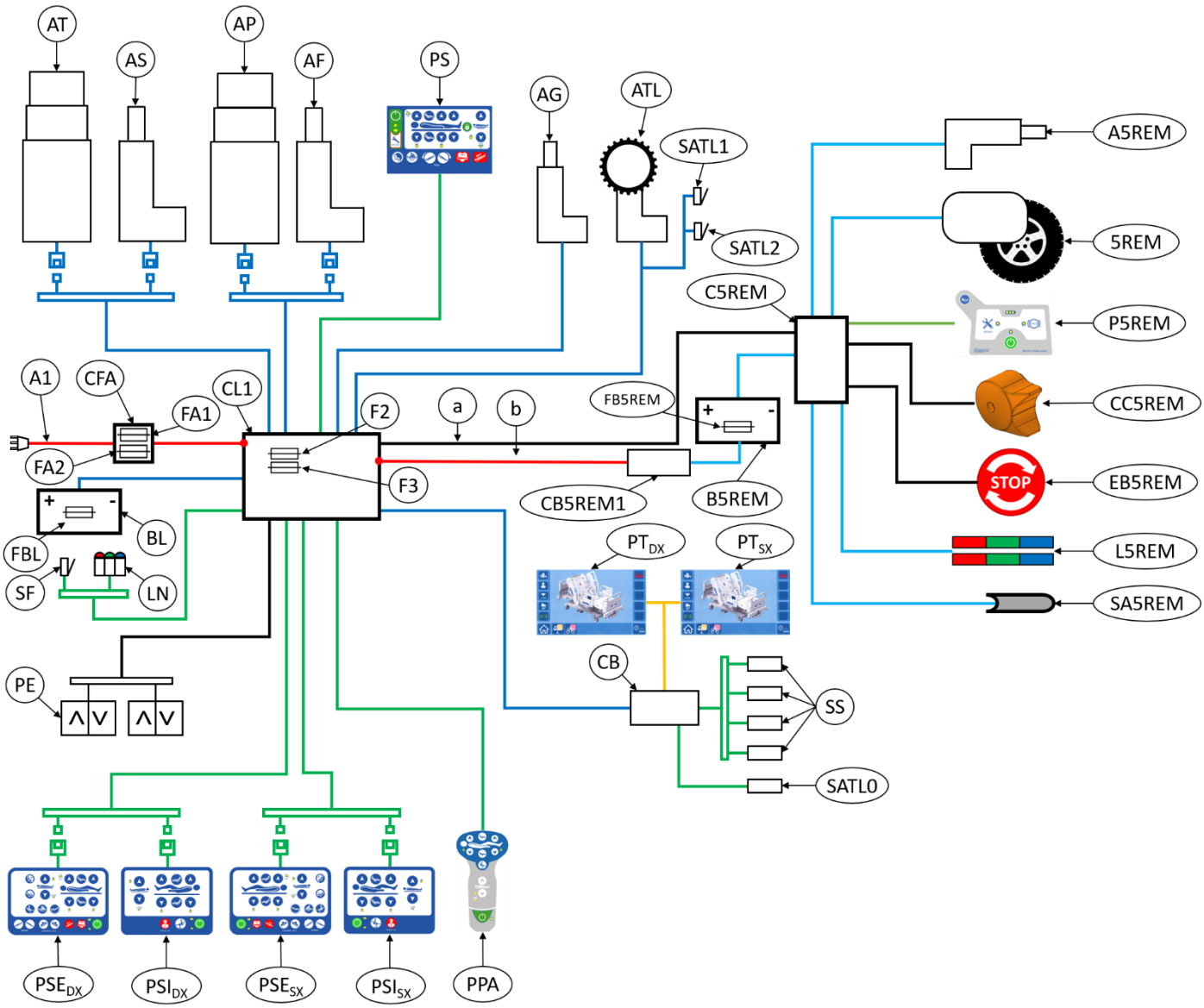
- Ensure that the device is not plugged in;
- Clean and disinfect the device and accessories before disposal;
- If the dismissed device/accessory is still reusable, it is recommended to donate it to a charitable organisation;
- Dismantle the device, taking care to sort the component materials according to their chemical nature (iron, aluminium, plastic, laminates, etc.).
  It is recommended to follow all national, regional and/or local laws and regulations relevant to the disposal of the medical device and its accessories. Contact your dealer for clarification regarding safe disposal protocols for the device.
- Do not dispose of device components in household waste;
- Pay particular attention to the electrical components, including the battery (if any).

The device falls within the scope of Directive 2012/19/EU on the management of waste electrical and electronic equipment (RAEE).

The product is not potentially hazardous to human health and the environment, as it does not contain harmful substances as indicated in Directive 2011/65/EU (RoHS), but if abandoned in the environment it will have a negative impact on the ecosystem.

11 ATTACHMENTS

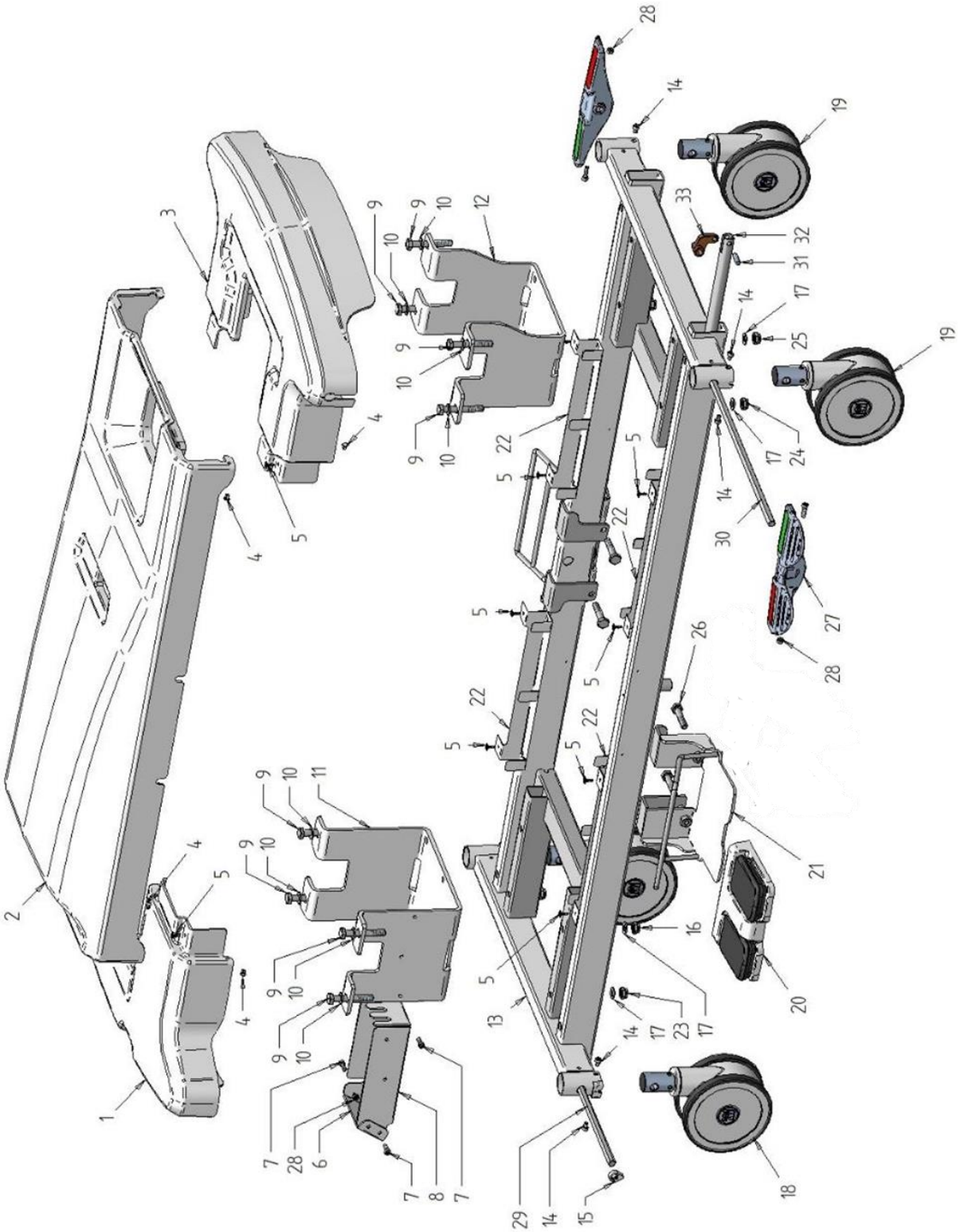
11.1 Wiring diagram



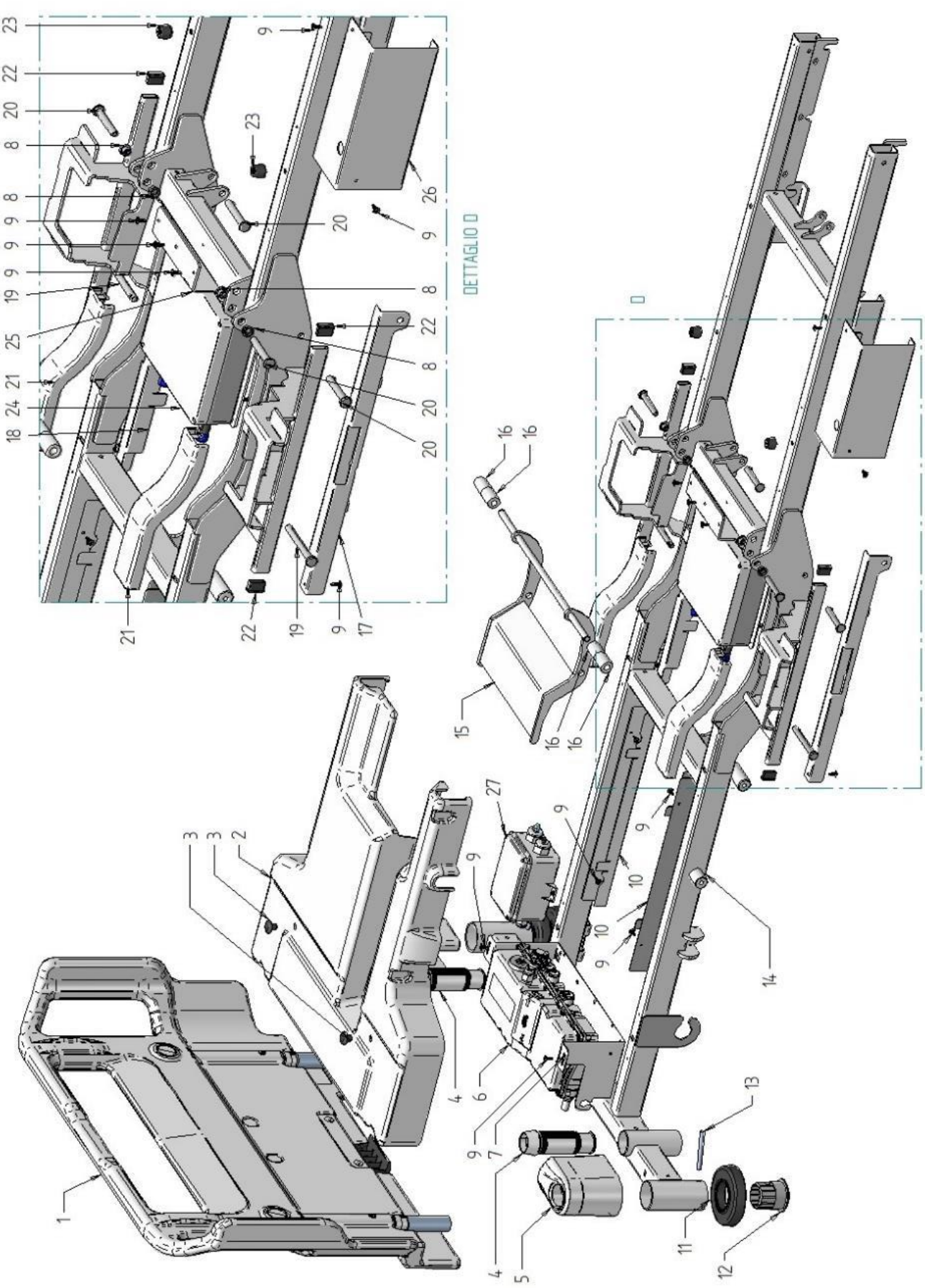
SIGN	CODE	DESCRIPTION	STATUS	MOD.
CL1	497873	Control box - Class 1	**-**	
F2, F3	---	Control box fuses Interior at CL1 Non-replaceable	**-**	
AT	871008	Head-side lifting column	**-**	
AS	871007	Backrest actuator	**-**	
AP	871008	Foot-side lifting column	**-**	
AF	871006	Knee-break section actuator	**-**	
PS	870647	Supervisor control panel	**S**	3900 – 3905
	870648	Supervisor control panel with legrest drive buttons	**S**	3910 – 3915 - 3960 – 3965
AG	872295	Legrest actuator	**ND**	3900 – 3905
			S	3910 – 3915 – 3960 – 3965
ATL	872296	Tilting actuator	**ND**	3900 – 3905 – 3910 - 3915
			S	3960 – 3965
SATL0	872138	Lateral tilt zero sensor	**ND**	3910 – 3915
			S	3960 – 3965
SATL1	872297	End-of-stroke sensor (max. angle) lateral tilt	**ND**	3910 – 3915
			S	3960 – 3965
SATL2	872297	End-of-stroke sensor (min angle) lateral tilt	**ND**	3910 – 3915
			S	3960 – 3965
A1	880331	Class 1 power cable	**-**	
BL	870936	Buffer battery	**-**	
FBL	---	Buffer battery fuse Non-replaceable	**-**	
SF	872275	Brake Sensor	**S**	
LN	872631	Led Night	**S**	
PE	870523	Electric pedal controls	**A**	3900 – 3905 – 3910 - 3915
			S	3960 – 3965
PSEDX	880616	Integrated controls for side rails, right, external	**A**	3900 – 3905
	880616	Integrated controls for side rails, right, external	**S**	3910 - 3915
	880625	Integrated controls for side rails with tilt function, right, external	**S**	3960 – 3965
PSIDX	880617	Integrated controls for side rails, right, internal	**A**	3900 – 3905
	880617	Integrated controls for side rails, right, internal	**S**	3910 – 3915 – 3960 – 3965
	880627	Integrated controls for side rails with nurse call, right, internal	**A**	All mod.
PSESX	880621	Integrated controls for side rails, left, external	**A**	3900 – 3905
	880621	Integrated controls for side rails, left, external	**S**	3910 - 3915
	880626	Integrated controls for side rails with tilt function, left, external	**S**	3960 – 3965
PSISX	880622	Integrated controls for side rails, left, internal	**A**	3900 – 3905
	880622	Integrated controls for side rails, left, internal	**S**	3910 – 3915 – 3960 – 3965
	880628	Integrated controls for side rails with nurse call, left, internal	**A**	All mod.
PP	870978	Patient control handset	**S**	3900 – 3905
PPA	870978	Additional Patient control handset	**A**	3910 – 3915 – 3960 – 3965

PTDX	880624	Touch-screen display right side	**ND**	3900 – 3905 – 3910 - 3915
			S	3960 – 3965
PTSX	880624	Touch-screen display left side	**ND**	3900 – 3905 – 3910 - 3915
			S	3960 – 3965
CB	871034	Secondary control box	**ND**	3900 – 3905 – 3910 - 3915
			S	3960 – 3965
SS	872138	Edge sensors	**ND**	3900 – 3905 – 3910 - 3915
			S	3960 – 3965
motorized 5th wheel **NB: all the components listed below are present if and only if the bed is equipped with the accessory in question.**			**ND**	**3905 – 3915 – 3965**
			A	**3900 – 3910 – 3960**
CB5REM1	870212	Battery charger for motorized 5th wheel Class 1		
B5REM	872243	Battery for motorized 5th wheel		
FB5REM	---	Battery fuse for motorized 5th wheel		
C5REM	870209	Control unit for motorized 5th wheel		
A5REM	871006	Lowering/lifting actuator for motorized 5th wheel		
5REM	871030	Motorized 5th wheel		
P5REM	880659	Headboard button panel		
CC5REM	870207	Motorized 5th wheel drive control		
EB5REM	870184	Emergency stop mushroom		
L5REM	872239	RGB LED strips		
SA5REM	870208	Anti-crushing sensor		
CFA	872320	Junction box with input fuses		
FA1, FA2	---	Input fuses Interior in CFA Non-replaceable		
a	\	Control unit- bed connection cable for motorized 5th wheel Bed ready indication		
b	\	Power cable - shared with bed control unit		
S: Standard, **A**: Accessory, **ND**: Not available, **-**: Basic bed component				

11.2 Spare parts



BASE FRAME			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
1	826741	Base cover, head side	Mod. 3900, 3910, 3960
	826860	Base cover, head side	Mod. 3905, 3915, 3965
2	826742	Central base cover	
3	826743	Base cover, foot side	
4	860314	Plastic pin for housing fixing	
5	85210742013	Self-drilling screw D. 4.2x13	Commercial screw
6	60002087	Corrugated conduit fixing plate	
7	85200506016	TCEI screw M6x16	Commercial screw
8	60002078	Cable support plate	
9	85203110070	TE screw M10x70	Commercial screw
10	85216010000	Rosette M10	Trade washer
11	60002035	Head-side column bracket	
12	60002036	Foot-side column bracket	
13	41000220	Base	
14	85200506008	TCEI screw M6x8	Commercial screw
15	825832	Micro brake cam	
16	85206610000	Self-locking nut M10	Trade nut
17	85216010000	Rosette M10	Commercial rosette
18	874055	Brake wheel + directional	
19	874054	Brake wheel	
20	See wiring diagram	Electric pedal controls	
21	41000031	Electric pedal controls bracket	
22	60002050	Cable bracket	
23	85206610000	Self-locking nut M10	Trade nut
24	85206610000	Self-locking nut M10	Trade nut
25	85206610000	Self-locking nut M10	Trade nut
26	85203110050	M10x50 TE screw	
27	826713	Brake pedal	
28	85206606000	Self-locking nut M6	Trade nut
29	44000010	Hexagonal rod on head side	
30	44000011	Foot-side hexagonal rod	
31	834376	Brake return rod plug	
32	50000414	Brake return rod	
33	820161	Brake return lever	


DETTAGLIO D
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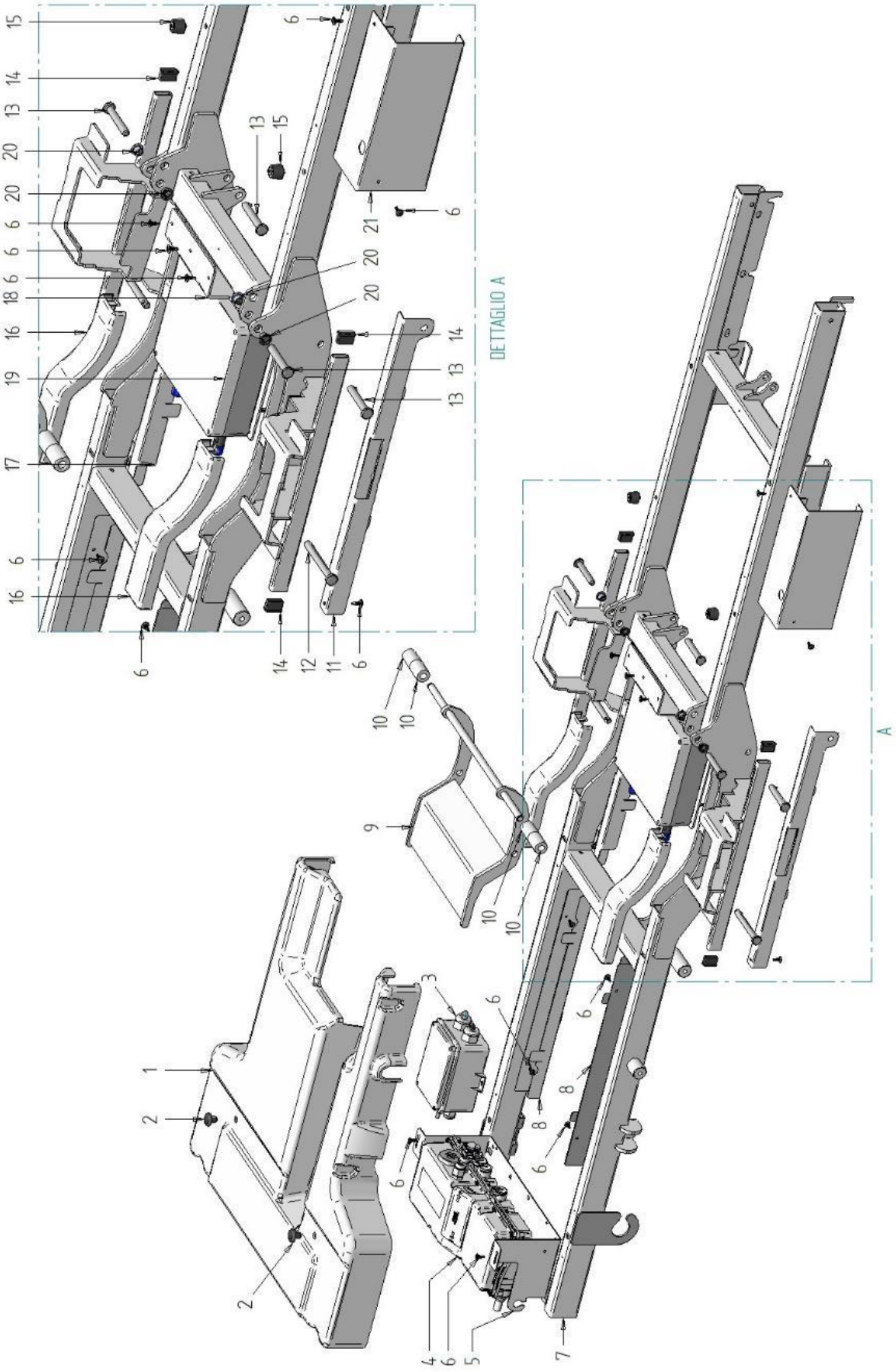
INTERMEDIATE FRAME - mod. 3900 - 3910 - 3960			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
1	49000188	Assembled headboard	
2	826740	Carter cover head side	
3	825698	Backrest shock-absorbing cap	
4	825536	Headboard pipe coupling	
5	826560	Angular cover	
6	See wiring diagram	ECU	
7	60002417	Control unit sheet metal	
8	866524	Self-lubricating bush	
9	85210742013	Self-drilling screw D. 4.2x13	Commercial screw
10	60002051	Cable support plate	
11	826563	Bumper wheel	
12	826562	Bumper wheel coupling	
13	834415	Header socket plug	
14	41000073	Intermediate frame	
15	41000027	Flap frame	
16	826606	Flap roller	
17	60002049	Cable support plate centre section right	
18	60002048	Cable support plate centre section left	
19	834452	Long snap-on plug	
20	834453	Short snap-on plug	
21	826593	Plastic central cover	
22	861002	Head cap	
23	825441	Knee-break section thickness	
24	See wiring diagram	Electronic touch-screen box	Only for 3960
25	60002047	Sheet metal electronic touch-screen box	Only for 3960
26	60002085	Sheet metal cover	Only for 3960
27	See wiring diagram	Battery	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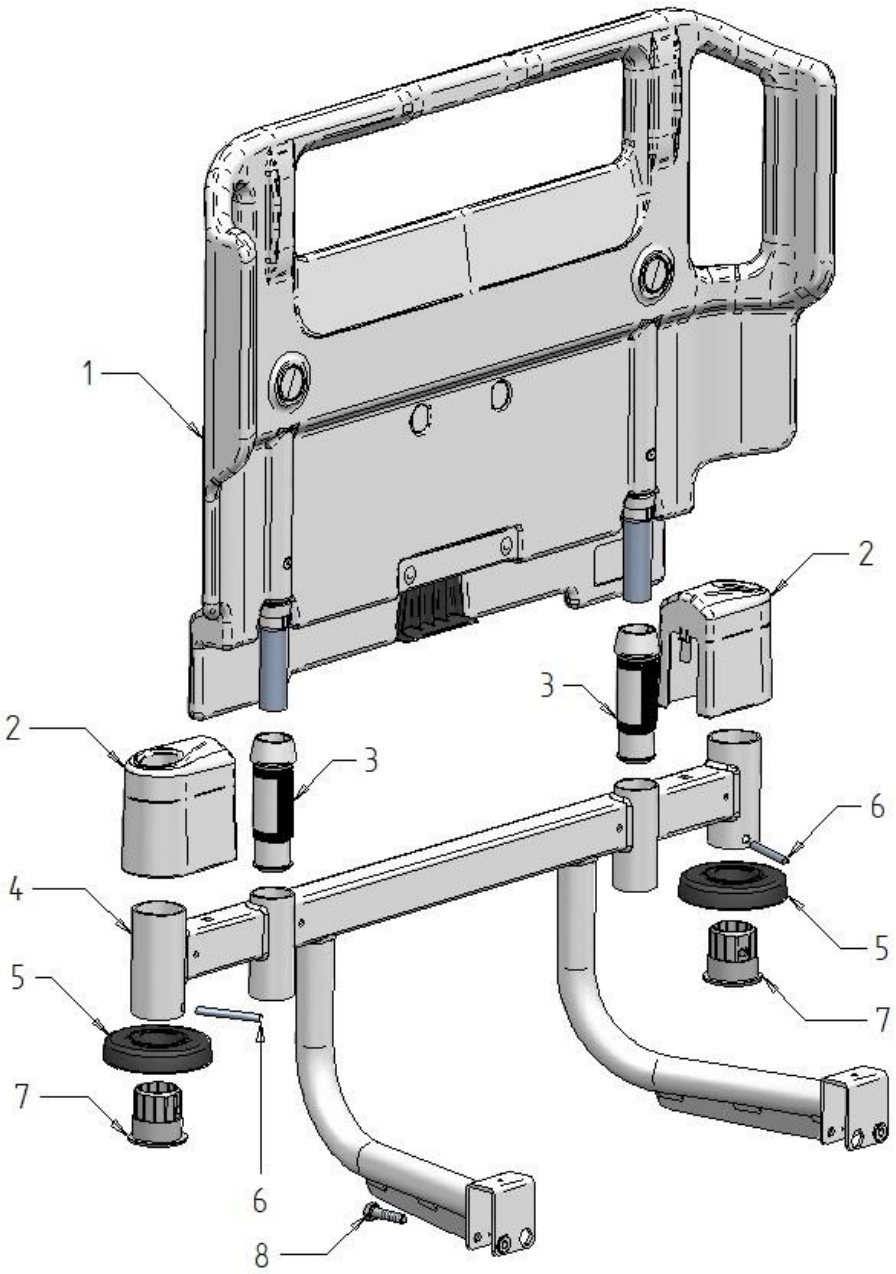
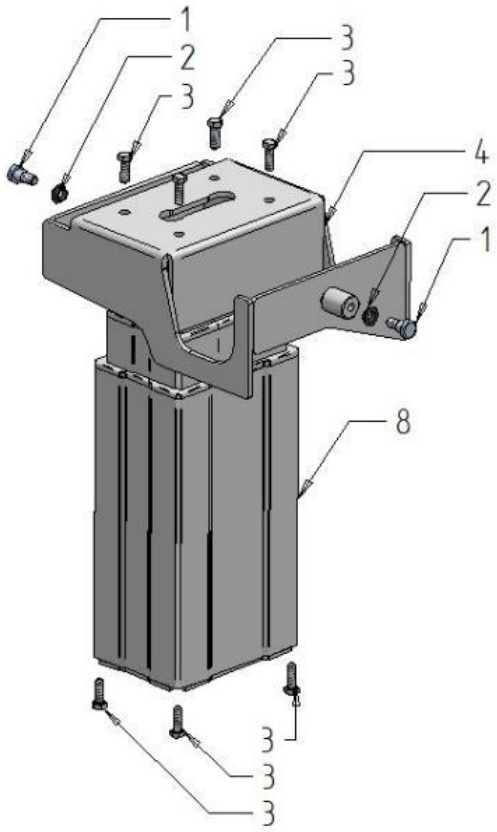
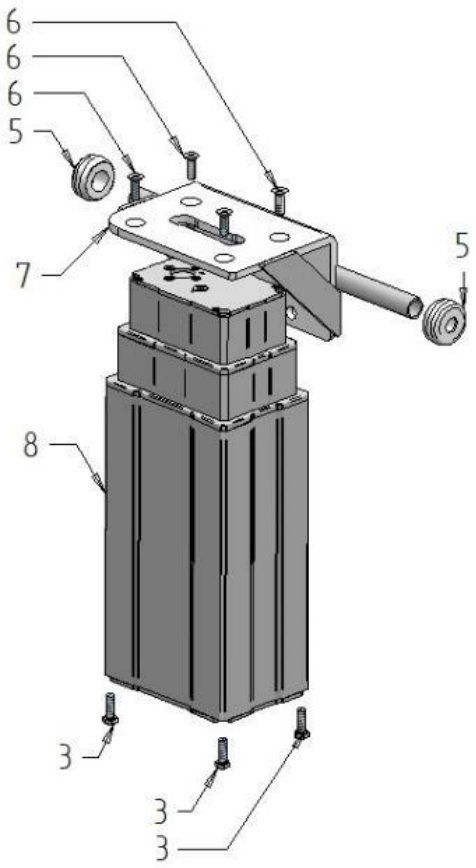
INTERMEDIATE FRAME - mod. 3905 - 3915 - 3965			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
1	826740	Carter cover head side	
2	825698	Backrest shock-absorbing cap	
3	See wiring diagram	Battery	
4	See wiring diagram	ECU	
5	60002417	Control unit sheet metal	
6	85210742013	Self-drilling screw D. 4.2x13	Commercial screw
7	41000219	Intermediate frame	
8	60002051	Cable support plate	
9	41000027	Flap frame	
10	826606	Flap roller	
11	60002049	Cable support plate centre section Dx	
12	834452	Long snap-on plug	
13	834453	Short snap-on plug	
14	861002	Head cap	
15	825441	Knee-break section thickness	
16	826593	Plastic central cover	
17	60002048	Cable support plate left centre section	
18	60002047	Touch-screen box support sheet metal	Only for 3965
19	See wiring diagram	Electronic touch-screen box	Only for 3965
20	866524	Self-lubricating bush	
21	60002085	Sheet metal tilt cover	Only for 3965

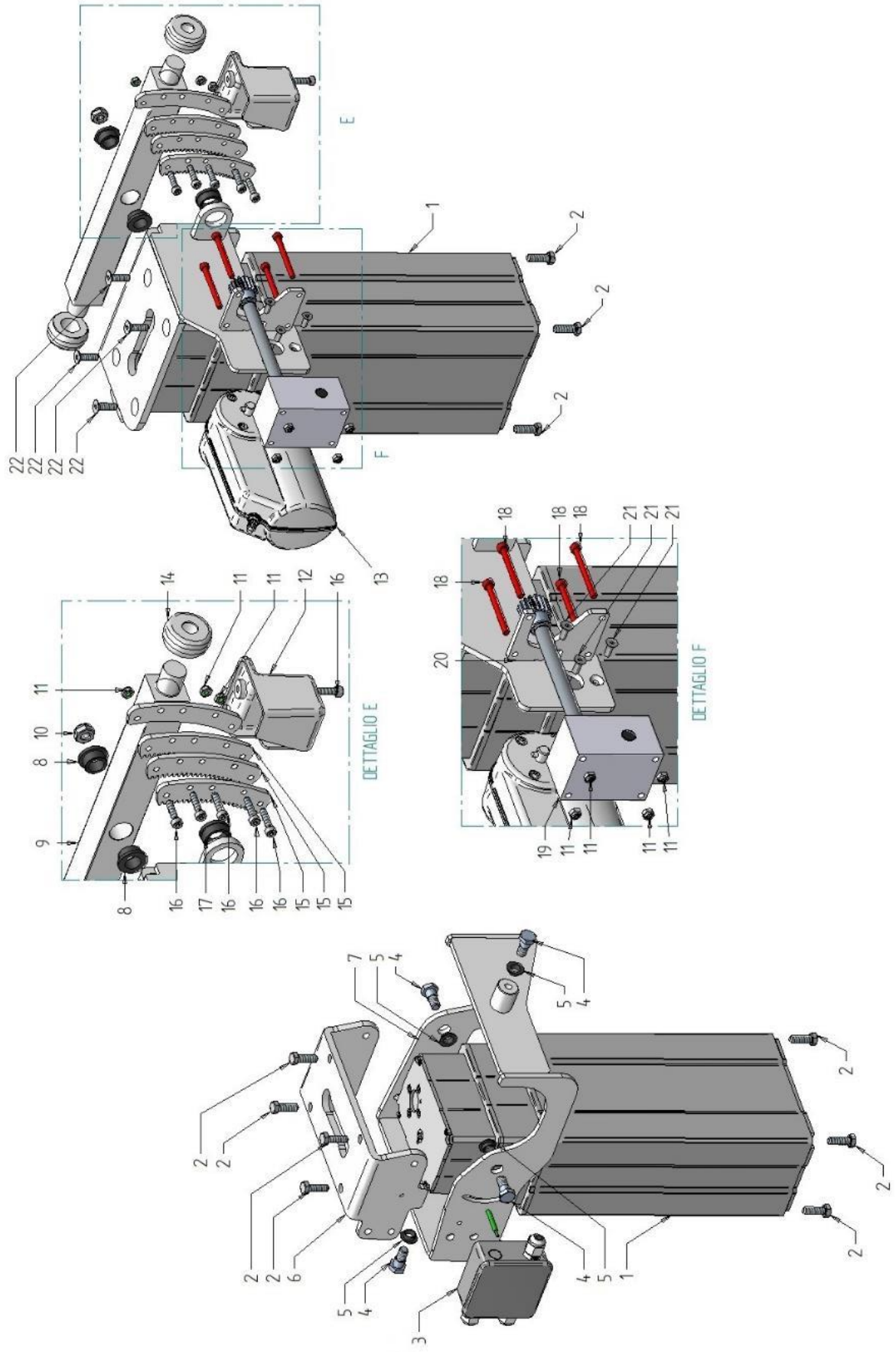


HEADBOARD SUPPORT - mod. 3905 - 3915 - 3965			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
1	49000188	Assembled headboard	
2	826560	Angular cover	
3	825536	Headboard pipe coupling	
4	41000218	Headboard support structure	
5	826563	Bumper wheel	
6	834415	Header socket plug	
7	826562	Bumper wheel coupling	
8	85203110040	M10x40 TE screw	Commercial screw





COLUMNS AND SUPPORTS - mod. 3900 - 3905 - 3910 - 3915			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
1	835287	Pin screw	
2	866523	Self-lubricating bush	
3	-----	Screw supplied with lifting column	
4	41000216	Head-side frame support	
5	825481	Slide roller	
6	85201008025	TSPEI screw M8x25	Commercial screw
7	41000217	Foot-side frame support	
8	See wiring diagram	Lifting column	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DETTAGLIO E
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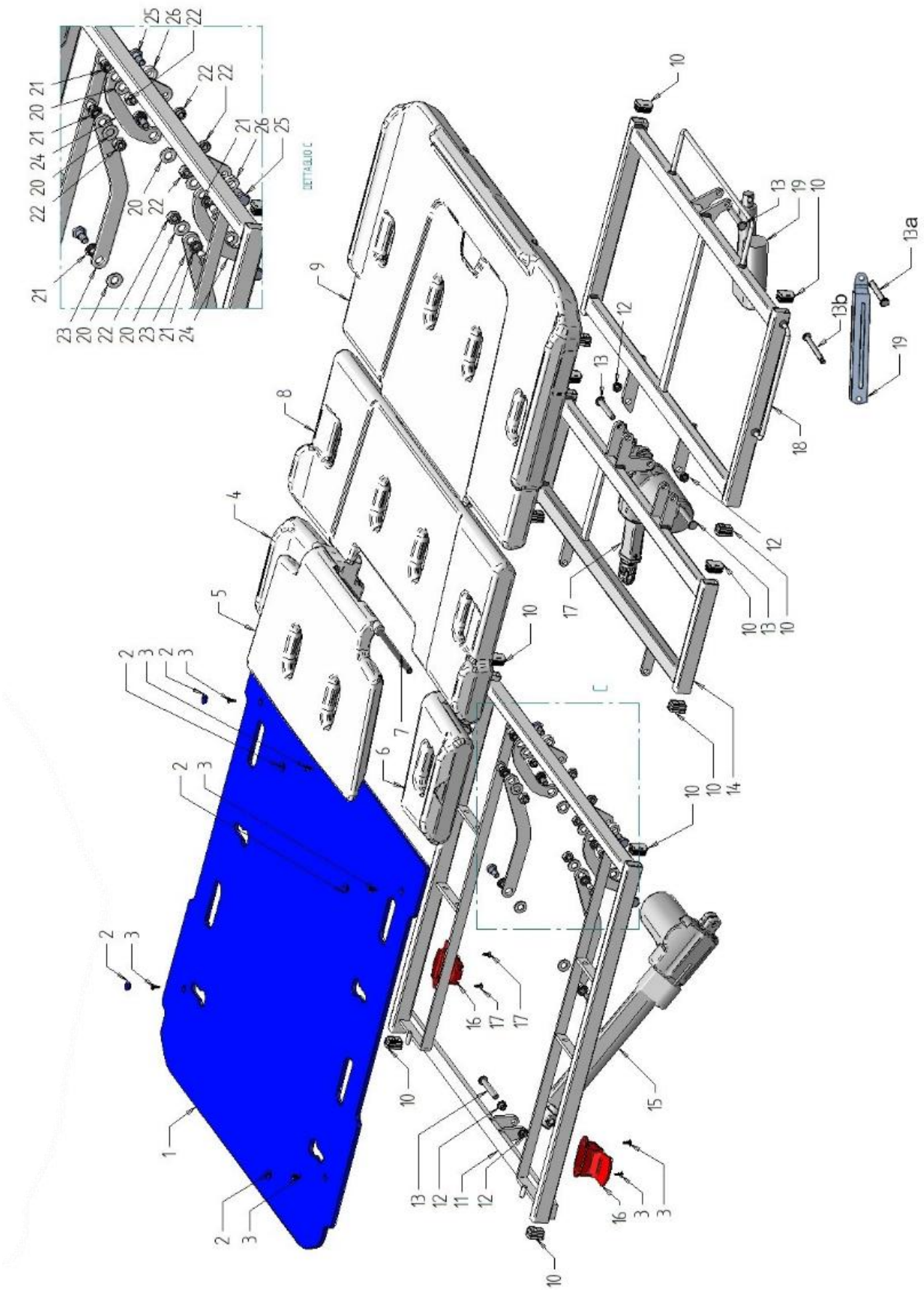
TILT COLUMNS AND SUPPORTS - mod. 3960 - 3965			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
1	See wiring diagram	Lifting column	
2	-----	Screw supplied with lifting column	
3	49000389	Micro tilt box	
4	835287	Pin screw	
5	866523	Self-lubricating bush	
6	60002041	Upper column bracket head side	
7	41000163	Head-side frame support	
8	866045	Self-lubricating bush	
9	41000165	Foot-side frame support	
10	85206610000	Self-locking nut M10	Trade nut
11	85206606000	Self-locking nut M6	Trade nut
12	826747	Gear cover casing	
13	See wiring diagram	Tilt motor	
14	825481	Slide roller	
15	60002083	Rack	
16	85200506025	TCEI screw M6x25	Commercial screw
17	866553	Self-lubricating bush	
18	85200506060	TCEI screw M6x60	Commercial screw
19	871013	Tilt reducer	
20	41000164	Upper column structure on foot side	
21	85201006016	TSPEI screw M6x16	Commercial screw
22	85201008025	TSPEI screw M8x25	Commercial screw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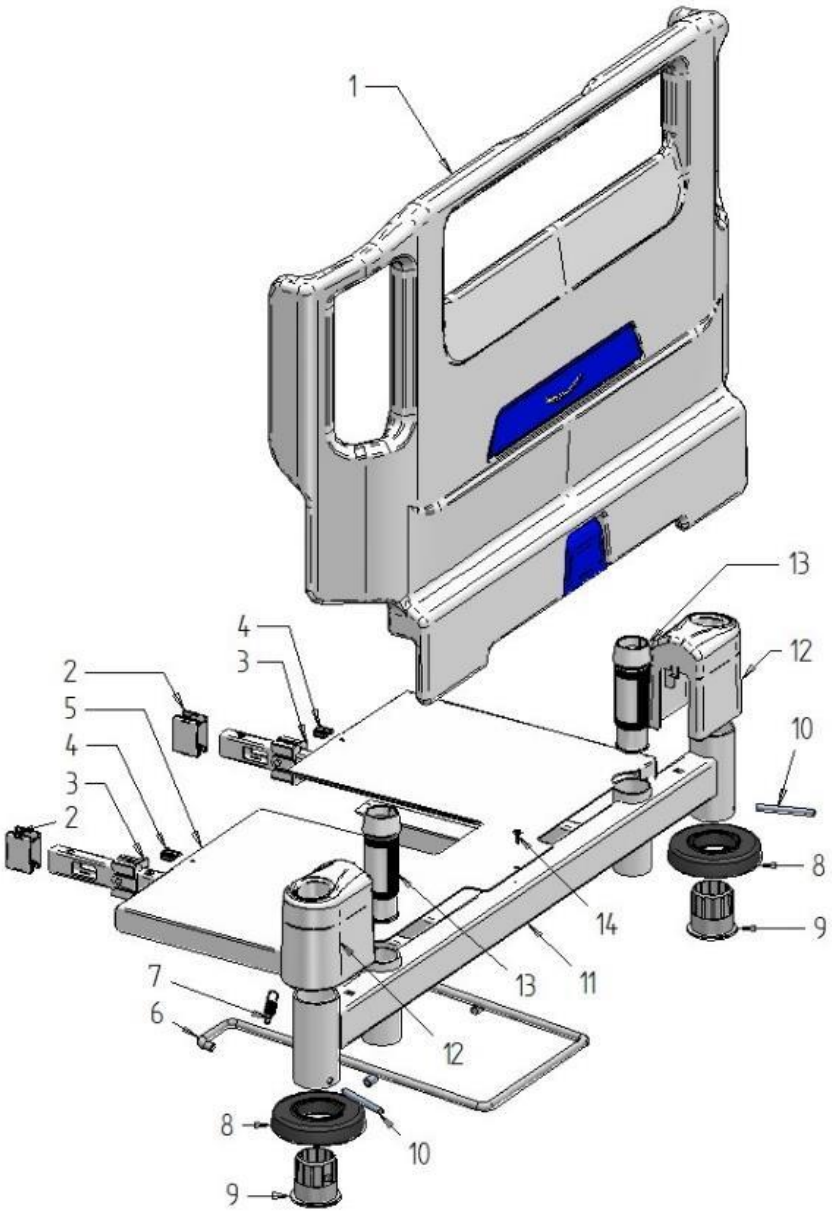
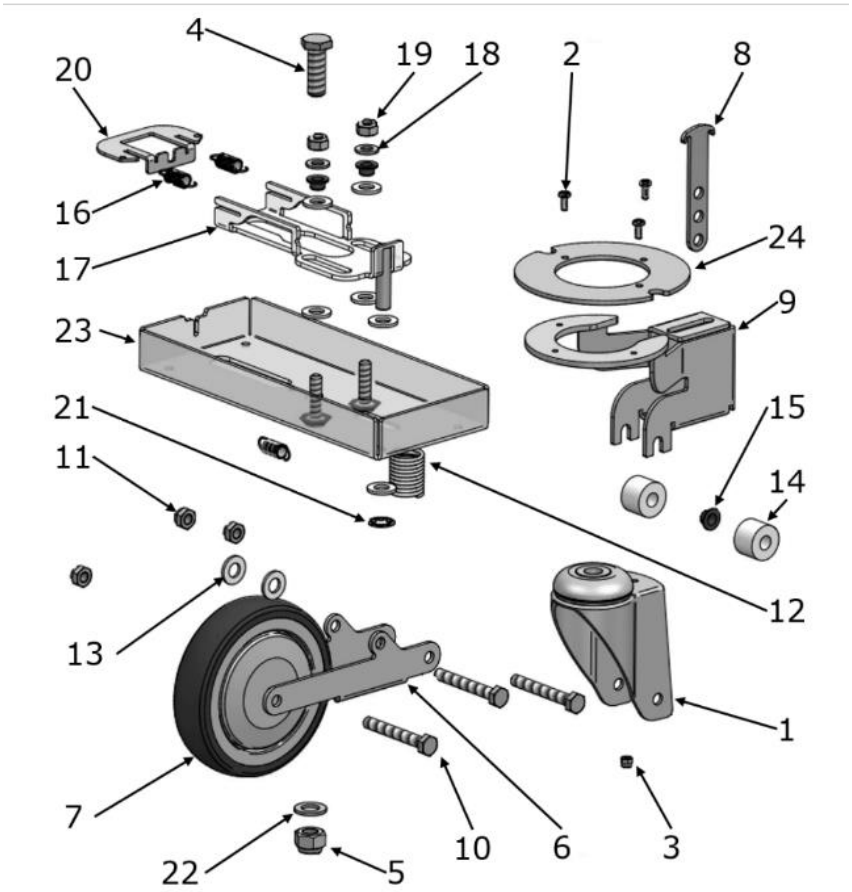
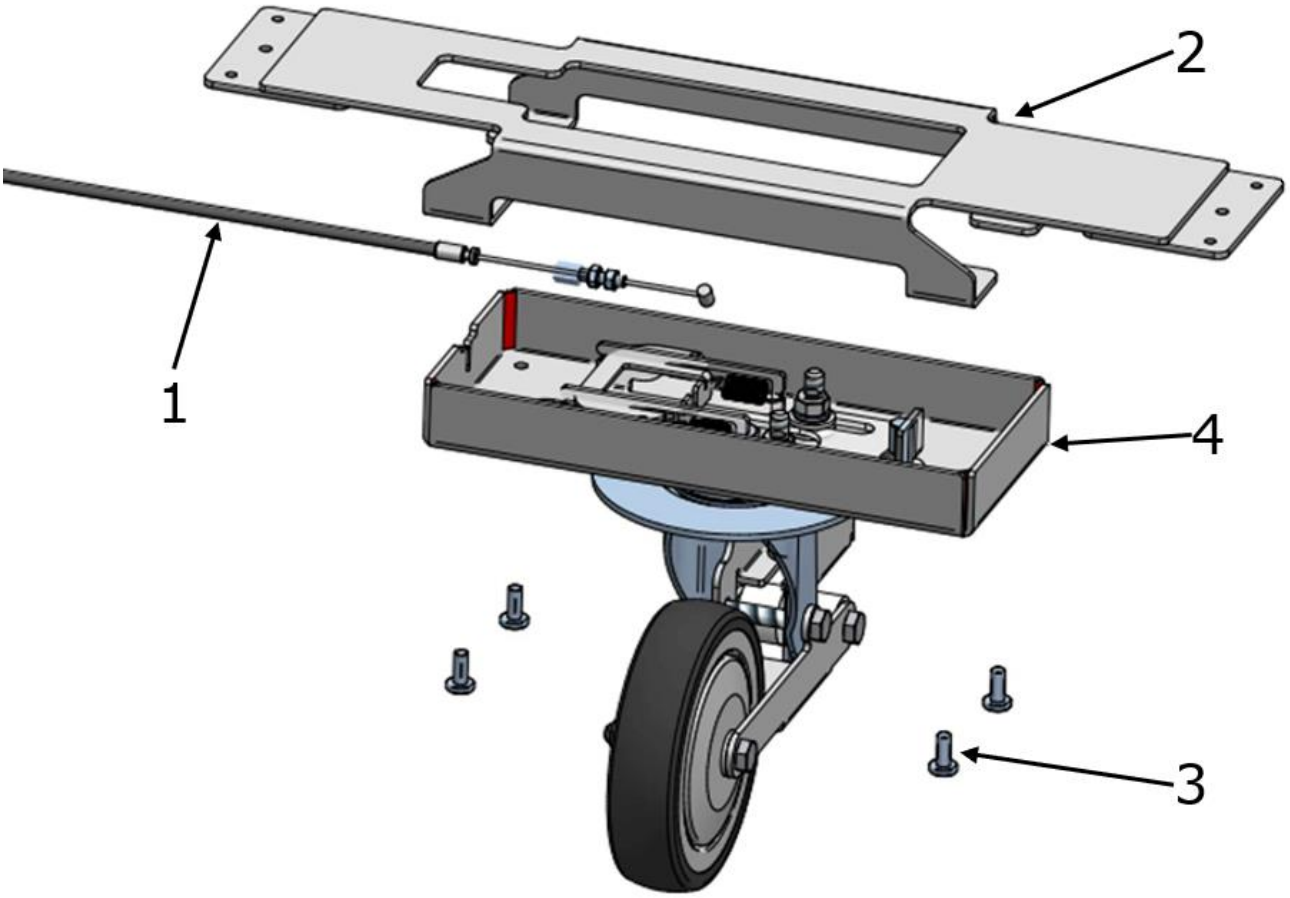
MATTRESS PLATFORMS			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
1	60002409	Laminate backrest	
2	826196	Screw cap	
3	85210742013	Self-drilling screw D. 4.2x13	Commercial screw
4	826591	Fixed section left	
5	826594	Fixed central section	
6	826592	Fixed section right	
7	834471	Fixed centre section plug	
8	826548	Knee-break section panel	
9	826547	Legrest panel	
10	860113	Head cap	
11	41000024	Backrest	
12	866524	Self-lubricating compass	
13	834453	Snap-on plug	
13a	834453	Snap-on plug	Mod. 3900, 3905
13b	834452	Long snap-on plug	Mod. 3900, 3905
14	41000025	Knee-break section	
15	See wiring diagram	Backrest actuator	
16	879129	Quick release handle	
17	See wiring diagram	Knee-break section actuator	
18	41000026	Legrest	
19	866532	Legrest rack	Mod. 3900, 3905
	See wiring diagram	Legrest actuator	Mod. 3910, 3915, 3960, 3965
20	85217112000	Nylon washer M10	Commercial rosette
21	866523	Self-lubricating compass	
22	85206510000	Self-locking nut M10	Trade nut
23	60000723	Long back brace	
24	60000722	Short back brace	
25	835287	Pin screw	
26	826605	Nylon thickness	
	879132	Right-hand backrest release cable	
	879134	SX backrest release cable	



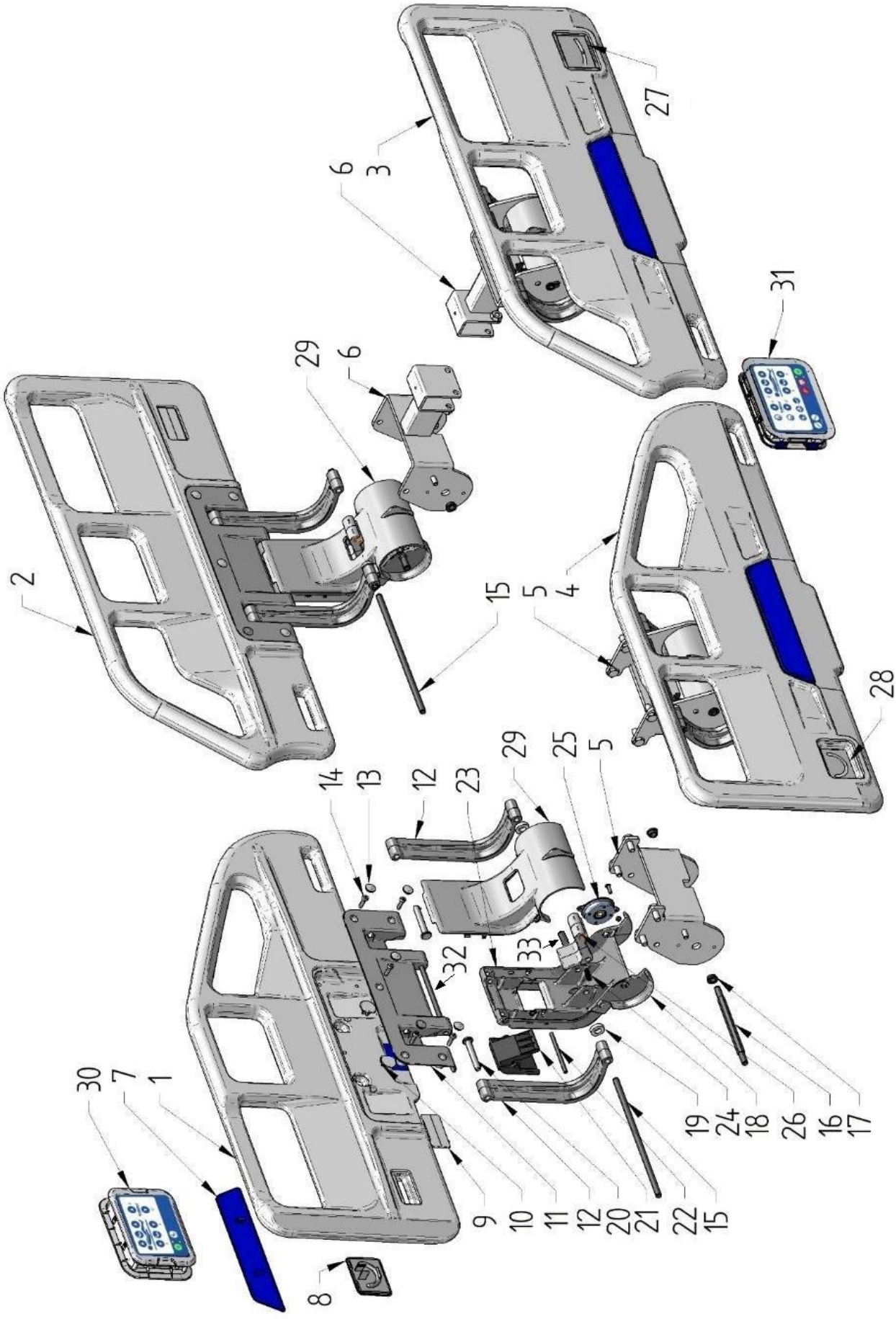
BED LENGTHENER			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
1	49000330	Assembled footboard	
2	826777	Inner skid	
3	826855	External skid	
4	826781	Sheet metal sliding support	
5	60002084	Cover sheet	
6	43000004	Bed lengthener handle	
7	875324	Handle spring	
8	826563	Bumper wheel	
9	826562	Bumper wheel coupling	
10	834415	Cup plug	
11	41000028	Bed lengthener	
12	826560	Angular cover	
13	825536	footboard pipe coupling	
14	85210742013	Self-drilling screw D. 4.2x13	Commercial screw



5th WHEEL – PREMONTAGE COD. 49000368			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
1	60000904	Wheel support	
2	85204304012	Screw M4 x 12	Commercial screw
3	85206504000	M4 nut	Trade nut
4	85203012035	Screw M12 x 35	Commercial screw
5	85206512000	M12 nut	Trade nut
6	44000006	5th wheel support	
7	874134	Wheel	
8	60000418	Guide for spring	
9	50000675	Directional fastening 5th wheel	
10	85203008060	Screw M8 x 60	Commercial screw
11	85206508000	M8 nut	Trade nut
12	875258	Spring	
13	85217110000	Nylon washer	Trade washer
14	825622	Spacer	
15	866065	Plastic compass	
16	875323	Short wheel stop spring	
17	50000471	Wheel lock	
18	85216008000	M8 rosette	Commercial rosette
19	85206608000	M8 nut	Trade nut
20	60002180	Register stop 5th wheel	
21	852246	Elastic fixer D10	
22	85216012000	Washer	Trade washer
23	50000612	Body 5th wheel	
24	60002494	Directional disc 5th wheel	



5th WHEEL - FIXING TO THE BASEMENT COD. 49000385			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
1	879147	Directional wheel control cable	
2	50000651	Fixing plate 5th wheel	
3	85210106014	Screw M6x14	Commercial screw
4	49000368	Pre-assembly 5th modular wheel	See previous assembly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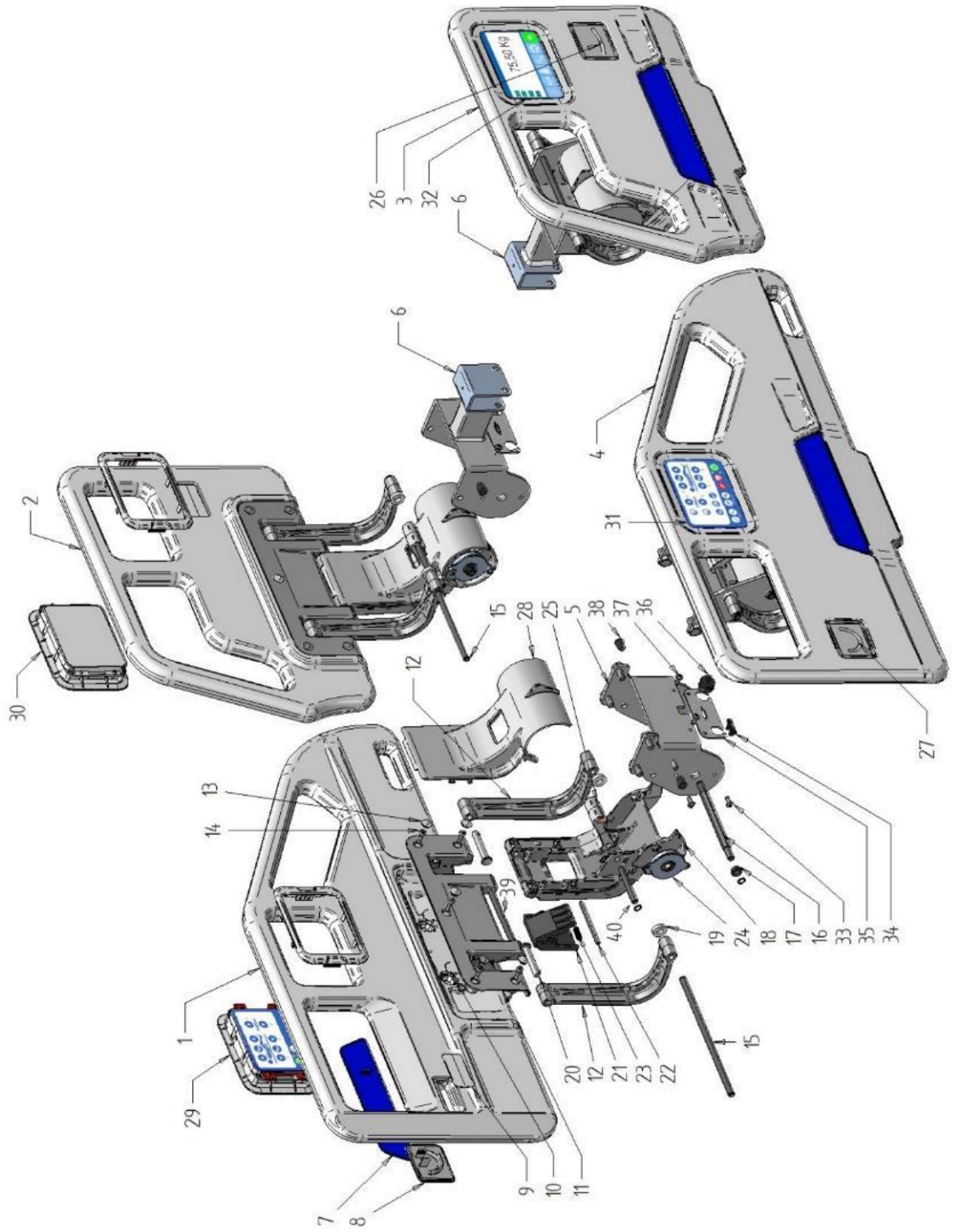
LONG 4-SECTION SIDE RAIL- mod. 3900 - 3905 - 3910 - 3915			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
1	826643	Side rail, left, head side	Side rail 339110
	826703	Side rail, left, head side, electric controls	Side rail 339160
2	826642	Side rail, left, foot side	
3	826574	Side rail, right, foot side	
4	826621	Side rail, right, head side, electric controls	Side rail 339110
	826702	Side rail, right, head side	Side rail 339160
5	41000076	Head rail support	
6	41000075	Foot-side rail support	
7	826604	Outer trim panel	
8	49000159	Left backrest degree indicator	
9	826636	Indicator fixing	
10	826633	Badge fixing	
11	41000069	Inner plate	
12	41000070	Side arm	
13	826196	Screw cap	
14	85200506020	M6 screw	Commercial screw
15	834467	Plug	
16	834482	Hexagonal plug	
17	825400	Compass	
18	41000071	Central arm	
19	825577	Thickness	
20	834453	Plug	
21	826617	Unlocking handle	
22	834466	Plug	
23	41000071	Central arm	
24	875972	Spring	
25	872269	Rotating shock absorber	
26	826618	Hook	
27	490000139	Trend degree indicator	
28	490000158	Right backrest degree indicator	
29	826616	Covering the side rail arm	
30	See wiring diagram	Left-hand side rail controls	Side rail 339160
31	See wiring diagram	Right-hand side rail controls	Side rail 339160
32	834465	Plug for side rail	
33	834473	Plug for side rail hook	



4-SECTOR SHORT RAILS			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
1	826739	Side rail, left, head side, electric controls	Side rail 339175
	826662	Side rail, left, head side	Side rail 339170
2	826736	Side rail, left, foot, electric controls	Mod. 3960, 3965
	826664	Side rail, left, foot side	Mod. 3900 - 3905 - 3910 - 3915
3	826737	Side rail, right, foot side, electric controls	Mod. 3960, 3965
	826663	Side rail, right, foot side	Mod. 3900 - 3905 - 3910 - 3915

4-SECTOR SHORT RAILS			
POS.	**CODE**	**DESCRIPTION**	**NOTES**
4	826738	Side rail, right, head side, electric controls	Side rail 339175
	826661	Side rail, right, head side	Side rail 339170
5	41000076	Head side - side rail support	
6	41000075	Foot-side - side rail support	
7	826604	Outer trim panel	
8	49000159	Left backrest degree indicator	
9	826636	Indicator fixing	
10	826633	Badge fixing	
11	41000069	Inner plate	
12	41000070	Side arm	
13	826196	Screw cap	
14	85200506020	M6 screw	Commercial screw
15	834467	Plug	
16	834482	Hexagonal plug	
17	825400	Compass 15-10	
18	41000071	Central arm	
19	825577	Thickness	
20	834453	Plug	
21	826617	Unlocking handle	
22	834466	Plug	
23	875972	Spring	
24	872269	Rotating shock absorber	
25	826618	Hook	
26	490000139	Trend grade indicator	
27	490000158	Right backrest degree indicator	
28	826616	Covering the side rail arm	
29	880620	Left-hand side control box	Mod. 3900 - 3905 - 3910 - 3915
	880646	Left-hand side control box for nurse call	Mod. 3900 - 3905 - 3910 - 3915
	880666	Left-hand side control box - tilt	Mod. 3960 - 3965
	880682	Left-hand side control box nurse call - tilt	Mod. 3960 - 3965
30	See wiring diagram	Touch screen box	Mod. 3960 - 3965
31	880613	Right-hand side control box	Mod. 3900 - 3905 - 3910 - 3915
	880645	Right-hand side control box for nurse call	Mod. 3900 - 3905 - 3910 - 3915
	880665	Right-hand side control box - tilt	Mod. 3960 - 3965
	880681	Right-hand side control box for nurse call - tilt	Mod. 3960 - 3965
32	See wiring diagram	Touch screen box	Mod. 3960 - 3965
33	85210106014	M6 screw	Commercial screw
34	See wiring diagram	Photosensor	Mod. 3960 - 3965
35	60001653	Sheet metal photosensor	Mod. 3960 - 3965
36	865005	Wire lock	Mod. 3960 - 3965
37	85210106014	M6 screw	Mod. 3960 - 3965 Commercial screw
38	861300	Rubber limit switch	
39	834465	Plug for side rail	
40	834473	Plug for side rail hook	

12 WARNINGS CONCERNING ELECTROMAGNETIC INTERFERENCE

The essential features of the **ARIA** range beds are:

- The manual lowering, by means of a mechanical release, of the backrest for resetting the mattress platform in emergency situations, thus allowing the CPR manoeuvre;
- Reaching the emergency Trendelenburg position is ensured by periodic and strict checks on the functioning of the lifting actuators and the specific buttons for reaching this position;
- Correct functioning of the battery charge status indicators;
- The structural mechanical seal of the device is guaranteed by tests carried out according to the standard.

Experimental evidence has shown that electromagnetic disturbances due to the environment or other nearby electromedical equipment do not influence and degrade the functionality of the indicated performance.

WARNING: Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

WARNING: Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

WARNING: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the of the ARIA Range medical bed, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

The EMISSIONS characteristics of this equipment hospitals (CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment.

12.1 List of cables and their lengths

The cables that can electromagnetically affect the medical device are mainly the power cables of the control unit.

The dimensions of the cables must be as follows:

- spiral part max. 600 ± 30 mm
- straight part max. 1200 ± 50 mm
- total dimension of unstretched cable max 1800 ± 80 mm.

12.2 Guidelines and manufacturer's declaration

Electromagnetic emissions		
The equipment is intended for use in a specified electromagnetic environment. The purchaser or the end user of the product must ensure that it is used in an electromagnetic environment as described below		
Emissions testing	**Compliance**	**Electromagnetic environment**
RF emissions CISPR 11	Group 1	The medical device uses RF energy only for its internal operation. Therefore, the RF emission is very low and is not likely to cause any interference to nearby electronic equipment.
RF emissions CISPR 11	Class A	The medical device is suitable for use in all non-domestic environments and in environments directly connected to the low-voltage network supplying buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Compliant	

Electromagnetic immunity			
The equipment is intended for use in a specified electromagnetic environment. The purchaser or the end user of the product must ensure that it is used in an electromagnetic environment as described below			
Immunity tests	**Test level EN60601-1-2**	**Compliance level**	**Electromagnetic environment**
Electrostatic discharge (ESD) IEC 61000-4-2	8kV contact 2/4/8/15 KV in air	EN60601-1-2 Test level	Floors should be made of wood, concrete or ceramic tiles. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Radiated electromagnetic field IEC 61000-4-3	3 V/m 80 MHz to 2.7 GHz	EN60601-1-2 Test level	Portable and mobile RF communication systems should not be used in the vicinity of any part of the equipment, including cables and wires. Minimum permissible distance 30 cm (12 inches).
Fast electric trains/trains IEC 61000-4-4	2kV for power supply lines	EN60601-1-2 Test level	The mains voltage quality should be that of a typical commercial or hospital environment.
Pulses IEC 61000-4-5	0.5/1 KV differential mode 0.5/2 KV common mode	EN60601-1-2 Test level	The mains voltage quality should be that of a typical commercial or hospital environment.
Duct disturbances due to RF fields IEC 61000-4-6	3V 150 kHz to 80 MHz 6V ISM frequencies	EN60601-1-2 Test level	Portable and mobile RF communication systems should not be used in the vicinity of any part of the equipment, including cables and wires. Minimum permissible distance 30 cm (12 inches).
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	10 ms - 0% at 0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°. 20 ms - 0% at 0° 500 ms - 70% at 0° 5 s - 0%	EN60601-1-2 Test level	The mains voltage quality should be that of a typical commercial or hospital environment. If the user of the appliance requires continuous operation even when the mains voltage is interrupted, it is recommended that the appliance be powered by an uninterruptible power supply or batteries.
Magnetic fields at mains frequency (50/60Hz) IEC 61000-4-8	30 A/m 50 Hz or 60 Hz	EN60601-1-2 Test level	Mains frequency magnetic fields should have levels characteristic of a typical location in a commercial or hospital environment.

Frequency Range and Level: RF wireless communication EQUIPMENT **Frequency range and level: RF wireless communication equipment**			
Test Frequency (MHz)	**Modulation**	**Minimum IMMUNITY Level**	**Test Frequency (MHz)**
385	**Pulse Modulation: 18 Hz	27	27
450	☐ FM ± 5 Hz deviation: 1 KHz sine ☑ **Pulse Modulation: 18 Hz	28	28
710 745 780	**Pulse Modulation: 217 Hz	9	9
810 870 930	**Pulse Modulation: 18 Hz	28	28
1720 1845 1970	**Pulse Modulation: 217 Hz	28	28
2450	**Pulse Modulation: 217 Hz	28	28
5240 5500 5785	**Pulse Modulation: 217 Hz	9	9

12.3 Maintenance

To guarantee the basic safety and the essential performance defined in relation to electromagnetic disturbances it is necessary to perform the normal routine and extraordinary maintenance as indicated in specific chapters of this manual and follow the warnings indicated in this chapter.

13 CONFORMITY

This product is a Medical Device that meets all applicable provisions and general safety and performance requirements (Annex I) of the Regulation (EU) 2017/745 about Medical Devices.

The Medical Device is also manufactured in accordance with the following Technical Standards (for applicable points):
- CEI EN 60601-1 (CEI 62-5)
- CEI EN 60601-1-2 (CEI 62-50)
- UNI CEI EN 60601-2-52 (CEI 62-161)

It is therefore declared that the device in question will be placed on the market with the CE marking, in accordance with the provisions of the Regulation (EU) 2017/745 about Medical Devices.

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FURNITURE FOR HEALTHCARE FACILITIES