

Art. N 505-170	HYDRAULIC PATIENT LIFTER WITH ADJUSTABLE BASE Max Load 170 Kg
Art. N 515-150	ELECTRIC PATIENT LIFTER WITH ADJUSTABLE BASE Max Load 150 Kg
Art. N 705-200	HYDRAULIC PATIENT LIFTER WITH ADJUSTABLE BASE Max Load 200 Kg
Art. N 715-170	ELECTRIC PATIENT LIFTER WITH ADJUSTABLE BASE Max Load 170 Kg
Art. N 715-200	ELECTRIC PATIENT LIFTER WITH ADJUSTABLE BASE Max Load 200 Kg
Art. N 815-170	ELECTRIC PATIENT STANDING HOIST WITH ADJUSTABLE BASE Max Load 170 Kg - Arm N 7951
Art. N 815-200	ELECTRIC PATIENT STANDING HOIST WITH ADJUSTABLE BASE Max Load 200 Kg - Arm N 7951
Art. N 825-170	ELECTRIC PATIENT STANDING HOIST WITH ADJUSTABLE BASE Max Load 170 Kg - Arm N 7952
Art. N 825-200	ELECTRIC PATIENT STANDING HOIST WITH ADJUSTABLE BASE Max Load 200 Kg - Arm N 7952

## Mobile Patient Lifters / Patient Standing Hoists Gemini Series Instruction Manual

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**CE** Medical Device Class I  
EC Directive 93/42 - D. Legislative Decree no. 46 24 /02/1997

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## Preface

### Dear Customer

The KSP Italia srl is pleased to introduce this product to its Customers and is confident that the quality of this product fully meets Your expectations.

Comfortable, practical and extremely functional, the universal mobile GEMINI series patient lifters/standing hoists products from KSP Italia srl, allow the use of special accessories, lifting or hoisting of older people and people with disabilities with maximum stability and ease of use for operators.

This operation and maintenance manual together with the instructions given on the label, constitute the information provided by the manufacturer in accordance with directive 93/42/EEC.

Each device must be accompanied by the necessary information to ensure safe use considering the training and knowledge of the potential users.

This manual is an integral part of the medical device, it should be kept with extreme care and is addressed to users, the owner, safety managers, users and maintainers.

This manual is written considering the characteristics, knowledge, cultural level and training of the user.

The user should have the following characteristics:

- Ability to assess situations and dangerous act in a calm and reflective way
- Good knowledge of both spoken and written in the English language
- Knowledge of the meaning of symbols and markings

It provides information, technical specifications, on the correct use of the device, the modes of transport, storage, maintenance, disposal and on arrangements for the related safety.

Changes to the instructions supplied by the manufacturer that have importance for the safety of the patient or user, will be promptly communicated to the owners of the product. Any other modification and/or integration are excluded from the notification obligation.

If this manual or the labels and/or markings on the product are damaged even if only partially, faded, not readable in their parts or entirely, you should immediately ask for a copy to your dealer or the manufacturer.

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## KSP declares and guarantees

The products described below:

CODE	NAME
Art. N 505-170	HYDRAULIC PATIENT LIFTER WITH ADJUSTABLE BASE MAX. LOAD 170 Kg
Art. N 515-150	ELECTRIC PATIENT LIFTER WITH ADJUSTABLE BASE MAX. LOAD 150 Kg
Art. N 705-200	HYDRAULIC PATIENT LIFTER WITH ADJUSTABLE BASE MAX. LOAD 200 Kg
Art. N 715-170	ELECTRIC PATIENT LIFTER WITH ADJUSTABLE BASE MAX. LOAD 170 Kg
Art. N 715-200	ELECTRIC PATIENT LIFTER WITH ADJUSTABLE BASE MAX. LOAD 200 Kg
Art. N 815-170	ELECTRIC PATIENT STANDING HOIST WITH ADJUSTABLE BASE MAX. LOAD 170 Kg - Arm N 7951
Art. N 825-170	ELECTRIC PATIENT STANDING HOIST WITH ADJUSTABLE BASE MAX. LOAD 170 Kg - Arm N 7952
Art. N 815-200	ELECTRIC PATIENT STANDING HOIST WITH ADJUSTABLE BASE MAX. LOAD 200 Kg - Arm N 7951
Art. N 825-200	ELECTRIC PATIENT STANDING HOIST WITH ADJUSTABLE BASE MAX. LOAD 200 Kg - Arm N 7952

## KSP declares and guarantees

- that they are classified as class I medical devices as in Annex IX. Directive 93/42/EEC (transposed with Leg. Dec. 46/97),
  - that they are in accordance with the provisions of Directive 93/42/CEE "Medical devices" and meet the essential requirements set out in Annex I, Directive 93/42/
  - the conformity for the purposes of affixing of the CE marking and evaluated according to the procedure laid down in Annex VII, Directive 93/42/
- The A4034 model also meets the requirements of the following standards:
- ISO EN 60601-1: Electromedical apparatus: general safety rules
  - ISO EN 60601-1-2: Electromedical apparatus: Electromagnetic Compatibility
  - ISO EN 60601-2-38: Particular requirements for electrically operated hospital beds.

Such devices are published regularly in the Medical Equipment Index issued by the Ministry of Health such as DM February 20, 2007 and DM 30 March 2007. All products are constructed according to the characteristics required by current regulations for on the job safety, with particular reference to the Safety Consolidated Act, Leg. Dec. 81/08 and as amended.

Legal Representative  
Claudio Emanuelli

\_\_\_\_\_

## 1. Description and characteristics of the product

### 1.1 Intended use

The mobile GEMINI series patient lifters/standing hoists are intended to be used at home, hospital, or in the community as an axillary medical equipment to assist in the lifting/hoisting and transfer of older people and people with disabilities with maximum stability and ease of use for operators.

The lifters themselves are of general use; the model, the optional items, accessories must be selected by the user and/or from the medical staff as a function of their need.

The mobile lifters must be used by only one person.

Other uses that are different from those above are excluded.

### 1.2 Product Description

The mobile GEMINI series patient lifters/standing hoists have the following characteristics:

- Structure is made from a steel pipe with differentiated sections having a high mechanical resistance.
- In the electric version the usable upper arms are moved by an 24 AC electric actuator controlled manually with a button. For the procedures of use please see sections 4.2 and 4.2.1
- Interchangeable feeding battery by current transformer. For charging procedures see section 3.1.2.
- Emergency Button located on the Controller, which allows the immediate shutdown of the movements. For procedures of use please see section 4.2 and 4.2.1
- In the hydraulic version, which allows for the function of raising only weights of up to 160 Kg., the raising and lowering movement of the arm occurs through a manually operated hydraulic pump by a side control and exhaust valve lever. For the procedures of use see section 4.1.
- The movement of the GEMINI is entrusted to a thrust handle, with antitrauma rounded corners, located on the upper part of the backbone and four swivel casters, the two rear Ø 100 mm. equipped with an independent brake locking system, with the front Ø 80 mm. swivel.  
For procedures of use see section 5.8.
- Based on movable arms that are adjustable in three positions by a central control lever connected to the base of the lifter. Adjustable opening from 630 mm to 1050 mm. For procedures of use see section 4.6 .

Completing the standard version, we have the sling model type version of the GEMINI selected (lifter or hoist), and usage weight (Kg. 160 - 200). The slings are made of a woven polypropylene/polyethylene, network structure, antiallergic, non-toxic, washable, permeable and easily to dry.

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## 1. | Description and characteristics of the product

### 1.3 Average Life

The life of the product is estimated based on experience to be at least 10 years.

In the case of very intensive use it is recommended to reduce the estimated times for the periodic inspections specified in paragraph 5.1.

### 1.4 Finishing

The surface finish of the paintwork is obtained with degreasing and powder coat paint finish dried in a heat tunnel at 180 +220 °C. All the chrome parts are treated in a chromium plating bath with quality furnishing.

## 1. Description and characteristics of the product

### 1.5 Legend of components

- 1) Handle
- 2) Support column
- 3) Opening/closing arms lever
- 4) Base structure
- 5) Exhaust valve for lowering
- 6) Hydraulic Pump
- 7) Control Lever for raising
- 8) Arm lift with balancer



Fig. 1

**Art. GEMINI N 505-170**  
Lifter version – Max. Load 170 Kg.



## 1. Description and characteristics of the product

- 1) Lifting acuator (Kg. 150) with a device for emergency lowering
- 2) Handle
- 3) Control keypad
- 4) Dewert control unit with device for emergency lowering
- 5) Opening/closing arms lever
- 6) Base structure
- 7) Support column
- 8) Removable Battery
- 9) Lift Arm with balancer

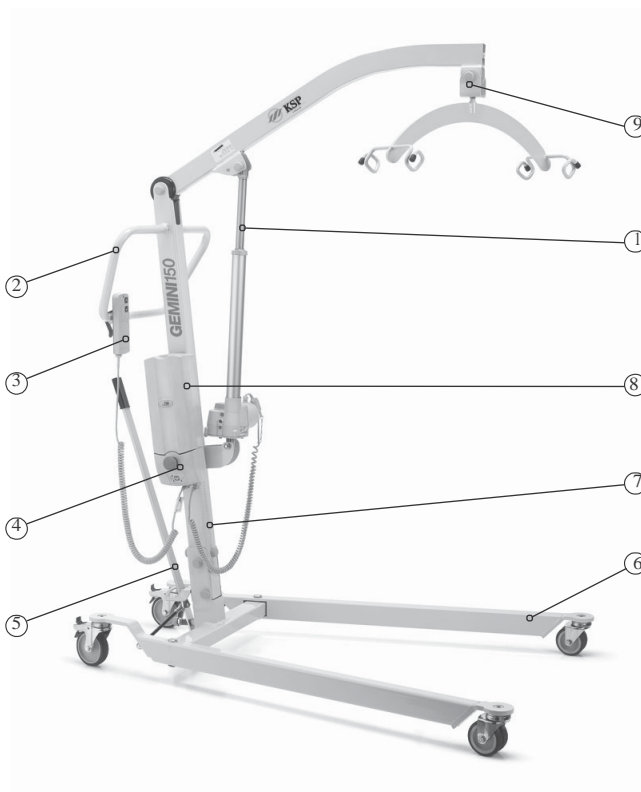


Fig. 2

**Art. GEMINI N 515-150**  
Lifter version – Max. Load 150 Kg

## 1. Description and characteristics of the product

- 1) Handle
- 2) Support column
- 3) Opening/closing arms lever
- 4) Base structure
- 5) Exhaust valve for lowering
- 6) Hydraulic Pump
- 7) Control Lever for raising
- 8) Lift Arm with balancer



Fig. 3

**Art. GEMINI N 705-200**  
Lifter version – Max. Load 200 Kg

## 1. Description and characteristics of the product

- 1) Lifting actuator with a device for emergency lowering
- 2) Handle
- 3) Control keypad
- 4) Dewert central unit with device for emergency lowering
- 5) Opening/closing arms lever
- 6) Base structure
- 7) Support column
- 8) Removable Battery
- 9) Lift Arm with balancer

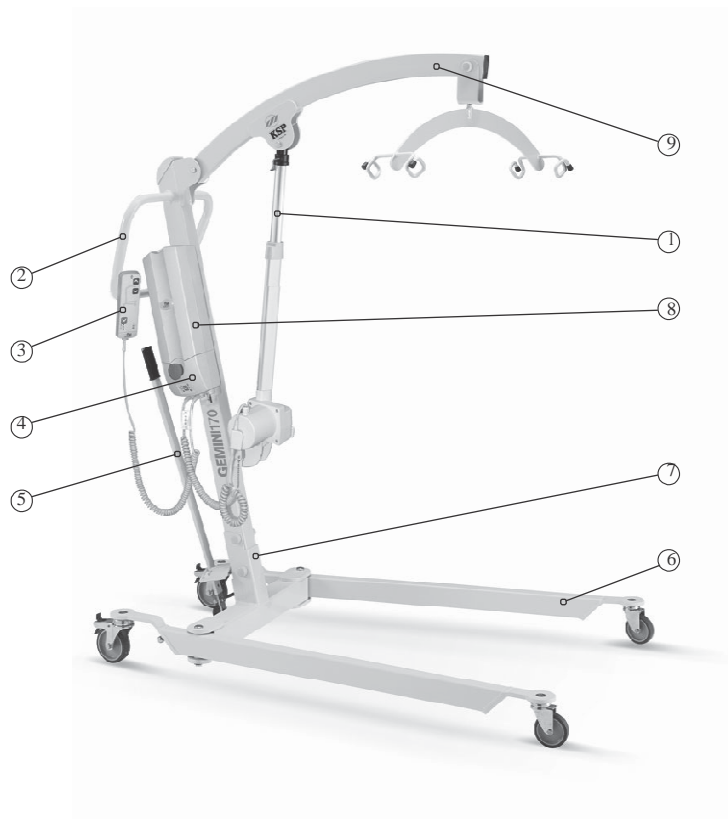


Fig. 4

**Art. GEMINI N 715-170**  
Lifter version – Max. Load 170 Kg

## 1. Description and characteristics of the product

- 1) Handle
- 2) Removable Battery
- 3) Control keypad
- 4) Linak control unit with device for emergency lowering
- 5) Opening/closing arms lever
- 6) Base structure
- 7) Support column
- 8) Lifting actuator (Kg. 200)
- 9) Lift Arm with balancer



Fig. 5

**Art. GEMINI N 715-200**  
Lifter version – Max. Load 200 Kg

## 1. Description and characteristics of the product

- 1) Lifting actuator with a device for emergency lowering
- 2) Handle
- 3) Control keypad
- 4) Dewert control unit with device for emergency lowering
- 5) Opening/closing arms lever
- 6) Base structure
- 7) Support column
- 8) Removable Battery
- 9) Legs support footboard/toggle
- 10) Hoisting arm (N 7951)
- 11) Hoisting arm (N 7952)

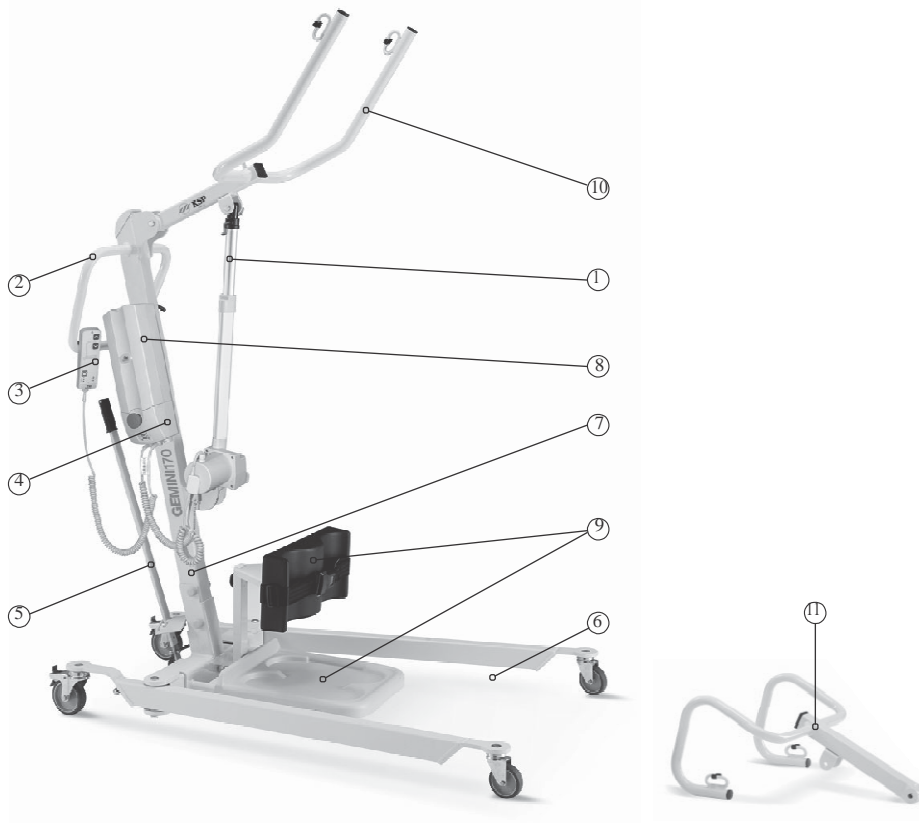


Fig. 6

Art. GEMINI N 815-170 (ARM N 7951)

Art. GEMINI N 825-170 (ARM N 7952)

Standing hoist version – Max. Load 170 Kg

## 1. Description and characteristics of the product

- 1) Handle
- 2) Removable Battery
- 3) Control keypad
- 4) Linak control unit with device for emergency lowering
- 5) Opening/closing lever
- 6) Support column
- 7) Base structure
- 8) Legs support footboard/toggle
- 9) Lifting actuator (Kg. 200)
- 10) Hoisting arm (N 7951)
- 11) Hoisting arm (N 7952)

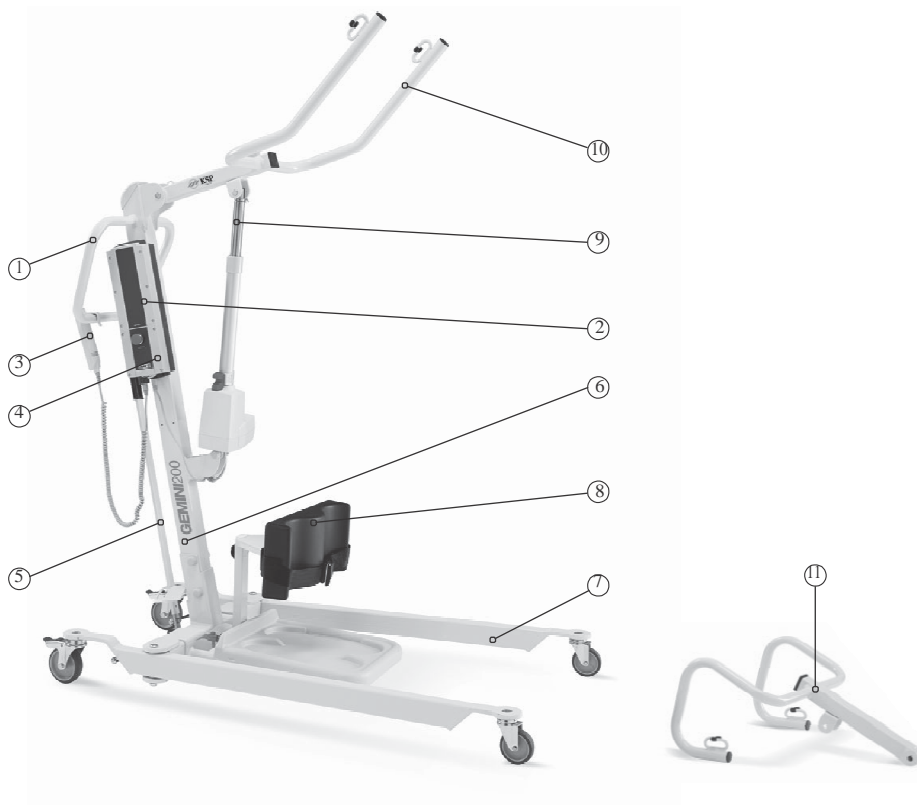


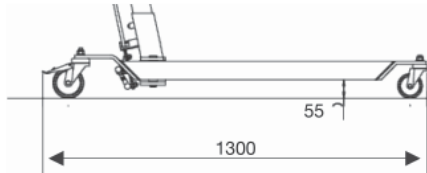
Fig. 7

Art. GEMINI N 815-200 (arm N 7951)  
Art. GEMINI N 825-200 (arm N 7952)  
Standing hoist version – Max. Load 200 Kg

# 1. Description and characteristics of the product

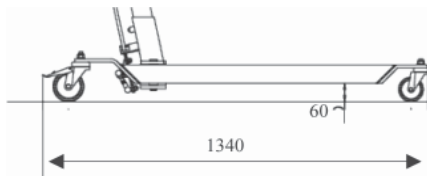
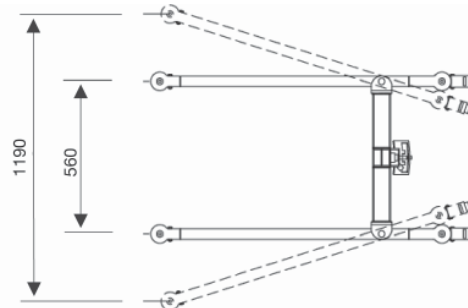
## 1.6 Characteristics of the product

### Dimensions of the adjustable base GEMINI



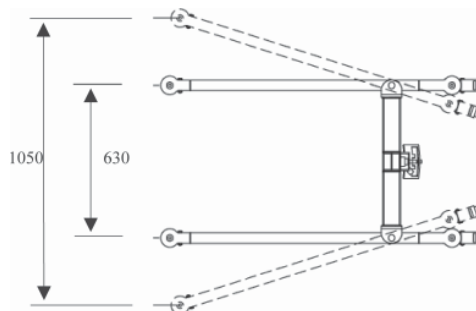
**Model N 500**

Fig. 8



**Model N 700 - N 800**

Fig. 9



# 1. Description and characteristics of the product

## GEMINI N 505-170

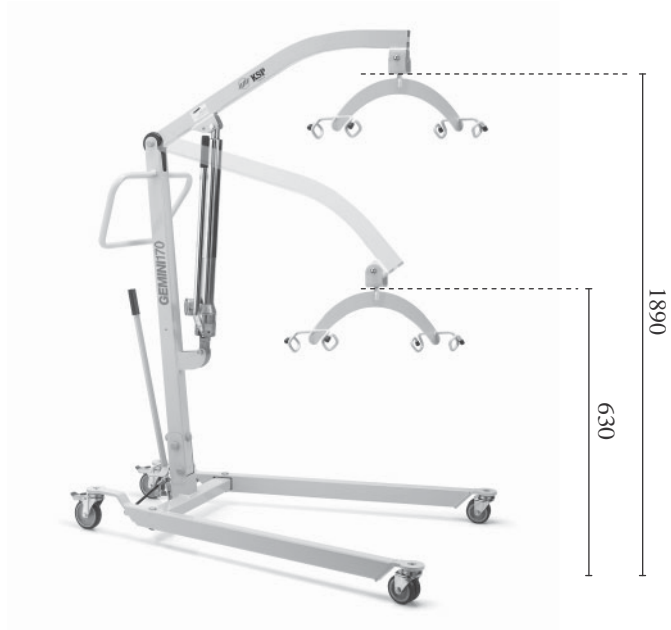


Fig. 10

## GEMINI N 515-150

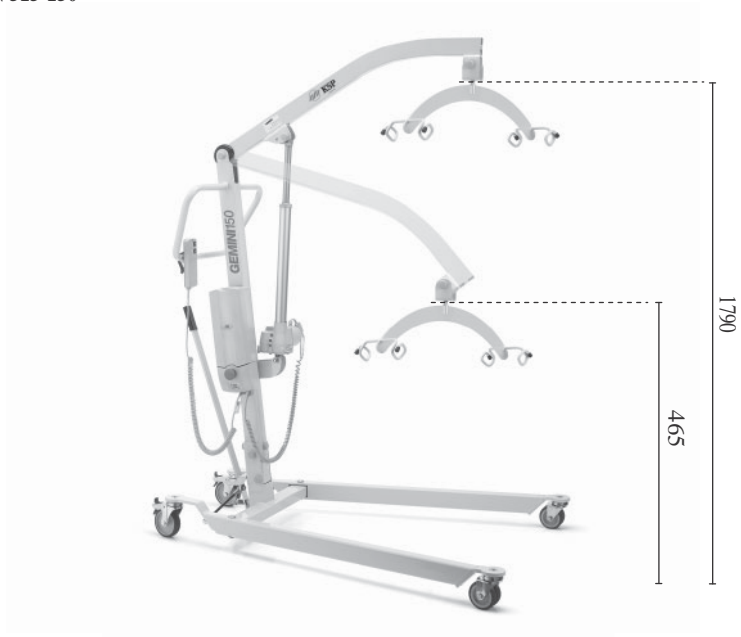


Fig. 11



# 1. Description and characteristics of the product

## GEMINI N 705-200



Fig. 12

## GEMINI N 715-170

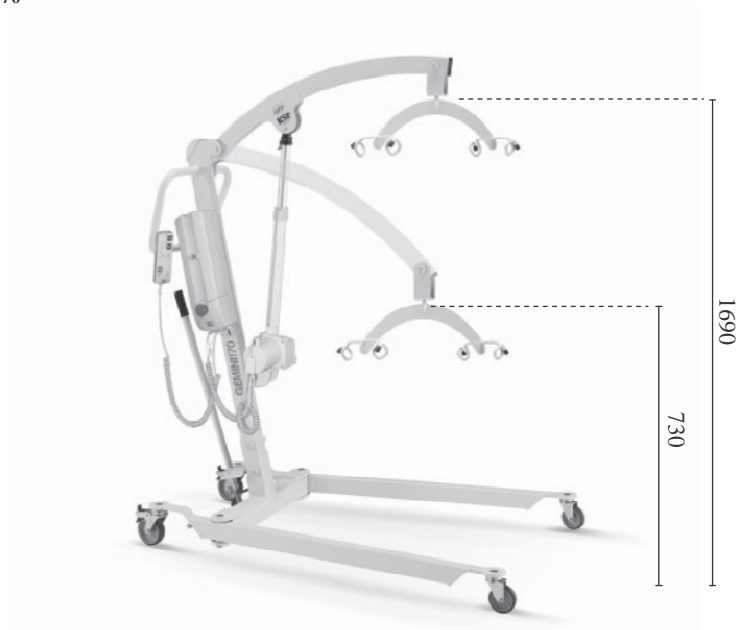


Fig. 13

# 1. Description and characteristics of the product

GEMINI N 715-200



Fig. 14

# 1. Description and characteristics of the product

**GEMINI N815-170**  
(with arm N 7951)

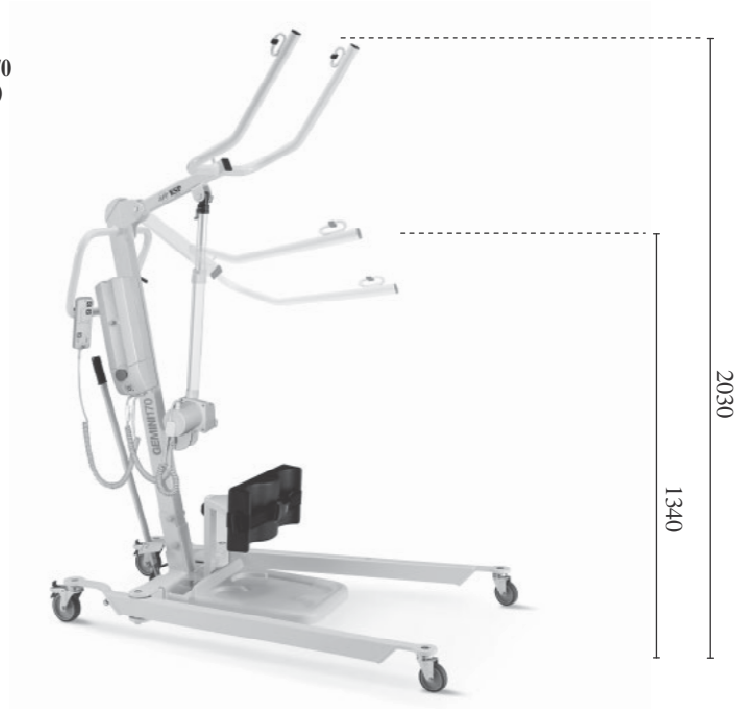


Fig. 15

**GEMINI N 815-200**  
(with arm N 7951)

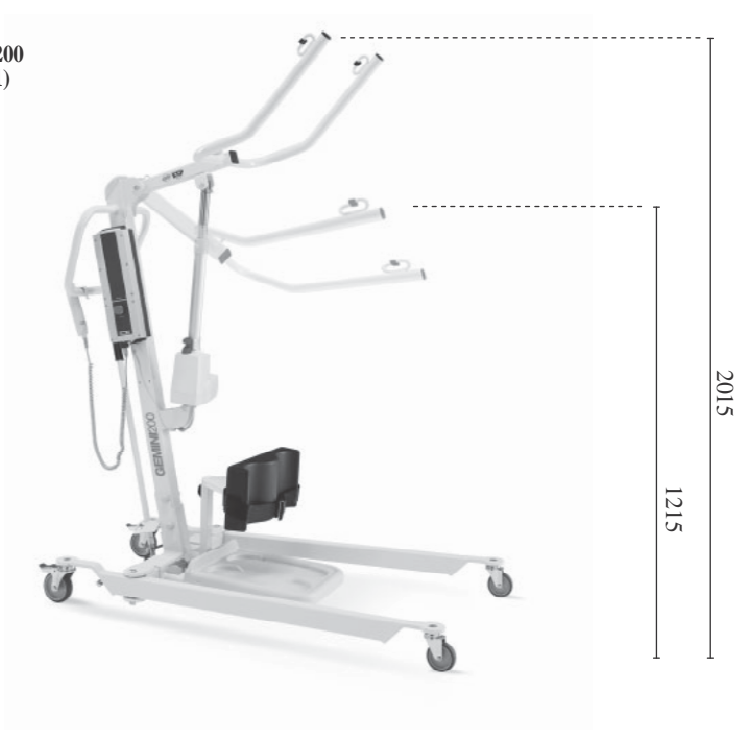


Fig. 16

# 1. Description and characteristics of the product

**GEMINI N 825-170**  
(with arm N 7952)

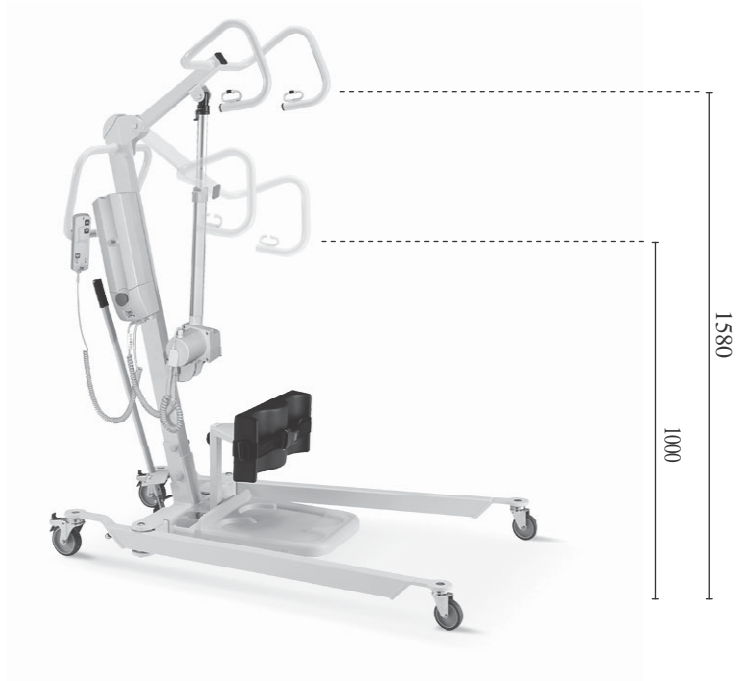


Fig. 17

**GEMINI N 825-200**  
(with arm N 7952)

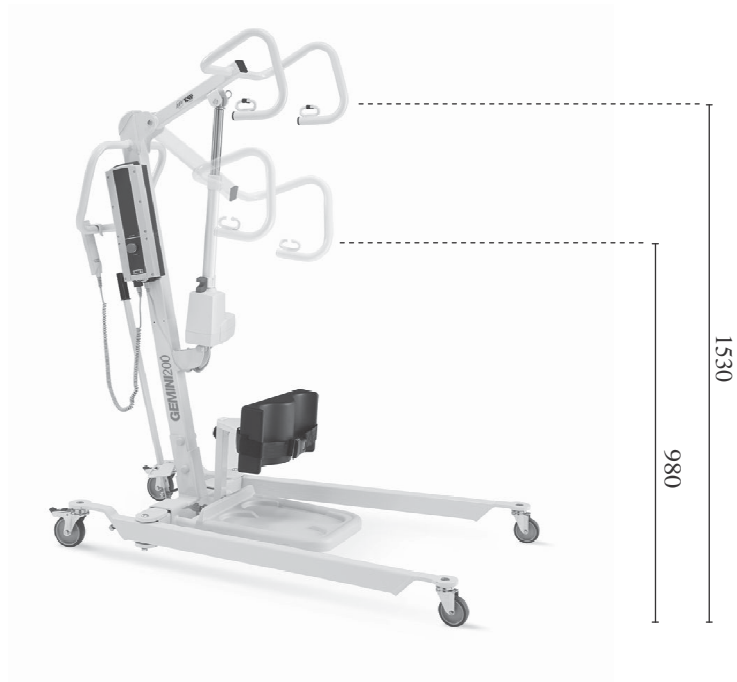


Fig. 18

## 1. Description and characteristics of the product

### Max. Loads:

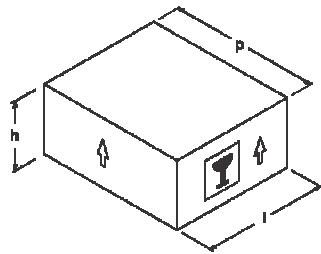
Model	Complete Lifter Weight	Maximum permissible load
N505-170	Kg. 43.80	Kg. 170
N 515-150	Kg. 43.80	Kg. 150
N 705-200	Kg. 50	Kg. 200
N 715-170	Kg. 50	Kg. 170
N 715-200	Kg. 52	Kg. 200
N 815-170	Kg. 54	Kg. 170
N 825-170	Kg. 54	Kg. 170
N 815-200	Kg. 54	Kg. 200
N 825-200	Kg. 54	Kg. 200

### Compatible Accessories

#### Patient lifter (Fig.1)

The packaging for the complete patient lifter is composed of 1 carton box

Article	Size LxDxH (mm)	Volume (m <sup>3</sup> )
<b>GEMINI</b>		
<b>500 Series</b>	680 X 1300 x 400	0.35
<b>700-800 Series</b>	710 X 1300 x 400	0.43



## 1. Description and characteristics of the product

### 1.7 Compatible Accessories

#### Gemini article Lifter version (arm N 7950)

- Art. N 9601 Universal sling max. load 170 Kg.
- Art. N 9606 Universal sling max. load 200 Kg.
  - Designed to meet most of the most frequent pathologies
  - Made of polypropylene/polyethylene fabric, network structure, non-toxic, antiallergic, washable and easily to dry.
  - Reinforcements in the peripheral zone
  - Retaining straps coloured for the identification of the cut.
  
- Art. N 9602 Sling stretcher max. load Kg. 130 (Figure 13).
  - Light corrosion-resistant alloy frame.
  - Made of woven polypropylene/polyethylene, network structure, non-toxic, antiallergic, washable and easily to dry.
  - Lifting Straps adjustable in height.
  - Can only be used with Balancing Hook Art. ... /GB.
  
- Art. N 9603 Sling with cervical support for quadriplegics max. load 170 Kg. (Fig. 11)
- Art. N 9607 Sling with cervical support for quadriplegics max. load 200 Kg.
  - Specifically designed for quadriplegic patients, weak cervical, and with mobility problems to the shoulders and legs.
  - Made of woven polypropylene/polyethylene, network structure, non-toxic, antiallergic, washable and easily tumble.
  - Reinforcements on the dorsal and cervical area.
  - Cervical and under legs padded support.
  - Grip on the sides and on the back.
  - Coloured fixing belts for identifying the size.
  
- Art. N 9604 Self-balancing gurney (Figure 12)
  - Particularly suitable for bedridden patients.
  - Frame in monoblock stainless steel tube.
  - Bands of rigid support plastic radio-transparent, easily positioned below the body of the patient and securely fastened to the frame.
  - Lifting belts adjustable in height with the sphere balancing system.

## 1. Description and characteristics of the product

### Article GEMINI Patient standing hoist version



- **Art. N 7951**  
**Hoisting Arm**  
(Standard Equipment)



- **Art. N 7952**  
**Hoisting Arm**  
(Alternative/optional)



- **Art. N 7953**  
**Legs support footboard**



- **Art. N 9608**  
**Axillary sling**  
(Max. Load 170 Kg.)
- **Art. N 9609**  
**Axillary sling**  
(Max. Load 200 Kg.)



#### **ATTENTION:**

In order to ensure appropriate safety conditions, it is necessary to use KSP Italia production accessories and follow the instructions on the manual on its use. KSP Italia will not be liable for damage resulting from the use of accessories other than those expressly provided for.

## 1. Description and characteristics of the product

### 1.8 Reference Standards

The GEMINI series mobile patient lifters/standing hoists are made in accordance with:

- Directive 93/42/EEC concerning medical devices
- Directive 1999/44/EC on certain aspects of the sale of consumer goods and associated guarantees
- Directive 2002/96/EC on waste from electrical and electronic equipment (WEEE)
- Directive 2002/95/EC on the restriction of the use of hazardous substances (RoHS compliant)
- ISO EN 1041: Information supplied by the manufacturer on medical devices
- ISO EN 1441: medical devices - Risk Analysis
- ISO EN 980: Symbols used for the labelling of medical devices
- ISO EN 60601-1: electromedical apparatus: general rules for the security
- ISO EN 60601-1-2: electromedical apparatus: Electromagnetic Compatibility
- UNI EN ISO 10535: lifts for the transfer of persons with disabilities Requirements and test methods

### 1.9 Transport, unloading and unpacking

During transport, the orientation of the packaged product must be kept

In accordance with the indications and the inscriptions on the outer surface of the casing (Eg. Cash, cardboard, etc... ). Perform the unloading operation with a suitable lifting medium, that has a useful range suitable for the weight of the packaged product.

- In case there is a need to manually unload and transport, you should remember that the maximum load supported by each operator must be less than 30 Kg.
- Make sure that the packaging is positioned according to the indications on the shell (Directional arrows).
- Open the package and remove all its parts.
- Ensure that the parts are undamaged and that they have not sustained damage during transport.
- Carry out the assembly in accordance with the procedures outlined in paragraph 3.



**All materials used in the packaging are recyclable, therefore they must be disposed of in accordance with local laws in force.**







**Take care to dispose of the plastic sheeting and the protective films, this is to avoid them constituting a source of danger for children (e.g. suffocation).**



















## 2. Safety Measures


### 2.1 Symbols used

<b>Art.</b>	Article Code and/or Model (e.g. N 705-200)
<b>Year of construction</b>	Date of production period (e.g. 2008)
<b>Serial Number</b>	Product series number (when provided) (e.g. 0001)

SYMBOL	MEANING	NOTES
	TYPE B PART	Part of the product that comes into contact with the patient and that respects the limits specified in EN 60601-1 for the applied parts of type B
	PROTECTIVE GROUND TERMINAL	Indicates the function of earth terminal. In this case protection.
	EQUIPOTENTIAL GROUNDING TERMINAL	Indicates the function of earth terminal. In this case protection.
	CE MARKING OF CONFORMITY WITH EUROPEAN DIRECTIVES	
	SAFE WORKLOAD	

SYMBOL	MEANING	NOTES
	TOTAL MAXIMUM LOAD, INCLUDING EFFECTS, ACCESSORIES, PATIENT .....	
	WEEE	
	MANUFACTURE DATE	
	ALTERNATING CURRENT	
	OPERATING INSTRUCTIONS	
	DANGER, READ THE INSTRUCTIONS.	
	DANGEROUS VOLTAGE	
	WARNING SIGNAL	

SYMBOL	MEANING	NOTES
	GENERAL WARNING	
	WARNING: DANGEROUS VOLTAGE	
	BODIES IN MOTION	
	DANGER OF CRUSHING FEET	
	PROHIBITION SIGN	
	SIGNAL MANDATORY BEHAVIOUR	
	GENERIC MANDATORY BEHAVIOUR	
	REFER TO THE INSTRUCTION BOOKLET	

SYMBOL	MEANING	NOTES
<p style="text-align: center;"><b>IP<sub>N1</sub>N<sub>2</sub></b></p>	<p style="text-align: center;">DEGREE OF PROTECTION</p>	<p>N1 =</p> <ul style="list-style-type: none"> <li>3) Protected against penetration of solid foreign bodies of 2.5 mm Ø and higher</li> <li>4) Protected against penetration of solid foreign bodies of 1.0 mm Ø and higher</li> <li>5) Protected against dust</li> <li>6) Totally protected against dust</li> </ul> <p>N2 =</p> <ul style="list-style-type: none"> <li>4) Protected against splashing of water</li> <li>5) Protected against jets of water</li> <li>6) Protected against jets of water powerful</li> <li>7) Protected against the effects of temporary immersion in water</li> <li>8) Protected against the effects of continuous immersion in water</li> </ul>
	<p style="text-align: center;">FUSE</p>	

## 2. Security Measures

### 2.2 Specific precautions

**DANGER:**

- Before proceeding to the transfers with the patient, be sure to unplug the power plug from the 220 Volts power outlet.
  - During the transfers with the patient, it is prohibited overcome obstacles placed on the floor that could cause oscillations of the lifter and cause it to tip.
  - During the lifting of the patient, make sure that the wheels of the lifter are locked. For the locking procedure see paragraph 4.7 .
- If during the raising or lowering of the patient there occurs a dangerous condition, to lock the lifter press the emergency button (red), mounted on the Controller. For the procedures for the operation and reactivation refer to paragraph 4.2.1.

**Interference from electromagnetic fields**

- 2.3** Electrical equipment, may be sensitive to interferences due to the presence electromagnetic fields, generated from sources such as TV, radio receivers, Transceivers, Cellular Phones, Radio Stations, etc.....

The electromagnetic waves generated from these sources can cause the operation of the electric motor with consequent unintended movements of the lifter arm. The intensity of the electromagnetic waves is measured in volts on meter (V/m).

Electrical appliances have a threshold for protection, known as the "Level of Immunity", equal to 20 V/m, which should be sufficient to provide protection to the most common sources of electromagnetic waves.

In common day places, you can classify three kinds of emissions:

**- Two-way radios with antenna mounted directly on the transmitting unit.**

Example: CB Radio, Walkie-Talkie, Police Transmitters, Firemen, Security, Mobile Phones and other personal communication devices.

## 2. Security Measures

**ATTENTION:**

Mobile phones and similar devices emit electromagnetic waves when they are not in transmission mode.

**- Medium range transmitters and receivers.**

Example: Police car antennas, ambulances, taxis and all the means which usually have an antenna mounted on the outside of the vehicle.

**- Long range transmitters and receivers.**

Example: Radio station antennas, TV and Radio Amateurs.

**ATTENTION:**

Other devices such as hairdryers, shavers, CD, FM/AM Radio, do not create problems of electromagnetic interference on electronic devices of the lifter.

**ATTENTION:**

Following these warnings you can reduce the possibility of abnormal movements of the lifter, due to electromagnetic interference:

- When you use the lifter do not use two-way radios, CB, mobile phones.
- Obtain information on the closeness of sources of radio emissions and if possible leave it.
- To pay attention and avoid if possible using the lifter near other electric or electronic apparatus.

Report to KSP Italia all drawbacks due to involuntary movements of the lifter and take note of the possible presence of a source of emission of radio waves in the vicinity.

## 2. Safety Measures

### 2.4 Identification plate and CE mark

Prior to shipment, KSP Italia shall apply on every lifter the identification plate accompanied by the CE mark. At the time of the assembly, check that the lifter has the identification plate shown in Figure 6 and on it are reported the data specified in paragraph 2.1 .

**ATTENTION:**

This information will be useful in the future, if you need to contact us for any question or clarification linked to the functionality of the lifter (e.g. , purchase of spare parts, etc. . ).











 KSP ITALIA S.r.l. N° 01793970540 Via Dell'artigianato, 1 Zona Industriale 06031 Bevagna (PG) Telefono: 0742-36 19 47 Fax: 0742-36 19 46	<b>SOLLEVATORE ELETTRICO .....</b>				
	Art. n.				
	Leggere attentamente le istruzioni d'uso  		Lavoro sicuro Kg: ..... 		
	III 	IP54		24 V 	200 W
	2/18 min	7A			

Fig. 6A

*Electrical lifters Identification Plate and CE mark*

 KSP ITALIA S.r.l. Zona Industriale, 168/F 06031 Bevagna (PG) - Italy Tel. 0039 0742 361947 Fax 0039 0742 361946		
	Art.	Matricola
Anno di costruzione	Portata	  

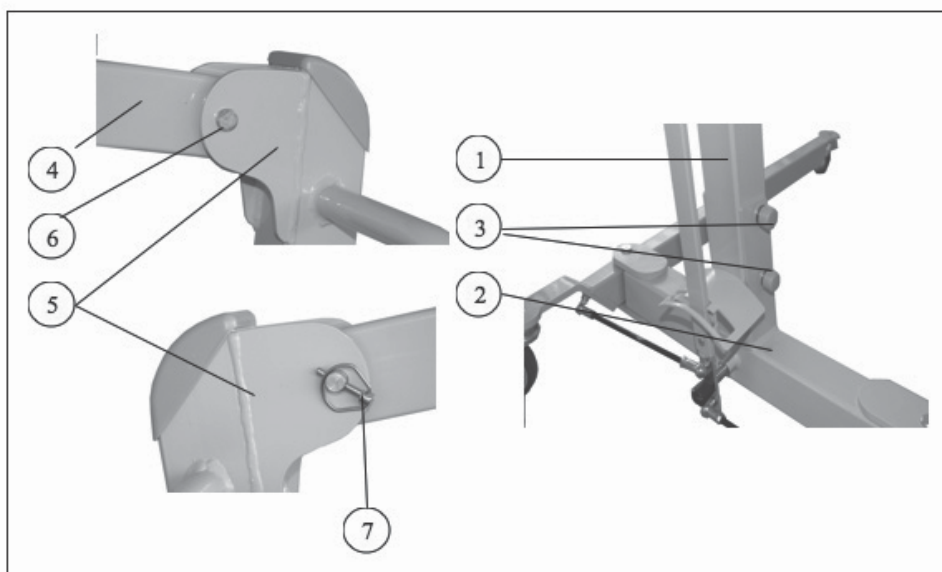
Fig. 6B

*Identification Plate and CE mark*

### 3. | Installation Instructions

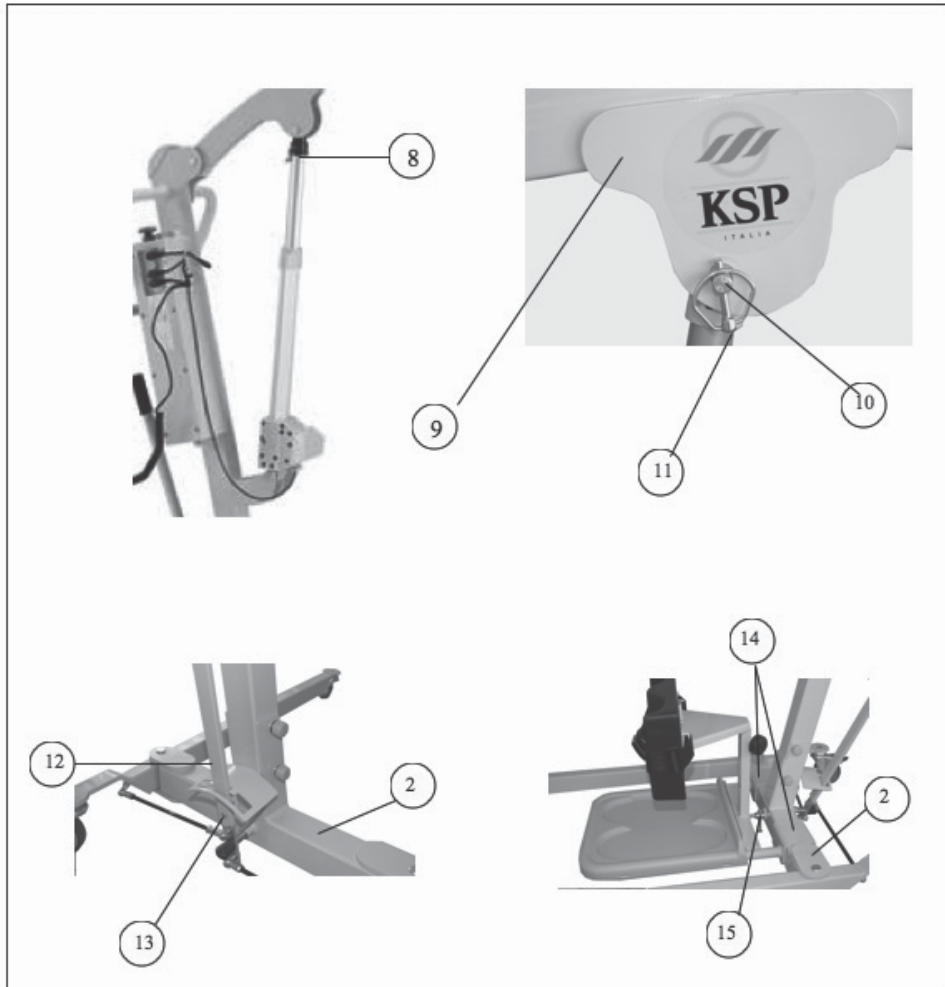
#### 3.1 Mounting of the GEMINI (Figure 1)

- Remove the parts of the packaging.
- Place the support column vertically (1) with respect to the base (2) until the stop and secure it in place with the supplied bolts (3).  
By means of an M19 key, tighten the bolts (3).
- Insert the arm (4) on the relative flange (5) placed on the upper end of the support column and secure it in place by means of the pin (6) and the safety stop (7).
- Insert the upper end of the electric motor (8) on the appropriate flange present on the upper arm (9) and secure it in position by means of the pin (10) and safety stop (11).
- Insert the release and operating lever (12) on the base (2) and secure it in place using the screw (13).  
By means of a 3 mm Allen key, tighten the screw (13).
- Install the legs support footboard N 7953 (provided in hoist version), by entering the relevant support anchors (14) directly on the base (2). Ensure the locking screw on the block (15)





### 3. | Installation Instructions



#### 3.1.1 Connecting the electrical wiring (Figure 1)

Proceed as follows:

- To connect the wiring harness of the actuator (1), insert the electrical plug (5) on the socket (4) of the control unit (3).
- To connect the wiring harness of the control push-button (14), insert the electrical plug (7) on the appropriate socket (6) of the control unit (3).

## 3. | Installation Instructions

### 3.1.2 Charging the battery

For recharging of the battery pack it is recommended to use only the supplied battery charger.

Models with DEWERT motorisation have 3 LEDs on the control unit which illuminate in a different colour according to the state of charge detected at the moment in which you perform the operation of the ascent and descent. The LED to light up will be green in colour with the battery charged, yellow with half charge and red in colour when it is necessary to recharge. It is recommended that in the latter case to avoid using the GEMINI and immediately provide charging to fully recharge the battery to avoid deep discharges that can irreparably damage the battery. For charging you need to take out the battery holding it on top, and then pressing the red tab that will be under your fingers and slide upwards. At this point the charger connector will be connected to the socket at the bottom of the extracted battery. The time to be fully charged is about 8 - 10 hours.

Models with LINAK motorisation have an audible signal at the moment in which you carry out the operations of ascent and descent, which indicates the moment required for recharging. It is recommended that in the latter case to avoid using the GEMINI and immediately provide charging to fully recharge the battery to avoid deep discharges that can irreparably damage the battery.

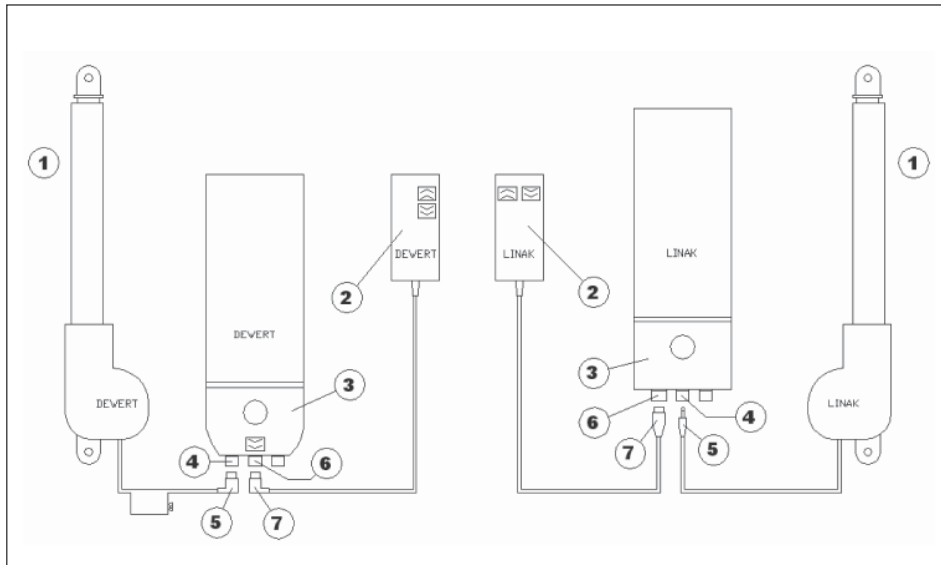
The recharging of the battery can take place in one of two ways:

- with mounted battery, i.e. without removing it from its seat simply inserting the charger connector in free socket located in the lower part of the controller.
- Extracted battery, i.e. removed from its housing. Pull it out, hold in the upper part, pull with the fingers of the latch release lever inside and then tilt and slide upwards. Then insert the charger connector into the socket at the bottom of the extracted battery. The time to be fully charged is about 10 - 12 hours.

### 3. Installation Instructions

#### General warnings on charging

- Due to the internal leakage (self-discharge), the battery pack provided with the lifter, may be not fully charged. It is therefore necessary that the user provides a first charge of at least 24 hours before use the lifter.
- A very intensive use of the lifter results in a reduction of the life of the battery pack.
- For optimum life of the battery pack, it is recommended to keep it under charge for as long as possible, by the supplied battery charger.
- To ensure the lifetime of the battery pack, do not wait until it is fully discharged before recharging.
- Where the lifter is used sporadically, it is recommended to perform the recharging of the battery pack at least once a month.



### 3. Installation Instructions

#### 3.2 Slings

The following figure shows the slings can be supplied with the patient lifter:



Fig. 1 Universal sling. N 9601 (supplied)

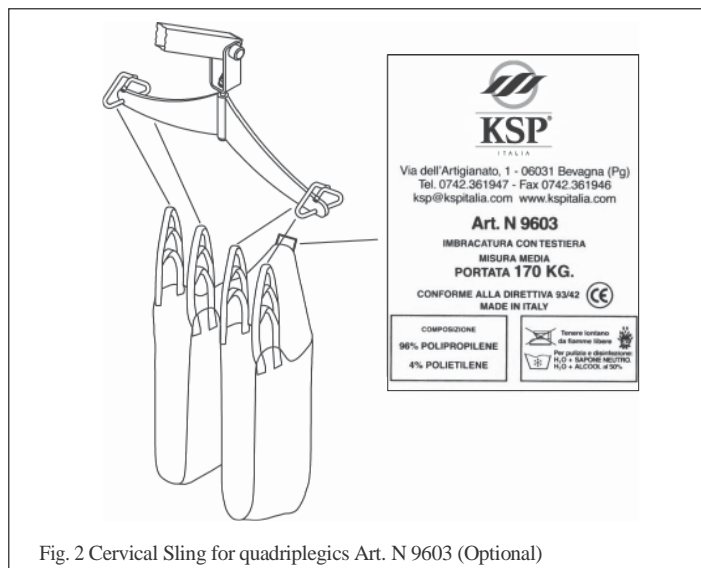


Fig. 2 Cervical Sling for quadriplegics Art. N 9603 (Optional)

### 3. | Installation Instructions

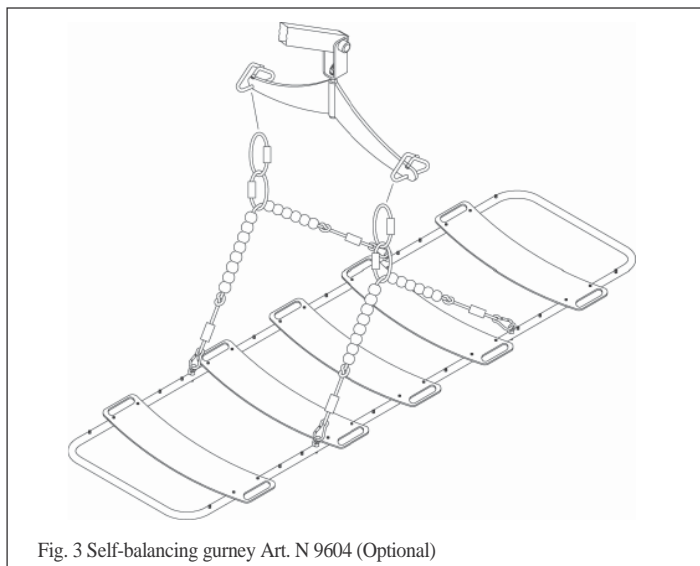


Fig. 3 Self-balancing gurney Art. N 9604 (Optional)

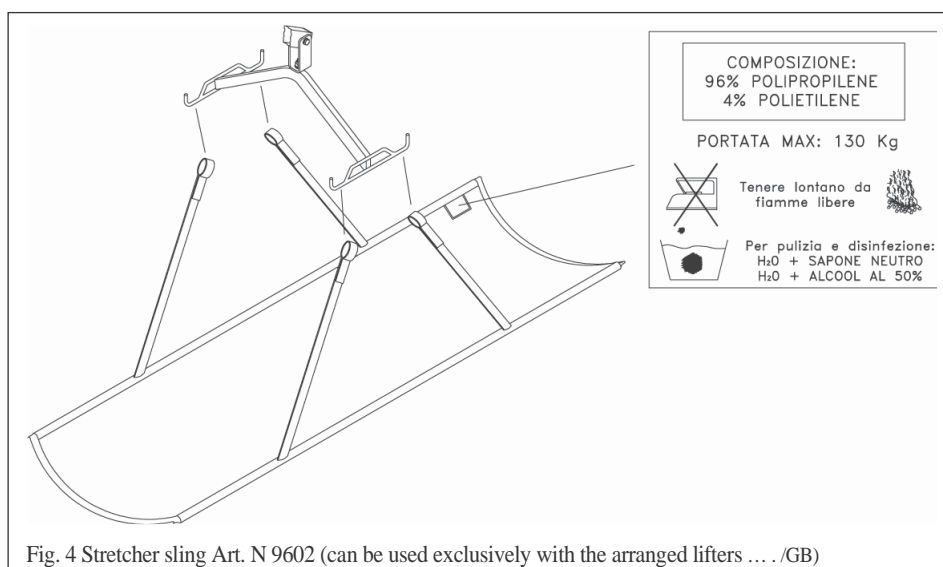


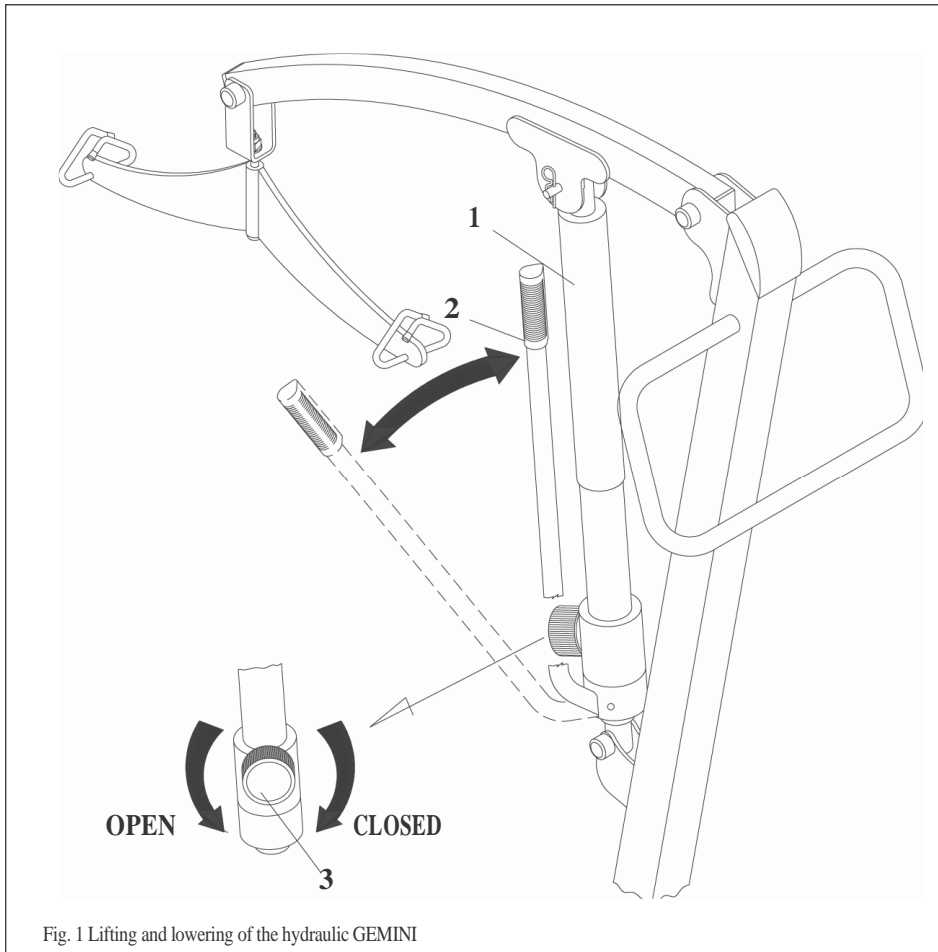
Fig. 4 Stretcher sling Art. N 9602 (can be used exclusively with the arranged lifters ... /GB)

## 4. Operating Procedures

### 4.1 Using the GEMINI hydraulic version (Figure 1)

The raising or lowering of the patient is affected by the hydraulic pump (1), manually operated by the lever (2).

- To lift the patient, close the drain valve by turning the hand wheel (3) In the clockwise direction (**CLOSED**) and manually operate the lever (2) until you reach the desired lift position.
- To lower the patient, slowly open the drain valve, by turning the hand wheel (3) counter clockwise (**OPEN**). Having reached the desired level close the drain valve by turning the hand wheel (3) In the clockwise direction (**CLOSED**).



## 4. | Operating Procedures

### 4.2 Using the Gemini electric version

**ATTENTION:**

The electric motor installed on the electrical motors of the GEMINI is the sealed type. This solution allows a high level of safety, combined with a compact and functional design. The sealed motor, has no ventilation or cooling system and therefore requires **the** user to ensure compliance with the following operating cycle:

**GEMINI with LINAK and DEWERTmotorisation**

Continuous operation: maximum 2 minutes.

Cycle of use: for every 2 minutes of operation (with the engine running), wait for 18 minutes (engine off) in order to allow for the disposal of the accumulated heat. Example: An operation that last 1 minute, must always be followed by a minimum of 9 minutes of rest.

**ATTENTION:**

Absolutely avoid performing operations that require continuous operations of the main engine as specified. Otherwise, KSP assumes no responsibility for any damage to persons and objects.

#### 4.2.1 Raising and lowering of the GEMINI with LINAK motor (Figure 2a) / DEWERT (fig 2b)

The raising or lowering of the patient is effected by the operation of the electric motor, controlled by the special control keypad.

- To raise the patient press the button (3), having reached the desired level release the button (3), the locking is automatic.
- To lower the patient press the button (4), having reached the desired level release button (4), the locking is automatic.

**DANGER:**

If during the raising or lowering of the patient a dangerous condition occurs, to lock the system press the Red Emergency Button (5).

After having removed the cause that triggered the dangerous event, to restore the functionality of the system, turn clockwise the emergency stop button (5).

## 4. Operating Procedures



### ATTENTION:

During the use of the GEMINI, if the lowering key of the control keypad is inefficient, it is possible to lower the arm by adjusting the device (6).

To restore the normal operating conditions, please contact your service centre or the dealer. In case of complete failure of one of the electrical parts and therefore the total impossibility of operation, the DEWERT system foresees the lowering of the manual lifting arm by inserting the hexagon key supplied, in position placed in the lower side (7) of the engine, turning it in one direction or the other on the basis of the desired manoeuvre. This system only works with the weight applied to the arm.

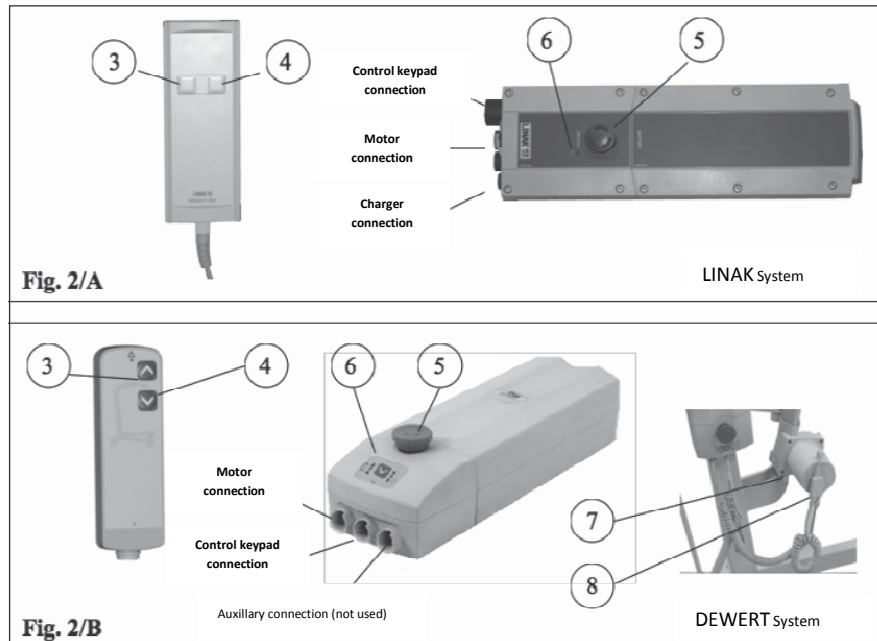


Fig. 2 Lifting and lowering of the GEMINI electric version

**IMPORTANT** In the DEWERT motorisation version, there is an inhibition device (8) placed directly on the cable of the engine (Figure 2/B). This device consists of a metal key inserted in a small box. In the condition in which the key is inserted the machine works properly, in a condition in which the key is not inserted the machine remains inactive. In this case there will be the lighting of the leds and the internal activation of the controller to press the control buttons, but the engine will remain inactive. This device allows the inhibition of the lifter in the event of absence of authorised personnel in the event that it is necessary to have them.



## 4. | Operating Procedures

### 4.3 Use of slings Art. N 9601 and Art. N 9603 (Figure 4)

For the use of the included universal sling Art. N 9601 (not indicated for quadriplegics) and Art. N 9603 with cervical support for quadriplegics (optional), refer to the following procedure:

- Apply the sling (1) to the patient or person with the disability.
- Lower the lifter arm until you reach the desired level.
- Fix the sling (1) to the hooks (2) of the support sling (3) and raise the patient.



**ATTENTION:**

Before performing the lifting, adapt the sling (1) to the needs of the patient, by suitably selecting the slots (4) clip to the hooks (2).

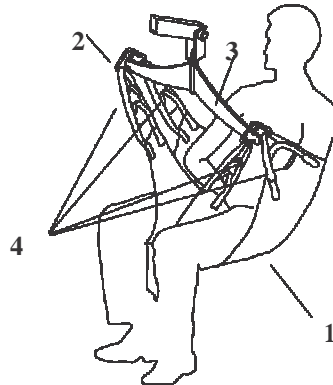


Fig. 4 Use of slings  
Art.N 9601 and Art. N 9603

### 4.4 Use of the stretcher sling Art. N 9602 (4 Par. 3.3 )

For the use of the stretcher sling Art. N 9602, refer to the following procedure:

- Make sure that the lift is equipped with the appropriate support (1), prepared for this type of stretcher sling.
- Place the patient on the stretcher sling (2).
- Lower the lifter arm until you reach the desired level.
- Fix the slots (3) of the four belts of the stretcher sling (2), to the four hooks (4) of the support sling (1) and raise the patient.

## 4. | Operating Procedures

### 4.5 Use of the self-balancing gurney Art. N 9604 (3 Par. 3.3 )

For the use of the self-balancing gurney Art. N 9604 (optional), refer to the following procedure:

- Place the patient on the rigid stretcher sling (1).
- Lower the lifter arm until you reach the desired level.
- Fix the slots (2) of the two belts of the rigid stretcher sling (1), the hooks of the sling support (3) and gently lift the patient.
- Make sure the weight is evenly distributed on the stretcher and that this remains in a horizontal position during the lift.
- If the weight is unbalanced, lower the lifter arm and move the slots (2) on the centring balls (4), in the direction of greater weight.
- Raise the patient.

### 4.6 Use of the adjustable GEMINI base (Fig.1 Par. 4)

To open the base refer to the following procedure:

**Pos. A** Manually pull the lever (10).

**Pos. B** Move laterally towards the right lever (10), until you reach the corresponding end of the stroke.

**Pos. C** Release the lever (10), which automatically will return forward to the next lock position.

To close the base perform the procedure described above in the opposite direction.



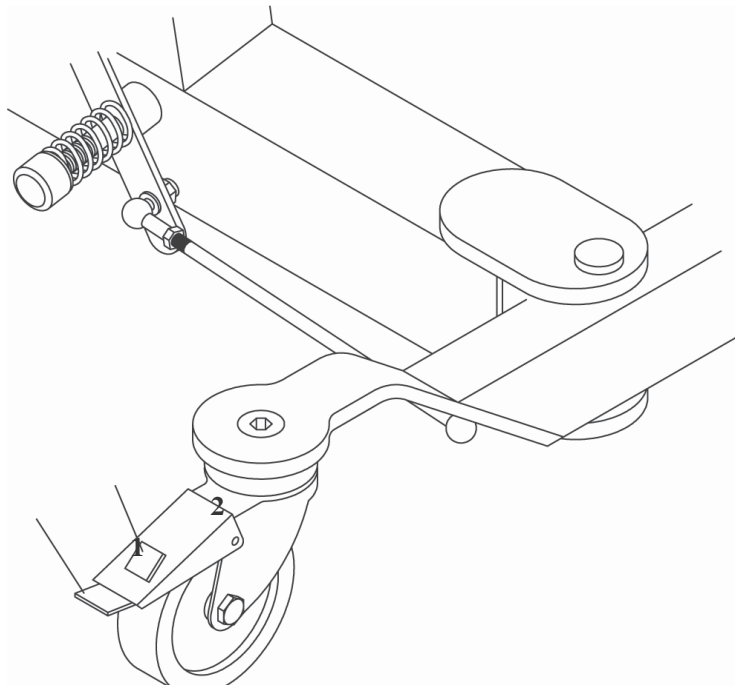
**ATTENTION:**

Before lifting or moving the patient, always make sure **that** the lever (10) is locked into the slots provided on each end of the stroke. Never leave the lever (10) in an intermediate position, because the legs of the lifter is not being blocked, and hence may move during the lifting or handling, producing conditions of potential danger to the patient.

## 4. | Operating Procedures

### 4.7 | Wheels and braking system (Figure 5)

All versions of the GEMINI are provided with four swivel castors (two locking) with an independent brake. To lock the lifter, press with the foot on the lever (1). To unlock the wheel, press with the foot on the lever (2).



## 5. Maintenance Requirements of the product

### 5.1 Periodic Checks

The periodic inspection of the lifter/hoist must be performed at least once a year and consists of a visual examination (in particular of the support column of the lifter and the lifting mechanism with their connections, brakes, controls, safety devices and supporting devices for the person) and maintenance to the adjustment of brakes and the tightness of the fasteners. Each periodic inspection must include a test with the work load of a lifting cycle with the maximum load of 170 Kg.

The periodic inspection must be carried out by a suitably qualified personnel who thoroughly understand the model and the use and care of the lifter. The purpose of the periodic inspection is intended to verify the correct operation, the absence of abnormal wear of the components and any other anomaly that can generate danger for the patient/user. Each check must be recorded in the Register of periodic inspections" reported in paragraph 5.7 of this manual; there must be registered the:

- Date.
- Important Observations for safety purposes:
- Any accessories used for the test; these must be marked for proper identification.
- Any functioning or structural abnormalities encountered.
- The corrective actions performed.
- Reports to the manufacturer of the defects.

#### ATTENTION:



During periodic inspections, if you encounter anomalous situations in controlled parts, place the lifter "OUT OF ORDER" by appropriate card warning and immediately contact the nearest service centre for its technical intervention.

### 5.2 Slings control

#### ATTENTION:



During periodic inspections, if there emerges any wear or deterioration of the lifting slots, belts or in the sling fabric, proceed to its immediate replacement. For a list of spare parts refer to the paragraph 5.6 .

### 5.3 Lubrication

Periodically, and in particular after cleaning, you should lubricate the joints with a few drops of pure vaseline.

### 5.4 Cleaning

Carry out the cleaning of the mobile lifter/hoist with a sponge, or with a cloth dampened with water and mild detergent. At the end dry thoroughly.

## 5. Maintenance Requirements of the product

**DANGER:**

Before cleaning the mobile lifter/hoist mobile, make sure you have disconnected the power plug of the batteries charger from the 220 volts mains.

**ATTENTION:**

For cleaning of the mobile lifter/hoist mobile never use jets of water under pressure, acids, solvents, corrosive and abrasive substances.  
Detergents should not contain phosphates, phosphorous or formaldehyde.

### 5.5 Disinfection

The disinfection of the lifter/hoist must be performed with suitable non-corrosive products. The disinfectants must not contain phosphates, phosphorus or formaldehyde and must have a pH between 6 and 8. For disinfection of fabric slings Art. N 9601, N 9602, N 9603, use H<sub>2</sub>O and alcohol diluted to 50% (see the labels shown in Par.3.2).

### 5.6 Replacement of worn parts

In the case where, during periodic inspections damaged or worn parts are found, they should be immediately replaced. For the replacement of damaged parts, it is recommended that the use of genuine KSP parts are used, otherwise KSP will assume no responsibility for any damage to persons and objects. Refer to paragraph 8 for information regarding the validity, the limits and on the application of the guarantee.

In order to identify the replacements parts needed, please specify in the Order the following data on the identification plate applied to the lifter:

- **Item code and/or mode**
- **Date production period**
- **Serial Number of the product**

Next, list the parts required by specifying for each item the:

- **Description**
- **Required amount**

The order must be completed with the address and telephone number of the "Sender" to which the replacements parts will be shipped.

Send the order of parts directly to the KSP Italia:

- Via Fax at the following telephone number: **0742 361946**

- Or send it to the following address:

**KSP Italia srl - Via Dell'Artigianato, 1 Zona industriale 06031 Bevagna (PG)**

## 5. Maintenance Requirements of the product

### 5.7 Register for periodic inspections

Notes: Corrective Action, Reports											
Accessories Used											
Faults Found											
Signature											
Date											

## 6. | Guide to identifying the failures

This product was made by KSP Italia using manufacturing methods and materials to ensure maximum safety and functionality.  
Given below is the guide on the checks to be carried out and the possible remedies for the failure due to normal wear and tear of operation of the electrical parts and mobile ones that make up the lifter.

**Fault:** By pressing the keypad the lifting/hoist arm is not raised/lowered.

**Remedy:** Check if there are obstacles that block the moving parts of the lifter. Check if the wiring harnesses are connected correctly. (See para. 3.1.1). Check if the wiring harnesses are damaged or broken.  
Check the charge status of the battery pack. If pressing one of the buttons on the control keypad, the LED colour is red, this means that the battery pack is discharged. Recharging according to the procedure described in paragraph 3.1.2.  
Check if the lift arm is bent.  
Check that the inhibition key is inserted into the respective section. (See paragraph 4.2.1 )  
In the negative case proceed to the replacement of the electric motor or battery pack.

**Fault:** The release lever and movement of the legs of the lifter does not go back into locked position

**Remedy:** Check if there are obstacles that block the operating lever of the patient lifter.  
Check that the stays are properly secured and that the spring is compressed enough.  
If necessary, remove the plastic cap and with a 19 mm flat wrench, compress the spring to tighten the nut. Refit the plastic cap.

**ATTENTION:**

The interventions mentioned above can be hazardous, and therefore they must be carried out by experienced or specialised personnel from KSP Italia.

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## 7. | Glossary of technical definitions

### **Independent brake**

The braking system is made by means of wheels each equipped with a locking lever. The movement of the locking lever causes the braking of the corresponding wheel.

### **Electric motor**

The electric motor, is composed of an extendable rod driven by an electric motor controlled manually by a button.

Its function is to raise or lower the upper arm of the lifter.

The electrical motors installed on the GEMINI are supplied with a low voltage (24V DC), provided directly by the battery pack.

For the procedures for using electric motors refer to paragraph 4.2.



## 8. | Warranty

The guarantee has a validity of 24 months (12 months for professional use or in the case of the good used and/or reconditioned by KSP Italia) from the date of delivery to the end user reported in the documents of invoicing and delivery.

The batteries have a reduced guarantee of 6 months.

The acquirer or the holder of the contract of sale has two months from the time of the discovery to denounce the lack of conformity, the complaint should be made in writing by registered mail with return receipt or telegram to KSP ITALIA or to an authorised seller to the sale.

The guarantee meets the requirements of Leg. Dec. Dated 2 February 2002 n.24, with implementation of Directive 1999/44/EC and paragraph 1-bis, Section II Chapter I, Title III of the book IV of the Civil Code. The consumer is the holder of the rights provided for by law, and this warranty does not affect those rights.

The guarantee covers the replacement or repair free of charge, within the period laid down, of the component parts of the apparatus which, in the opinion of the manufacturer, may prove defective in origin due to faulty manufacture.

The warranty does not cover damage from transport (scratches, dents, etc...), damage from bumps; damage caused by carelessness, tampering, inability to use the product and repairs performed by unauthorised personnel; damage caused by incorrect installation of the product, if this is performed directly by the user or unauthorised personnel, damage caused by the insufficiency or inadequacy of the electrical system, or alterations arising from environmental and climatic conditions and all damage caused by phenomena not dependent on normal operation.

A component replaced under warranty, does not extend in any case, the overall warranty of the product including the part replaced.

### SERVICE – HOME SERVICE

KSP ITALIA, offers a service of technical home assistance with the fixed right of call of € 30.00. Within 24h from the request for assistance the user will be contacted by an authorised KSP technician to make an appointment to carry out the assistance and possible repair.

The right to call is due even when it is provided for the exemption, if when the technician arrives the reported problem does not exist or has been solved independently by the user. If the technician finds that the fault or the fault reported was due to improper use or neglect, he will provide a repair estimate.

The non-acceptance of the estimate does not exempt from the payment of the right to call. The payment of the intervention, when due, must always be paid at the end of the intervention to our technicians.

Once the work has been done, the KSP ITALIA Customer Service, will call the customer, to check on the satisfaction and the correct operation of the product.

## 9. Disposal



The proper separate collection for the next start of the equipment was divested to recycling, environmentally compatible treatment or disposal, that helps to avoid possible negative effects on the environment and on health and promotes the recycling of the materials of which it the equipment is composed.

The crossed-out dustbin symbol applied on the equipment indicates that the product, at the end of its useful life, must be collected separately from other waste.

MODELS Art. NO 515-150, Art. NO 715-170, Art. NO 715-200, Art. NO 815-170, Art. NO 815-200, Art. NO 825-170, Art. NO 825-200, are the medical devices powered electrically and the disposal of the waste does not put responsibility on the buyer but is the responsibility of KSP Italia. When the equipment reaches the end of its useful life, the user must **contact the manufacturer KSP Italia directly or the Obligatory Consortium APIRAEE ([www.apirae.it](http://www.apirae.it))** to which the same is adhered, communicating the registered **manufacturer code** in the National Producers of Electrical and Electronic Equipment present in commercial documents and that is shown below:

**EN0809000005523**

These will provide for the pick up and disposal without cost to the buyer. The improper disposal of the product by the user implies the application of the administrative penalties referred to in Leg. Dec. no. 152 dated 3 April 2006.

Models N 505-170 and 705-200 not having electrical power, must be disposed by the user as **a non-dangerous special waste** in accordance with the regulations in force.

The battery should be disposed of separately in accordance with Leg. Dec. 188/08.

For the extraction refer to the instructions in the paragraph relating to the battery charge of which here we are highlighting the main points:

- Pull up with your fingers the appropriate release lever located internally on the top of the battery pack ( **A** ),
- then tilt it and remove it ( **B** ).

Once extracted, dispose of the battery according to law.





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