



DX4305 & DX4205

User's Manual

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INTRODUCTION

About this User Manual

This user manual contains instructions for the proper and safe use of the DX4305 & DX4205, and for patient & user safety and comfort, which has to be strictly followed.

This User Manual has to be read and followed by every person using or handling this Bed. In case of any query, Kindly contact Midmark India Pvt. Ltd.

ABOUT THIS PRODUCT

- These DX4305 & DX4205 Beds are non- invasive medical devices used for resting and treatment of the patients by medical / paramedical / hospital personnel to help and support the patient in diagnosis, prevention, monitoring, treatment or alleviation of the disease.
- These DX4305 & DX4205 Beds are patient support and patient rest facility which help medical personnel in carrying out their medical procedures comfortably, minimizing the risks while moving and handling the patient.
- These DX4305 & DX4205 Beds are manufactured and supplied in non-sterile condition for use in normal hospital environment.
- These DX4305 & DX4205 Beds are electrically operated for certain pro filing movements to provide clinical positions with the help of patient friendly Handset. These DX4305 & DX4205 Beds are supported with a Battery Backup.
- These DX4305 & DX4205 Beds are not diagnostic, measuring, monitoring or a therapeutic device or we say that it can prevent or alleviate disease
These DX4305 & DX4205 Beds are also useful for intensive care, critical care in hospitals and nursing homes.

DX4305 & DX4205 Bed Features.

Please refer DX4305 & DX4205 catalogue for salient features of these products.

Technical Data.

Please refer DX4305 & DX4205 catalogue for Technical Data of these products.

Optional Accessories.

Please refer DX4305 & DX4205 catalogue for Optional Accessories of these products.

DEFINITIONS

Operator

The operator is the person appointed by the owner (i.e. clinic, hospital management, etc.) who will be responsible for the safe operation of this Bed.

User

A user is a person who is capable of assessing the clinical condition of the patient e.g. specialist medical personnel, doctors, nursing staff, attendants, etc. Based on their training experience or through the instructions, they are entitled to operate the Bed on their responsibility or to carry out work on it and can recognize and control possible risks to the patient as well as the Bed.

Patient

A patient is a person who is ill, infirm, disabled, or in need of care & occupying this Bed. Each time the Bed is allotted to a new patient it is recommended that the patient is instructed by the operator or the user about the functions important for his/her comfort and safety.

SAFETY

In this User Manual, the following safety symbols are used



Danger: This symbol will appear wherever safety instructions are designed to protect people from physical harm. The symbol stands for imminent danger of death or serious injury.



Caution: This symbol will appear where situations are described, which might be dangerous, and which might inflict slight injuries.



Advice: This symbol will appear in front of additional helpful pieces of advice.



A dot in front of the text implies the action that is required to be taken.

Safety Instructions

- Always use Midmark India accessories that have been designed and approved for use with the Beds.
- Ensure that the Beds are assembled and installed in accordance with the instructions given in this User Manual.
- Restrict child visitors without proper attendants. Supervision is necessary to avoid any mishap due to unintended movement of the Bed.
- Persons with reduced physical or mental abilities & children must not be allowed to use & handle the Bed without proper supervision.
- Do not allow any visitor to sit on the Bed, as it may cause overloading. (Refer section --- Operation)
- Accessories or any devices used along with the Bed should be as per its intended use specified and approved by Midmark India.
- The Bed should always be kept and used in normal indoor hospital environment.
- The Bed is not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide. It may damage the Electro-Mechanical Control System.
- Always use a mattress of the correct size and type. Before operating the Bed, make sure that the patient is safely positioned to avoid entrapment or imbalance.
- Do not keep any articles on the Base Frame Cover of the Bed. It can damage the linkages and electrical components.
- Keep the User Manual handy with the Operator/User for ready reference.



Keep some gap between walls and bed while in a stationary position and also while moving from one place to another



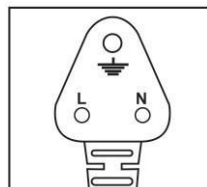
Use of water on mattress is prohibited.

Electrical Safety Points

When the Bed is connected to 230V / 15A (or as per country specific) main supply-

Connecting more than one plug to the three pin mains socket can cause electrical overload and damage the control system of the Bed.

- AC power supply exceeding 230V or sudden spikes or lack of proper earthing can be hazardous to User / Patient, as well as can cause damage to the Bed and property.
- Ensure stabilized and properly earthed input power supply for the equipment. Also, ensure polarity of the mains socket is as per Standard and matches with the mains plug.
- Inspect all the wires and cables for any cuts, cracks, and damages at regular intervals.



ELECTRICAL SPECIFICATIONS

Mains power supply	Nominal 240 VAC
Operating Range with Battery	100 VAC to 240 VAC 50/60Hz, Max2A
Protection Voltage	300 VAC to 450 VAC
Electrical Shock Protection	Class 1
Degree of Shock Protection	Type B
Liquid Ingress Protection	IP54
Rechargeable Batteries	2 x 12 Volt Sealed Lead Acid
Duty Cycle	10% (Two Minutes for every eighteen minutes)

Inbuilt Battery Charger

Battery Charger (Inbuilt)	Suitable to charge 1.2AhX 2batteries
	Reverse polarity protection
	Spark free connection
	Short circuit protected output.
	Very minimal battery consumption at idle state, to enhance stand by time
	Battery overcharging protection.
	Battery low or dip discharge protection

ENVIRONMENTAL SPECIFICATIONS

Usage, Storage and Transport

Temperature	-10° C to 50°C
Relative Humidity	0% to 95% non-condensing
Atmospheric Pressure	800 to 1060 hPa
Altitude	< 200Qm

INSTALLATION



- 1) Unpack all the components carefully.
- 2) If the packing is drenched by rain, water or other liquids, inform this matter to the operator.
- 3) Each Bed is supplied with the following components as per packing list:-

Bed with castors, actuators and crank mechanism	Rubber Buffer with bush:	- 1 Nos.
Rubber Buffer with bush:		- 4 Nos.
Polymer Moulded Head and Foot Board:		- 1 Pair.
Safety Side Railings - Product Specific:		- 1 Set.
Polypropylene Panel for Backrest, Knee Rest, Fixed and Leg Rest:		- 1 Set.
Miscellaneous items:		- 1 Packet
4. Prior to connecting to the mains, get the input voltage & earthen tested through a qualified electrician. It is necessary to ensure that all electrical connections are proper and tightened.
5. It is advisable to charge the battery for 24 hours to get the best performance when plugged in for first time.
6. Use the Handset and check all the functions by pressing the respective buttons.
7. Demonstrate the functions of the Bed to the User / Operator.

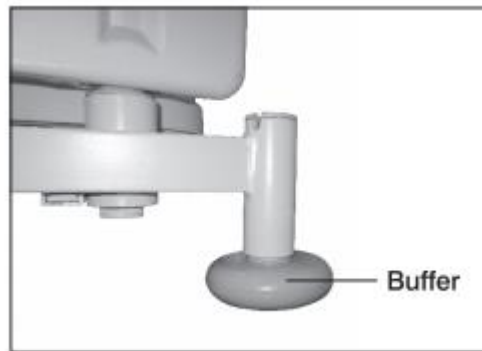
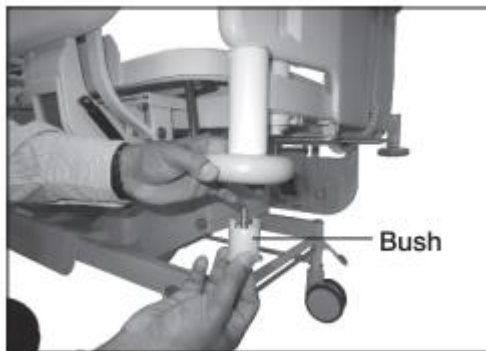


Notify if any damage has occurred during transportation either to the authorized agent or directly to Midmark India Pvt. Ltd.



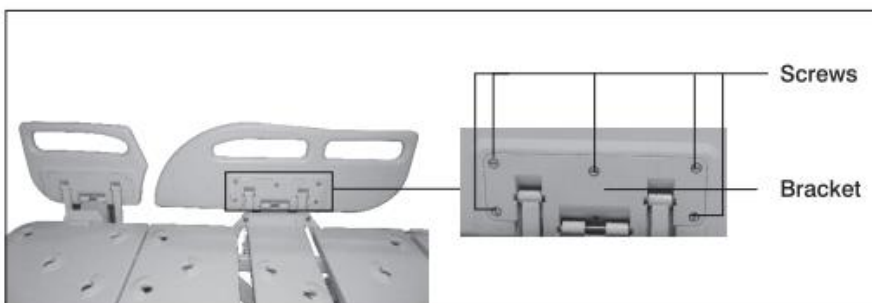
Installation of the Bed should be done only by Midmark India trained technicians

Buffers



Fix the rubber buffer in the buffer holder with bush and bolt at all 4 corners

1. 0360 – Polymer Molded Split Safety Side Railings



- Place and align the Safety Side Railings with the brackets provided on the top frame of Bed. Tighten the Safety Side Railings in position with screws provided separately in a packet.
- Fit the caps provided over the screw heads to cover the screws.
- Check the correctness of fitting by operating the Safety Side Railings for a few cycles. Readjust the screw if hampering the smooth operation of the Safety Side Railings

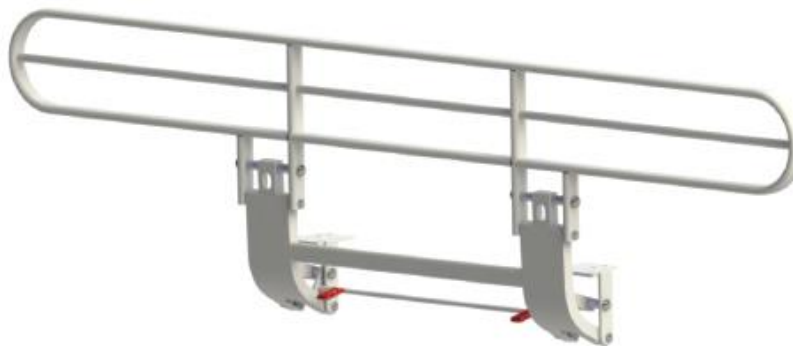
2. 0380 – Split Type Polymer Moulded Safety Side Railing (2 Sets)



DX4305/4205 with 0380 Railing

- Place and align the Safety Side Railings with the brackets provided on the top frame of Bed. Tighten the Safety Side Railings in position with screws provided separately in a packet.
- Fit the caps provided over the screw heads to cover the screws.
- Check the correctness of fitting by operating the Safety Side Railings for a few cycles. Readjust the screw if hampering the smooth operation of the Safety Side Railings

3. 0354B (Product Specific) - Swing Down Type Full Length Epoxy Powder Coated MS Safety Side Railing



(This railing comes factory fitted to the bed)

4. 0356B (Product Specific) - Collapsible Type MS Powder Coated Safety Side Railing



- Loosen the two T-Screws provided below the clamp.
- Fix the Safety Side railings to the sides of the Bed frame and tighten both the T-Screws.
- By holding the Safety Side Railing with both the hands, pull out the Plunger Knob and push the Safety Side Railing inside.
- Press the S.S. Rod with both the hands and lower the Safety Side Railings for few cycles to check smooth operation of the Safety Side Railings.

ADD On Accessories

1. Orthopaedic Traction Pulley (0187)



Orthopaedic Traction Pulley
(0187)

Used in orthopaedic treatment for physical therapy.

2. Moulded Chart Holder (0158A)



Moulded Chart Holder
(0158A)

Used for keeping medical reports and charts.

Oxygen Cylinder Cage (0166E)

Used to hold the Oxygen Cylinder

S.S. Lifting Pole (0553)



Stainless Steel Lifting Pole
(0553)

Helps the patient lying on the Bed to lift themselves up on their own, by holding the hand grip.



Ensure that the accessories are properly secured and not overloaded to avoid any personal injury or equipment damage.



Use the Bed accessories in accordance with the manufacturer's instructions for patient safety and comfort. Use recommended spares and accessories of suitable design manufactured by "Midmark" to eliminate hazards.

X-Ray Permeable Backrest with Cassette Holder. (DX4205)

- The Backrest Section Top in this bed option is made of high pressure laminated sheet which is X-Ray permeable.
- This facility is provided specially for patients who are seriously ill or too weak to stand unsupported, and need the X-Ray imaging without being moved out of the bed.
- X-Ray Permeable Backrest come factory fitted to the bed, and do not need any special installation.
- Insert back the Cassette holder with Plate in its guides.
- Tighten both the knobs provided at sides.
- Adjust the Backrest to facilitate X-Ray imaging.

Procedure to use X-Ray Backrest:-

- Raise the Backrest to a convenient position as shown in Fig. 1 & 2.
- Unscrew both the knobs provided at sides of the Cassette holder as shown in Fig. 3.
- Slide the Cassette holder upwards and outwards from its guides as shown in Fig. 4.
- Place the X-Ray plate on the Cassette holder to its desired position for X-Ray imaging.
- Lock the plate in position by adjusting the lever as shown in Fig. 5.
- Insert back the Cassette holder with Plate in its guides.
- Tighten both the knobs provided at sides.
- Adjust the Backrest to facilitate X-Ray imaging.



Only authorized and qualified persons designated by the Operator and having proper training should be allowed to prepare the bed with patient for X-Ray imaging.



Do not stretch / extend the power supply cord from its plug.



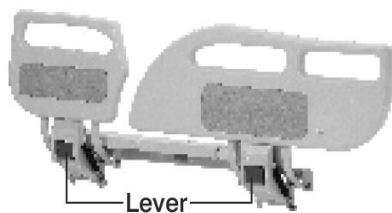
Do not load the Bed more than the Safe Working Load as mentioned above

Head & Foot Boards

- The Head and Foot Board are located at the head and foot end of the Bed frame.
- The Head and Foot Board can be removed or attached in a single step by extending equal force with both the hands in the bracket by ensuring the proper matching of the brackets with board holder fitted in the main frame.
- The Head and Foot Boards can be removed for ease of access to the patient from head and foot side.



Do not hang any heavy items on the Head and Foot Boards.



(0360)



DX4205/4305 with 0380 Railing



0354B



0356B

- To use the Safety Side Railings - Immobilize the Bed.
- To raise the Railing, pull it to the top position until it gets locked.
- To release / lower the Safety Side Railing, ensure that there are no obstacles in the path of the railing. Lift the lever and push the Safety Side Railing down to its end position.
- Always keep the Safety Side Railing in raised condition when moving the patient with the Bed. Do not use the Safety Side Railing to lift or move the Bed.
- Safety Side Railings must only be used with a mattress of the correct size and which is approved for used with the Bed.
- To prevent the patient from falling, ensure that the Safety Side Railings are in raised position.
- The clinically qualified person responsible should consider the age, size and condition of the patient before allowing the use of the Safety Side Railings.
- Other manufacturer's Safety Side Railings are not compatible with these Beds. Please take care of fingers and hands while operating the Safety Side Railings.



Although the Safety Side Railings have been designed to reduce the risk of patient injury, the potential exists for patient entrapment, particularly in agitated or disoriented patients, patients who have cognitive disability or have uncontrolled body movement as well as patients who lack the physical strength to extract themselves, if they get entrapped.



Users should carefully evaluate the need for Safety Side Railings and periodically check patients in accordance with facility protocols for safe positioning.

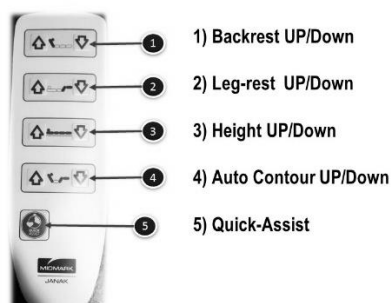


The Safety Side Railings should always be in raised position when attaining lowest height position or when attaining Trendelenburg / Reverse Trendelenburg Tilt positions.



If these safety measures are not observed, injuries can be caused to hands, knees, fingers, feet, legs or other body parts of patient due to unintended entrapment. In children or weak patients who are less than 146 cms tall, non-observance of these guidelines may even lead to death.

Handset



- The Handset is used for activating the above clinical positions by the User or the Operator.
- Switch the any button to activate the Handset.
- Press the desired function button and simultaneously press the up or down control key to get the required position.
- Hang the Handset on the Safety Side Railings.



The bed should be brought to its lowest position, to facilitate the convenient movement of patient in & out of the Bed.



Do not operate any clinical position for more than TWO minutes at a stretch; it might over heat the control system.



Do not misuse or allow children to play with the Handset as it can cause an inadvertent change in clinical position of the Bed and endanger the patient.



Hand set, if dropped can cause malfunctioning.

Battery

The Bed is equipped with battery to allow emergency operation of the electric drive system. This ensures that all the power requirements can still be supplied in the event of power failure. The battery also has inbuilt fuse protection for the safety of battery as well as users.



It is necessary to fully charge the battery at least once a month, especially when the Bed has not been in use for a long time. Otherwise the battery could get permanently discharged and/or damaged.



Always keep the Bed connected to the main supply to get a fully charged battery for any emergency use. Operations of the Bed on battery should be only as per its duty cycle (refer Electrical Specifications given above)



Do not bring fire or a heated object close to the Product as the batteries in the Bed may emit hydrogen gas.



With due consideration to environmental limitations, materials used to make the device are not affected by contact with any bio chemicals or bio waste. When used as per its intended purpose, all materials used in the product and accessories do not facilitate any breeding or growth of bio contaminants on their own

MAINTENANCE & CLEANING

Maintenance

Each time before putting the Bed into service the user must check that-

- All the functions are in satisfactory working condition before the Bed is allotted to the next patient. Unplug the mains supply before carrying out any maintenance activity.
- Lubrication of all the mechanical joints/ pins / moving parts / tightening of the bolts should be carried out at least once in three months , to avoid unnecessary sound and wear & tear of the Bed.
- At regular intervals carry out a visual inspection and check for any mechanical damage (e.g. loose/missing rivets, screws, etc.)
- If any damage or malfunction is observed, immediately report this matter to the operator.
- If the Bed is not in use, it should be stored in a dry and flat indoor environment which is rodent free with gradient not more than 5 degrees.
- If the Bed is not in use for long term, it is necessary to conduct a test to check for functioning and any electrical or mechanical damage that may have been caused.
- Depending on the usage, certain moving parts may require replacement due to wear & tear. We recommend timely replacement with genuine 'Midmark' spares for safety and trouble free operation.

Cleaning & Disinfecting -

- The Bed is not suitable for machine wash or steam cleaning. Do not use water jet for cleaning.
- Always disconnect the mains power cord from the electrical power supply before cleaning.
- Wipe the electrical components with dry cloth only. No traces of water or disinfectant should be present on any electrical component.
- The Bed cannot tolerate the influence of strong solvent, basic or alkaline liquids & caustic agents. Also, do not use concentrated insecticides on electrical parts.
- The cleaning agents must not contain any substances which bring about any change in the structure or adhesive property of the plastic.
- The Bed should be properly cleaned and disinfected to avoid infection and stains before allotment to a new patient.
- Immobilize the Bed & remove all the detachable accessories and components before cleaning. Any prolonged contact of urine or acid on mild steel can corrode the surface. Keep the surface dry at all times.
- Wearing suitable protective clothing, clean the surface with a disposable cloth soaked in a neutral detergent and hot water. We recommend use of approved disinfectant and cleaning agents to clean the Bed. E.g. Bacillocid or other similar agents.
- Start by cleaning the upper sections of the Bed & work along all horizontal surfaces. Work methodically towards the lower sections of the Bed. Take extra care to clean areas that may trap dust or dirt. All detachable accessories and its component can be cleaned separately.



Do not expose the Bed to excessive moisture as corrosion may cause personal injury or equipment damage.

Disposal:

Product and its defective parts especially elements made of plastic, steel, rubber and electrical / electronics (including battery) material should be disposed of in accordance with the statutory rules and regulations prevailing for such disposal. The user is advised to contact 'Midmark' for further assistance.



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Routine Inspection Check List: Inspection By The User


(Recommended Frequency: Every new allotment but not later than one month)

Checks	Observations	Ok	Not Ok	Descriptions of Faults
Visual Check of electrical components				
Handset	Damage, Loose, hanging.			
Mains Cable	Damage, Loose, hanging.			
Control Elements	Damage, Loose, hanging.			
Visual Check of Mechanical components				
Main Frame	Damage, Deformation			
IV Rod	Damage, Bend			
Mattress	Damage			
Metal Tops	Cleaning, Damage, Deformation.			
Screw and Rivets	Missing, Loose.			
Performance Check of electrical components.				
Handset	Functional test			
Control unit	Functional test			
Actuators	Functional test			
Performance Check of all Mechanical components.				
Screw Mechanism	Smooth Movement			
Detachable Head & Foot Boards	Secure Retention			
Castors	Locking and release			
Emergency Lowering of Backrest (CPR)	Functional test			
Safety Side Railing	Engagement, release, secure fastening			
Leg-rest	Function test			
Accessories	Fastening, damage, missing			
Sign	Result of inspection		Date	

Trouble Shooting Guide

PROBLEM	POSSIBLE CAUSES	REMEDY
The Bed is not working	<ul style="list-style-type: none"> • No power supply at mains socket. • The Mains cable is not plugged in. • Main fuse blown. 	<ul style="list-style-type: none"> • Check in the supply current • Plug in the mains cable • Replace the fuse (2A)
Certain functions are not working	<ul style="list-style-type: none"> • Actuator not functioning • Replace the Actuator • Control unit not functioning • Handset not functioning • Cables of the actuators are loosened 	<ul style="list-style-type: none"> • Check the Actuator connector for any loose connection • Repair or replace the control unit • Repair or replace the Handset • Fix the cables firmly
Bed is not functioning during mains power failure	<ul style="list-style-type: none"> • Battery discharged • Battery fuse blown off • Battery wire loosened 	<ul style="list-style-type: none"> • Recharge the battery as recommended • Replace the fuse (2A) • Fix the battery wire firmly
Beeping sound from the Control Unit	<ul style="list-style-type: none"> • Overloading on the bed. • Internal or external fuse blown off. • Battery discharged. 	<ul style="list-style-type: none"> • Reduce the load on the battery • Replace (10A) with suitable matching fuse • Recharge the battery.
Castors not working	<ul style="list-style-type: none"> • Castors are damaged • Castors are not locking 	<ul style="list-style-type: none"> • Replace the Castors • Check the Locking lever for any damage & replace the Castor.
Abnormal sound/vibrations during any operation	<ul style="list-style-type: none"> • Linkages are tight • Nut/Bolts are loosen 	<ul style="list-style-type: none"> • Lubricate the Linkages from its joints. • Tighten the bolts.
Unusual burning smell	<ul style="list-style-type: none"> • Check for any short circuit in the Mains wire • Short circuit in the Control Unit 	<ul style="list-style-type: none"> • Switch off the mains supply & Unplug and remove the mains plug from its socket & contact 'Janak' For further assistance.
Manual CPR function is not working	<ul style="list-style-type: none"> • Bowden cable are set with too much slack or have become unhooked • Breaking of Bowden cable • Squeaking in Bowden cable 	<ul style="list-style-type: none"> • Readjust the release lever or adjust the wire by loosening the wire. • Lubricate or replace the cable
Screw Mechanism not working	<ul style="list-style-type: none"> • Mechanism is jam, very tight to rotate • Mechanism is damaged 	<ul style="list-style-type: none"> • Lubricate • Replace the screw mechanism
Railing not locking in raised position	<ul style="list-style-type: none"> • (0360) Gas Spring is not working due to Oil leakage • (0354B) check the locking lever and the locking spring tension 	<ul style="list-style-type: none"> • Check & replace the Gas Spring • Replace the lever/spring • Replace, plunger knob/spring



	<ul style="list-style-type: none">• (0356B) Check plunger knob and hole alignment, plunger knob broken, plunger knob spring defective	 Because we care.
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WARRANTY & SERVICE

Midmark India Pvt. Ltd. warrants solely to the end-users of this DX4305 & DX4205 bed that for a period specified in the warranty certificate, such DX4305 & DX4205 bed shall perform as per its intended use. The foregoing warranties shall not apply if the Product has been subjected to:(a) physical abuse, misuse, abnormal use, or use not consistent with Midmark India Pvt. Ltd.'s published directions, (b) any modification by anyone other than Midmark India Pvt. Ltd., or third parties designated by Midmark India Pvt. Ltd., or (c) fraud, tampering, negligence or accidents, depending upon the nature of the products.

Limitation Of Liability: In no event shall Midmark India Pvt. Ltd., be liable or obligated to the end-user in any manner for any special, non-compensatory, consequential, indirect, incidental, statutory or punitive damages of any kind. Including, without limitation. For injury or loss of life, lost profits lost sales. Lost revenue, loss of any software or data. or loss of use of any hardware, software or data, regardless of the form of action, whether in contract, tort, negligence, strict product liability, or otherwise, even if Midmark India Pvt. Ltd., has been informed of or is aware of the possibility of any such damages in advance. Midmark India Pvt. Ltd.'s total aggregate liability under this agreement and in relation to anything which Midmark India Pvt. Ltd., has done or not done in connection with this agreement shall be limited to the price of the products purchased and paid for by the end-user during the period in which such liability arises. The limitations set forth above shall be deemed to apply to the maximum extent permitted by applicable law and notwithstanding the failure of the essential purpose of any limited remedies.

In order to maintain functional safety and right to claim under the warranty only original 'Midmark' replacements parts may be used for ordering replacement parts, customer service request and further question, please contact our technical support department.

Disclaimer

Every effort has been made to ensure that the information in this user manual is valid. Midmark India Pvt. Ltd., reserves the right to change the information in this document without prior notice."

MANUFACTURER'S ADDRESS

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