

mackworth

TX Ceiling Track Hoist



User Manual

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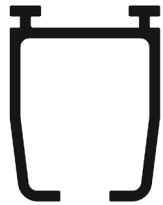
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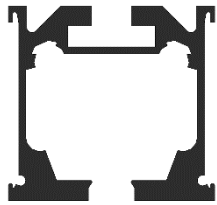
1.0 Safety Instructions and Warnings

1.1 Introduction

This manual includes the TX440 and TX600 Ceiling Track Hoists, along with all variants for various track types. Below a list of all track profiles that the TX can be installed into through the different configurations. The below profiles must match your pre-installed track for the TX to be installed.



Type 1



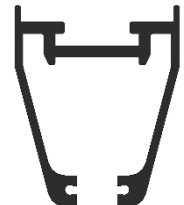
Type 2



Type 3



Type 4



Type 5

The list below includes all types of TX that are covered by this User Manual and which track type they are suitable for.

Hoist Type	Track Type
TX440 – 122515	Type 1
TX440 – 122516	Type 2
TX440 – 122517	Type 3
TX440 – 122518	Type 4
TX440 – 122519	Type 5
TX600 – 122520	Type 1
TX600 – 122521	Type 2
TX600 – 122522	Type 3
TX600 – 122523	Type 4
TX600 – 122524	Type 5

Table 1

As hoisting and transferring a person presents a potential risk, the information in this manual is important to your safety.



Please read and understand this manual in its entirety before using your TX Hoist.

The information in this manual is important for the safety of anyone near the TX Hoist and must be read and understood to help prevent injuries. It is also crucial to the proper operation and maintenance of the TX Hoist.

Store this manual with the documents included with the hoist system and sling(s). The TX Hoist is designed to be used in conjunction with Mackworth Hoist track, accessories and slings. Please refer to any user guides supplied with these components while reviewing this manual.

Should any questions arise from reviewing this manual, contact your local authorised representative.

Failure to comply with warnings in this manual may result in; injury to the operator and/or client and/or damage to the Ceiling Track Hoist or related components.

Contents of this manual are subject to change without prior notice.



Do not attempt to use this equipment without first understanding the contents of this manual.



Unauthorised modifications on any Mackworth product may affect its safety. The manufacturer will not be held responsible for any accident, incident or deficiencies of performance that occur as a result of any unauthorised modification to its products.

1.2 Manufacture

The Hoist is manufactured at the address below:



Prism Medical UK
Unit 1, Tir Llwyd Industrial Estate, St Asaph Avenue, Kinmel Bay, Conwy, LL18 5JZ
Telephone number: 01924 840 100

1.3 European Authorised Representative

The address of the European Authorised Representative for this product:



European Healthcare & Device Solutions (Ireland) Ltd.
Stratton House, Bishopstown Road,
Cork, Ireland.
T12 Y9TC.
Telephone number: +353(86)2280846

1.4 Symbols Used

The Table below includes all Symbols from BS EN ISO 15223-1:2016 that can be found in this Manual and on the Product and what they represent. Refer back to this Table when you are unsure of what a symbol represents.



















	Consult instructions before use		Caution – see instructions for use
	Class II Equipment - electrical equipment in which protection against electric shock does not rely on basic insulation only	SWL	Safe Working Load represents the maximum load rated for safe operation
	Manufacturer		Date of manufacture
	Packaging indicator – This way up		Packaging indicator – Keep dry
	Serial number		For internal use only
	Please observe local laws on recycling	IP_{N₁}N₂	Degree of protection provided by enclosure. N ₁ : Ingress of particles N ₂ : Ingress of water
	Temperature range		Humidity range
	Atmospheric pressure range		Type 'B' applied part
	Catalogue number		Type 'BF' applied part
	UK CA		European Authorised Representative

Table 2

1.5 Contraindications/Limitations

There are no known “contraindications” associated with the usage of the TX Hoist and its accessories, provided they are used as per manufacturer’s recommendations and guidelines. However, it is recommended that a client specific assessment is completed by a trained and knowledgeable health care professional to determine the method of transfer.

Mackworth does not recommend a required number of care givers for the use of our products. This information and recommendation can only be provided after a thorough personalized, case specific assessment, as there are many factors that can influence these decisions.

1.6 Intended Use



For internal use only.

This manual includes the TX440 and TX600 Ceiling Track Hoists, along with all variants for various track types.

All models of TX440 found in Table 1 below have a Safe Working Load (SWL) of 202kg (440 lb).

All models of TX600 found in Table 1 below have a Safe Working Load of 272kg (600lb).

The TX Hoist is a raising and lowering aid used to transfer people safely. The Hoist makes it possible to move mobility impaired individuals with minimal strain or risk to the caregiver, while providing complete safety, dignity and comfort for the person being moved.

The easy to use Hoist is designed to be operated by both professional health care workers and home health care workers who may not have a specific range of skills in health care. Typical home care users may include, but is not limited to, teachers, medics, paramedics, carers, family and friends. Focusing on the dignity and wellbeing of the person being moved, the simple to use hoist maximises the amount of care provided to the person.

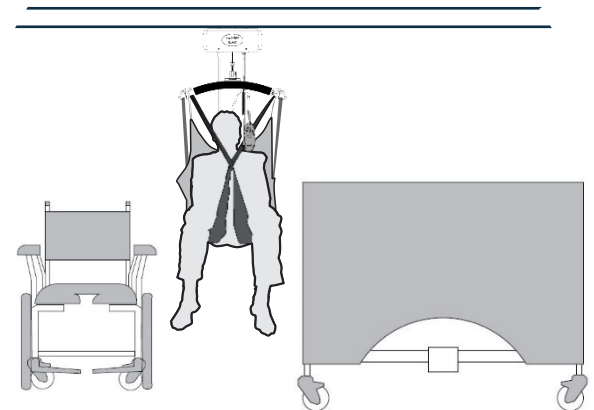


Figure 1

The TX Hoist is a Ceiling Track Hoist, and should only be used whilst on the Ceiling Track. It has the ability to raise up an individual from one location, such as a bed, move the individual along the track to another location and finally lower the individual, such as into a chair or a bath.

The TX is intended to be used with Mackworth/Care-ability slings and the Ceiling Track system. Together these three items make up the system. Please refer to any user guides supplied with the sling and track system and reference them while reviewing this manual.



A risk assessment must be performed before using any other manufactured sling, carry bar or ceiling track to ensure ‘safe’ use can be established.

The device is used under instruction and the operation of the aid is undertaken by a trained carer.

The carry bar is manufactured by Mackworth, associated for use with this device, incorporates three fixing point options at either end of carry bar, with a safety retaining clip on the outer hook. The fixing can be derived by the user, by means of a simple connection loop, made by the sling, to the carry bar. This connection system is used throughout the industry in various designs but all acts as the means to hold the sling and user in place through operation of the device whilst in use.

The sling is a specially designed fabric accessory that attaches to the Hoist by means of a carry bar and strap system, and holds an individual while the hoist or transfer takes place. The sling is supplied separately from the hoist at the initial time of purchase.

The track, also supplied separately from the Hoist at the time of purchase, is the means to operate the Hoist in a defined safe route, enabling the person different uses around the “travel” of the hoist.

- If additional accessories have been supplied with the Hoist, refer to the instructions included with those items.
- The TX Hoist must be installed on the ceiling track prior to use.
- The TX Hoist must be installed only by persons authorized by Mackworth who have had the training to do so.
- Under no circumstance should the TX Hoist, track, sling or entire system be put in control of a person who has not been properly trained in the use and care of this equipment. Failure to adhere to this warning may result in serious injury to the operator, and / or the individual being hoisted / transferred.
- In facilities where more than one operator will be responsible for using the TX Hoist and associated systems and sling(s) it is imperative that all such members be trained in the Hoist's proper use. A training program should be established by the facility to acquaint new operators with this equipment.
- Your guarantee is void if any modifications are made that are not authorised by Mackworth. This includes, but is not limited to, shortening the length of the emergency red cord – for example, tying it up or cutting it.
- The TX Hoist, and associated track and sling are not toys. Do not use it for unsafe practices. Do not allow children to play with the hoist or any of its components.
- Your guarantee is void if persons unauthorized by Mackworth perform work on the Hoist systems.
- There are no user serviceable parts inside the cover of the Hoist, likewise for any components of the associated parts. Do not remove cover screws, or open the Hoist unit, as this will VOID THE GUARANTEE/WARRANTY.
- Never expose the TX Hoist directly to water. Your guarantee does not cover any misuse or abuse of the Hoist system.
- To maintain optimum function, the TX Hoist should be inspected and maintained on a regular basis. See section 'General Inspection, Maintenance and Cleaning' within this user manual.
- Any accessories used with the TX including track and sling(s), should be checked to ensure that they are in good working order. Check for signs of wear to each component prior to use. Report any unusual wear, or damage immediately to your local authorized dealer.
- The TX Hoist and associated accessories, track and sling(s) are intended only for hoisting and transferring of a person. Mackworth will not be responsible for any damage caused by the misuse, neglect or purposeful destruction of the Hoist, and/or its associated components.
- The installation of the Hoist and its associated parts are certified to a maximum load of 200 kg (440 lb) / 270 kg (600 lb), depending on the model. Do not exceed the maximum rated load of any of the components.
- There is a risk of explosion if the Hoist is used in the presence of flammable anaesthetics.
- Ensure that a clear space is maintained around the Hoist and track. Before performing a transfer check for and move all obstacles out of the way.
- Your Hoist is for human hoisting. Do not use it, or allow it to be used, for any other purpose.
- Protecting the people present, visually monitor sling loop connection points during raising, lowering and transfer stages so the sling remains firmly attached to the carry bar.
- In areas where children are prone to be present be vigilant when operating the Hoist.

- To reduce the risk of unintended use, when the Hoist is not in use remove the sling(s) from the product to prevent entrapment or strangulation should the device be tampered with.
- The Hoist batteries are not a user serviceable part. Contact your local authorised dealer to arrange for replacement.
- Before initial use, the Hoist unit must be charged for approximately 8 hours. Refer to section 'Charging the Hoist'. The handset must also be connected to the hoist. To connect the handset refer to the section 'Connecting the Handset to the Hoist'.
- Between the Hoist, Carry Bar, Sling and other accessories, the lowest maximum load shall always be used.



You may need to seek specialist advice on how to assist some people with specific moving and handling needs. Sources of advice include, but is not limited to, professional bodies and organisations, occupational therapist, physiotherapists, manual handling advisers and ergonomist with experience in health and social care.

1.7 Additional Warnings and Safety Notices



Risk of strangulation: Please make sure handset cable and lift tape are clear of all persons at all times.

Risk of impact with carry bar: Please take care to ensure the carry bar is clear of the person in the sling when preparing to raise/lower and move them to avoid any contact with that person.

Risk of collision: The person operating the hoist should make sure that when raising, lowering or moving the Hoist that no people or objects will obstruct, be injured or damaged by the movement.

Serious Injury: If, during the use of this device or as a result of its use a serious incident has occurred, please report it to the manufacturer and to your national authority.

Electric Shock: Do not insert any objects into the hoist case or battery charging station because of potential risk of electric shock.

To reduce the risk of electric shock, do not install or operate the battery charger with a damaged cable or if the unit has been dropped or damaged.

Portable RF Communication Devices: Portable RF communications equipment (including peripherals, such as antenna cables and external antenna) should be used no closer than 30cm (12 inches) to any part of the TX Ceiling Track Hoist, including cables specified by the manufacturer, otherwise degradation of the performance of this equipment could result

Vicinity to Other Equipment: Use of this equipment adjacent to or stacked with other equipment should be avoided, as 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.

Specified Accessories: 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.

1.8 Operating Environment

The TX Hoist is suitable for use within the professional health care facility environment as well as the home health care environment.

The Hoist is not suitable for any special environments.

The Hoist is not intended to be used in environments where there are rapid changes in the environmental temperature and humidity during intended use.

1.9 Essential Performance

The essential performance of the Hoist is defined as:

Raise up, lower down, traverse left, and traverse right and emergency lower.

These functions may be interrupted if the Hoist is subjected to any electromagnetic field created by other electrical devices which are located nearby.

In the event of electromagnetic disturbances, the following conditions may occur:

1. Should the display screen go blank, or become unreadable, but eventually self recovers and there is detrimental effect to performance, continue to use but investigate source of electromagnetic disturbance.
2. Should the display screen go blank, or the charging status bulb continue to flash red or green, the hoist is still acceptable to be used, but investigate EMC source and contact your service provider at the soonest opportunity.
3. Should the motors pause temporarily, the hoist can be continue to be used but investigate EMC source and contact your service provider at the earliest convenience.

1.10 EMC Statement

The following statement has been made against the assumption that the user of the system utilises the provided components supplied by the manufacturer of the device to operate the device as intended. DO NOT use any other form of power charge with the system as the manufacturer's adapter has been assessed and complies with the EMC requirements.

This product, manufactured by Mackworth, has been designed, manufactured and tested in accordance with the legal requirements for the environment in which the device will be used within.

Pacemakers, defibrillators and other medical devices should be manufactured in such a manner that they can withstand Electromagnetic Interferences (EMI) in accordance with their associated mandatory European directives and regulations. Please consult the user alert card which would have been issued to the user regarding the use of electrical items for those individuals fitted with these or any other devices.

If users of this equipment are unsure of its compliance to EMC you can request the confirmation from Mackworth that the product is manufactured to the appropriate Electromagnetic Compatibility standard.

A brief summary of the tests carried out in accordance with IEC 60601-1-2 is shown below in Table 3.

The hoist is also classified as Class B according to CISPR 11:2009 for the home health care environment.

The use of the device within the correct area where the intended use is given will have no detrimental effect on other devices that have been tested to their intended respective requirements.

Section	Specification Clause	Test Description	Results	Comments/ Base Standard
Configuration and Mode: Test setup standby				
2.1	4.4.1	General Requirement; Risk Management Process for ME Equipment and ME Systems	Pass	
2.2	5	Identification, Marking and documents	Pass	
Configuration and Mode: Test setup charging				

2.3	7.1.1	Mains Terminal Disturbance Voltage	Pass	CISPR 11: 2009 A1:2010 EN 55016-2-3: 2004 + A1:2005
2.4	7.1.1	Electromagnetic Radiation Disturbance	Pass	CISPR 11: 2009 A1:2010 EN 55016-2-3: 2004 + A1:2005
2.5	7.2.1	Harmonic Current Emissions (AC Power Port)	Pass	EN 61000-3-2: 2014
2.6	7.2.2	Voltage Fluctuations and Flicker (AC Power Port)	Pass	IEC 61000-3-3: 2013
2.7	Table 4	Immunity to Electrostatic discharge (Enclosure Port)	Pass	IEC 61000-4-2 2008
2.8	Table 4	Immunity to Radiated RF Electromagnetic fields (Enclosure Port)	Pass	IEC 61000-4-3: 2006 A2:2010
2.9	Table 4	Immunity to Proximity Fields from RF Wireless CommunicatioN Equipment (Enclosure Port)	Pass	IEC 61000-4-3: 2006 A2:2010
2.10	Table 5	Immunity to Surges (AC Power Port)	Pass	IEC 61000-4-5: 2005
2.11	Table 5	Immunity to Electrical Fast Transient / Burst (AC Power Port)	Pass	IEC 61000-4-4: 2012
2.12	Table 5	Immunity to Conduct Disturbances Induced by RF Fields (AC Power Port)	Pass	IEC 61000-4-6: 2013
2.13	Table 5	Immunity to Voltage Dips and Voltage Variations (AC Power Port)	Pass	IEC 61000-4-11: 2004
2.14	Table 5	Immunity to Voltage Interruptions (AC Power Port)	Pass	IEC 61000-4-11: 2004
In-Track charging system stand testing				
2.7	Table 4	Immunity to Electrostatic discharge (Enclosure Port)	Pass	IEC 61000-4-2 2008
Configuration and Mode: Test setup standby				
2.4	7.1.1	Electromagnetic Radiation Disturbance	Pass	CISPR 11: 2009 A1:2010 EN 55016-2-3: 2004 + A1:2005
2.7	Table 4	Immunity to Electrostatic discharge (Enclosure Port)	Pass	IEC 61000-4-2 2008
2.8	Table 4	Immunity to Radiated RF Electromagnetic fields (Enclosure Port)	Pass	IEC 61000-4-3: 2006 A2:2010
2.9	Table 4	Immunity to Proximity Fields from RF Wireless CommunicatioN Equipment (Enclosure Port)	Pass	IEC 61000-4-3: 2006 A2:2010
Configuration and Mode: Test set up operating up and down				
2.4	7.1.1	Electromagnetic Radiation Disturbance	Pass	CISPR 11: 2009 A1:2010 EN 55016-2-3: 2004 + A1:2005
2.7	Table 4	Immunity to Electrostatic discharge (Enclosure Port)	Pass	IEC 61000-4-2 2008
2.8	Table 4	Immunity to Radiated RF Electromagnetic fields (Enclosure Port)	Pass	IEC 61000-4-3: 2006 A2:2010
2.9	Table 4	Immunity to Proximity Fields from RF Wireless CommunicatioN Equipment (Enclosure Port)	Pass	IEC 61000-4-3: 2006 A2:2010
Configuration and Mode: Test setup standby				
2.1	4.4.1	General Requirement; Risk Management Process for ME Equipment and ME Systems	Pass	
2.2	5	Identification, Marking and documents	Pass	

Table 3

2.0 Components/Key Parts

Please see below to familiarise yourself with the components of the Mackworth TX Hoist. The images below show the contents of the Ceiling Track Hoist. If you have not received all the components contact your local Mackworth dealer immediately – contact details are provided on the last page of this manual.

Item	Description	Part Numbers
1	TX Hoist	122515, 122516, 122517, 122518, 122519, 122520, 122521, 122522, 122523, 122524
2	Carry Bar	300024
3	Handset	122073
4	Hoist Charger	122100
5	Allen Key	122093
6	User Manual	999553

Table 4

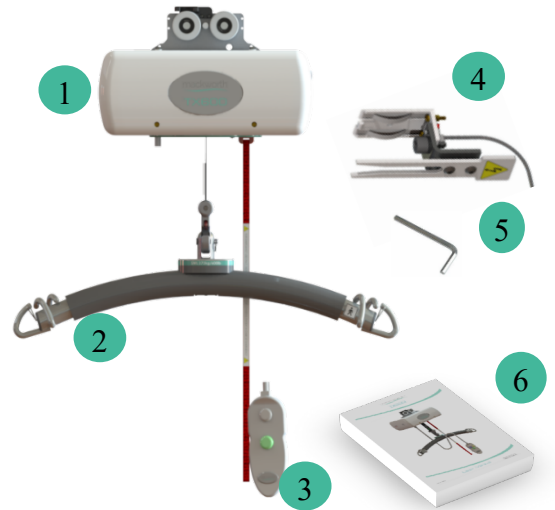


Figure 2

2.1 Unpacking



The Hoist will arrive to you in a robust box, please be careful when removing the components from the box. Please read the user guide in full before operating.

This user manual should be kept safe for future reference.

The Hoist has been specifically designed to be installed in both the professional and home health care environments.

No matter the environment, health and safety factors should be considered to ensure the safety and essential performance of the Hoist and to avoid unnecessary damage or injuries to people within the area of the Hoist.



When using a sharp knife, be careful not to damage the product.

This section will summarize the layout of the Hoist Packaging and what is included in the Box. It is recommended a knife is used for smoother unpacking of the Hoist. The Hoist is packed into a single box (280x670x365), weighing approximately 15kg.

Using a knife to open the box around the perimeter, the box should open, remove the internal packaging to access the product. It will include all the components listed above.

Please see below to familiarise yourself with the components of the TX Hoist. The images below show the contents of the hoist package. If you have not received all the components contact your local Mackworth dealer immediately – contact details are provided on the last page of this manual.



Figure 3

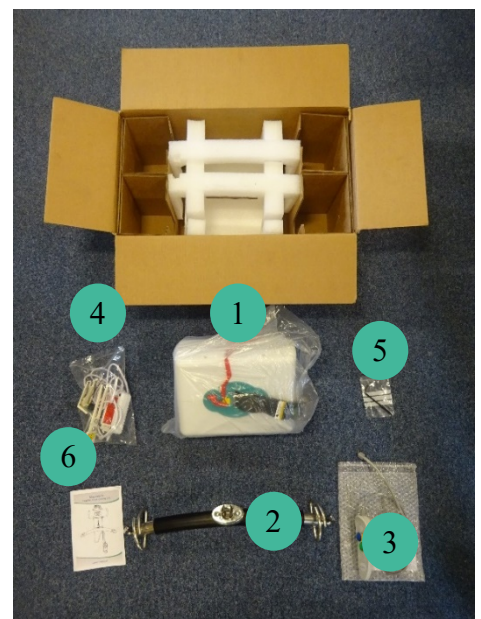


Figure 4

3.0 Installation

The TX Hoist has been specifically designed to be installed in both the professional and home health care environments.

No matter the environment, health and safety factors should be considered to ensure the safety and essential performance of the Hoist and to avoid unnecessary damage or injuries to people within the area of the Hoist.

Typical examples include: radiated heat (e.g. from a heater or fire place), excessive moisture impacting electrical performance (e.g. from a bathroom or kitchen area) and the correct storage of the Hoist after use (e.g. handset position on the carry bar).

The Hoist is not intended to be used in environments where there are rapid changes in the environmental temperature and humidity during intended use.

This manual covers the safety and advice for the TX and moving and handling risks can be done in-house, as long as the person is competent to identify and address the risks.

Refer to the Commissioning guide document which outlines the correct procedure to install the product.
Document Number: 996553.

You may need to seek to seek specialist advice on how to assist some people with specific moving and handling needs. Sources of advice include, but is not limited to, professional bodies and organisations, occupational therapist, physiotherapists, manual handling advisers and ergonomist with experience in health and social care.



A Mackworth approved engineer must install the hoist.

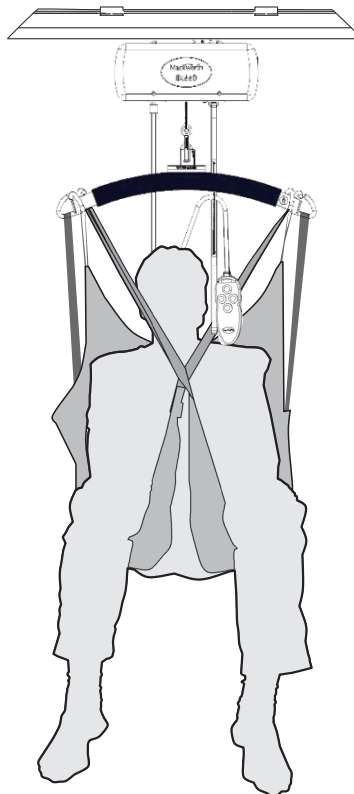


Figure 5

4.0 Type 'BF' Applied parts

Below shows the two parts of the hoisting system, which are classed as Body Floating (BF) applied parts. The carry bar is a complete assembled unit which allows approved Prism slings to be attached, to lift and assist patient. See section 5.1 for instructions to attach carry bar to Hoist system and 5.2 to attach an approved sling to the carry bar. To see Prism Medical UK approved sling list see table 5 and 6.



5.0 Frequently Used Functions

5.1 Carry Bar

Attach the carry bar (type 'BF applied part) into the hook on the lift tape, located at the end opposite to the hoist, in the following way:

1. On the hook, move the locking mechanism into the hook by pressing down on the tab (Figure 6 and 7).
2. With the carry bar positioned sideways along the length of the bar, move the pin at the top of the carry bar into the hook (Figure 8).
3. Alternatively, with the carry bar positioned sideways, the pin at the top of the carry bar can gently push the locking mechanism out of the way as the pin is carefully moved into the hook.
4. Once the pin is in the hook, rotate the carry bar 90° down so the carry bar is hanging below the hook on the pin in the hook. Move the locking mechanism into place by pushing up on the tab, securing the carry bar on the hook and lifting tape. (Figure 10 and 11)



Figure 6

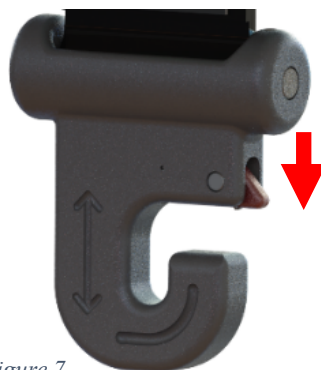


Figure 7

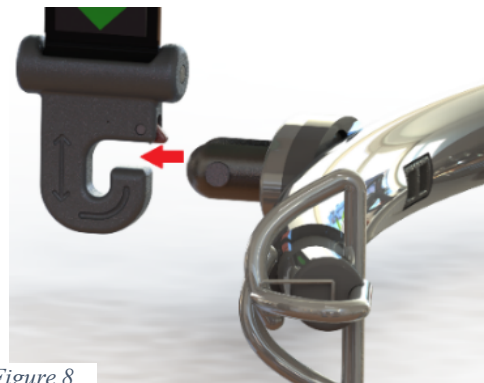


Figure 8



Figure 9

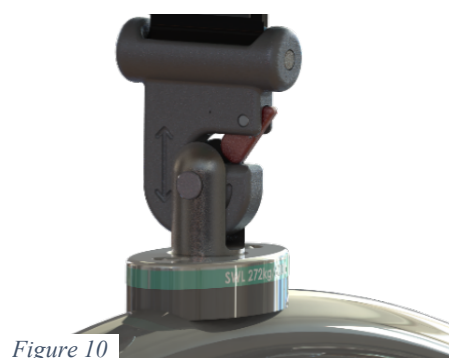


Figure 10

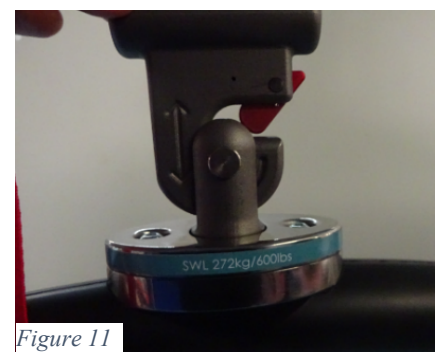


Figure 11

5.2 Sling

The way the sling is attached to the carry bar needs to be assessed on individual basis and documented in the individual's care plan. Furthermore, the person attaching the sling to the carry bar should reference the user manual for the specific sling in use as attachment points vary depending on the application and type.

Only after the correct attachment is fully understood should the sling loops be fitted onto the carry bar in the correct order.

Sling loops should be attached as follows:

1. Put the required sling loop onto your finger and thumb and then using the same finger or thumb, pull back the spring locking mechanism on the correct hook on the correct side of the carry bar (Figure 12).
2. Slide the sling loop from your finger and thumb over the edge of the hook (Figure 14 and 15).
3. After positioning the loop below the locking mechanism (Figure 15) release the spring locking mechanism to secure the sling loop. (Figure 16)



Make sure the required loop(s) are on the correct hooks and are correctly positioned.



Figure 12



Figure 13

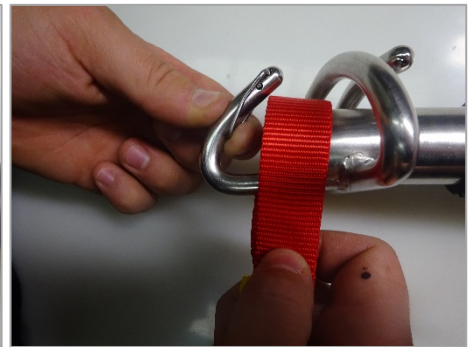


Figure 14

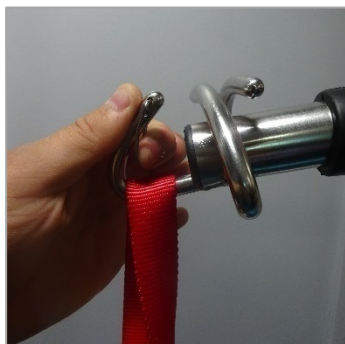


Figure 15



Figure 16

To remove the sling, simply reverse the process – pull back on the spring locking mechanism, lift the loop out of the hook and release the locking mechanism.

We recommend the use of Mackworth manufactured sling range (type 'BF' applied part) to be utilised with the TX Hoist. It is at the user's discretion to use alternative supplied product. In utilising another manufacturer's sling, checks must first be made to ensure the sling is safe to use and meets the requirements of BS EN ISO 10535 before its use and a full risk assessment to be carry out before use.

The Mackworth slings with a safe working load of 272 kg (600 lb) or more that can be used with the TX Hoist are shown below in Table 5, complete with product codes.

Size	Mackworth Sling Range - Product Material and Code				
	Polyester Solid	Polyester Mesh	Parasilk	Quilted	Supersoft Spacer
Mackworth Oak					
Small	1201OK7500	1201OK8500	1201OK3500	1201OK5500	1201OK4500
Medium	1201OK7400	1201OK8400	1201OK3400	1201OK5400	1201OK4400
Large	1201OK7300	1201OK8300	1201OK3300	1201OK5300	1201OK4300
XL	1201OK7200	1201OK8200	1201OK3200	1201OK5200	1201OK4200
XXL	1201OK7100	1201OK8100	1201OK3100	1201OK5100	1201OK4100
XXXL	1201OK7000	1201OK8000	1201OK3000	1201OK5000	1201OK4000
Mackworth Oak with head support					
Small	1201OK7520	1201OK8520	1201OK3520	1201OK5520	1201OK4520
Medium	1201OK7420	1201OK8420	1201OK3420	1201OK5420	1201OK4420
Large	1201OK7320	1201OK8320	1201OK3320	1201OK5320	1201OK4320
XL	1201OK7220	1201OK8220	1201OK3220	1201OK5220	1201OK4220
XXL	1201OK7120	1201OK8120	1201OK3120	1201OK5120	1201OK4120
XXXL	1201OK7020	1201OK8020	1201OK3020	1201OK5020	1201OK4020
Mackworth Yew					
Small	1201YW7500	1201YW8500	1201YW3500	n/a	1201YW4500
Medium	1201YW7400	1201YW8400	1201YW3400	n/a	1201YW4400
Large	1201YW7300	1201YW8300	1201YW3300	n/a	1201YW4300
XL	1201YW7200	1201YW8200	1201YW3200	n/a	1201YW4200
XXL	1201YW7100	1201YW8100	1201YW3100	n/a	1201YW4100
XXXL	1201YW7000	1201YW8000	1201YW3000	n/a	1201YW4000
Mackworth Yew with head support					
Small	1201YW7520	1201YW8520	1201YW3520	n/a	1201YW4520
Medium	1201YW7420	1201YW8420	1201YW3420	n/a	1201YW4420
Large	1201YW7320	1201YW8320	1201YW3320	n/a	1201YW4320
XL	1201YW7220	1201YW8220	1201YW3220	n/a	1201YW4220
XXL	1201YW7120	1201YW8120	1201YW3120	n/a	1201YW4120
XXXL	1201YW7020	1201YW8020	1201YW3020	n/a	1201YW4020
Mackworth Hazel					
Small	1201HZ7500	1201HZ8500	1201HZ3500	1201HZ5500	1201HZ4500
Medium	1201HZ7400	1201HZ8500	1201HZ3400	1201HZ5400	1201HZ4400
Large	1201HZ7300	1201HZ8300	1201HZ3300	1201HZ5300	1201HZ4300
XL	1201HZ7200	1201HZ8200	1201HZ3200	1201HZ5200	1201HZ4200
XXL	1201HZ7100	1201HZ8100	1201HZ3100	1201HZ5100	1201HZ4100
XXXL	1201HZ7000	1201HZ8000	1201HZ3000	1201HZ5000	1201HZ4000
Mackworth Hazel with head support					
Small	1201HZ7520	1201HZ8520	1201HZ3520	1201HZ5520	1201HZ4520
Medium	1201HZ7420	1201HZ8520	1201HZ3420	1201HZ5420	1201HZ4420
Large	1201HZ7320	1201HZ8320	1201HZ3320	1201HZ5320	1201HZ4320
XL	1201HZ7220	1201HZ8220	1201HZ3220	1201HZ5220	1201HZ4220
XXL	1201HZ7120	1201HZ8120	1201HZ3120	1201HZ5120	1201HZ4120
XXXL	1201HZ7020	1201HZ8020	1201HZ3020	1201HZ5020	1201HZ4020
Mackworth Willow					
Small	1201WL7500	This sling is made up of a single quilted material backed with solid polyester material.			
Medium	1201WL7400				
Large	1201WL7300				
XL	1201WL7200				
XXL	1201WL7100				

XXXL	1201WL7000				
Mackworth Willow with head support					
Small	1201WL7520	This sling is made up of a single quilted material backed with solid polyester material.			
Medium	1201WL7420				
Large	1201WL7320				
XL	1201WL7220				
XXL	1201WL7120				
XXXL	1201WL7020				
Mackworth Beech					
Small	1201BC7500	1201BC8500	1201BC3500	1201BC5500	1201BC4500
Medium	1201BC7400	1201BC8400	1201BC3400	1201BC5400	1201BC4400
Large	1201BC7300	1201BC8300	1201BC3300	1201BC5300	1201BC4300
XL	1201BC7200	1201BC8200	1201BC3200	1201BC5200	1201BC4200
XXL	1201BC7100	1201BC8100	1201BC3100	1201BC5100	1201BC4100
XXXL	1201BC7000	1201BC8000	1201BC3000	1201BC5000	1201BC4000
Mackworth Beech with head support					
Small	1201BC7520	1201BC8520	1201BC3520	1201BC5520	1201BC4520
Medium	1201BC7420	1201BC8420	1201BC3420	1201BC5420	1201BC4420
Large	1201BC7320	1201BC8320	1201BC3320	1201BC5320	1201BC4320
XL	1201BC7220	1201BC8220	1201BC3220	1201BC5220	1201BC4220
XXL	1201BC7120	1201BC8120	1201BC3120	1201BC5120	1201BC4120
XXXL	1201BC7020	1201BC8020	1201BC3020	1201BC5020	1201BC4020
Mackworth Pine					
Small	1201PN7500	1201PN8500	1201PN3500	1201PN5500	1201PN4500
Medium	1201PN7400	1201PN8400	1201PN3400	1201PN5400	1201PN4400
Large	1201PN7300	1201PN8300	1201PN3300	1201PN5300	1201PN4300
XL	1201PN7200	1201PN8200	1201PN3200	1201PN5200	1201PN4200
XXL	1201PN7100	1201PN8100	1201PN3100	1201PN5100	1201PN4100
XXXL	1201PN7000	1201PN8000	1201PN3000	1201PN5000	1201PN4000
Mackworth Pine with head support					
Small	1201PN7520	1201PN8520	1201PN3520	1201PN5520	1201PN4520
Medium	1201PN7420	1201PN8420	1201PN3420	1201PN5420	1201PN4420
Large	1201PN7320	1201PN8320	1201PN3320	1201PN5320	1201PN4320
XL	1201PN7220	1201PN8220	1201PN3220	1201PN5220	1201PN4220
XXL	1201PN7120	1201PN8120	1201PN3120	1201PN5120	1201PN4120
XXXL	1201PN7020	1201PN8020	1201PN3020	1201PN5020	1201PN4020

Table 5

The Care-Ability slings with a safe working load of 272 kg (600 lb) or more that can be used with the TX Hoist are shown below in Table 6, complete with product codes.

Size	Care-Ability Sling Range - Product Material and Code		
	Polyester	Mesh	Spacer
CA300 Universal			
P1	CA300PP1	CA300MP1	CA300SP1
P2	CA300PP2	CA300MP2	CA300SP2
P3	CA300PP3	CA300MP3	CA300SP3
P4	CA300PP4	CA300MP4	CA300SP4
P5	CA300PP5	CA300MP5	CA300SP5

X Small	CA300PXS	CA300MXS	CA300SXS
Small	CA300PS	CA300MS	CA300SS
Small/Medium	CA300PSM	CA300MSM	CA300SSM
Medium	CA300PM	CA300MM	CA300SM
Medium/Large	CA300PML	CA300MML	CA300SML
Large	CA300PL	CA300ML	CA300SL
X Large	CA300PXL	CA300MXL	CA300SXL
CA400 Universal Deluxe			
P1	CA400PP1	CA400MP1	CA400SP1
P2	CA400PP2	CA400MP2	CA400SP2
P3	CA400PP3	CA400MP3	CA400SP3
P4	CA400PP4	CA400MP4	CA400SP4
P5	CA400PP5	CA400MP5	CA400SP5
X Small	CA400PXS	CA400MXS	CA400SXS
Small	CA400PS	CA400MS	CA400SS
Small/Medium	CA400PSM	CA400MSM	CA400SSM
Medium	CA400PM	CA400MM	CA400SM
Medium/Large	CA400PML	CA400MML	CA400SML
Large	CA400PL	CA400ML	CA400SL
X Large	CA400PXL	CA400MXL	CA400SXL
CA500 Toilet Access			
P1	CA500PP1	CA500MP1	CA500SP1
P2	CA500PP2	CA500MP2	CA500SP2
P3	CA500PP3	CA500MP3	CA500SP3
P4	CA500PP4	CA500MP4	CA500SP4
P5	CA500PP5	CA500MP5	CA500SP5
X Small	CA500PXS	CA500MXS	CA500SXS
Small	CA500PS	CA500MS	CA500SS
Small/Medium	CA500PSM	CA500MSM	CA500SSM
Medium	CA500PM	CA500MM	CA500SM
Medium/Large	CA500PML	CA500MML	CA500SML
Large	CA500PL	CA500ML	CA500SL
X Large	CA500PXL	CA500MXL	CA500SXL
CA501 Toilet Access with crossover straps			
P1	CA501PP1	CA501MP1	CA501SP1
P2	CA501PP2	CA501MP2	CA501SP2
P3	CA501PP3	CA501MP3	CA501SP3
P4	CA501PP4	CA501MP4	CA501SP4
P5	CA501PP5	CA501MP5	CA501SP5
X Small	CA501PXS	CA501MXS	CA501SXS
Small	CA501PS	CA501MS	CA501SS
Small/Medium	CA501PSM	CA501MSM	CA501SSM
Medium	CA501PM	CA501MM	CA501SM
Medium/Large	CA501PML	CA501MML	CA501SML
Large	CA501PL	CA501ML	CA501SL

X Large	CA501PXL	CA501MXL	CA501SXL
CA502 Toilet Access with head support			
P1	CA502PP1	CA502MP1	CA502SP1
P2	CA502PP2	CA502MP2	CA502SP2
P3	CA502PP3	CA502MP3	CA502SP3
P4	CA502PP4	CA502MP4	CA502SP4
P5	CA502PP5	CA502MP5	CA502SP5
X Small	CA502PXS	CA502MXS	CA502SXS
Small	CA502PS	CA502MS	CA502SS
Small/Medium	CA502PSM	CA502MSM	CA502SSM
Medium	CA502PM	CA502MM	CA502SM
Medium/Large	CA502PML	CA502MML	CA502SML
Large	CA502PL	CA502ML	CA502SL
X Large	CA502PXL	CA502MXL	CA502SXL
CA503 Toilet Access with high back			
P1	CA503PP1	CA503MP1	CA503SP1
P2	CA503PP2	CA503MP2	CA503SP2
P3	CA503PP3	CA503MP3	CA503SP3
P4	CA503PP4	CA503MP4	CA503SP4
P5	CA503PP5	CA503MP5	CA503SP5
X Small	CA503PXS	CA503MXS	CA503SXS
Small	CA503PS	CA503MS	CA503SS
Small/Medium	CA503PSM	CA503MSM	CA503SSM
Medium	CA503PM	CA503MM	CA503SM
Medium/Large	CA503PML	CA503MML	CA503SML
Large	CA503PL	CA503ML	CA503SL
X Large	CA503PXL	CA503MXL	CA503SXL
CA503E Toilet Access with high back extensor			
X Small	CA503EPXS	n/a	n/a
Small	CA503EPS	n/a	n/a
Medium	CA503EPM	n/a	n/a
Large	CA503EPL	n/a	n/a
X Large	CA503EPXL	n/a	n/a
CA600 Hammock			
P1	CA600PP1	CA600MP1	CA600SP1
P2	CA600PP2	CA600MP2	CA600SP2
P3	CA600PP3	CA600MP3	CA600SP3
P4	CA600PP4	CA600MP4	CA600SP4
P5	CA600PP5	CA600MP5	CA600SP5
X Small	CA600PXS	CA600MXS	CA600SXS
Small	CA600PS	CA600MS	CA600SS
Small/Medium	CA600PSM	CA600MSM	CA600SSM
Medium	CA600PM	CA600MM	CA600SM
Medium/Large	CA600PML	CA600MML	CA600SML

Large	CA600PL	CA600ML	CA600SL
X Large	CA600PXL	CA600MXL	CA600SXL
CA700 Classic Hammock			
P1	CA700PP1	CA700MP1	CA700SP1
P2	CA700PP2	CA700MP2	CA700SP2
P3	CA700PP3	CA700MP3	CA700SP3
P4	CA700PP4	CA700MP4	CA700SP4
P5	CA700PP5	CA700MP5	CA700SP5
X Small	CA700PXS	CA700MXS	CA700SXS
Small	CA700PS	CA700MS	CA700SS
Small/Medium	CA700PSM	CA700MSM	CA700SSM
Medium	CA700PM	CA700MM	CA700SM
Medium/Large	CA700PML	CA700MML	CA700SML
Large	CA700PL	CA700ML	CA700SL
X Large	CA700PXL	CA700MXL	CA700SXL
CA701 Deluxe Hammock			
P1	CA701PP1	CA701MP1	CA701SP1
P2	CA701PP2	CA701MP2	CA701SP2
P3	CA701PP3	CA701MP3	CA701SP3
P4	CA701PP4	CA701MP4	CA701SP4
P5	CA701PP5	CA701MP5	CA701SP5
X Small	CA701PXS	CA701MXS	CA701SXS
Small	CA701PS	CA701MS	CA701SS
Small/Medium	CA701PSM	CA701MSM	CA701SSM
Medium	CA701PM	CA701MM	CA701SM
Medium/Large	CA701PML	CA701MML	CA701SML
Large	CA701PL	CA701ML	CA701SL
X Large	CA701PXL	CA701MXL	CA701SXL
CA701 Deluxe Hammock with head support			
P1	CA701HSPP1	CA701HSMP1	CA701HSSP1
P2	CA701HSPP2	CA701HSMP2	CA701HSSP2
P3	CA701HSPP3	CA701HSMP3	CA701HSSP3
P4	CA701HSPP4	CA701HSMP4	CA701HSSP4
P5	CA701HSPP5	CA701HSMP5	CA701HSSP5
X Small	CA701HSPXS	CA701HSMXS	CA701HSSXS
Small	CA701HSPS	CA701HSMS	CA701HSSS
Small/Medium	CA701HSPSM	CA701HSMSM	CA701HSSSM
Medium	CA701HSPM	CA701HSMM	CA701HSSM
Medium/Large	CA701HSPML	CA701HSMML	CA701HSSML
Large	CA701HSPL	CA701HSML	CA701HSSL
X Large	CA701HSPXL	CA701HSMXL	CA701HSSXL
CA702 Comfort In Chair Hammock			
P1	CA702PP1	CA702MP1	CA702SP1
P2	CA702PP2	CA702MP2	CA702SP2

P3	CA702PP3	CA702MP3	CA702SP3
P4	CA702PP4	CA702MP4	CA702SP4
P5	CA702PP5	CA702MP5	CA702SP5
X Small	CA702PXS	CA702MXS	CA702SXS
Small	CA702PS	CA702MS	CA702SS
Small/Medium	CA702PSM	CA702MSM	CA702SSM
Medium	CA702PM	CA702MM	CA702SM
Medium/Large	CA702PML	CA702MML	CA702SML
Large	CA702PL	CA702ML	CA702SL
X Large	CA702PXL	CA702MXL	CA702SXL
CA702 Comfort In Chair Hammock with head support			
P1	CA702HSPP1	CA702HSMP1	CA702HSSP1
P2	CA702HSPP2	CA702HSMP2	CA702HSSP2
P3	CA702HSPP3	CA702HSMP3	CA702HSSP3
P4	CA702HSPP4	CA702HSMP4	CA702HSSP4
P5	CA702HSPP5	CA702HSMP5	CA702HSSP5
X Small	CA702HSPXS	CA702HSMXS	CA702HSSXS
Small	CA702HSPS	CA702HSMS	CA702HSSS
Small/Medium	CA702HSPSM	CA702HSMSM	CA702HSSSM
Medium	CA702HSPM	CA702HSMM	CA702HSSM
Medium/Large	CA702HSPML	CA702HSMML	CA702HSSML
Large	CA702HSPL	CA702HSML	CA702HSSL
X Large	CA702HSPXL	CA702HSMXL	CA702HSSXL
CA703 Split Leg In Chair Hammock			
P1	CA703PP1	CA703MP1	CA703SP1
P2	CA703PP2	CA703MP2	CA703SP2
P3	CA703PP3	CA703MP3	CA703SP3
P4	CA703PP4	CA703MP4	CA703SP4
P5	CA703PP5	CA703MP5	CA703SP5
X Small	CA703PXS	CA703MXS	CA703SXS
Small	CA703PS	CA703MS	CA703SS
Small/Medium	CA703PSM	CA703MSM	CA703SSM
Medium	CA703PM	CA703MM	CA703SM
Medium/Large	CA703PML	CA703MML	CA703SML
Large	CA703PL	CA703ML	CA703SL
X Large	CA703PXL	CA703MXL	CA703SXL

Table 6

5.3 Connecting the Handset to the Hoist



A sturdy ladder or steps may be required in order to access the underside of the Hoist to attach the hand controller. Caution should be used when this is required.

Should the grey rubber airline that connects the handset to the hoist become disengaged from the underside of the Hoist it must be re-connected in order for the Hoist to work.

The rubber airline may become disconnected for the following reasons:

1. The Hoist is pulled along the track by the handset.
2. The tubing accidentally gets wrapped around an object while a hoist or transfer is being performed.
3. It is accidentally pulled out by the hoist operator or the individual being hoisted.

In this section the correct procedure on attaching the Handset will be determined.

The Pneumatic Handset is attached to the Hoist through the Airline Grommet on the underside of the Hoist as shown in Figure 19. While holding the Airline Connector at the end of the Handset Air Tubes, locate the two small metal ribbed pins with the Airline Grommet on the Hoist. To correctly locate, ensure the profile of the two parts are lining up, this means the grey rib profile, which faces inwards on the Hoist aligns with the grey rib on the Handset, this is the only way the Handset can be connected, therefore it is not possible to incorrectly mate the two parts.

Once the two parts have been aligned, ensure that the Handset is pushed into the Grommet properly, with both metal pins being fully inserted into the Grommet. This is important to ensure there is no air leak which will affect the Hoist functionality.



Figure 17

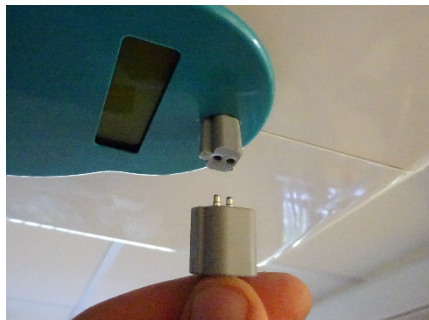


Figure 18

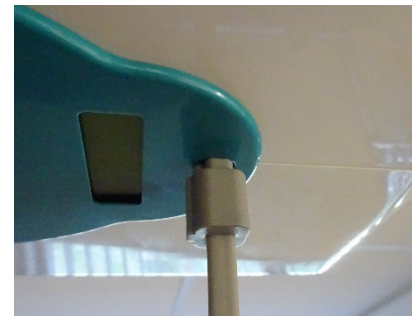


Figure 19

Perform a brief test to ensure proper connectivity. If the hoist is OFF, turn it ON. Use the handset to RAISE and LOWER the carry bar. For powered traverse hoists, also check the hoist correctly moves FORWARD and BACK along the track using the handset. See section 'Hoist Operation' for details of how to perform these functions. If these operations all work as intended, then the handset is correctly connected to the hoist.

If the hoist does not work properly, check to ensure that the grey ribs on the grey rubber grommet on the underside of the hoist and the airline tubing are lined up properly.

If they are not lined up properly, then remove the airline, line up the grey lines and then re-insert it into the rubber grommet. Perform the brief test as described previously. If there are still problems with the hoist, then contact your local Mackworth authorised dealer for service.

To remove the handset, follow the procedure above in reverse.



Figure 20

6.0 Hoist Operation

6.1 Turning the Hoist ON and OFF

To operate the Hoist, it must first be turned ON via the toggle switch on the Hoist itself (see figure 21). This toggle switch has three states, On, Off and E-Lower. To turn the Hoist on, the Toggle Switch must be pressed vertically into the slot. Once this is done, press any button on the handset to “wake up” the Hoist. Once a button has been pressed the Display screen will turn on and the LED will display a steady green.

To conserve battery, the Hoist will automatically shut off after approximately two minutes of non-use.



Figure 21

If the batteries of the Hoist are low and require charging, the LED indicator light located on the hoist will turn ORANGE and flash (see LCD Display Status Indications further in the user manual) depending upon the level of discharge, and an audible buzzing alarm will sound when the level gets critical until charging takes place.

6.2 Raising and lowering the carry bar

By pressing the UP or the DOWN arrow button on the handset, the carry bar can be raised or lowered to the correct height for attaching the sling or positioning an individual. The UP/DOWN functions of the handset buttons are in relation to the travel of the Hoist. That is, the grey button at the top end of the handset activates the UP motion of the carry bar and the Green button activates the DOWN motion (Figure 22).

Shown in the image below are the 2 functions of the hand controller for the hoist.

The Lift Tape includes arrows that corresponds with the colour scheme on the Handset to indicate the correct UP and DOWN button.

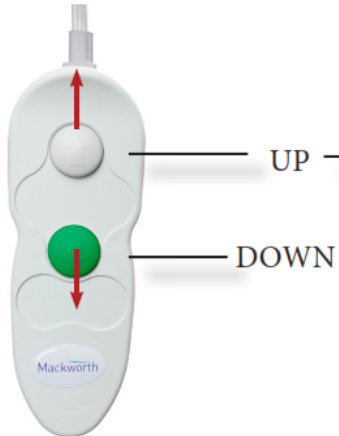


Figure 22

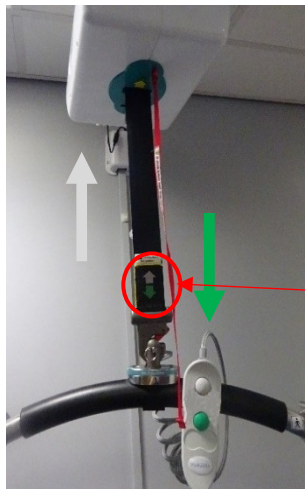


Figure 23

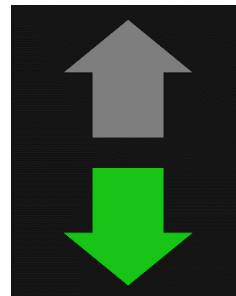


Figure 24

It is recommended that the operator hold the carry bar with one hand while raising/lowering is being done. This will stop the bar accidentally swaying and/or coming into contact with an individual or close object.

For the same reasons, raise the carry bar above head height when not in use and when traversing the unloaded Hoist.

6.3 Handset Storage

The Handset is designed to be stored onto the carry bar. The Handset has a hook attached to the rear face which will slot nicely onto the carry bar, as shown in figure 25. It is recommended that the Handset be stored on the carry bar at all times when not in use for safe keeping and easy access.

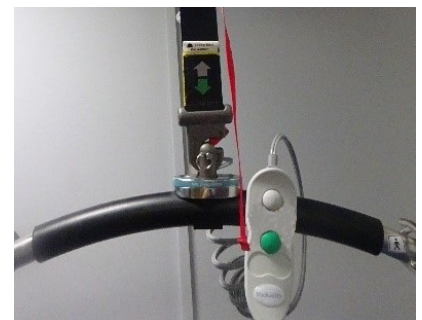


Figure 25

6.4 Moving the Hoist along the track system



Always use extreme care when moving the Hoist along the track. Watch out for and avoid any obstructions that may cause injury to the individual in the sling, damage to the hoist and/or to the obstruction.

After use, the Hoist should be located at the correct end of the track system for re-charging.

When needed, the Hoist should be moved along the track using the following appropriate method:

To Traverse the Hoist, you must first lower the carry bar to an appropriate height to hold onto with both hands.

Then the user must hold the carry bar with both hands either side of the lift tape, and push or pull the Hoist along the track in the intended direction of travel to the required destination.

This process applies when moving the Hoist with and without a patient in the sling.

When there is a patient being transferred, ensure they are at a reasonable height above the ground to ensure they are not being dragged along the floor, or hit any obstructions.

Always ensure the direction of travel is clear of any obstacles.



NEVER pull the Hoist along the track using the handset or the Emergency Cord as this could have a detrimental effect on the performance of the Hoist.

6.5 Charging the Hoist

The Hoist will indicate when charging is required. The light will turn ORANGE on the hoist control panel and a slow beeping audible alarm will sound if the batteries are low and require charging. The display screen will also indicate low battery. (Figure 28) Complete the transfer that is in progress and then move Hoist to the end of the track where the charger is located.

If the Hoist is not charged, following the ORANGE indicator, the light will turn RED on the hoist control panel and a fast beeping audible alarm will sound. These indicate the batteries are discharged and require charging. The display screen will also indicate "Up: Inhibit!" which will disable the UP function. The DOWN and EMERGENCY DOWN function will continue to operate for one cycle – enabling the person to be safely lowered and for the Hoist to be returned to the charge point.

At the end of each use of the Hoist, it is recommended that it be returned to the charging dock for placement and charging. This will ensure that the batteries are charged on a regular basis for peak performance and maximum life expectancy. The Hoist may remain connected to the charger indefinitely because the Hoist has a built-in regulator, removing the danger of overcharging.

The TX Hoist is designed for in track charging. This is charged by the charging dock installed in the track. A charging dock should have been fitted during the installation of the Hoist. (Figure 26)

To Traverse the TX, simply manually traverse the Hoist along the track to the charging dock at the far end of the track. Once the Hoist has made contact, it should begin charging immediately (Figure 27). The LED will begin to flash orange when charging, (see LCD Display status indications further in the user manual)



Do not traverse the Hoist with excess speed or force into the dock as this could damage the Hoist and the Dock. Use only the charger that was supplied with the hoist or provided as a replacement. Use of any other charger will void all warranties and may cause damage to the hoist.



Figure 26

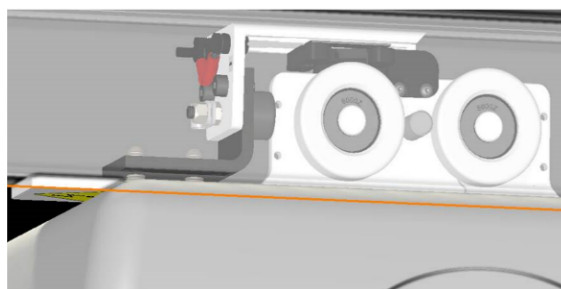


Figure 27

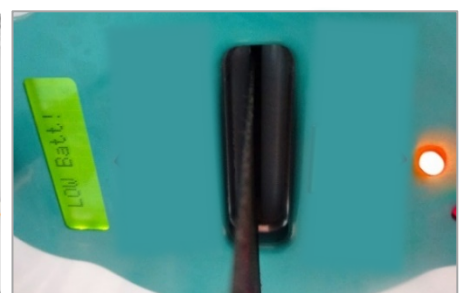


Figure 28

6.6 Emergency Operation

6.6.1 Emergency stopping

The hoist unit has an emergency shut-off feature that allows the operator to completely stop power to the hoist.

By pulling down ONCE on the emergency red cord, located underside of the hoist unit, the powered functions will stop working immediately (Figure 29).

Beeping once, the display and the LED indicator light will turn off. The emergency shut-off tab, located underneath the Hoist case where the emergency red cord enters the case, will pop out.



Once the red emergency cord is released, the Hoist unit will need to be reset in order to operate again. To reset, the toggle switch must be pressed in as shown in section 5.1 “Turning the Hoist ON and OFF”. **This should only be done by an authorised engineer.**

The emergency stopping feature must only be used in an emergency. If the Emergency Stop has been activated, contact your local authorised dealer to report the emergency and where applicable, a service engineer may be sent out to solve the issue with the Hoist. Do not continue to use the Hoist after using the emergency stop function before contacting the local authorised dealer. (See the last page of this manual for contact details).

Once the Hoist has been reset, simply press any button on the handset to resume power.

6.6.2 Emergency lowering

In the event that the DOWN button on the handset does not function, or in power failure situations, the person may be lowered by pulling down and HOLDING the red emergency cord. The emergency cord is located underneath the Hoist unit (Figure 29).

Continue to pull down on the emergency red cord until the person is safely lowered to the desired position. The unit will continue beeping until the red cord is released.

NOTE: The emergency lowering function does not provide a lifting function. The Emergency Lower should only be used in an emergency, such as lowering a patient due to damaged handset etc.

Once the emergency red cord is released, the Hoist unit will need to be reset in order to operate again. To reset, the toggle switch must be pressed in as shown in section 5.1 “Turning the Hoist ON and OFF”. **This should only be done by an authorised engineer.**

Contact your local authorised dealer to report the emergency and where applicable, a service engineer may be sent out to solve the issue with the Hoist. Do not continue to use the Hoist after using the emergency lower function before contacting the local authorised dealer. (See the last page of this manual for contact details).

Once the Hoist has been reset, simply press any button on the handset to resume power.

6.6.3 Manual Emergency lowering

The manual emergency lowering should only be used if when the emergency lowering cord fails, due to total power loss. The manual E-Lower is a last resort safety feature for when a patient is suspended and cannot be lowered.

To operate, remove the Cap from the side cover of the Hoist (Figure 30). Insert the 4mm Allen Key that is provided with the Hoist, into the Motor unit inside the cover. (Figure 31) Gently wind the Allen key to manually operate the Hoist Motor and safely lower the patient.

After use, remove the Allen key and re-insert the grommet back into the plastic cover.



6.7 LCD Display Screen Functionality

The table below includes the details on all user display messages, it also includes the LED colour, the audible beeping and instructions on what actions to take when each message appears. This table may help for troubleshooting.

Display Message	Message explanation	LED colour	Beep sound	Instruction
LOW Batt!	Battery Status LOW	Orange	1 Beep Repeat	Place Hoist on charge as soon as possible
Charged	Batteries Fully Charged	Green	None	Batteries full - remove from charging dock
Charging	Charging Currently Active	Orange flashing	None	None - Batteries are charging
Up	Hoist Lifting Active	Green	None	None - Informative only
Down	Hoist Lowering Active	Green	None	None - Informative only
No Lim_Sw!	Limit Switch Fault	Green	Constant Beep	Contact Service Centre
UP: Inhibit!	Battery Capacity TOO LOW to Lift	Red	3 Beep Repeat	Place hoist on charge immediately
Up Lim_Sw!	Up Limit Switch Active	Green	None	None - Informative only, press Down to continue
Down Lim_Sw!	Down Limit Switch Active	Green	None	None - Informative only, press Up to continue
HIGH CURRENT	High Current Draw from Hoist Motor	Green	Beep for 1 Second	Contact Service Centre
PM Due	Preventative Maintenance Due	Green	Beep every 30 minutes	Contact Service Centre

Table 7

7.0 Technical Specification

7.1 Hoist Dimensions and Lifting Range

All dimensions are shown in millimetres

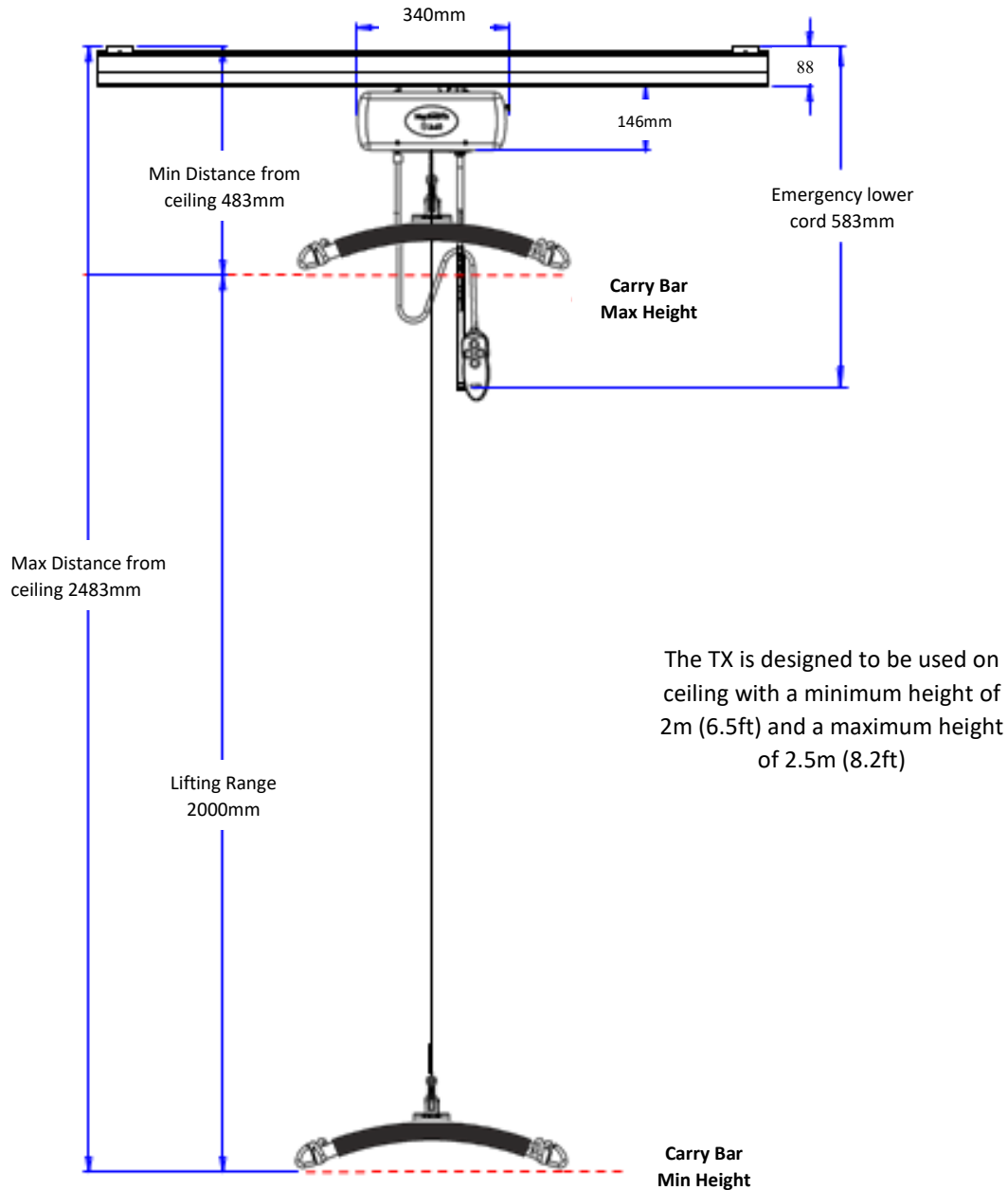


Figure 32

The diagram above (Figure 32) shows the relevant lifting ranges and dimensional sizes of the Hoist. The direction of travel can only be made within the boundaries of where the hoist is in the track system.



There are no necessary modifications required for the device to perform its intended use. However, should the device or the installed system require modification, please consult your local Mackworth dealer to arrange a date and time to assess the required changes to the system.

If this equipment is modified, appropriate inspection and testing must be conducted to ensure continued safe use of the equipment.

7.2 Specifications

Technical specifications	
Hoist Motor	24VDC
Traverse Motor (optional at time of purchase)	24VDC
Charger Input	100-240V AC 50/60Hz 1.5A
Charger Output	24VDC/1.0A
Batteries (sealed lead acid)	24VDC (2x 12VDC) 5.0 AH
Hoist Case	Flame Retardant ABS
Hoist Case Degree of Protection	IP20
Handset Degree of Protection	IP67
Lifting Capacity (SWL)	202 kg (440 lb) / 272 kg (600 lb)
Lifting/Range	2000 mm / 78.74"
Operation	Handset (Pneumatic)
Sound Level	54 dB
Traverse Duty Cycle	25% use, 75% rest (90 seconds use, 270 seconds rest)
Lifting Speed (272 kg / 600 lb)	29.52 mm/s -- 1.16"/s
Lifting Speed (No Weight)	64.52 mm/s -- 2.54"/s
Lowering Speed (272 kg / 600 lb)	54.48 mm/s -- 2.14"/s
Lowering Speed (No Weight)	60.75mm/s -- 2.39"/s
Stopping Distances Up (272 kg / 600 lb)	10 mm / 0.39"
Stopping Distances Up (No Weight)	24 mm / 0.94"
Stopping Distances Down (272 kg / 600 lb)	39 mm / 1.54"
Stopping Distance Down (No Weight)	33 mm / 1.30"
Raising/Lowering Duty Cycle	15% use, 85% rest (90 seconds use, 510 seconds rest)
Emergency Down Stopping Distance (272 kg / 600 lb)	39 mm / 1.54"
Emergency Down Stopping Distance (No Weight)	33 mm / 1.30"
Battery Capacity for Raising/Lowering (272 kg / 600 lb)	35 Lifts (Top 500 mm / 19.69" of Lift Tape)
Battery Capacity for Raising/Lowering (200 kg/ 440 lb)	60 Lifts (Top 500 mm / 19.69" of Lift Tape)
Battery Capacity for Raising/Lowering (100 kg / 220 lb)	120 Lifts (Top 500 mm / 19.69" of Lift Tape)

Table 8

Weights	
Safe Working Load (SWL)	202 kg (440 lb) / 272 kg (600 lb)
Hoist	10 kg (22 lb)
Battery charger	0.8kg (1.76 lb)
Carry bar	2 kg (4.4 lb)
Handset	0.2kg (0.44 lb)

Table 9

Operational Forces	
Handset	3N
Emergency cord	15N
Hook locking mechanisms on lift tape	2.5N
Spring clips on carry bar	8N
Manually traversing fully loaded hoist (SWL)	50N
Manually traversing unloaded hoist (No weight)	10N

Table 10

7.3 Expected Product Lifetime

Ten years depending usage and compliance to maintenance, servicing and LOLER inspections.

Serviceable parts within this period are batteries and the lift tape. Batteries should have an expected service life of 200 discharge cycles or 3 years, dependant on the charging routine. The lift tape should have an expected service life of 2 years if used correctly but visual inspection should be carried out before use.

7.4 Standards Applied

The standards that have been applied to the device are as follows:

- EN 10535:2006 Hoists for the transfer of disabled persons. Requirement and test methods.
- EN 60601-1-1:2006 +A12:2014 Medical electrical equipment. General requirements for basic safety and essential performance.
- EN 60601-1-2:2015 Medical electrical equipment. General requirements for basic safety and essential performance. Collateral Standard. Electromagnetic disturbances. Requirements and tests.
- EN 60601-1-6:2010 Medical electrical equipment. General requirements for basic safety and essential performance.
- EN 60601-1-11:2015 Medical electrical equipment. General requirements for basic safety and essential performance.

8.0 Environmental - Storage and Operating Conditions

The Hoist is intended for internal use within normal environmental conditions.



It is not intended to be used in environments where there are rapid changes in the environmental temperature and humidity during intended use.

The TX Ceiling Track Hoist suffers little from any effects of lint, dust and light.

- Lint – Due to the nature of the TX being installed closely to the ceiling, very little lint would be likely to gain access into the hoists workings. The hoist is recommended as per Service Guide to be wiped cleaned during every hoist inspection.
- Dust – Due to the nature of the TX being installed closely to the ceiling, very little dust would be likely to gain access into the hoists workings.
- Light – The User controls have been designed to be easily recognisable and the use of bright colours will help the user through all ranges of lighting. The Specification of the hoist dictates that normal use would occur during ambient luminance 50 – 500 lux. Additional as the hoist is designed for indoor use only, if required the user may wish to switch on room lighting. The LCD display on the hoist is backlit to aid with user interaction.

8.1 Normal operating conditions

+5°C to +40°C (41°F to 104°F) at a relative humidity between 15% to 90% RH, non-condensing but not requiring a water vapour pressure greater than 50hPa and atmospheric pressure between 700hPa to 1060hPa

8.2 Shipping and storage conditions

-25°C to +5°C (-13°F to 41°F) with any humidity level.

+5°C to +35°C (41°F to 95°F) at a relative humidity up to 90%.

+35°C to 70°C (95°F to 158°F) non-condensing at a water vapour pressure up to 50hPa.

12 Hours are required for the hoist to cool from the maximum storage temperature until ready for its intended use when the ambient temperature is 20°C (68°F).

12 Hours are required for the hoist to warm from the minimum storage temperature until ready for its intended use when the ambient temperature is 20°C (68°F).

9.0 Disposal



When the Hoist has completed its life cycle and can no longer perform to its intended use safely the Hoist must be decommissioned by an approved Service Engineer. The following specifies the importance of correct disposal procedure including local laws and being environmentally friendly.

Please observe the local laws on recycling and respect the current laws for disposal within the community the device is being used within. If there is any uncertainty of the below guidelines, contact your local authorities to determine the proper method of disposal of potentially biohazardous parts and accessories.

The relevant components utilised in the manufacture of the device that can be recycled at the end of the device life are:

Fully recyclables:	Consideration when Recycling:
Chassis	Batteries
Plastic Covers	Wiring Looms – electronics
Metallic Internals – Hub etc.	PCB
Initial packaging of the device (cardboard)	Hand Control
Metallic fixing – Screws etc.	Motors
Plastic Mouldings	Lift Tape
Carry Bar	Charger

Table 11

Ensure that this list is used as guidance and that the local laws in the given community overrule the suggested component disposal in the table above.



The product may be contaminated and has to be disinfected before decommissioning. See section 'Cleaning' in the User Manual for details of how to do this.

10.0 Fault Finding

If a problem arises with the Hoist, the Table below will hopefully assist in determining the fault and what actions you can take. If the fault cannot be found or the fault is found and the action guide does not provide a fix (e.g. – a damaged wire would need replacement), contact your local Mackworth authorized dealer immediately, a service engineer will be required to repair the Hoist. Contact details can be found on the last page of this manual.

Fault	Action
The Handset has become disengaged from the Hoist, or the Handset buttons are not responding.	Refer to the section 5.3 'Connecting The Handset To The Hoist'. If this does not correct the fault, then contact your local authorised dealer immediately so the hoist can be checked to ensure proper continued operation.
The handset button command is continuously activated – UP, DOWN, E-LOWER.	Turn off the Hoist using the OFF switch on the Cover. Contact your local authorised dealer immediately so that the hoist can be checked to ensure proper continued operation.
The handset buttons do not operate according to their designations (e.g. the UP button initiates a DOWN).	The airline tubing has not been connected correctly. Refer to the section 5.3 'Connecting The Handset To The Hoist'. If this does not correct the fault, then contact your local authorised dealer immediately so the hoist can be checked to ensure proper continued operation.
The carry bar of the Hoist does not move UP or DOWN even when the handset has been properly connected.	The indicator light on the control panel should be green and show that there is power. If it is not then press any coloured button on the handset to activate the hoist and the indicator light should turn GREEN. If the hoist still does not function, then the batteries may be low and require charging. Refer to the section 6.5 'Charging The Hoist '. Charge the hoist for at least one hour and then try to raise/lower the carry bar. If none of these resolve the fault, DO NOT use the Hoist. Contact your local authorised dealer immediately so that the hoist can be checked to ensure proper continued operation.
The Hoist LED's indicate there is power, but the Hoist does not operate in the DOWN direction.	A built-in detector checks the slackness of the lift tape. This may be sensitive. Apply weight to the carry bar while pressing the DOWN button at the same time. If this corrects the fault temporarily but not permanently then contact your local authorised dealer so that the Hoist can be checked to ensure proper continued operation
The red indicator light on the hoist turns RED and/or a loud alarm sound is heard when an individual is raised.	The batteries are low and require charging. Refer to section 6.5 'Charging The Hoist' and charge the hoist for at least one hour before trying to raise/lower the carry bar. If this does not correct the fault then contact your local authorised dealer immediately so that the hoist can be checked to ensure proper continued operation.
One side of the lift tape is starting to fray after continued use.	Contact your local authorised dealer immediately so the hoist can be checked to ensure proper continued operation.
The hoist does not pass through a track component such as a turntable or gate.	Refer to the User Manual of the specific piece of equipment in question. If the recommended solution does not correct the fault, then contact your local authorised dealer immediately so that the track component and hoist can be checked to ensure proper continued operation.
No Power.	If the emergency red cord has been used to either stop or lower the person the Hoist will not operate again until it has been reset. Contact your local authorised dealer immediately so that the Hoist can be checked that it is safe to reset.

Table 12

11.0 General Inspection, Maintenance and Cleaning

11.1 Service



No service is to be carried out on the Hoist while transferring a person to reduce the risk of injury. Service must be completed by a Mackworth authorised Service Engineer. Do not attempt to service the product yourself, or warranty is void.

To ensure the safety and continued good function of your Hoist, routine service must be performed on your Mackworth TX Ceiling Track Hoist.

Service should be completed by a Mackworth approved service engineer every 6 months to ensure the products required standard is maintained. The service history of the product should be documented each service in the Service Log at the back of this User Manual.

When the Hoist is serviced, the 6 month service checklist must be completed for the Mackworth TX Hoist.



Service Manual Document Number: 995553.

Spare Parts Manual Document Number: 992553.

The Service must be completed every 6 months after installation of the Hoist to comply with LOLER Regulations.

The Mackworth TX Hoist has an expected Service Life of 10 Years.

Contact your local authorised Mackworth dealer if you:

- Need more information.
- Have any questions about the use or service of your Hoist.
- Notice any change in the performance.
- Want to report an unexpected occurrence.
- Want to arrange a service.
- Need to ascertain necessary information for replacement parts and components.

Contact details of your local Mackworth dealer are shown on the last page of this manual.

11.2 Inspection

Inspection is to be completed prior to each use by the user of the Hoist.



Should any of the components in the table below fail the inspection, DO NOT use the Hoist. Contact your local authorized dealer for service – contact details are on the last page of this manual.

Ensure all component inspections in the Table below are completed prior to each use of the Hoist.

Check List before Use:

Component	Service/Inspection required
Generic	Visual inspection of the external of the Hoist. Significant damage that may affect the function of the Hoist along with a clear safety hazard is unacceptable.
	Check the Labelling on the Hoist to ensure they are all still legible, this includes the Serial Number and other important markings. If labels are not legible, then contact your local authorised dealer immediately.
	Check all nuts and bolts that are accessible and visible to see if they are loose, (such as the Carry Bar Hook). If they are not tight or you have concerns, then contact your local authorised dealer immediately.
Emergency Stop Button	Check the emergency stop button functionality.
Carry Bar	Inspect the sling looped attachments for any damage, sharp edges and excessive wear.

	Check the carry bar rotates and swings freely, and that there is no build-up of wear.
	Ensure the Spring Clips on the Carry Bar are functional and present.
Lift Tape	Inspect the Hoist Lift Tape for any signs of damage such as fraying, breaking and tearing along its entire length. Ensure to also inspect the stitching on the tape for the same signs of damage.
QRS (Quick Release Hook)	Ensure that the locking device on the QRS is closed when the carry bar is attached.
	Inspect the QRS for damage such as cracking. And ensure that the locking device is functioning correctly.
LED's	Ensure that the LED's are all working correctly prior to use.
LCD Display Screen	Ensure that the LCD is working correctly and the messages can be read.
Wheels	Ensure the wheels are traversing smoothly in the track before traversing a patient along the system. Listen for any unusual noises.
Motor	When raising and lowering the Hoist, with or without load, listen to the motor for any unusual lifting noises. Lower the patient immediately if an unusual noise is present.
Handset	Ensure the Handset is functional, ensure the connection to the Hoist is correct and that all the buttons are working before operation with a patient.

Table 13

1 1.2.1 - Lift Tape caution

The image (Figure 32) indicates a badly worn lift tape due to an accumulation of events the Hoist has operated under.



Whilst a tape in this condition provides no immediate danger, the Hoist should not be used until a service agent can replace the damaged tape.

The visual checks that must be performed before each use will make the operator aware of a tape degrading. Any damage should prompt the operator to cease use and seek a replacement.



Figure 32

1 1.3 Cleaning

Please follow the cleaning guidelines below on cleaning and disinfecting the Hoist.

1 1.3.1 General Cleaning



It is recommended to clean the Hoist and accessories before use by a different person, reducing the risk of cross-contamination.

The exterior of the Hoist can be cleaned using a damp soapy cloth for general cleaning duties. Please ensure the cloth is damp and not wet. Ensure the exterior of the device is dry after cleaning. Dry using a clean dry cloth.

For the Handset and Lift Tape, use a dry cloth wipe only.



Care should always be taken when cleaning around electrical components to reduce the risk of electric shock or damage to the hoist.

1 1.3.2 Disinfecting (if necessary)

Should the Hoist require a more thorough clean, the use of the Actichlor™ disinfectant product (which is widely available in tablet form and used throughout the health care industry) is recommended.



Follow the manufacturer’s safety instructions for the use of the cleaning product before use to ensure safe use for the operator and the patient.
Ensure the cloth is damp before the cleaning process.

Application is through a clean damp cloth applied to wipe the device down. Use in the following dilutions to ensure an effective clean:

- Actichlor™ dissolvable chlorine tablets provide a concentration of 1000 ppm of available chlorine (0.1%) per 1 tablet
- 1 tablet (1.7g formed tablet (x1)) will create a virucidal solution, diluted in 1 litre of water to provide effective means to clean a “dirty” device. This is also ideal for use after an outbreak of the Norovirus/winter vomiting and can be used as a precaution against C.Diff. It is effective against viruses, bacteria, spores, yeasts and moulds.
- The contact time against the outer components of the device should be for 5 minutes to prevent any virucidal infections without a degradation to the functionality of the device. 5 minutes is a recommended contact time. The device can withstand a longer contact period but the 5 minute recommendation as a minimum must be followed to provide an effective cleaning regime.
- Blood spills should be dealt with by an increased concentration of the solution – please refer to the instructions on the manufacturers product labelling.

Dilution chart					
Product used as	Device condition	Concentration (ppm)	Dilution qty* (l)	Tablets per 1l (0.26gal)	Contact time (minutes)
Bactericidal	Clean	200	5 (1.32gal)	1	1
	Dirty	1000	1 (0.26gal)	1	5
Yeasticidal	Clean	200	5 (1.32gal)	1	1
	Dirty	1000	1 (0.26gal)	1	5
Fungicidal	Clean	2000	1 (0.26gal)	2	15
	Dirty	5000	1 (0.26gal)	5	15
Mycrobactericidal	Clean	1000	1 (0.26gal)	1	15
	Dirty	5000	1 (0.26gal)	5	15
Virucidal	Clean	500	2 (0.53gal)	1	5
	Dirty	1000	1 (0.26gal)	1	5
Sporcidal (C.Diff)	Clean	1000	1 (0.26gal)	1	10
	-	-	-	-	-
Sporcidal	Clean	5000	1 (0.26gal)	5	10
	-	-	-	-	-
<p>* Dilution is made with water. DO NOT dilute within any other medium.</p> <ul style="list-style-type: none"> • When diluted in water, one tablet gives 1000ppm of available chlorine. • The concentration of the solution depends upon whether the object being cleaned is noticeably dirty (indicated in the table by “Device condition”). 					

Table 14

Handling and storage safety precautions when using this cleaning agent:

Advice on Safe Handling



- Avoid contact with skin and eyes.
- Do not breathe dust/fumes/gas/mist/vapours/spray.
- Use only with adequate ventilation.
- Wash hands thoroughly after handling.
- Mixing this product with acid or ammonia releases chlorine gas.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

Conditions for safe storage, including and incompatibilities



- Keep out of reach of children.
- Keep container tightly closed.
- Store in suitable labelled containers.
- Storage temperature: 0-25°C (32-77°F).

Individual protective measures

Hand protection: Gloves

Dissolve

Dissolve in cold water – With no agitation, 1 tablet will take approximately 10 minutes to fully dissolve in the water used.

The information above has been extracted from the Actichlor™ MSDS (Manufacturers Safety Data Sheet). For a full review of the data please follow the link below:

<http://www.nhsggc.org.uk/media/236215/msds-actichlor-plus.pdf>

12.0 Warranty

This guarantee does not affect or in any way limit your Statutory Rights.

1. Mackworth guarantees the TX, supplied as new, against failure within the period of 12 months from the date of purchase by virtue of defects in material or workmanship.
2. The liability of Mackworth under terms of this guarantee shall be limited to the replacement or the defective part(s) to the sales distributor, dealer, agent, person or entity which purchased the equipment from Mackworth. In no event shall Mackworth incur liability for any consequential or unforeseeable losses.
3. This equipment guarantee shall be void if the equipment is not serviced by Mackworth or its authorized agents, in accordance with manufacturer's recommendations, or if any unauthorized persons carry out work on the equipment.
4. This guarantee does not apply to failure attributable to normal wear and tear, damage by natural forces, user neglect or misuse or to deliberate destruction.
5. Do not attempt to service the product yourself, or warranty is void.
6. Exemptions: Batteries will be guaranteed for a period of 90-days after original purchase.

13.0 Service Record History

Complete this section after each service, repair inspection and/or maintenance.

Date: _____	Time: _____
Service Type: <input type="checkbox"/> Periodic inspection <input type="checkbox"/> Monthly inspection <input type="checkbox"/> 6-month inspection <input type="checkbox"/> Repair <input type="checkbox"/> Yearly inspection <input type="checkbox"/> Other	
Completed by: (printed name). (signature)	
Company:	
Remarks & Action Taken:	
Device left in a safe usable condition: YES. <input type="checkbox"/> NO <input type="checkbox"/> (if "NO" explain in remarks the action taken)	

Date: _____	Time: _____
Service Type: <input type="checkbox"/> Periodic inspection <input type="checkbox"/> Monthly inspection <input type="checkbox"/> 6-month inspection <input type="checkbox"/> Repair <input type="checkbox"/> Yearly inspection <input type="checkbox"/> Other	
Completed by: (printed name). (signature)	
Company:	
Remarks & Action Taken:	
Device left in a safe usable condition: YES. <input type="checkbox"/> NO <input type="checkbox"/> (if "NO" explain in remarks the action taken)	

Date: _____	Time: _____
Service Type: <input type="checkbox"/> Periodic inspection <input type="checkbox"/> Monthly inspection <input type="checkbox"/> 6-month inspection <input type="checkbox"/> Repair <input type="checkbox"/> Yearly inspection <input type="checkbox"/> Other	
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Company:	
Remarks & Action Taken:	
Device left in a safe usable condition: YES. <input type="checkbox"/> NO <input type="checkbox"/> (if "NO" explain in remarks the action taken)	

Date: _____	Time: _____
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Remarks & Action Taken:	
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Remarks & Action Taken:	
Device left in a safe usable condition: YES. <input type="checkbox"/> NO <input type="checkbox"/> (if "NO" explain in remarks the action taken)	

Date: _____	Time: _____
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Completed by: (printed name). (signature)	
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Remarks & Action Taken:	
Device left in a safe usable condition: YES. <input type="checkbox"/> NO <input type="checkbox"/> (if "NO" explain in remarks the action taken)	

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Company:	
Remarks & Action Taken:	
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Remarks & Action Taken:	
Device left in a safe usable condition: YES. <input type="checkbox"/> NO <input type="checkbox"/> (if "NO" explain in remarks the action taken)	

Date: _____	Time: _____
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Completed by: (printed name). (signature)	
Company:	
Remarks & Action Taken:	
Device left in a safe usable condition: YES. <input type="checkbox"/> NO <input type="checkbox"/> (if "NO" explain in remarks the action taken)	

Date: _____	Time: _____
Service Type: <input type="checkbox"/> Periodic inspection <input type="checkbox"/> Monthly inspection <input type="checkbox"/> 6-month inspection <input type="checkbox"/> Repair <input type="checkbox"/> Yearly inspection <input type="checkbox"/> Other	
Completed by: (printed name). (signature)	
Company:	
Remarks & Action Taken:	
Device left in a safe usable condition: YES. <input type="checkbox"/> NO <input type="checkbox"/> (if "NO" explain in remarks the action taken)	

Date: _____	Time: _____
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User notes:

User notes:

Dealer contact details:

Prism Medical UK Contact details:

Address: Unit 1 • Tir Llwyd Industrial Estate • St Asaph Avenue • Kinmel Bay • Conwy • LL18 5JZ

Telephone Number: 01924 840 100

Disclaimer

While every effort has been made to ensure the accuracy of information contained in this user manual, no liability can be accepted by Mackworth for any errors or omissions. Mackworth operates a policy of continuous improvement. Specifications and other data are subject to change without notice.



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