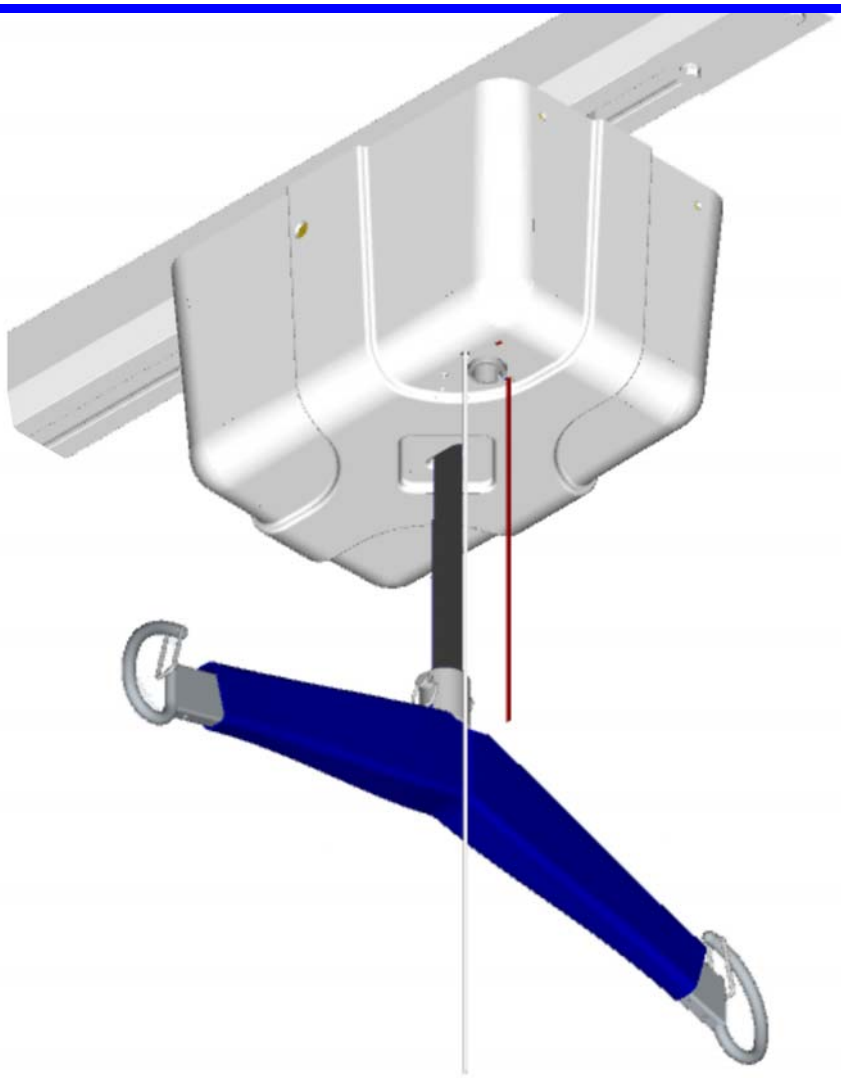
Voyager 420

Instructions for Use

IMPORTANT: Read these instructions before installing or operating this system.



CE

DO NOT DESTROY.

KEEP ENCLOSED KEY AND MANUAL
WITH THE LIFT AT ALL TIMES.

Joerns

 # 001.08860.04 rev. 10 • February 2014

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Table of Contents

Thank you for buying the Voyager 420 ceiling lift from Joerns Healthcare.

Your Voyager 420 is part of a series of quality products designed specially for home care, nursing homes and other health care uses.

We are dedicated to serving your needs and providing the best products available along with training that will bring your staff maximum benefit from every Joerns Healthcare product.

Contact us if you have any questions about the use or maintenance of your Joerns Healthcare product.

Foreword

Please read this manual in its entirety before using your Voyager 420. The information in this manual is crucial to the proper use and maintenance of the product. It will help protect your product as well as ensure that the product performs to your satisfaction.

Lifting and transferring a person always presents a potential risk. Some of the information in this manual is important for your safety and must be read and understood to help prevent injuries.

WARNING: Injuries can be attributed to the use of inadequate parts. Use only parts designated by Joerns Healthcare on your Voyager 420.

WARNING: Unauthorized changes on any Joerns Healthcare product may affect its safety. Joerns Healthcare will not be held responsible for any accidents, incidents or deficiencies of performance that occur as a result of any unauthorized changes to its products.

Tested according to standards by CSA.

Service and Support

A service routine must be performed on your Voyager 420 by qualified service staff. This will ensure the safety and good function of your product. See section called “Care and Maintenance”.

Please contact your local Joerns Healthcare agent if you need more information, want to report an unexpected event or notice any changes in the performance of your lift, or if you need any help in setting up, using or maintaining your Voyager 420. The agent can offer support and service programs to maximize the long-term safety, reliability and value of the product.

Contact your local agent for replacement parts.

Additional copies of this manual can be bought from your local Joerns Healthcare agent. When ordering, include the *Instructions for Use* product number (*see front page)* and product identification number.

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General Information

Manufacturer Information

This product has been manufactured by:
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Definitions Used in this Manual

WARNING:

Means: Failure to understand and follow these instructions may result in injury to yourself and others.

CAUTION:

Means: Failure to follow these instructions may cause damage to the product.

NOTE:

Means: This is important information regarding the correct use of the product.

Intended Use

The Voyager 420 is designed for lifting patients in a homecare setting, at nursing homes and other assisted living centres. Patient transferring is performed under the supervision of trained caregivers in accordance with the instructions outlined in this manual.

The product must only be used for the reasons stated above, and must be installed by Joerns Healthcare authorized personnel and in accordance with local codes.

Operational Life

The equipment is designed and tested to support at minimum, a useful life of seven (7) years or 10,000 transfers, whichever comes first. It is subject to preventive maintenance as specified in the “Care and Maintenance” section in this manual.

WARNING: The manufacturer cannot ensure full safety for a ceiling lift or an accessory of which the life span has been exceeded. Wear may cause the breakage of a part and lead to a patient fall.

The expected life for consumable products such as batteries, fuses, straps and cords is dependent upon the care and usage of the product concerned. Consumables must be maintained in accordance with published *Instructions for Use* and the “Preventive Maintenance Schedule”.

Product Identification

The unit's identification number (specification, model, serial number) appears on a silver nameplate attached to the lift’s plastic housing.

Package Contents

Upon receipt of the equipment, verify it against the packing list to ensure it is complete. Inspect it for possible damage due to shipping. If this the case, contact your local Joerns Healthcare agent.

How to Use this Manual

WARNING: Do not attempt to use this product without fully understanding the information contained in this manual. A misuse of this unit may lead to a patient fall and to injuries.

Keep this manual with the lift and refer to it as required.

General Information

Symbols Used

This symbol is accompanied by the date of manufacture and the address of the manufacturer.

This symbol indicates the products comply with the medical device directive 93/42/ EEC.

This symbol indicates the approval of the Canadian Standards Association.

This symbol is accompanied by the manufacturer's catalogue number.

This symbol is accompanied by the manufacturer's serial number.

This symbol indicates “separate collection” as per the WEEE Directive.

This symbol refers to the *Instructions for Use*.

This symbol indicates a type BF applied part.

SWL

Safe Working Load represents the maximum load the lifter is rated for safe operation.

Alternating current.

Direct current.

Degree of protection provided by enclosure.
N1: Ingress of particles,
N2: Ingress of water.

The following symbols are used on sling labels and are related to washing instructions.
Refer to individual sling labels for complete instructions regarding washing and drying.

Maximum washing temperature XX °C permanent cycle.

Do not use bleach.

Do not dry clean.

Tumble dry low temperature.

Do not iron.

General Instructions

WARNING: The Voyager 420 is for transferring patients only. Do not use the lift for any other reason. It could get damaged and the safety of the patient may be compromised.

WARNING: Always place the sling around the patient according to the instructions found therein. Failure to do so may result in injuries to you or to others.

CAUTION: Do not drop the ceiling lift. This could cause internal damage. If the ceiling lift is thought to be damaged, contact your local Joerns Healthcare agent for servicing.

Safe Working Load

The Voyager 420 has been designed with a lifting capacity of 190 kg (420 lb).

WARNING: The Voyager 420 is intended to be used for patients whose weight is within a specified safe working load. Do not attempt to lift more than the lowest weight limit indicated on the following:

- **the track system;**
- **the "maximum load" label on the Voyager 420;**
- **on the spreader bar;**
- **on the accessories;**
- **on the sling.**

Surcharge of any of these elements may lead to a patient fall and to injuries.

Important Safety Directions

Always ensure that:

- The product is used by trained staff.

WARNING: Before using the Voyager 420, a clinical assessment of the patient's suitability for transfer must be carried out by a qualified health professional. A transfer conducted when it should not can degrade the patient's health condition.

- Special consideration is taken with a patient who is connected to electrodes, catheters or other medical devices.
- Violent impact during transfers is avoided.
- The sling is not damaged, torn or frayed, and the sling straps are in good condition and properly fastened.
- The lifting procedures outlined in this manual are followed.
- All controls and safety features are used only according to the rules specified in this manual. Never attempt to force a control or button on the lift.
- The charger is not stored in a shower, bath or other areas with high humidity.
- The daily maintenance is carried out before using the lift.
- Any precautionary or instruction labels are read and those that cannot be easily read are replaced.

WARNING: Joerns Healthcare advises to take necessary precautions to prevent possible strangulation risks related to the lifting strap.

WARNING: This product contains small parts that might present a choking hazard if swallowed or inhaled.

CAUTION: Keep all components of the lift clean and dry.

CAUTION: Excessive exposure of the hand control to water (or other liquids) could cause a malfunction of the device.

Shock Prevention

- Do not touch or use a device with bare conductors or a damaged power cord. If this is the case, contact your local Joerns Healthcare agent immediately.
- Do not splash or expose the device to water or moisture.
- Check nameplate for input voltage and frequency requirements. These requirements differ by country. Do not attempt to use the lift in an area that has a different voltage and frequency requirement.
- Do not attempt to expose, service or repair the ceiling lift or charger. If any unit is malfunctioning, contact your local Joerns Healthcare agent.
- Read ceiling lift and charger instructions thoroughly before using or storing them.

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Safety Instructions

Fire and Explosion Prevention

- Do not place or store the batteries under direct sunlight or near a heat source.
- Do not expose the batteries or battery charger to flames.
- Do not use the charger in the presence of flammable anaesthetic gases.
- Do not short circuit the battery terminals.

Human and Environmental Safety Practices

- Should the battery casing crack and cause contents to come in contact with skin or clothing, rinse immediately with plenty of water.
- If contents come in contact with the eyes, rinse immediately with plenty of water and seek medical attention.
- Inhalation of the contents can cause respiratory irritation. Provide fresh air and seek medical attention.
- For recycling and disposal of the batteries, the WEEE directive (Waste of Electronic and Electrical Equipment) as well as local laws and regulations must be followed. If not they may explode, leak and cause personal injury. When returning batteries, insulate their terminals with adhesive tape. Otherwise, the residual electricity in used batteries may cause fire or explosion. Fig. 1 below shows the symbols for disposal and recycling.

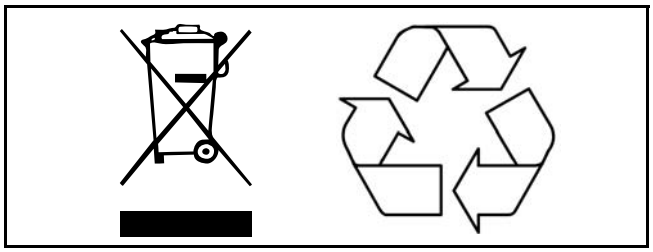

Fig. 1

Environmental Advice

When disposing of any items associated with the equipment, contact the appropriate local authorities for information.

Battery and Battery Charger Safety Practices

WARNING: Following the instructions is important for the safe use of the battery and to keep the user (resident/caregiver) from harm.

WARNING: Do not operate the charger unit with a damaged cord or if the unit has been dropped or damaged.

Do not bend the power cord by force, or place a heavy object on it. This will damage the cord and may cause fire or electrical shock.

The batteries of this device are rechargeable.

- Do not expose the battery charger to water.
- Do not expose the charger to flames.
- To avoid bodily injury, do not crush, puncture, open, dismantle or otherwise mechanically interfere with the batteries.
- Be careful not to drop the batteries.
- Do not charge the batteries in an unventilated area.

Homecare Environment Considerations

WARNING: The Voyager 420 is not intended to be operated by children. Serious injuries could occur.

NOTE: Rigorous cleaning actions are needed when the Voyager 420 is near animals. Pet hair trapped inside the device (through the strap opening) can reduce the product's performance.

Voyager 420 Ceiling Lift and Charger Station

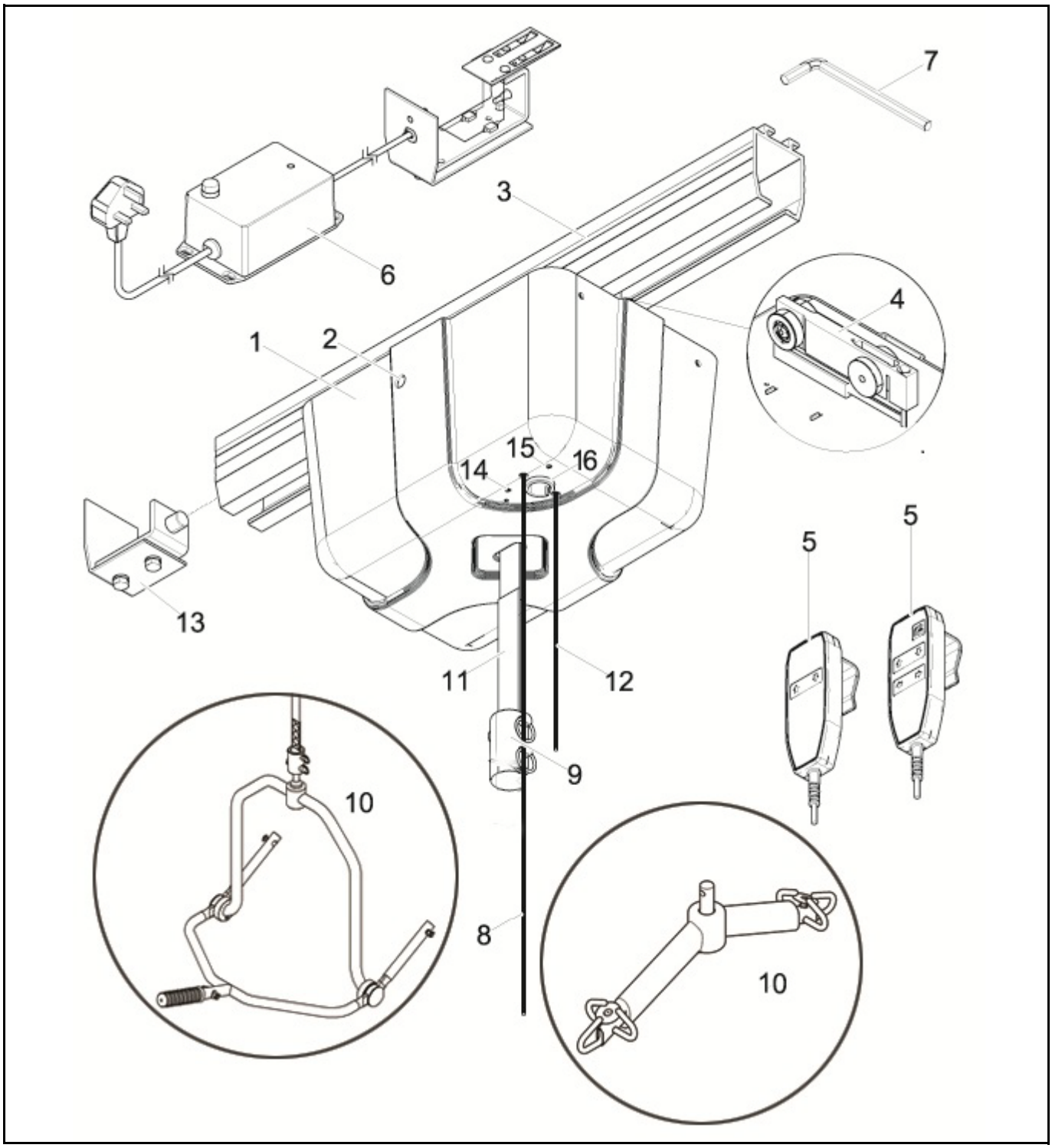

Fig. 2

Legend

1) Ceiling lift
2) Manual Emergency Lowering Device
3) Rail
4) Trolley (inside rail)
5) Hand Control (2-function and 4-function)
6) Charger / Stopper (for UK only)
7) Allen Key (for Manual Emergency Lowering Device)
8) Electrical Emergency Lowering Device
9) Spreader Bar Adaptor
10) Cradle and 6-Point Spreader Bars
11) Strap
12) Emergency Stop Cord
13) Rail Stopper
14) Low Battery Indicator (Red)
15) Charging Indicator (Red/Yellow/Green)
16) Hand Control Connector

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Part Designation

Hand Control

The Voyager 420's hand control unit is used to operate the ceiling lift. Each function is described in Fig. 3. The UP and DOWN buttons raise or lower the spreader bar. With the four-function model, the LEFT and RIGHT buttons activate a lateral motor to move the lift along the track.

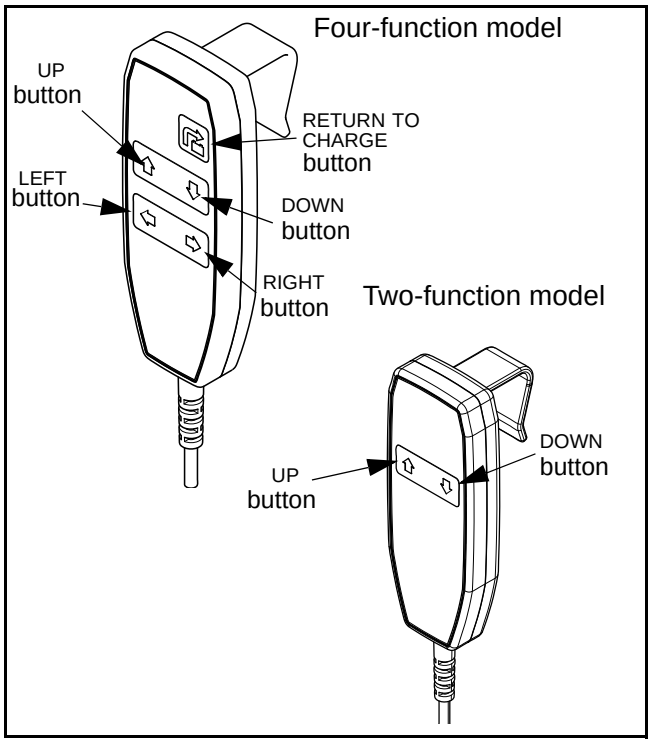

Fig. 3

Chargers

The Voyager 420 unit is provided with an external transformer/stopper that requires a mains input voltage of 230 Vac, 50 Hz.

NOTE: Avoid positioning the charger such that access to the plug is limited.

Indicator Lights

The following refers to Fig. 2 on previous page:

- The Low Battery Indicator light (red) flashes when the batteries are low. A beep also sounds to warn that these should be charged.
- When the batteries are being charged, the charging indicator light (red/yellow/green) gradually changes colour to indicate the charge status of the batteries.

Spreader Bar Installation

1) Place the union tube over the carry bar shaft, ensuring the holes are aligned.
2) Place the clevis pin (1) through the second hole.
3) Insert the split ring through the hole at the end of the clevis pin.
4) Place the lifting strap in the union tube, ensuring the holes are aligned
5) Place the clevis pin (2) through the top hole.
6) Insert the split ring through the hole at the end of the clevis pin.

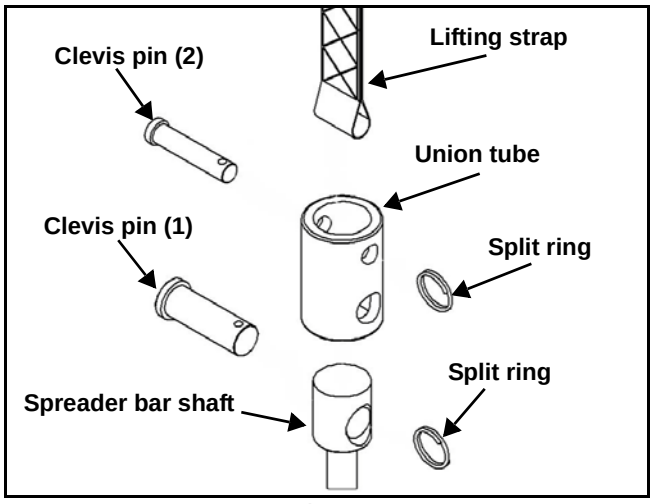

Fig. 4

Transferring procedure

WARNING: All tracks must be closed with end stoppers or connected to other closed track components. Before use, make sure all end stoppers are in place and secured. A faulty installation of these items might lead to a patient fall and to injuries.

NOTE: The unit will not lift or lower when it is in charging position.

1) Place the sling around the patient. See "Sling Application" section for further information.
2) Move the ceiling lift directly over the patient. With the four-function model, use the left and right buttons on the hand control (see Fig. 5). With the two-function model, simply hold the ceiling lift's spreader bar and drag it along the track.
3) Use the down button on the hand control to lower the spreader bar to a point below the chin of the patient.

NOTE: If the patient is lying down, lower the spreader bar on the patient's chest, then install the straps.

4) Attach the straps to the desired position. See "Sling Application" section.

WARNING: Pay close attention to the safety of the patient as you press the control buttons. Before lifting the patient:

- **Make sure that all straps are attached to the spreader bar.**
- **Make sure that the spreader bar is correctly attached to the ceiling lift (see Fig. 5).**

If any of the above occurs, lower the patient immediately and correct the problem. Any of these situations might lead to a patient fall.

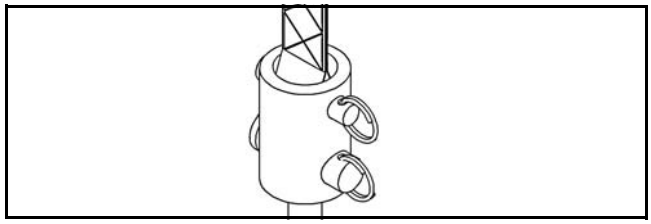

Fig. 5

5) To lift the patient, press the UP button.
6) Make sure the patient is clear of any obstacles before moving him/her. Guide the patient's legs if necessary.
7) When the patient is located above the desired point of transfer, press the DOWN button.
8) Use the handles on the back of the sling to position the patient when transferring into a chair. Hold the handle firmly as the sling will tilt back to position the patient.
9) Once the patient is properly seated and the straps have slackened, detach the sling form the ceiling lift and remove it from around the patient.
10) Move the ceiling lift away from the patient.
11) When the Voyager 420 is no longer required, return the ceiling lift back to the charging station. With the four-function model, use the right or left buttons or press the return to charge button. With the two-function model, simply drag the ceiling lift back by the spreader bar.

Verify the Charging Indicator light (Red/Yellow/Green) on the ceiling lift to ensure that the charging function is working properly.

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How to Use the Voyager 420

Return to Charge (RTC)

To engage the RTC function, press on the return to charge button on the hand control for 1 second. The spreader bar will raise all the way up to avoid any obstacles during the run. When the lift is at the charging station, the spreader bar lowers by itself to the preset height so as to be easily accessible.

The RTC function is not an automatic transfer function. A safety weight detector is included in the device to prevent the use of the function when patient is present in sling.

WARNING: When using the RTC function, make sure that the carry bar does not catch on anything when raising up. Not doing so, could result in injuries to the patient.

WARNING: DO NOT make use of the RTC function where there is a patient in the lift, as this could cause injuries to the patient.

NOTE: You can stop the return to charge at any time by pressing any button on the hand control or pulling on the red emergency cord.

WARNING: Extra care should be exercised when handling the hand control when transferring a patient that weighs 34.1 kg (75 lb) or less. The weight detector within the unit that prevents the RTC from functioning when a patient is in the lift can only detect a minimum load of 34.1 kg (75 lb). Use of the RTC function in such conditions may lead to the patient hitting obstacles along the path and may cause injuries to patient.

Emergency Stop

(Red cord)

The emergency stop can be activated at any time to stop the functioning of the ceiling lift.

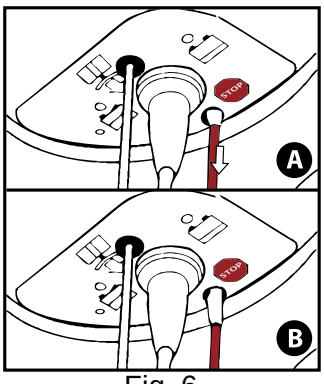

Fig. 6

To stop the ceiling lift in any emergency, gently pull the red emergency cord once until you hear a click (see Fig. 6 - A). You will notice that the reset switch's plastic insert, at the very top of the red cord, has descended (see Fig. 6 -B).

Caution: Do not pull the red emergency cord with excessive force. If the cord is jerked too hard, the ceiling lift may become inoperable.

To reactivate the ceiling lift, push up on the reset switch's plastic insert.

Emergency Lowering Feature

(White cord)

In the event of an electrical or functional failure, the Voyager 420 has an emergency electrical and manual lowering feature only to be used in case of an emergency.

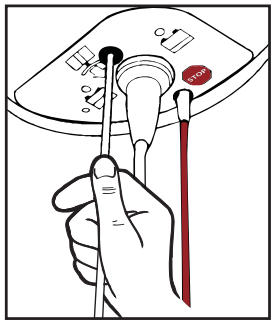

Fig. 7

If the lift malfunctions when a patient is being transferred, the emergency lowering device provides a safe way of lowering the patient onto a chair or bed.

To operate the emergency lowering features:

Electrical Version:

Move the patient over a bed or a chair, and then gently pull down on the white cord.

NOTE: If this does not function then refer to instructions for the manual version.

Manual Version:

1) Find the rubber cap and label on the side of the lift (see Fig. 2)
2) Pull the rubber cap out of the Voyager 420's casing – DO NOT DISCARD.
3) Use the Allen key provided with this manual, turn the key clockwise to lower the person into the chair.
4) Once the patient is lowered safely into a chair or bed, call a qualified technician to have the unit serviced.

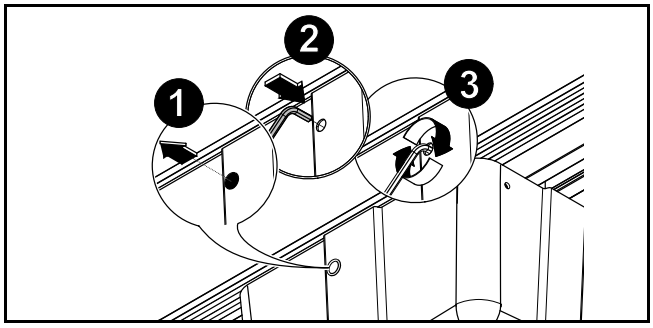

Fig. 8

Emergency Brake

The emergency brake consists of a metal bar fixed to the drum. In the unlikely event of a transmission or motor failure, the centrifugal force produced will quickly throw the metal bar against the frame, blocking the descent.

WARNING: Never use the Voyager 420 with the emergency brake deployed. Use other equipment to lower the patient. Forcing the lift to make it move might lead to a patient fall.

The emergency brake is intended for single activation and therefore can only be used once. Call your Joerns Healthcare agent's Service Department to arrange for the unit to be replaced.

Battery Information

- 24 Vdc, 7 Ah rechargeable battery.
- Provides up to 150 transfers with load of 75 kg (165 lb).

Life span (number of charging cycles) of the batteries is largely dependent on the depth of discharge before recharge. The life of the battery is also related to such factors as varying temperatures and rest periods between charge and discharge.

NOTE: To prolong battery life, return the lift to the charger whenever it is not in use. The battery will not overcharge.

Joerns Healthcare uses sealed lead-acid batteries that do not have any memory effect. Therefore, batteries should not be completely drained before recharge. This will dramatically reduce the battery life span.

Number of lifts vs. Lift load

The following graph illustrates the relationship between the load lifted and the number of lifts that can be done with fully charged batteries.

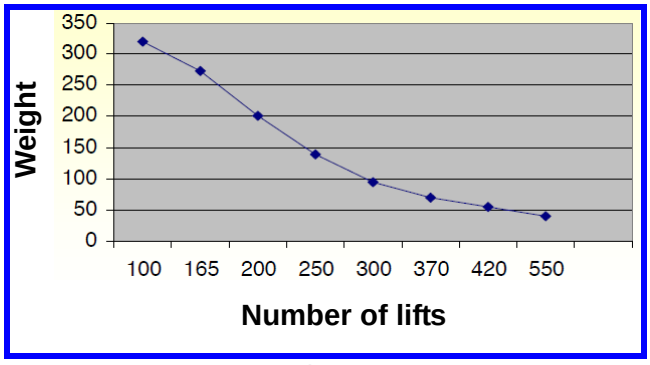

Fig. 9

If the low battery buzzer sounds and red light flashes, be sure to recharge the battery as soon as possible.

Charging the Battery

Warning: DO NOT operate the charger unit with a damaged cord or if the unit has been dropped or damaged. DO NOT forcibly bend the power cord or place a heavy object on it. These could damage the cord and may cause fire or electrical shock.

NOTE: Do not place the unit in locations that are:

- **Extremely hot**
- **Dusty or dirty**
- **Very humid**
- **Moving or vibrating**

The recharging steps should be as follow:

For the 4-function, press the button to charge on the hand control. The lift cannot return to the charger with a load exceeding 75 lb.

For the 2-function, pull the lift gently over to the charger and ensure it is properly connected.

CAUTION: Do not slide the lift to charger forcefully or quickly. Charger may become damaged.

- The indicator light will light up red, yellow or green depending on the battery state. If the light does not light up, check "Troubleshooting" section in this manual for assistance.
- If the battery is low, the light will show red or yellow when you return the lift to the charger. The light will gradually turn to green when fully charged.
- Whenever possible leave the lift on the charger when not in use. Charge the batteries until the light is green before using it again. This will extend the life of the batteries.

Sling Application

Use of Loop Slings

The Voyager 420 has the option of a six-point spreader bar designed for loop slings.

Loop slings compatible with the Voyager 420:

- Oxford Quickfit
- Full Back
- Quickfit Deluxe
- Long Seat
- Access
- Silkfit

Procedure for Using Loop Slings with a Six-Point Spreader Bar

The spreader bar has six hooks at either end of the bar; always use these for the shoulder strap loops (see Fig. 10).

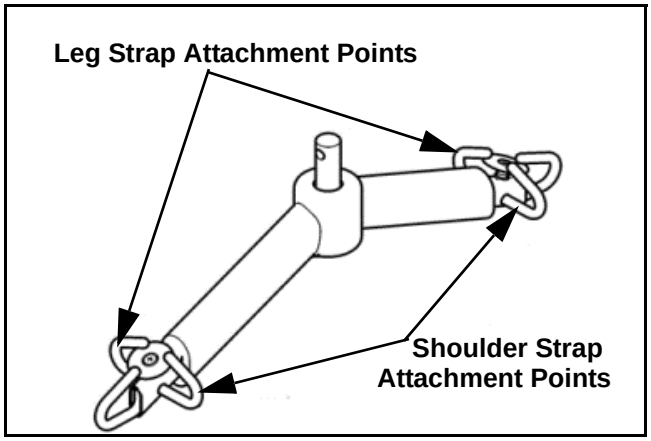

Fig. 10

The specific sling loops chosen determine the position of the patient. Different loop combinations can be used to allow the patient to be lifted and transferred in positions ranging from semi-reclined to seated.

Once the loop sling has been fitted around the patient, it can be configured in three ways. With each of the three methods described below, it is necessary to first connect each shoulder loop (points A) of the sling to the same side hook on the spreader bar (see Fig. 11).

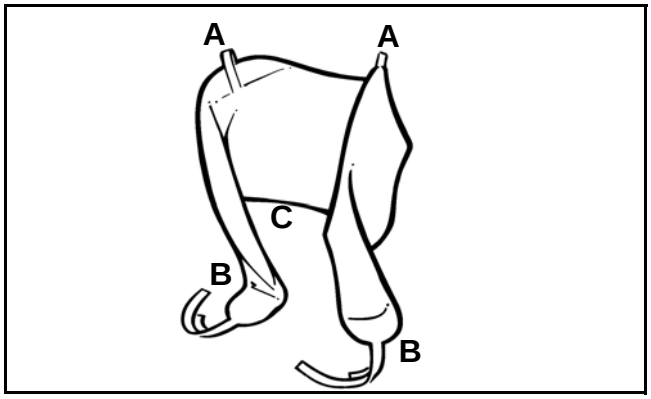

Fig. 11

Method 1: With the sling correctly positioned around the patient, slide the left-hand leg section of the sling under the patient's left thigh and the right- hand leg section under the patient's right thigh. Attach each leg loop (see points **B** in Fig. 11) of the sling to the outer hook on the opposite side of the spreader bar (see Fig. 12).

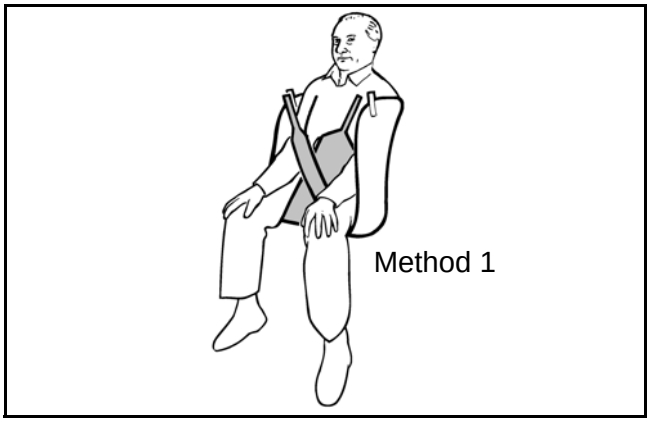

Fig. 12

Method 2: With the sling correctly positioned around the patient, pass each leg section of the sling under <u>both</u> of the patient's thighs, then attach each leg loop (see points **B** in Fig. 11) to the outer hook on the opposite side of the spreader bar (see Fig. 13).

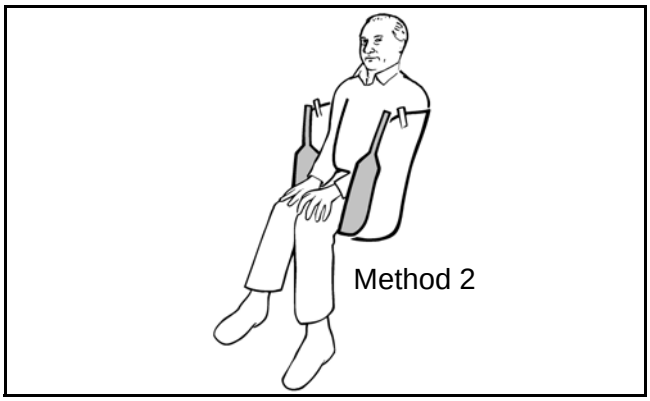

Fig. 13

WARNING: This method might not be suitable for confused, combative or erratic patients as they can fall forward and get injured.

Method 3: With the sling correctly positioned around the patient, slide the left-hand leg section of the sling under the patient's left thigh and the right- hand leg section under the patient's right thigh, then attach each leg loop (see points **B** in Fig. 11) to the hook that is on the same side of the spreader bar (see Fig. 14).

This particular method holds the patients legs in abduction, and is useful for toileting.

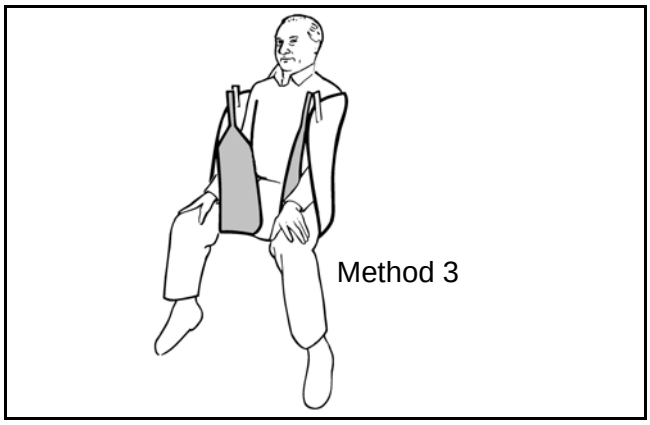

Fig. 14

WARNING: This method might not be suitable for patients with no upper body control as they can slide down and almost out of the sling when it is applied in this manner.

Apart from the methods listed above, the six-point spreader bar with loop slings is also extremely useful for lifting patients who have contracted legs. Attach the sling in the regular manner as described in the following section "To lift a Patient from a Bed".

For more information on the use of loop slings, refer to the documentation included with the sling.

Use of Clip Slings

The Oxford Voyager has the option of a four-point cradle designed for clip slings.

Here is the compatible clip sling with the Voyager 420:

- Oxford Comfort

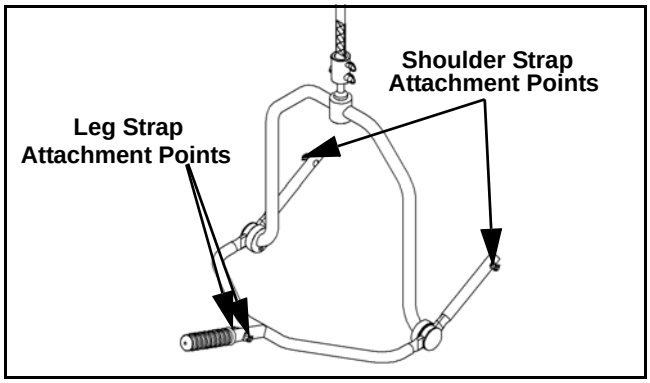

Fig. 15

Procedure for Using Clip Slings with a 4-Point Cradle

The three key stages assure the patient and caregiver of safety and comfort throughout the transfer.

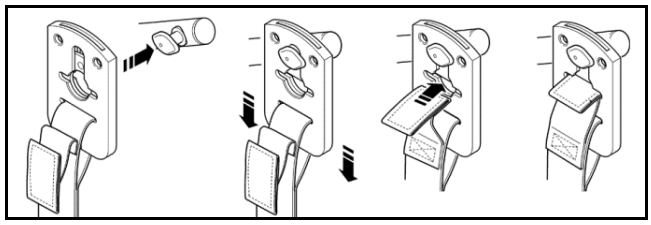

Fig. 16

WARNING: A patient should never be left unattended during a transfer. Certain safety features can only be accessed by the caregiver and patient could get stuck in the event of a malfunction.

WARNING: This unit must never be operated by the patient but only by the caregiver. Patient could get stuck in the event of a malfunction.

WARNING: Always hold the spreader bar when near a patient. The spreader bar could hit the patient resulting in injury.

WARNING: Before raising the patient, always make sure the sling is not caught on any obstructions (for instance, the wheelchair brakes or armrests). Sling catching in such obstructions could result in a patient fall.

WARNING: Always confirm that the sling remains attached as the weight of the patient is taken up. A wrongly fixed attachment could detach resulting in patient fall.

WARNING: Make sure that the spreader bar is correctly attached to the lift. An unsecured spreader bar attachment may lead to a patient fall.

WARNING: Make sure the intended route of travel is clear to prevent the patient from bumping any obstruction.

CAUTION: Do not attempt to pull the ceiling lift along the rail using the hand control cable. This will damage the cable and eventually ruin the function of the hand control.

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Sling Application

NOTE: To ensure maximum patient comfort, do not allow the patient to hold onto the spreader bar.

To Lift a Patient from a Bed

If the patient cannot attain a sitting position, then roll the patient toward you, fold the sling in half length-wise and place it along the patient's back. Position the sling so that when rolled back, the patient will lie in the centre of the sling.

Align the bottom of the sling with the patient's coccyx (see Fig. 17). When the patient is lying in the correct position on the sling, carefully flex the patient's legs and bring the leg sections of the sling under the thighs, ready to attach the complete sling to the six-point spreader bar.

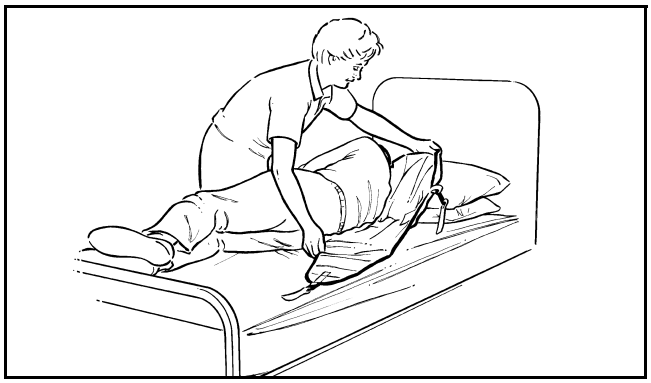

Fig. 17

If the patient can sit easily, the sling can be positioned the same way as if the patient was seated in a chair: i.e. by easing the patient forward, (if necessary) slide the sling down the patient's back until seam **C** (see Fig. 11) reaches the base of the spine. Take attachment points **B** and pass the leg sections described in one of the three methods for lifting shown above. Ensure that the sling's sections are not twisted underneath the patient.

To Lift a Patient from a Chair

Lower the spreader bar until you can easily attach the sling. Be careful not to allow the spreader bar to touch the patient, use your hand to stabilize it.

Once the sling has been positioned and attached securely to the spreader bar, lift the patient using the hand control.

Avoid lifting the patient higher than the caregiver's eye-level to lessen any anxieties the patient may feel about heights.

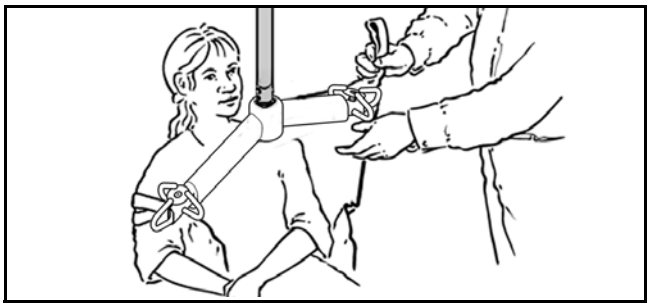

Fig. 18

To Lift a Patient from the Floor

Raise and support the patient into a sitting or half sitting position. Some attendants prefer to use a larger sling for this operation.

Slide the sling down the patient's back as described previously, bringing the leg sections of the sling into position and under the patients thighs. Lower the spreader bar (taking care not to permit it to touch the patient) until the spreader bar is low enough to attach the sling shoulder loops. Flex up the patients knees to connect the leg sections of the sling.

When the patient has been returned to the bed he/she may be reclined before the sling is unhooked from the spreader bar.

Before Transferring a Patient

Turn the patient to face the direction of travel, and keep him/her at chair height; this affords the patient a measure of confidence and dignity.

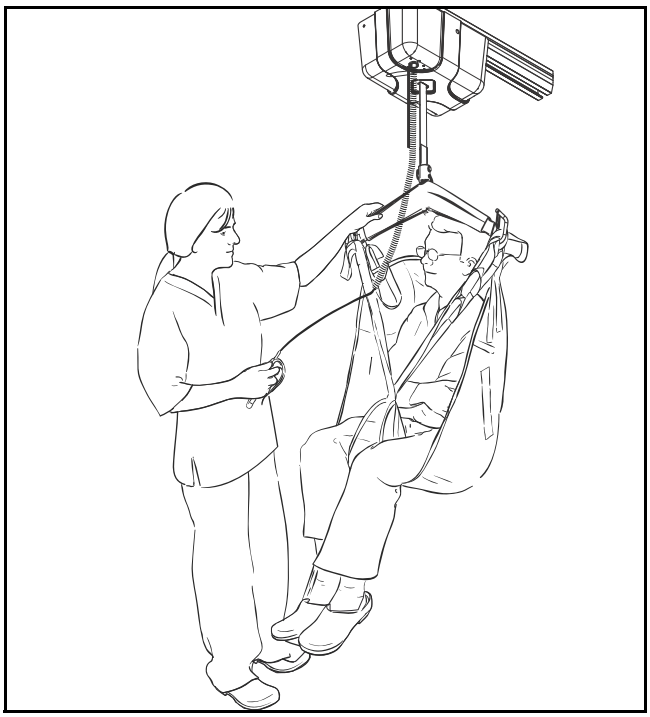

Fig. 19

Preventive Maintenance Schedule

The product is subjected to wear and tear, and the following maintenance instructions must be acted upon when specified to ensure that the product remains within its original manufacturing specifications. Care and maintenance must be carried out in accordance with the preventive maintenance schedule below.

WARNING: The maintenance described in the following checklist is the minimum that the manufacturer recommends. In some cases more frequent inspections should be carried out. Continuing to use this product without conducting regular inspections or when a fault is found may seriously compromise the safety of the user and of the patient. Service and preventative maintenance can be arranged with the distributor. Preventive maintenance specified in this manual can prevent accidents and reduce repair costs.

WARNING: Safety related maintenance and authorized service must be carried out by qualified personnel, fully trained in servicing procedures by Joerns Healthcare, and equipped with correct tools. Failure to meet these requirements could result in personal injuries and/or unsafe product.

User Inspections

Inspections for ceiling lift, track system and slings	**FREQUENCY**					
	Initially	Before every use	Every two months or 500 cycles	Every four months or 1000 cycles	Every year or 2500 cycles	Every two years or 5000 cycles
Inspect for evidence of external damage, missing parts, broken panels or ceiling lift casing not properly aligned.	X	X				
Make sure that end stoppers are in place and tightened.	X	X				
Inspect strap for wear, discolouration or loose threads.		X				
Recharge batteries.		X				
Inspect wheels in rail for damage, rust or cracks. Replace if damaged.					X	
Clean the rail and the Charger/Stopper station contacts.				X		
Overall inspection by authorized personnel.					X	
Verify emergency stop cord.				X		
Verify emergency lowering devices.				X		
Inspect all sling parts (attachments, fabric, stitch areas and strap) for signs of wear, discolouration, deterioration or loose threads.		X				
Clean sling as indicated on the tag.	When necessary					
Inspect the spreader bar on the strap of the lift for damage or cracks. Make sure all attachments are properly secured (e.g. split ring).		X			X	

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Care and Maintenance

Inspections by an Authorized Service Technician

Inspection for ceiling lift	FREQUENCY					
	Initially	Before every use	Every two months or 500 cycles	Every four months or 1000 cycles	Every year or 2500 cycles	Every two years or 5000 cycles
Replace strap.						X
Inspect frame parts interlock and hardware for malfunction and make sure there are no parts missing.					X	
Inspect gears for wear and lubricate as necessary.					X	
Inspect connecting joints for proper attachment (trolley and spreader bar).					X	
Verify that the emergency brake on the drum moves freely.					X	
Verify the emergency brake.					X	
Verify emergency lowering mechanism.					X	
Load test with the SWL (safe working load).					X	
Make sure the rail is straight when it is not loaded.	X				X	
Make sure the safe working load of the ceiling lift is equal or lower than the safe working load of the installation.	X				X	
Check that the accessories (turntable) are complete and correctly maintained.	X				X	
Make sure that the attachments (ceiling brackets, wall post, wall brackets) have not been displaced.	X				X	
Inspect track end stoppers. Inspect and tighten hardware (if necessary).					X	
Load test with the SWL (Safe Working Load).					X	

NOTE: If the product does not work as intended, immediately contact your local Joerns Healthcare agent for support.

Cleaning

Removing visible residues:

1) Use a cloth soaked with water.
2) Remove visible residues located on the Voyager 420 and its accessories. Start from top and move downwards.

Cleaning:

1) To clean the Voyager 420 and its accessories, spread cleaning fluid (water and disinfectant cleaner) on the product, and use a brush (to remove any residues).
2) Wipe the lift with a clean cloth damped with water.
3) Repeat above steps as necessary.

NOTE: Take extra care with areas pointed below. These areas are most likely to trap dust and dirt. Use a smaller brush and/or cotton swab to reach them.

Voyager 420's Special Areas to Clean

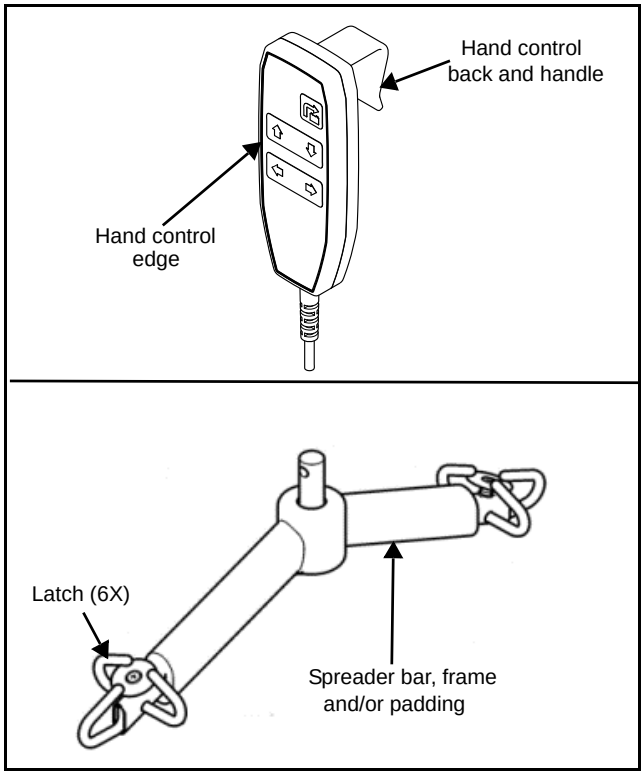

Fig. 20

Strap Inspection

If the strap is damaged or shows signs of wear or discolouration, the acceptable load on the strap before rupture can drop rapidly and present a danger for the patient or caregiver. Joerns Healthcare recommends a thorough inspection of the straps every 2 months as follows:

1) Completely unwind the strap.
2) Look for any signs of wear or discolouration (see Fig. 21).

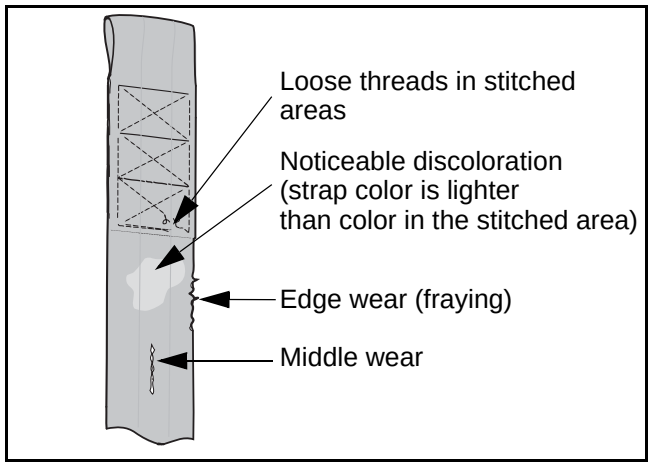

Fig. 21

WARNING: If there is any sign of wear as indicated above or any other visual defects, the strap must be inspected by a qualified technician and changed if required. By continuing to use the lift without changing a damaged strap, the safety of the caregiver or patient is greatly compromised.

NOTE: The manufacturer recommends changing the strap at least every two years (see "Care and Maintenance" section). By continuing to use the lift without changing the strap, the safety of the caregiver or patient is greatly compromised.

Handling and Storage

Avoid violent impacts while transporting the lift.

The lift should not remain stored for long periods of time without recharging the batteries.

NOTE: Even if the lift is not used, Joerns Healthcare recommends charging the batteries at least every two weeks. This will prevent premature aging of batteries.

If you store or ship the Voyager 420, ensure that the power is turned off beforehand by pulling on the red cord.

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Care and Maintenance

Battery Replacement

Joerns Healthcare uses sealed lead-acid batteries in the Voyager 420 ceiling lifts. Joerns Healthcare batteries do not have any memory effect. Therefore, batteries should not be completely discharged before recharging.

Replace the batteries when there is a noticeable reduction in the number of transfers that can be performed between charges. If you hear the Voyager 420 lift beeping and notice a red light flashing, see the instructions in the “Troubleshooting” section of this manual to determine if it is a problem with the batteries.

To replace batteries, be sure to contact your local Joerns Healthcare agent.

CAUTION: Do not attempt to use a battery that was not supplied by Joerns Healthcare. Joerns Healthcare batteries are specially designed for Joerns Healthcare charging systems. Attempting to use an unauthorized battery may seriously damage the lift and/or the charger.

Charger Fuse Replacement

If the charging indicator does not illuminate when the Voyager 420 is placed at the charger stopper, do the following steps:

1) Check to make sure the power cord is correctly plugged into the charger in the wall.
2) Disconnect the power cord from the wall.
3) Unscrew the fuse holder cap.

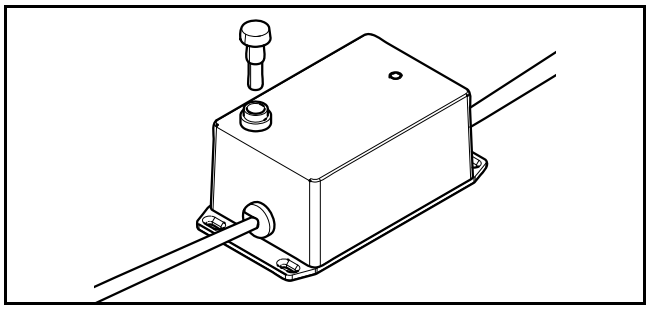

Fig. 22

4) Replace the fuse as specified on the charger’s label.

The fuse may be ordered through your local dealer or agent.

5) Screw back the fuse holder cap

Sling Inspection and Care

See the documentation included with the sling.

Sling Laundering

WARNING: The slings should be checked before and after use and, if necessary, washed according to instructions on the sling. This is especially important when using the same product for another patient. This minimizes the risk of cross infection.

NOTE: With regard to laundering, slings should not be classified as linen, but as an accessory to a medical device. Slings should be cleaned and disinfected only in strict accordance with the manufacturer’s instructions.

Annual Inspection

The Voyager 420 and its accessories must be inspected annually by a qualified technician.

WARNING: The Voyager 420 and accessories must be serviced every 12 months as a minimum requirement (see “Care and Maintenance” section). Not servicing the product may lead to patient fall, causing injuries.

Troubleshooting

PROBLEMS	TO CHECK
The unit starts and stops repeatedly.	• If the load is over the safe working load, the unit will not work due to an overload protection on the motor. • Has the lift been making a “beeping” sound? The battery is low and needs to be charged.
The lift emits a "beep" and a red light flashes during utilisation. The unit may stop lifting but you can still lower it.	• Batteries are low, return to charger.
If the light does not light up on the Voyager 420, try the following:	• Make sure that the charger is correctly plugged into the AC outlet. • Make sure that there is contact between the contact blades of the lift and the contact blades of the charger stopper. • Check the power of the AC outlet on the wall. • Contact your local Joerns Healthcare agent.
Charge indicator on the lift (green-red) does not light up when the lift is on the charger.	• Is the charger stopper plugged into a standard outlet? If so does the outlet have power? • Check the condition of the fuse. If needed, change it with a spare one (see “Maintenance” section of this manual).
Batteries are always dead after a few transfers (3 to 5).	• Replace batteries, the life of the current set is probably nearly over.(Contact your local dealer or agent to have batteries replaced).
The lift does not work when you press the buttons on the hand control.	• Is the charging indicator light on? Lift must be moved away from the charger in order to operate. • Is the emergency stop activated? Push up on the reset switch's plastic insert. Try the buttons again. • Is the hand control properly plugged into the lift? The hand control may be slightly pulled out of its socket yet appear as though it is plugged in. The lip of the hand control must be flush with the cab of the lift. The socket and hand control connector is a tight fit – press firmly to ensure the hand control is plugged in properly. • Slide the lift over to the charger. Is the light red or not on at all? Battery likely needs to be charged. See troubleshooting situations above for more information. • If, after testing all of the above, the lift will not operate, contact your local dealer or agent.
The charging light on the lift remains red and does not turn to green after an overnight charge.	• If available, try another charger stopper from another lift or a spare one; plug it into the rail and charge for 3 hours. If the light does not change to yellow or green, contact your local dealer or agent. • Contact your local dealer or agent.
When you press the button to return the lift to its charger (4-way motors only), the lift goes to the charger but does not lower the spreader bar and you can hear a ‘humming’ sound.	• Charger either does not have power or is not working properly, see troubleshooting question above.

Labels on the Lift

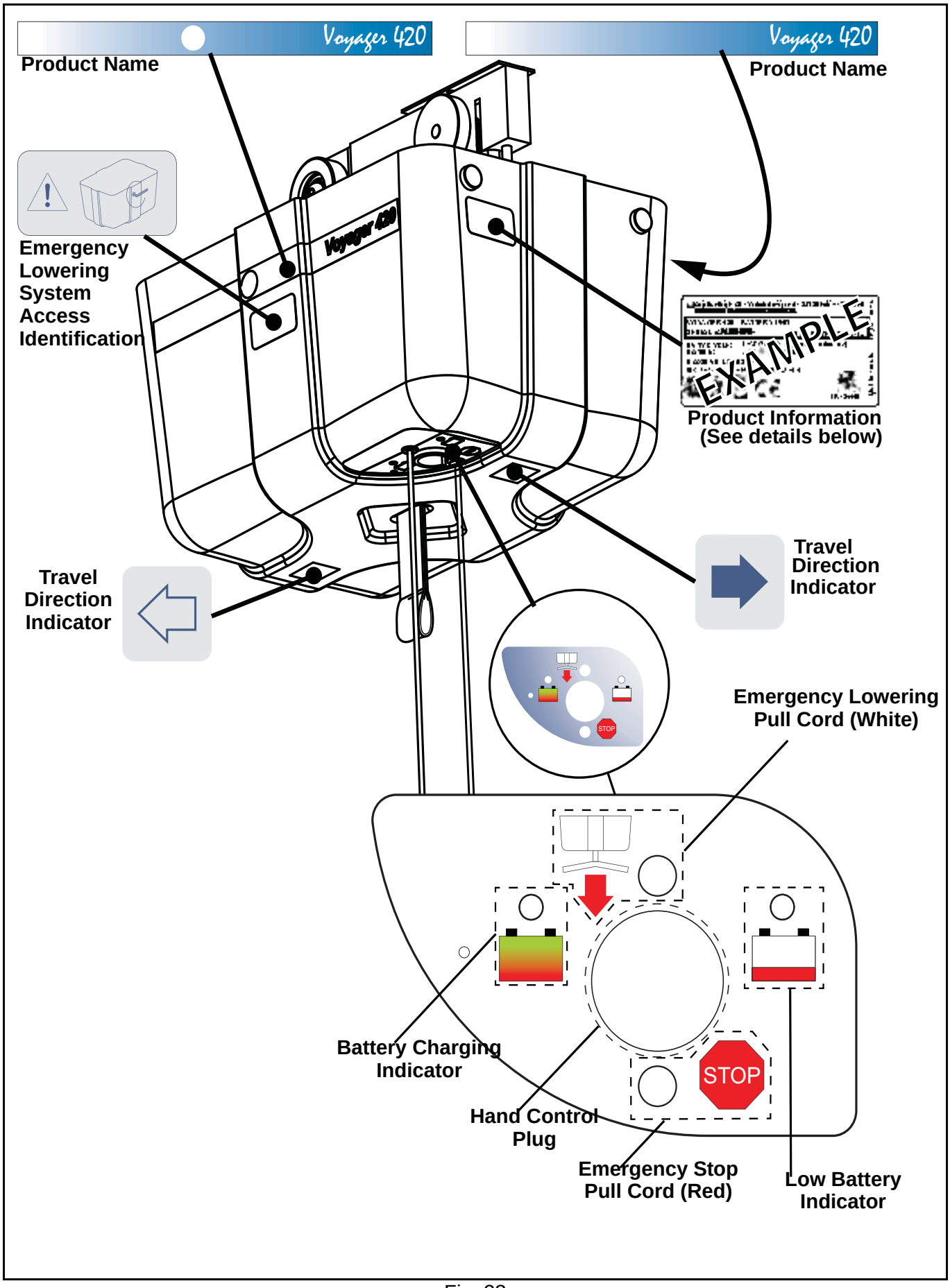

Fig. 23

Technical Specifications

PRODUCT INFORMATION	Voyager 420
Weight, complete (Four-function model)	12.7 kg (28 lb)
Weight, complete (Two-function model)	11.4 kg (25 lb)
Lifting capacity	190 kg (420 lb)
Strap length	2200 mm (88 in)
Lifting speed	4.0 cm/s (1.6 in/s) without load) 3.5 cm/s (1.4 in/s) at 190 kg (420 lb)
Maximum stroke (from ceiling)	1930 mm (76 in)
Horizontal displacement speed	20 cm/s (7.9 in/s)
Horizontal axis motor	24 VDC, 62 watts
Vertical axis motor	24 VDC, 110 watts
ELECTRICAL	
Duty cycle	Max 10% (6 min/hour), 1 minute continuously
Rating	24 VDC, 15 A max
Noise level for either raising or lowering, with or without load	61 dBA max
Medical equipment	Type BF protection against electrical shock in accordance with IEC 60601-1

The Voyager 420 is compliant with **CAN/CSA-C22.2, CSA-Z323.5.98, IEC 60601-1 and UL 60601-1.**

WARNING: Wireless communications equipment such as wireless home network devices, mobile phones, cordless telephones and their base stations, walkie-talkies, etc. can affect the Voyager 420 and should be kept at least 2.34 m away from it. Cables from potentially strong sources of electromagnetic fields should not be placed near the unit.

Battery type	Sealed rechargeable valve regulated lead acid battery (2 x 12V, 7 Ah)
Battery capacity	Provides up to 150 transfers with a load of 75 kg (165 lb)
Degree of protection - Hand control	IPX1, IPX6
Degree of protection - Voyager 420	IP21
Lift - protection class - shock prevention	Internally powered equipment
Battery charger input	230 VAC, 50 Hz, 0.5 A
Battery charger output	28 VAC, 0.5 A max
Battery charger fuse	250 V, 0.5 A
Battery charger safety protection	Class II
OPERATION CONDITIONS	
Ambient temperature range	5 °C to 40 °C (41 °F to 104 °F)
Relative humidity range	15% to 93% non-condensing
Atmospheric pressure range	700 hPa to 1060 hPa (2000 m max)
STORAGE CONDITIONS	
Ambient temperature range	-25 °C to 70 °C (-13 °F to 158 °F)
Relative humidity range	< 94% non condensing
Atmospheric pressure range	500 hPa to 1060 hPa

WARNING: This equipment is not suitable in the presence of flammable anaesthetic mixtures with air or oxygen, or with nitrous oxide. Using the Voyager 420 in this environment might lead to an explosion. The lift might create some spark internally and ignite the gas.

RECYCLING	
Battery	Sealed lead-acid, rechargeable, recyclable
Package	Cardboard recyclable
The lift	Separated and recycled, according to the European Directive 2002/96/EG (WEEE).

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Technical Specifications

Lift Dimensions

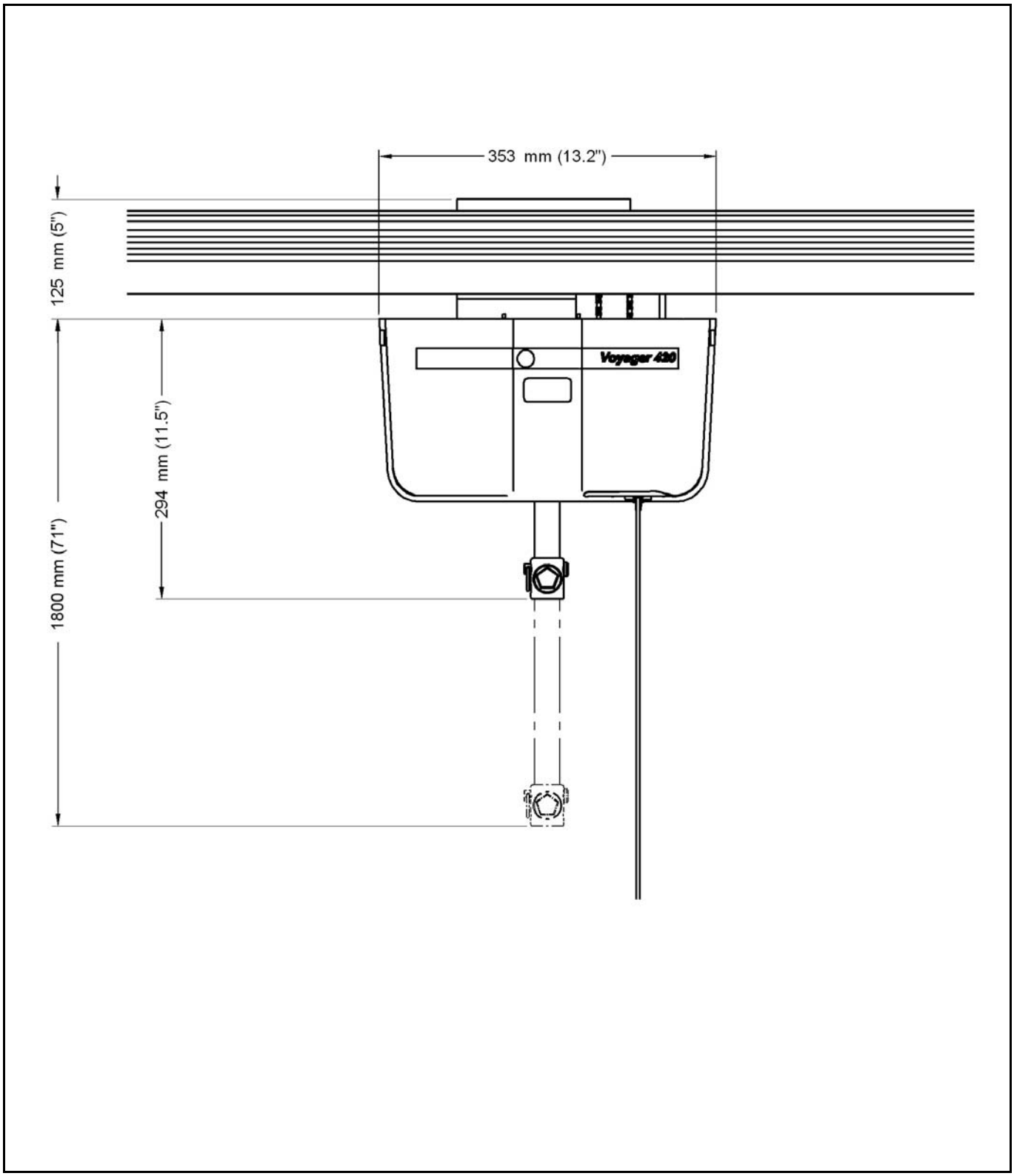
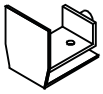


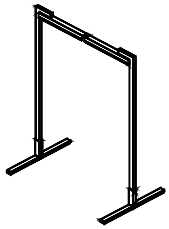
Fig. 24

Accessories

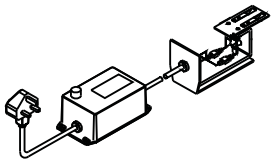
RAIL STOPPER



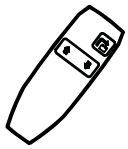
SEMI-PERMANENT RACK



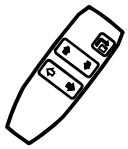
CHARGER STOPPER FOR UK ONLY



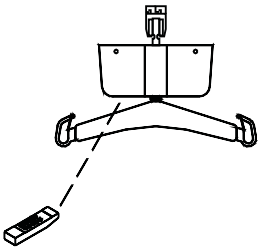
HAND CONTROL
2 FUNCTIONS



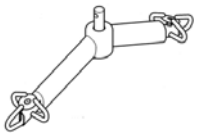
4 FUNCTIONS



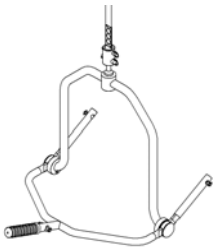
OPTIONAL INFRARED
REMOTE CONTROL



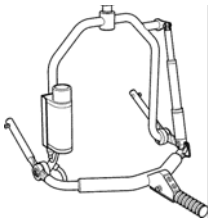
SIX-POINT
SPREADER BAR



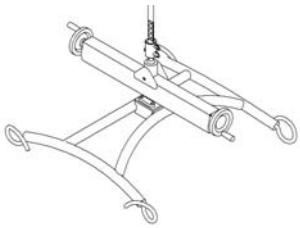
FOUR-POINT CRADLE



POWERED FOUR-POINT
CRADLE



SIX-POINT CRADLE



Electromagnetic Compatibility

Electromagnetic Compliance

The Voyager 420 has been tested for compliance with current regulatory standards regarding its capacity to block EMI (electromagnetic interference) from external sources.

Nonetheless, some procedures can help reduce electromagnetic interferences:

- Use only ArjoHuntleigh cables and spare parts to avoid increased emissions or decreased immunity which can compromise the correct functioning of the equipment.
- Ensure that other devices in patient-monitoring and/or life-support areas comply to accepted emissions standards.
- Maximize the distance between electro-medical devices. High-powered devices may produce EMI that can affect the lift. Refer to separation distance table further on in this document.

For more information on how to manage the unit's RF electromagnetic environment, please consult the *AMI TIR 18-1997 - Guidance on Electromagnetic Compatibility of Medical Devices for Clinical/Biomedical Engineers*.

Electromagnetic Emissions

Guidance and Manufacturer's Declaration - Electromagnetic Emissions - For all Equipment and Systems		
The Voyager 420 is intended for use in the electromagnetic environment indicated below. The customer or the user of the Voyager 420 should assure that it is used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group 1	The Voyager 420 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions ISPR 11	Class B	The Voyager 420 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/flicker emissions IEC 61000-3-3	Complies	

Electromagnetic Immunity

Guidance and Manufacturer's Declaration - Electromagnetic Immunity - For all Equipment and Systems			
The Voyager 420 is intended for use in electromagnetic environment specified below. The customer or the user of the Voyager 420 should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/ output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV for common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% *U*T (>95% dip in *U*T) for 0.5 cycle 40% *U*T (60% dip in *U*T) for 5 cycles 70% *U*T (30% dip in *U*T) for 25 cycles <5% *U*T (>95% dip in *U*T) for 5 sec.	<5% *U*T (>95% dip in *U*T) for 0.5 cycle 40% *U*T (60% dip in *U*T) for 5 cycles 70% *U*T (30% dip in *U*T) for 25 cycles <5% *U*T (>95% dip in *U*T) for 5 sec.	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Voyager 420 requires continued operation during power mains interruptions, it is recommended that the Voyager 420 be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercials or hospital environment.
NOTE: *U*T is the AC mains voltage prior to application of the test level.			

Electromagnetic Compatibility

(continued)

<table>
<tr><th colspan="4">Guidance and Manufacturer's Declaration -
Electromagnetic Immunity - For Equipment and Systems that are Not Life-Supporting</th></tr>
<tr><th>Immunity test</th><th>IEC 60601 test level</th><th>Compliance level</th><th>Electromagnetic environment - guidance</th></tr>
<tr><td>Conducted RF
IEC 61000-4-6</td><td>3 Vrms
150 kHz to 80 Mhz</td><td>3 Vrms
150 kHz to 80 Mhz</td><td rowspan="2">Portable and mobile RF communications equipment should be used no closer to any part of the Voyager 420, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Recommended separation distance
$d = \left[\frac{3,5}{V1}\right]\sqrt{P}$
$d = \left[\frac{3,5}{E1}\right]\sqrt{P}$ 80 MHz to 800 MHz
$d = \left[\frac{7}{E1}\right]\sqrt{P}$ 800 MHz to 2.5 GHz
where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters.
Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, (a) should be less than the compliance level in each frequency range. (b)
Interference may occur in the vicinity of equipment marked with the following symbol:
  </td></tr>
<tr><td>Radiated RF
IEC 61000-4-3</td><td>3 V/m
80 MHz to 2.5 GHz</td><td>10 V/m[1]
80 MHz to 2.5 GHz</td></tr>
<tr><td colspan="4">NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2: Theses guidelines may not apply in all situations. Electromagnetic propagation if affected by absorption and reflection from structures, objects and people.</td></tr>
<tr><td colspan="4">(a) Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Voyager 420 is used exceeds the applicable RF compliance level above, the Voyager 420 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Voyager 420.

(b) Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

[1]The EUT was tested at 10 V/m as per ISO 10535: 2006</td></tr>
</table>

(continued)

**Recommended Separation Distance Between -
Portable and Mobile RF Communications Equipment and the Voyager 420
for Equipment and Systems that are not Life-Supporting**

Recommended separation distances between portable and mobile RF communications equipment and the Voyager 420.

The Voyager 420 is intended for use in electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Voyager 420 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communication equipment (transmitters) and the Voyager 420 as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	**Separation distances according to frequency of transmitter m**		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2.5 GHz
	$d = \left[\frac{3,5}{V1}\right]\sqrt{P}$	$d = \left[\frac{3,5}{10}\right]\sqrt{P}$	$d = \left[\frac{7}{10}\right]\sqrt{P}$
0.01	0.12	0.12	0.24
0.1	0.37	0.37	0.74
1	1.17	1.17	2.34
10	3.69	3.69	7.38
100	11.67	11.67	23.34

For transmitters rated at a maximum output power not listed above, the recommended separation distance *d* in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

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