SKY TRACK

CEILING LIFT INTRODUCTION

PRODUCT DESCRIPTION

Sky–Track is a technically innovative, well–designed and powerful electric lift system with a maximum load of 200kgs(440lbs), suitable for disabled or elderly people with reduced mobility.

Combined with the Rail System (ERS), the Sky–Track addresses all lifting situations in healthcare and other patient handling environments. Lightweight and flexible Sky–Track with comprehensive accessories for seated and horizontal transfers as well as standing and gait training. It is used with rails fixed to the ceiling, but can also be used in portable rail systems.

Sky–Track provides users with flexible solutions, such as remote control and room–to–room transfer, lightweight, convenient and fast control system that meets safety requirements, large hoisting space, and is equipped with a 2.5–meter lifting belt and a variety of carry bar/sling for choices. It is a complete solution for the healthcare, easy to install and use. Equipped with a lithium battery power system to provide users with higher efficiency and longer battery service time. Wall–mounted charger or rail charging (IRC) for on–the–go charging.

Sky–Track integrates obstacle avoidance sensor system and laser positioning assistance, original nursing and personal mode function switching, patients can use it autonomously in a safer

situation; with two sets of independent LED display systems to give users timely operation instructions. Emergency stop/ Emergency lowering/SOS call systems provide medical staff or users with timely and reliable safety and alarm services, reducing possible unexpected situations.

COMPONET LIST

The Sky–Track lifting system includes the following accessories:

1. Sky–Track electric lift hoist
2. Controller handle
3. Charger
4. Rail charging station
5. lifting carry bar/sling
6. Instructions/Warranty card

IMPORTANT: The lift must be fully charged before first use. For specific charging instructions, please refer to Operation Section 10 and related tips after charging is completed.

CONTROLLER HANDLE CONNECTION

WARNING: A sturdy ladder may be required to easily connect the lift side port to the controller cable, be careful during installation.

SKY-TRACK OPERATION

WARNING: Before using the Sky-Track electric lift system,The lift, rail and sling must be inspected for any loose, unusual wear or damage. Please refer to the owner's manual for each part of equipment to determine what to check. Please contact your local dealer for any abnormalities or questions you see before use. Failure to observe or ignore this precaution could result in serious injury to the operator and patient or damage to the lift during usage.

Before use, connect the terminal of the controller handle cable with the circular female socket on the side of the lift, and securely connect it.

1. Power On: Press the bottom main switch to start the electric lift with a long beep and enter standby mode, And ensure that the pillar connected to the rope has been pushed back into the case the white breathing light in the center of the circular main screen flashes for 3 seconds/cycle, and the bottom attached screen displays "WORK".
2. Sleep Mode: When the electric lift is in the standby state, the screen will turn off without any operation within 120 seconds, and it will automatically switch to the sleep state. Return to standby after pressing any key.

3.Lift Up: Press  button on the handle, the main screen will display ”Up ” arrow and the attached screen will display ”Up”. At the same time, lift the patient to an appropriate height and release the button, the lift stops rising and the screen returns to standby state.

4.Move to the Left: press  button, the main screen displays the ”Left arrow”, the bottom screen displays the ”Left arrow”, the lift machine moves to the left, the bottom laser red dot starts positioning; Release the button, the lift machine stops moving, laser red spot extinguished, the machine returns to the standby state.

5. Move to the Right: press  button, the main screen displays the ”Right arrow”, the bottom screen displays the ”Right arrow” machine moves to the right, the bottom laser red dot starts positioning; Release the button, the machine stops moving, laser red spot is extinguished, and the machine returns standby state.

6. Vertical Descent: Press  button, the ”Down arrow” will be displayed on the main screen and the word ”Down” displayed on the bottom screen. At the same time, the patient will descend to a safe place to release the button, the machine will stop descending and the screen will return to standby state.

7. Left obstacle avoidance STOP: In the process of the machine moving to the left, the obstacle avoidance sensor will be triggered when the distance from the left side of the machine is less than 20cm, so that the machine will STOP moving. The breathing light on the main screen turns red and the obstacle avoidance signal on the left side lights up. The bottom screen displays ”STOP” and the buzzer alarms. When the distance between the obstacle and the sensor on the left side is greater than 20 cm, the machine can resume moving; or use the hand controller to control the machine to move away from the obstacle to resume moving.

8. Right obstacle avoidance STOP: In the process of the machine moving to the right, the obstacle avoidance sensor will be triggered when the distance from the right side of the machine is less than 20cm, so that the machine will STOP moving. The breathing light on the main screen turns red and the obstacle avoidance signal on the right side lights up. The bottom screen displays ”STOP” and the buzzer alarms. When the distance between the obstacle and the sensor on the right side is greater than 20 cm, the machine can resume moving; or use the hand controller to control the machine to move away from the obstacle to resume moving.

9.SOS: When an unexpected situation occurs or when you want to call nursing staff, press the 

SOS button on the handle.breathing light on the main screen will turn red and blinks for 1 second/cycle. and In this state, the shifting machine cannot be operated to lift. Press this button again to restore the machine to normal standby mode.

10.Charging: Press  button and the lift will automatically move to the side of the hand controller connection port until it contacts the charging base fixed in the track. At this time, the lift stops moving and starts charging, the breathing light in the center of the circular main screen goes off, the attached screen at the bottom displays the word ”CHG” and the green charging icon lights up .

During the charging process, if the power is too low to satisfy the motor’s operation, at least one green bar appears on the display before the functions can resume work. It is recommended to fully charge the battery at one time, the breathing light turns white again and the charging icon on the bottom screen disappears. At this point, the charging is complete.

11.Caregiver/Personal Mode: The key  allows the lift to switch between Medical Mode and Personal Mode. In standby mode, the default is the medical care mode, and the medical staff can operate according to steps 2–10; press button once, the electric lift will switch to the personal mode, and the bottom screen display will change from ”WORK” to ”SELF”, The patient can independently operate the lift to movements and lift actions according to steps 2–10, and the main screen and bottom screen will display synchronized instructions.

12.Low Battery Power Protection: If the green level turns red, the battery reaches a discharge state and should be charged immediately. After the battery bar turn red 2 minutes:

A.The Up left and right operate frozen

B.SOS、Charging and Down continue support.

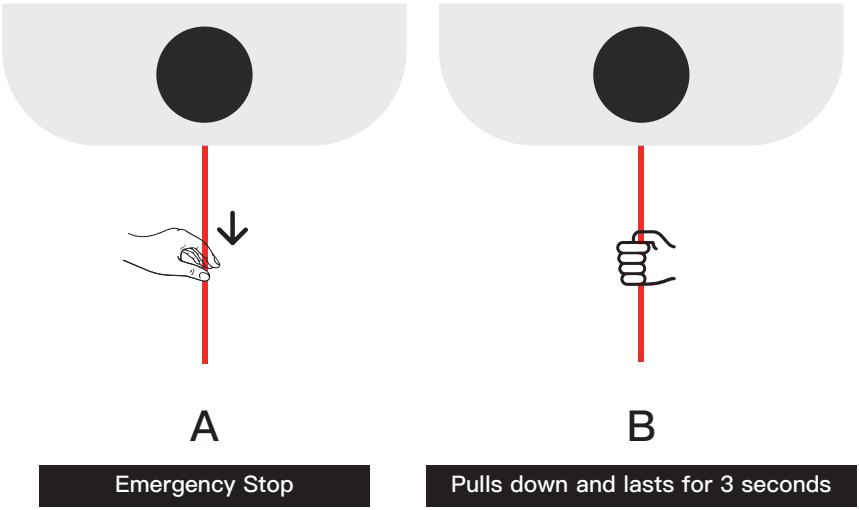
C.Make beeping sound and flash battery bars every 30 sec–onds.

D.The forzen function will sound an alarm when operated.

13. Emergency state:

A. Emergency state switch：If there is an emergency during use, pulling down the rope switch will shut down the main power. Push the pillar connected to the rope back into the case, and the lift returns to standby mode.

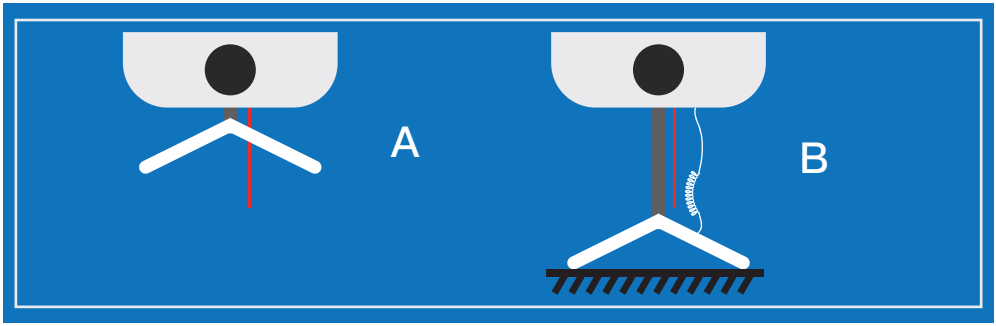
B. Emergency Lowering： In the event that the DOWN button on the controller does not function, or in power failure situations, the person may be lowered by pulling down and holding the red emergency rope 3 seconds.



14. Limit switch：

A. If the sling enters the shell during ascent, the limit switch will be released, the ascent function will stop, and only descent can be performed.

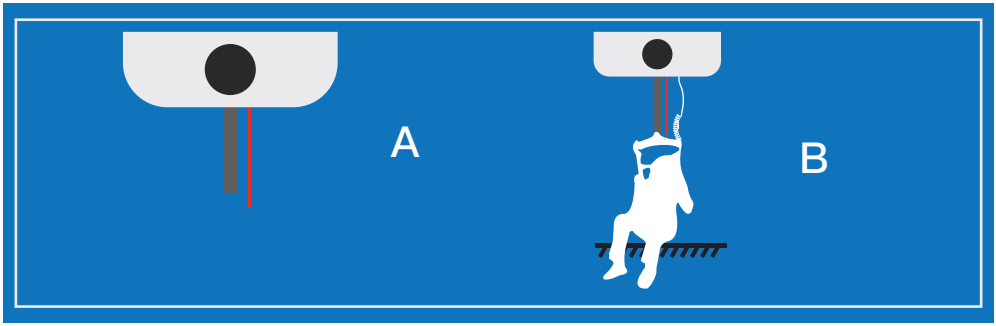
B. And when the continuous load condition is operated downwards until the end of the sling, the switch will also be activated to prevent the sling shaft from reversing

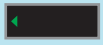


15. Load switch:

A.Standby state: After turning on, the strap did not detect any load and cannot operate Up and Down, only for translation. Assembly the Carry bar or holding and pulling the strap lift function activing .

B.Lowering state: When the Carry Bar lowering and be blocked it cannot continue to operate Down just to protect the strap from damage When the Carry Bar lowering and be blocked it cannot continue to operate Down just to protect the strap from damage. But it can lifting.



No	Remote Control Button	Funtion	Main Display	Sub Diplay
1		On/Standby		
2		Up		
3		Lifting Limit		
4		Down		
5		Load Switch		
6		Left		
7		Right		
8		Emergency (Pull Switch)		
9		Emergency Lowering		
10		Left Limited		
11		Right Limited		
12		SOS		
13		Pcrsonal Mode		
14		Caregiver Mode		
15		Charging		
16		Low Power Need Charging		

TECHNICAL SPECIFICATIONS

Horizontal/Vertical Motor： 24VDC

Safe Working Load (SWL) :

450lbs / 204Kg

Unit Weight :

42 lbs / 19 kg

Dimensions :

Length: 16.6” / 423 mm

Width: 11.8” / 301 mm

Height: 9.6” / 243 mm

Strap Length: 82” / 2100 mm

Safety :

Emergency Stop

Emergency Lowering Device

Upper Limit Detection

Lower Limit Detection

horizontal limit Detection

Load Detection

Red dot laser to point

Slack strap Sensor

Fall Brake (over speed governor)

Low Battery and Dead Battery Alarms

Call for help(from patient)

Overload Protection

Emergency Manual Lowering

TECHNICAL SPECIFICATIONS

Approvals Certiffed to :

YY0505–2012 EMC/EMI

IEC60601–1–2:2014, EMC/EMI

Tested to: IEC 60601–1,CE

Hand Control : Electronic control

Protection Class : IPX0

Maximum Sound Level : <55dB

Maximum Lifting Speed :

No load: 2.0 inches/second

220 lbs / 100 kg: 1.8 inches/second

300 lbs / 136 kg: 1.6 inches/second

440 lbs / 200 kg: 1.4 inches/second

Batteries : High Capacity, lithium battery

Standard: 24V (20Ah)

Battery Charger

Input: 100–240 VAC 2.5A 140Watt

Output: 5A Charging time: 2 – 3 hours

Number of Lifts per Charge (Duty: 10/90)

Lifting and horizontal operation

240 with 185 lbs / 100 kg 175 with 440 lbs / 200 kg

During the running–in period, the actual frequency of use, the distance of transport and the size of the applied load will directly affect the consumption of electricity. High–frequency and high–load use of the shift machine will increase power consumption.

WARNINGS

Sky–Track must be installed by professional staff before use. Under no circumstances should the rail, lift and slings or the entire system be operated by persons not trained in the use and maintenance of this equipment. This could cause serious injury to the operator and/or patient.

- Lifts and associated rails and accessories are not toys. Do not use the lift in an unsafe manner. Do not allow children to play with the lift or any of its parts.
- The manufacturer's warranty will be void if repairs and disassembly work are performed on the Sky–Track electric lift system by unauthorized after–sales personnel
- There are no user serviceable parts inside the service cover. Do not remove the retaining screws on the service cover or open the lift as this will void the warranty.
- Any user using the Sky–Track lift and associated rails and accessories must be trained in proper use or fully read and understand the instruction manual or instruction video. Operators should be trained in the proper use of the lift and associated accessories.
- Never expose the Sky–Track lift directly to water. The warranty does not cover any misuse or abuse of the lift system.
- To maintain optimum performance, the Sky–Track should be

inspected and maintained regularly. Refer to the section of the instruction manual titled ”General Inspection and Maintenance”.

- Any accessories used with the Sky–Track, including rails and slings, should be checked and ensured they are in good working order before use. Inspect for signs of damage or wear before use. Any abnormal wear or damage please contact your local authorized dealer immediately.
- The Sky–Track lift and associated rails and accessories are used to lift and transfer one person only. Manufacturers and distributors of lifts and slings and their associated components are not responsible for any damage caused by misuse of negligence or vandalism.
- Do not use the lift under any circumstances to exceed the maximum permissible load for this lift. See the Technical Specifications section of this manual or the nameplate on the side of the lift enclosure.
- Lifts, rails, accessories and slings are installed with maximum load certified. Do not exceed the maximum load rating of any component.
- There is a danger of explosion if the lift is used in a flammable environment.
- Make sure there is enough clear space around the lift and track. Remove all curtains and other inconvenient obstructions

and materials before transferring the patient. The charger must be kept a safe distance from the patient at all times. Dangerous due to the possibility of being touched by the patient or caregiver. The space should be kept within 2 meters of the bed or treatment table, and there should be no obstacles below the ground height of 2.3 meters.

BATTERY MAINTENANCE AND CHARGING

The charger is connected to two metal charging pole pieces along the inner end of the rail, which we call a rail charging station. Whenever the lift reaches the orbital charging station, it will automatically start charging the lift. And the battery should be charged and maintained regularly.

It is recommended that the lift be kept charged when not in operation and at the end of each day. This will maximize the life cycle of the battery. Due to the protection system set up in the charger and the internal control circuit of the lift, the lift can remain connected to the charger indefinitely, that is, keep the charging state for a long time, without causing the danger of overcharging the lift circuit system .

Display Screen Functionality

Main Display	Sub Display	Message Explanation	Beep Sound	Instruction
None	None	Shut down status	None	Turn on the Power Switch and Turn on via the toggle switch on lower cover
		Standby （Caregiver Mode）	None	None - Informative only
		1.None Carry Bar to lifting 2. Lowering be blocked	1 Beep per 2 Secound	1.Install Carry Bar or Hold and pull down the strap 2.Press Up to continue
		Lowering Active	None	None - Informative only
		Lifting Active	None	None - Informative only
		Moving Left Active	None	None - Informative only
		Moving Right Active	None	None - Informative only
		Obstacle sensor of Left Active	Beep Repeat	Press Right to continue
		Obstacle sensor of Right Active	Beep Repeat	Press Left to continue
		Up Limit Switch Active	Beep & 3 Beep Repea	Press Down to continue
		Down Limit Switch Active	Beep & 3 Beep Repea	Press Up to continue
		Battery Status LOW	2 Beeps Repeat	Place Lift on charge as soon as possible within 2 Mintutes
		Funtion Left Right and Up be frozened	3 Beeps Repeat	Press Charging or Down or SOS to continue
		Arrived Charge Station of the track	None	Batteries are charging
		Emergency Lowering Need	None	Pull down & Holding 3 Seconds Lowering the patient to safe situation
		Switching Personal Mode	None	Handle control by lifted person
		The Patient ask help to others	Beep Repeat	The caregiver attention Beep sounds

EMC INFORMATION

Electromagnetic compatibility information and technical notes require special precautions regarding electromagnetic compatibility (EMC) and must be installed and used in accordance with the EMC information provided in this user manual. The basic performance of the product is that the control buttons are normal, and the display content is normal.

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

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

CAUTION: Electrostatic discharge may slightly disturb the image.

Guidance and manufacturer's declaration — electromagnetic emissions		
The ceiling lift is intended for use in the electromagnetic environment specified below. The customer or the user of ceiling lift should assure that it is used in such an environment.		
Launch test	**Compliance**	**Electromagnetic environment**
RF emissions CISPR 11	Group 1	The ceiling lift 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 CISPR 11	Class A	The ceiling lift is suitable for use in all establishments other than domestic, and may be used in domestic establishments and those directly connected to the public low–voltage power supply network that supplies buildings used for domestic purposes, provided the following warning is heeded.
Harmonic emissions IEC 61000–3–2	N/A	
Voltage fluctuations / flicker emissions IEC 61000–3–3	N/A	

Guidance and manufacturer´s declaration — electromagnetic immunity			
The ceiling lift is intended for use in the electromagnetic environment specified below. The customer or the user of the ceiling lift should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment**
Electrostatic discharge (ESD) IEC 61000–4–2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 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 %.
Electrostatic transient / burst IEC 61000–4–4	±2 kV for power supply lines	±2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000–4–5	±0.5 kV, ±1 kV differential mode ±0.5 kV, ±1 kV, ±2 kV common mode	±0.5 kV, ±1 kV differential mode ±0.5 kV, ±1 kV, ±2 kV common mode	

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000–4–11	0 % UT (100 % dip in UT) for 0.5 cycle 0 % UT (100 % dip in UT) for 1 cycles 70 % UT (30 % dip in UT) for 25 cycles 0 % UT (100 % dip in UT) for 5 sec	0 % UT (100 % dip in UT) for 0.5 cycle 0 % UT (100 % dip in UT) for 1 cycles 70 % UT (30 % dip in UT) for 25 cycles 0 % UT (100 % dip in UT) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the ceiling lift requires continued operation during power mains interruptions, it is recommended that the ceiling lift be powered from an uninterruptible power supply or a battery.
Power frequency magnetic field (50/60Hz) IEC 61000–4–8	30 A/m		Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE：UT is the a. c. mains voltage prior to application of the test level.			

Guidance and manufacturer´s declaration — electromagnetic immunity			
The ceiling lift is intended for use in the electromagnetic environment specified below. The customer or the user of the ceiling lift should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment**
Conducted RF IEC 61000–4–6 Radiated RF IEC 61000–4–3	3 Vrms 150 kHz to 80 MHz 3 V/m 80 MHz to 2.5 GHz	3 V (V1) 3 V/m (E1)	Portable and mobile RF communications equipment should be used no closer to any part of the ceiling lift, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2.7 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 metres (m).[b] Field strengths from fixed RF transmitters, as determined by an elec–tromagnetic 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 follow–ing symbol: 

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2: These guidelines may not apply in all situations. Electro–magnetic is affected by absorption and reflection from structures, objects and people.

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 ceiling lift is used exceeds the applicable RF compliance level above, the ceiling lift should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorient–ing or relocating the ceiling lift.
b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.

Recommended separation distances between portable and mobile RF communications equipment and the ceiling lift

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

Rated maximum output of transmitter (w)	Separation distance according to frequency of transmitter (m)		
	150kHz～80MHz $d=1.2\sqrt{P}$	80MHz～800MHz $d=1.2\sqrt{P}$	800MHz～2.7GHz $d=2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above the recommended separation distance d in metres (m) can be esti–mated using the equation applicable to the frequency of the transmit–ter, 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. Electro–magnetic propagation is affected by absorption and reflection from structures, objects and people.