

# Sky-Track Ceiling Lift Product 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. Two sets of emergency stop/SOS call systems provide medical staff or users with timely and reliable safety and alarm services, reducing possible unexpected situations.

## **Component List**

The Sky-Track lifting system includes the following accessories:

1. Sky-Track electric lift host
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, 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 the "Up" 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 the "left" 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 the "right" 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 the "DOWN" 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.Emergency stop/SOS:** When the electric lift is running in an emergency, immediately press the handle "SOS" button or pull down the red pull rope under the motor body to stop the lift immediately, and the breathing light on the main screen will turn red and Blinks for 1 second/cycle, and the bottom screen displays "STOP"; repeat the previous step to restore the lift to the normal standby state.

**10.Charging:** Press the "Charge" 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.Medical/Personal Mode:** The "Medical" 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 the "medical care" 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 PowerProtection:** When the battery power remains one bar and turns red, the control circuit protection function is activated, the buzzer sounds two short alarms and the lift stops running, the breathing light on the main screen turns red and alarms, and the hand controller is not allowed to operate . At this time, it is necessary to restart the main power switch to restore the lift to the standby state. In the current state, the power is extremely low. To avoid the control failure again, please place the patient in a safe position immediately and charge the lift according to step 10.

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.

## **Technical Specifications**

Horizontal motor: 24VDC 30W

Vertical motor: 24VDC 250W

Charger Input: 100-240VAC 2.5Amps

Charger Output: 5.0Amps

Controller mode: electronic control

Manipulation cycle: The longest lift lasts 2 minutes;The longest horizontal movement lasts 2 minutes

Battery capacity: 500Wh lithium battery

Lift casing: ABS plastic

Product Net Weight: 18.5kg(40.8lbs)

Product Gross Weight: 22kg(48.5lbs)

The maximum load of the lift: 200kg(440lbs) (the actual maximum load is subject to the content of the nameplate on the product)

Product working performance cycle: (In a working cycle, the shortest intermittent time should be 4 times the longest continuous working time) 10% work time, 90% rest time. The lift under 200Kg(440lbs) load can be used for 250 times of lifting. The lift has a running-in period. 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, and even the phenomenon that the control system starts protection and interrupts operation due to low power during use.

Model	Specifications	Model	Specifications
Horizontal motor	24VDC 30W	Vertical motor	24VDC 250W
Charger input	100-240VAC 2.5Amps	Charger output	5.0Amps
Controller mode	electronic contro	Lift Casing	ABS plastic
Manipulation cycle	The longest lift lasts 2 minutes;The longest horizontal movement lasts 2 minutes		
Battery capacity	500Wh lithium battery	ProductGross Weight	22kg(48.5lbs)
Product Net Weight	18.5kg(40.8lbs)		
The maximum load of the lift	200kg(440lbs) (the actual maximum load is subject to the content of the nameplate on the product)		
Product working performance cycle:	(In a working cycle, the shortest intermittent time should be 4 times the longest continuous working time) 10% work time, 90% rest time. The lift under 200Kg(440lbs) load can be used for 250 times of lifting. The lift has a running-in period. 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, and even the phenomenon that the control		

	system starts protection and interrupt
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## **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 .




### Low Battery Power Charging:


If the battery is low and needs to be charged, the breathing light on the lift home screen will change from white to red, the battery bar will show a red bar and a short two beep alert will sound and the lift bottom display will illuminate Red low battery indicator. In the design of the lift, in order to prevent the patient from being trapped in the halfway during the moving or lifting operation, in order to prevent the power exhaustion, the device will alert the battery to low power and lock the control system to ensure no accidental injury occurs during patient transfer. Just restart the lift power switch to continue transporting the patient to the destination, and then charge the lift.


If the lift is being used to transfer the patient, the lift system will immediately start the protection program and lock the control handle; at this time, the power switch needs to be restarted, and the lift will resume the control function. After the patient transfer is continued, operate the control handle immediately. Press the charging button to automatically move the lift to the end of the track where the charger is located for charging. During charging, the charging level can be judged by the change of the power grid. After the battery is fully charged, the lift system will light up the white breathing light to remind the user that the charging is completed. The system automatically switches to the standby state, and the system goes to sleep after 120 seconds of inactivity. When the charging reaches one grid of electricity and is green, the control system can be restored to meet the urgent needs of use. This process may take about 1 hour.

## 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		
<b>Guidance and manufacturer's declaration – electromagnetic immunity</b>			
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	IEC60601 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	±2kV for power supply lines	±2kV for power supply lines	Mains power quality should be that of atypical commercial or hospital environment.
Surge IEC 61000-4-5	±0.5 kV, ±1kV differential mode ±0.5 kV, ±1kV, ±2kV common mode	±0.5 kV, ±1kV differential mode ±0.5 kV, ±1kV, ±2kV common mode	Mains power quality should be that of atypical commercial or hospital environment.

<p>Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11</p>	<p>0 % U<sub>T</sub> (100 % dip in U<sub>T</sub>) for 0.5 cycle</p> <p>0 % U<sub>T</sub> (100 % dip in U<sub>T</sub>) for 1 cycles</p> <p>70 % U<sub>T</sub> (30 % dip in U<sub>T</sub>) for 25 cycles</p> <p>0 % U<sub>T</sub> (100 % dip in U<sub>T</sub>) for 5 sec</p>	<p>0 % U<sub>T</sub> (100 % dip in U<sub>T</sub>) for 0.5 cycle</p> <p>0 % U<sub>T</sub> (100 % dip in U<sub>T</sub>) for 1 cycles</p> <p>70 % U<sub>T</sub> (30 % dip in U<sub>T</sub>) for 25 cycles</p> <p>0 % U<sub>T</sub> (100 % dip in U<sub>T</sub>) for 5 sec</p>	<p>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.</p>
<p>Power frequency magnetic field (50/60Hz) IEC 61000-4-8</p>	<p>30 A/m</p>	<p>30 A/m</p>	<p>Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.</p>
<p>NOTE: U<sub>T</sub> is the a. c. mains voltage prior to application of the test level.</p>			

<p><b>Guidance and manufacturer's declaration – electromagnetic immunity</b></p>			
<p>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.</p>			
Immunity test	IEC60601 test level	Compliance level	Electromagnetic environment
<p>Conducted RF IEC 61000-4-6</p>	<p>3 Vrms 150 kHz to 80 MHz</p>	<p>3 V(V1)</p>	<p>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.</p> <p>Recommended separation distance</p> $d = 1.2\sqrt{P}$

<p>Radiated RF</p> <p>IEC 61000-4-3</p>	<p>3 V/m</p> <p>80 MHz to 2.7 GHz</p>	<p>3 V/m(E1)</p>	<p><math>d = 1.2\sqrt{P}</math> 80 MHz to 800 MHz</p> <p><math>d = 2.3\sqrt{P}</math> 800 MHz to 2.7 GHz</p> <p>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).<sup>b</sup></p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,<sup>a</sup> should be less than the compliance level in each frequency range.<sup>b</sup></p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
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NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

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

<sup>a</sup>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 reorienting or relocating the ceiling lift.

<sup>b</sup> 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 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.