Smart Lifter System User Manual

Smart Lifter System (LLT-2)
Smart Light Remote (LRC-1)

• SAFETY PRECAUTIONS

Read the installation and operation instructions carefully before installing and operating this device. Proper adherence to these instructions is essential.

- Disconnect power before installation or maintenance.
- Avoid exceeding the maximum load capacity of 60kg (132 lbs).
- Operate the lifter in environments below 40°C.
- Do not expose the lifter to water or corrosive chemicals.

• CAUTION

Read all instructions carefully before installation.

This product is not designed for utilization by children, individuals with diminished physical, sensory, or cognitive capabilities, or those lacking experience and knowledge regarding the product.

The device is designed to be installed INDOORS IN A SPACE THAT IS PROTECTED FROM RAIN AND FLOODING.

General maintenance is not required. DO NOT clean the light lifter's interior or chain with any chemicals that might cause damage. To clean the steel cable, use a damp cloth only and ensure it is fully dried before retracting the chain.

• WARNING

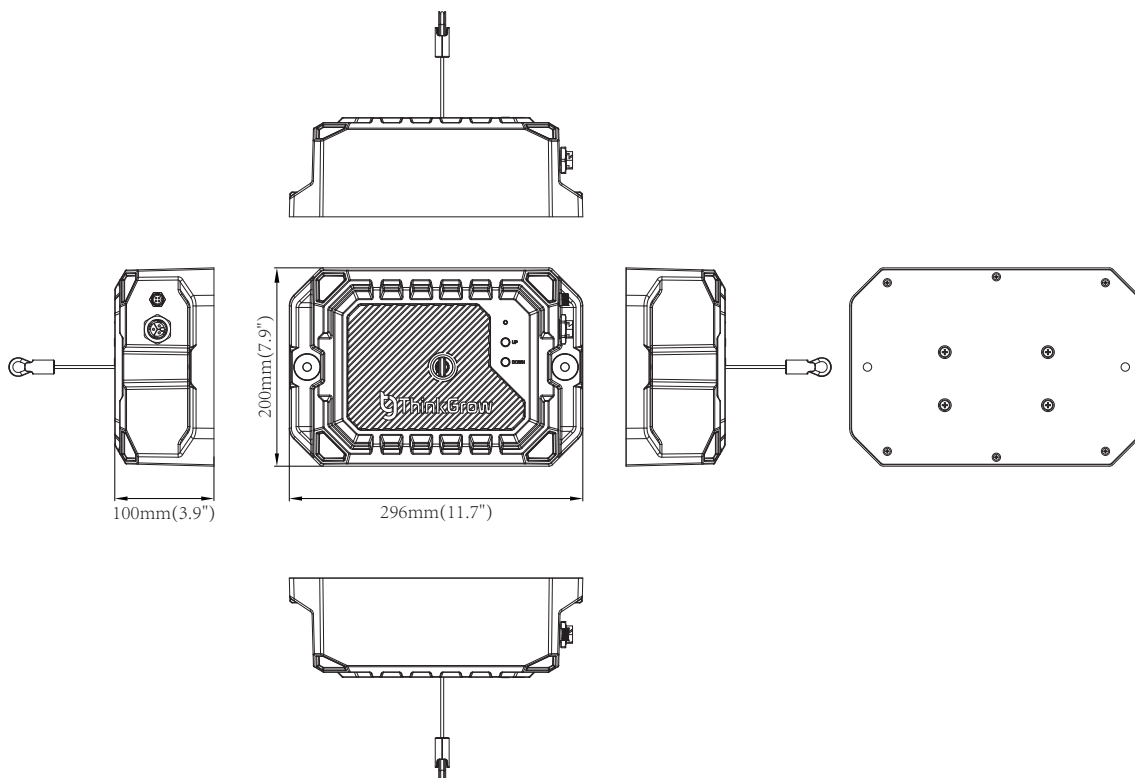|	
WARNING: **CLEAR AREA BELOW LOAD**	Ensure the area directly beneath the LLT-2 and its load is clear of people and obstacles at all times during operation. Never stand or work under the moving load, especially when lifting or lowering overhead.
	Users are responsible for the connection, safe installation, and usage of the devices.
	It is highly recommended that a certified person or licensed electrician install your light lift system.
	Ensure the existing electrical system can support the voltage and current requirements.
	The light lifter possesses significant weight. Serious injuries and/or damage to the equipment may occur if dropped. Exercise caution during the installation process. Ensure the light lifter is secured with the appropriate mounting hardware. Carefully adhere to the provided installation instructions.
	It is imperative to verify that the building structure, mounting solutions, and components are capable of supporting the weight of the lifter and the light fixtures.

Smart Lifter System (LLT-2)

• OVERVIEW

The LLT-2 Smart Lifter System is an advanced lifting device designed for use in agricultural planting environments. It efficiently automates the lifting and lowering of plant supplementary grow lights, facilitating automatic height management during plant growth. It enables efficient suspension of grow lights, sensors, and other equipment. This compact, quiet, and easy-to-install lifter ensures precision, synchronization, and user-friendly operation.

LLT-2 is ETL-listed. Each lifter can lift up to 77lbs/60kg, and the lifting range is up to 37"/940mm. Lifters can be linked together with automated alignment, and it is also compatible with the **LRC-1 Remote** and **(HCS-2) Hydro-X Pro Controller** for enhanced functionality.

• SPECIFICATION

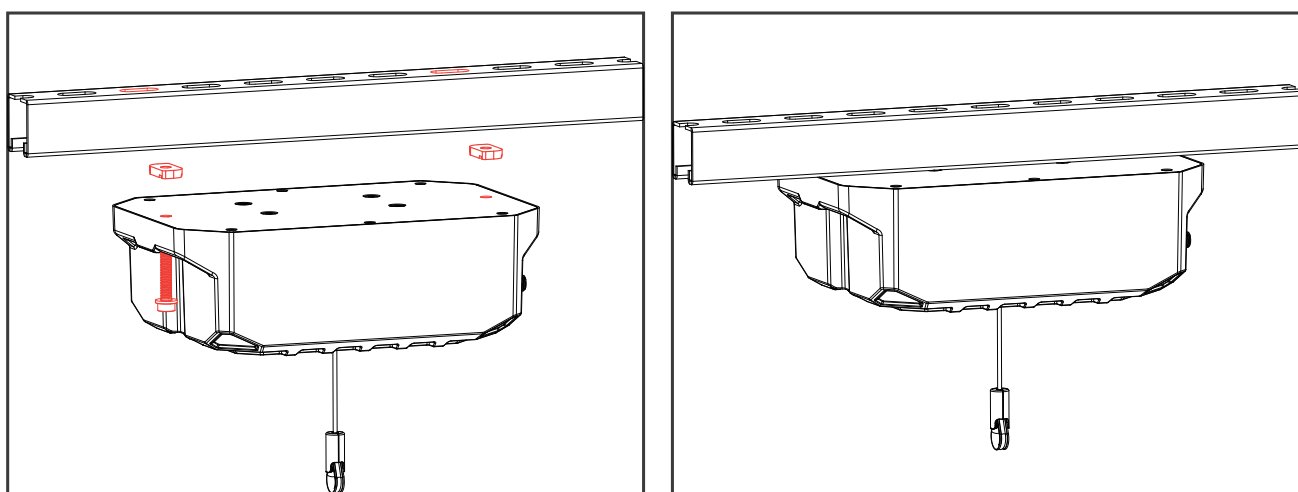|	
Input Voltage:	100-277VAC, 50/60Hz
Input Power:	≤165W
Lifting Range:	≤ 9.2' / 2.8m
Lifting Speed:	3.9m/min
Maximum Lifting Weight:	≤ 132lbs / 60kg
Maximum Lifting Length:	110" / 280mm
Working Environments:	Temperature 32-104°F / 0-40°C Humidity ≤ 90%
Product Dimensions:	0.8" x 11.6" x 39" 200mm(W) x 296mm(L) x 100mm(H)
Package Dimensions:	14.76" x 9.65" x 5.35" 375mm(W) x 245mm(L) x 136mm(H)
Product Weight:	11lbs / 5kg
Noise Level:	≤ 50db
Expected Lifespan:	7,200 cycles

• PACKAGE CONTENT

1 x Smart Lifter System (LLT-2)
1 x Power Cable

1 x 12ft RJ12 to 4-Pin IP65 Connector Cable (ECS-9)
1 x Lifter Rigging Cable Kit (RC-1)

• INSTALLATION

LED Indicator
Descent Button
Ascent Button

4 Pin Signal Cable Port

Power Cable Port
(120-277VAC/100W)

• MOUNTING INSTRUCTIONS

The LLT-2 module is designed to be mounted directly onto a unistrut, specifically using the MQM unistrut nuts, twist them 90' counter-clockwise to lock the unistrut nuts in place. Users can also install the LLT-2 on secured ceiling structures utilizing appropriate fasteners to ensure the stability of the lifter. The mounting solution must be rated and installed by qualified professionals. The mounting structure must be capable of supporting both the weight of the LLT-2 and that of the lifted fixture, while adhering to the rated lift capacity of the LLT-2. There exist two mounting holes for securing the lifters overhead. The minimum required diameter for screws is less than or equal to 0.3"(8mm), rated for a minimum of 80kg load. (Please note that screws and washers are not included in the package.)
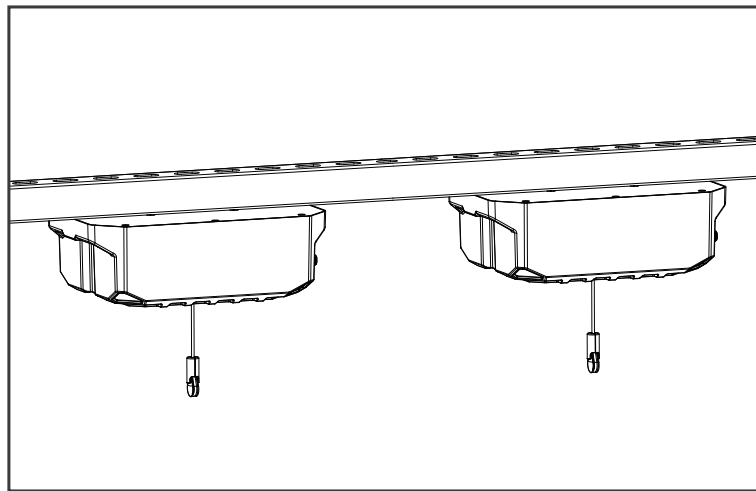
*Caution: It is incumbent upon users to ensure that all building structures, mounting solutions, and components possess appropriate ratings and are structurally sound.
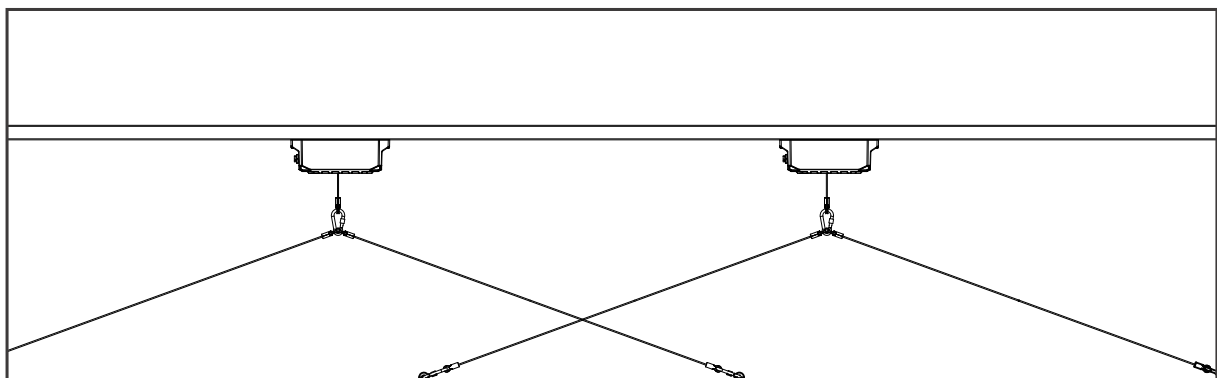
Connect to Power:

Power up the LLT-2 by attaching the power cable to the lifter's power cable port.
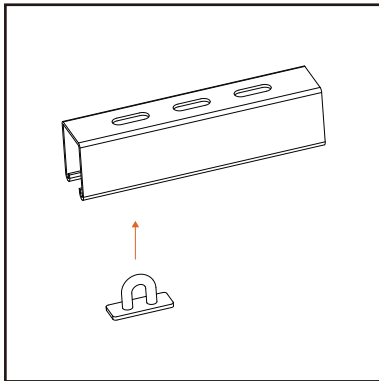
Unistrut Hanging Instructions:

1) Please ensure the LLT-2s are installed horizontally and that each lifter is interconnected with the connector cable. Also, please ensure the lifter's chains are adjusted to their highest or lowest position before hanging anything on the lifters to ensure the level for the elevating.
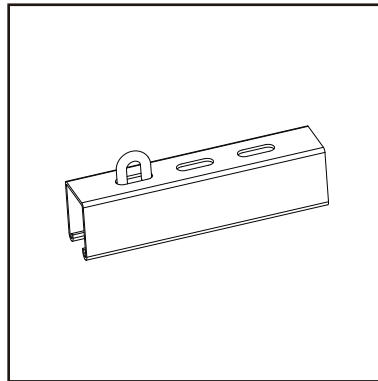

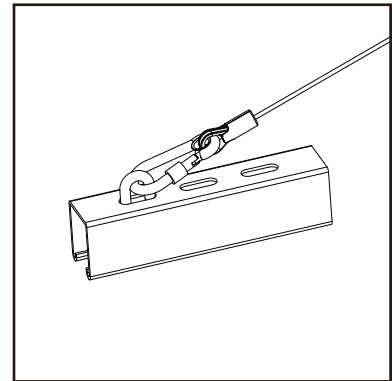2) Attach the carabiner to the LLT-2 hanging cable.

3) Use the RC-1 Cable Set
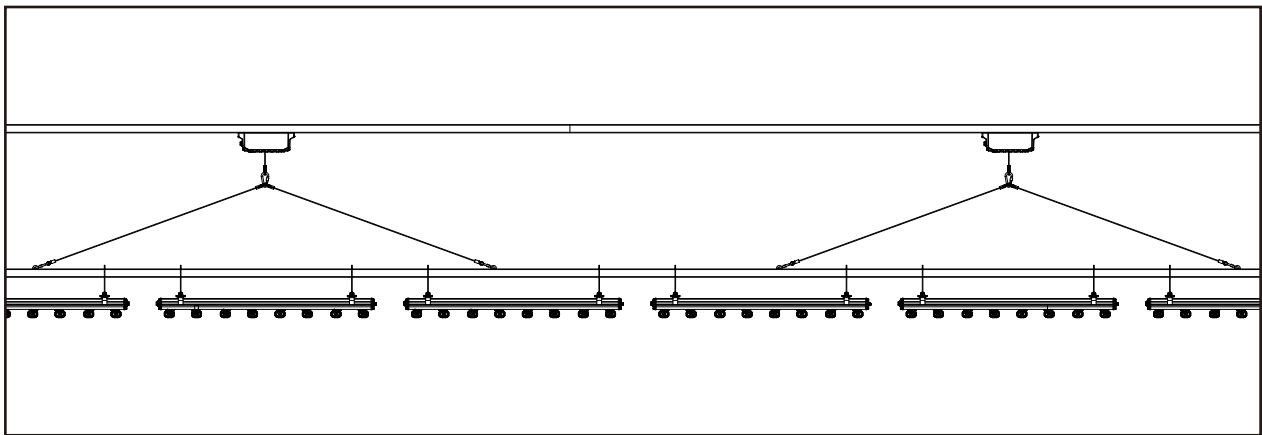

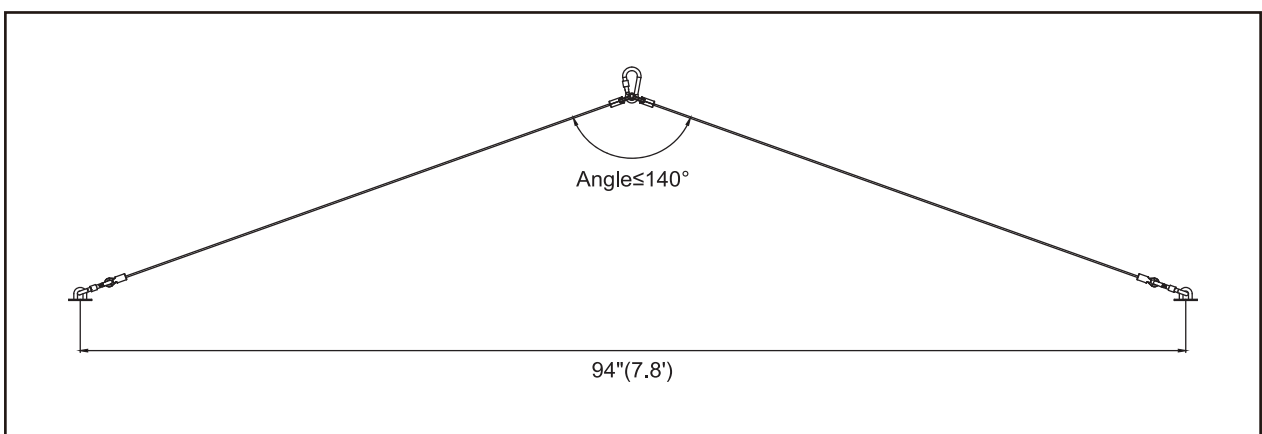1. Insert the Stainless Steel Eye Plate into the unistrut.

2. Make sure the Eye Plate is correctly placed.

3. Connect the Pear Quick Links to both of the Eye Plate.

4. Connect the Pear Quick Links to the lifter, installation completed.

Angle≤140°

94"(7.8')

5. Please ensure that the angle is no more than 140" and that the distance between the two Eye Plates is no greater than 94".

• TROUBLESHOOTING

LED Light Indicator	(Error) status	Description & solution
Connected with controller: Blinking Red LED for 10 seconds, then turns Solid Green Not connected with controller: Blinking Red LED for 10 seconds, then turns Blinking Green	Lifter has reached a level limit. (The lifter reached its highest or lowest setpoint)	Press the Down (or Up) button on the LRC-1 module to lower (or raise) the unit(s) from the ned limit position. If it's not working, repair or RMA may be needed.
Blinking Red LED for 10 seconds, then turns Solid Green	Reached minimum level (The lifter reached its lowest setpoint or the lowest level the hardware can reach)	Press the up button on the LRC-1 module to raise the unit(s) above the low limit position. If it's not working, repair or RMA may be needed.
Blinking Red LED	Steel cable is loose or has slacked. *There needs to be some weight on the cable when lifting.	Lower the lifter slightly, then lift a heavy object then lower it again to eliminate slack. If it's not working, repair or RMA may be needed.
Solid Red LED	System protection (Overloaded / too much weight on the lifter)	It should go back to normal operation in 60 seconds. Then test the lifter without adding any weight to it. If this fixes the problem, it's likely the ifters have been temporarily overloaded. Please make sure to keep the weight within the specified range. If it's still not working, repair or RMA may be needed.
Solid Red LED	Hardware malfunction	Repair or RMA may be needed.

*CAUTION: If an unexpected power outage occurs during full-load operation, it is imperative to lower the equipment to its minimum position before preparing it for use.

• OPERATION INSTRUCTIONS

Manual Control:
• Use the Ascent / Descent button on the panel to adjust the height manually.

Automated Features:
Activated when paired with Smart Lifter Remote (LRC-1) or TrolMaster Hydro-X Pro Main Controller (HCS-2):
• Set the lifters' upper and lower range limits via LRC-1.
• Program synchronization for multiple lifters to ensure level lifting.

Lifter Testing:
• Use the Ascent / Descent buttons to elevate and ensure functionality.
• Calibrate the elevating level if required.

LED Indicators:
• **Green Light:** Normally working.
• **Flashing Green:** Connection issues with the main controller or remote.
• **Red Light:** Error—refer to troubleshooting.

Smart Lifter Remote (LRC-1)

• OVERVIEW

The LRC-1 Lifter Remote Control is designed to be used with the LLT-2 smart lifter. Its plug & play easy installation enables users to easily install and operate the light lifter(s) from a distance, and program LLT-2 smart lifters maximum and minimum range.

The LRC-1 LED indicator will also show its operation, program settings and height limit for users easy reference.

The LRC-1 Lifter Remote can be connected with the Hydro-X Pro for advanced features such as lifter-group control.

• SPECIFICATION

Input Voltage and Amperage:	12V, 0.1A
Working Environments:	Temperature 32-104°F / 0-40°C Humidity≤90%
Product Dimensions:	5.12" / 130mm(L) x 7.36" / 187mm(W) x 3.46" / 88mm(H)
Product Weight:	0.66lbs / 0.3kg

• PACKAGE CONTENT

1 x Smart Lifter Remote (LRC- 1)
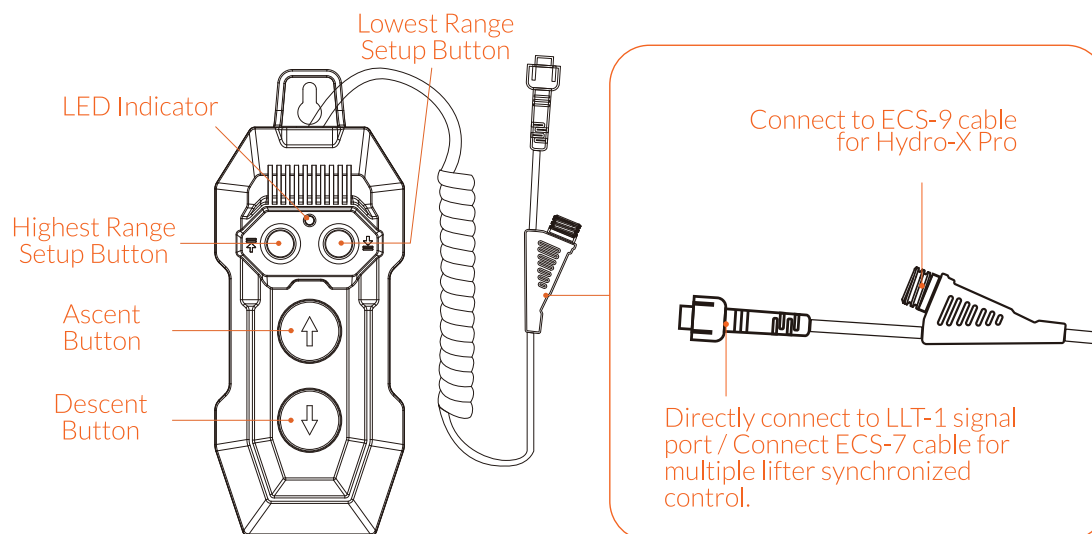1 x 12ft RJ12 to 4-Pin IP65 Connector Cable (ECS-9)

• INSTALLATION

Connect the longer jack on the LRC-1 directly to the Remote Controller Signal Port on the LLT-2 smart lifter if you are only using one lifter. If you want to synchronize multi-lifter control with one LRC-1 remote, connect the longer jack to a connection cable and daisy chain these lifters together (follow the "Data Signal Wiring" guide on P8).

Address and pair the connected remote and lifter by pressing the lifter's ascent button. If you are connecting the remote to a daisy-chained multi-lifter, address and pair all lifters individually by pressing the ascent button on the lifters.

Connect the shorter cable to ECS-9, and use the ECS-9 RJ12 port to connect the controller to Hydro-X Pro main controller.

Address the remote and the HCS-2 by pressing LRC-1's Highest Range Setup Button once. When the remote is paired with the HCS-2, the remote LED will turn from slow blinkinggreen(1.2s per blink) to solid green. A "Device Added" pop-up message will appear in HCS-2.

*Note: A single remote can pair and control a signal chain of up to 30lifters.

Lowest Range Setup Button

LED Indicator

Highest Range Setup Button

Ascent Button

Descent Button

Connect to ECS-9 cable for Hydro-X Pro

Directly connect to LLT-1 signal port / Connect ECS-7 cable for multiple lifter synchronized control.

• OPERATION INSTRUCTIONS

1. The LED indicator will be blinking green when the ascent or descent button is held.

2. Once the highest or lowest setpoint is positioned, hold the highest or lowest range setup button on the LRC-1 for 3 seconds to lock the position in memory, The LED will blink red while saving the setting. When it turns to solid red, that means the position has been assigned and locked successfully.

3. The highest range must be set higher than the lowest, and vice versa. The LED indicator will blink green for 5 seconds once it's been sent, the remote shall only be able to move the lights up or down within the setup range.

4.The LED indicator will blink red for 5 seconds when the cable reaches the upper or lower range limit, and cannot go further.
* Press the up or down button to move the lifter from the positioning limit.

Reset Range Limit: Hold both the highest and lowest range setup buttons for 3 seconds.

Unpair Lifter(s) in signal chain: Hold both the highest range setup button and ascent button for 3 seconds.The LED indicator will be blinking red and green, the LED will be solid red after 3 seconds indicating the unit has been successfully unpaired.

Reset Range Limit: Hold both the highest and lowest range setup buttons for 3 seconds. The LED indicator will be blinking red and green, solid red after 3 seconds indicates successful range limit removal.

• LED LIGHT INDICATOR

LED Light indicator	Status
Solid Green LED	Normal operation status. The remote is connected and paired with both the lifter(s) and main controller.
Rapid Blinking Green LED (0.6s per blink)	Normal operation status. The remote is not paired/ connected to both the lifter(s) and main controller. or Normal operation status. The remote is connected and paired to the main controller, but not paired/connected to the lifter(s).
Slow Blinking Green LED (1.2s per blink)	Normal operation status. The remote is connected and paired to the lifter(s), but not paired/connected to the main controller.
Blinking Red LED	One or more of the paired lifter(s) in the signal chain has an error/offline.Check the LED indicator on the lifter(s) to troubleshoot (details on P.7).

⚠ **WARNING :** DO NOT allow the Smart Lifter System to be exposed to water or excessive heat. DO NOT open or attempt to repair or disassemble the Lifter, as there are no user-ser-viceable parts inside. Opening the Lifter will void thewarranty.

If the surface of the Smart Lifter System is dirty, wipe it with a dry towel. The Smart Lifter System operates under natural ventilation conditions.

⚠ **AVERTISSEMENT :** NE PAS exposer la carte de contact sec Smart Lifter System à l'eau ou à une chaleur excessive. NE PAS ouvrir ou tenter de réparer ou de démonter le Lifter, car il ne contient aucune pièce réparable par l'utilisateur. L'ouverture du Lifter annulera la garantie.

Si la surface de la carte de contact sec Smart Lifter System est sale, essuyez-la avec une serviette sèche. La carte de contact sec Smart Lifter System fonctionne dans des conditions de ventilation naturelle.

The LLT-2 comes with a 3-year warranty. For any issues or concerns with our products, DO NOT return them to the store. Please contact our tech support department at **support@thinkgrow.com** or call **877-420-9876**.

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