

nexus²¹

CONCEALMENT SYSTEMS

TV Lift System Model CL-65 Installation Instructions



Below is a parts list describing all of the items included with the Model CL-65 Lift System.

Before beginning assembly and installation, please make sure that you have all items included on the list. If any parts are missing or damaged, please contact Nexus 21. Our contact information is shown at the top of this page.

Parts List



CL-65 Assembly (Control Box & Cables Included)



Vertical Mounting Bars



TV Mounting Hardware



Lift Mounting Hardware



IR Remote

OR



RF Remote

Cables

- **Motor Cables (2)** – Black cable with white, six-pin plugs. These cables to connect the Lift Actuators to the Control Box (using slots #1 and #2 on the Control Box). There are 2 Cables total, in 2 different sizes, 2500mm and 4500mm
- **Power Cable** – Connects Control Box to power outlet. Three feet long.
- **RF Cable (only present if you ordered the RF version of the Lift System)** – Use to connect the RF Receiver to the Control Box. Ends have RJ-45 connectors. One foot long.

Hardware

1. Four (4) – 3/8" x 2 1/2" Lag Bolt
2. Thirty-Two (32) – #10-32 Self Tapping Pan Head Screws
3. Two (2) -- Screen Locks
4. Two (2) -- #8 x 3/4" Flat Head Wood Screw (For Backup Switch)
5. Two (2) -- #8 x 3/4" Flat Head Wood Screw (For IR controls only)
6. RF Controls or IR Controls (see explanation on page 4)
7. Two (2) -- 4mm x 14" T Handle Allen Wrench and 5/16" x 6" L Key Allen Wrench
8. Four (4) -- Square Multi Mount Washers

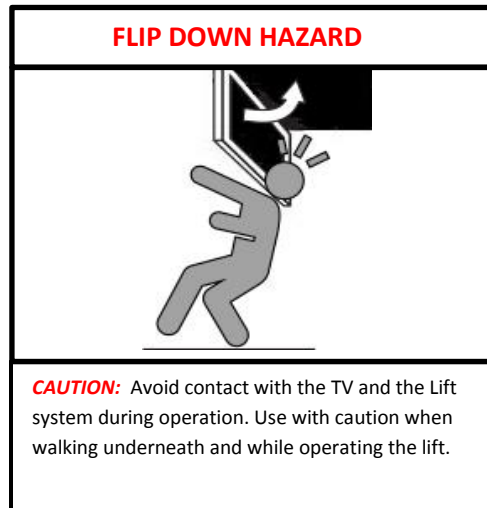
The combined weight of the TV and Ceiling panel on the CL-65 cannot exceed 100 lbs.



SAFETY INFORMATION



**SEVERE PERSONAL INJURY AND PROPERTY DAMAGE CAN RESULT FROM IMPROPER INSTALLATION OR ASSEMBLY.
READ THE FOLLOWING WARNINGS BEFORE BEGINNING:**



WARNINGS:

1. Do not use this product for any application other than those specified by Nexus 21.
2. Do not exceed the weight capacity. This can result in serious personal injury or damage to the equipment. It is the installer's responsibility to ensure that the total combined weight of all attached components does not exceed that of the maximum figure stated.
3. Follow all technical specifications and instructions during the installation.
4. Only use attachments/accessories specified by the manufacturer.
5. Close supervision is necessary when this system is being used by, or near, children, or disabled persons.
6. It is the responsibility of the installer to warn all potential users of the dangers of interfering with the mechanism during operation.
7. Read all technical instructions fully before installation and use. It is the installer's responsibility to ensure that all documentation is passed on to the users and read fully before operation.
8. Failure to provide adequate structural strengthening, prior to installation can result in serious personal injury or damage to the equipment. It is the installer's responsibility to ensure the structure to which the Lift System is affixed can support four times the weight of the system.
9. Risk of electric shock. Do not attempt to open the Control Box.
10. To reduce risk of fire or electric shock, do not expose parts to rain or other liquids.
11. Protect the power cord from being walked on or pinched.
12. Keep all documentation.
13. Heed all warnings.
14. Clean only with a dry cloth.
15. Refer all service questions to Nexus 21 if the system does not operate normally.

Nexus 21 disclaims any liability for modifications, improper installations, or installations over the specified weight range. Nexus 21 will not be liable for any damages arising out of the use of, or inability to use, Nexus 21 products. Nexus 21 bears no responsibility for incidental or consequential damages. This includes, but is not limited to, any labor charges for the servicing of Nexus 21 products performed by anyone other than Nexus 21.

Nexus 21 intends to make this and all documentation as accurate as possible. However, Nexus 21 makes no claim that the information contained herein covers all details, conditions or variations, nor does it provide for every possible contingency in connection with the installation or use of this product. The information contained in this document is subject to change without prior notice or obligation of any kind. Nexus 21 makes no representation of warranty, expressed or implied, regarding the information contained herein. Nexus 21 assumes no responsibility for accuracy, completeness or sufficiency of the information contained in this document.

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Thank you for your purchase of this Nexus 21 TV Lift System, which includes all the hardware required to assemble and operate it. It also includes a wireless remote control, and hardware to mount your flat panel television onto the Lift. This System does NOT include the Frame that is required to mount the Lift System and TV above your ceiling.

IMPORTANT DETAILS ABOUT THIS LIFT MODEL:

The maximum TV weight for this Lift Model is 100 lbs. Using this Lift System with any TV that exceeds the maximum TV weight can result in failure of the Lift Mechanism, and can pose safety hazards.

BEFORE YOU BEGIN, PLEASE NOTE:

***You will need a licensed contractor to perform this installation** because the Lift and TV require that 110V power be delivered to the attic, and a large hole to be cut in your ceiling. Building codes require licensed electricians and carpenters to perform these functions. Once complete, a building inspector must approve the installation before you can connect power to your lift and TV.

***The system also requires you to construct and properly mount a frame above the ceiling,** to which you will affix the Lift System and the TV.

***You must make sure that your frame is able to safely support at least 1000 lbs.** because, even though the Lift System and TV together will only weigh 175–200 lbs., operation of the Lift System causes additional forces to be applied to the structure.

LIMITATION OF USE

The CL-65 Flip Down TV Lift system is not designed or tested for use in mobile applications such as boats, yachts, and RV's.

ASSUMPTION OF RISK

User understands and acknowledges that the CL-65 Flip Down TV Lift system is not designed to handle the rigors of a mobile application. Nexus 21 does not recommend installation into mobile applications without the use of a "latching mechanism." Nexus 21 does not provide said "latching mechanism" with the CL-65 Flip Down TV Lift system, nor assume any liability of any products not provided with the lift system. Nexus 21 will not warranty any components damaged on the CL-65 Flip Down TV Lift system caused by the absence of a "latching mechanism" or the forces put on the system due to a mobile application.

SAFETY NOTICE: YOU ARE ABOUT TO SUSPEND A HEAVY LOAD ABOVE YOUR CEILING. PLEASE BE AWARE THAT YOU ARE RESPONSIBLE FOR THE CONSTRUCTION AND MOUNTING OF THE FRAME WHICH WILL HOLD THE LIFT SYSTEM AND THE TV. YOU ARE ALSO RESPONSIBLE FOR MAKING SURE YOUR FRAME IS STRONG ENOUGH (MUST BE ABLE TO SUPPORT AT LEAST 1000 LBS), AND THAT THE LIFT SYSTEM AND YOUR FRAME ARE SAFELY SECURED ABOVE YOUR CEILING. FAILURE TO SECURELY MOUNT YOUR FRAME TO THE STRUCTURE OF THE BUILDING, AND/OR FAILURE OF YOUR FRAME TO SUPPORT THE LIFT SYSTEM, CAN CAUSE SEVERE INJURY AND/OR PROPERTY DAMAGE. IF YOU ARE NOT QUALIFIED TO PERFORM THE INSTALLATION OF THIS SYSTEM, OR IF YOU ARE NOT SURE IF YOU ARE QUALIFIED, DO NOT ATTEMPT TO INSTALL IT. IF YOU ARE NOT AN EXPERIENCED PROFESSIONAL, PLEASE HIRE ONE TO PERFORM THIS INSTALLATION.

NEED ADVICE? If you have questions or need advice, we are happy to help. Please call us at (866) 500-5438.

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Types of Controls for Nexus 21 Lift Systems

All Nexus 21 Lift Systems come standard with a **wireless remote control** and receiver. We offer a choice of two different types of remotes: IR and RF (both of which are explained in detail below). Our standard control type is RF, so unless you specifically requested the IR version when you made your purchase, you probably received the RF controls with this Lift System. The method of installation for each type of remote control is slightly different, so you should now identify which type of remote you have by reading below, and then follow the instructions for that type of remote.

NOTE: If you will be using the Lift with a home control system (like the ones made by companies such as Crestron or Control 4) the most common form of control is to WIRE IT DIRECTLY to the relays of your home control system. This direct-wire method is called **Integration by Contact Closure**, and is accomplished by using the Contact Closure Hardware that is supplied with the IR Control Kit to connect the Lift to your home control system.

Before You Begin the Installation: Identify Your Control Type

IR (Infrared) – This control option allows you to utilize a 3rd party universal style remote control to raise and lower the TV Lift. Your universal remote will “learn” the IR codes from the provided IR Handset, which will enable you to control the lift. The universal remote will then communicate with the “eye” located on the IR Receiver via your 3rd party emitter (or flasher).

NOTE: If you are NOT planning on using a 3rd party Universal Remote, switch to the RF setup. (There is no charge for swapping)

These are the parts included with IR controls:



Contact Closure Hardware



IR Receiver



IR Handset

RF (Radio Frequency) - This system utilizes a wireless remote control handset that sends a radio signal to the RF Receiver. The radio signal can go through cabinet walls and does not require line-of-sight.

TIP: Planning to integrate the TV Lift with your UNIVERSAL REMOTE CONTROL? The RF version of the Nexus 21 controls won't do it. Switch to IR.

These are the parts included with RF controls:



Backup Switch



RF Receiver



RF Handset

Integration by Contact Closure – To direct-wire the TV Lift controls to a home control system (Crestron, Control 4, AMX, etc.) you will use the Contact Closure Hardware. You won't use any Nexus 21 receiver or handset for this type of control because you will use the handset or control pad that comes with your home control system. **Instructions for setting up the System using Contact Closure are on “Page 14”.**

The combined weight of the TV and Ceiling panel on the CL-65 cannot exceed 100 lbs.

Framing Examples

The installation and framing examples shown throughout this manual are for illustration purposes only and are in no way the only means of doing the installation or framing for the lift. Please consult a licensed contractor for questions pertaining to the framing and contact us for any questions regarding the installation.



Example of the Cutout in the ceiling. It will need to be large enough to accommodate the lift as well as the framing for the lift.



Example of pre-installation framing layout. This is showing how the sides of the framing may be done to accommodate the lift.



Examples of pre-installing framing layout. This is showing how the back side of the framing may be done to accommodate the lift.

Examples of pre-installing framing layout. This is showing how the front side of the framing may be done to accommodate the lift.

Tip: by leaving a lip on the front side of the cutout, you can provide support for the front of the lift to help install it into the ceiling.

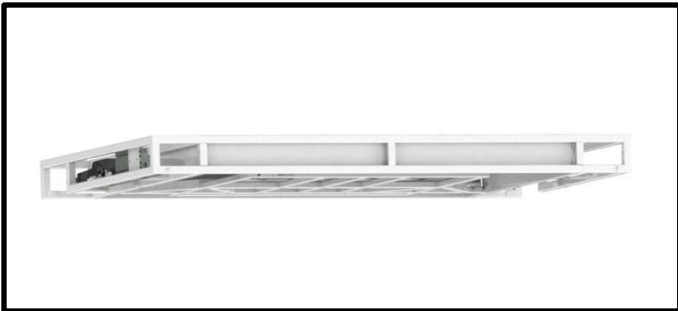


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Installation

WARNING: DO NOT LIFT THE LIFT SYSTEM BY THE SUBFRAME AT ANY POINT IN THE INSTALL.

This will damage the actuators and cause them to fail. The photo to the left indicates how to safely and properly support the lift when installing it into the ceiling. Supporting the lift by the subframe during installation will void the warranty.



For the following steps you will need:

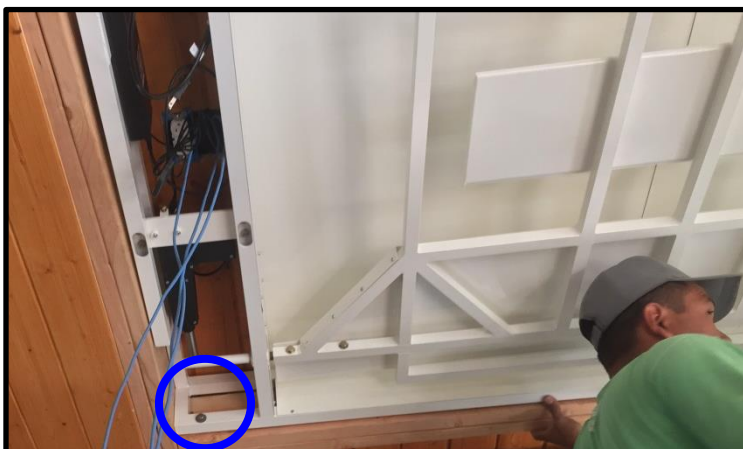
- Four (4) – 3/8" x 2 1/2" Lag Bolt
- Thirty-Two (32) – #10-32 Self Tapping Pan Head Screws
- CL-65 Assembly

Lift should be supported until Step 1 and 2 are complete.

The combined weight of the TV and Ceiling panel cannot exceed 100 lbs, a list of materials with their weights used in the images for this manual are listed below:



- 1st layer of Material – 3/4" Plywood; Weight – 14 lbs
- 2nd layer of Material – 3/4" Pinewood; Weight – 28 lbs
- TV Used – 65" Samsung TV; Weight – 52.3 lbs
- Total Weight – 92.3 lbs



Step 1: Place the lift into the cutout. While supporting the lift inside the cutout, drill the (2) 3/8" x 2 1/2" Lag Bolts in the rear left and rear right corners of the Main Frame.

The combined weight of the TV and Ceiling panel on the CL-65 cannot exceed 100 lbs.

Step 2: Drill the (2) 3/8" x 2 1/2" Lag Bolts in the front left and front right corners of the Main Frame.



Step 3: Cut a panel using your preferred ceiling material proportional to the left section of the Main Frame.

Step 4: Drill (6) #10-32 Self Tapping Pan Head Screws through the panel into the Main Frame (3 on each side) to attach it.

Step 5: Cut a panel using your preferred ceiling material proportional to the right section of the Main Frame.

Step 6: Drill (6) #10-32 Self Tapping Pan Head Screws through the panel into the Main frame (3 on each side) to attach it.



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Step 7: Cut a panel using your preferred ceiling material using the Ceiling Panel measurements on the Dimensional Diagram for the CL-65. See page (12 & 13) for the CL-65 Dimensional Drawings.

Step 8: Drill (20) #10-32 Self Tapping Pan Head Screws through the panel into the Sub-Frame to attach it.

Step 9: The Installation is now complete. See **“Adjustments”** section to properly calibrate the Lift System.



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Mounting the TV to the Lift

Step 10: Attach the Vertical Mounting Bars to the TV using the screws found in the bag labeled "TV Mounting Screws/Spacers." The length and size of the screw required will depend on whether the TV has a flat/unobstructed or irregular/obstructed back.



A

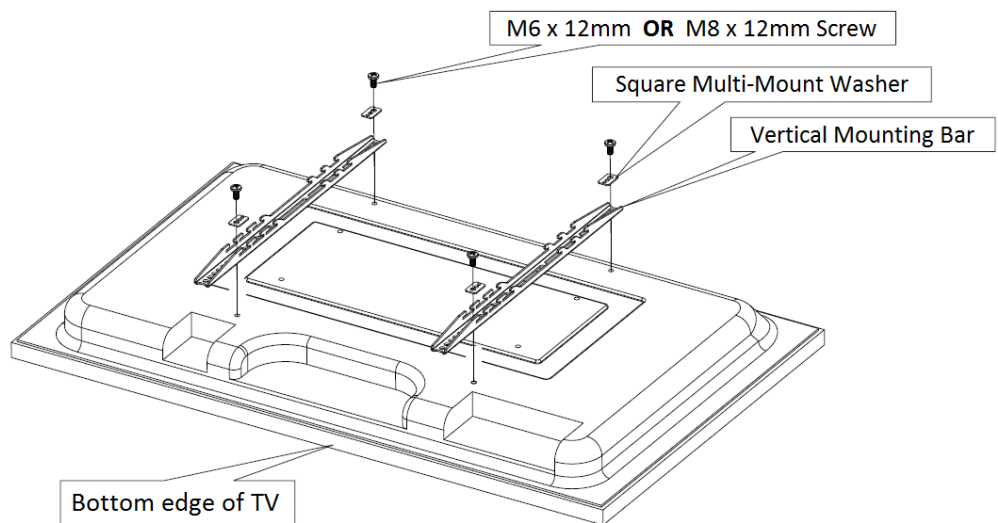
Flat/Unobstructed Back

Diagram "A" installation procedure:

- 1) Place the flat screen TV face down on a protected surface.
- 2) Position the Vertical Mounting Bars equidistant from the bottom and top of the TV, with the slots facing toward the top of the TV.

- 3) Using the four (4) Square Multi-Mount washers and the TV mounting screws selected from the bag, attach and tighten the hardware.

DO NOT OVERTIGHTEN HARDWARE. DAMAGE TO TV MAY RESULT.



B

Irregular/Obstructed Back

Diagram "B" installation procedure:

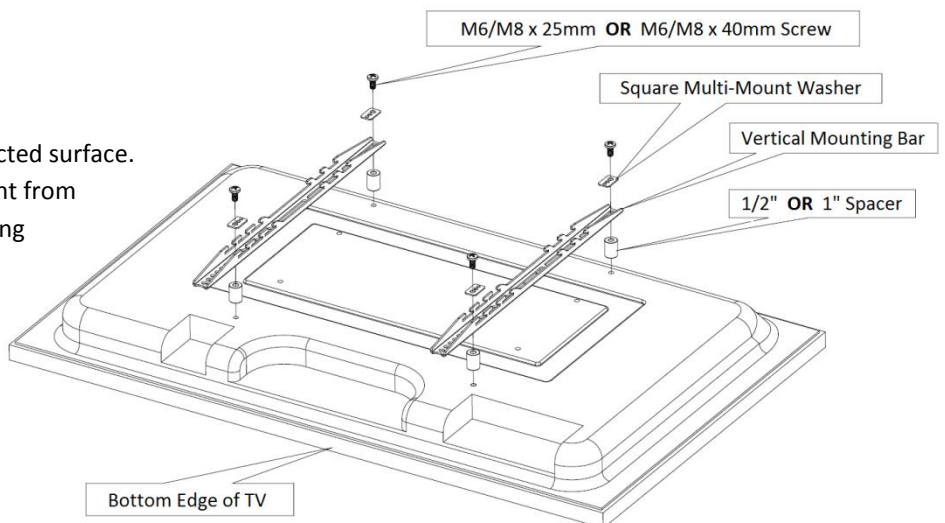
- 1) Place the flat screen TV face down on a protected surface.
- 2) Position the Vertical Mounting Bars equidistant from the bottom and top of the TV, with the slots facing toward the top of the TV.

- 3) Using the four (4) spacers needed, (4) Square Multi-Mount washers and the TV mounting screws selected from the bag, attach and tighten the hardware.

The hardware will be used in this order (as shown in the diagram above):

TV, Spacers, Vertical Mounting Bars, Square Multi-Mount Washers, TV Mounting Screws.

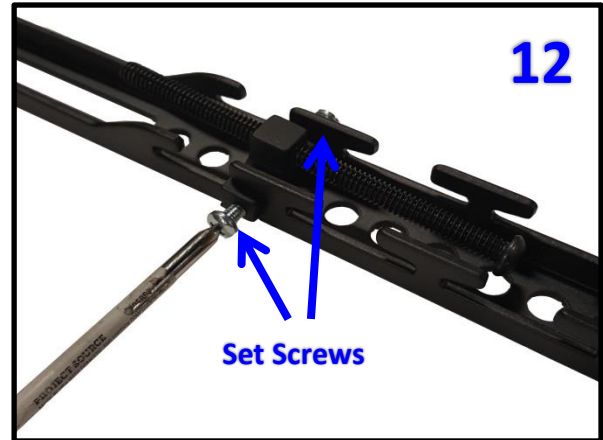
DO NOT OVERTIGHTEN HARDWARE. DAMAGE TO TV MAY RESULT.



The combined weight of the TV and Ceiling panel on the CL-65 cannot exceed 100 lbs.

Step 11: Hang the TV on the Screen Back Plate that is attached to the Sub-Frame of the Lift System.

Step 12: Insert both **Screen Locks** into both **Vertical Mounting Bars**. Using (2) **Screen Locks**, place one **Screen Lock** on a set of hooks for each **Vertical Mount Bar**. Using a Philips Head Screwdriver (not provided), tighten the **Screen Lock** set screws to prevent the **Screen Lock** from falling out of the slot on the **Vertical Mounting Bar**. Then use the 4mm T Handle to tighten the **Screen Lock Screw** to fasten the TV to the **Screen Back Plate**.



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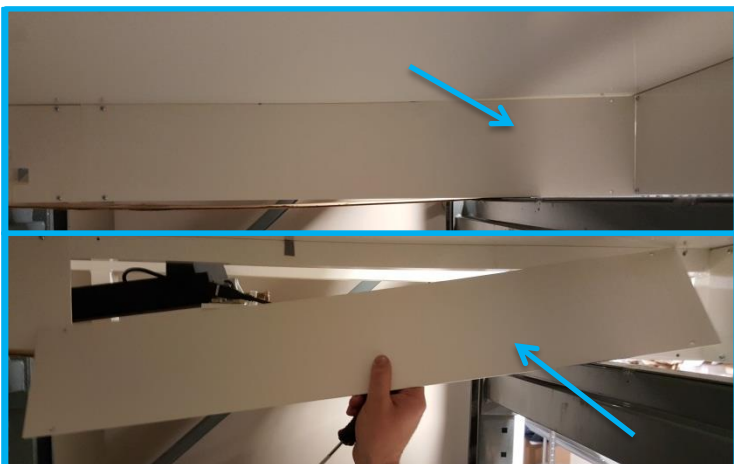
Adjustments

To ensure the calibration is maintained, follow these steps **only** after the **TV** and **Ceiling Panel** have been mounted.

Follow these steps to calibrate the Lift System:

Step 13: Test the Lift by running it into the fully retracted position then determine one of the following:

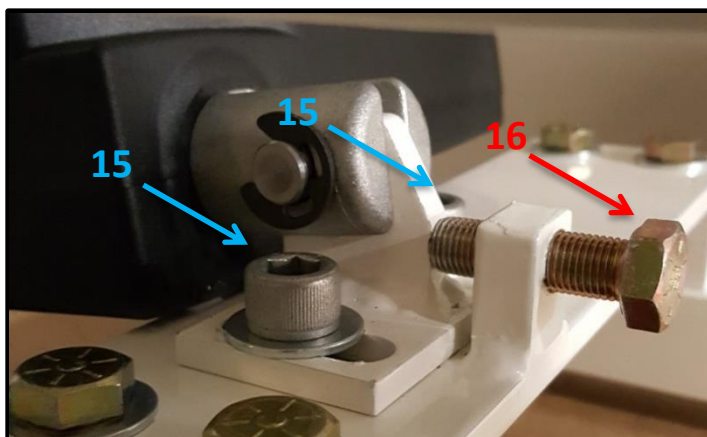
- Ceiling Panel sits flush, no adjustments are needed.
- Ceiling Panel goes too far into the ceiling, follow the steps below to adjust it.
- Ceiling Panel hangs to far below the ceiling, call **480-275-8613** for assistance.



Step 14: Remove both of the Long Side Panels from each side of the Lift System.

Step 15: Use provide 5/16" x 6" L Hex Key to loosen the (2) Socket Head Bolts located behind each Actuator on the left and right side of the Lift System. (Total of 4 Socket Head Bolts) **You must loosen all four bolts before moving to Step 16.**

Step 16: Loosen the Fine Adjustment Screw that is located behind each Actuator on the left and right side of the Lift System.



NOTE: This will adjust the angle of the Sub-Frame so that when the lift retracts it will sit flush with the rest of the ceiling. It is recommended that you test each adjustment you make by running the lift up and checking where the panel rests when it is fully retracted.



WARNING: Loosen the fine adjustment screws on left and right side by the same amount of turns. Do not tighten one side more than the other.

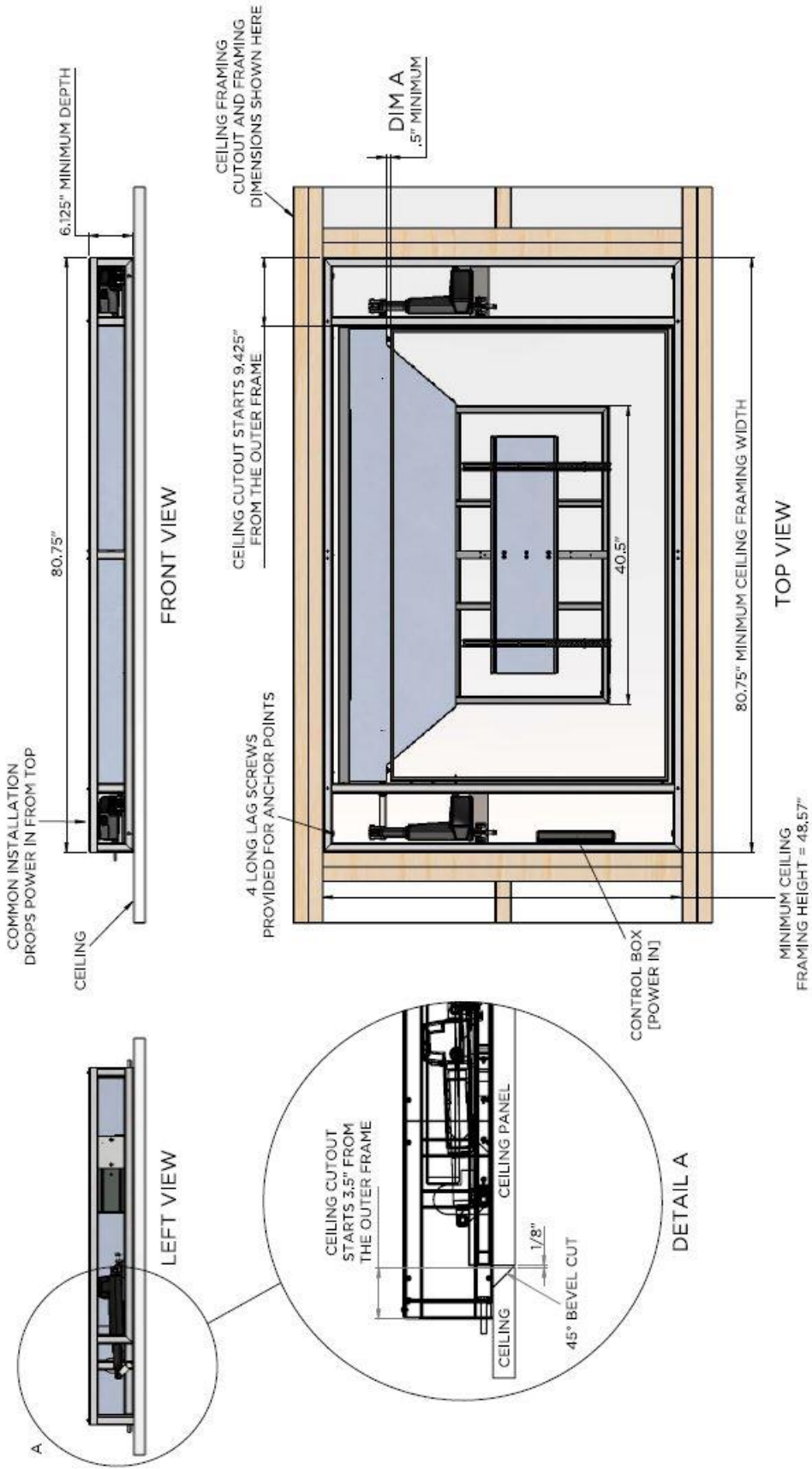


Step 17: Tighten all (4) Socket Head Bolts from Step 15 and test the lift.

Step 18: If the ceiling panel is still resting too high, repeat Step 15 - 17. If it is hanging to low, repeat step 15, tighten the Fine Adjustment Screws, then repeat step 17.

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MODEL CL-65 DIAGRAM

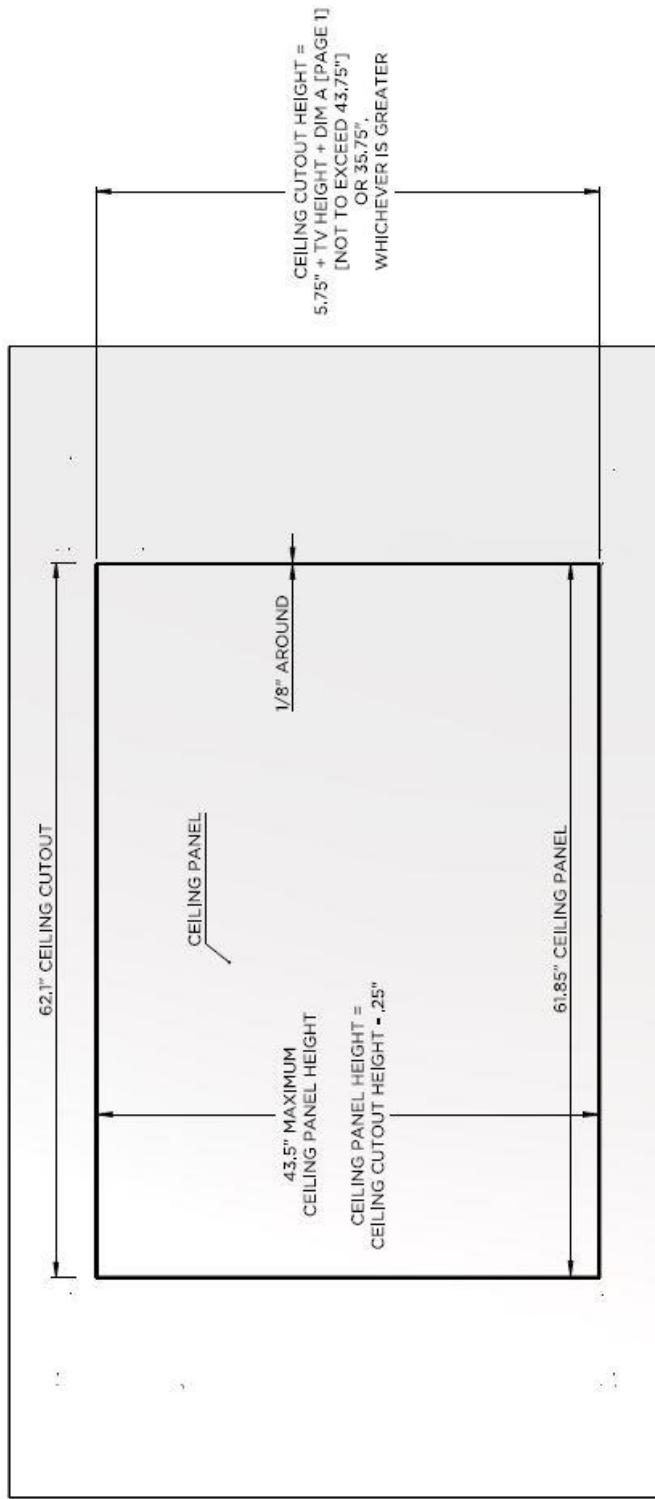


- NOTES:**
1. NEXUS 21 RECOMMENDS THIS INSTALLATION BE COMPLETED BY A LICENSED CONTRACTOR
 2. MAX TV WIDTH = 61.5"
 3. MAX TV HEIGHT = 37.5"
 4. MAX TV DEPTH = 3.5"
 5. FOR THIS LIFT MODEL, THE TOTAL WEIGHT CAPACITY (INCLUDING TV AND CEILING PANEL) IS 100 LBS
 6. SUPPLIED SYSTEM WEIGHT = 120 LBS
 7. USE SUPPLIED 32x SELF TAPPING SCREWS TO MOUNT CEILING PANEL DIRECTLY TO SUBFRAMING
 8. WHEN DETERMINING TV HEIGHT, ALWAYS USE MANUFACTURER SUPPLIED "TV WITHOUT STAND" HEIGHT
 9. LIFT MECHANISM IS WHITE POWDERCOATED ALUMINUM, COLORS IN DIAGRAM ARE FOR CLARITY ONLY.

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 UPDATED 02/17/16

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MODEL CL-65 DIAGRAM



The combined weight of the TV and Ceiling panel on the CL-65 cannot exceed 100 lbs.

Connecting the Lift to your Home Control System

Connecting the Nexus 21 Lift System to Other Control Systems

Use these instructions if you need to wire the Lift System directly to a Home Control System, like those made by Crestron, AMX, Control 4, RTI, etc. A common term for this method of integration is "connection by contact closure."

Contents of Contact Closure Hardware Pack:

Step 1: Contact Closure Hardware Pack

This pack contains the following parts:

- 1 – *Contact Closure Cable*, RJ-45 to Relays
- 1 – *Height limit Insert*



Contact Closure Cable, RJ-45 to Relays



Height Limit Insert

Step 2: Connecting the Lift System to the Control System

Using the *Contact Closure Cable* to connect the three wires directly to the relays on your control module (see image below). Then connect the RJ-45 plug on the *Contact Closure Cable* to the Nexus 21 system, using either one of the two RJ-45 ports on the side of the Nexus 21 Control Box.

The colored wires function as follows:

BLUE = common (Pin 4 from RJ45) **GREEN** = Extend (Pin 5 from RJ45) **RED** = Retract (Pin 8 from RJ45)

Wire combinations for the relays:

The lift system uses two relays. One for "extend" and one for "retract." The common wire runs between both relays, by using the **BLUE common wire**, together with a jumper wire you supply.

Relay 1 Extend: **BLUE** common wire with **GREEN** normally open.

Relay 2 Retract: **BLUE** common wire (use jumper) with **RED** normally open.



Close-up View of RJ-45 Pins



Step 3: Setting a Height Limit for the Lift System

Begin with the Height Limit Insert UNPLUGGED. Then send the "UP" command from your control system and run the Lift System up to your desired height. Once the Lift System is at the desired height, send the "DOWN" command to stop the lift at the point. Now PLUG the Height Limit Insert into the available RJ45 port on the Nexus 21 Control Box. The Lift will now remember the height and always stop at that point. To change, unplug the Height Limit Insert and repeat Step 3.

For technical support or to ask questions, call Nexus 21 Customer Service, toll-free at (866) 500-5438.

Contact Closure Integration Document for L-90

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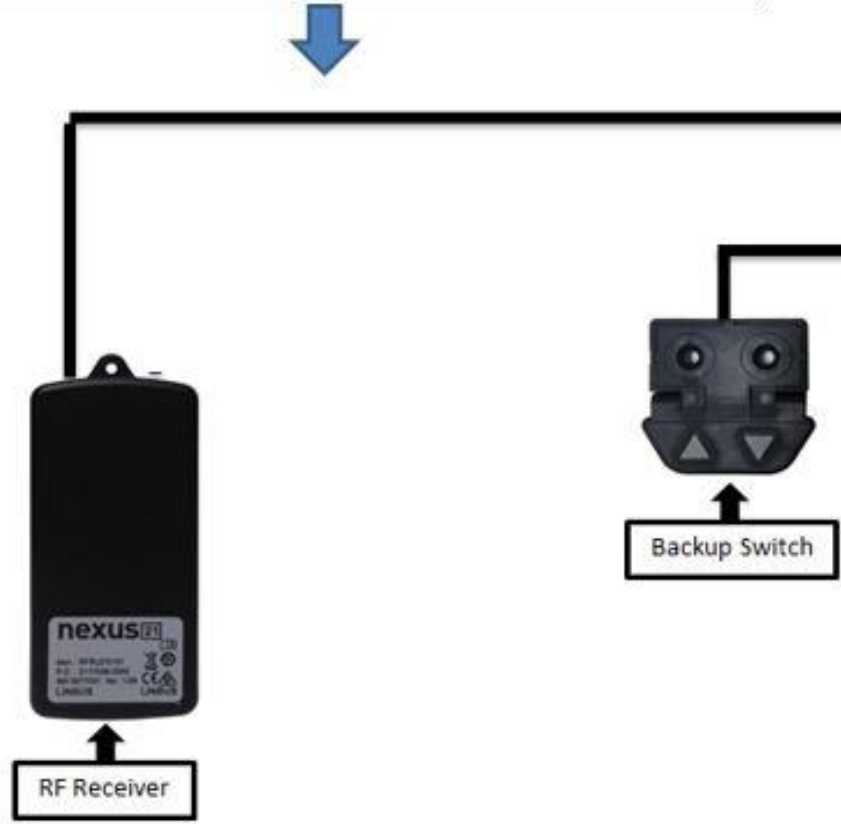
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CL-65 RF Wiring Diagram

Note: Ports A1 & A2 are interchangeable.



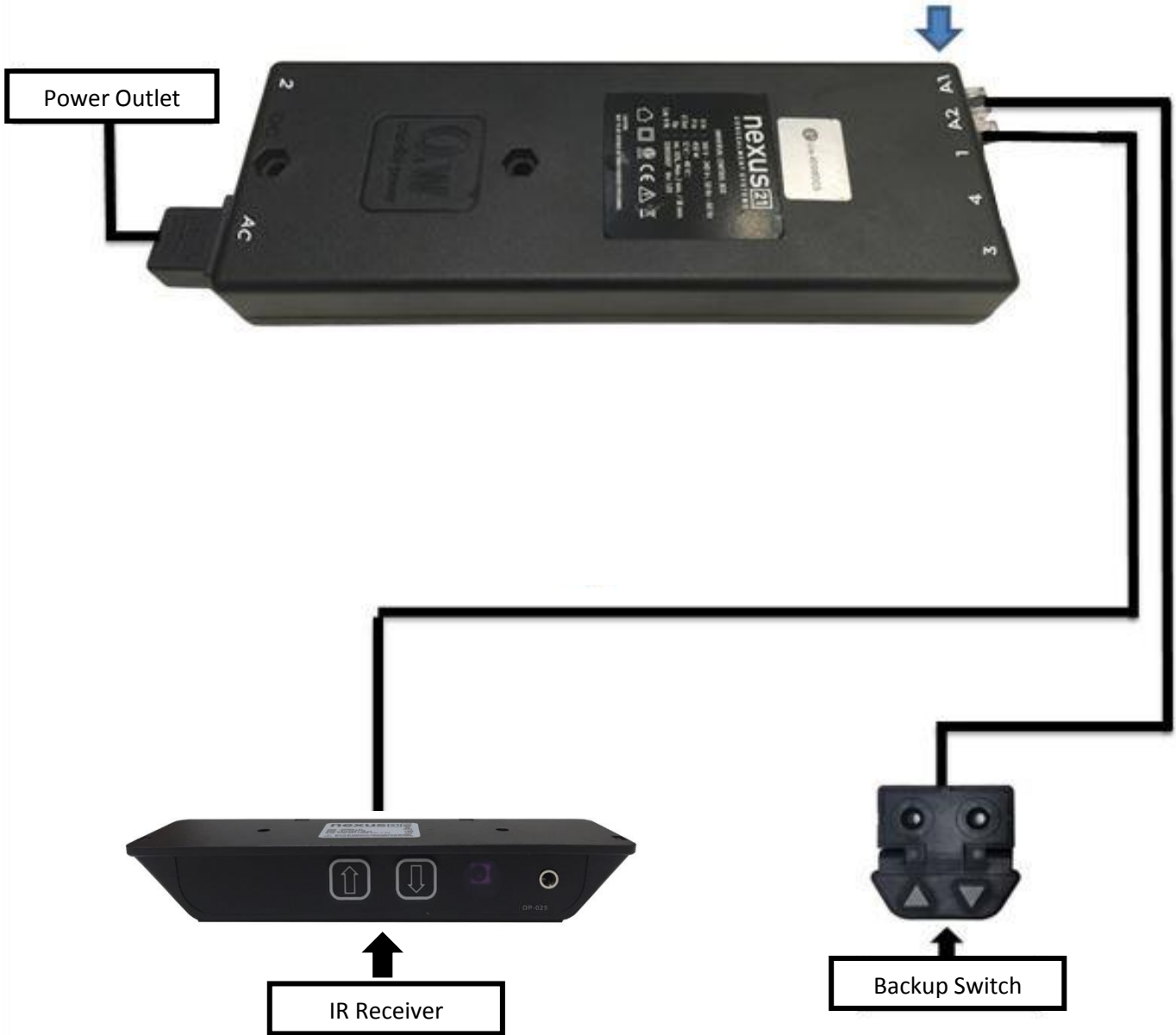
The RF Receiver must be mounted a minimum of 6 ft. away from the frame of the CL-65 in order to function properly. Any length of RJ45/Cat5 cable may be used to accomplish this.



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CL-65 IR Wiring Diagram

Note: Ports A1 & A2 are interchangeable.



The combined weight of the TV and Ceiling panel on the CL-65 cannot exceed 100 lbs.

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