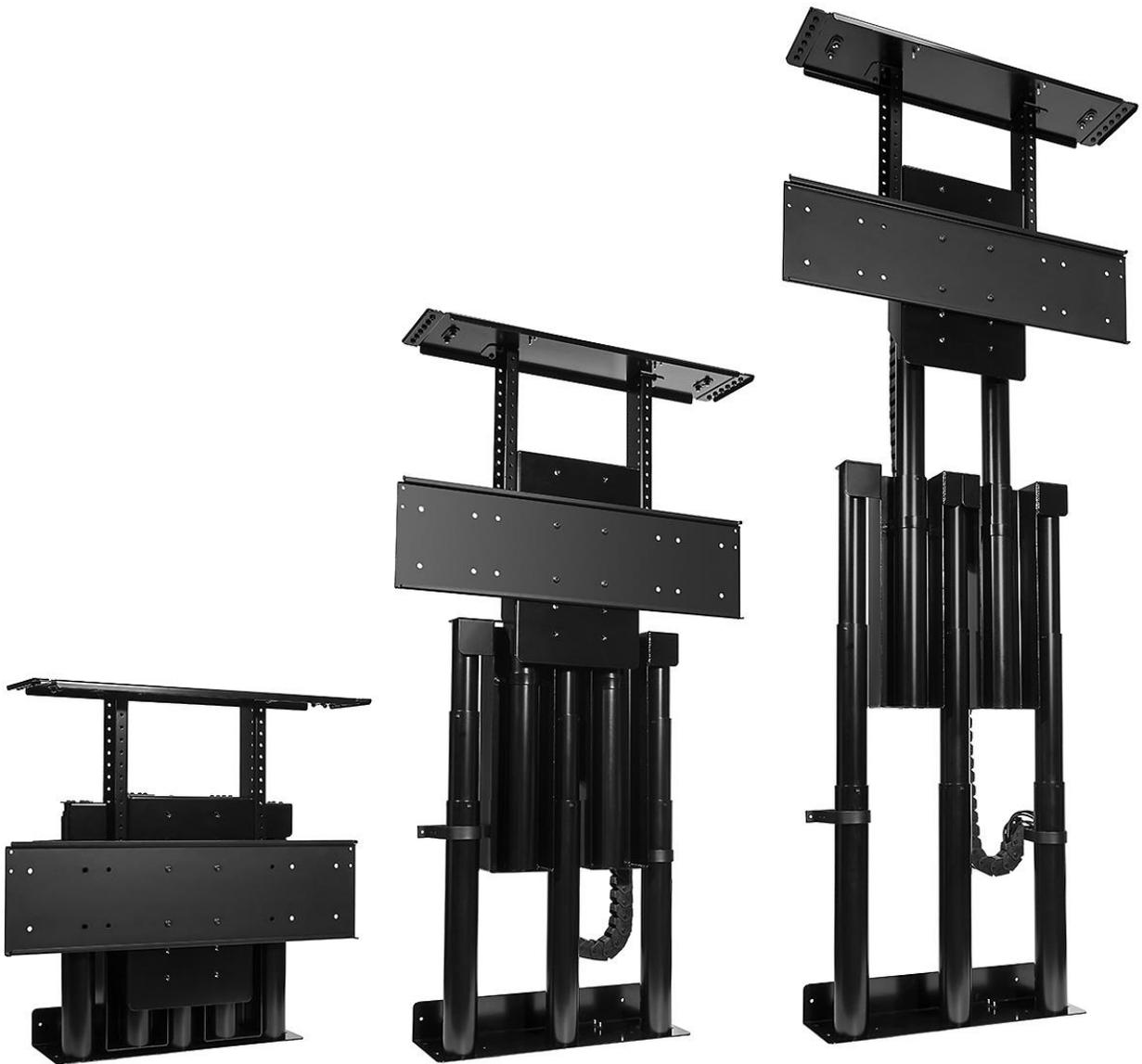


nexus 21

CONCEALMENT SYSTEMS

TV Lift System Model L-90 Installation Instructions



Below is a parts list describing all of the items included in the Model L-90 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 at the above numbers. Please note that the approximate dimensions are included in many descriptions for easier identification. You may also wish to refer to the Parts View diagram at the end of this document.

Parts List



1. **Lift Column (5)**
(20 1/2" x 2 3/4")



2. **Base Mount**
(27" x 3 1/4" x 6 1/2")



3. **Column Support Bracket (2)**
(20 1/4" x 10 1/4" x 3 1/4")



4. **Screen Support**
(17 1/2" x 11 1/2" x 3 5/8")



5. **Top Plate**
(30 1/4" x 7 5/8" - 10 5/8")



6. **Screen Back Plate**
(36" x 7 3/4")



7. **Vertical Mounting Bar (2)**
(25 1/2" x 1 5/8" x 1 5/8")



8. **Control Box (2)**
(10 1/2" x 3 3/4" x 1 1/2")



11. **Top Support Bracket (2)**
(14" x 2 3/4" x 1 1/8")



NOTE: You will find items 6 and 7 inside the "Nexus 21 Standard TV Mount" package.

Parts List, continued



12. **Upper Column Brace (2)**
(4½" x 3" x 1")



13. **Lower Column Brace (2)**
(5 ¼" x 6" x 1")



14. **Cable Chain (2)**
(27 7/8" x 1 ¾" x 1 ½")



15. **Upper Chain Bracket**
(3 7/8" x 3 1/8" x 2 1/8")



16. **Lower Chain Bracket**
(2 ¾" x 3 1/8" x 2 1/8")

Cables – shown in wiring diagram on page 13 & 17

- **Motor Cables (5)** – White, six-pin cable that plugs into the Lift Columns and Motor Cable slots on the Control Boxes. There are three 2.5 Meter long and two 4.5 Meter cables.
- **Power Cable (2)** – Plugs into electrical power and Control Box. Three feet long.
- **RF Cable** – Plugs into RF Receiver and Control Box. One foot long.
- **Cat 5 Extension Pack** – Plugs into RF Receiver and Control Box.



TIP: You will need to install a power strip (not included) in the bottom of the cabinet to plug in the power cords from the Control Box, TV and any other components included in the cabinet.

Hardware

17. Two (2) -- 1 ½" x ¼" diameter Steel Threaded Taper Pin
18. Two (2) -- Screen Locks (Located in box with Part #6 & 7)
19. Four (4) -- 3/8"-16 x ¾" Button Head Machine Screw
20. Sixteen (16) -- #10 x ¾" Truss Head Wood Screw
21. Four (4) -- #10 x 1 ¾" Flat Head Wood Screw
22. Two (2) -- #6 x ¾" Round Head Wood Screw (Included in bag with RF handset)
23. Four (4) – 5mm x 12mm Flat Head Machine Screws
24. Eight (8) -- 6mm x 12mm Button Head Machine Screw
25. Four (4) -- #8 x ¾" Flat Head Wood Screw (For IR Receiver and/or Backup Switch)
26. Twenty-two (22) -- 6mm x 20mm Flat Head Machine Screw
27. Eight (8) -- 6mm x 12mm Flat Head Machine Screw
28. Twenty (20) – 6mm x 16mm Button Head Machine Screw
29. Four (4) – Square Multi-Mount Washers
30. Three (3) -- Allen Wrenches – 3mm, 4mm and 7/32"
31. Four (4) -- Cable Zip Ties
32. Four (4) -- Wire Clips
33. Two (2) -- 6mm Hex Nuts

! SAFETY INFORMATION !

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

<p>TV HAZARD</p> 	<p>LID HAZARD</p> 	<p>UNDER FLOOR HAZARD</p> 
<p>CAUTION: Avoid contact with the TV and Lift System during operation. Use with caution.</p>	<p>CAUTION: The lid of your enclosure must be installed as described in the instructions, using the Steel Threaded Tapered Pins. Installing the enclosure lid in any other fashion will create hazardous pinch points that can cause serious personal injury. More info on page 25.</p>	<p>CAUTION: FOR UNDER FLOOR INSTALLATIONS ONLY: Do not, under any circumstances, allow any person or pet to position themselves underneath the TV at any time.</p>

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 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.

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 type 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 Backup Control Switch (Height Limit Switch) that was supplied with the Lift System to connect the Lift to the control unit from 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). Instructions for mounting the IR controls are on page 27. Instructions for setting the TV Lift’s travel limit are on Supplemental Page B.

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



Height Limit Insert

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. Instructions for mounting the RF controls are on page 27. Instructions for setting the Lift System travel limit are on Supplemental Page B.

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



Height Limit Insert

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 Back-up Control Switch (Height Limit Switch). 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 “Supplemental Page C”.**

Assembly and Mounting – Things to Think About First



SAFETY NOTICE:

- For proper support, the Lift System **MUST NOT** be attached to any material that is less than $\frac{3}{4}$ " thick. This applies to BOTH the back and bottom mounting points.
- The Lift Column is **ONLY** designed and rated for VERTICAL, NON-INVERTED USE. **DO NOT MOUNT THIS LIFT SYSTEM UPSIDE DOWN or SIDEWAYS (HORIZONTALLY)!**

TIP: Inverted (drop-down) lift systems are available from Nexus 21. Contact Customer Service at (866) 500-5438.

Space requirements for the L-90 Lift System are as follows:

Depth= TV Depth + 10.25"

Height = TV Height + 1", or a minimum of 33.2", whichever is greater.

Width= TV Width + 2"



IMPORTANT NOTE: The Lift System must be mounted **as high up as possible inside the cabinet**, so that when the Lift is in the fully "DOWN" position (fully retracted), the top of the TV will be just underneath the lid of the cabinet.

Lift System height and mounting position:

The Top Support Brackets allow you to adjust the installation height of the Lift in $\frac{1}{2}$ " increments if necessary. When fully assembled in the standard configuration, the HEIGHT of the Lift will be 33.2" and can be a maximum of 34.2" with the Top Support Brackets in the highest position. See installation dimensions diagram on following page.

About the Cabinet Lid (Cabinet Top)



SAFETY NOTICE:

WARNING! YOU MUST NOT DIRECTLY SCREW THE CABINET LID (TOP) TO THE LIFT SYSTEM!! THIS CREATES HAZARDOUS "PINCH POINTS" AND MAY AFFECT THE OPERATION OF THE LIFT OR CAUSE DAMAGE TO THE CABINET TOP. For floating lids, **DO NOT USE SCREWS to attach the lid to the Lift System.** Instead, use the "Threaded Taper Pins". This will keep the lid firmly in place, but will also allow it to **separate from the lift system** if anything (like a finger) gets in the way when the TV lowers.

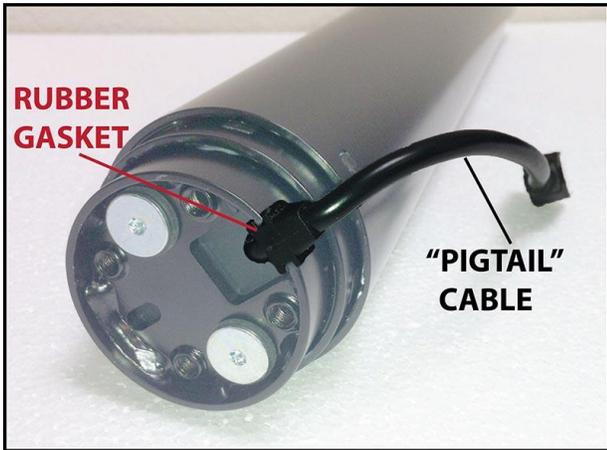
Which Lid Style Will You Use? (There are 2 Different Styles)- Hinged Lid is NOT Compatible

Floating Lid (Floating Top) – The whole top of the cabinet sits on top of the Lift System and raises/lowers with the TV. This is the standard Installation method, using the Top Plate and Threaded Tapered Pins.

Cut-Out Floating Lid (Top) – You will "cut out" part of your cabinet top, customizing it to the size of your TV. That cut-out lid then sits on top of the Lift System and raises/lowers with the TV. This method uses the Top Plate and Threaded Taper Pins, but you must set up a "catch" for the cut-out lid so that when the TV lowers, the lid stops level with the rest of your cabinet top (like a manhole cover).

Assembly and Mounting Instructions – You Are Ready to Start

Step 1: Inventory the Parts List. Carefully inspect all items, making sure you have everything shown in the Parts List.



Step 2: Verify the "Pigtail" cables are properly seated on the top of the Lift Columns. Take the Lift Columns (Part #1) and find the end with the short black cable (this cable is called the "pigtail"). This end will become the top of the Lift Column. Before you begin assembly of the system, make sure this cable is seated properly on all 5 Lift Columns. The rubber gasket attached to the cable should be seated snugly around the steel edge of the inner profile. **IF THE CABLE IS NOT PROPERLY SEATED IT MAY BE DAMAGED DURING ASSEMBLY CAUSING LOSS OF POWER TO THE LIFT COLUMN.** As you assemble the lift the pigtails should be oriented to face the back of the cabinet.



Step 3: Attach (3) Lift Column A's to the Base Mount. Mount one Lift Column A to the middle of the Base Mount. Start by turning the Lift Column A over so the top (the side with the Pigtail Cable) is on the floor. Align the four countersunk holes in the center of the Base Mount with the four threaded holes on the bottom of the Lift Column A. Using the provided small Hex Key and four (4) 6mm x 20mm Flat Head Machine Screws, attach the Lift Column to the Base Mount. Make sure the "Pigtails" are facing the rear of the Base Mount (the side with bend).



NOTE: Do not tip or knock the Lift Columns over during assembly. This may damage and affect performance.

Step 3 Continued:



Step 4a: Flip the *Lift Column A's* over so the base mount is on the ground.



Step 4b: Slide the (2) *Lower Column Braces (Part #13)* over the two outer *Lift Column A's*. Make sure to loosen the rubber bumpers all the way, to ensure ease of install.



NOTE: Make sure not to damage the Pigtails while sliding the *Lower Column Braces* onto the *Lift Column A's*.

Step 5a: Slide the (2) *Upper Column Braces* onto the (2) *Lift Column B's*. Route the pigtails through the *Upper Column Braces* and slide the brackets down the columns. Align the *Upper Column Brace* holes with the two counter sunk holes on the back side of the *Column Support Bracket*. Using (4) 6mm x 12mm FHMS (two screws per *Lift Column*), fasten the *Upper Column Braces* to the *Column Support Brackets*.



Step 5b: Fasten the bottom of each *Lift Column B's* to each *Column Support Bracket*. Flip *Lift Column B* and the *Column Support Bracket* over and align the four counter sunk holes with the four threaded holes on the bottom of *Lift Column B*. Using (8) 6mm x 20mm FHMS Screw (4 screws per *Lift Column*) attach the bottom of both *Lift Column B's* to the *Column Support Brackets*.



Step 5c: Apply the provided Wire Clips to the inside walls of the Column Support Brackets. Using (4) Wire Clips (two per Column Support Bracket) peel the white paper and stick two Wire Clips on the inside walls of the Column Support Brackets, half way down the bracket. These clips will be used for wire management.



Completed Upper Lift Assemblies



Upper & Lower Lift Assemblies



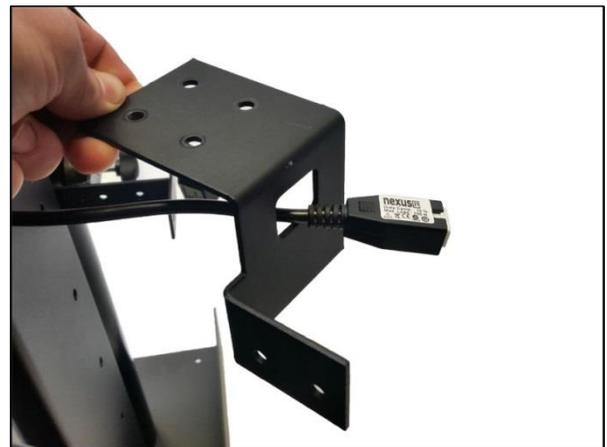
Step 6a: Place the Upper Lift Assemblies onto the Lower Lift Assembly. The Upper Lift Assemblies will share the mounting holes on top of the middle Lift Column A of the Lower Lift Assembly. Position one Upper Lift Assembly so it is resting on top of the middle and one of the outer Lift Column A's of the Lower Assembly as seen in the photos below.



Step 6b: Attach both Upper Lift Assemblies to the outer two *Lift Column A's*, of the Lower Lift Assembly:
Using (8) 6mm x 16mm BHMS Screws (4 screws per outer *Lift Column A's*) fasten each Upper Lift Assembly to the outer most *Lift Columns A's*. **NOTE:** Do not fasten the center *Lift Column A* to the Upper Lift Assemblies, as this will be completed in Step 7.



Step 7: Attach the *Lower Chain Bracket* (Part #16) and Upper Lift Assemblies to the top of the middle *Lift Column A*. Align the 4 holes on the *Lower Chain Bracket* and the 4 holes (2 from each Upper Lift Assembly) of the Upper Lift Assemblies with the 4 threaded holes on the top of the middle *Lift Column A* and attach using (4) 6mm x 16mm BHMS Screws. **NOTE:** Make sure to feed the *Lift Column A* "Pigtail" through the *Lower Chain Bracket* as seen down below.

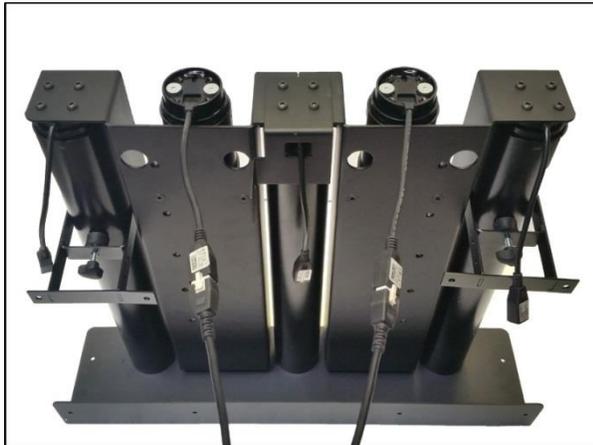


Step 7 Continued:



Step 8: Temporally connect both upper *Lift Column B's* to the *Control Box (Part #8)*. Connect the two 4.5 meter *Motor Cables* to the pigtails of the two upper *Lift Column B's* and connect the *Control Box* and *IR or RF Controls* (depending on which controls you ordered) as shown in the wiring diagrams on pages 14 and 15.

NOTE: Make sure to plug the *Motor Cables* into ports 1 and 2 on the *Control Box*.

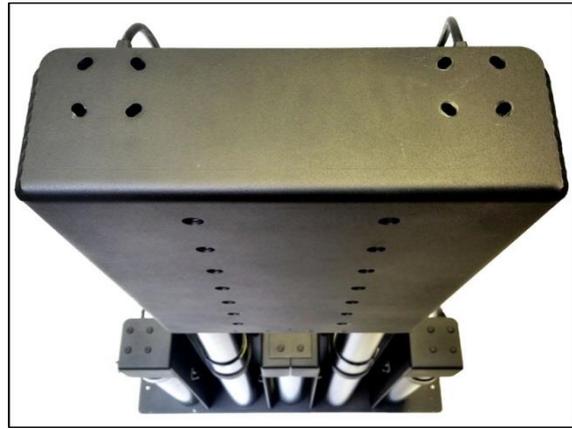


Step 9: Fully extend the upper *Lift Columns*. After connecting the controls you must activate the two upper *Lift Columns* by following the “Initialization” procedure:

1. Make sure the *Lift Columns* are in the fully retracted position.
2. Using the wired *Back Up Switch*, press and hold the down button (Triangle button without the raised dot) for 5 seconds.
3. You should witness a slight up and down “jog” movement from the *Lift Columns*. If you do not see this movement, release the down button and repeat step 2. Once you witness this “jog” movement, the *Lift Columns* are synced and ready for use. Fully extend the *Lift Columns* at this time.

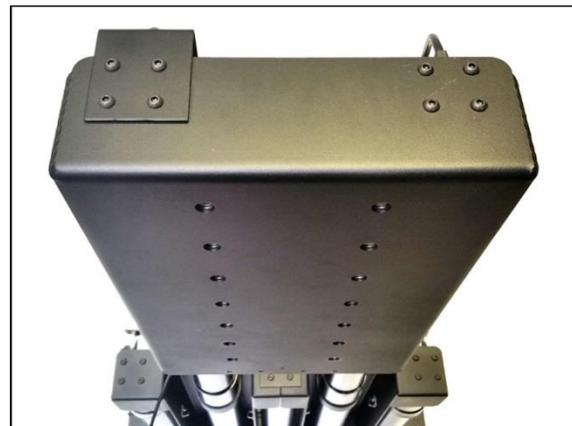
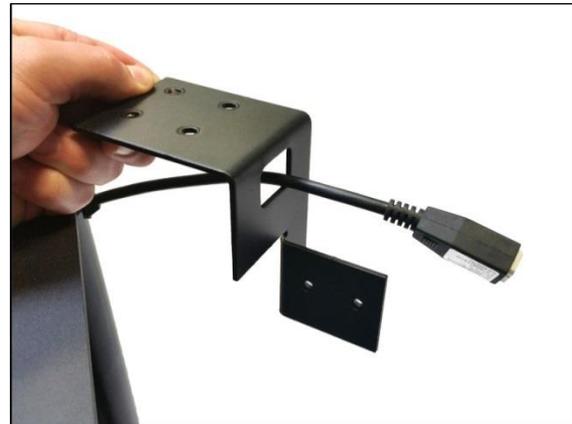


Step 10a: Attach the Screen Support (Part #4) to the upper right Lift Column. Using (4) 6mm x 16mm BHMS Screws fasten the Screen Support to the right upper Lift Column. Do not attach the left upper Lift Column, as this will be performed in Step 14b.

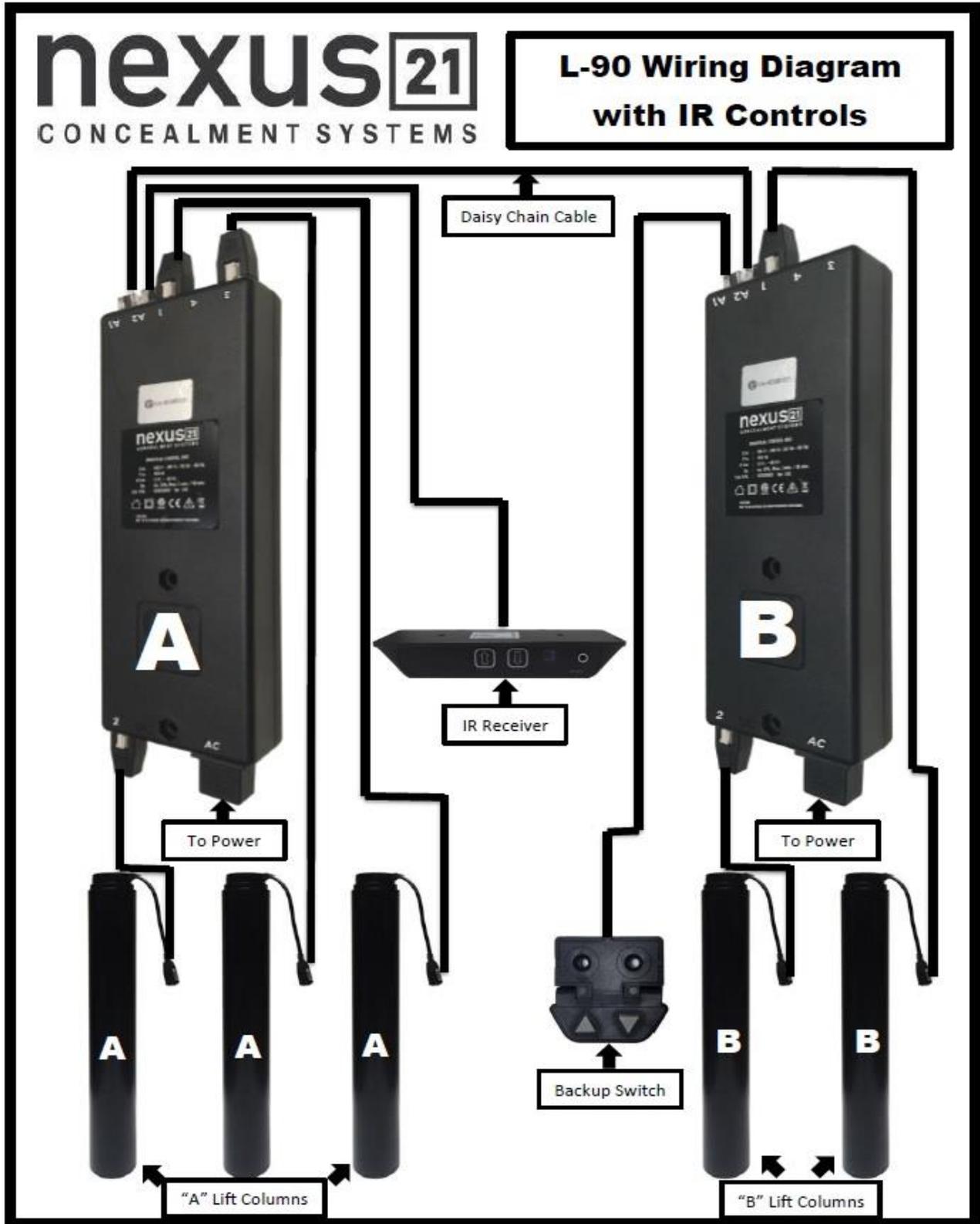


Step 10b: Fasten the Upper Chain Bracket (Part #15) to the Screen Support (Part #4). Align the four holes on the Upper Chain Bracket with the four holes on the Screen Support and the four threaded holes on the top of the Lift Column. Using (4) 6mm x 16mm BHMS Screws fasten the Upper Chain Bracket and Screen Support to the top of the left upper Lift Column.

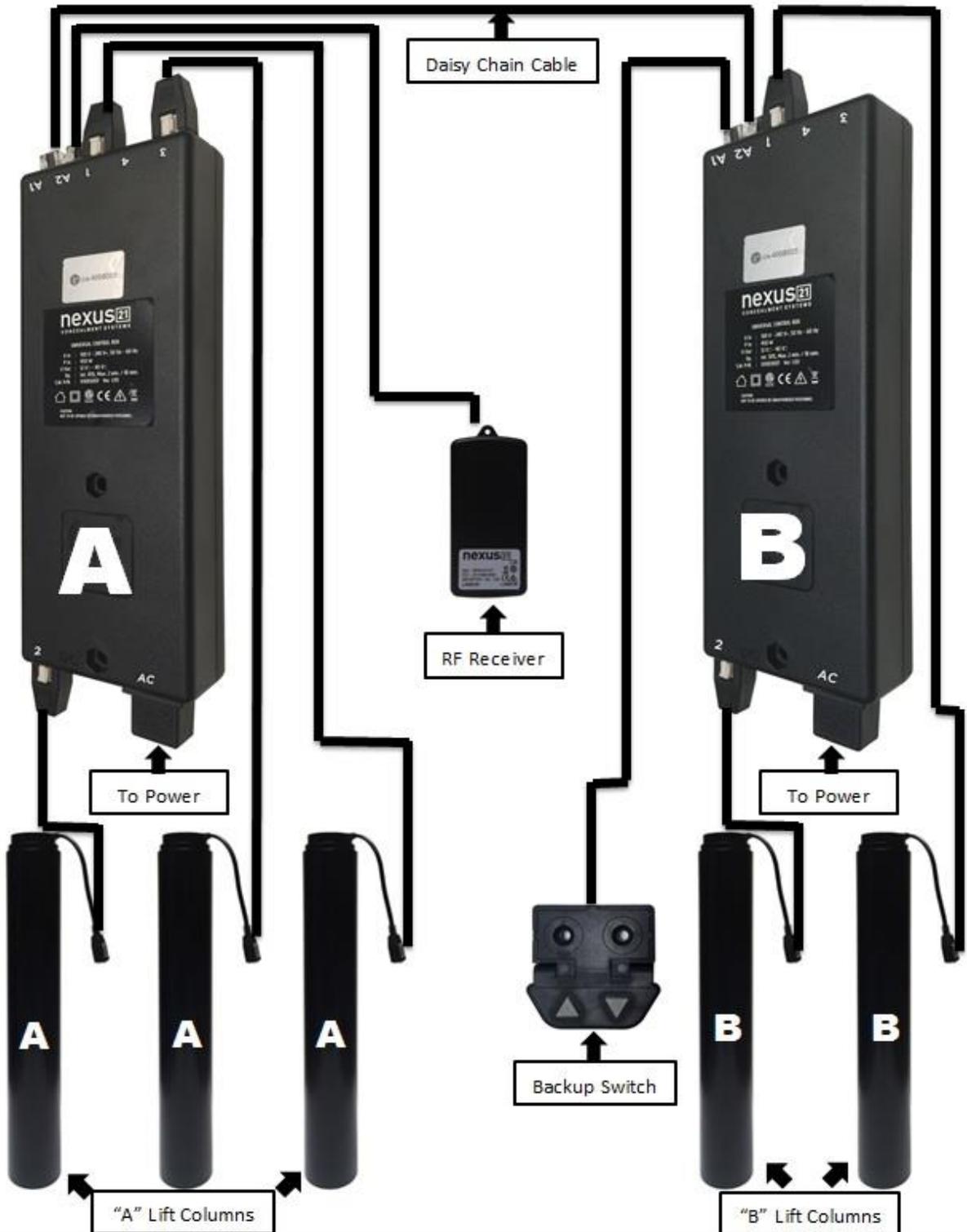
NOTE: Make sure to feed the “Pigtail” of the Lift Column through the Upper Chain Bracket.



Step 11: Temporarily connect the lower three Lift Columns to Control Box A. Using (3) 2.5 Meter Motor Cables, connect the three lower Lift Columns to Control Box A. Refer to the wiring diagram down below for IR Controls or the following page for RF Controls.



L-90 Wiring Diagram with RF Controls



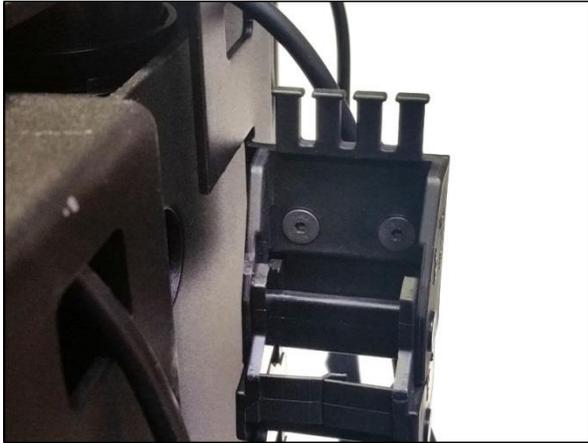
Step 12: Fully extend the lower *Lift Columns*. After connecting the controls you must activate the three lower *Lift Columns* by following the “Initialization” procedure:

1. Make sure the *Lift Columns* are in the fully retracted position.
2. Using the wired *Back Up Switch*, press and hold the down button (Triangle button without the raised dot) for 5 seconds.
3. You should witness a slight up and down “jog” movement from the lift columns. If you do not see this movement, release the down button and repeat step 2. Once you witness this “jog” movement, the *Lift Columns* are synced and ready for use. Fully extend the *Lift Columns* at this time.

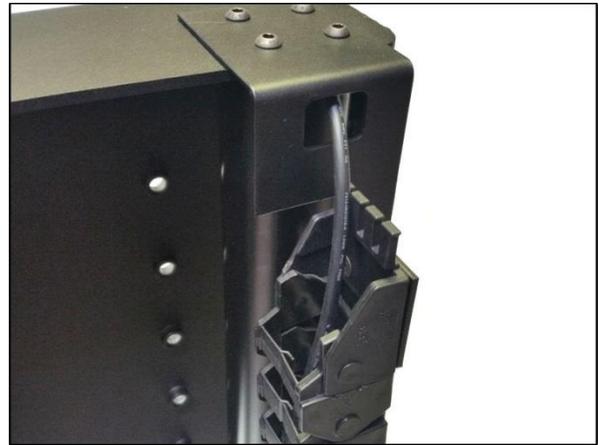
Step 13: Attach the upper and lower *Cable Chains* to the *Lower Cable Chain Bracket*. Using (2) 6mm x 20mm *FHMS Screws* and (2) 6mm *Nuts* attached both *Cable Chains* to the *Lower Cable Chain Bracket*.



Step 14: Attach the upper Cable Chain to the Upper Cable Chain Bracket. Lower the upper Lift Columns, so the Upper Cable Chain Bracket is accessible. Using (2) 5mm x 12mm FHMS Screws fasten the upper Cable Chain to the Upper Cable Chain Bracket. The Cable Chain will bend into a U-Shape.



Step 15: Route the upper two 4.5 Meter Motor Cables through the upper Cable Chain: Extend the upper two Lift Columns, as this will aid in routing the Motor Cables. Disconnect the two upper Motor Cables from the Control Box and route each cable down through the Cable Chain.



Step 16 Continued:



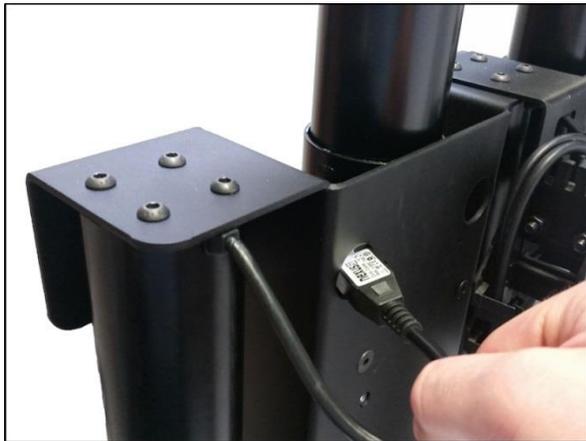
NOTE: Place a *Zip Tie* around the two upper *Motor Cables*, as this will aid in identifying them later.



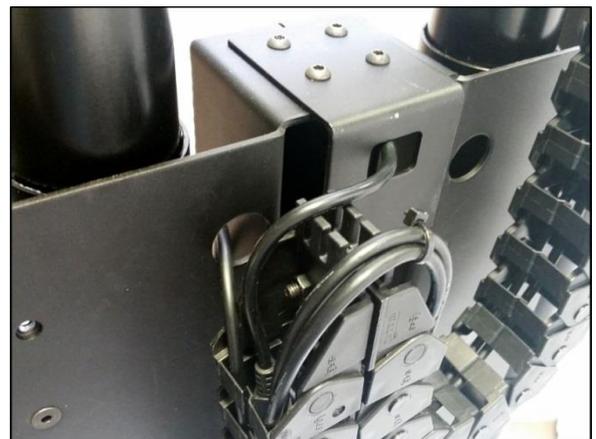
Step 17: Connect the *Lower Cable Chain* to the *Lower Cable Chain Bracket*. Using (2) 5mm x 12mm FHMS Screws attach the *Lower Cable Chain* to the *Lower Cable Chain Bracket*. Once connected continue routing the upper *Motor Cables* through the lower *Cable Chain*.



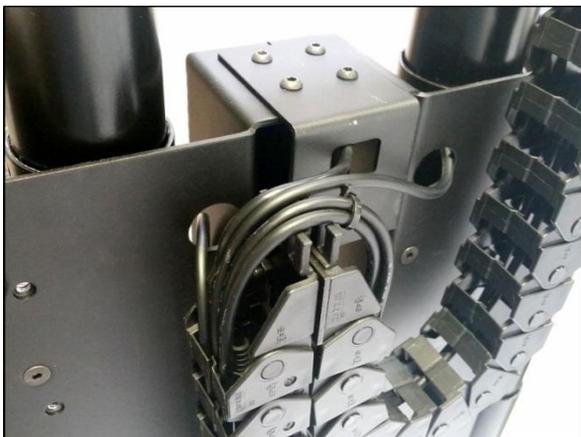
Step 18a: Route the lower right 2.5 Meter Motor Cable through the lower Cable Chain. Route the Motor Cable through the hole on the Column Support Bracket. Next, slide the Motor Cable through the Wire Clips on the inside walls of the Column Support Bracket (previously install in step 5). Then route the Motor Cable through the second hole on the Column Support Bracket. Last, route the Motor Cable through the lower Cable Chain.



Step 18b: Route the lower center 2.5 Meter Motor Cable through the lower Cable Chain.



Step 18c: Route the lower left 2.5 Meter Motor Cable through the lower Cable Chain. Route the *Motor Cable* through the hole on the *Column Support Bracket*. Next, slide the *Motor Cable* through the *Wire Clips* on the inside walls of the *Column Support Bracket* (previously install in step 5). Then route the *Motor Cable* through the second hole on the *Column Support Bracket*. Last, route the *Motor Cable* through the lower *Cable Chain*.



NOTE: Place a *Zip Tie* around the lower three 2.5 Meter *Motor Cables* and a *Zip Tie* around the upper two 4.5 Meter *Motor Cables*. This will aid in identifying which *Motor Cables* go to which *Lift Columns*. It is critical to not mix up the *Motor Cables* and accidentally plug the upper *Lift Columns* into the same *Control Box* as the lower *Lift Columns*.

Step 19: Attach both Top Support Brackets (Part #11) to the Screen Support (Part #4). There are eight PEM Nuts on both sides of the *Screen Support* which give you ½” adjustments and the holes on the *Top Support*

*Brackets give you 1" adjustments. Using (8) 6mm x 12mm BHMS Screws (4 Screws per Top Support) fasten both *Top Support Brackets* using the last four holes.*



Step 20: Attach the *Top Plate (Part #5)* to both *Top Support Brackets*. Using (4) 6mm x 12mm FHMS Screws fasten the *Top Plate* to the top of the *Top Support Brackets*. The four countersunk holes on the *Top Plate* are offset, make sure to position the edge closes to the four countersunk holes towards the front of the lift.





NOTE: The *Top Plate* is a 5-part plate (one Main Plate, two Extensions and two Nest Plates) that allows you to adjust the depth and position of the plate relative to the *Threaded Tapered Pins* (step 43-48). The *Top Plate* comes pre-assembled in a semi-retracted configuration. If you need to expand the depth of the plate to accommodate a deeper cabinet lid, remove the flat head machine screws from the extensions, move them to the depth you need, and re-insert the screws. Fully retracted, the *Top Plate* has a depth of 7 ½", and can be adjusted in 1" Increments up to 11 ½" with the extensions on either end of the plate.

Step 21: Attach the Screen Back Plate (Part #6) to the Screen Support. Using (4) 3/8 x 16 BHMS Screws attach the *Screen Back Plate* to center of the *Screen Support*. Make sure to level the *Screen Back Plate*, prior to tightening down the screws.





Step 22: Test Run the lift system. Run the lift up and down several times to confirm the cables do not bind and the cable chains raise and lower smoothly. **MAKE SURE YOU SUPPORT THE LIFT SYSTEM WHILE OPERATING SO IT DOES NOT TIP OVER.** Lower the lift system after testing.

Mounting the Lift System into the cabinet:

Due to the compact design of the L-90 Lift System, you will need to mount the lift on a platform inside the cabinet or enclosure. This platform may be avoided if a trench or hole is created in the ground, to allow the bottom half of the TV to reside in the hole when fully retracted.

Step 23: Position the Lift System within the cabinet or enclosure. Make sure it is centered from left to right with the cabinet lid opening.



Step 24: Attach the Lower Column Braces to the cabinet.

Raise the lift system until you can see the *Lower Column*

Braces. Position the *Lower Column Braces* so the top of the braces are 2" below the top edge of the outer profile (the non-moving part of the *Lift Column*). Using four (4) #10 x 3/4" *Truss Head Wood Screws* (2 screws per brace) attach both *Lower Column Braces* to the back wall of the enclosure.



Step 24 Continued:

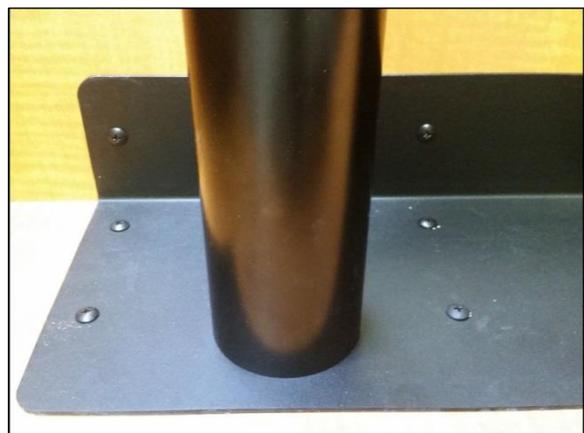


NOTE: Make sure to fully tighten both lower *Column Brace* rubber stops, as this will ensure there is minimal deflection from the lift system, once the TV is hung.

Step 25a: Attach the rear of the *Base Mount* to the back wall of the enclosure. Using (4) #10 x 3/4" *Truss Head Wood Screws* fasten the *Base Mount* to the back wall of the enclosure.



Step 25b: Attach the *Base Mount* to the top of the platform or base of the enclosure: Using (8) #10 x 3/4" *Truss Head Wood Screws* fasten the *Base Mount* to the top of the platform or base of the enclosure.



Step 26: Mounting the Control Boxes (Part #8) and Controls. Using (4) #10 x 1 3/4" Flat Head Wood Screws (2 screws per Control Box) fasten both *Control Boxes* to the right side of the lift system near the lower *Cable Chain*. Use (2) #8 x 3/4" Flat Head Wood Screws fasten the *Wired Backup Switch*. If you ordered IR Controls you will use (2) #10 x 3/4" Flat Head Wood Screws to fasten the IR Receiver to the enclosure wall. If you ordered *RF Controls*, then use (2) #6 x 3/4" Round Head Wood Screws to fasten the *RF Receiver* the enclosure wall.



NOTE: Please refer to our Setting a Height Limit section or Contact Closure Integration section for info on setting a Height Limit.

Step 27: Attach the Vertical Mounting Bars to the TV. Before you begin, hand thread screws found in bag labeled "TV Mounting Screws/Spacers" into the threaded inserts on the back of your TV to determine the correct screw diameter (M6 or M8). The length of the screw required will depend on whether the TV has a flat/unobstructed or irregular/obstructed back. Follow diagram "A" for TV's with flat/unobstructed backs. Use diagram "B" for TV's with irregular/obstructed backs. These diagrams can be found on the following page.



A

Flat/Unobstructed Back

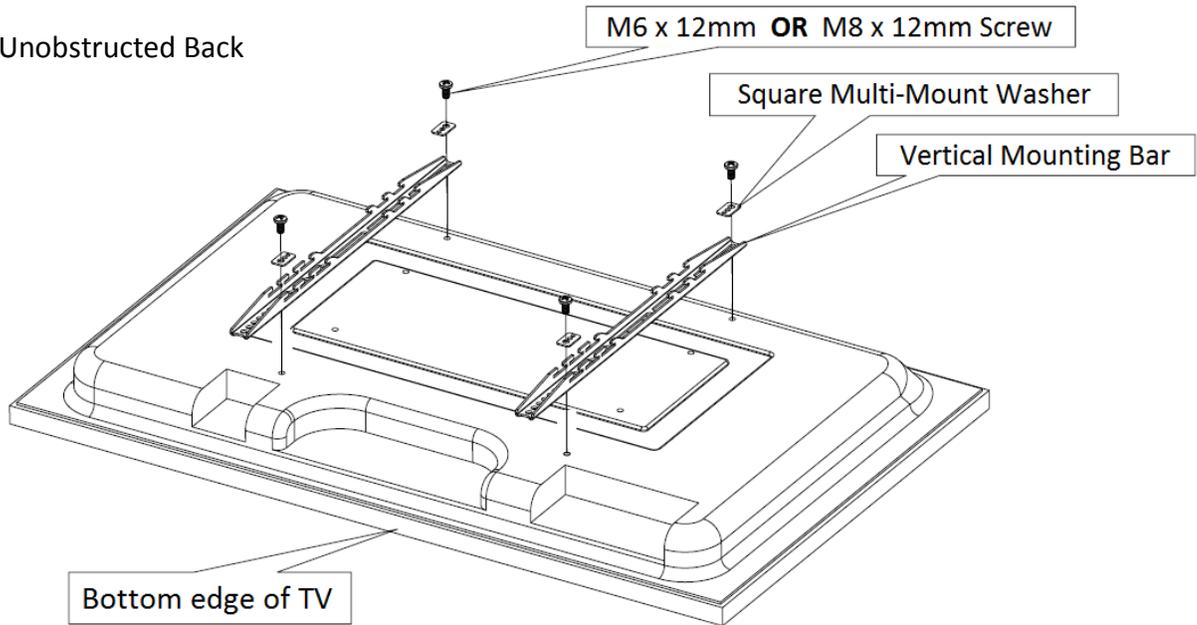


Diagram "A" installation procedure:

- 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

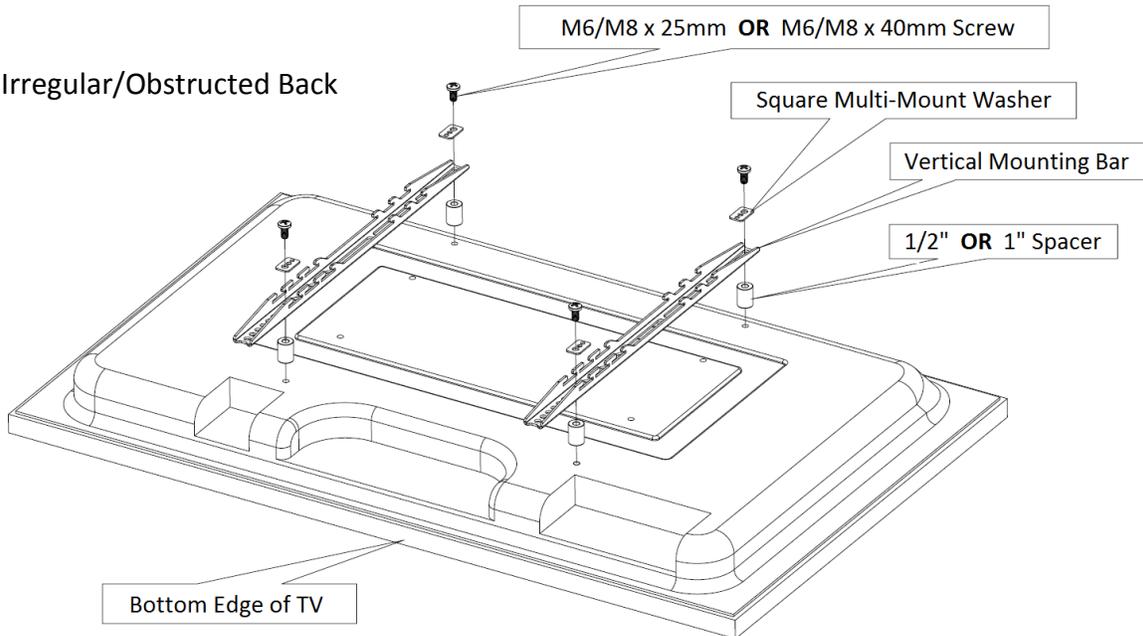
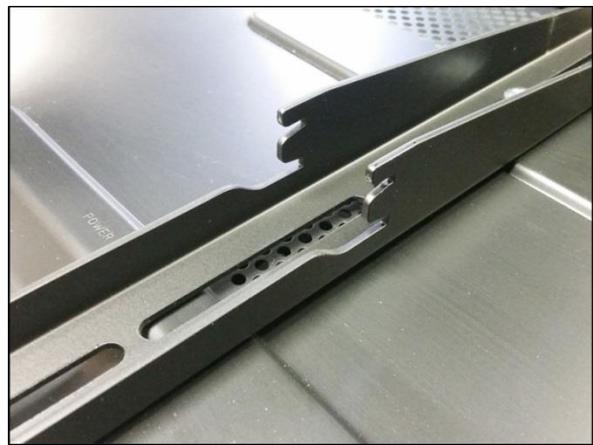


Diagram "B" installation procedure:

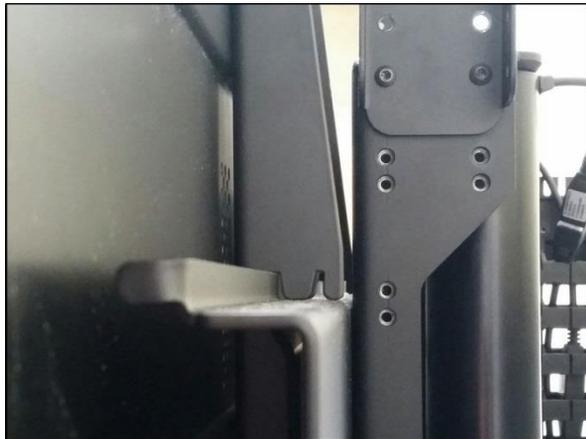
- 1) Place the flat screen TV face down on a protected surface.
- 2) Position the Vertical Mounting Bars equidistant from the bottom and top of the TV, with the slots facing toward the top of the TV.
- 3) Using the four (4) spacers needed, (4) Square Multi-Mount washers and the TV mounting screws selected 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.

set of “hooks” on each *Vertical Mounting Bar* has a 5 degree tilt option. Hanging the TV using the inner most “hooks” will give you a flush vertical orientation. If you’d like to give the TV a 5 degree fixed tilt, hang the TV using the outer most “hooks”.



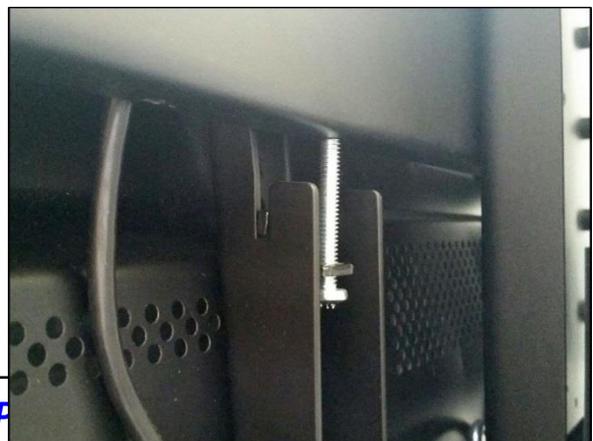
No Tilt



5° Tilt

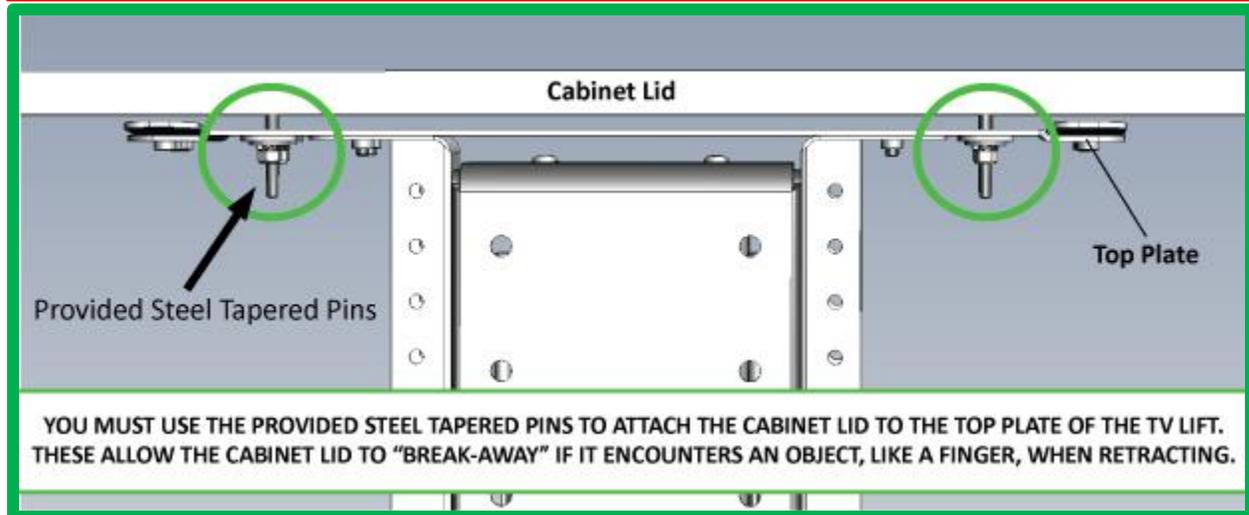


Step 29: Insert both *Screen Locks* into both *Vertical Mounting Bars*. Using (2) *Screen Locks*, place one *Screen Lock* on the bottom set of hooks for each *Vertical Mount Bar*. Using a Philips Head Screwdriver (not provided), tighten the *Screen Locks* against the bottom of the *Screen Back Plate*. This will ensure the TV does not slide left to right and eliminate the TV from being lifted off of the mount.





WARNING! YOU MUST NOT DIRECTLY SCREW THE CABINET LID (TOP) TO THE LIFT SYSTEM!! THIS CREATES HAZARDOUS “PINCH POINTS” AND MAY AFFECT THE OPERATION OF THE LIFT OR CAUSE DAMAGE TO THE CABINET TOP. For floating lids, **DO NOT USE SCREWS** to attach the lid to the Lift System. Instead, use the “Threaded Tapered Pins”, as described below.



What Are the Tapered Pins, and Why Use Them?

The two 1½” x ¼” Steel Threaded Tapered Pins are used IN PLACE OF SCREWS to hold your cabinet top (lid) in place on the Lift System Top Plate (Part #5). The Tapered Pins will keep your lid firmly in place, but will also allow it to **separate from the lift system** if anything (like a finger) gets in the way when the TV lowers. [See Safety Notice above. Please do NOT use screws with your cabinet lid.](#)

Cut-Out Floating Lid (Top) – This option assumes that you have “cut out” part of your cabinet top, customizing it to the size of your TV. That cut-out lid then sits on the Top Plate of the Lift System, held in place by the Tapered Pins, and raises/lowers with the TV. You must set up a “catch” for the Cut-Out Lid so that when the TV lowers, the Lid stops level with the rest of your cabinet top (like a manhole cover), and the Lift System continues down a little further into the cabinet (no more than ¼” to ½”). In this way, when the Lift System is fully retracted, the Cut-Out Lid will always be level, and the Top Plate of the Lift System will always be positioned just below the Lid. Since the Lid and the Top Plate are slightly separated from one another, but still very loose, the Taper Pins (which are 1½” long) will still be hanging down through the holes in the Top Plate so when the Lift System moves, everything is properly aligned and the Lid rides smoothly up and down.



NOTE: There are several different methods for setting up the “catch” for your Cut-Out Lid, but the hardware to do it is not included with the Lift System because it is part of the cabinet. Hardware suggestions include: buy 4 small corner brackets and screw to underside of main top, with edges exposed to catch the corners of the cut-out lid. The same thing can be accomplished with 1” x 1” “cleats”, which are strips of hardwood, again mounted underneath, with edges exposed to catch the lid.

How to Install the Tapered Pins:

You will be screwing the *Tapered Pins* into the underside of your cabinet lid, and they will hang down and drop into the two holes in the *Top Plate*. These two holes called referred to as the “Nests” of the *Top Plate*, give you a $\frac{1}{4}$ ” adjustment in all directions.

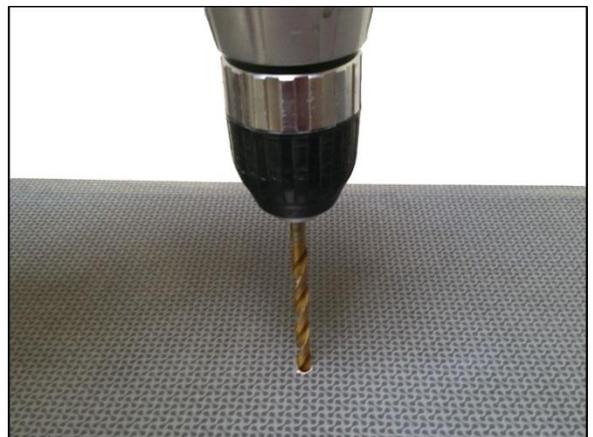
Step 30: Adjusting the *Top Plate* “Nests”. Before you install the *Tapered Pins* into the underside of the lid, make sure to center both “Nests” within the outer diameter hole. You may need to loosen the two nuts on the bottom side of the *Top Plate* in order to center the “Nests”. This will ensure you have a full $\frac{1}{4}$ ” adjustment in all directions, once the *Tapered Pins* are installed.



Step 31: Mark the Tapered Pin holes on the bottom side of your lid. With the lift in the fully retracted position, place the lid material on the *Top Plate*. Shift the lid material around until you have the lid material squared, to the top of the cabinet on all sides. Without bumping the lid or allowing the lid to shift around, raise the lift system high enough to allow you to mark the two “Nest” holes on the underside of your lid.



Step 32a: Drill two $\frac{1}{2}$ ” deep holes into the bottom side of your lid. Using a $\frac{7}{32}$ Drill Bit (not provided) drill two $\frac{1}{2}$ ” holes into the bottom side of your lid in the marked positions from the previous step.



Step 32b: Thread both Tapered Pins into the underside of your lid. Using a Phillips head Screwdriver thread both *Tapered Pins* into the underside of your lid. Make sure to drive the *Tapered Pins* into the lid as straight as possible.



NOTE: You will have a 1/4" tolerance (in all directions) for the placement of the Tapered Pins into your cabinet lid. There are a set of nuts on the underside of the Top Plate that allow you to adjust the position of the hole that the Taper Pins will pass through to secure the cabinet lid to the Top Plate. If you happen to position the Taper Pins a few millimeters off from your intended position, you can still make adjustments to fit properly.

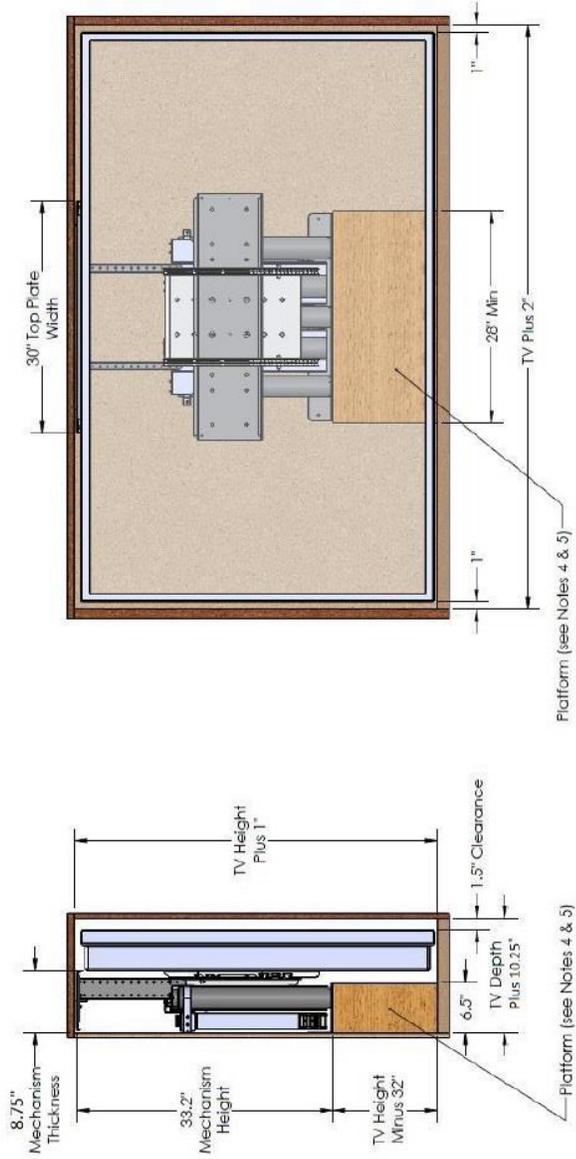
Step 33: Place the Cabinet Lid onto the Lift System. Align the *Tapered Pins* with the two "Nest" holes on the *Top Plate* and allow the lid to rest on the *Top Plate*. Fully retract the lift system and make sure your lid is still squared, if not, loosen the nuts on the underside of the *Top Plate* and re-square your lid. Once squared, tighten all four nuts on the underside of the *Top Plate*, as this will prevent the lid from shifting.



Step 34: Management for TV Cables. Route the remaining AV cable that run to the back of the TV through the *Cable Chains*. Once the cables have been fed through the *Cable Chains*, test operate the lift several times to be sure that all cables are clear so they do not get "hung up" when the TV is moving either up or down.

Congratulations your Nexus 21 TV Lift System Model L-90 is now installed!

Model L-90
Installation Dimensions
Standard Configuration



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- Notes:
- 1) The cabinet box shown in this diagram is for reference only and is not provided with the lift system.
 - 2) For this lift model, the length of its travel (extension length) is 50".
 - 3) Weight capacity for this lift model is 200 lbs.
 - 4) The platform (the wood box the TV Lift is mounted on top of) is not provided with the TV Lift as its height is dependent on the TV's height.
 - 5) The platform allows the lift system to be mounted as high as possible, offering the best scenario for rear support of the TV and TV Lift.

Supplemental Page B: Connect the Lift to Home Control System

Connecting the Nexus 21 L-90 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 for L-90

This pack contains the following parts:

2 – Contact Closure Cables, RJ-45 to Relays

2 – Height limit Inserts



Contact Closure Cable, RJ-45 to Relays



Height Limit Insert

Step 2: Connecting the L-90 Lift System to the Control System

Use the *Contact Closure Cables* to connect the L-90 Lift system to your control system. Connect the three wires from each *Contact Closure Cable* directly to the relays on your control module (see image below). Then connect the RJ-45 plug from each *Contact Closure Cable* to the Nexus 21 system, using either one of the two RJ-45 ports on the side of the each Nexus 21 *Control Box*.

Note: You must connect 1 contact closure cable to each *Control Box* in order for the lift to operate correctly.

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 L-90 lift system uses two pairs of relays. Each pair consists of one relay for “extend” and one relay for “retract.” The common wire runs between each pair of relays using the **BLUE common wire**, together with a jumper wire you supply.

Note: You cannot use the same common wire for all four relays. Each pair must have their own **BLUE common**.

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

Relay for 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 L-90 Lift System

Begin with the Height Limit Inserts 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 Inserts into the available RJ45 ports on each 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.

How to Set a Height Limit using RF or IR Controls Only

(Excludes Contact Closure)

Setting the Height Limit for IR (L-90 Lifts):

1. First fully retract the lift using the *IR Receiver*,
2. Then press and hold the down button on the *IR Receiver* till you get a slight movement from the *Lift Column*. This may take 2 to 3 tries.
3. After the seeing the movement, press and hold the up command until the lift extends to your desired height, then release the up button and tap the down button to stop the lift.
4. Once you have stopped the lift, you must use the *IR Remote* to send the lift down.
 - a. **Note:** If you use the *IR Receiver* to retract the lift at this point, you will modify the height limit.
5. Finally test the lift by using the remote to send the lift up, the remote will obey the height limit you have just set.

Setting the Height Limit with RF Controls (L-90 Lifts):

1. First fully retract the lift using the *Wired Backup Switch*,
2. Then press and hold the down button on the *Wired Backup Switch* until you get a slight movement from the *Lift Column*. This may take 2 to 3 tries.
3. After seeing the movement, press and hold the up command until the lift extends to your desired height, then release the up button and tap the down button to stop the lift.
4. Once you have stopped the lift, you must use the *RF Remote* to send the lift down.
 - a. **Note:** If you use the *Wired Backup Switch* to retract the lift at this point, you will modify the height limit.
5. Finally test the lift by using the *RF Remote* to send the lift up; the remote will now obey the height limit you have just set.

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