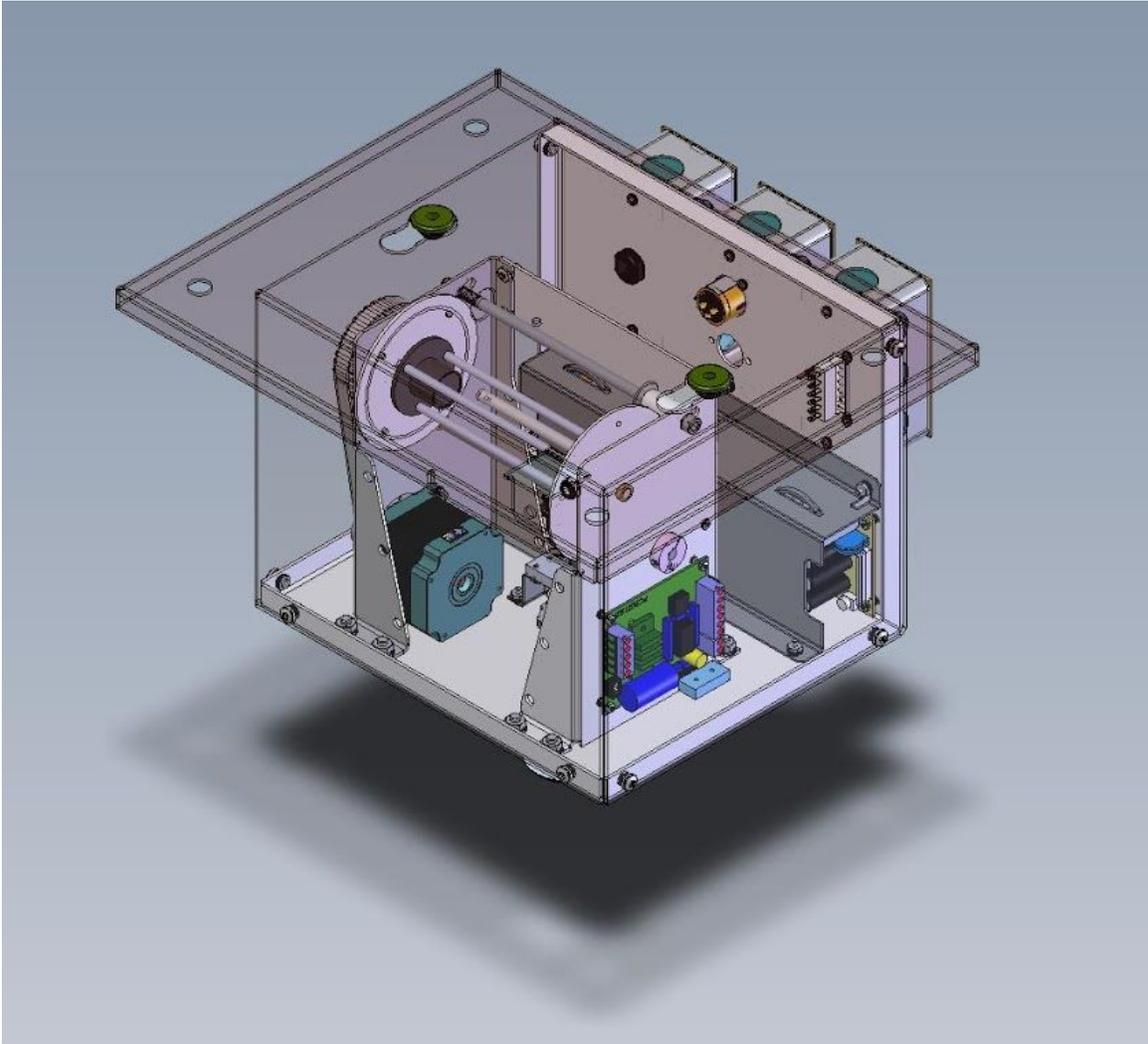




Microphone Lift ML2020

Installation and Operations Instructions



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Do's and Don'ts:

** Do not operate the lift up when the microphone cable is swinging – the unit can jam.

** Do not replace or extend the factory-installed microphone cable.

** Do not operate the lift without the factory-installed weight (located at the end of the cable) The weight is also the upper limit switch activation mechanism.

** When using directional microphones, operate the lift 30 times to relax the cables memory. To reduce the lift from getting hot, allow one minute between each cycle. Once cable is sufficiently relaxed, adjust the direction of the microphone.

** Do not cycle the lift up and down more than once per hour. The brake on the motor will heat up and have reduced performance.

Weight Capacity:

To assist in lowering the microphone, a 5.2 ounce weight is attached to the cable. This is the minimum weight required. The maximum weight allowed is a total of 12 ounces. If your microphone assembly is over 6.7 ounces, please call Support for more details.

Structural Attachment:

Structural attachment points will depend upon your specific installation. The lift is designed to hang above the finished ceiling so your microphone is slightly below the bottom of the finished ceiling. The actual mounting height will vary depending upon your architectural situation. Structural channel and threaded rods are common methods to install mounting points at the appropriate height above the finished ceiling. The unit is shipped with a $\frac{3}{4}$ " diameter conduit that is 2" long. Reference the images below.

The lift is shipped fully assembled for installation into an unfinished ceiling application. To install in a finished ceiling, you must disassemble the lower trim ring prior to installation into the finished ceiling or ceiling tile. The lift is designed to operate via our three-button remote or contact closures. See the Control Interface section for control assignments.

Steps for Typical Installation:

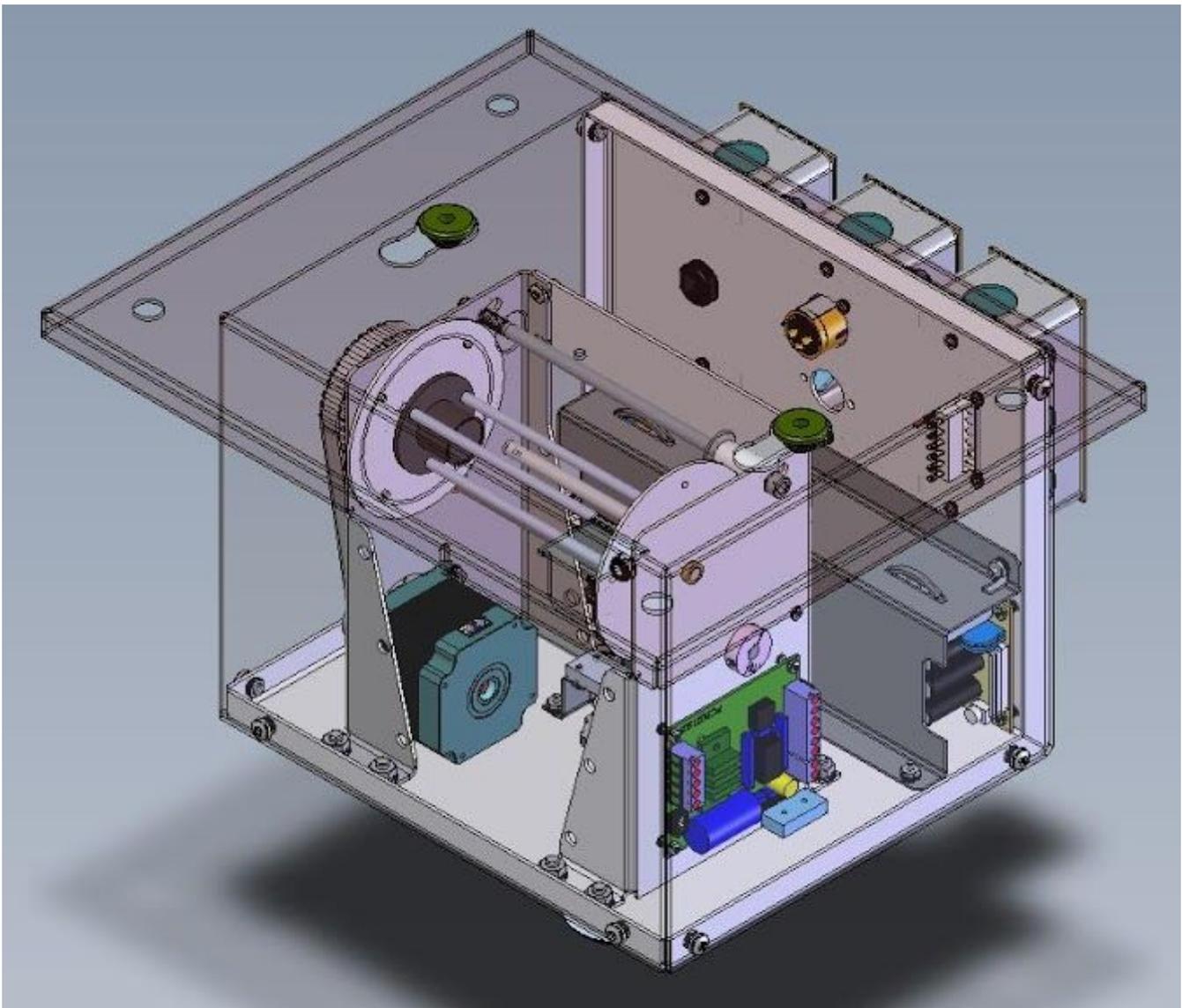
- 1.) Install the mounting plate above the bottom of the finished ceiling so the ceiling bezel is flush with the bottom surface. Use $\frac{1}{2}$ " dia. hardware. Attach to the structural channel or other solid mounting surface. Be sure the plate is level.
- 2.) Install the mounting plate using $\frac{1}{2}$ " dia. hardware. Attach to a structural channel or a solid mounting surface. Be sure the plate is level.
- 3.) Add a plumb bob to the mounting plate at the indicator hole and hang the bob down to the ceiling. This is the center point for the hole cutout location for the microphone assembly.
- 4.) Cut a 1.5" hole in the ceiling aligned with the plumb bob.

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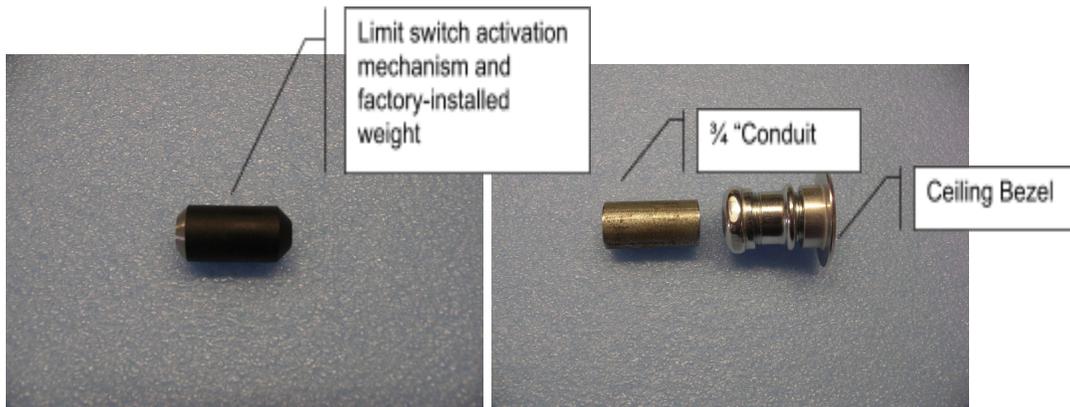
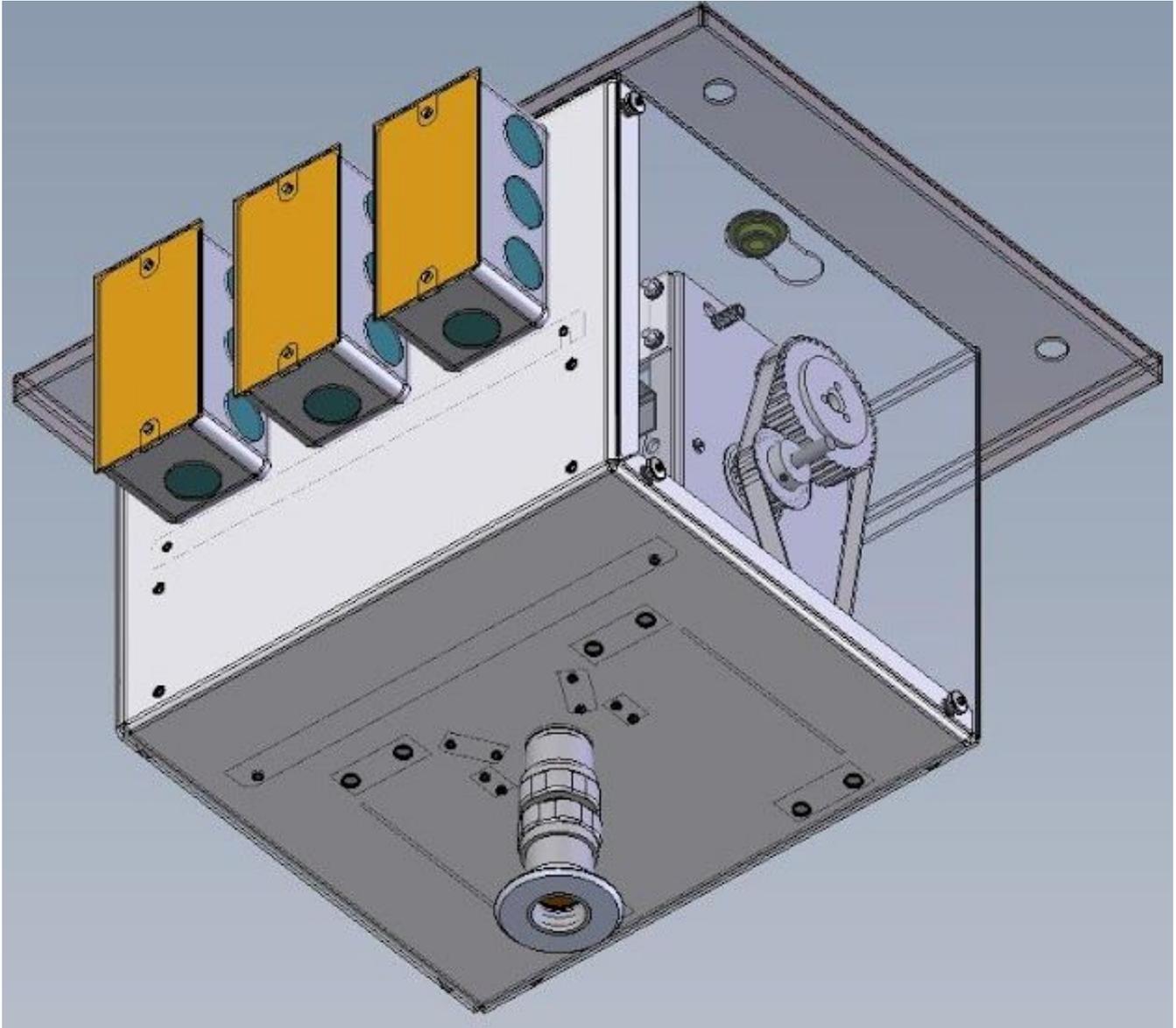


- 5.) Raise the lift to the mounting plate. Insert the lugs into the keyholes and slide to the narrow side of the keyhole slot.
- 6.) Install the locking screw on the side of the unit.
- 7.) There is a 2" long $\frac{3}{4}$ " diameter conduit shipped with the unit, use a longer piece if needed. Lower the microphone and weight down through the hole, and thread through the conduit, conduit fitting, and ceiling bezel. Run this assembly up through the hole and lock in place by tightening the upper nut which is fixed to the bottom of the lift.
- 8.) Replace ceiling bezel.
- 9.) If you're installing this unit for purposes other than what the above installation procedure describes, please call Support.



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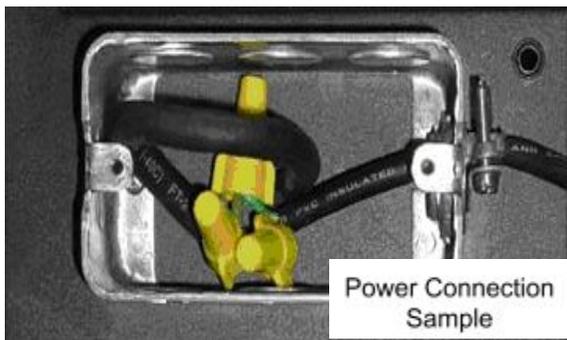
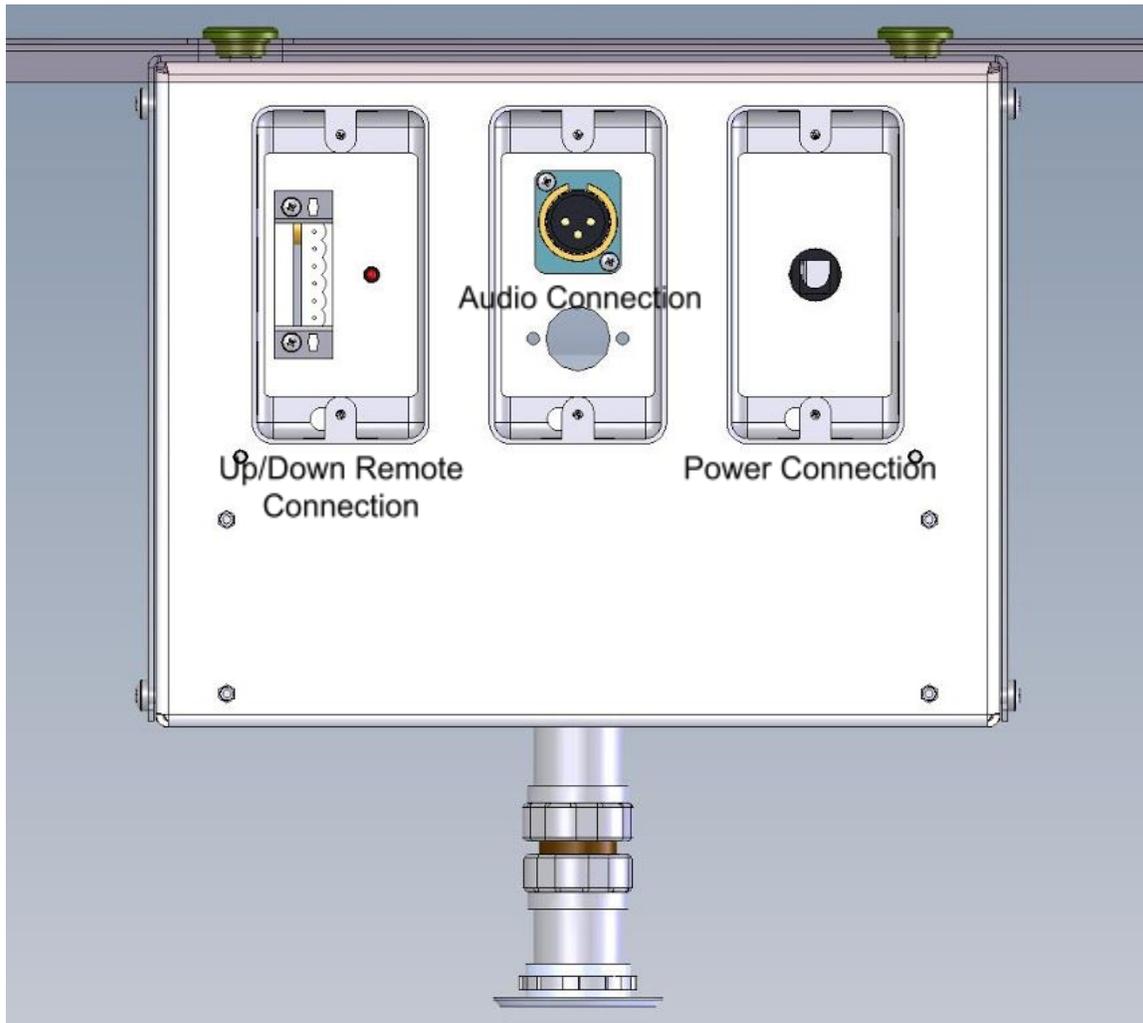


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Power, Audio and Control Installation



Making Power, Audio and Control Connections

1. The lift will accept voltage from 88-132VAC or 176-264VAC. The power supply is autoranging. To connect, remove the j-box cover plate and connect AC power leads with wire nuts:
ground = green
neutral = white
hot = black.

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2. Connect the hardwired hand-held remote control to the 5-pin Phoenix connector in the center j-box.
3. Connect audio signal to the 3-pin XLR-f.

Operating the Lift



Control Interface - Included Hand Held Remote

The included controller is a simple way to move the microphone up, down and to stop it at a certain height.

'Up' button to pin 1

'Down' button to pin 2

'Stop' button to pin 3

Common for all buttons to pin 4

Pin 5 & 6 are not used

Show Position - Setting the height of the microphone

Programming can only be done with the three-button control.

1. Send lift to top position ('Up' button).
2. Press and hold 'Stop' button for ten seconds.
3. Press the 'Down' button. Lift will travel down. Press 'Stop' at the proper show position. THIS MUST BE DONE IN ONE MOTION, DO NOT PRESS UP, DOWN, OR STOP FOR FINE-TUNING OF POSITION.
4. At the proper position, press and hold the 'Stop' button for 10 seconds.
5. Lift is now set. If you start the procedure and wish to quit after step 2, you must reset power to the lift before normal operation will resume.

If other methods of triggering the lift are normally used, first program the lift with the remote and then configure the lift for the other trigger method.

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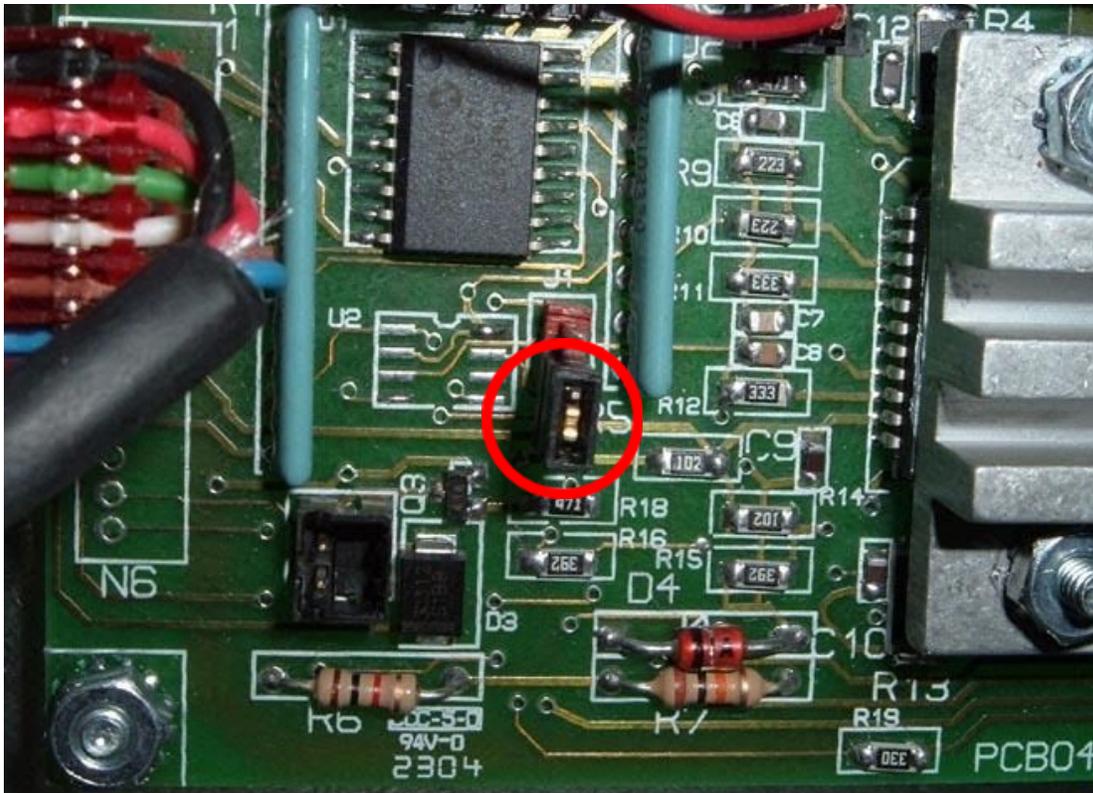
Ramping Distance - Decrease speed before home position

You may determine the location where the lift slows its acceleration. Programming can only be done with the three-button control. If other methods of triggering the lift are normally used, first program the lift with the remote and then configure the lift for the other trigger method.

1. Send lift to top position ('Up' button).
2. Press and hold 'Stop' button for 10 seconds.
3. Press the 'Down' button. Lift will travel down. Press 'Stop' at the position where you would like the microphone to begin slowing down. We recommend no less than six inches below the finished ceiling. **THIS MUST BE DONE IN ONE MOTION. DO NOT PRESS UP, DOWN, OR STOP FOR FINE TUNING OF POSITION.**
4. At the proper position, press and hold the 'Stop' and 'UP' buttons for 10 seconds.
5. Lift is now set. Press 'Up' to send the lift to the home position. Press 'Down' to lower the lift, and 'Up' to send it to home position and verify where the ramping point is. If you start the procedure and wish to quit after step 2, you must reset power to the lift before normal operation will resume.

Optional Speed Adjustment:

The lowering and raising speed can be changed from slow to fast. The jumper is installed in the factory, so the default is fast.



Steps:

1. Disconnect power to the unit.
2. Remove the side cover then remove the control board electronics cover. The jumper is not connected and must be placed on both pins.

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3. For Slow speed – no jumper connected
4. For Fast speed – jumper connected

Microphone Cable

Microphone Cable Details

The balanced microphone cable is connected to the 3-pin XLR. The color code of the cable is:

Braided/ground – pin 1

Blue/Blue with white stripe – pin 2

White/white with blue stripe – pin 3

It is very important that the weight is on the cable. If the weight is removed and you operate the lift, **YOU WILL DESTROY THE MICROPHONE AND LIFT!** Also, make sure any splice is below the weight near the microphone.

Optional Movement Controllers

Using Optional Control Methods

The next two control methods involve adding jumper wires on the Phoenix connector in the center j-box. They are presented here for information only; please contact DDI for further directions. NOTE: It is required that the lift is installed and the show position, along with the ramping position has been set. After that, jumpers must be added to the connector as listed below.

FOR LOW VOLTAGE CONTROL (5 vdc < V < 24 vdc):

Connect a jumper from Pin 1 to Pin 4, and Pin 2 to Pin 4. Then connect Control to Trigger Voltage at Pin 5. Also, Trigger Voltage ground to Pin 4. An applied voltage moves lift up, no voltage moves lift down.

FOR SINGLE LATCHING CONTROL:

Connect a jumper from Pin 1 to Pin 4, and Pin 2 to Pin 4. The contacts are between Pin 5 and Pin 6. Contact closed moves lift up, while an open contact moves lift down.

Remote Control - Pin out

Pin 1 = Moves cable and microphone UP

Pin 2 = Moves cable and microphone DOWN

Pin 3 = Movement of cable and microphone STOPS

Pin 4 = COMMON

Pin 5 = 12V trigger in

Pin 6 = +5V out

Contact Closure Control

This is the most common type of control.

The lift ships with a hand held remote 8028-06000 (as shown above).

The contact closure pins 1-3 are at 5VDC, and pin 4 which is common ground. To send the Microphone lift up pin 1 is connected to pin 4 for ½ second, and to send the lift down to the show position pin 2 is connected to pin 4 for about ½ second.

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This operation pulls the control pin from 5VDC to zero volts DC, and is the same as pressing the button on the hand held remote.

Third Party Control Hookup

The most common hook up for the lift when using a 3rd party system is to use two relays.

Pin 4 will go to the common of both relays

Pin 1 will go to the normally open of relay 1

Pin 2 will go to the normally open of relay 2.

To send the lift up the relay 1 needs only be engaged for ½ second, and then released.

To send the lift down the relay 2 needs only be engaged for ½ second, and then released.

Pin 3 is controlled through the hand held remote and it is used for programming, and to stop the lift.

For cable runs:

Use 22 AWG for runs up to 100 feet

Use 20 AWG for runs between 100-500 feet