

Maxi Lift & Midi Lift Install Procedure

Inspect Shipment

Remove the card board boxing and inspect for damage before the driver leaves. If damaged, take pictures and contact us immediately. You may need to refuse delivery.

Inventory Parts

Use checklist sheet to inventory parts.

Cargo Lift Site

Clear the cargo lift site making sure nothing could interrupt the cargo lift cage during it's travel up and down. Also be mindful of post or columns that could be in the way of gate openings.

Upper Support Brace

It connects the I-Beams to the structure or decking and is referred to as the "L" brace. It is bolted to the upper floor joist or deck header.

Mounting The "L" Brace

This is the **MOST IMPORTANT STEP**. Use the dimensional drawings to measure where the lift will fit including the "L" brace. To be sure of placement, make a template (**see template example**) from the dimensional drawings and transfer those measurements on to a piece of wood trim (1'x2") representing the total length of the cage and mounting brace. This is the best way to know where everything will fit.

The side of the "L" brace with the 4 pre-drilled holes is the side bolted to the floor joist or deck header.

NOTE: The "L" brace has to be mounted level and plumb.

I-Beams

Lay out the two i-beams parallel to each other on flat ground or concrete. Place the i-beams 31" apart.

Measure from outside to outside of the i-beams. Place 4"x4" post under the i-beams to elevate them off the ground so you can place the lifting head on without touching the ground.

Spooler Head Assembly

Place the spooler head assembly at one end of the i-beams. Insert the factory painted ends of each i-beam inside the head as far as it will go. Make sure both i-beams are 90% to the spooler head. Use a framing square or speed square to insure the 90% alignment. I-Beams must measure exactly 31" apart (O.D.) Clamp i-beams in place so they don't move. Drill through the pre-drilled 3/8" holes in the spooler head.

Do not remove clamps until you finish bolting the 4 holes on this side. Then repeat the same process for the other 4 bolt holes on the other side.

Footplate

Place the footplate at the end of the two i-beams. Match up the angles on the footplate to the face of the i-beams. Make sure both i-beams are 90% to the footplate and the i-beams are 31" apart. (O.D.) Clamp both angles to the i-beams before drilling and bolting.

Install Limit Switch

If you are using a **Rotary Limit Switch**, follow the instructions and install the rotary switch to the spooler head assembly now so you won't have to install it from a ladder after the lift frame is stood up. If you are using a **Proximity Switch**, wait until the lift is installed and just before pouring concrete or bolting the foot plate to the slab.

Stand Up Frame

Stand up the frame against the already mounted support brace. The frame work is very top heavy at this point and you should use extra help when standing up the frame for safety. Clamp the frame work

to the support brace to hold it in place. Clearance of 13" is needed from the outer edge of decking header (or floor joist) to the edge of the nearest i-beam. This should allow enough room for the gate hinges and the latch to clear. Nothing can overhang inside the 13" of space from the decking header (or floor joist) to the edge of the closest i-beam. **(any handrails or balusters need to be removed if inside the 13")**

Check and re-check i-beams for level and plumb. It may take a while to get **PERFECT**. Check the 31" (O.D.) across the i-beams one last time before drilling and bolting i-beams to mounting brace.

NOTE: (refer to dimension drawings for measurements)

Footplate Mounting Methods

(1) **Concrete** mounted footplate uses 4 concrete anchors. The footplate has 4 pre-drilled 1/2" holes. Drilled through the bolt holes into the concrete. Set the anchors and tighten the hex nuts. Make sure the spooler head is level. You may need to compensate for a sloping concrete.

(2) **In Ground** method is burying the footplate 18" in the ground. Level the bottom of the hole so the spooler head will be level. Making sure the i-beams are **plumb**. Use the 4 pre-drilled holes in the footplate to drive rods down into the ground **(after re-checking again for plumb)** to keep i-beams from moving before pouring 3 or more bags of concrete in the hole. **DO NOT OVER DIG THE DIRT HOLE.** I-Beams were pre-cut for a certain length to allow for 60" above the deck surface for cage and spooler head.

SECURING OF THE FOOTPLATE IS THE VERY LAST STEP so corrections can be made if there is a problem with clearance before permanently secure the footing.

MAKE SURE THE SPOOLER HEAD IS LEVEL A spooler head and i-beams that are not level and plumb could cause unnecessary wear of the cable, roller wheels, and a friction noise.

Gem Control Box

Attach the Gem control box at the cargo lift's upper destination. Refer to manufacturer's wiring instructions.

WE SUGGEST USING A LICENSE ELECTRICIAN

Motor and Control Box must be wired to the same voltage.

1 HP Motor

Pre-wire the 1 HP motor before bolting it on the gearbox flange. Wire the motor as per wiring instructions from the motor's manufacture. Leave a loop in the cord at the motor for slack and run the motor cord down past the gearbox and rout it over to the control box securing it along the way. Keep the cord from coming contact with the moving cage and rollers.

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Attach The Lift Cage

Back the lift cage up to the i-beams. Insert the i-beams into the two channel area on the backside of the cage. There are 4 roller/plates to install (two left and two right). Take the roller and white spacer off the shaft of the roller/plate. Insert the shaft through the hole of the roller-channel while placing the roller and white spacer on the opposite side of the roller-channel. The white spacer will be up against the inside of the i-beam and then the roller. Insert the 3/8" bolt with the bolt head inward and the nut facing outward of the roller-channel. You will need to tip the front of the cage up enough to get the bolts in the holes of the roller wheel plate. Apply anti-seize (silver compound) on all roller axles and stainless steel threads. It keeps the stainless threads from seizing up and make the lift rollers roll smoothly with less friction.

Attach Cables

Insert the I-Bolts through the holes in the horizontal angle on the backside of the cage. Use the

supplied lock nut /set-screw This angle is positioned in-between the two roller channels for the i-beams

to travel in. Use the supplied s/s shackles to connect the cable ends to the s/s I-Bolts.

Midi Lift (no Brake) Follow above instructions.

Maxi Lift (with Brake System) An extra step is added to the above instructions about attaching cables to the Maxi Lift model. Insert the I-Bolt through the angle on the backside of the cage and also through a slot in the brake arm as seen in the brake system instructions.

NOTE:

Apply the lock-tight to the threads of the i-bolt, nut, and set-screw after making the final adjusting making the tension equal on both cables. Do this while the cage is suspended off the ground.

Winding Up The Cables

You should now be ready to wind up the cables on the spooler (grooved aluminum tube). Put the control box in manual mode and rotate the spooler where the cables are straight down before starting to wind up the cables. Have someone (wearing gloves) hold tension on the cables and line up both cables with the corresponding groove on the spooler. Start the lift traveling upward by pressing the up button on the hand held remote or control box face plate. Make about 3 or 4 cable wraps on the spooler and stop the the lift. While someone is still holding tension on the cables, the other person should be in position to make sure the cables are in the same groves on both sides of the spooler. Finish winding up the cables making sure the cables are tracking correctly in the spooler groves. If the cables resist following the groves or try to wrap on top of itself, the motor is running in the wrong direction. Directions for changing the motor direction is simple to fix by changing two wires at the motor. (see motor wiring instructions)

Set The Limit Switches

Proximity or Rotary limit switch. Follow the instructions for the correct limit switch.

NOTE:

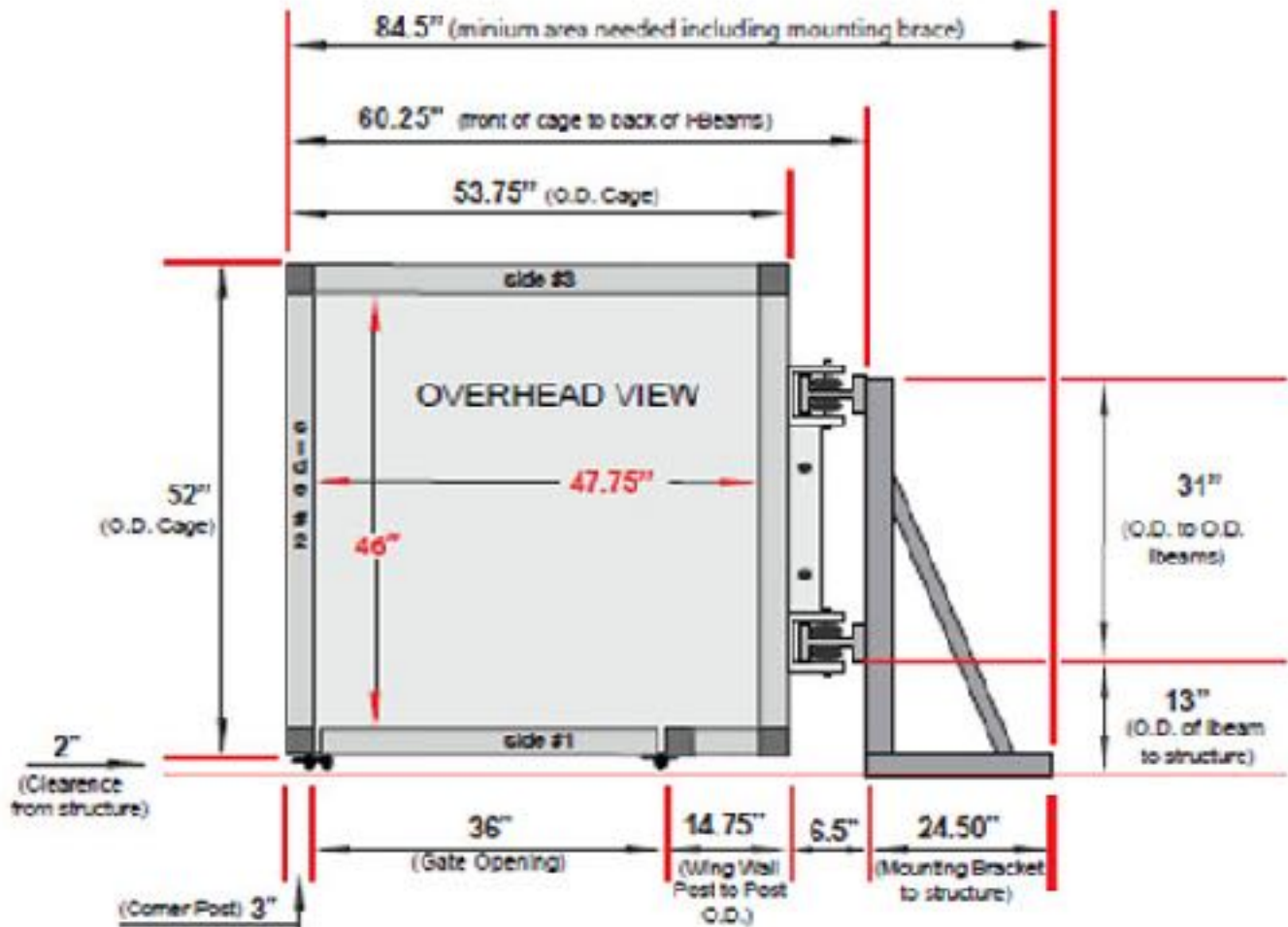
SET THE BOTTOM LIMIT TO STOP ABOUT 3" OFF THE SURFACE.

CARGO LIFT MUST BE SUSPENDED BY THE CABLES AT ALL TIMES.

THE CAGE WEIGHT KEEPS THE CABLES IN THE SPOOLER GROOVES.

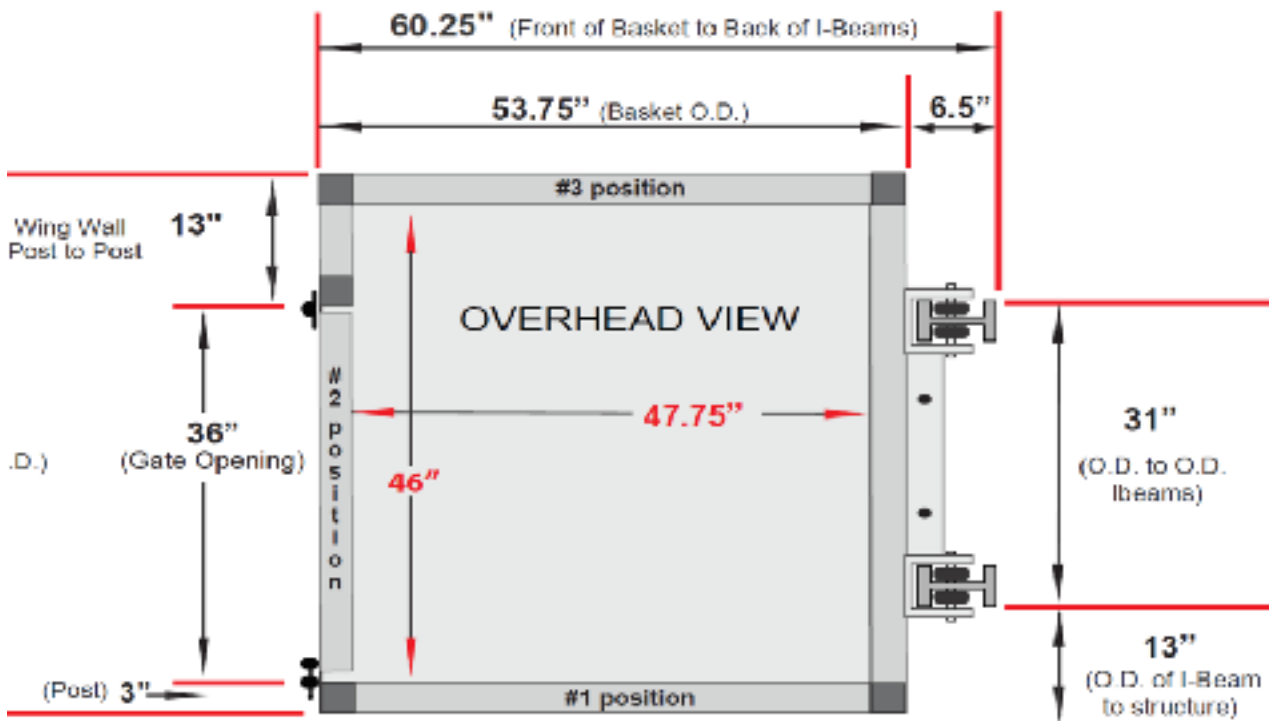
Dimensions for Maxi and Midi Lift

Gate Positions for sides #1 or #3
(shown w/side angle brace)



Gate Positions for side #2

The wing-wall can be placed on either side of the standard 36" gate opening. Custom size gate openings are an option.



PROXIMITY SWITCH



- 1) The lift cage has predrilled holes on both sides of each roller channel. Attach the actuator to the side that best fits your lift site. The arrow in the center of the actuator and switches must point at each other. Also, the switch wires must come out of the bottom of the switch to keep moisture out. Leave a small loop in case adjustment need in the future.
- 2) Move lift cage to the bottom stop position.
- 3) Mount a switch to one of the two angles with predrilled holes using the supplied machine screws.
- 4) Align the switch and angle to the actuator with the long slotted holes on the back side of the beam. Adjust the angle by moving it about 1/2" from the edge of beam to match up with the actuator. Mark and drill holes in the center of the slots. Attach with supplied machine screws.
- 5) Repeat the above steps for the upper stop position.
- 6) Secure the switch wires running up the back side of the beams with wire ties as they go to the control box.
- 7) Connect the switch wires in the control box. The color of the wires are red and black. The two black wires are connect to the black limit switch wire in the control box. Connect the red wire from the bottom switch to red limit switch wire. Connect the other red wire from the upper switch to the blue limit switch wire in the control box.



Rotary Limit Switch Install Procedure

Install Limit Switch. Look at the lifting head and find the flat mounting plate opposite the side of the gear box. This flat plate is where the limit switch box will be mounted. At the end of the spooler (*cable-winder*) is a hole drilled through both sides to insert the supplied S/S bolt and a lock-nut to secure it with. The bolt will fit sloppy but, it is by design. Now place the limit switch box onto the flat plate and slide the turning fork inside the end of the spooler and straddle the S/S bolt you just installed. Slide the turning fork forward enough to allow the turning fork's shaft to clear the edge of the flat plate. This will allow the machine screw connecting the turning fork to the limit switch to rotate without hitting the flat plate. When the turning fork is, *centered in the spooler, off the edge of the plate, and is in straight alignment*, the switch box can be fastened to the flat plate. Use self-taping screws or appropriate sized machine screws to fasten to the flat plate.

Routing Cords. Run the limit switch cord to the back edge of the lifting head. Drill small holes along the way over to the motor and gearbox side of the lifting head. Attach the limit cord with wire ties. Leave a loop of slack at the limit box before your first wire tie. Make sure the cord is secured in enough places to keep the cord from coming in contact with the rotation of the spooler. The motor cord will meet up with the limit switch cord at the gearbox. Run these two cords together using wire ties and/or staples as they are routed to the control box. The Gem control box should be mounted to the upper deck railing or wall for convenience and security.

At the Control Box. Remove the four screws on the yellow face plate. Be careful when removing the face plate. The ribbon tape on the backside of the face plate is connected to the mother board and two black wires connect to the on/off toggle switch. Set the face plate aside to complete the wiring. The limit switch cord has three 18 gauge wires (red, blue, black) and connects to three matching wires in the control box. They are taped together with a label and not connected to anything. Use blue wire nuts to connect wires. Red to Red wires for the down limit, Blue to Blue wires for the up limit, and the black wires are common and all three are tied together.

Setting the Up Limit.

1. Use the emergency over-ride (*located on the face plate*) to move the cargo lift up to match the upper deck floor surface.
2. Remove the limit switch cover and loosen the retainer screw in the center of the two cams (just enough to turn the adjustment screws).
- 3) Adjust the screw #2 so the cam engages the micro switch roller arm ***in the direction the cam was turning***. Make sure you know which direction the cam are turning.
- 4) Test your adjustments by using the face plate in the control box or use the remote to lower the lift about 2 feet before sending the lift up to test your last adjustment. Adjust #2 screw to get the right landing results. This is ***VERY TEDIOUS PROCEDURE***. Adjustments are made in the smallest increments.

Setting the Down Limit.

The procedure for setting the down limit is the same as the up limit. Except when testing the down adjustments, make sure you have someone keep tension on the cables. If the cage touches the ground, the cable will come out of the winder and you will need to re-spool the cables. Set the down limit so the cage stops about 3" off the ground

Inside the Black Limit Switch Box

