

Trus-T-Lift™ 750

Installation Manual

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Revision E – Aug 15, 2016

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Section 1: Introduction

Thank you for selecting the Trus-T-Lift™. When operated properly the Trus-T-Lift™ is designed to provide years of trouble free service. This manual is provided to show you how to install and operate the lift safely and efficiently. Please read this manual thoroughly before installing and operating your lift for the first time. We recommend your lift be installed and serviced by a qualified technician. If you are having problems installing the lift call our technical support line at 1-800-563-4382.

Section 2: Safety and Warnings

The following notations will be used through this manual to indicate areas that may present special risks or consideration.

DANGER

Danger messages indicated an imminently hazardous situation, which, if not avoided, results in serious injury or even death.

Warning

Warning messages indicate a potentially hazardous situation, which, if not avoided, could result in serious injury, death, or damage to equipment

NOTE

Note messages provide information, such as reminders, general information or additional guidelines that may provide additional guidance to the installer.

HAZARDS and WARNINGS **Warning**

Read all instructions thoroughly before installation or use of this lift. Failure to following the instructions in this manual and the associated manuals for testing and operation could result in serious injury or death. In addition, it will render RAM's warranty null and void.

Do not connect or disconnect wiring while the power to the equipment is on. Before servicing, disconnect all power to the equipment. Failure to do so could result in significant injury or even death.

System may start unexpectedly upon application of power. Unpredictable equipment movement may result in serious injury or death. Use caution when applying power to the unit during installation process.

RAM Manufacturing Ltd. (RAM) disclaims any and all liability for any personal injury or property damage resulting from the operation of a product that has been modified from the original design. No person or company is authorized to change the design of the product without written authorization by RAM.

Do not use an improper voltage or one that provides poor quality power. This may present a significant FIRE HAZARD and/or permanent damage to the equipment.

The tower component of all lifts over 52" travel must be secured to the building for additional support. For commercial installations the tower shall be secured to the building for all lifting heights. Failure to secure a tower to a support wall will likely lead to severe injury or even death.

Do not override any of the safety devices provided with the lift. Doing so will likely lead to serious injury or even death.

Ensure that there is nothing obstructing the carriage travel before operating the lift.

Ensure there is a minimum of 2in (50mm) and a maximum of 3in (75mm) clearance between any part or edge of the carriage that could possibly be used as a supporting handhold and any part of the fixed installation to prevent the trapping of a hand during the travel of the carriage. See RAM installation drawings for details.

The lift is intended for use by people and not to be used for cargo or other purposes. Lifting capacity is up to a maximum of 750 lb. unless otherwise noted on the lift and in RAM's supplied documentation. **(DO NOT OVERLOAD THE LIFT)**. Overloading the lift will render RAM's warranty null and void.

The list of warnings may not be exhaustive, due care around equipment should be observed.

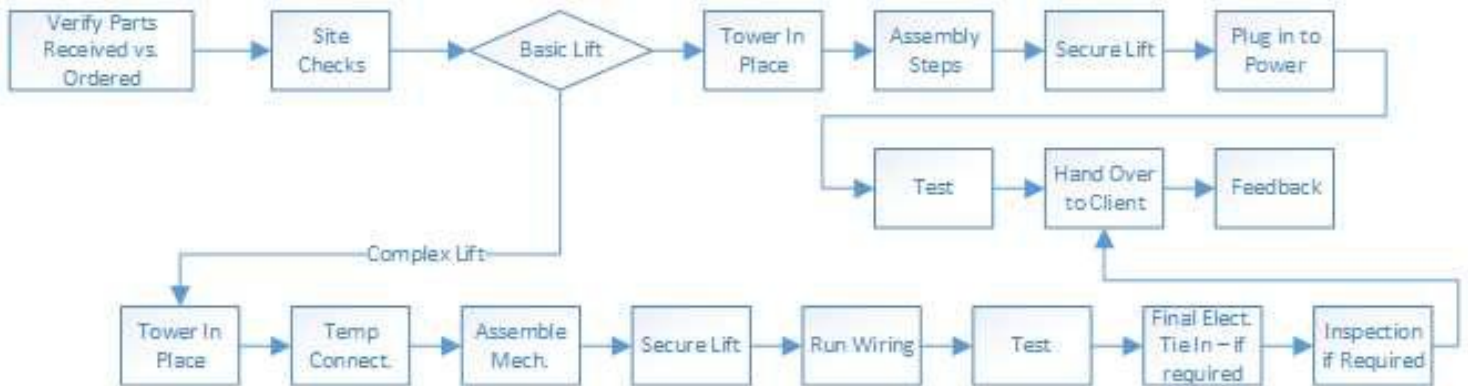
If uncertain, please contact the manufacture or a qualified installer.

For product updates and bulletins, please refer to our website
www.trustram.com

Section 3: Jobsite Tool List

- Hammer
- 3/8" Drive Ratchet
- 3/8" ratchet drive x 6" long Extension
- 3/8" Drive Sockets- 3/8", 7/16", 1/2", 9/16", 3/4", 7/16", 15/16" Deep (15/16" socket will come with the lift originally)
- Combination Wrench- 3/8", 7/16", 1/2", 9/16", 3/4"
- Wire Cutters
- Wire Strippers
- #2 Robertson Screwdriver
- Flat Blade Screw Driver
- Terminal Block Screw Driver (0.6x3.5)
- #2 Phillips Screwdriver
- Tape Measure
- 24" Pry Bar – suggested only
- 1½" Adjustable Crescent Wrench
- 1/8" Allen Key
- Small Magnetic Level
- Utility Knife
- Electrical Meter (Amperage/Voltage/Resistance) – suggested for checking power input and during testing or troubleshooting
- Concrete Drill
- 3/8" Concrete Bit

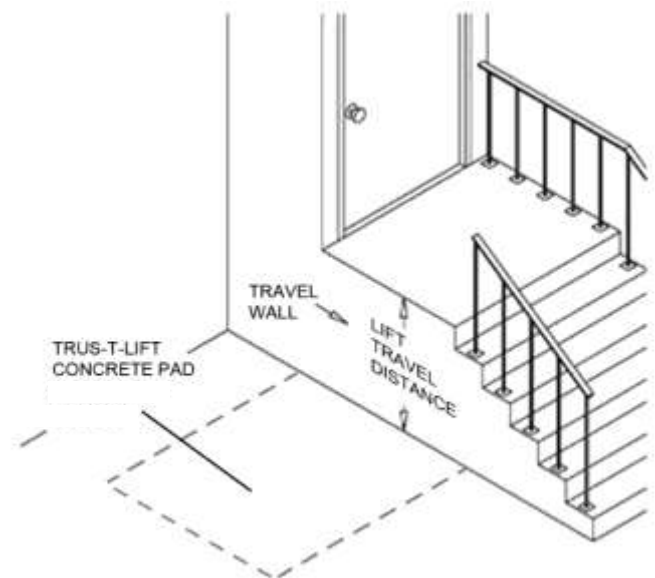
Section 4: Overview of Installation Process



Section 5: Installation Site Check

5.1 Mounting location

- The Trus-T-Lift™ requires a solid, smooth, and level mounting surface.
- When mounting on a concrete pad ensure there is a minimum of 6in from any anchor point to the pad edge to prevent cracking the concrete.
- The specific size of the lower landing may vary depending on the specific lift in question. Consult your job specific drawings for size requirements.
- The mounting surface must be solid enough to support the lift and its maximum rated load. If you need a load diagram please contact your RAM dealer or call 1-800-563-4382.



Note: The Trus<T>Lift™ ships with four 3/8" x 2 3/4" concrete wedge anchors.

For wedge anchor installation information visit <http://trustram.com/concrete-anchor/>

5.2 Travel Wall

The travel wall is the wall below the upper entrance/exit point of the lift (Figure 3). **This wall should be vertical, smooth, and free of gaps or protrusions for the entire travel distance of the lift.**

DANGER

If the travel wall is not prepared in compliance with the above statement possible crushing or shearing hazards may be present and this will likely cause serious injury or harm.

5.3 Travel Height

Ensure that the travel required from the bottom of the pit to the top landing surface can be accommodated by the maximum lift travel specified on the order documents provided. If not consult your RAM dealer or call RAM at 1-800-563-4382 with the serial number of the lift to review.

5.4 Verify Dimensions of Shaft

If your lift is intended to be placed in a shaft, the dimensions of the shaft at each landing as well as the squareness of the shaft and plumbness of any travel walls should be inspected prior to any installation. Failure to have square and plumb walls may result in the inability to install the lift correctly. These dimensions can be obtained on the RAM installation drawing specific to your application. If you do not have them please consult RAM for a new copy.

5.5 Verify Power Supply

5.5.1 Residential

A 110 VAC 15A electrical receptacle must be provided within 6 feet of the tower side of the lift. You can use an extension cord if required. Total length of line including the cord attached to the unit must not exceed 20 ft. Use only 14 gage extension cord. Residential lifts should use a dedicated circuit where possible. Commercial applications require a disconnect and a dedicated circuit.

5.5.2 Commercial

A 110 VAC – 15A electrical supply is required but all commercial lifts are required to have their final connection hard connected by a licensed electrician. In addition, disconnects for the power will be required and these are typically supplied by the electrical contractor. For specific guidance on disconnect

locations you should review RAM disconnect guidance and consult with your local inspector.

Warning

Do not use an improper voltage power source or one that provides poor quality power. This may present a significant FIRE HAZARD and/or cause permanent damage to the equipment.

5.6 Verify Phone Line

Check to see if a phone line has been provided by the General Contractor as part of the site preparation – if required for a two communication device.

Section 6: Basic Lift Assembly

RAM manufactures numerous lift configurations. For lifts that have additional options (including commercial lifts) please see Section 6. The basic lift assembly instructions apply to all lifts regardless of configuration.

Position the tower on the mounting deck close to the final install position. **(Figure 4)**
Slide the base legs under the base angles on the tower.

NOTE

Choose a location where the carriage components can be assembled easily with the intention of moving the unit into final position after tower, base legs and carriage are fully assembled.

Warning

Use safe lifting practices along with a dolly or other appropriate lifting equipment to move the tower into place. Failure to do so may result in serious injuries.

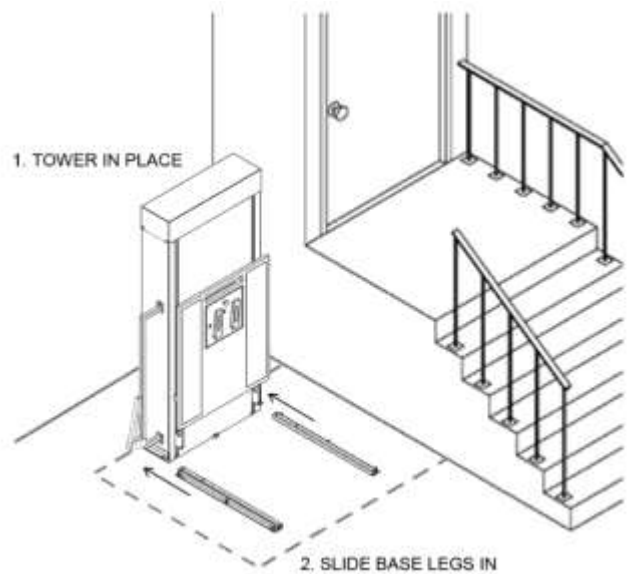


Figure 4: Position Tower and Base Legs

Securely fasten base legs to the tower as shown in **Figure 5** using provided ½ NF x 1 ¼” cap screws, ½ lock washers and ½ flat washers.

Adjust the front and back base leg load-support screws to lift the base frame slightly off the ground.

NOTE

Do not attach the base frame to the ground at this point, this setting will ensure the lift is supported on the outer points of the base frame for maximum stability. Later in the process the mid-load support screws will be adjusted to just touch the floor with no load on the carriage before the base legs are anchored to the ground.

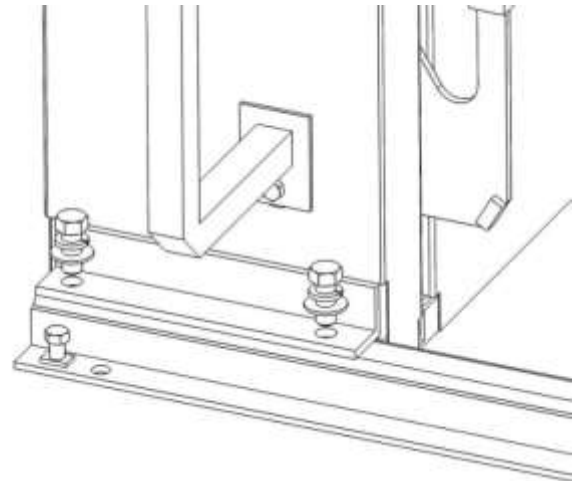


Figure 5: Attach Base Legs to Tower

6.1 Attach the platform to the tower

Raise the guide frame using the manual crank or by temporarily plugging the unit in to a power outlet.

NOTE

If the lift was purchased with any upper or lower interlocks or safety pan, the lift will not run with the control paddles until those items are properly wired into the lift as per the electrical diagram in your documentation package

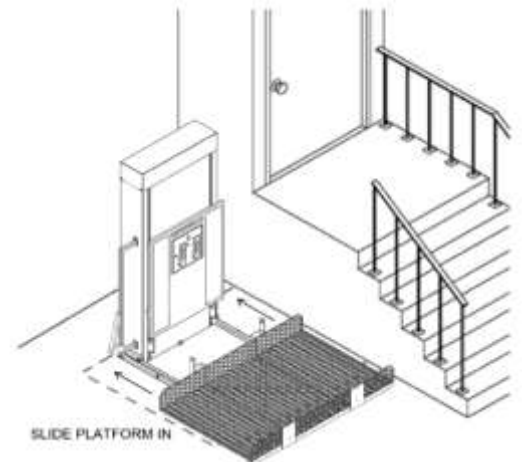


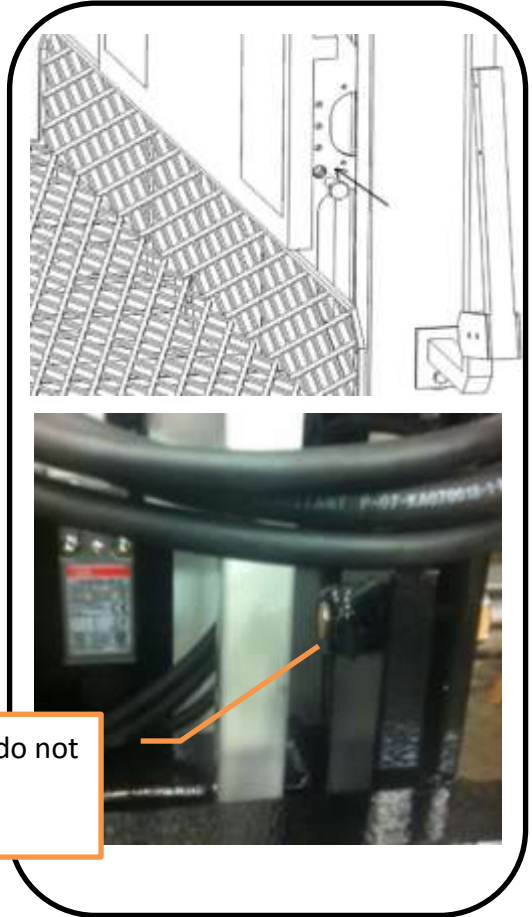
Figure 6: Slide Platform In

Slide the platform into place on the base frame (Figure 6), be careful not to scratch the base frame. Hint!! Use packaging foam from the shipping crate to protect the base legs when installing platform.

Lower the guide frame to line up bolt holes on the carriage and install the bolts (Figure 7).

NOTE

tighten the bolts until the end of the bolt is 1/8" of an inch out of the lock nut, do not over tighten the bolts.



1/8in clear of end of nut – do not over tighten

Figure 7: Attach Platform

6.2 Install Control Wall

Install the control wall by sliding it in to place on the upright posts of the platform as shown in **figure 8** and secure using the cap screws provided.

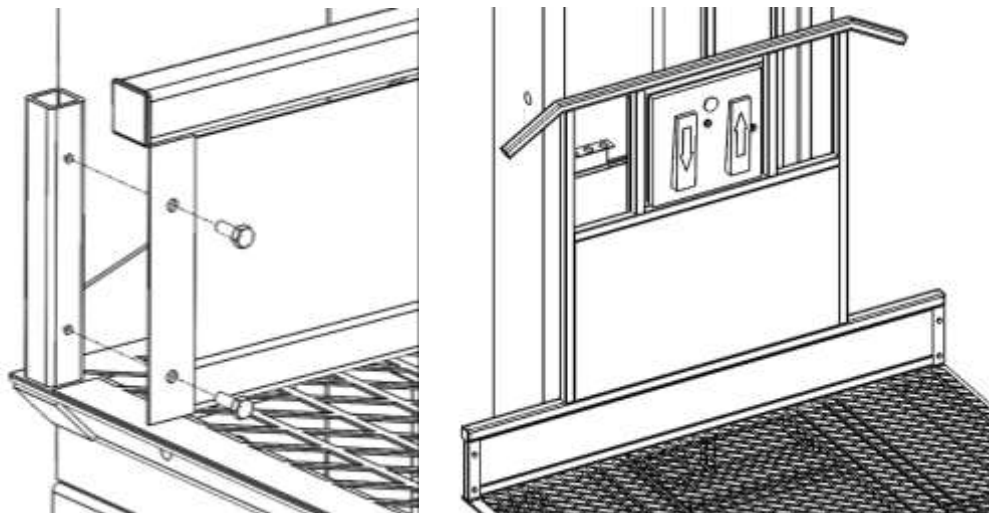
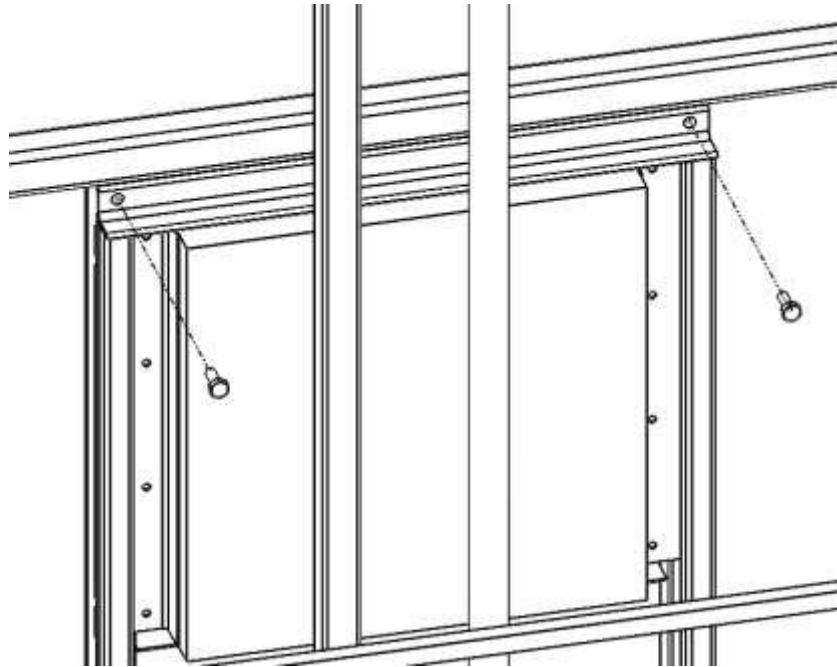


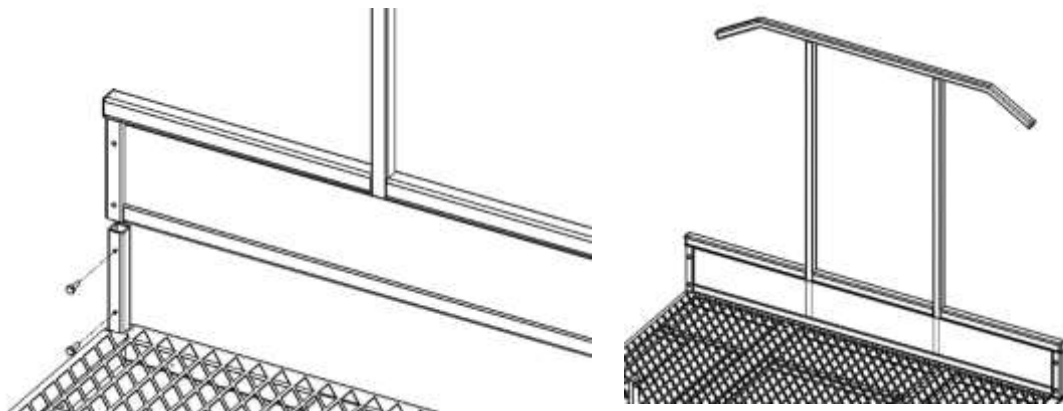
Figure 8: Install Control Wall

Once in place secure at the top edge to the guide frame using the Cap screws as shown below.



6.3 Install handrail

Install the handrail wall by sliding it in to place on the upright posts of the platform as shown in **figure 9** and secure using the cap screws provided.

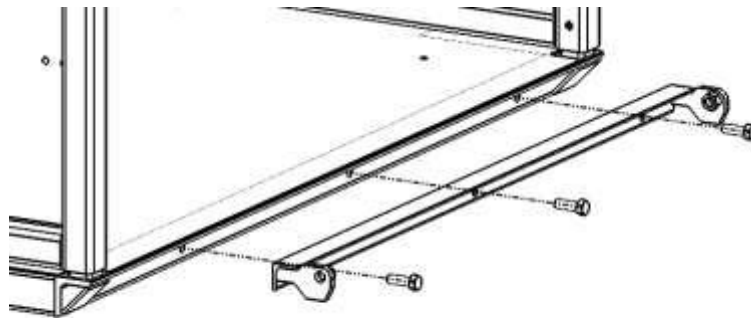


6.4 Install Toe plate assembly

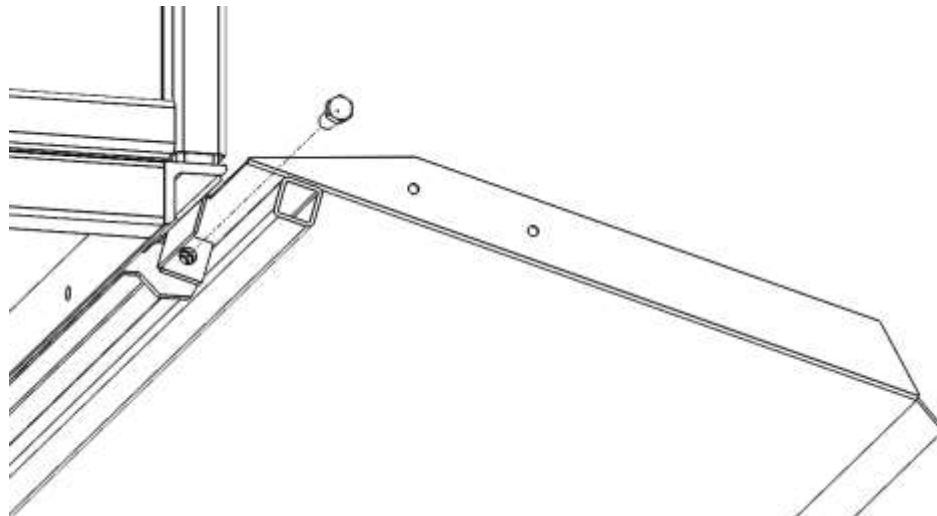
NOTE

For lifts intended to be placed in a shaft a toe plate will not be supplied as the device will not function properly in a shaft.

Raise the carriage to working height, **Figure 9: Install Handrail** a comfortable install the toe plate ramp mounting angle (if not already attached from the factory and tighten the three (3) mounting bolts as shown in (Figure 10)



Attach the toe **Figure 10: Install Toe Plate Angle** plate to the toe plate ramp mounting angle using the 2 supplied bolts. The toe plate is attached



from the outside edge of the toe plate and using an extended socket/ ratchet set. It may be easier to bring the lift lower to the ground and rest the toe plate ramp on the ground when installing.

Install the toe plate rocker arm as per (Figure 11)

Warning

The toe plate is designed to resist a static force of 125 Lbs. to prevent a manual wheel chair from rolling off of the platform. It is recommended that a carriage gate is used to provide additional protection when lift is being used by powered wheelchairs, powered scooters, standing persons or if the user has limited control of their wheelchair when entering the lift at the upper landing.

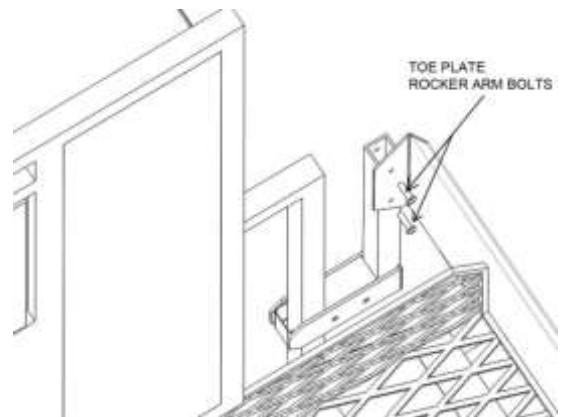


Figure 11: Attach Toe Plate Rocker Arm

6.5 Level the Platform

Using the two platform levelling screws provided (Figure 12) Adjust the platform tilt so that the platform is level with both top and lower landing when a load is applied to the carriage. In most cases setting the levelling bolts to have the platform be even at 50% of expected working load is preferred.

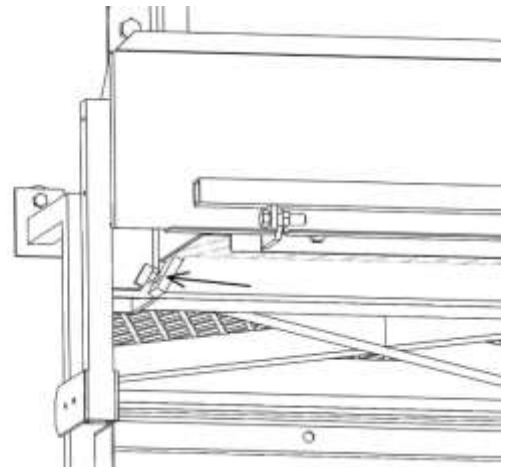


Figure 12: Platform Levelling Screws

6.6 Adjust clearance to travel wall

Position the tower and adjust the front and back base leg levelling screws (shown in figure 11a) so that the carriage runs evenly along the travel wall with **a gap between the platform edge and travel wall of less than 5/8" (15 mm) for installations in Canada and 3/4" for installations in the USA.** An example of good running clearance and poor running clearance is shown in figure 13 and 14.

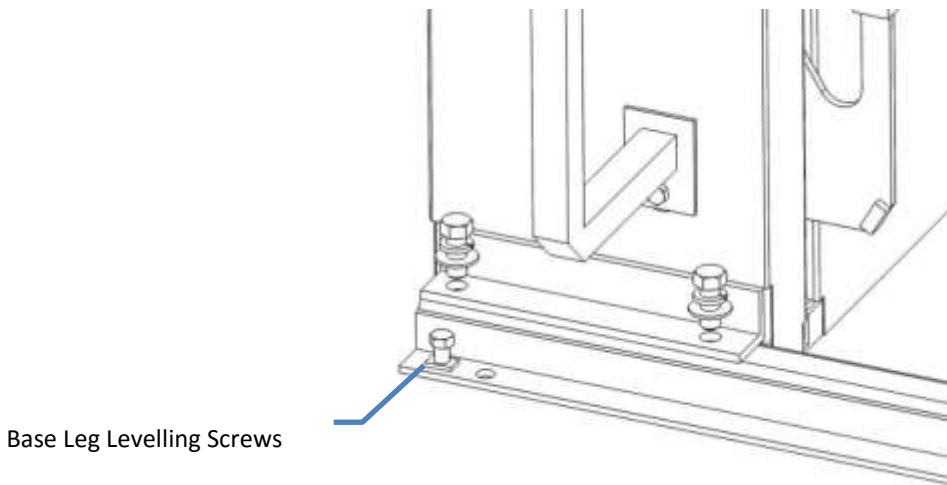


Figure 13: Base Leg Levelling Bolt Location

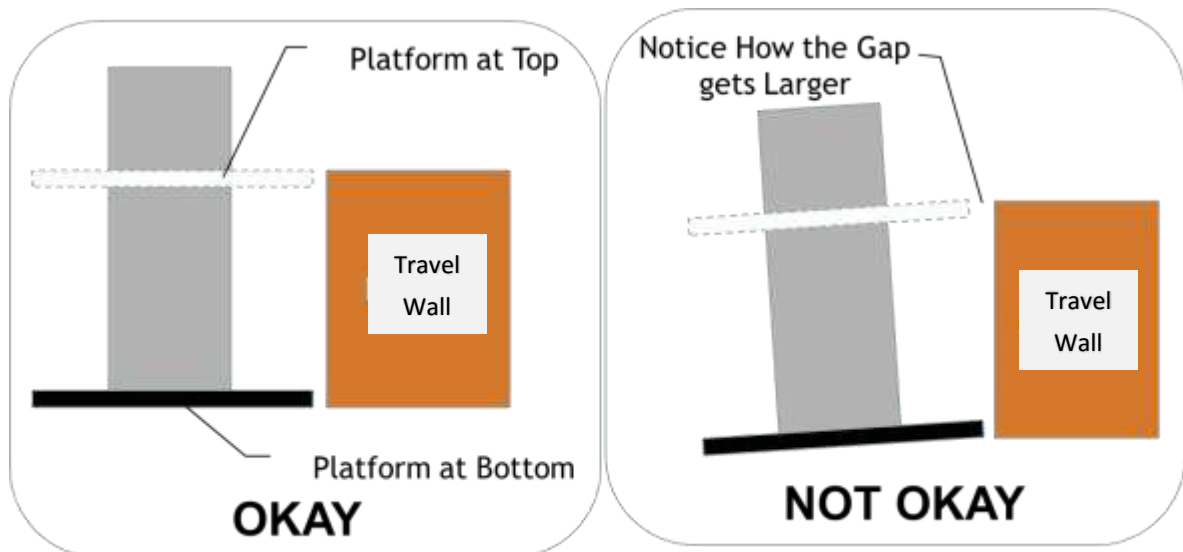


Figure 14: Example of Poor and Good Travel wall alignment

6.7 Secure the lift to the foundation

Drill 3/8" holes through mounting holes in base legs. Use provided concrete anchors to attach base legs to concrete. (If attaching to another material then concrete use appropriate fasteners for the material you are working with).

If working with a commercial insulation or if lifting height is greater than 52", attach the top of the tower to the building prior to attaching the base frame.

Lightly tighten middle levelling bolts until they touch the concrete pad, and then tighten them an additional ½ turn.

For wedge anchor installation information visit <http://trustram.com/concrete-anchor/>

See Section – Mounting the Tower to a Wall later in this manual for securing lifts that are taller than 52in of travel and in commercial applications

6.8 Setting the Upper and Lower Stopping Positions (Upper and Lower Limits)

The upper stopping point (**upper limit**) bracket is located on the front cover support tube behind the front cover of the main tower (Figure 15). Remove the top cover and front cover, and use a Robertson screwdriver to loosen the upper limit bracket. Slide the bracket down until the upper limit switch clicks. Tighten 2 screws on the limit to hold it in place. Move the lift down and back up to test that the limit is set at the correct height to stop the platform at the upper landing. Once the limit is in the correct place, use the self-drilling and tapping screw provided to set the limit in place.

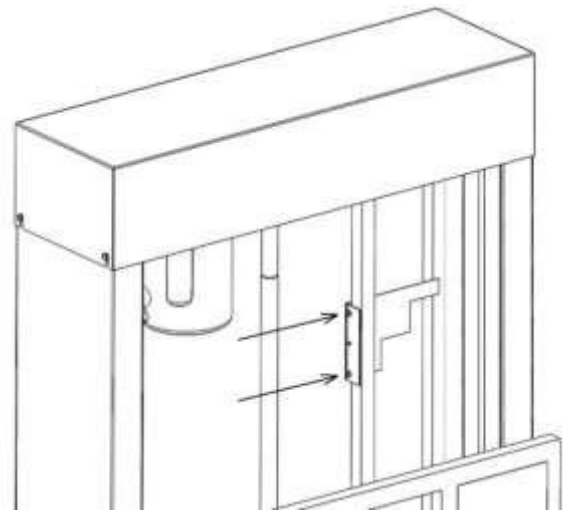


Figure 15: Set the Upper Limit Bracket

When replacing the front cover ensure that the gap between the side covers and the front cover is even. **If it is not even damage could be done to the electrical/ control cables** that run between the panels as they move up and down with the carriage. See figure 16.

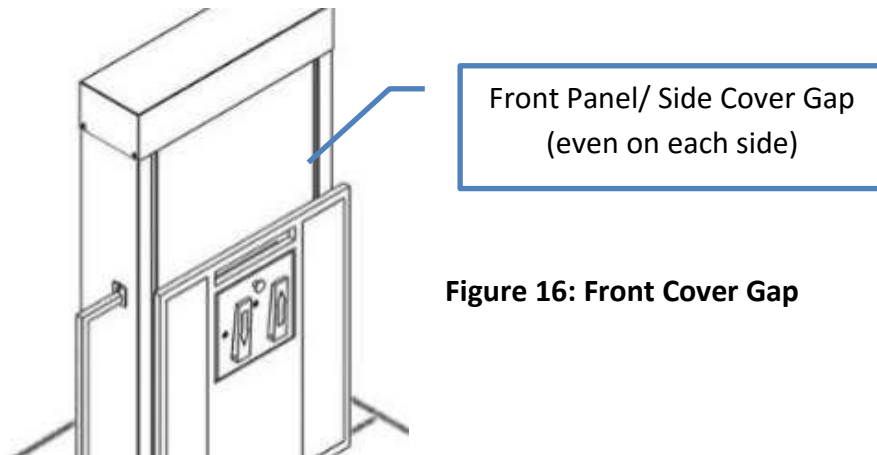


Figure 16: Front Cover Gap

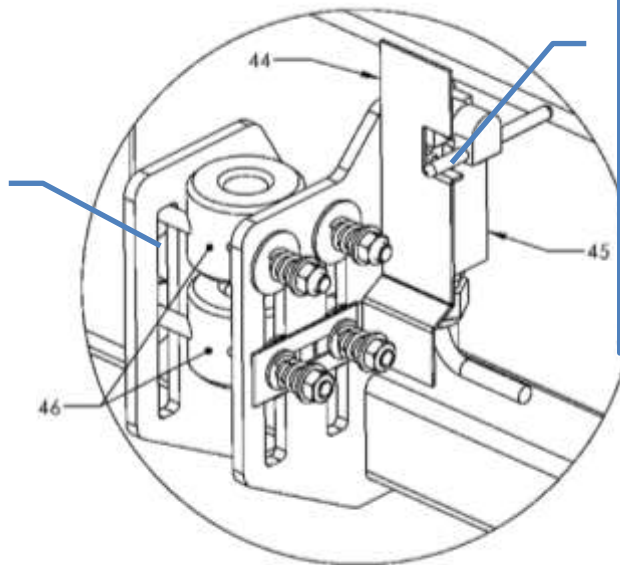
The lower stopping point (**lower limit**) for a RAM Trus-T-Lift™ is not typically set in the field. With RAM's Zero-Load Start system the lift turns off automatically when the carriage platform reaches the ground. The lift will come to a stop as the lower limit sensor is actuated. This occurs as the drive nuts continue to move through the slots in the guide frame for a short time after the platform comes to a rest on the lower landing.

To see an example of this occurring please see the video at <https://www.youtube.com/watch?v=KHpyx5blPE0> or just go to www.trustram.com and look for our link to videos.

Warning

It is critical to have the lower limits/ drive nut switch set up properly and functioning as this is a critical part of the safety features on the equipment. Failure to set and test this item during installation may result in serious risks and injury.

As platform or mechanical stops (for lifts equipped with a safety pan) comes in to contact with the ground the bolts will travel down in the slot bringing the safety bracket (item 44) down as well.



Lower limit switch (item 45) not activated yet but as drive nuts (items 46) travel further the switch will get pressed and stop lift movement

DRIVE NUT/LOWER LIMIT SWITCH DETAIL

In cases where the RAM Trus-T-Lift™ is being used to replace a product that had a pit that was deeper than that required for our product you may need to stop the lift before the lift platform comes in to contact with the bottom of the pit. In these cases you can use some form of rigid blocking that will withstand the full load of the landed carriage platform. If you are uncertain whether this is the case please consult your RAM Dealer or contact RAM technical support.

NOTE

There are some RAM lift products that do have a lower limit stop switch that is required to be set. This will be shown on the electrical diagrams and typically it is typically set by simply sliding a metal plate up or down and securing it in place. The specific location of the plate can vary and if you are not sure please consult RAM for clarification by citing your serial number.

Section 7: Installing Additional Optional Equipment

The installation of a lift with options differs from a basic unit in that it **requires all peripheral safety devices (i.e. upper interlock, lower interlock and safety Pan) to be wired up at least temporarily in order to run the motor. The following initial steps will help you temporarily get the lift to move up and down but you will need to complete all steps and test the unit.**

7.1 Identify the Optional Components for your Lift

Not all lifts are shipped with the same components. Be sure to identify all the options you have purchased before assembly. Follow each step carefully to ensure proper functionality.

The lift is then disassembled into its separate components for shipping. All fasteners required to assemble the lift are re-installed in their respective positions after disassembly, except for the Lower Mechanical Stops (5/8" X 3" Carriage Bolts) included with the small parts bag.

7.2 Locating the Upper Junction Box

Call stations, upper gates and interlocks terminate in the upper junction box under the cover at the top of the lift.

Remove the cover from the top of the lift.

NOTE

Depending on the lift configuration, it may not run with the top cover removed due to safety codes.

Inside there is a junction box on the right side, remove the cover of this junction box. Inside the junction box there is a cable with individual wires labeled with numbered tags. Number tags are also on the end of the wires coming from the various options to be hooked up. **Figure 17**

Mount the call station, upper gate and or interlocks into their respective positions. Run the wires from each option to the upper junction box through conduit. Using the wire nuts provided match the number on the wires to complete the terminations.

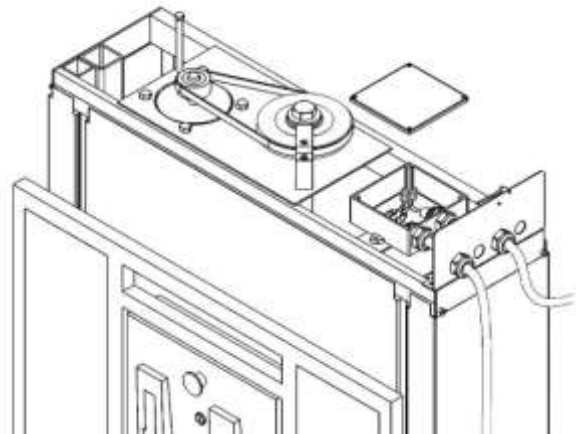
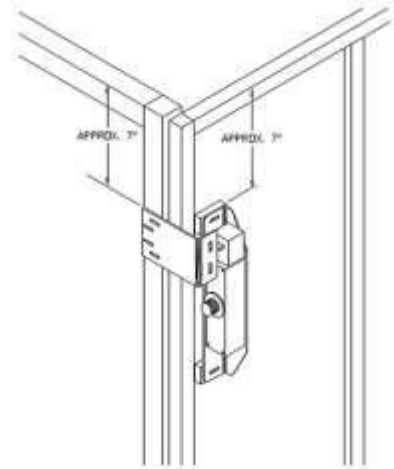


Figure 17: Upper Junction Box

You can temporarily connect the upper-gate/interlock wire harness and the lower-door/interlock wire harness (if provided) to the matching numbered wires in the outside junction box located on top right hand side of tower. The interlock gate latches must be inserted into the head of the interlock and **the interlocks must be set to the locked position** for the lift to operate.



7.3 Installing the Door or Gate Interlocks

There are two scenarios for installing interlocks. The first is that the interlock is pre-mounted on a carriage gate or landing gate you have purchased from RAM. The second is that you have purchased interlocks to mount on doors or gates you will be providing.

Unplug the unit.

Disconnect your temporary connections of the upper gate/interlock to the outside junction box-

Do not cut the wire numbers off, you will need them again!

Once you have installed conduit (not supplied by RAM) and run your wire leads back to the Top Junction Box on the lift. Remove the cover from the top of the lift.

Inside there is a junction box on the right side, remove the cover of this junction box. Inside the junction box there is a cable with individual wires labeled with numbered tags.

Use the wire nuts provided to match the number on the wires to complete the terminations. These connections are shown on your specific wiring diagram that will be sent with the lift documentation and will vary depending on the exact configuration.

7.4 Commercial Lift UPS

Commercial units have a UPS power supply to provide power to a light and bell pack as well as operate the interlocks if the main building power fails.

To preserve the battery in the UPS for transportation and storage the fuse is removed. You will need to re-install the 2 amp fuse supplied by RAM and taped to the inside of the upper junction box. The lift and interlocks will not operate properly until this is completed.

The UPS and fuse will either be located in a wall mount enclosure outside the lift or the UPS will be mounted inside the top cap of the lift with the fuse in the Upper Junction Box as shown in the figure below.



⚠ Warning

If you leave the 2A fuse in place and the building power fails/ is turned off/ or disconnected for more than 45 minutes the battery may be permanently depleted and a replacement will likely be required. This is not covered under RAM's warranty policy.

NOTE

Note that this UPS system is not designed to be backup power supply.

Should you require complete DC backup capabilities then visit:

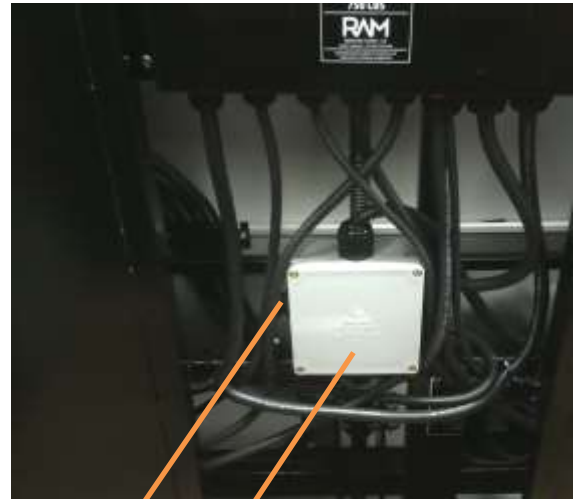
<http://trustram.com/ram-tower-of-power-battery-back-up-system/> to inquire about our Tower of Power

7.5 Installing the Safety Pan

The safety pan will come pre-assembled to a solid platform and the entire assembly can be attached to the guide frame as per the method for the basic lift earlier in this manual.

Once platform is bolted on, then connect the Under Deck Safety Pan to the Inside Junction Box located on the Guide Frame as shown in the image to the side by loosening the skin tite strain relief and running the wire through it. Connect the wires inside with wire nuts and as per the electrical wiring diagram provided for your specific lift

Access to the junction box will require the removal of either access panel on the solid control wall or the entire control wall on basic lift.



Inside Junction Box

Run wire from Safety pan through Skin Tite strain relief

NOTE

Failure to connect the safety pan properly may allow the lift to run in the upward direction but will typically prevent it from moving in the downward direction due t the safety circuit.

NOTE

If the temporary connections above are made properly the lift should now be operational with the motor and onboard control paddles once you ensure that the top cap of the lift has been replaced. You can now reconnect power temporarily should you need to move the lift up and down for the rest of the assembly process.

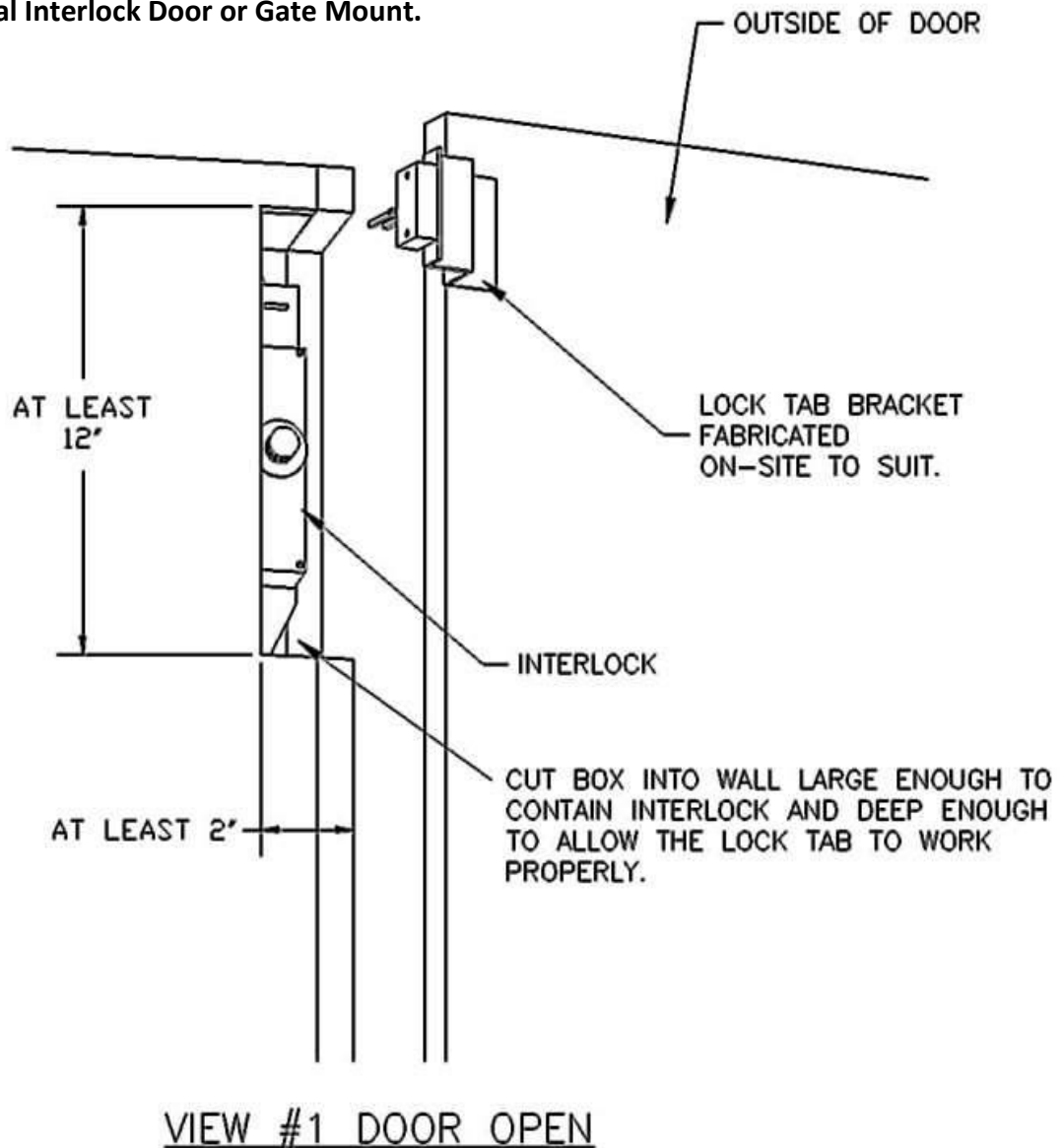
DANGER

Although the preceding steps to get the lift operational are provided the lift should be maneuvered with extreme caution during this stage as there are numerous risks that are present while temporary connections are in place. A lift should not be left unattended or be used for anyone for any purpose other than to complete the installation process. All wiring should be permanently installed and connected before leaving a lift operational. Failure to do so will result in serious injury or even death.

7.6 Mounting the Interlocks

This section applies to you only if you have purchased Interlocks that will be mounted on doors or gates that are supplied by you or a contractor. This does not apply to interlocks that come on RAM Doors and Gates. Choose the configuration that best works for your application.

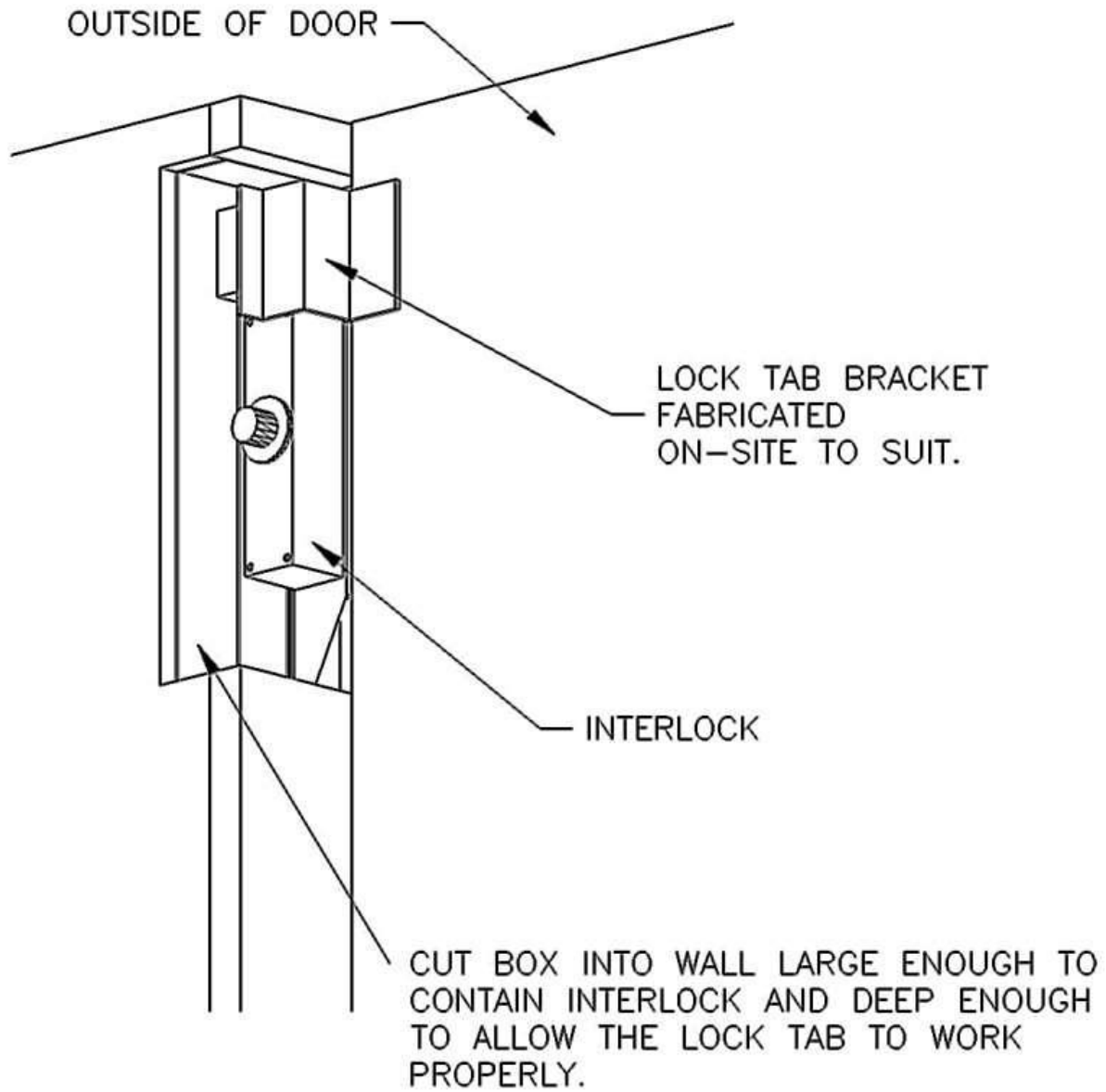
Typical Interlock Door or Gate Mount.



NOTE:

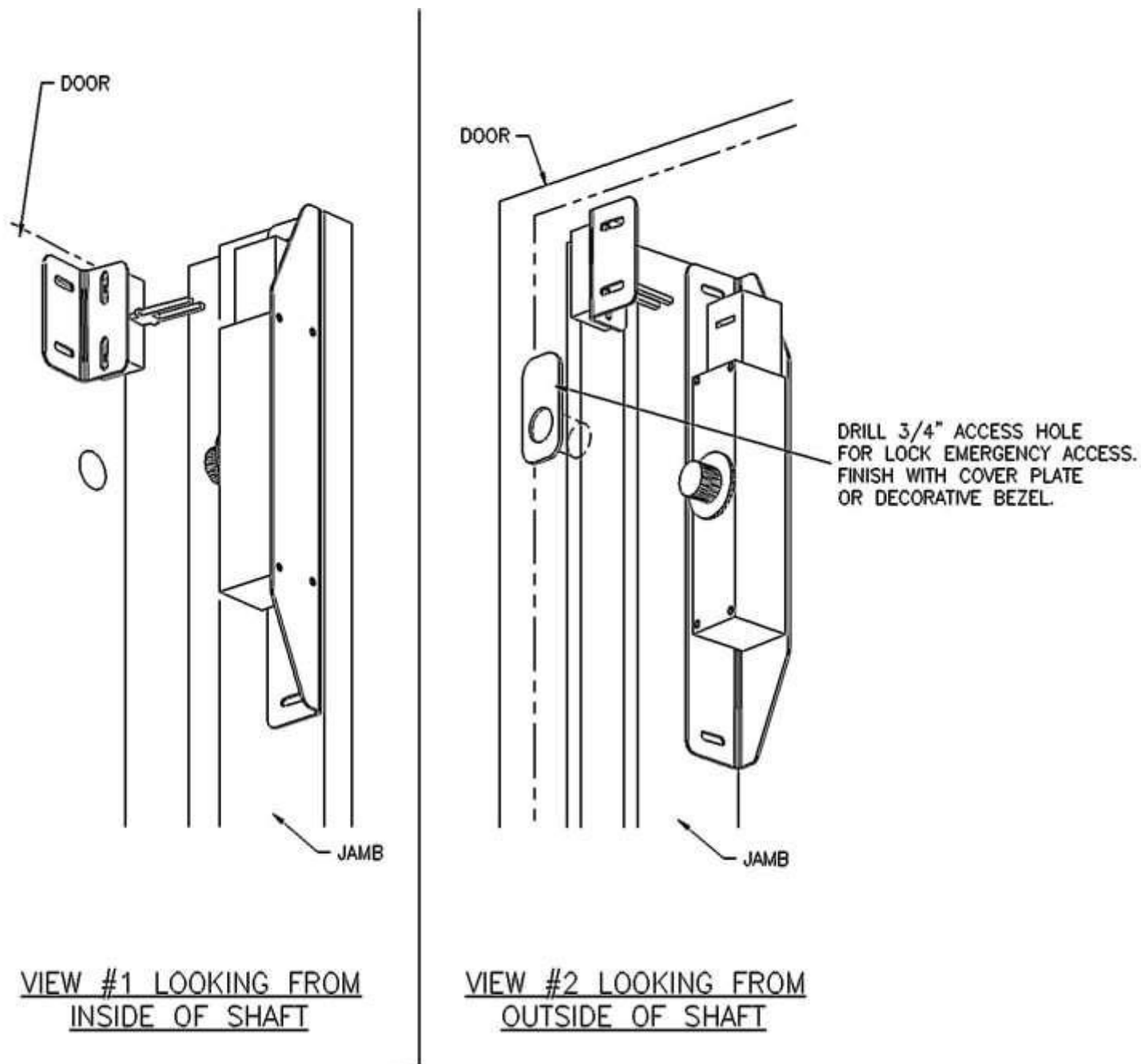
1. BECAUSE OF VARIATIONS IN CONSTRUCTION METHODS (WALL THICKNESSES, MATERIALS ETC.) ANY INSTALLATION OF THIS TYPE WILL HAVE TO BE CUSTOM BUILT ON-SITE BY THE INSTALLER.
2. THIS TYPE OF INSTALLATION WILL REQUIRE A FLUSH DOOR HANDLE OR PUSH PLATE INSIDE THE SHAFT.

Typical Interlock Door or Gate Mount.



VIEW #2 DOOR CLOSED

Typical Top Floor Door Interlock - Shaft/Hoistway



7.7 Installing Remote Call Stations

Mount the Lower Remote Call Station in a suitable location.

Disconnect your temporary connections of the Upper Gate/Interlock to the Top Junction box. **Do not cut the wire numbers off, you will need them again!**

Run electrical conduit from the Call Station to the Top Junction Box and/or the Upper Gate to the Top Junction Box. Conduit is only required if arrangements for pre-wiring through walls and liquid-tite tech cable has not already been made.

Run the cable from the Call Station and the harness from the Upper Gate through the conduit to the Top Junction Box.

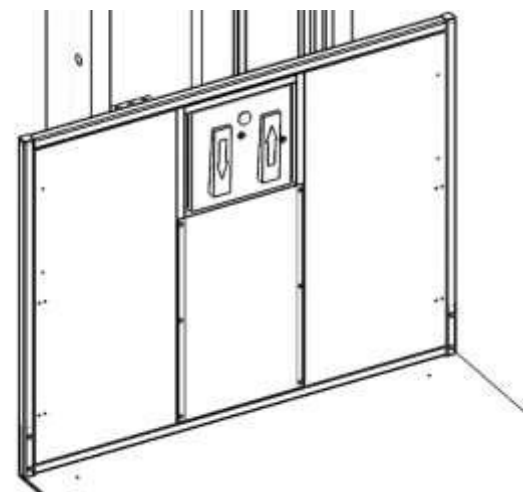
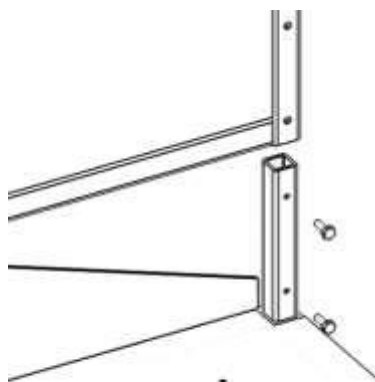
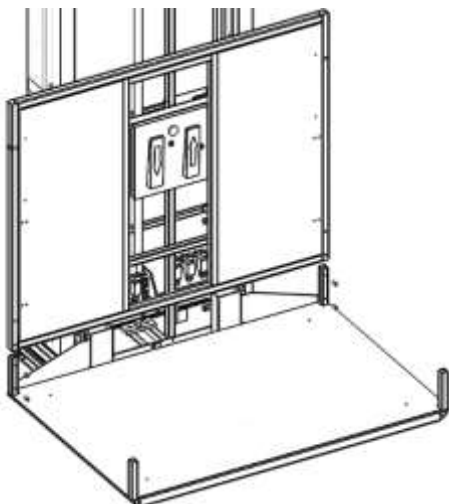
Connect all wires in the Top Junction Box as per the supplied electrical diagram.



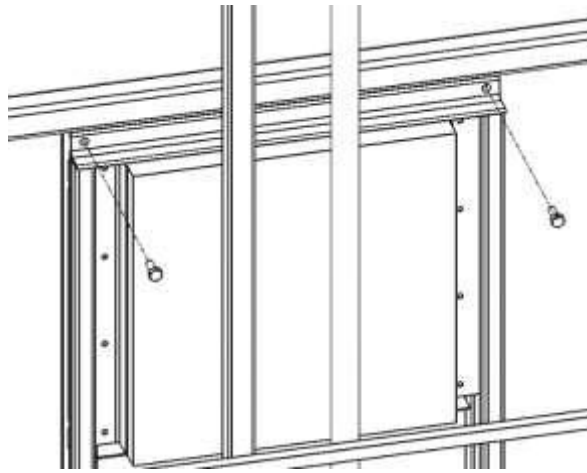
Typical Push Button Call Station.

7.8 Installing the Control Wall Extension

Install the control wall by sliding it in to place on the upright posts of the platform as shown in the images below and secure using the cap screws provided.

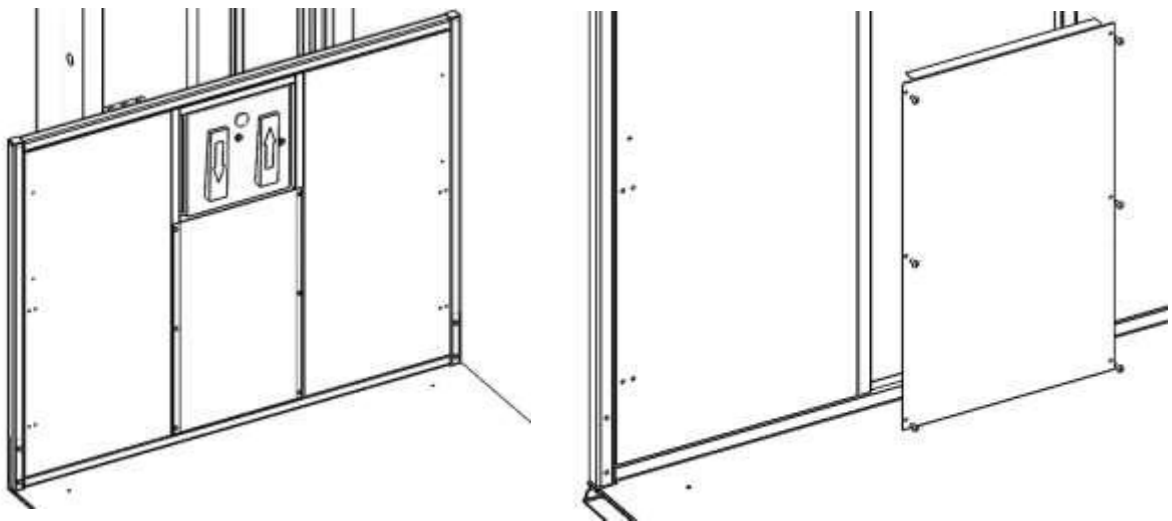


Once in place secure at the top edge to the guide frame using the cap screws provided and as shown in the image below.



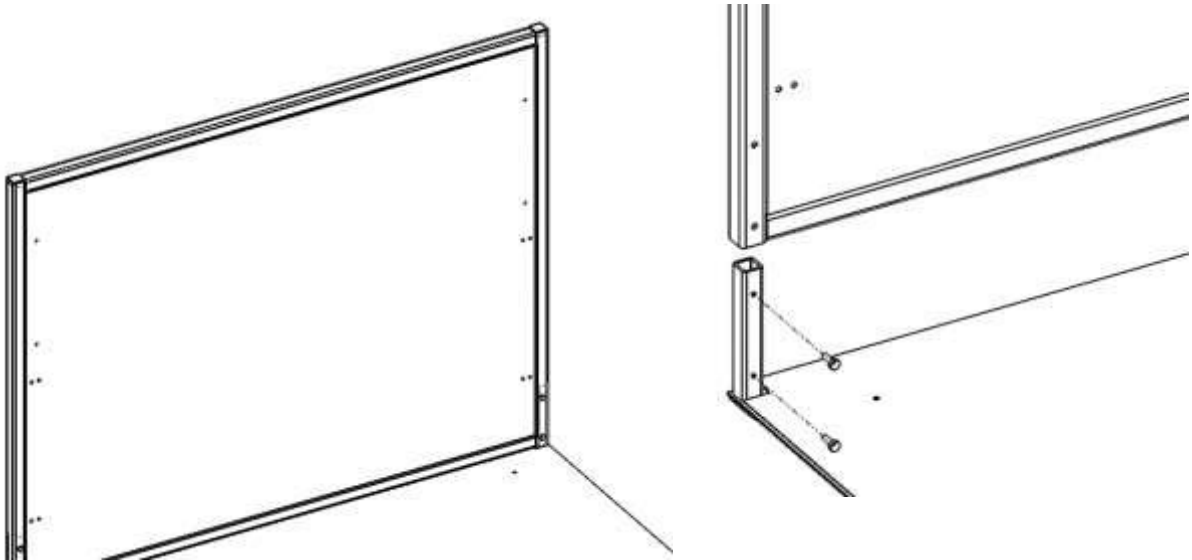
7.9 Control Wall Center Panel

The control wall has a center panel that typically comes installed and this may need to be removed during the installation process to properly connect the safety pan, should one be present, and during testing to activate limit switches. It can be removed and reinstalled as shown in the images below.



7.10 Installing the Solid Hand Rail Straight Platform

Install the solid hand rail wall by sliding it in to place on the upright posts of the platform as shown in in the images below and secure using the cap screws provided.



7.11 Installing the Carriage Gate

Mount the Carriage Gate to the Control Wall Extension as shown. Match the hinges to the holes on the Control Wall or the Handrail



7.12 Installing the Carriage Gate Interlock

After mounting the carriage gate and interlock body for the swing direction specified in the order document, proceed to mount the interlock tab to the gate door latch.

Adjustment of the Interlock Key Tab may be necessary to allow proper alignment, 2 screws mounting it to the Aluminum Gate Tab and adjust if necessary as shown.

The alignment should be done initially with 50% of expected working load centered on the platform. Then check with 0 load and 100% load to verify that the interlock will latch properly.



NOTE

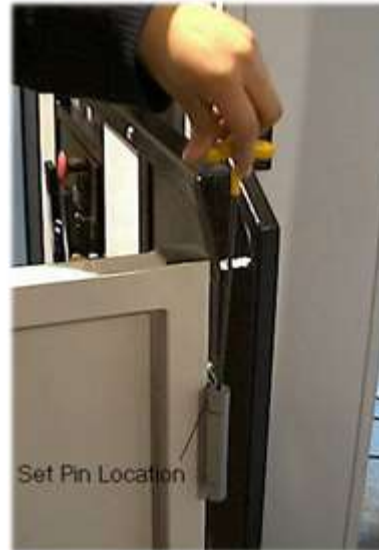
If you are struggling with the alignment of the carriage gate interlock there is a more detailed adjustment procedure on the RAM website in product manuals.

Adjust the Spring Loaded Hinge on the Carriage Gate as shown; this allows the gate to self-close against the Interlock. It should close and make up the interlock from both full open and ¼ open positions.

Use a 5/32" Allen Key to release the tension on the loaded pin (turn clock wise). Remove the set pin from the hinge.

Increase tension (clock wise) or decrease tension (counter clock wise) and reinsert the set pin.

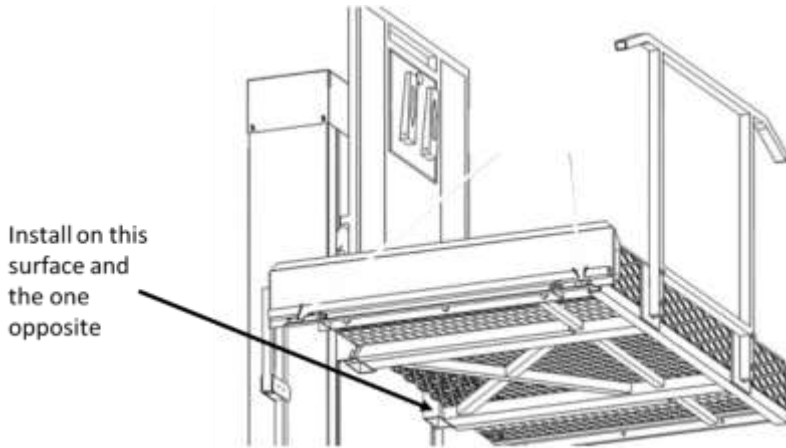
Fasten the Carriage Gate Interlock Cable to the underside of the Toe Plate Angle using the plastic Nylon Tie Straps provided as shown.



Adjust the Spring Loaded Hinge.



7.13 Adjusting Mechanical Stops



Your lift may come equipped with mechanical stops.

These stops should be pre-installed at the factory but will be in a fully retracted position.

They need to be adjusted on site to ensure proper operation of your lift.

This is particularly important if you have a solid platform that is also equipped with a safety pan.

The lift should come to a rest on the mechanical stops evenly and you adjust the stops by loosening the jam nut and then rotating the large bolt in the appropriate direction to raise or lower them.

If you do not adjust these bolts properly the interlocks, should your lift be equipped with them, will not function properly.

Please see figures to the side indicating the parts and where they are located



Jam Nut

Button Head Bolt

7.14 Mounting the Upper Landing Gate

Mount the Upper Gate to the threshold at the upper landing as shown.

Drill through the 4" X 4" Angle on the Upper Gate frame at suitable locations to provide adequate mounting holes for the angle, lag bolt or screw into place. OR Use a Polyurethane Adhesive to mount the threshold to the upper landing.

You can also use Polyurethane Adhesive to mount the Upper Gate Post uprights to the existing structure as shown.

When using the Polyurethane Adhesive, adequate clamping and support must be in place until the adhesive sets properly. (NOTE CLAMP IN PICTURE)

Or

You can utilize drill and tap holes in to the gate posts to utilize the mounting angles provided by RAM if the rough opening is not conducive to using an adhesive (i.e. the space is wider than the gate and adhesive would not work well)



Drill Through Both Angle Edges to Fasten Gate to Threshold.



Use Adhesive to Fasten Gate to Existing Structure.



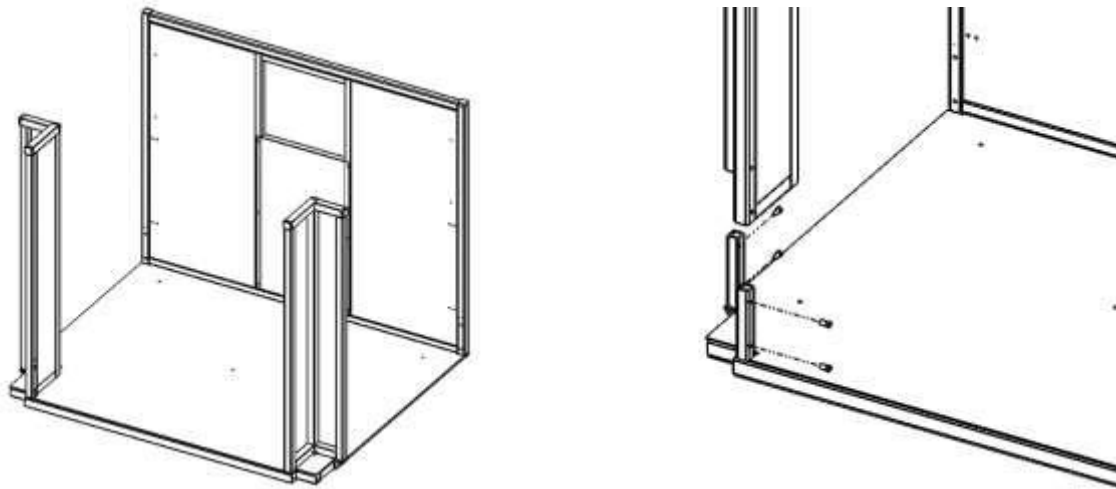
Gate Mounting Flange (2X each side)

7.15 Adjacent/ 90 Platform Arrangements

7.15.1 Installing Corner Posts

The corners posts are used for supporting a carriage gate and/or a solid end wall. Installation of the corner posts is accomplished by simply sliding the corner post over the corresponding upright posts on the platform.

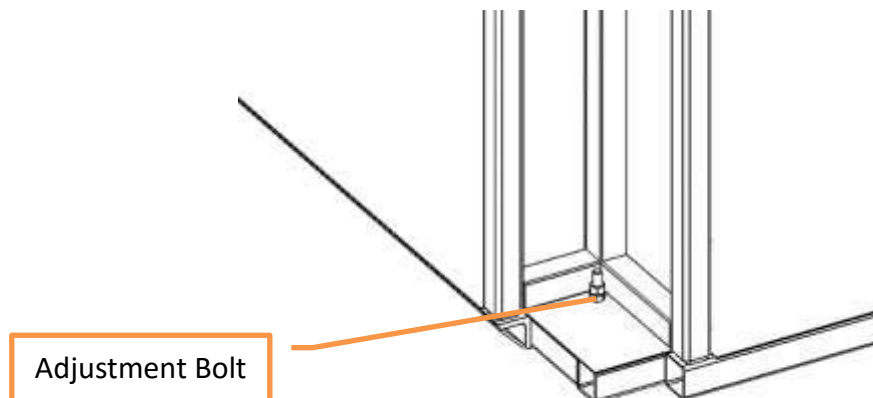
Secure the corner posts with screws from the inside of the lift platform as shown in the image below.



7.15.2 Adjusting Corner Posts

Each corner post is equipped with a nut in the corner joint, as shown in the image below. This is used to adjust the tilt of the corner post and ensure a rigid support from the platform so that flex is limited. The head of the adjustment bolt should be accessible from the bottom of the corner post between the lower tube and the platform surface.

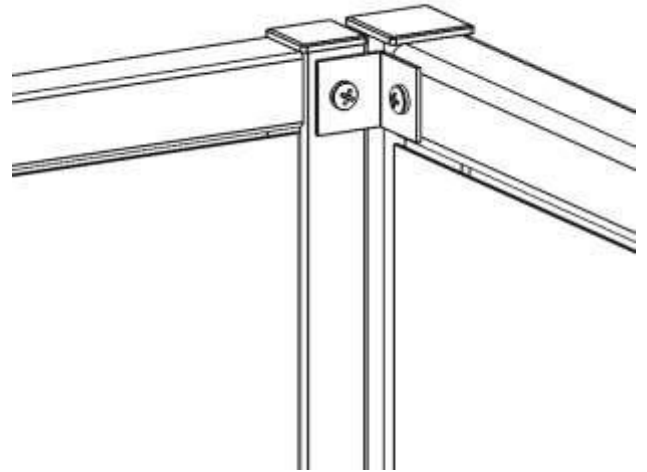
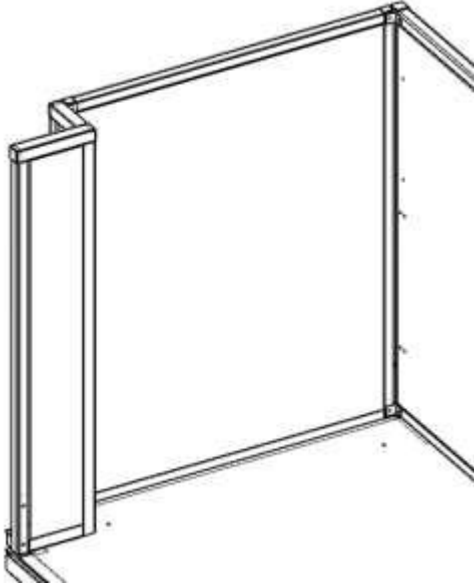
This adjustment will mostly likely be needed during carriage gate installation.



7.15.3 Installing Solid End Wall

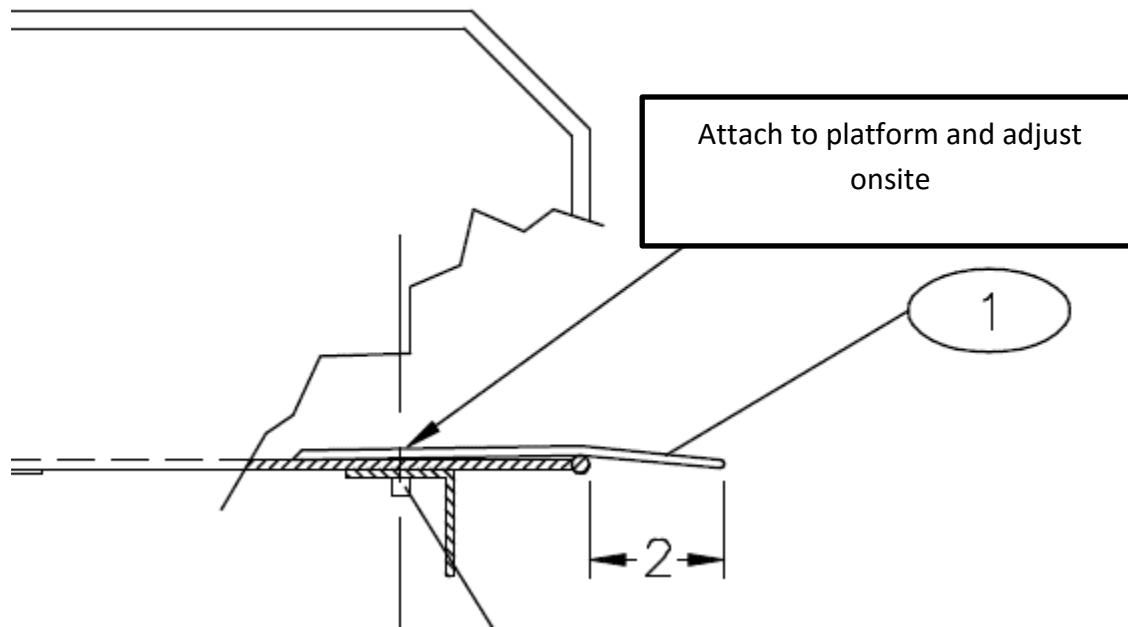
A solid end wall is installed simply by mounting the wall in between the corner post and the control wall.

Simply attach the end wall with the 4 angle brackets provided and the corresponding screws, as shown in the image below at the top and bottom corner of each side of the panel:



7.16 Threshold Extension Plate for In-Out Same Side Configurations

For platforms that have entry-exit on the same side but **also** have a carriage gate RAM will provide a platform extension plate. This plate is to provide sufficient clearance between the carriage gate and the travel wall/ upper landing. It may need to be adjusted on site but in most cases you will simply place the tower in the correct position.

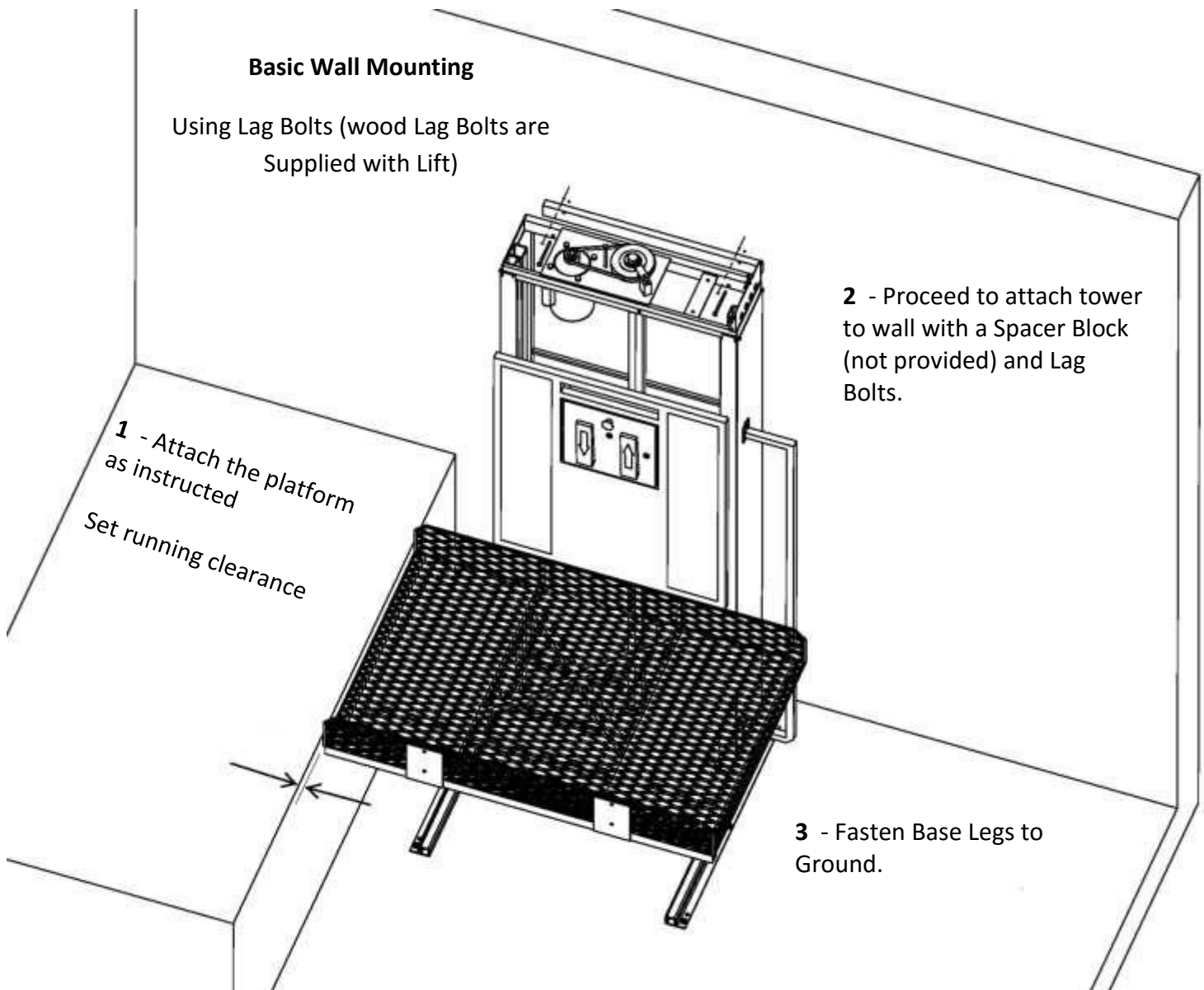


Section 8: Mounting the Tower to a Wall

On Commercial applications and Tall Tower installation you will be required to attach the tower to a wall or support. Your code requirements may vary so check with your governing authority.

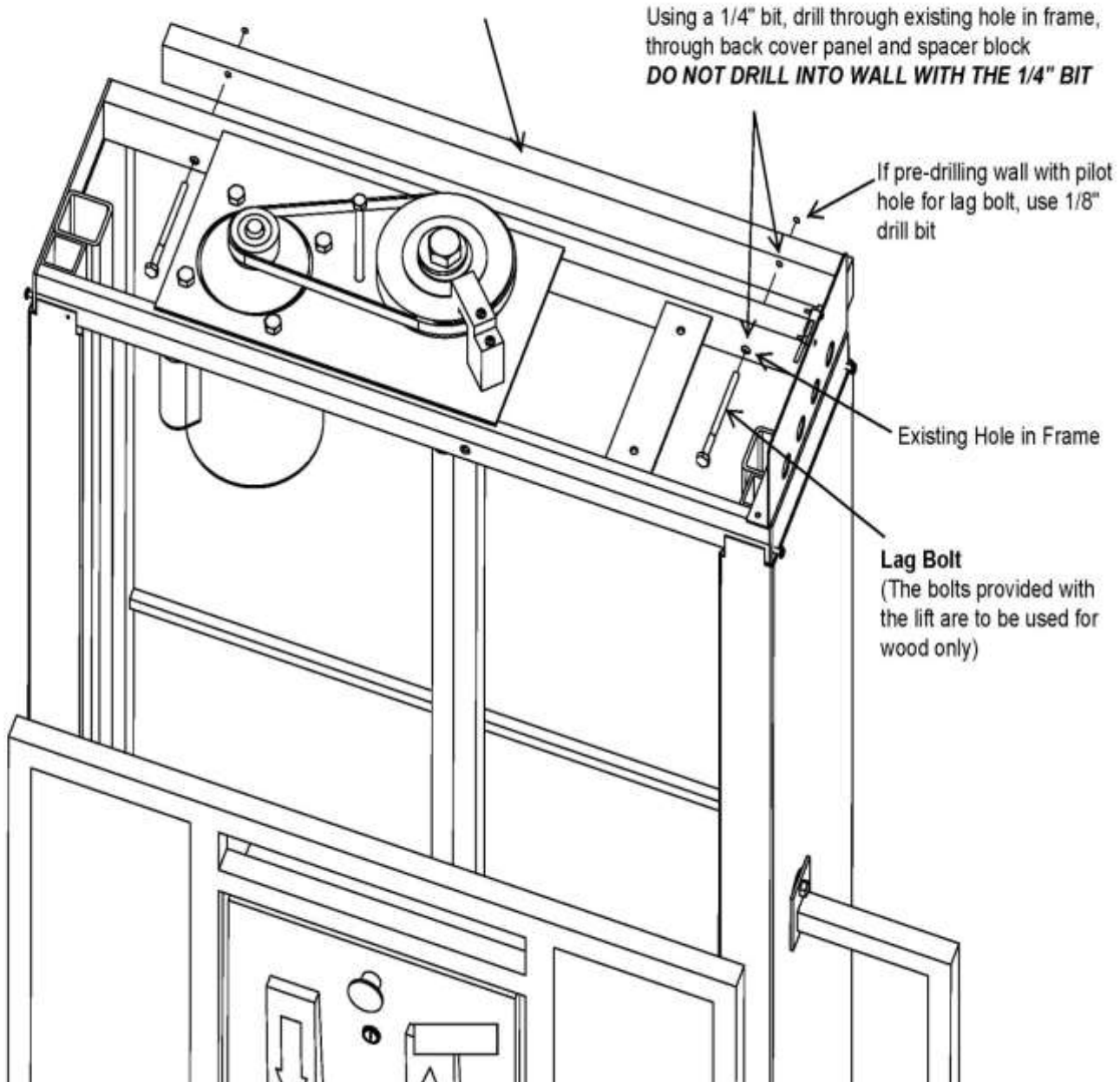
Basic Wall Mounting

Using Lag Bolts (wood Lag Bolts are Supplied with Lift)

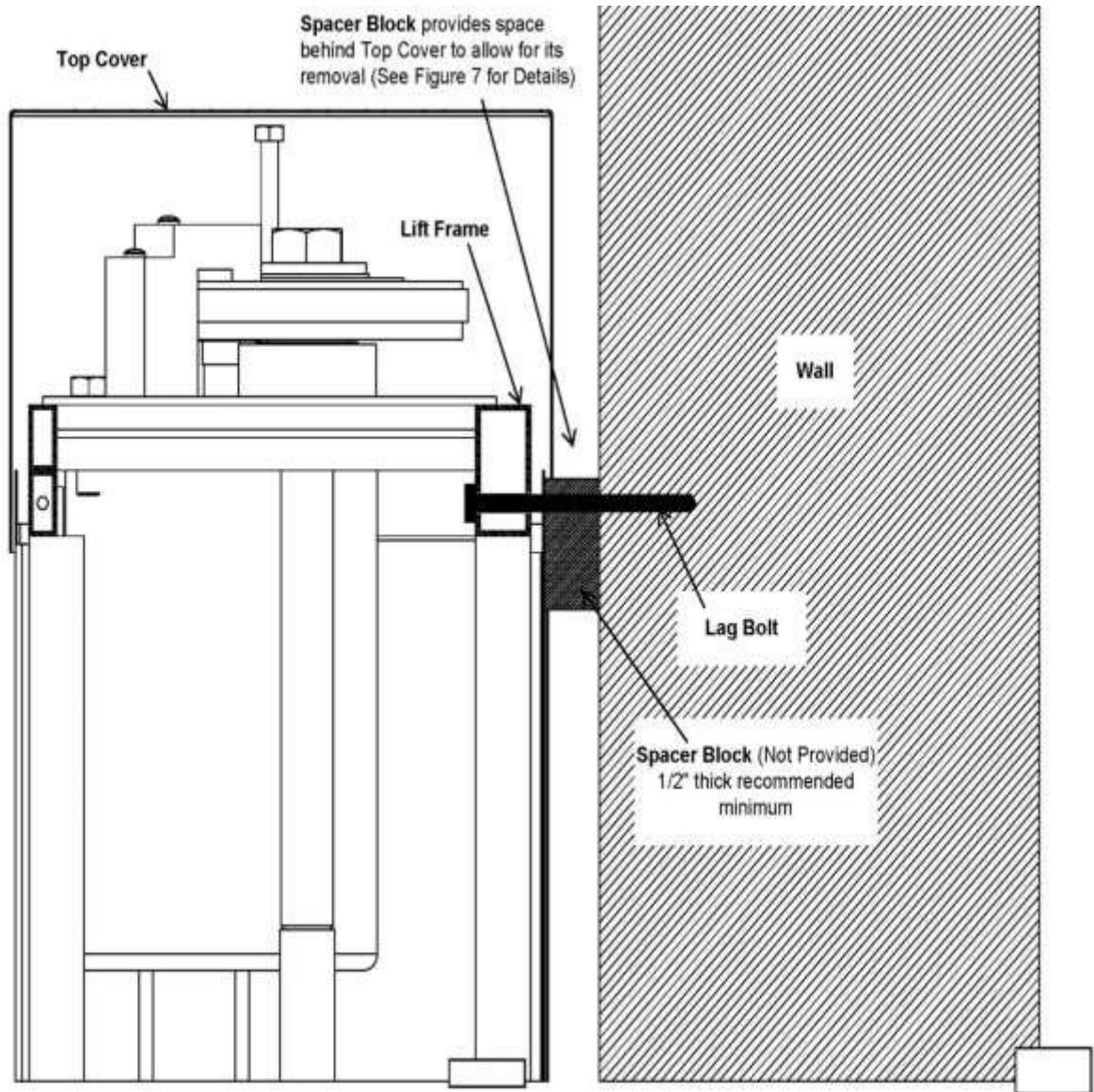


8.1 Installing the Spacer Block for Wall Mount

Spacer Block (Not Provided) is required to maintain space behind Top Cover in order for Top Cover to be removed for maintenance etc

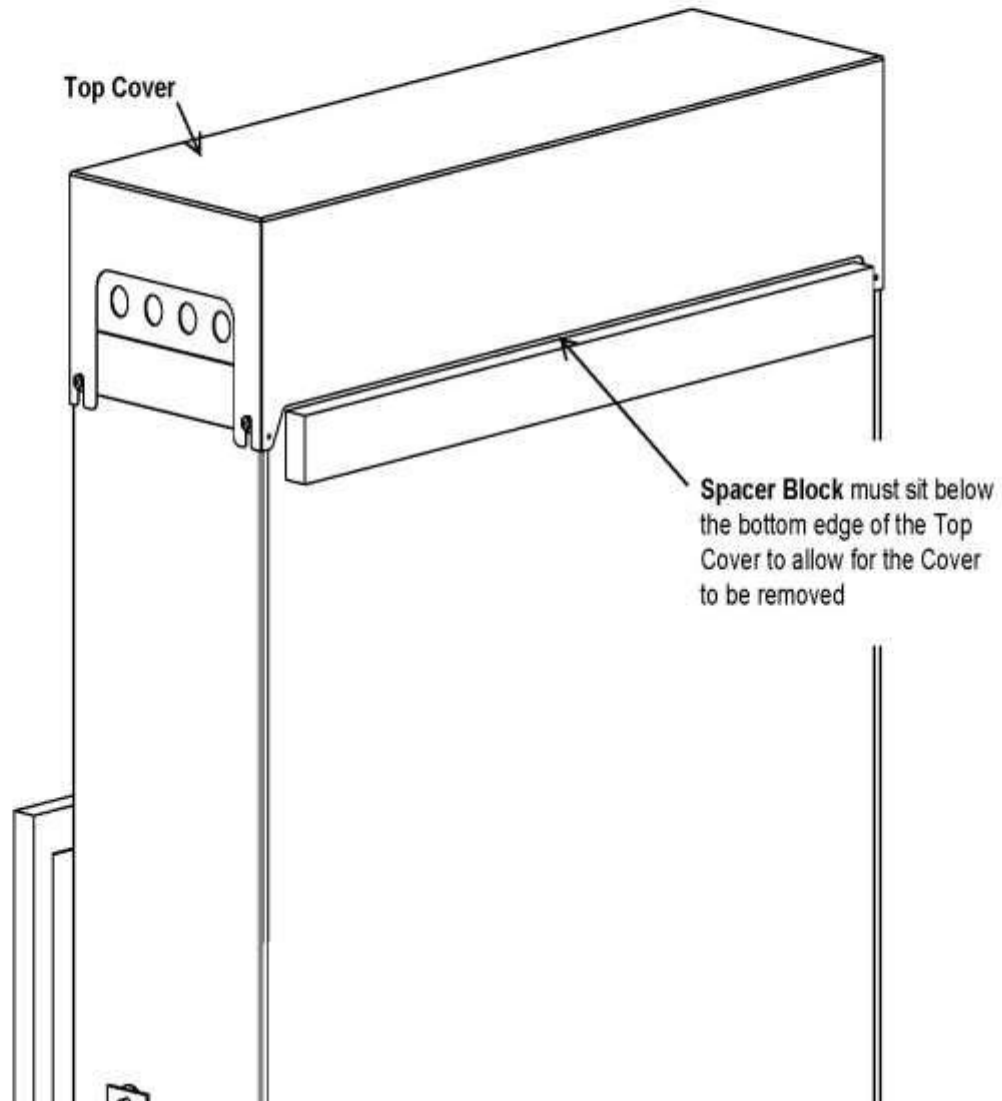


8.2 Spacer Block Placement



8.3 Spacer Block Installed View

Note that the Spacer Block does not interfere with the removal of the Top cover.



Section 9: Greater than 52in travel Tower Lifting Instructions

Working with Tall Towers can be difficult and dangerous if done incorrectly. This is the recommended method and should be followed at all times.

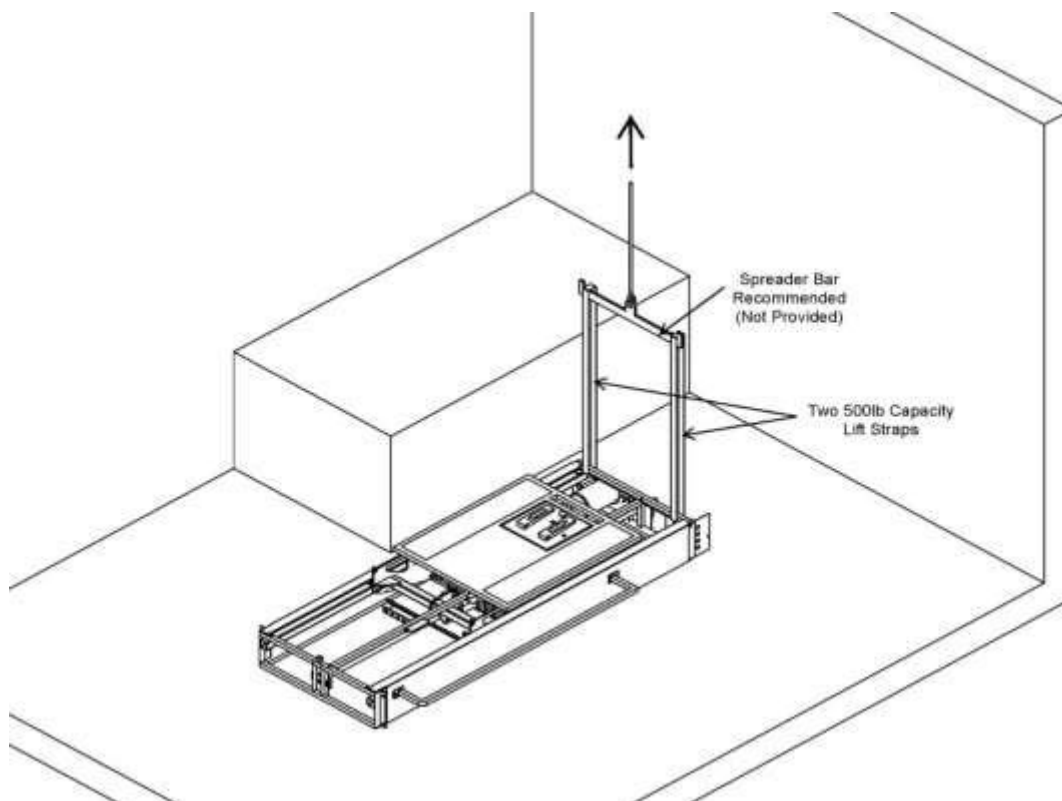
Warning

Failure to do so can result in serious injury or death. Under no circumstance should you attempt to lift or maneuver a Tall Tower unit by muscle power alone.

9.1 Lifting Tools Required.

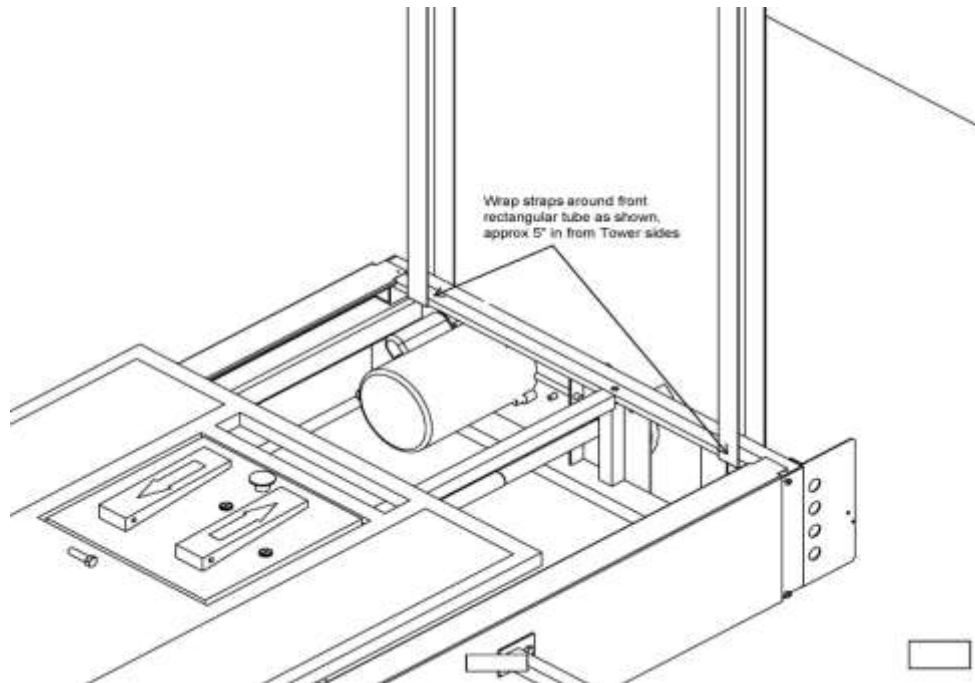
Using the right tools will decrease your chances of having an accident. However no tool can replace forethought or common sense. Always plan your project well in advance.

- Spreader Bar – Ensure that the Spreader Bar you are using is rated for the weight of the lift you are attempting to lift. Confirm the unit weight with RAM before lifting.
- 2 – 500 lb. Capacity Lifting Straps – Only straps that are in good condition should be used. Do not use frayed or worn straps as their capacity may be compromised.
- Lifting Device. Remember that whatever device you intend to lift the unit is weight rated properly. Check with the supplier of this device if unsure.



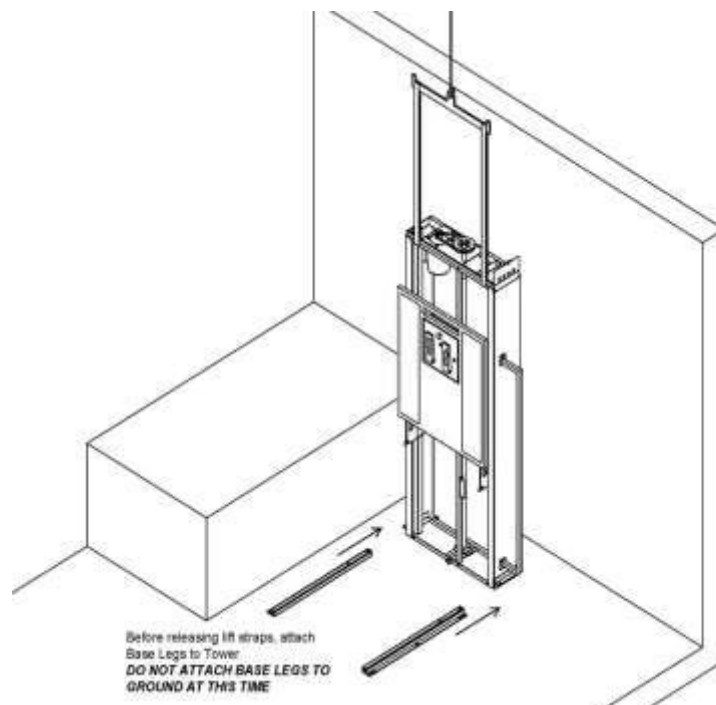
9.2 Locating the Lifting Straps

The lifting strap placement is critical. Failure to use the recommended locations can produce unpredictable results. Confirm proper placement before attempting lift.



9.3 Releasing the Lifting Straps

Once you have completed raising the unit you must attach the Base Legs to the Tower. This is done BEFORE you release the lifting straps. **DO NOT ATTACH THE BASE LEGS TO THE GROUND AT THIS TIME.**



Section 10: Electrical Connections and Diagrams

DANGER

It is the installers responsibility to complete all wiring connections as per the schematic and wiring diagram provided as part of your documentation package. A competent person familiar with electrical work or an electrician should be used to complete this work. Failure to do so will likely result in an unsafe lift that, when utilized, will result in serious injury or even death.

10.1 Schematic vs. Wiring Diagram

RAM's schematics drawings with a prefix of "SECTE" show the logic and main components of a lift circuitry. The schematic is used to understand the general flow of the circuit.

RAM's wiring diagrams with a prefix of "WMBTE" show specific wires, wire numbers, and colors that run between various components.

10.2 Using the legend on a diagram

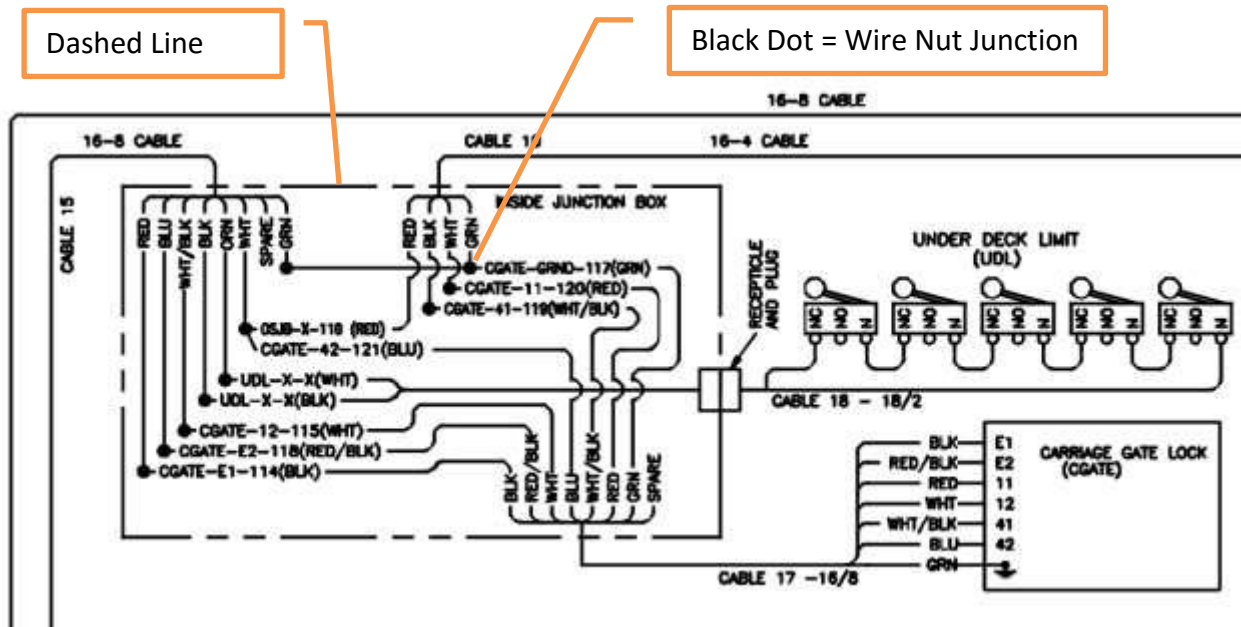
Each drawing will likely have a legend on the right hand side and this will help you determine what various symbols mean. In some cases, there are standard symbols that are assumed as common electrical knowledge, but should you not understand the symbols please contact RAM and we can provide a table of common symbols for your reference.

One symbol that often comes up is a "field junction" and an example is shown in the below.

10.3 Dotted line boxes

Of particular note are the use of boxes around grouped of component such as the one shown below. This indicates that all of these connections or components are in the same enclosure, junction box, or casing. This is particularly helpful for installers so that they can help orient between the electrical drawings and the physical objects.

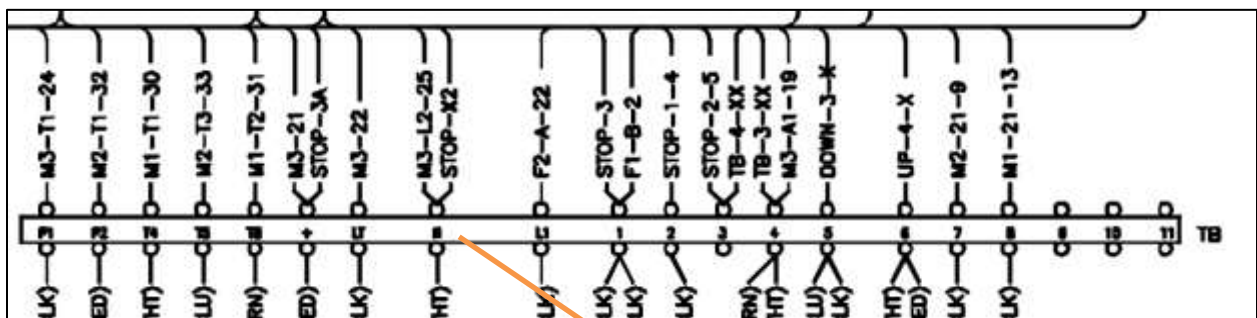
The image below shows the connections in the upper junction box of a commercial Trus-T-Lift™ from WMBTE004. All of the circular black dots where wires come together are wire nut connections and some of these will need to be "made up" using wire nuts in the field.



10.4 Orienting on the electrical schematic and wiring diagram

On each wiring diagram there will be a terminal strip that looks exactly like the one inside the main control box. This will help you orient starting points for various circuits and wire runs should you need to conduct and trouble shooting or discuss issues with RAM’s technical support team.

In addition, on the Schematic drawings there are tags with number that correspond to the terminal strip numbers. For example, you will not that there are tags on the image below from SECTE018 that show “L1” and “1” and “N” and these are the positions on the terminal strip inside the main control box.

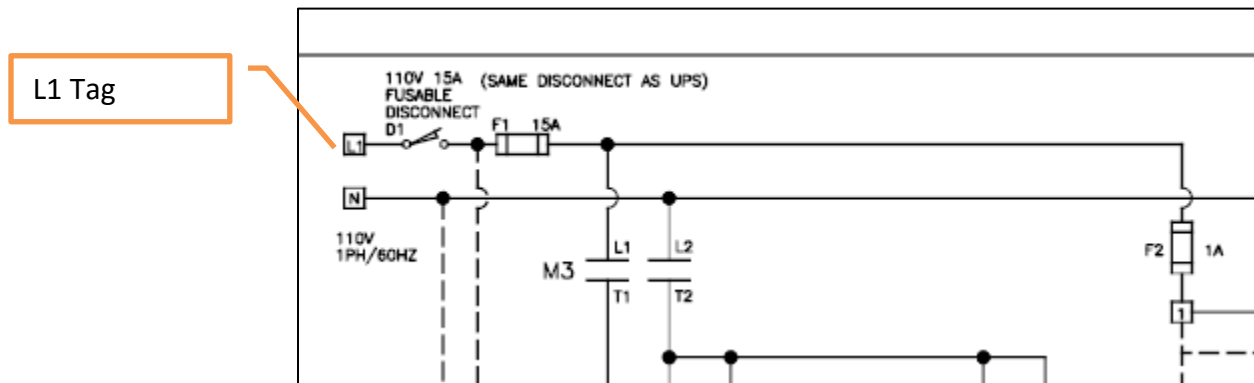


Wiring Diagram Terminal Strip from WMBTE004

N, L1, 1...etc



Terminal Strip inside main control Box

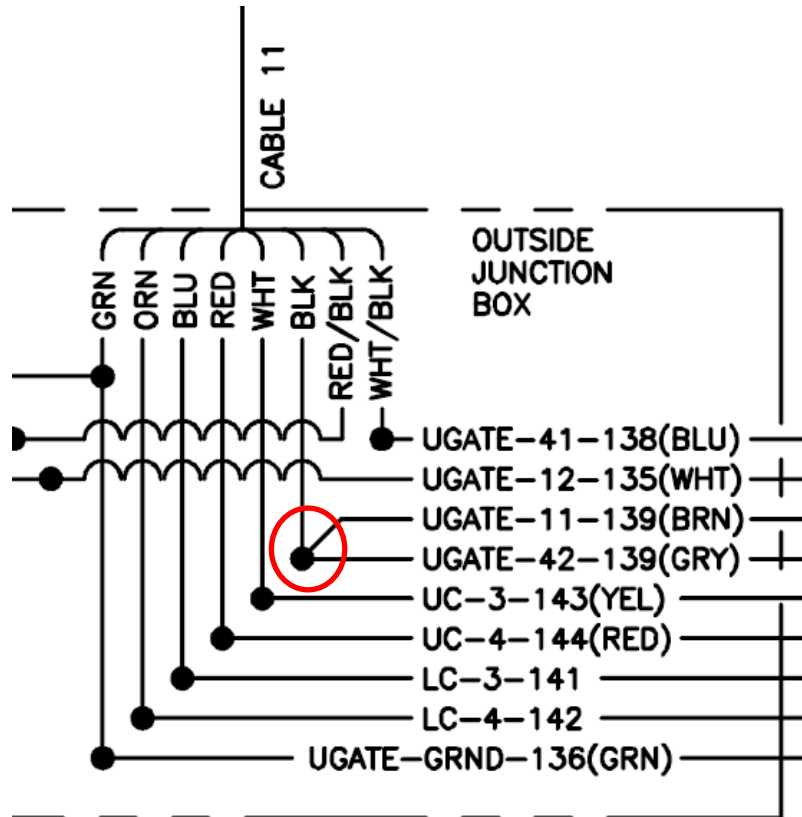


Electrical Schematic (SCTE Prefix) exert from SECTE018

10.5 Field junctions with more than one wire running together

In some cases, there will be more than one wire running in to a field connection. This can sometimes confuse people but in numerous cases this is required for the lift to operate correctly. An example of this is shown in the image below, again from the WMBTE004 drawing for a commercial lift.

In this case, we are looking at the outside junction box that is at the top of the tower and a black wire from cable 11, brown wire labeled 11-139 and a gray wire labeled 42-139 all need to be connected securely with a wire nut in the field. The junction needs to have the copper from each wire touching so that it is a complete junction or the lift will not operate correctly.



10.6 Disconnect Arrangement

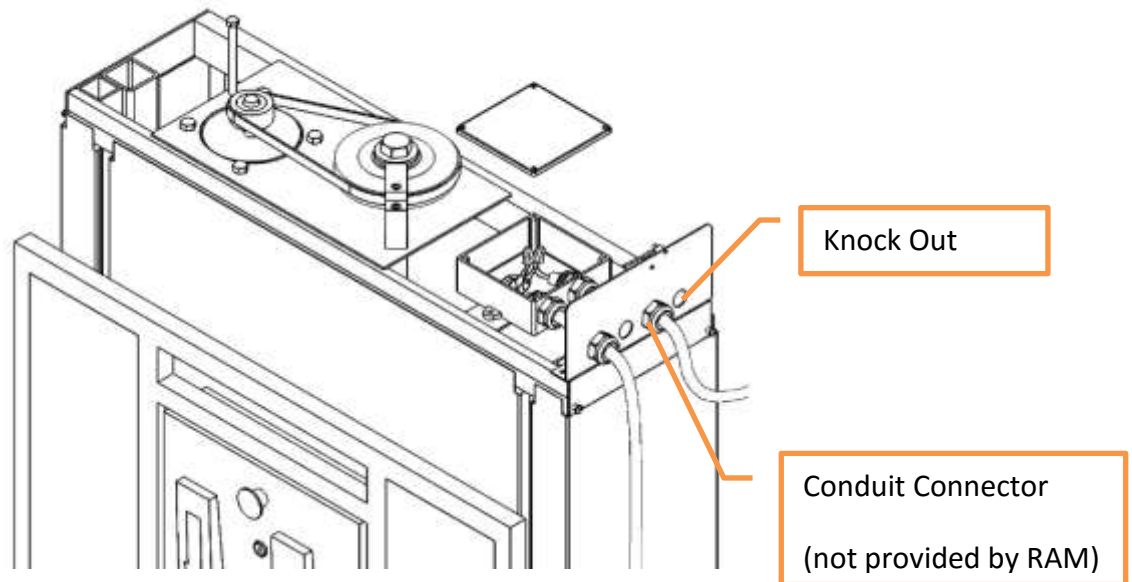
Disconnect arrangements are typically the scope of an electrician as is final tie in to main power for any commercial lift. The specific disconnect arrangement requirements are dictated by the local Authority Having Jurisdiction but RAM can provide guidance on our opinion as well as example drawings for location should you wish. These are not typically part of the standard documentation package.

10.7 Conduit Usage

When running wiring for a lift you should consult local and national electrical code. In most cases the code will require that wiring for gates, interlocks, call stations, and other electrical peripherals be run in rigid conduit for protection from damage. RAM does not provide the conduit for this portion of the installation. Please see RAM’s commercial lift planning guide on our website for options if conduit is not something you wish to consider alternatives to the standard loose wiring that RAM provides.

10.8 Wiring entry points to the lift

Once you have decided what type of conduit to use in your installation, RAM has provided knock-outs in top of the lift that will allow wiring entry in to the lift. The connector type could be one of numerous types and if you opt for a larger type of connector/ conduit you may need to drill out the knock out to a larger size that matches your selection or look for a reducer of some kind.



10.9 Main Power Tie In

Although RAM provides a cord with a standard electrical receptacle plug on the end this will not be suitable to leave in place for a commercial lift and the cable will need to be removed and replaced by an licensed electrician during final tie in to main building power.

Residential lifts can utilize the standard electrical plug provided but for any lift that is outdoor a GFCI plug should be provided to ensure adequate protection from short circuits.

Section 11: 90 Deg Manual Crank Access

In some cases, a 90 deg manual crank option will be configured as part of your lift. In most cases this will be due to the lift being taller and likely placed in an enclosure.

In most cases you will need to drill a hole in a wall for the manual crank to enable access from the outside.

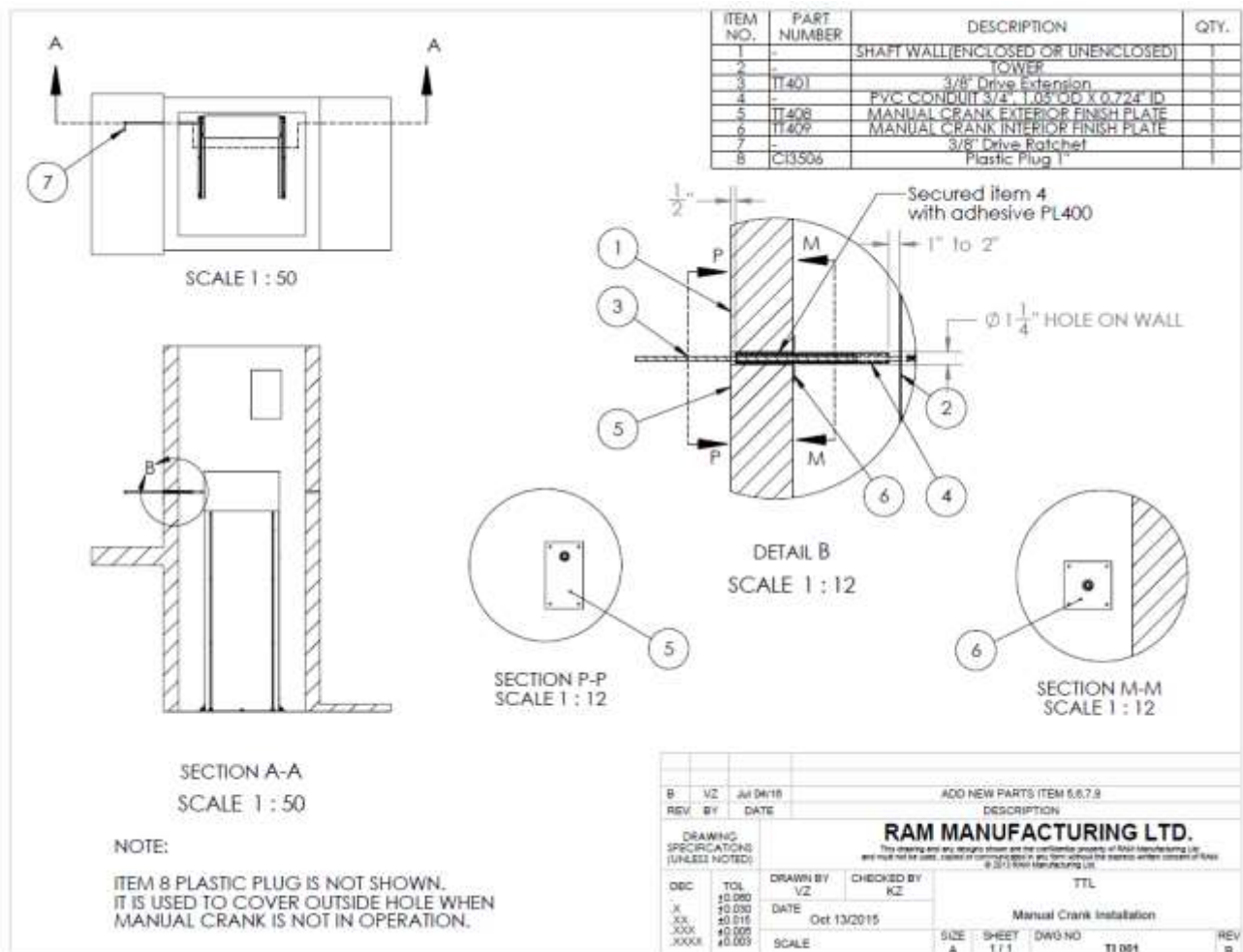
The 90 Deg manual crank will come with an extension, cover plate for inside the shaft wall/ travel wall, cover plate for the interior wall, and a PVC tube.

After drilling the hole in roughly the location that will line up with the hole in the top cover plate you will need then place the PVC tube in the hole and cut to length so that it just stands off the top cover of the main lift tower.

You will then remove the PVC tube and apply a polymer adhesive such as PL400 and place the tube back in to position. Once it is in place attach the two wall cover plates. An image of this arrangement is shown on the next page.

The manual crank extension should be placed somewhere for safe keeping so that it does not get lost but is readily accessible for usage.

Finally, the label for the direction to turn for upward and downward movement should be placed on the cover plate or near the access point if not already in place.



Section 12: Testing Required Prior to Completion of Installation

Once all the wiring connections are confirmed, the mechanical assembly, is complete and the lift is secured you can proceed with testing to prove that all systems and main safety functions are active and functional.

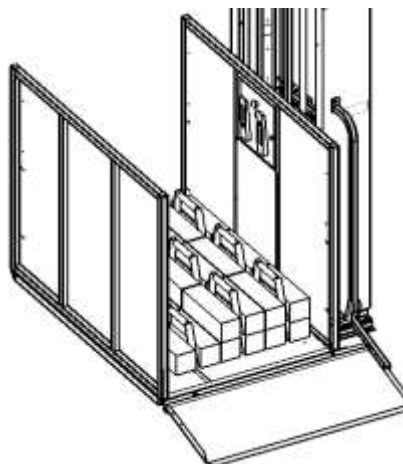
12.1 Weight Testing

Every lift should be weight tested once the installation for mechanical and electrical items is complete to ensure that the lift is operating correctly. All lifts are tested at the factory but they are then disassembled and shipped to sites across North America.

The lift capacity may vary but this will be noted on the lift serial number label as well as other documentation.

Weight testing may comprise 2 elements:

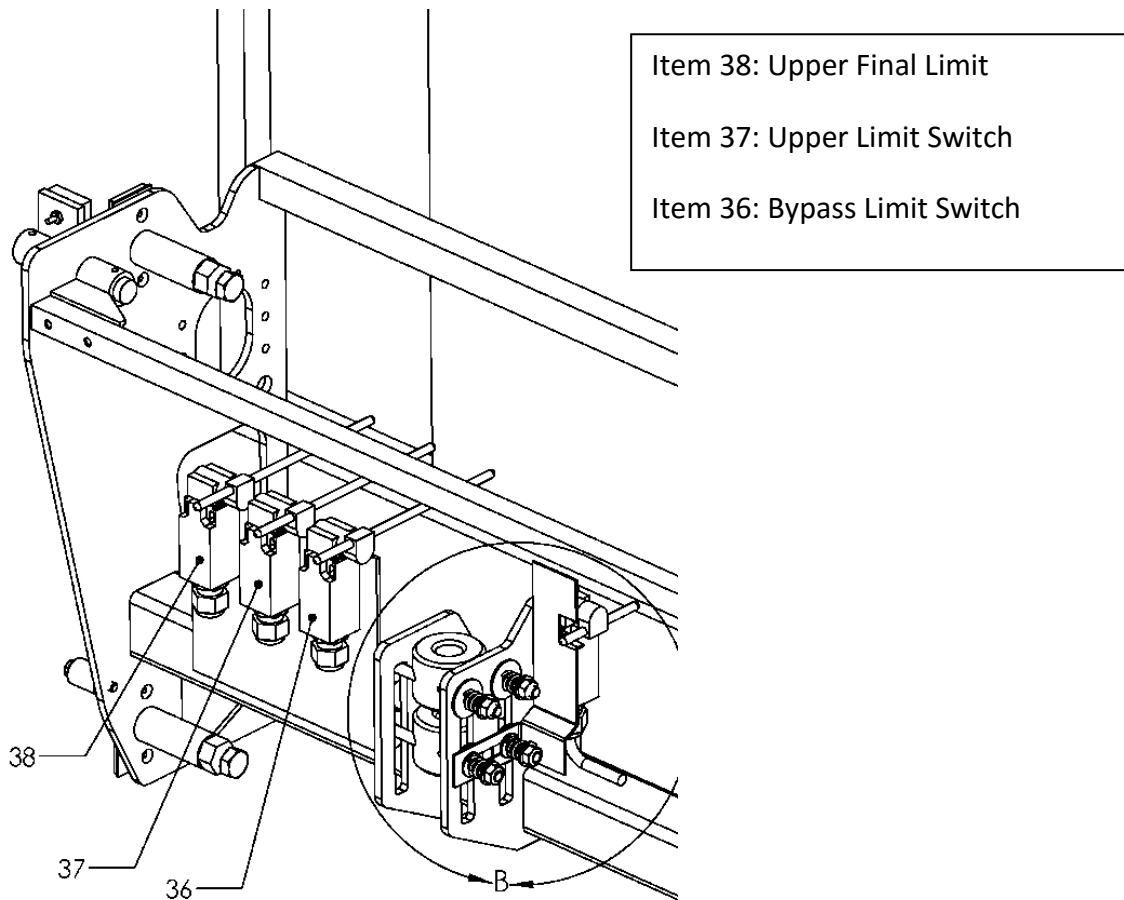
1. Maximum Lifting capacity – you apply full load to the lift in the center of the center of the platform and the lift should operate in the upward direction. Current draw by the machine should be less than 13A.
2. Overload testing – North American Safety the code requires that with 125% the lift does not move in the downward direction unintentionally. To test this, raise the lift roughly 12 in and apply 125% of rated working load and check that the lift does not move in the downward direction unintentionally. The lift is not required to lift 125% of working load.



12.2 Check Upper Limit and Upper Final Limit Switch

Each lift is equipped with an upper limit switch that indicates to the control circuitry when the lift has reached the upper landing. This will be set as part of the installation process but you should physically and visually verify that the limit switch engages with the limit switch plate and that the limit switch rod is adjusted for full engagement.

Because the lift is set up to stop on the upper limit switch you will need to manually test if activating the upper final limit switch cause the lift to come to a stop before it reached the upper limit. This is a simple process of pressing the up control paddle and then as you move up depress the upper final limit switch. If the lift does not come to a stop, there is something wrong and you will need to go through a trouble shooting exercise.



12.3 Verify Bypass Switch Operation

If your lift comes equipped with a BYPASS switch you will need to verify that it operates correctly. The BYPASS switch is used to allow the lift to operate within 50mm of the

upper landing while the interlock is electrically unlocked. To test the bypass switch, move platform to the top landing and the upper landing gate/ interlock should unlock. Leave the gate/ lock in the open position and then run the lift down while monitoring the bypass switch visually. The lift should stop roughly 2in (50mm) down from the top landing when the by pass switch disengages from the limit switch plate. If this is not the case there is something wrong with the switch or wiring and a trouble shooting exercise should be undertaken.

Lastly, check that the rod engages fully with the limit switch plate.

In some configurations, the bypass is also used at the lower landing to accomplish the same function for the lower landing door. A similar test at the lower landing should be completed if you have a lift with this configuration.

12.4 Check Drive Nut Switch

Verify that as the platform/ mechanical stops come in to contact with the foundation the limit switch is engaged with the red safety bracket and that this cuts power to the motor.

Also verify that the drive screw stops spinning prior to the drive nut bolts hitting the end of the slots in the guide frame.

If the drive nut bolts hit the end of the slots before the screw starts spinning the drive screw will be pushed up and the bearing on which it rests at the top of the lift will come out of the bearing raceway; this can cause damage to the bearing and may cause the belt to come off of the main drive pulley in extreme cases.

12.5 Verify Door and Gate Interlocks

Depending on the number of landings you have each door interlock should be checked so that if the platform is not at the landing location the door or gate will not open.

Additionally, for each door or gate you should manually override to keep each one open in turn and verify that the lift will not operate.

Lastly, for each landing, while the platform is at the landing the doors at all other landings should be checked to verify that they will not open.

12.6 Verify E-Stop Button Function

Verify that if the E-stop button is pressed then the lift will not operate.

For commercial lifts the alarm bell should also sound.

12.7 Verify Toe Plate Ramp Operation

If your lift has a toe plate ramp you should verify that the ramp deploys properly and makes full contact with the lower landing. The action should be smooth and consistent without binding or jerking of the motion.

When the toeplate ramp is in the up position both the ramp and the linkage mechanism should resist up to 125lb of force without deforming.

Warning

For power wheelchairs that can exert loads higher than 125lb of force a toe plate is insufficient safety protection and a carriage gate option will also be required. See RAM product bulletin.

12.8 Verify that disconnects function correctly

Verify that when the disconnects are flipped power to the lift is cut off and, if this is a commercial lift, the interlocks at each landing (when the lift is in the correct position will open) and that the alarm and light on board the carriage are active.

12.9 Verify that key switches at each location function correctly

Verify that when a key switch at each landing or on board the lift is turned to the off position the corresponding buttons and control paddles do not operate the lift.

12.10 Additional Redundancy Tests for Commercial Applications

For commercial lifts there are often additional redundancy tests required to be completed during inspection. To prepare for an inspection where these are required RAM suggests doing the tests prior to the inspection so that the functions are confirmed.

RAM will typically include a copy of these redundancy procedures in a commercial lift package but if you do not have them please contact RAM and we will supply a copy.

Section 13: Maintenance

Minimum maintenance requirements and a number of common procedures are outlined in the maintenance manual that accompanied your equipment and that manual should be retained by the owner of the lift to allow them to keep track of maintenance and service as well as have a reference of the minimum requirements.

If you do not have a copy of the maintenance manual please contact RAM to obtain one.

Warning

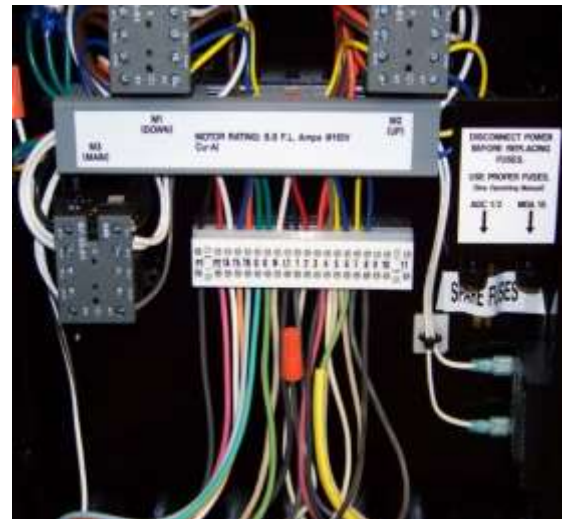
Failure to observe and complete the required maintenance for your lift product will render the warranty null and void and may present significant risk that could lead to injury or death.

Section 14: Basic Trouble Shooting

14.1 Replacing a Fuse

Unplug the power cord.
Open the control box with the key provided.

The fuses are located in the control box on the right hand side. Replace the blown fuse with a fuse with the same Amp rating.



14.2 No Power to the lift. Lift will Not Operate

Check to see if the lift has been plugged in or the power supply has been hooked up. Check if emergency button is depressed. Pull to “on” position. Ensure that the power key on the control panel is in the “on” position. If you have interlocks

ensure they are in the “locked” position. Check that the Top cover Switch (if it is included) is properly depressed by removing the top cover and inspecting the switch.

14.3 Lift Runs Up and Not Down

Ensure that the Lower Limit Switch Rod is resting inside the Red Safety Bracket. Check that the Safety Pan has not been activated.

Safety Pan must be Free Floating.

Additionally, the safety pan must be connected at the “inside junction box underneath the main control panel and behind the control wall.

14.4 The lift won't raise the full capacity load

Verify the current being drawn by the unit by using a clamp-on current meter or multimeter. It should be less than 13Amps at full load.

Check the adjustment on the sliders – ask RAM for procedure if you do not know how to do this.

Clean the drive screw and guide rails thoroughly. Reapply RAM approved grease Mobilith SHC 460PM to the drive screw and work it in by raising and lower the platform with reduced load. If this improves the lifting capacity but it still does not lift full load clean and re-apply again as other grease may have been used and was not fully removed.

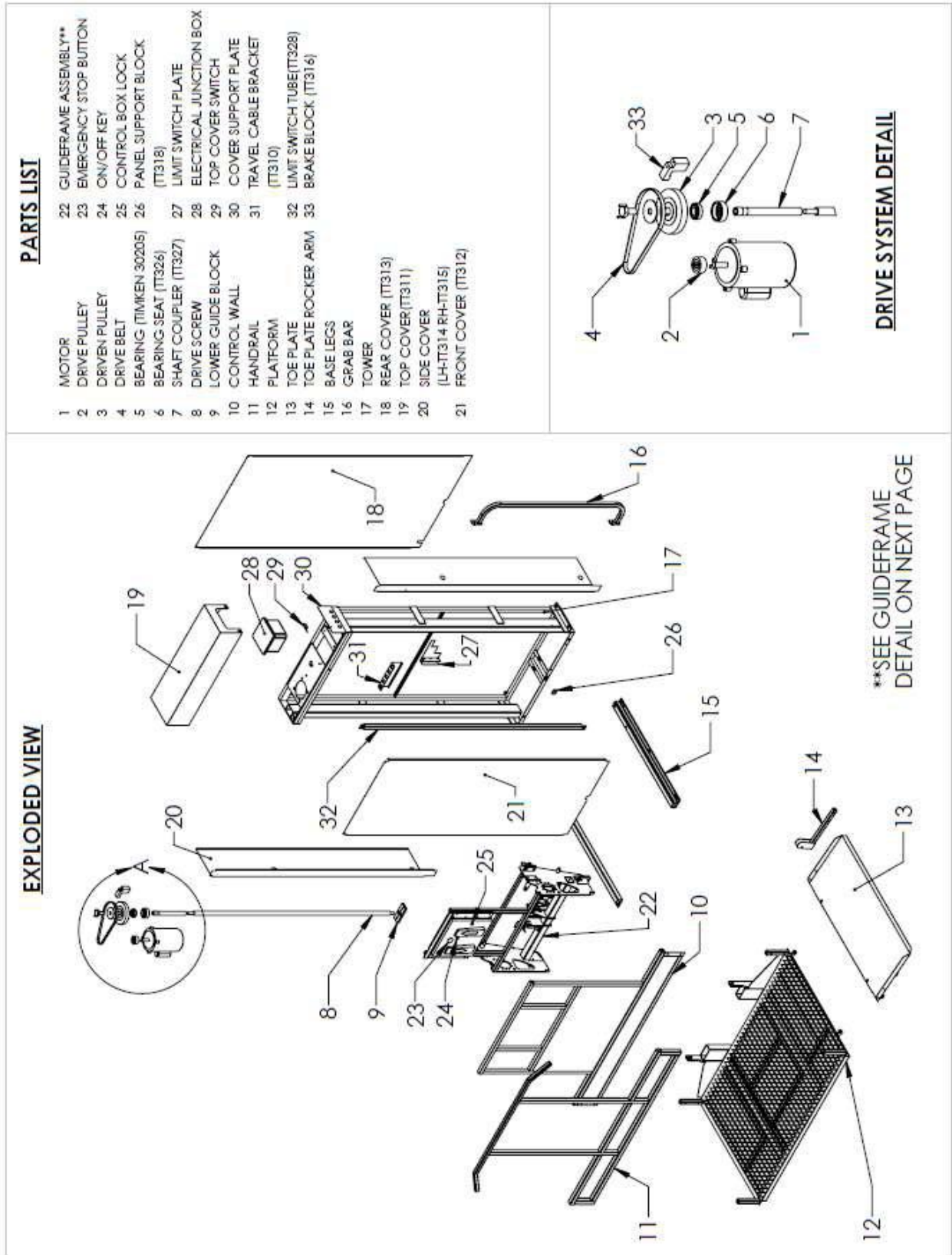
14.5 Lift Runs Up and Down but Doors or Gates will Not Unlock

Check to see that interlocks are properly mounted, and latches properly mate with the interlock. For Commercial lifts the UPS must be turned on or the doors will not open.

Contact RAM Tech Support or A More Advanced Troubleshooting Guide (if you are a dealer partner) for other issues.

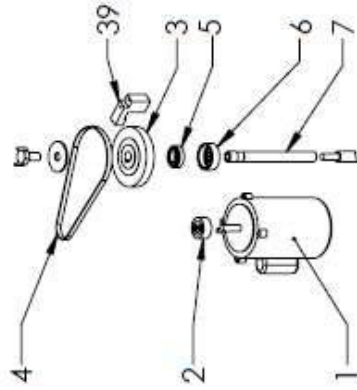
Please have your serial number ready. Serial Number is located inside of the control panel door.

Appendix A: Trus <T> LIFT Assembly Drawings (with part numbers)



PARTS LIST

- 1 MOTOR
- 2 DRIVE PULLEY
- 3 DRIVEN PULLEY
- 4 DRIVE BELT
- 5 BEARING (TIMKEN 30205)
- 6 BEARING SEAT (TT326)
- 7 SHAFT COUPLER (TT327)
- 8 DRIVE SCREW
- 9 LOWER GUIDE BLOCK
- 10 EXTENDED HANDRAIL
- 11 PLATFORM
- 12 EXTENDED CONTROL WALL
- 13 CONTROL WALL PANEL
- 14 INTERLOCK
- 15 CARRIAGE GATE
- 16 GATE HINGES
- 17 SAFETY PAN
- 18 TOE PLATE
- 19 TOE PLATE ROCKER ARM
- 20 BASE LEGS
- 21 GRAB BAR
- 22 TOWER
- 23 REAR COVER (TT313)
- 24 TOP COVER (TT311)
- 25 SIDE COVER (LH-TT314, RH-TT315)
- 26 FRONT COVER (TT312)
- 27 GUIDE FRAME ASSEMBLY**
- 28 EMERGENCY STOP BUTTON
- 29 ON/OFF KEY
- 30 CONTROL BOX LOCK
- 31 PANEL SUPPORT BLOCK (TT318)
- 32 LIMIT SWITCH PLATE
- 33 LOWER BYPASS PLATE
- 34 ELECTRICAL JUNCTION BOX
- 35 TOP COVER SWITCH
- 36 COVER SUPPORT PLATE
- 37 TRAVEL CABLE BRACKET (TT310)
- 38 LIMIT SWITCH TUBE (TT328)
- 39 BRAKE BLOCK (TT316)



DRIVE SYSTEM DETAIL

EXPLODED VIEW

