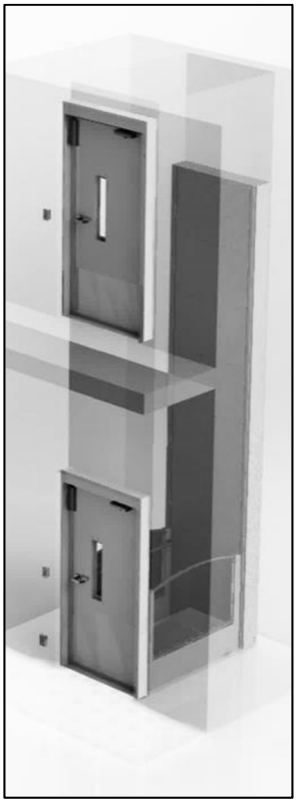
# *ASCENSION CLARITY*
## *WHEELCHAIR LIFT*
## *16C/D/E/S MODEL SERIES*

# PRODUCT MANUAL

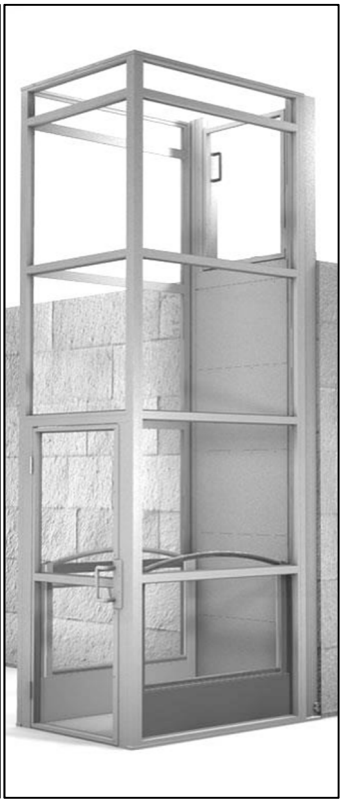


**16C**

**Same-Side, Shaftway**

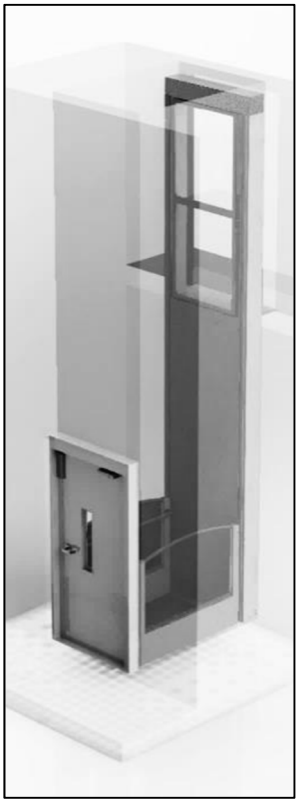
**16D**

**Same-Side, Enclosed**



**16E**

**Straight-Through, Enclosed**



**16S**

**Straight-Through, Shaftway**

For patent information, see ascension-lift.com/patents

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http://ascension-lift.com

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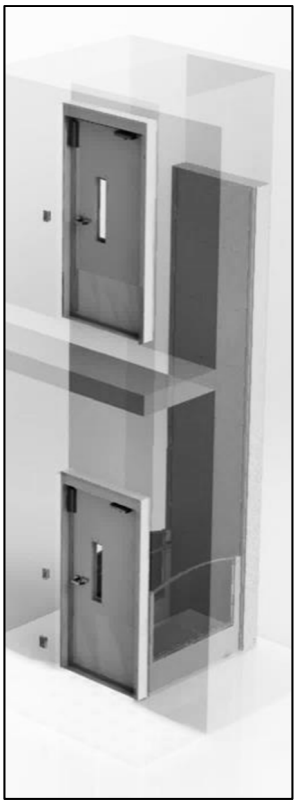

**16C**

**Same-Side, Shaftway**

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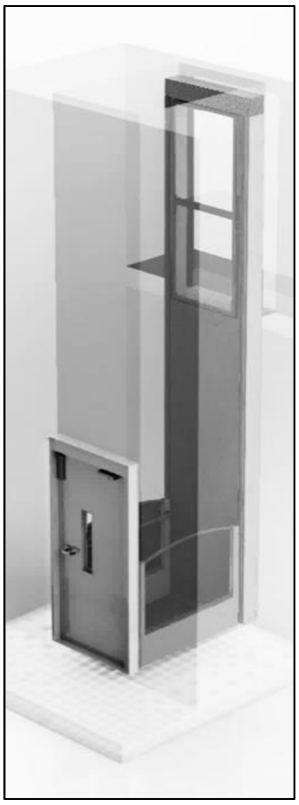

**16S**

**Straight-Through, Shaftway**

For patent information, see ascension-lift.com/patents

ascension

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# SECTION 1 General

## *1.1 Product information*

Operational ratings

| | |
|---|---|
| OCCUPANCY: | 1 person |
| RATED LOAD: | 750 pounds (340kg) |
| AVERAGE SPEED: | 20 feet per minute (0.1 m/s) |
| DUTY CYCLE: | 15 minutes of operation per hour repetitive use<br>(10 cycles for 168” lifting height)<br>22 minutes maximum single runtime<br>(15 cycles for 168” lifting height, followed by full cool-down) |

Physical ratings

| | | |
|---|---|---|
| PLATFORM SIZE: | 36" wide x 56" long, 42” minimum side height | |
| MATERIALS: | Platform, base frame, lifting device: Mild steel<br>Accent rails and grab bar: Stainless steel<br>Guide rails and enclosure framing: Aluminum alloy<br>Windows: High impact strength clear thermoplastic | |
| FINISH: | Oven-baked powder coat<br>Brushed stainless | |
| ELECTRICAL: | Input power: | 120VAC, 60Hz, 6A, single phase |
| | Motor: | 24VDC, 3hp (2.1kW) |
| | Batteries: | 2X 12VDC 35A-h AGM SLA batteries<br>Duracell® Ultra DURA12-35C |
| | Control circuits: | 24VDC |

## *1.2 Definitions*

**Emergency stop switch** The red pushbutton provided at the platform operating station. Pushing this button immediately stops the lift until it is manually reset.

**Fascia** The smooth surface extending from the upper landing sill to the level of the lower landing.

**Fascia panel** One of the sheet metal covers used to enclose the machinery cabinet and form the fascia.

**Guide rails** The vertical tracks that the platform travels on and form the sides of the machinery cabinet.

**Lower landing** The lower-elevation level that the lift serves.

**Lower landing door** The door providing access to the platform from the lower landing.

**Machinery cabinet** The enclosed space in which the lifting and control mechanisms are located. The machinery cabinet forms the rear wall of the runway and extends from the lower landing to the upper landing.

**Operating stations** The controls for raising and lowering the platform. The operating station inside the platform has an emergency stop switch. The operating stations outside the platform may be mounted remotely.

**Operating switch** An up/down rocker switch used to raise/lower the platform.

**Platform** The traveling cab that carries a passenger between levels.

**Platform brackets** The weldments extending from the machinery cabinet that the platform mounts to.

**Runway** The vertical space through which the platform moves as it travels between landings.

**Runway enclosure** The walls or barriers that surround the runway, restricting access to the inside of the runway.

**Upper landing** The higher-elevation level that the lift serves.

**Upper landing door** The door providing access to the platform from the upper landing.

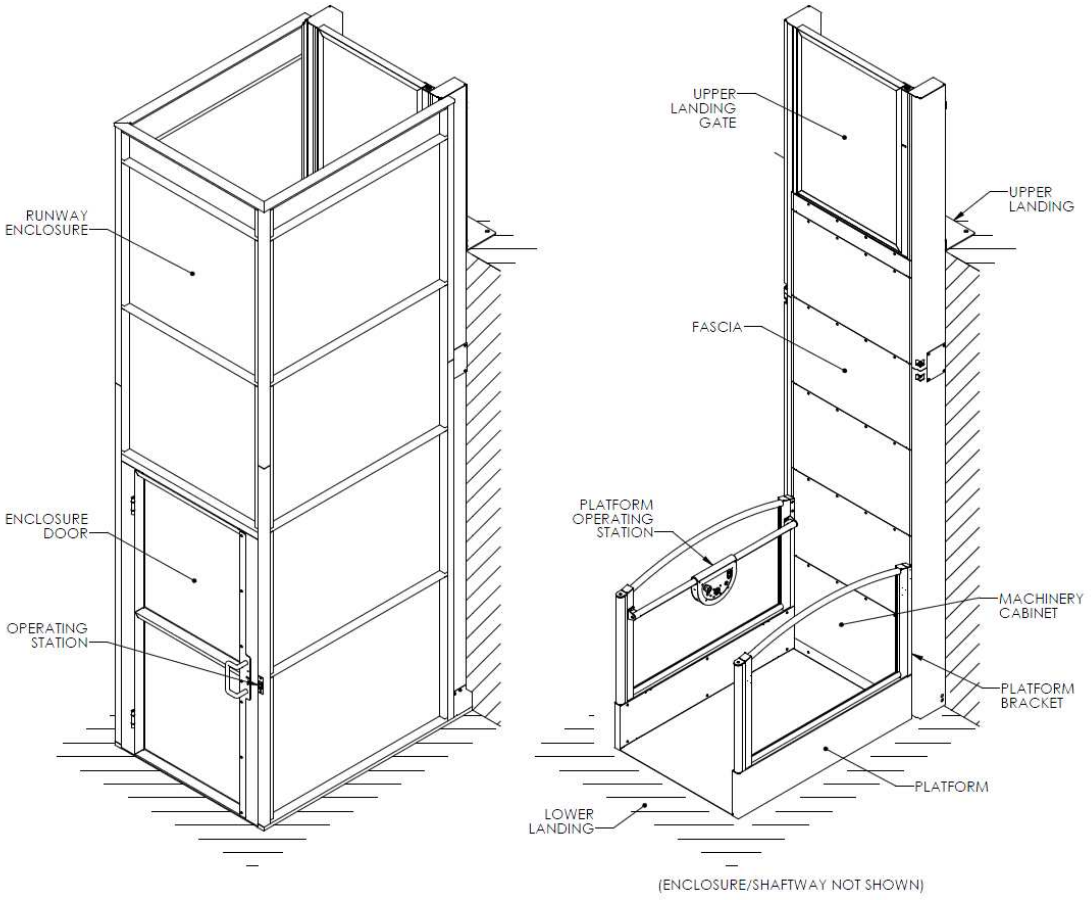



**Figure 1: Parts identification**

## *1.3 Important safety information*

When using the lift, the following basic safety precautions and practices *must* be observed:

1. Read and understand all of the information contained in this manual.
2. Do not overload the platform. The lifting capacity is 750 lbs.
3. Operate the lift only as described in Section 2 of this manual.
4. Use the lift for movement of people only.
5. Do not expose any part of the lift to a direct liquid stream or spray, such as a water hose. This could create an electrical shock or fire hazard.
6. Do not operate the lift in the presence of combustible or explosive gas or fumes. The electrical components of the lift could cause ignition of these chemicals.

# SECTION 2 Operation

## *2.1 Description of operation*

Vertical motion of the platform is controlled by the three (3) operating switches located in the platform and at the landings. While any switch is in use, the other switches are disabled. These are constant-pressure type switches, meaning that the platform stops when the switches are released.

A door at each landing permits passengers to enter and exit the platform. Each door is equipped with an electric lock that prevents the door from being opened while the platform is away from the given landing, ensuring the safety of those inside and outside the platform. Both doors are self-closing.

Two parallel-connected hydraulic cylinders raise and lower the platform. When the "Up" circuit is energized, an electric motor operates a hydraulic pump which provides pressurized hydraulic fluid to the cylinders, causing the cylinder rods to extend and raise the platform. When the "Down" circuit is energized, a hydraulic valve is opened to allow a controlled, gravity-driven descent. It takes approximately 45 seconds for the platform to travel in either direction through its maximum travel range of 168 inches (14 feet).

The lift is equipped with standard battery backup that allows the platform to be operated up and down at least five (5) cycles in the event of a power outage. Additionally, the lift is equipped with a manual lowering pull handle that can be used to lower the platform in an emergency. Use of the override pull handle is restricted to authorized personnel only. The platform will descend at a controlled speed as long as the handle is pulled until it rests at the lower landing.

The drive unit and electrical controller are located at the base of the machine cabinet, behind the bottom fascia panel. Equipment at this location includes the motor, pump, power supply, batteries, controller circuit board, and motor relay.

## *2.2 Standard operation*

- The main power disconnect for the lift must be in the “on” position for the lift to operate, even on battery power.
- Both landing doors must be closed and locked for the platform to operate.
- Each landing door unlocks for as long as the platform remains at that landing. Pressing an operating switch in a valid direction of travel will lock the door.
- Move the platform using any of the three (3) operating switches. The operating switches must be held with constant pressure until the platform stops at the upper or lower landing. Releasing the switch will stop the platform.

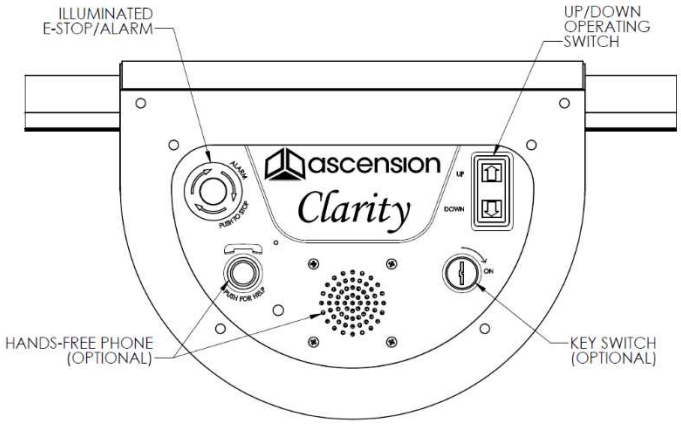



**Figure 2: Platform operating station**

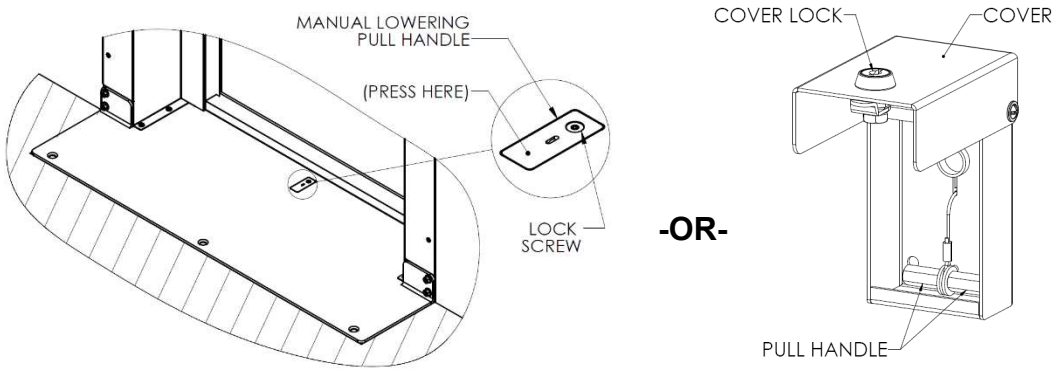
- Push the emergency stop button to immediately prevent any up/down motion and cause the audible alarm to sound. Turn clockwise to deactivate and reset the switch.
- If included, press the “PUSH FOR HELP” button to call a preprogrammed number. See Section 6.12 for the communication system configuration information.
- By default, the platform lighting will illuminate for at least thirty (30) seconds when either door is opened or any operating switch is used. Lighting also activates during an AC power outage. See Section 6.13 for information on adjusting brightness or mode of operation. See Section 6.11 for adjusting alarm volume.
- If the lower landing door is equipped with an automatic operator, press a “down” operating switch while the platform is present at that landing to open the door. If the upper landing door is equipped with an automatic operator, press an “up” operating switch while the platform is present at that landing to open the door. Each operator will hold the door open for a set time period and then automatically close the door.

## *2.3 Manual lowering*

The manual lowering pull handle can be used to lower the platform when power is unavailable. It is operated from upper landing (16E, 16S) or lower landing (16C, 16D).

1. 16E, 16S:
    a. Locate pull handle at the upper landing, near the base of the upper landing door (See Figure 3, 16E/16S). Remove the torx head screw to release manual lowering pull handle.
    b. Push on the near end of the manual lowering pull handle to rock the far end upward. Pull the handle up and out of the floor plate until you feel tension in the steel cable attached to the handle.
    c. Pull the handle to override the hydraulic lowering valve and lower the platform. Do not pull with more than 20 pounds of force.
2. 16C, 16D (or any lift equipped with remote manual lowering package):
    a. Unlock and open the manual lowering access box (see Figure 3, 16C, 16D).
    b. Pull the handle to override the hydraulic lowering valve and lower the platform. Do not pull with more than 20 pounds of force.

| | |
|---|---|
| ***NOTICE*** | ***Do not pull handle with more than 20 pounds of force. If the platform still does not descend, the platform safeties may be holding the platform in place. Contact a repair technician.*** |




16E, 16S 16C, 16D

**Figure 3: Manual lowering**

## *2.4 Manually unlocking doors*

To manually unlock a locked door, the interlocks locking each door may be manually overridden. See section 5.10.2.

## *2.5 Using the service override controls*

Certain maintenance and repair tasks require movement of the platform at times when the safety switches would normally prevent motion. In these circumstances, the service override controls can be used to bypass the control circuits and directly switch on the lowering valve or the motor and up valve. The service override controls are an up and down button on a hand-held pendant to be connected to the lift only when needed.

The service override controls are only intended for use by Ascension dealers and authorized service companies.

**Exercise EXTREME CAUTION while using the service override controls, as they exist for the express purpose of bypassing the lift's safety features.**

| | |
|---|---|
| ⚠ ***WARNING*** | ***CRUSHING AND SHEARING HAZARDS RESULTING IN SERIOUS INJURY OR DEATH MAY BE PRESENT WHILE OPERATING THE PLATFORM USING THE SERVICE OVERRIDE CONTROLS. EXERCISE EXTREME CAUTION.*** |

To use, first remove the bottom fascia panel and electrical box cover as described in section 5.2, then plug the service override control into the DIN connector on the main circuit board. Use the buttons on the controller to move the platform up and down.

Using the service override controls will cause the controller circuit board to enter a fault mode and lock out normal operation. To restore normal operation, reset the controller using the reset button or the main electrical disconnect switch (see Figure 15 on page 35).

# SECTION 3 Basic maintenance and troubleshooting

## *3.1 Routine maintenance*

The owning facility is responsible for the proper maintenance of the lift. The following checks must be performed every six (6) months:

1. Verify the operation of the lift per Section 2.
2. Verify that the lower platform door interlock engages before the platform moves from the lower landing. Verify that the upper landing door interlock engages before the platform moves from the upper landing.
3. Verify that the hydraulic oil in the reservoir (behind the bottom fascia panel at the base of the machine cabinet) is between the MIN and MAX levels when the platform is at the lower landing. If the hydraulic oil is low, remove the black reservoir cap and use a funnel and rubber hose to add more fluid. For indoor lifts use ISO 32 grade hydraulic oil such as Texaco Rando HD32 or 76 Unax AW32 filtered to 10 microns. For outdoor lifts use ISO 22 grade low-temperature hydraulic oil.

## *3.2 Basic troubleshooting*

If the lift will not operate, confirm the following before calling a service technician:

- Both doors are fully closed.
- The key switch (if present) on the operating station in use is in the ON position.
- The emergency stop button is not actuated.
- The main power disconnect switch is in the ON position.
- The branch circuit supplying the lift does not have a tripped breaker or blown fuse.

If these conditions are satisfied but the lift does not operate, contact an authorized service technician (usually the company that installed the lift). Advanced troubleshooting to be performed by the technician can be found in Section 4.

# SECTION 4 Advanced troubleshooting

## *4.1 Advanced troubleshooting*

Troubleshooting in this section is to be performed by a licensed service technician. See Section 3.2 for basic troubleshooting before contacting a licensed service technician.

| Problem | Possible Cause | Remedy | Section | Page |
|---|---|---|---|---|
| Platform will not raise or lower | Hydraulic shutoff valve is closed | Open shutoff valve | 5.1.2 | 16 |
| | Lift controller is in fault mode | Reset lift controller | 6.2 | 36 |
| | Slack chain switches have been actuated | Restore tension and reset switches | 5.7 | 23 |
| | Disconnected wire | Check lift controller lights and reconnect | 6.2 | 36 |
| | Component failure | Electrical testing – possible component replacement | 6.0 | 35 |
| Motor does not run & platform does not raise | Batteries are disconnected, dead, and/or not charging | Reconnect red battery connectors or replace batteries | 5.1.1<br>6.7 | 16<br>40 |
| Motor runs but platform does not raise | Shutoff valve is closed | Open shutoff valve | 5.1.2 | 16 |
| | Low fluid level | Fill reservoir | 3.1 | 14 |
| | Up valve not activating | Electrical testing – possible component replacement | 5.5.1 | 20 |
| Platform does not stop level with landing | Cylinder stop collar set too low (lower landing) | Adjust cylinder stop collar | 5.5.2 | 20 |
| | Terminal switch actuating early/late (either landing) | Adjust terminal switch actuator | 5.8<br>5.9 | 24<br>25 |
| Landing door will not open | Lower/upper terminal switch not actuating | Adjust terminal switch actuator or cylinder stop | 5.8/5.9<br>5.5.2 | 24<br>25<br>20 |
| | Disconnected interlock or terminal switch wire, or component failure | Electrical testing – possible component replacement | 5.10<br>6.2 | 26<br>36 |
| Landing door will not lock | Interlock manually overridden | Un-override interlock | 5.10 | 26 |

# SECTION 5 Mechanical disassembly and repair

## *5.1 Safety procedures*

The repairs in this section are to be performed by a skilled technician who has experience working on electromechanical systems and is well versed in standard industrial safety practices and procedures. In the United States of America, electrical safety procedures are established in OSHA's *Lockout/Tagout – Hazardous Energy Sources Standard* (29 CFR 1920.147).

Familiarity with the setup and operation of the lift described in previous sections of this manual is required to effectively perform the repairs listed in this section.

### 5.1.1 Electrically isolating the lift

To electrically isolate the lift, turn the manual disconnect installed with the lift to the OFF position. This will completely isolate the lift from AC power and disconnect the logic controller from DC power from the built-in backup batteries, eliminating the possibility of unexpected platform movement.

While servicing the lift, be aware that some parts will remain live at 24VDC due to connection to the batteries. To isolate the batteries, open the machinery cabinet and disconnect the red battery connectors located just above the left battery.

### 5.1.2 Hydraulically isolating the pumping unit

A shutoff valve is provided to isolate the hydraulic power unit from the lifting cylinders. It is located just to the left of the electrical box in the base of the machine cabinet, just above the motor and pumping unit. Close this valve during servicing to prevent unintended motion of the platform.

To close the shutoff valve and isolate the pump from the cylinders, turn the handle horizontal, perpendicular to the tubes connected to the body of the valve. While the shutoff valve is closed, the pump and lowering valve cannot move the platform.

## *5.2 Removing the fascia panels*

Most of the functional components inside the machinery cabinet can be accessed by removing the bottom fascia panel while the platform rests at the lower landing.

| | |
|---|---|
| ⚠ ***WARNING*** | ***CRUSHING AND SHEARING HAZARDS EXIST WHILE OPERATING THE PLATFORM WITH ONE OR MORE FASCIA PANELS REMOVED. EXERCISE EXTREME CAUTION.*** |

1. Remove the two (2) screws just above the platform floor fastening the bottom fascia cover. Set the cover aside.
2. Remove the four (4) screws near the top of the bottom fascia panel.
3. Slide the fascia panel up to remove it, taking care not to scratch the other panels.
4. Remove additional panels in the same manner.
5. To reinstall panels, perform the above steps in reverse order. Install screws with a manual screwdriver, finding the existing threads by feel.

| | |
|---|---|
| ***NOTICE*** | ***Reinstalling fascia panel screws with a power driver is likely to damage the threads and result in loose fixing.*** |

## *5.3 Removing the upper covers (16E, 16S)*

The upper covers form the insides of the side posts at the upper landing and support the upper door and strike. Removal of these covers grants access to the upper terminal switch, creep switch, and upper door interlock switch.

| | |
|---|---|
| ⚠ ***WARNING*** | ***FALLING HAZARD WHEN UPPER DOOR IS REMOVED AND PLATFORM IS NOT AT UPPER LANDING.*** |

| | |
|---|---|
| ⚠ ***CAUTION*** | ***PINCHING HAZARD WHEN UPPER COVERS ARE REMOVED. EXERCISE CAUTION.*** |

1. Raise the platform to the upper landing to prevent falling when the upper door is removed. Otherwise, use fall protection and restrict access to the area.
2. Manually unlock the door per the instructions in section 5.10.2.
3. Remove the hinge-side upper cover (with door attached) by removing two (2) screws fastening it to the top of the side rail, all screws fastening it to the vertical face of the side rail, and three (3) screws attaching it to the landing plate at the bottom.
4. Unfasten the strike-side upper cover (with door interlock switch attached) in the same manner as the hinge-side cover. However, the strike-side upper cover is fixed at the bottom with only two (2) screws.
5. Lift the strike-side upper cover up several inches to expose the cord from the upper door interlock switch. Disengage the cord from the U-shaped slot in the landing plate and pull it up another several inches to find the connectors labeled “P5.” Disconnect the connectors and take precautions to prevent the lower wiring harness from falling down into the machine cabinet. If present, also disconnect the connectors from the back of the operating station mounted over the skin.
6. After servicing, reassemble by performing the steps above in reverse order. Take care not to pinch the cable from the upper door interlock switch during installation; it must be routed through the “hole” formed by the opposing U-shaped cutouts in the landing plate and upper strike-side cover.

## *5.4 Mechanically blocking the platform*

Most repairs on the Clarity lift can be accomplished with the platform resting at the lower landing. Ascension recommends against working under the raised platform unless it is necessary to do so. Any time work will be performed under the platform, it must first be blocked. **Never place a load on the platform while it is supported by mechanical blocks.**

| | |
|---|---|
| ⚠ ***WARNING*** | ***RISK OF CRUSHING. DO NOT PLACE ANY LOAD ON THE PLATFORM WHILE IT IS BLOCKED FOR SERVICE.*** |

Provision and use of blocking means is the responsibility of the servicing company. Blocking means must be stable and capable of supporting 450 lb. (200 kg).

## *5.5 Hydraulic drive system*

### 5.5.1 Description

The hydraulic system includes the hydraulic power unit, two (2) lifting cylinders, a shutoff valve, and the tubing connecting the components. The hydraulic power unit includes an integrated motor, pump, reservoir, and manifold with two solenoid valves:

- Lowering valve: When the solenoid is energized, the valve opens and allows fluid to flow out of the cylinders and back to the reservoir, lowering the platform by gravity.
- Up valve: When the solenoid is energized, the valve closes to direct fluid to the cylinders. When the valve is in its normally open state, fluid bypasses from the pump directly back to the reservoir. This valve prevents the platform from coasting above the upper landing and provides redundant safety with the motor relay.

To raise the platform, the motor and up valve are energized to pump fluid from the reservoir through a tee to the parallel-connected cylinders. As the cylinders extend, they raise the platform at double speed by means of a 2:1 chain suspension system.

As each cylinder extends, fluid stored in the rod end flows out the top port and refills the reservoir. As gravity lowers the platform by retracting the cylinders, it creates a vacuum in the rod end of the cylinder that draws fluid back into the empty volume, acting as additional reservoir capacity.

### 5.5.2 Cylinder stop collars

A shaft collar installed at the top of each cylinder rod acts as a lower physical stop and prevents the rod from retracting too far once the platform reaches the lower landing.

The stop collars should not normally need adjustment after initial installation of the lift. If adjustment is necessary, loosen the screw on each collar then use the manual lowering pull handle to lower the platform to where it rests on the ground without any slack in the lifting chains. Slide each collar down until it contacts the top of the cylinder barrel and tighten the screw to lock the location.

### 5.5.3 Measure and adjust relief pressure

The hydraulic system is equipped with a pressure gauge that should read between 150-450 psi during normal operation. The relief pressure is factory set at 600 psi, which should be the correct setting for most applications.

To measure and adjust the relief pressure:

1. Remove the bottom fascia panel as described in Section 5.2.
2. Close the hydraulic shutoff valve as described in Section 5.1.2 to isolate the gauge and facilitate pressure readings.
3. Use an operating switch or the service override controls to run the motor.
4. Read the pressure on the gauge located on top of the hydraulic power unit.
5. If adjustment is necessary, loosen the jam nut on the relief pressure adjustment screw on the front of the hydraulic power unit, adjust the screw as needed, and retighten the jam nut.

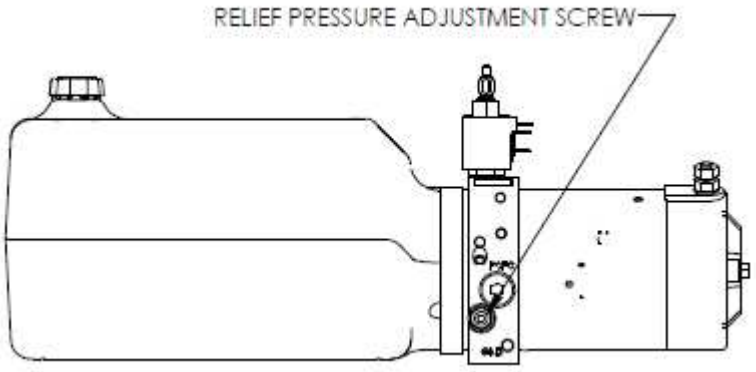


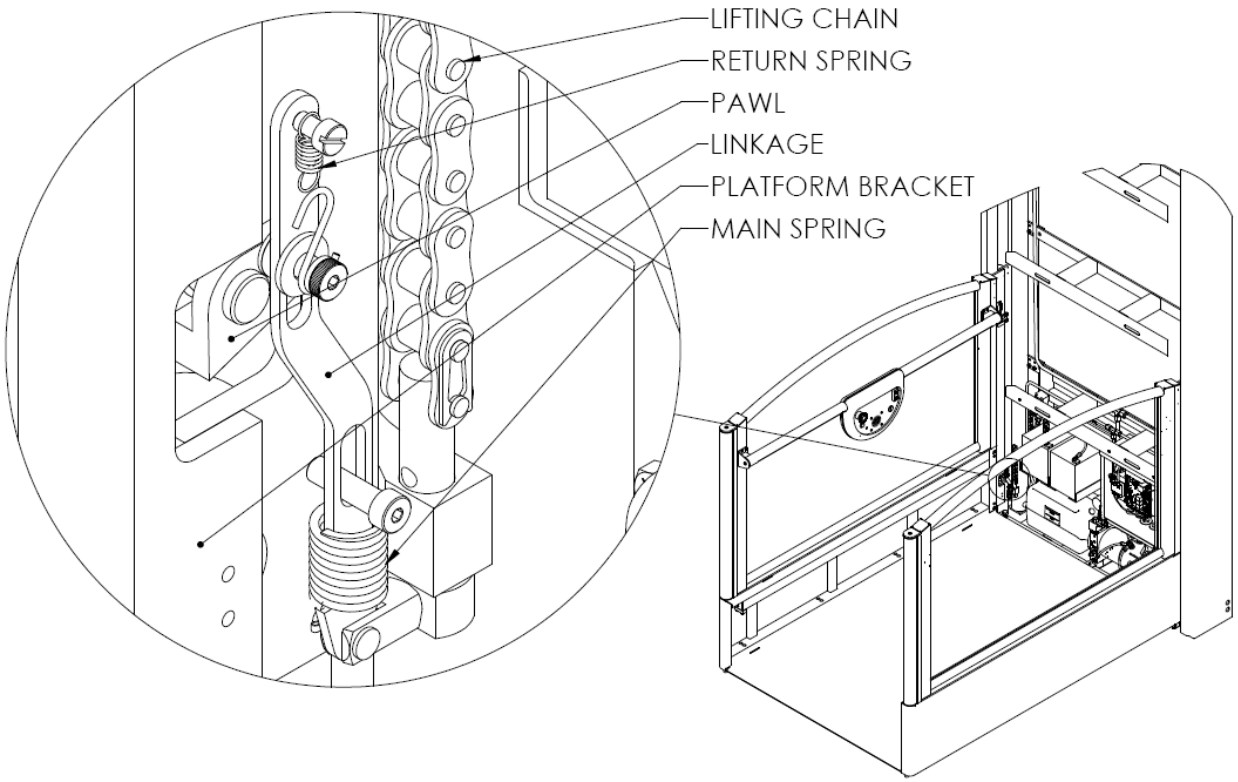

**Figure 4: Relief adjustment**

## *5.6 Platform safeties*

The platform is equipped with mechanical devices designed to prevent it from falling in the event of failure of the lifting chains. These devices are called the platform safeties, and are located on both sides of the platform where it engages the guide rails.

The platform safeties each consist of a toothed pawl, stainless steel linkage, and a compressed spring. When tension is lost in the lifting chain, the spring pushes the linkage down and presses the tooth of the pawl into the guide rail. When tension is restored, a return spring allows the linkage to disengage independently of the pawl until the platform is lifted, allowing the pawl to snap back into the retracted position.

See section “SECTION 7: Inspections” for platform safety testing.



## *5.7 Slack chain switches*

The two (2) slack chain switches are cable-pull type switches with a manual reset. The switches are mounted on each side of the machinery cabinet base. Each contains electrical contacts that are closed as long as there is tension in the platform suspension chains, allowing for normal operation of the lift. If tension is ever lost in any of the chains, the contacts for the applicable switch are opened and operation of the lift will cease. Even if tension is restored, the contacts on that switch will not close until the manual reset is pulled, allowing normal operation to resume.

To adjust the default tension on the slack chain switches, tighten or loosen the attached turnbuckle. Adjust so that the green indicator ring near the end of the switch actuator is aligned with the edge of the surrounding switch housing.

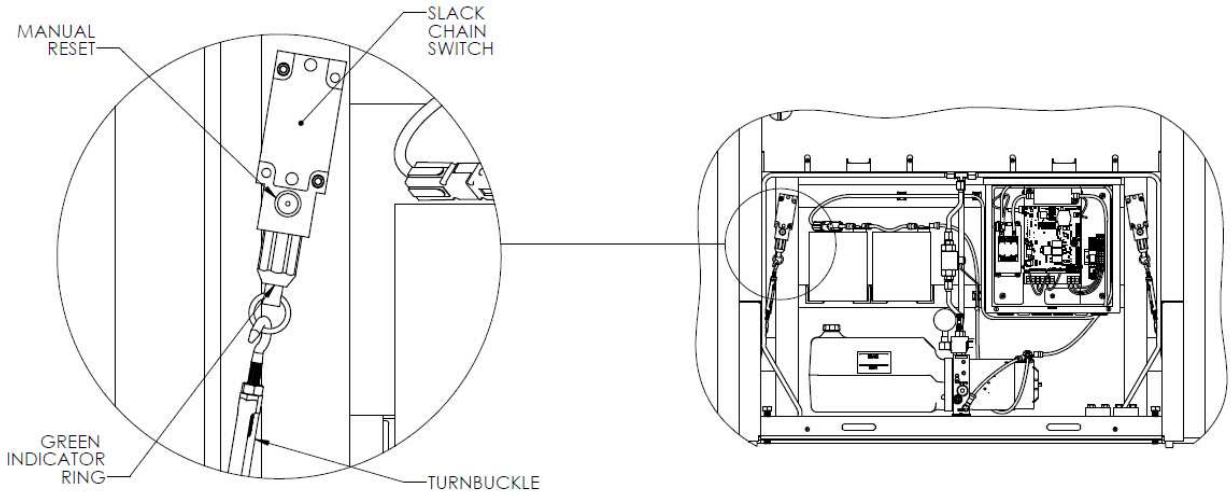



**Figure 5: Slack chain switches**

## *5.8 Lower terminal switch*

The lower terminal switch is a rotary lever limit switch mounted at the bottom of the machinery cabinet base on the right side. Upon arrival at the lower landing, the normally closed (NC) contacts open to stop the platform, and the normally open (NO) contacts close to apply power to unlock the lower landing door.

The lower terminal switch is actuated by an adjustable block fastened to the right platform bracket. To adjust the lower stopping location, loosen the two screws fastening the actuator block and shift it up or down to lower or raise the platform stopping location.

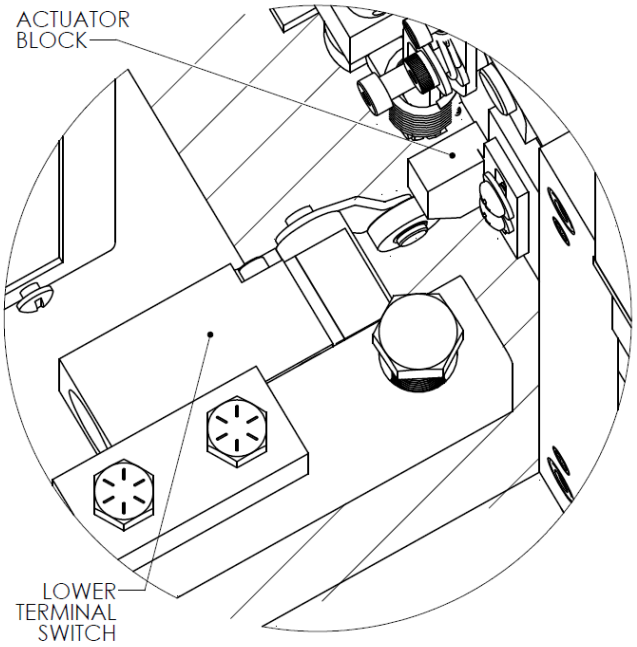



**Figure 6: Lower terminal switch**

## *5.9 Upper terminal switch and creep switch*

The upper terminal switch is a rotary lever limit switch mounted at the top of the right guide rail (as viewed from the lower landing). It contains two sets of contacts: a normally closed (NC) set that are opened to stop the platform upon arrival at the upper landing, and a normally open (NO) set that are closed to apply power to unlock the upper landing door.

The creep switch is a microswitch mounted just in front of the upper terminal switch. If the platform is left at the upper landing level and drifts down enough to break contact with the upper terminal switch while the microswitch remains actuated, the lift will re-level the platform. This does not occur if the platform is more than two inches away from the landing or if a door is open. The creep switch also signals the controller to slow the platform as it reaches the upper landing during normal operation.

Both switches are actuated by a plate fastened to the right platform bracket. If it is necessary to adjust the location where the platform stops, loosen the two screws fastening the plate and shift it up or down to lower or raise the platform stopping location. To adjust the height where the creep switch activates, loosen the two screws fastening the creep switch assembly to the guide rail and shift the assembly up or down.

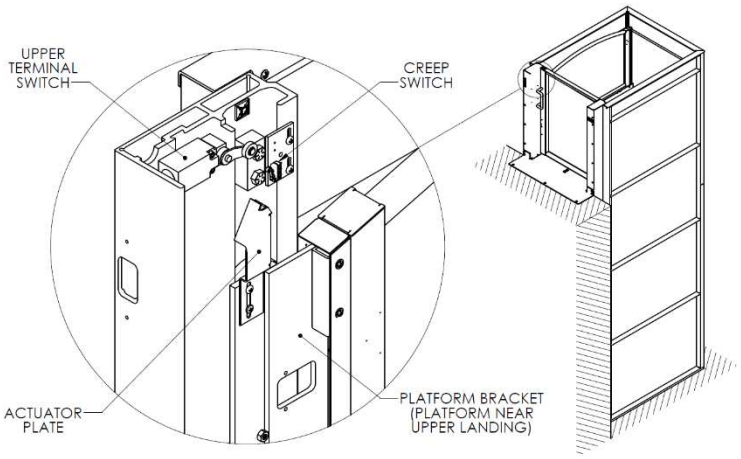



**Figure 7: Upper terminal switch and creep switch**

## *5.10 Door lock switches*

### 5.10.1 Description

The door at each landing is equipped with a safety interlock switch that mechanically latches the door whenever the platform leaves the landing and electrically monitors whether the door is open, shut and unlocked, or locked shut.

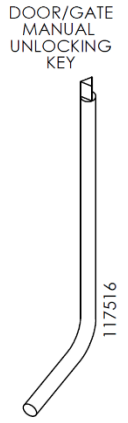
The switch actuator mounts onto a plate on the swing side of the door. When the door closes, the actuator is inserted into the head of the switch mounted in the door frame. If an operating switch is pressed while the actuator is inserted, the switch releases the locking pin to latch the door. It remains locked until the platform returns to that landing.

When the door is open, the solenoid releases the lock pin so that it may immediately spring into its locking position when the actuator is re-inserted. When the door closes, it locks for a half second to prevent it from bouncing open.

### 5.10.2 Mechanically overriding the door locks

Some maintenance and repairs may require manually unlocking the upper or lower landing door to gain access to the runway. While a door lock is mechanically overridden, it cannot lock until it is returned to the default position. As a result of the door remaining unlocked, the operating stations cannot be used to run the platform up or down. The override controls may still be used to run the platform up or down.

To mechanically override a door lock on the 16E or the upper door on the 16S, insert the manual unlocking key (or a 2.5mm hex key) into the Ø 1/4” hole below the lock actuator entry and fit it into the triangular recess in the interlock switch. Gently turn the hex key counterclockwise until it stops (about 1/4 turn) and remove the hex key.




To mechanically override the door lock on a hoistway door installed in the building wall, use the small override lever on the inside of the runway (Honeywell locks) or use the triangular key supplied with the door in the hole in the front of the frame (Prudhomme locks).

## *5.11 Traveling cable*

The traveling cable connects the electrical devices on the platform to the control equipment inside the machine cabinet. As the platform moves, the traveling cable flexes and follows it. Typical cable routing is shown in Figure 8 (upper fastening position depends on total travel height).

From the electrical box, the traveling cable is routed up through the centers of the machine cabinet crosspieces to where it is clamped to one of the machine cabinet crosspieces. The cable loops over the crosspiece and down the side clearance to the platform bracket, where it is fastened with another clamp bracket. At the platform bracket, the individual wires are routed through a sheet metal guard bracket as shown in Figure 9 and connected to a mating harness in the platform side.

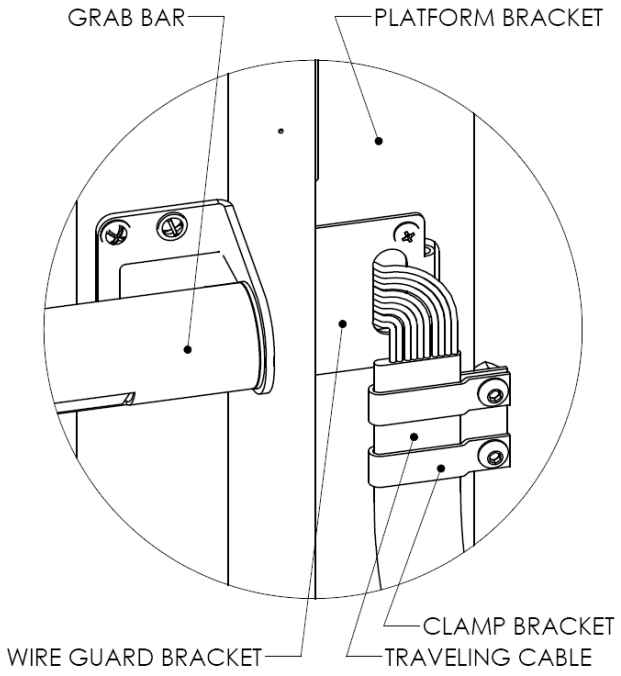



**Figure 9: Traveling cable guard**

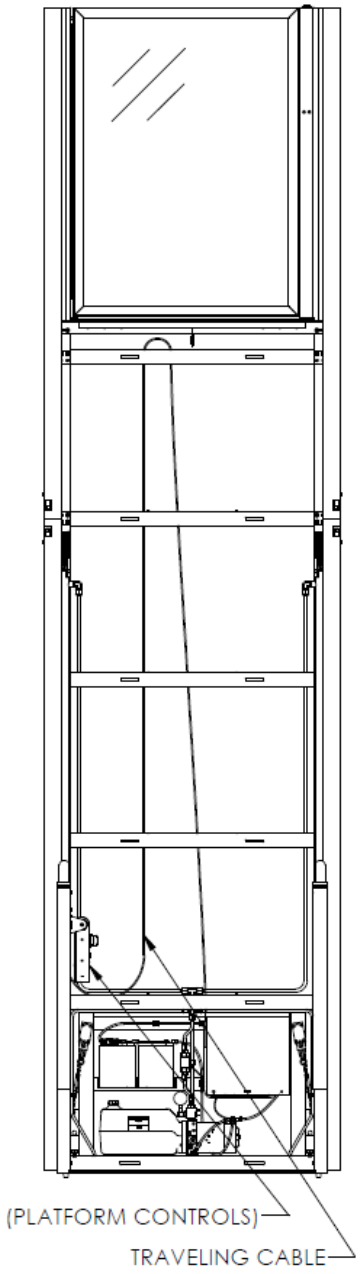



**Figure 8: Traveling cable**

## *5.12 Platform operating station*

The platform operating station contains an operating switch, emergency stop, and control lighting. It may optionally contain a hands-free phone and/or keyed operation. The front plate is attached at the back with four (4) fasteners (10-24 binding barrels). To remove the front plate from the platform operating station, remove the fasteners, then pull the front plate off and disconnect the 10-conductor connector. Disconnecting the connector will cause the audible alarm to sound unless the manual disconnect is turned OFF.

## *5.13 Windows*

All standard windows are made of high impact strength acrylic sheet. Clean windows using a soft antistatic cloth and water mixed with a mild, non-abrasive detergent. Scuffs and scratches may be removed with plastic polish.

### 5.13.1 Door windows

The windows in the doors are held in place with a special glazing system consisting of an aluminum frame with a heavy rubber gasket, shown in Figure 10. To remove a window, pry one end of each rubber gasket free and pull the gasket out of its channel. When all four gaskets are removed, the window will lift straight out of the frame. To reinstall the window, place it back in the frame and stuff the four gaskets back into their channels (this may require a significant amount of force).

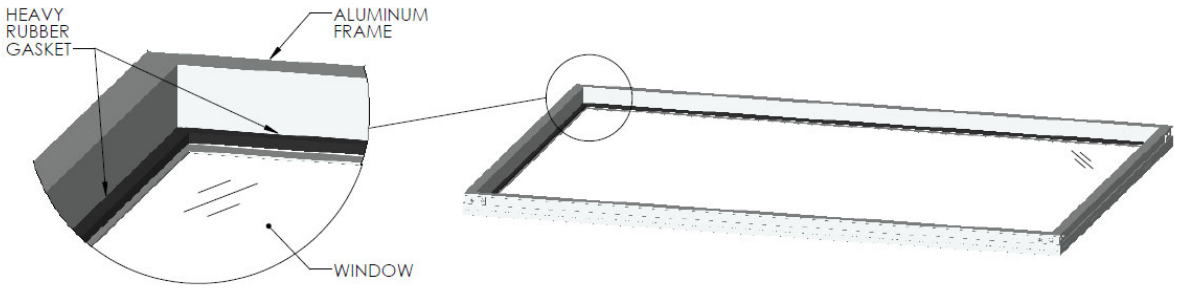



**Figure 10: Window removal**

### 5.13.2 Runway enclosure windows

The windows in the runway enclosure are inserted into the surrounding window frame members and cannot be removed without first removing the top horizontal window frame member. The horizontal members are interlocked with the vertical enclosure corner posts and can only be removed vertically (not horizontally). As such, to remove a window, all window panel assemblies above it must also be removed.

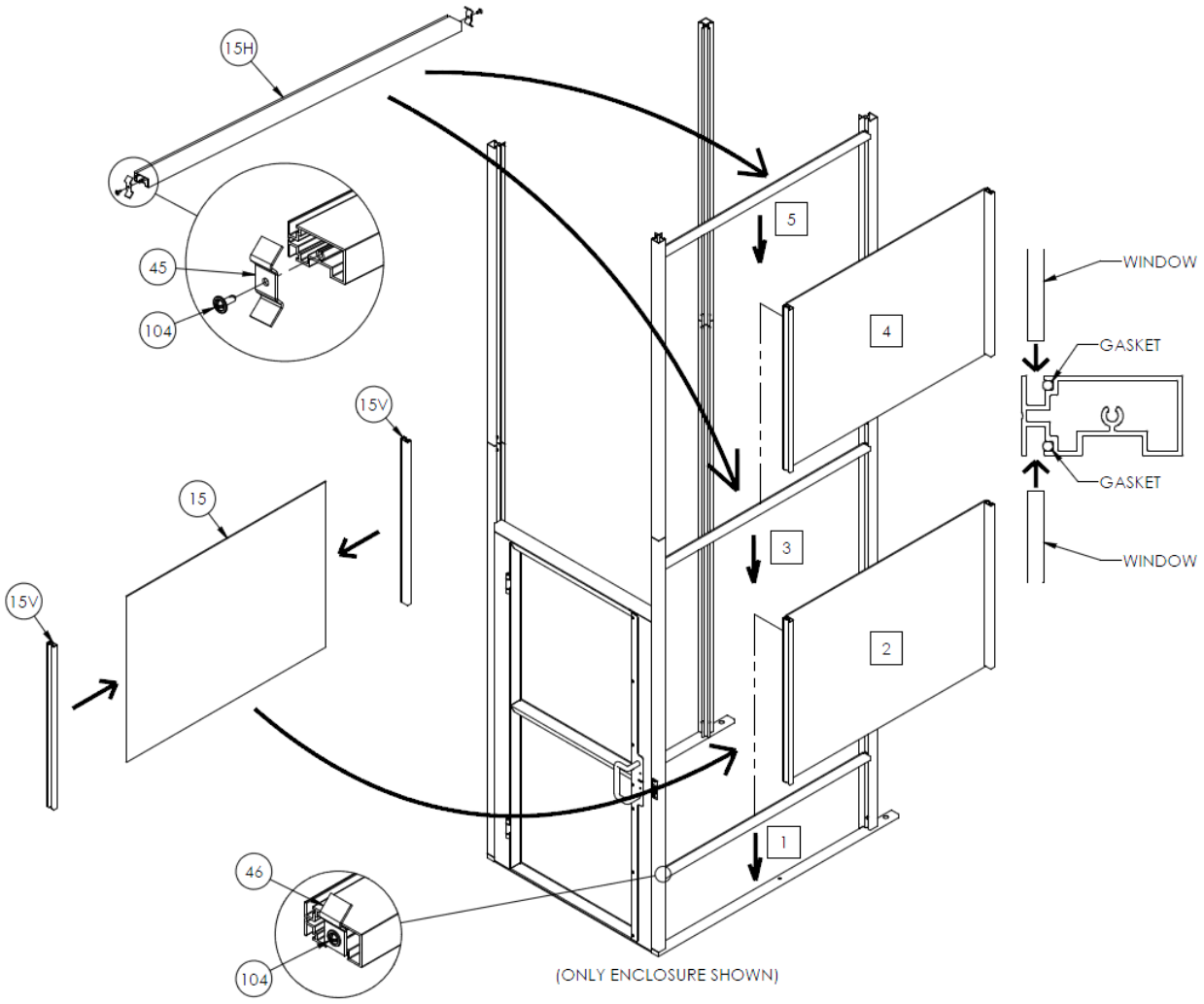



**Figure 11: Runway Enclosure Assembly**

### 5.13.3 Platform windows

Each window in the platform side assembly is pressed into a slot in the top stainless steel rail, slid into channels in the side frame, and fixed by attachment of the stainless rail to the side frame. The window and top rail are tightly factory-fitted, and should be removed and replaced as a unit. To disassemble:

1. Remove the side assembly from the platform base as described in section 5.14.
2. Remove the front vertical round tube by removing the screw holding it at the top.
3. Remove the four (4) screws fastening the top tube cover brackets to the side frame as shown in Figure 12.
4. Pull the window assembly up and out of the lower stainless tube and out of the frame.
5. Remove the cover brackets from the top curved tube by removing the screws that fasten them to the underside of the tube.
6. To reinstall the window, follow the above steps in reverse order. If the window and top tube are replaced, it will be necessary to open up the pilot hole on the underside of the tube using the self-drilling screws that fasten the cover brackets.

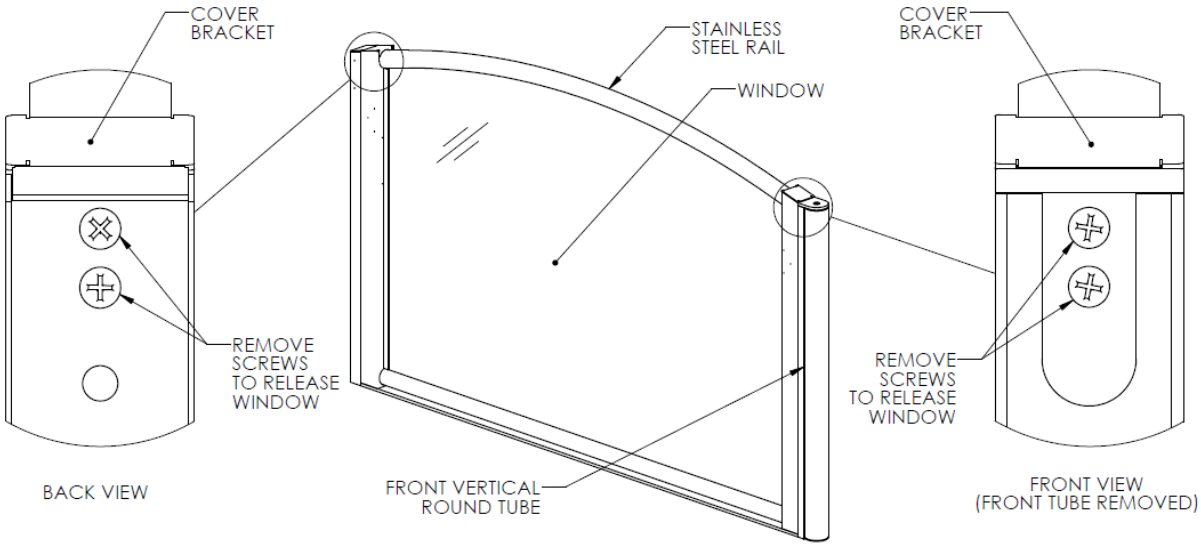



**Figure 12: Platform window removal**

## *5.14 Disassembling and detaching the platform*

The platform consists of three main subassemblies. The platform base is a steel weldment comprising the floor and lower sections of the sides. It connects to the platform brackets at the back and bears all of the structural loads imposed during operation. Two platform side assemblies mount on top of the platform base to complete the platform enclosure, one of which is fitted with a grab bar and operating controls. To disassemble and remove the platform, do the following:

### 5.14.1 Remove the platform interior covers

1. Raise the platform to gain access to the underside. Manually unlock the lower door and block the platform as described in sections 5.4 and 5.10.2.
2. From underneath the platform, remove the four (4) sheet metal screws trapping the platform interior covers. These screws are recessed into the underside of the platform floor near the sides. Typical location each corner shown in Figure 13.

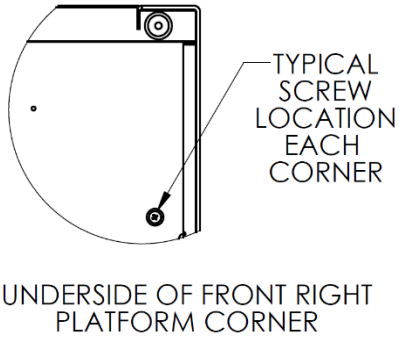



**Figure 13: Screw location**

3. Unblock the platform, re-lock the door, and lower the platform to the floor level. Remove the screws fastening each platform interior cover to the platform base, slide the cover towards the front of the platform about 3/8”, and pull it off.

### 5.14.2 Remove the platform side assemblies

1. Remove the two (2) screws attaching the platform side assembly to the platform bracket at the back of the lift.
2. Remove the four (4) 1/4”-20 x 4-1/2” hex cap screws fastening the platform side assembly to the platform base. These screws are located inside the platform in the hollow side wall of the platform base.

3. Remove the platform side assembly. If removing the side with controls, first slide the assembly forward a few inches, find the electrical connectors at the back, and unplug. Unplugging the connectors will activate the audible alarm unless the main disconnect switch is OFF.

### 5.14.3 Detach the platform base

This step is necessary only when performing certain major repairs. Call Ascension at 1-800-459-0400 for service recommendations.

1. Manually lower the platform until it is resting firmly on the ground. It is also acceptable to rest it on a pallet or other means to facilitate removal of the platform after it is detached.
2. Remove the lower landing door assembly from the runway enclosure. See section 5.15 for how to remove a runway enclosure door (16E, 16D).
3. Use a 3/16” hex key to loosen the four (4) socket set screws at the inside rear of the platform base by at least four turns each.
4. Remove the four (4) pull-out dowel pins connecting the platform base to the platform brackets. The best way to do this is by threading a 1/4”-20 threaded rod into the dowel pin, placing a hollow tube around it, and tightening a nut against the end of the tube to draw the pin out of its hole and into the tube.
5. Pull the platform forward to disengage it from the platform brackets.
6. To reinstall the platform, follow the above steps in reverse order.

## *5.15 Runway enclosure (16E, 16D)*

The runway enclosure is comprised of the lower landing door and window panels that surround and enclose the lift for its full length of travel. It serves to prevent unintended access during operation. It is fastened along the length of the runway to the edges of the guide rails at the back and is anchored to the ground at the front. Enclosure disassembly is not necessary for most repairs.

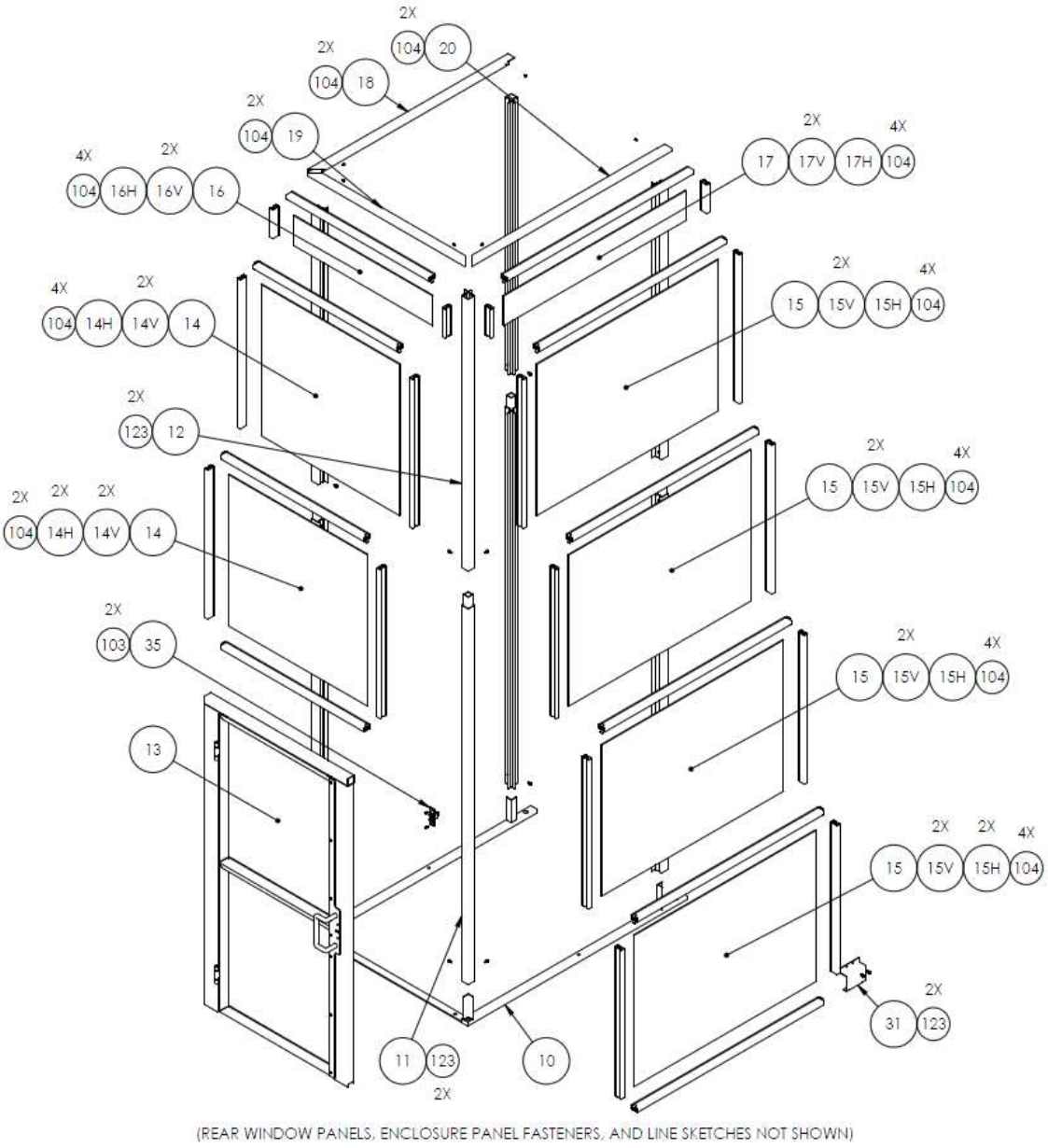



**Figure 14: Runway enclosure**

Components of the runway enclosure are fastened from the inside. It may help to operate the platform in order to gain access to these fasteners.

To disassemble:

1. Remove the upper enclosure cover over each enclosure side to be disassembled by removing the two (2) screws fastening it to the vertical corner posts.
2. Starting from the top, remove each window panel by first removing the screws fastening it to the vertical corner posts. Next, remove the top horizontal window frame member by lifting straight up. Remove the window and the two attached vertical side window frame members by lifting up. Keep track of the original location and orientation of each removed panel to facilitate re-assembly.
3. To gain access to the screws fastening the bottom runway enclosure panels and the lower landing door, raise the platform then manually unlock the lower door and block the platform as described in sections 5.4 and 5.10.2.
4. Remove the lower landing door by removing the eight (8) screws fastening the door frame to the vertical corner posts. Tilt the top of the door frame forward to reveal a connector at the bottom corner of the frame below the lock switch. Detach the connector and remove door and frame assembly.
5. Remove the front two (2) vertical corner posts by removing the two (2) screws fastening the posts to the enclosure base.
6. To reinstall the enclosure, follow the above steps in reverse order. Install screws with a manual screwdriver, finding the existing threads by feel, taking care to not strip the existing threads. Use a dead-blow hammer or rubber mallet to install the window frame members over the windows; see the Installation Manual for more detail.

# SECTION 6 Electrical testing and adjustment

## *6.1 Access to the lift controller*

The lift controller is located at the bottom of the machine cabinet. It is accessed by removing the bottom fascia panel (Section 5.2) and the cover to the electrical box.

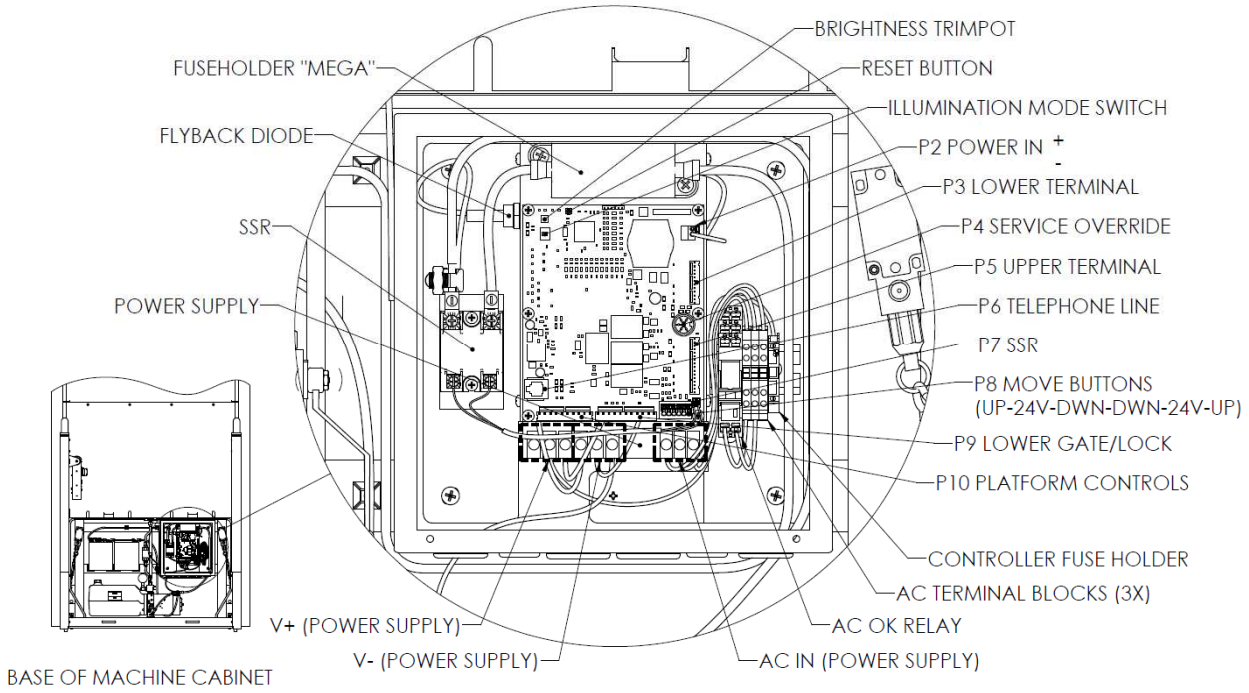



**Figure 15: Electrical box equipment**

The figure above identifies the equipment inside the electrical box as well as the connectors (“P#”) and other components on the controller circuit board. Some cables hidden for clarity.

## 6.2 Controller diagnostic lights

The circuit board controlling the lift is equipped with LED lights for diagnostic purposes. The following diagram shows the location of each diagnostic light:

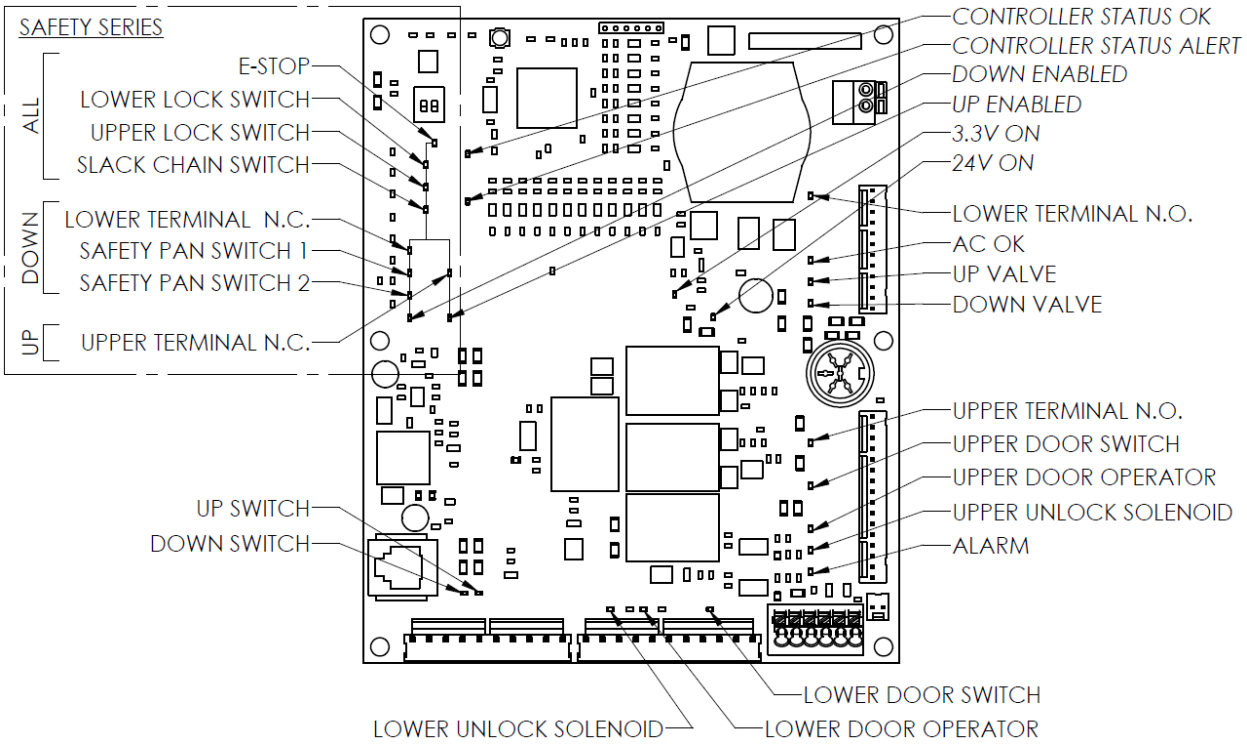



**Figure 16: Controller diagnostic lights**

- Each input light illuminates when the contacts of the associated switch are closed.
- Each output light illuminates when power is applied to that output.
- In the case of the door operator signal outputs, which do not source power but simply complete an external signal circuit, the lights illuminate when the controller is signaling the operator to open the door.

### 6.2.1 Input, output and controller status lights

| IO/*status* light | Illuminated means… |
|---|---|
| *Controller status OK* | Power is connected and controller is initialized. |
| *Controller status alert* | Flashes when a fault is detected, locking out all other functions until reset. There are several possible causes:<br>• The service override controls have been used.<br>• An output sticks ON after deactivation by controller.<br>• Component fault on the circuit board.<br>• Software crash.<br>To reset the controller, press the reset button near the top left of the board or switch the main disconnect OFF then back ON. If the alert light immediately begins flashing again, contact Ascension. |
| *Down enabled* | The platform may safely descend if a down switch is pressed. |
| *Up enabled* | The platform may safely rise if an up switch is pressed. |
| *3.3V On* | The main processor chip is receiving 3.3V power. |
| *24V On* | The board is receiving power from the 24V system. |
| Lower terminal N.O. | Platform is at the lower landing. |
| AC OK | AC power is detected (no power outage). |
| Up valve | UP valve is activated, allowing motor to raise platform. |
| Down valve | DOWN valve is activated, allowing gravity to lower platform. |
| Upper terminal N.O. | Platform is at the upper landing. |
| Upper door switch | Upper door is closed. |
| Upper door operator | Upper door operator is signaled to open (if provided). |
| Upper unlock solenoid | Upper door unlock solenoid is powered (door should unlock). |
| Alarm | Audible alarm is activated. |
| Lower door switch | Lower door is closed. |
| Lower door operator | Lower door operator is signaled to open (if provided). |
| Lower unlock solenoid | Lower door unlock solenoid is powered (door should unlock). |
| Down switch | A “down” switch is pressed. |
| Up switch | An “up” switch is pressed. |

### 6.2.2 Safety series

Lights in the “safety series” indicated in the upper left corner show the state of the safety switches. All of these switches must be closed to enable UP or DOWN operation of the platform. When the contacts of a single switch in this series are opened, all downstream lights will also go out. The upper part of the series controls both UP and DOWN operation, then the series splits into two separate branches for the switches that pertain to operation in only a single direction. See the markings on the circuit board or Figure 16 on page 36.

To restore operation, identify the uppermost unlit light in the safety series and troubleshoot that switch, working down the series until DOWN ENABLED and/or UP ENABLED illuminate. Note that, if the lift is at either the upper or lower landings, the corresponding door will normally remain unlocked while the lift is at rest (causing the corresponding light and all lights downstream to go out). As such, press and hold UP/DOWN to trigger the lift to lock the lower/upper door to illuminate the corresponding light and allow for illumination of all lights downstream in the safety series.

| Branch | Safety series light | Illuminated means… |
|---|---|---|
| ALL | E-stop | The emergency stop switch is released. |
| | Lower lock switch | The lower door is closed and locked. |
| | Upper lock switch | The upper door is closed and locked. |
| | Slack chain switch | There is tension in the suspension chains. |
| DOWN | Lower terminal N.C. | The platform has not yet reached the lower terminal. |
| | Safety pan switch 1 | Jumper installed (unused feature). |
| | Safety pan switch 2 | Jumper installed (unused feature). |
| UP | Upper terminal N.C. | The platform has not yet reached the upper terminal. |

## *6.3 Removing the controller subpanel*

The controller subpanel is the sheet metal component that the controller and other components are mounted to within the electrical box. To remove, unfasten the four (4) screws, one at each corner. For complete removal, disconnect the externally connected wires at either end.

## *6.4 Testing the switches*

See switch mechanical descriptions in Section 4 and operational descriptions in Section 6.2. An illuminated diagnostic light corresponds to closed switch contacts. Refer to markings on circuit board for additional connection information.

## *6.5 Testing supply of power to lift and motor*

The facility provides 120VAC input power for the lift. The power supply converts the 120VAC input to a 27VDC output which is the voltage used by the controller and motor. The power supply and batteries are electrically in parallel and both supply power to energize the controller and provide the power to run the motor.

While the batteries alone are sufficient to operate the lift for a finite period of time (such as in the event of a facility power failure), the power supply alone cannot normally generate enough current on its own to raise the platform without the additional power from the batteries. However, the power supply does have enough power to energize the controller by itself. The power supply also charges the batteries between uses.

Presence of 120VAC power at the lift can be confirmed by the “AC OK” light on the circuit board (see Figure 16 on page 36) which is controlled by the “AC OK RELAY” (see Figure 15 on page 35). The relay also has its own indicator light.

The power supply is covered in section 6.6. The batteries are covered in section 6.7.

## *6.6 Testing the power supply*

The 27VDC power supply is located behind the controller circuit board inside the electrical box. Its terminals are visible below the circuit board, just above the enclosure grounding screw. See Figure 15 on page 35.

If the circuit board has lights illuminated (is powered) when the batteries are disconnected and the manual disconnect is “ON”, this indicates that the power supply is functioning properly.

To directly check the power supply, there is a green LED located just above the AC input terminals on the power supply that can be most easily seen using a small mirror to look up at the power supply from below. If this LED is illuminated while the batteries are disconnected (power from the batteries will independently power the LED), then the unit is supplying 27VDC to power the controls and to charge the batteries. This may also be tested using a voltmeter to check the voltage between one of the “V+” terminals and one of the “V-” terminals.

To remove the power supply, remove the controller subpanel from the electrical box as described in Section 6.3 and remove the four (4) M4 screws fastening the sides of the power supply to the subpanel.

## *6.7 Testing the batteries*

The two (2) 12VDC 35A-h AGM SLA batteries (Duracell® Ultra DURA12-35C or equivalent) are connected in series and, together, are in parallel with the power supply. They provide emergency backup power to the lift in the event of a facility power outage. They are located in inside the machinery cabinet, above the hydraulic reservoir.

The power supply maintains the voltage across the two (2) 12VDC batteries at 27VDC, charging the batteries. When isolated via the red battery disconnect (see section 5.1.1), the batteries will settle to 24-25VDC. When isolated, if battery voltage is significantly below this, then the batteries likely need to be replaced.

## *6.8 Testing the controller fuse*

The controller fuse is a 4A fuse located inside a fuse holder inside the electrical box, mounted to a din rail on the right side. To test or replace the fuse, do the following:

1. Open the fuse holder, disconnecting the fuse from the circuit.
2. Test for continuity across the fuse.
3. If the fuse is not continuous, it will need to be replaced. Replacement fuses may be purchased from Ascension (P/N 193461) or a Littelfuse distributor; part number 0239004. (239 series) or 0477004. (477 series) may be used.

## *6.9 Testing the motor fuse*

The motor fuse is an 80A fuse located in a fuse holder inside the electrical box, just above the main circuit board. To test or replace the fuse, do the following:

1. Shut off the main electrical disconnect.
2. Disconnect the red battery connector just above the left battery.

| | |
|---|---|
| ⚠ ***CAUTION*** | ***MAIN DISCONNECT SWITCH AND BATTERY CONNECTOR MUST BOTH BE DISCONNECTED TO PREVENT ACCIDENTAL SHORTING OF 24V SYSTEM DURING FUSE SERVICING.*** |

3. Pry upward from one end of the fuse holder cover to remove the cover.
4. Test for continuity across the fuse while it is in place in the fuse holder.
5. If it is necessary to remove the fuse, remove the nuts at each end and lift off the connected ring terminals. Rock the top of the fuse forward to disengage it from the plastic clips in the fuse holder.
6. To reinstall fuse, snap fuse into fuse holder clips, reposition the three (3) ring terminals on the studs over the fuse tabs, and reinstall lock washers and nuts. To fit properly, the two (2) ring terminals on the right stud must be installed back to back.
7. Replacement fuses may be purchased from Ascension (P/N 193387) or a Littelfuse distributor. The manufacturer part number is 0298080.ZXEH.

## *6.10 Testing the SSR (motor relay)*

The SSR (solid-state relay) is used to switch power to the motor. The SSR is mounted on a heat sink located inside the electrical box to the left of the circuit board.

In general, the most common failure mode for an SSR is for the output contacts to short closed. If the input wires are disconnected and output contacts are still closed, then the SSR has almost certainly failed in this manner and must be replaced. For further testing, see below.

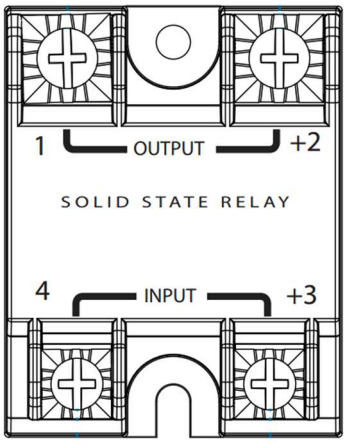



**Figure 17: SSR**

The SSR cannot be tested with a multi-meter in the same way as an electromechanical relay because it requires a load in order to operate. To test the SSR, you will need a 9V battery and a small 24V light bulb with 2-wire socket (or two 12V bulbs with sockets):

1. Shut off the main electrical disconnect and turn the handle of the hydraulic shutoff valve to isolate the hydraulic system (sections 5.1.1 and 5.1.2).
2. Leave the red battery connectors above the left battery connected. The batteries will be used to supply the SSR load voltage.
3. Use a voltmeter to check for 24VDC between SSR terminal 2 and any bare part of the galvanized subpanel inside the electrical box. If no voltage is present, stop and check the 80A fuse and connected wiring as described in section 6.7.
4. Unplug connector P7 from the lower right hand corner of the main circuit board.
5. Disconnect the screw lug connected to SSR terminal 1.
6. Connect the 24V bulb (or two 12V bulbs in series) between SSR terminal 1 and any bare part of the galvanized subpanel inside the electrical box.
7. Connect a 9V battery to the SSR as follows:
    a. 9V “+” terminal (smaller male contact on the battery) to SSR terminal 3.
    b. 9V “-” terminal (larger female contact on the battery) to SSR terminal 4.

8. Determine whether the SSR is functional:

    a. If the test bulbs illuminate when the 9V battery is connected and turn off when the 9V battery is disconnected, the SSR is working properly.

    b. If the test bulbs are always illuminated, even when the 9V battery is disconnected, the SSR must be replaced.

    c. If the bulbs fail to illuminate when the 9V battery is connected, check 9V battery and wiring. The SSR may need to be replaced.

## *6.11 Adjusting alarm volume*

The audible alarm is normally located at the upper landing and sounds when the emergency stop button is pressed. The alarm volume is adjusted manually by rotating the front cover over the speakers. The alarm is at maximum volume when the rotary cover is not covering any of the speaker holes and a minimum when they are completely covered.


**Figure 18: Alarm**

## *6.12 Two-way communication system*

The Clarity lift may be equipped with an optional hands-free two-way communication system powered by the telephone line. It is capable of autodialing of up to 5 preprogrammed emergency numbers and giving a preprogrammed digital announcement to identify the location of the emergency call.

Many settings on the two-way communication system may be adjusted simply by using a touch-tone phone to call the phone line to which the device is connected. Refer to the Viking Electronics E-1600-50A (1600A series) product manual for details.

## *6.13 Adjusting the illumination*

The Clarity is provided with standard platform and controls illumination. The brightness and mode of operation may be adjusted using the trimpot and DIP switches on the controller circuit board (for identification see Figure 15 on page 35).

To adjust the illumination brightness, turn the trimpot with a small screwdriver.

To adjust the mode of operation, set the DIP switches as follows. The switch is ON when the lever is in the down position. Switch 2 is on the left, and switch 1 on the right.

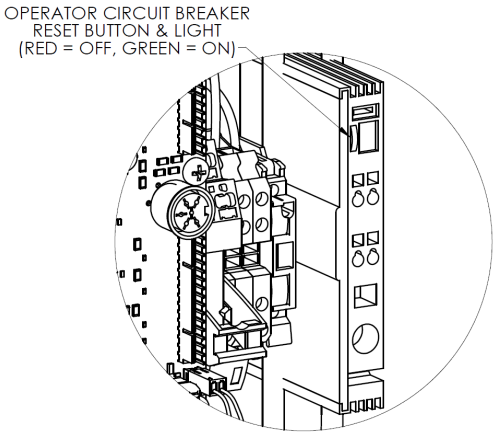
| Switch 2 | Switch 1 | Description |
|---|---|---|
| ON | ON | Automatic (default): platform illuminates whenever a door is opened or platform is operated, then dims and turns off after 30 seconds of inactivity. |
| OFF | ON | Always on: illumination remains on at all times. |
| ON | OFF | Emergency only: illumination is normally off, but turns on to a fixed brightness in the event of a power outage. |
| OFF | OFF | All off: illumination is completely disabled. |

## *6.14 Adjusting/testing the optional power door operators*

Open Sesame (model 233) operator operation (open angle, hold open time, etc.) can be adjusted by following the instructions provided in the Open Sesame instruction booklet which can be obtained from the manufacturer's website. Condensed instructions are on the inside of the operator cover.

The Open Sesame operators are normally equipped with an on/off switch on the operator that can be used to enable/disable the operator.

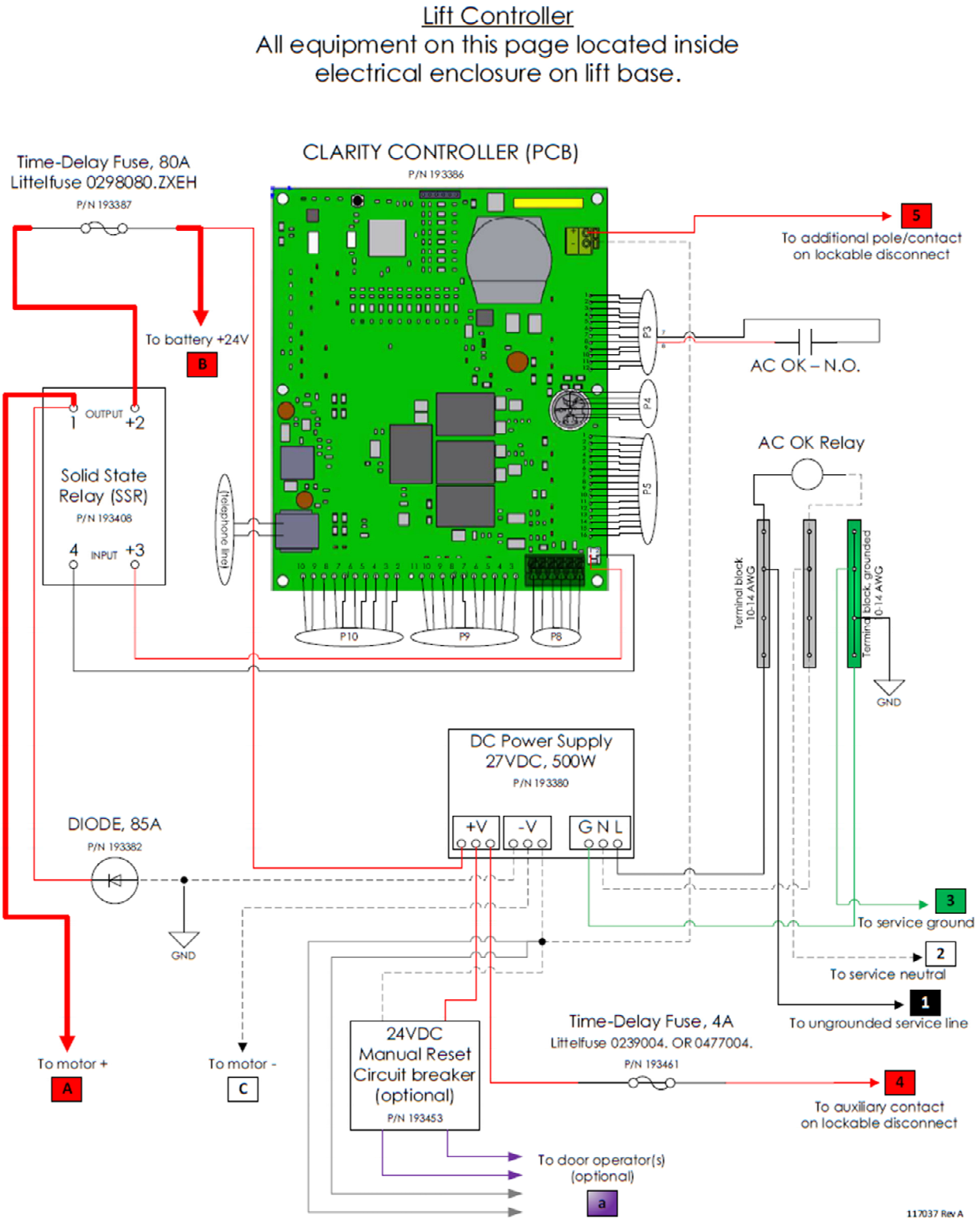
The Open Sesame (model 233) operators have internal batteries that are charged by the lift. There is a circuit breaker located in the lift electrical box that, when tripped, will cut the power supply from the lift to the operator(s) (NOTE: the operator will still operate using its internal battery until drained). Press the reset button (also the light) to alternate between connecting and disconnecting power to the operators: Red = OFF, Green = ON.

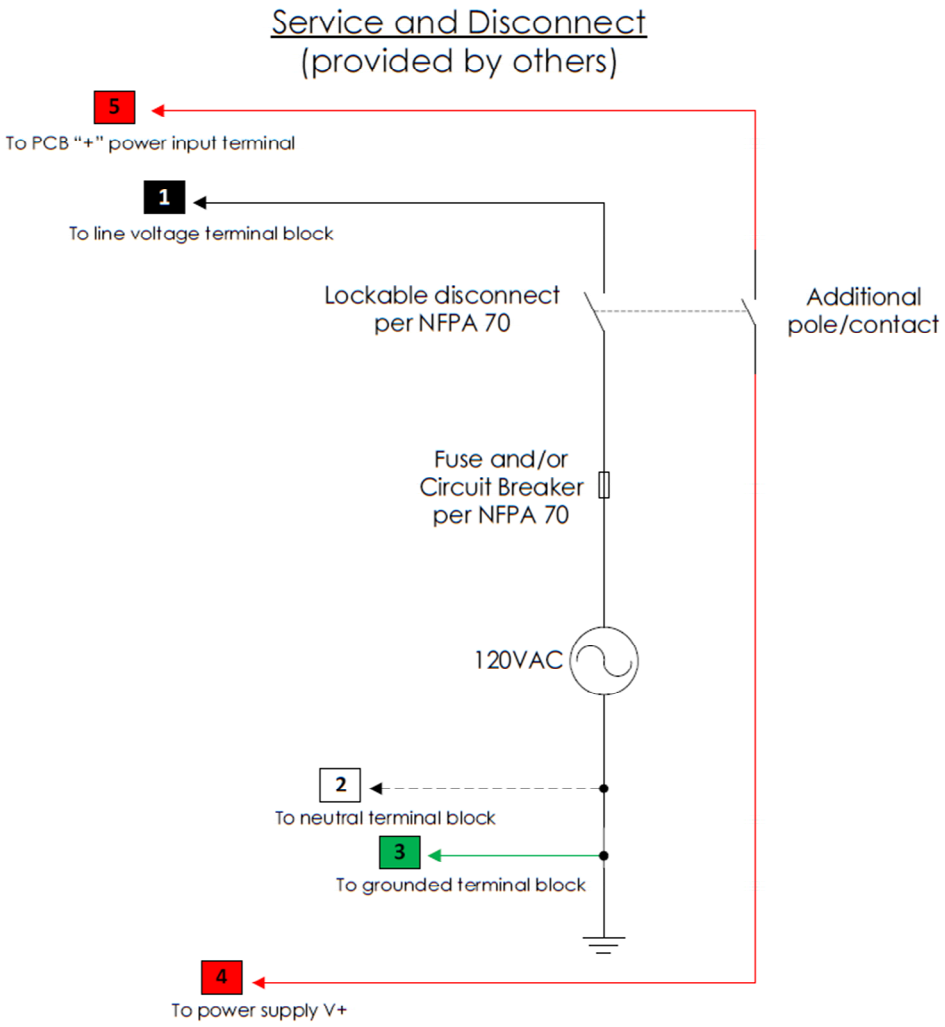


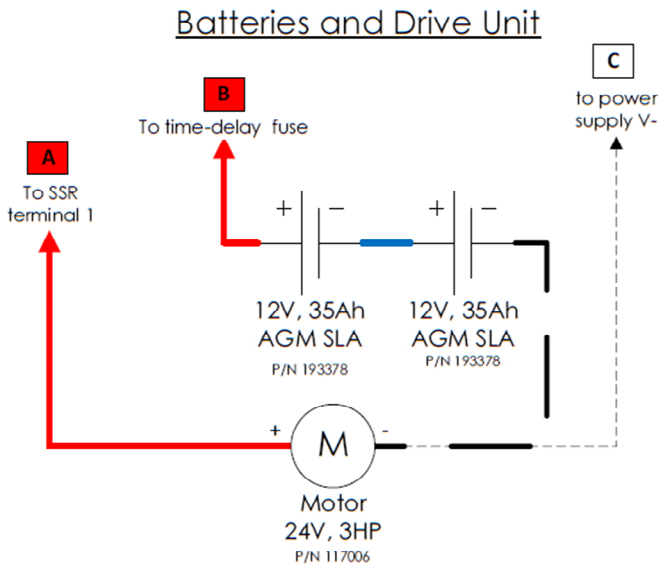

The concealed operator for hoistway doors (installed in the building wall) can be adjusted by following the instructions included with the door.

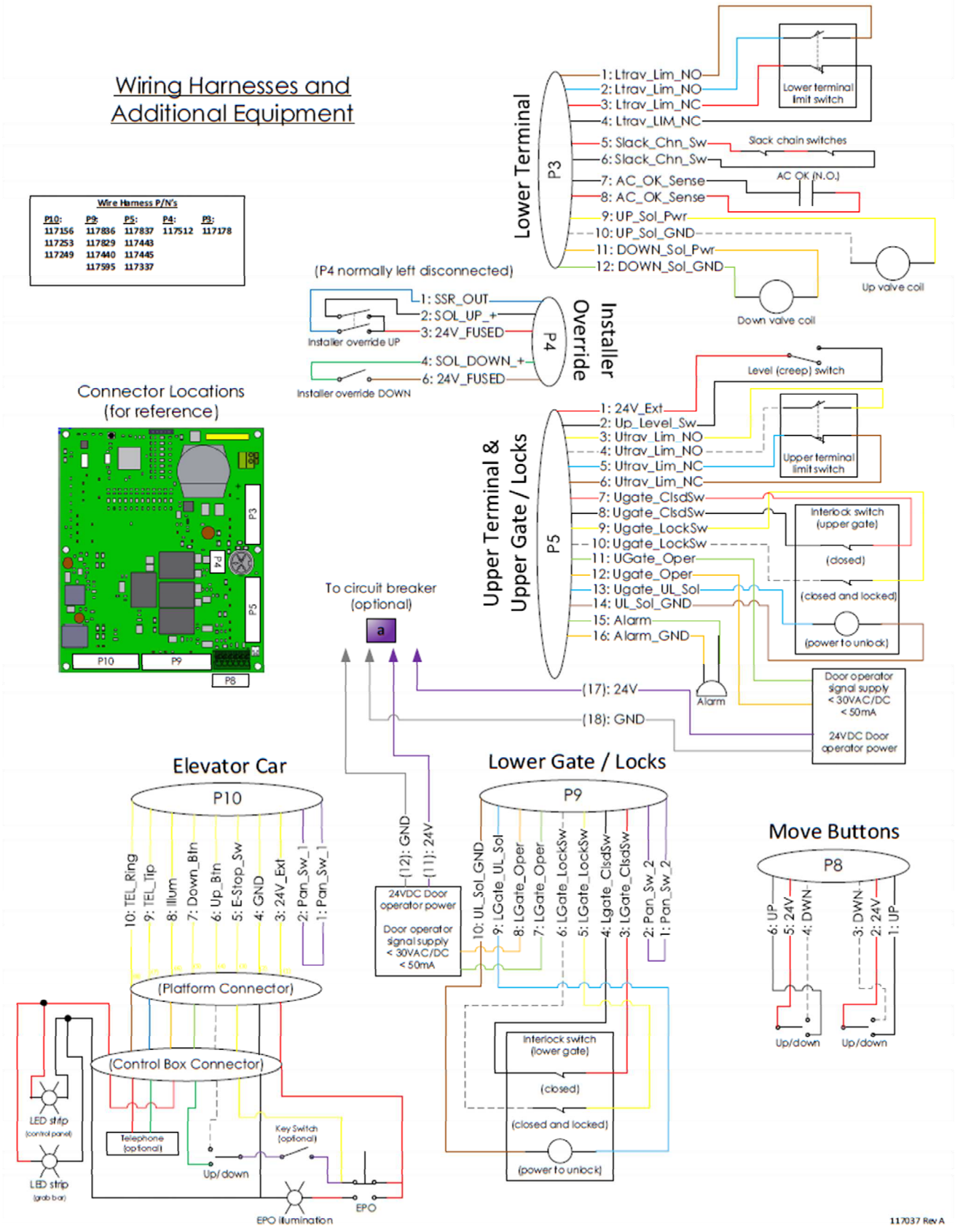
## 6.15 Electrical diagram

(Color electrical diagram provided in document box).




Service and Disconnect
(provided by others)
5
To PCB "+" power input terminal
1
To line voltage terminal block
Lockable disconnect
per NFPA 70
Additional
pole/contact
Fuse and/or
Circuit Breaker
per NFPA 70
120VAC
2
To neutral terminal block
3
To grounded terminal block
4
To power supply V+


Batteries and Drive Unit
B
To time-delay fuse
C
to power
supply V-
A
To SSR
terminal 1
+
–
+
–
12V, 35Ah
AGM SLA
P/N 193378
12V, 35Ah
AGM SLA
P/N 193378
+
M
-
Motor
24V, 3HP
P/N 117006


Wiring Harnesses and Additional Equipment
Wire Harness P/N's
P10: 117156 117253 117249
P9: 117836 117829 117440 117595
P5: 117837 117448 117445 117337
P4: 117512
P3: 117178
Lower Terminal
P3
1: Ltrav_Lim_NO
2: Ltrav_Lim_NO
3: Ltrav_Lim_NC
4: Ltrav_LIM_NC
5: Slack_Chn_Sw
6: Slack_Chn_Sw
7: AC_OK_Sense
8: AC_OK_Sense
9: UP_Sol_Pwr
10: UP_Sol_GND
11: DOWN_Sol_Pwr
12: DOWN_Sol_GND
Lower terminal limit switch
Slack chain switches
AC OK (N.O.)
Up valve coil
Down valve coil
(P4 normally left disconnected)
Installer Override
P4
1: SSR_OUT
2: SOL_UP_+
3: 24V_FUSED
4: SOL_DOWN_+
6: 24V_FUSED
Installer override UP
Installer override DOWN
Connector Locations (for reference)
P3
P4
P5
P10
P9
P8
Upper Terminal & Upper Gate / Locks
P5
1: 24V_Ext
2: Up_Level_Sw
3: Utrav_Lim_NO
4: Utrav_Lim_NO
5: Utrav_Lim_NC
6: Utrav_Lim_NC
7: Ugate_ClsdSw
8: Ugate_ClsdSw
9: Ugate_LockSw
10: Ugate_LockSw
11: UGate_Oper
12: Ugate_Oper
13: Ugate_UL_Sol
14: UL_Sol_GND
15: Alarm
16: Alarm_GND
Level (creep) switch
Upper terminal limit switch
Interlock switch (upper gate)
(closed)
(closed and locked)
(power to unlock)
Alarm
To circuit breaker (optional)
a
(17): 24V
(18): GND
Door operator signal supply < 30VAC/DC < 50mA
24VDC Door operator power
Elevator Car
P10
10: TEL_Ring
9: TEL_Tip
8: Illum
7: Down_Btn
6: Up_Btn
5: E-Stop_Sw
4: GND
3: 24V_Ext
2: Pan_Sw_1
1: Pan_Sw_1
(Platform Connector)
(Control Box Connector)
LED strip (control panel)
LED strip (grab bar)
Telephone (optional)
Key Switch (optional)
Up/down
EPO
EPO Illumination
(12): GND
(11): 24V
24VDC Door operator power
Door operator signal supply < 30VAC/DC < 50mA
Lower Gate / Locks
P9
10: UL_Sol_GND
9: LGate_UL_Sol
8: LGate_Oper
7: LGate_Oper
6: LGate_LockSw
5: LGate_LockSw
4: Lgate_ClsdSw
3: LGate_ClsdSw
2: Pan_Sw_2
1: Pan_Sw_2
Interlock switch (lower gate)
(closed)
(closed and locked)
(power to unlock)
Move Buttons
P8
6: UP
5: 24V
4: DWN
3: DWN
2: 24V
1: UP
Up/down
Up/down
117037 Rev A

# SECTION 7 Inspections

## *7.1 System specifications*

| | |
|---|---|
| **Drive system** | 2:1 chain hydraulic, two parallel cylinders<br>Two lifting chains per cylinder |
| **Typ. working pressure** | 400 psi |
| **Min. component rated pressure** | 3000 psi |
| **Rod diameter (2x)** | 1.25 inches, solid |
| **Cylinder barrel diameter (2x)** | 2.38 inches |
| **Cylinder Bore (2x)** | 2 inches |
| **Chain type (4x)** | ANSI #50 roller chain, 5045 lb. min. strength |
| **Platform safeties** | 2x Type A (instantaneous) |
| **Platform weight** | 400 lb. |

## *7.2 Test platform safeties*

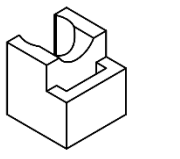
The platform safeties are identified and discussed in section 5.6.

The following additional materials are recommended for testing the platform safeties:

- ☐ Clarity service override controls
- ☐ 10 ft. of rope (any type)
- ☐ 2x4 lumber planks cut to about 12” each (qty. 4)
- ☐ Hydraulic jack (optional)

Recommended test procedure for platform safeties:

1. For first test after installation, ensure that the plastic safety blocks shipped with the lift were removed. They are marked with bright spray paint and would be located where the lifting chains attach to the platform brackets. The safety blocks aid with installation of the lift, but are intended to be removed and disposed of as they prevent actuation of the platform safeties.



2. Load platform as needed for testing.

3. With the lower door open, use the override controls to raise the platform as shown.

| | |
|---|---|
| ⚠ ***WARNING*** | ***RISK OF CRUSHING UNDER PLATFORM. NEVER GO UNDER THE PLATFORM UNLESS IT IS SUITABLY BLOCKED.*** |

4. Position wooden planks as shown to support the platform, with the rope tied around one of the vertical planks near where the two vertical planks meet.

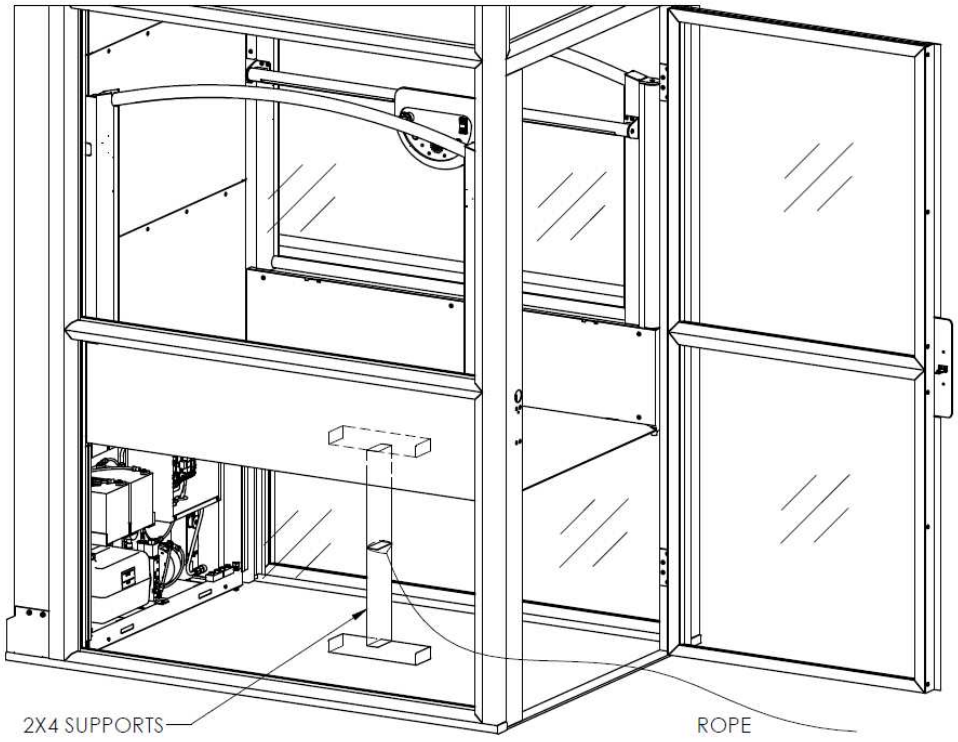



**Figure: Platform safety test**

5. Use service override controls to lower the platform onto the wooden column. Continue to hold the button until both sets of chains slacken. Due to internal friction in the lifting cylinders, it may be necessary to manually pull the chains to introduce slack. Alternatively, one of the supports may be replaced with a hydraulic jack, which can be used to raise the platform several inches and slacken the chains. Sufficient slack is necessary for the safeties to position themselves for engagement.

6. Pull rope to buckle the column holding the platform. The platform safeties will engage to prevent the platform from falling.

7. Retrieve wooden planks from under platform using a broom or other reaching tool.
8. Use service override controls to raise platform, automatically disengaging the platform safeties.
9. Use service override controls to lower platform to lower landing.
10. Reset the slack chain switches per the instructions in section 5.7.

Notes:


ascension