



# DELTA

## Straight Inclined Platform Lift

### PLANNING GUIDE

#### **Applicable Codes:**

ASME A17.1

ASME A18.1

CAN/CSA B355

CAN/CSA B613

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## Purpose of This Guide

This guide assists architects, contractors, and lift professionals to incorporate the DELTA Straight Inclined Platform Lift into a residential or public building design. The design and manufacture of the DELTA Inclined Platform Lift meets the requirements of the following codes and standards:

- ASME A18.1-2003 Section 3 (Public)
- ASME A18.1-2005 Section 3 (Public)
- ASME A18.1-2008 Section 3 (Public)
- ASME A18.1-2003 Sections 5 and 6 (Private)
- ASME A18.1-2005 Sections 5 and 6 (Private)
- ASME A18.1-2008 Sections 5 and 6 (Private)
- ASME A17.1-2000 Section 20
- ASME A17.1-2000 Section 21
- CAN/CSA B355 S1-02 (Public)
- CAN/CSA-B355-09 (Public)
- CAN/CSA B613-2000 (Private)

We recommend that you contact your local authority having jurisdiction to ensure that you adhere to all local rules and regulations pertaining to inclined platform lifts.

**IMPORTANT:** This Planning Guide provides nominal dimensions and specifications useful for the initial planning of an inclined platform lift project. **Dimensions and specifications are subject to change without notice due to continually evolving code and product applications.**

Before beginning actual construction, please consult Savaria Corporation or the authorized Savaria dealer in your area to ensure you receive your site-specific installation drawings with the dimensions and specifications for your project.

Visit our website for the most recent drawings and dimensions.

## How to Use This Guide

- 1 Determine your client's intended use of the lift.
- 2 Determine the local code requirements.
- 3 Determine the site installation parameters.
- 4 Plan for electrical requirements.

## History

February 6, 2012 – Initial release

February 14, 2012 – Corrected codes above

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## Description of the lift

The DELTA Straight Inclined Platform Lift is an accessibility device used to provide access over straight-run stairs in commercial or public settings.

The lift will transport a passenger either sitting in a wheelchair or on an optional folding seat.

The unit travels along the rail at a comfortable speed of 20 feet per minute (0.1 metres per second) up and down the stairway.

The DELTA is easy to operate using the on-board pendant control buttons. When the lift is not in use, it can be parked and folded up allowing access to the stairs.

The lift is suitable for indoor use, and can be factory-built for left- or right-side rail installations.

## Features and benefits

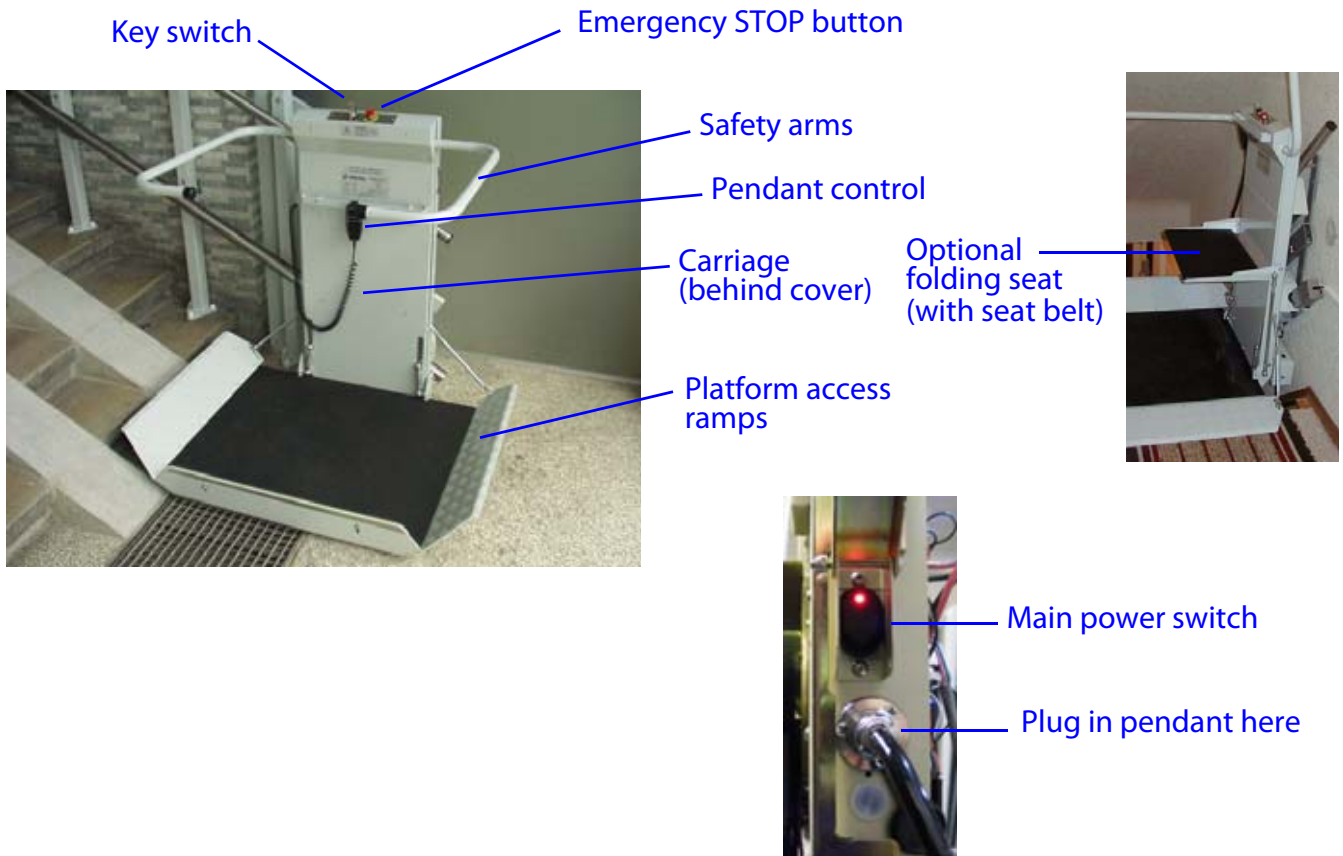
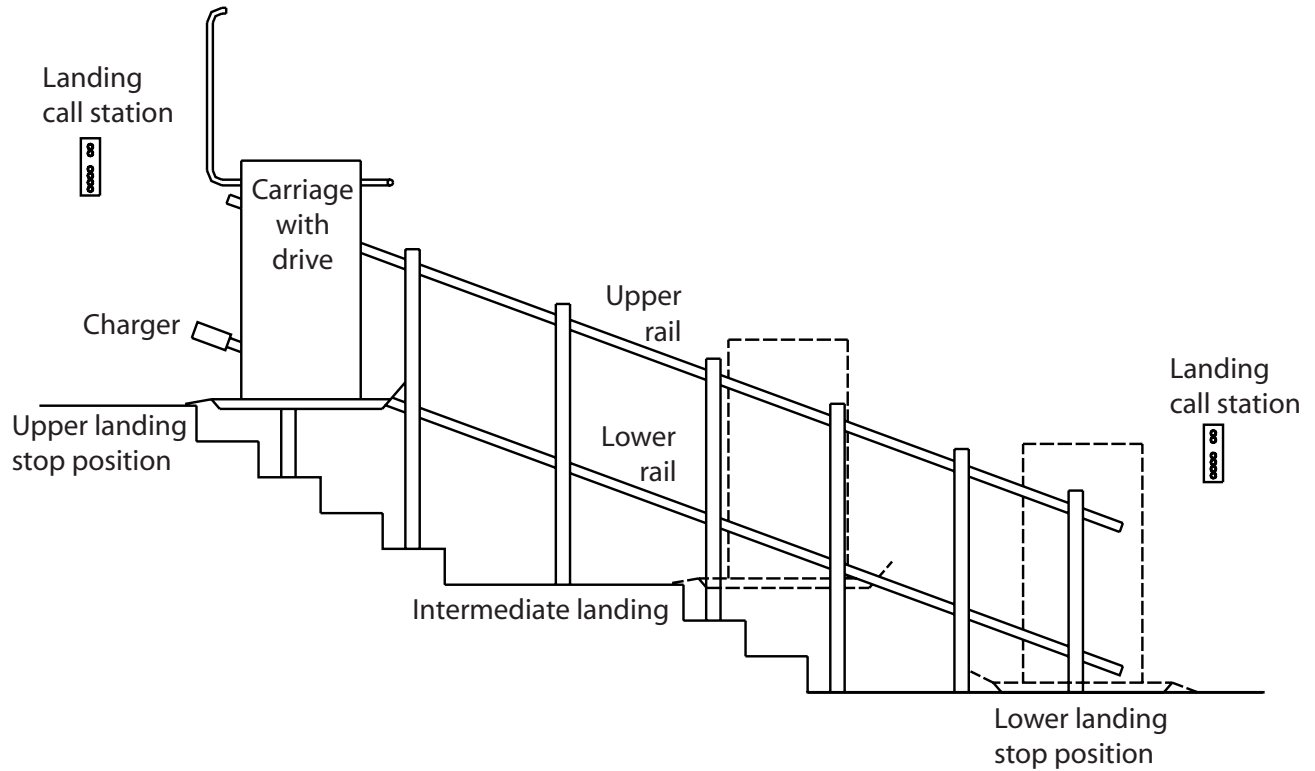
- Major building renovations are usually not required as the DELTA is installed on a modular guide rail system that follows along an existing stairway. The rails will be securely fastened to a supporting wall, the stairs, or both.
- The space-saving design of the platform and the rail system allows the platform to fit into narrow staircases.
- The lift can be parked at the top or bottom of the staircase.
- The drive unit for the lift is part of the carriage assembly.
- A robust platform motor operates folding and unfolding of the platform, arms and ramps.

## Specifications of the lift

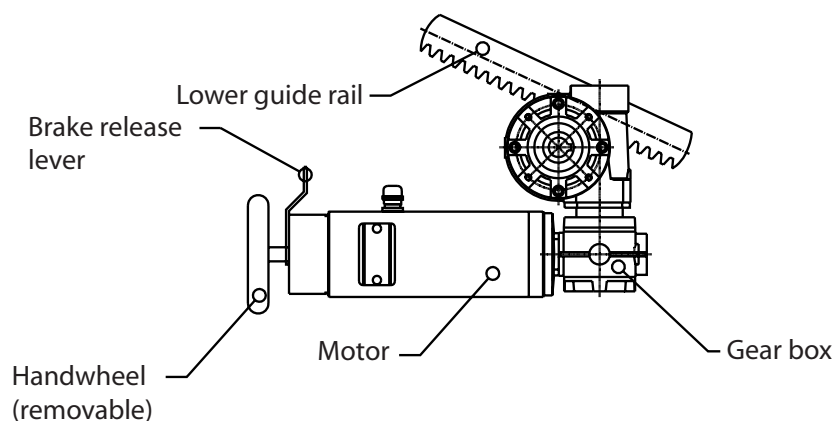
### DELTA Specifications

| Specification               | Data                                                                                                                                                                                                                                                                    |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum load                | 550 lb (250 kg)                                                                                                                                                                                                                                                         |
| Gradient                    | Constant, 15° to 45°                                                                                                                                                                                                                                                    |
| Capacity                    | One person in wheelchair or sitting on the optional seat; seat capacity is 330 lb (150 kg)                                                                                                                                                                              |
| Platform sizes              | 30.5" x 49.25" (775mm x 1250 mm)<br>27" x 36" (685 mm x 914 mm)<br>28.5" x 44" (724 mm x 1117 mm)<br>36" x 48" (914 mm x 1220 mm) – Not Available for Public Canada                                                                                                     |
| Travel speed                | 20 feet/minute (0.1 metres/second)                                                                                                                                                                                                                                      |
| Travel direction            | Forward/backward                                                                                                                                                                                                                                                        |
| Temperature                 | 32 °F to 104 °F (0 °C to 40 °C)                                                                                                                                                                                                                                         |
| Humidity                    | Maximum 70%<br>Not for use in bathrooms or swimming pool areas                                                                                                                                                                                                          |
| Noise                       | Less than 70 db                                                                                                                                                                                                                                                         |
| Power supply                | 24V DC (battery system); 230V AC for charger                                                                                                                                                                                                                            |
| Motor                       | 0.66 hp (0.5 kW)                                                                                                                                                                                                                                                        |
| Pendant control buttons     | Two constant-pressure directional buttons to move the lift up or down the stairway and an emergency STOP button to stop the lift in an emergency                                                                                                                        |
| Remote call station buttons | Used to call/send the lift and fold/unfold the platform (if automatic)                                                                                                                                                                                                  |
| Platform control panel      | Emergency STOP button to bring the lift to an immediate stop<br>Key switch to enable use of the pendant control buttons                                                                                                                                                 |
| Standard features           | Pendant control buttons (on platform)<br>Constant-pressure type buttons<br>Manual lowering capability (using handwheel)<br>Safety arms<br>Manual folding platform (fold/unfold platform by hand)<br>Limit switches<br>No machine room required<br>Emergency stop button |
| Safety features             | Edge sensors<br>Underpan sensors<br>Safety brake<br>Safety arms<br>Platform ramps<br>Emergency stop button<br>Limit switches<br>Manual operation (using handwheel)                                                                                                      |

## Lift components



## Drive unit



## Lift controls



PLATFORM PENDANT

The on-board, hand-held pendant has constant-pressure **UP/DOWN** buttons allowing you to move the platform up or down the stairway. There is also a red emergency **STOP** button.



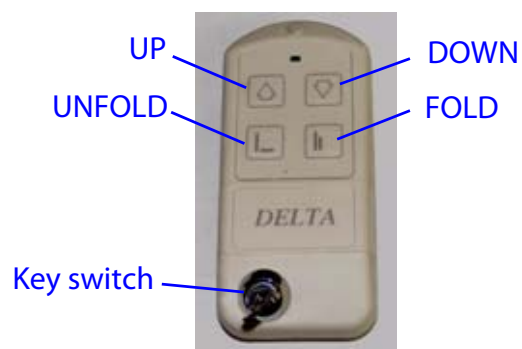
PLATFORM CONTROL PANEL

**Key switch** – use to activate/de-activate the platform pendant controls

**Alarm button (if equipped)** – use in an emergency to sound an audible alarm

**Emergency STOP button** – use in an emergency to stop the lift

**Running light** - flashes to indicate the unit is in use



CALL STATION

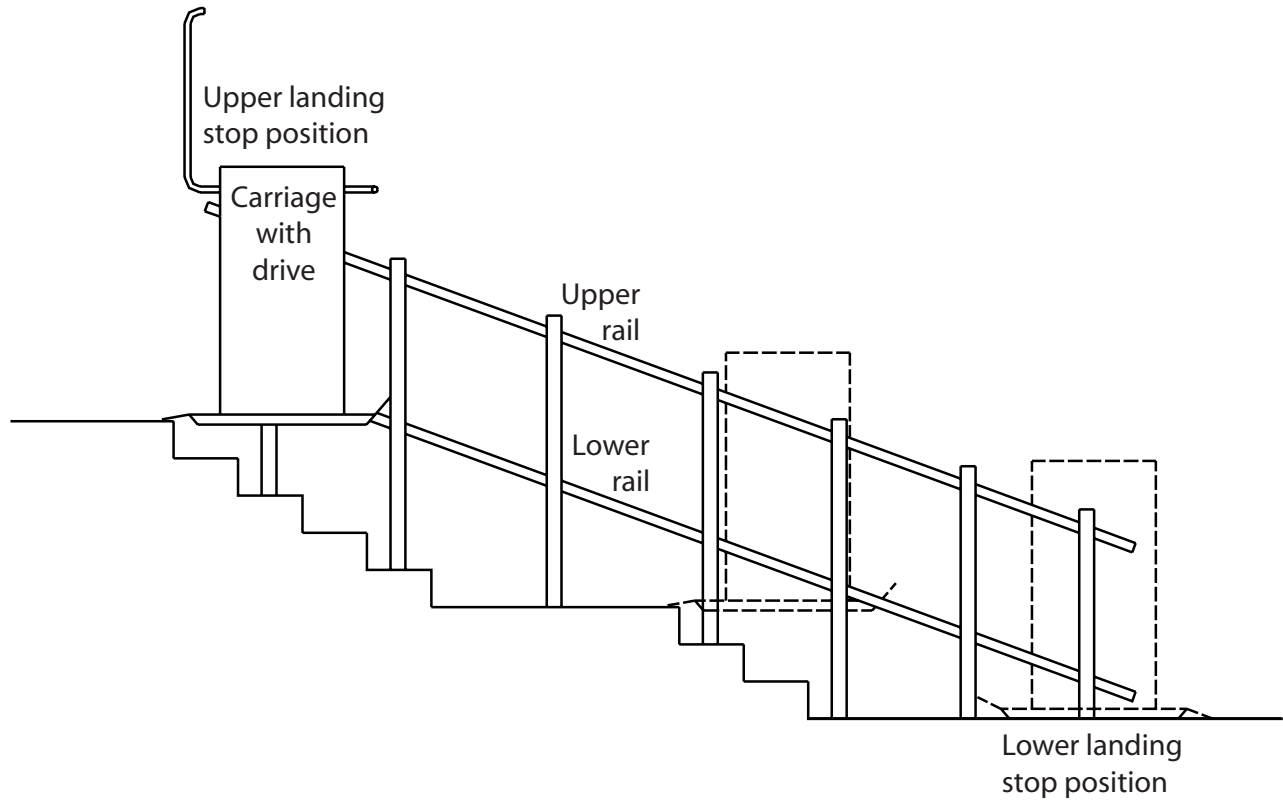
**UP/DOWN** buttons – use to call the lift to the required landing

**FOLD/UNFOLD** buttons – use to fold or unfold the platform and raise or lower the ramps

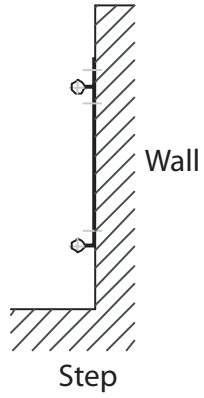
**KEY SWITCH (optional)** – use to activate/de-activate the call station controls

## Guide rails

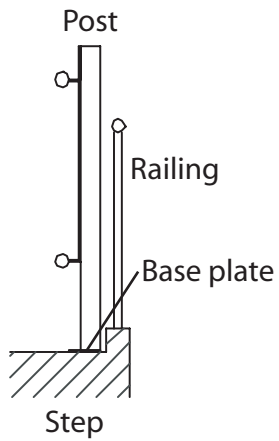
The lift travels up and down the stairway along two guide rails – an upper rail and a lower rail. The mounting location of the rails depends on the platform size and the angle of the stairs.



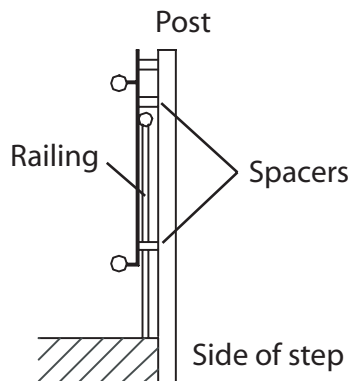
## Guide rail mounting



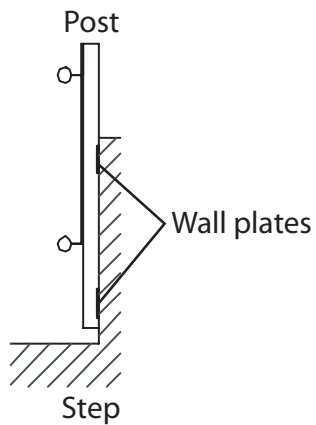
WALL MOUNTED



POST MOUNTED ON STEPS



POST MOUNTED ON SIDE OF STAIRS

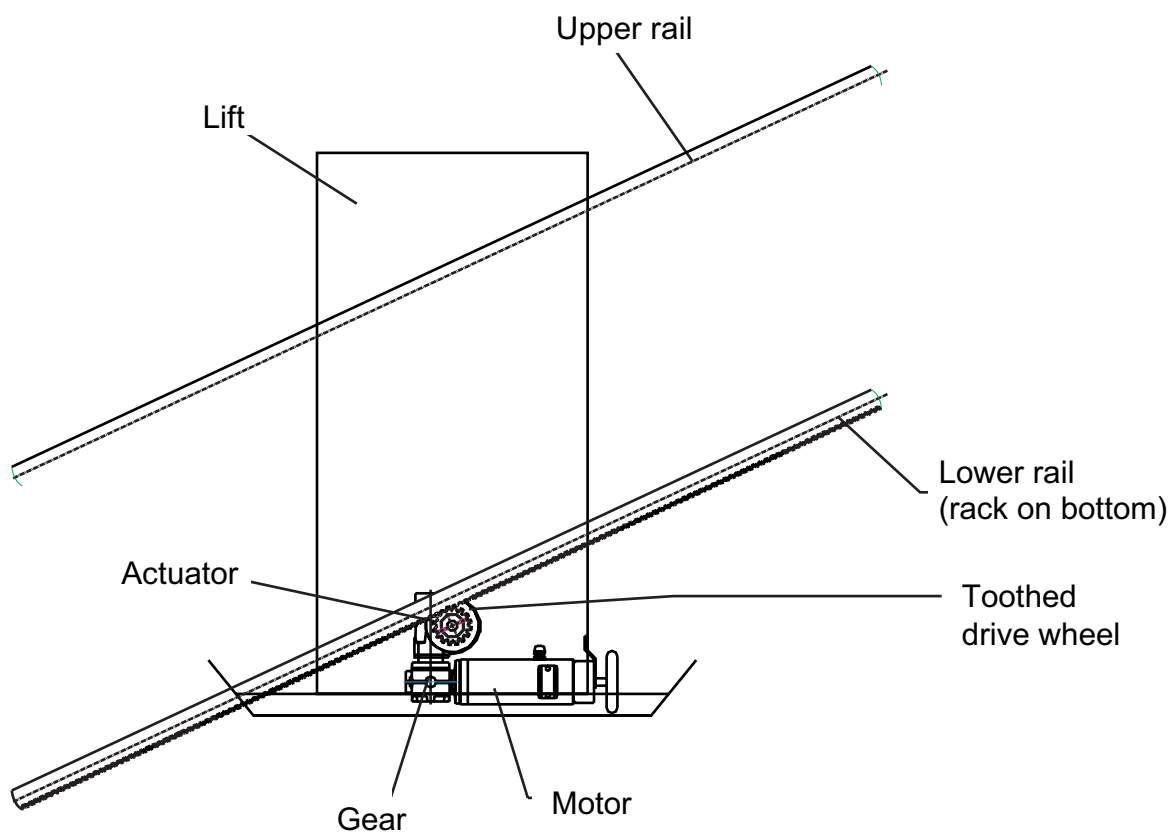


POST MOUNTED TO WALL

## How the system works

The Delta carriage/platform assembly travels along a guide rail system that is custom designed for each site. This railway consists of an upper rail and a lower rail.

When the motor powers the drive system, the toothed drive wheel engages in the rack of the lower guide rail moving the lift up or down the stairs.



## **Safety features**

### **Obstruction sensors**

During travel, the edges of the platform ramp and the carriage of the lift are protected by sensors which stop the lift if it touches an obstacle.

There are also safety underpan sensors to detect an obstacle underneath the platform and carriage and stop the lift.

### **Safety arms and platform ramps**

While in motion, the platform is protected by two safety arms. The platform is also protected by two platform side ramps which have the dual function of facilitating access to the lift at the floors (open position) and of retaining the wheelchair while the lift is in motion (safety position).

Before the lift leaves the floor, the safety arms must be down and the platform ramps must be up.

If the safety arms or platform ramps encounter an obstacle as they move into position, a microswitch is tripped, stopping the lift. You can drive away from the obstacle in the other direction in order to remove the obstacle.

### **Safety brake (overspeed)**

The lift is equipped with a mechanical safety brake. It engages if a drive component fails, or if the normal downward travel speed is exceeded by a preset amount. Application of the brake slows the lift to a stop.

### **Limit switches**

The upper and lower limit switches allow the lift to stop automatically in the correct landing position at the upper or lower end of the staircase. If the upper or lower limit switch fails, the additional final safety limit switch stops the unit.

### **Emergency STOP button**

There is a red emergency STOP button located on the platform control panel and on the handheld pendant which can be pressed in an emergency to stop the lift.

### **Platform key switch**

The key switch is located on the platform control panel and is used to activate/de-activate the platform pendant controls.

### **Manual lowering device**

You can use a manual handwheel by inserting it on the motor shaft to bring the lift to the next landing in the event of a power failure.

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## **Site verification**

### **Stairway**

Due to close running clearances, the Owner/Agent must ensure that the stairs (where provided) are level, plumb (+/-1/8" (3 mm)) and square and are in accordance with the dimensions specified on the site-specific plan drawings.

### **Minimum overhead clearance**

The Owner/Agent must ensure the minimum overhead clearance is in compliance with codes.

### **Construction site**

The Owner/Agent is responsible for all masonry, carpentry and drywall work as required, and for patching and finishing (including painting) all areas where walls/floors may need to be cut, drilled or altered in any way to permit the proper installation of the lift.

### **Dimensions**

The Contractor/Customer must verify all dimensions on the site-specific plan drawings and report any discrepancies to our office immediately.

### **Installation**

The equipment must be installed by a qualified technician in compliance with the codes identified on the front cover of this manual.

The conformity for access to the platform is the distributor's responsibility.

## **Electrical requirements**

### **General**

Electrical equipment and wiring to comply with Section 38 of CSA C22.1 (Canada) or Section 620 of NEC ANSI/NFPA 70 (USA).

### **Main power supply**

110 VAC, single-phase 60 Hz, in a dedicated 15 amp circuit through a fused disconnect. The power will be supplied to a 24V DC battery charger.

Contractor/customer to provide two 14 AWG conductors and a ground conductor between the fused disconnect contact and the connection box.

Contractor/customer to provide an electrical connection box at the top end of the rails.

### **Lighting**

Lighting must be a minimum of 100 Lux at the platform and landings and must have a switch and electrical GFCI outlet.

Emergency lighting of 2 Lux must be provided for a minimum of one hour on the platform along the travel route.

## Structural details

### Floor/support wall loads

A structural engineer must ensure that the building and stairway will safely support all loads imposed by the lift equipment. Adequate structural support must be provided at the top landing, bottom landing and throughout the supporting wall along the stairs.

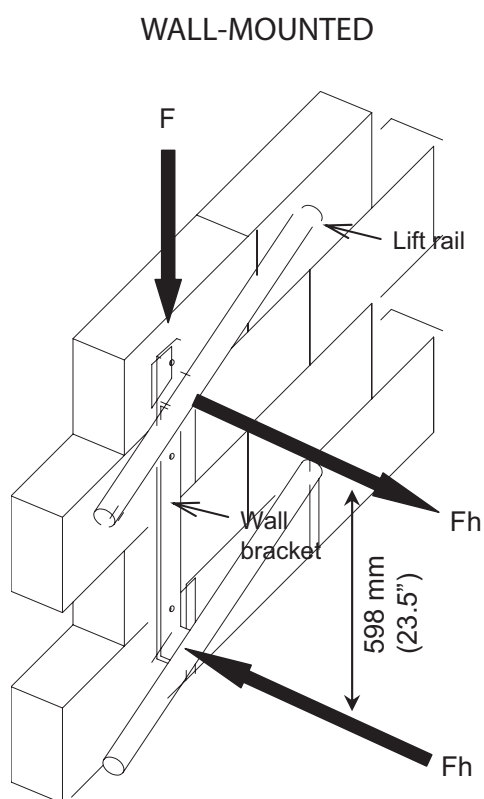
The pull-out force on the supporting wall will vary depending on the type of rail mounting used (wall brackets or support posts on the steps). The supporting wall must be able to support the pull-out force as identified in the support load diagram below.

All wood studs in the supporting wall must be anchored in the ceiling and the floor to meet the pull-out force requirements. Wood studs must be placed at 16" (404 mm) centres, solidly anchored in the floor and ceiling.

The floor load will vary depending on the type of rail mounting used (wall brackets or support posts on the steps). The floor must be able to support the loads identified in the support load diagram below.

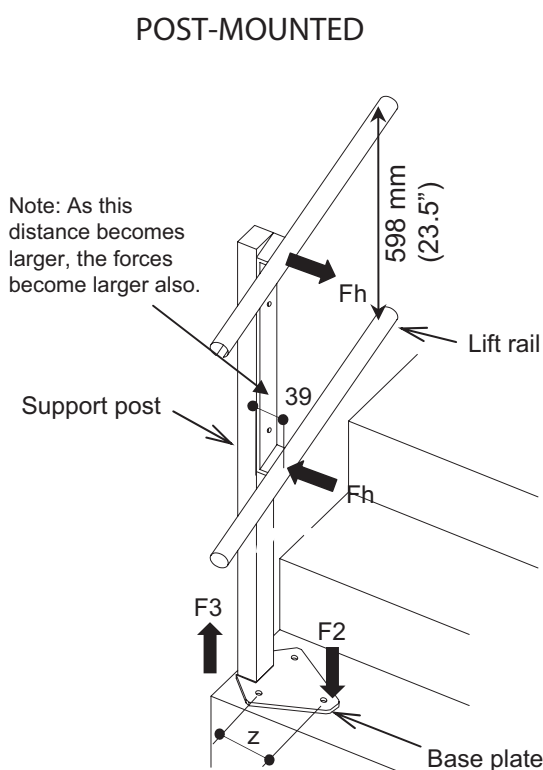
Where required, the rail must be securely fastened to the structural support wall. Refer to the wall diagram and lag dimensions shown below.

### Support load diagram



$$F = 5775 \text{ N (1300 lb}_F\text{)}$$

$$F_h = 4220 \text{ N (945 lb}_F\text{)}$$



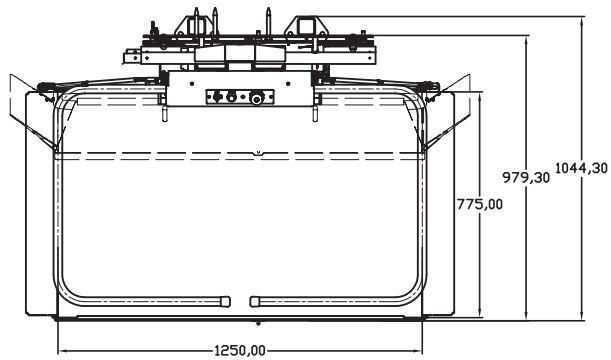
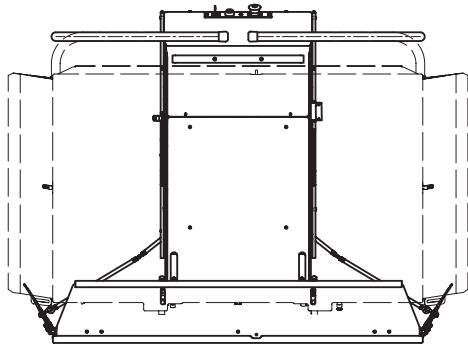
$$F_h = 4220 \text{ N (945 lb}_F\text{)}$$

$$F_2 = 16875 \text{ N (3785 lb}_F\text{)}$$

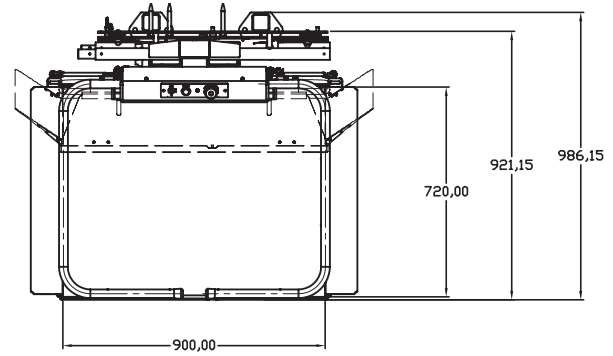
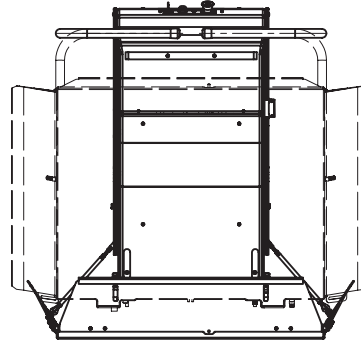
$$F_3 = 11100 \text{ N (2490 lb}_F\text{)}$$

$$z = 150 \text{ mm (6")}$$

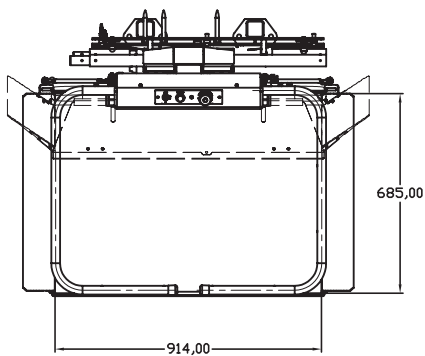
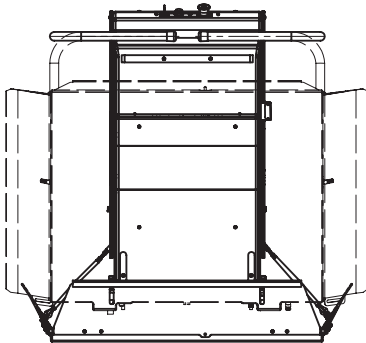
## Platform dimensions



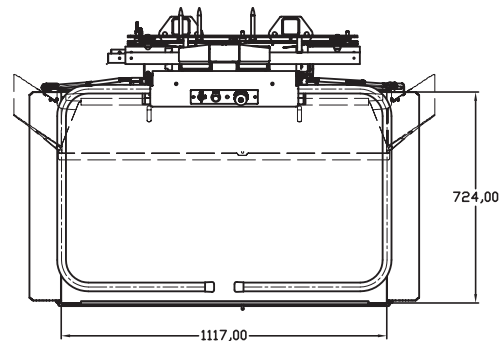
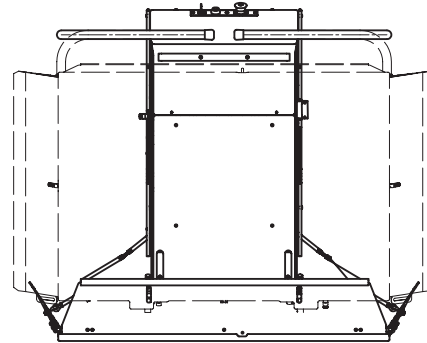
PLF\_DELTA (775X1250)  
STRAIGHT ENTRANCE



PLF\_DELTA (720X900)  
STRAIGHT ENTRANCE



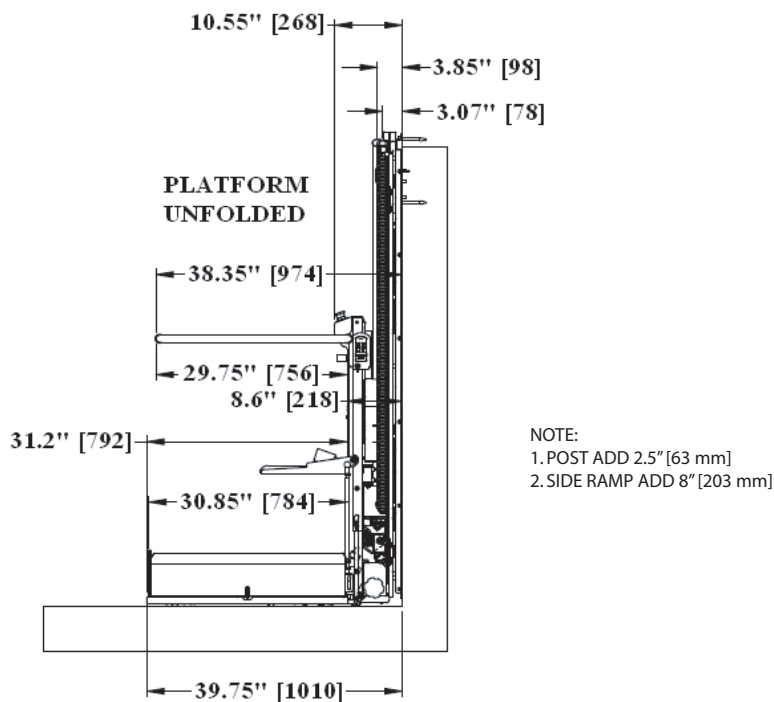
PLF\_DELTA (685X914)  
STRAIGHT ENTRANCE



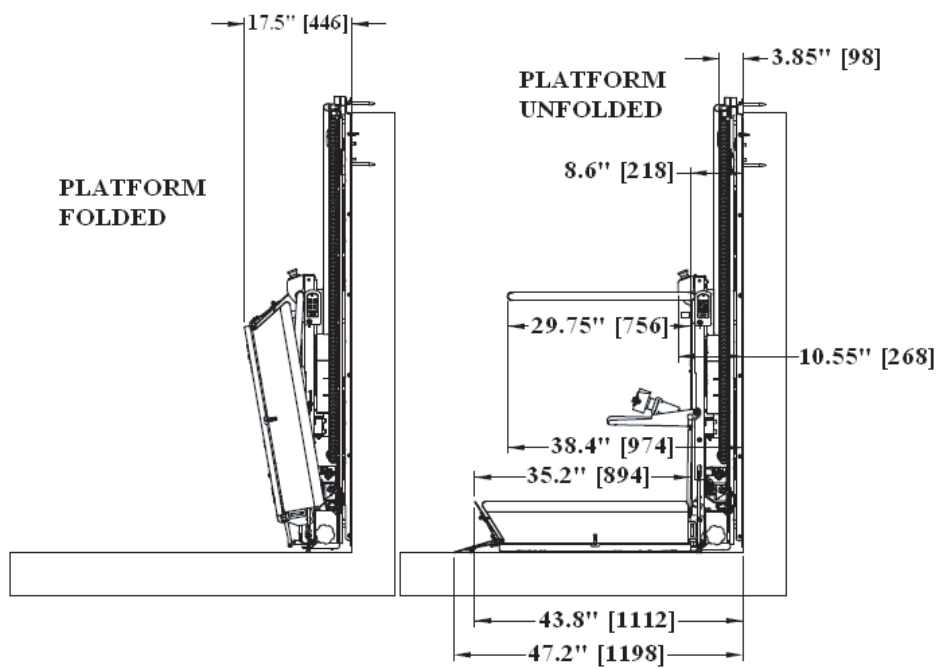
PLF\_DELTA (724X1117)  
STRAIGHT ENTRANCE

## Platform 775 x 1250

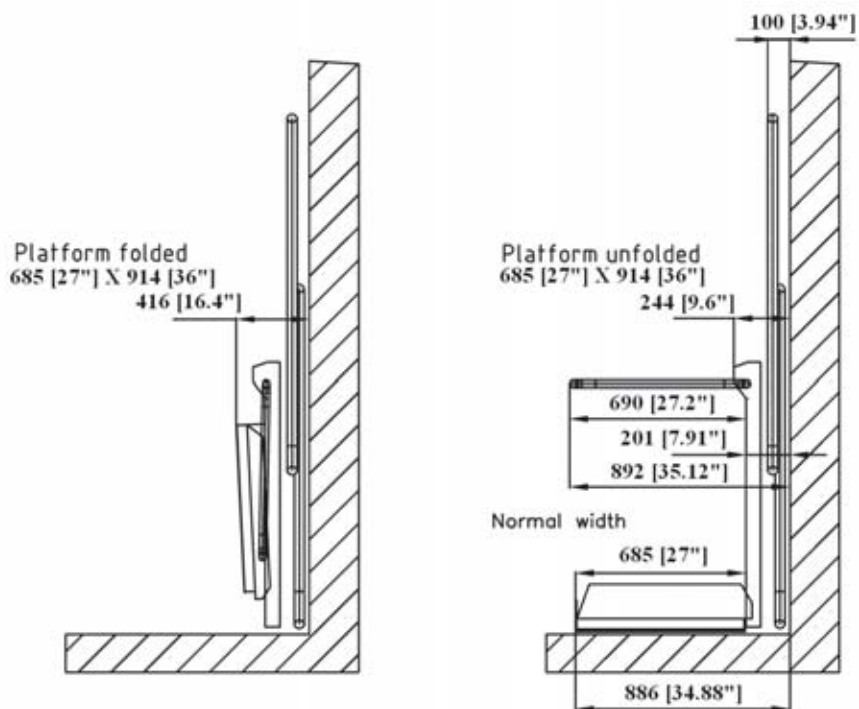
### INLINE ACCESS PLATFORM (775 X 1250)



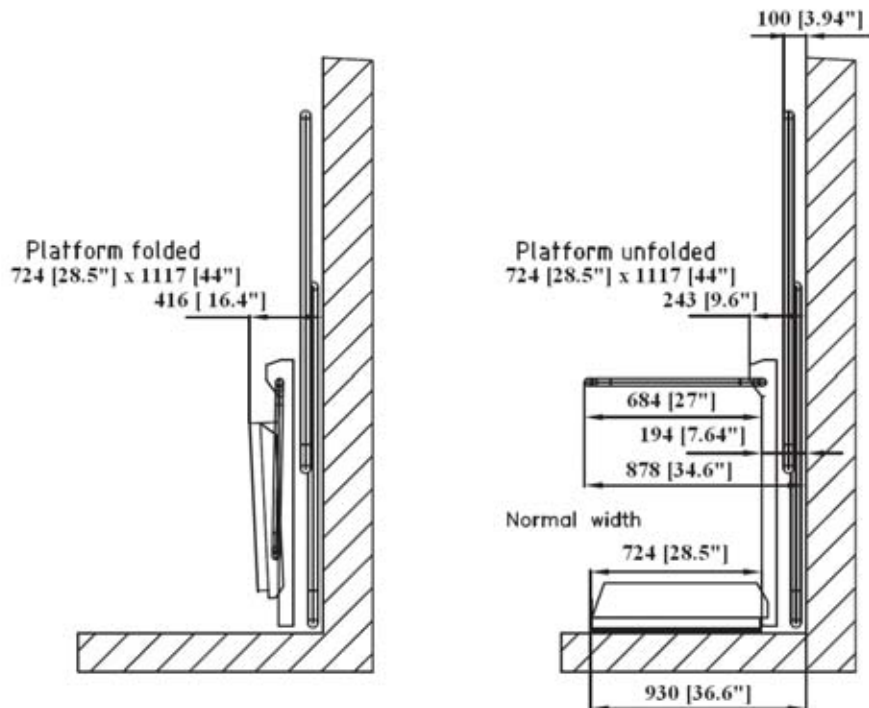
### 90 DEGREE ACCESS PLATFORM (775 X 1250)



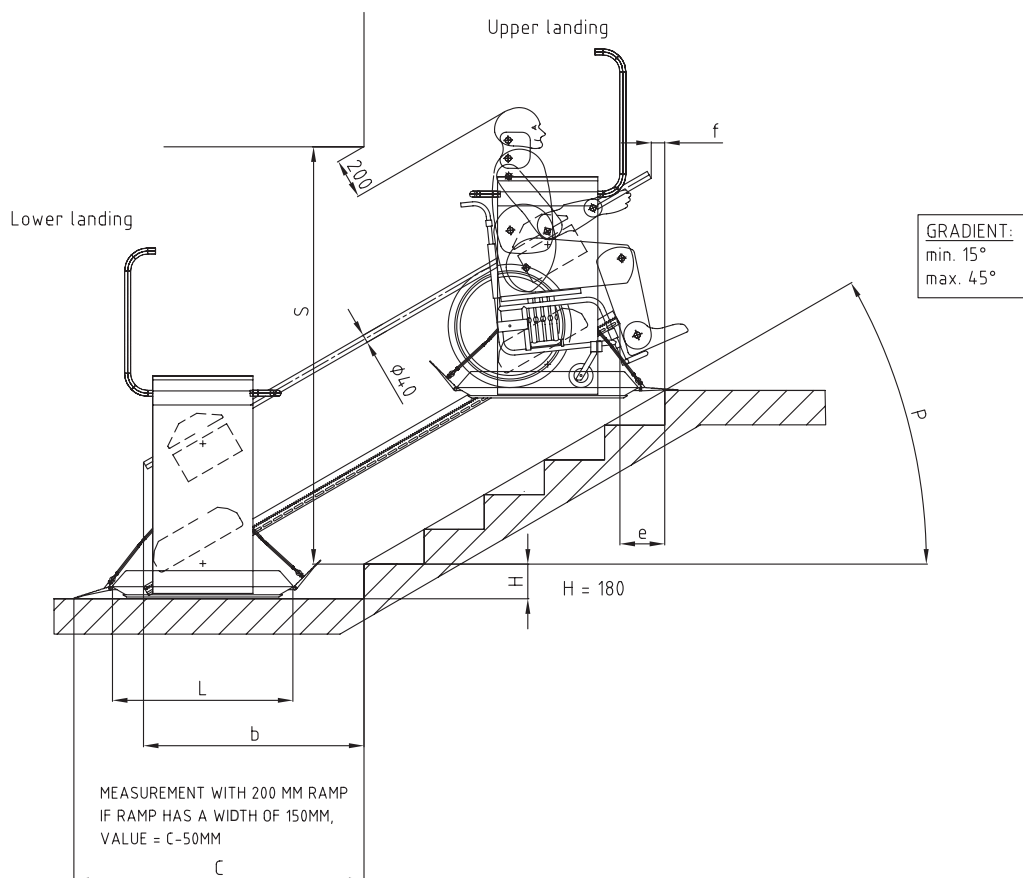
## Platform 685 x 914



## Platform 724 x 1117



## Clearances



|          |         |      |      |      |      |          |      |      |      |      |
|----------|---------|------|------|------|------|----------|------|------|------|------|
| 15°      | 1437    | 1757 | -229 | -45  | 1815 | 1612     | 2107 | -440 | -255 | 1910 |
| 20°      | 1255    | 1557 | -220 | -40  | 1885 | 1430     | 1907 | -405 | -220 | 2010 |
| 25°      | 1145    | 1455 | -185 | -15  | 1965 | 1320     | 1805 | -400 | -205 | 2105 |
| 30°      | 1070    | 1370 | -175 | -20  | 2050 | 1245     | 1720 | -395 | -210 | 2220 |
| 35°      | 990     | 1320 | -185 | -40  | 2150 | 1165     | 1670 | -410 | -225 | 2355 |
| 40°      | 965     | 1300 | -185 | -55  | 2265 | 1140     | 1650 | -410 | -235 | 2515 |
| 45°      | 930     | 1266 | -230 | -110 | 2400 | 1105     | 1616 | -425 | -260 | 2680 |
| P        | b       | *c   | e    | f    | S    | b        | *c   | e    | f    | S    |
| Gradient | L = 900 |      |      |      |      | L = 1250 |      |      |      |      |

| L =          |      | 914  |         |        |        |
|--------------|------|------|---------|--------|--------|
| GRADIENT (P) | b    | *c   | e       | f      | S      |
| 15°          | 1444 | 1771 | -239.22 | -55.22 | 1820.6 |
| 20°          | 1262 | 1571 | -225.88 | -46.58 | 1889.9 |
| 25°          | 1152 | 1469 | -193.4  | -26.2  | 1969.2 |
| 30°          | 1077 | 1384 | -182.7  | -27.7  | 2053.5 |
| 35°          | 997  | 1334 | -193.4  | -20.4  | 2154.9 |
| 40°          | 972  | 1314 | -199    | -69    | 2274.8 |
| 45°          | 937  | 1280 | -242.6  | -122.6 | 2412.6 |

| L =          |        | 1117 |          |          |         |
|--------------|--------|------|----------|----------|---------|
| GRADIENT (P) | b      | *c   | e        | f        | S       |
| 15°          | 1545.5 | 1974 | -366.584 | -182.116 | 1880.74 |
| 20°          | 1363.5 | 1774 | -329.456 | -149.244 | 1962.12 |
| 25°          | 1253.5 | 1672 | -317.54  | -146.48  | 2046.48 |
| 30°          | 1178.5 | 1587 | -307.22  | -138.18  | 2142.86 |
| 35°          | 1098.5 | 1537 | -322.22  | 41.5     | 2264.56 |
| 40°          | 1073.5 | 1517 | -343.5   | -192.44  | 2419.24 |
| 45°          | 1038.5 | 1483 | -369.14  | -228.08  | 2578.92 |

# **DELTA**

## **Straight Inclined Platform Lift**

### **PLANNING GUIDE**

Part No. 000817  
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