GSL ARTIRA

PLANNING GUIDE

Inclined Platform Lift For Straight And Turning Stairways
Please note:

Dimensions provided in this Guide are for **REFERENCE ONLY** and should not be used for site preparation or construction.
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**What is an Inclined Platform Lift?**

An inclined platform lift easily transports a passenger in a wheelchair, or someone who has difficulty using stairs. The lift can be operated independently or by an attendant with a attendant remote control (optional item). Compatible for indoor and outdoor applications, the **Garaventa Artira Inclined Platform Lift** is a versatile, attractive and cost-effective accessibility solution.

**Why a GSL Artira?**

- **Meets ADA Requirements** - Garaventa inclined platform lifts are approved as a means to provide public building access. Compliant to ASME A18.1 (USA) and CSA B355 (Canada).
- **The Established Benchmark** - Garaventa Lift has been designing and manufacturing inclined platform lifts since 1978. More Garaventa inclined platform lifts are installed in commercial buildings in North America than all other current manufacturers combined.
- **Minimal or No Stairway Modification** - The Artira will fit into most existing stairways and do not require specially constructed hoistways.
- **Space Saver** - The Artira does not permanently occupy valuable floor space and, when folded, is the most compact inclined lift available. It is also capable of turning tighter corners than any other lift on the market.
- **Safety** - The Artira is available with a large selection of safety and useability options. It is considered to be one of the most user-friendly inclined platform lift available today.

**Design Assistance**

With over 35 years of experience, Garaventa Lift is willing and able to overcome almost any design challenge you face. Please call our Design Hot Line with your accessibility challenge.

1-800-663-6556 or 1+604-594-0422

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**Design Versatility**

The GSL Artira can be designed for **turning**, **straight** or **radiating stairways** with or without **intermediate landings**. It is suitable for multi-level buildings with a wide variety of design configurations.

Some of the many design configurations include:

- **Straight Stairway With An Intermediate Horizontal Landing**
- **Straight Stairway With Platform Storage**
- **Unusual Bends**: For applications such as theaters, restaurants or lecture halls.
Unusual Landings:
An ideal layout for stages or store entrances.

Turning Stairway In A Multi-Level Building

Radiating Stairs:
Found in installations such as hotel lobbies or observatories.

Spiral Stairs:
Grand staircases in hotels or theaters.

Applications Include:
- Schools
- Courthouses
- Theaters
- Restaurants
- Hospitals
- Churches
- Commercial Buildings
- Historical Buildings
- Residential
- And Many More
**Finishes**

The GSL Artira is finished in a durable polyester powder paint coating that is electrostatically applied and baked at 210° C (410° F).

**Standard Color**
Garaventa Lift’s standard color, Satin Grey (fine textured), complements a variety of modern and traditional decors (color samples are available upon request).

**Custom Colors (Optional)**
Garaventa Lift offers a choice of colors from the internationally accepted RAL color charts (color samples are available upon request).

**Stainless Steel Finish (Optional or for Outdoor Applications)**
For aesthetic purposes the tubes, towers, drive box, sensing plate and call stations can be ordered in a combination brushed and electro-polished stainless steel finish. Tubes and towers are electro-polished whereas the drive box and sensing plates are brushed. Stainless steel components are also available with a powder coat painted finish.

**Outdoor Applications**
When located outdoors, the lift must be equipped with stainless steel outdoor compatible components. See page 21 for more information on the outdoor weather-resistant package. For outdoor units, stainless steel components are available in a painted finish.

*Note: In certain indoor applications such as near a swimming pool, an outdoor weather-resistant package may be required.*

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**Where You’ll Find Our Lifts**

Garaventa Lift has completed over 50,000 installations world wide. Some of our well-known inclined lift installations include:

- National Art Gallery - Ottawa, ON, Canada
- Presidential Palace - Seoul, Korea
- City Hall, San Francisco, CA, USA
- #10 Downing Street - London, England
- The Peak - Hong Kong
- Madison Square Garden - New York, NY, USA
- Yankee Stadium - New York, NY, USA
- Harvard Business School - Cambridge, MA, USA
- Metro System - Santiago, Chile & Mexico City, Mexico
- BART (Bay Area Rapid Transit), San Francisco, CA, USA
- Safeco Field, Seattle, Washington, USA
- Minnesota Twins Ball Park - Minneapolis, MN, USA
How it Works

Two custom-designed **steel guide tubes** which are custom designed for each stairway support the **platform**. These tubes contain a continuous loop of **wire haul rope** that is attached to the **upper carriage**. This carriage is mounted to the back of the platform through a slot in the upper tube. The **drive system**, consisting of an electric motor and **drive cog**, moves the wire haul rope and the wheelchair platform up and down the stairway.

**Overspeed Safety**

The Overspeed Safety is located at the lower end of the tube system and consists of a mechanical pawl and electrical cut-out switch. In the unlikely event that the lift should descend too quickly, both the mechanical and electrical safety will activate simultaneously and stop the platform from moving.
Component Identification

The main components of an inclined lift are:

**Platform, Drive, Guide Tubes, Call Stations**
Platform

**Platform Sizes**
The platform is available in four sizes, all with a rated load of 300 kg. (660 lbs.).

- 800 x 1220mm (31 1/2” x 48”)*
- 800 x 1050mm (31 1/2” x 41 3/8”)
- 800 x 900mm (31 1/2” x 35 3/8”)
- 700 x 750mm (27 1/2” x 29 1/2”)

*ADA Compliant

**Platform Components**

The durable and vandal resistant platform control panel is mounted to the platform hanger. The standard platform controls are permanently mounted and consist of two large illuminated constant pressure Directional Buttons for independent operation and an Emergency Stop Button (with illumination optional).

The platform can be equipped with an optional Attendant Remote Control that overrides the constant pressure Directional Buttons during attendant operation. The remote control unit can be removed when not required.
Standard Platform Safety Features

Safety Sensing
The platform is equipped with safety sensors listed below. These sensors will automatically stop the lift when activated by 1.8 kg (4 lbs.) of pressure. The platform can then be backed away from the obstruction.

- **Leading Ramp Sensor**
  When the platform is called to or from the landing area in the folded up position the leading ramp is sensitive to obstructions.

- **Bi-Directional Ramp Sensing**
  The inside and outside surfaces of the leading ramp are obstruction sensitive in the direction of travel.

- **Under Platform Sensing Plate**
  The under platform sensing plate detects obstacles underneath the platform.

Curved Safety Arms
Fully automatic 32mm (1 1/4”) diameter Curved Safety Arms further increase the safety of the GSL Artira. They are directly over the perimeter of the platform, guarding the user. The top of the arm is located 948mm (37 3/8”) above the platform deck. If arms should encounter an obstruction, they will retract to the up position upon release of the directional control button.

Emergency Stop Button
Located on the platform control panel, this large red button is used to stop the lift in an emergency.

Smooth Start & Stop
The Artira is equipped with a variable speed drive, programmed to automatically slow down while travelling through certain sections of the staircase. The platform is programmed to slow to 50% of the normal travel speed well in advance of corners and resumes full speed when the platform reaches straight sections. The lift controller is also programmed to slow the platform travel speed when approaching and departing landings.

Grab Bar
The Grab Bar is a 25mm (1”) diameter aluminum bar located on the front face of the platform control panel to assist passengers in loading and unloading.

Pedestrian Safety Lights
This illuminated tube lighting located at the base of the ramps visually alerts pedestrians of the platform’s location during travel, while still being discreet to the passenger.

Emergency Fold
In an emergency the platform can be manually folded and will lock in the folded position.
Optional Platform Features

Platform Lock
This lock secures the platform in its folded position protecting the unit from vandalism.

Under Hanger Obstruction Sensing
When the platform moves to or from the landing area in the folded up position, sensors on the underside of the hanger will automatically stop the lift when activated by a minimum of 1.8 kg (4 lbs.) of pressure.

Pedestrian Audio Alert
When the platform is folded up and traveling between stations, an audio chime on the platform is activated indicating the lift is in motion. The chime is deactivated when a passenger is using the lift.

Folding Seat
Designed for use by ambulatory passengers, this folding seat is equipped with a safety belt. For commercial applications, the folding seat and seat belt are required by the ASME A18.1 safety code in the USA.

Dek-Lite (requires folding seat)
Mounted below the folding seat, this light provides additional lighting to the platform.

Side Load
For confined lower landing spaces, an automatically deployed side load ramp allows the passenger to wheel onto the platform diagonally, offering easier access.

Auto Fold
This feature automatically folds the platform if it is left unfolded at a landing for a period of time.

Platform on Board Alarm
When the Emergency Stop Button is activated it illuminates and an alarm located on the platform. The alarm will alert others that the passenger on the lift requires assistance.

Attendant Remote Control
The Attendant Remote Control overrides the platform controls allowing an attendant to operate the lift.

Key Switch
To meet some local code requirements a key switch can be added to the platform control panel.

Side of Hanger Optical Sensing
Mounted on the side of the platform hanger, these sensors are designed to protect pedestrian traffic. This feature detects possible obstructions in open-core stairways and while the lift turns corners.

Note: In some jurisdictions certain optional features are either not permitted or mandatory depending on local codes. Please consult your local Garaventa representative for clarification.
Call Stations

Located at each landing, the call station enables the user to unfold the platform with a touch of a button. If the platform is not at the landing, the user simply presses the illuminated directional button to call the platform to their landing.

Garaventa Smart-Lite Technology™
The Artira’s Smart-Lite Technology™ illuminates the correct call station button, guiding the user through the sequenced steps to call and unfold the lift from the call station (patent pending).

Call Station Options
- Emergency Stop Button (with illumination optional)
- Attendant Call Switch

Keyless (optional)
A keyless call station is available as an option. The keyless lift does not have a keyswitch on the call station.

Remote Platform Fold/Call (optional)
This feature allows the platform to be folded up and called from any call station should the platform be left folded down.

Mounting Options
The call stations can be mounted on the wall (surface or flush mounted) or on a pedestal (when no suitable surface is available). The upper call station can also be mounted on the drive box or on the tube system itself (only available with Drive Box arrangement). Flush mount call stations can be pre-wired during the construction or building renovations, resulting in a cleaner appearance with no surface wiring.
Lower Landing Configuration Options

A variety of lower landing configurations are available to suit each stairway. If you have a unique arrangement, contact your local Garaventa representative or call the Garaventa Design Hot Line for more information.

**Straight Lower Landing for Drive Box**
This configuration is used when there is adequate space to load/unload straight onto the platform at the lower landing.

**Drop-Down Lower Landing**
(Drive Box System Shown) When lower landing space is limited, the lower landing section of the tubes are angled downward at a 45° angle to land the platform as close to the bottom step as possible. This configuration is often combined with the side load feature.

**Straight Lower Landing for Compact Drive**
The Rope Tensioning Device used with the Compact Drives requires a minimum clearance of 250mm (9 7/8") from the end of the tubes to the nearest obstruction.
**90° and 180° Lower Landings**  
These configurations place the platform away from pedestrian traffic while loading/unloading and storing the platform. Ideal for stairs with sufficient clearances such as stairways with alcoves, hallways or otherwise unused spaces under stairs.

<table>
<thead>
<tr>
<th>Platform Size</th>
<th>Dim. A</th>
<th>Dim. B</th>
<th>Dim. C</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 x 1220 mm*</td>
<td>2883</td>
<td>1708</td>
<td>1540</td>
</tr>
<tr>
<td>(31 1/2” x 48”)*</td>
<td>(113 1/2)</td>
<td>(67 1/4)</td>
<td>(60 5/8)</td>
</tr>
<tr>
<td>800 x 1050 mm</td>
<td>2713</td>
<td>1538</td>
<td>1370</td>
</tr>
<tr>
<td>(31 1/2” x 41 3/8”)</td>
<td>(106 3/4)</td>
<td>(60 1/2)</td>
<td>(53 7/8)</td>
</tr>
<tr>
<td>800 x 900 mm</td>
<td>2563</td>
<td>1388</td>
<td>1220</td>
</tr>
<tr>
<td>(31 1/2” x 35 3/8”)</td>
<td>(100 7/8)</td>
<td>(54 5/8)</td>
<td>(48)</td>
</tr>
<tr>
<td>700 x 750 mm</td>
<td>2368</td>
<td>1218</td>
<td>1070</td>
</tr>
<tr>
<td>(27 1/2” x 29 1/2”)</td>
<td>(93 1/4)</td>
<td>(48)</td>
<td>(42 1/8)</td>
</tr>
</tbody>
</table>

**Notes:**  
- *ADA Compliant*  
- Dimension A + B has been calculated using a drop-down landing configuration and a first riser height of 178mm (7”).  
- Dimensions are based on standard platforms with standard ramps. Ramp extensions will increase the clearances required.  
- Contact your local Garaventa representative or call the Garaventa Design Hot Line for more information.

**Landing Over a Flight**  
This enables the platform to be loaded/unloaded and stored over a flight of stairs that is not being serviced by the lift.
Required Turning Clearances

Stair Width Clearances and Platform Projection Dimensions

(Note: Nearest obstruction, i.e., handrail or wall)

Wall to outside of tubes

Platform Folded Up
Platform Folded Down
Side Load Ramp Loading (optional)
Turning Clearance Chart

The space requirements of the GSL Artira are affected by how the tube system is supported. The lift can either be mounted directly to the wall, Direct Mount, or structural support posts can be supplied Tower mount. For further information on Attachment Methods please refer to page 26 & 27.

<table>
<thead>
<tr>
<th>Dim.</th>
<th>Attachment Method</th>
<th>Platform Sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>800 x 1220 mm* (31 1/2&quot; x 48&quot;)*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>mm</td>
</tr>
<tr>
<td>A</td>
<td>Direct Mount</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>Tower Mount</td>
<td>150</td>
</tr>
<tr>
<td>B</td>
<td>Direct Mount</td>
<td>320</td>
</tr>
<tr>
<td></td>
<td>Tower Mount</td>
<td>345</td>
</tr>
<tr>
<td>C</td>
<td>Direct Mount</td>
<td>1015</td>
</tr>
<tr>
<td></td>
<td>Tower Mount</td>
<td>1040</td>
</tr>
<tr>
<td></td>
<td>Tower Mount</td>
<td>1255</td>
</tr>
<tr>
<td>E</td>
<td>Direct Mount</td>
<td>1035</td>
</tr>
<tr>
<td></td>
<td>Tower Mount</td>
<td>1060</td>
</tr>
<tr>
<td>F</td>
<td>Direct Mount</td>
<td>1225</td>
</tr>
<tr>
<td></td>
<td>Tower Mount</td>
<td>1250</td>
</tr>
</tbody>
</table>

Notes:
- *ADA Compliant
- Dimensions E and F include 20mm (3/4”) running clearance and include standard ramps. Ramp extensions will increase the clearances required. Contact your local Garaventa Lift representative or call the Garaventa Design Hot Line for more information.
- For towers mounted to 2” x 6” wood boards on walls (see page 26) add 38mm (1 1/2”) to the above tower mount dimensions.
Standard Upper Landing Drive Configurations

A variety of configurations are available for each drive system. If you have a unique or complex application that is not covered in this guide, contact your local Garaventa Lift representative or call the Garaventa Design Hot Line for more information.

Standard In-Line Drive
The standard in-line drive configuration places the drive 1200mm (47 1/4”) from the top of the stairs to allow a passenger to load and unload the platform and maneuver past the drive box.

90° & 180° Drive
The 90° or 180° configuration allows the drive box to be located away from the top of the stairs and pedestrian traffic.

Offset Drive
When upper landing space is limited, the drive box can be positioned closer to the stairs and to the wall.

Notes:
For 90° and 180° configurations, add 200mm (7 7/8”) if the Call Station is mounted on the tubes.
Standard Upper Landing Drive Configurations (Continued)

Compact Drive
The Compact Drive is designed to utilize a minimum amount of space, in some conditions as little as 203mm (8”). Required clearances vary with stair angle, motor orientation, as well as ramp and platform sizes. For further details on this drive system refer to page 20, and for lower landing considerations see pages 13 and 14.

Reverse Drive
By reversing the drive box it can be placed closer to the top stair nose, while still maintaining sufficient clearance for loading and unloading. This scenario is ideal for landings between stairs or where walls end at the top of the stairs.

* 152mm (6”) - 406mm (16”)
Dimension variable with stair angle, motor orientation, ramp extensions and platform size.
Alternate Drive Configurations

**Drive on Treads - Flight Beyond Upper Landing**
Designed for intermediate landings with restricted clearances due to narrow hallways, the drive box is mounted on the stair treads. This ensures maximum clearance on the landing for pedestrian traffic.

**Drive Under Floor**
The drive box can be positioned under the floor if sufficient clearances are available. It can be placed on its side or right side up.

**Drive Through Wall at 90° or 180°**
The tubes go through the wall enabling the drive to be stored in a separate room instead of on the upper landing.

**Drive on Shelf**
The drive box can be attached to a shelf that is fastened to a solid wall.
Drive System

The drive is always located at the upper end of the guide tubes. It is available in two arrangements, the standard Drive Box and the Compact Drive. Each drive system is suited to a particular application, with a variety of design configurations to choose from (see pages 17-19 for drive configurations).

Drive Box
The most common drive arrangement, the Drive Box, uses a 2 H.P. motor and is always attached to the upper end of the guide tubes.

The drive box has a multitude of design configurations (under the floor through the wall and many more). Please see pages 17-19 for some of the many design options available.

Mains Power Requirements
Both drive systems require 208-240 VAC single-phase 50/60 Hz. on a dedicated 20 amp. circuit.

Compact Drive
The compact drive is ideal for lifts with restricted upper landings. It utilizes the same components as the Drive Box however, they are arranged differently. The drive cog and the motor are directly attached to the upper end of the guide tube system, with the electrical components housed in a Controller Box that can be located up to 6 meters (20ft) away from the compact drive.

The compact drive is not available outdoors or with stainless steel tubes.

Drive Box

Mains Power Requirements

Compact Drive
Additional Component Options

The GSL Artira can be equipped with a number of additional safety features:

**Audio Visual Alert**
A wall mounted strobe light and audible chime cautions pedestrians in the vicinity that the lift is in operation. The volume of the audible chime can be adjusted on site. This option is ideal for stairways with 90 degree or 180 degree switchbacks.

**Fire Alarm Integration (Fire Service)**
The fire service feature is designed to interface with a building’s fire safety system and interrupt power to the lift when the fire alarm sounds. This **ensures the lift will not obstruct stairway traffic during evacuation**. If the lift is in use when the alarm sounds, the lift will only allow the platform to travel to the designated landing with the emergency exit. The passenger must use the constant pressure direction button. Custom versions of this feature are available. Consult Garaventa Lift.

**Auxiliary Power System**
This feature provides backup power to operate the lift when mains power is lost. The self contained battery can be located up to 4.5 meters (15’) away from the drive system.

**Box Size:** 597 mm (23 1/2”) high x 444 mm (17 1/2”) wide x 192 mm (7 5/8”) deep

**Outdoor and Extreme Applications**
When located outdoors or in extremely harsh environmental conditions, the lift will require a stainless steel drive box, stainless steel tubes, towers and audio visual alerts (if specified).

A vinyl platform cover is recommended for outdoor applications.

The Compact Drive System is not available for outdoor applications or with stainless steel tubes.

**Note:** In certain indoor applications such as near a swimming pool, an outdoor weather-resistant package may be required.
Guide Tubes

The platform travels on two steel tubes, 51mm (2”) in diameter, that are affixed 600mm (23 5/8”) apart vertically. The location of the tubes on the stairs depends on the platform size and the angle of the stairs. Generally speaking, the lower tube is approximately 500mm (21 5/8”) vertically above the stairs when a 800 x 1220 mm (31 1/2” x 48”) platform is used.

Infill Panels (Optional)

These mesh screens are located between the towers of the lift to create a safety barrier. As an alternative, attachment angles can be welded to the sides of the towers to allow for infill panels of other materials, such as Plexiglas or wood (infill panel material is not supplied by Garaventa Lift).

Stabilizer

The stabilizer tube is placed in horizontal or shallow sections of the lift’s travel. This slotted tube allows a roller, mounted to the back of the platform, to enter and travel through. This roller connection creates a triangle of support to stabilize the platform. The stabilizer is required whenever the lift travels horizontally or at an angle of less than 20°.

Pedestrian Handrails (Optional)

With the installation of the tube system the existing handrails are often obstructed or removed. A third tube, 38mm (1 1/2”) in diameter, can be located between the main guide tubes to serve as a pedestrian handrail. In most applications this handrail can be positioned within the accepted code height range. Due to interference with the platform during travel, full building code compliance may not be possible. Some restrictions apply when used in conjunction with the horizontal stabilizer (see above for further details on the stabilizer). Contact your local Garaventa Lift representative or call the Garaventa Lift Design Hot Line for more information.
Platform Storage at Upper Landing (Optional)

This feature allows the platform to travel along the tubes, while folded, to a storage location off the stairs. A stabilizer tube is required for this application (see page 22 for stabilizer details). Other configurations are possible.

### In-line Drive with Platform Storage
(Provide Box Shown, also available with Compact Drive)

### 90° Drive with Platform Storage
(Compact Drive Shown, also available with Drive Box)

#### Platform Size

<table>
<thead>
<tr>
<th>Dim.</th>
<th>Drive Arrangement</th>
<th>800 x 1220 mm (31 1/2” x 48”)</th>
<th>800 x 1050 mm (31 1/2” x 41 3/8”)</th>
<th>800 x 900 mm (31 1/2” x 35 3/8”)</th>
<th>700 x 750 mm (27 1/2” x 29 1/2”)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>mm</td>
<td>in</td>
<td>mm</td>
<td>in</td>
</tr>
<tr>
<td>A.</td>
<td>Drive Box</td>
<td>2350</td>
<td>92 1/2</td>
<td>2175</td>
<td>85 5/8</td>
</tr>
<tr>
<td></td>
<td>Compact Drive</td>
<td>2035</td>
<td>80 1/8</td>
<td>1865</td>
<td>73 3/8</td>
</tr>
<tr>
<td>B.</td>
<td>Drive Box</td>
<td>2245</td>
<td>88 3/8</td>
<td>2075</td>
<td>81 3/4</td>
</tr>
<tr>
<td></td>
<td>Compact Drive</td>
<td>1935</td>
<td>76 1/8</td>
<td>1765</td>
<td>69 1/2</td>
</tr>
</tbody>
</table>

#### Notes:
Dimensions for Compact Drives are approximate only. Factors affecting the location of the Compact Drive include stair angle, motor orientation and ramp extensions. Contact your local Garaventa Lift representative or call the Garaventa Lift Design Hot Line for more information.

- If the call station is mounted on the tubes, add 200mm (7 7/8”) for drive box configurations.
- Dimensions are based on standard platforms with standard ramps. Ramp extensions will increase the clearance dimensions required.
Platform Running Clearances Required For Platform Folded Up

Minimum Overhead Clearances To Meet Code Requirements

Note:
This running clearance is for the platform in the folded position only. See dimensions below for overhead requirements for passenger usage and codes.

Minimum Code Requirements:

**US Code (ASME A18.1)**
1524mm (60”) overhead clearance required to any point above the platform deck. Refer to Dimension B in chart on page 25.

**Canadian Code (CSA B355)**
1500mm (59”) overhead clearance required to the centerline of the platform. Refer to Dimension C in chart on page 25.

*Important Note:* Please consult the local Garaventa Lift representative for local code requirements.
### Platform Running Clearances Required For Platform Folded Up

<table>
<thead>
<tr>
<th>Stair Angle</th>
<th>Dimension A</th>
<th>Platform Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>800 x 1220 mm (31 1/2&quot; x 48&quot;)</td>
<td>800 x 1050 mm (31 1/2&quot; x 41 3/8&quot;)</td>
</tr>
<tr>
<td></td>
<td>mm</td>
<td>in</td>
</tr>
<tr>
<td>22°</td>
<td>1560</td>
<td>61 3/8</td>
</tr>
<tr>
<td>25°</td>
<td>1690</td>
<td>66 1/2</td>
</tr>
<tr>
<td>30°</td>
<td>1825</td>
<td>71 7/8</td>
</tr>
<tr>
<td>35°</td>
<td>2000</td>
<td>78 3/4</td>
</tr>
<tr>
<td>40°</td>
<td>2215</td>
<td>87 1/4</td>
</tr>
<tr>
<td>45°</td>
<td>2460</td>
<td>96 7/8</td>
</tr>
</tbody>
</table>

### Clearances to Meet US Code Requirements (ASME A18.1)

<table>
<thead>
<tr>
<th>Stair Angle</th>
<th>Dimension B</th>
<th>Platform Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>800 x 1220 mm (31 1/2&quot; x 48&quot;)</td>
<td>800 x 1050 mm (31 1/2&quot; x 41 3/8&quot;)</td>
</tr>
<tr>
<td></td>
<td>mm</td>
<td>in</td>
</tr>
<tr>
<td>22°</td>
<td>2086</td>
<td>82 1/8</td>
</tr>
<tr>
<td>25°</td>
<td>2170</td>
<td>85 3/8</td>
</tr>
<tr>
<td>30°</td>
<td>2320</td>
<td>91 3/8</td>
</tr>
<tr>
<td>35°</td>
<td>2480</td>
<td>97 5/8</td>
</tr>
<tr>
<td>40°</td>
<td>2665</td>
<td>104 7/8</td>
</tr>
<tr>
<td>45°</td>
<td>2880</td>
<td>113 3/8</td>
</tr>
</tbody>
</table>

### Clearances to Meet Canadian Code Requirements (CSA B355)

<table>
<thead>
<tr>
<th>Stair Angle</th>
<th>Dimension C</th>
<th>Platform Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>800 x 1220 mm (31 1/2&quot; x 48&quot;)</td>
<td>800 x 1050 mm (31 1/2&quot; x 41 3/8&quot;)</td>
</tr>
<tr>
<td></td>
<td>mm</td>
<td>in</td>
</tr>
<tr>
<td>22°</td>
<td>1820</td>
<td>71 5/8</td>
</tr>
<tr>
<td>25°</td>
<td>1865</td>
<td>73 3/8</td>
</tr>
<tr>
<td>30°</td>
<td>1945</td>
<td>76 5/8</td>
</tr>
<tr>
<td>35°</td>
<td>2030</td>
<td>79 7/8</td>
</tr>
<tr>
<td>40°</td>
<td>2130</td>
<td>83 7/8</td>
</tr>
<tr>
<td>45°</td>
<td>2245</td>
<td>88 3/8</td>
</tr>
</tbody>
</table>
Attachment Methods

The following are examples of common tube attachment methods. To ensure that the structure can withstand the loads and forces exerted by the lift, please consult a structural engineer.

Tube Attachments
To maintain the vertical separation between the tubes, distance struts and gussets are welded to the tubes. The struts are attached either directly to the wall or to square or rectangular steel support towers.

Solid Walls
- solid concrete, concrete block, wood or steel reinforcement.
This construction is ideal for direct mounting as the struts can be attached directly to the wall. Where extra support is necessary the upper hole in the strut can be fastened through the wall.

Wood Stud Walls
These structures require support towers, along with a 2” x 6” board that is screwed to the studs in the wall, running parallel to the stair flight. The towers must be attached to the board as well as to the floor or stair treads.

When using this attachment method, add the board thickness of 38mm (1 1/2”) to the turning clearances shown on pages 15 & 16.

Note: Never attach a lift to a wall framed with steel studs.
Freestanding Support Towers
- solid concrete stairs, steel pan stairs filled with concrete, 76mm (3”) thick wood stairs/landings

These are required when there are no existing support walls, or when the lift is required to be freestanding.

For concrete-filled steel pan treads, the towers are either bolted through the treads (where access is possible) or attached to a steel stringer for additional support.

Open Balustrade - Towers In The Core
Towers can be positioned within the open stair core when there is insufficient platform turning clearances or if the stairs are too weak for freestanding towers. The towers are fastened to the walls, stringers, or stair edge, as well as to the floors.

Handrails can be removed or special brackets can be used to allow for tube attachment to the towers, without damaging the balustrade.

Please refer to the loading diagram on page 29 for wall and floor reactions.
Wall Height Requirements for Direct Mounting

For prevention of concrete breakout, these required wall heights include 100mm (3 7/8”) of clearance from the top hole of the strut to the top of a concrete wall.

<table>
<thead>
<tr>
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<tbody>
<tr>
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<td>mm</td>
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<tr>
<td>20°</td>
<td>1155</td>
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<td>25°</td>
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<td>40°</td>
<td>1520</td>
</tr>
<tr>
<td>45°</td>
<td>1645</td>
</tr>
</tbody>
</table>

Minimum Support Structure Height for Direct Mounting on Concrete Wall
Loading Diagram

Loads are based on an 800 x 1220mm (31 1/2” x 48”) platform:

**Straight Lifts And/Or Lifts With Inside Radius Bends**

\[ \begin{align*}
F_1 &= 1093 \text{ N (246 lbf)} \\
F_2 &= 2942 \text{ N (661 lbf)} \\
d_1 &= 296\text{mm (11 5/8")} \\
d_2 &= 506\text{mm (19 7/8")}
\end{align*} \]

**Moment At The Center Of Tower Or Back Of Direct Mount Strut**

\[ M = F \times d \quad \text{(F: Force; d: distance)} \]

\[ M = F_1 \times (d_1 + X) + F_2 \times (d_2 + X) \]

**Tower Mount**

\( X \) is 92mm (3 5/8”) min. to 330mm (13”) max.

**Direct Mount**

\( X \) is 100mm (4.0”) min. to 140mm (5 1/2”) max.

**Maximum Moment**

\[ \begin{align*}
M &= 3144 \text{ Nm (27827 in.lbf) with Tower Mount} \\
M &= 2377 \text{ Nm (21041 in.lbf) with Direct Mount}
\end{align*} \]

---

**Lifts With Outside Radius Bends**

\[ \begin{align*}
F_1 &= 1231 \text{ N (277 lbf)} \\
F_2 &= 2942 \text{ N (661 lbf)} \\
d_1 &= 341\text{mm (13 3/8")} \\
d_2 &= 606\text{mm (23 7/8")}
\end{align*} \]

**Moment At The Center Of Tower Or Back Of Direct Mount Strut**

\[ M = F \times d \quad \text{(F: Force; d: distance)} \]

\[ M = F_1 \times (d_1 + X) + F_2 \times (d_2 + X) \]

**Tower Mount**

\( X \) is 92mm (3 5/8”) min. to 330mm (13”) max.

**Direct Mount**

\( X \) is 100mm (4.0”) min. to 140mm (5 1/2”) max.

**Maximum Moment**

\[ \begin{align*}
M &= 3580 \text{ Nm (31682 in.lbf) with Tower Mount} \\
M &= 2787 \text{ Nm (24664 in.lbf) with Direct Mount}
\end{align*} \]
Technical Reference of Standard Features

Platform Sizes
800 x 1220mm (31 1/2” x 48”) - ADA Compliant
800 x 1050mm (31 1/2” x 41 3/8”)
800 x 900mm (31 1/2” x 35 3/8”)
700 x 750mm (27 1/2” x 29 1/2”)

Curved Safety Arms
Fully automatic, 32mm (1 1/4”) diameter safety arms, top of arm 948mm (37 3/8”) above platform deck.

Pedestrian Safety Lights
Illuminated tube lighting, located at both ends of the platform deck. Alerts pedestrians that the platform is in motion.

Rated Load
300 kg. (660 lbs.)

Speed
6 meters (20 ft) per minute, slowing to 3 meters (10 ft) through corners and when approaching or departing landings.

Operating Controls
Call Stations (Standard): Equipped with Garaventa Lift Smart-Lite Technology™, constant pressure directional buttons, one touch fold & unfold buttons, 24VDC power, and keyed operation.
Platform (Standard): Equipped with constant pressure switches, Emergency Stop Button (manual reset) and keyless operation

Drive System
Motor: Single phase (supplied by inverter) 2 H.P. drive box at the end of the guide tube system. The drive box can be located away from the upper landing by extending the guide tubes.
Power Requirements: The mains power requirement for both drive systems is 208-240 VAC, 50/60 HZ single phase on a dedicated 20 amp. circuit.
Power Transmission: Roped sprocket using 8mm (3/8”) wire haul rope.
Emergency Use: Ratchet wrench (or handwheel) is provided.

Overspeed Safety
Located at the bottom of the tube assembly containing mechanical overspeed sensor and brake, with electrical drive cut-out protection.

Rail System
Two 51mm (2”) O.D. steel tubes spaced 600mm (23 5/8”) apart vertically.

Finishes
Durable electrostatically applied and baked fine textured Satin Grey paint.

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Typical Wiring Layout

Actual wiring and number of conductors may vary depending on options, quantity of stations and lift configuration.

Some of the options that will affect the wiring include:
- Emergency Stop switches (requires 2 additional conductors to each call station)
- Additional Audio Visual Alerts (requires 3 additional conductors to each A/V)

The following options require field wiring by others:
- Attendant Call
- Fire Service
- Auxiliary Power System
- and possibly others

Call Station
3 Conductors min. 20 AWG

Audio Visual
(Tube Mounted Shown)

Audio Visual
3 Conductors min. 20 AWG

Intermediate Call Station

Call Station
3 Conductors min. 20 AWG

Upper Call Station

Integrated Disconnect Switch

Overspeed Safety
1 Conductor min. 20 AWG

Overspeed Safety
1 Conductor min. 20 AWG

Mains Power
2 Conductors plus ground.
Wiring size as per local electrical code specifications, loads and distance from source.

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