

SECTION 14420 14 42 13

XPRESS II INCLINED WHEELCHAIR PLATFORM LIFT



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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Indoor inclined platform wheelchair lifts.
- B. Outdoor inclined platform wheelchair lifts.
- C. Portable emergency evacuation device.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast-In-Place Concrete: Anchor placement in concrete.
- B. Section 04800 - Masonry Assemblies: Anchor placement in masonry.
- C. Section 06100 - Rough Carpentry: Blocking in framed construction for lift attachment.
- D. Section 09260 - Gypsum Board Assemblies: Stair walls.
- E. Section 13650 - Fire Alarm System: Building Fire Alarm Integration system to connect the lift control system with the building fire alarm system.
- F. Division 16 - Electrical: Electrical power service and wiring connections.

1.3 REFERENCES

- A. ASME A17.5 - Elevator and Escalator Electrical Equipment.
- B. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts.
- C. CSA B44.1 - Elevator and Escalator Electrical Equipment.
- D. CSA B355 - Lifts for Persons with Physical Disabilities.
- E. ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities.
- F. NFPA 70 - National Electric Code.

G. CSA - National Electric Code.

#### 1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Submit manufacturer's installation instructions, including preparation, storage and handling requirements.
2. Include complete description of performance and operating characteristics.
3. Show maximum and average power demands.

C. Shop Drawings:

1. Show typical details of assembly, erection and anchorage.
2. Include wiring diagrams for power, control, and signal systems.
3. Show complete layout and location of equipment, including required clearances.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples, representing actual product, color, and patterns.

#### 1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Firm with minimum 10 years documented experience in manufacturing of inclined wheelchair platform lifts of installations of type specified.

B. Installer Qualifications: Firm licensed to install equipment of this scope, with evidence of experience with specified equipment. Installer shall maintain an adequate stock of replacement parts and have qualified people available to ensure timely maintenance and callback service at the project site.

#### 1.6 REGULATORY REQUIREMENTS

A. Provide platform lifts in compliance with:

1. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts.
2. ASME A17.5 - Elevator and Escalator Electrical Equipment.
3. NFPA 70 - National Electric Code.

B. Provide platform lifts in compliance with:

1. CSA B355 - Lifts for Persons with Physical Disabilities.
2. CSA B44.1/ASME A17.5 - Elevator and Escalator Electrical Equipment.
3. CSA - National Electric Code.

C. Seismic Design: In accordance with \_\_\_\_ seismic risk zone in accordance with \_\_\_\_\_ code.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

- B. Store components off the ground in a dry covered area, protected from adverse weather conditions.

## 1.8 PROJECT CONDITIONS

- A. Do not use wheelchair lift for hoisting materials or personnel during construction period.

## 1.9 WARRANTY

- A. Warranty: Manufacturer shall warrant the wheelchair lift materials and workmanship for two years following completion of installation.
- B. Extended Warranty: Provide an extended manufacturer's warranty for the entire warranty period covering the wheelchair lift materials and workmanship for the following additional extended period beyond the initial warranty:
  - 1. One additional year.
  - 2. Two additional years.
  - 3. Three additional years.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garaventa Lift;  
U.S. Address: P.O. Box 1769, Blaine, WA 98231-1769.  
Canadian Address: 7505 134A Street, Surrey, BC V3W 7B3  
Toll-Free 1-800-663-6556 Tel: (604) 594-0422. Fax: (604) 594-9915. Email:  
[productinfo@garaventa.ca](mailto:productinfo@garaventa.ca). Web: [www.garaventa.ca](http://www.garaventa.ca)
- B.
- C. Substitutions: Not permitted.
- D. Requests for substitutions will be considered in accordance with provisions of Section 01600.

### 2.2 STAIR LIFT FOR STRAIGHT STAIRWAYS

- A. Garaventa Inclined Platform Lift: Stair-Lift Model XPRESS II to serve one flight of straight stairs, with two landings and two stops. Lift consists of an extruded aluminum guide rail, a folding platform that is moved along the guide rail by an integrated rack and pinion drive system, overspeed safety system and call stations at each landing. Conform to the following design requirements:
  - 1. Application:
    - a. Indoor.
    - b. Outdoor.
  - 2. Platform Load Rating: 225 kg (495 lb) with minimum safety factor of 5.
  - 3. Travel Speed: 4m/min (13 fpm) traveling up; 5 m/min (16 fpm) traveling down.
  - 4. Platform Deck: Surface shall be slip resistant with the following features:
    - a. Platform Size A (ADA Compliant): 800 mm (31 1/2 in.) wide by 1200mm (48 in.) long.
    - b. Platform Size B: 800 mm (31 1/2 in.) wide by 1000 mm (39 3/8 in.) long.
    - c. Platform Size C: 750 mm (29 1/2 in.) wide by 900 mm (35 1/2 in.) long.

- d. Platform Size D: 725 mm (28 1/2 in.) wide by 1000 mm (39 3/8 in.) long.
  - e. Platform Size E: 675 mm (26 1/2 in.) wide by 1000 mm (39 3/8 in.) long.
5. Platform Operation:
    - a. Automatic Fold: Folded and unfolded electrically from the call station.
    - b. Emergency Manual Fold: When unit is left in the open position, the platform may be manually folded and retained in the closed position.
  6. Under Platform Obstruction Sensing:
    - a. Provide an under-platform sensing device to stop the platform from traveling in the downward direction when encountering 20N (4 lbf) of pressure.
    - b. Platform is permitted to travel in the opposite direction of the obstruction to allow clearing.
  7. Passenger Restraining Arms:
    - a. Platform equipped with retractable passenger restraining arms in compliance with ASME A18.1a – 2001 or more recent edition.
    - b. Arms stop moving when an obstruction causing 20 N (4 lbf) of pressure is encountered and will immediately retract when the signal is removed.
    - c. Provide with means to manually unlock and open the restraining arms for passenger emergency evacuation.
    - d. Arms are folded and unfolded electrically from the call stations or platform controls.
    - e. Top of arms mounted 800 mm (32 in.) to 1000 mm (38 in.) above the platform deck. When in the guarding position the arms are located above the perimeter of the platform.
    - f. The gaps between the ends of the arms shall not exceed 100 mm (4 in.).
  8. Boarding Ramps:
    - a. Provide boarding sides of platform with retractable ramps positioned for travel at a height of 150 mm (6 in.) measured vertically above the platform deck.
    - b. Lock ramps in their guarding positions during travel. When the platform is at the landing, only the retractable ramp servicing the landing shall be operable.
    - c. Ramps shall be folded and unfolded electrically.
    - d. Retractable ramps, in the guarded position, shall withstand a force of 550 N (125 lbf) applied on any 100 mm (4 in.) by 100 mm (4 in.) area. This force shall not cause the height of the ramp, at any point in its length, to be less than 150 mm (6 in.) measured vertically above the platform deck.
    - e. Provide a means to manually unlock the ramps for emergency evacuation when the platform is located at a landing.
    - f. Provide with a bi-directional obstruction sensitive device on the travel direction side end of the platform to stop the lift when 20 N (4 lbf) of pressure is encountered. Platform is permitted to travel in the opposite direction of obstruction to allow clearing.
  9. Platform Sidewall:
    - a. Provide on the non-boarding and non-guide rail side of the platform a sidewall of not less 150 mm (6 in.) in height, measured vertically from the platform deck.
    - b. When the platform is folded the sidewall shall cover the platform controls, providing protection from vandalism.
  10. Hand Grips:

- a. Equip platform with a 32 mm (1-1/4 in.) tubular steel hand grip or grab bar at the top of the platform. The hand grip is to cover the entire width of the platform.
- 11. Clearances Dimensions:
  - a. The platform shall not protrude more than 260 mm (10 1/4 in.) from the mounting surface when folded and stored.
  - b. The platform shall not protrude more than 1020 mm (40 1/4 in.) from the mounting surface when unfolded and in use.
- 12. Controls:
  - a. Controls: 24 VDC Low Voltage type.
  - b. Platform equipped with emergency stop switch located within reach of the passenger. When activated the emergency stop button shall cause electric power to be removed from the drive system stopping lift immediately.
  - c. Operating controls shall be two separate 36 mm (1 1/2) diameter round constant pressure buttons with directional arrows, mounted on the front surface of the platform control panel.
  - d. When the platform arrives at landing and the user releases the directional control button, the passenger restraining arms and boarding ramp shall unfold automatically allowing passenger to disembark.
  - e. Platform control panel shall include a receptacle for an optional plug-in hand-held attendant pendant control.
  - f. Platform shall be equipped for:
    - 1) Keyless Operation.
    - 2) Keyed Operation.
  - g. Provide control to automatically fold the platform into the storage position if left unused in the open position at a landing for a period of 1 – 10 minutes (field adjustable).
  - h. Provide control wiring to allow the platform to be folded into the storage position from the opposite call station.
  - i. Provide control wiring to allow the platform to be called to the opposite landing in the folded open position.
- 13. Passenger Seat: Fold-down type with safety belt. Minimum rated load of 115 kg (250 lb).
- 14. Side Loading Platform: Provide with automatic folding ramps and kickplates at boarding sides of platform.
- 15. Platform Security Lock: Provide to prevent unauthorized unfolding of the platform.
- 16. Attendant Hand-Held Pendant Control: Provide lift with a plug-in pendant control for attendant operation.
- 17. Autofold Platform: Provide to automatically fold platform into storage position when left unused in open position at lower landing for field-adjustment period of 1 – 10 minutes.
- 18. Platform on-Board Emergency Alarm: Provide platform with an on-board alarm that sounds when emergency stop button is pushed. The alarm shall have a battery back-up so that it will continue to function if lift power is lost.
- B. Drive and Guide Rail System:
  - 1. Operation:
    - a. Motor: 0.6 kW (3/4 HP) electric motor with an integrated brake.
    - b. Required power: 208-240 VAC, single phase, 50/60 Hz. on a dedicated 15 amp circuit. Power Transmission: Worm gear reduction to a pinion moving on a fixed gear rack.
    - c. A frequency inverter shall be used to smoothly start and stop the platform motion.

- d. Drive carriage and associated control devices to be located within the platform conveyance.
  - e. An upper final limit switch shall be provided to stop the lift in the event of a failure of the primary limit switch.
  - f. Drive system shall be equipped with an hour counter.
2. Guide Rail System:
- a. Two-part guide rail system consisting of:
    - 1) Main Upper Rail: Anodized aluminum extrusion weighing 11.9 kg/m (8 lb/ft) with integrally mounted zinc plated gear rack.
    - 2) Lower Rail: 38 mm (1 1/2 in.) by 64mm (2 1/2 in.) anodized aluminum extrusion.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following rail mounting paragraphs and delete the ones not required. Direct mounting is recommended only for solid concrete walls. Mounting to a 2 by 8 inch board is intended for wood frame walls where the 2 by 8 inch board can be securely attached to the wooden studs. Use of steel support posts is for installations where there is no wall to attach to or where wall construction does not provide enough strength. See the Garaventa Xpress II Design and Planning Guide for further rail mounting information and a loading diagram.**

- b. Rail Mounting:
    - 1) Rails shall be directly mounted to the stairway wall.
    - 2) Upper rail shall be attached to a 2 by 8 inch board that is secured to the wall. Lower rail shall be attached to a 2 by 4 inch board that is secured to the wall. Each board shall be fastened to every available stud with a minimum of two fasteners.
    - 3) Rails shall be mounted to steel support posts that are secured to the lower landing floor and stair treads. Support posts shall be 64 mm (2 1/2 in.) by 64 mm (2 1/2 in.) hollow structural steel.
  - c. Provide a mechanical stop at the upper landing to prevent over-travel of the drive carriage in the event of a switch failure.
3. Provide overspeed governor and brake on upper carriage drive, containing mechanical overspeed sensor and lock, with electrical drive cut-out protection.
4. Provide with manual handwheel for emergency operation.
5. Emergency Battery Operation:
- a. Auxiliary Power: Provide an external battery back-up system for normal up/down lift operation during a power failure for a minimum period of one hour with rated load.
  - b. Emergency battery lowering: provide an on-board battery system to allow the user to lower the platform during a power failure.
- C. Pedestrian Handrail Integrated with Guide Rail:
- 1. Provide a pedestrian handrail to be mounted to the top of the upper rail.
  - 2. The top of the handrail gripping surface shall be between 785 mm (31 in.) and 1270 mm (50 in.) above the stair nosing and have a smooth gripping surface 38 mm (1-1/2 in.) in diameter.
  - 3. Handrail will be on the same plane as the upper rail of the lift.
  - 4. Handrail may meet local code requirements for height above stair noses depending on stair angle and platform size.
- D. Call Stations:
- 1. Provide surface mounted call stations at both landings.
  - 2. Call station operating voltage to be 24V.
  - 3. Call stations shall be provided with constant pressure directional control buttons for call and send.
  - 4. A one-touch control system shall be used to automatically fold/unfold the platform, boarding ramps and passenger restraining arms.

5. Call stations shall be equipped for:
    - a. Keyed Operation.
    - b. Keyless Operation.
  6. Provide constant pressure Attendant Call buttons on each call station.
  7. Mounting:
    - a. Lower landing call station:
      - 1) Surface mounted call station.
      - 2) Flush mounted call station: Provide powder-coated trim collar.
      - 3) Pedestal mounted call station: Provide free-standing mounting pedestal.
    - b. Upper landing call station:
      - 1) Surface mounted call station.
      - 2) Flush mounted call station: Provide powder-coated trim collar.
      - 3) Pedestal mounted call station: Provide free-standing mounting pedestal.
- E. Additional Safety or Code Requirements:
1. Wall Mounted Audio-Visual Alert: Provide wall mounted audio-visual alter(s) with adjustable volume control tht sound while the lift is in operation and are visible by pedestrian traffic from all flights and landings.
  2. Building Fire Alarm Integration: Coordinate with Section 13650 Building Fire Alarm System to connect the lift control system with the building fire alarm system. If the lift is not in operation when the building fire alarm system is activated power will be cut to the lift preventing use during fire evacuation. If the lift is in use when the building fire alarm system is activated, the lift shall only allow the passenger to travel to the designated landing with the emergency exit.
- F. Finish Environment Requirement:
1. Design and fabricate lift to manufacturer's standard design for indoor and outdoor locations.
    - a. Aluminum guide rails and ramps to be anodized aluminum. Steel components shall be painted with electrostatically applied and baked powder coat as follows:
      - 1) Fine Textured Satin Grey (RAL 7030).
      - 2) Custom color as selected by Architect from an RAL color chart.
    - b. Electrical printed circuit boards and control transformers to be treated with a conformal coating for resistance to ambient moisture.
  2. Platform Cover: Provide a durable and weather resistant nylon platform cover for protection.

## 2.3 EMERGENCY EVACUATION DEVICE

- A. Portable evacuation chair, Garaventa "Evacu-Trac" with steel storage enclosure:
1. Capacity: 1 person, 136 kg (300 lbs.) with minimum 1.5 times safety factor.
  2. Maximum Stair Angle: 40 degrees.
  3. Speed Governor: Piston brake.
  4. Brake: By manual mechanical brake, attendant must release for descent.
  5. Surface Mount Cabinet:
    - a. Steel cabinet and door panel. Available only in Satin Grey, left hinged only.
    - b. Size: Height 1151mm (45 3/8 in.) width 508 mm, (20 in.) depth 279mm (11 in.)

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify electrical rough-in is at correct location.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### 3.3 INSTALLATION

- A. Install platform lifts in accordance with in compliance with regulatory requirements specified and the manufacturer's instructions.
- B. Install system components and connect to building utilities.
- C. Accommodate equipment in space indicated.
- D. Startup equipment in accordance with manufacturer's instructions.
- E. Adjust for smooth operation.

### 3.4 FIELD QUALITY CONTROL

- A. Perform tests in compliance with regulatory requirements specified and as required by authorities having jurisdiction.
- B. Schedule tests with agencies and Architect, Owner, and Contractor present.

### 3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION