



SECTION 14423

CURVE STAIRWAY CHAIRLIFT

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Stairway chairlift for straight and turning stairways. (Stairfriend)

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.
- G. Division 16 - Electrical: Concealed low voltage control wiring.
- H. Division 16 - Electrical: Intercom and wiring.

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. ASME A18.1 - Section 4, Inclined Stairway Chairlift.
- D. CSA B44.1 - Elevator and Escalator Electrical Equipment.
- E. CSA B355 - Lifts for Persons with Physical Disabilities.
- F. CSA B613 - Private Residence Lifts for Persons with Physical Disabilities.
- G. ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities.
- H. ADDAG – American with Disabilities Act & Architectural Barriers Act
- I. NFPA 70 - National Electric Code.
- J. 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 finished product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finished product specified, two samples, representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Firm with minimum 5 years documented experience in manufacturing of curve inclined stairway chairlift.
- 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 call back service at the project site.

1.6 REGULATORY REQUIREMENTS

- A. Provide stairway chairlifts 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 stairway chairlifts in compliance with:
 - 1. CSA B355 - Lifts for Persons with Physical Disabilities.
 - 2. CSA B613 - Lifts for Persons with Physical Disabilities.
 - 3. CSA B44.1/ASME A17.5 - Elevator and Escalator Electrical Equipment.
 - 4. CSA - National Electric 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 stairway chairlift for hoisting materials or personnel during construction period.

PART 2

2.1 WARRANTY

- A. Warranty: Provide a three (3) year limited warranty covering replacement of defective parts and excluding labor. Preventive maintenance agreement required.

2.2 MAINTENANCE SERVICE

- A. Furnish service and maintenance for elevator system and components for the following period from Date of Substantial Completion.
 - 1. One year.
 - 2. Two years.
 - 3. Three years.
 - 4. Four years.
 - 5. Five years.
- B. Include systematic examination, adjustment, and lubrication of elevator equipment. Repair or replace parts whenever required. Use parts produced by manufacturer of original equipment. Replace drive components when necessary to maintain required factor of safety.
- C. Provide emergency call back service for this maintenance period.
- D. Perform maintenance work using competent and qualified personnel approved by elevator manufacturer or original installer.

PART 3 PRODUCTS

3.1 MANUFACTURERS

- A. Acceptable Manufacturer: Savaria Inc.:2 Walker Dr, Brampton, Ontario, L6T 5E1. Toll Free: 800-661-5112. Tel: (905) 791-5555. Fax: (905) 791-2222 Email: info@savaria.com Web www.savaria.com
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

3.2 INCLINED STAIRWAY CHAIRLIFT FOR STRAIGHT OR TURNING STAIRWAYS

- A. Inclined Stairway Chairlift: Savaria Model **STAIRFRIEND** inclined chairlift for straight and turning stairways. Lift consists of a tubular guide rail system, a carriage and seat that is moved along the guide rails by a rack and pinion drive system, overspeed safety system on the carriage and call stations at each landing. Conform to the following design requirements:
 - 1. Lifts shall be in accordance:
 - a. ASME 18.1 section 4 – Commercial application (USA)
 - b. ASME 18.1 section 7 – Residential application (USA)
 - c. CSA B355 – Commercial application (Canada)
 - d. CSA B613 – Residential application where it applies (Canada)
 - 2. Application:
 - a. Rail configuration as per site drawing.
 - b. Indoor
 - 3. Chairlift Load Rating:
 - 350 lb (160 kg), with minimum safety factor of 5.
 - 4. Travel Speed: 20 ft/min, (0.1 m/s), 12 ft/min (0.06 m/s) through curves
 - 5. Chairlift footrest: 0.250 in (6 mm) sheet metal coated with electrostatically applied and baked paint covered with anti-skid surface.
 - 6. Chairlift seat Size: 19 in (485 mm) wide by 14 in (355 mm) long with 18 in (455 mm) high

- backrest.
7. Chairlift seat rotation: Swivel at top landing with 2 positions. Seat is equipped with self-retracting safety belt.
 8. Chairlift Storage:
 - a. Manual Fold: When unit is left in the open position, seat, armrests and footrest may be manually folded and retained in closed position.
 9. Under footrest Obstruction Sensing:
 - a. Provide an under footrest sensing device to stop the chairlift from traveling in the downward direction when encountering 15 lb (70 N) of pressure.
 - b. Chairlift is permitted to travel in the opposite direction of obstruction to allow clearing.
 10. Clearance Dimensions:
 - a. When chairlift is folded it shall not protrude more than 15.5" in (394 mm) from wall surface.
 - b. When unfolded and in use chairlift shall not protrude more than 24.5" in (622 mm) from mounting surface.
 11. Controls:
 - a. Chairlift Controls: 24 VDC Low Voltage type.
 - b. On public application, Chairlift equipped with emergency stop switch located within reach of the passenger on the armrest. When activated emergency stop button shall cause electric power to be removed from the drive system stopping lift immediately.
 - c. Operating controls shall be a paddle or bi-directional constant pressure switch.
 - d. When chairlift arrives at top landing the user reaches for the swivel handles beneath the seat and swivels the chairlift allowing passenger to disembark.
 - e. Chairlift shall be equipped for:
 - 1) Keyed operation, where required.
 - 2) Keyless operation, where allowed.
 12. On Board Emergency Alarm: On public application, Provide chairlift with on board alarm that sounds when emergency stop button is pushed.
 13. Side of Carriage Obstruction Device: Provide sensors that detects obstructions in the path of the side of the carriage (top and bottom carriages). Lift shall stop immediately and not travel until the obstruction is removed. It shall be possible to drive the chairlift away from the obstruction.
- B. Drive and Guide Rail System:
1. Operation:
 - a. Motor: 1/2 hp (0.375 kW) electric motor with an integrated brake.
 - a) Required power: 100-240 VAC, single phase, 3 amp, 60 hz on a dedicated 10 amp circuit for power supply.
 - b. Locate drive system consisting of a motor, gearbox and controller within the carriage on the chairlift under the seat.
 - c. Chairlift is powered by two (2) rechargeable sealed lead acid batteries, 12V, 7AH, 9AH on Public application or when travel exceed 30 feet.
 - d. Equip drive with an emergency manual lowering system with kill switch when emergency manual lowering system is engaged.
 - e. Lift to slow down when entering a low radius curve.
 - f. Range of incline of the rail system: 0° to 52°. Maximum travel of 45 feet (13,7m) on public application since in case of power failure, unit needs to do minimum of five (5) trips with rated load..
 - g. Provided by others an integrated lockable disconnect switch and breaker remotely located to shut down the power supply. Main battery disconnect on the side of the carriage.

2. Guide Rail:
 - a. Construct of two 1.75 in (45 mm) diameter steel tubes spaced 11.25 in (285 mm) apart vertically at right angle from rail. Tubes will run parallel to the stairs and horizontal to landings throughout the length of travel.
 - b. Leveling of the seat assembly must be achieved mechanically without the help of electronics and without leveling motors.
 - c. Tube system shall not protrude more than 5.50 in (140 mm) from the wall with its support posts.
 - d. Drive unit to be rack and pinion type. The rack will be welded to the lower tube section and located between the wall and tube hidden from stairway users.
 - e. The overspeed safety is part of the carriage and runs off the bottom tube assembly rack and shall consist of a mechanical overspeed sensor and brake with electrical drive cut-out protection.
 - f. Provide a final limit switch for the upper and lower end of the tubes to stop the chairlift if it travels past the normal terminal stopping device.
 - g. 180 degree turns must be achieved with 9 in (230 mm) maximum radius where ever needed.
 3. Auxiliary Power: Provide battery operation for normal up / down lift operation during power failure for a minimum of five (5) trips with rated load.
 4. Chairlift Storage Beyond Upper/Lower Landings:
 - a. As per drawing.
 5. Rail Mounting:
 - a. Tower Mount Struts: Provided with telescopic 1.75 in (45 mm) and 1.375 in (35 mm) hollow structural steel tubular posts to support the guide rails. Struts are anchored in stairs only.
- C. Call Stations:
1. Provide a call station at each serviced landing.
 2. Call stations, Radio frequency low voltage with control buttons: two directional call and send buttons and an on/off key.
 3. Call stations shall be equipped for:
 - a. Keyed operation, where required.
 - b. Keyless operation, where allowed.
- D. Finish Environment Requirements:
1. Design and fabricate lift to manufacturer's standard design for indoor location.
 2. Painting: Painted components shall be painted with electrostatically applied and baked powder coat as follows:
 - a. Fine Textured Architectural white.
 - b. Custom color as selected by Architect from manufacturers color chart.

PART 4 EXECUTION

4.1 EXAMINATION

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

4.2 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.

4.3 INSTALLATION

- A. Install units 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.

4.4 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.

4.5 PROTECTION

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

END OF SECTION