



SECTION 14 42 16

VERTICAL WHEELCHAIR LIFTS

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Commercial vertical platform lifts.

1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete.
- B. Section 06 10 00 - Rough Carpentry.
- C. Division 16 - Electrical: Dedicated telephone service and wiring connections.
- D. Division 16 - Electrical: Lighting and wiring connections at top of hoistway.
- E. Division 16 - Electrical: Electrical power service and wiring connections.

1.3 REFERENCES

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

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.

2. Storage and handling requirements and recommendations.
 3. Installation methods.
- C. Shop Drawings: Provide a complete layout of lift equipment detailing dimensions and clearances as required.
- 1.5 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
 - B. Installer Qualifications: Minimum 2 year experience installing similar products and approved by manufacturer.
- 1.6 REGULATORY REQUIREMENTS
- A. Provide platform lifts in compliance with:
 1. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts.
 2. CSA B44.1/ASME A17.5 - Elevator and Escalator Equipment.
 3. CSA B355 - Lifts for Persons with Physical Disabilities.
 4. CSA - National Electric Code.
 5. NFPA 70 - National Electric Code.
 - B. Fabricate and install work in compliance with applicable jurisdictional authorities.
- 1.7 DELIVERY, STORAGE, AND HANDLING
- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
 - B. Handling: Handle materials to avoid damage.
- 1.8 PROJECT CONDITIONS
- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
- 1.9 SEQUENCING
- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
- 1.10 WARRANTY
- A. Manufacturer's Warranty: Standard limited warranty against defects in materials and manufacturing.
 1. Warranty Period: For major components including the drive system, 2 years.
 2. Warranty Period: For all other components, 1 year.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Bruno Independent Living Aids, Inc., which is located at: 1780 Executive Dr. ; Oconomowoc, WI 53066; Toll Free Tel: 800-882-8183; Tel: 262-567-4990; Fax: 262-953-5501; Email: [request info \(commercialvpl@bruno.com\)](mailto:request info (commercialvpl@bruno.com)); Web: www.bruno.com/architect-resources

- B. Substitutions: Not permitted.

2.2 VERTICAL PLATFORM LIFT - GENERAL

- A. U.S. F.D.A. CLASSIFICATION: Class II, 510(K) exempt
 1. CLASSIFICATION NUMBER: 890.3930
 2. Product Code: PCE
- B. ETL-Intertek C-US Listed: Control Number: 4004689
- C. Performance Standards:
 1. ASME A18.1-2011 (Sec. 2) Safety Standards for Platform Lifts and Stairway Chairlifts.
 2. CSA B355-09 Lifts for Persons with Physical Disabilities.
 3. CSA B44.1-11/ASME A17.5-2011 Elevator and Escalator Electrical Equipment.

2.3 COMMERCIAL VERTICAL PLATFORM LIFT

- A. Product: VPL-3300B as manufactured by Bruno Independent Living Aids, Inc.
 1. Model: 3-Gate Series, VPL-3353B with 3-Gate (DC-powered unit).
 2. Model: Unenclosed Series, Model: VPL-3353B (DC-powered units).
 3. Model: Unenclosed Series, Model: VPL-3375B (DC-powered units).
 4. Model: Enclosed (Enclosure by Bruno), Model VPL-3353B (DC-powered unit).
 5. Model: Enclosed (Enclosure by Bruno), Model VPL-3375B (DC-powered unit).
 6. Model: Enclosed (Enclosure by Bruno), Model VPL-3310B (DC-powered unit).
 7. Model: Enclosed (Enclosure by Bruno), Model VPL-3312B (DC-powered unit).
 8. Model: Enclosed (Enclosure by Bruno), Model VPL-3314B (DC-powered unit).
 9. Model: Enclosed (Hoistway by others), Model VPL-3353B (DC-powered unit).
 10. Model: Enclosed (Hoistway by others), Model VPL-3375B (DC-powered unit).
 11. Model: Enclosed (Hoistway by others), Model VPL-3310B (DC-powered unit).
 12. Model: Enclosed (Hoistway by others), Model VPL-3312B (DC-powered unit).
 13. Model: Enclosed (Hoistway by others), Model VPL-3314B (DC-powered unit).
- B. Performance:
 1. Rated Load: 750 lb (340 kg) maximum.
 2. Number of Passengers: One passenger with mobility device.
 3. Speed: 10 feet/minute (0.05 meters/second) maximum.
 4. Number of Landings: 2-Stop (all models); 3-Stop (optional for VPL-3310B, VPL-3312B, and VPL-3314B)
 5. Lifting Height: Model VPL-3353B (Unenclosed, Enclosed, 3-Gate): 53 inches (1346 mm) maximum floor-to-floor height and 11 inches (279 mm) minimum floor-to-floor height;
 6. Lifting Height: Model VPL-3375B (Unenclosed): 60 inches (1524 mm) maximum floor-to-floor height and 32 inches (813 mm) minimum floor-to-floor height. Check local codes for maximum lifting height for unenclosed applications. ASME A18.1 Sec. 2.7.1 limits maximum floor-to-floor to 60 inches (1524 mm).
 7. Lifting Height: Model VPL-3375B (Enclosed): 75 inches (1905 mm) maximum floor-to-floor height and 32 inches (813 mm) minimum floor-to-floor height.
 8. Lifting Height: Model VPL-3310B (Enclosed): 123 inches (3124 mm) maximum floor-to-floor height.
 9. Lifting Height: Model VPL-3312B (Enclosed): 147 inches (3734 mm) maximum floor-to-floor height.
 10. Lifting Height: Model VPL-3314B (Enclosed): 171 inches (4343 mm) maximum floor-to-floor height.
 11. For pit applications, maximum floor-to-floor is measured from the bottom of

- the pit.
12. Platform Configuration:
 - a. Enter/Exit Straight Through (Front and Rear Openings).
 - b. 90 Degree Enter/Exit (Front and Side Openings) (not available with 3-Gate).
 - c. Enter/Exit Same Side (Front Opening only) (VPL-3310B, VPL-3312B, and VPL-3314B).
 13. Platform Dimensions:
 - a. 36 inches x 48 inches (914 mm x 1219 mm).
 - b. 36 inches x 54 inches (914 mm x 1371 mm).
 - c. 36 inches x 60 inches (914 mm x 1524 mm).
 - d. 42 inches x 60 inches (1067 mm x 1524 mm) (not available with 3-Gate).
- C. Drive:
1. Primary Drive: 1/2 hp motor, 1750 rpm, 24VDC permanent magnet, 20 full-load amps, continuous duty (VPL-3353B and VPL3375B).
 2. Primary Drive: 1 hp motor, 1750 rpm, 24VDC permanent magnet, 20 full-load amps, continuous duty (VPL-3310B, VPL-3312B, and VPL-3314B)
 3. 5A, 24VDC output internal battery charger, 120VAC, 60 Hz, 3A maximum input power required.
 4. Intermediate Reduction: Dual 4L style poly-V belts and pulleys, 3.94:1 pulley reduction.
 5. Final Drive: 1 inch (25.4 mm) diameter ACME lead screw with bronze nut and bronze safety back up nut (VPL-3353B and VPL-3375B).
 6. Final Drive: 1 1/4 inch (32 mm) diameter ACME lead screw with bronze nut and bronze safety back up nut (VPL-3310B, VPL-3312B, and VPL-3314B).
- D. Motor Controller: 24VDC relay control with 35A circuit breaker and disconnect (VPL-3353B and VPL-3375B). 24VDC relay control with 60A circuit breaker and disconnect (VPL-3310B, VPL-3312B, and VPL-3314B).
- E. Braking: Precision landing control.
- F. Platform Control: Up and down rocker switch or optional paddle controls, continuous pressure, key switch control (key removable in both on/off position).
- G. Emergency Stop Switch: Red, sealed, 1.55 inches (39 mm) diameter mushroom head, illuminated with audio alarm, push to stop, pull to reset.
- H. Construction:
1. Main Frame: Welded steel tubular guide construction with formed sheet steel guarding.
 2. Carriage: Welded carriage with 2.25 inches (57 mm) diameter front and back sealed dual ball bearing wheels and adjustable low-friction plastic side stabilizer guide pads.
 3. Platform: Totally enclosed side walls consisting of 1 inch (25.4 mm) tubular framing and sheet metal siding.
 4. Under Carriage Safety: Totally enclosed bottom formed steel safety pan.
 5. Automatic Lower Ramp: 16 inches (406 mm) long self-lowering ramp (standard on unenclosed applications).
 6. Finish: E-coated platform and landing gate parts; exterior grade powder coat paint (standard color is champagne).
 7. Weight of Unit: Model VPL-3353B: 857 lb (388 kg) (without batteries) (with batteries +40 to 80 lb /18 to 36 kg).
 8. Weight of Unit: Model VPL-3375B: 930 lb (422 kg) (without batteries) (with batteries +40 to 80 lb /18 to 36 kg).

9. Weight of Unit: Model VPL-3310B: 1210 lb (549 kg) (with batteries)
10. Weight of Unit: Model VPL-3312B: 1304 lb (591 kg) (with batteries)
11. Weight of Unit: Model VPL-3314B: 1400 lb (635 kg) (with batteries)
12. 36 inch Top Landing Gate Option: 99 lb (45 kg)
13. 42 inch Top Landing Gate Option: 108 lb (49 kg)
14. 3-Gate Lower Landing Gate and Walls: 130 lb (59 kg)

I. Operation:

1. Limit Switches: Adjustable upper and lower limit switches; upper and lower final limit switches.
2. Manual Lower Device (optional): Manual hand crank to lower device available; access to adaptive shaft via safety interlocked top cap
3. Remote Control (optional): Station includes a separate landing call/send rocker switch or paddle controls and a keyed on/off switch.
4. Lower Landing Gate (3-Gate): Includes mechanical interlock which releases door, only when platform is at lower landing; electronic sensors stop platform from operating unless door is closed; includes call/send rocker switch or paddle controls and keyed on/off switch mounted into gate frame.
5. Top Landing Gate (optional): Includes mechanical interlock which releases door, only when platform is at upper landing; electronic sensors stop platform from operating unless door is closed; includes call/send rocker switch or paddle controls and keyed on/off switch mounted into gate frame; extends 42 inches above upper landing.
6. Top Landing Gate (optional): Includes electric strike interlock (ESI) which releases door, only when platform is at upper landing; electronic sensors stop platform from operating unless door is closed; includes call/send rocker switch or paddle controls and keyed on/off switch mounted into gate frame; extends 42 inches above upper landing.
7. Platform Gate (Standard with Unenclosed models): Includes mechanical interlock which releases door, only when platform is at lower landing. Electronic sensors stop platform from operating unless door is closed
8. Flush Mount Door (optional): Includes Von Duprin electronic interlock which releases door only when platform is at door landing; electronic sensors stop platform from operating unless door is closed; offered as an oak door with steel frame (no fire rating) or a steel door with steel frame (90 min. fire rating including a viewing window); delay action hydraulic closer; keyed handle. Refer to drawings for door type required.
9. Stationary Ramp (Unenclosed and Enclosed) (optional): 24 inches L x 36 inches W x 3 inches H (610 mm L x 914 mm W x 76 mm H) aluminum stationary ramp with anti-skid champagne powder coat.
10. Stationary Ramp (3-Gate) (Standard): 24 inches L x 41 inches W x 3 inches H (610 mm L x 1041 mm W x 76 mm H) aluminum stationary ramp with anti-skid champagne powder coat.
11. Platform canopy (optional): not available for 90 degree platforms or 42 inches x 60 inches (1067 mm x 1524 mm) straight-through platform.
12. Telephone kit (optional): ADA compliant with battery backup.
13. Battery package upgrade (optional): 34 AH battery package.
14. Cold-weather package (optional): Recommended if operating temperature is below 20 degree F (-7 degree C).
15. Pit switch (optional).
16. Door/gate operator (optional): Used for power assisted top landing door or gate, lower landing door, and lower landing gate on 3-Gate model.
17. Platform gate operator (optional): Used for power-assisted platform gate on unenclosed models.
18. Single timer (optional): Used with flush-mount door and top landing gate with electric strike interlock (ESI).

PART 3 EXECUTION

3.1 EXAMINATION

- A. For enclosed applications, do not begin installation until hoistway has been properly prepared. Verify that hoistway spaces are of correct size and within tolerances.
- B. Verify required landings and openings are of correct size and within tolerances.
- C. Verify site dimensions are of correct size and within tolerances and clearances have been maintained and meet local regulations.
- D. Verify electrical rough-in is at correct location.
- E. Do not begin installation until substrates have been properly prepared.
- F. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 SITE PREPARATION

- A. The following is a list of general operations designed to prepare the job site for installation of the VPL. This list is provided as a guide to help the installer. For a complete list of requirements check the installation site's applicable local codes.
 - 1. Electrical Requirements: DC battery-powered units: require a dedicated GFCI 120V, 3A (max.), 60 Hz single-phase circuit to operate the internal battery charger. Check applicable local codes for all electrical and wiring requirements.
 - 2. Platform Pathway Requirements: Make sure the pathway that the platform runs in is clear of any electrical conduit and wire ways. Make sure no liquids, steam or gas piping discharge into the pathway, and make sure that there is sufficient headroom clearance (minimum of 80 inches [2032 mm]) throughout floor-to-floor travel. Make sure the area is sufficiently lit.
 - 3. Floor Recommendations: 4 inches (102 mm) thick, 3500 PSI minimum compressive strength, reinforced concrete slab. Refer to technical drawings for minimum slab dimensions. If the temperature can fall below freezing, it is recommended that you insert an insulation sheet between the concrete slab and the compacted rock.
 - 4. Pit requirements (3-Gate and Bruno Enclosure): 3 inches maximum (gate/door will not open if pit is over 3 inches).
 - 5. Floor Attachment: VPL shall be fastened to concrete slab using four 1/2 inch (3/8 inch bolt) x minimum 2-1/2 inches long concrete anchors suitable for the environment. Follow selected concrete anchor manufacturer's guidelines and applicable codes.
 - 6. Housing Attachment (VPL-3353B and VPL-3375B): None required however one can use 5/16-18 tapped holes on tower frame work to fasten the tower housing to a vertical wall for additional stability. (200 lb/91 kg wall loading). Housing shall remain intact.
 - 7. Housing Attachment (3-Gate): Lower landing walls must be secured to the house (fascia) with the brackets provided. Housing shall remain intact.
 - 8. Housing Attachment (VPL-3310B, VPL-3312B, and VPL-3314B - Hoistway by others): Use 5/16-18 tapped holes on tower frame work to fasten the tower housing to a vertical wall near or above the upper landing (200 lb/91 kg wall loading). Mounting brackets are supplied with unit. Housing shall remain intact.
 - 9. Top Gate Attachment: As required by manufacturer.
 - 10. Lower Landing Gate Attachment (3-Gate): As required by manufacturer.

11. Platform-to-Top Landing Sill Clearance: ASME code indicates the platform floor-to-sill clearance at the upper landing shall not be less than 3/8 inch (9.5 mm) nor exceed 3/4 inch (19 mm). Follow applicable local codes.
12. Fascia Wall Requirements: ASME code indicates that fascia shall be smooth and non-perforated that guards the full length and width of the platform. The fascia shall be securely fastened from the upper landing sill down to the lower landing sill. It shall be able to withstand a 125-pound side load over any 4-inch square area. Follow applicable local codes.

3.3 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.

3.4 INSTALLATION

- A. Install in accordance with manufacturer's installation instructions.

3.5 FIELD QUALITY CONTROL

- A. Perform tests in compliance with ASME A18.1 and as required by authorities having jurisdiction.
- B. Perform tests in compliance with CSA B355 and required by authorities having jurisdiction.

3.6 PROTECTION

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

END OF SECTION