

1.1 Scope

To furnish all labour, materials and equipment necessary or required to fully complete the installation of the lift as indicated on the drawings and specifications. This suggested specification is intended to cover the complete installation of the Synergy LULA type hydraulic elevator as manufactured by Niagara Belco Ltd.

1.2 System Description

The lift assembly shall consist of a power unit, car, guide system, 1:2 cable hydraulic lifting device or direct drive, hoistway doors, control system, signals and alarms, electrical wiring, and parts and accessories necessary to provide required performance, operation, code and safety requirements.

1.3 Quality Assurance

The lift shall meet or exceed the applicable regulations of the authority(s) having jurisdiction and be in compliance with the relevant sections of the most current edition of the applicable codes and standards as mandated by the authority(s) having jurisdiction:

1.4 Regulatory Compliance

Fabrication and installation shall be in compliance with all applicable standards as set forth by the jurisdictional authorities.

The installation contractor shall provide shop drawings and submissions to local authorities as may be required and shall make all necessary arrangements for inspections by the jurisdictional authority.

It is the responsibility of the owner or the owner's representative to complete the Supplementary Report as required by T.S.S.A. Submissions made to the regulatory authority without the aforementioned document will not be accepted or reviewed by T.S.S.A.

It is the responsibility of the owner or the owner's representative to ensure that payment in the form of a cheque or money order for the lift licence is available to the inspector on the day of the initial inspection. As per T.S.S.A. policy, an inspection will not be conducted if this requirement is not met.

1.5 Lift Installation Contractor Qualifications

Only qualified mechanics certified by the regulatory authority shall be employed by the Installation Contractor for the purpose of executing the scope of work contained within this specification.

Part 2- Preparatory Work by Others

2.1 Structural

2.1.1

Power unit machine room design and construction shall be in accordance with applicable codes and standards. Provide a self-closing, self-latching, fire rated machine room door, minimum 29 ½” (750mm) wide x 80” (2030mm) high. The minimum room or space height shall be 84” (2134mm). The temperature of machine room, control room, or control space shall be thermostatically controlled and maintained between 10°C and 32°C. The maximum allowed humidity is 95%, non-condensing.

2.1.2

Provide appropriate sleeves for both the electrical conduit and hydraulic line from the power unit enclosure to the hoistway (as shown on drawings). Provisions shall be made to accommodate permanent installation of the electrical conduit and hydraulic supply lines required for the operation of the elevator if the machine room is not adjacent to hoistway.

2.1.3

Provide an enclosed, plumb and square hoistway to within a tolerance of +/- 1” with reasonably smooth interior surfaces. It is the responsibility of the hoistway construction contractor to ensure that running clearance specified can be achieved for the entire travel of the elevator. The hoistway construction contractor shall be responsible for fascias or furring of hoistway interior where needed and shall ensure that any deviations or projections 4” shall be bevelled at an angle of no less than 70 degrees in the direction of travel.

2.1.4

Provide a framed and enclosed legal hoistway, including power unit enclosure, as required by the governing code or authority.

2.1.5

Provide landing entrance rough openings as specified on the contractor’s shop drawings with suitable lintels designed to prevent weight transfer onto the entrance assembly.

2.1.6

Provide substantially level pit floor slab to support loads indicated on the contractors’ shop drawings.

2.1.7

Provide adequate support for guide rail fastenings as indicated on the lift contractors’ shop drawings.

2.1.8

Provide pit water proofing or sump pump, if required, as allowed by Code.

2.1.9

Provide pit ladder for pits 3' - 0" (914 mm) or more in depth.

2.1.10

Provide finish grouting and masonry around door frames.

2.1.11

Provide finish painting of landing entrances.

2.2 Power and electrical

2.2.1

Provide a permanent separate power supply in a lockable fused cartridge type disconnect switch complete with auxiliary switch and contact. Provide a permanent separate 115V branch circuit fused (15A) car lighting disconnect. Refer to architectural drawings for permanent power specifications and location of electrical disconnects.

2.2.2

Provide power unit machine room light, switch, and GFCI convenience outlet located to comply with applicable codes and standards. Refer to CEC Section 38

2.2.3

Provide light, receptacle and switch in pit, located to comply with applicable Code. Refer to CEC Section 38

2.3 Cab Interior

2.3.1

Provide and install finished flooring in the cab. Provide product specifications in conformance with code requirements

2.4 Special Emergency Service

2.4.1

Where required, provide all work and materials needed to interface the elevator emergency operation control system to the building systems in accordance with B44 (applicable edition) Section 2.27

2.5 Communication

2.5.1

Provide a dedicated permanent telephone line to the elevator controller.

Part 3 – Submittals

3.1 Shop Drawings

The shop drawings shall show a complete layout of the lift equipment detailing dimensions, clearances and location of machinery. Including, but not limited to, the following:

3.1.1

Drawings showing the dimensions including plans, elevations, and sections to show equipment locations shall be provided.

3.1.2

Load and reaction values shall be provided by the lift manufacturer and detailed on drawings.

Part 4 - Product Data

The elevator shall be the LULA type hydraulic model as manufactured by Niagara Belco Ltd. and shall include the following:

General:

Capacity:	1400 lb (636 kg) standard
Speed:	30 fpm (0.15 mps)
Pump:	screw type hydraulic pump design
Jack Type:	1:2 Roped hydraulic or Direct Drive
Control:	non-proprietary control system
Stops:	2-5 levels served
Power:	230/1/60 or 208/3/60V pump unit power supply 115V/1ph car lighting power supply
Operation:	automatic floor selective operation
Travel:	7 Meters Max. (Consult local code for additional travel)
Platform:	48" X 54" nominal (custom designs and sizes available)
Entrances:	2 speed single slide primed or stainless steel. 36x84 nominal entrance dimensions
Cab:	full platform enclosure with SS 2 speed sliding doors and solid ceiling
Pit Depth:	14" min.
Overhead:	132" min.

Standard Product Specifications

System Control:

CSA certified, B44 (latest edition) code compliant **non-proprietary** control system featuring:

- PLC and relay logic fully field serviceable design
- Tape reader based hoistway signaling and leveling system
- Automatic floor selective operation with two way leveling
- Integral self monitoring emergency power device
- Enclosure is supplied as an independent fixture for remote installation as specified by building design requirements.
- Complete with all wiring design documents including component list for service reference.

Landing Entrances (Doors):

Each door/frame entrance unit is supplied as a knock down assembly and installation ready. Assemblies are fire rated and fully certified as code compliant for all applications in all jurisdictions throughout North America. Standard features and hardware included in the door/frame assembly as follows:

- Self closing two speed single slide door design
- Entrance ways available in various depths to suit architectural requirements
- UL Listed code compliant interlock
- Aluminum sill
- Available in beige painted or stainless steel finish
- 90 minute fire rating
- 36 x 84 nominal size

Hydraulic Drive Unit:

High efficiency, continuous duty rated hydraulic drive unit is supplied fully assembled and pre-wired for ease of installation. Features:

- Hydraulic pump unit featuring an industrial rated 5HP submersible motor
- (230-208) VAC-single or 3 Phase.
- Blain EV-100 valve featuring
 - Bypass control for smooth start up
 - 2 coil up and down speed control
 - Manual lowering valve for emergency lowering
 - Pressure relief valve to prevent overloading complete with means for affixing seal by inspection authority as required by code
 - Integral check valve capable of supporting the car with 125% of rated load
- screw type pump for ultra quiet operation
- ball type gate valve
- high capacity tank for extended fluid life featuring
 - fluid level sight gauge
 - Fluid filter

Jack Assembly:

A high pressure steel pipe cylinder, true machined packing head and a polished micro finish steel piston fitted with a welded steel stop ring designed to positively prevent the piston from leaving the cylinder. Featuring:

- 2 3/4" Cylinder complete with 'u-cup' packing
- High pressure flexible hydraulic supply line (in machine room only) rated and tagged as per code requirements.
- An adjustable over-speed valve is supplied complete with means for affixing a seal to prevent unauthorized adjustment.

The 1:2 roped type design incorporates a rail guided sheave assembly affixed to the top of the piston featuring;

- 1/8" plate steel construction
- polished 'U' groove sheave complete with sealed precision bearings
- two 3/8" aircraft grade suspension cables utilizing wedge type shackles

Hoistway Equipment:

- 8Lb/ft machined guide rails
- Welded steel guide rail brackets c/w mounting hardware
- Maintenance block capable of sustaining the car with 125% of rated load

Car sling and platform construction:

- Sling provided as welded modular design featuring:
 - Zinc Plated or Powder Coated Steel Materials
 - formed 3/16" steel channel construction
 - Type 'A' instantaneous safety device
 - Upper and lower metal guide shoes w/nylon inserts
- Platform provided as welded assembly featuring:
 - Zinc Plated or Powder coated Steel Materials
 - 1.50" X 1.50" steel tube and angle iron sub-frame construction
 - .125" plate steel sub-floor
 - 8" steel platform apron (toe guard)

Car Enclosure:

The platform is supplied with a full enclosure to a minimum height 84" (2032mm) and comes standard with a solid ceiling. All cabs are fully assembled during production. Enclosure features are:

- welded tube steel sub-frame utilizing an all bolted cab assembly system
- wall panels constructed using fire rated materials with stainless trim
- formed stainless steel entrance trim
- 2 speed sliding stainless steel doors with automatic door operator
- Car gate switch, automatic door re-opening device and door restrictor provided
- stainless steel handrail
- 1/8" Steel flooring with wood subfloor
- automatically activated overhead and emergency lighting provided

In-car Operating Devices:

The in-car operating control panel is designed and conveniently located for ease of operation whether standing or sitting. The factory pre-wired panel consists of floor designated pushbuttons, alarm, light switch and an emergency stop switch as specified by code requirements. The buttons are suitably marked as to their function. The buttons are mounted on a 1/8", 10 gauge (3mm) stainless steel plate. A digital position indicator and a code compliant emergency communication system are provided.

Landing Operating Devices:

Illuminated momentary touch operating devices are provided as standard. The hall or landing operating control devices are pre-assembled and designed to mount remotely near the door frame. Key switches are available as an option.

Signage:

All code related signage is provided including operating instructions, emergency operating instructions, caution signs and equipment specification information.

Part 5- Execution

5.1 Examination

All site dimensions shall be taken to ensure that tolerances and clearances have been maintained and meet local regulations.

5.2 Preparation

Pre-inspect the construction and service requirements for “Work by Others.” These requirements will be included in drawings, diagrams, engineering data sheets and special instructions before the work commences.

Part 6- Warranty

6.0

Niagara Belco Ltd shall provide a Manufacturer’s limited parts warranty as outlined in Appendix A.

Part 7- Substitutions

7.0

No substitutions will be considered unless written request for approval has been submitted by the bidder and received by the architect at least 10 days before the date of receipt of bids. Each such request shall include a complete description of the proposed substitute including drawings, technical specification data, and any other information needed for consideration.

Substitutions submitted for consideration shall also include a comprehensive list of components which may be exclusive to the manufacturer and shall provide proof of

durability as well as replacement costs. The manufacturer shall, in such cases, provide written assurances as to the long term availability of such components for a period of no less than 10 years from the date of installation of the lift.

Furthermore, the manufacturer shall provide written assurances that the equipment shall be able to be maintained by any registered contactor other than the manufacturer and other than those having entered into an exclusive arrangement with the manufacturer.

In the event that the applicant for substitution is unable to provide such assurances, detailed information regarding the cost of maintenance of the equipment shall be included.

Where maintenance and/or emergency service and/or warranty service is to be provided for a specified period of times under the terms of the contract the manufacturer shall and the installing contractor shall provide written assurances that such services shall be provided on a 24 hr 7 day per week basis at a predetermined hourly rate. Emergency call-back response times shall form part of such written assurances.