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**ELEVATOR CONCEPTS LTD**

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## DIRECT HYDRAULIC LULA ELEVATOR SPECIFICATION

### GENERAL

#### SCOPE OF WORK:

It is the intent of this specification to provide for a complete Limited Use / Limited Access (LULA) elevator system, including but not limited to all labor, material, equipment as required to provide a complete elevator as shown on the drawings and specified herein.

#### SUMMARY OF WORK SPECIFIED ELSEWHERE:

Legal hoistway and machine room, properly dimensioned and enclosed, including landing entrances.  
Suitable motor circuit through a heavy duty fused mainline disconnect to the lift controller.  
Suitable lighting circuit through a lockable disconnect to the lift controller for cab lighting.  
Fire extinguisher in machine room.  
Finish floor covering.

#### SUBMITTALS

Submit shop drawings including basic device layout with clearances, loads on building structure, excavation requirements, machine and motor data, weights of principle components, electrical requirements, and other information as may be required by regulatory agencies.

Submit product data including descriptions and operation of principle components, maintenance schedules, parts lists, operating instructions, and emergency procedures.

#### CODE REQUIREMENTS

Comply with all applicable requirements of ASME 17.1, and local codes. Provide permits and inspections as required.

#### GUARANTEE

Provide one year guarantee for materials and workmanship. Make good on defects, except those due to ordinary wear and tear, misuse, or improper maintenance, at no cost to the owner.

#### QUALITY ASSURANCE

The equipment shall be manufactured as an integrated system and supplied as a complete package from a single supplier. The installer shall have not less than 5 years experience with the installation of equipment similar to that specified.

#### MAINTENANCE

The installer shall maintain a 24 hour service for repair and maintenance of the equipment. Upon completion of the work, the installer shall provide 90 days free maintenance. Upon completion of the free maintenance period, the installer shall provide to the owner a proposal for continuing maintenance service.

#### INSTALLATION

The installation shall be first-class in every respect, utilizing trained and licensed personnel experienced with the equipment specified. Comply with all applicable codes. Electric wiring shall comply with the latest edition of the National Electric Code and ASME 17.1.

#### SYSTEM DESIGN

Provide manufacturer's standard or custom equipment as required to comply with the requirements specified herein.

# AS-006 LULA III spec

## PRODUCTS:

Elevator contractor to furnish and install where indicated on plans one (1) TIGER LIFT III Direct Hydraulic LULA elevator as manufactured by Elevator Concepts LTD, Riverview, Michigan.

## SYSTEM DESCRIPTION:

TYPE	DIRECT HYDRAULIC
CAPACITY	(1400 # MAXIMUM)
SPEED	(28 FPM)
TRAVEL	(25' MAXIMUM)
PLATFORM	(18 SQUARE FEET MAXIMUM)
LANDINGS	
OPENINGS	
DOOR SIZE	
DOOR TYPE	
OPERATION	SINGLE BUTTON
POWER SUPPLY	

## CAB:

WALL FINISH	
GATE TYPE	
CEILING FINISH	
HEIGHT	
HANDRAILS	
FLOOR COVERING	BY OTHERS

## FIXTURES:

COP  
CPI  
CDI  
HPI  
HALL STATION  
TEL CABINET  
EMERGENCY LIGHT  
LANTERNS  
FINISH

## CONTROL:

CONTROLLER LOGIC	
CONTROL VOLTAGE	24 VOLT
LANDING SYSTEM	MAGNETIC HALL EFFECT SENSOR
PUMP	SUBMERSIBLE SCREW
EMERGENCY LOWERING	
INTERLOCKS	GAL N with RETIRING CAM
CAR TOP OPERATION	INCLUDED
GATE OPERATION	
DOOR OPERATION	

## AS-006 LULA III spec

### MACHINE:

Pumping unit to be of unitized construction, including steel reservoir of adequate capacity with cover, direct coupled gear type positive displacement pump, heavy duty submersible motor, elastomeric mounting isolation, unit control valve and line shut off valve.

### PUMP:

High tolerance 3 screw set of hard nitrided steel, balanced to eliminate all axial loading. Input shaft to be supported by motor grade roller bearing. Housing to be extruded from G-Al-Si-12 Cu-Mg-Ni alloy, with integral steel strainer.

### VALVE:

Hydraulic unit control valve shall be machined from solid aluminum billet, with the following field adjustable functions: check valve, relief valve, up start valve, down start valve, down speed. Unit valve shall be equipped with self closing manual lowering valve, self cleaning strainer, pressure gauge & shut off.

### GUIDE RAILS:

Steel T rails shall be machined to exact tolerances for smooth travel. Guides shall be stabilized by adequate brackets as required, and secured to hoistway. Guides shall have a nominal weight of 8 lbs/ft.

### GUIDE SHOES:

Car guides shall be adjustable. Insert shall be nylon with molybdenum disulfide machined for close tolerance. Insert shall be removable without removing entire shoe.

### BUFFERS:

Compression springs of sufficient stroke and capacity shall cushion the car in the event of overtravel.

### CAR FRAME:

Frame shall be constructed of steel, rigidly reinforced and gusseted, bolted and welded to insure durability. Supply isolation coupling between piston and platen. Provide platform of 1-1/4" plywood. All frame components shall be capable of sustaining a static load 5 times the rated load.

### CAB:

Cab walls to be 3/4" engineered stressed-skin panels, consisting of high pressure plastic laminate pressure bonded with epoxy to a high density frame with 0-0-10 3/8 vertical core material. Car shall be fitted with a collapsing gate at each opening, conforming to applicable code. Canopy shall be 3/4" stress skin panel, laminate finish with 2 recessed incandescent light fixtures. Canopy shall be capable of sustaining 100 lbs/sq.ft. - 500 lbs total. Provide handrail.

### GATE:

Standard gate to be wood folding accordion type, with vinyl hinges. Panels to have stabilized wood core faced with semi-rigid vinyl film, 6 mil minimum, pressure laminated. Panels to be enclosed in steel frames, joined with full length articulated pins. Hanger assembly of dual nylon rollers shall be installed on alternate panels. Gate shall be suspended in track of no less than 20 gauge metal. Gate shall be fitted with lower guide pins and track.

Optional Heavy Duty side slide gate to consist of articulated 5" extruded aluminum panels, each with a total thickness of 5/8". Each panel to have articulation joint with upper and lower bearings, retaining rod and outer tube. Provide 3 wheel trolley with ball bearing urethane tired wheels on alternate panels. Provide nylon bearings for bottom guide. Provide upper and lower aluminum extruded track, with molded corner sections. Gate to turn and recess behind cab wall.

### CONTROLLER:

Controller shall be enclosed in a NEMA 12 cabinet. Shall be of the electro-magnetic type, designed to prevent damage to the motor from overload or excessive current. The controller shall automatically stop the motor and close all valves if any safety device becomes operative. A non interference relay shall be provided. Constant pressure on a car or hall button shall send car to the desired floor if all safety circuits are made up. A low oil timer shall stop the motor and cause the car to descend to the lowest landing if the required travel time is exceeded. Controller and all associated switches and wiring to comply with ANSI 17.1.

# AS-006 LULA III spec

## FIXTURES:

Provide a car operating panel with buttons for each landing. Provide a car top operation device. Provide a light switch, alarm button, and emergency stop button. Provide a call button at each landing. All fixtures shall have stainless steel face, #4 finish. Operating buttons shall be internally illuminated when depressed and extinguished when call is answered. Buttons shall be 1-1/8" diameter with black bezel. Floor designations shall be 5/8" high, black, on translucent white background.

## EMERGENCY OPERATION:

When required, provide backup power source to allow normal elevator operation in the down direction.

## JACK UNIT:

The hydraulic jack unit shall comply with all provisions of ASME 17.1. The plunger will be machined true to a minimum smoothness of 12 micro-inches, and equipped with a suitable stop ring. The cylinder will be rated for 500 psi working pressure, and fitted with a safety bulkhead, seamless dished bottom cap, removable head, bearing, and packing, and provisions for air bleed and leakage collection.

## LEVELING DEVICE:

Provide automatic 2-way leveling device to maintain platform within 3/8" of landing. Leveling device to function when doors and gates are open or closed. Leveling device shall consist of hall effect sensors mounted in a traveling carriage attached to the car, output driver circuit board, 2" spring steel tape with mounting brackets, and sufficient magnets to actuate sensors as required for the appropriate control of the elevator.

## TRAVEL RESTRICTION DEVICE:

Where pit or overhead clearances do not meet the requirements of ASME 17.1, provide electrical and mechanical travel restriction devices conforming with ASME 17.1 Section 25.

## EXECUTION:

### PREPARATION

1. Verify that hoistway, pit and machine room are ready for installation of elevator equipment.
2. Verify that shaft and openings are according to manufacturer's layout as approved for this installation.
3. Confirm electrical power availability and characteristics; arrange for temporary electrical power if necessary.
4. Report defects or deficiencies in writing.

### CASING EXCAVATION

1. Excavate for plunger casing through normal earth conditions. Should rock or other concealed conditions be encountered, notify Architect immediately for verification of concealed condition. Elevator contractor shall be allowed an adjustment to the contract sum for excavating through such concealed conditions.
2. Provide finished casing which is plumb and free of water. Backfill with clean fill sand to maintain placement of casing.

### INSTALLATION

1. Coordinate elevator installation with other trades for time and sequence to avoid delays.
2. Install in accordance with all applicable codes.
3. Install hoistway and machine room components as per manufacturer's recommendations.
4. Provide conduit, boxes, and wiring to connect controller to switches, signals and accessories.
5. Arrange equipment in machine room to allow for future service of individual components. Arrange equipment to allow clear passage to access door; maintain all code clearances.
6. Adjust equipment for proper operation as per manufacturer's recommendations.

### TURNOVER

1. Upon completion of installation and before turnover, perform tests as required by the authority with jurisdiction; correct any deficiencies. Furnish test and approval certificates.
2. Instruct Owner's personnel in operation and emergency procedures.
3. Remove protective coverings from finished surfaces; clean all finished surfaces as required.