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ELEVATOR CONCEPTS LTD

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ROPED 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.

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PRODUCTS:

Elevator contractor to furnish and install where indicated on plans one (1) TIGER LIFT X5LM Roped Hydraulic LULA elevator as manufactured by Elevator Concepts LTD, Riverview, Michigan.

SYSTEM DESCRIPTION:

TYPE	X5LP - Roped hydraulic LULA with power doors
CAPACITY	1400 # MAXIMUM
SPEED	28 FPM
TRAVEL	25' MAXIMUM
PLATFORM	18 SQUARE FEET MAXIMUM
LANDINGS	
OPENINGS	
DOOR SIZE	36" x 84"
DOOR TYPE	2 SPEED SIDE SLIDE
OPERATION	SINGLE BUTTON
POWER SUPPLY	

CAB:

WALL FINISH	LAMINATE
GATE TYPE	2 SPEED
CEILING FINISH	LAMINATE
HEIGHT	7'2"
HANDRAILS	1
FLOOR COVERING	BY OTHERS

FIXTURES:

COP	STANDARD
CPI	OPTIONAL
CDI	OPTIONAL
HPI	OPTIONAL
HALL STATION	STANDARD
TEL CABINET	OPTIONAL
EMERGENCY LIGHT	OPTIONAL
LANTERNS	OPTIONAL
FINISH	#4 STAINLESS

CONTROL:

CONTROLLER LOGIC	MICROPROCESSOR
CONTROL VOLTAGE	24 VOLT
LANDING SYSTEM	MAGNETIC HALL EFFECT SENSOR
PUMP	SUBMERSIBLE SCREW
EMERGENCY LOWERING	MANUAL STANDARD
INTERLOCKS	GAL
CAR TOP OPERATION	INCLUDED
GATE OPERATION	AUTOMATIC
DOOR OPERATION	AUTOMATIC

MACHINE:

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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.

GUIDES:

Car guides shall be 3" diameter rollers with high density urethane tread and ball bearings. Rollers shall be mounted with adjustable eccentric studs.

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 or door 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.

DOOR OPERATION

Car and hoistway doors shall open and close simultaneously at all levels. Door movement shall be fully adjustable. Movement shall be electrically retarded at both limits of travel. Operating mechanism shall be arranged to allow manual opening during loss of electricity when car is in the unlocking zone. Hoistway doors shall be self-locking and self-closing at all times.

Door operator shall provide an average door opening speed of not less than 1 foot per second. Closing shall be as required to limit the kinetic energy to that permitted by Code. Provide car door operator and hoistway door equipment of one manufacturer. Manufacturer to be GAL, Vertisys or equivalent.

CAR DOOR EQUIPMENT

Provide new door hangers and tracks. Hangers to be sheave type, no less than 2 per door, tired with a suitable sound reducing material and shall rotate on sealed ball bearings. Provide adjustable means to eliminate upthrust. Provide manufacturer's standard gate contact device. Provide door clutch and all related hardware, linkage and accessories, arranged to meet all applicable code requirements.

Provide door operator to perform as specified above. Speeds and limits shall be electrically adjustable. Operator shall interface properly with main elevator control.

DOOR REVERSAL DEVICE

A solid state infrared door reversal device shall be installed on all car doors. The device shall be capable of detecting an opaque ball 1" in diameter anywhere in the within its path. Upon detection, the doors shall stop and reopen, after which the

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door shall again start to close. If the door is prevented from closing for approximately 30 seconds, the doors shall close at a reduced speed ("nudging"), regardless of the condition of the reversal device.

HOISTWAY DOOR EQUIPMENT

Provide new door hangers and tracks. Hangers to be sheave type, no less than 2 per door, tired with a suitable sound reducing material and shall rotate on sealed ball bearings. Provide adjustable means to eliminate upthrust. Provide manufacturer's standard door closing device. Provide manufacturer's standard locking device arranged to comply with all applicable codes.

HOISTWAY ENTRANCES

Provide 16 gauge hollow metal doors and 14 gauge frames finished as specified. Frames and doors shall have a 1-1/2 hour fire resistive rating. Provide aluminum sill with guide groove for non-metallic bottom gibb. Provide struts, headers, fascia, toe guards, hanger covers and hardware as required for a complete entrance installation.

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.

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. The jack unit shall be equipped with a U-groove sheave to support hoisting cables. The sheave carriage shall be provided with gibbs to guide it on the car guide rails. Hoisting cables to be 3/8" x 8-19 traction steel.

SAFETY:

Type A instantaneous safety shall be located in a steel safety plank below the platform, capable of stopping and holding the car plus its rated load with a safety factor of 5 minimum. Safety shall be actuated by a slack cable mechanism or optional governor. Safety shall operate a switch to remove power from motor and valve. Safety shall release only by raising the car.

GOVERNOR:

Governor shall be furnished where required by code. Governor shall be of the centrifugal type. The governor rope shall be steel, 1/4" diameter and 8x19 construction. Governor shall be located on the machine base. Tension sheave shall maintain sufficient traction, and be located in the overhead. Safeties shall set through inertia on free fall, independent of the governor.

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.

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TRAVEL RESTRICTION DEVICE:

Where pit or overhead clearances do not meet the requirements of AMSE 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.

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.