



E L E V A T O R   S Y S T E M S

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## IMPERIAL 2000 RESIDENTIAL ELEVATOR SUGGESTED SPECIFICATIONS

### GENERAL

These specifications are intended to cover the complete installation of one (1) Imperial 2000 residential elevator, having a capacity up to 750 lbs. and car speed of 40 F.P.M. The lift is to be installed in a first class workmanlike manner and is to include all work and materials in accordance with specifications and installation drawings. The installation shall be guaranteed for one year against defective materials and workmanship. It shall be in compliance with the applicable sections of the Safety Code for Elevators and Escalators ASME A17.1 and all local codes having jurisdiction.

### WORK BY OTHERS

The following preparatory work that must be performed in conjunction with the elevator installation is to be done by others and is part of the work of other sections.

- A. A suitable fire rated hoistway of proper size and construction conforming to the applicable building codes and elevator construction drawings.
- B. A suitable fire rated machine room of proper size with a lockable door, 220 Volt, 1 phase (or 3 phase) fused disconnect switch of ample size to operate motor specified on layout drawing for each elevator, a 120 VAC lighting disconnect or breaker, convenience outlet and light switch. Machine room temperature to be maintained between 60 degrees and 100 degrees F. Machine room must be in compliance with ASME A17.1, National Electric Code, applicable building codes, and elevator construction drawings.
- C. Provide adequate guide rail supports able to withstand rail forces shown on layout drawings.
- D. Provide waterproof pit of adequate design to withstand loads shown on layout drawings. Provide light switch and receptacle in pit. Ladder to be furnished if pit exceeds 36" deep.
- E. Telephone connection in machine room connected to an outside central exchange where required.
- F. Provide adequate knockouts and sleeves from elevator hoistway to machine room for oil and electrical lines.
- G. Provide knockouts for hall stations at each landing.

- H. Provide all wall patching, painting and grouting required.
- I. Provide finish grouting and masonry required after installation of hoistway doorframes.
- J. Provide finish painting of hoistway doors and frames.
- K. Hoistway doors, frames and door hardware by others.  
(Elevator contractor may opt to furnish).

## PERMITS AND INSPECTION

The elevator contractor shall obtain and pay for necessary Municipal or State permits and inspections, as required, and make tests as called for by the regulations of such authorities.

## CHARACTERISTICS

Type	Roped Hydraulic Residential		
Model	Imperial 2000		
Capacity	750 lbs.		
Speed	40 FPM		
Car Travel			
No. of Landings			
No. of Openings	_____	Front	_____
			Rear
			_____
			Side
Nominal Car Size	3'0" X 4'0" Clear inside Platform (Consult Factory for Custom Sizes)		
Operation	Single Automatic Push Button		
Power Supply	220 Volts, Single Phase, 60 HZ		

## DRAWINGS

The elevator contractor is to provide general arrangement drawings of the equipment showing the hoistway, pit, and machine room dimensions. Drawings to be properly approved before commencement of fabrication and/or installation. All surface finishes and colors to be selected and returned with approved drawings.

## HYDRAULIC POWER UNIT

A power unit especially designed and manufactured for this service shall be furnished. It shall include a constant displacement rotary screw type pump, motor, oil reservoir, hydraulic control unit and oil level gauge. The hydraulic control unit shall include a safety check valve, an UP direction valve with high pressure relief including UP leveling and soft stop features, a lowering valve including DOWN leveling and a manual lowering feature; all enclosed in a compact unit assembly. The control valves shall be solenoid operated and designed to open and close gradually to give smooth starts and stops. All valves shall be readily accessible for adjustments. The power unit shall be located near the hoistway at the lowest landing and shall be contained in a metal cabinet with a lid having a lock and key.

## **AUTOMATIC TWO-WAY LEVELING**

An automatic two-way leveling device shall be provided so that the car will approach a landing stop at reduced speed from either direction of travel. The leveling device shall, within its zone, be entirely independent of the operating device and shall automatically stop and maintain the car approximately level, plus or minus ¼ inch with the landing, regardless of the change in load. Slow downs and leveling switches shall be by magnetic sensors located behind the main car station panel. Actuation of switches shall be by magnetic strips placed on a epoxy coated tape that runs the full height of the elevator hoistway. Mechanical Terminal Floor Limits are required.

## **EMERGENCY POWER LOWERING**

An automatic emergency lowering feature shall be incorporated into the power unit and control system. In the event of the loss of normal power the elevator will return to a selected landing, stop and wait for a selected time period, then continue to the lowest landing while monitoring all safety circuits. Opening the car gate or activating the stop switch or terminal limit will stop the elevator. If equipped with automatic car door operator(s), doors shall open automatically upon arrival.

## **INSPECTION OPERATION**

Controls shall be equipped to run the elevator on inspection operation from within the machine room or car during maintenance and service. On inspection operation the elevator can run by constant pressure switches located in the main machine room controller or from within the car. All safety circuits must be made to move the elevator on inspection operation.

## **PLUNGER**

The plunger shall be manufactured from accurately ground and polished seamless steel tubing. The bottom of the plunger shall be fitted with a heavy steel disc welded in place and provided with a suitable extended edge to provide a positive stop designed to prevent the plunger from leaving the cylinder in the up direction. The top of the plunger shall be provided with an internally welded steel disc drilled and tapped for fastening a U-groove sheave for 1-2 roping application.

## **CYLINDER**

The cylinder shall be machined from steel pipe with a steel flange at the upper end and a heavy steel bulkhead welded in the lower end. The cylinder shall be provided with a suitable steel fitting for connecting the oil line and shall be provided with an air bleeder.

## **PIPE RUPTURE VALVE**

An automatic shut-off valve in the oil supply line at the cylinder inlet will be provided. When there is a drop in no-load operating pressure or an overspeed in the down direction, the automatic shut-off valve shall be actuated and immediately stop the elevator.

## **CAR CONSTRUCTION**

The car frame and integrated platform support shall be of welded and bolted steel construction of cantilever design. It shall be fitted with the appropriate diameter polyurethane faced roller guide shoes and an instantaneous broken rope car safety and slack cable switch which will cut off power to the control valve if a rope should become slack or broken.

## **SUSPENSION**

The steel car frame shall be attached to and suspended by two (2)  $\frac{3}{8}$ " diameter 6 x 19 traction steel cables. The cables shall be fastened to the pit structure on one end and pass over the U groove sheave to shackles attached to the car frame and safety device. Should one or more cables break or slacken, a broken rope safety mechanism shall apply two cams to wedge against the elevator guide rails and bring the car to a complete stop.

## **GUIDE RAILS**

Guide rails shall be provided for the car consisting of planed steel 8 pound per foot "T" sections erected and securely fastened to the hoistway framing by heavy steel brackets. The ends of all guides shall be tongue and groove, forming matched joints and shall be connected with steel splice plates.

## **ELECTRIC WIRING**

Furnish and install all wiring necessary for a complete installation commencing at the machine room disconnect switch and connecting the controller and power unit to all electrical devices. All wiring to be in accordance with the requirements of the applicable building codes and the National Electric Code. The traveling cables between the car and the controller shall have a flame retarding and moisture resisting outer cover. They shall be flexible and suitably suspended to relieve strain in the individual conductor.

## **CONTROLLER**

The controller shall be made up of laboratory tested and approved components/assemblies enclosed in a Nema 1 hinged lockable steel cabinet. It shall contain the following: power relays and overload device suitable for the size motor and power supply; a distributed network control system which utilizes microprocessor based I/O cards in the elevator car and machine room that each handle discreet inputs and outputs to monitor all safety circuits, call dispatching, signaling devices, and landing system interface; relay redundancy circuits designed to prevent dangerous conditions that exist as a result of a single failure; an emergency battery operated circuit to automatically provide emergency lighting and lower the lift in the event of an electric power failure; a battery charging circuit to maintain a full charge on the batteries during normal operation. All components to be protected by fused circuits.

## **HAND HELD UNIT (HHU)**

The Controller shall be designed to interface with a Hand Held Unit (HHU). The HHU shall provide full diagnostic capabilities by allowing the user to view inputs/outputs status, an error log, monitor board communications, and read and adjust operational parameters.

## **OPERATION**

Operation of the lift shall be fully automatic. When the lift is not running and all doors and car gates are closed, the momentary pressure on any operating button will call or send the car to the corresponding landing. Field selectable operation shall be single button collective or single automatic pushbutton as preferred.

## **LOW OIL CONTROL**

A low oil control feature shall be provided which is designed to automatically cause an up traveling car to descend to the lowest terminal landing if the system does not have a sufficient reservoir of oil.

## **CAR LIGHTING**

The car lights shall be on an automatic timer. Opening a hatch or car door shall automatically illuminate the In Car Lights. Lights shall time out automatically after a set time.

## **OPERATING FIXTURES**

Provide a car operating panel consisting of light up landing buttons, a red push-pull emergency stop button, an alarm button, and a light switch. In addition, a field programmable digital car position indicator shall be an integral part of the car station. It shall display the current floor position and have direction arrows which indicate the direction of car travel. A decorative phone box w/hinged door and concealed fasteners shall be furnished and located below the car station. The hall station is to contain a call button with acknowledge light or in use light and a car here indicator light; one shall be located adjacent to each landing hoistway door. All operating buttons are to have face plates of #4 brushed stainless steel.

### **Fixture Options:**

- #4 Brushed Bronze Faceplates (Car & Hall)
- Keyed Car Station
- Keyed Hall Stations

## **DOOR LOCKS**

A combination unit system contact and lock shall be furnished for each hoistway entrance. The interlock device shall prevent elevator operation unless all doors are closed and locked and prevent opening of a door when the car is not at rest at that landing.

## **HOISTWAY DOORS**

The general contractor or owner is to furnish (elevator contractor may opt to furnish) and install hoistway doors, frames, hinges and passage sets at each landing. The type and installation of the doors and frames must comply with ASME A17.1, all local codes and as per manufacturer's layout drawings.

## **CAB GATE**

The cab gate furnished shall be an accordion type folding gate with vinyl laminate panels. Vinyl laminate to be chosen from manufacturer's standard color selections.

### **Cab Gate Options:**

- Vinyl laminate with (3) clear or bronze tinted vision panels
- Hardwood oak, birch, mahogany or walnut panels
- Hardwood with (3) clear or bronze tinted vision panels
- All clear acrylic panels
- All bronze tinted acrylic panels
- Power operated

## **CAB DESIGNS**

### **Lexington (Optional)**

The cab enclosure shall be constructed of ¾" melamine panels pre-faced with decorative vinyl laminate panels. Clear inside cab height is to be 6'-8". Vinyl laminate to be chosen from the manufacturer's standard color selections [approx. (5) choices]. Platform is to be integral construction made of wood and steel. Cab floor is to be prepared for floor covering by others. Standard cab lighting shall consist of one recessed down light set in a 1" melamine ceiling/dome faced with "white" pre-faced vinyl laminate. Each cab opening shall be equipped with a horizontal sliding manually operated accordion type folding gate. Each cab opening shall be furnished with one extruded aluminum car sill.

#### **Additional Options:**

- ½" x 2" #4 Brushed Stainless Steel Handrail
- ½" x 2" #4 Brushed Bronze Handrail
- (2) Recessed Down Lights [In Lieu of (1)]
- Extruded Bronze Car Sill(s)

### **Saratoga (Standard)**

The cab enclosure shall be constructed of ¾" melamine panels faced with decorative plastic laminate. Clear inside cab height is to be 6'-8". Plastic laminate to be chosen from the manufacturer's standard color selections. Platform is to be integral construction made of wood and steel. Cab floor to be prepared for floor covering by others. Standard cab lighting shall consist of two recessed down lights set in a 1" melamine ceiling/dome faced with "white" pre-faced vinyl laminate. Each cab opening shall be equipped with horizontal sliding manually operated accordion type folding gate (power operated optional). Cab shall be furnished with one ½" x 2", #4 brushed stainless steel handrail on one wall, #4 brushed stainless steel car columns and each opening fitted with an extruded aluminum car sill.

#### **Additional Options:**

- #4 Brushed Bronze Columns & Handrail With Extruded Bronze Sill(s)
- ¼" Laminated Safety Glass on (1) Wall
- 7'-4" Clear Inside Cab Height

## **Raleigh (Optional)**

The cab enclosure shall be constructed of ¾" melamine panels faced on the interior top and bottom half with two choices of decorative plastic laminate separated with a solid oak chair rail. Clear inside cab height shall be 6'-8". Plastic laminate to be chosen from the manufacturer's standard color selections. Platform is to be integral construction made of wood and steel. Cab floor to be prepared for floor covering by others. Standard cab lighting shall consist of two recessed down lights set in a 1" melamine ceiling/dome faced with "white" pre-faced vinyl laminate. Each cab opening shall be equipped with horizontal sliding manually operated accordion type folding gate (power operated optional). Cab shall be furnished with one ½" x 2", #4 brushed stainless steel handrail on one wall, #4 brushed stainless steel car columns and each opening fitted with an extruded aluminum car sill.

Additional Options:

- #4 Brushed Bronze Columns & Handrail With Extruded Bronze Sill(s)
- ¼" Laminated Safety Glass on (1) Wall
- 7'-4" Clear Inside Cab Height

## **Franklin (Optional)**

The cab enclosure shall be constructed of ¾" red oak plain sliced veneer panels with a stained and clear coated finish. Clear inside cab height is to be 7'-4". Stain finish to be chosen from the manufacturer's standard color selections. Platform is to be integral construction made of wood and steel. Cab floor to be prepared for floor covering by others. Standard cab lighting shall consist of one 8" diameter, polished brass, six sided, beveled clear glass chandelier set on a 1" melamine ceiling/dome faced with "almond" pre-faced vinyl laminate. Each cab opening shall be equipped with a horizontal sliding, manually operated accordion type folding gate (power operated optional). Cab shall be furnished with one 1½" diameter cylindrical, #4 brushed bronze handrail on one wall, #4 brushed bronze car columns and each opening fitted with an extruded bronze car sill.

Additional Options:

- ¼" Laminated Safety Glass on (1) Wall
- Chair Rail, Crown & Base Moldings

## **Executive (Optional)**

The cab enclosure shall be constructed of ¾" solid red oak raised panels with a stained and clear coated finish. Clear inside cab height shall be 7'-4". Stain finish to be chosen from the manufacturer's standard color selections. Platform is to be integral construction made of wood and steel. Cab floor to be prepared for floor covering by others. Standard cab lighting shall consist of one 8" diameter, polished brass, six sided, beveled clear glass chandelier set on a 1" melamine ceiling/dome faced with "almond" pre-faced vinyl laminate. Each cab opening shall be equipped with horizontal sliding manually operated accordion type folding gate (power operated optional). Cab shall be furnished with one 1½" diameter cylindrical #4 brushed bronze handrail on one wall, #4 brushed bronze car columns and each opening fitted with an extruded bronze car sill.

### **Additional Options:**

- Solid Cherry Panels In Lieu of Red Oak
- Solid Birch Panels In Lieu of Red Oak
- Solid Walnut Panels In Lieu of Red Oak

## **WARRANTY**

All materials furnished by elevator contractor shall be guaranteed for a period of one (1) year against defects in workmanship.