

SECTION 11 73 00
CEILING MOUNTED PATIENT LIFT SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

Ceiling Mounted Patient Lift Systems for the transfer of physically challenged patients are specified in this section.

1.2 RELATED WORK

- A. Section 01 00 00, GENERAL REQUIREMENTS: Requirements for pre-test of equipment.
- B. Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS: General Electrical Requirements and items, which are common to sections of Division 26.

1.3 QUALITY ASSURANCE

- A. Certification for compliance is required for Ceiling Mounted Patient Lift Systems. Certifications shall be provided by an independent third party who will conduct testing to ensure that the ceiling lift and charging system are safe and in compliance with ISO 10535 & UL 60601-1
- B. Inspection of equipment after installation is required prior to use for patient movement. Inspection shall be in accordance with manufacturer's installation checklist and the facilities installation checklist (Patient Safety Alert AL14-07).

1.4 SUBMITTALS

- A. Submit in accordance with specification Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.
- B. Certificates of Compliance
- C. Manufacturer's Literature and Data:
 - 1. Lifting Capacity
 - 2. Lifting Speed
 - 3. Vertical Axis Motor
 - 4. Emergency Brake
 - 5. Emergency Lowering Device
 - 6. Emergency Stopping Device
 - 7. Electronic Soft-Start and Soft-Stop Motor Control
 - 8. Current Limiter for Circuit Protection
 - 9. Low Battery Disconnect System

10. Strap Length

11. All equipment anchors and supports. Submittals shall include weights, dimensions, center of gravity, standard connections, manufacturer's recommendations and behavior problems (e.g., vibration, thermal expansion,) associated with equipment or piping so that the proposed installation can be properly reviewed.

D. Individual Room layouts showing location of lift system installation shall be approved before proceeding with installation of lifts.

E. Manufacturer's Checklist for after installation inspection.

1.5 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are listed in the text by the basic designation only.

B. International Organization for Standardization (IOS):
10535-06.....Hoist for the Transfer of Disabled Persons
Requirements and Test Methods

C. Underwriters Laboratories (UL):
60601-1(2003).....Medical Electrical Equipment: General
Requirements for Safety
94-2013.....UL Standards for Safety Test for Flammability
of Plastic Materials for Parts in Devices and
Appliances-Fifth Edition

D. International Electromagnetic Commission (IEC):
801-2(1991).....Electromagnetic Compatibility for Industrial-
Process Measurement and Control Equipment-Part
2: Electromagnetic Discharge Requirements

E. Patient Safety Alert AL14-07

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis of Design: Hill-Rom Likorall® 250 Overhead Lift, or equal.

BRAND NAME OR EQUAL PRODUCTS

In accordance with VAAR 811.104-71 (b), based on the inclusion of VAAR 811.104-71, Brand Name or Equal, bidders proposing to furnish an "equal product other than referenced in the solicitation, shall insert the following description for each equal product (See also VAAR 852.211-73 (c)(1) and (c)(2)).

Bidding On:

Manufacturer's Name: _____.

Brand: _____.

No.: _____.

2.2 CEILING TRACK SYSTEM

The Ceiling Track shall be made from high strength extruded aluminum T66081-T5 at a thickness of 3/16" (4.8mm). Provide anchor supports at a minimum 3 per linear foot at ceiling substrate. The ceiling track shall be finished with baked enamel paint.

2.3 LIFT UNIT

- A. The Lift Unit shall be constructed of a steel frame system (2205lbs / 1000kg tested) driven by a gear reduced high torque motor
- B. The Lift system shall have the following features.
 - 1. Lifting capacity: **550 lbs** (250 kg)
 - 2. Electronic soft-start and soft-stop motor control
 - 3. Emergency lowering device
 - 4. Emergency stopping device
 - 5. Current limiter for circuit protection in case of overload.
 - 6. Safety device that stops the motor to lift when batteries are low.
 - 7. Lifting speed: 2.3 in/s (6 cm/s), 1.6 in/s (3.5cm) in full capacity
 - 8. Strap length up to 90in (2.3m), **width 2 in.**, tested for 2998 lbs (1360 kg)
 - 9. Cab: VO plastic-fire retardant, UL 94
 - 10. **Hydraulic Safety drum with speed control to automatically brake free fall in event of motor axel malfunction.**
 - 11. **Motor to be mounted via a quick-release system that requires no tools to remove motor from the track.**

2.4 MOTOR

- A. Vertical Movement-DC Motor
 - 1. Type: Class A, fully enclosed, permanent magnet.
 - 2. Rating: 24Vdc, 1.1A, 110W, 4000RPM, 0.3N-m.
 - 3. Mounting: Secured to chassis.

2.5 BATTERIES

- A. The life cycle (number of charging cycles) for batteries shall be in compliance with IEC 801-2.
- B. Provide rechargeable batteries with up to 120 transfers with a load of 200lbs (74kg) and up to 70 transfers with its maximum load of **550 lbs** (200kg).

2.6 CHARGER

- A. Charger Input: **100-120 Vac, 50/60 Hz.**

B. Charger Output: 27 Vdc, 1.0 A max., splash-proof and double insulated. C. Supplemental to the charger provide a clip on charging station with indicator lights.

C. **Charger shall be wall mounted.**

2.7 STRAPS AND SLING

- A. The straps shall be made of threaded nylon. The straps shall ensure the patient's safety by preventing the patient from falling out of the sling.
- B. The sling shall be made from a polyester/nylon net material that is pliable, breathable and easy to use. The sling shall cradle the body of the patient.

2.8 Hand Control

- A. Hand control will connect on the side of the motor via a round thread-locking DIN connector.
- B. Lift motor will have a hand control with an LED light to indicate charging to a power source and/or an indication when batteries are charging or finished charging.

2.9 Warranty

- A. Provide manufacturer's standard three-year warranty issued in the name of the owner against defects in materials and workmanship. Promptly correct defects not due to ordinary wear and tear or improper use.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install ceiling mounted patient lift system as per manufacturer's instruction and under the supervision of manufacturer's qualified representative and as shown on drawings.
- B. If the distance in between the suspended ceiling and anchors is more than 18" consult with manufacturer to determine if lateral braces will be required.

3.2 INSTRUCTION AND PERSONNEL TRAINING

Provide eight hours of training over a three-day period to cover day, swing, and midnight shift personnel to educate them on proper operation and maintenance for the lift system equipment.

3.3 TEST

Conduct performance test, in the presence of the Resident Engineer COR and a manufacturer's field representative, to show that the patient

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lift system equipment and control devices operate properly and in
accordance with design and specification requirements.

3.4 INSPECTION

Inspection of installed ceiling mounted patient lift systems shall be
conducted in accordance with the manufacturer's installation checklist
and the facilities installation checklist (Patient Safety Alert AL1407)
prior to use for patient movement.

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