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 13 05 41, SEISMIC RESTRAINT REQUIREMENTS FOR NON-STRUCTURAL COMPONENTS: Seismic requirements for non-structural equipment.

C. 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. Horizontal Displacement Speeds
4. Horizontal Axis Motor
5. Vertical Axis Motor
6. Emergency Brake
7. Emergency Lowering Device

8. Emergency Stopping Device
9. Electronic Soft-Start and Soft-Stop Motor Control
10. Current Limiter for Circuit Protection
11. Low Battery Disconnect System
12. Strap Length
13. 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 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.

2.2 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. Brand name or equal for non-bariatric lift: Maxi Sky 600 by ArjoHuntLeigh. Brand name or equal for bariatric lift: Maxi Sky 1000 by ArjoHuntLeigh.

B. The Lift system shall have the following features.
   1. Lifting capacity: 600 lbs (272 kg); 1,000 lbs (445 kg) bariatric lift
   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: 2.3in/s (6 cm/s), 1.6in/s (3.5cm) in full capacity
   8. Horizontal displacement speed: 5.9in/s (150mm/s)
   9. Horizontal axis motor: 24VDC at 62 watts and vertical axis motor at 110 watts
   10. Emergency brake (in case of mechanical failure)
   11. Strap length up to 90in (2.3m)
   12. Cab: VO plastic–fire retardant, UL 94
   13. Wireless remote control (optional)

2.3 MOTORS

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.

B. Horizontal Movement-DC Motor
   1. Type: Fully enclosed, permanent magnet, integral reducer.
   2. Rating: 24Vdc, 1.8A, 62W, 260RPM, 1.0N-m.
   3. Mounting: Secured to chassis.

2.4 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 150 transfers with a load of 165lbs (75kg) for non-bariatric lifts. Provide rechargeable batteries with up to 80 transfers with a load of

500lbs (230kg) and up to 25 transfers with its maximum load of 1,000lbs (450kg) for bariatric lifts.

2.5 CHARGER

A. Charger Input: 100-240 Vac, 50/60 Hz.

B. Charger Output: 27 Vdc, 1 A max.

C. Supplemental to the charger provide a clip on charging station with indicator lights.

2.6 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.

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

Training shall be provided for the required 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 and a manufacturer's field representative, to show that the patient 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 AL14-07) prior to use for patient movement.

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