

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. Basis of Design is Guldmann GH3+CLM System with(built-in)scale (550 lbs. capacity) for non-bariatric and GH3+CLM System with(built-in)scale (825 lbs. capacity) for bariatric lifts.

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 the manufacturer 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).
- C. Certification of compliance with VA requirements shall be provided by an independent third party, Inspector of Record (IOR), who will observe installation and manufacturer's testing to ensure that the ceiling structure, ceiling lift, and charging system is safe and compliance with shop drawings, structural calculations, specifications, ISO 10535 requirements, and code requirements. IOR shall be a registered structural engineer in the state of installation.

1.4 SUBMITTALS

- A. Submit in accordance with specification Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
 - 1. Shop drawings shall show structural supports and escutcheons to the underside of structure. Structural calculations for the support of

- the track and its attachment to ceiling structure shall be submitted. Shop drawings used in the quoting phase shall be PDFs, and either 2D CAD files or 3D BIM files showing structural support to underside of structure. Shop drawings shall also provide general room layout with bed position and all obstructions to ceiling lift.
2. Once the purchase order is accepted by the vendor, a set of stamped drawings shall be provided by the vendor. Shop drawings and structural calculations shall be signed and stamped by a registered structural engineer and shall meet all code requirements in the jurisdiction having authority. Structural engineer shall ensure ceiling minimum structure capacity shall support the loads specified in the shop and installation drawings and be in compliance with local structural and seismic codes.
 3. Shop drawings shall show obstructions such as lights and sprinklers, and coordinate their relocation.
 4. Manufacturer shall provide BIM (Building Information Model) for clash detection on the request of the Contracting Officer's Representative (COR), VA Construction Agent, or General Contractor.
 5. Manufacturer shall provide standard service agreement (for COR approval).
- B. Certificates of Compliance from Manufacturer
- 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. Strap Length
 10. 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 (ISO):
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):
60601-1-2(2015).....Medical electrical equipment - Part 1-2:
General requirements for basic safety and
essential performance - Collateral Standard:
Electromagnetic disturbances - Requirements and
tests.
- E. VA Patient Safety Alert AL14-07

PART 2 - PRODUCTS

2.1 CEILING TRACK SYSTEM

- A. The Ceiling Track shall be made from high strength extruded aluminum or VA approved equal. Provide anchor supports at ceiling substrate.
- B. Installed rail shall be security tested for 1.5 times greater than the motor's weight capacity and maximum allowable deflection of a horizontal rail is no more than 1mm (1/16th inch) per 200mm (7.87 inch) of track length. (As per ISO 10535 standards.)
- C. Fixed rails shall be mounted flush with ceilings.
- D. Matching escutcheons shall conceal support penetrations.

2.2 LIFT UNIT

- A. The Lift Unit shall be constructed of a steel frame system driven by a gear reduced high torque motor.
- B. The Lift system shall have the following features.
1. Lifting capacity: 550 lbs (249.476 kg) for non-bariatric lifts and 825 lbs (374.214 kg) for bariatric lifts.
 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.
Escutcheons concealing support penetrations into ceilings.
7. Emergency brake (in case of mechanical failure)
8. Strap length: 8 feet.
9. Cab: VO plastic-fire retardant, UL 94

2.3 MOTORS

- A. Vertical Movement-DC Motor

2.4 BATTERIES

- A. The life cycle (number of charging cycles) for batteries shall be in compliance with IEC 6100-1-2.
- B. Provide rechargeable batteries with up to 120 transfers with a load of 200lbs (74kg) (for repositioning) a minimum of 40 transfers with its maximum load of 550lbs (249.476 kg) for non-bariatric lifts and a minimum of 50 transfers with its maximum load of 1,000 lbs (453.592 kg) for bariatric lifts.

2.5 CHARGER

- A. Charger

2.6 STRAPS AND SLING

- A. The straps shall meet ISO 10535, Appendix A guidelines. The straps shall ensure the patient's safety by preventing the patient from falling out of the sling.
- B. The sling shall meet ISO 10535, Appendix A guidelines. The sling shall cradle the body of the patient. Bariatric slings shall be rated to a minimum of 800 lbs.

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 Contracting Officer's Representative (COR), Inspector of Record (IOR), and a manufacturer's field representative, to show that the patient lift system equipment and control devices operate properly and in accordance with design, specification, and code requirements.

3.4 INSPECTION

1. 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.
2. Periodic Inspection shall be provided by the manufacturer on a yearly basis in compliance with ISO 10535.

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