



SECTION 14 45 00
VEHICLE LIFTS

MCH418

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- A. Vehicle lifts including safety equipment, controls and accessories.

1.2 RELATED SECTIONS

- A. Section 23 05 00 - Common Work Results for HVAC.
- B. Section 26 05 00 - Common Work Results for Electrical.

1.3 REFERENCES

- A. for the Construction, Testing, and Validation of Automotive Lifts.
- B. International Standards Organization (ISO): ISO 9001 Quality management systems - Requirements.
- C. Underwriters Laboratories Inc. (UL): UL201 - These requirements cover garage equipment, rated not more than 600 volts, for use in accordance with the National Electrical Code, NFPA 70.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation manual.
 - 4. Operations manual.
 - 5. Maintenance manual.
 - 6. Safety manual.
- C. Shop Drawings: Template drawings and load reactions for lift application.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Factory trained authorized company.
 - 2. Company insured for completed operations of installing lift.
- B. In addition to the other requirements outlined herein, the lift or lifts, shall comply with all applicable requirements of ANSI standards. "Safety Requirements for the Construction, Care and Use of Automotive Lifts " as published by the American national Standards Institute. The lift company Quality Management System shall be ISO9001 certified.

1.6 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.7 WARRANTY

- A. Contractor/manufacturer/installer has responsibility for an extended Corrective Period for work of this Section for the period stated from date of Substantial Completion against deficiencies as stated in the manufacturer's standard warranty.
- B. Contractor/manufacturer/installer shall promptly and without inconvenience and cost to Owner correct said deficiencies:
 - 1. Failure due to defective materials and workmanship.
- C. Contractor/manufacturer/installer shall be notified immediately of defective products, and be given a reasonable opportunity to inspect the goods prior to return. Manufacturer will not assume responsibility, or compensation, for unauthorized repairs or labor.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Rotary Lift, which is located at: 2700 Lanier Dr. ; Madison, IN 47250; Toll Free Tel: 800-640-5438; Tel: 812-273-1622; Fax: 800-578-5438; Email:requestinfo@lkendall@vsgdover.com; Web:www.rotarylif.com
- B. Substitutions: Not permitted.

2.2 72,000 LB./108,000 LB. CAPACITY SURFACE MOUNTED WHEEL ENGAGING MOBILE COLUMN LIFTS MACH 4 SERIES / MACH 6 SERIES

- A. Lift Characteristics:
 - 1. The intent of this specification is to establish the minimum standards of quality and performance for portable mobile column lifts which will be used to lift a variety of vehicles including Trucks, Buses, Passenger Vehicles, Fork Lifts and other general service vehicles. This specification shall describe a mobile column surface mounted, wheel engaging lifting system designed to elevate vehicles for the purpose of inspection and maintenance. One Lifting System shall consist of four electric-hydraulic mobile columns sustaining 72,000 lb (32659 kgs) capacities or six electric-hydraulic mobile columns sustaining 108,000 lb (48988 kgs) capacities (18,000 lbs (8165 kgs) per mobile column). Mobile columns may be added, (not exceeding 8 columns), removed, or changed out. All mobile columns shall operate synchronously from any one of the lifting units by means of a control interface. The control system shall have replaceable printed circuit boards equipped with quick-connect electrical couplers. The mobile columns shall be battery operated with a DC charging system built into each column for easy recharge and communication cable cord reel for cable management.
- B. MACH 6 Series - 6 Mobile Columns: Capacity, 108,000 lbs (48988 kg); 18,000 lbs. (8165 kg) per column.
- C. Shipping Weight: 1485 lbs (674 kg).
- D. Weight Per Column: 1400 lbs. (635 kg).
- E. Lifting Fork Length: 14 inches (356 mm) forks accommodate rim sizes 9 inches (229 mm) minimum to 24-1/2 inches (622 mm) maximum.
- F. Floor requirements 4-1/2 inches thick (minimum) 3000 psi concrete not to exceed a side to side floor slope of 1/8 inch = 1 foot 0 inches and not to exceed a 1/4 inch = 1 foot 0 inches floor slope fore and aft.

- G. Motor: 3 kw, 24 volt minimum.
- H. Hydraulic Tank Capacity: 10.5 quarts (10 liters) mobile columns will require 11-1/2 quarts (11 liters) of fluid to fill tank, hoses, and cylinders. Bio-Fluid compatible.
- I. Overall Height at Full Lower: 102 inches (2591 mm).
- J. Overall Height at Full Rise: 144-3/8 inches (3677 mm).
- K. Overall Width: 45-1/2 inches (1156 mm).
- L. Overall Length: 48-9/16 inches (1234 mm).
- M. Turning Radius: 45 inches (1143 mm).
- N. Rise: 70 inches (1778 mm).
- O. Lifting/Lowering Speed: 78 seconds to full rise - 54 seconds to fully lowered position.
- P. Control Voltage: 24 volts DC. Rechargeable by 110 Volt Automatic Weather Tight Marine Charger.
- Q. Battery Charge Cycle: (New Battery) 15 - 20 cycles per charge at rated load of the lift.
- R. Fabrication:
 - 1. Column Assemblies:
 - a. Columns shall be constructed of formed channel fabrication from a single steel plate and shall not require welded seams to form the column structure.
 - b. Columns shall be further reinforced externally along their back face with structural steel angle for additional rigidity and extended service life. Rigid column design shall be protected from corrosion via sand blasted enamel painting of metal surfaces.
 - c. Each column shall be fabricated to a set of legs that will sit directly on the floor and provide a stable platform when lifting a load. When unloaded the mobile columns ride on a set of wheels to allow the units to be moved. When a vehicle is lifted, the wheels shall automatically retract and the lift shall sit down flat on its steel base and no lifted weight shall remain on the casters. Legs have an extended fork configuration that allows for extensions to be added at any time. Such extensions will permit the addition of longer forks to lift dual wheel assemblies or optional assemblies for lifting vehicles further away from the column assembly.
 - d. Each of the lifting units shall contain a mechanical locking latch mechanism completely separate from the drive of lifting system. This lock shall be gravity actuated with a spring loaded assist to ensure engagement at any position. Spacing between locking positions shall be a maximum of 3 inches (76 mm) in accordance with ALCTV-2006.
 - e. The column structures shall be easily moveable on three wheels consisting of two fixed heavy duty steel wheels and a dual rubber steering wheel mounted at the rear of the column. Columns shall come equipped with a hoisting hook for lifting by overhead crane and a fork lift pocket lifting points on each column for ease of relocation by standard fork lift.
 - 2. Carriage Assemblies:
 - a. Each column assembly shall include a carriage assembly which consists of 4 Ultra High Molecular Weight (UHMW) roller bearings. These bearings shall be oil impregnated and shall not require any greasing or maintenance of any kind.
 - b. Each carriage assembly shall include a full enclosure for the lifting cylinder chrome rod. No part of the chrome lifting cylinder shall be exposed to impact at

- any time during the lifting stroke.
 - c. Forks shall provide a minimum of 12 inches of sufficient safety clearance between column and body of vehicle. Forks shall also be available in an extended configuration capable of supporting inboard tires on dual-wheeled axles.
 - d. Carriage assemblies shall come equipped with adjustable lifting forks to allow for adjustment of lifting forks for small tire applications to standard large tire applications without need for adapter sleeves. Forks shall include handles to facilitate the lateral adjustment of forks for narrower and wider tires. Adjustment shall be accomplished by release of a spring loaded lock on the top of the fork. When adjustment of the forks is complete, locks shall automatically re-engage to secure forks from further movement.
- 3. Hydraulic System:
 - a. Each lifting unit shall be equipped with an electric hydraulic power unit, consisting of a DC motor, gear pump, reservoir, check valve, pressure relief valve, and two control valves. Entire power unit totally enclosed to protect from dirt and water.
 - b. The direct drive lifting cylinder shall be installed in such a manner as to push the carriage up, using no chains or cables. The extension of the cylinder shall occur inside of the carriage as to keep the plunger of the cylinder protected from dirt, sand, or any possible mechanical damage.
 - c. Hydraulic check valve shall hold load at any position of the cylinder. Redundant mechanical safety lock shall be continuously engaged except while lift is being lowered.
 - d. Solid zinc plated steel pipes are used to circulate all hydraulic fluids in the system.
 - e. Pressure relief valve shall prevent overloading of the lifting unit.
 - f. Unit shall be equipped with two control valves that shall be used to maintain synchronous operation when a lifting system of more than one column is being commanded to raise or lower.
 - g. Hydraulic system is self-lubricating and shall require little to no maintenance.
 - h. A velocity fuse shall be installed directly to the end of the cylinder in order to keep hydraulic fluids from discharging if there is a fast leak somewhere after the cylinder, which could cause the load to unintentionally be lowered.
- 4. Steering:
 - a. The steering assembly shall consist of a fully automatic, spring-loaded steering handle. The steering handle shall lock the movement of the rear wheel when it is in the vertical position.
 - b. The steering assembly shall allow the lift to be moved around the shop floor without the need to pump up a hydraulic jack or pallet jack mechanism.
 - c. The rear wheel shall be spring loaded as to retract when weight is applied to the column. All other wheels will automatically retract when the lift is loaded with the weight of a vehicle. All wheels shall be equipped with sealed ball bearings.
- 5. Lift shall be 3rd party certified by ETL testing laboratory and labeled with the ETL/Automotive Lift Institute (ALI) label that affirms the lifts meet conformance to all applicable provisions of American National Standard ANSI/ALI ALCTV-2006 and in compliance with IBC 2003, IBC 2006 chapter 30 section 3001.2.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until supporting structures have been properly prepared.
- B. If supporting structure preparation is the responsibility of another installer, notify Architect of

unsatisfactory preparation before proceeding.

3.2 INSTALLATION

A. Install in accordance with manufacturer instructions.

3.3 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION