



**MOHAWK LIFTS**

VR-SERIES 35-64K, 77K

**BID SPECIFICATIONS  
MOHAWK VR-SERIES, VERTICAL RISE LIFT  
35,000 / 40,000 / 50,000 / 64,000 / 77,000 LB CAPACITY  
PANTOGRAPH LIFT**

1.1. SUBMITTALS.

- A. 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 methods.
- B. Shop Drawings: Submit drawings showing full layout of all lifts with dimensions and details shown for services and conduits between lifts and the control consoles.
- C. Operation and Maintenance Manual: Submit Owner's manual to include system operation, maintenance and trouble shooting, spare part number, drawings and schematics.

1.2. QUALITY ASSURANCE

- D. Manufacturer Qualifications: The lift company selling the product shall have ISO-9001 certification and the proof of current certification shall accompany the bid.
- E. Installer Qualifications: For warranty validation, installation shall be performed by qualified factory Authorized and trained personnel.
- F. Product Requirements:
  - 4. Design Standards and Certification: The lift shall be Certified by ETL to the ANSI/ALI Standard for Automotive Lifts, ALCTV-2017: Safety Requirements for Construction, Testing and Validation. The lift company shall be a member of the ALI and in good standing.
- G. The drive system shall synchronize both platforms to provide smooth even lifting without any pulsation, jerks, or unsteady lifting despite variances in vehicle weight distribution. Mechanical-Hydraulic system

shall comprise an electrically powered pump, flow control valves, and a fluid reservoir without any electronic synchronization devices on the lift or in the control panel. Troubleshooting codes shall facilitate diagnostics and service.

- H. Store products in manufacturer's unopened packaging until ready for installation.
- I. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

### 1.3. PROJECT CONDITIONS

- J. 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.

### 1.4. WARRANTY – Mohawk Lifts Warranty: [mohawklifts.com/warranty](http://mohawklifts.com/warranty)

## 2. PRODUCTS

### 2.1. SUPPLIER

K. MOHAWK LIFTS. 65 VROOMAN AVE., AMSTERDAM NY 12010.

L. **Substitutions: Not permitted.**

- 5. Requests for substitutions will be considered in accordance with provisions the specific tender.
- 6. Requests for changes on products, materials, equipment and methods of construction required by the contract documents by the Contractor after the award shall be considered requests for "substitutions", and shall follow the procedures outlined within the bid documents for Substitutions.
- 7. Any substitution of specified lift requiring modifications of foundation system detailed will be the responsibility of the Contractor.
- 8. The Contractor shall provide for any and all engineering and redesign of foundation system as a result of substitution.
- 9. Under no circumstances will extra payment be permitted as a result of additional work to accommodate any equipment substitution.

### 2.2. VR-SERIES - PANTOGRAPH LIFT

10. Mohawk Lifts brand, Heavy-Duty Hydraulic Vehicle Lifts Model VR35/40/50/64/77 Pantograph Vertical Platform Lift.

11. Scope:

- a. A vertical "Pantograph" K style hinged heavy-duty platform lift to elevate large trucks, buses, and other heavy-duty vehicles for the purpose of inspection, maintenance, servicing and cleaning. Lift shall rise straight up in a vertical envelope without any "throw" in one direction or another. Mobile column type lifts, four post lifts, parallelogram lifts (which throw), **are not acceptable.**
- b. The lift must be a true "PANTOGRAPH" DESIGN to **maximize under runway FREE**

access and reduce lifting stress. Those lifts using a **"Y" design will not be acceptable.**

- c. **The lift must be available for indoors, outdoor, wash bay, surface mounted or in floor recessed for longitudinal and transversal loading.**
- d. **For recessed in floor installations, an optional pneumatic style lifting platform must be available that operates sequentially with the raising and lowering of the lift controls.**
- e. The lifting legs must be manufactured using nothing less than 50 mm – 2" XAR 400 thick steel bar. Legs using **multiple WELDS or tube design** are not acceptable.
- f. The lift must pivot from the floor mounted fixed pads **without the need to SLIDE** to relieve offloading stresses. Sliding mounts inherently produce friction and wear. The lift must incorporate an **"AOS" or equivalent shock absorbing system at each hinge to provide stress relief.**
- g. The runway will be manufactured using a "BOX" design a minimum of 250 mm thick **versus plate welded to I Beams.** Box design runways are inherently stronger and less susceptible to twisting. The box design runway is heavier, can lift more load and can be extended to longer lengths.
- h. The lift shall be utilize an **"ELECTRONIC SENSOR FREE" "VOLUMETRIC"** hydraulic cylinder divider control system for platform synchronization.
- i. The VR-SERIES lifting platform must have a minimum lifting height of 79" from the concrete base to the top of the lifting platform. This design must be capable of a collapsed height not to exceed **360 mm or 14.2"**. Lifts requiring a higher collapsed height will not be acceptable because they require a deeper recessed pit or longer approach ramp.
- j. The lift system shall be totally open floor design with no obstructions between lifting platforms and no crossbeams either in the front or the rear of the runways.
- k. The system shall incorporate a minimum of four hydraulic fluid driven cylinders; with one inversely mounted to each of the four upper hinge legs. The runway must position the cylinders so that they remain covered at all times. No chains, cables, slack cables, or pulleys are permitted.
- l. The maximum lifting height of the lift system shall be programmable to the height specifications as requested by user.
- m. Two optional runway 66" (1700 mm) extensions shall be available to accommodate a modular length of up to 48' (14,500 mm) for articulated vehicles.
- n. Lift shall have a complete LED 24v explosion proof lighting system installed on the inner edge to illuminate the work area when the vehicle is raised. Individual lamps shall utilize waterproof low voltage construction. Lamps shall be installed to the lower inside edge of the runway so as to be protected from potential damage caused by falling objects. Lights are available in sets of six, eight or ten fixtures.

- o. The lift system shall have a jacking beam rated at either a 26,400 lb. (12,000 kg), 36,000 lb. (16,000 kg), or 44,000 lb. (20,000 kg) Certified to ANSI/ALI ALCTV 2017 Standards. Jacking beam shall be double-piston, telescopic piston. The jacking beam shall be designed with a flow divider valve to maintain synchronization of pistons in raising and lowering mode; maximum pressure valve shall prevent lifting of loads if loads exceed rated capacity of jack; check valves in each piston shall prevent the accident descent of load. The jacking beams supplied must be listed as approved ALI/ETL certified accessories for the lift chosen.
12. Equipment:
- p. The lift shall have a minimum nominal lifting capacity of:
    - 1) 35,000lb, 40,000lb, 50,000lbs, 64,000lbs and 77,000lb capacity rated for **Asymmetric Loading**. The lift must be capable of extreme uneven loading operation **with up to 85% of the maximum capacity loaded over the front or rear hinge with the balance of the load anywhere along the length of runway.**
  - q. The lifting capacity shall be determined by the following factors:
    - 2) The load distribution between the front and the rear axles.
    - 3) The location of the vehicle on the lift.
    - 4) The wheelbase of the vehicle.
  - r. The lift shall have a minimum lifting height of 79.6 inches (2022 mm) from floor to the top of the runways when the lift rests on the floor and no less than 69 inches (2022 mm) when the lift is flush mounted to the floor. Any equipment that does not have a minimum of 79 inches (2022 mm) lifting height shall not be acceptable.
  - s. The platform dimensions shall be available in the following dimensions:
    - 5) 23 feet (7 m).
    - 6) **26 feet (8 m).**
    - 7) 30 feet (9 m).
    - 8) 33 feet (10 m).
    - 9) 36 feet (11 m).
    - 10) 40 feet (12 m)
    - 11) 48 feet (14.5 m).
    - 12) Other intermediate lengths are available, between 20 – 48 feet.
  - t. Width of runways for all models shall be MINIMUM of 30 inches (762 mm).
  - u. The spacing between the runways can be adjusted to suit the wheel bases of the vehicles being serviced. The distance is recommended to be between 41' and 45'.
  - v. The lift will have a minimum shipping weight of no less than 15,000 lbs. – 6.8 metric tons. Lifts being offered with similar lifting capacity having a physical weight of less than this will be deemed as too lightweight structurally to provide the long-term durability required.
  - w. The runways (ramps) must be available in lengths from 276" – 7000 mm to 576" (48') –

14500 mm.

- x. The collapsed height shall be maximum 14.2 inches (360 mm).
  - y. The lift will be supplied with floor mounted drive on approach ramps no less than 101" – 2580 mm. The ramps must be reinforced with an anti skid surface. For drive through applications a second set of ramps will be available as an option. For lower vehicles approach ramps will be available in optional longer lengths or double inclination style to reduce the approach angle.
  - z. An optional runway traction surface must be available that is a fine grained silicone material built into the powder coat finish or clear coat (with galvanizing). Runways using an optional "diamond plate" surface will not be acceptable.
  - aa. Concrete thickness shall be a minimum of 6 inches (152 mm). There will four (4) base plates that will accommodate installation with 5 bolts per plate. Total installation shall not require more than 20 bolts. The lift will operate safely with a minimum of four bolts.
  - bb. The lifting legs shall attach and pivot from floor base plates that are no more than 30" wide (the width of the runways) and 13.4". The base plates are powder coated and can be ordered as an option either hot dipped galvanized or stainless steel.
  - cc. There must be a minimum of two (2) vertically mounted levelling bolts installed on either side of each base plate to assist the accurate and stable levelling of the lift.
13. Safety Devices:
- dd. An independent and fail-safe mechanical safety device shall be present on each lifting hinge. This safety device shall be totally independent from the lifting drive system. A locking catch shall be free to engage all of the teeth of the locking strip attached to the half scissor. This mechanical locking system must operate automatically and controlled by the central control panel. The locking devices will be disengaged for lowering by a pneumatically operated lock release requiring 8-19 Bar pressure. To lower the lift the lift must rise up off the mechanical lock automatically to allow the airlocks to release before the lift descends.
  - ee. The lift shall incorporate a combination of a minimum of four redundant safety systems: 1) dead man operated safety lock releases 2) Low Voltage Controls, 3) A limiting switch with audible alarm (buzzer) capable to stopping the lowering of the lift at 500 mm or 19" and 4) a photo electric shutoff switch mounted on the inside of the rear of the runways.
  - ff. Each lifting device shall be provided with two (2) separate levelling systems. The synchronization system between the two runways shall be a "Volumetric" mechanical-hydraulic system to ensure maximum reliability under all conditions of employment. The result should be perfect alignment (co planarity) of the platform lifting system.
  - gg. The lifts must be equipped with a mechanical locking system using a minimum 250mm

XAR 400 plate steel

- hh. The lift system shall incorporate a splash proof electrical system (IP65).
  - ii. There will be hydraulic burst valves (velocity fuses) installed at the base of all lifting cylinders with no less than five (5) HYDRAULIC FLOW CONTROL VALVES with an operating pressure of approximately 220 Bar pressure.
  - jj. There will be an optional automatic foot-guard protection available for the outer edge of the runways. The anti crush foot guard system will use a cantilevering bar with 24v micro switches. The foot guards are available in an optional stainless steel version. Pressure sensitive tape switch style shut off systems will be not be acceptable. The lift must be equipped with limit switches so that the runway automatically stops at a safety height of 19.6 " or 500 mm from the ground accompanied by a buzzer audible alarm.
  - kk. The locking mechanism shall be activated in no less than 3 inches (76 mm) of lifting height.
14. Controls:
- ll. The lift system shall utilize appropriately rated motors that operate at 208/220/460/575V, 3 phases, 60 Hz. The lift shall utilize an "energy efficient" 7.5 kw electric motor that will be rated at no more than 28 amps 208/220v or 14 amps 440/460v.
  - mm. The lift shall have a two-speed lowering option.
  - nn. The control system will be available in a water resistant design for use in wash bay environments. The standard control console is powder coated and can be ordered in stainless steel.
  - oo. The lift will be available with an optional manual hydraulic hand pump to aid with raising the lift off the mechanical locks for lowering in the event of a power failure.
  - pp. Electrical enclosures for control components shall be rated IP 65 and shall include as a minimum:
    - 13) System disconnects.
    - 14) "Power-on" pilot lamp.
    - 15) "Up" control and "down" control.
    - 16) Lock release button.
15. Drive Mechanism:
- qq. The drive system shall be a smooth and even hydraulic drive and shall permit lifting without any pulsations, jerks or unsteady lifting. Lifting shall be smooth. Hydraulic system shall be comprised of an electrically powered pump, flow control valves, and a fluid reservoir.
  - rr. Hydraulic lifting cylinders shall be of a piston type to prevent leakage in the case of piston damage.
  - ss. The cylinders shall be built using highly polished chromium plated plunger shafts that

resist corrosion, scratching and other damage that could lead to shorter seal life.

- tt. All rotating hinge axles shall be made of stainless steel.
- uu. There will be "zirk" style grease fittings installed at all accessible hinge points to permit scheduled lubrication and extended operational life.
- vv. The manufacturer must also offer an optional greasing manifold so that all zirk fittings can be greased from a central location.

**16. FOR EXTREME WASH BAY ENVIRONMENTS:**

**GALVANIZED WASH BAY COATING:**

- The lift must be hot dip galvanized to provide a Nickel Zinc protective coating to the entire lift structure – platforms, legs and baseplates.
- Coating thickness shall be 130 microns or a minimum of 5 Mils.
- The steel components must undergo a steel pellet blast (Wheelabrator style) preparation with acid wash before the coating is applied.

**STRUCTURAL COMPONENTS TO BE GALVANIZED:**

- Platforms – all surfaces, inside and outside
- LEGS – Legs shall be completely galvanized and re-machined for pins and hinged elements
- Baseplates

**WASH BAY CONTROL SYSTEM**

- Controls shall be a hydraulic/mechanical VOLUMETRIC control system to synchronize the platforms without the use of electrical synchronizing devices on each platform including inclinometers or rotary encoders which are vulnerable to rapid corrosion in wash bay environments.
  - Purpose – Volumetric control does not utilize any electrical synchronization components between the control panel and the lift.
  - Any electrical safety system components shall be sealed in water-tight enclosures

**ADDITIONAL ANTI-CORROSION TREATMENTS**

- Stainless steel braided hydraulic lines
- Stainless steel fittings,
- Stainless steel wedge anchors
- stainless steel baseplates can be provided in lieu of galvanized baseplates upon request

- h. **For paint booth applications** and other applications requiring totally explosion proof components the manufacturer must offer optional upgrades that comply with this need.



