SPECIFICATIONS
HEAVY DUTY FOUR POST TRACK TYPE VEHICLE LIFT
MOHAWK MODEL TR-33 WITH 30' TRACKS

1.0 SCOPE

1.1 This specification sets forth CUSTOMER'S requirements for the purchase of heavy duty above ground runway style track lift to permit lifting heavy vehicles. The maximum rated capacity of the lift shall be 33,000 pounds. Installation of this equipment shall require no in-ground posts, pits or special foundations. Above ground parallelogram, in-ground or scissor type lifts are not acceptable.

1.2 Equipment shall be new and furnished with all specified materials for installation when delivered. Used or reconditioned equipment will not be accepted.

1.3 Equipment shall comply with all applicable Federal, State, and local regulations and meet OSHA, UL, NEC, and ANSI safety standards.

1.4 Equipment must be ALI/ETL certified and tested to the current ANSI/ALI ALCTV automotive lift standard and a copy of listing certification shall be supplied as part of the acceptance of the bid package. ANSI/ALI ALCTV is the one and only recognized safety and testing standard for vehicle lifts.

1.5 The vendor shall submit drawings of overall dimension, and utility requirements of the equipment within thirty (30) days after receipt of a purchase order.

1.6 Manufacturer shall be a firm regularly engaged in the design, and manufacturing of the type of equipment specified herein for a minimum of five (5) years. Equipment being offered shall be a current production model that has been in field operation for a minimum period of five (5) years.

1.7 All material thickness and structural dimensions are minimums. Dimensional tolerances, unless noted, are as follows: ± 0.25 inch for dimensions less than 10 inches; ± 1.0 inch for dimensions 10

inches to 5 feet inclusive; ± 3.0 inch for dimensions greater than 5 feet.

1.8 The intended purpose of this lift is for under vehicle service of all customers' vehicles.

2.0 EQUIPMENT

2.1 Complete assembly shall consist of an electro-hydraulic lift, a control console, and any accessories as specified herein.

2.2 Lifting Capacity: 16.5 tons (33,000 lbs.) minimum.

2.3 Lifting Height: The lift shall be capable of lifting the rated load to a height 74.5 inches (minimum), measured from floor level to bottom of tires.

2.4 Lifting unit shall permit lifting of vehicle to any height up to the full amount specified herein. The lift shall incorporate multi-position mechanical locks at all posts at 6 inch locking intervals through the full length of travel.

2.5 Lifting/ Lowering Speed: 30 inches per minute, minimum.

2.6 Each track shall be constructed of three (3) 8" wide by 12" inch high parallel "I" beams welded together and covered with diamond plate for added traction and durability.

2.7 Each track shall have a wheel stop constructed of 0.375 inch by 8" high (minimum) steel angle mounted to the rear of the track to prevent a vehicle from rolling off the rear of the lift when raised.

2.8 Ramp chocks shall automatically swing into position as the lift is raised and automatically recede when lowered.

2.9 Wheel chocks shall not reduce the effective length of lifting tracks by more than 8 inches.

2.10 Chocks shall be securely pinned or bolted to track to prevent casual removal by Shop personnel.

2.11 Manually positioned wheel chocks will also be provided.

2.12 Track Dimensions

- Track Length: 389 inches, minimum. (includes length of I-beams and end connection plates)
- Track Width: 24 inches, minimum.
- Spacing outside tracks: 96 inches, minimum.
- Overall Width: 173.5 inches, minimum.
- Overall Length: 504 inches, minimum; (including front ramps).
- Minimum retracted height of tracks: 14.5 inches above finished floor.
- Distance between runways: 48 inches (4 ft), minimum.

2.13 Drive-On Ramps: 2 ramps located at front of lift (drive through ramps optional).

2.14 Ramp Dimensions:

- Width: 24 inches
- Height: 14.5 inches
- Incline: shall be less than 10 degrees.

2.15 Drive-on ramps shall be constructed of steel floor plate supported by 0.25 inch thick steel support tubes.

2.16 Drive-on ramps shall be fixed to floor and be supplied with automatic wheel chocks that engage after the lift is raised.

2.16.1 Alternatively, drive-on ramps can raise (pivot) with the lift. Customer must specify this with order.

2.17 Non-skid Surfaces: The tracks and approach ramps shall be covered with steel floor plates providing a skid-resistant surface.

2.18 Cross rails supporting tracks shall consist of 8 inch x 10 inch x 3/8 inch thick wall structural steel rectangular tubing.

2.19 Each post shall consist of a ¾ inch thick steel base plate measuring 23 ½ inch square. Each post shall be fabricated of two (2) ¾ inch

steel “R-34” fork lift mast channels to act as guides for lifting carriage rollers.

2.20 Each carriage shall be constructed of a welded structure of ½ inch steel plates. Each of the four carriages shall have eight (8) 4” diameter self-lubricated steel ball bearings to guide carriage travel in posts.

2.21 Synchronization between mainside and offside posts shall be accomplished through use of twin opposing leaf chains (BL-646 leaf chain).

2.22 Lifting System

2.22.1 The lift will be powered by a direct drive lifting cylinder in each post.

2.22.2 Each cylinder will be 4 ½ inch diameter and power an enclosed 2 5/8 inch diameter chrome-plated rod.

2.22.3 Each cylinder will connect to each carriage via two (2) 1 ½ inch diameter direct drive lifting rods which attach to the top of the carriage and the cylinder head.

2.23 Safety System

2.23.1 Steel safety locks, 1.5 inch thick, at each post will be gravity actuated and released via air cylinders. Safeties will rest upon lock racks consisting of 1 inch thick, 3 inch wide steel plates welded to back of leg channels.

2.23.2 Any of the four individual locking devices shall be capable of supporting the entire rated load.

2.23.3 The locking mechanism shall be air released and gravity engaging towards the locked position.

2.23.4 The locks shall disengage by depressing the “LOCK RELEASE” button on the control panel. At all other times the locks remain in the engaged position.

2.23.5 The safety locks shall always be engaged when the “LOCK

RELEASE" button is not depressed.

2.24 Electric Motor

2.24.1 208-230/440-460 volt, 3 phase, 60 Hz, Totally Enclosed Fan Cooled (TEFC), of US manufacture, 10 HP minimum.

2.25 Control System

2.25.1 The lift shall incorporate a precision flow divider and track leveler control system capable of synchronizing track elevations during both raising and lowering operations with the most adverse rated load placed on the lift. Console will also have Fore/Aft over-ride controls to manually level unit.

2.25.2 The control system shall not rely upon mechanical torque links to synchronize the tracks.

2.25.3 The control console shall be a free standing unit with the operating controls at 40 inch height nominal.

2.25.4 Control console shall house the following equipment:

- Power unit complete
- Steel oil reservoir (plastic reservoirs not acceptable)
- Suction strainer
- Low pressure return filter with bypass
- Hydraulic gear pump submerged in reservoir
- Electric motor
- All hydraulic valving
- Motor starter and over loads
- NEMA 12 enclosure with electrical terminal strips

2.25.5 The control panel shall have the following controls mounted on it yet still maintain its NEMA 12 sealing ability:

- Push Buttons consisting of: "Power On", "Power Off", "Lock Release", "Raise", "Lower", "Fore" and "Aft". All controls will be water resistant, NEMA 4 rated.

•Indicating pilot lamps consisting of: “Power On”, “Filter”, “Fore” and “Aft”. All with gasketed screw on plastic lenses, either green or red.
•Toggle switches consisting of: “Manual/Auto Leveling” and “Down Settle” controls.
•Two glycerin filled hydraulic pressure gauges indicating pressure present at both Fore and Aft cylinders.

2.26 Cable and hose assemblies shall be furnished for interconnecting hydraulics between the control console and lift tracks.

2.27 Signage

2.27.1 All controls, warnings, and instructional information shall be oil resistant, laminated, or engraved in plastic. Metal serial tag shall be riveted into place.

2.27.2 Characters to contrast with background color. Colors shall be resistant to fading from all sources, including, but not limited to sunlight, dirt, extreme temperatures, age, ozone, diesel fuel, hydraulic fluid, and common cleansers.

2.27.3 Plastic signage shall not be brittle nor shall it become brittle or break down over time from any source, including, but not limited to those listed above.

2.27.4 On the face of the control panel shall be the following signs:

•“Raise” directly above the raise button.
•“Lower” directly above the lower button.
•“Power-On” directly below the power-on button.
•“Power-Off” directly below the power-off button.
•“Lock Release” directly above lock release button.
•“Aft” directly above the Aft control button.
•“Fore” directly above the Fore control button.

2.28 Paint

2.28.1 Entire lift and control box shall be painted manufacturer’s standard color(s).

2.28.2 For safety purposes, moving sections of lift (runways and crossbeams) shall be painted OSHA safety yellow.

2.28.3 All surfaces shall be free of grit, contaminants, or other substances that would prevent proper adhesion.

2.28.4 All surfaces shall be painted with two coats minimum of lead-free acrylic enamel paint in accordance with paint manufacturer's instructions.

3.0 HYDRAULIC SYSTEM

3.1 Oil reservoir shall be sized for capacity of system, made of 0.084 thick sheet steel (minimum) pickled & oiled and shall be easily accessible.

3.2 Each hydraulic cylinder shall have a velocity fuse integrally mounted to prevent collapse in the event of a fluid leak.

3.3 Cylinder Specifications (4 cylinders total):

- Barrel Outside Diameter: 4.500 inch
- Barrel Inside Diameter: 4.000 inch
- Rod (Chrome Plated) Diameter: 2.625 inch
- Cylinder Stroke: 60 inch

3.4 All hydraulic hoses shall be of steel reinforced construction, with a burst rating of 13,500 PSIG (minimum) and have standard JIC fittings throughout. Hydraulic tubing is to consist of seamless stainless steel with a minimum outside diameter of 3/8 inch.

3.5 The lift shall be driven by a hydraulic gear pump of US manufacturer, capable of supplying the appropriate pressure and flow to operate the lift.

3.6 Screw-on disposable type oil filter, with a 10 micron filtering surface shall be located in the return flow oil port in the oil reservoir.

3.7 Hydraulic oil and filter shall require replacement under normal use no more frequently than once a year.

4.0 OPTIONAL EQUIPMENT

4.1 Track Lighting (OPTIONAL)

Certified Accessory

4.1.1 The track lighting option must be certified and tested to the current versions of the ANSI/ALI ALCTV and UL-201 standards.

4.1.2 The lift shall be furnished with eight (8) 40 watt dual pin, 48 inch long (minimum) cool white fluorescent lighting fixtures. Lights shall be evenly spaced along the length of each track to illuminate the inner area of the lift and the vehicle undercarriage.

4.1.3 One (1) coiled cable of 12/3 Type SOW cable (rated 25 Amps) shall be supplied to connect incoming power supply to moving tracks.

4.1.4 Light fixtures shall incorporate guards to prevent breakage of bulbs and also shield the operator in the event of the bulb breakage.

4.1.5 The lighting system shall be self-contained and require its own 120 VAC power supply. A limit switch shall be provided to prevent power to the system when the lifting tracks are below 18 inches from floor level to top of track.

4.2 RJ-50A Electric Hydraulic Jacking Beam (OPTIONAL)

4.2.1 Maximum Capacity per beam: 23,000 lbs. on a TR-33 lift.

Certified Accessory

4.2.2 Any jacking beams supplied with this lift must be certified and tested to the newest adopted versions of the ANSI/ALI ALCTV and UL-201 standards.

4.2.3 The jacking beam weldment shall be constructed of two (2) 2” x 10” x 1/4” wall parallel ASTM A-500 grade B structural rectangular steel tubes welded onto a 1/2” thick x 8 1/2” wide x 41 1/2” long ASTM A-36 steel bottom plate. End Sections are enclosed by 3/8” thick ASTM A-36 steel plates to trap ends of platform in flanges of tracks. One (1) 1/4” thick x 42” wide ASTM A-36 steel flat handle provided for pushing and pulling platform

along inside length of tracks. Mounting plates provided for mounting valving and power unit.

4.2.4 Wheel assemblies: Wheels constructed of AISI C-1045 Chrome rod and rimmed to capture flat rails that run along inside of each track. Axles made of 3/4" diameter ASTM A-311 class B steel round stock. Axles designed to carry load of jack beam when empty and flex when loaded, thus transferring load of jack beam on inner flanges of tracks to secure/hold jacking beam in place. Adjustment of wheel centers made by adjusting set screws in axle retaining sleeves.

4.2.5 The power unit shall consisting of a Motor, Pump and Reservoir.

4.3.5.1 Motor: 1 HP, 1800 rpm, 115/230 VAC, 13.4/6.7 FLA, 60 Hz, single phase, continuous duty, Insulation class B, 48C frame, permanently lubricated ball bearings, UL recognized and CSA approved.

4.3.5.2 Pump: 0.8 gpm @ 2000 psi @ 1800 rpm

4.3.5.3 Reservoir: 7" x 10" x 10" steel rectangular tank (3 gallon).

4.2.6 Valving: (1) Directional control valve, 2 spool tandem valve, spring centered, rated 3000 psi, with (2) handle assemblies for separate control of each jacking cylinder.

4.2.7 Two (2) Jacking Cylinders: Each consisting of (1) 5 1/2" OD x 5" ID ASTM A-513-5 honed steel cylinder barrel and (1) 2 5/8" diameter CF-1045 steel cylinder rod. Cylinder bases consist of a 3/8" thick x 6 1/4" x 8" ASTM A-36 steel plate. Exposed rod ends have machined holes to accept standard lifting pads and special axle lifting pads. Stroke of each jack cylinder equals approx 7 7/8".

4.2.7.1 Each hydraulic cylinder shall have a velocity fuse integrally mounted to prevent collapse in the event of a fluid leak.

4.2.8 Two (2) standard lifting pads and two (2) axle lifting pads supplied with each jacking beam. Jacking beam also supplied with (2) 5" long, (2) 7 ½" long, and (2) 10" long stackable truck adapters.

4.2.9 Hydraulic Tubing: 3/8” OD seamless stainless steel hydraulic tubing assemblies, rated 14,000 psig minimum burst pressure, flared at each end to accept #6 ORB male fittings. Four (4) Hydraulic Hose assemblies: Parker brand type SAE-100R2, 1/4” ID, Rated 20,000 psig minimum burst pressure, oil, weather and abrasion resistant, each end with #6 JIC female swivel fittings.

4.2.10 Wiring: Power lead conductor, 14/3 Type SOW-A/SO, water and oil-resistant, rated 18 Amp, 600 V, UL listed, CSA approved, OSHA acceptable. Plug, 2 pole, 3-wire grounding, 15 Amp, 125 V, NEMA 5-15.

4.2.11 Dimensions: Designed for standard 48” dimension inside of tracks. Approximate beam dimensions: 11” high x 24 1/8” deep x 54 3/8” long.

4.3 DRIVE-THRU RAMPS (OPTIONAL)

VALIDATED ALI CERTIFIED BY ETL ®

Certified Accessory

4.3.1 The drive-thru ramp option must be certified and tested to the newest adopted version of the ANSI/ALI ALCTV standard.

4.3.2 Drive-thru ramp option includes two (2) additional ramps, two (2) additional flip plates and attaching hardware to enable driving of vehicle onto and thru tracks.

4.3.3 Dimensions: Designed for standard 24” wide tracks. Increases length of lift by approximately 110”. Departure angle: 8.5° approx.

4.4 TD-1000-AH TIRE DOLLY (OPTIONAL)

4.4.1 The TD-1000-AH tire dolly is designed for the removal and installation of single, tandem, and duplex tires and wheels which are mounted on trucks that are supported above ground level (i.e. raised off the wheels by a jacking beam)

4.4.2 The tire dolly shall come equipped with an air over hydraulic pump unit, operated by a foot pedal for raising and lowering.

4.4.3 The tire dolly capacity shall be 1000 lbs minimum.

4.4.4 The tire dolly shall have an open-carriage design for much easier access to lug nuts and visibility for alignment of bolt pattern to wheels.

4.4.5 Heavy duty lift arms made with ball bearing conveyer rollers shall allow easy rotation of wheels for alignment with bolt pattern.

4.4.6 A hydraulic jack shall be provided to tilt the arms for ease of alignment, providing a -2 degree to +30 degree fork tilt range.

4.4.7 A safety chain shall be provided to secure tires and wheels to dolly.

4.4.8 Dolly shall be equipped with two (2) front mounted ball bearing casters, and two (2) rear mounted ball bearing **swivel** casters for maneuverability. The swivel caster wheels shall include locking mechanisms which can prevent the dolly from moving.

4.4.9 The dolly fork rollers shall range in height from 2 1/8" minimum to 39 ½ inches at maximum height.

4.4.10 The side to side adjustment shall be 7" minimum, to ease alignment of rim's lug holes with wheel.

4.4.11 The fork rollers shall be at 30 7/8" width and 22 1/8" long to accommodate a variety of larger diameter, wide tires.

4.4.12 Overall dimensions of dolly shall be 49 ½" long, 44 ½" wide, 69 ¾" high.

5.0 QUALIFICATION OF BIDDERS

5.1 This bid shall be rewarded only to a responsible bidder, qualified to provide the work specified. The bidder shall submit the following information with his proposal:

5.2 Equipment and options must be ALI/ETL certified and tested to the newest adopted ANSI/ALI ALCTV standard and an attached listing of said certification shall be attached with these specifications. (Standard model)

5.3 Experience record showing the bidder's training and experience in similar work with units of stated capacities.

5.4 List and brief description of similar work satisfactorily complete with location, dates of contracts, names and addresses of owners.

5.5 List of equipment and facilities available to do the work.

5.6 List 3 references of jobs of equal value with the same specified equipment.

COMPANY NAME	CONTACT	PHONE #

All lift options must be compatible with base model lift. If not, then entire lift is not ALI/ETL certified. Each proposal shall contain a list of certified options from ETL testing labs.

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