

# MOHAWK MODEL SYSTEM - 1A SPECIFICATIONS

## HEAVY DUTY TWIN POST VEHICLE LIFT

### 1.0 SCOPE

- 1.1 THIS SPECIFICATION SETS FORTH THE CUSTOMERS REQUIREMENTS FOR THE PURCHASE OF A HEAVY DUTY TWO-POST, FRAME CONTACT, ABOVE GROUND LIFT DESIGNED FOR LIFTING VEHICLES WEIGHING UP TO 10,000 LBS. ***THIS IS THE ONLY TYPE OF LIFT THAT WILL BE ACCEPTED.***
- 1.1.1 ALL EQUIPMENT SHALL BE NEW AND UNUSED. THE MODEL BEING BID MUST BE THE MANUFACTURES CURRENT PRODUCTION MODEL. USED, RECONDITIONED, LEFT OVER OR DISCONTINUED MODELS WILL NOT BE ACCEPTED.
- 1.1.2 EQUIPMENT MUST COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS AND MEET OSHA, UL-201, NEC, AND THE LATEST ANSI STANDARD ALCTV-1998 ADOPTED 6/98 AND MANDATORY EFFECTIVE 4/2000.
- 1.1.3 EQUIPMENT MUST BE STRUCTURALLY AND SAFETY TESTED AND CERTIFIED TO ANSI/ALI ALCTV 1998 AUTOMOTIVE LIFT STANDARD AND A COPY OF LISTING CERTIFICATION SHALL BE SUPPLIED AS PART OF THE ACCEPTANCE OF THE BID PACKAGE.
- 1.1.4 EQUIPMENT MUST BE SUPPLIED WITH ALL ANSI, ALI/ETL SAFETY BOOKLET, ANSI OPERATIONS, INSTALLATION, AND MAINTENANCE BOOKLETS
- 1.1.5 EQUIPMENT MUST BE SUPPLIED WITH ALL ANSI, ALI/ETL SAFETY DECALS. DECALS MUST BE PERMANENTLY PLACED ON THE LIFT IN CLEAR VIEW FOR THE OPERATOR.
- 1.2 THE MANUFACTURER MUST BE A FIRM REGULARLY ENGAGED IN THE DESIGN AND MANUFACTURING OF THE TYPE OF EQUIPMENT SPECIFIED HEREIN FOR A MINIMUM OF 5 YEARS.
- 1.2.1 EQUIPMENT BEING OFFERED **MUST BE A MODEL THAT HAS BEEN IN PRODUCTION FOR A MINIMUM OF 5 YEARS. A USERS LIST MUST BE AVAILABLE AT THE BUYERS REQUEST.**
- 1.2.2 ON REQUEST, THE BUYER MUST RECEIVE A CURRENT USERS LIST FOR THE SPECIFIED STYLE AND LIFT CAPACITY.
- 1.3 ALL MATERIAL THICKNESS AND STRUCTURAL DIMENSIONS ARE MINIMUMS DIMENSIONAL TOLERANCES UNLESS NOTED AS FOLLOWS; ± 0.25 INCHES FOR DIMENSIONS LESS THAN 10 INCHES; ± 1.0 INCHES FOR DIMENSIONS FROM 10 INCHES TO 5 FEET INCLUSIVE; ± 3.0 INCHES FOR DIMENSIONS GREATER THAN 5 FEET.



## 2.0 EQUIPMENT

- 2.1 COMPLETE ASSEMBLY SHALL CONSIST OF AN ELECTRIC OVER HYDRAULIC LIFT UNIT, CONTROLS, ANY ACCESSORIES AS SPECIFIED HEREIN.
- 2.2 LIFTING CAPACITY WILL BE 10,000 LBS. MINIMUM
- 2.3 LIFTING STROKE WILL BE 72" MINIMUM. THIS DIMENSION IS MEASURED FROM THE FLOOR TO UNDERNEATH THE SWING ARM WHEN THE LIFT IS AT FULL HEIGHT. **MEASUREMENT TO THE TOP OF THE LIFTING PAD SHALL NOT BE ADDED TO THE VERTICAL TRAVEL TO ARRIVE AT LIFTING STROKE.**
- 2.3.1 LIFTING HEIGHT WILL BE 75-1/2" MINIMUM. THIS MEASUREMENT IS MEASURED FROM THE FLOOR TO THE TOP OF THE LIFTING PAD WHEN THE LIFT IS AT FULL HEIGHT AND THE LIFTING PAD IS AT IT'S LOWEST POSITION.
- 2.3.2 LIFTING HEIGHT WILL BE 78-1/2" WITH 3" TRUCK ADAPTER, 81-1/2" WITH 6" TRUCK ADAPTER AND 84-1/2" WHEN THE 3" AND 6" ADAPTERS ARE STACKED TO 9".
- 2.3.3 **GRAVITY ACTIVATED LOCKS** IN EACH COLUMN WORKING INDEPENDENTLY OF EACH OTHER **SHALL START LOCKING AT FIVE (5) INCHES OFF THE FLOOR, MINIMUM. THE MECHANICAL LOCKS IN EACH COLUMN WILL ENGAGE EVERY THREE (3) INCHES THEREAFTER TO FULL LIFTING HEIGHT.**
- 2.3.4 THE MECHANICAL LOCKS ARE RELEASED MANUALLY. THE MECHANICAL LOCKS WILL RE-ENGAGE AUTOMATICALLY EVERY TIME THE LIFT IS RAISED. THE MECHANICAL LOCKS SHALL ALLOW THE OPERATOR TO RELEASE THE LOCKS AND LOWER THE LIFT WITHOUT CONTINUING TO HOLD A LOCK RELEASE. **AIR OPERATED LOCK RELEASE IS NOT ACCEPTABLE.**
- 2.4 LIFTING SPEED WILL BE 45 SECONDS MINIMUM FROM THE FLOOR TO FULL HEIGHT.
- 2.5 **LIFTING COLUMN**
- 2.5.1 EACH COLUMN WILL BE CONSTRUCTED OF 3/4-INCH "R-34" FORKLIFT CHANNEL AND BE RIGIDLY SUPPORTED AND JOINED TOGETHER WITH 3/4-INCH STEEL PLATE USING 3 POINT FILLET WELDS. **FORMED, TUBULAR, OR BENT COLUMNS ARE NOT ACCEPTABLE.**
- 2.5.2 EACH COLUMN WILL BE A MINIMUM OF 19" WIDE X 9" DEEP. THESE LARGER HEAVY DUTY COLUMNS GIVE BETTER, SAFER SUPPORT WHEN LIFTING HEAVIER, UNEVEN LOADS. **SMALLER LIGHTER DUTY COLUMNS WILL NOT BE ACCEPTED.**
- 2.5.3 EACH COLUMN WILL HAVE A BASE PLATE MADE FROM 3/4" STEEL PLATE, MINIMUM. THE BASE PLATE WILL BE 29-1/2" X 19", MINIMUM. **THIS LARGE BASE PLATE IS DESIGNED TO HAVE LESS THAN 50 PSI OF PRESSURE ON THE CONCRETE FLOOR WITH A FULL LOAD.**

2.5.4 EACH COLUMN WILL HAVE A CARRIAGE CONSTRUCTED OF 3/4- INCH STEEL PLATE JOINED TO A 3/8-INCH BACKING PLATE BY 3 POINT FILLET WELDS, MINIMUM.

## 2.6 CARRIAGE ASSEMBLY

2.6.1 THE CARRIAGE ASSEMBLY WILL ROLL UP AND DOWN SMOOTHLY IN THE FORKLIFT MAST COLUMNS ON **FOUR (4) 4 INCH DOUBLE SEALED SELF-LUBRICATING STEEL BALL BEARING ROLLERS. *PLASTIC OR NYLON TYPE SLIDE BLOCKS AND BUSHING TYPE ROLLERS ARE NOT ACCEPTABLE.***

2.6.2 THE CARRIAGE ASSEMBLY SHALL NOT REQUIRE ANY MONTHLY CLEANING WITH SOLVENTS OR ANY MONTHLY LUBRICATION. **ALL WEAR SURFACES SHALL BE COMPLETELY SELF LUBRICATING.**

2.6.3 THE CARRIAGE WILL ALSO INCLUDE **(4) 2 INCH DOUBLE SEALED SELF LUBRICATING STEEL NEEDLE BEARING ROLLERS** ACTING AS THRUST BEARINGS TO ELIMINATE THE STRESS OF UNEVENLY DISTRIBUTED LOADS. ***PLASTIC OR NYLON TYPE BEARINGS OR SLIDE BLOCKS ARE NOT ACCEPTABLE***

2.6.4 THE CARRIAGE WILL BE LIFTED BY # 646 LEAF CHAIN (MINIMUM), **ROLLING OVER TWO (2) DOUBLE SEALED SELF-LUBRICATING CHAIN BEARINGS. *SINGLE CHAIN BEARING AND BUSHING TYPE ROLLERS ARE NOT ACCEPTABLE.***

2.6.5 **CARRIAGES WILL SUPPORT THE SWING ARMS BY SANDWICHING THEM IN BETWEEN 2 PIECES OF 3/4 - INCH STEEL PLATE THAT IS JOINED TOGETHER BY 3 POINT FILLET WELDS. THE SWING ARMS WILL BE HELD IN PLACE BY A 1- 3/8 INCH STEEL PIN WITH NYLON LOCK NUTS ON EACH SIDE. *SWING ARMS THAT ARE NOT SUPPORTED BY A "TOP PLATE AND BOTTOM PLATE" ON THE CARRIAGE ARE NOT ACCEPTABLE.***

## 2.7 LIFTING ARMS

2.7.1 LIFTING ARMS WILL BE A CONSTRUCTED OF TWO PIECES OF GRADE A-500-B STRUCTURAL TUBING. THIS TUBING MUST HAVE A MINIMUM TENSILE STRENGTH OF 75,000 LBS. AND MINIMUM YIELD STRENGTH OF 60,000 LBS.

2.7.2 THE FIRST PIECE CALLED "SWING ARM" WILL BE MADE OF 3" X 5" X 1/4" WALL THICKNESS. THE SECOND PIECE CALLED "SLIDER" WILL BE MADE FROM 2" X 4" X 3/8" WALL THICKNESS. **SLIDERS SHALL BE CAP WELDED CLOSED ON BOTH ENDS FOR ADDED STRENGTH.**

2.7.3 LIFTING ARMS WILL ACCOMMODATE THE SMALLEST OF COMPACT CARS THROUGH LIGHT DUTY TRUCKS AND VANS WEIGHING UP TO 10,000 LBS.

2.7.4 LIFTING ARMS WILL HAVE A CLOSED REACH OF 35-3/4" AND AN OPEN REACH OF 54-11/16". ALL FOUR LIFTING ARMS WILL BE EQUAL IN LENGTH TO SAFELY SUPPORT FRONT WHEEL DRIVE VEHICLES AS WELL AS VEHICLES WITH DUAL REAR WHEELS, LIFT GATES, DUMP BODY AND UTILITY BODIES. ***ASYMMETRICAL***

***ARMS ARE NOT ACCEPTABLE.***

- 2.7.5 LIFTING ARMS WILL BE EQUIPPED WITH ARM RESTRAINTS THAT OPERATE AUTOMATICALLY. ***MANUALLY OPERATED ARM RESTRAINTS ARE NOT ACCEPTABLE.***
- 2.7.6 SWING ARM RESTRAINTS WILL BE MADE FROM 1" DIAMETER HEAT TREATED ROCKWELL HARDNESS 50/55 STEEL PINS THAT DROP DOWN THROUGH THE CARRIAGE AND ARE FORCED DOWNWARD BY A TENSIONING SPRING. THE TENSIONING SPRING FORCES THE PIN TO WEDGE AGAINST THE SWING ARM SECURING IT IN PLACE. THE SWING ARMS AUTOMATICALLY SECURE THEMSELVES WHEN THE LIFT IS RAISED AND RELEASE AUTOMATICALLY WHEN THE LIFT IS LOWERED ALL THE WAY DOWN.
- 2.7.7 LIFTING PADS WILL BE MADE FROM 3-3/4" X 5-3/4" STEEL PLATE WITH STEEL CORRUGATED SURFACE FOR POSITIVE GRIPPING ON FLAT SURFACES OR LIFTING BY UNIBODY PINCH WELDS. ***RUBBER OR PLASTIC PADS ARE NOT ACCEPTABLE.***
- 2.7.8 LIFTING PADS MUST HAVE A 3-3/4" X 5-3/4" LIFTING SURFACE AT ALL TIMES INCLUDING WHEN TRUCK ADAPTERS ARE IN USE. ***SMALLER SURFACES SUCH AS FLIP-UP PADS ARE NOT ACCEPTABLE.***
- 2.8 **LIFT DIMENSIONS**
- 2.8.1 COLUMN HEIGHT 8'7" MAXIMUM
- 2.8.2 **HYDRAULIC LINE HEIGHT SET AT TWELVE (12) FOOT STANDARD HEIGHT; ANY ADJUSTABLE TO ACCOMMODATE CEILING HEIGHT. NO OVERHEAD STRUCTURES OR CABLE COVERS THAT REQUIRE AN ELECTRICAL SAFETY SHUT-OFF SWITCH WILL BE ACCEPTABLE.**
- 2.8.3 **OPTIONAL UNDERGROUND HYDRAULIC LINES ROUTED IN THE CONCRETE SLAB USING SEAMLESS STAINLESS STEEL HYDRAULIC LINES. THIS FEATURE LEAVES NO OVERHEAD LINES ALLOWING FOR TALLER VEHICLES TO BE LIFTED THE FULL 6' LIFTING HEIGHT AND OVER HEAD CRANES TO MOVE FREELY AROUND THE LIFT.**
- 2.8.4 WIDTH BETWEEN COLUMNS WILL BE TEN (10) FOOT STANDARD, MINIMUM. **WIDTH CAN BE ADJUSTABLE TO ACCOMMODATE WIDER VEHICLES OR NARROWED FOR TIGHT BAYS**
- 2.8.5 WIDTH BETWEEN LIFTING ARMS EIGHT FOOT TEN INCHES (8'10") MINIMUM; **ADJUSTABLE TO ACCOMMODATE WIDER VEHICLES.**
- 2.8.6 PAD HEIGHT 3-1/2" AT LOWEST POSITION WHEN THE LIFT IS ALL THE WAY DOWN.
- 2.8.7 LIFTING HEIGHT 75-1/2" AT THE TOP OF THE PAD AT FULL LIFTING HEIGHT.
- 2.8.8 LIFTING HEIGHT WITH 3" TRUCK ADAPTERS 78-1/2" AT FULL LIFTING HEIGHT.

2.8.9 LIFTING HEIGHT WITH 6" TRUCK ADAPTERS 81-1/2" AT FULL LIFTING HEIGHT.

2.8.10 LIFTING HEIGHT WITH 3" AND 6" ADAPTERS STACKED TO 9" IS 84-1/2"

### 3.0 HYDRAULICS

3.1 THE LIFT SHALL INCORPORATE A MASTER / SLAVE HYDRAULIC SYSTEM CAPABLE OF SYNCHRONIZING ELEVATIONS DURING BOTH RAISING AND LOWERING OPERATIONS WITH THE MOST ADVERSE RATED LOAD PLACED ON THE LIFT. THE LIFT SHALL COME EQUIPPED WITH A FULLY AUTOMATIC LEVELING CONTROL AND MANUAL OVER-RIDE AS A BACK UP. ***CHAINS OR CABLE EQUALIZATION IS NOT ACCEPTABLE.***

3.2 INTERNAL HYDRAULIC SAFETIES ON BOTH CYLINDERS SHALL DETECT MAINSIDE TO OFFSIDE PRESSURE DIFFERENTIALS OF LESS THAN 200 LBS. SHOULD THE LIFTS PRESSURE CHANGE OR AN IMBALANCE CONDITION OCCUR FOR ANY REASON, **THE LIFT WILL LOCK HYDRAULICALLY ON BOTH SIDES.**

3.3 HYDRAULIC CYLINDERS WILL BE MADE OF 2-5/8" CHROME ROD. THE OVERSIZED CHROME ROD WILL BE PACKED IN A 4" BARREL, MINIMUM.

3.4 FULL LOAD WORKING PRESSURE WILL BE A MAXIMUM OF 2,300 PSI. ***HIGHER PRESSURE SYSTEMS WILL NOT BE ACCEPTED.***

3.5 CYLINDER PACKING CONSISTS OF:

- DYNAMIC PISTON T - SEALS
- 2 BACK UP RINGS
- 2 STATIC O-RINGS
- ROD WIPER
- ROD T - SEALS

3.6 EXTERNAL HYDRAULIC SAFETIES CONSIST OF VELOCITY FUSES MOUNTED ON EACH CYLINDER TO PREVENT COLLAPSE IN THE EVENT OF A LEAK, PLUS A FACTORY SET PRESSURE COMPENSATED FLOW CONTROL VALVE TO LIMIT DESCENT SPEED.

3.7 SEAMLESS STAINLESS STEEL HYDRAULIC TUBING WITH A BURST RATING OF 14,000 PSI, MINIMUM. ***RUBBER, STEEL BRAIDED, OR PLASTIC HYDRAULIC HOSES ARE NOT ACCEPTABLE.***

3.8 ALL HYDRAULIC FITTINGS WILL BE STANDARD JIC OR O-RING BOSS FITTINGS. ***SELF FLARING OR COMPRESSION FITTINGS ARE NOT ACCEPTABLE.***

3.9 HYDRAULIC FLUID WILL BE DEXXRON III, ATF.

### 4.0 POWER UNIT

- 4.1 POWER UNIT CAN BE MOUNTED ON EITHER DRIVER SIDE OR PASSENGER SIDE COLUMN AND WILL CONSIST OF:
- ELECTRIC MOTOR
  - HYDRAULIC PUMP
  - STEEL OIL RESERVOIR, PLASTIC NOT ACCEPTABLE
  - SUCTION STRAINER
  - HYDRAULIC GEAR PUMP
  - ALL HYDRAULIC VALVING MANIFOLD
- 4.1.1 ELECTRIC MOTOR IS AMERICAN MADE 2 H.P. 208V / 230V 1 PHASE 60hz MINIMUM. THE MOTOR WILL HAVE MAXIMUM FULL AMP LOADS OF 17.4 AMPS @ 208V AND 14.6 AMPS @ 230V.
- 4.1.2 HYDRAULIC PUMP IS A PRESSURE BALANCED GEAR PUMP WITH FIXED DISPLACEMENT, EXTERNAL TOOTH, AND ALL STEEL GEARS. THE PUMP MUST BE EXTREMELY TOLERANT OF FLUID CONTAMINANTS AND RESISTANT TO GALLING CAUSED BY LOW VISCOSITY START-UP. HARDCOAT PROCESSED INTERNAL PUMP SURFACES FOR EXTENDED SERVICE LIFE.

## 5.0 WARRANTY

- 5.1 STANDARD WARRANTY ON ALL STRUCTURAL COMPONENTS AND POWER UNIT WARRANTY IS A FULL 5 YEARS. PARTS, LABOR, SHIPPING, AND TRAVEL ARE ALL INCLUDED.
- 5.2 HYDRAULIC CYLINDERS ARE COVERED BY AN EXTENDED CYLINDER WARRANTY AFTER THE INITIAL 5 YEAR WARRANTY HAS EXPIRED.

## 6.0 STANDARD EQUIPMENT

- 6.1 TRUCK ADAPTERS, (4) 3" AND (4) 6". THEY MUST BE STICKBALL TO MAKE 9" ADAPTERS. ***FLIP TYPE AND SCREW TYPE PADS ARE NOT ACCEPTABLE.***
- 6.2 MALE AND FEMALE ELECTRICAL HUBBELL PLUGS.
- 6.3 (16) 3/4" X 5" WEJ-IT ANCHOR BOLTS.
- 6.4 TOUCH-UP PAINT, 1 CAN EACH OF RED & YELLOW.
- 6.5 DEXXRON III ATF FOR HYDRAULIC PUMP AND RESERVOIR.
- 6.6 SHIMS TO LEVEL THE COLUMNS FOR PROPER INSTALLATION.
- 6.7 SAFETY AND OPERATIONS MANUAL.
- 6.7.1 ANSI/ALI OIM BOOKLET (ALI STANDARD # ALOIM-1994).
- 6.7.2 ANSI/ALI LIFTING IT RIGHT BOOKLET (ALI STANDARD # SM93-1).

6.7.3 ANSI/ALI LIFTING POINT GUIDE BOOKLET (ALI STANDARD # ALI/LP-GUIDE).

6.7.4 ANSI/ALI SAFETY DECALS AFFIXED TO LIFT.

7.0 QUALIFICATION OF BIDDERS

7.1 THIS BID WILL BE AWARDED ONLY TO A RESPONSIBLE BIDDER, QUALIFIED TO PROVIDE THE WORK SPECIFIED. THE BIDDER WILL SUBMIT THE FOLLOWING INFORMATION WITH THEIR PROPOSAL.

7.1.1 LIST 3 REFERENCES OF JOBS OF EQUAL VALUE WITH THE SAME SPECIFIED EQUIPMENT.

COMPANY NAME

CONTACT

PHONE #

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