Parallelogram Quick Start Procedure:

File: Parallelogram Quick Start.doc
Date: 4/28/09 (r.v.)

- Read/Review manual thoroughly.
- Check bay location for adequate space for lift. If flush mounted lift provided, verify that pits are to required dimensions and that conduits are in proper locations.
- Position platforms and console in their designated locations.
- Ensure electrical cables and air/hyd hoses are labeled at ends (#’s and Left/Right). Feed electrical wires, air lines, and hydraulic hoses thru their respective conduits to the console (Refer to Fig 7 in manual). DO NOT cut hoses or wires. Excess will be wrapped in console.
- Connect electrical wires to electrical control box per Figure 11a/11b/11c in manual. Use respective wiring diagram for a 4-leg, 6-leg or 8-leg lift.
- Connect 1/4 inch air hoses (yellow) to manifold block (dark blue valve block), and 3/8 air hoses (blue) to regulator block (Refer to Fig 17 in manual).
- Connect Hydraulic Hoses to manifold block. (Refer to Fig 8 in manual).
- Connect vent air lines (black) to tank tee fitting. (Refer to Fig 17 in manual).
- Connect incoming air supply to quick connect fitting at top of console.
- Have qualified electrician connect incoming power to junction box within console (Refer to Fig 9 in manual). Ensure proper power supply for lift.
- Turn on lift and jog raise button. Check rotation of motor to ensure it is turning the proper direction.
• Continue to raise lift. A “loss of encoder” error may periodically occur until the hoses are filled and the platforms raise. Raise lift platform to a workable height. DO NOT raise more than 5 feet.

• Rotate home switches on underside of platform ends (these are installed upside down to prevent damage to the switch during shipment). Set these switches per Fig 16. Ensure lift “homes” at fully lowered position (reads L0/D0/R0 on display) before attempting to raise lift to full height. NOTE that beeper will not stop unless the lift is in a park position for 10 seconds or is homed at the bottom for 10 seconds.

• Once the lift is raising, test the park function and the lower function. If either of these functions do not operate properly, the reed switches on the air lock cylinders may need to be adjusted. Refer to Fig 14 and Fig 15. Do not adjust these until the platforms are fully anchored to the floor, or you may end up having to adjust them again.

• To anchor the lift to the floor, use the following steps as a guide line. First, shim the right side platform, using a laser level to ensure it is raising vertically. Refer to Fig 5 and installation section in manual. Anchor this platform from the center of the base frame, outward. Then shim and anchor the left side platform to conform to the right side, ensuring it maintains equal distance between the jack rails during raising and lowering.

• Attach ramps, flip plates, jack beams, etc..

• Raise lift thru a few more complete cycles, ensuring that all functions operate properly (and to purge hydraulics of air) prior to attempting to lift any vehicles.
READ MANUAL THOROUGHLY BEFORE INSTALLING, OPERATING OR SERVICING THIS LIFT !!
Deliver these instructions to lift owner/user/employer along with other instructional materials furnished with this lift.
IMPORTANT SAFETY INSTRUCTIONS

When using your garage equipment, basic safety precautions should always be followed, including the following:

1. Read this manual and review all illustrations of this manual thoroughly before attempting to install, operate or maintain this lift.

2. Deliver these operation, inspection, and maintenance instructions to the lift owner/user/employer along with the other instructional materials furnished with this lift.

3. Maintenance on this equipment is to be performed only by trained lift service personnel, and and worn or broken parts are to be replaced only with genuine Mohawk brand supplied parts.

4. Care must be taken as burns can occur from touching hot parts.

5. Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged - until it has been examined by a qualified serviceman.

6. Do not let cord or hoses hang over edge of table, bench or counter or come in contact with hot manifolds or moving fan blades.

4. If an extension cord is necessary, a cord with a current rating equal to or more than that of the equipment should be used. Cords rated for less current than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.

5. Always unplug equipment from electrical outlet when not in use. Never use the cord to pull the plug from the outlet. Grasp plug and pull to disconnect

6. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline). WARNING: Risk of Explosion: This equipment has internal arcing and sparking parts which should not be exposed to flammable vapors. This equipment is only suitable for installation in a garage having sufficient air circulation to be considered a non-hazardous location.

7. Adequate ventilation should be provided when working on operating internal combustion engines.

8. Keep hair, loose clothing, fingers, and all parts of body away from moving parts.

9. To reduce the risk of electric shock, do not use on wet surfaces or expose to rain.

10. Use only as described in this manual. Use only manufacturer’s (Mohawk) recommended attachments.

11. ALWAYS WEAR SAFETY GLASSES. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.

SAVE THESE INSTRUCTIONS  Rev (10/22/99)
LIFT ENVIRONMENT:
Mohawk prohibits the outdoor installation of this standard lift, which is APPROVED FOR INDOOR USAGE ONLY, in a normal garage type environment. Any concerns in applications that expose the lift to additional environmental effects, such as paint booths, wash bays, outdoors, high or low temperatures, etc. must be addressed to our engineering department, where provisions could/may be made to the lift to accommodate the area of use. Our engineering department must be made aware in advance of these conditions and any additional code requirements that must be met.

Also, the foundation for which this lift must be installed on must comply to the minimum specifications as set forth in this manual. Any drainage slopes in the bay where the lift is to be installed must be directed away from the base pads to prevent water accumulation at the anchors.

Standard foundation flooring and anchorage specifications are contained within this manual. For installation within a seismic area, a qualified person must be consulted to address seismic loads and other local or state requirements.

ACCESSORIES:
All accessories (i.e. Lifting Pads, Height Adapters, Wheel Adapters, Turf Adapters) supplied with this lift are to be used on this lift only. Accessories from other lifts are not acceptable and could result in injury to the user.

If attachments, accessories or configuration modifying components are used on this lift and, if they are not certified for use on this lift, then the certification of this lift shall become null and void. Contact the participant (Mohawk Resources Ltd.) for information pertaining to certified attachments, accessories or configuration modifying components.

RJ-50P JACKING BEAMS:
Only certified RJ-50P Jacking Beams are intended for use on certified versions of the Mohawk Parallelogram Lifts (See next page for list of certified lifts) Follow load rating of beam dependant on what lift it is on. Use of non-certified jacking beams on certified lifts will void the certification of the lift.

Use of a pair of Jacking Beams is allowable, but the minimum distance between centerline of the beams (cylinders) is 14 feet minimum.

Loading of the jacking beams or combinations of jacking beams above the rated capacity of the lift itself could result in personal injury to the operator and/or damage to the lift and/or vehicle. The load rating of any jacking beam or combination of jacking beams on this unit must not exceed the rated capacity of the lift.

LIGHT KIT:
Only the certified Light Kit is intended for use on certified versions of the Mohawk Parallelogram Lifts (See next page for list of certified lifts). Use only lights provided from Mohawk for this kit. Light kit receptacle is intended for lights only, and must not be used as an industrial outlet. Rating for light kit receptacle is 120 VAC, 60 Hz, 5 Amp. Lights are 40 watt, 120 VAC, 60 hz, 1/3 amp each.

LOCKOUT/TAGOUT REQUIREMENTS:
The start switch provided with this unit must not be used as a primary disconnecting means. A separate disconnecting means must be provided in accordance with all applicable codes. It is the responsibility of the owner/user of this unit to provide a proper lockout/tagout device for this unit before or during installation in conformance to ANSI Z244.1 and any local/state/national electrical codes and any OSHA regulations.
MOHAWK MODEL PARALLELOGRAM

Call your local
Mohawk distributor
For parts, service and technical support.

Please have this unit’s model and serial number when calling for service.

Model Number ______________________
Serial Number ______________________

OR CONTACT:

MOHAWK RESOURCES LTD.
65 Vrooman Ave.
P.O. Box 110
Amsterdam, NY 12010
Toll Free: 1-800-833-2006
Local: 1-518-842-1431
Fax: 1-518-842-1289
Internet: www.MOHAWKLIFTS.com
E-Mail: Service@MOHAWKLIFTS.com
GENERAL WARRANTY INFORMATION:
Mohawk’s Obligation under this Warranty is limited to repairing or replacing any part or parts returned to this Factory, transportation charges prepaid, which prove upon inspection to be defective and which have not been misused. Damage or failure to any part due to freight damage or lack of required regular documented maintenance is not covered under this warranty. All warranty claims must be performed in accordance to Mohawk’s Warranty Parts Return Policy (contact Mohawk’s Service Department for more information).

This warranty does not cover mis-diagnosing of unit or parts returned that are non-defective. This warranty does not cover any consequential or incidental damages including, but not limited to, lost revenues or business harm. This equipment has been designed for use in normal commercial vehicle maintenance applications. A specific individual warranty must be issued for units that deviate from intended usage, such as high cycle usage in industrial applications, or usage in extremely abusive environments, etc. Mohawk reserves the right to decline responsibility when repairs have been made or attempted by others. This warranty does not cover labor. This warranty does not cover downtime expenses incurred when unit is in repair. The lift must be registered within 30 days of installation by mailing supplied warranty registration card to Mohawk and must be signed by a licensed electrician. The model name and serial number of the equipment must be furnished with all warranty claims. This warranty statement contains the entire agreement between Mohawk Resources Ltd. and the purchaser unless otherwise specifically expressed in writing. This non-transferable warranty applies to the original purchaser only. This warranty is applicable to units located only in the United States of America and Canada. Contact Mohawk Resources Ltd. for specific warranty provisions for units located outside of these countries.

This warranty does not cover normal surface wear items, items subject to abrasion, or items used in a corrosive environment. Some items on lift are subject to normal “wear and tear” and are not covered under this warranty.

STRUCTURAL COMPONENTS (ALL LIFTS):
Structural and mechanical components of this unit are guaranteed for the below stated time frame, specific to model listed, from the date of shipment from factory, against defects in workmanship and/or materials when lift is installed and used according to specifications.

25-YEARS STRUCTURAL / 10 YEARS MECHANICAL: Models A-7, System IA-10, LC-12, LC-12-3SA, LMF-12, TP-16, TP-18, TP-20, TP-26, TP-30. Structural items covered include leg, carriage, swing arm and slider weldments (excluding normal wear areas as stated above). Mechanical items covered include roller bearings and lifting chain.
5-YEAR: MODELS TL-7.
2-YEAR: MODELS PARALLELOGRAM SERIES LIFTS.
1-YEAR: MODELS TD-1000, TD-2000, CT-1000, USL-6000.

POWER UNIT (ALL LIFTS):
All power unit components (motor, pump and reservoir) are guaranteed for two years for parts, from the date of shipment from factory, against defects in workmanship and/or materials when the lift is installed, connected by a licensed electrician and used according to specifications.

ELECTRICAL COMPONENTS (ALL LIFTS):
All electrical components (excluding motor) are guaranteed for one year for parts, from the date of shipment from factory, against defects in workmanship and/or materials when the lift is installed and used according to specifications.

PNEUMATIC-AIR COMPONENTS (ALL LIFTS):
All pneumatic (air) components (i.e. air cylinders and poppet air valves) are guaranteed for one year for parts, from the date of shipment from factory, against defects in workmanship and/or materials when the lift is installed and used according to specifications.
HYDRAULIC CYLINDERS (MODEL SPECIFIC LIFTS):
The following models are guaranteed for 5 years (parts only), from date of shipment from factory, for hydraulic cylinders, against defects in workmanship and/or materials when the lift is installed and used according to specifications: A-7, SYSTEM IA-10, LC-12, LC-12-3SA, LMF-12, TP-16, TP-18, TP-20, TP-26, TP-30.

All other models are guaranteed for two years (parts only), from the date of shipment from factory, for hydraulic cylinders, against defects in workmanship and/or materials when the lift is installed and used according to specifications (excluding USL-6000, which is one year).

After the first 5 years from date of shipment from factory, the “EXTENDED LIFETIME CYLINDER SEAL WARRANTY” (below) is applicable to the following Mohawk lifts only: A-7, SYSTEM IA-10, LC-12, LC-12-3SA, LMF-12, TP-16, TP-18, TP-20, TP-26, TP-30. See Mohawk’s “EXTENDED LIFETIME CYLINDER SEAL WARRANTY” for specific warranty provisions for hydraulic cylinders.

THE “EXTENDED LIFETIME CYLINDER SEAL WARRANTY” is as follows:

As the original purchaser of a Mohawk lift manufactured by Mohawk Resources, Ltd. you are entitled to an extended cylinder seal warranty. To qualify for this warranty, the following conditions must be met:

All lifts must be registered with Mohawk Resources, Ltd., P.O. Box 110, 65 Vrooman Avenue, Amsterdam, NY 12010, with the original customer name, address and phone number, within 30 days of installation. (Use postage paid warranty registration card attached to the front of the manual provided.)

Mohawk’s obligation under this warranty is limited to supplying model specific cylinder seals. The customer is responsible for shipping and handling of the seals. Mohawk is not responsible/liable for the rebuild of cylinders by others. This warranty is non-transferable and runs to the original purchaser only.

STANDARD OPTIONS (ALL LIFTS):
All standard options of this unit are guaranteed for one year for parts, from the date of shipment from factory, against defects in workmanship and/or materials when lift is installed and used according to specifications.

CUSTOM LIFTS AND OPTIONS:
All “custom” lifts and/or “custom” options are guaranteed on a case-by-case basis. Consult Mohawk factory for details on specific custom lifts and/or options.

WARRANTY EXCEPTIONS (ALL LIFTS):
ADJUSTMENTS: This warranty does not cover casual and routine adjustments such as, but not limited to: fittings, anchor bolt re-tightening, or any shimming or adjustments required during a proper and professional installation by a qualified installer.

MAINTENANCE AND INSpections: If this unit is not maintained and inspected in accordance to the relevant sections in the users manual for this specific model, warranty is void. OSHA, ANSI and Mohawk require that records must be maintained to prove that inspections and maintenance of this unit have been routinely performed by qualified individuals.

ABUSE: If this unit is found to be overloaded (purposely or unknowingly), used in a situation beyond its intended function, not maintained or inspected regularly, or used in an abusive environment or beyond normal shop usage, etc., this warranty is void in its entirety.

NON-EXISTENT PROBLEMS: For service visits, part replacements, labor, etc. For parts found to be non-defective, or for a unit dis-function that does not exist, it is the lift owner that requested the service visit who bears the responsibility of all related expenses.

BATTERIES: All batteries carry the battery manufacturer’s warranty. Maintenance requirements and abuse provisions are as stated by the battery manufacturer. Refer to battery manufacturer’s warranty.

SPECIAL/MODIFIED INSTALLATIONS: This warranty does not cover “non-traditional” installations. Installations are to be done according to specifications, or the warranty is void.

WEARABLE COMPONENTS: Some items on lifts are subject to normal “wear and tear” and are not covered under this warranty.

* This warranty supersedes all other warranty policies previously stated and in all other Mohawk product specific literature (manuals, brochures, etc.).
MODEL NAMES & VARIATIONS:
NOTE: THIS MANUAL IS SUITABLE FOR USE WITH VARIOUS LIFT MODEL CONFIGURATIONS. REFER TO SERIAL TAG ON LIFT AND TABLE BELOW FOR LIFT SPECIFICATIONS.

<table>
<thead>
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<th>MODEL NAME</th>
<th>ALCTV Certified</th>
<th>CAPACITY (1000 x LBS)</th>
<th>TRACK LENGTH (FT)</th>
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SEE INFORMATION ON NEXT PAGE CONCERNING CERTIFIED LIFTS
This section refers only to Mohawk parallelogram lift models (listed and designated as certified on previous page) that have been tested and certified to meet the requirements of ANSI/ALI ALCTV-2006.

The Automotive Lift Institute (ALI) is a trade association comprised of US and Canadian manufacturers and certain national distributors of automotive lifts. For almost 50 years, the ALI in cooperation with the American National Standards Institute (ANSI) has continued to sponsor the national standard ANSI/ALI ALCTV:2011 "Safety Requirements for Construction, Testing, and Validation for Automotive Lifts.”

The new "ALI/ETL Automotive Lift Certification Program" is based on ALI developed methods and criteria for third party testing of automotive lifts to validate conformance with ANSI/ALI ALCTV:2011.

For automotive lifts to be certified, manufacturers must execute an agreement with the ALI and ETL / Intertek Testing Services and must meet certain requirements:

- Must be structurally tested in accordance with the test requirements as outlined in ANSI/ALI ALCTV:2011.

- All motor operated units must be listed by a nationally recognized testing laboratory (NRTL) in accordance with ANSI/UL-201.

- The manufacturer's production facility must meet quality control requirements as set forth in the ANSI Z34.1-1987 and the ALI/ETL Automotive Lift Certification Program Procedural Guide.

- All manufacturer-provided instructions, manuals, and operator safety documents, must meet the requirements of the ANSI/ALI ALCTV:2011 and ANSI/UL-201.

Lifts meeting these rigid requirements may be listed in the directory of certified lifts and be labeled with the "ALI/ETL certification mark" (Above on right), and, if applicable, the ETL listing mark to ANSI/UL-201.

Mohawk has been a long-standing member of ALI and most of Mohawk’s popular models are currently listed and certified. Other Mohawk models are in various stages of testing. To obtain a complete and current certification listing, contact Mohawk Resources Ltd. or visit www.mohawklifts.com or www.ali-directory.org. To obtain a copy of the current automotive lift standard, contact ALI or ANSI or visit www.autolift.org.

Some people purchase quality products and others do not. You are assured of quality when you purchase a Mohawk product in compliance with the certification program.
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BEI INTRINSICALLY SAFE ENCODER DRAWINGS

SURFACE MOUNT INSTALLATION DRAWINGS

THIS PACKET OF DRAWINGS CONTAINS SURFACE INSTALLATION INFORMATION FOR PREPARATION OF FLOOR, GENERAL DIMENSIONS OF LIFT, AND GENERAL INSTALLATION INSTRUCTIONS FOR A STANDARD 50-26-S LIFT.

FLUSH MOUNT INSTALLATION DRAWINGS

THIS PACKET OF DRAWINGS CONTAINS FLUSH INSTALLATION INFORMATION FOR PREPARATION OF FLOOR, GENERAL DIMENSIONS OF LIFT, AND GENERAL INSTALLATION INSTRUCTIONS FOR A STANDARD 50-26-F LIFT.

PARTS DRAWINGS

THIS PACKET OF DRAWINGS CONTAINS REPRESENTATIVE ASSEMBLY DRAWINGS WITH PART BREAKDOWNs.

UNIFORM WARNING, CAUTION & SAFETY DIAGRAMS

ALL INFORMATION, ILLUSTRATIONS, AND SPECIFICATIONS IN THIS MANUAL ARE BASED ON THE LATEST PRODUCT INFORMATION AVAILABLE AT THE TIME OF PRINTING. WE RESERVE THE RIGHT TO MAKE CHANGES AT ANY TIME WITHOUT NOTICE.
GENERAL NOTES & WARNINGS

RECOMMENDATIONS BY THE INDIVIDUAL USER OR USING ORGANIZATION FOR IMPROVING THIS PUBLICATION OR ANY ASPECT OF THE PRODUCT ARE ENCOURAGED AND SHOULD BE FORWARDED IN WRITING TO:

MOHAWK RESOURCES LTD.
PRODUCT IMPROVEMENTS
65 VROOMAN AVE.
AMSTERDAM, NY, 12010

THIS IS NOT A VEHICLE LIFTING PROCEDURE MANUAL AND NO ATTENTION IS MADE OR IMPLIED HEREIN TO INSTRUCT THE USER IN LIFTING METHODS PARTICULARLY TO THE INDIVIDUAL APPLICATION OF THE EQUIPMENT DESCRIBED IN THIS MANUAL. RATHER, THE CONTENTS OF THIS MANUAL ARE INTENDED AS A BASE LINE FOR OPERATION, MAINTENANCE, TROUBLE SHOOTING, AND PARTS LISTING OF THE UNIT AS IT STANDS ALONE AND AS IT IS INTENDED AND ANTICIPATED TO BE USED IN CONJUNCTION WITH OTHER EQUIPMENT.

PROPER APPLICATION OF THE EQUIPMENT DESCRIBED HEREIN IS LIMITED TO THE PARAMETERS DETAILED IN THE SPECIFICATIONS AND THE USES SET FORTH IN THE DESCRIPTIVE PASSAGES. ANY OTHER PROPOSED APPLICATION OF THIS EQUIPMENT SHOULD BE DOCUMENTED AND SUBMITTED IN WRITING TO MOHAWK RESOURCES LTD. FOR EXAMINATION. THE USER ASSUMES FULL RESPONSIBILITY FOR ANY EQUIPMENT DAMAGE, PERSONAL INJURY, OR ALTERATION OF THE EQUIPMENT DESCRIBED IN THIS MANUAL OR ANY SUBSEQUENT DAMAGES.

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ALL WARRANTIES APPLICABLE TO THIS EQUIPMENT ARE CONTINGENT ON STRICT ADHERENCE TO THE MAINTENANCE SCHEDULES AND PROCEDURES IN THIS MANUAL.

KEEP ALL SHIELDS AND GUARDS IN PLACE. INSURE ALL SAFETY MECHANISMS ARE OPERABLE. KEEP HANDS, FEET, AND CLOTHING AWAY FROM POWER-DRIVEN AND MOVING PARTS.

WARNING
● DO NOT INSTALL THIS UNIT IN A PIT OR DEPRESSION DUE TO FIRE OR EXPLOSION RISK

IMPORTANT NOTE

A LEVEL FLOOR IS SUGGESTED FOR A PROPER INSTALLATION SITE AND WILL ENSURE LEVEL LIFTING. SMALL DIFFERENCES IN FLOOR SLOPES MAY BE COMPENSATED FOR WITH SPECIAL LIFTING PADS. ANY MAJOR SLOPE CHANGES WILL AFFECT THE LOW PROFILE HEIGHT OF THE LIFTING PADS AND / OR THE UNITS LEVEL LIFTING PERFORMANCE. IF A FLOOR IS OF QUESTIONABLE SLOPE, CONSIDER A SURVEY OF THE SIGHT AND / OR THE POSSIBILITY OF POURING A NEW LEVEL CONCRETE SLAB SECTION. SIMPLY STATED, FOR optimum LEVEL LIFTING, THE EQUIPMENT, AT BEST, CAN LIFT ONLY AS LEVEL AS THE FLOOR ON WHICH IT IS LOCATED... AND SHOULD NOT BE EXPECTED TO COMPENSATE FOR DRASTIC FLOOR SLOPE DIFFERENCES.

THE EQUIPMENT MUST BE INSTALLED ON A LEVEL CONCRETE FLOOR WITH A MINIMUM THICKNESS OF 6" ON GRADE, THE CONCRETE MUST BE AGED AT LEAST (28) TWENTY EIGHT DAYS PRIOR TO INSTALLATION AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 P.S.I. REFER TO INSTALLATION INSTRUCTIONS FOR ADDITIONAL REQUIRED SPECIFICATIONS OF FLOOR.

DO NOT INSTALL THIS UNIT ON ANY ASPHALT SURFACE.

DO NOT INSTALL THIS UNIT ON ANY SURFACE OTHER THAN CONCRETE CONFORMING TO THE MINIMUM SPECIFICATIONS STATED IN THE PRE-EXISTING FLOOR REQUIREMENTS SECTION.

DO NOT INSTALL THIS UNIT ON EXPANSION SEAMS OR ON CRACKED, DEFECTIVE CONCRETE. CHECK WITH BUILDING ARCHITECT.

DO NOT INSTALL THIS UNIT ON A SECOND FLOOR OR ANY GROUND FLOOR WITH A BASEMENT BENEATH WITHOUT WRITTEN AUTHORIZATION FROM THE BUILDING ARCHITECT.

INSTALL THIS EQUIPMENT ON CONCRETE ONLY

IF, FOR ANY REASON, A NEW CONCRETE SLAB SECTION IS REQUIRED, THE MINIMUM THICKNESS, COMPRESSIVE STRENGTH, AND AGING ARE MANDATORY. FOR YOUR PROTECTION, CERTIFIED STRENGTH DOCUMENTATION SHOULD BE OBTAINED FROM THE FIRM WHO SUPPLIES THE CONCRETE MIXTURE AT THE TIME OF THE POUR. SPECIAL CONSIDERATION SHOULD BE MADE TO THE JOINING OF THE EXISTING FLOOR AND THE NEW SECTION BEING ADDED. CHECK WITH BUILDING ARCHITECT. THE SUGGESTED SIZE OF THE NEW CONCRETE SLAB SECTION IS SHOWN IN THE NEW SLAB RECOMMENDATIONS SECTION.

CAUTION

THE EQUIPMENT DESCRIBED IN THIS MANUAL COULD BE POTENTIALLY DANGEROUS IF IMPROPERLY OR CARELESSLY OPERATED. FOR THE PROTECTION OF ALL PERSONS AND EQUIPMENT, ONLY COMPETENTLY TRAINED OPERATORS WHO ARE CRITICALLY AWARE OF THE PROPER OPERATING PROCEDURES, POTENTIAL DANGERS, AND SPECIFIC APPLICATION OF THIS EQUIPMENT SHOULD BE ALLOWED TO TOUCH THE CONTROLS AT ANY TIME.

SAFE OPERATION OF THIS EQUIPMENT IS DEPENDENT ON USE, IN COMPLIANCE WITH THE OPERATION PROCEDURES OUTLINED IN THIS MANUAL ALONG WITH THE MAINTENANCE AND INSPECTION PROCEDURES WITH CONSIDERATION OF PREVAILING CONDITIONS.

THE EQUIPMENT DESCRIBED IN THIS MANUAL IS NEITHER DESIGNED NOR INTENDED FOR ANY APPLICATION ALONE OR IN CONJUNCTION WITH ANY OTHER EQUIPMENT THAT INVOLVES THE LIFTING OR MOVING OF PERSONS.

ALWAYS CONSULT THE VEHICLE LIFTING GUIDE FOR THE PROPER LIFTING POINTS ON ANY VEHICLE. THESE GUIDES ARE AVAILABLE FROM THE VEHICLE MANUFACTURERS.

AFTER LIFTING THE VEHICLE TO THE DESIRED HEIGHT, ALWAYS LOWER THE UNIT ONTO THE MECHANICAL SAFETIES. THE FORMING OF GOOD OPERATIONAL WORK HABITS WILL ELIMINATE OVERSIGHTS IN THE USE OF PROVIDED SAFETY DEVICES.
MOHAWK MODEL PARALLELOGRAM

PARALLELOGRAM SPECIFICATIONS

### MODEL SPECIFIC SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Capacity (x 1000 lbs)</th>
<th>Track Length (ft)</th>
<th>Working Pressure (psi)</th>
<th>Relief Pressure (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>36-28-S / 36-28-F</td>
<td>36</td>
<td>28</td>
<td>2150</td>
<td>2450</td>
</tr>
<tr>
<td>38-26-S / 38-26-F</td>
<td>38</td>
<td>26</td>
<td>2200</td>
<td>2500</td>
</tr>
<tr>
<td>40-28-S / 40-28-F</td>
<td>40</td>
<td>28</td>
<td>2350</td>
<td>2650</td>
</tr>
<tr>
<td>40-35-S / 40-35-F</td>
<td>40</td>
<td>35</td>
<td>1800</td>
<td>2650</td>
</tr>
<tr>
<td>45-35-S / 45-35-F</td>
<td>45</td>
<td>35</td>
<td>1950</td>
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<tr>
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<td>26</td>
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</tr>
<tr>
<td>50-32-S / 50-32-F</td>
<td>50</td>
<td>32</td>
<td>2100</td>
<td>2400</td>
</tr>
<tr>
<td>50-35-S / 50-35-F</td>
<td>50</td>
<td>35</td>
<td>2150</td>
<td>2450</td>
</tr>
<tr>
<td>50-42-S / 50-42-F</td>
<td>50</td>
<td>42</td>
<td>1750</td>
<td>2000</td>
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<tr>
<td>50-48-S / 50-48-F</td>
<td>50</td>
<td>48</td>
<td>1800</td>
<td>2050</td>
</tr>
<tr>
<td>75-26-S / 75-26-S</td>
<td>75</td>
<td>26</td>
<td>2850</td>
<td>3200</td>
</tr>
<tr>
<td>75-30-S / 75-30-F</td>
<td>75</td>
<td>30</td>
<td>2875</td>
<td>3200</td>
</tr>
<tr>
<td>75-35-S / 75-35-F</td>
<td>75</td>
<td>35</td>
<td>2900</td>
<td>3200</td>
</tr>
<tr>
<td>75-42-S / 75-42-F</td>
<td>75</td>
<td>42</td>
<td>2150</td>
<td>2500</td>
</tr>
<tr>
<td>75-48-S / 75-48-F</td>
<td>75</td>
<td>48</td>
<td>2200</td>
<td>2500</td>
</tr>
<tr>
<td>100-42-S / 100-42-F</td>
<td>100</td>
<td>42</td>
<td>2850</td>
<td>3100</td>
</tr>
<tr>
<td>100-48-S / 100-48-F</td>
<td>100</td>
<td>48</td>
<td>2875</td>
<td>3100</td>
</tr>
</tbody>
</table>

### SUGGESTED SITE SELECTION / BAY SIZE

<table>
<thead>
<tr>
<th>WIDTH</th>
<th>DEPTH</th>
<th>HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 FT</td>
<td>40 FT</td>
<td>20 FT MIN</td>
</tr>
</tbody>
</table>

**NOTE**

THE PLACEMENT OF THE UNIT IS DETERMINED BY THE TYPE (LENGTH, WIDTH, HEIGHT) OF VEHICLE BEING SERVICED AS WELL AS THE CLEARANCES DESIRED AROUND THE LIFT AND THE VEHICLES BEING SERVICED.

### WEJ-IT ANCHOR SPECIFICATIONS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>DRILL DEPTH</th>
<th>DRILL SIZE</th>
<th>DRILL SIZE MIN.</th>
<th>MAX.</th>
<th>TORQUE (N/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 INCH</td>
<td>6 INCH MIN *</td>
<td>3/4 INCH</td>
<td>.775 INCH</td>
<td>.787 INCH</td>
<td>3-5 TURNS PAST HAND TIGHT</td>
</tr>
</tbody>
</table>

### POWER UNIT SPECIFICATIONS

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>FPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODEL</td>
<td>M-12193A</td>
</tr>
<tr>
<td>POWER UNIT TYPE</td>
<td>VERTICAL (T-STYLE)</td>
</tr>
<tr>
<td>MOTOR VOLTAGE</td>
<td>208-230 / 460 VAC</td>
</tr>
<tr>
<td>FLA @ RATED CAPACITY</td>
<td>60 / 30 AMPS</td>
</tr>
<tr>
<td>MOTOR HORSEPOWER</td>
<td>20 HP</td>
</tr>
<tr>
<td>MOTOR PHASE</td>
<td>THREE</td>
</tr>
<tr>
<td>MOTOR FREQUENCY</td>
<td>60 HZ</td>
</tr>
<tr>
<td>MOTOR SPEED</td>
<td>1800 RPM</td>
</tr>
<tr>
<td>PUMP FLOW</td>
<td>10.2 @ 1800 RPM</td>
</tr>
<tr>
<td>RELIEF VALVE SETTING</td>
<td>DEPENDANT ON LIFT MODEL</td>
</tr>
<tr>
<td>WORKING PRESSURE</td>
<td>DEPENDANT ON LIFT MODEL</td>
</tr>
<tr>
<td>RESERVOIR CAPACITY</td>
<td>30 GALLONS</td>
</tr>
<tr>
<td>HYDRAULIC FLUID MEDIUM</td>
<td>Dexron III ATF</td>
</tr>
</tbody>
</table>

### PRE-EXISTING FLOOR REQUIREMENTS

**NEW FLOOR SECTION**

<table>
<thead>
<tr>
<th>THICKNESS</th>
<th>SLAB SIZE</th>
<th>CUBIC YARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 INCHES</td>
<td>12 FT x (LIFT LENGTH + 12&quot;)</td>
<td>VARIABLE</td>
</tr>
</tbody>
</table>

IF, FOR ANY REASON, A NEW CONCRETE SLAB SECTION IS REQUIRED, MINIMUM THICKNESS, COMPRESSIVE STRENGTH, AND PROPER AGING IS MANDATORY.

THE NEW SLAB SECTION MUST BE TOTALLY SURROUNDED BY AN EXISTING CONCRETE FLOOR THAT IS STRUCTURALLY SOUND. CERTIFIED STRENGTH DOCUMENTATION SHOULD BE OBTAINED FROM THE FIRM WHO SUPPLIES THE CONCRETE MIXTURE AT THE TIME OF THE POUR.

NEVER HAND MIX THE CONCRETE. REFER TO NEW SLAB RECOMMENDATIONS SECTION.
## PARALLELOGRAM PACKING LIST

*** ALSO SEE PACKING DRAWINGS IN END OF MANUAL ***

<table>
<thead>
<tr>
<th>ORDER NUMBER</th>
<th>PART NUMBER</th>
<th>PART DESCRIPTION</th>
<th>QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PLATFORM ASSEMBLY</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RAMP WELDMENT</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WHEEL STOP WELDMENT</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FLIP PLATE</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FLIP PLATE SUPPORT</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CONTROL CONSOLE</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FLOOR SERVICE COVER</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FLOOR SERVICE COVER BRACKET</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PARTS BOX</td>
<td>1</td>
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</tr>
</tbody>
</table>

### PARTS BOX CONTENTS


# RECOMMENDED TOOL LIST

<table>
<thead>
<tr>
<th>TOOL DESCRIPTION</th>
<th>USED IN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FLOOR LAYOUT</strong></td>
<td></td>
</tr>
<tr>
<td>30 FT TAPE MEASURE</td>
<td>FLOOR LAYOUT / VERIFY LEVEL ASSEMBLY</td>
</tr>
<tr>
<td>CHALK LINE</td>
<td>FLOOR LAYOUT</td>
</tr>
<tr>
<td>SOAP STONE</td>
<td>FLOOR LAYOUT</td>
</tr>
<tr>
<td>4 FT BUBBLE LEVEL</td>
<td>VERIFY LEVEL FLOORING / PREDICT SHIMMING</td>
</tr>
<tr>
<td><strong>MOVING AND UNPACKING</strong></td>
<td></td>
</tr>
<tr>
<td>LIFTING DEVICE, 4 TON</td>
<td>LIFTING / MOVING HEAVY ITEMS</td>
</tr>
<tr>
<td>WRENCH &amp; SOCKET, 1 1/8 INCH</td>
<td>3/4 INCH PACKING BOLTS</td>
</tr>
<tr>
<td>CRESCENT WRENCH, 1 1/8 INCH</td>
<td>3/4 INCH PACKING BOLTS</td>
</tr>
<tr>
<td>TIN SNIPS</td>
<td>PACKAGING BANDING</td>
</tr>
<tr>
<td><strong>PLATFORM SETUP &amp; DRILLING</strong></td>
<td></td>
</tr>
<tr>
<td>LIFTING DEVICE, 4 TON</td>
<td>LIFTING / MOVING HEAVY ITEMS</td>
</tr>
<tr>
<td>LEAD CORD OR AIRLINE, 100 FT LG</td>
<td>OPERATE ELECTRICAL/PNEUMATIC TOOLS</td>
</tr>
<tr>
<td>PORTA POWER</td>
<td>TO ADJUST ALIGNMENT OF PLATFORMS</td>
</tr>
<tr>
<td>PRY BAR</td>
<td>MOVING HEAVY ITEMS</td>
</tr>
<tr>
<td>HAMMER DRILL</td>
<td>DRILLING CONCRETE</td>
</tr>
<tr>
<td>HAND DRILL FOR 3/4 INCH BIT</td>
<td>DRILLING CONCRETE BEHIND LEGS</td>
</tr>
<tr>
<td>DRILL BIT, 3/4 INCH</td>
<td>DRILLING CONCRETE</td>
</tr>
<tr>
<td>DRILL BIT, 3/4 INCH, SHORT</td>
<td>DRILLING CONCRETE BEHIND LEGS</td>
</tr>
<tr>
<td>DRILL BIT, 3/4 INCH, REBAR CUTTING TYPE</td>
<td>DRILLING CONCRETE AND REBAR</td>
</tr>
<tr>
<td>MEDIUM HAMMER</td>
<td>3/4 INCH WEJ-IT ANCHORS</td>
</tr>
<tr>
<td>WRENCH &amp; SOCKET, 1 1/8 INCH</td>
<td>3/4 INCH WEJ-IT ANCHORS</td>
</tr>
<tr>
<td>4 FT BUBBLE LEVEL</td>
<td>VERIFY LEVEL ASSEMBLY</td>
</tr>
<tr>
<td><strong>ASSEMBLE ATTACHMENTS</strong></td>
<td></td>
</tr>
<tr>
<td>WRENCH &amp; SOCKET, 13/16 INCH</td>
<td>ASSEMBLE STOPS, FLIP PLATES, ETC, 7/16 BOLTS</td>
</tr>
<tr>
<td>WRENCH &amp; SOCKET, 3/4 INCH</td>
<td>ASSEMBLE LIGHTS, ETC, 1/2 BOLTS</td>
</tr>
<tr>
<td><strong>CONSOLE &amp; UNDERGROUND ROUTING</strong></td>
<td></td>
</tr>
<tr>
<td>FISH WIRE, 30’</td>
<td>FISHING WIRES THRU CONDUIT</td>
</tr>
<tr>
<td>MECHANICS WIRE</td>
<td>FISHING WIRES THRU CONDUIT</td>
</tr>
<tr>
<td>DUCT TAPE</td>
<td>FISHING WIRES THRU CONDUIT</td>
</tr>
<tr>
<td>FLAT HEAD SCREW DRIVER, SMALL</td>
<td>CONNECTING WIRES @ CONSOLE</td>
</tr>
<tr>
<td>CUTTING KNIFE</td>
<td>CUTTING AIR LINES</td>
</tr>
<tr>
<td>WIRE CRIMPERS</td>
<td>WIRE CRIMPS @ LIFT CONNECTIONS</td>
</tr>
<tr>
<td>WRENCH &amp; SOCKET, 3/8 INCH</td>
<td>REMOVE PANELS FROM CONSOLE, 1/4 BOLTS</td>
</tr>
<tr>
<td>TABLE VISE</td>
<td>ASSEMBLY OF RE-USABLE HOSE FITTINGS</td>
</tr>
<tr>
<td>LARGE 2’ LONG CRESCENT WRENCH</td>
<td>ASSEMBLY OF RE-USABLE HOSE FITTINGS</td>
</tr>
</tbody>
</table>
BEFORE INSTALLING A LIFT

IMPORTANT

BEFORE INSTALLING A MOHAWK LIFT THERE ARE A FEW ITEMS THAT MUST BE INSPECTED. EACH REPAIR SHOP BAY IS DIFFERENT. IN AN ATTEMPT TO PREVENT OVERSIGHTS, ALL OF THE FOLLOWING INFORMATION IS TO BE VERIFIED AND INVESTIGATED.

OVERHEAD OBSTRUCTIONS

THE AREA WHERE THE LIFT WILL BE LOCATED SHALL BE FREE OF OBSTRUCTIONS, HEATERS, BUILDING SUPPORTS, ELECTRICAL CONDUIT; ALL OF THESE ITEMS ARE TO BE TWENTY (20) FEET ABOVE THE BAY FLOOR.

DEFECTIVE CONCRETE

VISUALLY INSPECT THE BAY FLOOR AREA. THE UNIT CANNOT BE INSTALLED ON EXPANSION SEAMS, OR CONCRETE THAT IS CRACKED. THE UNIT IS ONLY AS STRONG AS THE FLOOR IT IS INSTALLED ON.

FLOOR REQUIREMENTS

THIS INFORMATION IS IN THE GENERAL FLOOR REQUIREMENTS. IF THE BAY FLOOR DOES NOT CONFORM TO THESE SPECIFICATIONS, REFER TO INSTALLATION INSTRUCTIONS.

POWER SUPPLIES

THE STANDARD POWER UNIT IS 220 VAC THREE PHASE. THE USER IS TO SUPPLY CIRCUIT PROTECTION, DISCONNECTING MEANS AND LOCKOUT TAGOUT FOR INCOMING POWER TO LIFT. REFER TO THE POWER UNIT SPECIFICATIONS SECTION. REQUIREMENTS MAY VARY ON SPECIAL ORDERS.

ALSO, AN AIR SUPPLY OF 60 PSI MINIMUM @ 25 CFM MINIMUM IS ALSO REQUIRED. THE USER IS TO PROVIDE DRYER, MAIN SHUTOFF, FILTER/LUBRICATOR/REGULATOR FOR INCOMING AIR SUPPLY TO LIFT.

THE CONTROL CONSOLE WILL REQUIRE THE ELECTRICAL POWER SUPPLY AND PNEUMATIC AIR SUPPLY FOR THE UNIT. NOTE THE LOCATION OF THE POWER SUPPLY.

BAY SIZE

TO OPTIMIZE SHOP SPACE, IT IS ADVISED TO LOCATE A VEHICLE IN THE BAY PRIOR TO LAYOUT. NOTE WALKWAYS, OVERHEAD OBSTRUCTIONS, AND ABILITY TO MOVE EQUIPMENT IN THE BAY AREA.

REQUIREMENTS MAY VARY ON SPECIAL ORDERS.

SPECIFICATIONS

REFERENCE ALL SPECIFICATIONS PRIOR TO INSTALLING A LIFT.
INSTALLATION INSTRUCTIONS

IMPORTANT!!

READ THIS MANUAL IN ITS ENTIRETY. BE FAMILIAR WITH PART NAMES AND HAVE A GOOD UNDERSTANDING OF HOW THIS UNIT IS TO BE ASSEMBLED AND OF HOW INDIVIDUAL PARTS OPERATE, BEFORE ASSEMBLING THE UNIT. REFER TO ANSI/ALI ALIS, SAFETY REQUIREMENTS FOR INSTALLATION AND SERVICE OF AUTOMOTIVE LIFTS.

REFER TO ATTACHED DRAWING SET FOR FLOOR PREPARATION. VERIFY THAT FLOOR DIMENSIONALLY CONFORMS TO SPECIFICATIONS PRIOR TO BRING LIFT COMPONENTS INTO BAY.

USING A CHALK LINE, LAYOUT THE FLOOR DIMENSIONS WHERE THE UNIT WILL BE LOCATED.

MOVE THE PACKED UNIT NEAR THE SETUP AREA AND COLLECT ALL NEEDED TOOLS (SEE RECOMMENDED TOOL LIST).

PLACE CONSOLE IN VICINITY WHERE IT WILL BE LOCATED.

FISH ALL HYDRAULIC LINES, PNEUMATIC LINES AND ELECTRICAL CABLES AS SHOWN IN DIAGRAM ENCLOSED. DO NOT TRIM ANY EXCESS UNTIL CONNECTIONS ARE READY TO BE MADE.

--- IMPORTANT NOTE ON FORKLIFTS ---

EACH PLATFORM WEIGHTS APPROX 8000 LBS. IT IS HIGHLY RECOMMENDED TO USE A SINGLE 4 TON FORKLIFT TO MOVE THESE. A PAIR OF 2 TON FORKLIFTS CAN PERFORM THE SAME FUNCTION, BUT MANEUVERABILITY WILL BE A CHALLENGE AND SHOULD BE EXPECTED. ENSURE THAT THERE IS PROPER CLEARANCE IN THE BAY TO MANEUVER FORKLIFTS WHERE THEY WILL HAVE TO GO TO POSITION THE PLATFORMS PROPERLY.

CUT THE BANDING AND OPEN THE PARTS. VERIFY PARTS BOX CONTENTS. REFER TO PARTS PACKING DRAWING SECTION IN THIS MANUAL. IF MISSING PARTS ARE NOTED, THEY CAN BE OBTAINED BY CALLING 1-800-833-2006 OR BY CONTACTING YOUR LOCAL MOHAWK DISTRIBUTOR.

POSITION THE PLATFORMS ON THE FLOOR. ENSURE THAT THE ENDS HAVING THE CONNECTION LINES ARE AT THE UNDERGROUND CONDUITS. A SPACING OF 45 INCHES (+1/4 / –0) IS REQUIRED BETWEEN PLATFORMS IN BOTH LOWERED AND RAISED POSITIONS. POSITIONING IS APPROXIMATE FOR NOW UNTIL THE LIFT IS CONNECTED AND CYCLED UP AND DOWN.

CONNECT ALL ELECTRICAL, PNEUMATIC AND HYDRAULIC LINES AT BASE OF PLATFORMS.

CONNECT ALL ELECTRICAL, PNEUMATIC AND HYDRAULIC LINES AT CONSOLE. REFER TO DIAGRAMS IN BACK OF MANUAL FOR ELECTRICAL CONNECTIONS INSIDE OF CONSOLE ENCLOSURE.

ENSURE THAT ALL HYDRAULIC AND AIR LINE CONNECTIONS ARE TIGHT TO PREVENT LEAKAGE.

--- AT THIS TIME HAVE A QUALIFIED ELECTRICIAN CONNECT THE POWER SUPPLY TO THE UNIT ---

REFER TO ELECTRICAL SCHEMATIC FOR WIRING OF POWER UNIT TO POWER SUPPLY.

VERIFY PROPER MOTOR ROTATION BY JOGGING THE RAISE BUTTON. ENSURE THAT THE MOTOR IS ROTATING CLOCK-WISE AS VIEWED FROM THE TOP OF THE MOTOR. REVERSE INCOMING POWER LEADS IF ROTATION IS REVERSED.

ENSURE THAT THERE IS PROPER AIR SUPPLY TO CONSOLE AIR REGULATOR (SET REGULATOR TO 80 PSI).

REVIEW THE CONTROL INSTRUCTIONS AND OPERATION PROCEDURES TO ACHIEVE A GOOD UNDERSTANDING OF HOW TO OPERATE THE LIFT.

PRESS THE RAISE BUTTON AND THE F4 BUTTON SIMULTANEOUSLY. THE PLATFORMS WILL NOT RAISE IMMEDIATELY UNTIL THE HYDRAULIC LINES FROM THE CONSOLE TO THE LIFT ARE FILLED WITH HYDRAULIC FLUID. ONCE MOTION IN THE PLATFORMS IS SEEN, PRESS THE RAISE BUTTON ONLY, CONTINUE PRESSING THE RAISE BUTTON UNTIL THE PLATFORMS ARE AT FULL HEIGHT.

PRESS THE LOWER BUTTON AND THE PLATFORMS WILL RAISE FOR A FEW SECONDS, RELEASE THE LOCKS, THEN LOWER. IF THEY DO NOT LOWER, VERIFY THE “LOCKS OPEN” REED SWITCHES ARE ADJUSTED PROPERLY. REFER TO FIGURE IN BACK OF MANUAL.

PRESS THE LOWER BUTTON TO LOWER LIFT COMPLETELY. THE CONTROL SCREEN SHOULD READ ZERO HEIGHT FOR BOTH PLATFORMS WHEN LIFT IS FULLY LOWERED. IF THE PLATFORMS ARE STILL READING A VALUE WHEN FULLY LOWERED, THE HOME SWITCHES IN THE PLATFORMS MAY NEED TO BE ADJUSTED. REFER TO FIGURE IN BACK OF MANUAL.

PRESS THE UP BUTTON AND RAISE THE LIFT FULLY. WAIT A FEW MINUTES, THEN PRESS LOWER AND LOWER FULLY. REPEAT THIS A FEW TIMES UNTIL THE PLATFORMS MOVE SMOOTHLY. (THIS WILL BLEED THE AIR FROM THE HYDRAULIC SYSTEM). PLATFORMS SHOULD “ZERO” OUT EVERYTIME THE LIFT IS FULLY LOWERED.

RAISE AGAIN AND WITNESS THAT THE PARK LIGHT ILLUMINATES WHEN THE LOCKS FALL INTO THE LATCHES. RELEASE UP BUTTON WHEN PARK LIGHT ACTIVATES AND PRESS THE PARK BUTTON. HOLD PARK BUTTON UNTIL THE CONTROL SCREEN READING STOP CHANGING. IF THE PARK LIGHT DOES NOT COME ON, OR IF AN ERROR MESSAGE APPEARS WHEN ATTEMPTING TO PARK THE LIFT, THE “LOCKS CLOSED” REED SWITCHES MAY NEED TO BE ADJUSTED. REFER TO FIGURE IN BACK OF MANUAL.

RAISE THE LIFT A FEW MORE TIMES TO VERIFY THAT IT IS RUNNING SMOOTHLY WITHOUT ERRORS.
PLATFORM SHIMMING

LEVEL THE PLATFORMS BY INSERTING THE SUPPLIED SHIMS UNDER THE BASE FOOTINGS AROUND THE WEJ-IT ANCHORS. THE LIFT MUST BE LEVEL BOTH FRONT TO REAR AND SIDE TO SIDE. A LEVELING DEVICE AND A MEASURING TAPE MUST BE USED. REFER TO FIGURE IN BACK OF MANUAL.

ENSURE THAT PLATFORMS ARE SQUARE AND LEVEL AT FULLY RAISED AND FULLY LOWERED POSITION. A SPACING OF 45 INCHES (+1/4 / –0) IS REQUIRED BETWEEN PLATFORMS IN BOTH LOWERED AND RAISED POSITIONS. USE HORSESHOE SHAPED SHIMS AS NEEDED TO LEVEL AND SQUARE THE PLATFORMS FIRST, THEN SHIFT PLATFORMS AND SHIM TO OBTAIN THE 45 INCH DIMENSION. REFER TO PLATFORM SHIMMING DIAGRAM FURTHER ON IN THIS MANUAL.

SECURE THE PLATFORMS TO THE BAY FLOOR USING THE 3/4 x 6 INCH WEJ-IT ANCHORS. REFER TO THE FOLLOWING: “DRILLING THE MOUNTING HOLES” AND WEJ-IT INSTALLATION DIAGRAMS AND INSTRUCTIONS IN THE END OF THIS MANUAL. OBSERVE TIGHTENING SEQUENCE DEPICTED IN INSTALLATION DRAWINGS (TIGHTEN BOLTS FROM CENTER OF BASE OUTWARD TO ENDS).

--- WARNING ---

FAILURE TO FOLLOW THE INSTRUCTIONS FOR DRILLING THE MOUNTING HOLES AND PROPERLY INSTALLING THE WEJ-IT ANCHORS MAY RESULT IN COLLAPSE OF THE LIFT AND/OR FATAL INJURY. THIS LIFT IS ONLY AS STRONG AS THE WEJ-ITS THAT HOLD IT TO THE CONCRETE FLOOR. ENSURE THAT THE WEJ-IT ANCHORS ARE INSTALLED PROPERLY!

--- IMPORTANT ---

DRILLING THE MOUNTING HOLES

- REFERENCE ALL FIGURES PERTAINING TO DRILLING, WEJ-IT WARNINGS, AND INSTALLATION INSTRUCTIONS.

- WHEN DRILLING THE HOLES, USE A SHARP DRILL BIT (PER ANSI STANDARD) TO PREVENT DRILLING AN UNDERSIZED HOLE. DRILL THE HOLE EQUAL TO THE LENGTH OF THE WEJ-IT ANCHOR. BLOW OUT THE HOLE WITH SHOP AIR, OR VACUUM.

- WHEN INSERTING THE WEJ-IT ANCHORS, INSERT THEM SO THAT THE WASHER RESTS AGAINST THE POST FOOTING. TIGHTEN THE NUT 3 TO 5 FULL TURNS PAST HAND TIGHT.

- NEVER USE AN IMPACT TOOL TO TIGHTEN THE WEJ-IT ANCHORS. USE A WRENCH ONLY.

- MAKE SURE THE CONCRETE IS SOLID WHEN DRILLING. CRACKS AND EXPANSION SEAMS REDUCE THE EFFECTIVENESS OF THE WEJ-IT ANCHOR. NEVER INSTALL THE ANCHOR UNDER THESE CONDITIONS.

- MATCH DRILL SIX 3/4-INCH HOLES THRU THE BASE PLATE OF THE MAIN SIDE POST. INSERT AND TIGHTEN THE WEJ-IT ANCHOR 3-5 FULL TURNS PAST HAND TIGHT.

- INSURE THE INSIDE DIMENSIONS BETWEEN THE MAIN AND OFF SIDE POST IS STILL CORRECT.

- MATCH DRILL SIX 3/4-INCH HOLES THRU THE BASE PLATE OF THE OFF SIDE POST. INSERT AND TIGHTEN THE WEJ-IT ANCHOR 3-5 FULL TURNS PAST HAND TIGHT.

AFTER LIFT IS ANCHORED TO FLOOR, VERIFY SMOOTH OPERATION UP AND DOWN AGAIN.

ASSEMBLY ANY REMOVE COVERS TO LIFT. ATTACH AUTOMATIC WHEEL CHOCKS TO ENDS OF PLATFORMS WITH HARDWARE SUPPLIED.

APPLY SEALING FOAM TO UNDERGROUND CONDUIT CONNECTIONS AT LIFT AND AT CONSOLE.

PLACE COVERS OVER FLOOR SERVICES AT END OF PLATFORMS. ANCHOR RAMPS TO FLOOR (FOR SURFACE MOUNT LIFT ONLY).

ATTACH ALL COVERS TO CONSOLE.
HOW THIS LIFT OPERATES:

THIS LIFT HAS BASICALLY THREE MAIN FUNCTIONS. THE TASKS OF EACH OF THESE FUNCTIONS IS DESCRIBED BELOW:

- **RAISE PLATFORMS** – RAISES BOTH PLATFORMS SYNCHRONOUSLY WHILE BUTTON IS PRESSED.
- **LOWER PLATFORMS** – RAISES BOTH PLATFORMS FOR A FEW SECONDS, RELEASES ALL MECHANICAL LOCKS, THEN CONTINUES TO LOWER BOTH PLATFORMS SYNCHRONOUSLY WHILE BUTTON IF PRESSED.
- **PARK PLATFORMS** – LOWERS BOTH PLATFORMS ONTO MECHANICAL LOCKS. THIS FUNCTION ONLY OPERABLE WHEN THE BUTTON IS ILLUMINATED.

EACH OPERATION REQUIRES THE LIFT UNIT TO DETECT AND ENSURE CERTAIN CONDITIONS ARE MET IN ORDER TO OPERATE. UNDERSTANDING HOW THESE CONDITIONS EFFECT THE PERFORMANCE (OR LACK OF PERFORMANCE) OF THIS LIFT WILL GREATLY BENEFIT THE USER IN PROPERLY OPERATING AND TROUBLESHOOTING THIS LIFT. THESE CONDITIONS ARE AS FOLLOWS:

- **ADEQUATE AIR SUPPLY:** A MINIMUM OF 60 PSI AIR IS REQUIRED TO ACTIVATE THE LOCK RELEASES ON THIS LIFT. IF PRESSURIZED AIR IS NOT SUPPLIED, CONTROL DISPLAY SCREEN WILL GIVE AN ERROR MESSAGE AND WILL NOT ALLOW ANY MAIN FUNCTIONS TO OPERATE UNTIL THIS IS CORRECTED.

- **ENCODER PRESENCE:** EACH PLATFORM HAS A ROTARY ENCODER THAT PERFORMS COUNTS AS THE LIFT IS RAISED AND LOWERED. THESE ARE THE HEART OF THE SYNCHRONIZATION OF THIS LIFT. IF READINGS ARE NOT RECEIVED FROM THE LIFT TO THE CONTROL CONSOLE FROM THESE ENCODERS, THE CONTROL DISPLAY SCREEN WILL GIVE AN ERROR MESSAGE AND WILL NOT ALLOW ANY MAIN FUNCTIONS TO OPERATE UNTIL THIS IS CORRECTED.

- **SYNCHRONOUS LIMITS:** WHILE RECEIVING ENCODERS COUNTS FROM EACH PLATFORM, THE CONTROLS ALSO VERIFY THAT THESE COUNTS ARE WITHIN A CERTAIN DEGREE OF TOLERANCE TO MAINTAIN LEVEL AND SYNCHRONOUS LIFTING. IF THE COUNTS ARE NOT MAINTAINED WITHIN A DIFFERENTIAL VALUE OF ~100, THEN THE CONTROL DISPLAY SCREEN WILL GIVE AN ERROR MESSAGE AND WILL NOT ALLOW ANY MAIN FUNCTIONS TO OPERATE UNTIL THIS IS CORRECTED.

- **LOCKS RELEASED:** ON EACH LOCK RELEASE AIR CYLINDER, THERE IS A REED SWITCH THAT DETECTS WHEN THE LOCK IS FULLY RELEASED. ALL THESE LOCK RELEASE REED SWITCHES MUST BE ACTIVATED IN ORDER FOR THE LIFT TO LOWER, OTHERWISE ANY LOWERING OPERATION WILL HALT.

- **LOCKS ENGAGED:** ON EACH LOCK RELEASE AIR CYLINDER, THERE IS A REED SWITCH THAT DETECTS WHEN THE LOCK IS FULLY ENGAGED. ALL THESE LOCK ENGAGE REED SWITCHES MUST BE ACTIVATED IN ORDER FOR THE LIFT PARK LIGHT TO ILLUMINATE AND ALLOW THE LIFT TO BE PARKED ON THE MECHANICAL LOCKS.

- **HOME POSITION:** AT THE END OF EACH PLATFORM IS A SWITCH THAT IS ACTIVATED WHEN EACH PLATFORM IS FULLY LOWERED. THESE SWITCHES “ZERO” OUT THE ENCODER COUNTS FOR EACH PLATFORM AND TELL THE SYSTEM THAT THE LIFT IS IN “HOME” POSITION.

- **CONTROL DISPLAY STATUS:** THE DISPLAY SHOWS ERROR MESSAGES AND THE STATUS OF THE LIFT. SOME MESSAGES MUST BE CANCELLED IN ORDER FOR THE LIFT TO BE IN OPERATION MODE. ALSO, WHILE LIFTING OR LOWERING, THE “COUNTING” HEIGHT OF THE PLATFORMS CAN BE SEEN. THIS WILL GIVE THE USER A GOOD INDICATION OF HOW SYNCHRONOUS THE PLATFORMS ARE MOVING AND WHEN THE UNIT HAS CEASED MOVEMENT (FOR PARKING).
PARALLELOGRAM CONTROL INSTRUCTIONS:
BELOW IS A QUICK REFERENCE CHART FOR THE CONTROLS ON THE PANEL:

FUNCTION KEYS:

F1: ACTIVATE AUXILIARY JACK HEIGHT
(CAN ONLY BE ACTIVATED IN HOME POSITION)
F2: DE-ACTIVATE AUXILIARY JACK STOP HEIGHT
(CAN ONLY BE ACTIVATED IN HOME POSITION)
F4: CLEAR ERROR FAULT AS NEEDED
F8: USER SETTINGS
F9: FACTORY SETTINGS
F10: PASSWORD

OPERATOR PUSH BUTTONS:

RAISE (BLACK): RAISES LIFT
LOWER (RED): RAISES LIFT ~2 SECONDS TO CLEAR MECHANICAL LOCKS, THEN LOWERS LIFT
PARK (AMBER): ONLY FUNCTIONS WHEN ILLUMINATED. LOWERS LIFT ONTO MECHANICAL LOCKS (AFTER ~2 SECOND DELAY)

DISCONNECT SWITCH:

DISCONNECTS POWER TO LIFT CONTROLS.
WARNING: POWER IS STILL “LIVE” TO BOTTOM OF DISCONNECT SWITCH WHEN IT IS OFF.
BEFORE SERVICING ANY ELECTRICAL COMPONENTS ON THIS LIFT, MAIN ELECTRICAL FEED TO LIFT MUST BE DISCONNECTED AND LOCKED OUT.

MANUAL OVER-RIDE CONTROLS: (EMERGENCY LOWERING)
(LOCATED WITHIN CONSOLE ENCLOSURE)

HAND PUMP: USED FOR RAISING LIFT OFF OF LOCKS IN CASE OF ELECTRICAL OUTAGE. MUST BE USED IN CONJUNCTION WITH DIRECTIONAL KNOB.
DIRECTIONAL KNOB (BLK): DETERMINES WHICH PLATFORM RAISES WITH MANUAL PUMP.
LEFT LOWERING KNOB (RED): LOWERS LEFT PLATFORM.
RIGHT LOWERING KNOB (RED): LOWERS RIGHT PLATFORM.
SAFETY TIPS

PLEASE POST THE AUTOMOTIVE LIFT SAFETY TIPS CARD, (A COPY IS INCLUDED IN THE PARTS BOX) WHERE THEY WILL BE CONSTANTLY REMINDED TO YOUR LIFT OPERATOR. FOR INFORMATION SPECIFIC TO THE LIFT, ALWAYS REFER TO THE MOHAWK MANUAL.

- INSPECT YOUR LIFT DAILY. NEVER OPERATE IT IF IT MALFUNCTIONS OR IF IT HAS BROKEN OR DAMAGED PARTS. REPAIRS SHOULD BE MADE WITH ORIGINAL MOHAWK PARTS.

- OPERATING CONTROLS ARE DESIGNED TO CLOSE WHEN RELEASED. DO NOT BLOCK OPEN OR OVERRIDE THEM.

- NEVER OVERLOAD YOUR LIFT BEYOND STATED LIFTING CAPACITY. RATED CAPACITY IS SHOWN ON NAMEPLATE AFFIXED TO THE LIFT.

- ONLY TRAINED AND AUTHORIZED PERSONNEL SHOULD DO POSITIONING OF VEHICLE AND OPERATION OF THE LIFT.

- DO NOT ALLOW CUSTOMERS OR BY-STANDERS TO OPERATE THE LIFT OR TO BE IN A LIFTING AREA DURING ITS OPERATION. ONLY PROPERLY TRAINED PERSONNEL SHOULD BE ALLOWED TO OPERATE LIFT.

- NEVER RAISE A VEHICLE WITH PERSONS INSIDE.

- ALWAYS KEEP LIFT AREA FREE OF OBSTRUCTIONS, DEBRIS, GREASE, AND OIL.

- PERFORM THE PRE-OPERATION CHECK LIST, PER INSTRUCTIONS, BEFORE RAISING VEHICLE TO DESIRED HEIGHT.

- BEFORE DRIVING VEHICLE ONTO THE LIFT, ENSURE THAT THE PLATFORMS ARE FULLY LOWERED (ZERO READINGS ON CONTROL DISPLAY FOR RIGHT AND LEFT PLATFORM ELEVATIONS).

- LOAD VEHICLE ON LIFT CAREFULLY. ONCE VEHICLE IS CENTERED ON PLATFORMS, SET THE BRAKES AND POSITION THE WHEEL CHOCKS AROUND THE TIRES. RAISE LIFT TO DESIRED WORKING HEIGHT, THEN PARK LIFT. VEHICLE IS NOW READY TO BE SERVICED.

- NOTE THAT WITH SOME VEHICLES, THE REMOVAL OR INSTALLATION OF COMPONENTS MAY CAUSE A CRITICAL SHIFT IN THE CENTER OF GRAVITY, AND RESULT IN RAISED VEHICLE INSTABILITY. REFER TO THE VEHICLE MANUFACTURER’S SERVICE MANUAL FOR RECOMMENDED PROCEDURES WHEN VEHICLE COMPONENTS ARE REMOVED.

- BEFORE LOWERING LIFT, BE SURE TOOL TRAY’S, STANDS, ETC. ARE REMOVED FROM UNDER VEHICLE.

- BEFORE REMOVING VEHICLE FROM THE LIFT AREA, ENSURE THAT PLATFORMS ARE FULLY LOWERED AND WHEEL CHOCKS ARE REMOVED FROM TIRES.
PRE - OPERATION CHECK LIST

TRAINED OPERATOR

- The Operator must be fully trained and qualified to safely and effectively operate this equipment of this specific make and model.

ABSENCE OF OBSTRUCTIONS

- The total work area must be free of any and all obstructions and be generally clean. (Free of oil and debris)

VISUAL INSPECTION

- Thoroughly inspect the unit with a trained eye, noting any problem areas. Inspect the floor and the anchoring fasteners as well. Report any questionable items.

NO LOAD PERFORMANCE CHECK

- All mechanical safeties operate properly and consistently.
- No external fluid leaks.
- No bleed down.
- Effortless and simultaneous movement.
- Level lifting.
- Controls function properly.
- All safety mechanisms fully functional.

PREVIOUS DAY’S OPERATION REPORT

- Verify with supervisor that there was no problems experienced the previous day. If there were any problems, verify that all necessary repairs have been completed.

LIFTING PROCEDURES

PRE-OPERATION CHECK

- Perform pre-operation check list item by item.

POSITION VEHICLE

- Drive the vehicle onto the lift ensuring it is centered lengthwise and widthwise on the platforms. See ALL/LP-GUIDE.

-- WARNING --

Failure to place the vehicle’s center of gravity over the lifts platform centerline may cause serious injury to personnel and damage to equipment.

- Set brakes on vehicle and position wheel chocks around tires.

-- WARNING --

Do not place wheels, wheel chocks, or wing plow shoes on flip plates. Flip plates must be free to pivot during the whole lifting cycle. If these plates are obstructed, serious injury to personnel and damage to equipment may occur.

TO RAISE

- Engage the up-button on the control panel.
- Raise vehicle to the desired working height.
- Lower the unit onto the mechanical safeties using the park button. (Note, this button will function only when lit) continue pressing button until control display indicates zero movement.

NOTE: If for any reason, the lift becomes inoperative in the raised position with a vehicle on it, contact your local Mohawk representative or the Mohawk factory.

TO LOWER

- Inspect the lifting area to insure that all personnel and debris have been cleared from the lifting area.
- Engage the down-button on the control panel. (lift will raise approximately 2 seconds until the locks are released, then continue to lower)
- Lower unit to the desired working height.
- If work is complete, continue lowering the unit until both platforms are fully lowered and the control screen reads zero for both platform elevations.
MAINTENANCE PROCEDURES
QUALIFIED MAINTENANCE PERSONNEL ONLY

**DAILY**

- PERFORM THE PRE-OPERATION CHECK LIST.
- REPORT ANY AND ALL EQUIPMENT MALFUNCTIONS IMMEDIATELY.
- CLEAN ALL MOVING PARTS. IF OXIDIZATION IS OCCURRING USE A LIGHT LUBRICANT. (WD - 40 OR EQUIVALENT)
- KEEP AREA AROUND THIS EQUIPMENT FREE OF DIRT, SAND, WATER, ETC. ENSURE THAT WATER DRAINS AROUND LIFT ARE NOT CLOGGED.

**WEEKLY**

- PERFORM THE DAILY OPERATION CHECK LIST.
- WIPE CLEAN, THE CYLINDER RODS TO REMOVE ANY WEEPING OIL AND DUST.
- VERIFY FLUID LEVEL. WITH THE UNIT FULLY LOWERED, THE FLUID LEVEL WILL BE MIDRANGE ON THE FLUID LEVEL GAUGE. USE DEXRON III AS REPLACEMENT FLUID.
- ENSURE FLIP PLATES ROTATE FREELY AND HAVE SMOOTH OPERATION. (DO NOT USE GREASE)

**MONTHLY**

- INSPECT ALL HYDRAULIC COMPONENTS FOR LEAKS, DEFORMATION, WEAR OR CORROSION.
- TIGHTEN ALL FASTENERS AND HYDRAULIC FITTINGS AS REQUIRED.
  1. ALL O-RING BOSS (ORB) FITTINGS ARE TO BE TIGHTENED TO: 25-FOOT POUNDS TORQUE MINIMUM FOR #6 ORB AND 45-FOOT POUNDS TORQUE MINIMUM FOR #8 ORB.

2. ALL PIPE FITTINGS, IF LEAKING IS TO BE REMOVED, RE-SEALED, AND RE-INSTALLED. (SELECT - UNITE THREAD SEALANT OR EQUIVALENT ON FITTING THREADS)

- INSPECT ANCHOR CONDITIONS FOR ANY POSSIBLE CORROSION AND INSPECT THE FLOOR FOR ANY SIGNS OF FATIGUE OR FRACTURES.

**SEMI-ANNUAL**

- QUALIFY / RE-QUALIFY ALL PERSONNEL IN THE SAFE OPERATION OF THIS UNIT.
- VERIFY ALL FASTENERS TO PROPER TORQUE:
  FLIP PLATE BOLTS TO 70 FT-LB
  PIN RETAINING BOLTS TO 75 FT-LB
  ANCHORS (SEE ANCHOR SPECIFICATION SECTION)
- LUBRICATE ALL PIVOT PINS WITH A LIGHT LUBRICANT (WD-40 OR EQUIVALENT) ENSURING SMOOTH MOTION. DO NOT USE GREASE.

**ANNUALLY**

- CHECK YOUR HYDRAULIC FLUID ANNUALLY. EVERY FIVE YEARS REPLACE THE HYDRAULIC FLUID. ALWAYS USE A CLEAN FUNNEL AND FILTER. USE DEXRON III HYDRAULIC FLUID.
- INSPECT ALL LOAD PIVOT PINS FOR UNUSUAL OR EXCESSIVE WEAR. (REPLACE IF NEEDED, CONTACT MOHAWK PARTS DEPARTMENT)
- PERFORM THE DAILY, WEEKLY, AND MONTHLY MAINTENANCE PROCEDURES.
MANUAL OVERRIDE CONTROLS
QUALIFIED MAINTENANCE PERSONNEL ONLY

--- WARNING ---

THE MANUAL OVERRIDE CONTROLS ARE SUPPLIED TO THE USER IN THE EVENT OF POWER OUTTAGE OR OUT OF LEVEL CONDITIONS AND ARE NOT MEANT TO BE ROUTINELY USED TO CORRECT LIFT MALFUNCTIONS. IF THE LIFT EXPERIENCES MALFUNCTIONS OR FAULTS, CONTACT MOHAWK RESOURCES SERVICE DEPARTMENT.

WHEN YOU MAY NEED TO USE THESE CONTROLS:

- WHEN THE LIFT GIVES AN OUT OF PARALLEL FAULT AND YOU WISH TO RELEVEL THE PLATFORMS
- DURING A POWER OUTAGE, YOU WILL NEED TO LIFT THE PLATFORMS OFF THE LOCKS AND LOWER THE LIFT TO THE FLOOR.
- ONE PLATFORM DOES NOT OR WAS NOT FULLY LOWERED TO HIT THE HOME SWITCH AND YOU MAY WANT TO LOWER IT MANUALLY TO RESYNCHRONIZE THE PLATFORMS.

WHAT THESE CONTROLS DO:
(LOCATED WITHIN CONSOLE ENCLOSURE. SEE FIGURE ENCLOSED)

HAND PUMP: USED FOR RAISING LIFT OFF OF LOCKS IN CASE OF ELECTRICAL OUTAGE. MUST BE USED IN CONJUNCTION WITH DIRECTIONAL KNOB.

DIRECTIONAL KNOB (BLK): DETERMINES WHICH PLATFORM RAISES WITH MANUAL PUMP.

LEFT LOWERING KNOB (RED): LOWERS LEFT PLATFORM.

RIGHT LOWERING KNOB (RED): LOWERS RIGHT PLATFORM.

AIR BYPASS PROCEDURE:
(LOCATED WITHIN CONSOLE ENCLOSURE. SEE FIGURE ENCLOSED)

DURING MANUAL DESCENT OF LIFT, YOU MUST OVERRIDE THE LOCKS. TO DO THIS:

- TURN OFF THE AIR REGULATOR
- REMOVE BOTH YELLOW AIR CYLINDER TUBES FROM MANIFOLD BLOCK (SEE FIGURE)
- REMOVE SHORT JUMPER TUBE FROM RIGHT HAND SIDE OF REGULATOR BLOCK (SEE FIGURE)
- REPOSITION AIR CYLINDER TUBES TO RIGHT HAND SIDE OF REGULATOR BLOCK
- TURN ON THE AIR REGULATOR (LOCKS SHOULD DISENGAGE NOW IF LIFT RAISED HIGH ENOUGH ABOVE LOCK POSITION)
- WHEN COMPLETE WITH MANUAL ADJUSTMENTS, RETURN ALL TUBES TO THEIR NORMAL POSITIONS.
# TROUBLE SHOOTING

## WARNING!

NEVER ATTEMPT TO LOOSEN HYDRAULIC FITTINGS, OR OVERRIDE SAFETY DEVICES IN AN ATTEMPT TO CORRECT A PROBLEM. ALL TESTS ARE TO BE PERFORMED WITH NO VEHICLE.

<table>
<thead>
<tr>
<th>POSSIBLE CAUSE</th>
<th>SOLUTION</th>
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<tbody>
<tr>
<td><strong>NOT RAISING</strong></td>
<td></td>
</tr>
<tr>
<td>NO AIR TO LOCKS</td>
<td>ENSURE THAT SUFFICIENT PNEUMATIC PRESSURE (60 PSI) IS PROVIDED TO CONSOLE. CONNECTION IS AT REGULATOR WITHIN CONSOLE.</td>
</tr>
<tr>
<td>UNIT OVERLOADED</td>
<td>REFER TO LIFT SPECIFICATIONS AND CHECK WEIGHT OF VEHICLE TO ENSURE THAT IT IS NOT OVERLOADING THE RATING OF THE LIFT UNIT.</td>
</tr>
<tr>
<td>PRESSURE RELIEF CONTAMINATION</td>
<td>REFER TO POWER UNIT SPECIFICATIONS. RELIEF VALVE MAY NEED TO BE ADJUSTED TO PROPER PRESSURE. REMOVE AND CLEAN DEBRIS FROM VALVE ASSEMBLY IF NECESSARY.</td>
</tr>
<tr>
<td>INCORRECT VOLTAGE TO POWER UNIT.</td>
<td>REFER TO POWER UNIT SPECIFICATIONS. CONSULT AN ELECTRICIAN</td>
</tr>
<tr>
<td>REVERSE Rotation ON MOTOR</td>
<td>SWAP INCOMING POWER FEEDS TO LIFT. MOTOR SHOULD ROTATE CLOCKWISE AS VIEWED FROM TOP OF MOTOR.</td>
</tr>
<tr>
<td>PLATFORMS OUT OF SYNCHRONIZATION</td>
<td>MANUALLY LOWER PLATFORMS UNTIL THEY ARE LEVELED AND RAISE AGAIN. PLATFORMS MUST BE WITHIN 100 COUNTS TO BE SYNCHRONIZED.</td>
</tr>
<tr>
<td><strong>NOT LOWERING</strong></td>
<td></td>
</tr>
<tr>
<td>LIFT STOPPING TO REMIND YOU TO MOVE JACK TO END OF PLATFORM</td>
<td>ENSURE THAT JACK IS AT END OF PLATFORM WHERE POCKET IN FLOOR IS LOCATED (NOT APPLICABLE TO SURFACE). PRESS LOWER BUTTON AGAIN.</td>
</tr>
<tr>
<td>NO AIR TO LOCKS</td>
<td>ENSURE THAT SUFFICIENT PNEUMATIC PRESSURE (60 PSI) IS PROVIDED TO CONSOLE. CONNECTION IS AT REGULATOR WITHIN CONSOLE.</td>
</tr>
<tr>
<td>PNEUMATIC AIR LINE LEAKING</td>
<td>LISTEN FOR AIR LEAK AND REPAIR WHERE NEEDED</td>
</tr>
<tr>
<td>MECHANICAL LOCKS NOT DIS-ENGAGED</td>
<td>RAISE UNIT SLIGHTLY AND RE-PRESS THE LOWER BUTTON TO DISENGAGE MECHANICAL LOCKS.</td>
</tr>
<tr>
<td>LOSS OF ENCODER SIGNAL</td>
<td>VERIFY THAT BOTH ENCODERS ARE RECEIVING A SIGNAL. WHILE LOOKING AT DISPLAY SCREEN, HAVE SOMEONE STOMP ON BOTH PLATFORMS AND CONFIRM THAT COUNT VALUES ARE CHANGING.</td>
</tr>
<tr>
<td>REED SWITCHES ON AIR LOCK CYLINDERS OUT OF POSITION AND NOT DETECTING THAT MECHANICAL LOCKS ARE DISENGAGED PROPERLY</td>
<td>REFER TO DIAGRAM IN BACK OF MANUAL FOR PROPERLY ADJUSTING THE POSTION OF THE “LOCKS OPEN” REED SWITCHES.</td>
</tr>
<tr>
<td>PLATFORMS OUT OF SYNCHRONIZATION</td>
<td>RAISE UNIT TO FULL HEIGHT TO EQUALIZE. THEN LOWER OR USE MANUAL LOWERING VALVES TO EQUALIZED, THEN LOWER WITH BUTTON</td>
</tr>
<tr>
<td>DEBRIS IN POSTS (TOOLS ETC.)</td>
<td>REMOVE DEBRIS AND CLEAN UNIT</td>
</tr>
<tr>
<td>OBSTRUCTION UNDER VEHICLE OR LIFT</td>
<td>REMOVE OBSTRUCTION.</td>
</tr>
</tbody>
</table>

## RAISING/LOWERING UNEVEN

<table>
<thead>
<tr>
<th>POSSIBLE CAUSE</th>
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</thead>
<tbody>
<tr>
<td>ENCODERS NOT SYNCHRONIZED</td>
<td>LOWER LIFT COMPLETELY AND PRESS BOTH HOME SWITCHES TO ZERO LIFT AT BOTTOM</td>
</tr>
<tr>
<td>HOME SWITCHES NOT ADJUSTED PROPERLY</td>
<td>ENSURE THAT WHEN LIFT IS COMPLETELY LOWERED, BOTH HOME SWITCHES ZERO LIFT ON BOTH SIDES.</td>
</tr>
<tr>
<td>FAULTY PROPORTIONAL VALVE</td>
<td>REPLACE FAULTY COMPONENT. CONTACT MOHAWK SERVICE DEPARTMENT.</td>
</tr>
</tbody>
</table>
## TROUBLE SHOOTING, CONT.

<table>
<thead>
<tr>
<th>POSSIBLE CAUSE</th>
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<tbody>
<tr>
<td><strong>NOT PARKING (LIGHT DOES NOT ILLUMINATE)</strong></td>
<td></td>
</tr>
<tr>
<td>FAULTY LIGHT BULB</td>
<td>REMOVE BUTTON CASING AND CHECK BULB TO VERIFY IF IT IS DEFECTIVE. REPLACE WITH 24 VDC BULB.</td>
</tr>
<tr>
<td>REED SWITCHES ON AIR LOCK CYLINDERS OUT OF POSITION AND NOT DETECTING THAT MECHANICAL LOCKS ARE ENGAGED PROPERLY.</td>
<td>REFER TO DIAGRAM IN BACK OF MANUAL FOR PROPERLY ADJUSTING THE POSTION OF THE “LOCKS CLOSED” REED SWITCHES.</td>
</tr>
<tr>
<td>LIFT NOT IN POSITION WHERE ALL LOCKS ENGAGED.</td>
<td>RAISE LIFT UNTIL “CLUNK” IS HEARD FROM ALL LOCKS. ONCE ALL LOCKS DROP IN TO ENGAGE, LIGHT SHOULD COME ON AND ALLOW PARKING OF THE LIFT.</td>
</tr>
<tr>
<td><strong>HYDRAULIC LEAKS</strong></td>
<td></td>
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<tr>
<td>CYLINDER</td>
<td>THOROUGHLY CLEAN THE CYLINDER. VERIFY LEAK ORIGIN. FITTINGS ARE TO BE TIGHTENED PER SPECIFICATIONS</td>
</tr>
<tr>
<td>BAD FLARE OR FITTING</td>
<td>REMOVE THE HYDRAULIC LINE AND INSPECT FLAIR AND FITTING FOR DEFORMATION. REPLACE IF NEEDED.</td>
</tr>
<tr>
<td>BAD O-RING (O-RING TYPE FITTINGS)</td>
<td>CHANGE O-RING</td>
</tr>
<tr>
<td>LOOSE PIPE FITTING</td>
<td>REMOVE, RESEAL, AND RE-INSTALL FITTING. SEAL ALL PIPE FITTING CONNECTIONS WITH THREAD SEALANT MOHAWK PART # 601-610-002 NOTE: <strong>DO NOT USE TEFLON TAPE.</strong></td>
</tr>
</tbody>
</table>
### CONTROL DISPLAY ERROR MESSAGES

<table>
<thead>
<tr>
<th>MESSAGE:</th>
<th>POSSIBLE RESOLUTION:</th>
</tr>
</thead>
</table>
| LOCK LIFT NOT ALLOW – LOCKS NOT CLOSED | 1. LIFT IS NOT ALLOWED TO PARK ON LOCKS UNLESS COMPUTER DETECTS THAT ALL LOCKS ARE CLOSED. IF ANY SINGLE LOCK IS NOT CLOSED, THIS ERROR WILL OCCUR. TRY RAISING AND PARKING AGAIN.  
2. IF ERROR RECURS, ADJUSTMENT TO “LOCKS CLOSED” REED SWITCHES MAY BE NECESSARY (SEE FIGURE IN BACK OF MANUAL).  
3. CHECK THAT REED SWITCH CABLE CONNECTIONS ARE SECURE TO TERMINAL STRIP IN ENCODER BOX AND CONTROL PANEL. |
| F4 – TO RESET FAULT – LOW AIR FAULT | 1. AIR SUPPLY TO LIFT IS NOT PRESENT OR TOO LOW OF PRESSURE (NEED 80 PSI MINIMUM). PRESS F4 TO CLEAR MESSAGE WHEN AIR IS OBTAINED.  
2. CHECK THAT AIR REGULATOR WITHIN CONSOLE IS SET TO AT LEAST 80 PSI. RESET PRESSURE AND PRESS F4 ON PANEL TO CLEAR MESSAGE.  
3. POSSIBLE FAULTY AIR PRESSURE SENSOR MAY NEED REPLACEMENT. |
| PUMP MOTOR – OVERLOAD | 1. DISCONNECT POWER FROM CONTROL CONSOLE. WAIT APPROXIMATELY 5 MINUTES FOR MOTOR OVERLOAD TO RESET. CONNECT POWER AGAIN AND RETRY LIFT.  
2. DISCONNECT POWER FROM CONTROL CONSOLE. OPEN ELECTRICAL CONTROL BOX DOOR AND CHECK THAT OVERLOAD SETTING ON MOTOR STARTER IS SET TO MAXIMUM VALUE AND RESET BUTTON IS SET TO AUTO (NOT MANUAL). ENSURE THAT TRIP WINDOW ON OVERLOAD RELAY IS NOT SHOWING A COLORED TRIP STRIP.  
3. LIFT IS POSSIBLY OVERLOADED. CHECK CAPACITY. |
| F4 – TO RESET FAULT – OUT OF PARALLEL | 1. THERE MAY HAVE BEEN A TEMPORARY DIFFERENTIAL OF ENCODER READINGS BETWEEN LEFT AND RIGHT SIDE THAT HAS CORRECTED ITSELF. PRESS F4 TO CLEAR ERROR.  
2. USE MANUAL CONTROLS TO LEVEL LIFTING PLATFORMS. PRESS F4 TO CLEAR ERROR.  
3. SPEED OF LIFT MAY BE TOO FAST FOR CONTROLS TO COMPENSATE FOR OFFSET LOADING ON LIFT. CONTACT MOHAWK RESOURCES FOR RESETTING SPEED SETTING. |
| F4 – TO RESET FAULT – LEFT/RIGHT STOP BAR TRIP | 1. TAPE SWITCH UNDER PLATFORM HAS DETECTED AN OBSTRUCTION AND HAS SHUT DOWN LIFT. REMOVE OBSTRUCTION AND PRESS F4 TO CLEAR MESSAGE. NOTE: THIS MESSAGE ONLY PRESENT WHEN LIFT PROVIDED WITH OPTIONAL TAPESWITCH (NOT STANDARD FEATURE). |
| F4 – TO RESET FAULT – LOSS OF LEFT/RIGHT ENCODER | 1. LIFT HAS EXPERIENCED NO MOTION FOR 2 SECONDS IN A PLATFORM AFTER CONTROLS HAVE BEEN PRESSED. IF LOWERING, POSSIBLE HANG UP ON LOCKS. RAISE AND LOWER AGAIN. IF RAISING, POSSIBLE LOSS OF POWER TO MOTOR. CHECK MOTOR OVERLOAD.  
2. VERIFY THAT CONTROLS ARE RECEIVING SIGNAL FROM ENCODER. OBTAIN SCREEN ON CONTROL DISPLAY TO SHOW LIFT ELEVATIONS (LEFT, DIFFERENTIAL, RIGHT). STOMP ON EACH PLATFORM AND ENSURE THAT VALUES ON DISPLAY CHANGE.  
3. ENSURE THAT ENCODER CABLE CONNECTIONS ARE SECURE TO TERMINAL STRIP IN ENCODER BOX AND IN CONTROL PANEL.  
4. POSSIBLE FAULTY SOLENOID ON MANIFOLD NOT SHIFTING FLOW TO PLATFORM, RESULTING IN NO MOTION FOR 2 SECONDS AFTER CONTROLS Pressed. CONTACT MOHAWK RESOURCES FOR REPLACEMENT PART.  
5. POSSIBLE HYDRAULIC LEAK IN LEFT OR RIGHT PLATFORM HOSE. VERIFY AND TIGHTEN FITTING WHERE NECESSARY. MORE DEXTRON III MAY NEED TO BE ADDED TO RESERVOIR IF LEAK FOUND. |
| F4 – TO RESET FAULT – LOCKS NOT OPEN | 1. LIFT IS NOT ALLOWED TO LOWER UNLESS COMPUTER DETECTS THAT ALL LOCKS ARE OPEN. IF ANY SINGLE LOCK IS NOT OPEN, THIS ERROR WILL OCCUR. TRY RAising AND LOWERING AGAIN.  
2. IF ERROR RECURS, ADJUSTMENT TO “LOCKS OPEN” REED SWITCHES MAY BE NECESSARY (SEE FIGURE IN BACK OF MANUAL).  
3. CHECK THAT REED SWITCH CABLE CONNECTIONS ARE SECURE TO TERMINAL STRIP IN ENCODER BOX AND CONTROL PANEL. |
| WARNING: MOVE JACK TO END OF PLATFORM | 1. LIFT HAS STOPPED TO REMIND YOU TO MOVE JACK TO END OF PLATFORM WHERE CUTOUT IN FLOOR IS PROVIDED (FLUSH MOUNT LIFT ONLY). PRESS LOWER BUTTON AGAIN TO RESUME MOTION.  
2. IF REMINDER NOT NEEDED (SURFACE LIFT), BRING LIFT TO HOME POSITION AND PRESS F2. |
### SERVICE CHART

<table>
<thead>
<tr>
<th>DATE</th>
<th>PART REPLACED / SERVICED</th>
<th>SERVICE COMPANY</th>
<th>SERVICED BY</th>
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</table>
WEJ-IT INSTALLATION

STOP
DO NOT USE IMPACT WRENCH

USE HAND WRENCH ONLY

Figure 1
The Original **wej-it**® Wedge Anchors

**Key Features/Benefits**

- **Time-Tested, Proven Reliability.** An industry standard for over 45 years.
- **Fully Assembled and Ready to Use.** Unparalleled job-site convenience.
- **BOLT SIZE IS HOLE SIZE.** Allows precision placement of equipment through pre-drilled holes.
- **Exclusive “Positive Wedge Connections.”** Minimizes wedge loosening due to vibratory loads.

**Specifications, Approvals and Listings**

<table>
<thead>
<tr>
<th>Type</th>
<th>Zinc Plating</th>
<th>ASTM R-633, Type III, SC1</th>
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<tr>
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<td>ICBO-ES</td>
<td>Report 21821</td>
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<tr>
<td>City of Los Angeles</td>
<td>#RR 24939</td>
<td>DOT Please call Customer Service for specific information by state.</td>
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<tr>
<td>Federal</td>
<td>QQZ-325C, Type II, Class 3</td>
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<tr>
<td>Specifications</td>
<td>(Clear Chromate added)</td>
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<tr>
<td></td>
<td>FFS-325, Group II, Type 4, Class 1</td>
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**Maximum Tensile and Shear Capacity for Static Loads**

<table>
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<tr>
<th>Anchor &amp; Hole Size</th>
<th>Limestone Aggregate</th>
<th>Unreinforced Stone Aggregate</th>
<th>Concrete</th>
<th>Unreinforced Lightweight (Ideal)</th>
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<tbody>
<tr>
<td></td>
<td>Embedment Tension Shear</td>
<td>Embedment Tension Shear</td>
<td>Embedment Tension Shear</td>
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<tr>
<td></td>
<td>(in) (lbs) (lbs)</td>
<td>(in) (lbs) (lbs)</td>
<td>(in) (lbs) (lbs)</td>
<td>(in) (lbs) (lbs)</td>
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<tr>
<td>3/4</td>
<td>3</td>
<td>11579</td>
<td>15537</td>
<td>19299</td>
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<td>3/4</td>
<td>7</td>
<td>15444</td>
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<td>25740</td>
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<td>1</td>
<td>5 1/2</td>
<td>16351</td>
<td>16351</td>
<td>27252</td>
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<tr>
<td>1</td>
<td>7</td>
<td>17837</td>
<td></td>
<td>29728</td>
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</tbody>
</table>

Source (available upon request): 1) University of Texas, Austin, TX (using new ICBO-ES testing criteria); 1993. 2) AA Engineers & Associates, Inc., Denver CO; 1981.

**Length Selection Guide**

- **(C)** 3-4 turns of nut = 1/2 bolt diameter
- **(B)** Nut thickness = bolt diameter
- **(A)** Minimum embedment
- **(D)** Material thickness
- **(E)** Minimum embedment + Material Thickness + 1 1/2 x Bolt Diameter = Total Anchor Length

**Edge Distance and Spacing Requirements**

<table>
<thead>
<tr>
<th>Embedment (E) in Anchor Diameter (d)</th>
<th>Spacing</th>
<th>Edge Distance</th>
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</thead>
<tbody>
<tr>
<td>E &lt; 6d (shallow)</td>
<td>3.50E</td>
<td>1.75E</td>
</tr>
<tr>
<td>6d ≤ E ≤ 8d (standard)</td>
<td>2.00E</td>
<td>1.00E</td>
</tr>
<tr>
<td>8d &lt; E (deep)</td>
<td>1.50E</td>
<td>0.75E</td>
</tr>
</tbody>
</table>

**Notes:**

- Information provided only for the use of a qualified design engineer. Use of technical data by persons not qualified could cause serious damage, injury, or even death.
- Ultimate values shown. For static loads, use one-fourth of the maximum tensile and shear capacities for the recommended 4:1 safety factor.

Figure 2

21
MOHAWK MODEL PARALLELOGRAM

INSTALLATION INSTRUCTIONS – MOHAWK Lifts

1. Drill the hole perpendicular to the work surface.* The drill bit diameter will be the same as the
anchor diameter that you are installing. To assure full holding power, do not ream the hole or allow
the drill to wobble. Ensure all holes are a minimum of 6 inches away from any
cracks, seams or defects in the concrete.

2. Drill the hole 1 diameter deeper than the intended embedment of the anchor, but not closer than
two diameters to the bottom (opposite) surface of the concrete.

3. Clean the hole using compressed air and a nylon brush. A clean hole is necessary for proper
performance.

4. For ease of installation, make certain that the spear heads are located up against the wedge
pockets.

5. Turn the nut onto the anchor until contact is made with the top of the spears and the bottom of
the washer. Insert anchor into hole.

6. Tap anchor into hole with a 2 ½ lb. hammer until the washer rests solidly against the base plate.

7. Tighten the nut from 1 ½ to 3 turns past hand tight position to estimated installation torque below.
Use of an Impact wrench for installation of the anchor is NOT recommended.

TORQUE VALUES

<table>
<thead>
<tr>
<th>Anchor Diameter (in)</th>
<th>Drill Bit Diameter (in)</th>
<th>Estimated Install Torque (ft-lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4</td>
<td>3/4</td>
<td>75</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>130</td>
</tr>
</tbody>
</table>

INSPECTION & MAINTENANCE INSTRUCTIONS

1. Verify torque on anchors to 70 ft-lbs for 3/4 anchors and 120 ft-lbs for 1”
anchors for future/annual inspections.

* Always wear safety glasses. Follow the drill manufacturer’s safety
instructions. Use only solid carbide-tipped drill bits meeting ANSI B212.15
diameter standards as listed on back cover.

REV: 11/07

Figure 3
30 Series Fittings
Use with 301, 301LT, and 381 hoses.

30 Series Hose Assembly Instructions

1. Identify Over All Length (OAL) of hose assembly and the Cut Off Allowance (COA) length of fitting(s) on hose ends by use of the fitting data table. Property measure, mark and cut hose to desired length using fine tooth hacksaw or a cutoff machine. Dip hose end into Hoze-Oil or heavy oil.

2. Place socket in vice and screw in hose counterclockwise until hose bottoms. Back hose out 1/2 turn.

3. Dip hose end of nipple into Hoze-Oil or other heavy oil up to the hex. When assembling fittings of 316 stainless steel lubricate the threads of both the socket and nipple with Dow Corning Molykote G-n or equivalent metal assembly lubricant.

4. Screw nipple assembly into socket using wrench on nipple hex until nipple hex shoulders against socket.

Note: Disassemble in reverse order.

IF YOU HAVE QUESTIONS CONCERNING THE PRODUCTS OR APPLICATION OF THE PRODUCTS CONTAINED IN THIS CATALOG, PLEASE CALL:
PARKER HOSE PRODUCTS DIVISION - TECHNICAL SERVICES DEPARTMENT
PHONE: 216 / 943-5700
FAX: 216 / 943-3129
www.parkerhose.com

Parker FluidConnectors

Figure 4

23
PARALLELOGRAM SHIMMING
(END VIEW OF PLATFORMS, SHOWN)

STEP 1: POSITION TRACKS APPROXIMATELY 45" INSIDE DIMENSION AT FULLY LOWERED POSITION.

STEP 2: RAISE TRACK FULLY & SHIM UNDER BASE TO LEVEL WITH 4' BUBBLE LEVEL.

STEP 3: SIDE SHIFT BASES TO ACHIEVE 45" (+1/4", -0") INNER DIMENSION AT RAISED & LOWERED POSITION. WHEN SIDE SHIFTING, PUSH ON BASE, NOT PLATFORM. *

STEP 4: VERIFY TRACKS ARE LEVEL & SET AT 45" (+1/4", -0") FULLY RAISED & LOWERED POSITION.

STEP 5: ANCHOR LIFT TO FLOOR.

FILE: MAN3001
DATE: 3/2003
Figure 6

MOHAWK MODEL PARALLELOGRAM
CONSOLE CONNECTIONS:

- Cylinder vents connect here (black)
- Track air connects here (blue)
- Air regulator
- Hydraulic hose connections
- Light cables (16/3)
- Lock cylinder air connects here (yellow)

Figure 8
CONSOLE CONNECTIONS:

- LEFT REED SWITCH CABLE (24/8)
- LEFT ENCODER CABLE (16/8)
- RIGHT REED SWITCH CABLE (24/8)
- RIGHT ENCODER CABLE (16/6)
- MAIN POWER JUNCTION BOX

HYDRAULIC FLUID FILL PORT & FILTER

MANUAL CONTROLS

HYDRAULIC FLUID LEVEL GAUGE

FILE: MAN3007B
REV: 2/13/2004

Figure 9
Figure 11b
SHOWN FOR LEFT SIDE ONLY (4 LEG)

CONTROL PANEL ENCLOSURE
ALL CABLES Brought IN AND WIRED DIRECT TO TERMINAL STRIP
REED SWITCH POSITIONING: DETECT LOCKS OPEN

NOTES:

1. SWITCHES TO BE ADJUSTED ONLY WHEN LIFT RAISED FULLY

2. OVER-RIDE AIR SOLENOID TO FULLY RELEASE ALL LOCKS (AIR SUPPLIED TO ALL LOCK CYLINDERS)

3. DISCONNECT PLUG FROM REED SWITCHES AND CONNECT SWITCHES TO BATTERY TEST MODULE.

4. ADJUST POSITION OF REED SWITCH AT ROD END OF CYLINDER TO DETERMINE BAND OF READING (WHEN SWITCH LED LIGHTS). POSITION SWITCH TOWARD PORT END OF BAND. ENSURE REED SWITCHES ROTATED AWAY FROM EACH OTHER AS SHOWN IN DIAGRAM TO LEFT. SECURE CLAMP SNUG BUT DO NOT OVERTIGHTED CLAMP OR SWITCH MAY BECOME DAMAGED.

5. VERIFY ALL REED SWITCHES ADJUSTED PROPERLY BY LOWERING LIFT WITH LOWER BUTTON.
REED SWITCH POSITIONING: DETECT LOCKS CLOSED

NOTES:

1. ADJUSTMENT FOR THIS REED SWITCH IS TO BE DONE AT TOP-MOST LOCK POSITION. RAISE LIFT UNTIL ALL LOCKS FALL INTO PLACE AT TOP LOCK AND THERE IS ~3/8 GAP BETWEEN MATING TEETH.

2. DISCONNECT PLUG FROM REED SWITCHES AND CONNECT SWITCHES TO BATTERY TEST MODULE.

3. ADJUST POSITION OF REED SWITCH AT PORT END OF CYLINDER TO DETERMINE BAND OF READING (WHEN SWITCH LED LIGHTS). POSITION SWITCH TOWARD PORT END OF BAND. ENSURE REED SWITCHES ROTATED AWAY FROM EACH OTHER AS SHOWN IN DIAGRAM TO LEFT. SECURE CLAMP SNUG BUT DO NOT OVERTIGHTED CLAMP OR SWITCH MAY BECOME DAMAGED.

4. VERIFY THAT ALL REED SWITCHES ADJUSTED PROPERLY BY CYCLING LIFT UP AND DOWN AND ENSURING THAT PARK BUTTON ILLUMINATES AND PARKS LIFT ON LOCKS PROPERLY.
PARALLEL HOME SWITCH ADJUSTMENT INSTRUCTIONS:

RAISE LIFT TO A COMFORTABLE WORKING HEIGHT

ADJUST HOME SWITCH SUCH THAT IT EXTENDS 1/16" BELOW TRACK SETDOWN BAR.

PROCEED TO SHIM KIT INSTRUCTIONS.
PARALLEL HOME SWITCH SHIM KIT INSTRUCTIONS:

IN THE EVENT THAT THE LIFT DOES NOT SET COMPLETELY AND SOLIDLY ON THE FRAME EARS, SHIMS ARE PROVIDED (1/8" THK x 3/4" wide x 12" Long).

PLACE A COMRESSIVE COMPOUND (I.E. GUM) ON THE BASE FRAME EARS AND LOWER THE UNLOADED LIFT COMPLETELY.

MEASURE THE THICKNESS OF THE COMPOUND TO DETERMINE THE GAP THAT EXISTS BETWEEN THE FRAME EAR AND THE TRACK SETDOWN BAR. THIS WILL EQUATE TO THE AMOUNT OF SHIMMING REQUIRED ON THE TOP OF THE FRAME EARS.

STACK AND Shim STRIPS TO REQUIRED THICKNESS AND AFFIX TO TOP OF FRAME EARS USING EPOXY PROVIDED. USE SAND PAPER ON SHIMS AND FRAME EAR TO ENSURE SURFACE IS ROUGH ENOUGH TO ACCEPT EPOXY.

ENSURE THE ENTIRE TOP SURFACE OF THE FRAME EAR IS COVERED. PLACE SHIMS ON BOTH INSIDE AND OUTSIDE EARS, NOT JUST ONE SIDE.

RAISE AND LOWER LIFT TO ENSURE SOLID CONTACT WITH FRAME.

ALLOW EPOXY TO FULLY SET, THEN PAINT WITH TOUCH-UP PAINT AS NEEDED.
CONSOLE PNEUMATIC CONNECTIONS

FILE: MAN3008A

Figure 17
CONSOLE MANUAL OVERRIDE CONTROLS

FILE: MAN3008B

Figure 18
Parallelogram Shimming Notes:
File: Parallel Shim.doc
Date: 10/3/2003

The ideal surface to install Mohawk Parallelogram style lifts in on a perfectly flat and level floor. This, however, is usually the exception rather than the norm when installing these lifts in the field. When a non-flat or non-level floor is encountered, the following shimming guidelines should be followed:

Lateral Shimming (Left to Right):
The lift must be shimmmed plum and level with respect to each other, to ensure that both platforms raise evenly.

**PARALLELOGRAM SHIMMING**
(END VIEW OF PLATFORMS, SHOWN)

| STEP 1: | POSITION TRACKS APPROXIMATE INSIDE DIMENSION AT FULLY LOWERED |
| STEP 2: | RAISE TRACK FULLY & SHIM BASE TO LEVEL WITH 4' BUBBLE LEVEL. |
| STEP 3: | SIDE SHIFT BASES TO ACHIEVE (+1/4", -0") INNER DIMENSION AT RAISED POSITION. WHEN SIDE SHIFT ON BASE, NOT PLATFORM. * |
| STEP 4: | VERIFY TRACKS ARE LEVEL & 45" (+1/4", -0") FULLY RAISED & LOWERED POSITION. |
| STEP 5: | ANCHOR LIFT TO FLOOR. |

FILE: MAN3001
DATE: 3/2003
Longitudinal Shimming (Front to Back):
Usually the floor is sloped from the back of the bay downward to the front of the bay towards some drainage system. If this slope is in less than 3” from end to end of base frame, it is not necessary for shimming this lift level. It is left to the installer and the customer to decide if shimming the lift level is desired. Regardless, shimming may still be required to ensure the platforms are level with respect to themselves. If the slope is greater than 3” from front to end of base frame, it is recommended to shim the end of the base to within the acceptable range slope (less than 3”). The use of additional base plates, stringer plates, longer anchors and grout may be necessary to shim along the whole length of the base frame to achieve this. Also note that the ramps themselves may need to be shimmed up to meet the level of the platforms. If this is the case, the ramp angle will be increased, and the customer should be made aware of this.

In conclusion, without shimming, this lift can only be as level as the floor it is put on. If shimming is required to correct floor slopes, uneven floors, etc., additional time will be required for installation, and additional costs may be incurred for extra shims, base plates, grout, etc.

Figure 19
Discrete Input Devices with Intrinsically Safe Field Circuits

NON-HAZARDOUS LOCATION

HAZARDOUS (CLASSIFIED) LOCATION
Class I, Div. 1, Group A, B, C or D;
Class II, Div. 1, Group E, F or G;
Class III, Div. 1; or
Class I, Zone 0, Group IIC, IIB or IIA

Entity Parameters: Class I, Division 1; Class II, Division 1; Class III, Division 1
Circuit Characteristic: Linear

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<th>Model</th>
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<th>Iac (mA)</th>
<th>Pdc (mW)</th>
<th>Cdc (μF)</th>
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<td>222/781/1H</td>
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Entity Parameters: Class I, Zone 0, or 2
Circuit Characteristic: Linear

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<td>282/981/1H</td>
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<td>9.6</td>
<td>11</td>
<td>26</td>
<td>3.6/11.3/30.1</td>
<td>282/981/1H</td>
</tr>
<tr>
<td>IM1-222Ex-</td>
<td>1-2, 4-5, 6-7, 8-9-10</td>
<td>11.5</td>
<td>12.8</td>
<td>37</td>
<td>1.6/11.2/46.0</td>
<td>222/781/1H</td>
</tr>
<tr>
<td>IM1-451Ex-</td>
<td>1-2, 4-5, 6-7, 8-9-10</td>
<td>11.5</td>
<td>12.8</td>
<td>37</td>
<td>1.6/11.2/46.0</td>
<td>222/781/1H</td>
</tr>
</tbody>
</table>

Notes:
1. The symbolamburg symbol designates third party approved with correct entity parameters meeting the relations shown in Table 1, or simple apparatus.
2. Multiple circuits extending from the same piece of Associated Apparatus equipment must be installed in separate cables or in one cable having suitable insulation. Refer to Instrument Society of America Recommended Practice ISA RP12.6 for installing intrinsically safe equipment.
3. A simple apparatus is defined as an electrical component or combination of components of simple construction with wet–defined electrical parameters that does not generate more than 1.5W, 100mA, and 25mV, or a passive component that does not dissipate more than 1.3W and is compatible with the intrinsically safe of the circuit in which it is used.
4. Capacitance and inductance of the field wiring from the intrinsically safe equipment to the barrier should be calculated and should be included in the system calculations as shown in Table 1. Cable capacitance (Cc) plus intrinsically safe equipment capacitance (Ci) must be less than the marked capacitance (Cc) shown on any barrier used. The same applies for inductance (Lc, Li and Ls, respectively). Where the cable capacitance and inductance are not known, the following values shall be used: Cc = 60 pF/ft, Lc = 0.2 μH/ft.

I.S. Equipment Table 1

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Vmax (V)</th>
<th>Imax (mA)</th>
<th>C1 + C2 (μF)</th>
<th>L1 + L2 (μH)</th>
<th>I1 (mA)</th>
<th>C1 + C2 (μF)</th>
<th>L1 + L2 (μH)</th>
<th>Vdc (V)</th>
<th>Iac (mA)</th>
<th>Pdc (mW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar1</td>
<td>Vmax</td>
<td>Imax</td>
<td>C1 + C2</td>
<td>L1 + L2</td>
<td>I1</td>
<td>C1 + C2</td>
<td>L1 + L2</td>
<td>Vdc</td>
<td>Iac</td>
<td>Pdc</td>
</tr>
</tbody>
</table>

5. Barriers must be installed in accordance with barrier manufacturer’s control drawing and Article 504 of the National Electrical Code, ANSI/NFPA 70, for installation in the United States.
6. Control equipment must not use or generate more than 250V rms or dc with respect to earth.
7. WARNING: To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.

Drawing No: IS-1301
3000 Campus Drive
Plymouth, MN 55441
Phone: (763) 553-7300
Title: Control Drawing for UL Listed IM1-...Ex- and IM12-...Ex-, Isolator Barriers with I/S (Entity) Field Circuits

A Release | BVL Rev Date | Scale | Sheet 1 of 1
**TABLE 1 BARRIER PARAMETERS**

<table>
<thead>
<tr>
<th>Voltage Supply At Encoder</th>
<th>Voc (Uo)</th>
<th>Isc (Io)</th>
<th>Class I, Group D</th>
<th>Class II, Groups E,F,G</th>
<th>Class I, Group C</th>
<th>Class I, Groups A,B</th>
<th>Group II A</th>
<th>Group II B</th>
<th>Group II C</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5VDC</td>
<td>89</td>
<td>345mA</td>
<td>Ca (Co)</td>
<td>La (Lo)</td>
<td>Ca (Co)</td>
<td>La (Lo)</td>
<td>Ca (Co)</td>
<td>La (Lo)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>590 uF</td>
<td>2.0 mH</td>
<td>43 uF</td>
<td>0.75 mH</td>
<td>5.6 uF</td>
<td>0.4 mH</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 2 ELECTRICAL SPECIFICATIONS**

- **VOLTAGE SUPPLY AT ENCODER, NOMINAL**: +5 VDC ±5% @100mA (FUSED AT 160mA)
- **APPROX. POWER SUPPLY VOLTAGE TO BARRIER**: SEE TABLE 3
- **APPROX. POWER SUPPLY CURRENT TO BARRIER**: 200 mA NOMINAL
- **INPUT SIGNAL LEVEL FROM ENCODER**: 4V NOMINAL, 6V MAX
- **BARRIER SIGNAL INPUT IMPEDANCE**: 500 Ω NOMINAL
- **INPUT TO BARRIER FROM ENCODER**: A, A, B, B, Z, Z (QUADRATURE WITH INDEX)
- **INPUT CURRENT FROM ENCODER A TO A, B TO B, Z TO Z**: 10 mA PER CHANNEL, NOMINAL
- **BARRIER OUTPUT TO NON-HAZARDOUS APPARATUS**: SEE TABLE 3
- **FREQUENCY RESPONSE**: 250 KHZ MAX

**HAZARDOUS AREA**

- **NON-HAZARDOUS AREA OR CLASS 1, DIV 2 GROUPS A,B,C,D**

**INTRINSICALLY SAFE TELEMETRERING EQUIPMENT**

- **SUPPLY VOLTAGE ±5%**
- **POWER SUPPLY SEE NOTES 5 & 6**

**OUTPUT SIGNALS**

- **ZONE A**
- **ZONE B**
- **ZONE Z**

**BEI INTRINSIC SAFETY BARRIER**

P/N 924-60004-XXX

---

**Industrial Encoder Division**

BEI SENSORS AND SYSTEMS COMPANY

7230 Hollister Avenue • Goleta, CA 93117-2891 • Tel: (805) 968-0782 • Fax: (805) 968-3154

**System Diagram, Galvanically Isolated Barrier**

---

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NOTES:

1. NON-HAZARDOUS AREA APPARATUS THAT IS UNSPECIFIED EXCEPT THAT IT MUST NOT BE SUPPLIED FROM NOR CONTAIN UNDER NORMAL OR ABNORMAL CONDITIONS A SOURCE OF POTENTIAL WITH RESPECT TO EARTH IN EXCESS OF 250 V.R.M.S. OR 250 V.D.C.

2. INTRINSICALLY SAFE ENCODERS: HAZARDOUS AREA APPARATUS THAT IS CERTIFIED TO THE APPROPRIATE CLASS AND GROUP BY THE CERTIFICATION BODY OF THE COUNTRY OF USE.

3. THE ELECTRICAL CIRCUITS IN THE HAZARDOUS AREA MUST BE CAPABLE OF SURVIVING A VOLTAGE WITHSTAND TEST OF 500 V.R.M.S. TO EARTH OR FRAME OF THE APPARATUS.

4. THE INSTALLATION MUST COMPLY WITH THE REGULATIONS OF THE COUNTRY OF USE.

4a. NORTH AMERICAN INSTALLATIONS: INSTALLATION MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE NFPA70, ARTICLE 504, ANSI/UL-1212, AND CEC PART 1, APPENDIX F.

5. THE POWER SOURCE MUST BE CONSISTENT WITH PART NUMBER AND OUTPUT TYPE SPECIFIED IN TABLE 3. VOLTAGES GREATER THAN 5% OF THE NOMINAL BARRIER SUPPLY VOLTAGE MAY DAMAGE THE BARRIER.

6. FUSES IN THE BARRIERS MAY RUPTURE IF INPUT VOLTAGE EXCEEDS MAX SUPPLY VOLTAGE (Ve) IN TABLE 3.

7. HAZARDOUS AREA CABLE CAPACITANCE (C Cable) AND INDUCTANCE (L Cable) ARE CALCULATED BY MULTIPLYING THE CABLE LENGTH (IN FEET) BY THE NUMBER OF CONDUCTORS BY 60 pF/FT. AND 0.2 uH/FT. RESPECTIVELY. CABLE CAPACITANCE (C Cable) AND INDUCTANCE (L Cable) VALUES PLUS CI AND LI MUST NOT EXCEED VALUES OF Ca (Ca) and La (La) DETERMINED BY BARRIER MANUFACTURER.

8. THIS DESIGN IS CERTIFIED BY UL / DEMKO. NO CHANGES ARE ALLOWED WITHOUT APPROVAL FROM UL / DEMKO OR EQUIVALENT CERTIFYING BODY.

9. WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY. REPAIRS TO BE PERFORMED BY BEI ONLY.

10. ASSOCIATED APPARATUS AND APPAREILAGE CONNECTE; AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE.

11. DIV 2 INSTALLATIONS: USE GENERAL PURPOSE ENCLOSURE SUITABLE FOR CLASS 1, DIV 2 WIRING METHODS PER NATIONAL ELECTRICAL CODE NFPA 70, ARTICLE 501.

### TABLE 3

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>BARRIER SUPPLY Vs</th>
<th>OUTPUT VOLTAGE TO NON-HAZARDOUS AREA APPARATUS</th>
<th>OUTPUT TYPE NON-HAZARDOUS AREA APPARATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>924-60004-001</td>
<td>12-15 VOLTS</td>
<td>Vout-Vin (nominal)</td>
<td>LINE DRIVER 4469 100mA Source/Sink</td>
</tr>
<tr>
<td>924-60004-002</td>
<td>12-24 VOLTS</td>
<td>Vout=5V</td>
<td>LINE DRIVER 4469 100mA Source/Sink</td>
</tr>
<tr>
<td>924-60004-003</td>
<td>12-24 VOLTS</td>
<td>Vout-Vin (nominal)</td>
<td>LINE DRIVER 7272 100mA Source/Sink</td>
</tr>
<tr>
<td>924-60004-004</td>
<td>12-24 VOLTS</td>
<td>OPEN COLLECTOR</td>
<td>OPEN COLLECTOR 40mA Source/Sink</td>
</tr>
</tbody>
</table>
TABLE 1

<table>
<thead>
<tr>
<th>Voltage Supply</th>
<th>V. Max</th>
<th>Encoder</th>
<th>Encoder</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Encoder</td>
<td>1 MAX</td>
<td>Ci</td>
<td>Li</td>
</tr>
<tr>
<td>+5VDC</td>
<td>15VDC</td>
<td>A,B</td>
<td>0.75 μF</td>
</tr>
<tr>
<td>12 A</td>
<td></td>
<td>C,D</td>
<td>0 mH</td>
</tr>
</tbody>
</table>

TABLE 2 ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Voltage Supply</th>
<th>4.5 VDC ±5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT ENCODER</td>
<td></td>
</tr>
<tr>
<td>APPROX. POWER</td>
<td>11 VDC</td>
</tr>
<tr>
<td>SUPPLY</td>
<td></td>
</tr>
<tr>
<td>VOLTAGE TO BARRIER</td>
<td></td>
</tr>
<tr>
<td>INPUT BARRIER</td>
<td>Voc = 15VDC MAX</td>
</tr>
<tr>
<td></td>
<td>Isc = 300 mA MAX</td>
</tr>
<tr>
<td>OUTPUT BARRIER</td>
<td>Voc = 15VDC MAX</td>
</tr>
<tr>
<td></td>
<td>Isc = 150mA MAX</td>
</tr>
<tr>
<td>PER BARRIER CHANNEL</td>
<td></td>
</tr>
<tr>
<td>MAXIMUM CURRENT</td>
<td>140 mA</td>
</tr>
<tr>
<td>RECD BY ENCODER</td>
<td>(500Ω)</td>
</tr>
<tr>
<td>(OUTPUT IMPEDANCE)</td>
<td></td>
</tr>
<tr>
<td>TYPICAL CURRENT</td>
<td>120 mA</td>
</tr>
<tr>
<td>RECD BY ENCODER</td>
<td></td>
</tr>
<tr>
<td>OUTPUT CURRENT</td>
<td>10 mA</td>
</tr>
<tr>
<td>FROM A OR A</td>
<td></td>
</tr>
<tr>
<td>OUTPUT CURRENT</td>
<td>10 mA</td>
</tr>
<tr>
<td>FROM B OR B</td>
<td></td>
</tr>
<tr>
<td>OUTPUT CURRENT</td>
<td>10 mA</td>
</tr>
<tr>
<td>FROM Z OR Z</td>
<td></td>
</tr>
<tr>
<td>CURRENT TAKEN BY</td>
<td>140 mA - 30 mA = 110mA MAX</td>
</tr>
<tr>
<td>NON-DRIVE CIRCUIT</td>
<td>120 mA - 30 mA = 90 mA TYPICAL</td>
</tr>
<tr>
<td>OF ENCODER</td>
<td></td>
</tr>
</tbody>
</table>

BARRIER PARAMETERS

VT ≤ V MAX
IT ≤ I MAX
CA ≤ Ci + C cable
LA ≤ Li + L cable

SEE TABLE 1 AND NOTES 6 AND 9
1. NON-HAZARDOUS AREA APPARATUS THAT IS UNSPECIFIED EXCEPT THAT IT MUST NOT BE SUPPLIED FROM NOR CONTAIN UNDER NORMAL OR ABNORMAL CONDITIONS A SOURCE OF POTENTIAL WITH RESPECT TO EARTH IN EXCESS OF 250V R.M.S. OR 250 V.D.C.

2. INPUT AND OUTPUT BARRIERS: SAFETY BARRIERS THAT ARE CERTIFIED TO THE APPROPRIATE CLASS AND GROUP BY THE CERTIFICATION BODY OF THE COUNTRY OF USE.

3. ALL SAFETY BARRIERS ARE TO BE OF THE SAME POLARITY AND INCORPORATE A FUSE.

4. THE ELECTRICAL CIRCUITS IN THE HAZARDOUS AREA MUST BE CAPABLE OF SURVIVING A VOLTAGE WITHSTAND TEST OF 500V R.M.S. TO EARTH OR FRAME OF THE APPARATUS.

5. THE INSTALLATION MUST COMPLY WITH THE REGULATIONS OF THE COUNTRY OF USE.

5a NORTH AMERICAN INSTALLATIONS:

ALL INTRINSICALLY SAFE WIRING SHALL BE KEPT SEPARATE FROM NON-INTRINSICALLY SAFE WIRING. REFER TO ARTICLE 504 OF THE NATIONAL ELECTRICAL CODE.

6. THE POWER SOURCE MUST BE ADJUSTED TO PROVIDE THE ENCODER VOLTAGE SPECIFIED IN TABLE 2. VOLTAGES GREATER THAN 10% OF THE NOMINAL ENCODER OPERATING VOLTAGE MAY DAMAGE THE ENCODER.

7. FUSES IN THE ZENER BARRIERS MAY RUPTURE IF INPUT VOLTAGE EXCEEDS MAX BARRIER VOLTAGE (Voc) IN TABLE 2.

8. HAZARDOUS AREA CABLE CAPACITANCE (C cable) AND INDUCTANCE (L cable) ARE CALCULATED BY MULTIPLYING THE CABLE LENGTH (IN FEET) BY THE NUMBER OF CONDUCTORS BY 60 pF/FT. AND 0.2 mH/FT. RESPECTIVELY. CABLE CAPACITANCE (C cable) AND INDUCTANCE (L cable) VALUES PLUS CI AND LI MUST NOT EXCEED VALUES OF CA AND LA DETERMINED BY BARRIER MANUFACTURER.

9. SYSTEM EVALUATED WITH ALL BARRIERS CONNECTED IN PARALLEL. VT AND IT ARE TOTAL SYSTEM BARRIER PARAMETERS, WITH ALL INPUT AND OUTPUT BARRIER CHANNELS CONNECTED IN PARALLEL. REFER TO TABLE 2 FOR INDIVIDUAL CHANNEL BARRIER SPECIFICATIONS.

10. THIS DESIGN IS CERTIFIED BY UL / DEMKO. NO CHANGES ARE ALLOWED WITHOUT APPROVAL FROM UL / DEMKO OR EQUIVALENT CERTIFYING BODY.

11. WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY. REPAIRS TO BE PERFORMED BY BEI ONLY.

TYPICAL MODEL NUMBER:
H25D-1024-ABZC-4469-SM18-EX-S

SYMBOLS IN THESE AREAS MAY BE VARIED TO DENOTE STANDARD MECHANICAL VARIATIONS. THE "S" IS USED TO DENOTE NON-STANDARD VARIATIONS.

This is a Controlled Document
For Agency Approval

Signed: [Signature]
Date: 4-28-98

Industrial Encoder Division
BEI SENSORS AND SYSTEMS COMPANY
7230 Hollister Avenue • Goleta, CA 93117-2981 • Tel: (805) 998-6782 • Fax: (805) 998-3154

SYSTEM DIAGRAM, INTRINSICALLY SAFE ENCODER TYPE 4469

01061
09173

Next Assy
Used on

Scale
Rev
12050
924-08062-001
2/2
D
### TABLE 1

<table>
<thead>
<tr>
<th>Voltage Supply At Encoder</th>
<th>Input Barrier</th>
<th>Output Barrier</th>
<th>Group (Europe)</th>
<th>Group (No. America)</th>
<th>Encoder Cl</th>
<th>Encoder Li</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5VDC</td>
<td>22VDC</td>
<td>450mA</td>
<td>28 VDC 0 A A,B</td>
<td>C,D E,F,G</td>
<td>.75 µF</td>
<td>0 mH</td>
</tr>
</tbody>
</table>

### TABLE 2 ELECTRICAL SPECIFICATIONS

**VOLTAGE SUPPLY AT ENCODER**

+5 VDC ±5%

**APPROX. POWER SUPPLY VOLTAGE TO BARRIER**

11 VDC

**INPUT BARRIER**

Voc = 22VDC MAX
Isc = 450 mA MAX

**OUTPUT BARRIER**

Voc = 28VDC MAX.
Isc = 0 mA MAX.
PER BARRIER CHANNEL

**MAXIMUM CURRENT REQ'D BY ENCODER**

140 mA
(500 Ω)

**TYPICAL CURRENT REQ'D BY ENCODER**

120 mA

**OUTPUT CURRENT FROM A OR A**

10 mA

**OUTPUT CURRENT FROM B OR B**

10 mA

**OUTPUT CURRENT FROM Z OR Z**

10 mA

**CURRENT TAKEN BY NON-DRIVE CIRCUIT OF ENCODER**

140 mA - 30 mA = 110 mA MAX
120 mA - 30 mA = 90 mA TYPICAL

---

**HAZARDOUS AREA**

**NON-HAZARDOUS AREA**

---

**BEI INTRINSICALLY SAFE ENCODER**

**EECx IIB T4**

**VOLTAGE AT ENCODER ±5%**

**INPUT BARRIERS**

3 DIODE OUTPUT BARRIERS

**OUTPUT SIGNALS**

4 WIRES

**CASE GROUND**

**HIGH INTEGRITY EARTH GROUND**

**NON HAZARDOUS AREA APPARATUS**

**SEE NOTE 1**

**POWER SUPPLY**

**SEE NOTES 8 & 7**

---

**BARRIER PARAMETERS**

VT ≤ V MAX

IT ≤ I MAX

CA ≤ Cl + C cable

LA ≤ Li + L cable

**SEE TABLE 1 AND NOTES 8 AND 9**
1. NON-HAZARDOUS AREA APPARATUS THAT IS UNSPECIFIED EXCEPT THAT IT MUST NOT BE SUPPLIED FROM NOR CONTAIN UNDER NORMAL OR ABNORMAL CONDITIONS A SOURCE OF POTENTIAL WITH RESPECT TO EARTH IN EXCESS OF 250V R.M.S. OR 250V D.C.
2. INPUT AND OUTPUT BARRIERS: SAFETY BARRIERS THAT ARE CERTIFIED TO THE APPROPRIATE CLASS AND GROUP BY THE CERTIFICATION BODY OF THE COUNTRY OF USE.
3. ALL SAFETY BARRIERS ARE TO BE OF THE SAME POLARITY AND INCORPORATE A FUSE.
4. THE ELECTRICAL CIRCUITS IN THE HAZARDOUS AREA MUST BE CAPABLE OF SURVIVING A VOLTAGE WITHSTAND TEST OF 500V R.M.S. TO EARTH OR FRAME OF THE APPARATUS.
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10. THIS DESIGN IS CERTIFIED BY UL / DEMKO. NO CHANGES ARE ALLOWED WITHOUT APPROVAL FROM UL / DEMKO OR EQUIVALENT CERTIFYING BODY.
11. WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY. REPAIRS TO BE PERFORMED BY BEI ON Y.

TYPICAL MODEL NUMBER:
H2SD-1024-AB2C-4469-SM18-EX-S

SYMBOLS IN THESE AREAS MAY BE VARIED TO DENOTE STANDARD MECHANICAL VARIATIONS. THE "S" IS USED TO DENOTE NON-STANDARD VARIATIONS.

Industrial Encoder Division
BEI SENSORS AND SYSTEMS COMPANY
7230 Hollister Avenue • Goleta, CA 93117-2981 • Tel: (805) 965-0782 • Fax: (805) 965-3154
Material
SYSTEM DIAGRAM, DIODE OUTPUT BARRIERS, INTRINSICALLY SAFE ENCODER TYPE 4469,

D1061

D924-08062-002

12050

924-08062-002

Sheet

2/2
INSERT 50-26-S
SURFACE INSTALLATION
DRAWINGS HERE
PARALLELOGRAM

50-26-F FLUSH MOUNT
INSTALLATION
REQUIREMENT DRAWINGS

MOHAWK RESOURCES LTD.

65 VROOMAN AVE.
AMSTERDAM, NY 12010
TOLL FREE: 1-800-833-2006
LOCAL: 1-518-842-1431
FAX: 1-518-842-1289
INTERNET: WWW.MOHAWKLIFTS.COM
E-MAIL: SERVICE@MOHAWKLIFTS.COM
INSERT 50-26-F
SURFACE INSTALLATION
DRAWINGS HERE
NOTE
BAND ITEMS 2 THRU 7 TO ITEM 1 WITH ITEMS 4 & 8.

SURFACE
NOTE
BAND ITEMS 2 THRU 7 TO ITEM 1 WITH ITEMS 4 & 8.

FLUSH
NOTE
PLACE ITEMS 2 THRU 4 INTO ITEM 1

SURFACE + FLUSH

7
6
5
4 P-140-A-008 HOSE ASS'Y, CONSOLE TO LIFT, 1/2 DIA X 40 FT. LG.
3 P-150-P-012 Bracket Floor Service (Offset Slots)
2 P-150-P-013 Box, Floor Service
1 601-600-023 Carton, Top #1011, Bottom #1012, (275#, DW)

NOTICE OF CONFIDENTIAL INFORMATION

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NOTES:
1. REMOVE ALL SHARP CORNERS & EDGES.
2. UNLESS OTHERWISE SPECIFIED, SURFACE FINISH TO BE L/D RMS.
3. WELDING MEDIUM SHALL CONFORM TO AWS SPECIFICATIONS TO E-7018 ELECTRODES OR E-7011 CODE 3.3 FLUX CORE WERE ONLY.

G-nize

Parts List

FILE NAME
P-020-A-002

NEXT ASSEMBLY

MOHAWK RESOURCES LTD.

Title
PARALLELOGRAM Parts Box #2

Scale 1/4

Drawn

1/20/03

Weight 62.18 LBS

From
P-020-A-002
NOTE 1
PLACE ITEMS 2 THRU 22 INTO ITEM 1.

NOTE 2
ITEMS 19 AND 22 QUANTITIES MAY VARY WITH LIFT LENGTHS.
VERIFY WITH BASE PROVIDED WITH LIFT

SURFACE

C-SIZE

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INFORMATION SHALL NOT BE USED OR DISCLOSED TO ANY OTHER
PARTIES FOR ANY PURPOSE WHATSOEVER.

BAG

22 600-640-094 Bolt, 3/4" x 10 NC x 3" Lg, Grd 5
21
20 P-020-A-005 Parallelogram Shim Bag
19 600-670-003 Anchor Bolt, 3/4" x 6" Lg, UNC Class 2A
18
17
16 600-930-001 Wheel Chocks, Rubber
15 600-890-006 Cotter Pin, 1/8 x 1 3/4
14 600-710-010 Washer, Flat, 1"
13 601-600-022 Bag, 9 x 12, Plastic, Transparent
12 P-160-P-001 Tilt Bar
11 601-630-001 Paint, Red, Spray
10 601-550-002 Coupler Plug to 3/8 NPTM
9 601-530-001 Coupler Sleeve to 3/8 NPTM
8 601-420-010 Fitting, 90 Deg Elbow, 3/8 NPTM to 3/8 NPTF (Street)
7 601-200-044 Fitting, 90 Deg Elbow, B JIC to 10 JIC
6 601-200-036 Fitting, Str, 3/8 Tube to Tube
5 601-200-041 Fitting, Str, 1/4 Tube to Tube
4 601-200-008 Air Hose, Blue, 3/8 (Transparent) x 100 Feet
3 601-200-006 Air Hose, Black, 1/4 (Transparent) x 100 Feet
2 601-200-001 Air Hose, Black, 1/4 (Opaque) x 100 Feet
1 601-600-023 Carton, Top #1011, Bottom #1012, (275#, DW)

ITEM NAME DESCRIPTION

Parts List

FILE NAME P-020-A-003

NEXT ASSEMBLY

TITLE PARALLELOGRAM SURFACE PARTS BOX #1

MOHAWK RESOURCES LTD.

SCALE 1/4 DRAWN 1/4
CHECKED 1/4 APPROVED 1/4

TITLE PARALLELOGRAM SURFACE PARTS BOX #1

DATE 7/29/03 WEIGHT 100 LB
FROM

DRAWING NUMBER P-020-A-003
NOTE
PLACE ALL PARTS INTO ITEM 5.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>NAME</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>601-600-022</td>
<td>Bag, 9&quot; x 12&quot;, Plastic, Transparent</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>600-710-010</td>
<td>Washer, Flat, 1&quot;</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>600-740-003</td>
<td>Shim, Horseshoe, Plastic, Black, 1/4&quot;</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>600-740-002</td>
<td>Shim, Horseshoe, Plastic, Red, 1/8&quot;</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>600-740-001</td>
<td>Shim, Horseshoe, Plastic, Blue, 1/16&quot;</td>
<td>10</td>
</tr>
</tbody>
</table>
NOTES:
1. ALL DIMENSIONS SHOWN ARE APPROXIMATE (FOR BILL OF MATERIAL PURPOSES). CABLES AND TURNS TO BE CUT AFTER ROUTING.
2. PROVIDE ~3 FEET OF EXTRA CABLE IN ENCODER BOX FOR PANEL ACCESS.
3. RIGHT HAND PLATFORM SHOWN. EVERYTHING IS A MIRROR IMAGE FOR THE LEFT HAND.
4. REFER TO WIRING DIAGRAM FOR CONNECTIONS ON ENCODER BOX TERMINAL STRIP.
5. LONG CABLES FROM REAR LEGS MAY BE DIFFERENT LENGTH DEPENDING ON CUSTOMER'S CONSOLE PLACEMENT. REFER TO SCHEDULE SPECIFIED ON LIFT ORDER.

NOTICE OF CONFIDENTIAL INFORMATION

[Diagram includes various parts labeled with numbers and dimensions, along with electrical connections and annotations for installation.]
TYPICAL ALL LEG LOCATIONS  
(MIRROR VIEW FOR OPPOSITE PLATFORM)
<table>
<thead>
<tr>
<th>ITEM</th>
<th>NAME</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>601-200-039</td>
<td>Air Tube Fitting, Straight, 1/4 Tube to 1/4 MNPT</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>601-530-047</td>
<td>Reducer, 3/4 NPTM to 1/4 NPTF</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>601-530-009</td>
<td>Coupling, 3/4 NPT, Fem Typ., 150#</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>601-450-040</td>
<td>Pipe Nipple, 1/4 x Close, Galvanized, BlackSched 40, 150#</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>601-410-093</td>
<td>Check Valve, Brass, 1/4-18, 5 gpm, 2000 PSI</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>601-450-021</td>
<td>Tee, 1/4 NPT, Female</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>601-450-019</td>
<td>Pipe Coupling, 1/4 NPT Fem to 1/4 NPT Fem</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>601-450-042</td>
<td>Nipple, Pipe, 1/4 Pipe x 6” Long</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>601-450-041</td>
<td>Nipple, Pipe, 1/4 Pipe x 4” Long</td>
<td>2</td>
</tr>
</tbody>
</table>
NOTE: MATCH DRILL ENCLOSURE DOOR FOR THREADS ON CONTROL DISPLAY (ITEM 6)
NOTES:

1. DO NOT OVERTIGHTED CLAMPS ON REED SWITCHES! (SNUG ONLY)
2. POSITION SWITCHES ON CYLINDER USING BATTERY MODULE.

TOP VIEW
ORIENT REED SWITCHES AS SHOWN

120°

C-size

NOTICE OF CONFIDENTIAL INFORMATION
INFORMATION CONTAINED HEREIN IS CONFIDENTIAL AND PROPRIETY OF MOHAWK RESOURCES LTD., WHOSE MARKINGS ARE PLACED ON IT SHALL NOT BE USED EXCEPT FOR PURPOSES OF INSPECTION, INSTALLATION, OR MAINTENANCE. THIS INFORMATION SHALL NOT BE USED OR DISCLOSED BY THE RECIPIENT FOR ANY OTHER PURPOSES WHATSOEVER.

NOTES:
1. REMOVE ALL SHARP CORNERS & EDGES
2. UNLESS OTHERWISE SPECIFIED, SURFACE FINISH TO BE US RMS
3. WELDING MEDIUM SHALL CONFORM TO AWS SPECIFICATIONS TO E-7018 ELECTRODES OR E-7018 CODE 5.3 FLUX CORE WERE ONLY.

TOLERANCES:
- ANGULAR: .030
- LINEAR: .008

File Name: P-200-4-002.dwg

Parts List

<table>
<thead>
<tr>
<th>ITEM</th>
<th>NAME</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>601-165-036 Reed Switch</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>601-165-042 Female Terminal</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>601-165-048 Cable Seal Red</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>601-165-044 4 Contact Tower</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>601-200-002 Clamp, Reed Switch, 1 3/4 Dia</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>601-200-001 Air Cylinder, 1 3/4 Dia x 1&quot; Stroke</td>
<td>1</td>
</tr>
</tbody>
</table>

MOHAWK RESOURCES LTD.

Parallelogram
L/R Air Cylinder Assembly

Scale NTS: DRAWN
Checked: Approved

Date: 10/16/02  Weight: .75  From: n/a

Next Assembly

Drawing Number: P-200-4-002

P-
MOHAWK MODEL PARALLELOGRAM

Lift to be used by trained operator only.

Authorized personnel only in lift area.

Clear area if vehicle is in danger of falling.

Position vehicle with center of gravity midway between adapters.

Use vehicle manufacturer's lift points.

Always use safety stands when removing or installing heavy components.

Remain clear of lift when raising or lowering vehicle.

Avoid excessive rocking of vehicle while on lift.

Use height extenders when necessary to ensure good contact.

Auxiliary adapters may reduce load capacity.

Do not override self-closing lift controls.

Keep feet clear of lift while lowering.

The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style.

Funding for the development and validation of these labels was provided by the Automotive Lift Institute, PO Box 33116 Indialantic, FL. 32903.

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© 1992 by ALI, Inc. ALI/WLI01w

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MOHAWK MODEL PARALLELOGRAM

SAFETY INSTRUCTIONS
Read operating and safety manuals before using lift.

SAFETY INSTRUCTIONS
Proper maintenance and inspection is necessary for safe operation.

SAFETY INSTRUCTIONS
Do not operate a damaged lift.

The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style.

Funding for the development and validation of these labels was provided by the Automotive Lift Institute, PO Box 33116 Indialantic, FL 32903.

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© 1992 by ALI, Inc.
**MOHAWK MODEL PARALLELOGRAM**

**MOHAWK.**
Because Quality Lasts Forever.

**Model USL-6000**
Full rise, space-saving, no-post, portable scissors lift, offers full under-car access.

**Model A-7**
The A-7 is a 7,000 lb. capacity asymmetric lift that allows full opening of all vehicle doors as well as total undercar/underdash access, thanks to Mohawk's unique "clear-floor" design. Low 4' arms accommodate all imports and low-riding sports cars. Includes both 3' and 6' truck adapters.

**Model System I**
The 9,000 lb. capacity System I, like all Mohawk lifts, features Mohawk's patented hydraulic equalization system with adjustable overhead (or optional underground) hydraulic lines. Offers low 3 1/2" swing arms and comes standard with truck adapters.

**Model LMF-12, TP-15, TP-18, TP-26 & TP-30**
These 12,000 to 30,000 lb. capacity models are the ideal heavy-duty lifts for up to Class VI trucks. Mohawk's unique "clear floor" design makes these the perfect lifts for all fleet applications. Truck adapters are standard equipment.

**TR-Series Ramp Style Lifts**
Standard models from 25,000 up to 125,000 lbs. for total under-vehicle access. Ramp lengths from 20' to 50'. Completely operated by a single technician, and features fully interlocked, redundant safety systems.

Mohawk Industrial Park • PO. Box 110
Amsterdam, NY 12010
1-800-833-2006 or 518-842-1431
FAX 518-842-1289

www.mohawklifts.com