

HY-BRID LIFTSTM

BY CUSTOM EQUIPMENT LLC

MAINTENANCE & TROUBLESHOOTING MANUAL
PUSH-AROUND AERIAL WORK PLATFORM

SUPO-643
REV A



HB-P527

SERIES I

NOTES

[illegible]

If there is a question about application
and/or operation, contact:

Custom Equipment, LLC
2647 Hwy 175
Richfield, WI 53076
U.S.A.
P: +1-262-644-1300
F: +1-262-644-1320
www.hybridlifts.com

FOREWORD

Original instructions written in English

The purpose of this Maintenance Manual is to provide qualified service personnel with information for servicing and maintaining Hy-Brid Lifts. All information in this manual must be read and understood before any attempt is made to service this machine.

The operation and safety manual is considered a part of the work platform and contains instructions and operating procedures essential to properly and safely operate the Custom Equipment Hy-Brid Lift. Users must read and understand all information in the Safety and Operations Manual before operation.



**THE OPERATION AND SAFETY MANUAL MUST
BE READ AND UNDERSTOOD PRIOR TO OPERATING THE MACHINE.**

- The user/operator should not accept operating responsibility until the manual has been read and understood as well as having operated the lift under supervision of an experienced and qualified operator.
- Because the manufacturer has no direct control over machine application and operation, proper safety practices are the responsibility of the user and all operating personnel.



**ANY MODIFICATION ON THIS MACHINE WITH
OUT THE EXPRESS WRITTEN CONSENT OF THE MANUFACTURER IS PROHIBITED.**

TABLE OF CONTENTS

NOTES.....2

FOREWORD3

TABLE OF CONTENTS.....4

INDEX OF FIGURES.....5

SECTION 1 | SAFETY6

1.1 | SAFETY SYMBOLS.....6

1.2 | GENERAL RULES AND PRECAUTIONS6

1.3 | SAFETY GUIDELINES.....7

SECTION 2 | MAINTENANCE8

2.1 | BATTERY MAINTENANCE8

2.2 | BATTERY MAINTENANCE WET CELL BATTERIES.....8

2.3 | CHARGING THE BATTERY8

2.4 | REMOVING PLATFORM CONTROL.....10

2.5 | LUBRICATION.....10

2.6 | COMPONENTS REQUIRING ADJUSTMENT.....10

2.7 | EXAMINATION, REPAIR, REPLACEMENT OF LIMITED LIFE COMPONENTS10

2.8 | SAFETY DEVICES AND SYSTEMS REQUIRING CHECKS10

2.9 | STORAGE.....10

2.10 | MAJOR ALTERATIONS OR REPAIRS.....10

SECTION 3 | MAINTENANCE CHECKLISTS11

3.1 | PRE-START INSPECTION CHECKLIST.....12

3.2 | FREQUENT INSPECTION CHECKLIST.....13

3.3 | FREQUENT INSPECTION CHECKLIST.....14

SECTION 4 | TECHNICAL REFERENCES16

4.1 | HYDRAULIC SCHEMATIC16

4.2 | ELECTRICAL SCHEMATIC18

SECTION 5 | WIRING DIAGRAMS.....20

5.1 | WIRING DIAGRAM20

5.2 | UPPER CONTROL WIRING DIAGRAM22

SECTION 6 | TROUBLE SHOOTING FLOWCHARTS.....24

6.1 | TROUBLESHOOTING FLOWCHART: POWER.....24

6.2 | TROUBLESHOOTING FLOWCHART: ELEVATING26

6.3 | TROUBLESHOOTING FLOWCHART: LOWERING.....28

SECTION 7 | PARTS DIAGRAMS.....30

7.1 | SAFETY CONTROL DECALS30

7.2 | MAIN POWER/SAFETY CIRCUIT31

7.3 | ELEVATE/LOWER CIRCUIT PARTS32

7.4 | WHEELS/BREAKS.....34

7.5 | COVERS/OTHER35

SECTION 8 | WARRANTY.....36

NOTES.....38

INDEX OF FIGURES

FIGURE 1: Maintenance Lock Use7

FIGURE 2: Maintenance Lock Storage.....7

FIGURE 3: Battery Charger LED Display.....9

FIGURE 4: Platform Control Removal.....10

Revisions:

Revision A: Initial Release.....September 2015

1.1 | SAFETY SYMBOLS



FAILURE TO FOLLOW THIS WARNING WILL CAUSE DEATH OR PERSONAL INJURY.

“DANGER” indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.



FAILURE TO FOLLOW THIS WARNING MAY CAUSE DEATH OR PERSONAL INJURY.

“WARNING” indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury



FAILURE TO FOLLOW THIS WARNING MAY CAUSE INJURY OR DAMAGE TO EQUIPMENT.

“CAUTION” indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury or damage to equipment

1.2 | GENERAL RULES AND PRECAUTIONS

Custom Equipment, LLC designed the Hy-Brid Lift push-around scissor lift to be safe and reliable. It is intended for elevating personnel, along with their necessary tools and materials to overhead work locations. Vibration does not create significant hazards on this machine.

An operator of any type of work platform is subject to certain hazards that cannot be protected by mechanical means. It is therefore essential that operators be competent, careful, physically and mentally fit, and thoroughly trained in safe operation of this machine. Although Custom Equipment, LLC conforms to specified ANSI and CSA requirements, it is the responsibility of the owner to instruct operators with the safety requirements made not only by Custom Equipment, LLC, but by the various safety boards in your area, as well as additional requirements set forth by ANSI abd CSA. If you come across a situation that you think might be unsafe, stop the platform and request further information from qualified sources before proceeding.



MAINTENANCE INFORMATION IS FOR USE BY TRAINED PERSONNEL ONLY.



NEVER REACH BETWEEN SCISSOR LINKS OR PROP UP PLATFORM UNLESS MAINTENANCE PINS ARE IN LOCK.

1.3 | SAFETY GUIDELINES

Maintenance Lock

The maintenance lock must be placed into position whenever the machine is being serviced in the raised or partially raised position. Serious injury and/or death could result if maintenance lock is not used properly.

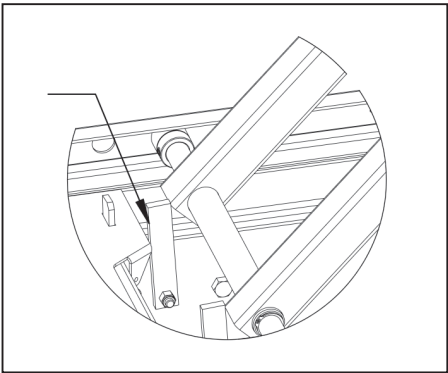


FIGURE 1: Maintenance Lock Use

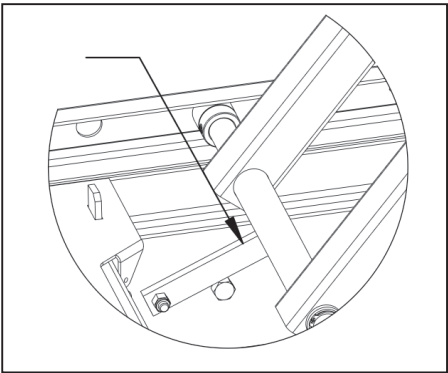


FIGURE 2: Maintenance Lock Storage



FAILURE TO COMPLY WITH THE LISTED SAFETY PRECAUTIONS MAY RESULT IN MACHINE DAMAGE, PERSONNEL INJURY, OR DEATH.

Other Guidelines

- Never work under an elevated platform until maintenance locks have been engaged.
- Remove all rings, watches, and jewelry when performing any maintenance.
- Do not wear long hair unrestrained or loose fitting clothing and neckties which may become caught on or entangled in equipment.
- Observe and obey all warnings and cautions on machine and in manual.
- Keep oil, grease, water, etc. wiped from standing surfaces and handhold's
- Before making any adjustments, lubricating or performing any other maintenance, shut off all power controls.
- Battery should always be disconnected during replacement of electrical components.
- Keep all support equipment and attachments stowed in their proper place.
- Use only approved nonflammable cleaning solvents
- After maintenance, inspect the machine as described for Pre-delivery

2.1 | BATTERY MAINTENANCE

Battery cycle life will vary significantly depending on the depth of discharge. The deeper the depth of discharge the fewer cycles a battery will deliver. Conversely, the shallower the depth of discharge the more cycles a battery will deliver. To optimize the health of your battery, limit discharge to 80%.

The performance and life of a battery will vary with application, usage, temperature and depth of discharge. AGM batteries tend to deliver higher than their rated capacity (up to 10-15% higher) for -30 cycles until they are “broken in” and settle at their rated capacity.

Operating batteries above 80°F (27°C) will yield runtime above the rated capacity and operating batteries below 80°F (2rC) will yield runtime below the rated capacity. Cold temperatures can significantly reduce battery capacity. Although higher temperatures increase the battery capacity they also accelerate corrosion and reduce overall battery life.

2.2 | BATTERY MAINTENANCE WET CELL BATTERIES

If this unit is equipped with a deep cycle 12-volt Group 27 battery, the care and maintenance of your battery has much to do with how well this unit functions. Battery wiring and water level should be checked monthly. Do not overfill. When the cells are too full, fluid will seep out when charging. The solution is at its proper strength when the battery is manufactured. Use distilled water and keep fluid up to proper level. When required, water should be added to battery after charging, unless water level is below the plates.

- Slide cabinet open to access battery.
- Remove battery caps and check fluid level.
- Fill each cell (if needed) to split ring with distilled water.
- Reinstall caps.
- Wash all dirt, debris, acid, etc., off battery whenever corrosion is detected. Use a solution of 5ml baking soda per 0.95 liters of warm water.
- Coat terminals with a commercially available coating.
- Close cabinet and latch in place.

2.3 | CHARGING THE BATTERY

This unit is equipped with either a deep cycle 12-volt AGM maintenance-free battery or a deep cycle Group 27 battery. Batteries should be fully charged after each use. Opportunity charging can be done but the batteries should be fully charged at least every other day if they are used daily. Charge in a ventilated area as gases may be released through the pressure relief valve if the batteries are excessively over-charged.

NOTE: The surrounding temperature greatly affects the power reserve within a battery.

EXAMPLE: A battery that is 100% charged at 80° F (27°C) drops to 65% at 32°F (0°C) At 0°F (-18°C), this battery will drop to 40% efficiency.



BATTERIES GENERATE EXPLOSIVE GASES. KEEP SPARKS AND FLAME AWAY FROM BATTERIES. DO NOT SMOKE WHILE CHARGING.

Do not operate unit while charging. Shortened battery life will result.

To Charge:

- Park the machine on a level surface
- Plug charger into AC outlet until charged.
- For best battery life, leave charger plugged in until machine will be used again, the charger will maintain the battery charge.

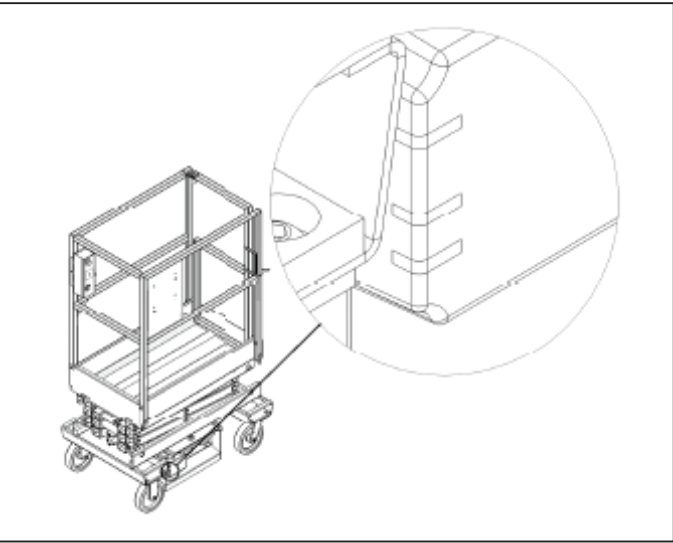


FIGURE 3: Battery Charger LED Display



CAUTION

NEVER ADD ACID TO BATTERY.



WARNING

DO NOT OPERATE UNIT WHILE CHARGING

How to read battery display

| POWER | BATTERY 1 STATUS | |
|----------------|------------------|----------------|
| | CHARGING | READY |
| | | |
| Green LED (ON) | Red LED (OFF) | Green LED (ON) |

This display indicates that the power is on but there is no connection to a battery. The charger must see approximately five (5) volts on a battery do deliver D/C current.

| POWER | BATTERY 1 STATUS | |
|----------------|------------------|-----------------|
| | CHARGING | READY |
| | | |
| Green LED (ON) | Red LED (ON) | Green LED (OFF) |

This display indicates that power is on and that both outputs are delivering D/C current to the batteries.

| POWER | BATTERY 1 STATUS | |
|----------------|------------------|----------------|
| | CHARGING | READY |
| | | |
| Green LED (ON) | Red LED (OFF) | Green LED (ON) |

This display indicates that power is on and that both outputs are finished charging and are in a float maintenance mode.

2.4 | REMOVING PLATFORM CONTROL

For maintenance, the upper control panel will need to be unscrewed and removed in order to operate from ground level. Elevate the platform to set the mainenance lock in place.

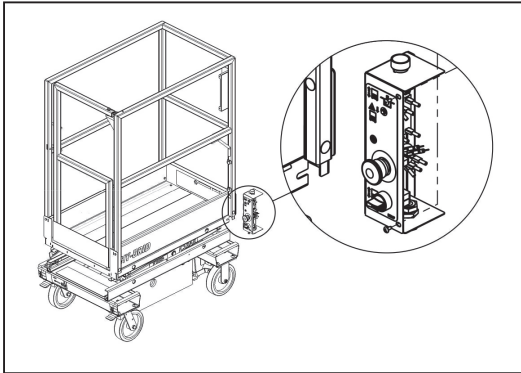


FIGURE 4: Platform Control Removal

2.5 | LUBRICATION

| Item | Specification | Frequency |
|--------|---------------|-----------|
| Wheels | Teflon Spray | Quarterly |

2.6 | COMPONENTS REQUIRING ADJUSTMENT

Under normal use, no components should require adjustment. Contact the manufacturer if adjustments are required.

2.7 | EXAMINATION, REPAIR, REPLACEMENT OF LIMITED LIFE COMPONENTS

With proper use, regular battery charging, and regular inspection, there are no limited life components that require routine replacement.

2.8 | SAFETY DEVICES AND SYSTEMS REQUIRING CHECKS

Check safety functions as part of daily inspection. Check that the brakes are holding.

2.9 | STORAGE

After periods of storage, exposure to extremes of ambient conditions-heat, cold, moisture, dust etc. inspect the machine. Batteries will need to be charged. Refer to the Pre-Delivery/ Frequent Inspection Checklist in the Maintenance Manual.

2.10 | MAJOR ALTERATIONS OR REPAIRS

Any alterations must be approved by the manufacturer. Major repairs, which affect the stability, strength, or performance of the machine must also be approved by the manufacturer, recorded, and include machine inspection and testing. Never attach pipe racks, material lifting devices, or make any other alteration that is not part of the intended design of the machine.



FAILURE TO PERFORM INSPECTIONS AND PREVENTATIVE MAINTENANCE AT RECOMMENDED INTERVALS MAY RESULT IN THE UNIT BEING OPERATED WITH A DEFECT THAT MAY RESULT IN INJURY OR DEATH OF THE OPERATOR

Regular inspection and conscientious maintenance is important to efficient economical operation of this machine. It will help to assure that equipment will perform satisfactorily with a minimum of service and repair. Make checks at the stated intervals or more frequently if required by local operating conditions. The following inspection checklists are required and included in this manual:

- Pre-Start (Required before operation at each work shift)
- Frequent (Required at intervals not more than three months)
- Pre-Delivery/Annual (Required at intervals not more than twelve months)

The rated life of the machine is Light Intermittent Duty (typical use 10 years, 40 weeks per year, 20 hours per week, 5 load cycles per hour).

3.1 | PRE-START INSPECTION CHECKLIST



THIS CHECKLIST MUST BE USED AT THE BEGINNING OF EACH SHIFT OR AFTER EVERY SIX TO EIGHT HOURS OF USE. FAILURE TO DO SO COULD AFFECT THE SAFETY OF THE OPERATOR.

Model Number:_____ Serial Number:_____

Check each item listed below.

- Use proper operating, service, and maintenance manual for specific information and settings
- If an item is found to be unacceptable make the necessary repairs and check the "repaired" box.
- When all items are "acceptable", the unit is ready for service.
- If an item is found to be unacceptable, make the necessary repairs and check the "repaired" box. When all items are "acceptable," the unit is ready for service.

Y - Yes/Acceptable N - No/Unacceptable R - Repaired

| Description | Y | N | R |
|---|--------------------------|--------------------------|--------------------------|
| Visual Inspections | | | |
| Check that there are no damaged, dented, or bent structural members. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There are no loose or missing parts. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Check that warning and instructional labels are legible and secure. Ensure that load capacity is clearly marked. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Check the platform rails and safety gate for damage. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Platform and base controls are not missing, damaged, or disconnected. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Electrical cables and wires are not torn, frayed, or disconnected. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Hydraulic hoses are not torn or loose, and there are no leaks. Check that hoses and cables have no worn areas or chafing. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Check the tires for damage. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Check that all snap rings are secure in grooves on pivot pins. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Functional Tests | | | |
| Gate closes automatically and latches (alignment can be adjusted with screw-on toe board or railing). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Platform Controls – Check all switches and push buttons for proper operation: | | | |
| Emergency Stop (stops all movement) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Up/Down Controls (Elevates, Lowers, Enable button must be pressed) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Base Controls – Check all switches and push buttons for proper operation: | | | |
| Emergency Stop (stops all movement) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Key Switch (Selects Platform Control, Ground Control, or Off) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Alarm (Not damaged, sounds for descent) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Up/Down Rocker Switch (Elevates, Lowers) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wheels: Front and rear wheels rotate freely. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Brakes engage and hold when platform is elevated. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Date:_____ Inspected By:_____

3.2 | FREQUENT INSPECTION CHECKLIST



AERIAL PLATFORMS SHALL BE INSPECTED, SERVICED, AND ADJUSTED TO MANUFACTURER'S REQUIREMENTS BY A QUALIFIED MECHANIC PRIOR TO EACH SALE, LEASE, OR RENTAL, AND EVERY 3 MONTHS OR 150 HOURS, WHICHEVER COMES FIRST.

Model Number:_____ Serial Number:_____

- Use proper operating, service, and maintenance manual for specific information and settings
- If an item is found to be unacceptable make the necessary repairs and check the "repaired" box.
- When all items are "acceptable", the unit is ready for service.
- If an item is found to be unacceptable, make the necessary repairs and check the "repaired" box. When all items are "acceptable," the unit is ready for service.

Y - Yes/Acceptable N - No/Unacceptable R - Repaired

| Description | Y | N | R |
|---|--------------------------|--------------------------|--------------------------|
| Visual Inspections | | | |
| Perform all the checks on the Pre-Start Inspection Checklist. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Inspect the condition of hydraulic fluid in reservoir. Oil should have a clear amber color. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Inspect the entire machine for signs of damage, broken welds, loose bolts, or improper repairs. (Check for corrosion, cracking, abrasion, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Check that all snap rings are secure in grooves on pivot pins | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Check if tires are leaning in or out. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Verify that bubble level is in place. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Verify that maintenance and inspection records are up t o date. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Check the tires for damage. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Check the hydraulic fluid level with the platform fully lowered. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Functional Tests | | | |
| Perform all check on Pre-Start inspection checklist. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Functions operate smoothly | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Functions operate over full range of motion | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergency lowering – Manual override functions properly | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Check that the platform does not drift down with a full load | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wheels lubricated if needed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comments:

Date:_____ Inspected By:_____

3.3 | FREQUENT INSPECTION CHECKLIST



AERIAL PLATFORMS SHALL BE INSPECTED, SERVICED, AND ADJUSTED TO MANUFACTURER’S REQUIREMENTS BY A QUALIFIED MECHANIC PRIOR TO EACH SALE, LEASE, OR RENTAL, AND EVERY 3 MONTHS OR 150 HOURS, WHICHEVER COMES FIRST.

Model Number:_____ Serial Number:_____

- Use proper operating, service, and maintenance manual for specific information and settings
- If an item is found to be unacceptable make the necessary repairs and check the “repaired” box.
- When all items are “acceptable”, the unit is ready for service.
- If an item is found to be unacceptable, make the necessary repairs and check the “repaired” box. When all items are “acceptable,” the unit is ready for service.

Y - Yes/Acceptable N - No/Unacceptable R - Repaired

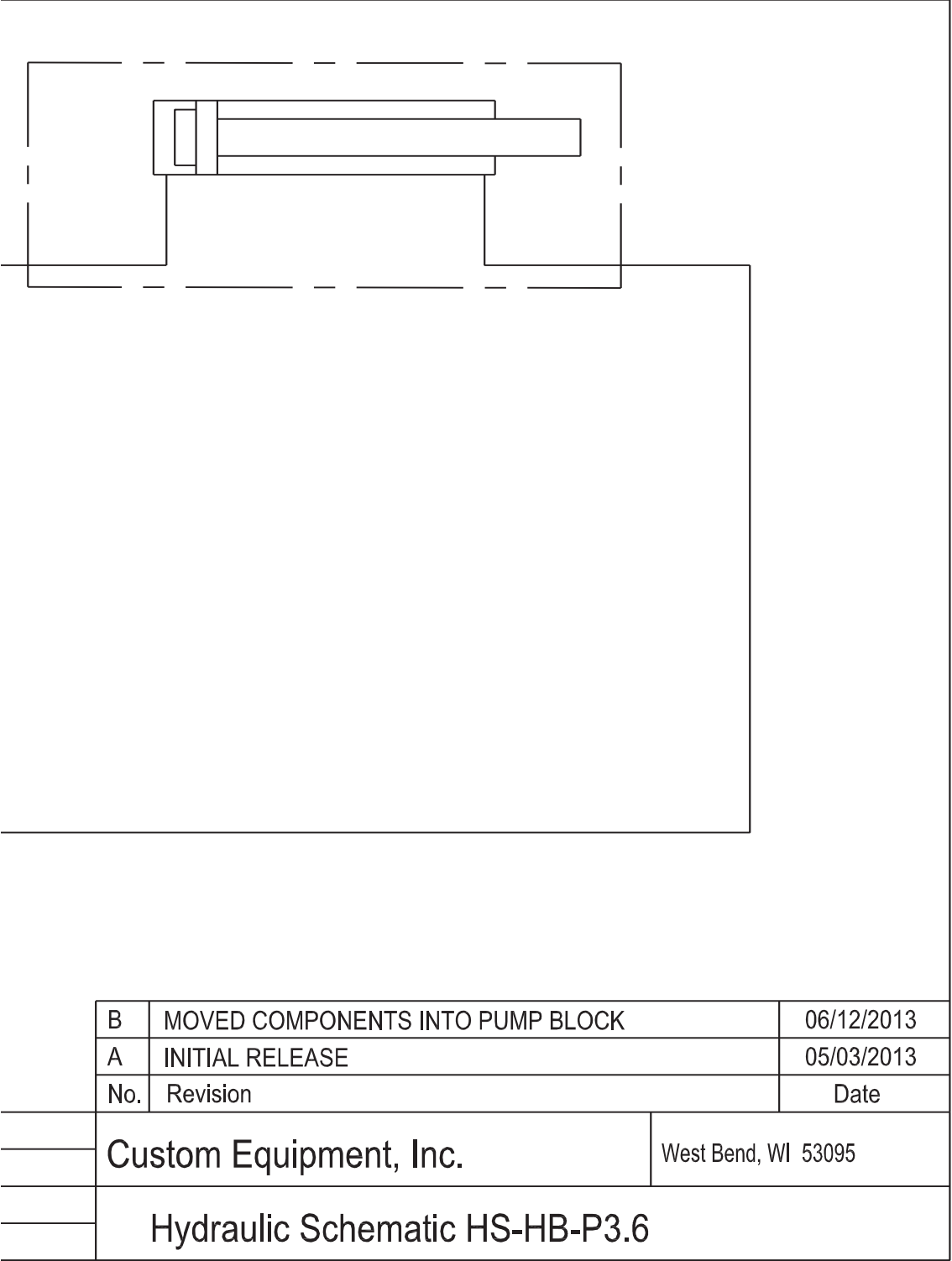
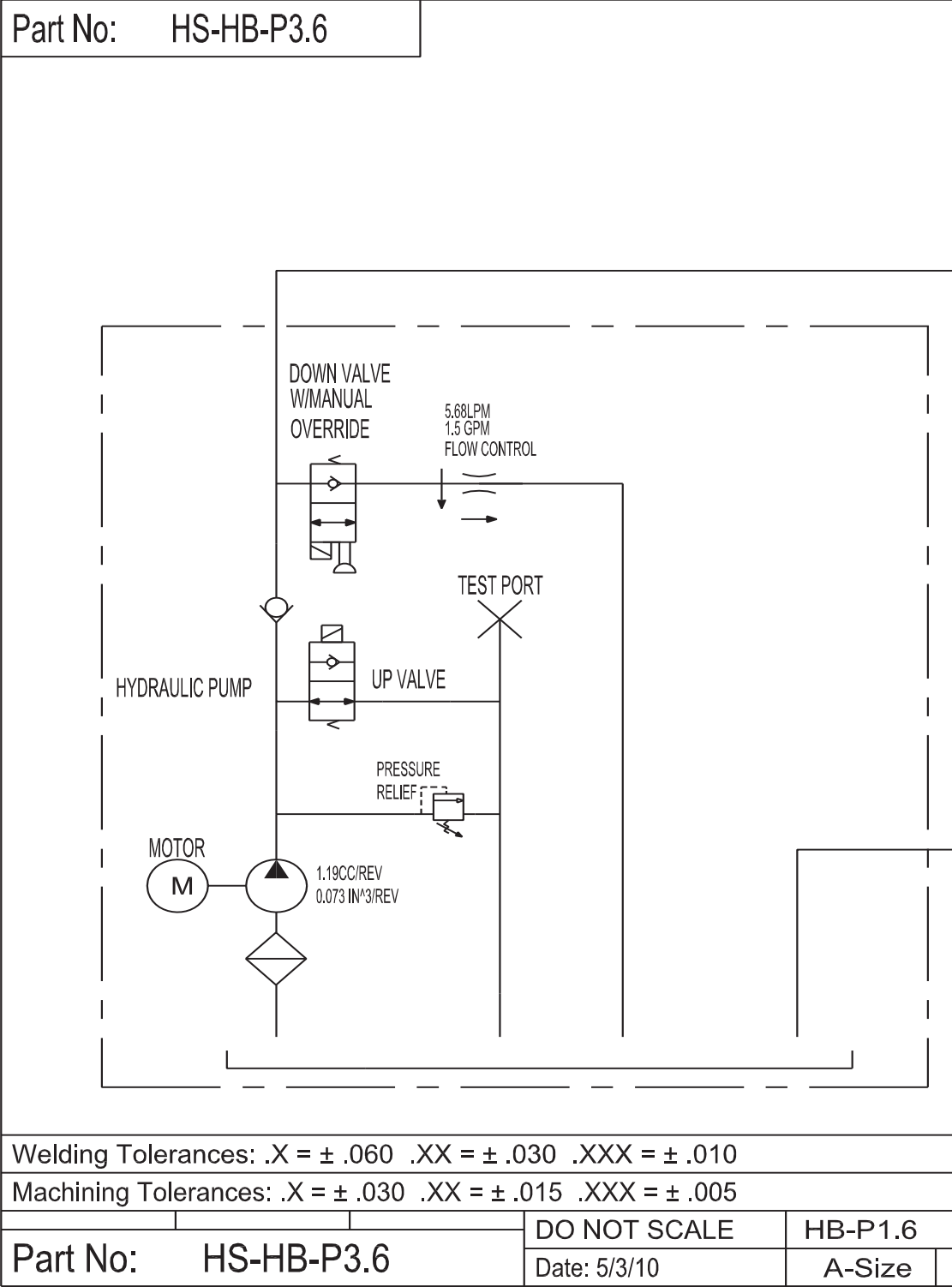
| Base: | Y | N | R | Platform: | Y | N | R |
|--|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|
| Inspect slide tracks for damage | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | All rails in place/secure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| All frame bolts tight | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | No bent rails | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Pump Secure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | No broken welds | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| DC motor secure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Platform power outlet safe/working (if installed) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Battery Hold Downs Secure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Entrance gate closes freely | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Batteries Fully Charged | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Cables in place/secure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Counterweights secured | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Functions: | | | |
| Wheels: Grease casters | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Elevate/Lower Operational | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wheels: Bolts/Nuts Tight | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Master Power Switch Breaks Circuits | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Maintenance Locks: Pins storage location | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Emergency Stop Breaks Circuits | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| All Shields/Guards in place | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Emergency Down Operational | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Hydraulic Oil Level | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Motion Alarms Functional | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Check all hydraulic hoses for leaks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Brakes: Operational | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Check all hydraulic fittings for leaks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Bubble Level in Place | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Scissors: | | | | When beginning to elevate, overload light and alarm activate. Then, if not overloaded, allows elevation to continue, and light and alarm stop. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| No Broken Welds | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | When overloaded, platform stops elevating. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Ret. Rings Secure on Pivots | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Check battery Voltage: <12.5V, charge. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| No Bent Beam Members | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Wiring / Other: | | | |
| All rollers turn freely | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Switches secure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Decals: | | | | Contactors secure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Legibility | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Tight on terminals (no loose wiring) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Correct capacity noted | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Operator / Service Manual Included | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Proper placement quantity | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Battery Charger Secure / Operational | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comments:

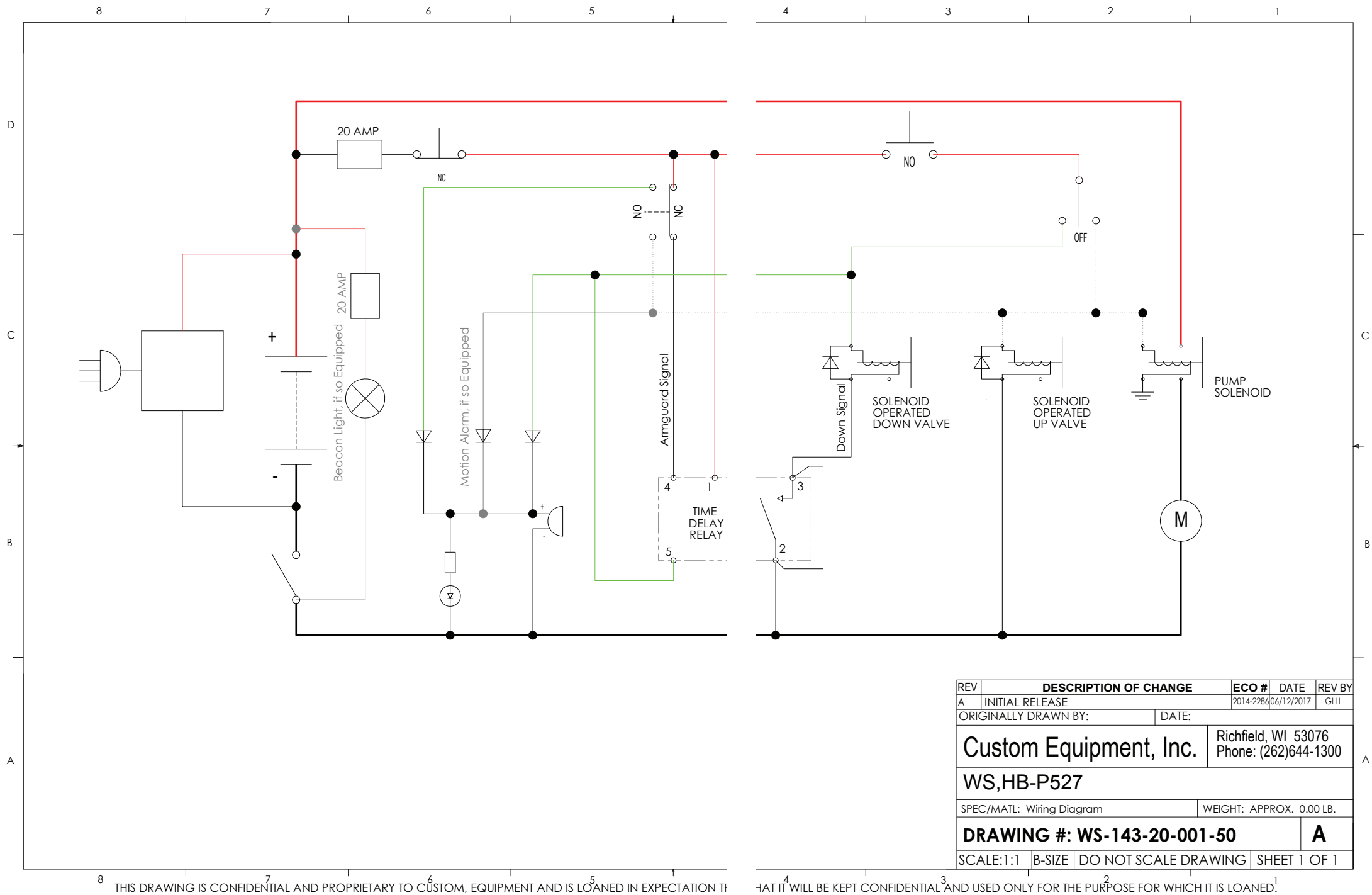
Date:_____ Inspected By:_____

THIS PAGE WAS INTENTIONALLY LEFT BLANK

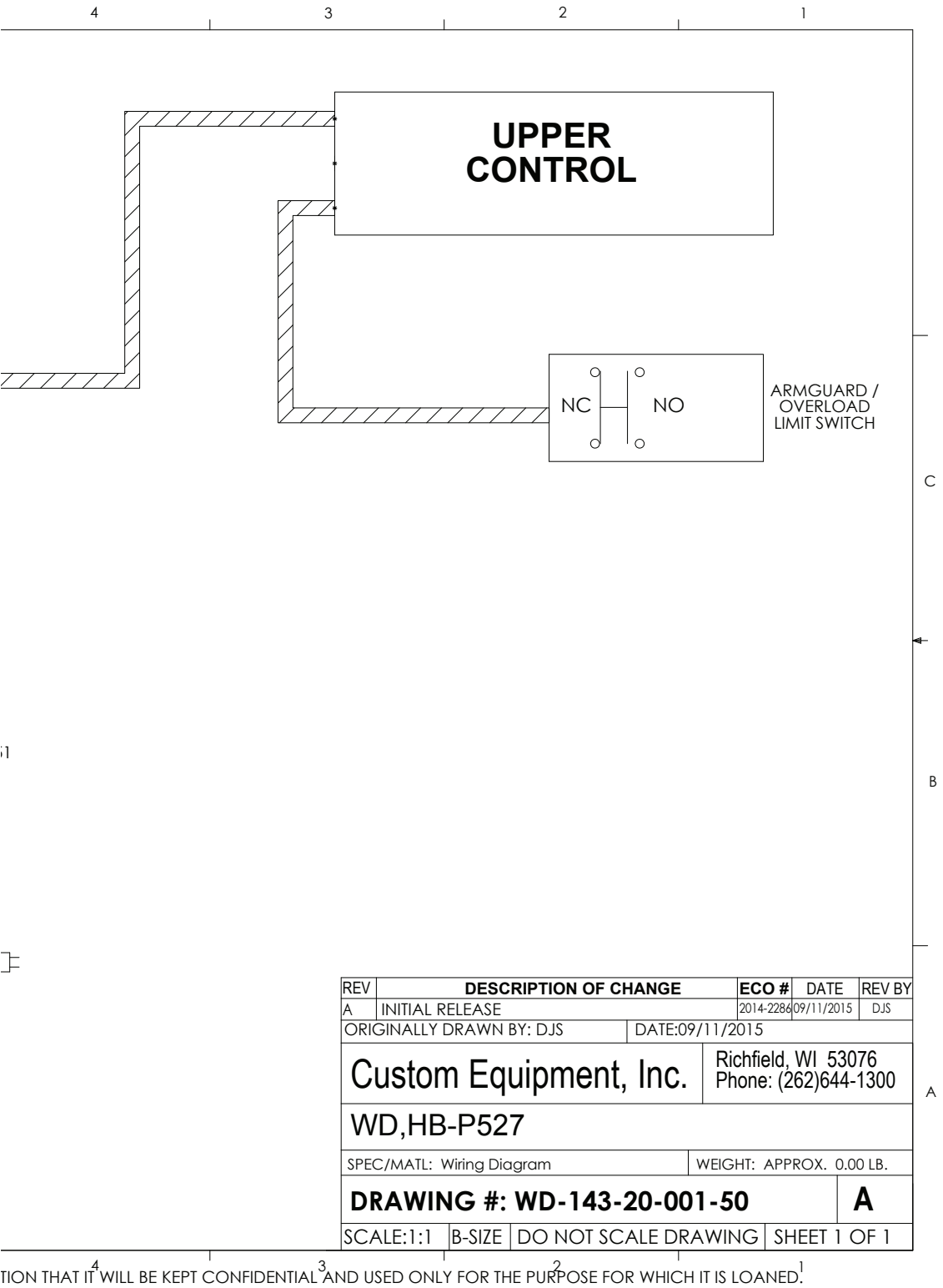
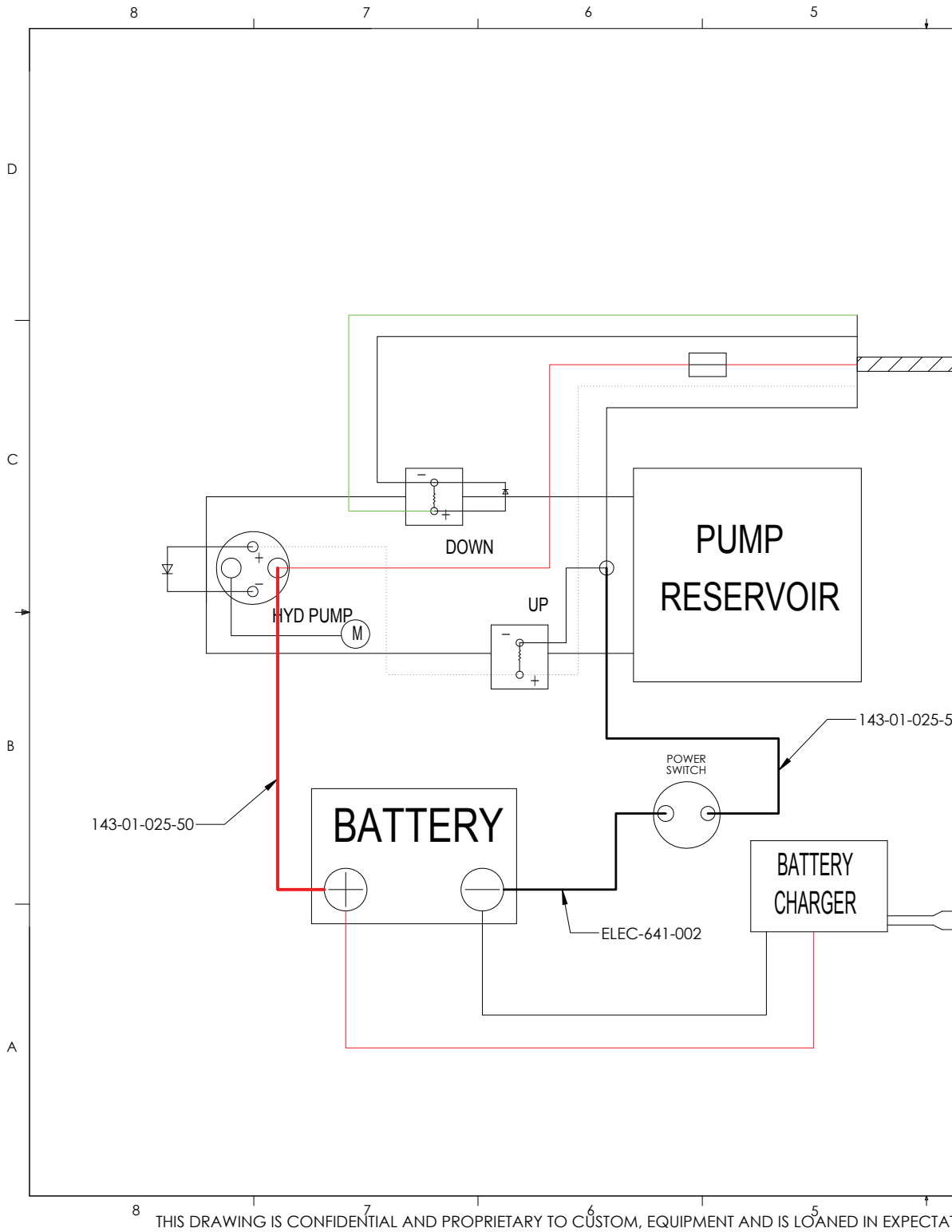
4.1 | HYDRAULIC SCHEMATIC
Part No HS-HB-P3.6/527



4.2 | ELECTRICAL SCHEMATIC
Part No WS-143-20-001-50



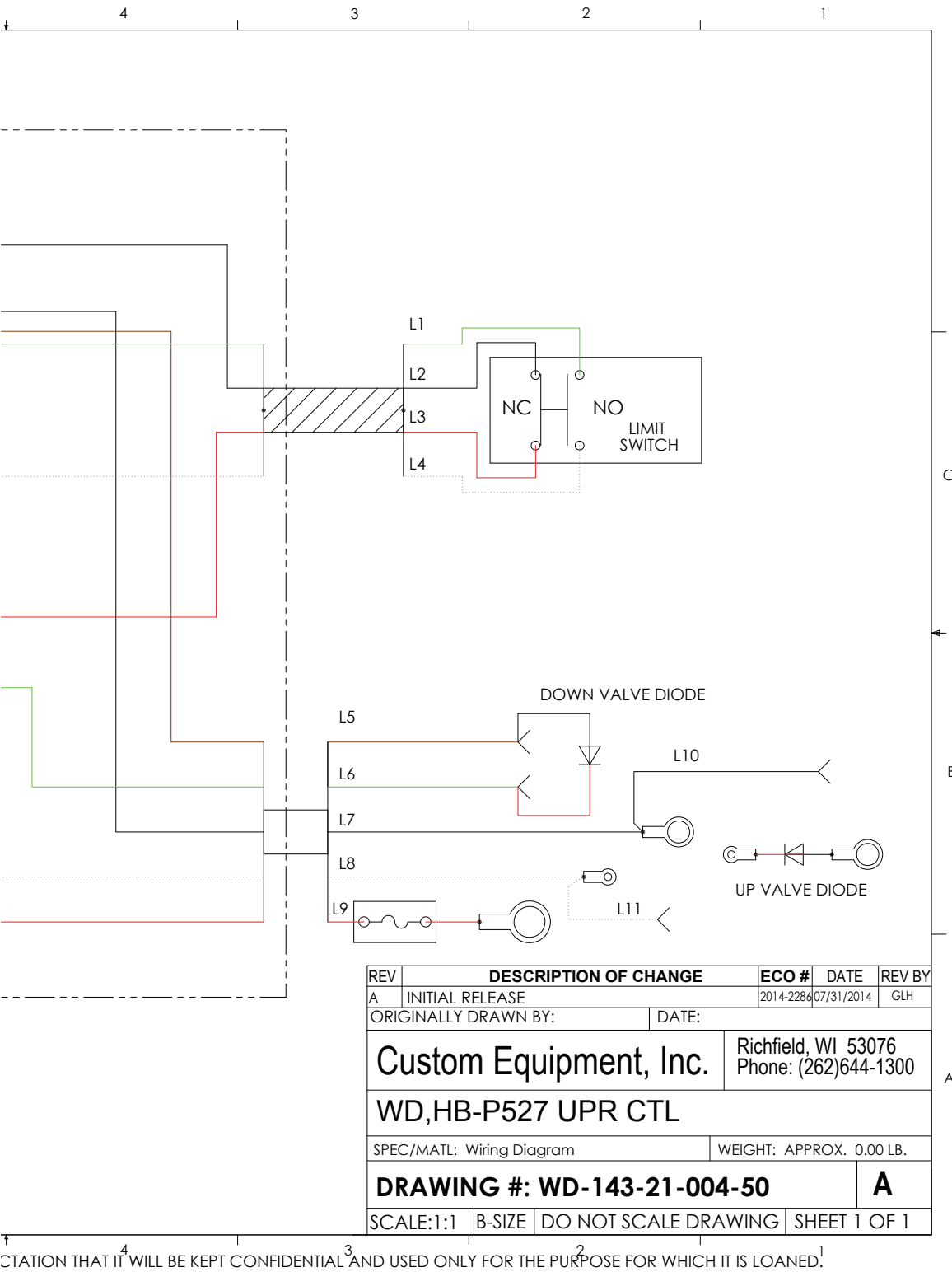
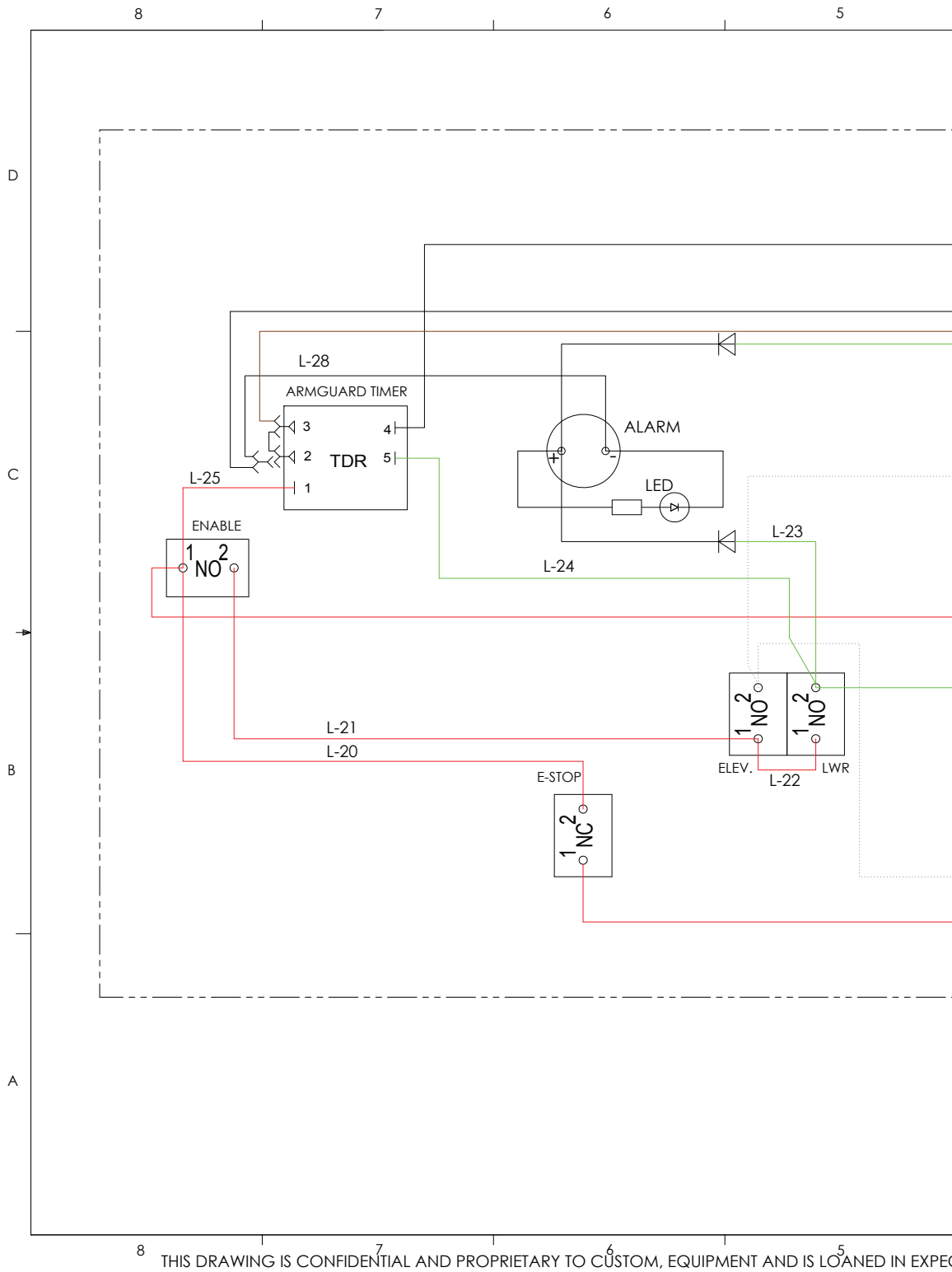
5.1 | WIRING DIAGRAM
Part No WD-143-20-001-50



| REV | DESCRIPTION OF CHANGE | | ECO # | DATE | REV BY |
|-----------------------------|-----------------------|--------|---|------------|--------------|
| A | INITIAL RELEASE | | 2014-2286 | 09/11/2015 | DJS |
| ORIGINALLY DRAWN BY: DJS | | | DATE:09/11/2015 | | |
| Custom Equipment, Inc. | | | Richfield, WI 53076 Phone: (262)644-1300 | | |
| WD,HB-P527 | | | | | |
| SPEC/MATL: Wiring Diagram | | | WEIGHT: APPROX. 0.00 LB. | | |
| DRAWING #: WD-143-20-001-50 | | | | | A |
| SCALE:1:1 | | B-SIZE | DO NOT SCALE DRAWING | | SHEET 1 OF 1 |

5.2 | UPPER CONTROL WIRING DIAGRAM

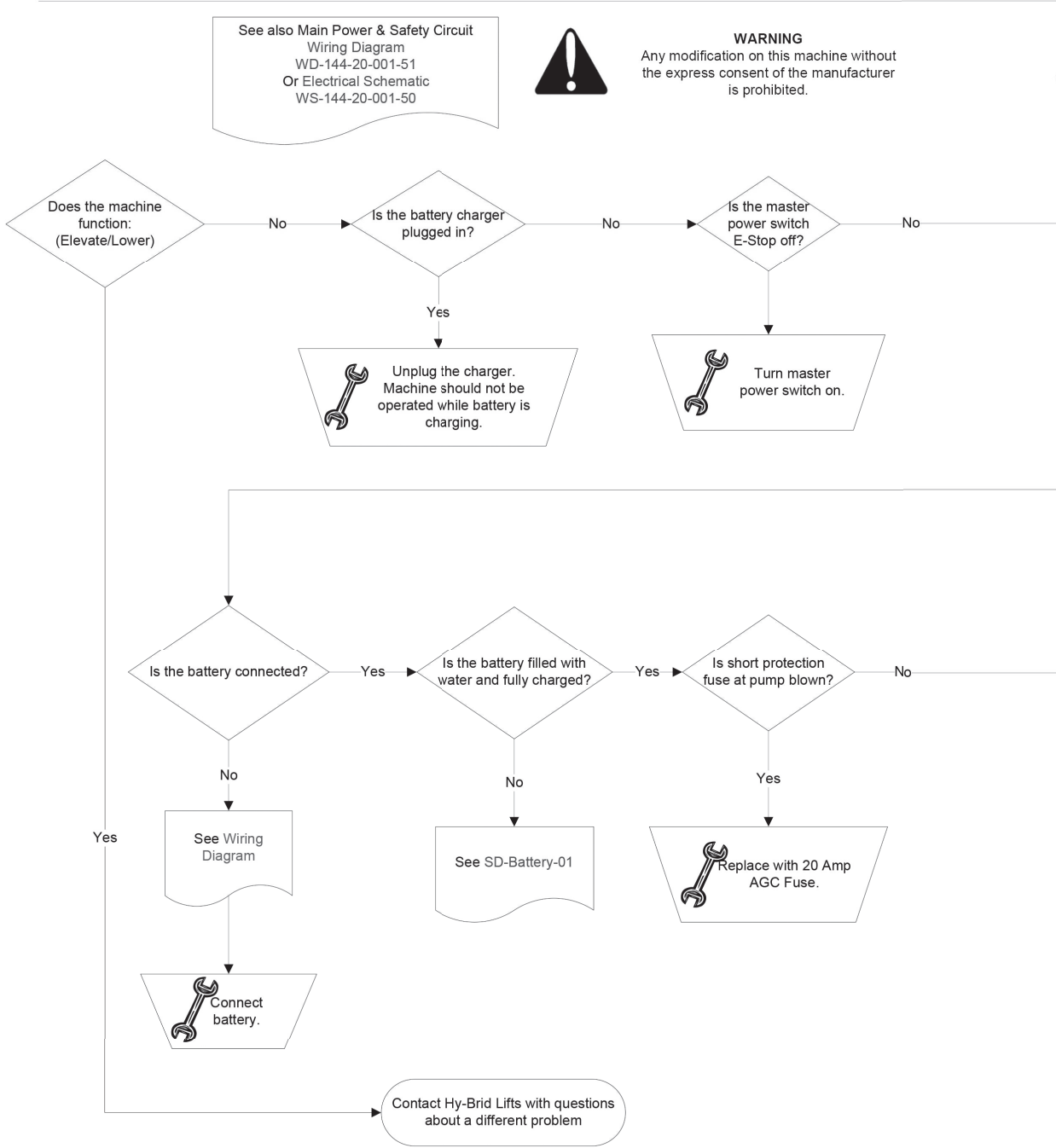
Part No WD-143-21-004-50



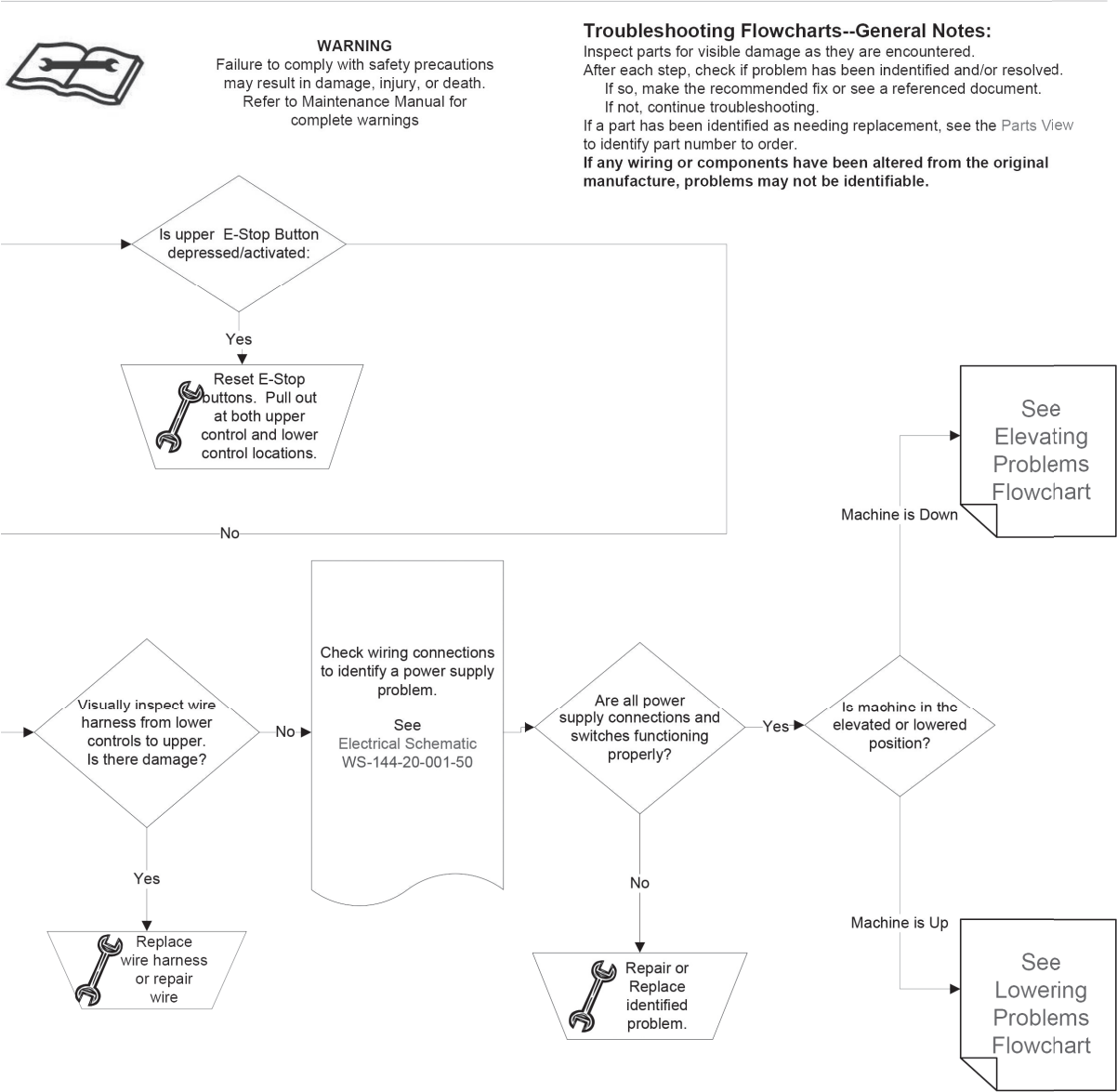
| REV | DESCRIPTION OF CHANGE | | ECO # | DATE | REV BY |
|-----------------------------|-----------------------|----------------------|---|--------------|--------|
| A | INITIAL RELEASE | | 2014-2286 | 07/31/2014 | GLH |
| ORIGINALLY DRAWN BY: | | | DATE: | | |
| Custom Equipment, Inc. | | | Richfield, WI 53076 Phone: (262)644-1300 | | |
| WD,HB-P527 UPR CTL | | | | | |
| SPEC/MATL: Wiring Diagram | | | WEIGHT: APPROX. 0.00 LB. | | |
| DRAWING #: WD-143-21-004-50 | | | | | A |
| SCALE:1:1 | B-SIZE | DO NOT SCALE DRAWING | | SHEET 1 OF 1 | |

6.1 | TROUBLESHOOTING FLOWCHART: POWER
Troubleshooting Step 1: Main Power

Flowchart: HB-P827/1027 Power
Troubleshooting Step 1: Main Power



Reference Revision A



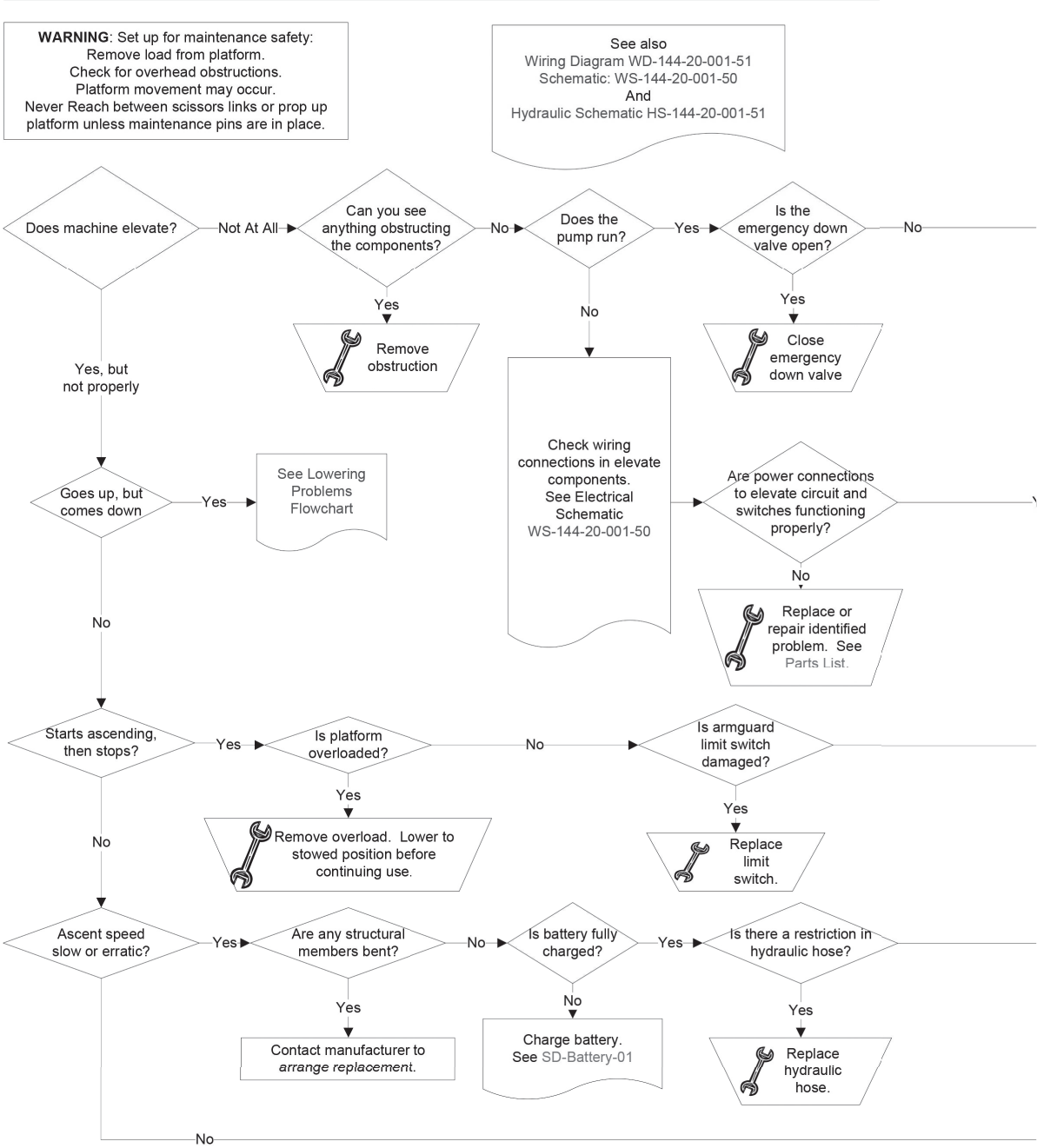
Reference Revision A

6.2 | TROUBLESHOOTING FLOWCHART: ELEVATING

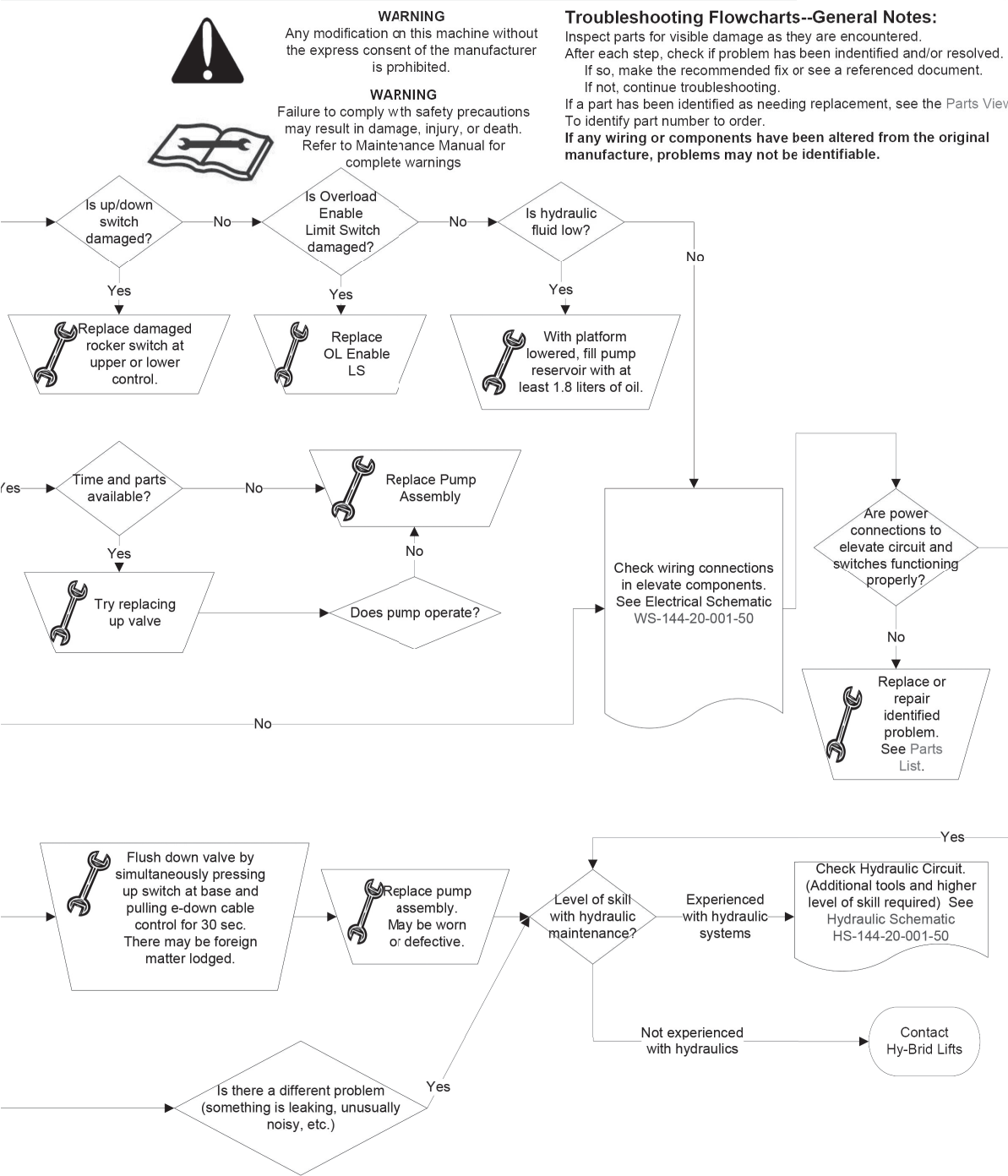
Troubleshooting Step 2A: Elevating

Flowchart-HB-P827/1027-Elevating

Troubleshooting Step 2A: Elevating



Reference Revision A



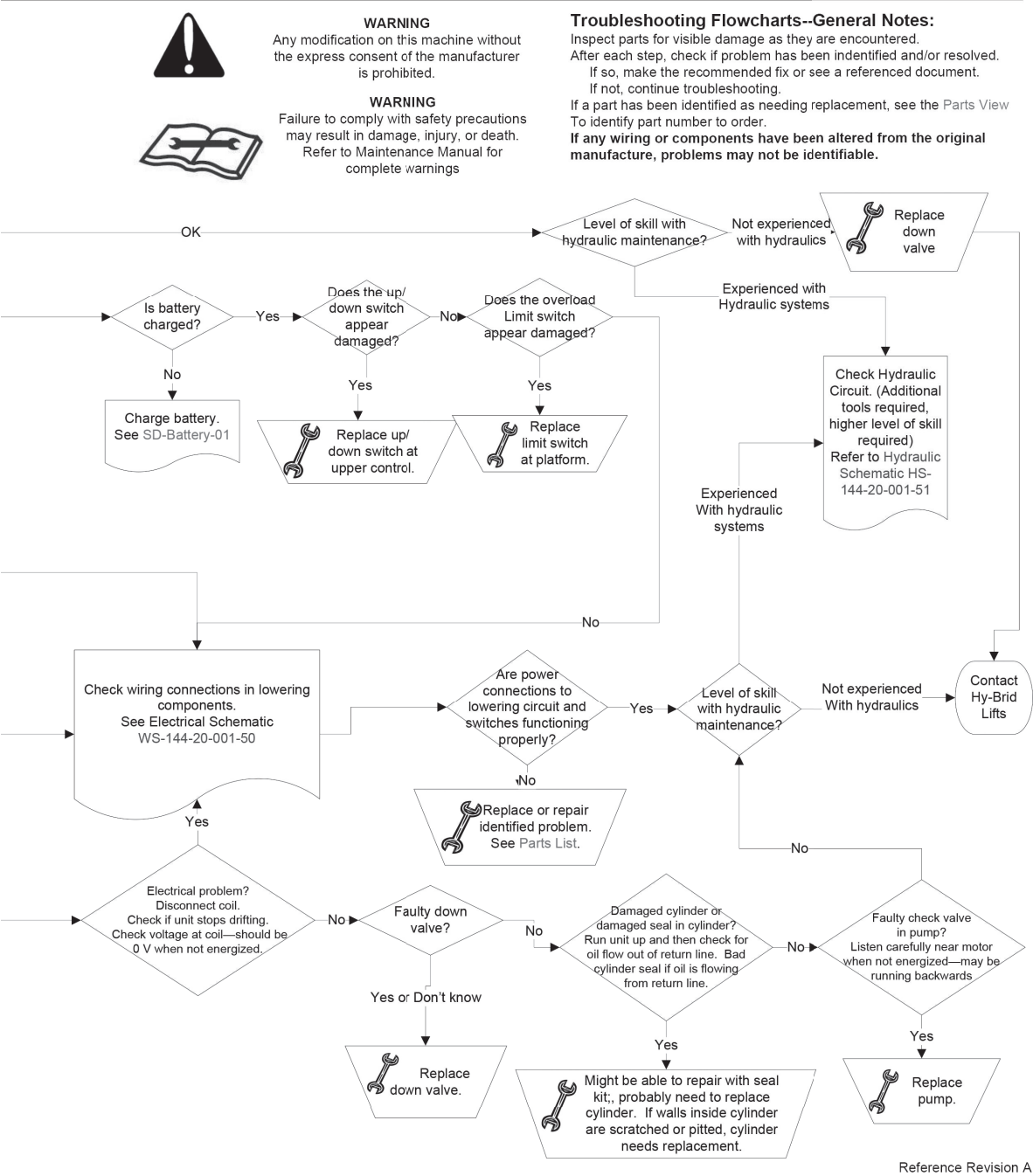
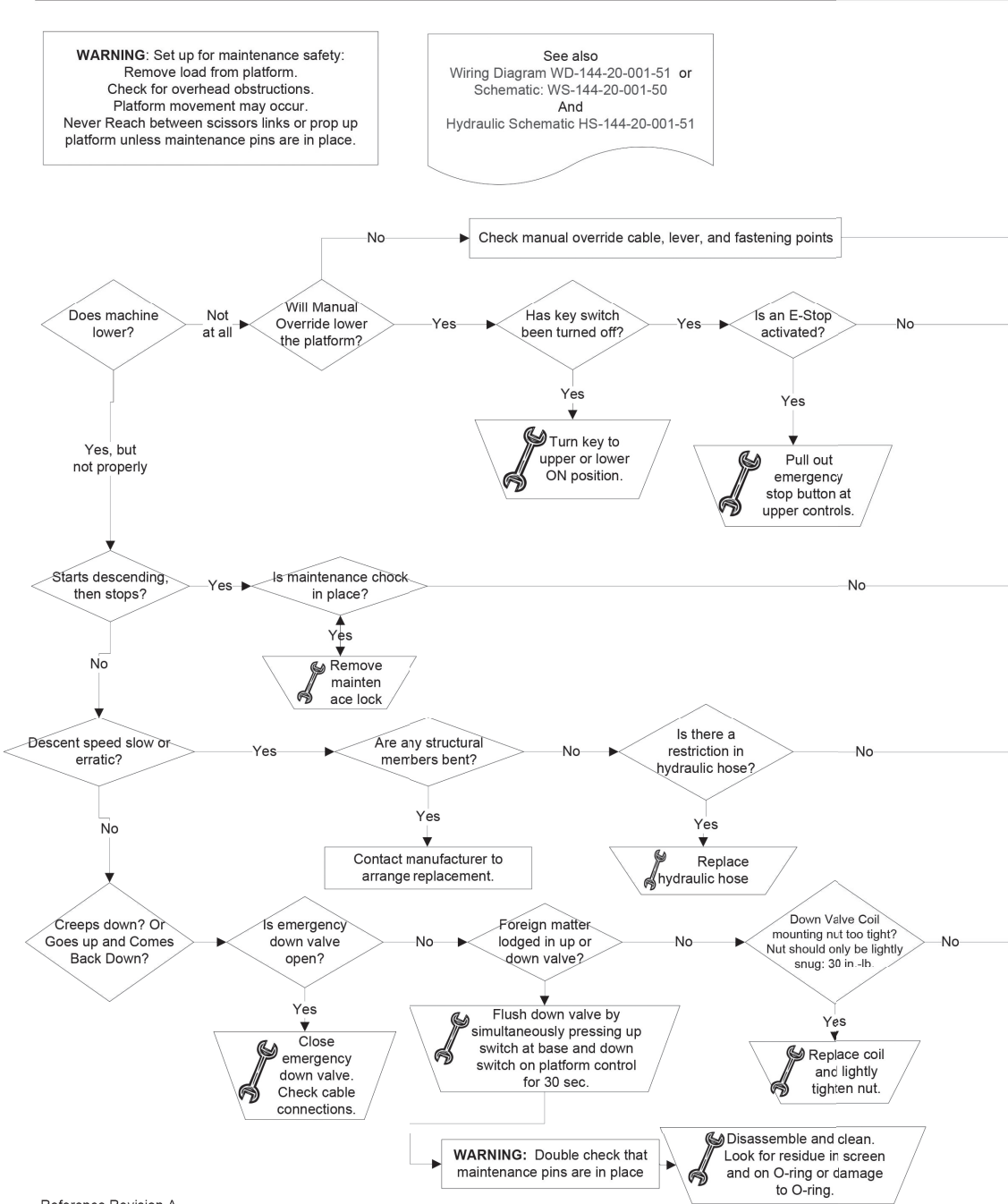
Reference Revision A

6.3 | TROUBLESHOOTING FLOWCHART: LOWERING

Troubleshooting Step 2B: Lowering

Flowchart: HB-P827/1027-Lowering

Troubleshooting Step 2B: Lowering





USE ONLY MANUFACTURER APPROVED REPLACEMENT PARTS. USE OF NON-OEM PARTS WILL VOID WARRANTY.



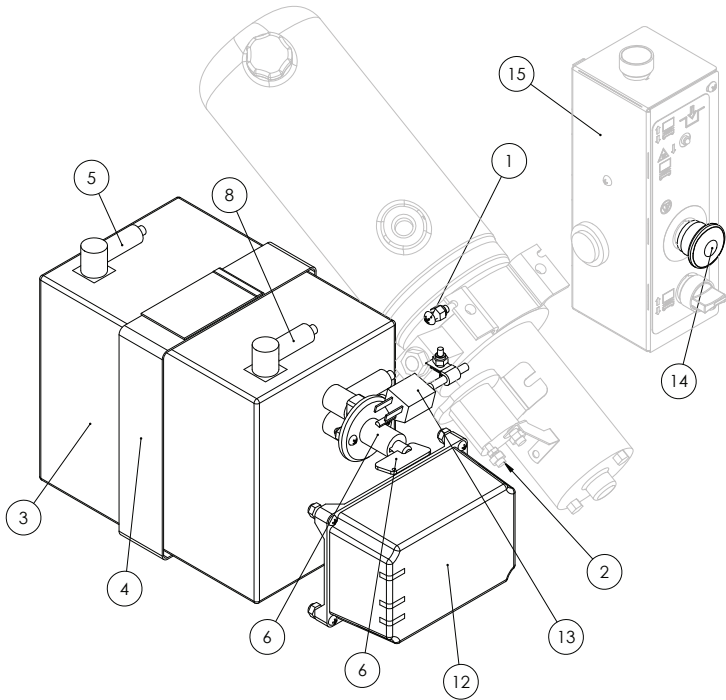
REPLACEMENT OF THE FOLLOWING COMPONENTS WILL AFFECT THE STRENGTH, STABILITY, OR SAFETY FUNCTION OF THE UNIT: BATTERY, HYDRAULIC CYLINDER, AND ALL STRUCTURAL COMPONENTS.

Listed below are replacement parts that may be available and listed for reference. These represent current revisions. Refer to our website, www.hybridlifts.com for more complete part listings and earlier revisions. Several parts are mode, serial number, or manufacture date specific. Contact your dealer for replacement part availability and pricing.

7.1 | SAFETY CONTROL DECALS

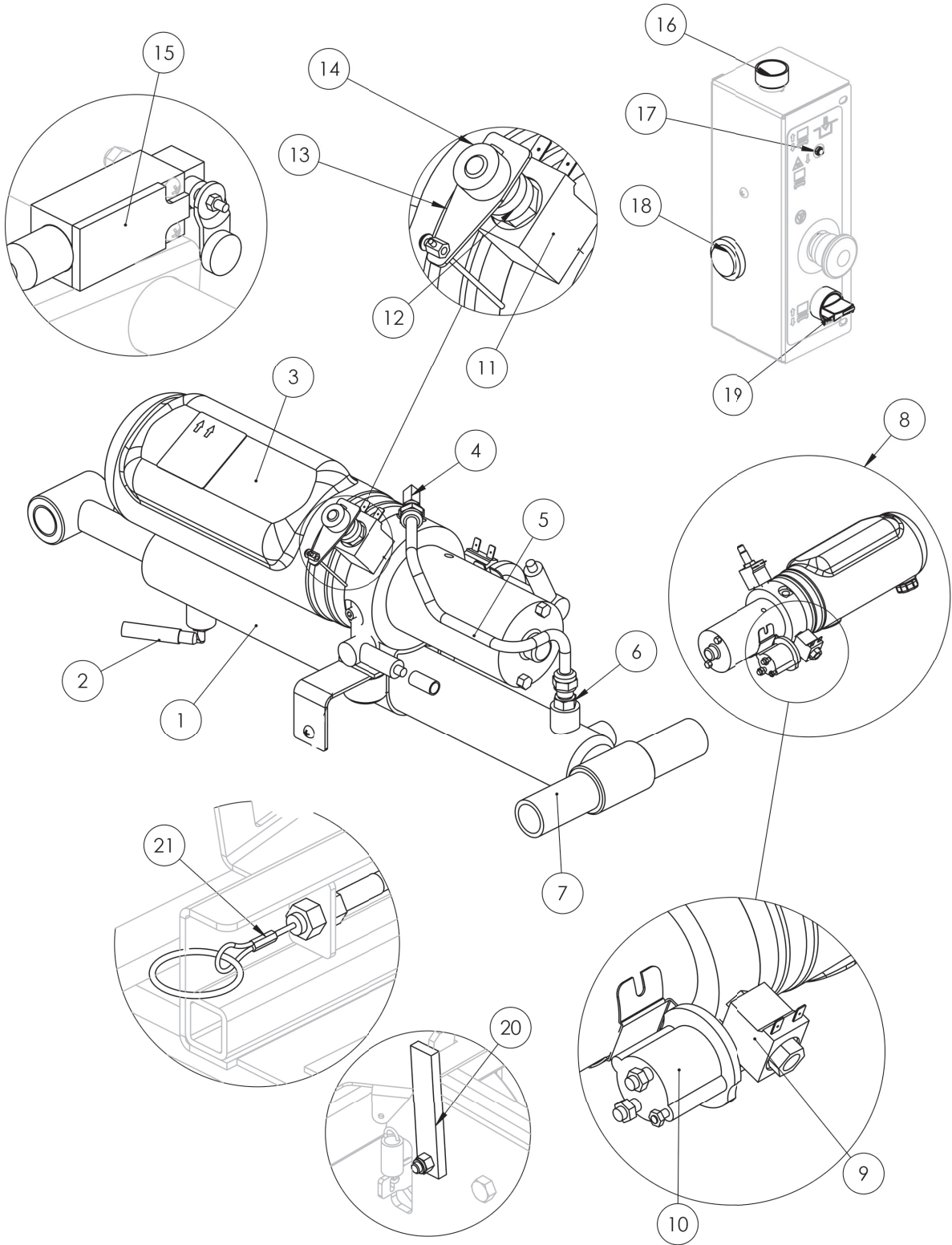
| Part Number | Description |
|-----------------|--------------------------------|
| 143-21-006-50-K | DECAL KIT, HB-P527 |
| DE600E-14 | DECAL,MAINT LOCK |
| DE601 | DECAL,LOGO HY-BRID |
| DE603-14 | MODEL# DECAL-HB-P527 |
| DE666 | DECAL, LWR |
| DE669 | DECAL, CONTROL UPR |
| DE673 | DECAL,HYDR FLUID |
| DE674 | DECAL,HYDR FLUID |
| DE675 | DECAL,NO FORK |
| DE706 | DECAL,UPR HB |
| DE726 | DECAL,CAPACITY,500#,1P,I,WO/SO |
| DE727 | DECAL,KEEP |
| DE728 | DECAL,CLEAR |
| DE730 | DECAL,OL ALARM |
| DE746 | DECAL,LANYARD ATTACHMENT |
| DE751 | DECAL,E-DOWN CABLE |
| DE760 | DECAL,E-STOP HANDLE |

7.2 | MAIN POWER/SAFETY CIRCUIT



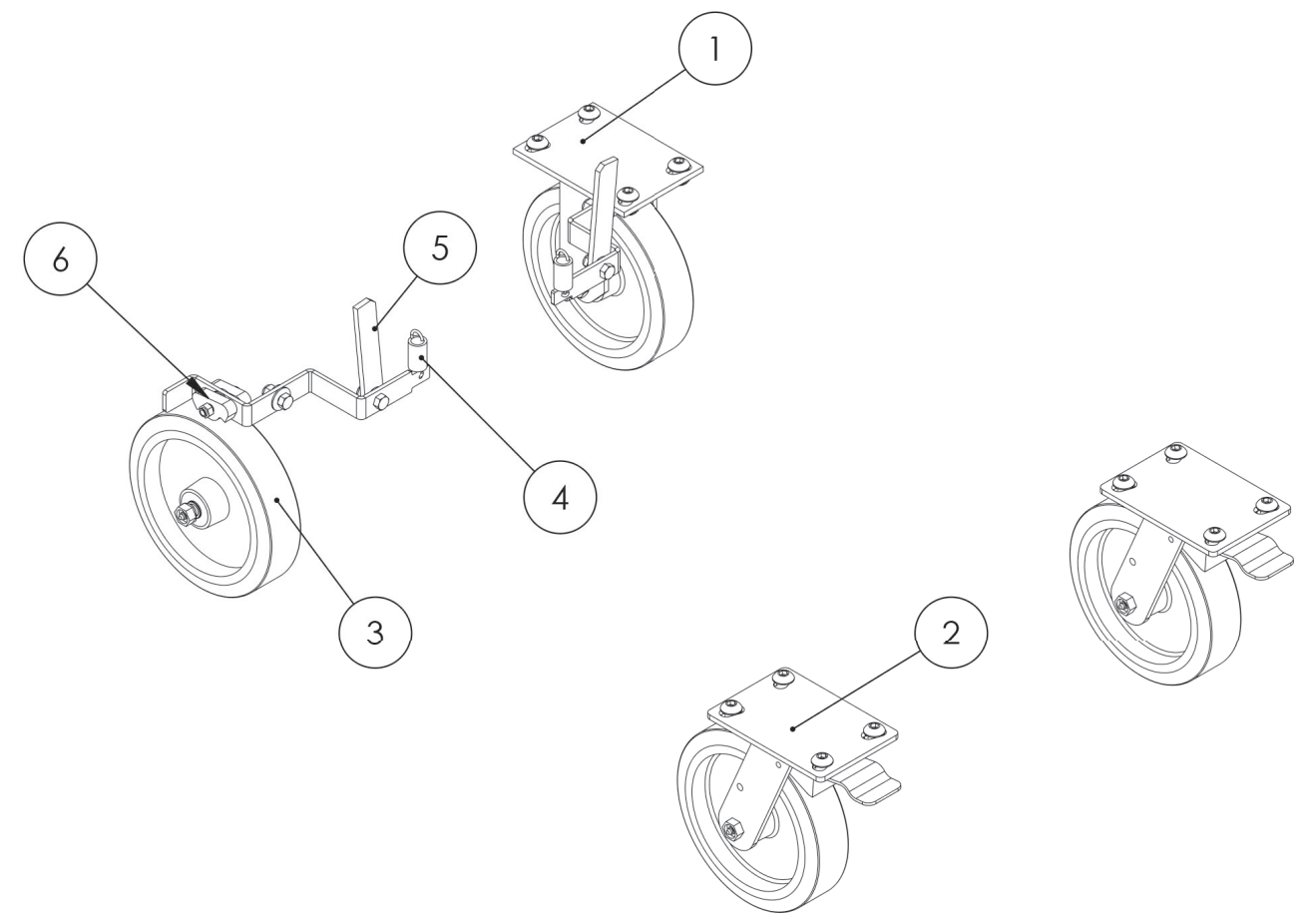
| Item # | Part Number | Description |
|--------|-----------------|--------------------------------|
| 1 | N/A | B- "GROUND" CONNECTION AT PUMP |
| 2 | N/A | B+ CONNECTION AT PUMPB1 |
| 3 | ELEC-047-6 | BATTERY,12V,GR24 AGM |
| 4 | HARD-684 | BATTERY STRAP,VELCRO |
| 5 | ELEC-634C | TERMINAL COVER (RED) |
| 6 | ELEC-633-2 | SWITCH,BATT DISCONNECT |
| 6 | ELEC-633-3 | SPARE KEY |
| 8 | ELEC-634D | TERMINAL BOOT (BLACK) |
| 9 | ELEC-641-002 | CABLE,6GA,BLACK,12,B/B |
| 10 | 143-01-025-50 | CABLE,6GA,RED,26,R/R,.38 EYES |
| 11 | 143-01-025-51 | CABLE,6GA,BLK,22,B/B,.38 EYES |
| 12 | ELEC-746 | CHARGER,12V |
| 13 | ELEC-639-1 | CORD,NEMA 515/IEC C13,12.0 |
| 14 | ELEC-071-KIT | EMERGENCY STOP BUTTON |
| 15 | 143-21-004-D-50 | CTL,UPR ASSEMBLY |
| 16 | ELEC-670-2 | 20A AGC FUSE |

7.3 | ELEVATE/LOWER CIRCUIT PARTS



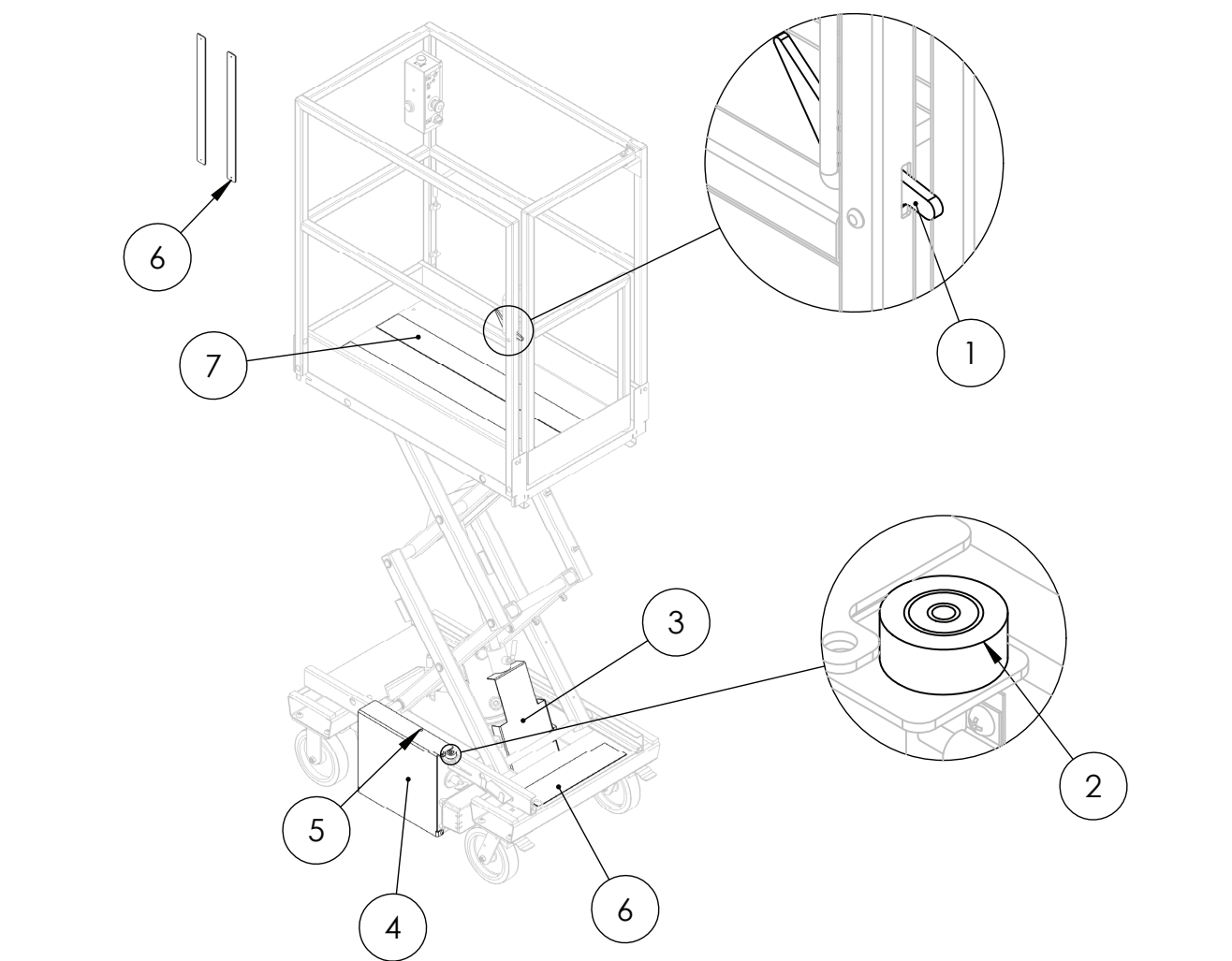
| Item # | Part Number | Description |
|----------------|------------------------------------|---|
| 1 | HYDR-002 | Hydraulic Pump |
| 2 | HYDR-019 HYDR-022-3 HYDR-681 | Hydraulic Fitting Low Pressure Hydraulic Line Hydraulic Grommet |
| 3 | HYDR-032 | Hydraulic Fluid: Not available as a replacement part. Replace with Flomite #150, Dexron II, Mobil-DTE 2, or equivalent. |
| 4 | HYDR-035 | Hydraulic Fitting |
| 5 | HYDR-600-9 | Hydraulic Line |
| 6 | HYDR-604 | Hydraulic Fitting |
| 7 | 143-07-005-02 | Spacer |
| 8 | HYDR-050-8 | Hydraulic Pump |
| 9 | HYDR-673 HYDR-665 | Up Valve Coil Up Valve |
| 10 | HYDR-674 | Start Solenoid (12V) |
| 11 | HYDR-673 HYDR-007-2E-5 | Down Valve Coil (12V) Down Valve |
| 12 | WHEE-605-P | Shaft Spacer |
| 13 | LAS-M115 | Emergency Down Lever |
| 14 | HARD-650 | 1/16 Shaft Collar |
| 15 | ELEC-123-5 | Armguard / Overload Switch |
| 16 | ELEC-602-KIT | Enable Button |
| 17 | ELEC-636 | Overload Indicator Light (Not applicable on this model) |
| 18 | ELEC-635 | Descent Alarm |
| 19 | ELEC-002A-KIT | Up / Down Rotary Switch |
| 20 | 143-01-023-02 | Maintenance Lock Chock |
| 21 | HARD-644-03 | Emergency Down Cable |
| (Not Pictured) | ELEC-632 | Time Delay Relay (Not active on this model) |
| (Not Pictured) | HARD-021 | Retaining Ring,1.25 in. |

7.4 | WHEELS/BREAKS



| Item # | Part Number | Description |
|--------|--|--|
| 1 | 143-21-008-50-K | Rigid Caster Assembly |
| 2 | 143-21-009-50-K | Swivel Caster Assembly |
| 3 | WHEE-706-KIT WHEE-002-1 WHEE-002-2 | Wheel 20.32 cm (8") Bearing Kit Axle Kit |
| 4 | HARD-690 | Spring |
| 5 | 143-01-023-02 | Brake Actuator |
| 6 | 143-01-026-02 | Brake Cam |

7.5 | COVERS/OTHER



| Item # | Part Number | Description |
|--------|---------------|---------------------|
| 1 | 1000307601 | RAIL,GATE LATCH |
| 2 | HARD-086 | LEVEL,BUBBLE |
| 3 | 143-05-003-01 | COVER,PUMP |
| 4 | 143-05-001-01 | COVER, SIDE (BATT.) |

Limited warranty

WARRANTY STATEMENT—NORTH AMERICA ONLY

LIMITED WARRANTIES

Subject to the terms, conditions and limitations set forth herein, Custom Equipment, LLC (The “company” warrants to the first end-user (“buyer”) that:

- Limited product warranty
For a period of 12 months from the date that a new product manufactured by the company (“product”) is delivered to the buyer, the product will (i) conform to the specifications published by the company for such product as of the date of delivery; and (ii) be free of any defect in material and/or workmanship under normal use and maintenance; and
- Extended structural and chassis warranty
For a period of 60 months from the date that the product is delivered to the buyer, the chassis and other structural components of such product will be free from defects in material and/or workmanship under normal use and maintenance.

EXCLUSIONS / WHAT IS NOT COVERED

The following items are not covered under this limited warranty:

- Defects in, and damage or loss relating to, any batteries incorporated by the company into or made a part of the product. Any such defects, damage or loss shall be exclusively covered by the battery manufacturer’s warranty, if any. For more information regarding the battery warranty, the buyer should contact the battery manufacturer using the contact information shown on the battery;
- Damage or loss resulting from or caused by carrier handling;
- Damage or loss resulting from or caused by normal wear and tear, weathering, lack of use or use with incompatible equipment or software;
- Damage resulting from or caused by improper maintenance, improper handling or storage, improper use, abuse, neglect, operation beyond rated capacity, or operation after discovery of defective or worn parts;
- Any part, component or assembly altered or modified in any way not approved in writing by the company;
- Damage to any equipment or parts not manufactured by the company; and
- Acts of god, accidents or any other causes beyond the company’s reasonable control.

MAKING A WARRANTY CLAIM

As a prerequisite to making any claim under this limited warranty, buyer must give the company written notice of any suspected defect promptly after discovery. Such notice shall specifically identify the suspected defect, the original delivery date and complete buyer identification and location information. The company will not accept any product for warranty service without receiving buyer’s written notice and issuing a return goods authorization. If requested by the company, buyer shall return the defective product, or parts, components or assemblies thereof, to the company, f.O.B, company’s designated location. All returned products or parts, components or assemblies thereof that are replaced under this limited warranty shall become the property of the company. The company reserves the right to review buyer’s maintenance and operation records and procedures to determine if the alleged defect(s) were due to any of the items listed in sections 2 of this limited warranty. The company shall not be liable for any claim under this limited warranty if buyer fails to satisfy the conditions set forth in this section.

EXCLUSIVE WARRANTY REMEDIES

Exclusive repair or replace remedy
The company’s sole obligation and buyer’s exclusive remedy with respect to any defect in the product occurring during the warranty periods set forth in section 1 of this limited warranty shall be for the company, at its option, to repair or replace (or have one of its designated authorized dealers repair or replace) the product or part, component or assembly thereof that contains a defect in materials or workmanship. The company reserves the right, at its discretion, to use new, re-manufactured or refurbished replacement parts.

Notwithstanding anything in this limited warranty to the contrary, the company shall not be obligated to replace the entire product if a covered defect can be remedied by the repair or replacement of a defective part, component or assembly. The company shall be responsible for the cost of all parts and labor charges, up to the maximum labor amount determined in accordance with section 4(b) of this limited warranty, necessary to remedy such defect.

Labor charges
If field repairs or parts replacement are necessary on any product covered by this limited warranty, the company will reimburse its designated authorized dealer for those direct labor costs incurred to perform such field repairs or parts replacement up to the maximum amount specified in the company’s current field service rate (hereinafter, the “fsr”) or in any ‘flat rate guides’ or similar agreement established with the authorized dealer (such maximum amount shall be referred to in this limited warranty as the “maximum labor amount”). Current versions of the company’s fsr and flat rate guides are incorporated by reference into this limited warranty. For a current copy of the company’s fsr and flat rate guides, buyer should contact the company at 1-866-334-0756. Buyer shall be responsible for any costs or fees due to the authorized dealer in excess of the maximum labor amount.

DISCLAIMER OF OTHER EXPRESS AND IMPLIED WARRANTIES

Except for the limited warranties set forth in section 1 above, the company makes no other representations or warranties and hereby disclaims all express or implied representations or warranties regarding the product, including, without limitation, any implied warranty of merchantability, non-infringement of proprietary or third-party rights or fitness for a particular purpose. There are no warranties which extend beyond the description on the face hereof. No employee or representative of the company or any of its authorized dealers is authorized to modify any term, condition or limitation in this limited warranty unless such modification is made in writing and signed by an officer of the company.

LIMITATION OF LIABILITY

Notwithstanding anything in this warranty to the contrary, in no event shall the company or any of its affiliates or subsidiaries be liable to buyer for any indirect, special, exemplary, punitive or consequential damages (including lost profits, lost revenue, down time, loss of business opportunity or other economic losses), whether in an action in contract or tort (including negligence and strict liability) or otherwise, even if the company has been specifically advised of the possibilities of such damages.
Version of 2.1.13

NOTES

This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings on the page.

NOTES

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

HY-BRID LIFTS[™]

BY CUSTOM EQUIPMENT LLC

Push-Around Aerial Work Platform
Maintenance & Troubleshooting Manual
HB-P527

© 2015 Custom Equipment, LLC
2647 Highway 175
Richfield, WI 53076
U.S.A.
Tel.: +1-262-644-1300
Fax: +1-262-644-1320
www.hybridlifts.com
Service@Customequipmentlifts.com

"Hy-Brid Lifts" is a trademark of Custom Equipment, LLC.
These machines comply with specified ANSI & CSA requirements

Revision Date: September 2015

Printed In The USA