

INSTALLATION & TECHNICAL MANUAL

DOCK LEVELER HYDRAULIC CONVERSION KIT UNIVERSAL



WARNING

Do not install, operate or service this product unless you have read and fully understand the entire contents of this manual. Failure to do so may result in property damage, bodily injury or death.

BLUE GIANT[®]

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1.0 SITE CHECK LIST FOR HYDRAULIC CONVERSION KIT

		Yes	No	Comments
1	Review site conditions. Have you completed and reviewed site survey report?	<input type="checkbox"/>	<input type="checkbox"/>	
2	Is the electrical power present to hook up to? <i>i.e. on inside wall near control install location</i>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Was the conduit(s) installed and properly positioned?	<input type="checkbox"/>	<input type="checkbox"/>	
4	Did you check to see if the proper voltage is supplied?	<input type="checkbox"/>	<input type="checkbox"/>	
5	When un-packing, were all the parts included? Refer to Section 7.2 " <i>Components as Shipped Check List</i> "	<input type="checkbox"/>	<input type="checkbox"/>	
6	Do you have all the tools needed to complete the job? This includes ladder(s), safety equipment and personal safety devices. Refer to Section 6.0 " <i>Tools Required for Installation</i> "	<input type="checkbox"/>	<input type="checkbox"/>	
7	Do you have all the anchors for the exterior driver traffic light, warning sign and control box? Supplied by: You / Contractor / Installer (if required)	<input type="checkbox"/>	<input type="checkbox"/>	
8	Have you read the Hydraulic Conversion Kit installation manual and fully understood it?	<input type="checkbox"/>	<input type="checkbox"/>	
9	Do you have the Blue Giant technical support number? 1.800.668.7078. Before calling, make sure to have serial # of equipment.	<input type="checkbox"/>	<input type="checkbox"/>	
10	Do you know what ESD " <i>Electrostatic Sensitive Device</i> " is and how to handle?	<input type="checkbox"/>	<input type="checkbox"/>	

2.0 INTRODUCTION

The following is a quick reference to important procedures that must be followed while installing the Hydraulic Conversion Kit. It is not intended to cover, or suggest that it does cover, all procedures necessary to ensure safe installation and operation. All personnel who install and / or use this dock equipment should be aware of and abide by all workplace safety regulations applicable to the installation and operation of the Loading Dock. These laws and regulations include but are not limited to:

- The Occupational Safety and Health Act
- Canada Occupational Health and Safety Regulations
- Occupational Safety and Health Acts for Individual States (USA)

For additional information on these regulations as well as industry standards that may apply to this product, please contact:

American National Standards Institute (ANSI)
1430 Broadway
New York, NY 10018



Also a member of:

Loading Dock Equipment Manufacturers
A Product Section of Material Handling
Industry of America
A Division of Material Handling Industry
8720 Red Oak Blvd, Suite 201, Charlotte, NC, 28217-3992
Telephone: 704.676.1190
www.mhi.org/lodem



2.1 WARRANTY INFORMATION

Thank you for purchasing Blue Giant products. We appreciate your business, and are confident that our product will serve you for many years to come. In the event that you experience a problem with our product, our Warranty Center is here to support the Blue Giant Product(s) that you have purchased.

To validate warranty on recently purchased equipment, please complete and submit your information with our on-line Warranty Registration at www.BlueGiant.com.

For more information about Blue Giant Warranty Support, please contact your local Blue Giant Equipment dealer, representative or authorized partner near you. You may also visit www.BlueGiant.com or phone 1.905.457.3900.

* Note that failure to validate warranty at the time of receipt can seriously affect the outcome of any claim.

DEALER INFORMATION

Name:

Contact:

Telephone:

2.2 EXCLUSION OF LIABILITY

The manufacturer assumes no liability for damage or injury to persons or property which occur as a result of defects or faults in or incorrect use of the Loading Dock Equipment. The manufacturer also assumes no liability for lost profits, operating downtimes, or similar indirect losses incurred by the purchaser. Injury to third parties, irrespective of its nature, is not subject to compensation.

The manufacturer reserves the right to make changes at any time to the modules, components, and accessories, concurrent with its continuing product improvements and development program. Specifications, operating instructions, and illustrations included in this manual are subject to change without notice. Please contact manufacturer for the latest information.

2.3 MANUFACTURER'S NOTE

The dock equipment has been carefully inspected and tested at the manufacturer's plant prior to shipment, but should be checked upon receipt for transport damage. Any observed transport damage is to be listed on the signed copy of the freight document. Notify the freight forwarder of any damage WITHIN 48 HOURS.

2.4 INSTALLER'S RESPONSIBILITY

Please read all instructions carefully before installing this Blue Giant dock product. It is the installer's responsibility to comply with the following:

- The installation of Blue Giant dock products should comply with all applicable local or national building codes and regulations, including any that may supersede this manual.
- Site surveys and other applicable install-related documentation must be properly and accurately completed prior to installation. Failure to comply with this requirement may result in an improper install and possible voiding of the warranty.
- Only Blue Giant-supplied or approved parts must be used. Any unauthorized parts substitution may void the warranty.

Always lockout and tagout any power source before performing any electrical work, in accordance with OSHA regulations and approved electrical codes. The installer is responsible for reading, understanding, and complying with all personal protective equipment (PPE) policies in effect.

3.0 SAFETY MESSAGE COLOR IDENTIFICATION

This manual includes color-coded safety messages that clarify instructions and specify areas where potential hazard exists. To prevent the possibility of equipment damage and serious injury or death, please observe strictly the instructions and warnings contained in the messages. If warning decals become damaged or missing, replace them immediately. Avoid accidents by recognizing dangerous procedures or situations before they occur.


 DANGER
Serious injury or death will likely occur if the instructions are not followed.

NOTICE
Procedures marked important must be followed in order to prevent damage to machinery.


 WARNING
Serious injury or death may occur if the instructions are not followed.


 CAUTION
Instructions marked caution concern safe operating procedure. Failure to comply may result in personal injury.

3.1 OPERATIONAL SAFETY WARNINGS

 DANGER
<ol style="list-style-type: none"> 1. Do not enter the pit area below the dock leveler. 2. BEFORE BEGINNING ANY SERVICE PROCEDURES: <ul style="list-style-type: none"> – Disconnect the power and follow all lockout / tagout procedures. 3. Never operate a broken or damaged dock leveler. Have repairs done immediately by a qualified service technician. 4. Always secure and center loads on the forklifts. Loose or unbalanced loads are dangerous.

NOTICE
<ol style="list-style-type: none"> 1. Do not ground welding equipment to any electrical components. 2. Do not attach welder as ground to leveler platform when welding on base frame assembly. Attach welder ground to base frame assembly only. 3. Do not allow the drill to go too deeply when drilling holes in the control box. Damage to the control systems may occur. 4. Never use air to blow debris from control box. Use a vacuum to remove debris from control box. 5. Do not connect green ground lead into control box until all welding has been completed. 6. Always keep the work area clean and free of litter. 7. Always clean all side openings of dirt and debris. 8. Always clean all dirt and debris from the lip hinge. 9. Always clean up dry and liquid spills immediately after they occur. 10. Always maintain proper lighting in the work area. 11. If a procedure is not clearly defined in this manual, contact your authorized Service Representative.


 WARNING
<ol style="list-style-type: none"> 1. The upper hinge point is a hazardous pinch point. Do not use fingers or hands to remove foreign materials. 2. Post safety warnings and barricade working area at dock level and at ground level to prevent unauthorized use of the leveler during maintenance/service. 3. Never leave the dock leveler unattended in the raised position. 4. Always make sure that the lip is seated inside the night lock after putting the dock in the parked position. 5. Never leave loads sitting on the dock leveler. 6. Do not attempt to raise the dock leveler if someone is standing on it. 7. Do not use the dock leveler if the lip's full width is not fully supported by the vehicle load bed. 8. Do not operate the dock leveler beyond its rated capacity. 9. Do not drive or walk onto the truck until it is parked against the dock bumpers and the wheels are chocked, or the vehicle restraint has been fully engaged. 10. Never attempt to lift or hold the lip out by hand. Serious personal injury could occur. 11. Never remove the wheel chocks until loading/ unloading is finished and the truck driver has been given permission to depart.

 CAUTION
<ol style="list-style-type: none"> 1. Only trained personnel should operate or service this equipment. 2. Do not operate the dock equipment until the transport vehicle is parked against the dock bumpers. 3. Always park the dock equipment after use. 4. Conduct routine inspections and maintenance. Failure to do so could cause equipment damage and or personal injury. 5. Always call your authorized service representative or manufacturer immediately if a malfunction occurs.

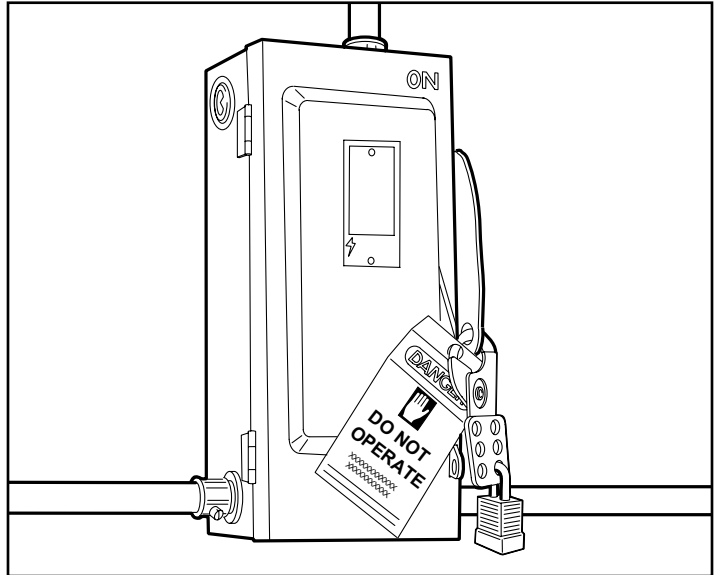
4.0 LOCKOUT / TAGOUT PROCEDURE AND RULES

In accordance with the rules and regulations of the Occupational Safety and Health Administration (OSHA), all affected employees must be notified that the machine or equipment will be shut down and locked out to perform repair or maintenance work. The work area must be checked to ensure that all personnel have been removed or safely repositioned. The machine or equipment power supply shall be locked in the OFF position or disconnected from the energy source. Blue Giant® strongly recommends that only OSHA-approved lockout devices and procedures be utilized.

The energy isolating device must bear a prominent warning tag indicating that work is being done on the equipment and the name of the authorized employee responsible for the lockout. It is mandatory that tagout notices not be susceptible to deterioration or illegibility due to weather conditions or exposure to chemicals and moisture.

 **WARNING**

Always lockout and tagout any power source before performing any work on any electrical devices or electrical controls according to OSHA regulations and approved local electrical codes.



Approved way to lockout / tagout.

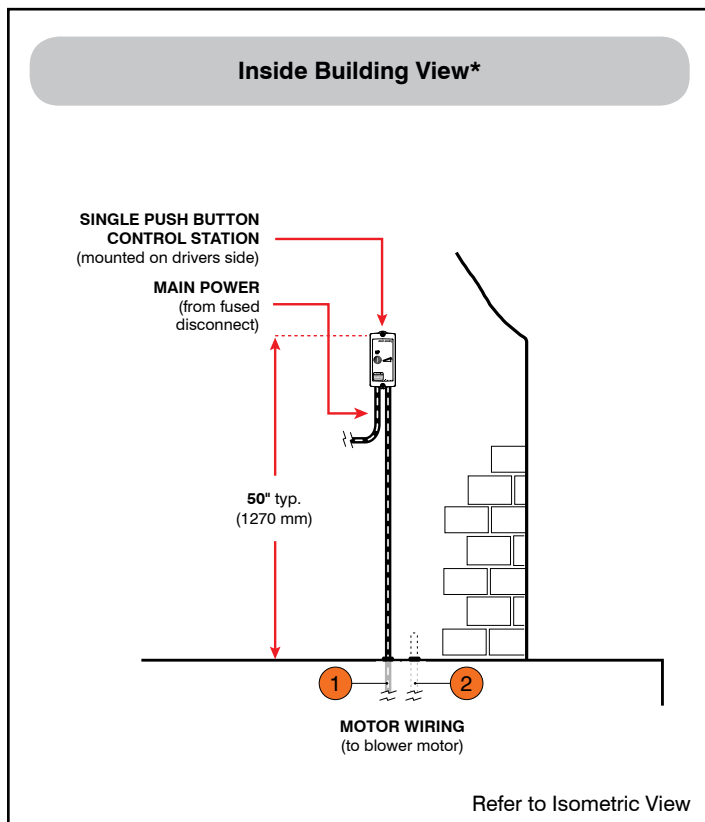
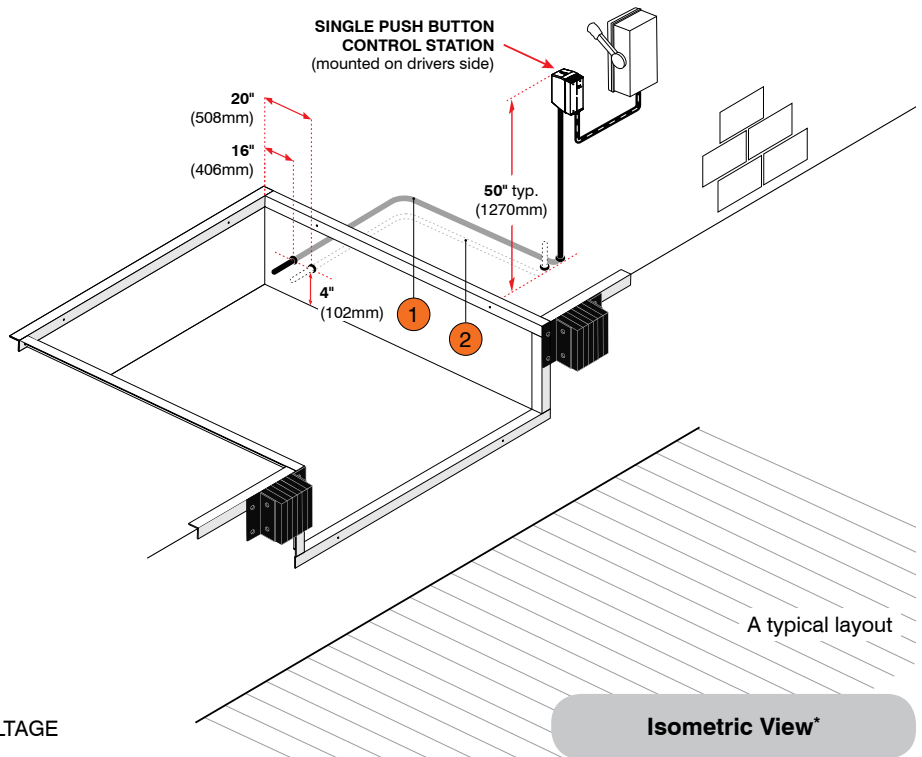
5.0 INSTALLATION LAYOUT

NEW CONSTRUCTION (CONDUIT POURED IN CONCRETE)

- 1 Run one 1/2" I.D. conduit from the control station to the inside pit as shown.
- 2 Run one 1/2" I.D. conduit from the control station to the pit for future expansion (i.e. interlocks, combos, etc.) (optional)

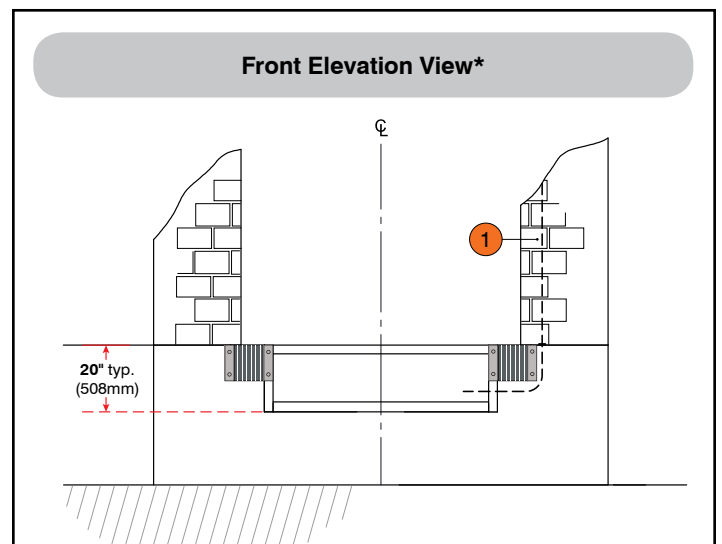
**MINIMUM CONCRETE STRENGTH
3,000 P.S.I.**

Refer to Section 11.0 for Alternative Details



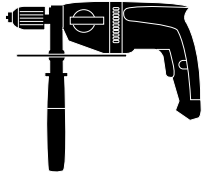
ELECTRICAL REQUIREMENTS

- Mount control box station to wall.
- Fused disconnect provided by others and wiring by others.
- Install wiring from control box station to power supply.
- Install wiring from control box station to motor.

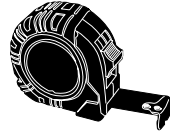


* Drawings not to scale

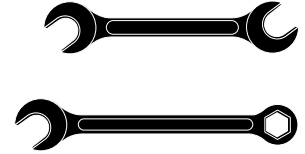
6.0 TOOLS REQUIRED FOR INSTALLATION



Hammer Drill



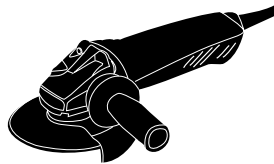
Tape Measure



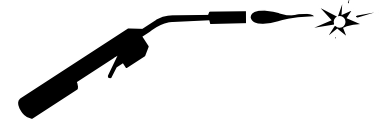
Combination wrench set $\frac{3}{8}$ " to 1"



1" x 24" Concrete Bit Carbide



Hand Grinder



Cutting Torch



Blow-out Pump, Concrete Dust



Ball Peen Hammer



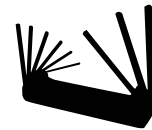
Safety Stand



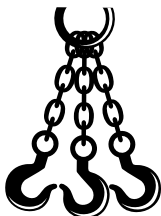
Electrician's Tools



Welder



Allen Key Standard Set Including $\frac{3}{8}$ "



Chain Lift

7.0 INSTALLATION FOR PIT TYPE DOCK LEVELERS

WARNING

Do not install, operate, or service this product unless you have read and followed the safety practices, warnings, and installation instructions contained in this manual. Failure to do so could result in death or serious injury. Always use dock leveler support when working under a dock leveler ramp or lip.

Place barricades around the pit on the dock floor and driveway while installing, maintaining or repairing dock leveler or vehicle restraint.

Improper installation of anchoring devices or installation into aged or unsound concrete could result in death or serious injury.

Inadequate lifting equipment or practices can cause a load to fall unexpectedly. Make sure the lifting chain or other lifting devices are in good condition and have a rated capacity of as much as 3500lbs (1588kgs) for the lifting angle used. Never allow anyone to stand on or near the dock leveler when it is lifted or positioned. Stand clear of the dock leveler when it is positioned. Failure to follow this warning can allow the dock equipment to fall, tip, or swing into people, causing death or serious injury.

7.1 GENERAL DESCRIPTION

See Figure 1 for names of components. These names will be used throughout the manual.

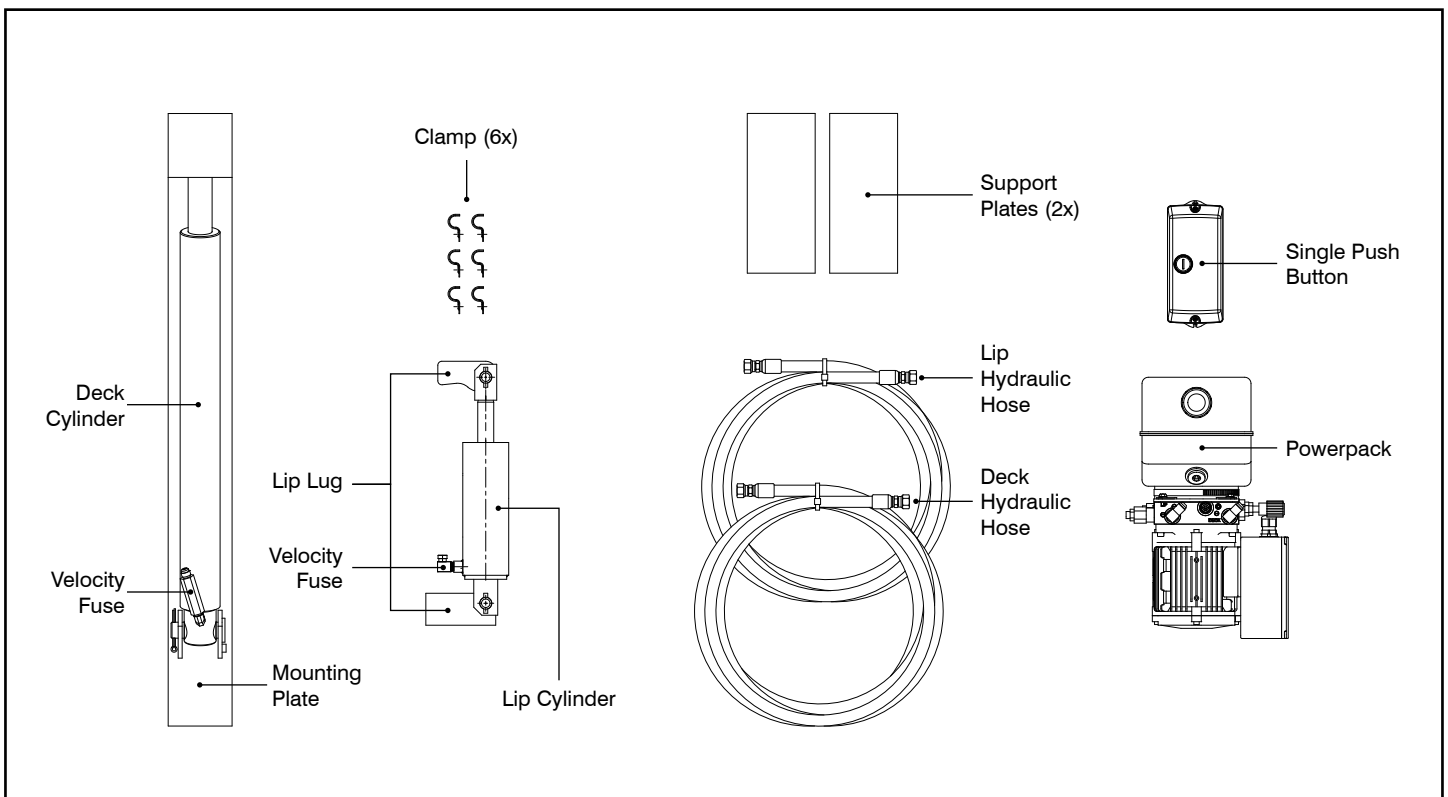
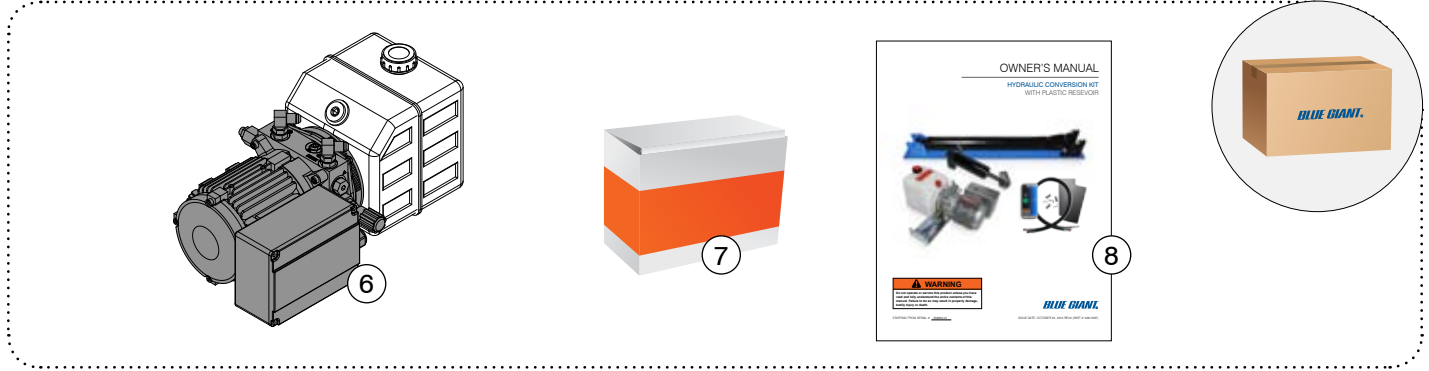
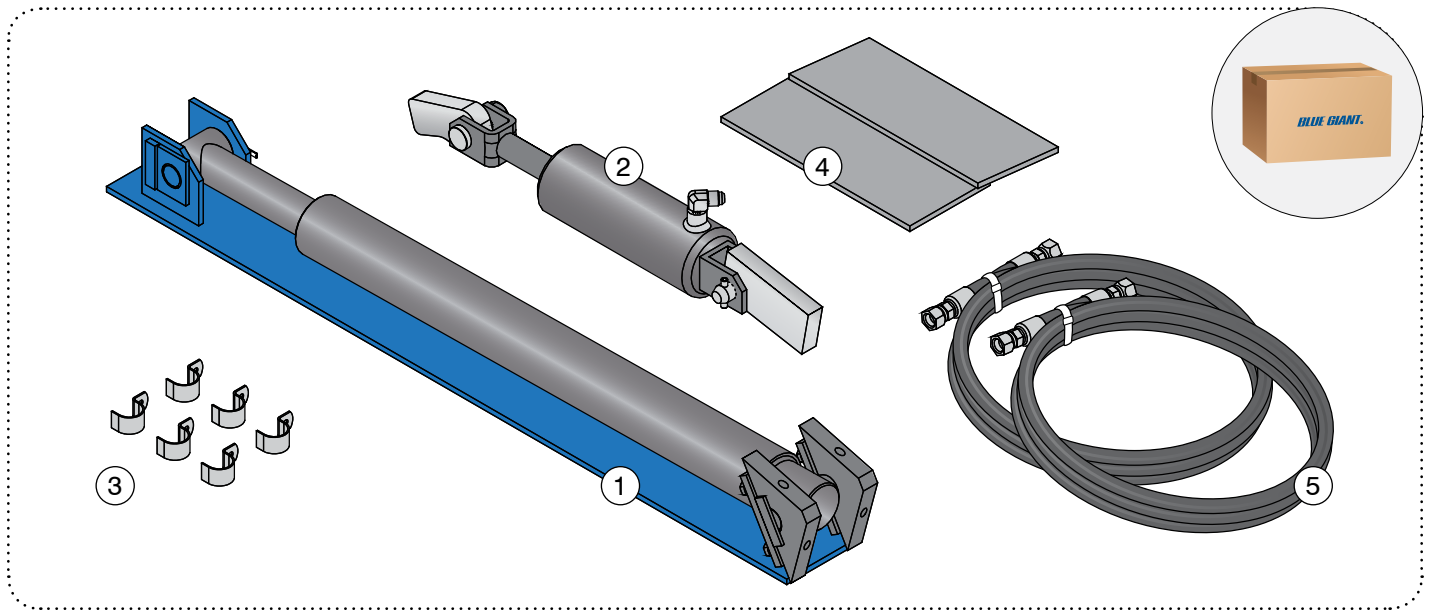


Figure 1: Components general description.

7.2 COMPONENTS AS SHIPPED CHECK LIST



✓	ITEM	QTY	PART #	DESCRIPTION	APPROX. WEIGHT		
	1	1	21-011819	Deck Cylinder			
	2	1	709-5001	Lip Cylinder			
	3	6	035-205	Clamps			
	4	2	109-917	Support Plates			
	5	2	788-332-37	Deck and Lip Hose			
	6	1	—	Powerpack			
	7	1	027-006-L	F	Control Assembly SP1 110–130V Single Phase	1 lb	0.45 kg
S							
			027-007-L	F	Control Assembly SP1 208–240V Single Phase	1 lb	0.45 kg
				S			
	8	1	038-703E	Owner's Manual	—	—	

7.3 HYDRAULIC CONVERSION KIT INSTALLATION

CAUTION

This procedure requires the dock leveler deck to be maintained in the fully raised position and lip extended without the aid of the main lift springs or lifting arm. Dock leveler to be properly secured with lifting equipment and service maintenance strut.

NOTICE

Most Dock Levelers are equipped with a maintenance strut during manufacture, to assist a service technician in the placing of a safety stand under the dock leveler deck. If the unit being converted to hydraulic operation has a damaged or missing maintenance strut or has never had one, consider installing one as a part of the hydraulic conversion. For details of a Maintenance Strut Kit that is available from Blue Giant as part number 200-5001.

DANGER

Failure to properly secure dock leveler could result in dock leveler deck to fall, and may result in property damage, bodily injury or death.

STEP 1

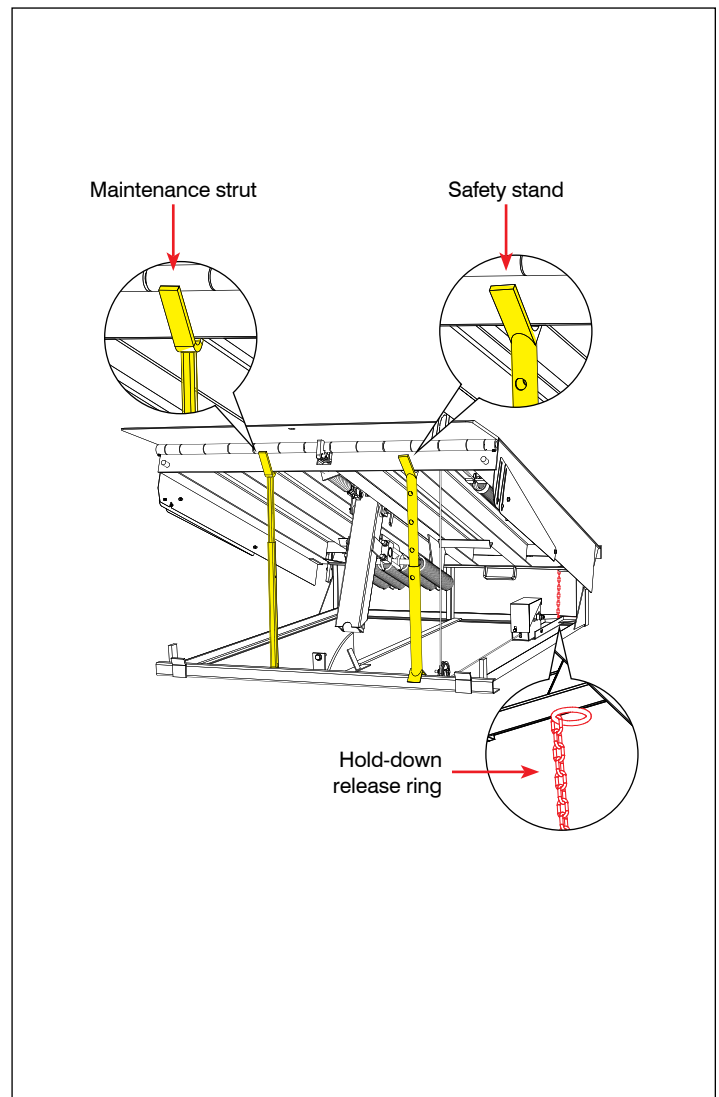
After barricading the work area, use the hold-down release ring to deploy the dock leveler deck and lip. Once deployed, use of a hoisting mechanism to keep the deck and lip raised is recommended. For added safety, use a maintenance strut in conjunction with the safety stand to hold the deck and lip in the deployed position.

NOTICE

Blue Giant offers a heavy-duty safety stand (Part# 796-710) that can be used for any under-deck service or maintenance.

WARNING

Proper lock-out procedures **MUST** be followed. After notifying all affected employees that work is being done on the unit, lock out all applicable electrical devices in the OFF position and disconnect the power supply. Ensure that power to the unit has been successfully cut off and cannot be turned back on accidentally.



Maintenance strut

Safety stand

Hold-down release ring

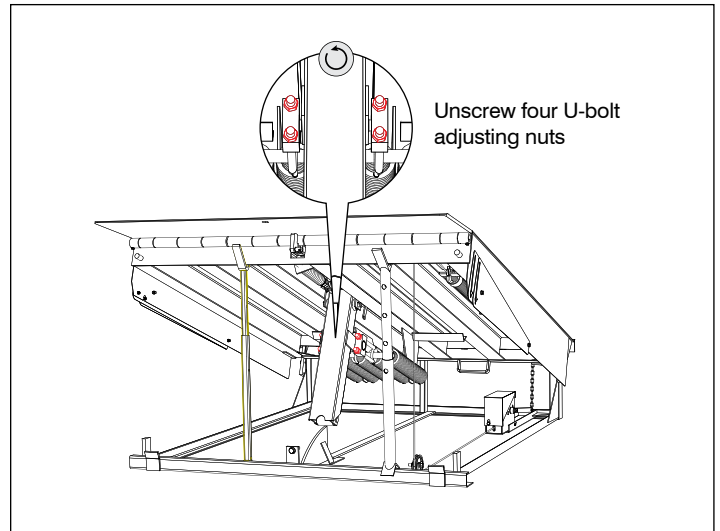
7.3 HYDRAULIC CONVERSION KIT INSTALLATION CONT'D.

STEP 2

Unscrew the main spring's four (4) u-bolt adjusting nuts (See Figure 2), turning them counter-clockwise. To keep the tension levels even, make no more than four (4) full turns on each nut. Check the maintenance strut and safety stand as the deck and lip settle onto them, making sure that they don't shift or fail to hold their position.

⚠ DANGER

The main lift springs and cable hold-down are under tension. Do not attempt to cut them away until all tension has been removed or controlled.

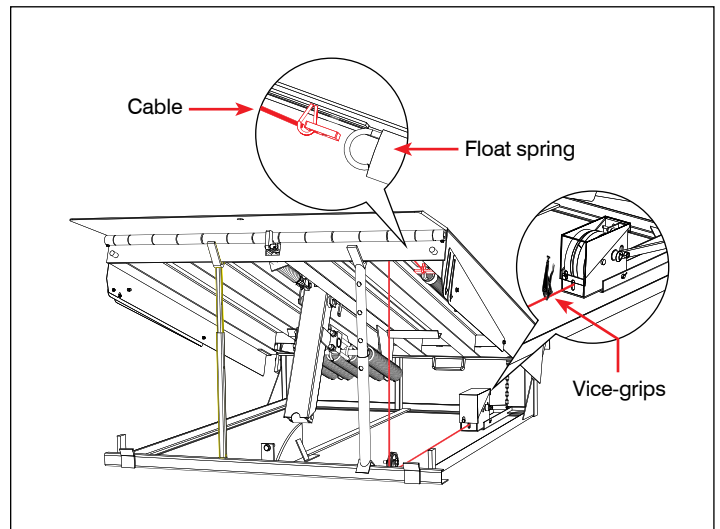


STEP 3

Lock the cable in place by applying a pair of vice-grips or other suitable clamping device at the point where the cable enters the hold-down box. Then, using the appropriate tools and / or cutting torch, remove the cable from the float spring.

⚠ CAUTION

The cable is under tension from a force pulling it into the hold-down box. Exercise appropriate caution.

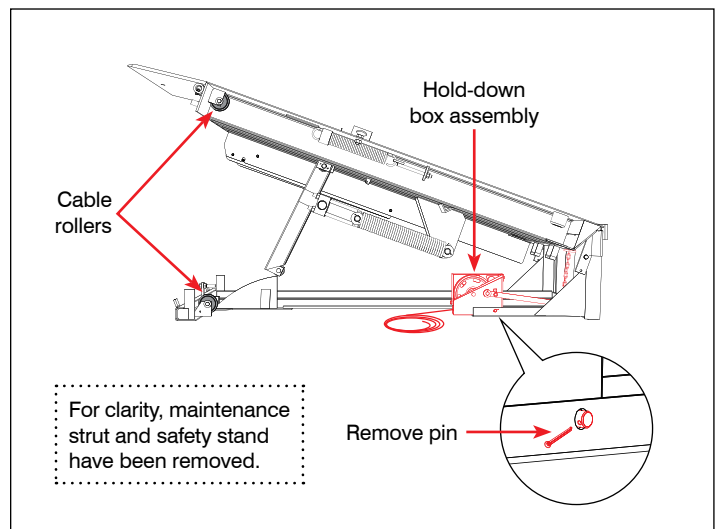


STEP 4

Pull the cable carefully out of the upper and lower cable rollers. Grasping the cable firmly at a point approximately 18" (457mm) from the hold-down box, slowly release the vice-grip clamp. Allow the box's rewind mechanism to slowly wind the cable back into the box until all tension disappears. Then remove and discard the entire hold-down box assembly. Do not remove the box cover, as spring tension may still be present inside.

⚠ CAUTION

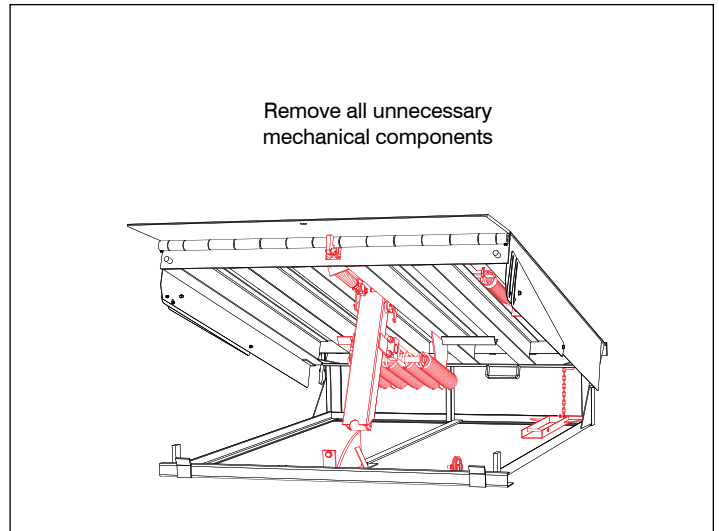
Wire rope cables must be handled carefully, as they can become frayed with use. Wear gloves or similar protection.



7.3 HYDRAULIC CONVERSION KIT INSTALLATION CONT'D.

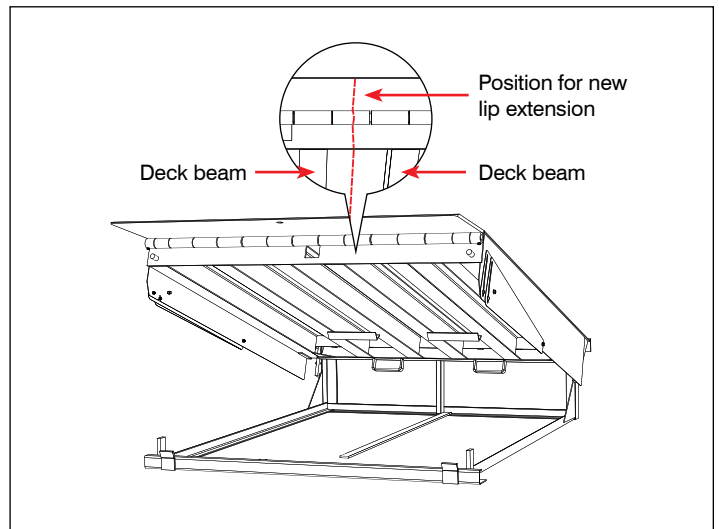
STEP 5

When all tension has been removed from the main springs, use appropriate tools and/or cutting torch to remove and discard all deck lifting, float spring, lip extension and locking mechanisms as well as any other obstruction that will interfere with the install process.



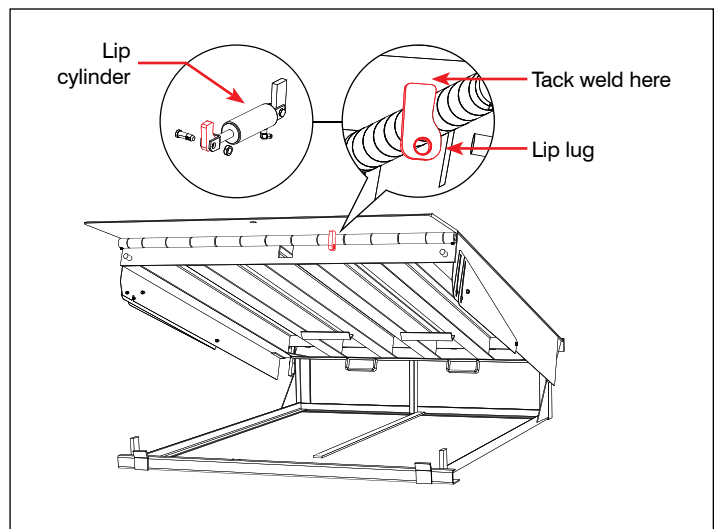
STEP 6

Inspect the underside of the deck assembly and the lip hinge to locate a suitable position for the new lip extension components. Placement should be made on the same side of the deck where the power pack is mounted, and centered between two of the main deck beams. The location should enable the lip lug to be attached to the lip at a hinge spool (if possible).



STEP 7

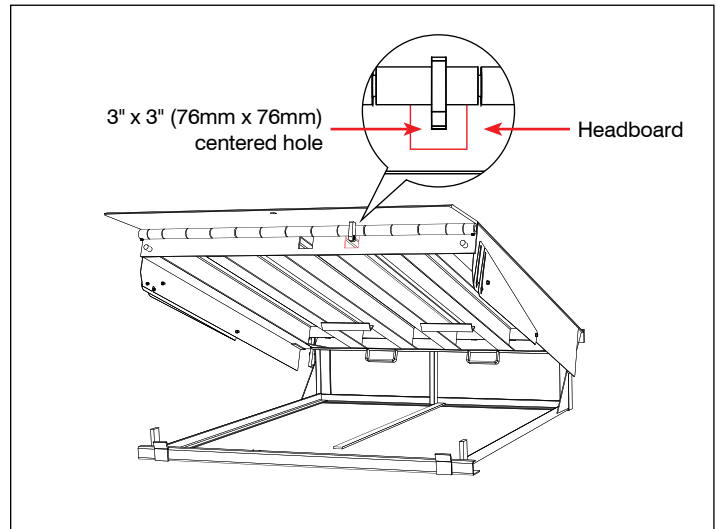
Locate the lip lug in the conversion kit and remove it from the lip cylinder clevis, taking note of the offset hole direction. If the lip is not fully extended, do so now. Position the lip lug at the location chosen in step 6 and tack-weld it squarely and securely to the lip plate (See Figure 7).



7.3 HYDRAULIC CONVERSION KIT INSTALLATION CONT'D.

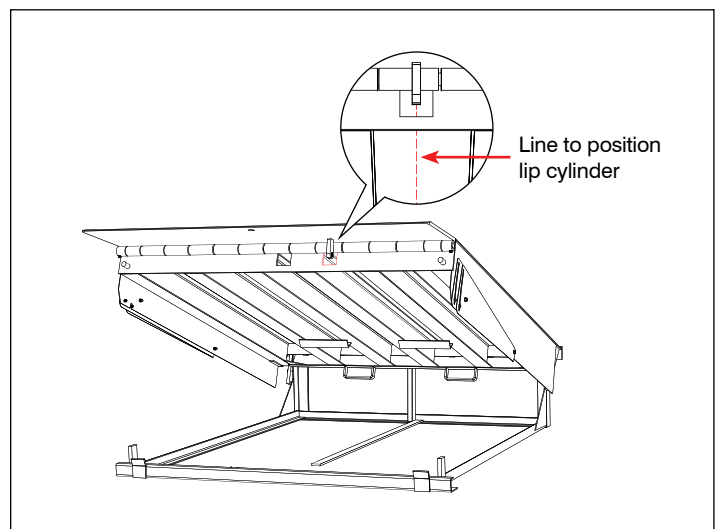
STEP 8

Using the lip lug to locate a vertical center line, cut a 3" x 3" (76mm x 76mm) centered hole in the headboard as shown in Figure 8. When completed, there must be no less than 1-1/4" (32mm) of original headboard material remaining below the 3" (76mm) centered square hole. Clean up all edges of the hole when completed.



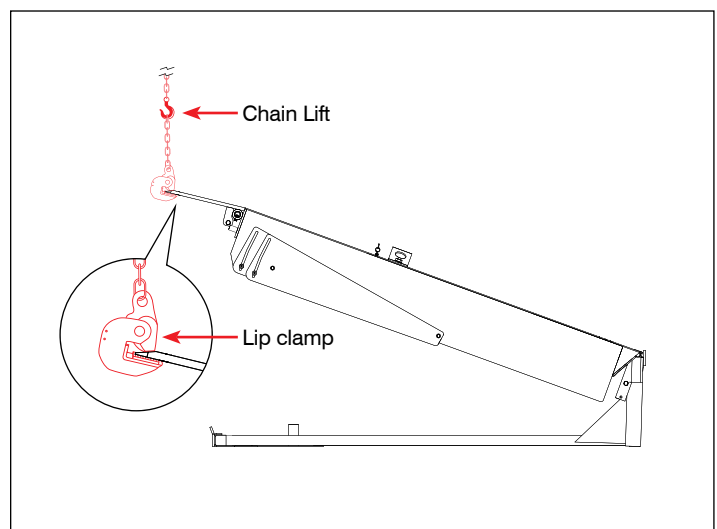
STEP 9

Using the center of the lip lug as a guide, mark a line on the underside of the deck plate, parallel to the deck beams, to be used to locate the center line of the lip cylinder and lip cylinder mounting bracket.



STEP 10

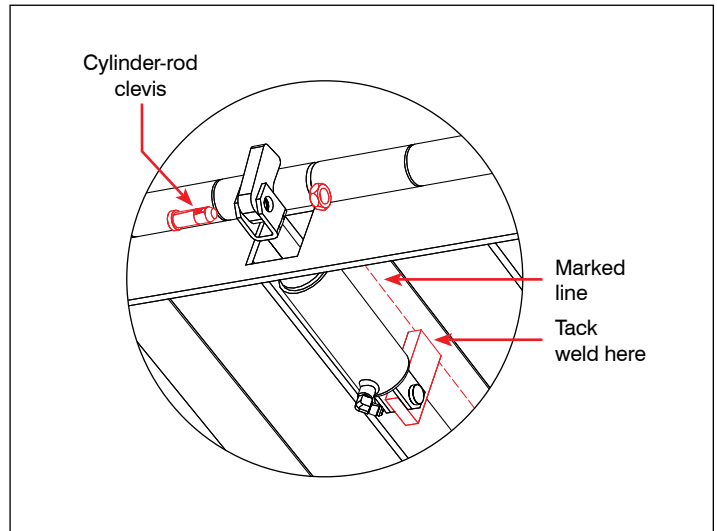
Prepare to place the lip cylinder mounting bracket by adjusting the lip blocking to hold the lip in the fully raised position. Raise and block the tip of the lip as required.



7.3 HYDRAULIC CONVERSION KIT INSTALLATION CONT'D.

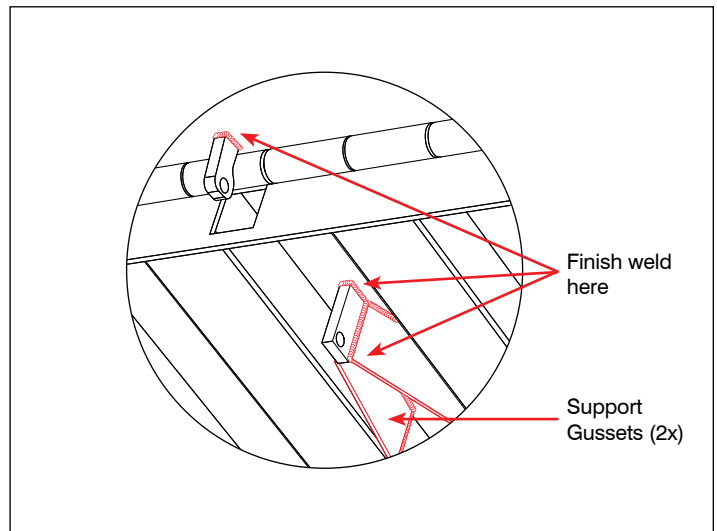
STEP 11

Manipulate the lip cylinder assembly through the headboard hole and temporarily attach the cylinder-rod clevis to the lip lug. Completely extend the cylinder and then collapse it by 1" (25mm). Position the cylinder mounting bracket on the deck, in the center of the bracket on the marked line, and tack-weld the bracket in this position.



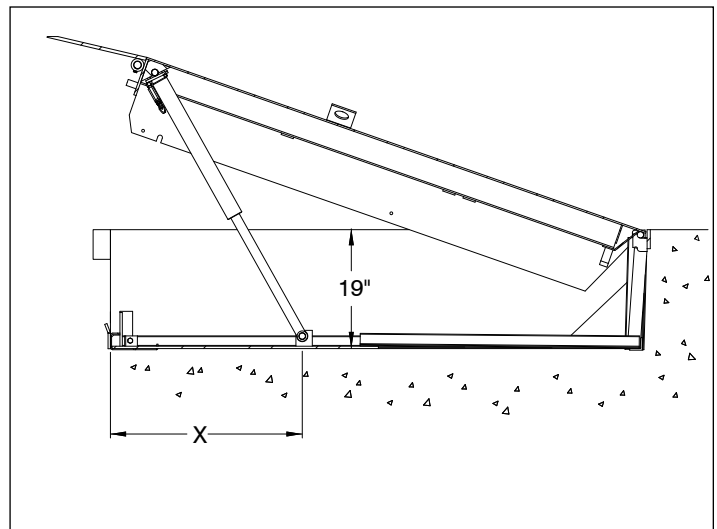
STEP 12

Confirm that the lip lug, lip cylinder and lip cylinder mounting bracket are aligned correctly and can move freely. If any components are misaligned, break the tack-weld and reposition the component(s) until the lip can raise and lower freely. (Ensure that the cylinder rod does not scrape either end of the 3" / 76mm hole.) When everything is correctly aligned and the cylinder collapsed by 1" (25mm), remove the cylinder from the lugs and securely weld all components into position. Then weld the cylinder mounting bracket and support gussets to the deck plate, mounting bracket, and beams. Use touch-up paint to clean all welds and paint the headboard hole and newly added components. Leave the cylinder aside for now to avoid accidental damage.



STEP 13

The main deck lift cylinder must be installed in the center of the frame and deck width. Upper mounting brackets are to be installed fully up against the underside of the deck plate and fully forward against the rear face of the headboard.

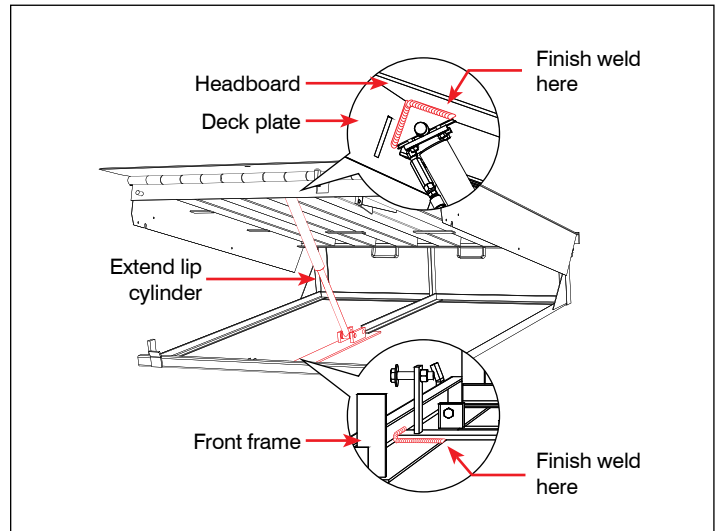


X Dim for 788-635-1 Cyl - 34" Up to 8' Leveler
 X Dim for 788-635 Cyl - 36" Up to 12' Leveler

7.3 HYDRAULIC CONVERSION KIT INSTALLATION CONT'D.

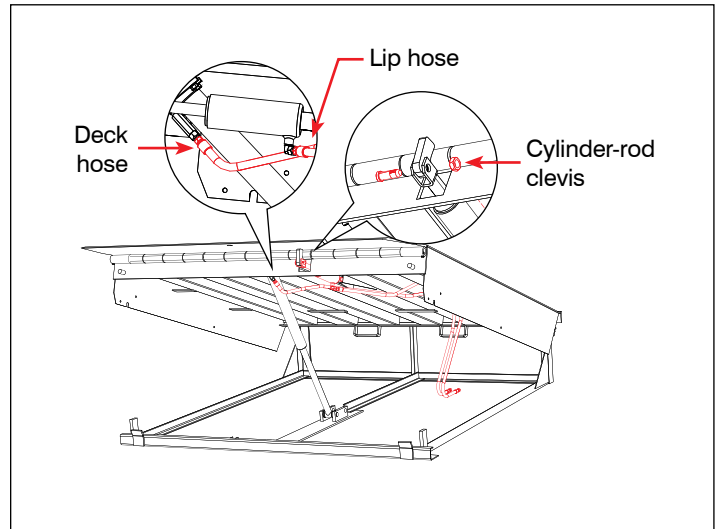
STEP 14

As part of the conversion kit, the deck lift cylinder is preassembled onto its mounting brackets. Place the complete assembly into the pit. Position the 1/4" x 4" x 36" (6mm x 102mm x 914mm) mounting plate and cylinder, centered and squared to the front frame. Tack-weld into position. Extend the cylinder rod complete with upper mounting brackets into position against headboard and deck plate. Tack-weld the mounting brackets into position. After verifying that the cylinder is located properly, remove it from the upper brackets and finish-weld all components securely to deck and frame.



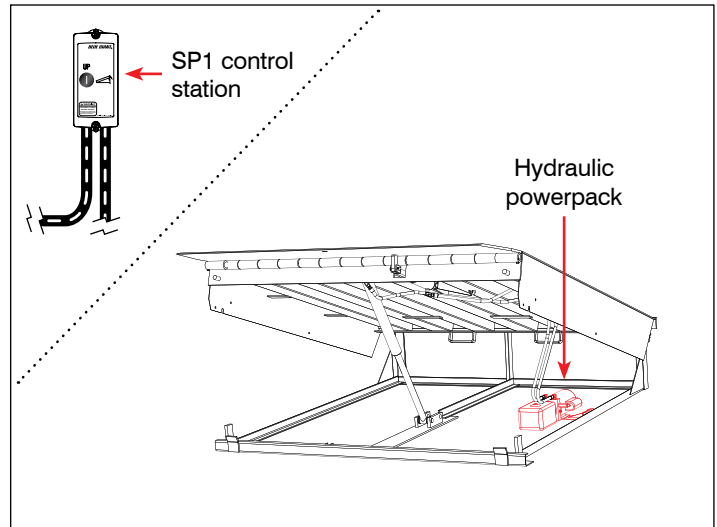
STEP 15

Manipulate the collapsed lip cylinder assembly through the headboard hole and temporarily attach the cylinder-rod clevis to the lip lug. Attach the lip hydraulic hose and hand tighten only at this time. Attach and tighten the deck hydraulic hose to the deck cylinder if not already done so.



STEP 16

Mount the hydraulic power pack and control station as required. All electrical work must be performed by a qualified electrician.



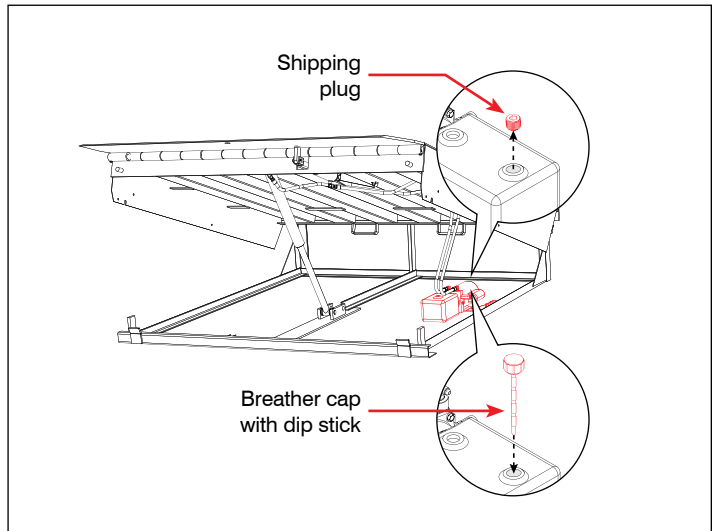
7.3 HYDRAULIC CONVERSION KIT INSTALLATION CONT'D.

STEP 17

After removing its shipping plug, fill the oil reservoir with ISO VG32 hydraulic oil to a level that is 1/2" to 1" (13mm to 25mm) below the reservoir top and install the attached breather cap in place of the shipping plug. Attach and tighten both hydraulic hoses to the power pack outlets making sure proper hose goes to the proper outlet.

NOTICE

Verify correct motor rotation on start-up to prevent pump damage. On three phase motors, interchange any two (2) motor wires to change rotation. On single phase motors check the motor's rotation sticker instructions. Do not run the motor for more than five (5) seconds in wrong direction.

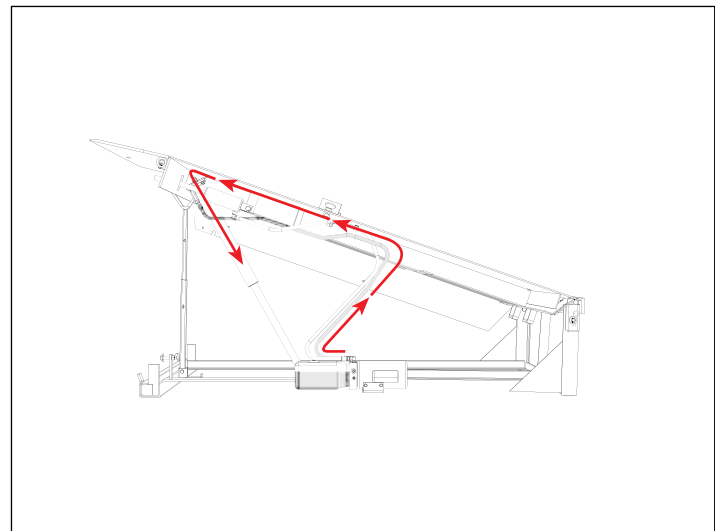


STEP 18

The next step is to force the deck cylinder to extend into its upper mounting brackets by running the power pack to pump oil into the cylinder. Be aware that the oil is free to drain out of the cylinder at all times when the motor is not running. This means that if the cylinder lifts the deck and the blocking moves out of position, the deck will lower. Perform the following temporary adjustment to the power pack to assist with installation of the cylinder.

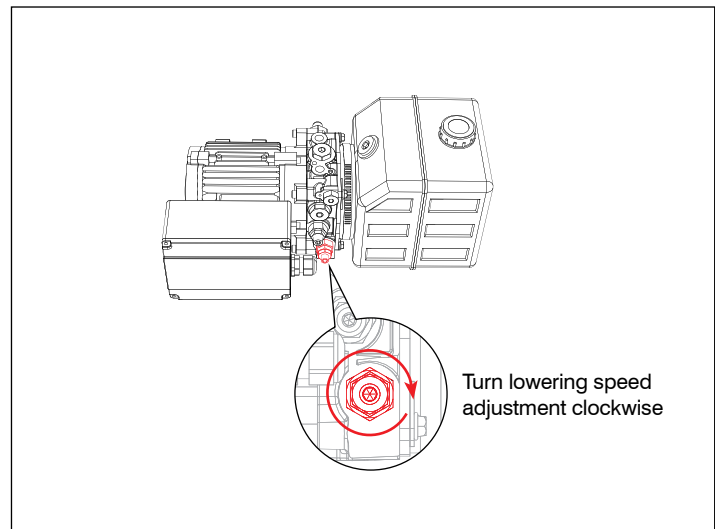
WARNING

Do not work beneath the deck without adequate blocking to ensure that the deck will not lower unexpectedly.



STEP 19

To prevent the cylinder from collapsing and the deck lowering when the motor stops, close the lowering speed adjustment. Loosen the locking nut and turn the adjusting screw clockwise until it bottoms out, noting the number of turn(s). The deck cylinder will now remain in an extended position because the oil can't flow back into the reservoir.



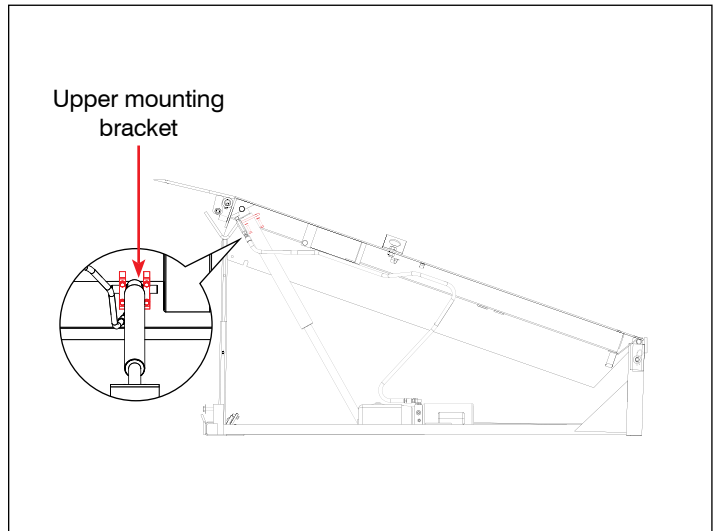
7.3 HYDRAULIC CONVERSION KIT INSTALLATION CONT'D.

STEP 20

Jog run the power pack motor and pump oil into the deck cylinder to cause the cylinder housing to move up its rod. Guide the base of the cylinder and its pivot pin into position in the upper mounting brackets.

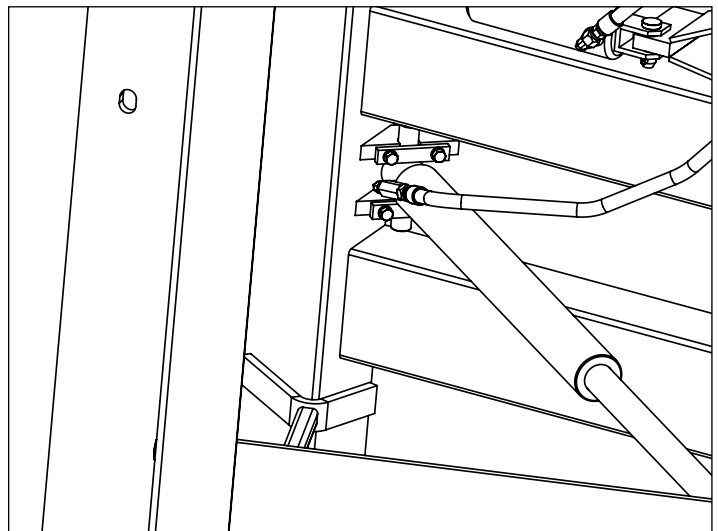
⚠ CAUTION

Run the motor in such a way as to cause the cylinder to extend in short 'move-stop-move-stop' steps. That way the cylinder can be stopped immediately when it makes contact with its upper mounting brackets and not accidentally lift the deck. Exercise caution to ensure that the deck does not lift off the safety stand.



STEP 21

Install the upper mounting bracket retaining straps securely. Inspect the hose routing and install retaining clips as required.

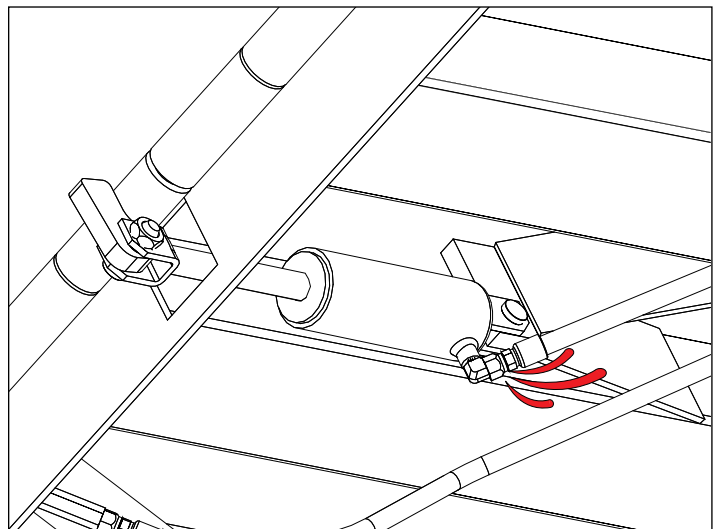


STEP 22

With the lip fully lowered, loosen the hose fitting at the lip cylinder. Run the motor until the lip cylinder hose and cylinder are both full of hydraulic fluid and the oil is free of air bubbles. Then tighten up the lip cylinder hose fitting.

⚠ CAUTION

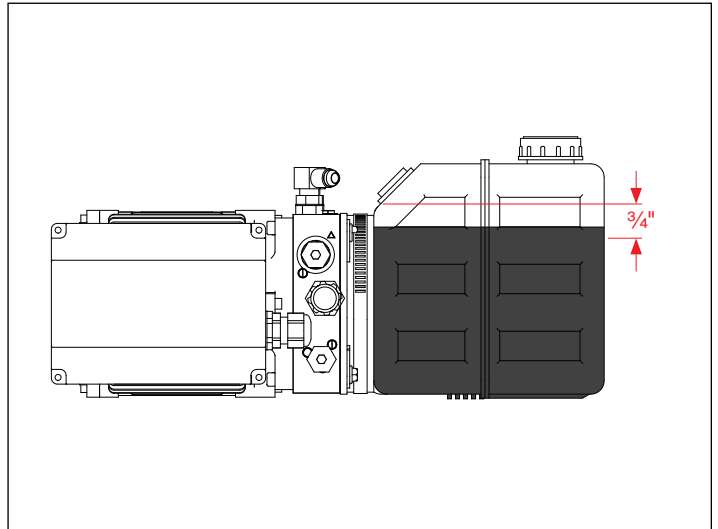
The lip is heavy: handle with care and avoid pinch points.



7.3 HYDRAULIC CONVERSION KIT INSTALLATION CONT'D.

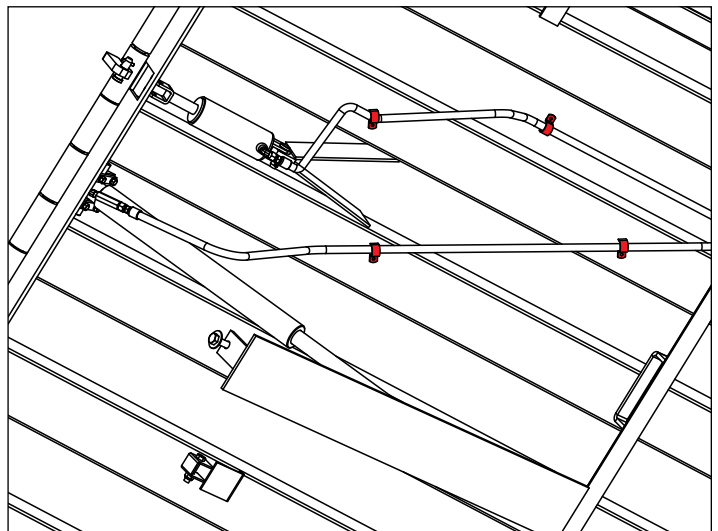
STEP 23

Fill the oil reservoir to the previously recorded level with ISO VG32 hydraulic fluid and re-install the reservoir breather cap.



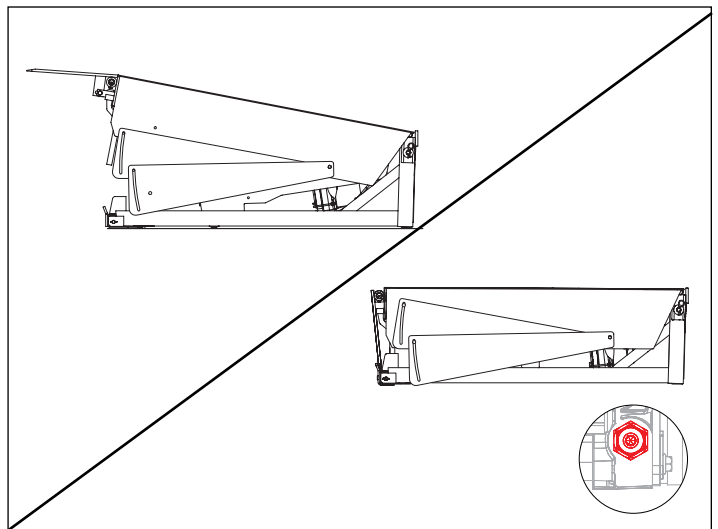
STEP 24

Inspect for proper routing of all hoses and install retaining clips as required. Check to confirm that all hose fittings are tight. Check all fasteners, etc. to verify that they are properly and permanently installed. Inspect for proper motor cable routing and install retaining clips as required.



STEP 25

The lowering (shuttle) valve will now be reset to allow the deck to lower. (approximately 7 seconds from deck's extended position to back to level).



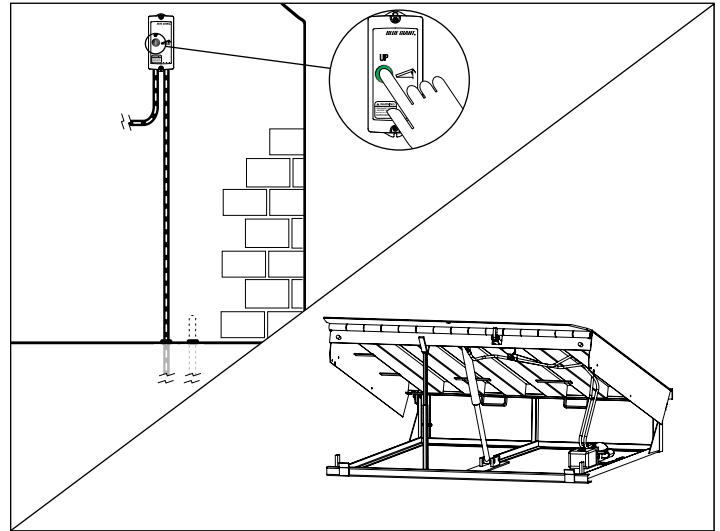
CAUTION

When the valve is turned out to make the adjustment, the oil will drain out of the deck cylinder, causing the deck to lower. Make sure that blocking is securely in place to prevent deck lowering.

7.3 HYDRAULIC CONVERSION KIT INSTALLATION CONT'D.

STEP 26

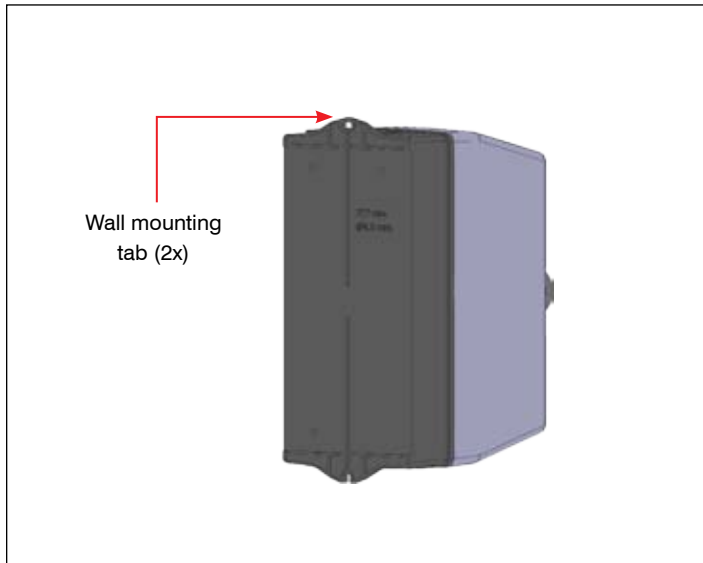
Turn power on, if it isn't already. Raise the dock leveler and carefully remove the safety stand/s, or blocking, and lower the maintenance strut. Allow the deck to lower.



7.4 COMMISSIONING AND START-UP PROCEDURES

1. Inspect all work performed, paying particular attention to the routing of the hoses and wires.
2. Make sure that all fasteners are in place and locked
3. Check that the oil level in the reservoir is at the correct level.
4. Check that all welds are cleaned and painted.
5. To complete the conversion, lubricate the entire dock leveler and clean up the work area, including the pit.
6. Test-operate the unit through several full cycles of operation by referring to the Owner's Manual (part # 038-885E). If problems are noted, refer to Section 11.0 "*Dock Leveler Troubleshooting*".
7. Confirm that all operational signs and placards are posted and the manual is in a place where it can be easily accessed.

7.5 SP1 CONTROL STATION INSTALLATION



SP1 control station—wall-mounting brackets.



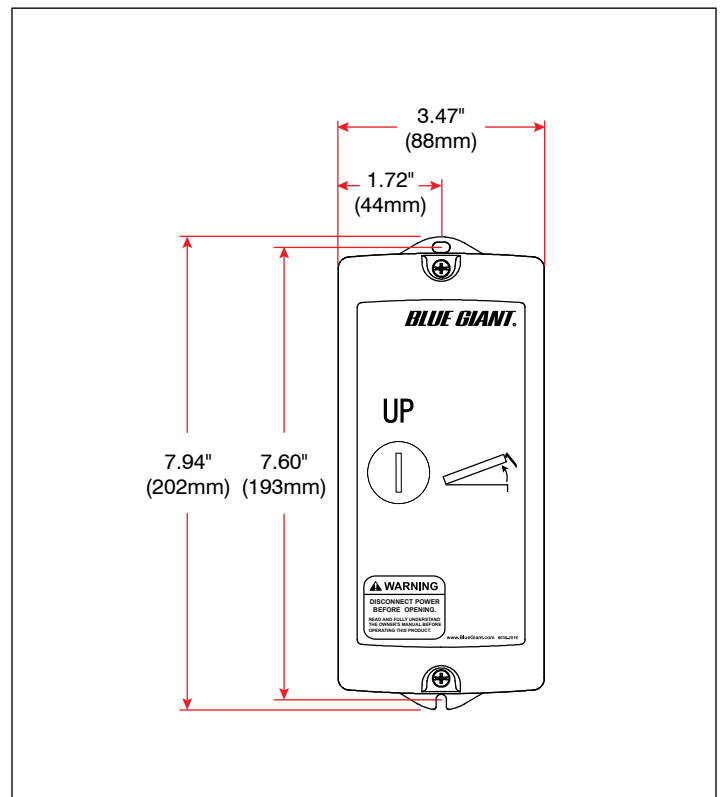
SP1 control station—mounting on wall (typical decal shown).

Remove the SP1 control station from its box.

Verify that the control station power rating is compatible with that of the power supply. All wiring inside the control station must be neatly laid out; avoid crossovers and untidy, excessive wiring patterns. All wiring must be completed in accordance with national and local codes.

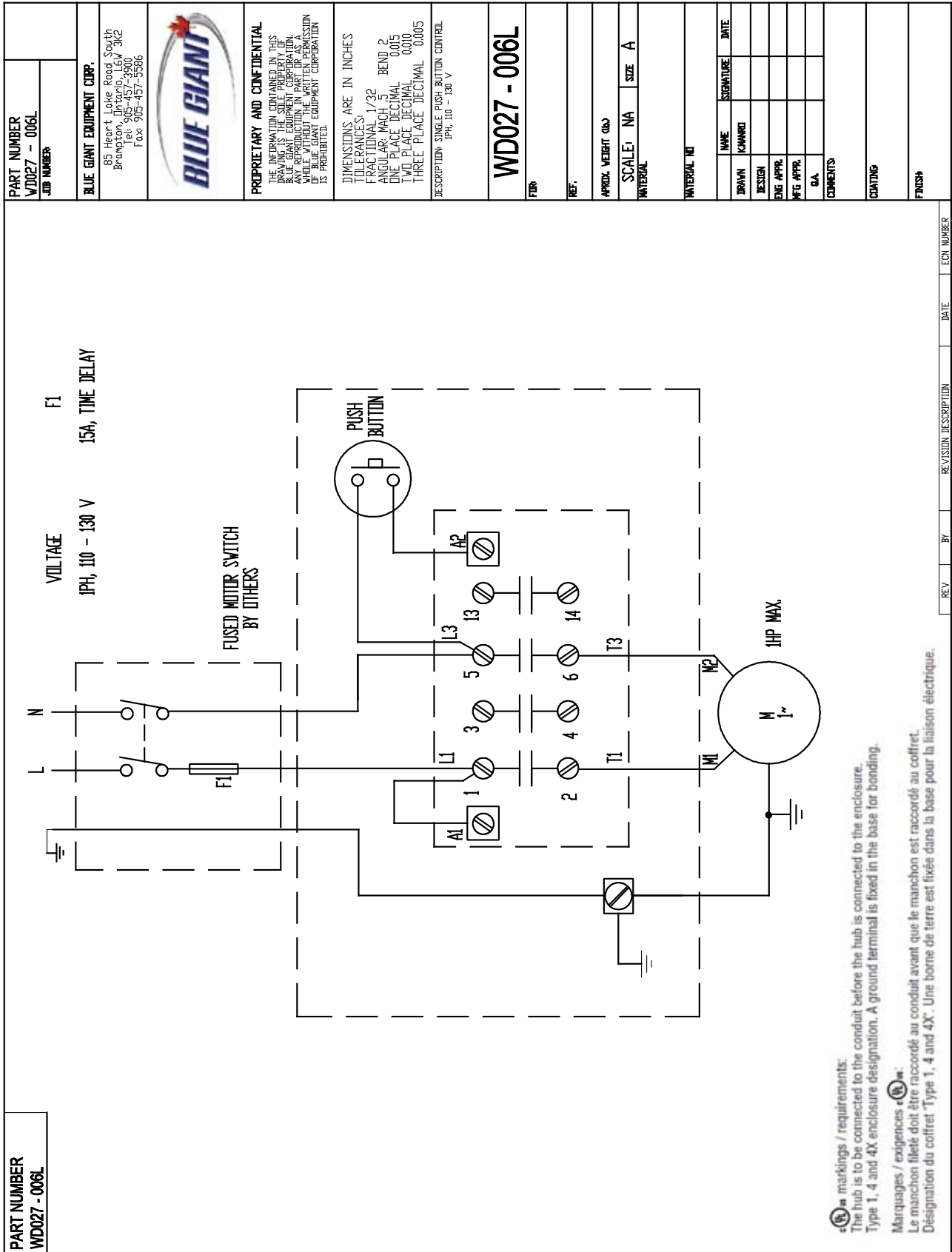
1. Run conduit from the fused disconnect to the control station.
2. Run conduit from the control station to the air motor junction box.
3. Complete the electrical hook-up between components. Refer to Section 5.0 "Installation Layout".

If site conditions call for a different wiring installation method, please consult factory before proceeding.

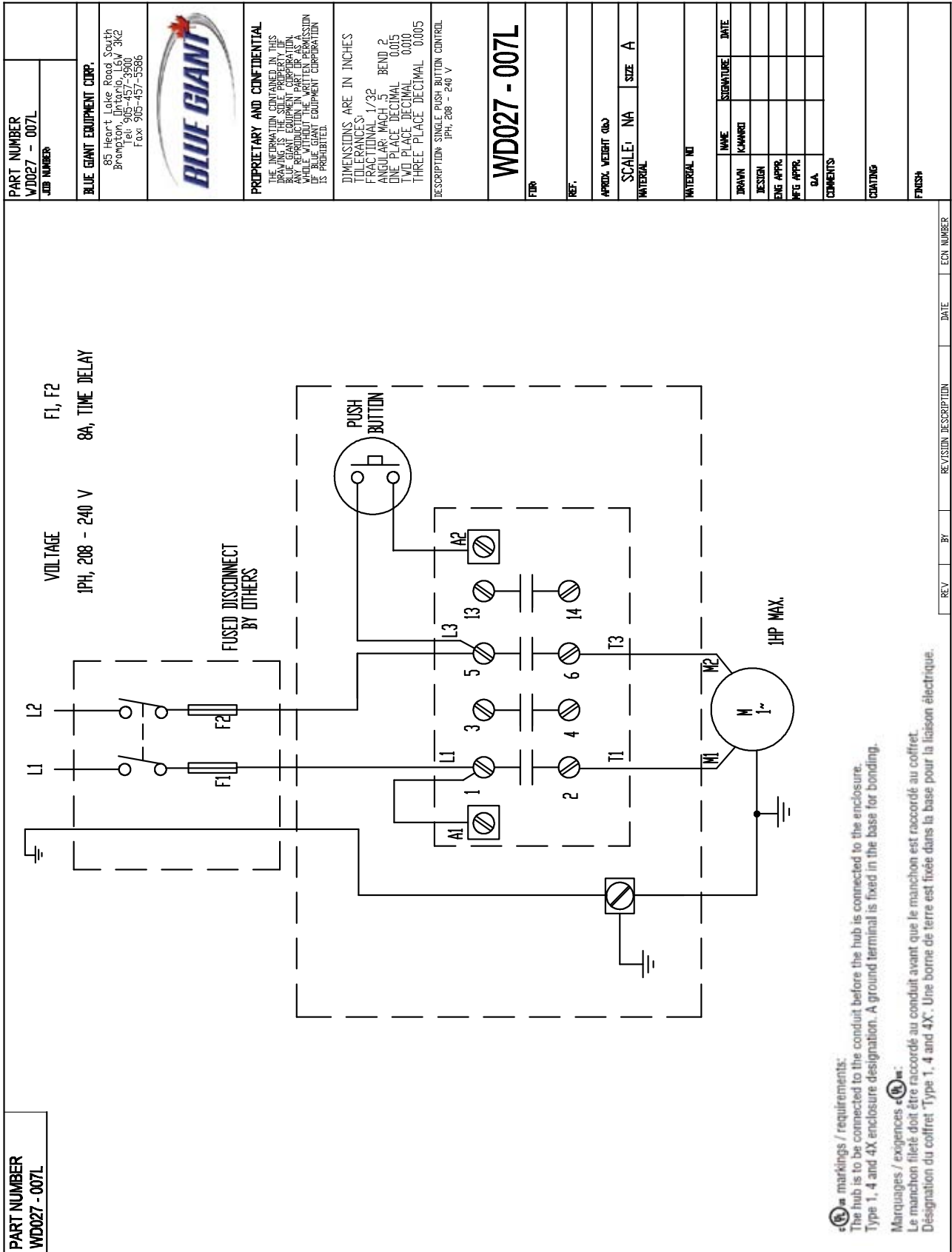


SP1 control station—dimensions.

8.0.1 SP1 WIRING DIAGRAM—110–130V SINGLE PHASE



8.0.2 SP1 WIRING DIAGRAM—208–240V SINGLE PHASE



9.0 PLANNED MAINTENANCE



WARNING

Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the installation process. Contact your local dealer or distributor for assistance.

Do not service this equipment until you have read and understood all of the safety information and instructions contained herein. Failure to adhere to recommended safety practices in this manual and on the dock equipment warning labels could result in death or serious injury.

Do not conduct maintenance or repairs until adequate barriers have been placed to keep warehouse and vehicle traffic away from the work area.

Before doing any electrical work, make certain the power is disconnected and properly tagged or locked off.

When conducting maintenance, use only Blue Giant approved lubricants. Improper lubrication or adjustments may cause operational problems.

See Owner's Manual (part # 038-703E) for detailed Planned Maintenance checklist.

10.0 HYDRAULIC DOCK LEVELER TROUBLESHOOTING



WARNING

Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the installation process. Contact your local dealer or distributor for assistance.

PROBLEM	PROBLEM CAUSE
<p>Deck will not rise when the push button is operated. Motor does start and run.</p>	<ol style="list-style-type: none"> 1. Foreign material may be lodged between side of deck and pit wall. Remove and discard 2. Damaged or missing bumpers are allowing the truck to contact and hold the lip. Move truck as required and replace the bumpers. 3. Equipment or goods are parked on dock leveler deck. Remove. 4. Low hydraulic oil fluid in power unit, possibly due to damaged hose or other oil leak. Repair and refill with approved hydraulic oil as required. 5. Incorrect motor rotation (three phase power supply only). Qualified personnel can correct by interchanging any two motor leads. 6. Incorrect motor rotation (single phase power supply only). Check the motor name plate or rotation tag for instructions on reversing rotation. 7. Relief valve is bypassing. Reset relief valve.
<p>Deck will not begin to rise immediately when motor begins to run. Usually occurs only after the deck cylinder hose has been replaced with a new hose that was not pre-filled with oil.</p> <p>(Note: this is for deck cylinders that are not inverted: hydraulic hose fitting is located at the base plate and not at the headboard. Cylinders that are inverted will self-bleed.)</p>	<p>Air is trapped in the deck lifting cylinder. Bleed as follows:</p> <p>METHOD #1</p> <ol style="list-style-type: none"> 1. Operate dock leveler and place in fully below level position. 2. Allow to rest in below level place for 60 – 90 seconds, and repeat as required until deck begins to raise immediately and the motor starts to run. <p>METHOD #2</p> <ol style="list-style-type: none"> 1. Raise the dock and let it rest on the maintenance stand. Remove and invert cylinder and then collapse the ram fully. Power up to extend the ram, and then reinstall.
<p>Deck will not rise when push button is operated.</p> <p>Motor does not attempt to run and no sound is heard from motor / power pack and control station.</p>	<ol style="list-style-type: none"> 1. Interlock devices not operating properly (i.e. overhead door interlock or vehicle restraint). Open overhead door or repair sensor. Engage vehicle restraint or chock wheels and key switch bypass. 2. No power supply to control station. Breaker may have tripped, the fuse may have blown, or the disconnect switch may be open. 3. Thermal overload tripped open. Reset by pushing the reset button on the control station. If trip-off recurs, repair motor circuit as required. 4. Faulty control station component – fuse, push button, contactor, transformer. Repairs may be required. 5. Single phase condition on a three phase system.

10.0 HYDRAULIC DOCK LEVELER TROUBLESHOOTING CONT.



WARNING

Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the installation process. Contact your local dealer or distributor for assistance.

PROBLEM	PROBLEM CAUSE
<p>Deck will not rise when push button is operated.</p> <p>Motor attempts to run, but power supply breaker switch trips to the off position, turning the power off before the motor reaches full running speed.</p>	<ol style="list-style-type: none"> 1. Not normally a fault in the controls or power unit. 2. This condition is more prevalent with a 115/1/60 power supply. 3. Power supply circuit is overloaded by other equipment or components being used on a branch circuit controlled by the same breaker switch. 4. To permanently correct the problem, the power supply line circuit must be upgraded to meet the requirements of the power unit. 5. A temporary measure to allow use of the dock leveler is to purposely misadjust the pressure relief valve to allow a minimal bypass of oil at motor startup, causing a reduction of amperage draw. Turn the relief valve, adjusting screw counter-clockwise 1/16 turn, and test operate. Repeat as required until a setting is found that will allow the motor to start and deck and lip to raise and extend fully. Readjust to normal settings after line voltage problem has been corrected. Failure to readjust to normal setting will result in unnecessary, frequent, service call backs. 6. Power pack is faulty. Replace.
<p>Deck raises slower than normal.</p> <p>Fluid level in reservoir is normal.</p>	<ol style="list-style-type: none"> 1. Deck or damaged skirts dragging on side of pit. Repair as required. <p>Note:</p> <ol style="list-style-type: none"> 1 - Hydraulic oil must be replaced if contaminated by foreign material. 2 - Count and record turns when removing or replacing adjustable parts. 2. Pressure relief bypassing <ul style="list-style-type: none"> • Foreign material may be lodged between the ball and seat. Change oil. Flush by raising deck and lip to maximum height and continue to run motor for 30 seconds maximum. • Remove relief valve (7), disassemble and clean thoroughly, and change oil. After replacing the valve, adjust to original setting and test operate. • Ball seat is damaged and must be re-seated. Remove relief valve, disassemble, and clean thoroughly. Using a brass punch, firmly hit the ball onto its seat and re-clean. Then change the oil, replace valve, adjust to original setting, and test operate. 3. Pilot Operated to close Check Valve (9) will not close. <ul style="list-style-type: none"> • Foreign material in hydraulic fluid causing check valve seat to be held open. Remove SAE plug and remove zero profile valve assembly from cavity. Clean all parts thoroughly. Clean the bore thoroughly, change oil, and replace all components. Adjust to original settings and test operate. 4. Faulty power pack. Replace

10.0 HYDRAULIC DOCK LEVELER TROUBLESHOOTING CONT.



WARNING

Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the installation process. Contact your local dealer or distributor for assistance.

PROBLEM	PROBLEM CAUSE
Deck rises partially and stops. Motor continues to run and power unit makes more noise than normal.	<ol style="list-style-type: none"> 1. Oil level in reservoir is low. <ul style="list-style-type: none"> • Add appropriate hydraulic oil to the reservoir. • Locate oil leak and repair as required. Park the dock leveler and top up the oil reservoir. The oil should be 1" (25mm) below the top of the reservoir while the dock is parked.
Lip extends before deck is fully raised.	<ol style="list-style-type: none"> 1. Sequence valve operating pressure setting too low. <ul style="list-style-type: none"> • Adjust to operate at higher pressure. • Turn adjusting screw clockwise in 1/2 turn increments until the lip does not extend until after deck has reached fully raised height. <p>Note: Lip must extend with no hesitation after the deck has reached its fully raised height.</p>
Lip will not remain extended. Lowers as deck is floating down.	<ol style="list-style-type: none"> 1. Sequence valve shuttle sticking. <ul style="list-style-type: none"> • Foreign material in hydraulic fluid is causing sequence spool to stick in bore. Remove sequence valve cartridge (6) from manifold cavity, clean all components thoroughly, and change the oil. Then replace all components, adjust to original settings, and test operate. (The sequence valve cartridge (6) should not be disassembled.)
Lip remains extended after deck has lowered to bottom of pit. (Lip will not auto-return.)	<ol style="list-style-type: none"> 1. A valve adjustment will not correct this problem. The lip lowers by gravity only and must pivot freely on hinge. <ul style="list-style-type: none"> • Thoroughly clean and lubricate hinge. • Disconnect lip cylinder and move lip by hand through full arc to 'feel' if it pivots freely. Lip may have been bent by truck backing into it. Replace or repair as required. Extend and retract lip cylinder by hand. Cylinder rod may be bent and binding because of worn hinge pin. 2. Inspect for pinched hose restricting oil flow. 3. Pilot-operated check valves (8 and 9) are sticking due to contamination. Remove, inspect, test, and clean as required.

10.0 HYDRAULIC DOCK LEVELER TROUBLESHOOTING CONT.



WARNING

Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the installation process. Contact your local dealer or distributor for assistance.

PROBLEM	PROBLEM CAUSE
<p>Lip does not lower when deck is rising, or does not lower with smooth motion.</p>	<ol style="list-style-type: none"> 1. Sequence valve cartridge (6) operating pressure set too low. <ul style="list-style-type: none"> • Adjust to operate at higher pressure. • Turn adjusting screw clockwise in 1/4 turn increments until lip lowers smoothly as deck is rising. 2. Lip must lower by gravity: check for bent or damaged lip, and then thoroughly clean and lubricate.
<p>Deck rises fully. Lip does not extend.</p>	<ol style="list-style-type: none"> 1. Sequence valve operating pressure is set too high. <ul style="list-style-type: none"> • Adjust to operate at lower pressure. • Turn adjusting screw counter-clockwise out 1/4 turn increments until lip will extend with no hesitation after the deck has reached its fully raised height. 2. Check oil level in reservoir. <ul style="list-style-type: none"> • Power unit sound will be louder than normal if oil level is low. • Top-up oil tank with appropriate hydraulic oil if required. See the maintenance section for recommended oil.
<p>Lip does not extend fully. Oil in reservoir is not low.</p>	<ol style="list-style-type: none"> 1. Lip plate may be bent, causing hinge to bind. Repair and lubricate as required. 2. Foreign material may be lodged in the lip hinge area. Clean thoroughly as required. 3. Relief valve is bypassing. <ul style="list-style-type: none"> • In some instances slight mechanical imperfections can be overcome by increasing the hydraulic pressure. • Turn Relief Valve adjusting screw clockwise until it bottoms out and then back off 1/8 turn. <p>Note: Repair is not completed until mechanical damage is corrected.</p>
<p>Lip lowers slowly in normal temperatures and very slowly in extremely cold weather.</p> <p>Deck lowering speed is correct.</p>	<ol style="list-style-type: none"> 1. A valve adjustment will not correct this problem. Opening the needle valve will cause the deck to lower too quickly, which will in turn cause the fall-safe velocity fuse to lock. The lip lowers by gravity and must pivot freely on its full length hinge. <ul style="list-style-type: none"> • Thoroughly clean and lubricate the lip hinge. • Inspect the cylinder hose to confirm that it is not pinched, restricting movement. • Hose should not be over 18 feet long. Shorten hose and if possible widen it to correct flow restrictions. 2. Use special low temperature hydraulic fluid and change seasonally. See the maintenance section for recommended low temperature oil. <ul style="list-style-type: none"> • If problem is extreme, modify to the power-down hydraulic lip system. A double acting cylinder forces the lip to lower as the deck rises.

10.0 HYDRAULIC DOCK LEVELER TROUBLESHOOTING CONT.



WARNING

Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the installation process. Contact your local dealer or distributor for assistance.

PROBLEM	PROBLEM CAUSE
<p>Deck lowering speed is too slow or too fast.</p>	<ol style="list-style-type: none"> 1. Lowering speed adjustment required. To increase lowering speed: <ul style="list-style-type: none"> • Turn lowering speed adjusting needle valve counterclockwise in 1/8 turn increments to a setting that causes the deck to lower from fully raised with lip extended to fully lowered below level with lip extended in 7 seconds maximum. Note: Fall-safe velocity fuse will lock closed if lowering speed is too fast, and deck will not lower. 2. To decrease lowering speed: <ul style="list-style-type: none"> • Turn lowering speed adjusting Needle Valve clockwise in 1/8 turn increments until desired lowering speed is reached. Note: Slightly slower than normal lowering speed will not adversely affect the dock leveler systems.
<p>Deck will not lower from the fully raised position with extended lip. Lip does lower.</p>	<ol style="list-style-type: none"> 1. The fall-safe velocity fuse located at the bottom of the deck cylinder is in the locked-closed position. <ul style="list-style-type: none"> • Deck lowering speed is set too fast. Turn lowering speed adjustment NEEDLE VALVE clockwise in 1/8 turn increments until the travel time is 7 seconds maximum from fully raised to fully lowered positions. • Air is trapped in the deck cylinder and hose. Bleed system as instructed by operating deck to fully below level and allow sitting for 60 – 90 second intervals. Repeat as required. <p>Note: To open a locked velocity fuse, remove deck weight from the cylinder by lifting with a fork truck or other means if cylinder is fully extended. Jog the up button if cylinder is not extended. Repairs are needed before up jog is performed. Example: leaking hydraulic hose.</p>

11.0 ALTERNATIVE CONTROL STATION OPTIONS

Control station upgrades are available for enhanced equipment operation.

The SP2 controls an independent dock leveler via a constant pressure “I” (UP) button and has a running timer that shuts down the motor after a specific interval to prevent excessive motor activity. Overhead door interlock provision terminals protect door from incorrect leveler sequence.

PART #		DESCRIPTION	APPROX. WEIGHT	
SP2S1115	F	SP2 Control 115V Single Phase	2 lbs	0.9 kg
	S			
SP2S1230	F	SP2 Control 230V Single Phase	2 lbs	0.9 kg
	S			



SP2 Control

The Blue Genius™ Gold Series I is a microprocessor-based control station with a touch-sensitive ‘Deck’ button and numeric keypad. The LED menu screen relays real-time prompts and commands for operating and troubleshooting. For added safety, the Blue Genius™ is available with an optional interior and exterior light communication package, overhead door interlock and expansion capability for future vehicle restraint and overhead door buttons.

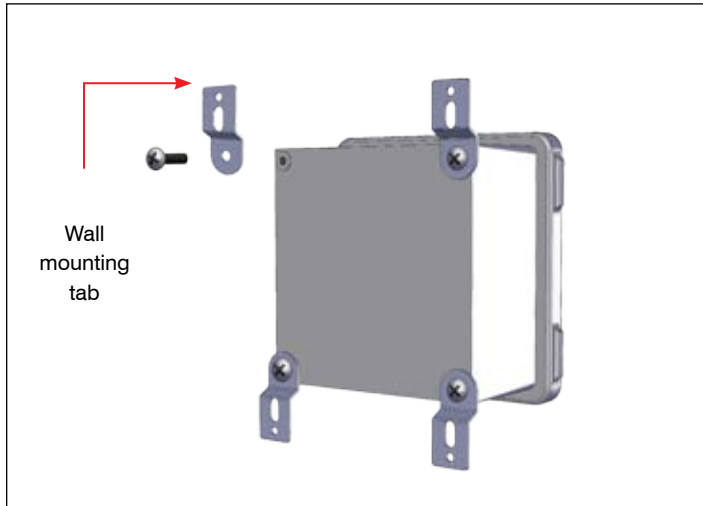
PART #		DESCRIPTION	APPROX. WEIGHT	
BGGE01115	F	Blue Genius™ Gold Series I 115V Single Phase	6.2 lbs	2.81 kg
	S			
BGGE01230	F	Blue Genius™ Gold Series I 230V Single Phase	6.2 lbs	2.81 kg
	S			



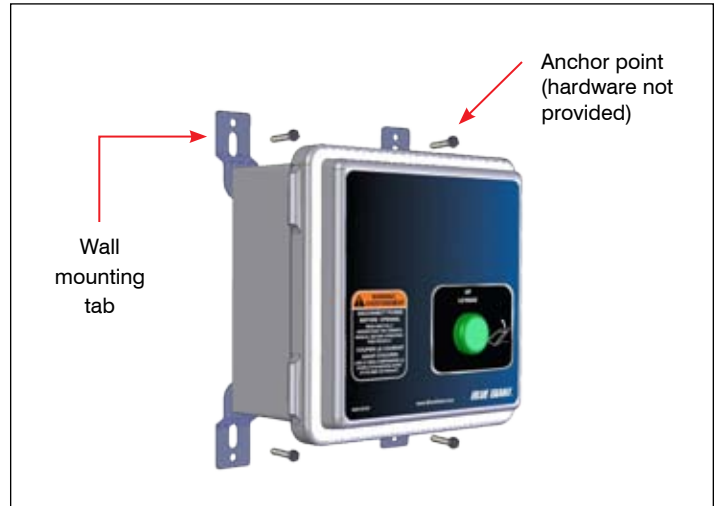
Blue Genius™ Gold Series I

11.0.1 SP2 CONTROL STATION INSTALLATION

Remove the SP2 control station from its box and install the wall-mounting tabs on the back of the control station. The mounting brackets must be installed to suit site / wall conditions. Do not drill through control station box itself.



SP2 control station—wall-mounting brackets.



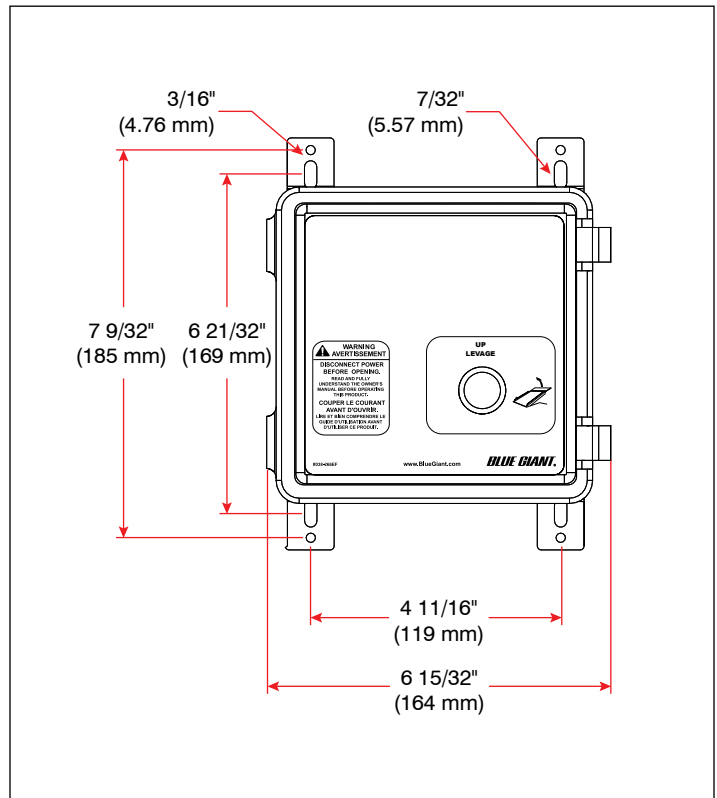
SP2 control station—mounting on wall (typical decal shown).

When determining where to position the control station, please ensure that the bottom of the box is accessible, as all conduit entry points must be drilled into the bottom. (**Warning: do not drill on top of the box.**) The control station must also be mounted at a height (66" (1676 mm) typical top of enclosure). Mount the control station on a flat surface. If the wall is uneven, shim to suit.

Verify that the control station power rating is compatible with that of the power supply. All wiring inside the control station must be neatly laid out; avoid crossovers and untidy, excessive wiring patterns. All wiring must be completed in accordance with national and local codes.

Use # 12 gauge stranded wired for motor and power leads only. A local disconnect means is required.

If site conditions call for a different wiring installation method, please consult factory before proceeding.

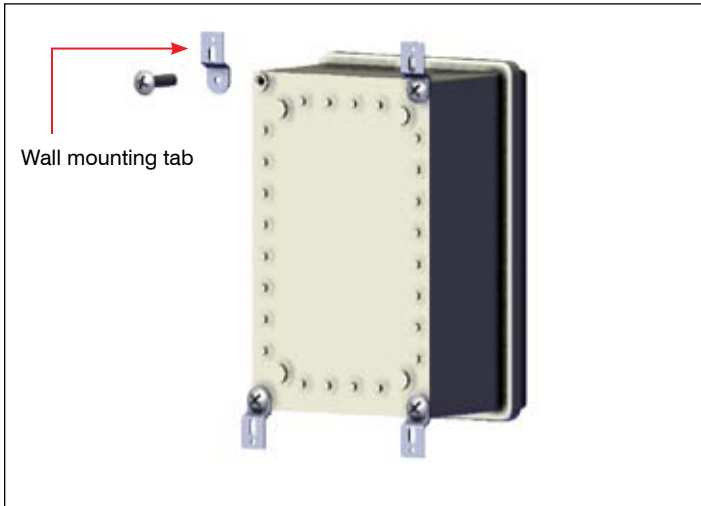


SP2 control station—dimensions.

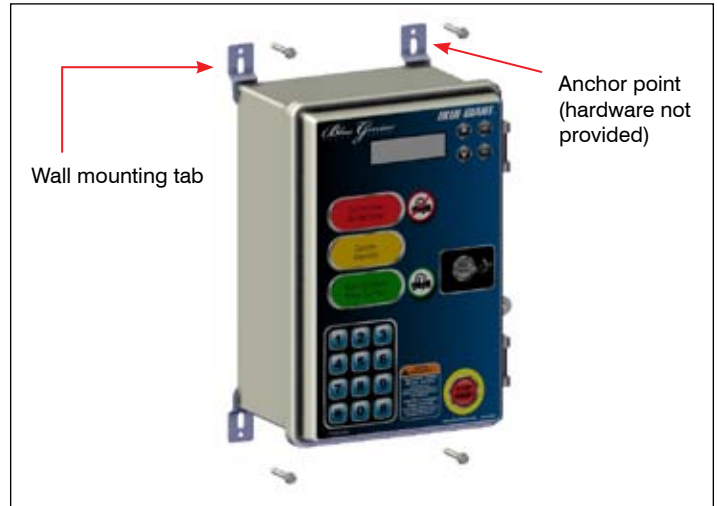
11.0.2 BLUE GENIUS™ CONTROL STATION INSTALLATION

NOTICE

The use of ESD protocol is now needed when handling any controls mentioned hereafter.



Blue Genius™ control station—wall-mounting brackets.



Blue Genius™ control station—mounting on wall (typical decal shown).

Remove the Blue Genius™ control station from its box and install the wall-mounting tabs on the back of the control station. The mounting brackets must be installed to suit site / wall conditions. Do not drill through control station box itself.

When determining where to position the control station, please ensure that the bottom of the box is accessible, as all conduit entry points must be drilled into the bottom. **(Warning: do not drill on top of the box.)** The control station must also be mounted at a height (66" (1676 mm) typical top of enclosure) that allows the operator to easily read the LCD display. Mount the control station on a flat surface. If the wall is uneven, shim to suit.

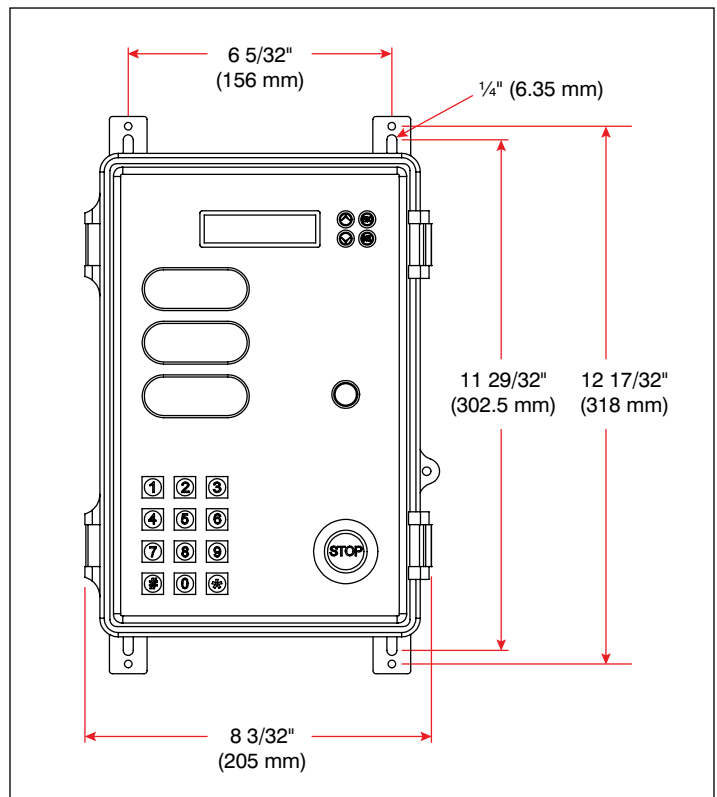
Verify that the control station power rating is compatible with that of the power supply. All wiring inside the control station must be neatly laid out; avoid crossovers and untidy, excessive wiring patterns. All wiring must be completed in accordance with national and local codes.

Use # 12 gauge stranded wired for motor and power leads only. A local disconnect means is required. Entry points at the bottom of the control station shall correspond to (left to right):

- Power
- Motor 1
- Motor 2 (if needed)
- Outside lights / door interlock
- Communication

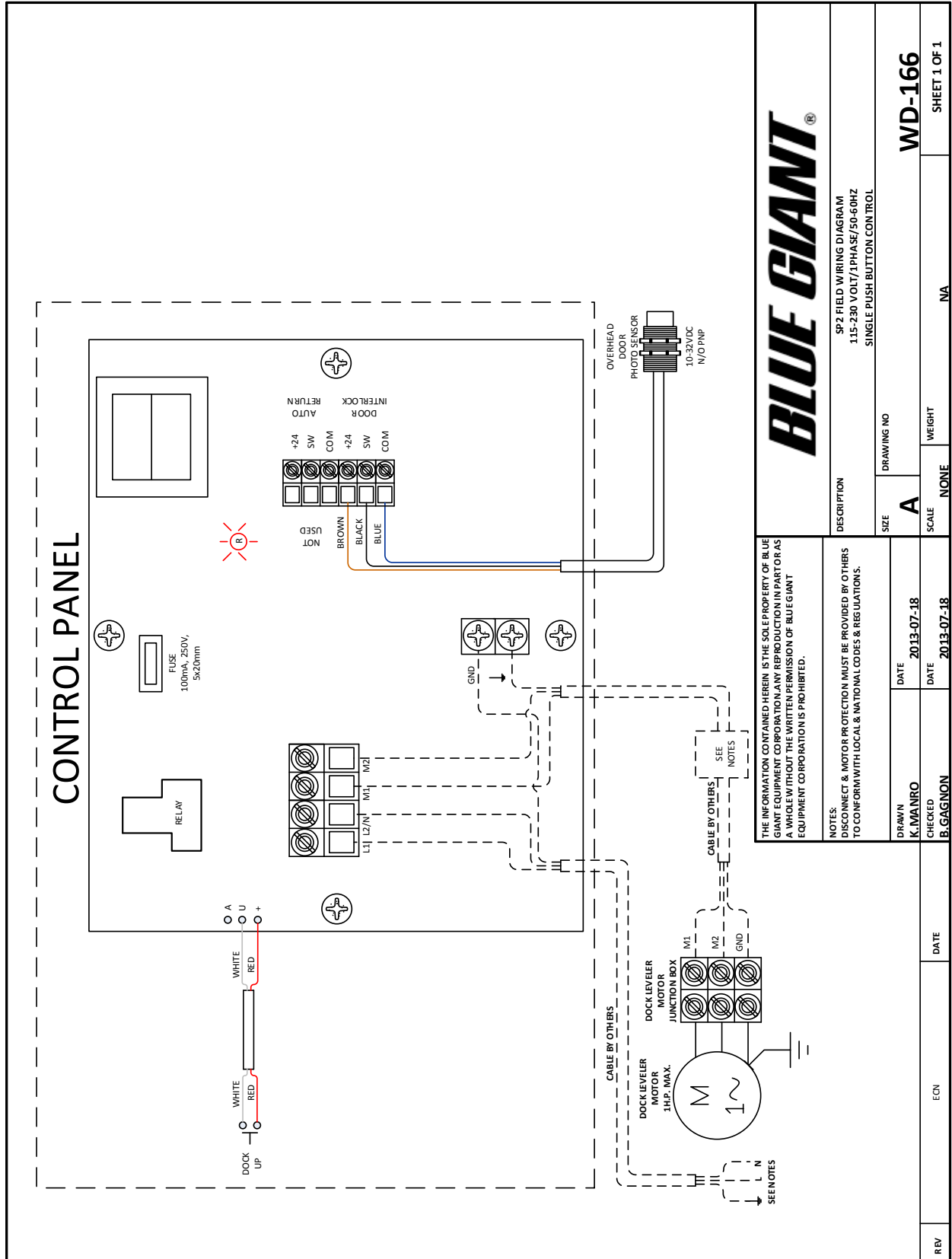
Refer to Section 7.8 "Electrical Conduit Installation".

If site conditions call for a different wiring installation method, please consult factory before proceeding.



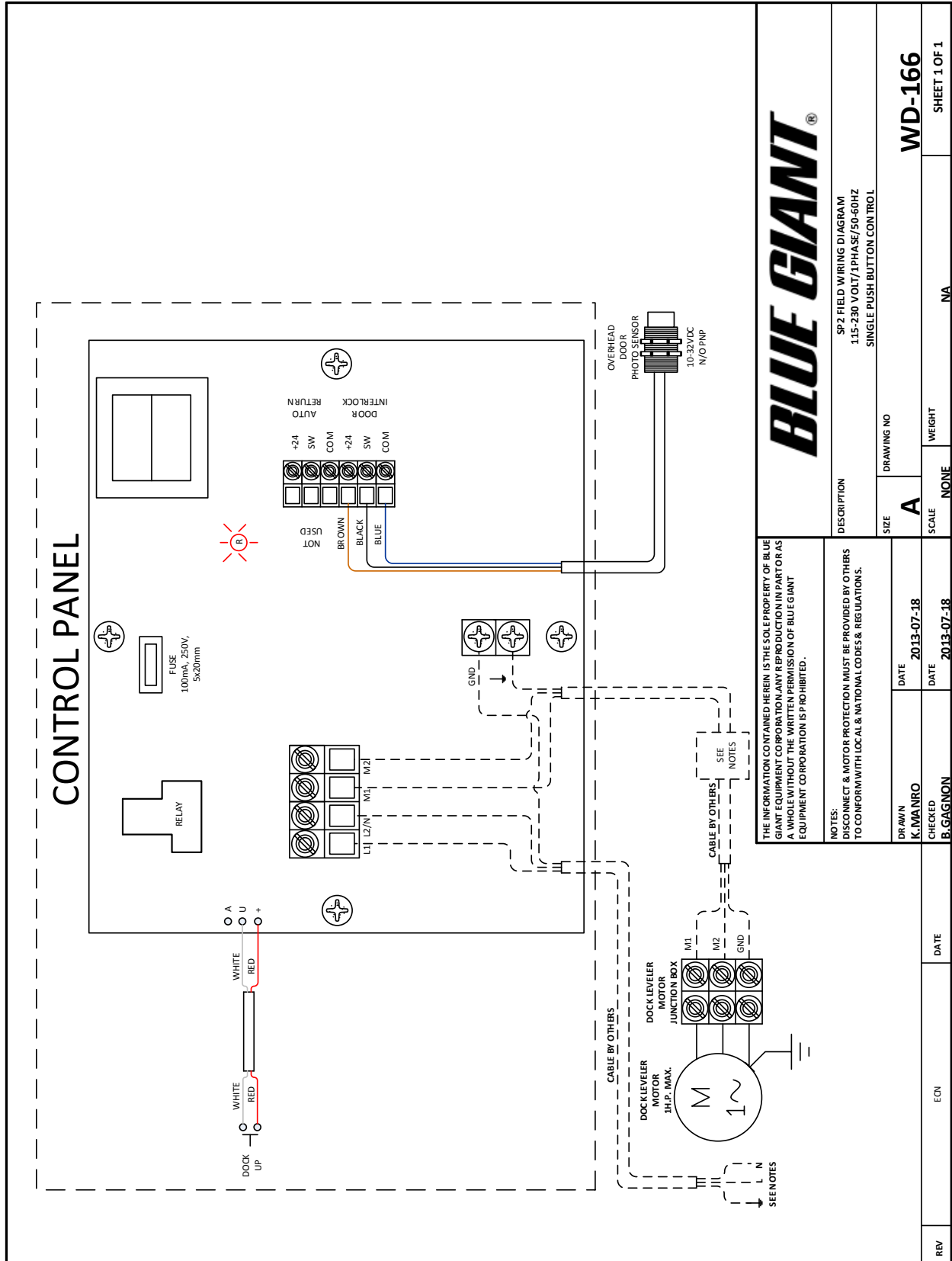
Blue Genius™ control station—dimensions.

11.0.3 SP2 WIRING DIAGRAM—115V SINGLE PHASE



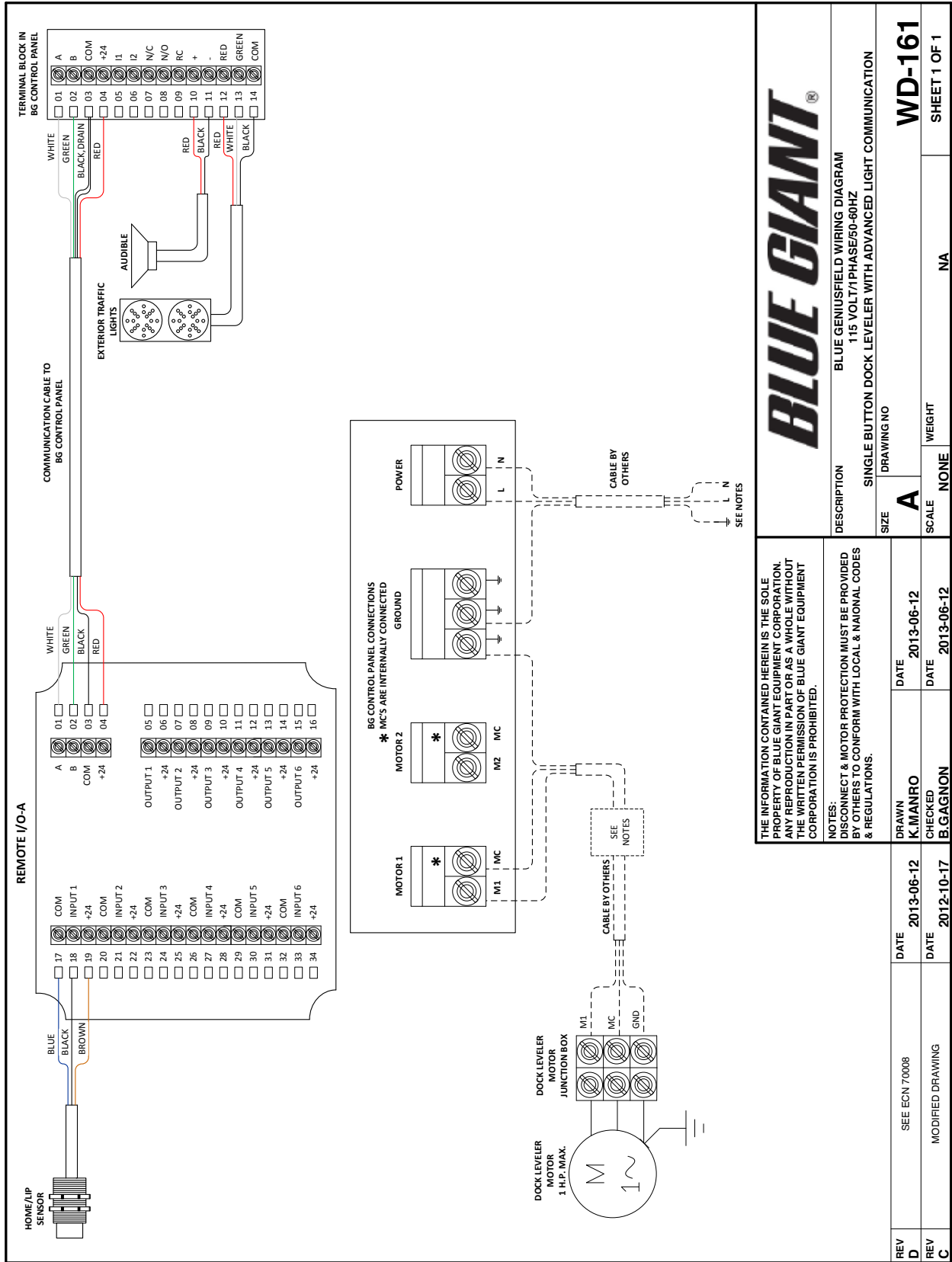
<p>THE INFORMATION CONTAINED HEREIN IS THE SOLE PROPERTY OF BLUE GIANT EQUIPMENT CORPORATION. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF BLUE GIANT EQUIPMENT CORPORATION IS PROHIBITED.</p>	
<p>NOTES: DISCONNECT & MOTOR PROTECTION MUST BE PROVIDED BY OTHERS TO CONFORM WITH LOCAL & NATIONAL CODES & REGULATIONS.</p>	<p>DESCRIPTION SP 2 FIELD WIRING DIAGRAM 115-230 VOLT/1PHASE/50-60HZ SINGLE PUSH BUTTON CONTROL</p>
<p>DRAWN K. MANRO</p>	<p>SIZE A</p>
<p>CHECKED B. GAGNON</p>	<p>SCALE NONE</p>
<p>DATE 2013-07-18</p>	<p>DRAWING NO WD-166</p>
<p>DATE 2013-07-18</p>	<p>WEIGHT NA</p>
<p>EON</p>	<p>SHEET 1 OF 1</p>

11.0.4 SP2 WIRING DIAGRAM—230V SINGLE PHASE



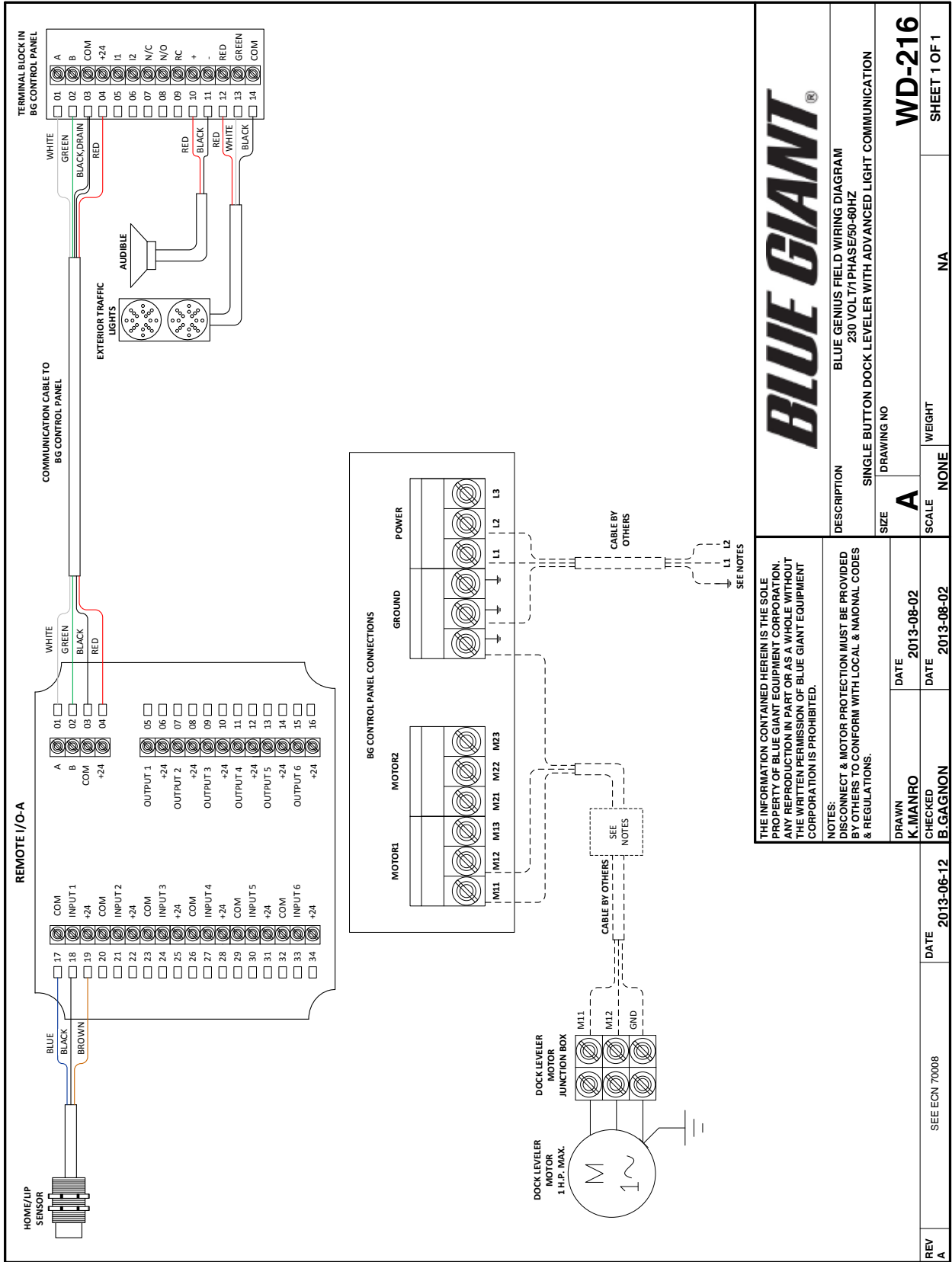
		DESCRIPTION SP 2 FIELD WIRING DIAGRAM 115-230 VOLT/1PHASE/50-60HZ SINGLE PUSH BUTTON CONTROL	
		DRAWING NO WD-166	SHEET 1 OF 1
THE INFORMATION CONTAINED HEREIN IS THE SOLE PROPERTY OF BLUE GIANT EQUIPMENT CORPORATION ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF BLUE GIANT EQUIPMENT CORPORATION IS PROHIBITED.	NOTES: DISCONNECT & MOTOR PROTECTION MUST BE PROVIDED BY OTHERS TO CONFORM WITH LOCAL & NATIONAL CODES & REGULATIONS.	SCALE NONE	WEIGHT N/A
DRAWN K. MANRO	DATE 2013-07-18	SIZE A	DRAWING NO WD-166
CHECKED B. GAGNON	DATE 2013-07-18	SCALE NONE	WEIGHT N/A
REV	ECN	DATE	SHEET 1 OF 1

11.0.5 BLUE GENIUS™ GOLD WIRING DIAGRAM—115V SINGLE PHASE



<p>BLUE GIANT</p>		<p>DESCRIPTION BLUE GENIUSFIELD WIRING DIAGRAM 115 VOLT/1 PHASE/50-60 HZ</p>		<p>SIZE DRAWING NO WD-161</p>	
		<p>DESCRIPTION SINGLE BUTTON DOCK LEVELER WITH ADVANCED LIGHT COMMUNICATION</p>		<p>SCALE NONE WEIGHT NA SHEET 1 OF 1</p>	
<p>THE INFORMATION CONTAINED HEREIN IS THE SOLE PROPERTY OF BLUE GIANT EQUIPMENT CORPORATION. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF BLUE GIANT EQUIPMENT CORPORATION IS PROHIBITED.</p>		<p>DATE 2013-06-12</p>	<p>DATE 2013-06-12</p>	<p>NOTES: DISCONNECT & MOTOR PROTECTION MUST BE PROVIDED BY OTHERS TO CONFORM WITH LOCAL & NATIONAL CODES & REGULATIONS.</p>	
<p>REV D</p>	<p>SEE ECN 70008</p>	<p>DATE 2013-06-12</p>	<p>DATE 2013-06-12</p>	<p>DRAWN K.MANRO</p>	<p>DATE 2013-06-12</p>
<p>REV C</p>	<p>MODIFIED DRAWING</p>	<p>DATE 2012-10-17</p>	<p>DATE 2013-06-12</p>	<p>CHECKED B.GAGNON</p>	<p>DATE 2013-06-12</p>

11.0.6 BLUE GENIUS™ GOLD WIRING DIAGRAM—230V SINGLE PHASE



DESCRIPTION	
BLUE GENIUS FIELD WIRING DIAGRAM 230 VOLT/1PHASE/50-60HZ	
SIZE	
DRAWING NO	
SCALE	
NONE	
WEIGHT	
NA	
WD-216	
SHEET 1 OF 1	

12.0 INSTALLING THE EXTERIOR DRIVER TRAFFIC LIGHT

Mount the exterior traffic light approximately 84" - 96" (2134 mm - 2438 mm) above the driveway surface. Position it to the right of the loading bay entrance, viewed from outside, so incoming truck drivers can easily view it in their rear view side mirror. Ensure that the traffic light is both square and level. Add shims to the back if needed. Do not over-tighten the fasteners.

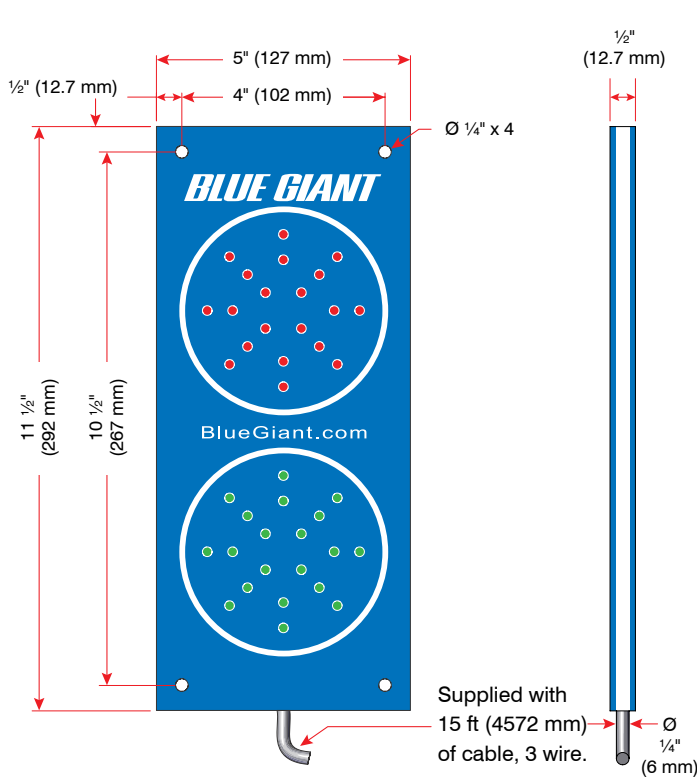
When drilling the hole for the cable, ensure that the hole is thoroughly deburred (cleaned out) so that accidental damage does not occur when the cable is pulled through during and after installation.

12.1 INSTALLING THE EXTERIOR DRIVER WARNING SIGN

When installing the driver warning sign below the exterior traffic light, ensure that the sign can be easily viewed and read by incoming drivers.

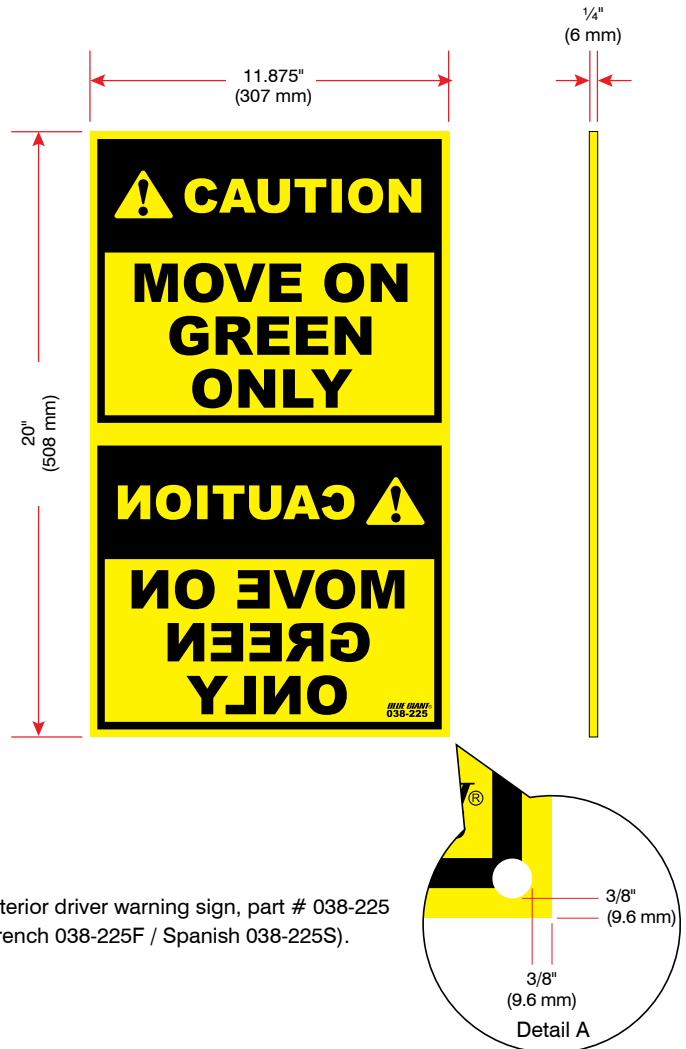
Because the sign comes without mounting holes, drill a minimum of four holes no less than 3/8" (10 mm) (Detail A) from the sign's edge. Ensure that the holes exceed the size of the anchor device used for expansion reasons (i.e. for a 1/4" anchor use a 5/16 hole. When mounting the sign, do a visual inspection to confirm that it is level and centered beneath the traffic light.

When fastening the sign to the wall, make sure that the sign does not warp or twist as a result of tightening the anchors. (Use shim washer if needed.) Do not over-tighten fastenings, as damage to the sign may occur.



Exterior driver traffic light, part # 032-461.

NOTE: Mount to a flat surface. DO NOT deform light housing with irregular wall surface.



Exterior driver warning sign, part # 038-225 (French 038-225F / Spanish 038-225S).

12.2 LIP GUIDE FOR AFTERMARKET DOCKS

If the dock leveler lip plate does not park correctly, a lip guide gusset (Blue Giant part # 25-008304) must be installed to facilitate proper parking.

The purpose of the guide is to properly position the new lip sensor. Figure 2 illustrates a typical guide placement, which applies to typ. dock models. The guide should be mounted near the new sensor bracket to ensure that the dock interlock sensor's range is not altered or otherwise affected.

To set up the guide, position the lip within the lip resting area so that it is tight against the night locks and resting on the "C" channel. Ensure that the guide is positioned close to the dock interlock sensor.

If the lip moved to the night lock, do the following:

- Operate the dock until the deck is raised and put it on the safety stand.
- Using a "C" clamp, clamp the new guide gusset to the below level stop, as seen in Figure 3. The guide should be at the bottom, approximately $\frac{3}{8}$ " (10 mm) away from the night locks.
- Lower the deck until the lip hits the newly installed lip guide gusset and slides into the proper position. (The lip should fit snugly between the gusset and the night lock.) If the fit is too loose or too tight, readjust the gusset accordingly and test again.
- After the proper positioning has been attained, weld it into place.

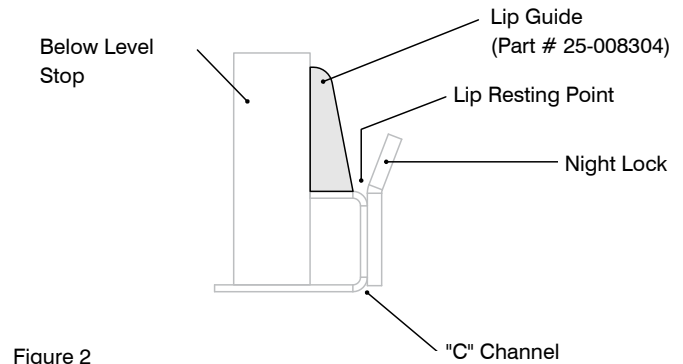


Figure 2

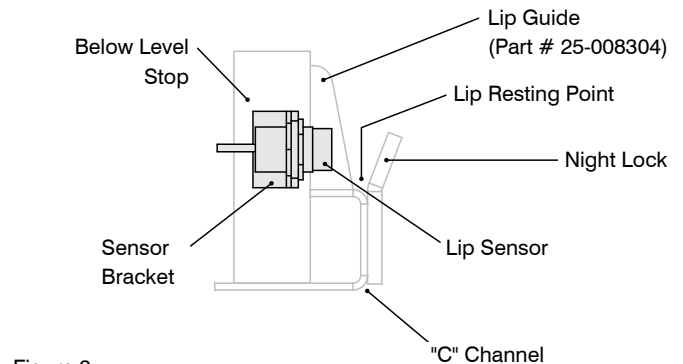


Figure 3

12.3 NEW SENSOR BRACKET INSTALLATION

Using Figure 4 as a guideline, mount the sensor bracket with a "C" clamp. Positioning the bracket, the sensor should be inserted halfway inside the bracket hole. This will allow for easy adjustment of the sensor either closer or further to the back of the lip. With the sensor in place, test the unit. Ensure that there is a minimum clearance of $\frac{1}{4}$ " (6 mm) between the front face of the sensor and the back of the lip plate. Then weld the sensor bracket (without the sensor) to the support. Clean up the entire work area and apply touch-up paint to all welds, scratches and burns.

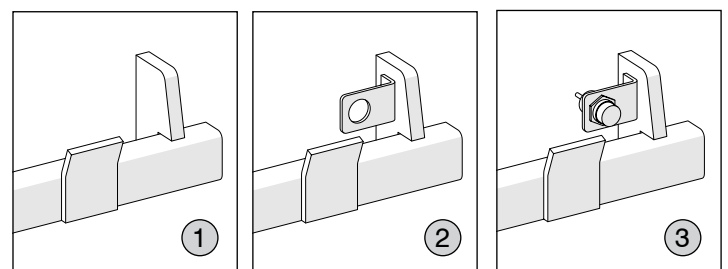


Figure 4: New sensor bracket installation.

12.4 SENSOR RANGE ADJUSTMENT

Sensor can be set between $\frac{1}{4}$ " (6 mm) to $\frac{1}{2}$ " (13 mm), adjust with nuts.

12.5 BLUE GENIUS™ ELECTRICAL WIRING INSTALLATION

NOTICE

All wiring must comply with local and national electrical building codes.

General notes to electrician / installer:

1. Run communication wire in separate raceways back to the Blue Genius™ control station, following the control station installation guidelines.
2. Communication lines not routed in the raceways must never be tie-wrapped to high-voltage conduits: a minimum separation of 1" (25 mm) is required. (If this procedure is not followed, intermittent communication-related issues may arise).
3. Do not loop the communication wire between the IPS sensor and the remote I/O to the Blue Genius™ control station. Use enough cable to meet anticipated requirements and cut length as needed.
4. Ensure that the drain wire is connected to terminal #3 inside the remote I/O from the IPS sensor cable and the drain wire from the Blue Genius™ control station cable to the remote I/O is connected to terminal #3 inside the Blue Genius™.

NOTE: The drain wire is always connected at the power source: never at each end.

5. Ensure that all wires in the screw-down terminal connections are inserted and tightened in place. If stranded wire is used, ensure that no loose strands remain.
6. Wiring should be neatly performed: excessive and untidy arrangements can cause noise interference.
7. The configuration (viewed from left to right on the bottom of the Blue Genius™ control station) must be:
 - Power Feed
 - Motor Wiring
 - Exterior Traffic Lights
 - Control / Communication Cable

DO NOT deviate from this order.

8. When drilling holes in the bottom of the Blue Genius™ control station, ensure that the outside edge of each hole is at least ½" (13 mm) from the power board.
9. Run the cable for the exterior traffic lights to terminals 12, 13 and 14 making sure the black (COM) wire is connected to terminal 14, terminal 12 for the red light and terminal 13 for the green light.

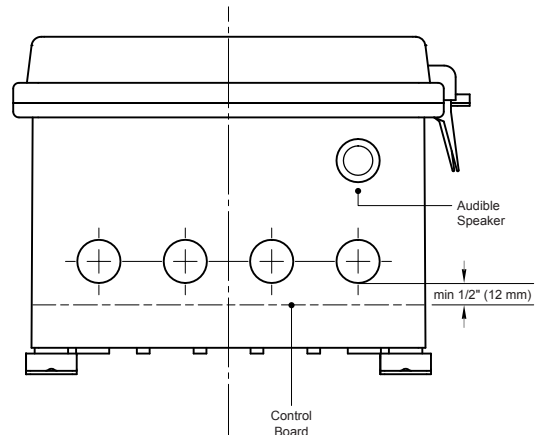


Figure 5: Bottom view of Blue Genius™ control station.

NOTE: Holes shown in Figure 5 are drilled at 7/8" for 1/2" trade size conduit. If larger conduit are needed, the minimal 1/2" clearance must be maintained between the hole's bottom to the control board inside the Blue Genius™ box.

10. If any optional equipment is added (such as overhead door interlock), ensure that all 24VDC devices are entering the Blue Genius™ control station on the bottom right-hand side. To prevent noise interference, separate high and low voltages within the Blue Genius™ control station.
11. All 115 volt single phase units have fuses inside. A disconnect means is needed.
12. All 208-230 volt single phase units must have fusing supplied and a local disconnect.

12.6 BLUE GENIUS™ CONTROL STATION WIRING LAYOUT

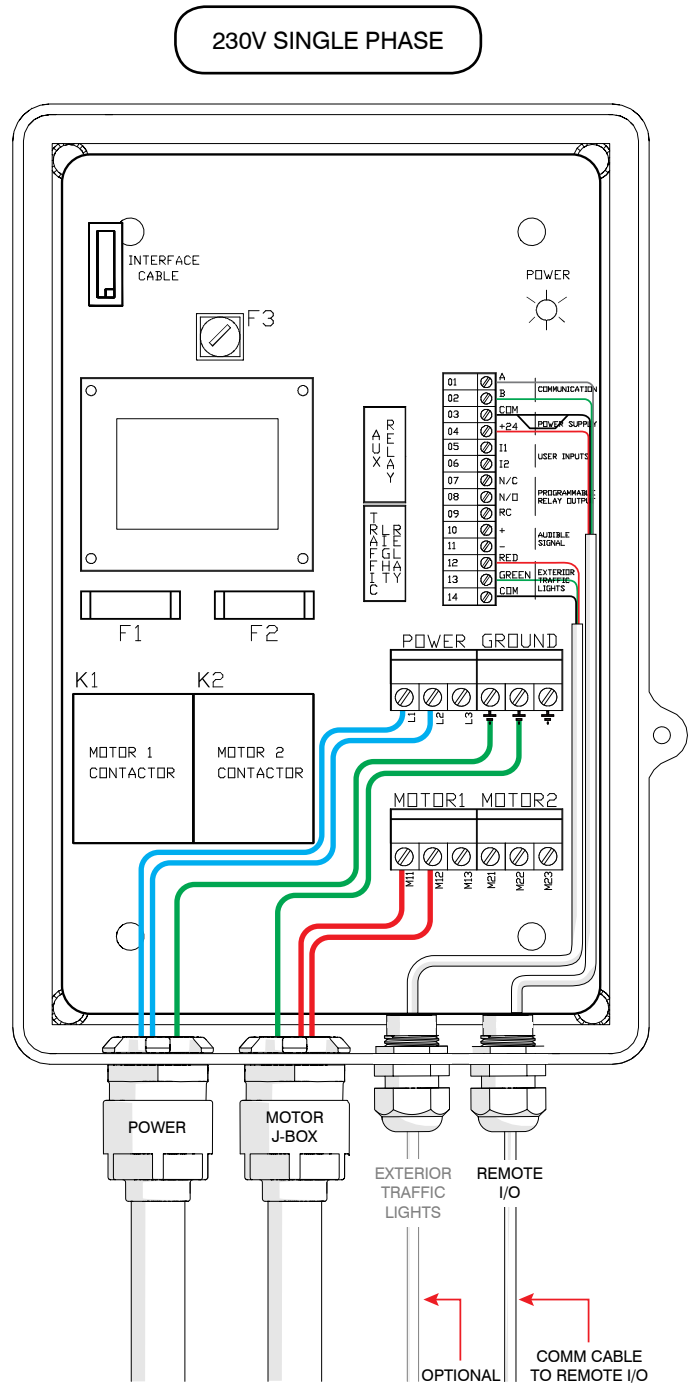
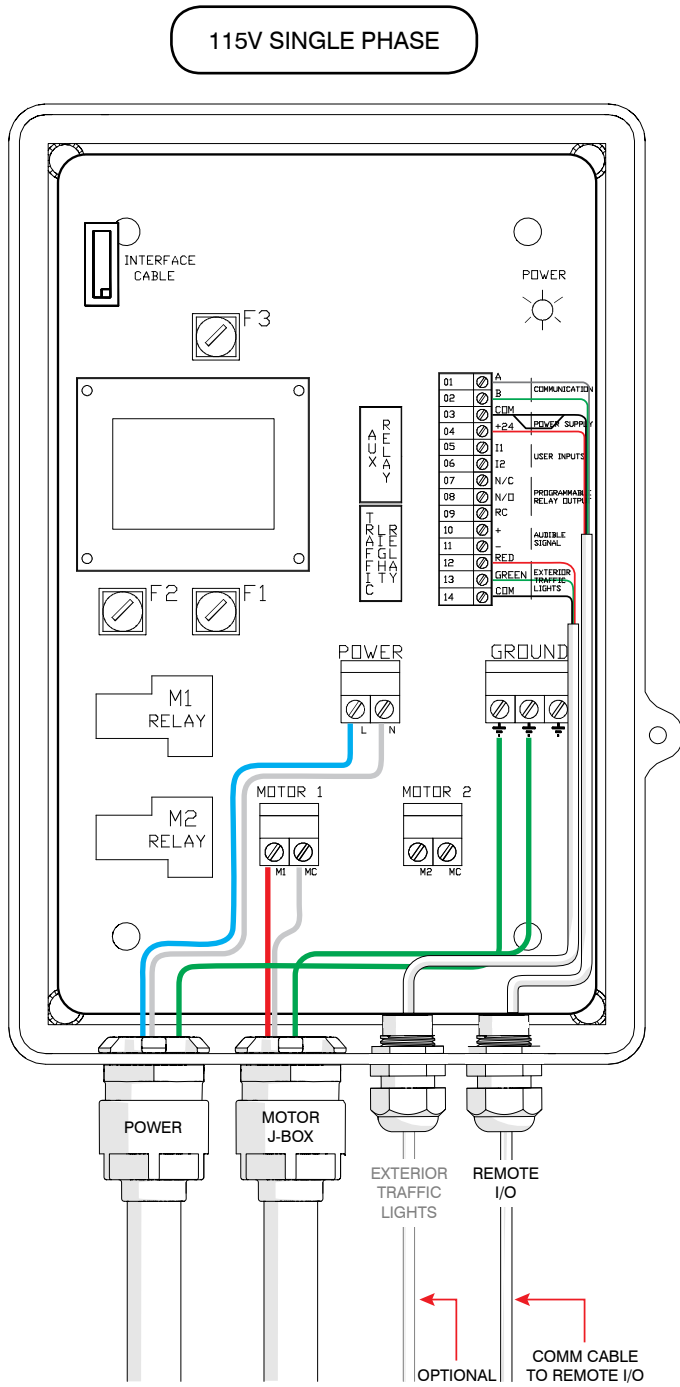


Figure 6: Blue Genius™ control station wiring layout for 115V single phase only.

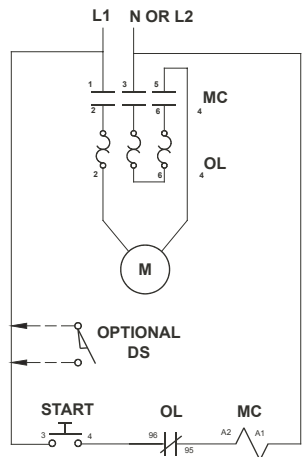
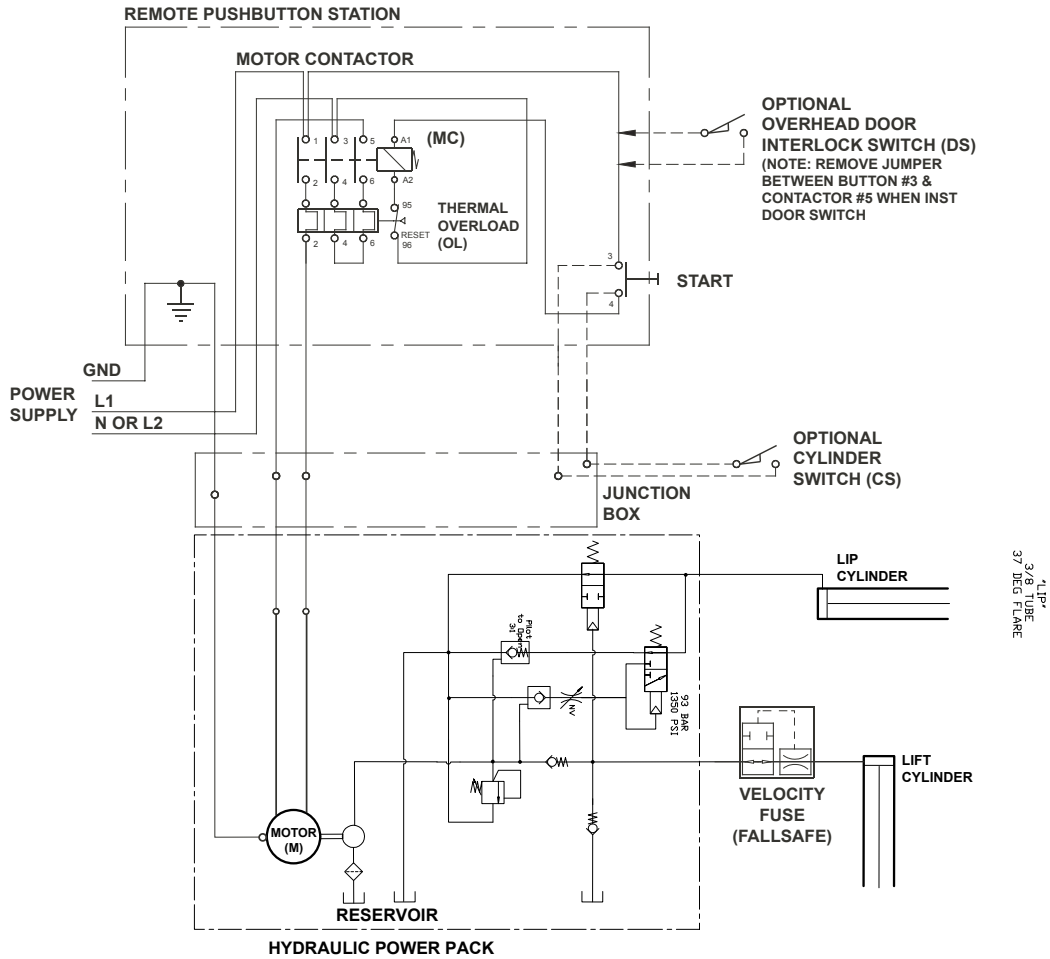
Figure 7: Blue Genius™ control station wiring layout for 208-240V single phase.

NOTE: Audible not shown connected for clarity purposes.

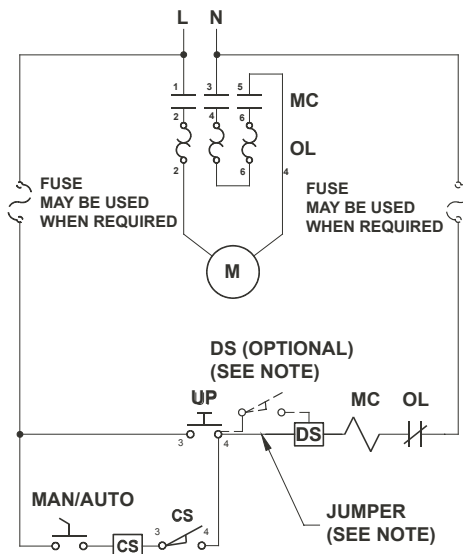
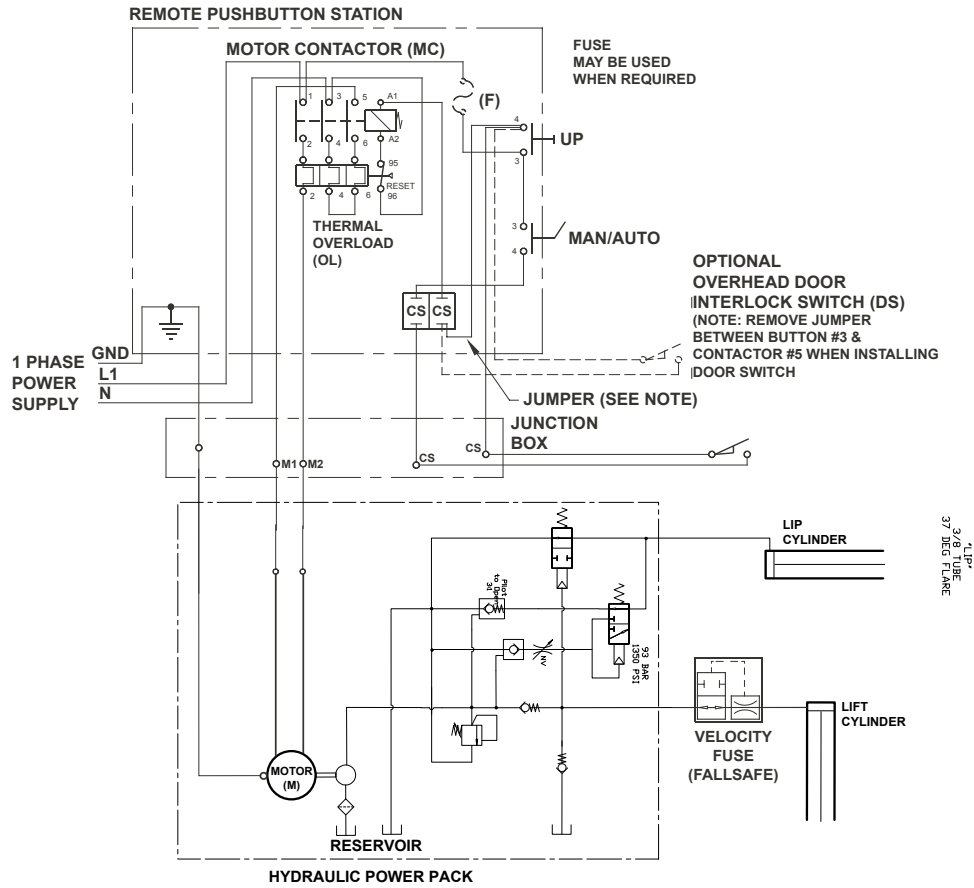
NOTICE

Follow the Wiring Diagram provided with the control panel, please leave the original with the control panel. Standalone wiring diagram is provided in Section 12.0 for reference without being at site with equipment. Use illustration for typical clean layout purposes only.

13.0.1 WIRING DIAGRAM—SINGLE PHASE



13.0.2 WIRING DIAGRAM—THREE PHASE



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