

INSTALLATION & TECHNICAL MANUAL

PIT STYLE DOCK LEVELERS



ACTUAL PRODUCT MAY NOT APPEAR EXACTLY AS SHOWN



WARNING

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

BLUE GIANT[®]

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1.0 GENERAL SITE CHECKLIST FOR DOCK LEVELER

		Yes	No	Comments
1	Review site conditions. Have you completed and reviewed site survey report?	<input type="checkbox"/>	<input type="checkbox"/>	
2	Does the pit fit the leveler that has been provided? See Section 13.0 "Pit Dimensions"	<input type="checkbox"/>	<input type="checkbox"/>	
3	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"/>	
4	Was the conduit(s) installed and properly positioned?	<input type="checkbox"/>	<input type="checkbox"/>	
5	Did you check to see if the proper voltage is supplied (Hydraulic only)	<input type="checkbox"/>	<input type="checkbox"/>	
6	When unpacking, were all the parts included? See Section 11.1 "Components as Shipped Checklist"	<input type="checkbox"/>	<input type="checkbox"/>	
7	Do you have all the tools needed to complete the job? This includes ladder(s), safety equipment and personal safety devices. See Section 9.0 "Tools Required for Installation"	<input type="checkbox"/>	<input type="checkbox"/>	
8	Do you have the anchors for the (optional) exterior driver traffic light, warning sign and control box? Supplied by: You, contractor, or installer	<input type="checkbox"/>	<input type="checkbox"/>	
9	Have you read this installation manual and fully understood it?	<input type="checkbox"/>	<input type="checkbox"/>	
10	Do you have the Blue Giant technical support number? 1.800.872.2583. Before calling, make sure to have serial # of equipment.	<input type="checkbox"/>	<input type="checkbox"/>	
11	Do you know what an ESD "Electrostatic Sensitive Device" 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 Loading Dock Equipment. 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)
1899 L Street, Washington, DC 20036
Telephone: 1.202.293.8020
www.ansi.org



Also a member of:

Loading Dock Equipment Manufacturers
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 online 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: Failure to validate warranty at the time of receipt can seriously affect the outcome of any claim.

NOTE: Improper installation of equipment may void any applicable warranties.

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 GUIDELINES

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 notice 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.

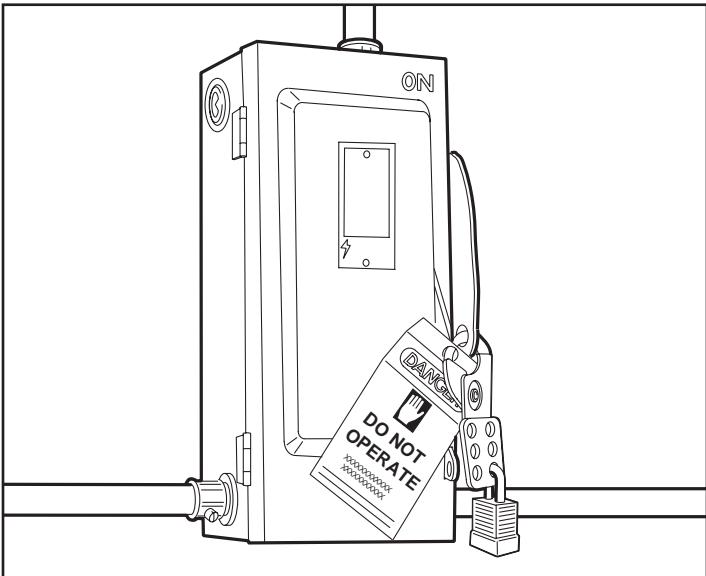
4.0 LOCKOUT / TAGOUT PROCEDURE AND RULES

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 HOW TO READ THIS MANUAL

This Installation and Technical manual covers standard installation steps for the Blue Giant Hydraulic and Mechanical dock levelers.

LEGEND

	Applies only to Hydraulic Dock Leveler
	Applies only to Mechanical Dock Leveler
<div style="background-color: #f44336; color: white; padding: 2px 5px; border-radius: 10px; display: inline-block;">ALL</div>	Applies to Hydraulic and Mechanical Dock Levelers

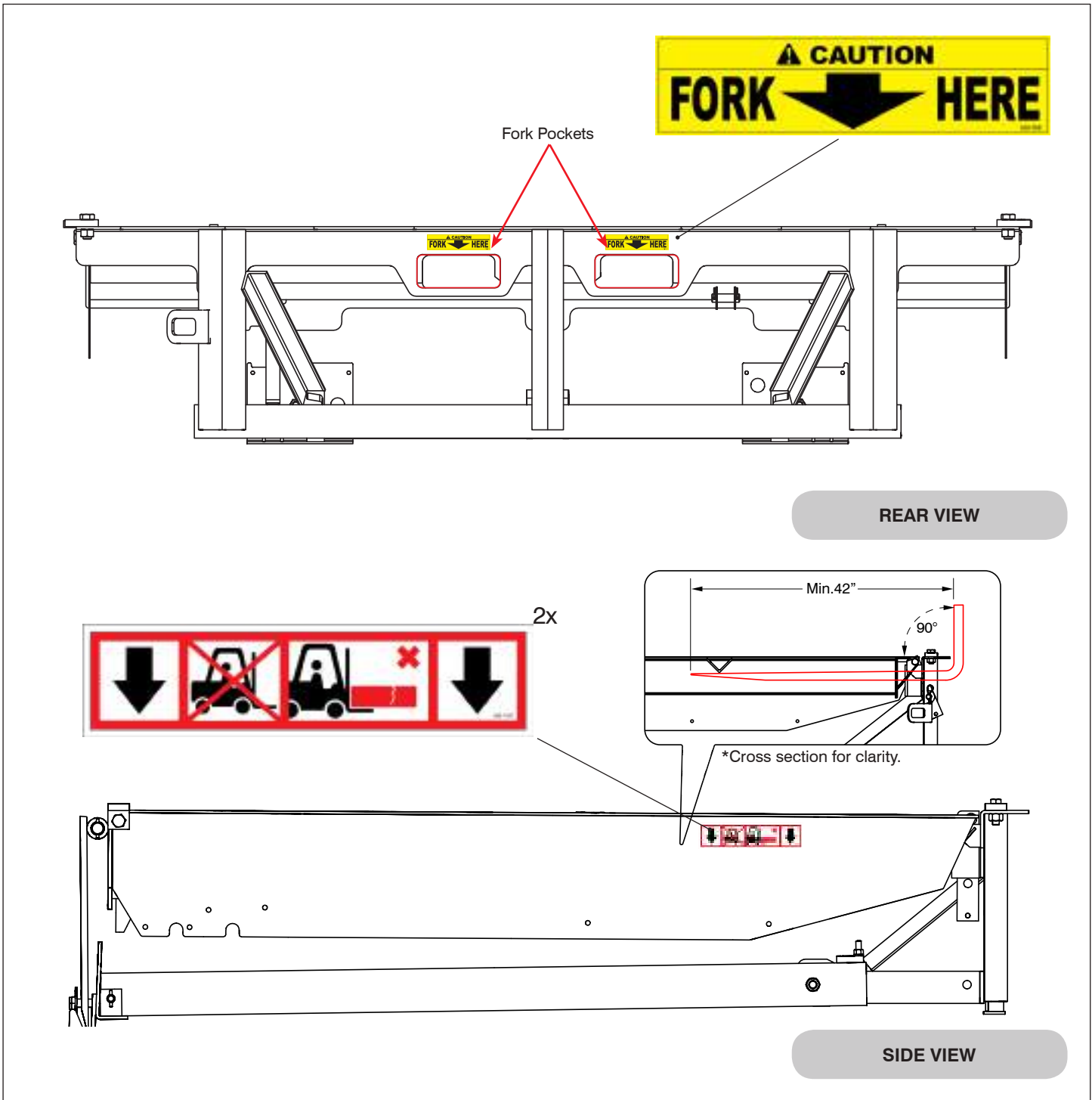
6.0 DOCK LEVELER FORKLIFT HANDLING

ALL

NOTICE

Failure to follow proper handling procedures may result in serious equipment damage.

All Blue Giant dock levelers come equipped with fork pockets located at the rear of the unit for safe and convenient handling. To ensure that the dock leveler does not experience any unnecessary damage, **always lift from the rear fork pockets when using a forklift.**



7.0 DOCK STRUT SET-UP

ALL

⚠ DANGER

Failure to properly secure the dock leveler deck prior to working underneath it may result in property damage, bodily injury, or death. Engage the Dock Strut AND Service Stand first. If the device cannot be successfully engaged, contact your authorized service representative.

⚠ WARNING

Post safety warnings and barricade work area at dock and ground level. Notify all affected personnel that work is being performed on the unit and follow proper lock-out procedure. Ensure that power to the unit has been completely cut off and cannot be turned back on accidentally.

7.1 ENGAGING THE DOCK STRUT

⚠ WARNING

Head protection and other applicable PPE is recommended when working under or around the raised deck.

⚠ WARNING

Install dock strut and secondary service stand only when the unit is fully raised and deployed.

⚠ CAUTION

Use of a service stand and hard hat while performing this step is required.

⚠ WARNING

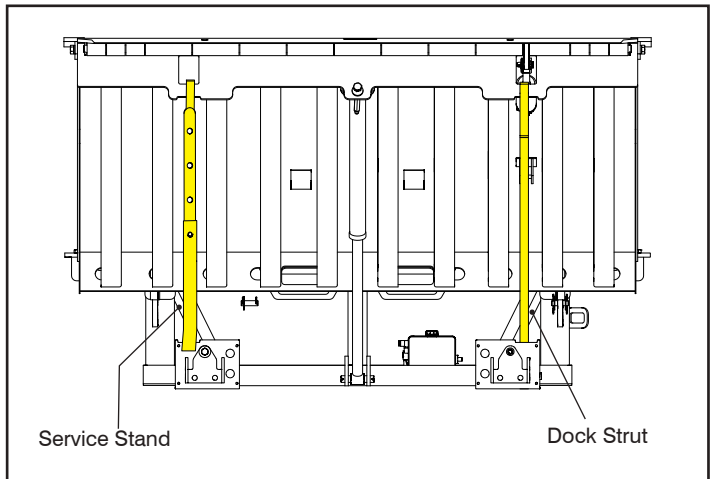
Use of a service stand (Part #796-710) in conjunction with the dock strut is required when working under the leveler.

This dock is equipped with a one piece dock strut that must be used, in conjunction with a service stand, during under-dock inspections or repairs / maintenance. The V-shape ensures safe headboard and lip support.

To apply the dock strut, one person raises the deck while another puts the strut in place.

It is recommended that a retrieval tool be used when retrieving the dock strut from its storage position beneath the dock.

NOTE: It is recommended that this step be performed with assistance.



Engaged Service Stand (part # 796-710) and Dock Strut (part # 2000659).

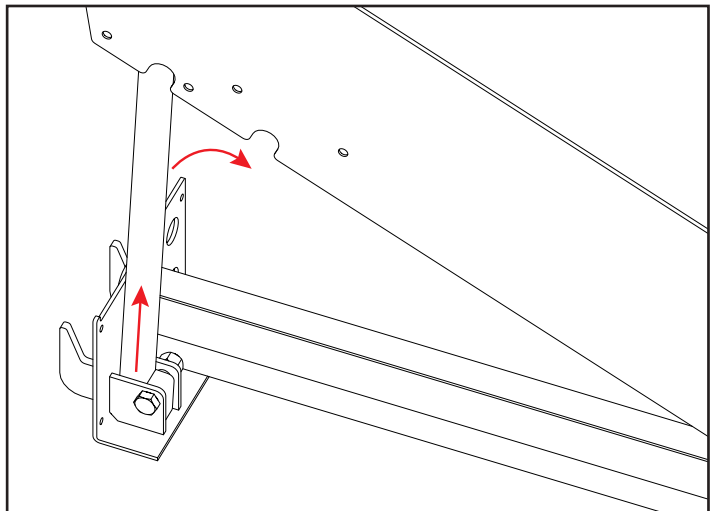
7.2 DISENGAGING THE DOCK STRUT

⚠ CAUTION

Remove the service stand only AFTER disengaging the dock strut (or equivalent)

After verifying that it is safe to disengage the dock strut, pull upwards on the dock strut and lower gently into the storage position.

Do not stand in the pathway of the dock leveler during the disengagement process in case the dock falls unexpectedly.



8.0 INSTALLATION LAYOUT



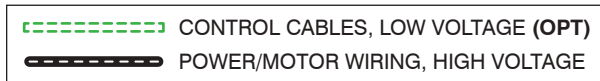
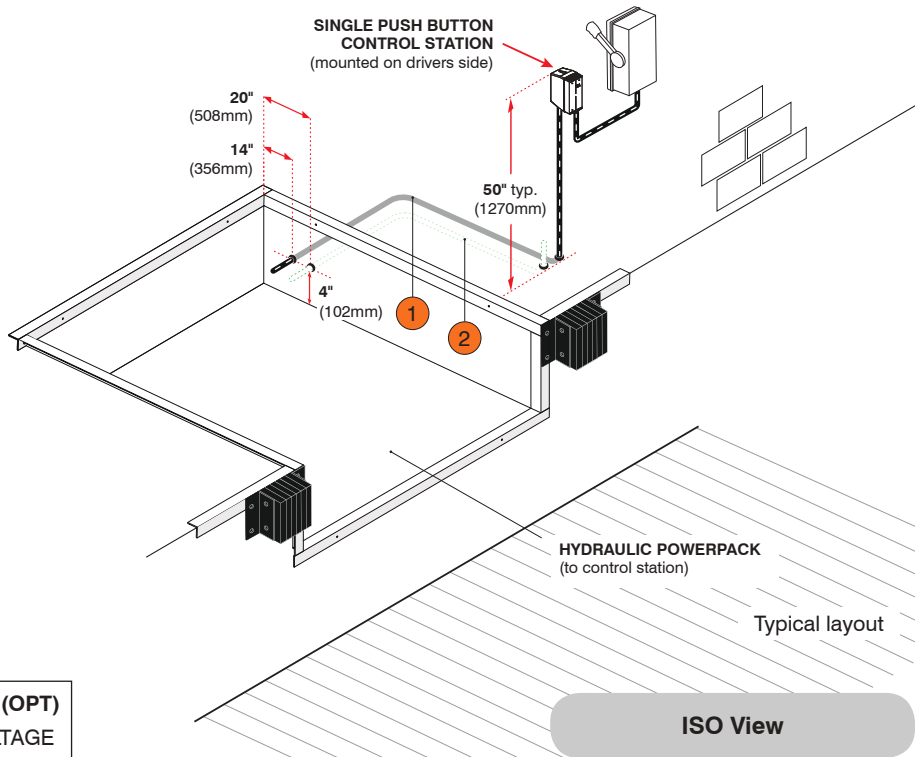
NEW CONSTRUCTION
(CONDUIT POURED IN CONCRETE)

- 1 Run one 1/2" (16mm) trade size conduit from the control station to the motor junction box.
- 2 **Optional:** Run one 1/2" (16mm) trade size conduit from the control station to the pit for future expansion (e.g. interlocks, combos, etc.)

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

See Sections 21.0 and 23.0 for alternative details.

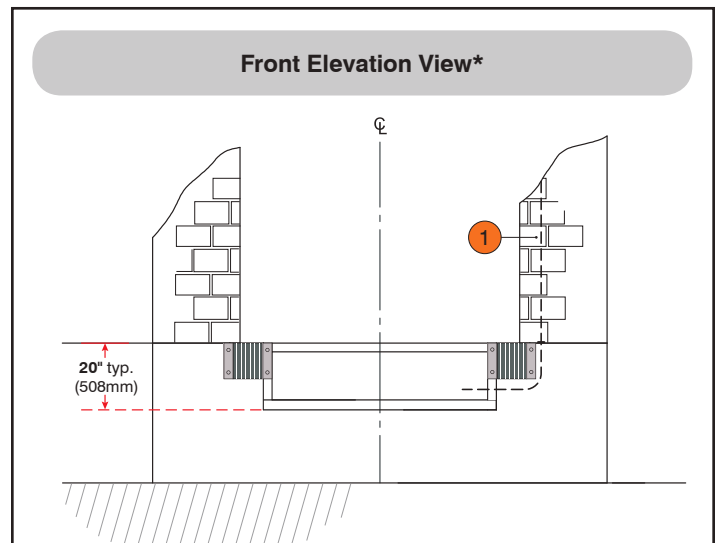
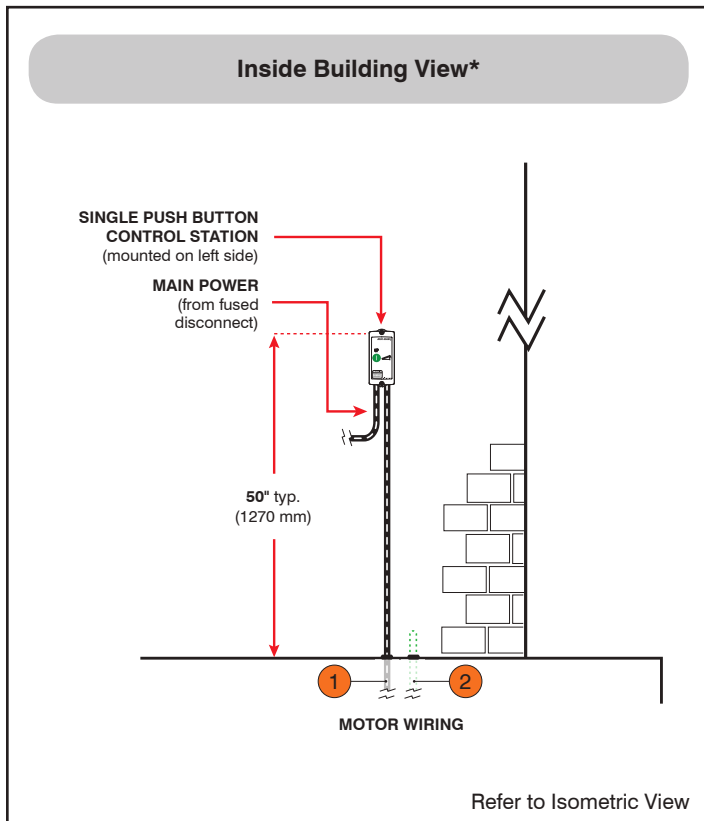
NOTE: Suggested for to accommodate future expansion.



ELECTRICAL REQUIREMENTS

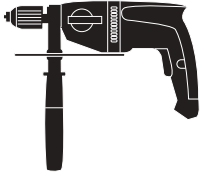


- Mount control station to wall.
- Fused disconnect provided by others and wiring by others.
- Install wiring from control station to hydraulic powerpack.
- Install wiring from control station to power supply.

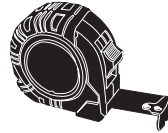


* Drawings not to scale

9.0 TOOLS REQUIRED FOR INSTALLATION



Hammer Drill



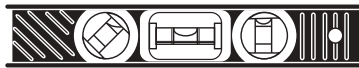
Tape Measure



Crowbar 3'-5'



5/8" and 1/4" Concrete Bit Carbide



2' Level



Chisel



Chip Hammer



Ball Peen Hammer



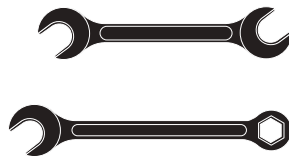
Large 1/8" x 3/8" Screwdriver



Small Flat Screwdriver
(flat tip to be suitable for .150 slot)



Electrician's Tools



Combination wrench set 3/8" to 1"



Sledge Hammer 10 lb



Welder

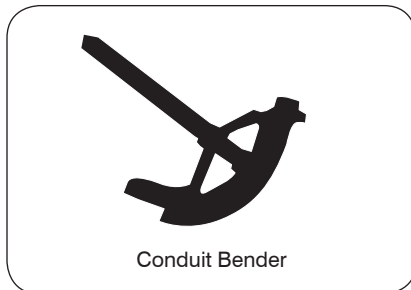
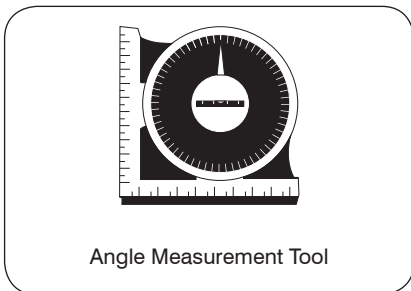
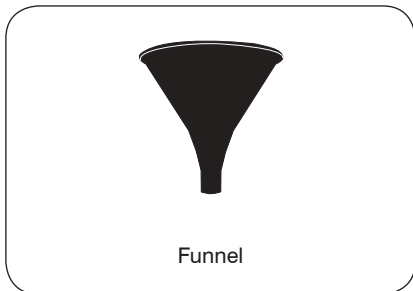


Socket Set 3/8" to 1"

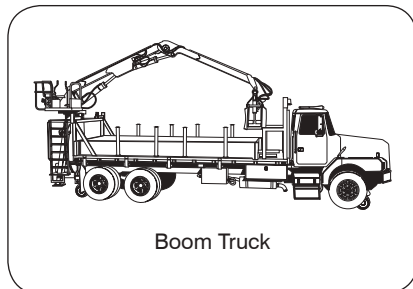
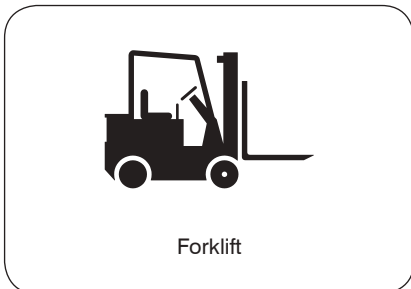
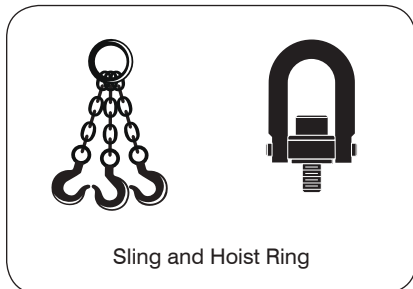


Grinder with Zip Blades As Well

9.0 TOOLS REQUIRED FOR INSTALLATION CONT'D



9.1 RECOMMENDED EQUIPMENT FOR RIGGING OR HOISTING



10.0 INSTALLATION FOR PIT TYPE DOCK LEVELERS

ALL

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 and owner's 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.

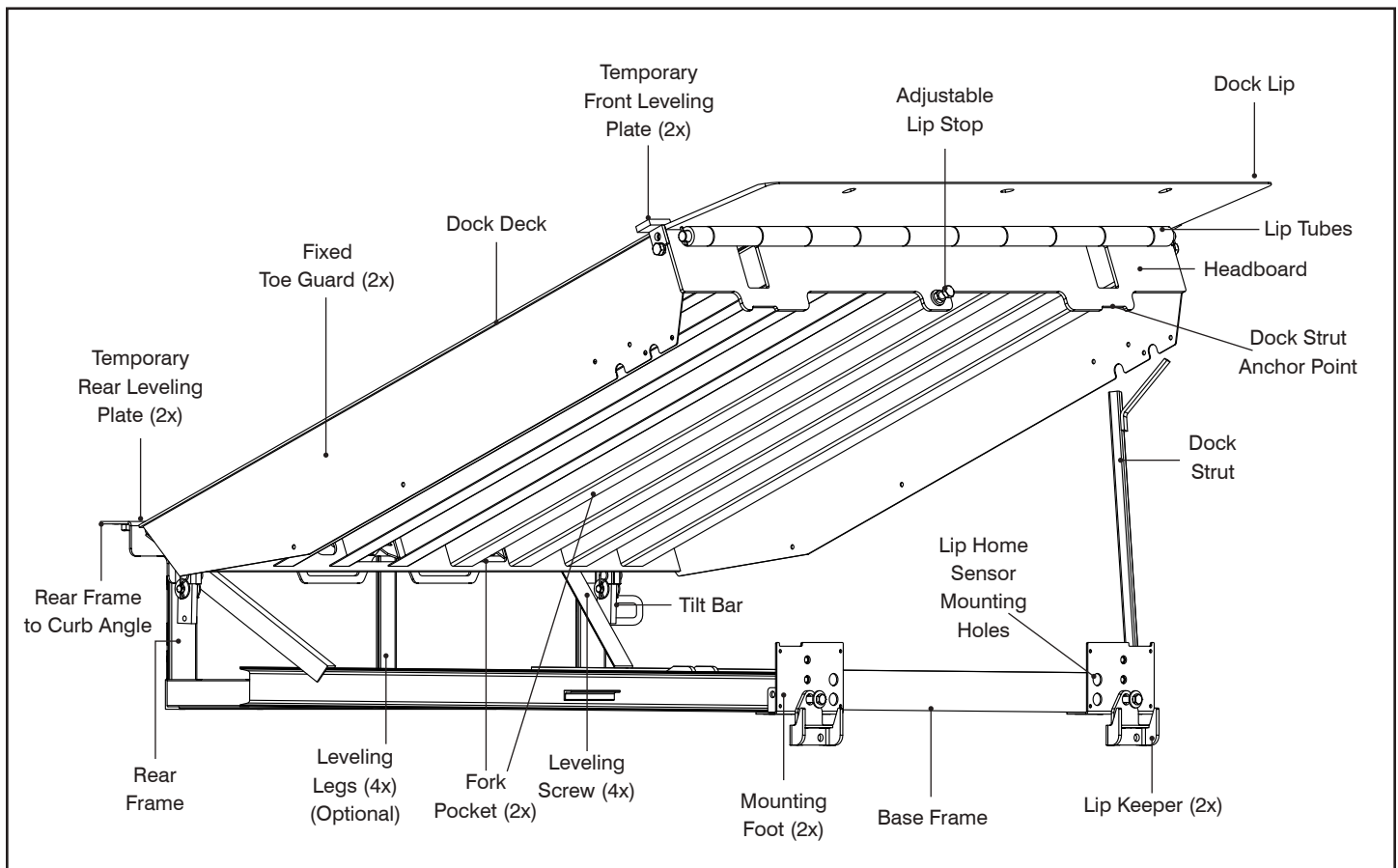
Improper installation of anchoring devices or installation into aged or unsound concrete could result in death or serious injury.

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 5000 lb (2268 kg) 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.

10.1 GENERAL DESCRIPTION

ALL

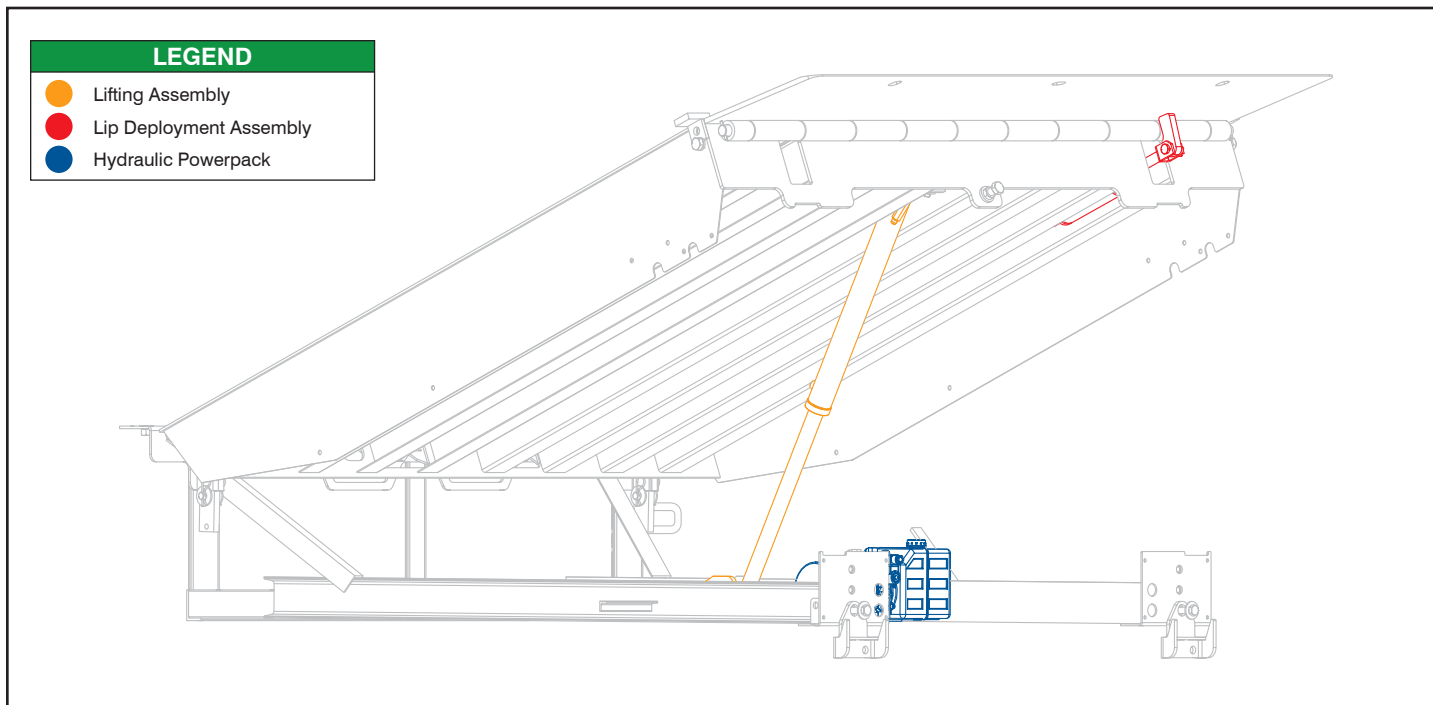
See below for names of **general** Blue Giant dock components. These names will be used throughout the manual.



10.2 GENERAL DESCRIPTION - HYDRAULIC DOCK LEVELER

H

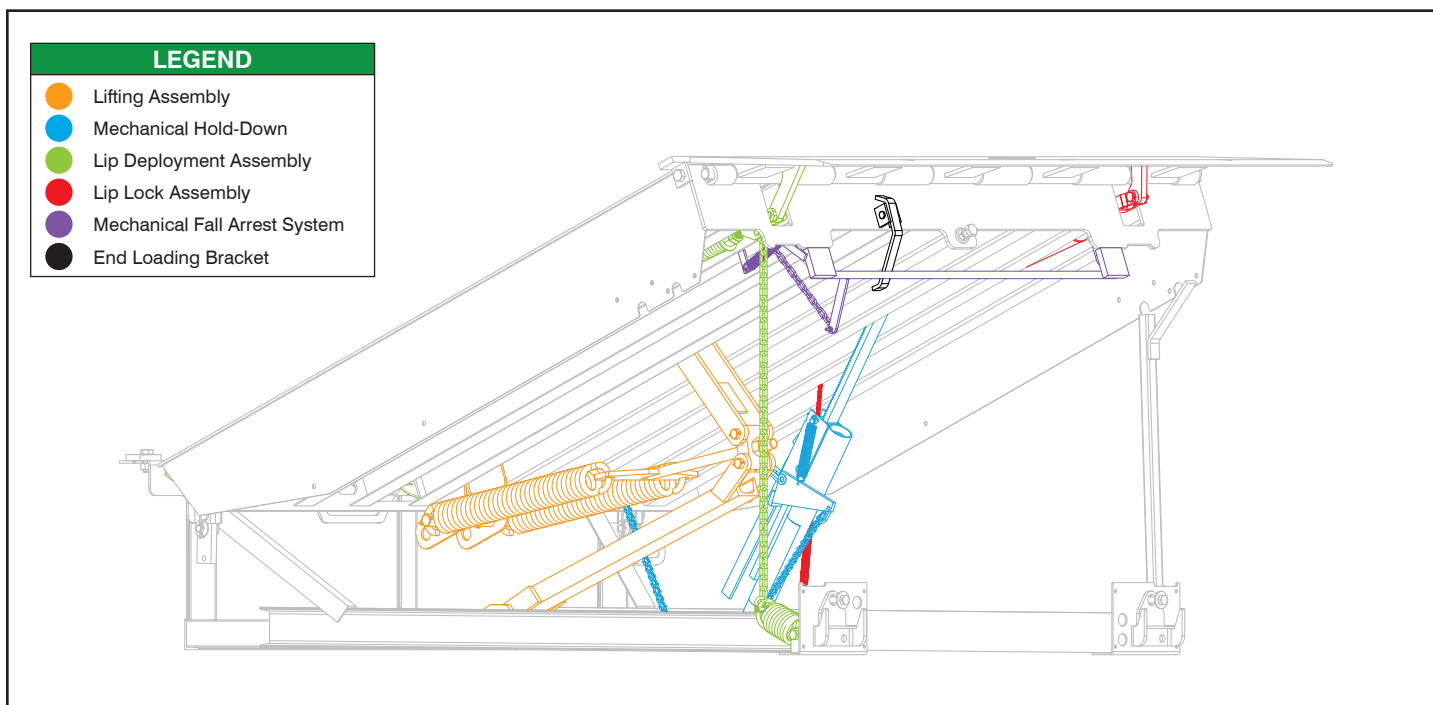
See below for names of assemblies unique to the Hydraulic Dock Leveler. These names will be used throughout the manual.



10.3 GENERAL DESCRIPTION - MECHANICAL DOCK LEVELER

M

See below for names of assemblies unique to the Mechanical Dock Leveler. These names will be used throughout the manual.

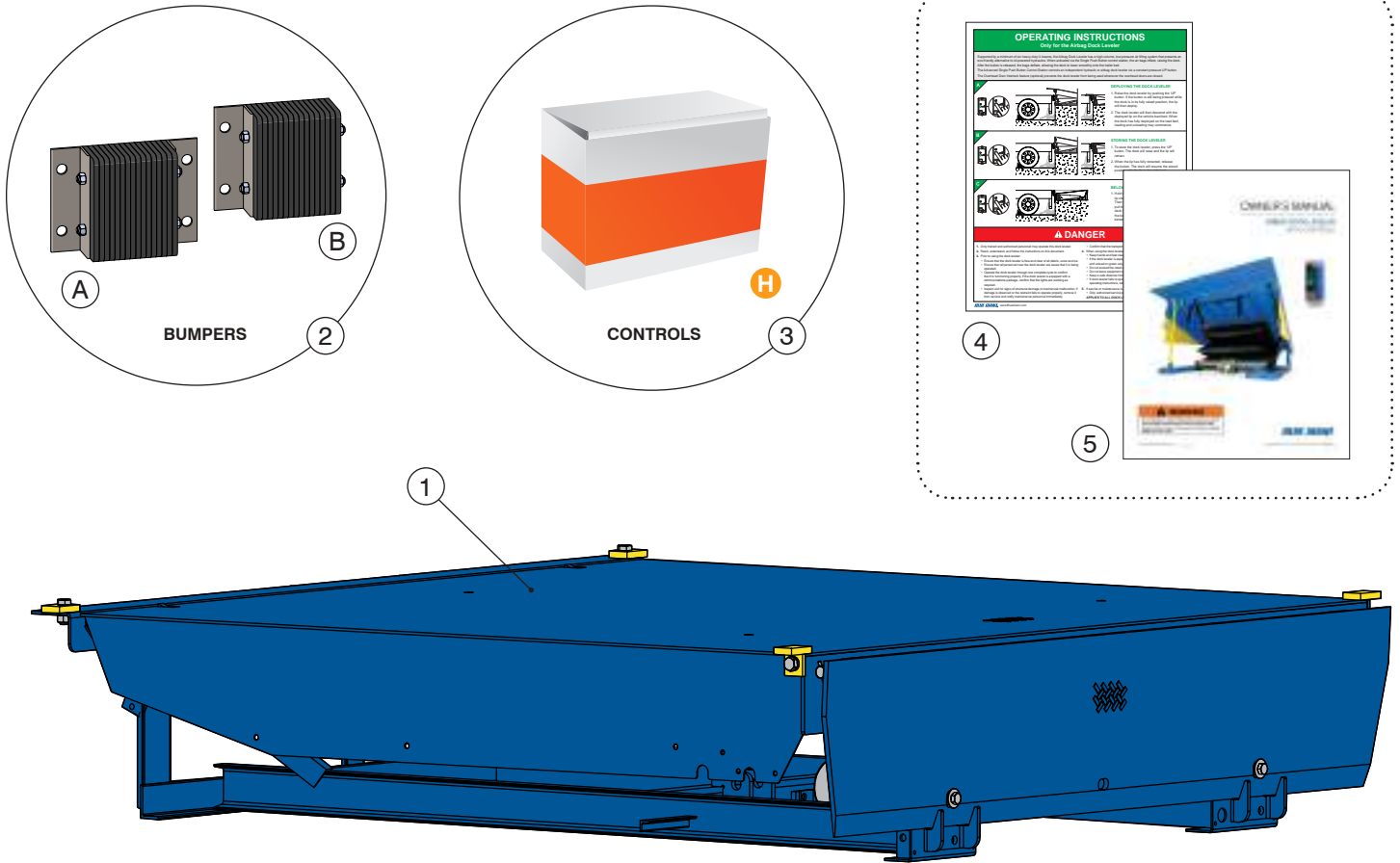


11.0 EQUIPMENT COMPONENT ILLUSTRATIONS

ALL

11.1 COMPONENTS AS SHIPPED CHECKLIST

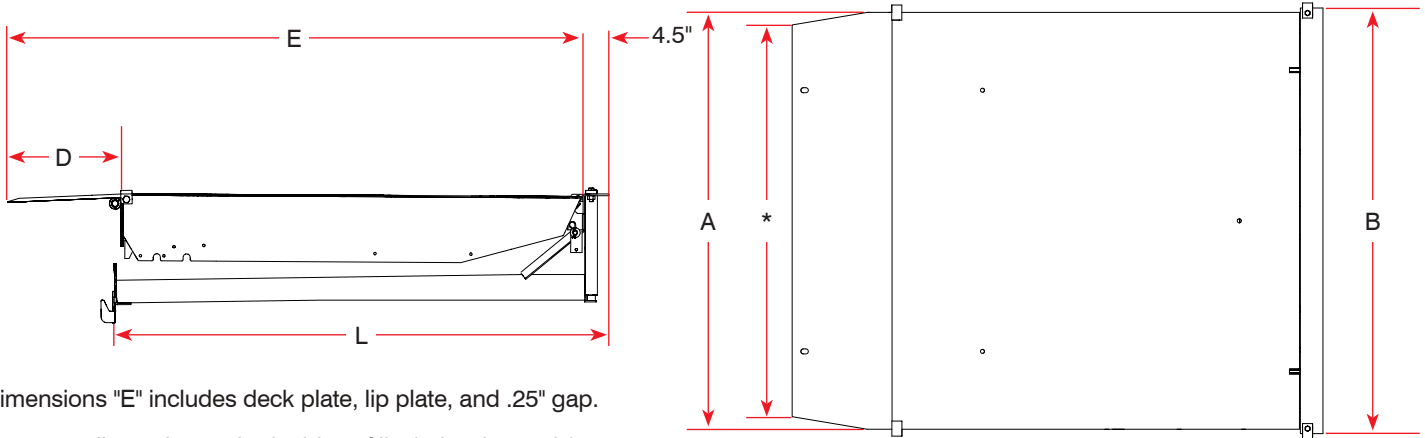
ALL



✓	ITEM	QTY.	PART NO.	DESCRIPTION	APPROX. WEIGHT	
	1	1	HXXXXX	Hydraulic Dock Leveler	Varies by Model	
			MXXXXX	Mechanical Dock Leveler		
	2	2	DB411	Laminated Bumpers	50 lb	23 kg
			DB411WB	Laminated Bumpers Single Flange	48 lb	22 kg
	3	1	027-006-L	Control Assembly SP1 110–130V Single Phase	1 lb	0.45 kg
			027-007-L	Control Assembly SP1 208–240V Single Phase	1 lb	0.45 kg
	4	1	Model Dependent	Operation Placard	—	—
	5	1	Model Dependent	Owner's Manual	—	—

12.0 GENERAL DIMENSIONS

ALL

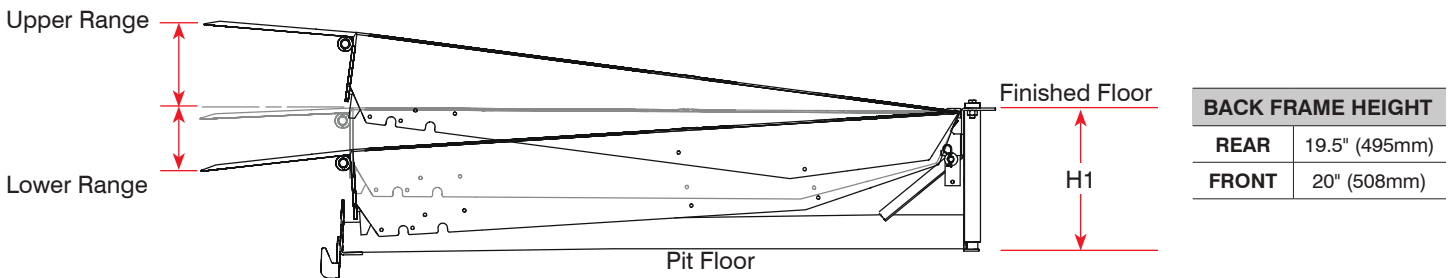


Dimensions "E" includes deck plate, lip plate, and .25" gap.

* 3" taper dimension on both sides of lip (7' levelers only).

MODEL	TOTAL DECK WIDTH (A)	FRAME WIDTH (B)	LIP LENGTH (D)		
			16" (406mm)	18" (457mm)	20" (508mm)
DIMENSION "E"					
_6006	72" (1829mm)	73.5" (1867mm)	73.125" (1857mm)	75.125" (1908mm)	77.125" (1959mm)
_6008			97.125" (2467mm)	99.125" (2518mm)	101.125" (2569mm)
_6010			121.125" (3077mm)	123.125" (3127mm)	125.125" (3178mm)
H6012			145.125" (3686mm)	147.125" (3737mm)	149.125" (3788mm)
_6606	78" (1981mm)	79.5" (2019mm)	73.125" (1857mm)	75.125" (1908mm)	77.125" (1959mm)
_6608			97.125" (2467mm)	99.125" (2518mm)	101.125" (2569mm)
_6610			121.125" (3077mm)	123.125" (3127mm)	125.125" (3178mm)
H6612			145.125" (3686mm)	147.125" (3737mm)	149.125" (3788mm)
_7006	83" (2108mm) *77" (1956mm)	84.5" (2172mm)	73.125" (1857mm)	75.125" (1908mm)	77.125" (1959mm)
_7008			97.125" (2467mm)	99.125" (2518mm)	101.125" (2569mm)
_7010			121.125" (3077mm)	123.125" (3127mm)	125.125" (3178mm)
H7012			145.125" (3686mm)	147.125" (3737mm)	149.125" (3788mm)

12.1 OPERATING RANGES

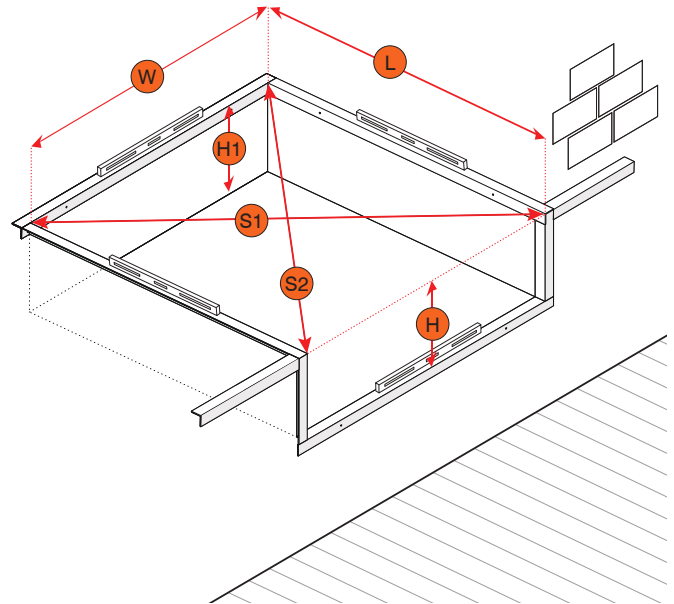


DEPTH	RANGE	DOCK LENGTH								
		6' (1.8 m)			8' (2.4 m)			10' (3 m)		
		16" LIP	18" LIP	20" LIP	16" LIP	18" LIP	20" LIP	16" LIP	18" LIP	20" LIP
12" (305mm)	UR	12" (305mm)	12" (305mm)	12" (305mm)	12" (305mm)	12" (305mm)	12" (305mm)	12" (305mm)	12" (305mm)	12" (305mm)
	LR	9.6" (244mm)	9" (229mm)	8.9" (226mm)	10" (254mm)	9.5" (241mm)	9.2" (234mm)	10.5" (267mm)	9.8" (249mm)	9.5" (241mm)

13.0 PIT DIMENSIONS

ALL

NOMINAL SIZE		PIT WIDTH (W)		PIT LENGTH (L)	
		in	mm	in	mm
6' x 6'	1829 x 1829mm	74	1880	63	1600
6' x 8'	1829 x 2438mm			87	2210
6' x 10'	1829 x 3048mm			111	2819
6' x 12*	1829 x 3658mm			144	3658
6' 6" x 6'	1981 x 1829mm	80	2032	63	1600
6' 6" x 8'	1981 x 2438mm			87	2210
6' 6" x 10'	1981 x 3048mm			111	2819
6' 6" x 12*	1981 x 3658mm			144	3658
7' x 6'	2133 x 1829mm	85	2159	63	1600
7' x 8'	2133 x 2438mm			87	2210
7' x 10'	2133 x 3048mm			111	2819
7' x 12*	2133 x 3658mm			144	3658



Standard Lip Lengths:	16", 18", 20" (406, 457, 508mm)	
Standard Frame Depth:	Front: 19.5" (495mm)	Rear: 19" (483mm)
Standard Pit Depth:	Front (H): 20" (508mm)	Rear (H1): 19.5" (495mm)
Pit to Deck Width:	W = A + 2"	

*12' length only available for Hydraulic models.

S1 must be equal to S2 within .125" - .25" squareness tolerance.

*8 Piece curb angle set show.

14.0 INSTALLATION GUIDELINES

WARNING

Use caution when lifting or moving the leveler. Do not attempt to lift without suitable hoisting equipment capable of lifting as much as 5000 lb (2268 kg). Do not work beneath a raised object. Follow all hoisting safety requirements.

Prior to installation, clean the pit thoroughly and verify that all dimensions are in accordance with manufacturer specifications.


1. Must be level side-to-side and front-to-back.
2. Must be square at both rear corners.
3. Side curb angles must be parallel to each other.
4. Finished floor to be flush with top surface of curb angle.

The leveler must be welded to an embedded curb angle or other firmly embedded dock steel as indicated in the installation instructions.

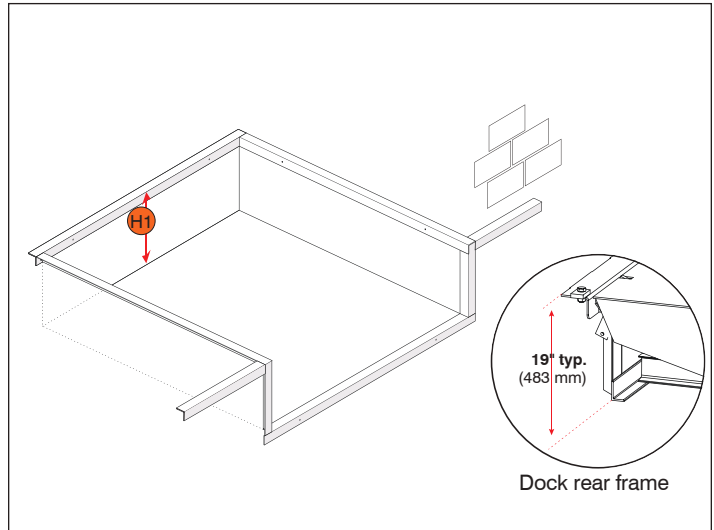
NOTE: Do not attach the dock leveler to the concrete with bolts or anchors alone.

14.1 DOCK LEVELER INSTALLATION

STEP 1
ALL



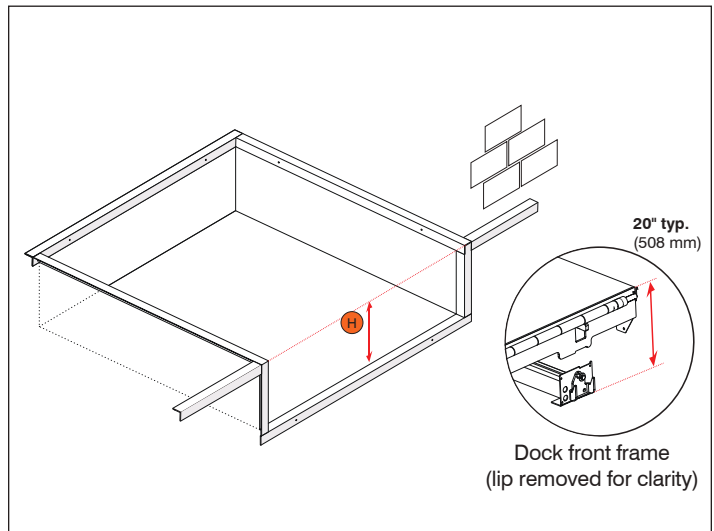
Measure the height of the dock leveler rear corners from the bottom of frame to top of dock deck, typically 19" (483 mm). Measure depth of pit at both rear corners where rear bottom corners of frame will be positioned.




STEP 2
ALL



Measure the height of dock leveler front corners, bottom of frame to top of deck plate, typically 20" (508 mm). Measure depth of pit at both front corners where front bottom corners of frame will be positioned.

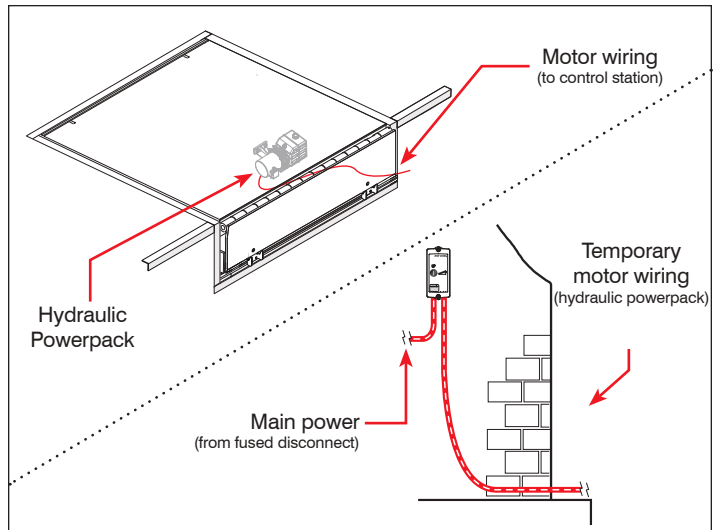


STEP 3
TEMPORARY
H



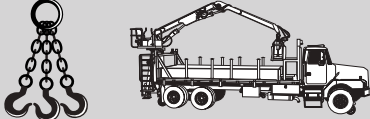
Perform a **temporary** electrical hook-up to allow use of power unit to raise the dock leveler.

WARNING
All electrical work must be performed by trained and authorized personnel.



14.1 DOCK LEVELER INSTALLATION CONT'D.

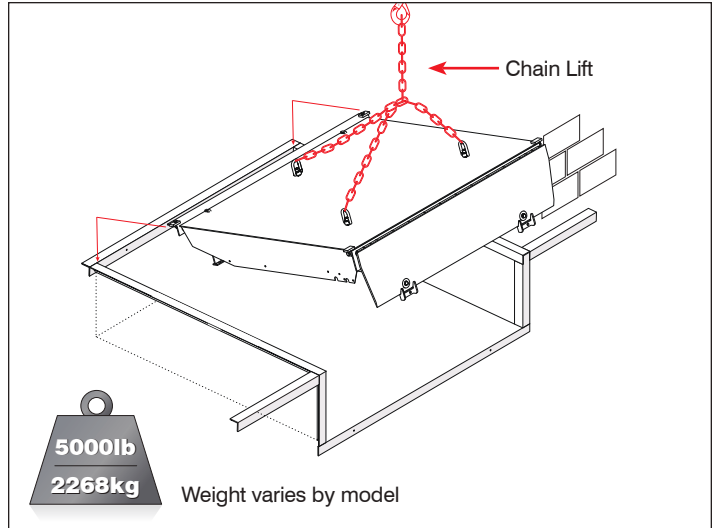
STEP 4
ALL



Sling the dock leveler into place squarely above the pit and lower gently. Locate and square the dock leveler to best suit both the pit and dock face. Space between the sides of the deck and the sides of the pit should be equal.

WARNING

Use caution when lifting or moving the leveler. Do not attempt to lift without suitable hoisting equipment capable of lifting as much as 5000 lb (2268 kg). Do not work beneath a raised object. Follow all hoisting safety requirements.

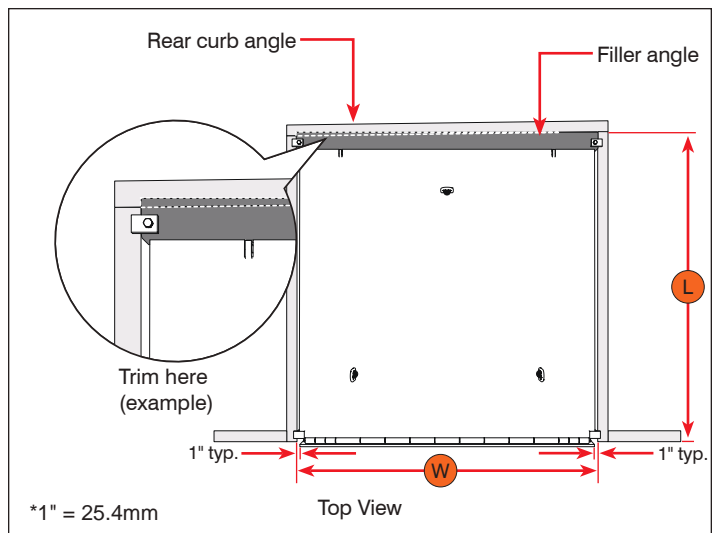


STEP 5
ALL



If the rear beam does not line up squarely with the rear curb angle, trim the filler angle to suit.

NOTE: Ensure that there is a 1" typ. (25.4mm) (.75" - 1.25" min/max) (19mm - 32mm min/max) equally spaced gap between each side of the leveler and the pit wall.



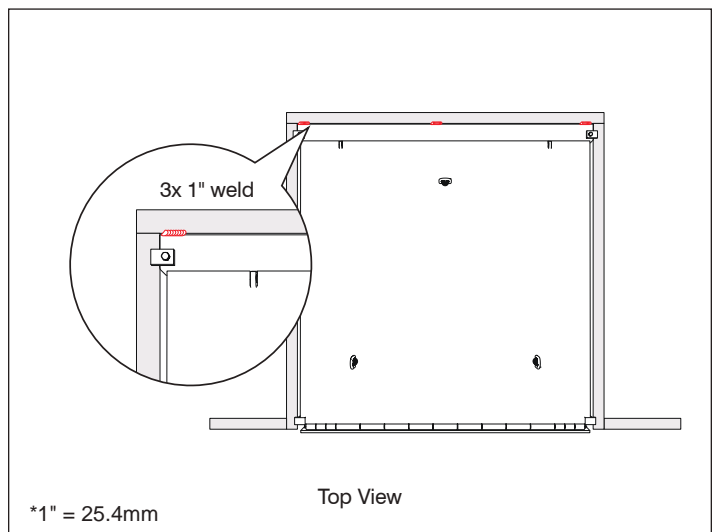
STEP 6
ALL



Ensure that the front and rear temporary leveling plates are resting on the curb angles and that the deck is flush with the finished floor. If flush, tack weld the frame to the rear curb angle at both corners and in the middle using 1" (25.4mm) welds.

NOTE: The leveling plates and bolts can be used to assist in adjusting out of square.

NOTE: Touch up all welds with appropriately matched paints.



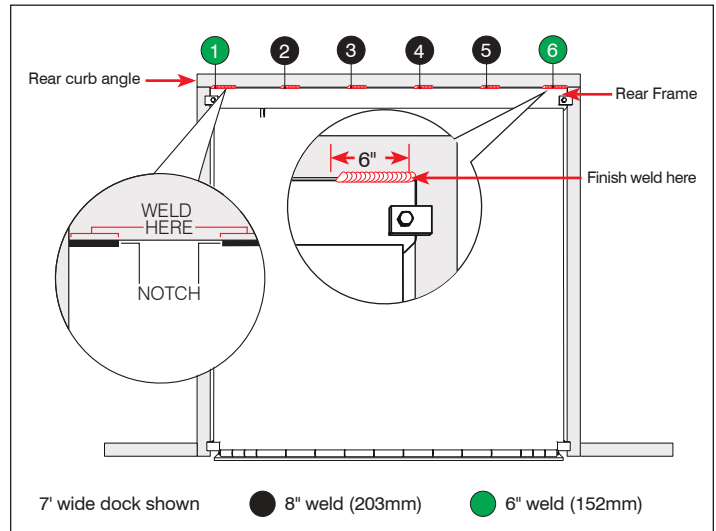
14.1 DOCK LEVELER INSTALLATION CONT'D.

STEP 7
ALL

Finish welding the rear frame to the rear curb angle of the pit. Width of weld is dependent on dock width.

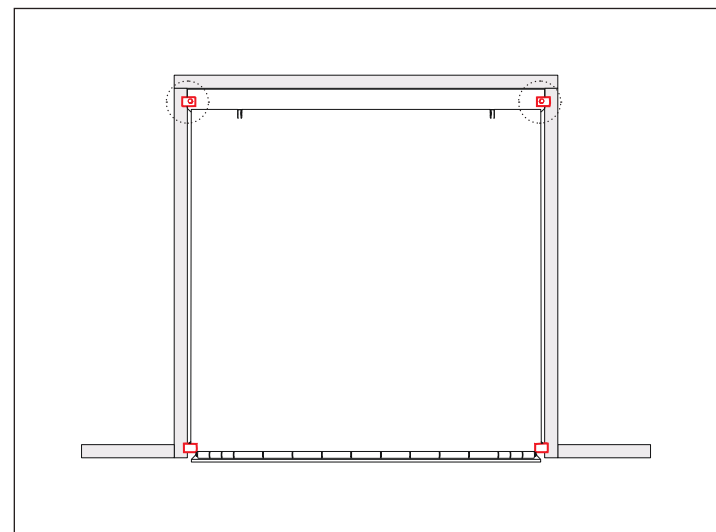
- **6' wide dock:** Six welds - 2" (51mm) welds for end, 8" (203mm) welds for center welds
- **6'6" wide dock:** Six welds - 4" (102mm) welds for end, 8" (203mm) welds for center welds
- **7' wide dock:** Six welds - 6" (152mm) welds for end welds, 8" (203mm) welds for center welds

NOTE: Follow weld notches in back channel.



STEP 8
ALL

With the dock in the home position, remove the rear temporary leveling plates.



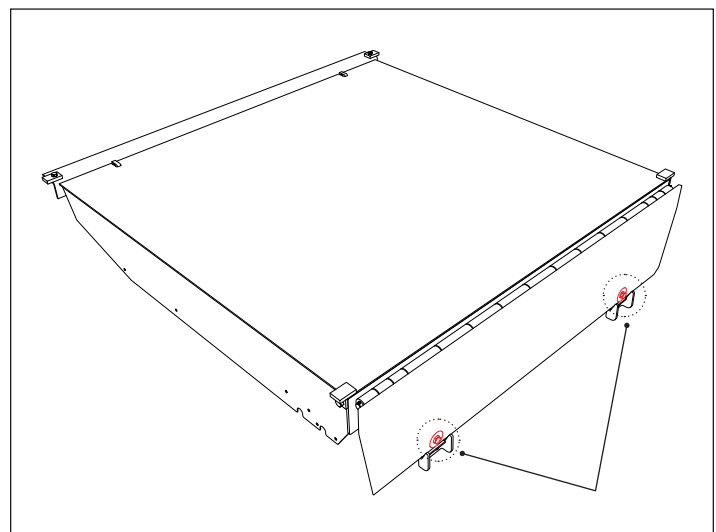
STEP 9
ALL

Loosen the shipping bolts from the front of the dock leveler lip, allowing the mounting feet to settle on the pit floor.

If they do not reach the curb angle within a 1/2" (12mm) then remove the shipping bolt to close the gap.

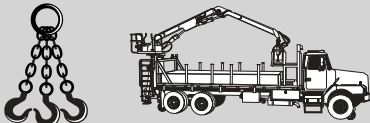
⚠ DANGER

If installing a Mechanical dock leveler, be aware that the deployment mechanism may have triggered during shipping and, as a result, the dock may pop up when the shipping bolts are loosened.



14.1 DOCK LEVELER INSTALLATION CONT'D.

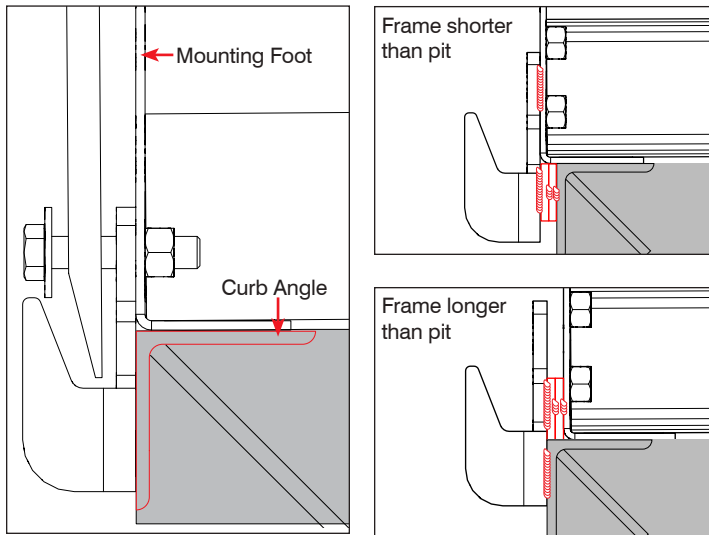
STEP 10
ALL




Ensure that the mounting feet are flush to the front of embedded curb angle.

NOTE: Tack weld on each shim per side per lip keeper.

NOTE: On a 24" the top of the lip keeper should still touch the curb angle. Weld 4" (102mm) along the top to secure.



STEP 11
ALL



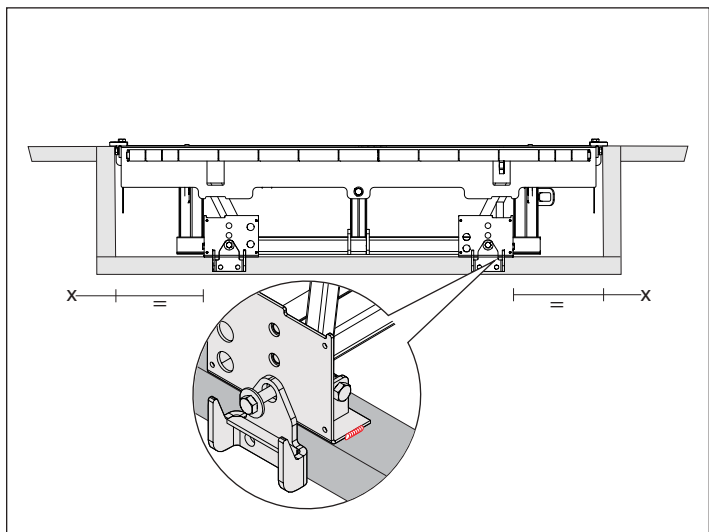
NOTE: Ensure mounting feet are an equal distance (x) apart from the right and left pit walls.

Re-verify that the mounting feet are flush against the front curb angle and then tack weld in place on each side.


NOTE: If leveler features a 20" (508mm) lip, a pry bar may be needed to raise the lip enough to tack weld the mounting feet as shown.

NOTE: Lip removed for clarity.

If the mounting feet do not reach the curb angle see Step 12.



STEP 12
ALL

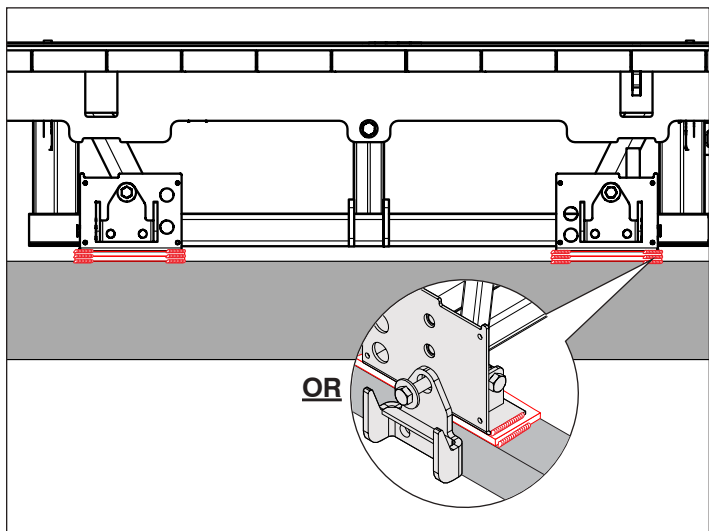


If the mounting feet do not reach the curb angle shim as needed on each mounting foot.

Weld on each shim per side per lip keeper. Using a 10" x 4" shim or equivalent.

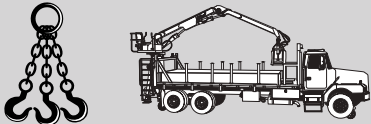
Weld in place with at least 1/2" - 1" weld bead ~ 1/2" per shim.

NOTE: Lip removed for clarity.



14.1 DOCK LEVELER INSTALLATION CONT'D.

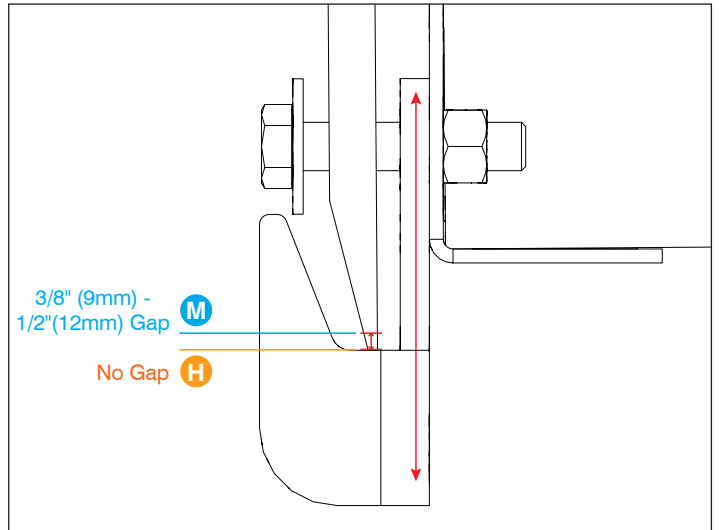
STEP 13
H



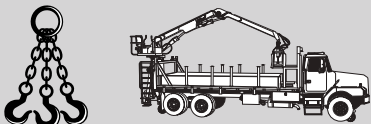
Refer to next step for all lip keeper mounting options and instructions.

If necessary, align the lip keepers by moving them up or down until the lip of the dock makes contact with the keeper as shown.

NOTE: If using an M dock, leave a small gap 3/8" (9mm) -1/2" (12mm) between the lip and the keeper. Failure to do so may result in the inability to fully park the dock.



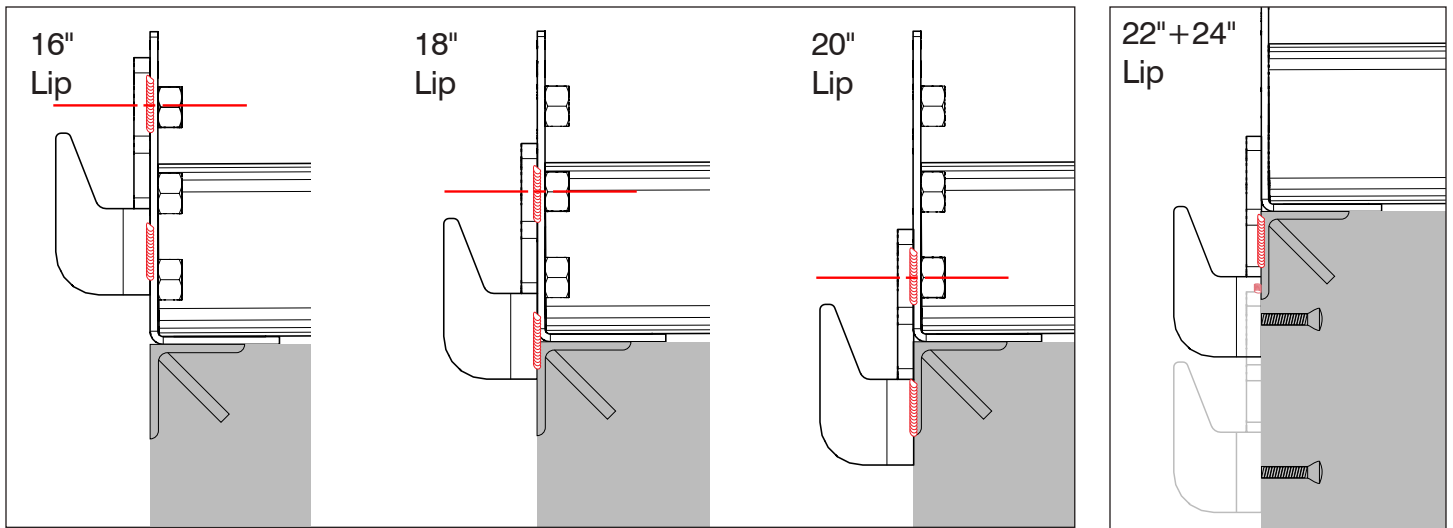
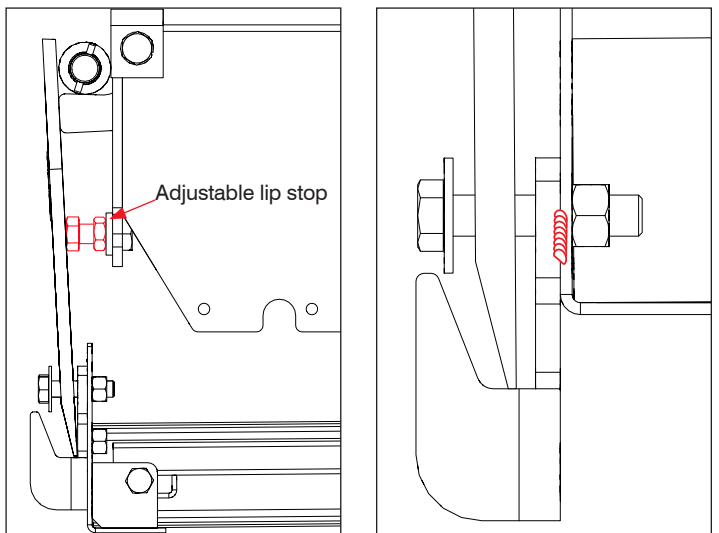
STEP 13A
ALL



NOTE: Lip Stop is factory set but may need adjustment depending on Lipkeeper setup used below.


Tack the lip keepers in place.

NOTE: 20" (508mm) lip mounting option shown.



14.1 DOCK LEVELER INSTALLATION CONT'D.

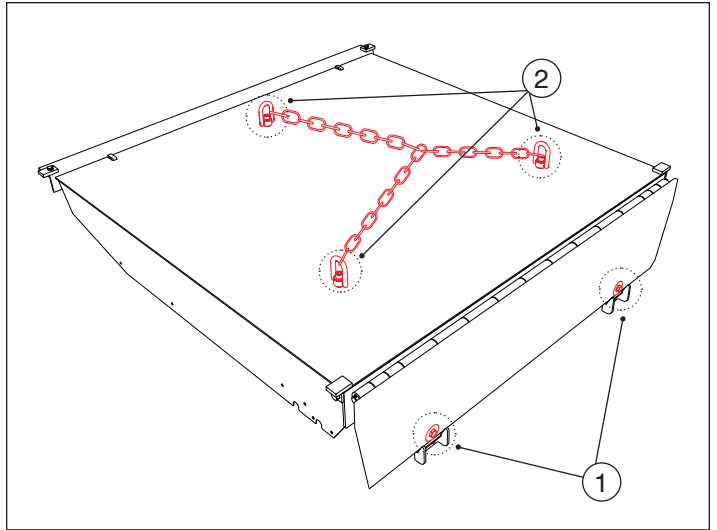
STEP 14
ALL




- ① Remove the shipping bolts.
- ② Remove the Shipping Hoist

⚠ DANGER

If installing a Mechanical dock leveler, be aware that the deployment mechanism may have triggered during shipping and, as a result, the dock may pop up when the shipping bolts are removed.

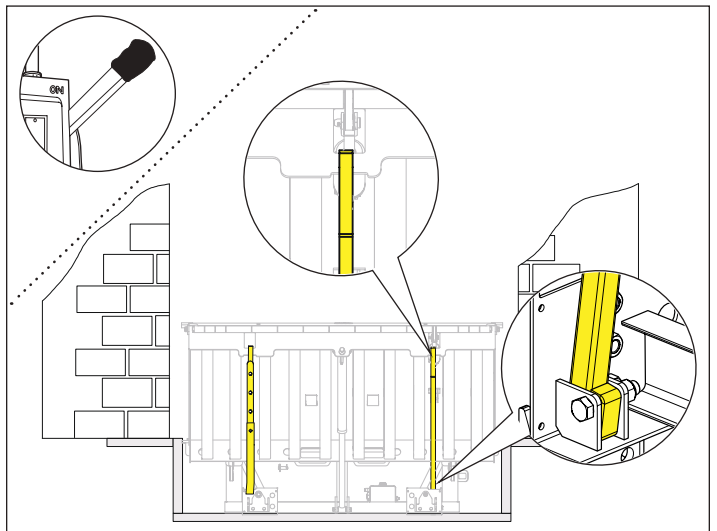


STEP 15
H




Power on the fused disconnect using the **temporary** electrical hook up established in Step 3 or 4. Once powered on, the leveler will rise. When the deck has fully risen, engage the dock strut by following the instructions in Section 5.0.

NOTE: If no power then use hoist to lift deck.

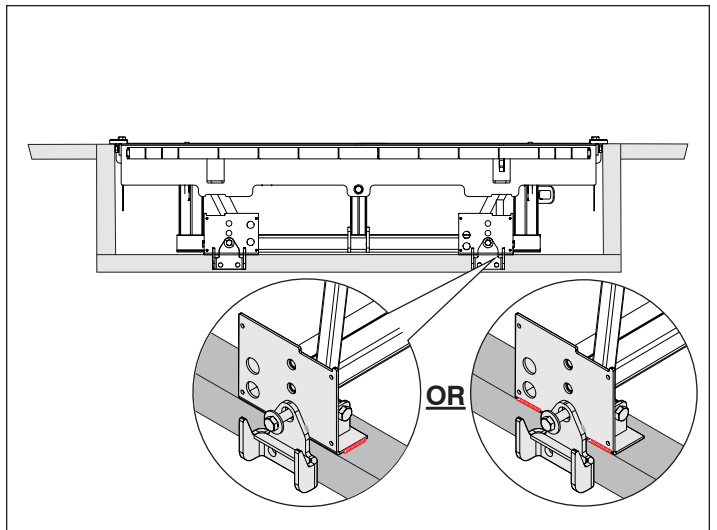


STEP 16
ALL




Finish welding the mounting feet to the front curb angle of the pit. Welds should be 2x2" (50.8mm)x(50.8mm) per side, per mounting foot. Only weld the back edge if available.

NOTE: Lip removed for clarity.

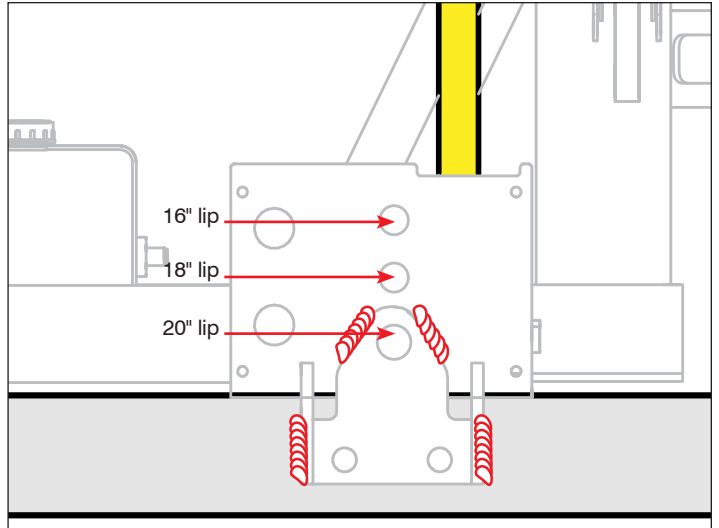


14.1 DOCK LEVELER INSTALLATION CONT'D.

STEP 17
ALL

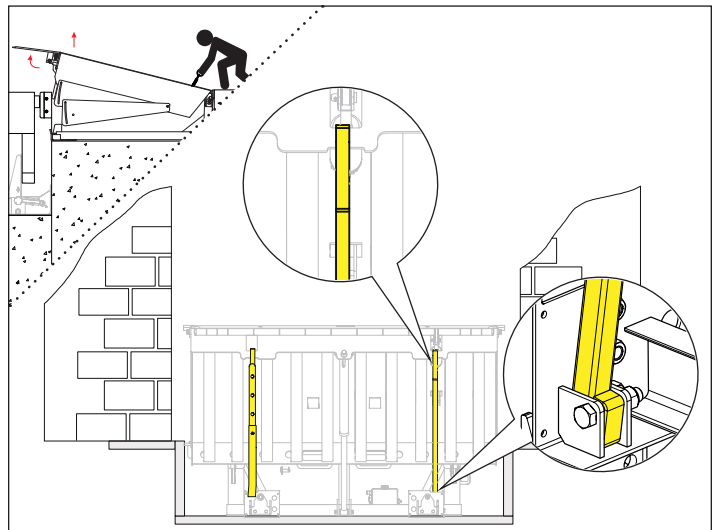


With the dock leveler raised and secured with dock strut and safety stand. Finish weld the lip keepers at least 4" total weld (3/16" - 1/4").



STEP 18
M

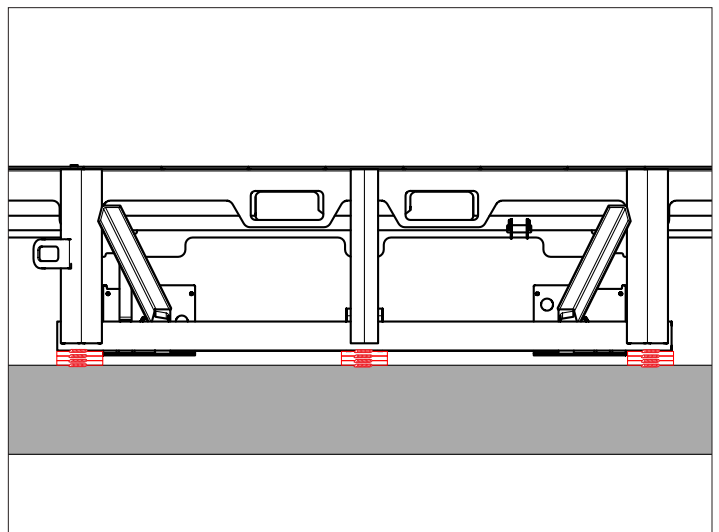
Raise the dock leveler by firmly pulling up on the hold-down release ring located at the rear of the deck. As the lip rises, it will automatically swing up and extend. Let go of the release ring once the deck reaches full height. Engage the dock strut by following the instructions in Section 7.0 and walk down the deck until it is resting on the dock strut.



STEP 19
ALL



Shim as needed in the locations shown. Weld in place with at least 1/2" - 1" weld bead ~ 1/2" per shim.



14.1 DOCK LEVELER INSTALLATION

OPTIONAL
STEP 20
ALL

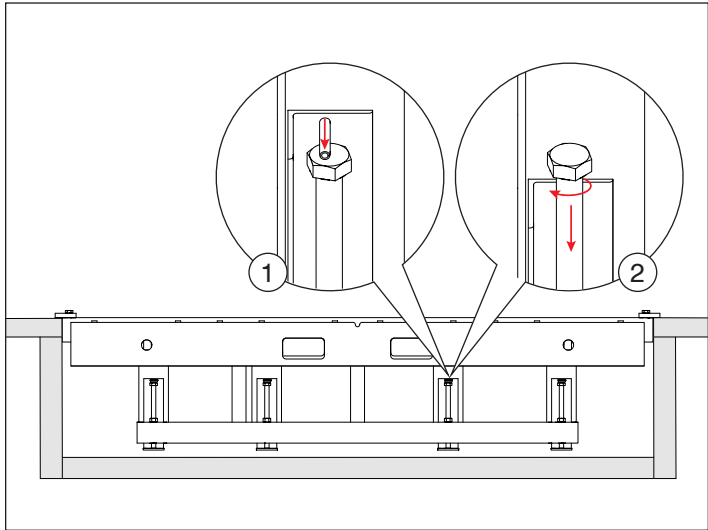
To lower the leveling legs:

1. Remove the shipping pin and leveling legs will drop.
2. Use a (insert dim) socket to turn the bolt.

As the bolt turns, the leveling legs will press to the pit floor.

DANGER

Review Section 7.0 before going underneath the leveler to complete installation. Failure to follow proper safety guidelines could result in serious injury or death.

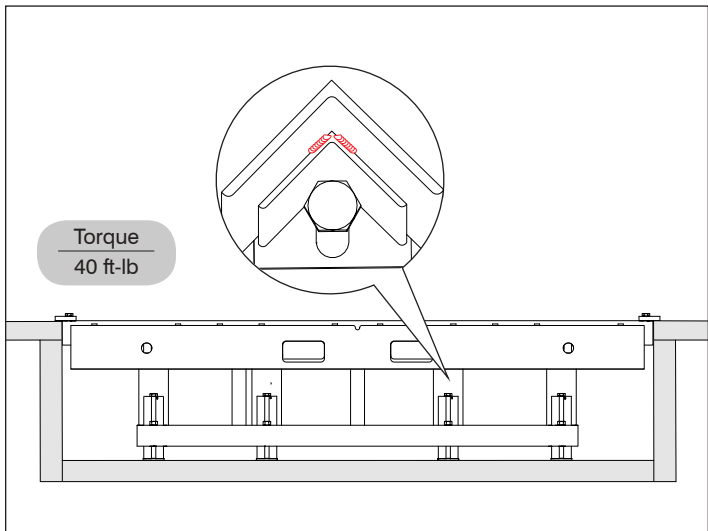


OPTIONAL
STEP 20A
ALL

Once the leveling legs are firmly against the pit floor, torque to 40ft-lb and weld as shown.

DANGER

Review Section 7.0 before going underneath the leveler to complete installation. Failure to follow proper safety guidelines could result in serious injury or death.



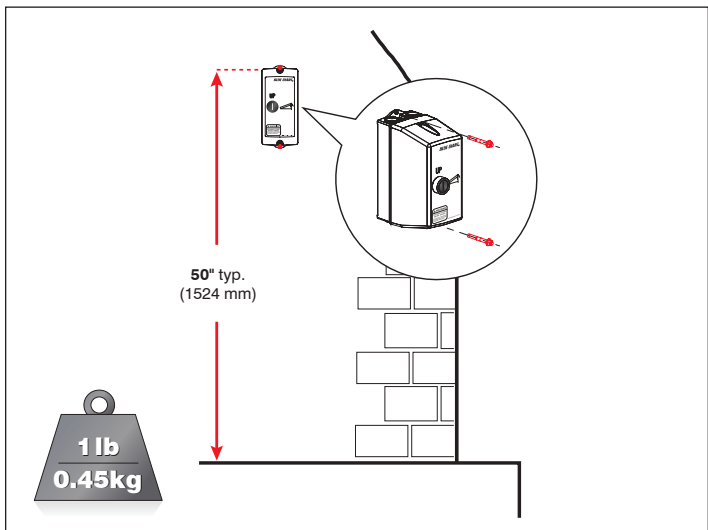
STEP 21
H

Mount the Single Push Button control station assembly in a suitable location - typically on the driver's side.

See Section 15.0 "SP1 Control Station Installation."


For alternative control station installation, see Section 21.0 "SP2 Control Station Installation" and 23.0 "Blue Genius™ Control Panel Installation."

NOTE: Mounting hardware provided by others.



14.1 DOCK LEVELER INSTALLATION CONT'D.

STEP 22
ALL



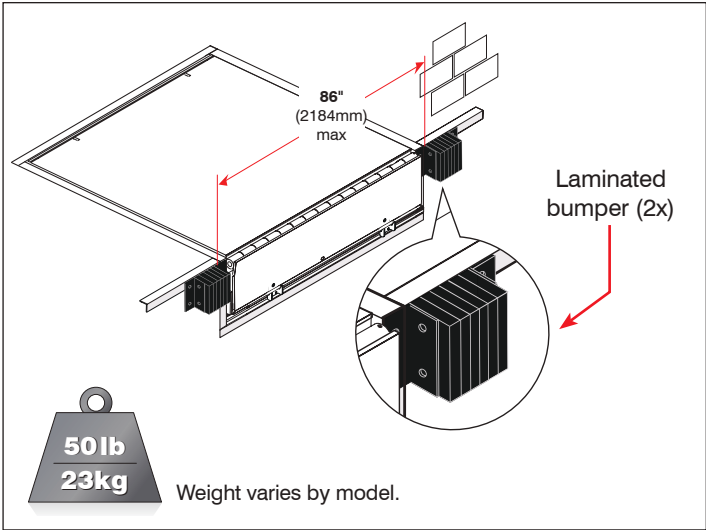
Install specified dock bumpers as required.

Ensure a maximum distance of 86" (2184mm) between the inner edges of the bumper. If a vertical curb angle exists, mount there.


See Section 17.0 "Laminated Bumper Installation."

NOTICE

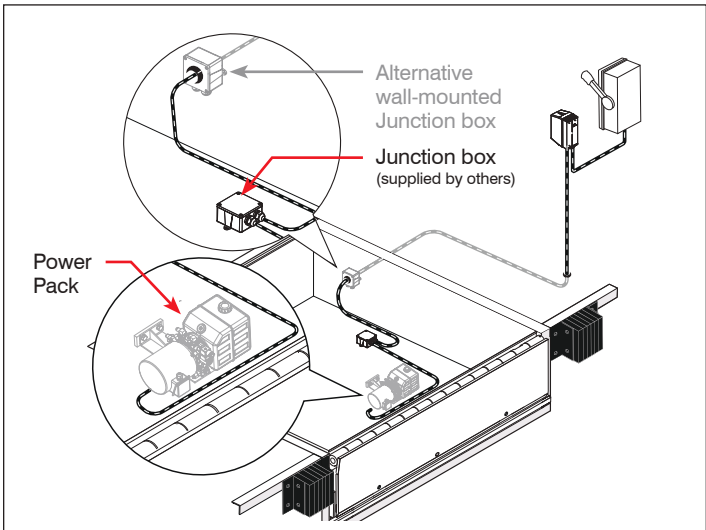
Do not use the dock leveler without bumpers, as damage to both building and leveler may result.




STEP 23
H



Make permanent electrical connections as required.



STEP 24
H

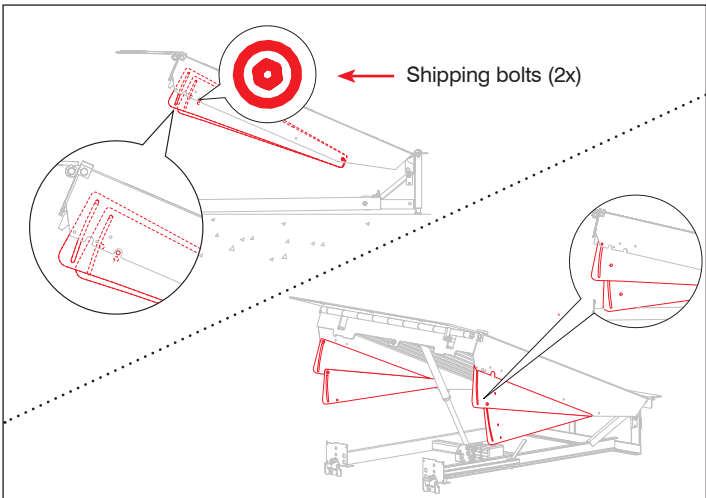


Release the bottom toe guards by removing and discarding shipping bolts, one bolt from each side.

Toe guards are **standard** on Hydraulic dock levelers and **optional** on Mechanical models.

NOTE: Toe guards are mounted on the **inside** of the dock leveler.

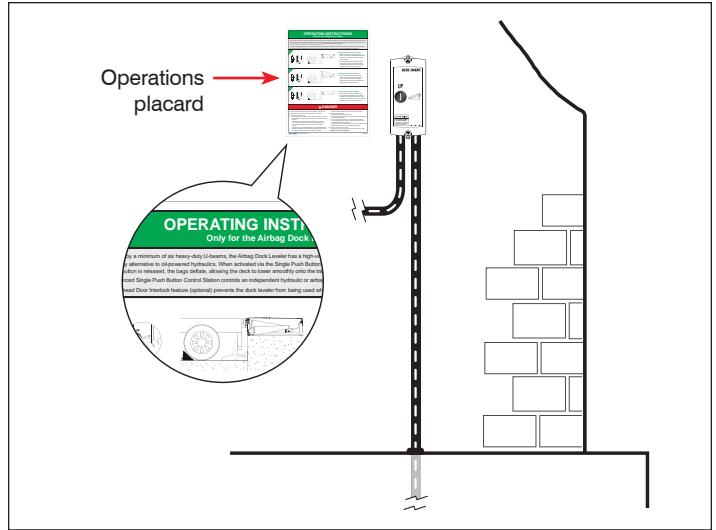
NOTE: Toe guards are not a replacement for dock safety rules and best practices. Use caution when operating all dock equipment.



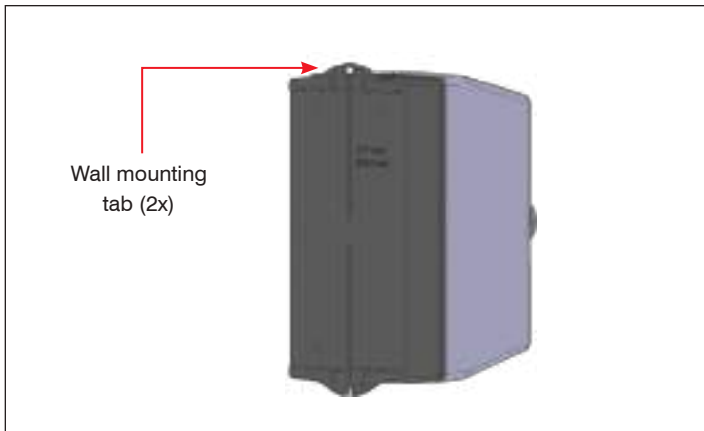
14.1 DOCK LEVELER INSTALLATION CONT'D.

STEP 25
ALL

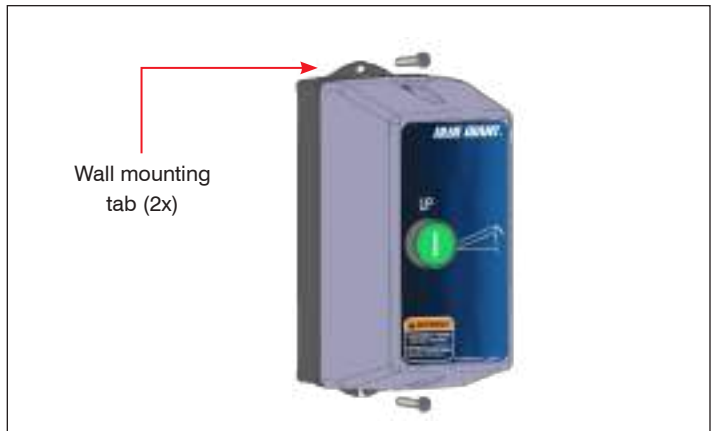
Mount the operation placard (part # dependent on model) on the wall in plain view of dock leveler operations. Fastening hardware supplied by other.



15.0 SP1 CONTROL STATION INSTALLATION



SP1 control station—wall-mounting brackets.



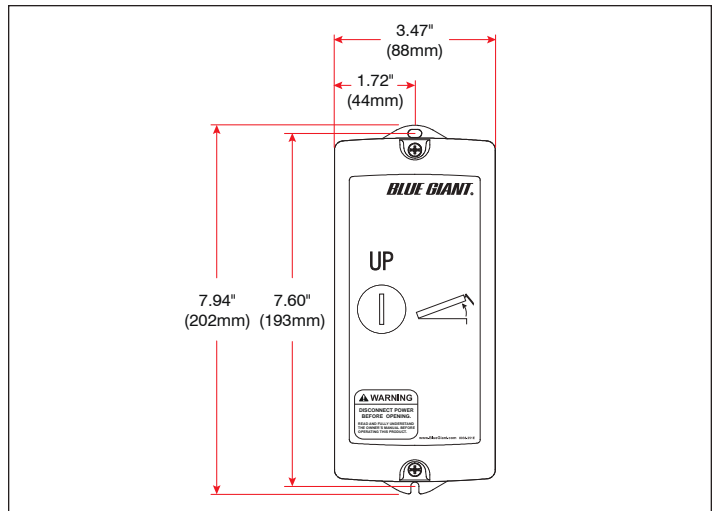
SP1 control station—mounting on wall (typical decal shown).

Remove the SP1 control station from its box.

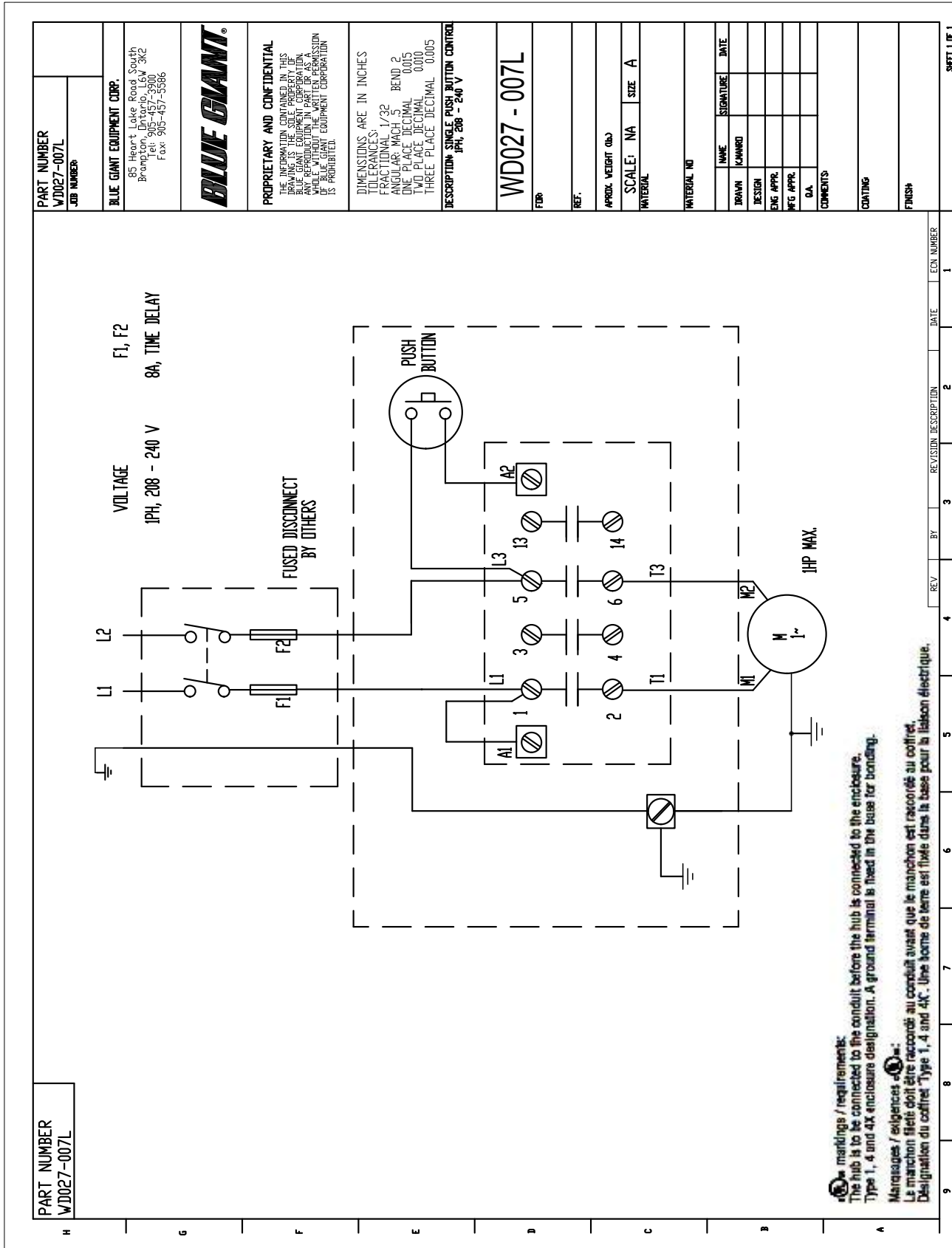
Verify that the control station power rating is compatible with that of the power supply. All wiring inside the control station must be neatly laid out; avoid crossovers and untidy, excessive wiring patterns. All wiring must be completed in accordance with national and local codes.

1. Run power from the fused disconnect to the control station.
2. Run power from the control station to the motor junction box.
3. Complete the electrical hook-up between components. See Section 8.0 "Installation Layout".

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



16.2 SP1 WIRING DIAGRAM—208-240V SINGLE PHASE



SHEET 1 OF 1

ALL

17.0 LAMINATED BUMPER INSTALLATION

17.1 WEDGE ANCHORS

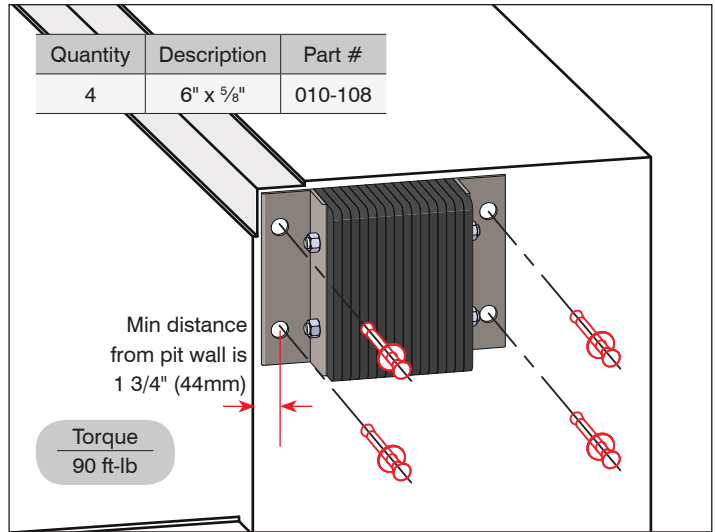
1. Mark and position each hole on the dock face.
2. Drill each hole in the concrete using a 5/8" (16mm) or carbide-tipped masonry drill bit.
4. Clear hole of all debris.
5. Using a hammer, drive one anchor into each hole until it is flush with the surface of the concrete.
6. Torque each nut to 90 ft-lb.

17.2 EMBEDDED ANCHOR BOLTS

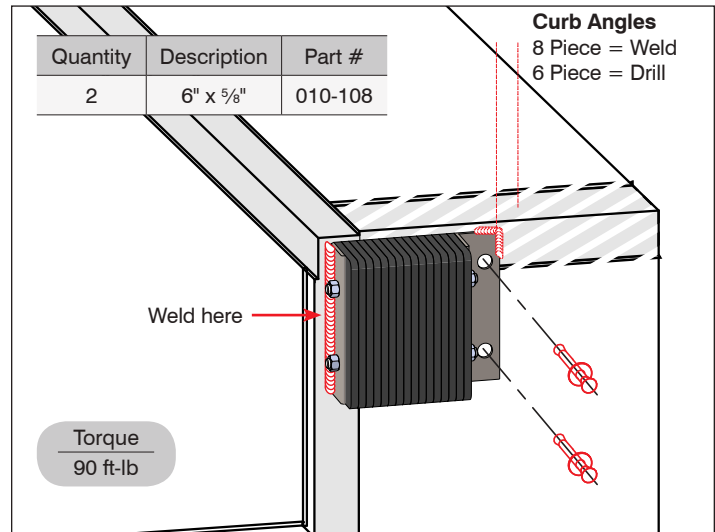
1. Construct an anchorage device / template that will temporarily hold each anchor bolt in its respective location.
2. Ensure threaded end protrudes the maximum allowed as per bumper type.
3. Position and hold the assembled device firmly against the dock face while pouring the concrete into the form.
4. After concrete has set, disassemble the device while leaving the bolts embedded.

17.3 WELDING/ANCHORING

1. Position and hold bumper to the desired location on dock face.
2. Weld to embedded steel plate or curb angle according to specified weld size.
3. Torque each nut to 90 ft-lb.



DB411 installed with wedge anchors or embedded anchor bolts on four piece curb angle.



DB411WB welded to curb angle and installed with wedge anchors or embedded anchor bolts on six or eight piece curb angle.

18.0 COMMISSIONING AND START-UP PROCEDURES

1. Check that all electrical conduits, hoses, and wires are mechanically protected against damage and are adequately secured.
2. Return all wiring diagrams to the control box (inside).
3. Mount Operation Placard (part # dependent on model) next to the Single Push Button Controls.
4. Clean up the entire work area and apply touch-up paint to all welds, scratches and burns.
5. Check the dock for proper and safe operation, and that no debris or personnel are in the operating path.
6. Test-operate the unit through several full cycles of operation by referring to your Owner's Manual (part # dependent on model). If problems are noted, see Section 20.0 "Dock Leveler Troubleshooting".
7. Keep this Installation Manual in a safe, dry place for easy future access.

19.0 PLANNED MAINTENANCE

ALL

 **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 the Owner's Manual supplied for detailed Planned Maintenance checklist.

20.0 HYDRAULIC DOCK LEVELER TROUBLESHOOTING

H

 **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 will not raise.	<ol style="list-style-type: none"> 1. Foreign material lodged between side of deck and pit wall. Remove and discard foreign material as required. 2. Damaged or missing bumpers allowing truck to contact and hold lip. Move truck as required and replace bumpers 3. Equipment or goods parked on dock leveler deck. Remove. 4. Low hydraulic oil fluid in power unit. Damaged hose or other oil leak, repair and refill with approved hydraulic oil as required. 5. Incorrect motor rotation: three phase power supply only. Contact qualified personnel to correct. 6. Relief valve is bypassing. Reset relief valve adjustment. Turn adjusting screw clockwise until deck lifts then continue 1/4 turn and relock. Another possibility is that contamination exists between relief ball and seat, consult factory.

PROBLEM	PROBLEM CAUSE
Deck will not lower.	<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 travel time is 7 seconds maximum from fully raised to level/home position.
Deck raises slowly.	<ol style="list-style-type: none"> 1. Deck or damaged skirts dragging on side of pit. Repair as required. 2. Pressure relief bypassing. Foreign material lodged between ball and seat. Consult factory. 3. Faulty Power Pack. Replace Power Pack
Lip does not extend fully.	<ol style="list-style-type: none"> 1. Lip plate bent causing hinge to bind. Repair and lubricate as required. 2. Foreign material lodged in the lip hinge area. Clean thoroughly as required. 3. Relief valve is by-passing. 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. Note: Repair is not completed until mechanical damage is corrected 4. Sequence valve not adjusted properly. Lovaste SEQ valve and turn adjustment set screw counter clockwise 1/2 turn.

21.0 MECHANICAL 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
Deck will not raise.	<ol style="list-style-type: none"> 1. Hold-down mechanism is not releasing. The release chain, handle, or locking roller may be jammed or broken. 2. Foreign material may be lodged between the side of the deck and the pit wall. 3. The bumpers may be damaged or missing, allowing truck to contact and hold the lip. 4. The lifting arm cam roller knocked off cam and jammed. 5. Missing or broken main lifting spring
The deck does not raise quickly enough to swing the lip up into the fully extended position.	<ol style="list-style-type: none"> 1. Foreign material lodged in the lip hinge, preventing full rotation. 2. Deck may be dragging on the side of the pit, slowing its movement. 3. Foreign material may be lodged between the side of the deck and the pit wall. 4. Lifting arm cam roller has groove worn in by the cam. 5. Lack of lubrication on the lip hinge spools. 6. Lifting springs may require adjustment. (Rule out all other causes first) 7. Improper use of the pull chain.

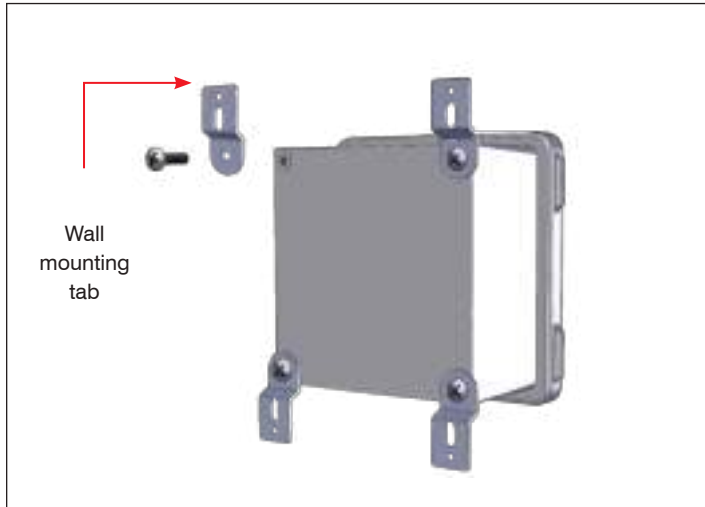
PROBLEM	PROBLEM CAUSE
The lip does not lock after fully extending.	<ol style="list-style-type: none"> 1. The lip lock is not engaging. The dock spring may be broken or stretched, or the lock itself may have seized. 2. The lip actuator is bent or broken. 3. Foreign shock material is lodged in the lip lock mechanism.
The deck will not 'walk down'.	<ol style="list-style-type: none"> 1. Foreign material in the pit may be blocking the mechanism. 2. Side safety skirts are damaged and jammed against the pit wall. 3. The lifting arm cam roller is knocked off, causing the lift arm to jam against the cam. 4. Main spring tension too tight to walk down.
The lip does not release when the truck departs.	<ol style="list-style-type: none"> 1. The lip actuator assembly may be damaged, causing lip to begin extending too early in the cycle. 2. The lip actuator requires adjustment. 3. Lack of lubrication.
The lip strikes the rear of the truck as the deck raises, stops, or slows down, and lip does not extend in the locked position.	<ol style="list-style-type: none"> 1. Damaged or missing dock bumpers allow the truck to park too close to the leveler. 2. Height difference between the dock and truck bed may be greater than recommended.
The deck does not stay down: it springs back up after being walked down.	<ol style="list-style-type: none"> 3. Foreign material in the hold-down assembly stopping the rotation of the ratchet hub. 4. Pawl worn out or pawl spring broken.
The lip will not clear the rear of the truck when attendant attempts to park the dock while the truck is parked	<ol style="list-style-type: none"> 1. Damaged or missing dock bumpers allow the truck to park too close to the leveler. 2. Height difference between the dock and truck bed may be greater than recommended. 3. The lip actuator assembly may be damaged, causing lip to be held out too late in the cycle. 4. The lip actuator requires adjustment. 5. Lip crown may be set too high.
The lip does not lock.	<ol style="list-style-type: none"> 1. The lip lock may have seized due to lack of lubrication or foreign material in the pit. 2. Lip lock may be held in locked position by foreign material in the pit. 3. Lip actuator needs adjustment.

22.0 ALTERNATIVE: SP2 CONTROL STATION INSTALLATION

NOTICE

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

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. When determining where to position the control station, please ensure that the bottom of the box is accessible, as all conduit entry points



SP2 control station—wall-mounting brackets.



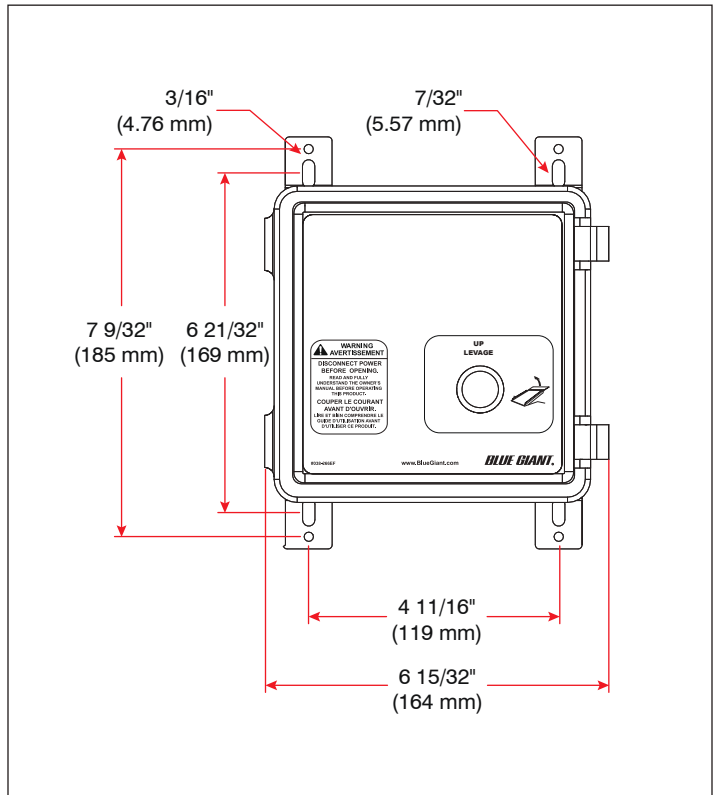
SP2 control station—mounting on wall (typical decal shown).

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.

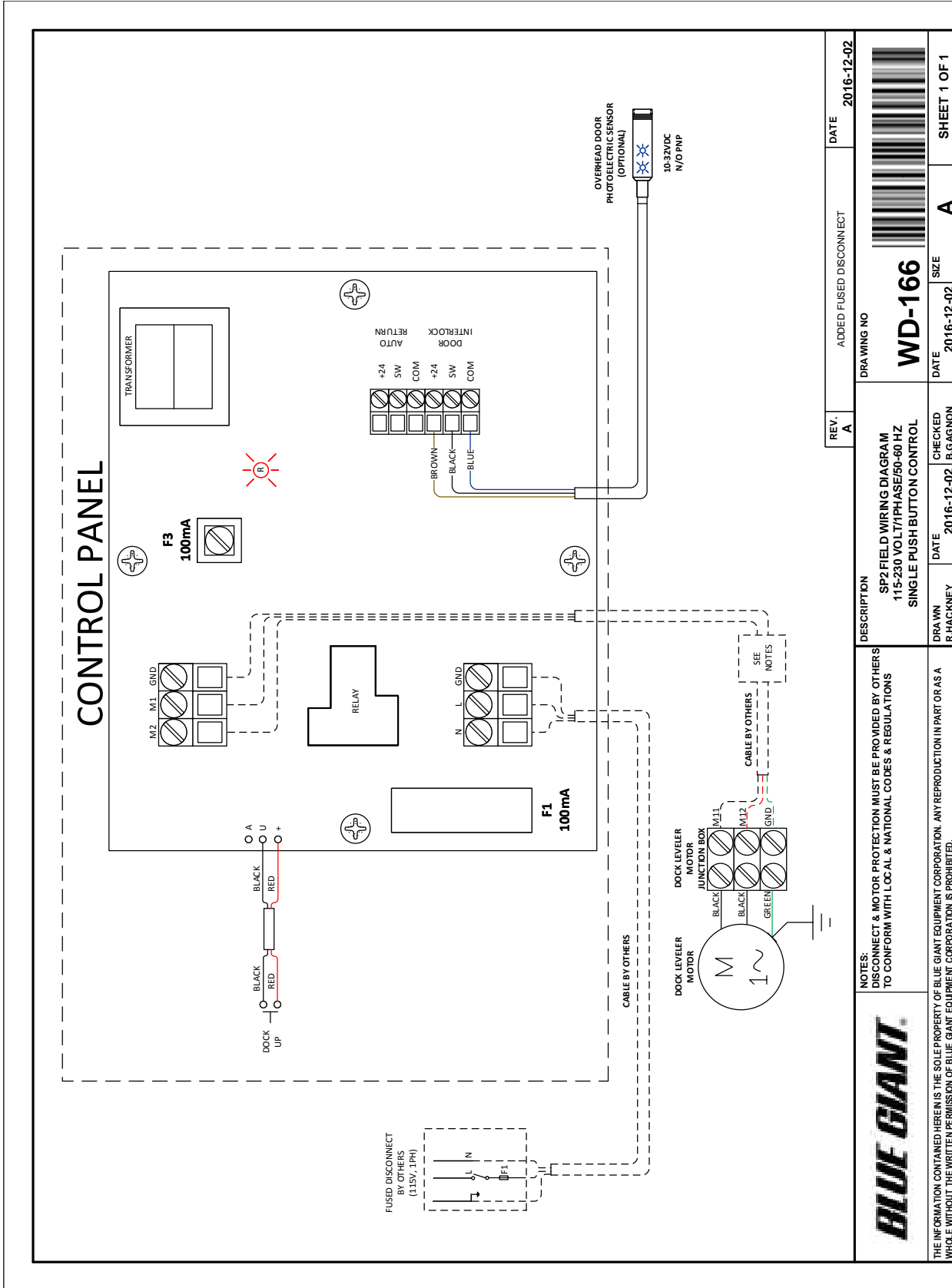
Use # 12 gauge stranded wired for motor and power leads only. A local disconnect means is required.

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



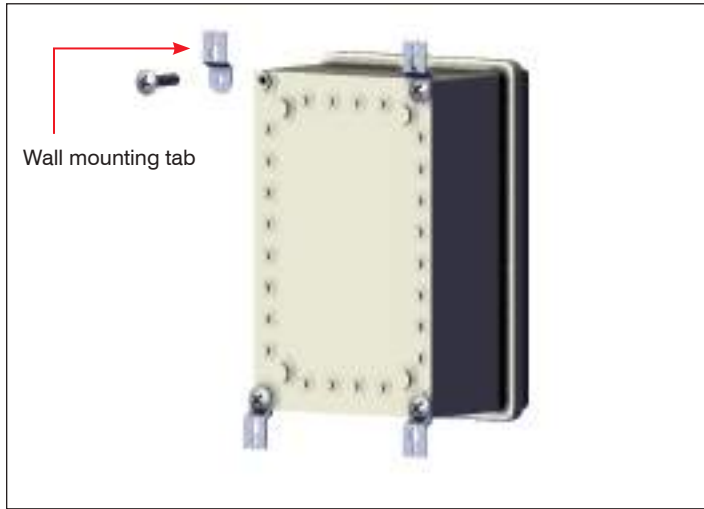
SP2 control station—dimensions.

23.0 SP2 WIRING DIAGRAM—115V SINGLE PHASE



BLUE GIANT	NOTES: DISCONNECT & MOTOR PROTECTION MUST BE PROVIDED BY OTHERS TO CONFORM WITH LOCAL & NATIONAL CODES & REGULATIONS		DESCRIPTION SP2 FIELD WIRING DIAGRAM 115-230 VOL/1PH/50-60 HZ SINGLE PUSH BUTTON CONTROL	REV. A	DATE 2016-12-02
	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.		DRAWING NO WD-166	ADDED FUSED DISCONNECT	DATE 2016-12-02
		DRAWN BY R.HACKNEY	CHECKED BY B.GAGNON	DATE 2016-12-02	SIZE A
					SHEET 1 OF 1

24.0 ALTERNATIVE: BLUE GENIUS™ CONTROL PANEL INSTALLATION



Blue Genius™ control panel—wall-mounting brackets.

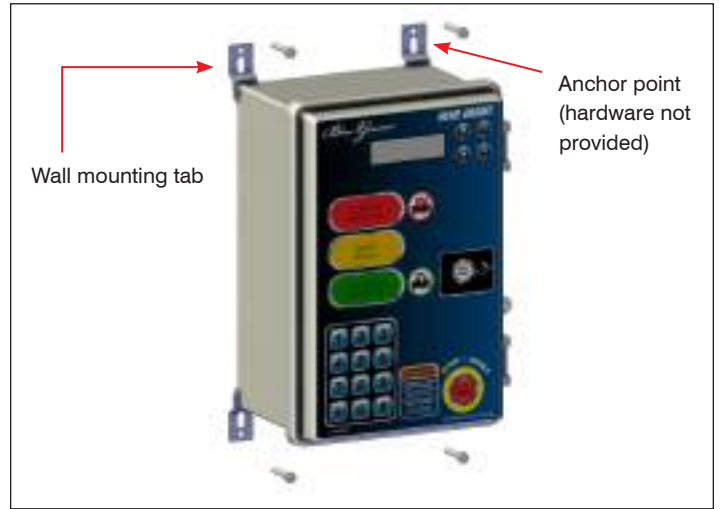
Remove the Blue Genius™ control panel from its box and install the wall-mounting tabs on the back of the control station. The mounting brackets must be installed to suit site / wall conditions. Do not drill through control station box itself.

When determining where to position the control panel, 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 panel 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 panel on a flat surface. If the wall is uneven, shim to suit.

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

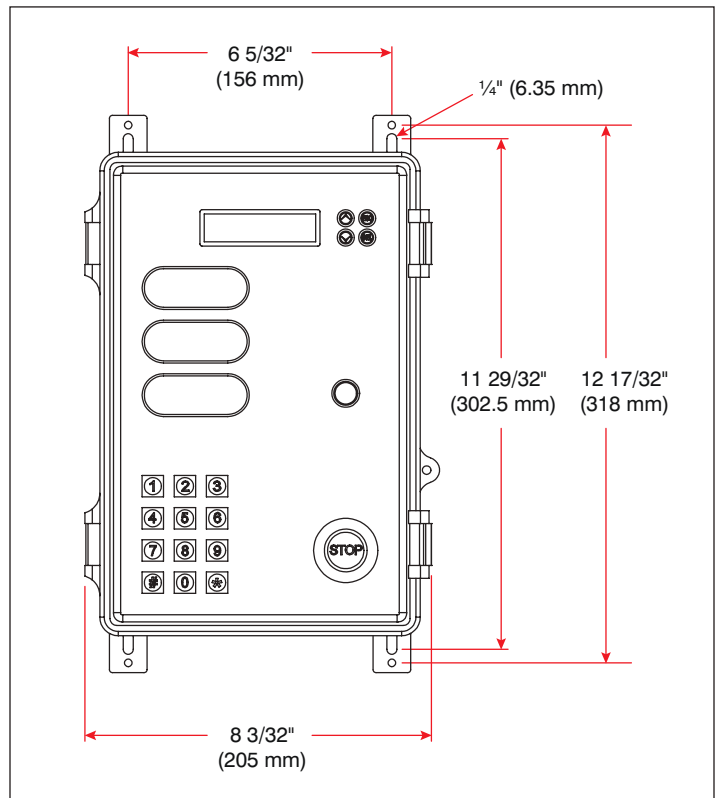
Use # 12 gauge stranded wired for motor and power leads only. A local disconnect means is required. Entry points at the bottom of the control panel shall correspond to (left to right):

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



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

See Section 12.6 "Blue Genius™ Electrical Wiring Installation". If site conditions call for a different wiring installation method, please consult factory before proceeding.



Blue Genius™ control panel—dimensions.

25.0 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 panel, 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 panel. 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 panel cable to the remote I/O is connected to terminal #3 inside the Blue Genius™.

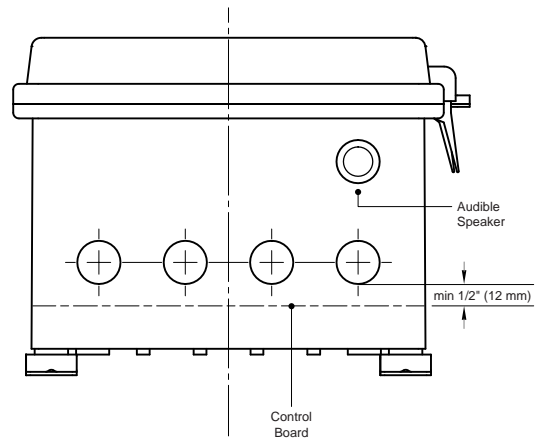
NOTE: The drain wire is always connected at the power source: never at each end.

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 panel) must be:

- Power Feed
- Motor(s) 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 panel, ensure that the outside edge of each hole is at least 1/2" (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.

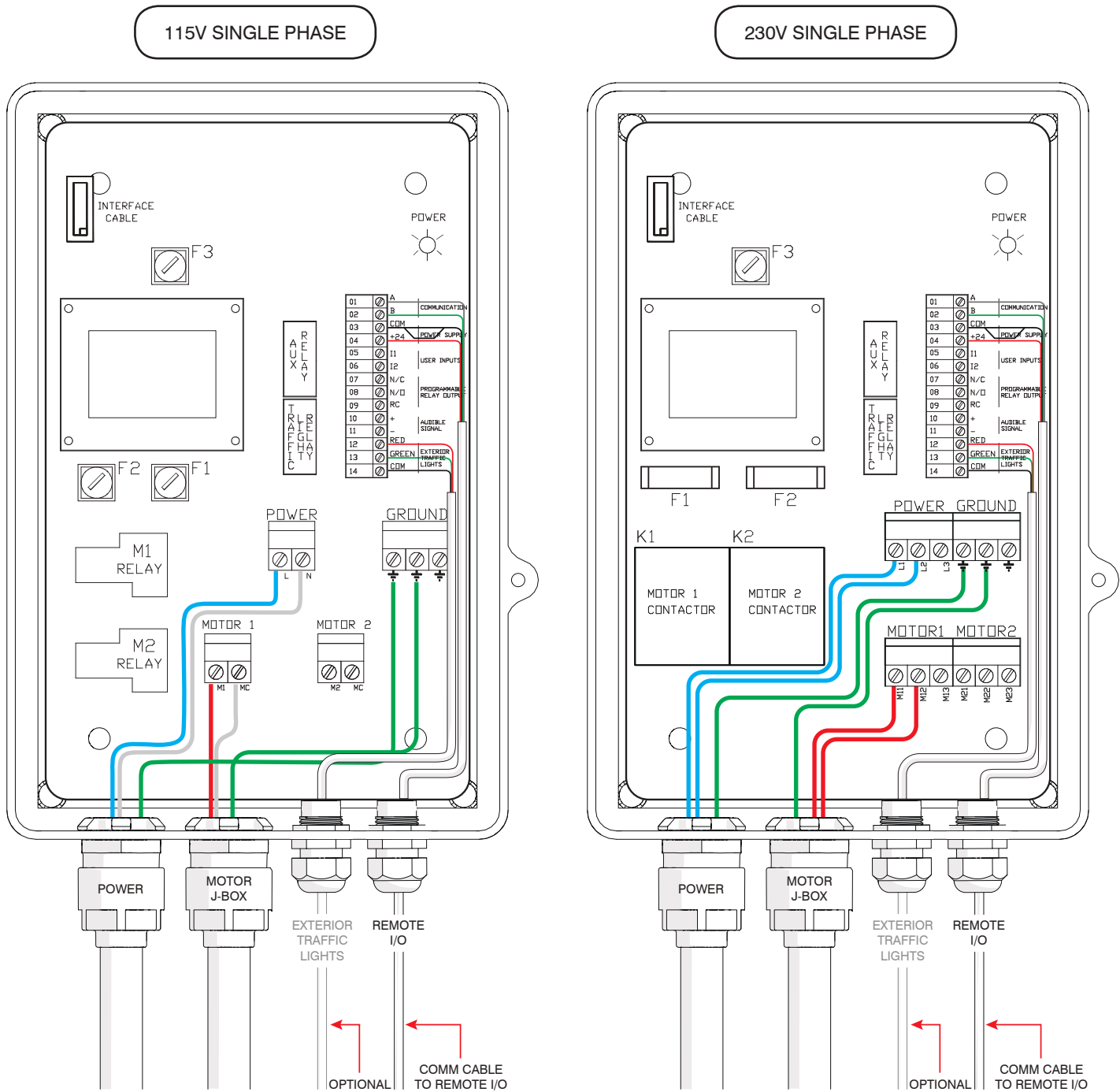


Bottom view of Blue Genius™ control panel.

NOTE: Holes shown above 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™ control panel.

10. If any optional equipment is added (such as overhead door interlock), ensure that all 24VDC devices are entering the Blue Genius™ control panel 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.

25.1 BLUE GENIUS™ CONTROL PANEL WIRING LAYOUT



Blue Genius™ control panel wiring layout for 115V single phase only.

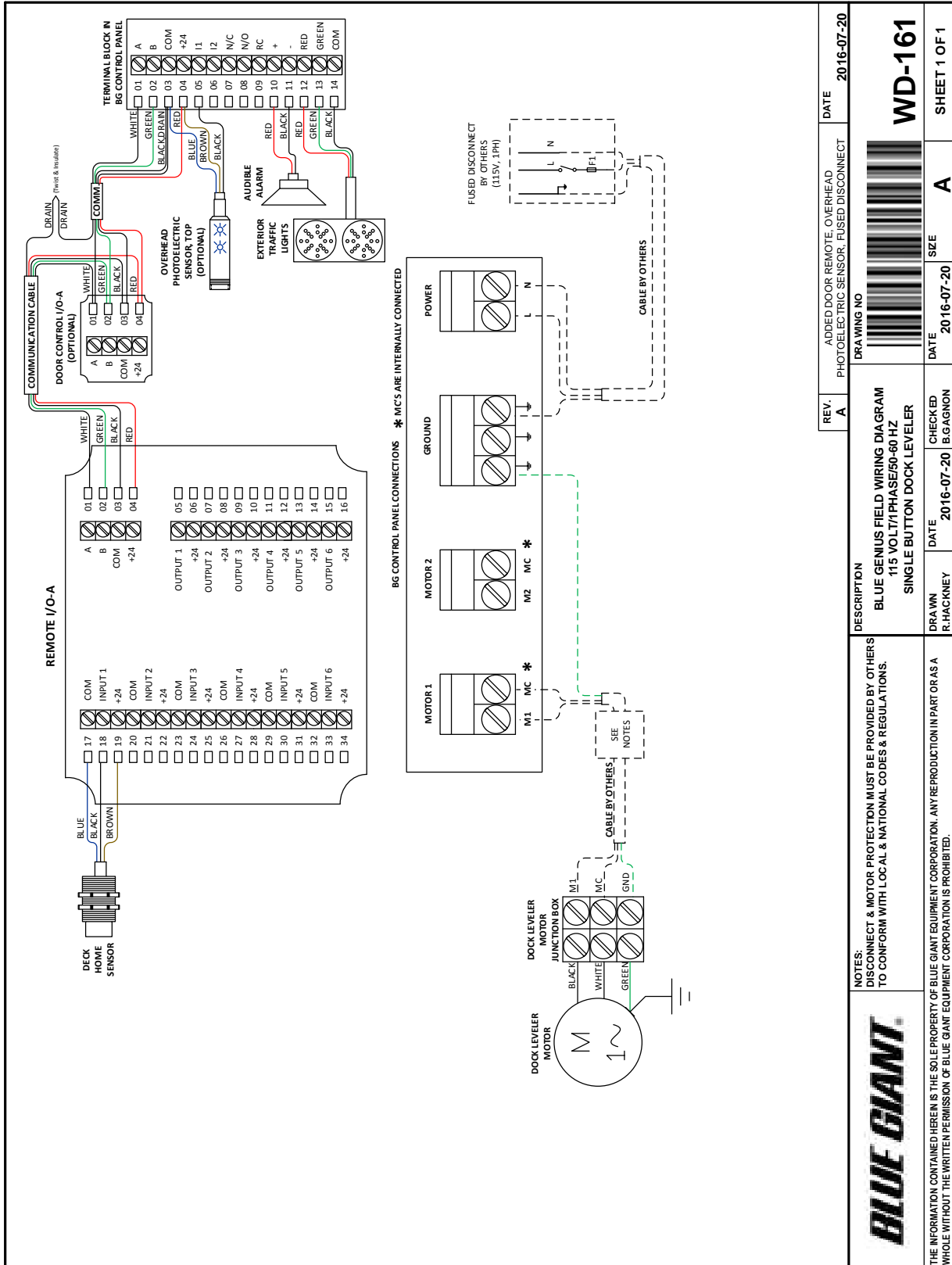
Blue Genius™ control panel wiring layout for 208-240V single phase.

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 23.0 "Alternative Control Station Options" for reference without being at site with equipment. Use illustration for typical clean layout purposes only.

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

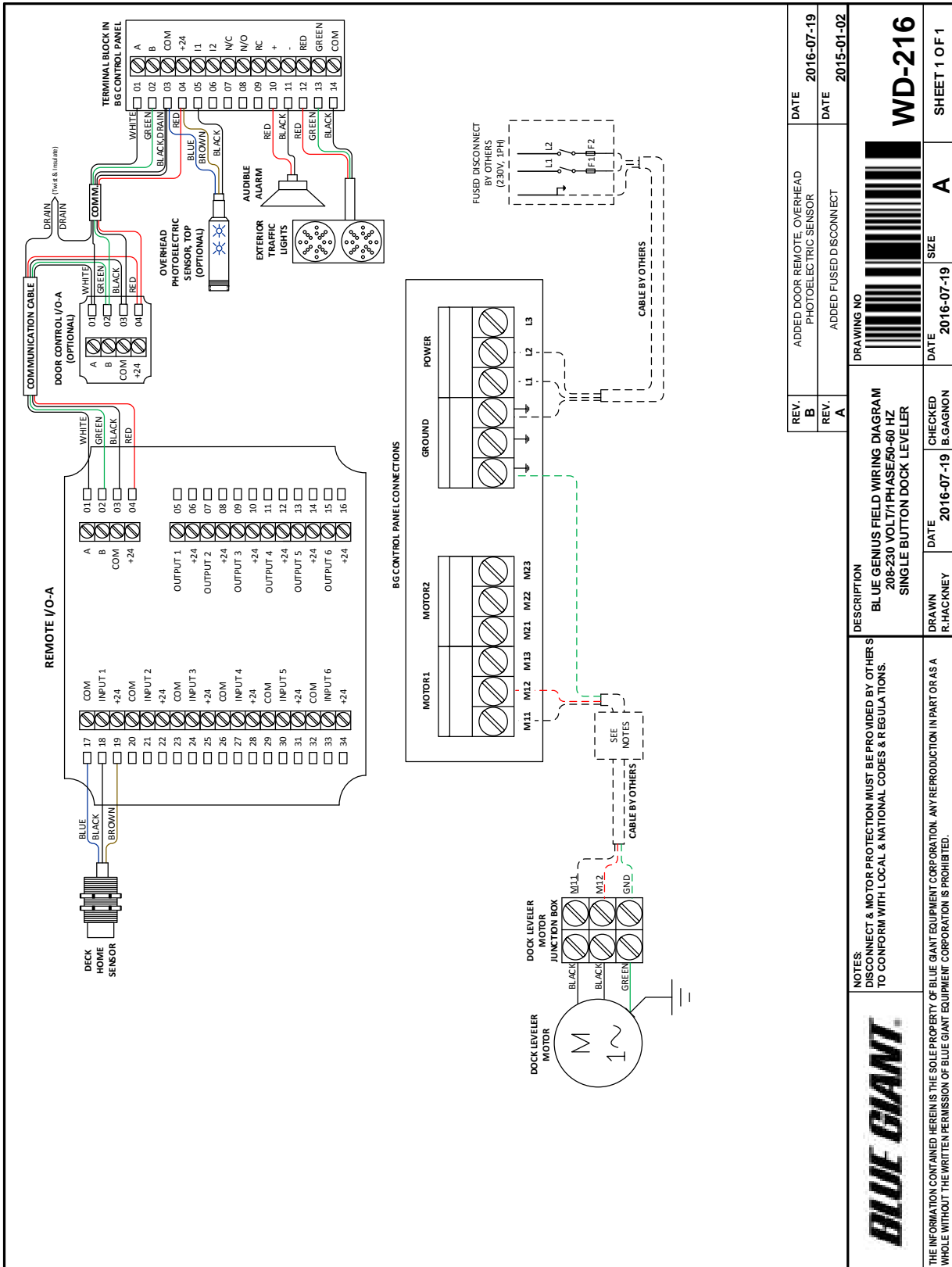


REV. A	ADDED DOOR REMOTE, OVERHEAD PHOTOELECTRIC SENSOR, FUSED DISCONNECT	DATE 2016-07-20
DRAWING NO. WD-161		
DESCRIPTION BLUE GENIUS FIELD WIRING DIAGRAM 115 VOLT/1PH/50-60 HZ SINGLE BUTTON DOCK LEVELER		
DRAWN R-HACKNEY	DATE 2016-07-20	CHECKED B.GAGNON
DATE 2016-07-20		DATE 2016-07-20
SHEET 1 OF 1		SIZE A



NOTES:
DISCONNECT & MOTOR PROTECTION MUST BE PROVIDED BY OTHERS TO CONFORM WITH LOCAL & NATIONAL CODES & REGULATIONS.
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26.1 BLUE GENIUS™ GOLD WIRING DIAGRAM—230V SINGLE PHASE



27.0 OPTIONAL EXTERIOR DRIVER TRAFFIC LIGHT INSTALLATION

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.

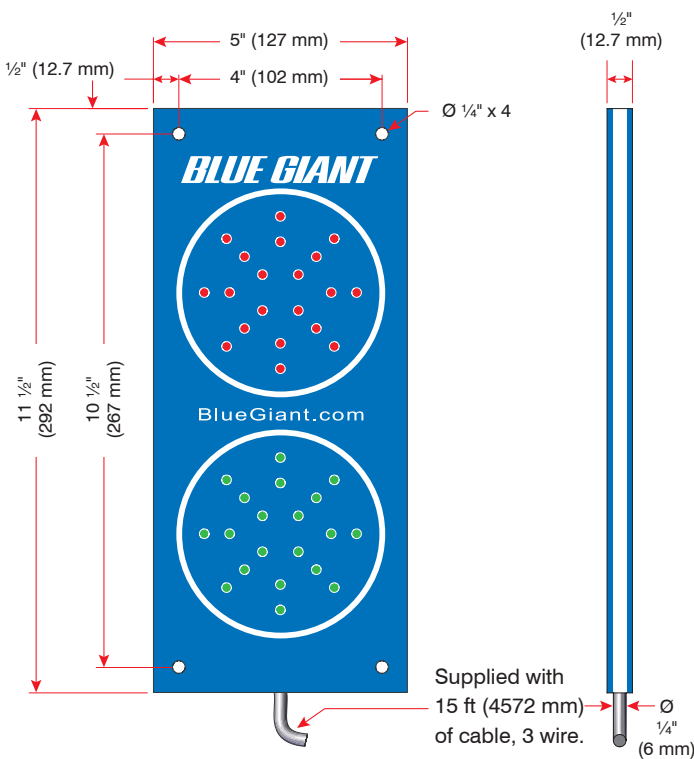
When drilling the hole for the cable, ensure that the hole is thoroughly deburred (cleaned out) so that accidental damage does not occur when the cable is pulled through during and after installation.

27.1 OPTIONAL EXTERIOR DRIVER WARNING SIGN INSTALLATION

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

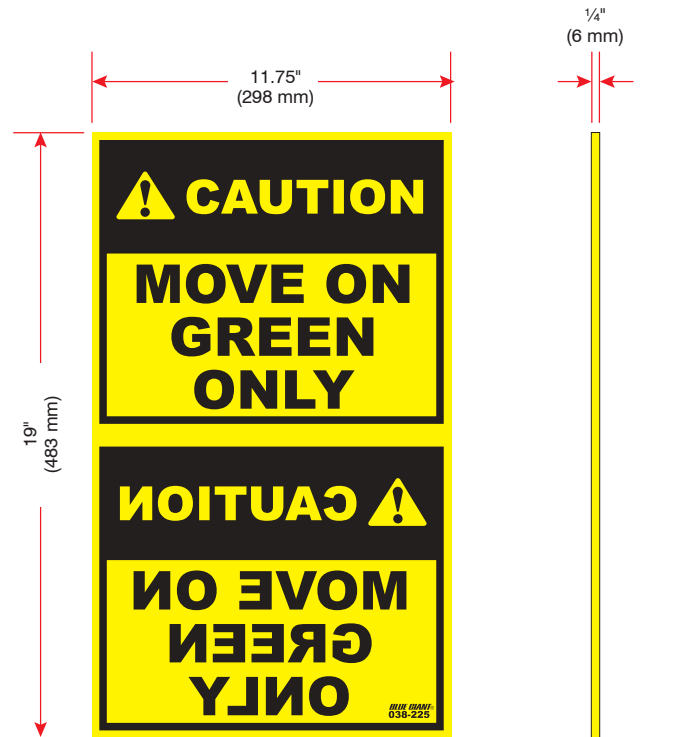
Because the sign comes without mounting holes, drill a minimum of four holes no less than 3/8" (10 mm) (Detail A) from the sign's edge. Ensure that the holes exceed the size of the anchor device used for expansion reasons (i.e. for a 1/4" anchor use a 5/16 hole. When mounting the sign, do a visual inspection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

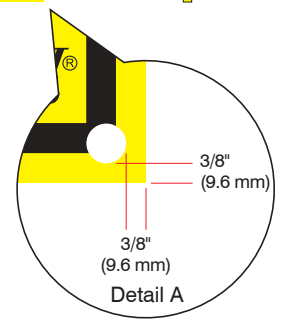


Exterior driver traffic light, part # 032-461.

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 / Portuguese 038-225P).



28.0 OPTIONAL LIP HOME SENSOR PACKAGE INSTALLATION - BLUE GENIUS™ EQUIPPED DOCKS ONLY

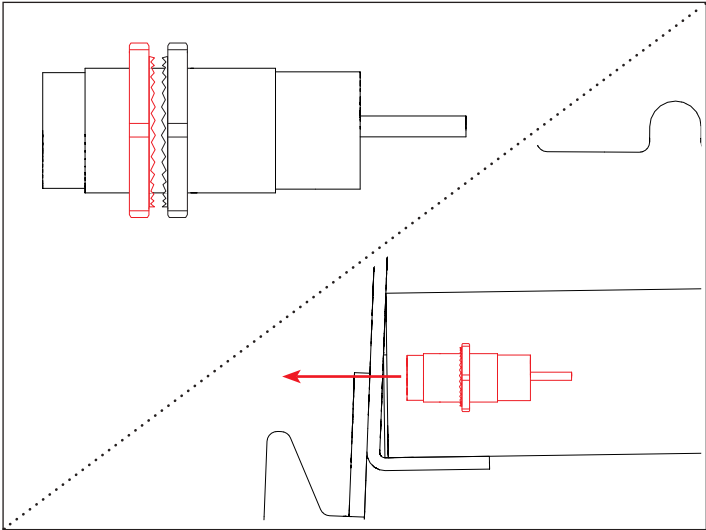
STEP 1




Remove the front holding nut from the proximity sensor and insert the sensor into one of the two larger holes in the mounting foot of the dock leveler. Ensure that the proximity sensor is inserted front first from behind the mounting foot. The wire should be leading into the pit, as illustrated.

Choose the mounting hole based on whichever is closest to the lip keeper. Typically, for a 16-18" lip, the top hole will be used and the bottom hole will be used for a 20" lip.

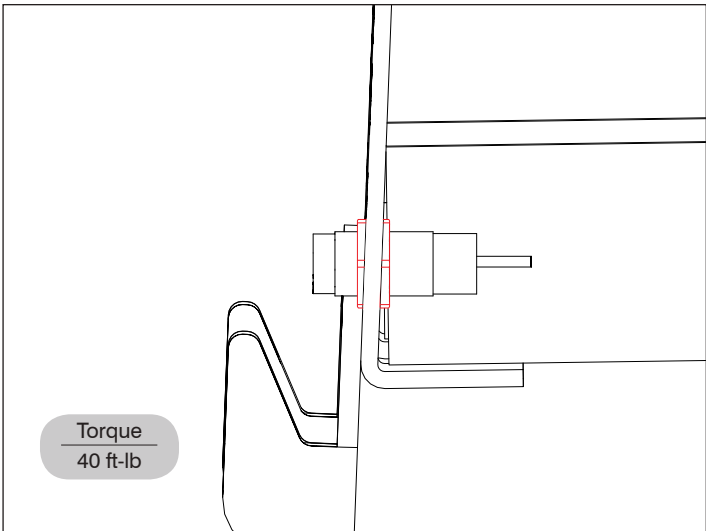
NOTE: 20" lip mounting position shown.




STEP 2



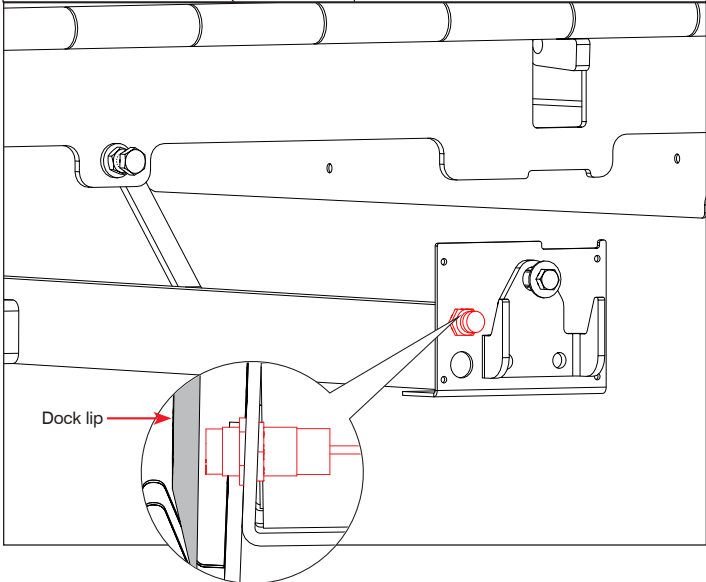
Once the proximity sensor is in place, fasten the front holding nut to the sensor and torque both nuts to 40 ft-lb.



STEP 3



Once installed, adjust the lip stop to ensure that the lip does not come into contact with the sensor but also rests firmly in the lip keepers. Typically, a .25" (6mm) gap between lip and proximity sensor is required.



NOTES

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