

INSTALLATION & TECHNICAL MANUAL

MECHANICAL HOLD-DOWN KIT



ACTUAL PRODUCT MAY NOT APPEAR EXACTLY AS SHOWN



WARNING

Do not operate, install, 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 CHECKLIST FOR MECHANICAL HOLD-DOWN KIT

		Yes	No	Comments
1	Review site conditions. Have you completed and reviewed site survey report?	<input type="checkbox"/>	<input type="checkbox"/>	
2	When unpacking, were all the parts included? Refer to Section 7.0 " <i>Components as Shipped Checklist</i> "	<input type="checkbox"/>	<input type="checkbox"/>	
3	Do you have all the tools needed to complete the job? This includes ladder(s), safety equipment and personal safety devices. Refer to Section 5.0 " <i>Tools Required for Installation</i> "	<input type="checkbox"/>	<input type="checkbox"/>	
4	Have you read the Mechanical Hold-Down Kit Installation Manual and fully understood it?	<input type="checkbox"/>	<input type="checkbox"/>	
5	Do you have the Blue Giant technical support number? 1.800.USA.BLUE. Before calling, make sure to have serial # of equipment and/or order #.	<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 Hold-Down System. 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 Hold-Down System. 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
Telephone: 212.642.4900
www.ansi.org



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 Parts 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 Vehicle Restraint System. 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 Hold-Down System 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 hazards exist on applicable equipment. 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.

<div style="background-color: red; color: white; text-align: center; padding: 5px;">  DANGER </div> <div style="padding: 10px;"> <p>Serious injury or death will likely occur if the instructions are not followed.</p> </div>	<div style="background-color: blue; color: white; text-align: center; padding: 5px;"> NOTICE </div> <div style="padding: 10px;"> <p>Procedures marked notice must be followed in order to prevent damage to machinery.</p> </div>
<div style="background-color: orange; color: white; text-align: center; padding: 5px;">  WARNING </div> <div style="padding: 10px;"> <p>Serious injury or death may occur if the instructions are not followed.</p> </div>	<div style="background-color: yellow; color: black; text-align: center; padding: 5px;">  CAUTION </div> <div style="padding: 10px;"> <p>Instructions marked caution concern safe operating procedure. Failure to comply may result in personal injury.</p> </div>

3.1 OPERATIONAL SAFETY WARNINGS

<div style="background-color: red; color: white; text-align: center; padding: 5px;">  DANGER </div> <div style="padding: 10px;"> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Keep hands and feet away from operating space of the restraint apparatus.</p> <div style="display: flex; align-items: center; margin-top: 20px;"> <div style="text-align: center; margin-right: 20px;"> <p>CRUSH HAZARD</p>  </div>  </div> </div> <div style="width: 50%;"> <ol style="list-style-type: none"> Do not operate the dock equipment while anyone is standing in its path. Lift the dock equipment with suitable hoisting equipment only. Do not stand under the dock equipment or any heavy object while it is being hoisted. BEFORE BEGINNING ANY SERVICE PROCEDURES: Disconnect the power and follow all lockout / tagout procedures outlined in this manual. </div> </div> </div>	
<div style="background-color: orange; color: white; text-align: center; padding: 5px;">  WARNING </div> <div style="padding: 10px;"> <ol style="list-style-type: none"> Installation must be performed only by trained and authorized personnel. Prior to installation, place adequate barriers to prevent vehicle traffic from entering the work area. During installation, anchors must be properly torqued to achieve the necessary anchoring strength. DO NOT USE IMPACT DRIVERS. Any electrical work must be performed by qualified personnel only. Do not remove the wheel chocks until loading /unloading is finished and the truck is cleared for departure or the vehicle restraint has been released and the lights have changed to RED inside and GREEN outside (if applicable). </div>	
<div style="background-color: blue; color: white; text-align: center; padding: 5px;"> NOTICE </div> <div style="padding: 10px;"> <ol style="list-style-type: none"> Do not ground welding equipment to any electrical components. Do not allow the drill to go too deeply into the control box, as damage may occur to the control systems. Never use air to blow debris from the control box. Use a vacuum to perform any necessary cleaning. Do not connect green ground lead into control box or junction box until all welding has been completed. If an extension plate / box is required, securely mount it on the restraint with hardware provided before shimming and drilling. Improper adjustments and / or lubrication may cause operational problems with equipment. Check hydraulic fluid level. Do not force the valve adjustment screws against the internal stops. </div>	
<div style="background-color: yellow; color: black; text-align: center; padding: 5px;">  CAUTION </div> <div style="padding: 10px;"> <ol style="list-style-type: none"> Only trained personnel should operate or service this equipment. Do not operate the dock equipment until the transport vehicle is parked against the dock bumpers. Always park the dock equipment after use (ensure that the lip is safely parked in the lip keepers). Conduct routine inspections and maintenance. Failure to do so could cause equipment damage and or personal injury. Always call your authorized service representative or manufacturer immediately if a malfunction occurs. Always return the restraint arm to the parked position after use. </div>	

4.0 LOCKOUT / TAGOUT PROCEDURE AND RULES

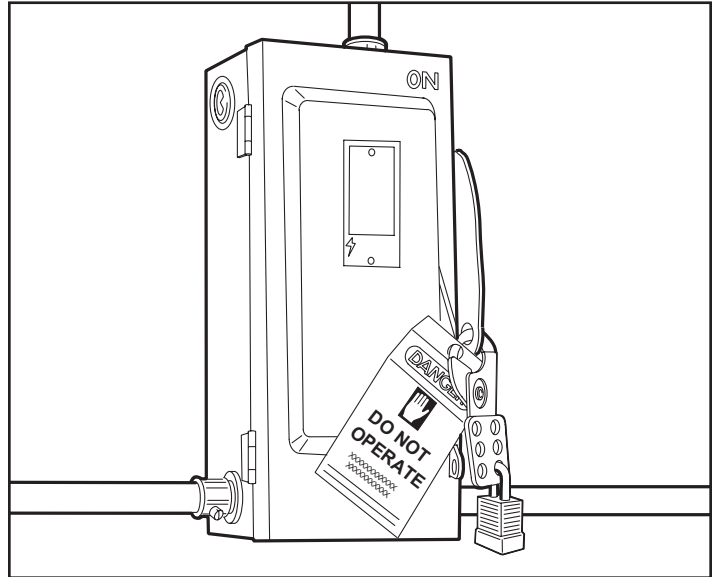
In accordance with the rules and regulations of the Occupational Safety and Health Administration (OSHA), all affected employees must be notified that the machine or equipment will be shut down and locked out to perform repair or maintenance work. The work area must be checked to ensure that all personnel 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.



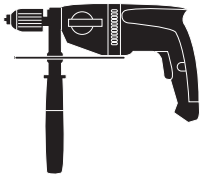
WARNING

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.

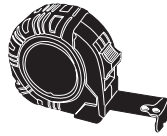


Approved way to lockout / tagout.

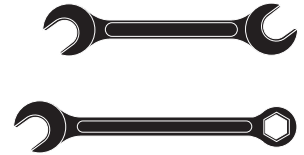
5.0 TOOLS REQUIRED FOR INSTALLATION



Hammer Drill



Tape Measure



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



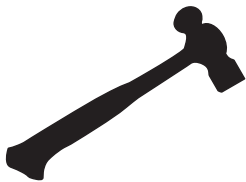
$\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ " Concrete Bit Carbide



Hand Grinder with Zip Blade



Cutting Torch



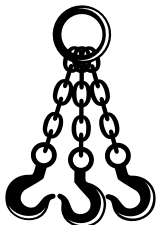
Ball Peen Hammer



Safety Stand



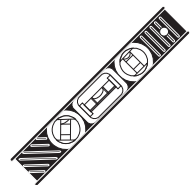
Electrician's Tools



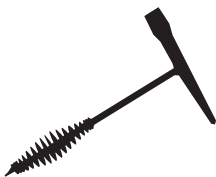
Chain Lift



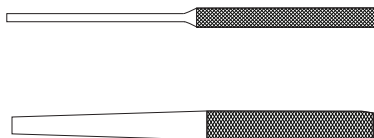
Welder



Level 4'



Chip Hammer



$\frac{3}{16}$ " Punch and $\frac{1}{4}$ " Taper Punch



Touch Up Paint

6.0 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.

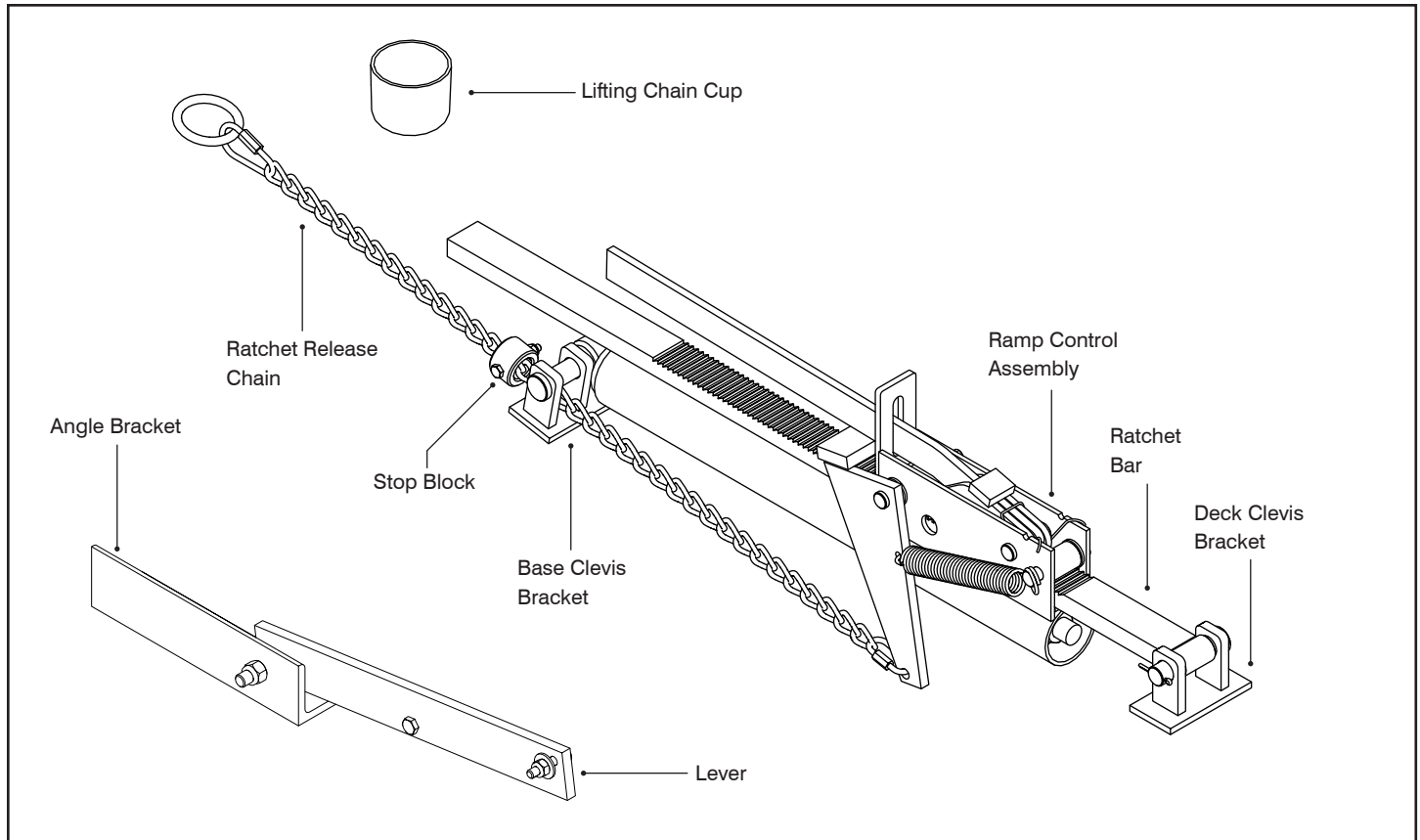
Place barricades around the pit on the dock floor and driveway while installing, maintaining or repairing dock leveler or vehicle restraint.

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

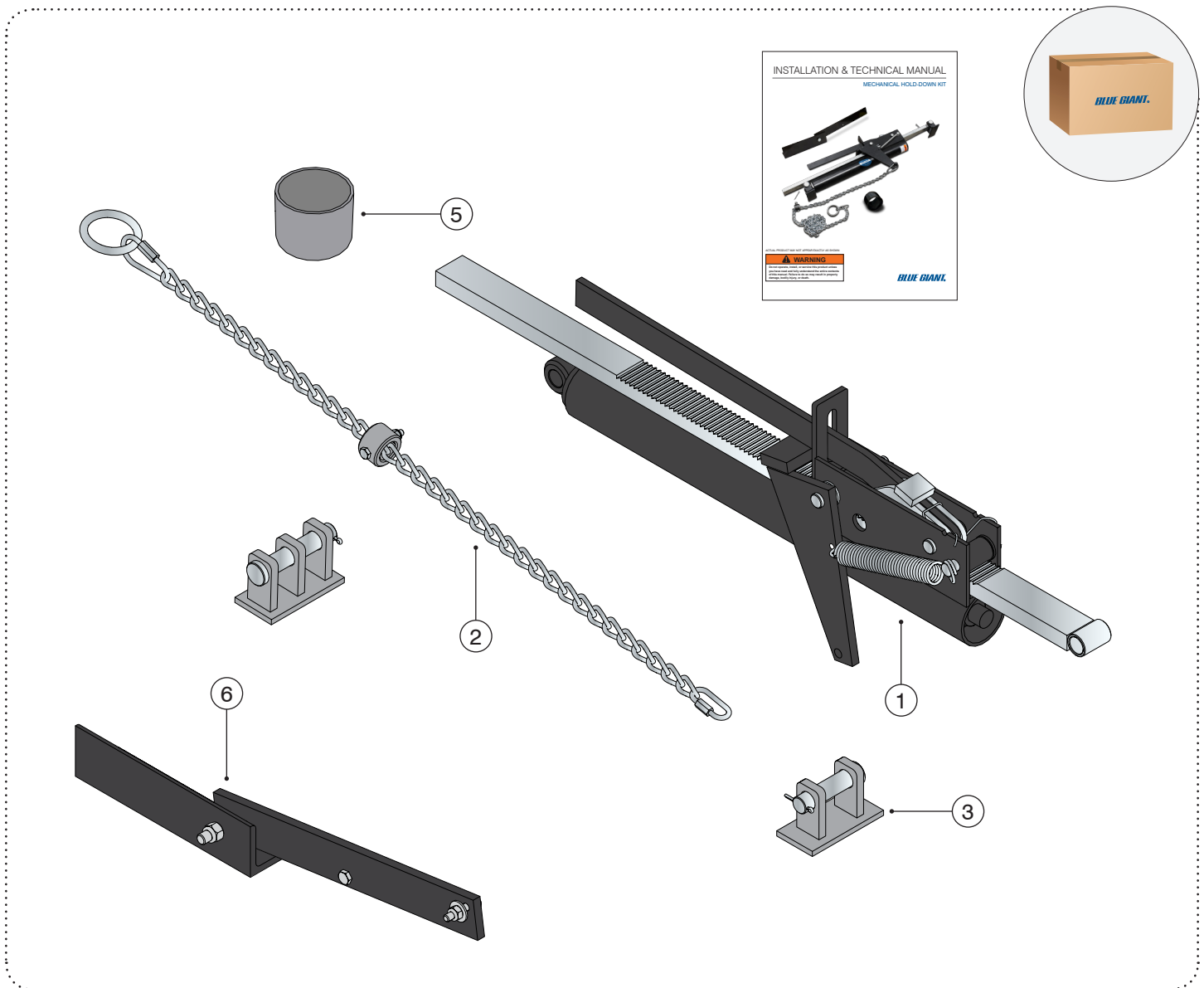
Inadequate lifting equipment or practices can cause a load to fall unexpectedly. Make sure the lifting chain or other lifting devices are in good condition and have a rated capacity of as much as 3500 lb (1588 kg) for the lifting angle used. Never allow anyone to stand on or near the dock leveler when 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.

6.1 GENERAL DESCRIPTION

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



7.0 COMPONENTS AS SHIPPED CHECKLIST



RATCHET HOLD-DOWN AND EASY-PULL ASSEMBLY - 70-003517-KIT

✓	ITEM	QTY.	PART NO.	DESCRIPTION	APPROX. WEIGHT	
	1	1	See Section 11.0 for individual part numbers	Ramp Control Assembly	48 lb	21.8 kg
	2	1		Ratchet Release Chain		
	3	1		Deck Clevis Bracket, Single (with pins)		
	4	1		Base Clevis Bracket, Double (with pins)		
	5	1		Lifting Chain Cup		
	6	1	See Section 12.0	Easy-Pull Assembly	2 lb	0.9 kg
	7	1	038-1034EI	Installation Manual	—	—

8.0 DOCK STRUT (OR EQUIVALENT) SET-UP**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 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 on accidentally.

8.1 ENGAGING THE DOCK STRUT (OR EQUIVALENT)**WARNING**

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

**WARNING**

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

**WARNING**

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

Before beginning any work around or under the dock leveler, secure the dock in the fully raised position using the integral dock strut (or equivalent) and the Blue Giant service stand. For more information, refer to the documentation provided by the manufacturer of the dock leveler.

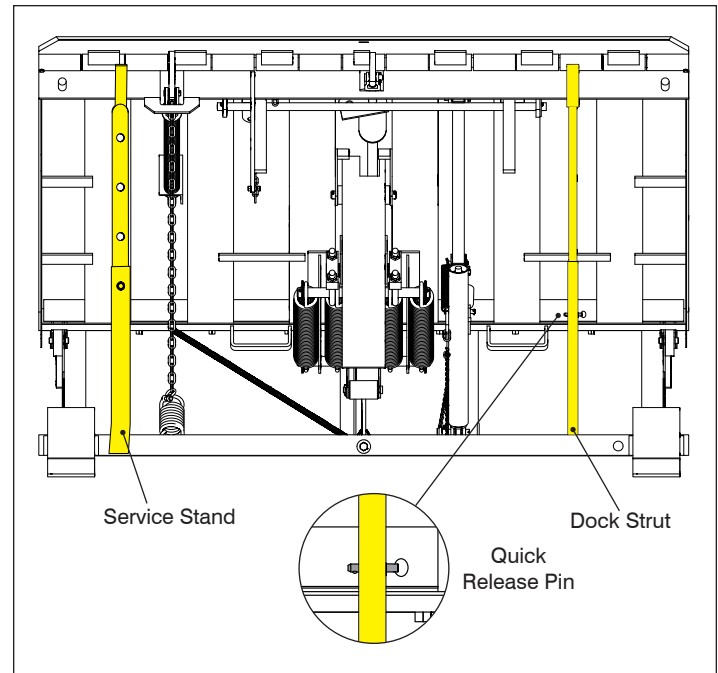
NOTE: Use of a service stand and hard hat while performing this step is required.

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

8.2 DISENGAGING THE DOCK STRUT (OR EQUIVALENT)**CAUTION**

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

Disengage the dock strut (or equivalent) according to the documentation provided by the manufacturer of the dock leveler.



Engaged pre-existing dock strut (or equivalent) and Blue Giant secondary service stand (part # 796-710).

9.0 PRE-INSTALLATION NOTES

Ensure that all tack welds are strong enough to operate the dock while testing, but can still be cut out to accommodate readjustments without damaging any parts.

When installing the base clevis bracket, ensure that the deck is flush with the finished floor when the dock is stored in the home position. See Section 10.0 "*Installation*", step 6.

It is critical that the hold-down assembly be mounted correctly to ensure the proper latching range for both above and below level latching. Vertical stop may be needed.

As this hold-down kit can be applied to a number of different docks, the following installation instructions should be considered as strictly a guideline.

If there is a pre-existing lifting chain cup, line up the ramp assembly as shown in Section 10.0 "*Installation*", step 1. If a new lifting chain cup needs to be installed, see Section 10.0 "*Installation*", steps 9 and 10 for placement information.

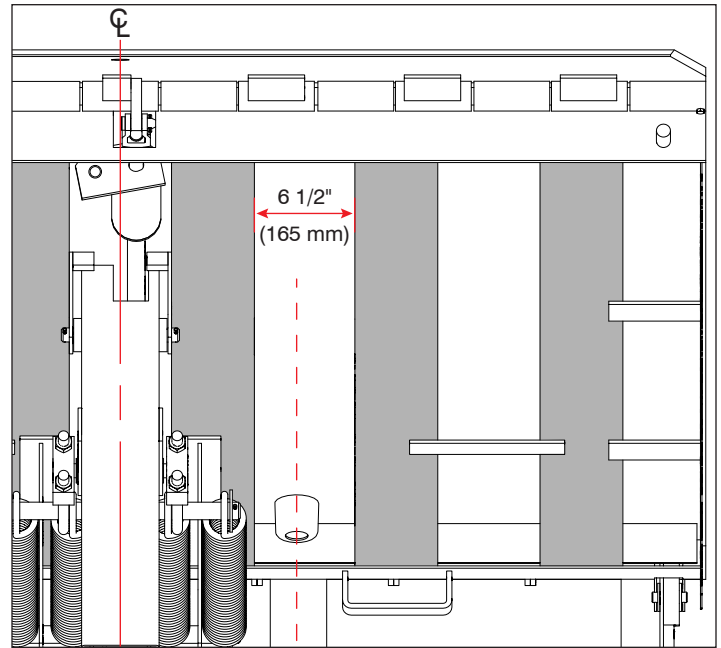
10.0 INSTALLATION

STEP 1



Determine the hold-down location (side to side) to avoid interference with other components and to obtain the best alignment with the existing lifting chain cup. The minimal internal distance between the vertical walls of the beam is 6 1/2" (165 mm). This is to allow enough room to insert the clevis pin into the clevis bracket.

NOTE: Hold-down location must be as close to the center of the deck as possible to ensure level holding.

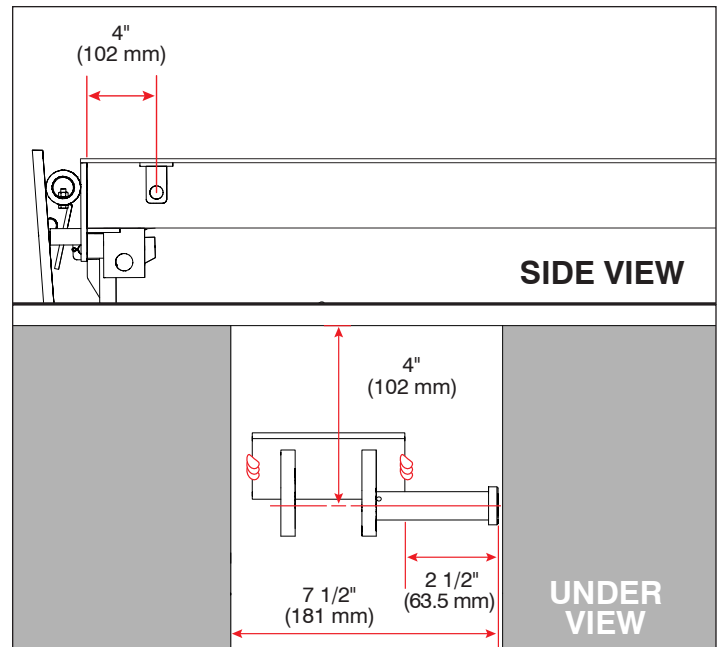


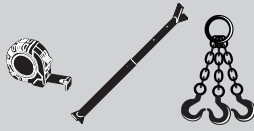
STEP 2



Locate the deck clevis bracket and tack weld it to the underside of the deck plate, 4" (102 mm) from the front inside edge of the front headboard and center line of the hole of the bracket. Depending on alignment, the upper bracket can either be mounted towards the left or right side of the gap between the beams to allow for pin insertion.

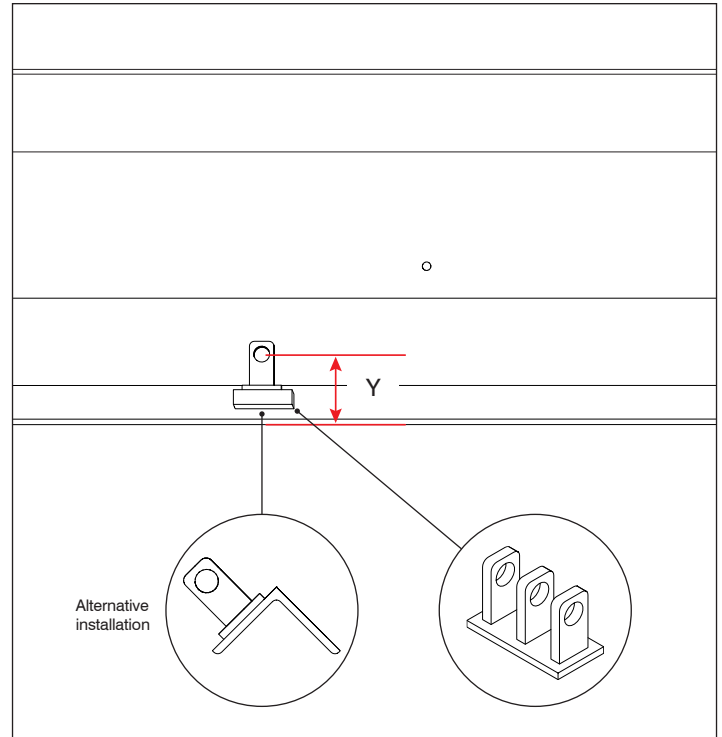
NOTE: Deck clevis bracket must be mounted toward left or right with a minimum of 2 1/2" (63.5 mm) on one side for pin insertion. Left side mounting shown.



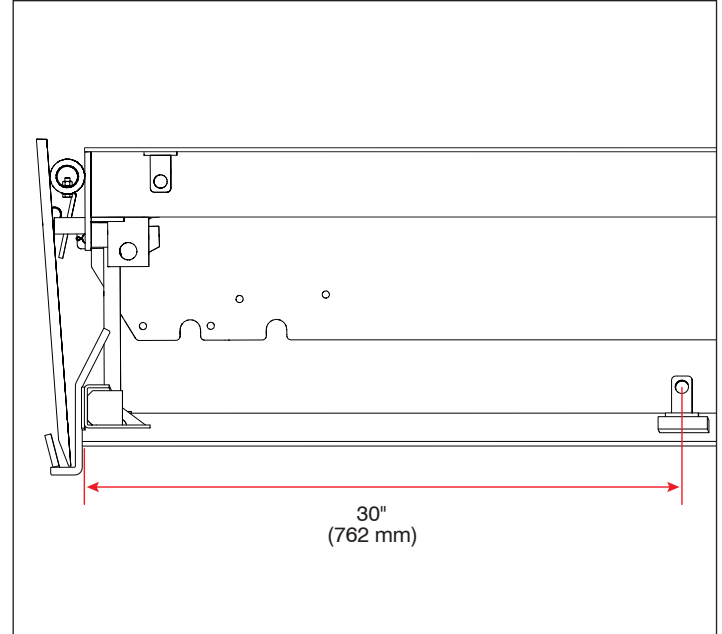
10.0 INSTALLATION CONT'D.**STEP 3**

The center of the pin holes of the base clevis bracket should be 8" (203 mm) above the pit floor on a leveler in a 24" (610 mm) deep pit and 4" (102 mm) above the pit floor on a leveler in a 20" (508 mm) deep pit.

DIMENSION Y	
PIT SIZE	MEASUREMENT
20" (508 mm)	4" (102 mm)
24" (610 mm)	8" (203 mm)

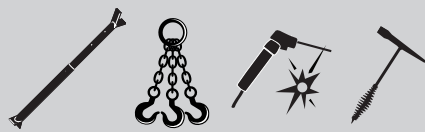
**STEP 4**

The center of the pin holes of the base clevis bracket must be mounted 30" (762 mm) back from the front frame member.

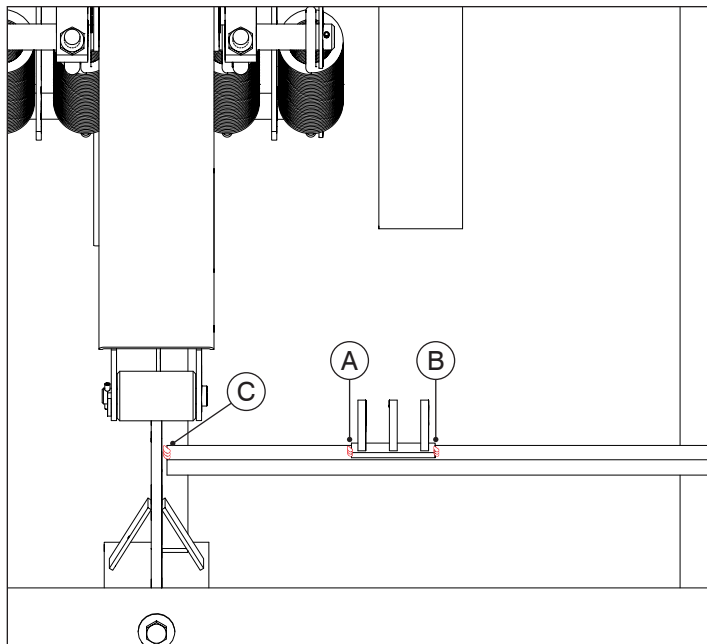


10.0 INSTALLATION CONT'D.

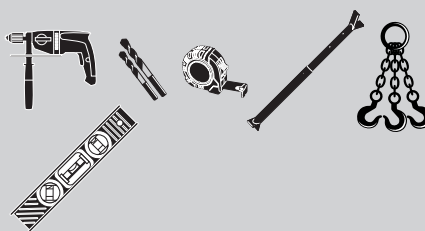
STEP 5



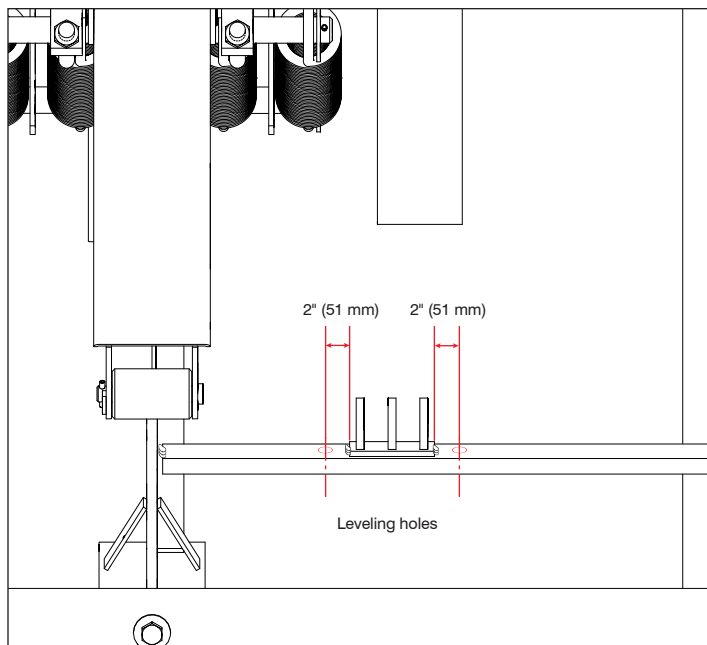
On some dock levelers, it may be necessary to install a reinforcing channel or plate (supplied by installer) to mount the base clevis bracket. Tack weld the bracket to the new reinforcing channel (A, B) and tack weld the reinforcing channel to the sides of the bottom frame (C). This is to temporarily test the full range of the dock.



STEP 6

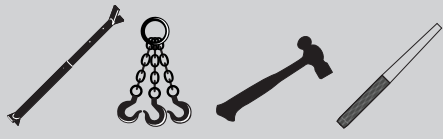


Drill two holes, one on each side of the base clevis bracket, 2" (51 mm) away from the base of the clevis. These holes will be used to level the top of the deck to finished floor height. For leveling instructions, see step 15



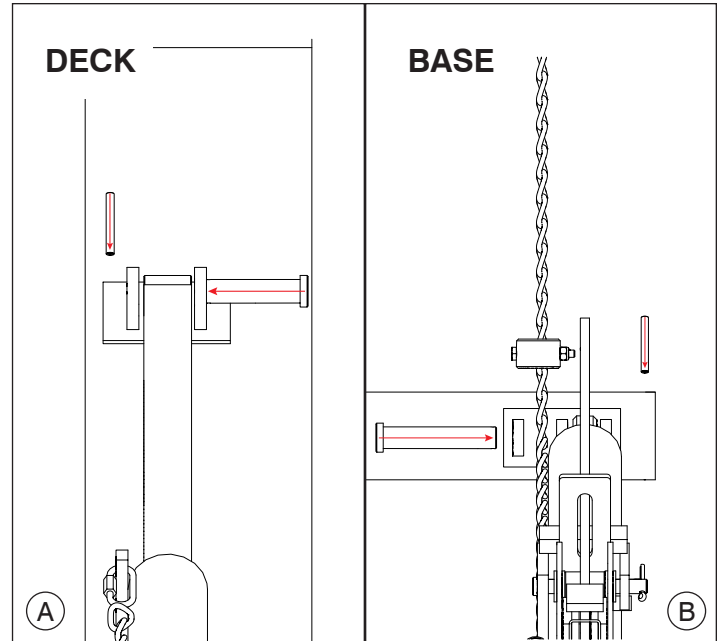
10.0 INSTALLATION CONT'D.

STEP 7

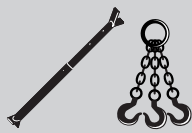


Place the ramp control assembly into the clevis brackets, ensuring that the ramp control bar is placed into the deck (A) and base (B) clevis brackets and secured with the appropriate clevis pins and supplied cotter pins.

NOTE: Pin can be inserted from either side

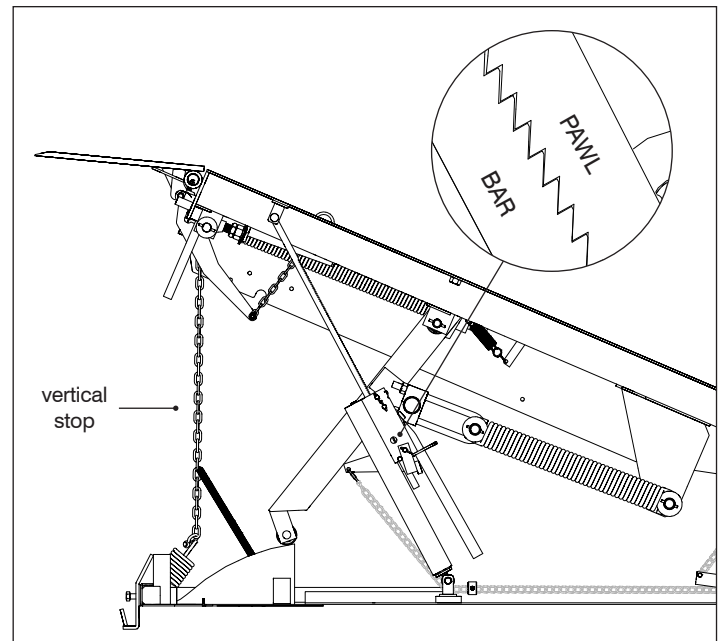


STEP 8



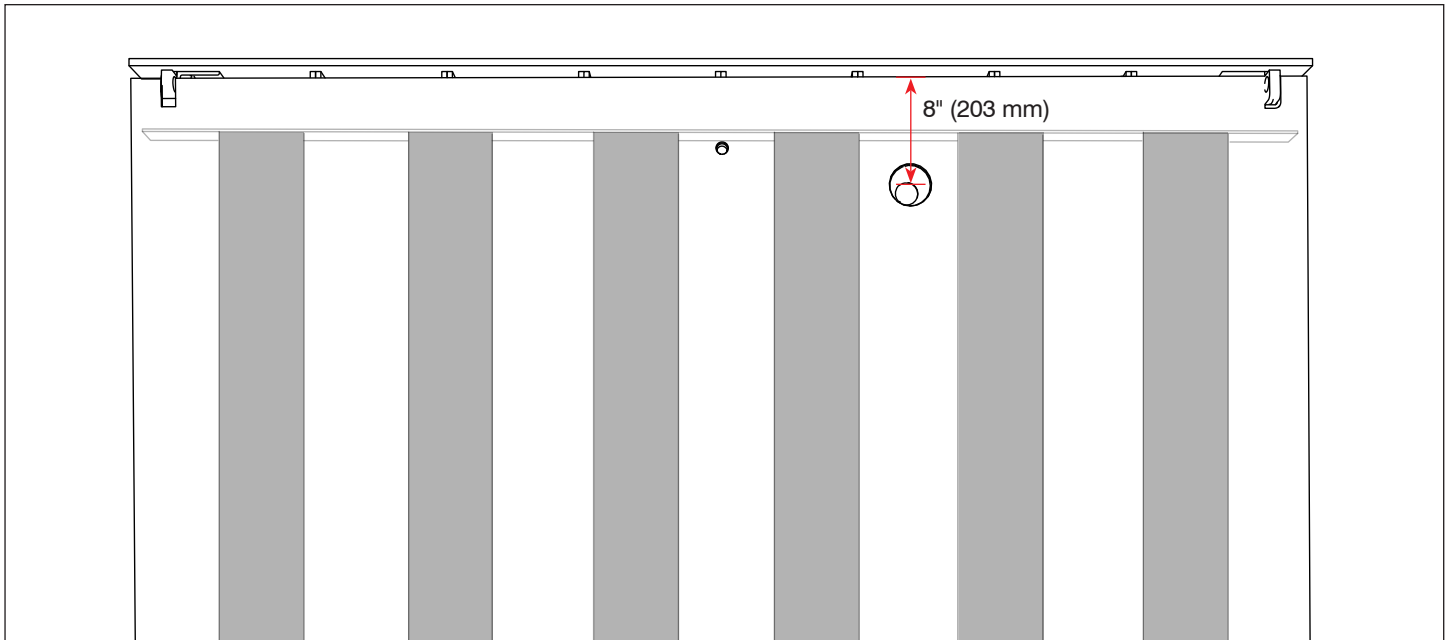
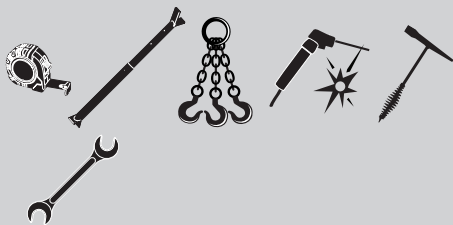
When the ramp control assembly has been installed, ensure that the ramp control bar teeth are engaged with the pawl teeth.

NOTE: A vertical stop must be used in order to prevent the deck from opening beyond the working range of the ramp control. Vertical stop shown is for Blue Giant 7' U-Series Mechanical Dock Leveler.

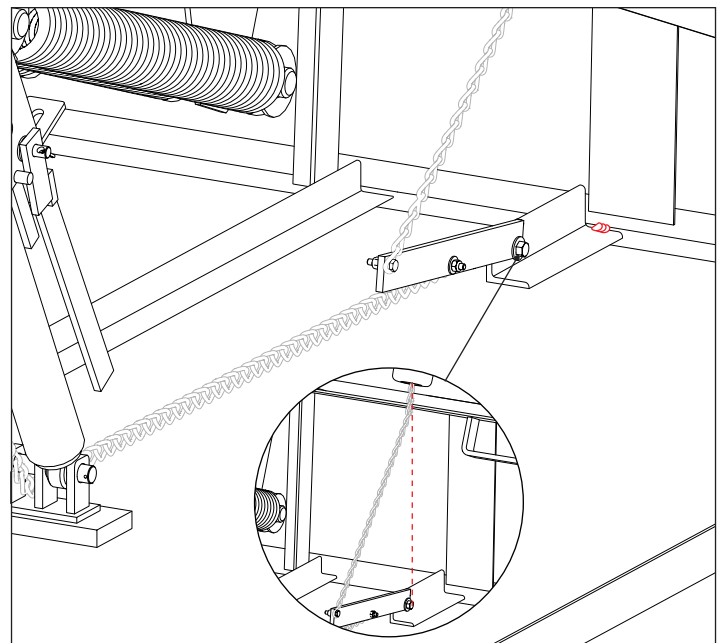


10.0 INSTALLATION CONT'D.**STEP 9**

If a new lifting chain cup is required, cut the deck plate 8" (203 mm) on center from the back edge of the deck. Ensure that the lifting chain cup is centered—or as close to centered as the dock will allow—between the beams where the ramp control assembly is being placed.

**STEP 10**

If equipped, install the easy-pull assembly, ensuring that the swing arm is bolted to the inside of the 2" x 2" x 1/4" angle iron located directly behind the ramp control assembly on the bottom frame. The easy-pull assembly must be positioned under the pull chain cup to function effectively. Tack weld to the rear frame.



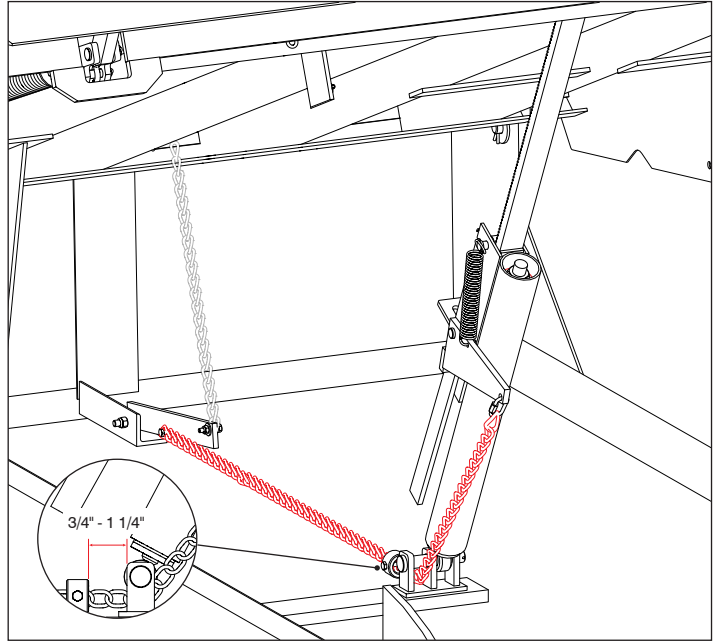
10.0 INSTALLATION CONT'D.

STEP 11



Route the ramp control release chain through the bottom left channel of the frame clevis bracket, then insert the stop block. Move the stop block and position it $3/4"$ - $1\ 1/4"$ (19 - 32 mm) away from the frame clevis bracket. Insert a bolt through the stop block and tighten with a nylon nut.

NOTE: Setting the stop block $3/4"$ away from the frame clevis bracket will activate the stop block sooner than the $1\text{-}1/4"$ setting.



STEP 12

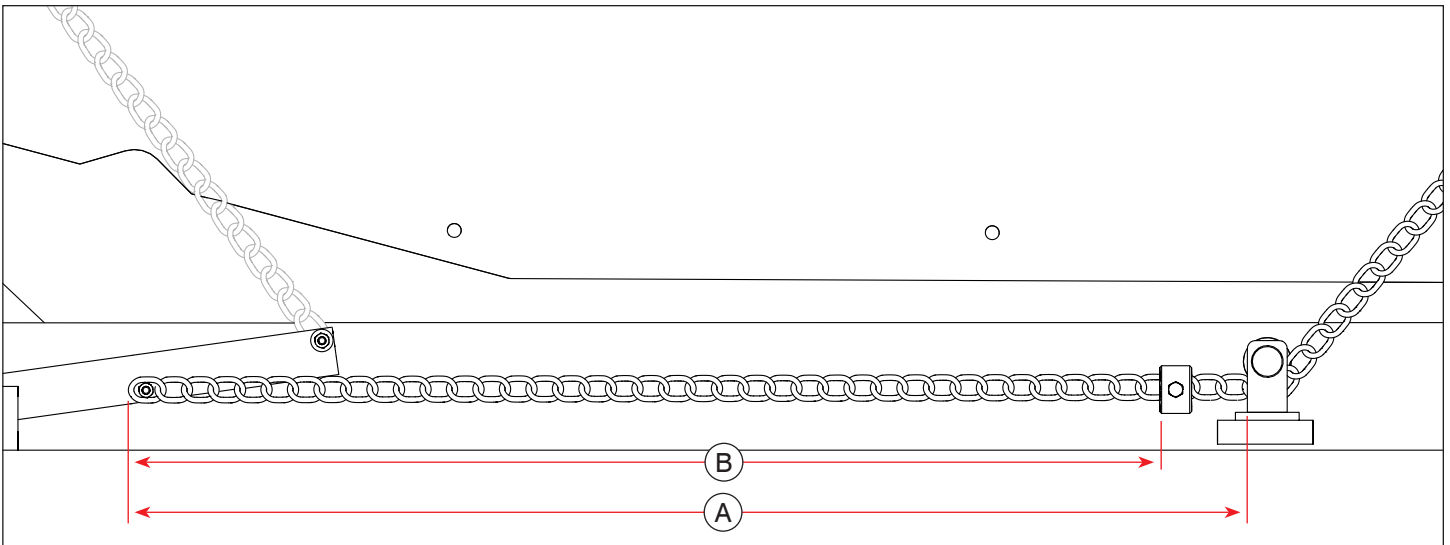


Lay the chain out toward the rear wall of the pit, removing any twists in the chain.

Measure the distance between the rear edge of the lower bracket to the middle hole of the easy-pull lever (A).

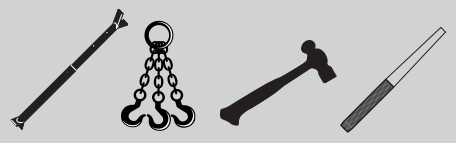
Measure from the rear of the stop block the length of (A) and insert the bolt through the chain into the middle hole of the left side of the easy-pull lever (B). Dimension B must equal Dimension A.

NOTE: Do not cut the chain.

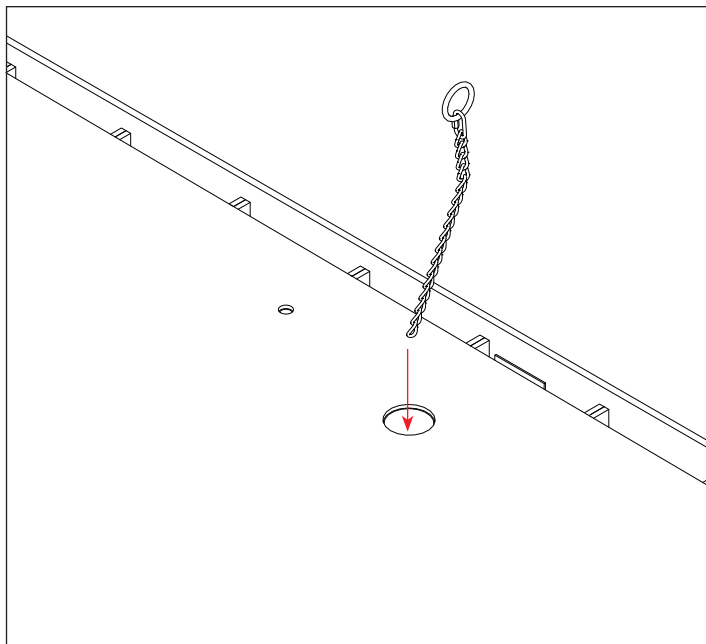


10.0 INSTALLATION CONT'D.

STEP 13



From above, insert the lifting chain into the lifting chain cup of the deck. Ensure that the supplied bolt fits through the link before placement. If it does not, open the link.

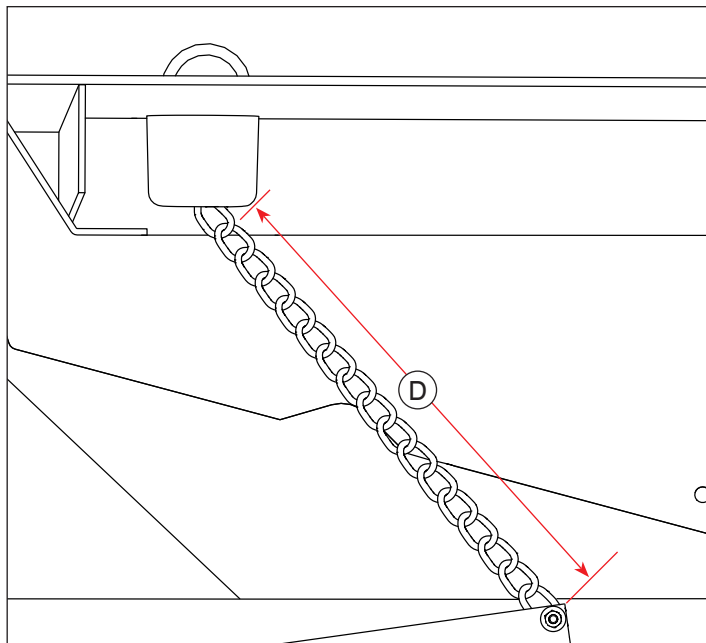


STEP 14



With the easy-pull lever laying flat, measure the distance from the bottom of the pull ring and the front hole of the easy-pull lever (D). Add an additional 2" (50 mm) to that measurement and insert a bolt between the link and right side of the front hole of the easy-pull lever.

NOTE: Do not cut the chain.



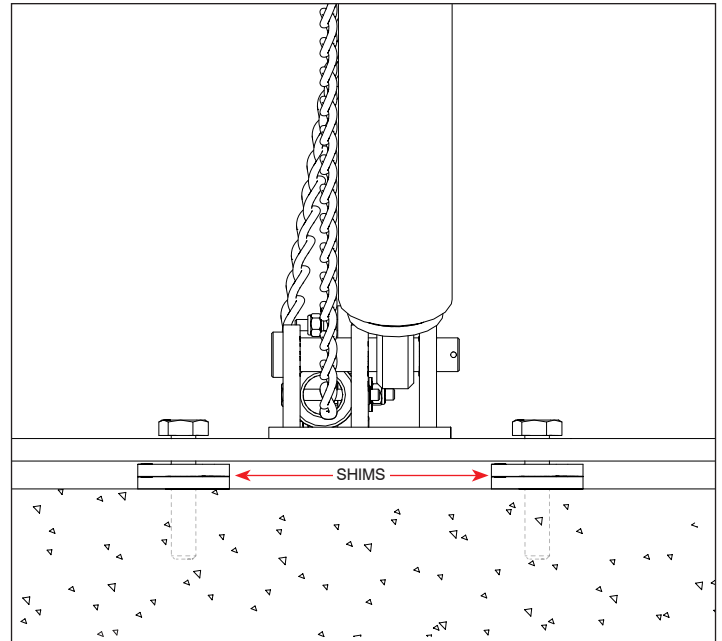
10.0 INSTALLATION CONT'D.

STEP 15



Remove safety devices and walk the deck down to the home position. Note where the deck rests in the stored position, specifically if it is flush with the finished floor. If adjustments are needed, shim as required only after testing is complete.

NOTE: Anchors supplied by others. Blue Giant recommends 6" x 5/8" be used. Site conditions will dictate usage.

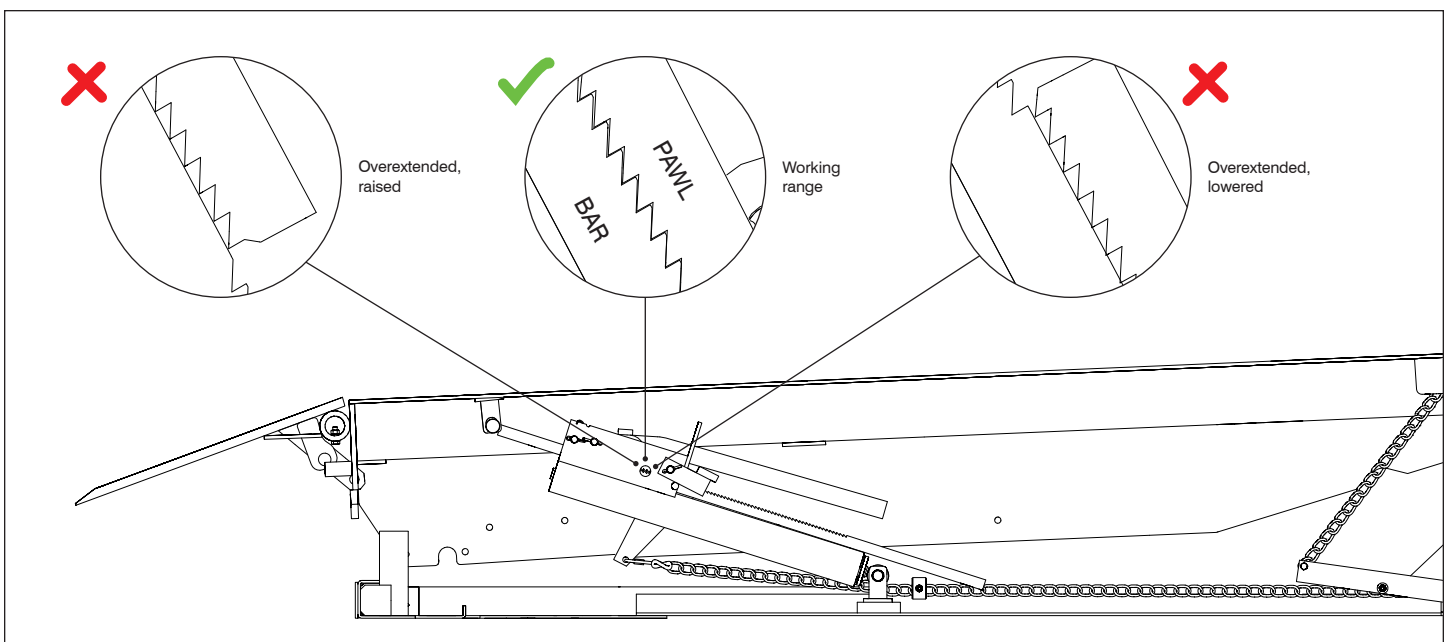


STEP 16



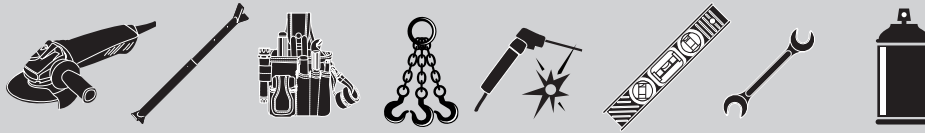
Test the operation of the ramp control, making adjustments to the chain as required. Ensure that the ramp control holds at the below level stop without any pop-ups. In the event of pop-ups, move the upper bracket closer to the headboard until the dock holds at below level stops.

NOTE: If the deck clevis bracket needs to be relocated, Step 15 must be redone.



10.0 INSTALLATION CONT'D.

STEP 17



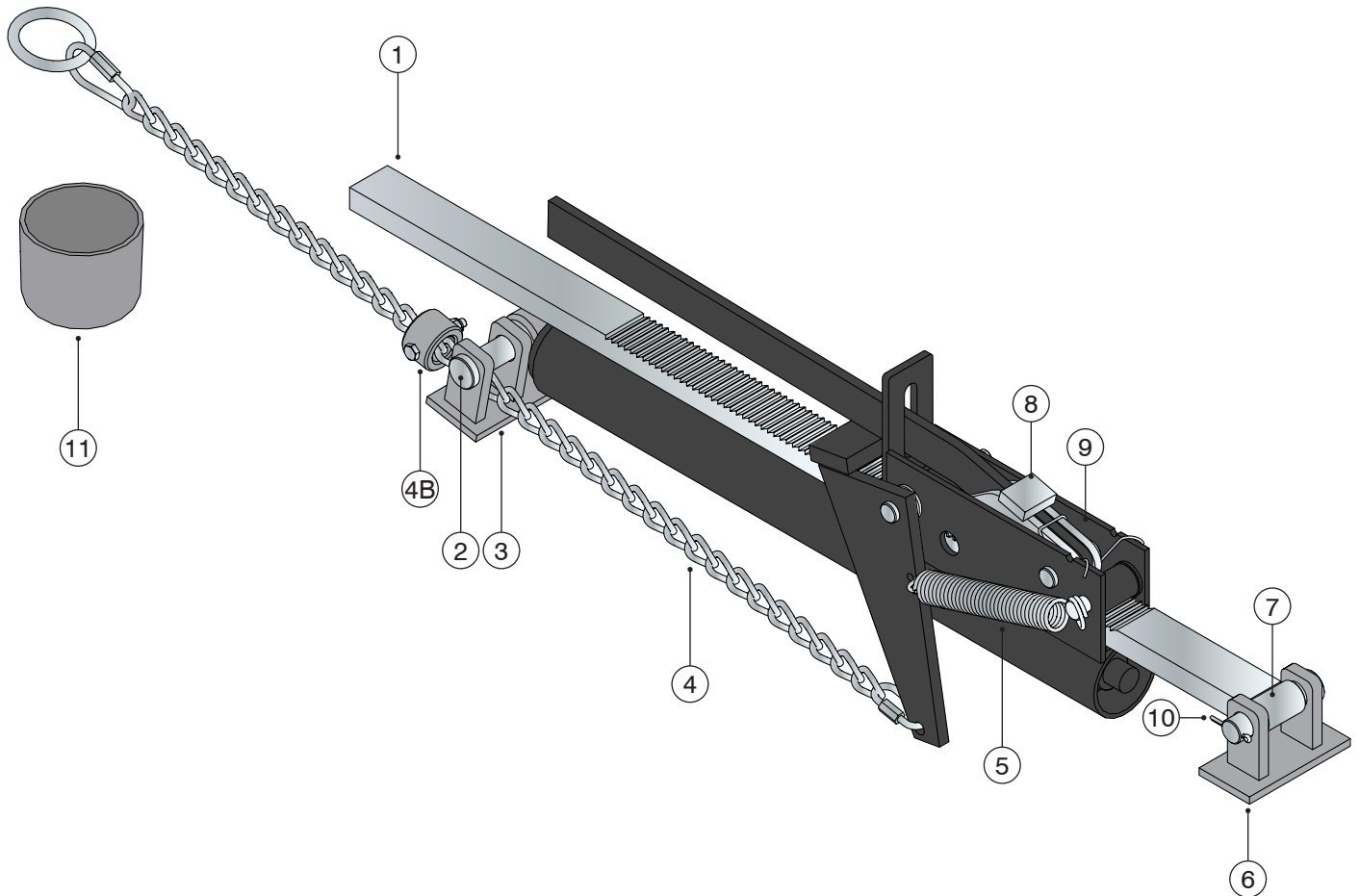
When lifting chain adjustments have been completed, make any adjustments necessary on the lower ramp control bracket to ensure that the deck sits flush with the finished floor.

When all necessary adjustments have been completed and the dock is functioning as it should, finish welding all previous tack welds.

Cut the excess chain for both the lifting chain and the ramp control release handle.

Clean, paint, and lubricate as needed.

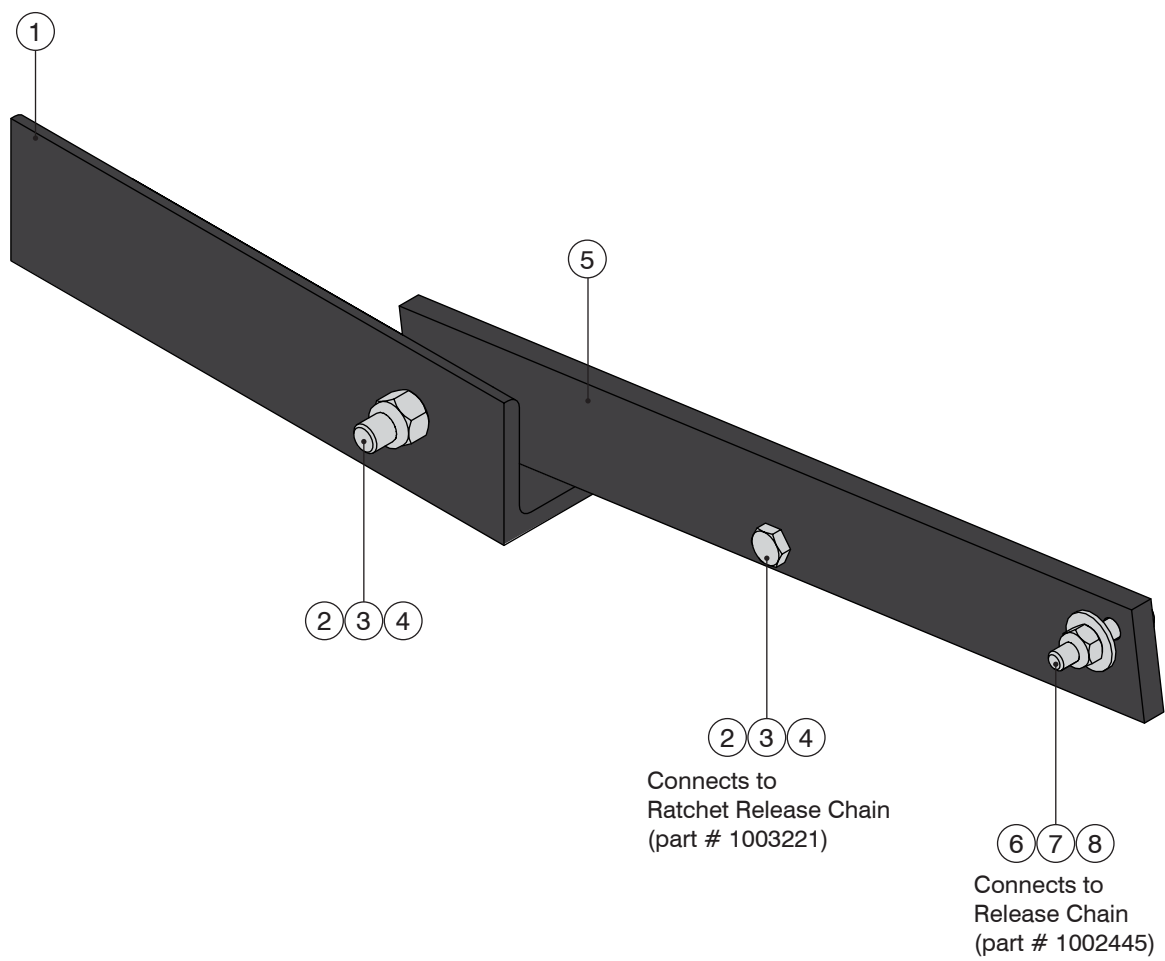
11.0 MECHANICAL HOLD-DOWN KIT ASSEMBLY



MECHANICAL HOLD-DOWN KIT ASSEMBLY - 70-003517

ITEM	PART NO.	DESCRIPTION	QTY REQ'D.
1	22-002641	Ratchet Bar	1
2	22-002092	Clevis Pin, Base 4 1/8"	1
3	22-002122	Clevis Bracket, Base	1
4	1003221	Chain Assembly, Ratchet Release	1
4B	1002299	Stop Block	1
5	70-003743	Tension Spring	1
6	22-002123	Clevis Bracket, Deck	1
7	22-002092-1	Clevis Pin, Deck 3 1/4"	1
8	22-002636	Pawl Assembly	1
9	22-002639	Spring, Retainer Pawl	1
10	013-021	Cotter Pin 1/8" dia x 2"	2
11	113-607	Lifting Chain Cup	1

12.0 EASY-PULL ASSEMBLY



EASY-PULL ASSEMBLY - 1001386			
ITEM	PART NO.	DESCRIPTION	QTY REQ'D.
1	1001388	Angle Bracket	1
2	012-210	Flat Washer 1/4	2
3	010-087	Hex Head Cap Screw 1/4-20 UNC x 1-1/4	2
4	011-545	Hex Self Lock Nut 1/4-20	2
5	1001387	Lever	1
6	010-014	Hex Head Cap Screw 3/8-16 UNC x 1-1/2	1
7	012-252	Flat Washer 3/8	2
8	011-552	Hex Self Lock Nut 3/8-16	1

NOTES



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