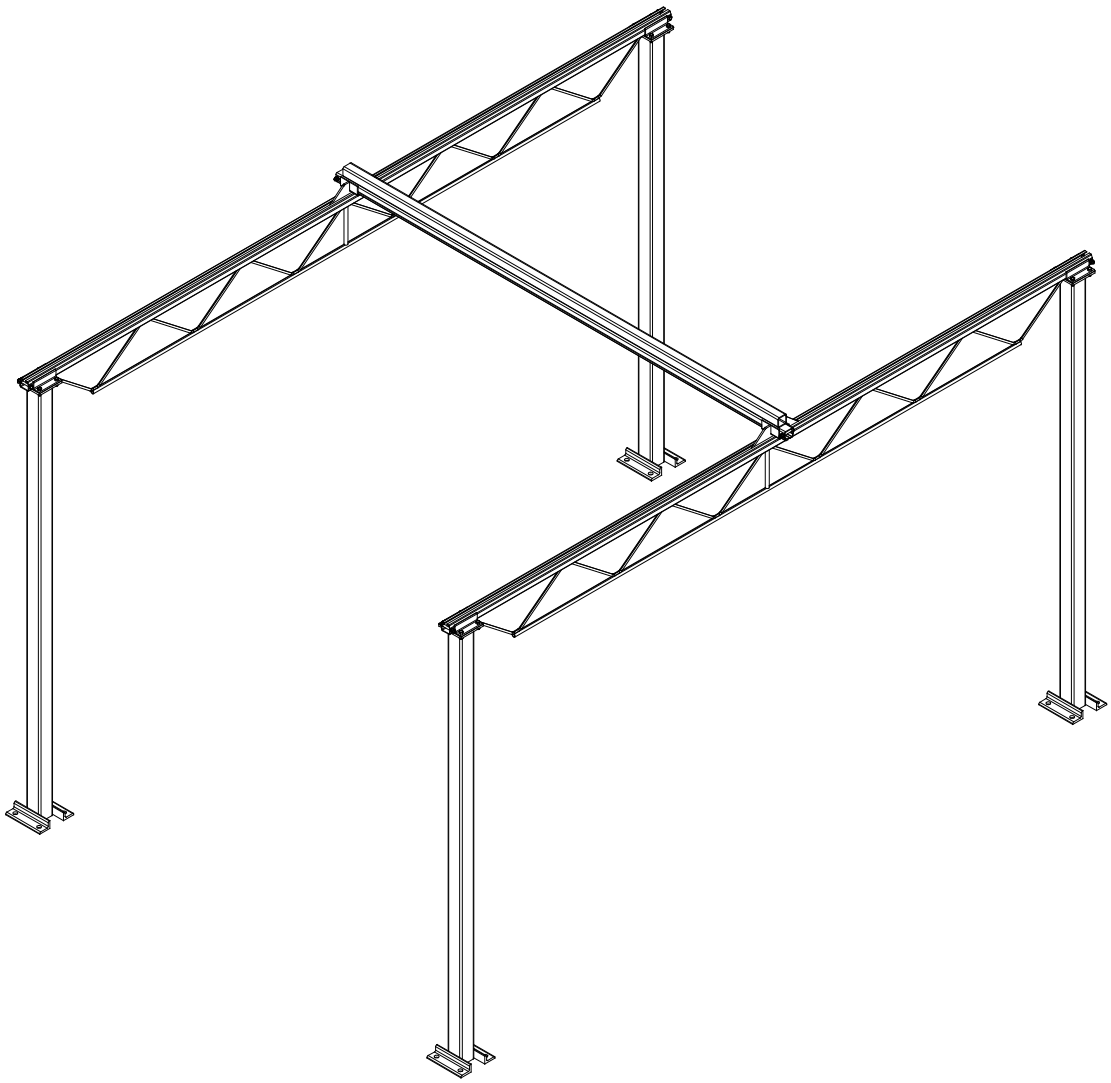
SHOP CRANE
PERFORMANCE LIFTING SYSTEM
by Gorbel



IMPORTANT!
DO NOT DESTROY

Installation, Operation, & Maintenance Manual

Shop Crane Customer Order No. _____

_____

Date _____
Month Year

TABLE OF CONTENTS

Parts List 1-2

Introduction 3

Installation

- Step 1 - Pre-assembly 3-4
- Step 2 - Column Weldment Installation 4
- Step 3 - Runway Installation 5
- Step 4 - Bridge and End Truck Installation 6-8
- Step 5 - Hoist Attachment 9
- Step 6 - Runway Tagline Installation 9-10
- Step 7 - Column Extension Installation 11

Crane Operator Instructions 12

General Safety Suggestions 12

Limited Warranty 13

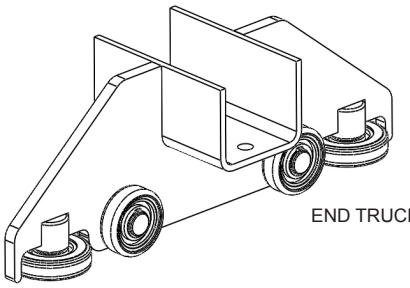
Inspection and Maintenance Schedule 14

Questions? Concerns? Comments? Please call us toll free at 855-99-CRANE (855-992-7263) (US and Canada).

PARTS LIST

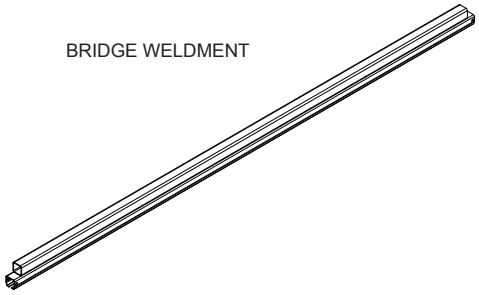
See packing list for specific quantities.

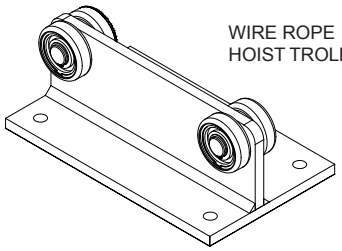
RUNWAY WELDMENT



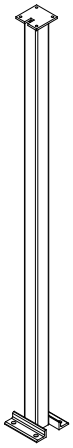
END TRUCK

BRIDGE WELDMENT

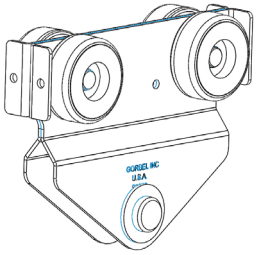




WIRE ROPE
HOIST TROLLEY

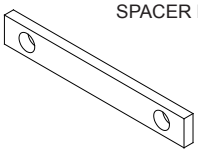


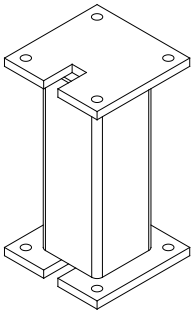
COLUMN WELDMENT



CHAIN HOIST
TROLLEY

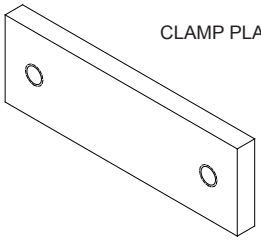
SPACER PLATE





COLUMN EXTENSION
(OPTIONAL)

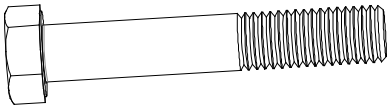
CLAMP PLATE

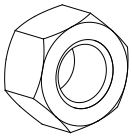


PARTS LIST

See packing list for specific quantities.

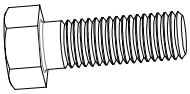
1/2-13, 3.5" LONG HEX BOLT
(END STOP BOLTS)

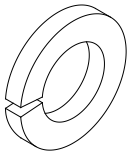




1/2-13 HEX NUT

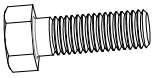
1/2-13, 1.5" LONG HEX BOLT
(RUNWAY TO COLUMN BOLTS)

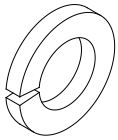




1/2" LOCKWASHER

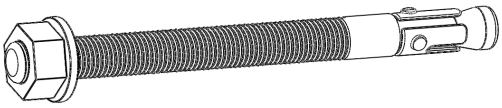
3/8-16, 1" LONG HEX BOLT
(END TRUCK ATTACHMENT BOLTS)

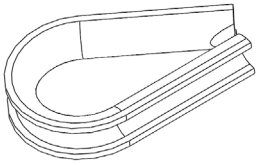




3/8" LOCKWASHER

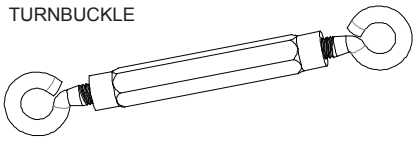
ANCHOR BOLT

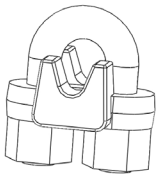




THIMBLE

TURNBUCKLE





WIRE ROPE CLAMP

INTRODUCTION

Thank you for choosing a Shop Crane by Gorbel®. The innovative design and solid construction of Shop Cranes will provide a superior quality product. Shop Crane is pre-engineered for powered hoist operation. The hoist weight allowance is 15% of the crane capacity (for example, a crane rated for 1000 pounds, allows for a 1000-pound live load plus 150 pounds for the weight of the hoist). There is also an allowance of 25% of the crane capacity for impact caused by hoist use. Shop Crane by Gorbel® will provide many years of dependable service by following the installation and maintenance procedures described herein.

Dimensions contained in this installation manual are for reference only and may differ for your particular application. Please refer to the enclosed General Arrangement Drawing for actual dimensions.

Normal safety precautions: These include, but are not limited to:

- Checking for obstructions in crane travel
- Checking that all bolts are tight and have lockwashers
- Making sure that endstops are in place
- Making sure that festooning cannot be snagged or pinched, whether it is electric or pneumatic
- For additional safety precautions, see page 12.

WARNING

A minimum of a 6”-thick reinforced concrete floor is required. Shop Crane assumes no responsibility for adequacy or integrity of the mounting surface. Support assemblies are designed to AISC (American Institute of Steel Construction) specifications. See back cover for maintenance schedule.

WARNING

Equipment described herein is not designed for, and should not be used for, lifting, supporting or transporting humans. Failure to comply with any one of the limitations noted herein can result in serious bodily injury and/or property damage.

WARNING

Crane cannot be utilized as a ground: A separate ground wire is required. For example, systems with 3-phase power require three conductors plus one ground wire.

WARNING

Reference the American Institute of Steel Construction (AISC) Manual of Steel Construction (9th edition), Part 5, Specification for Structural Joints using ASTM A325 or A490 Bolts (section 8.d.2) for the proper procedures to follow when using any torque tightening method.

INSTALLATION

STEP 1 - PRE-ASSEMBLY

TIP: Packing list can be found in plastic pocket attached to hardware box: General Arrangement Drawing can be found inserted in this installation manual.

1.1 Check packing list to make sure correct quantity of parts is included.

1.2 Tools and materials typically needed to assemble crane are as follows:

- Mallet
- Chalk line
- Hand tools
- Shop brush
- Steel shims
- Large square
- Heavy duty drill/Hammer drill
- Concrete drill bits
- Shop vacuum
- Torque wrench (able to torque up to 95 ft.-lbs.)
- Tape measure
- Ladders/man lifts
- Leveling tools (transit, laser level, water level, etc.)

STEP 1 - PRE-ASSEMBLY (CONTINUED)

1.3 Anchor bolts and concrete floor guidelines:

- Use 3/4”, grade 5 anchor bolts (included).
- Anchor bolts must be embedded at least 4” into floor, not to exceed 3/4 of floor depth (***diagram 1A***).

Note: **A minimum 6”-thick reinforced concrete floor is required. If other style anchor or floor conditions exist consult anchor manufacturer for requirements.**

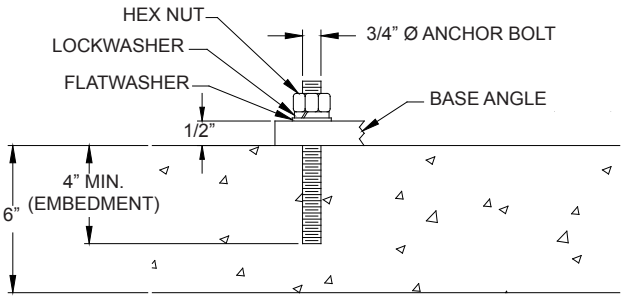


Diagram 1A. *Anchor bolt embedment. Max. anchor bolt load = 84 lbs.*

STEP 2 - COLUMN WELDMENT INSTALLATION

IMPORTANT: Be sure that column cap plate (top of column) is oriented in the proper direction as shown in ***diagram 2A***.

2.1 Lay out and mark on floor exact position of column weldments prior to proceeding with installation (refer to enclosed **General Arrangement Drawing** for recommended dimensions and column weldment location).

2.2 Position first column weldment in place. Orient column cap plate (top of column) as shown in ***diagram 2A***.

2.3 While supporting column weldment, drill holes in concrete floor using pre-drilled holes in column weldment base angles as a guide (use 3/4” drill bit). Vacuum or brush away cement dust.

2.4 Install anchor bolts and hardware according to ***diagram 1A***. Do not fully torque nuts at this point.

2.5 Check to see if column weldment is plumb. If column weldment is not plumb, place steel shims (not included) or grout (not included) under base of column weldment until plumb. After column weldment is plumb, tighten all nuts to recommended torque of 70 ft/lb.

2.6 Install remaining column weldments (repeat Steps 2.2 through 2.5). Add grout under base.

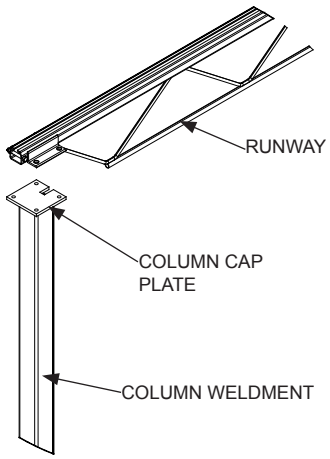


Diagram 2A. *Orienting column cap plate.*

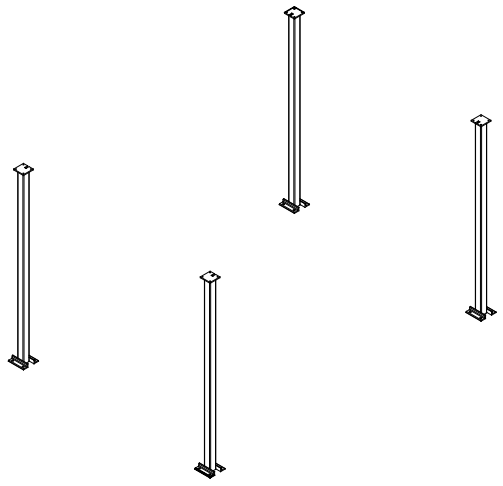


Diagram 2B.

STEP 3 - RUNWAY INSTALLATION

3.1 Set the runways on top of the columns. Attach runways to columns using four (4) 1/2-13, 1.5” long bolts, hex nuts and lockwashers per column.

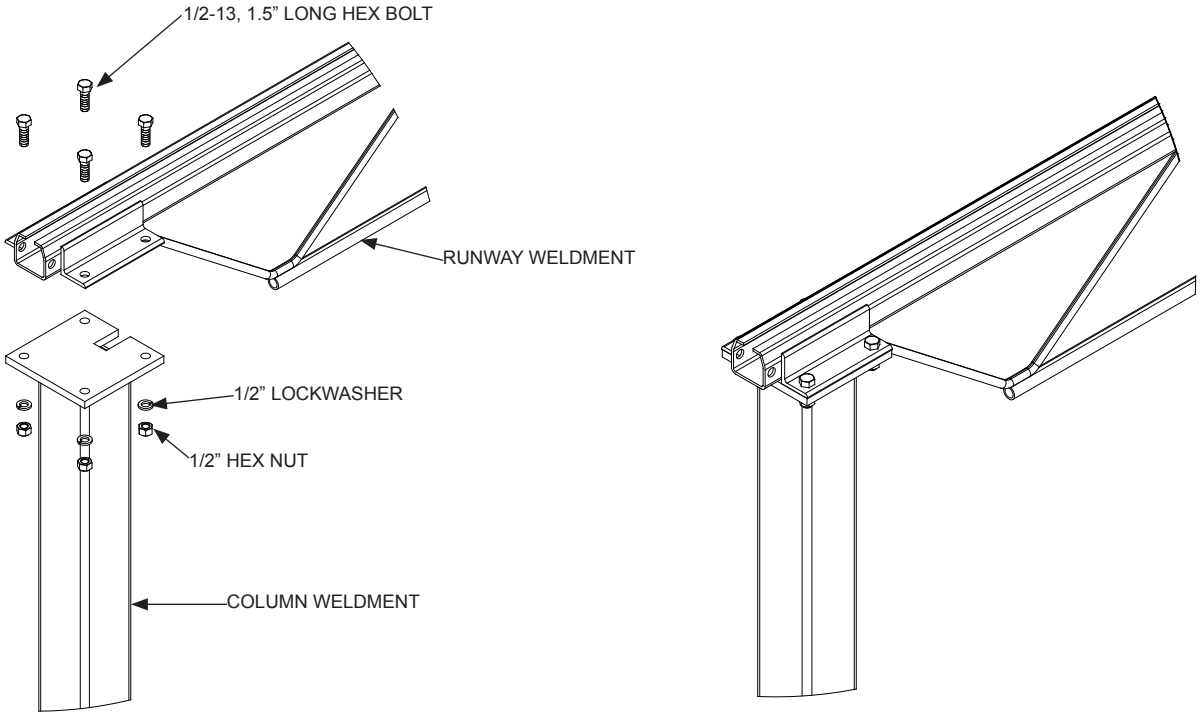


Diagram 3A. *Attaching runway to column weldment.*

3.2 Level runways and make sure that they are parallel within +/- 1/16”. Use shims under whole bracket if necessary.

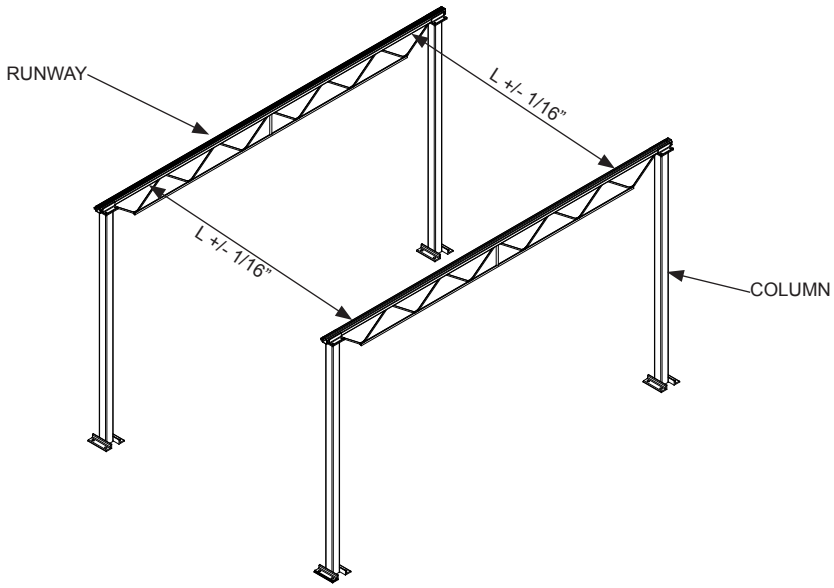


Diagram 3B.

STEP 4 - BRIDGE AND END TRUCK INSTALLATION

4.1 Slide both end trucks into the runways (***diagram 4A***).

TIP: Clean interior of tracks prior to end truck installation using dry vac or compressed air.

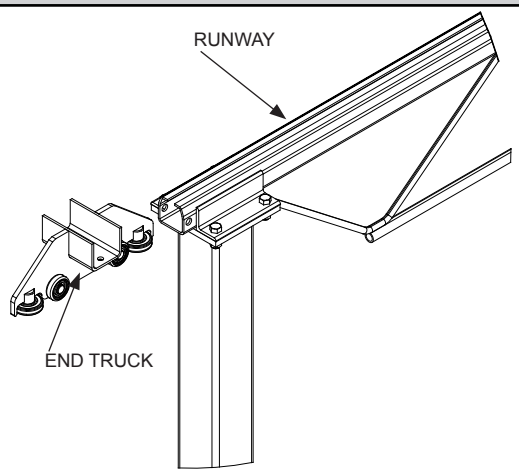


Diagram 4A. *Installing end truck on runway.*

4.2 Install end stops into the runways (***diagram 4B***).

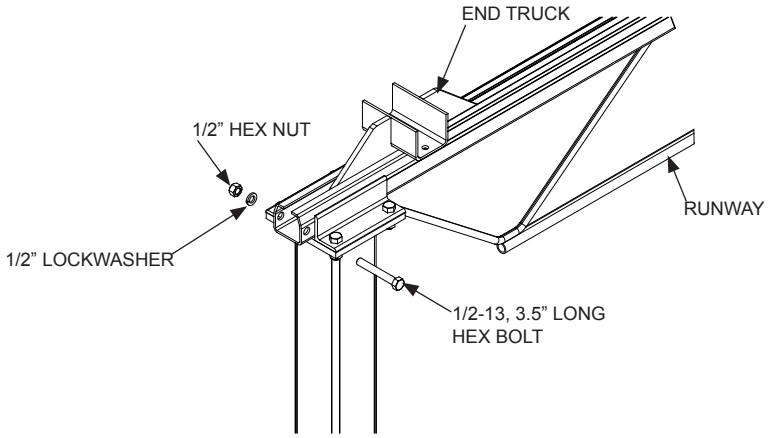


Diagram 4B. *Installing end stops on runway.*

4.3 Slide hoist trolley into the bridge first.

TIP: Clean interior of bridge track prior to trolley installation.

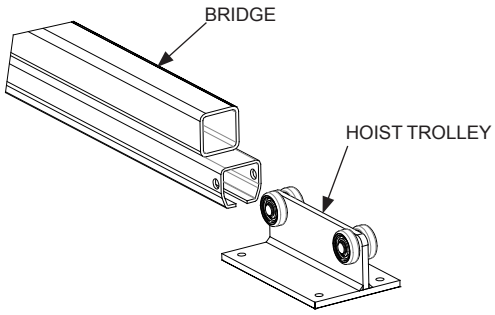


Diagram 4C. *Installing hoist trolley on bridge.*

STEP 4 - BRIDGE AND END TRUCK INSTALLATION (CONTINUED)

4.4 Install end stops into both ends of the bridge using 1/2-13, 3.5” long hex bolts, 1/2” hex nut and the 1/2” lockwasher.

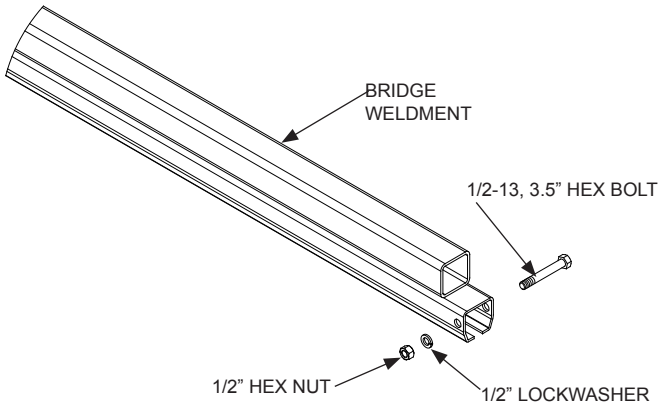


Diagram 4D. *Installing end stops on bridge.*

4.5 Place bridge weldment into U-bracket of each end truck.

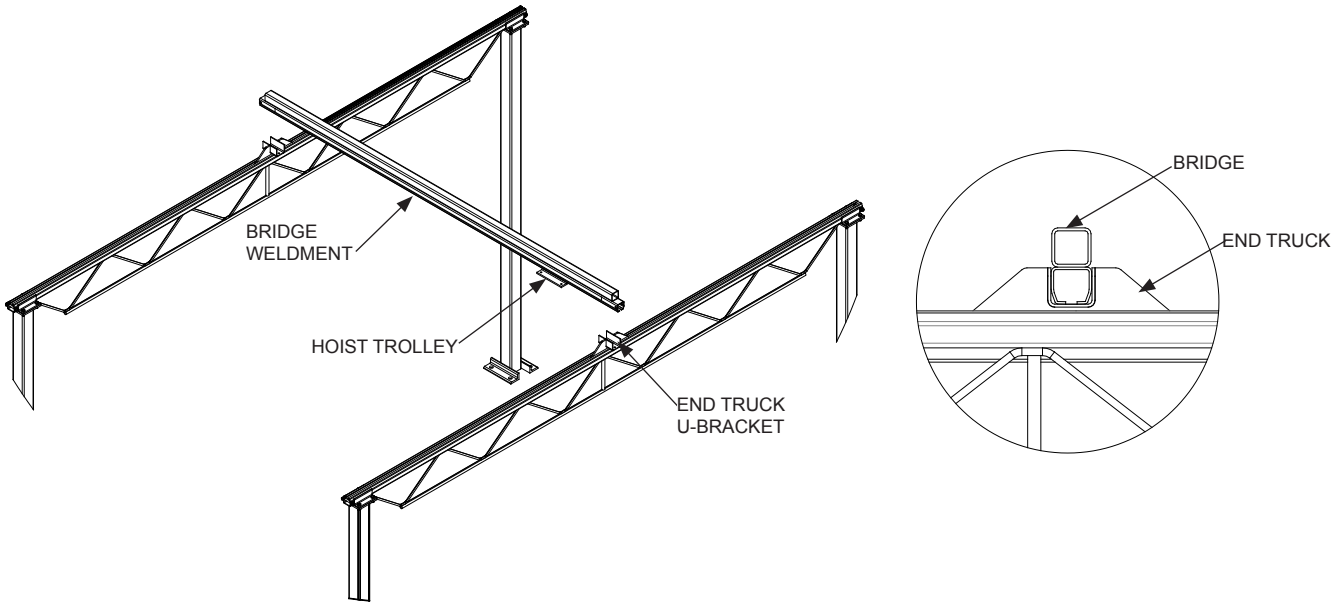


Diagram 4E. *Placing bridge weldment into end truck.*

STEP 4 - BRIDGE AND END TRUCK INSTALLATION (CONTINUED)

4.6 Attach bridge weldment to the end trucks using clamp plate and spacer plate at one end. Make sure that the end truck at this end slides freely along the bridge. **Center the bridge between end trucks and clamp opposite end truck to the bridge using the clamp plate without a spacer plate.** Tighten two (2) 3/8-16, 1" long hex bolts until lockwasher is flattened.

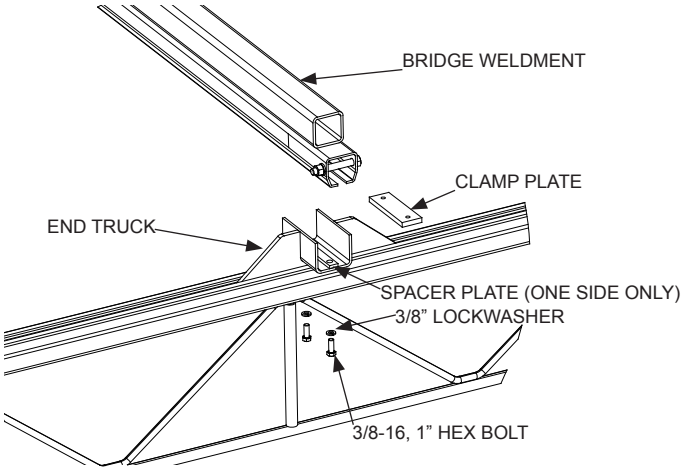


Diagram 4F. *Clamping end trucks to bridge weldment.*

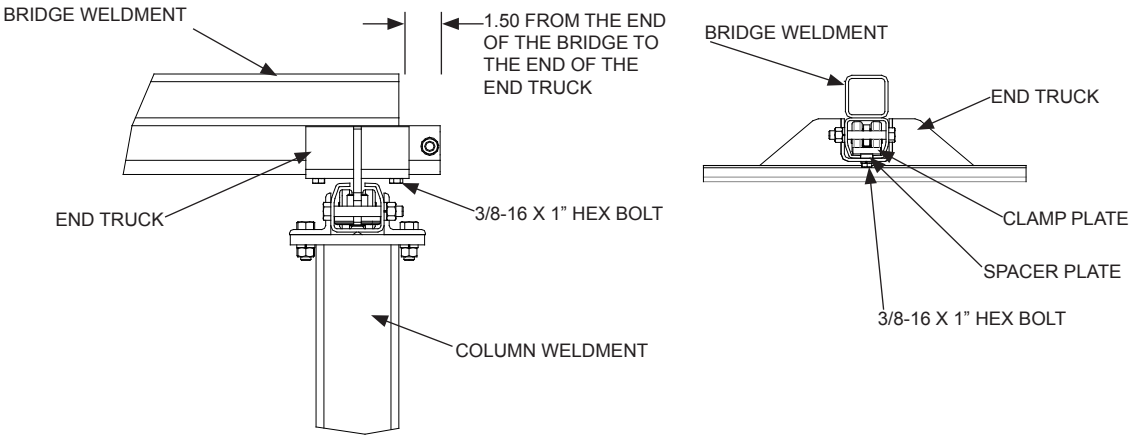


Diagram 4G.

4.7 Roll bridge down the length of the runways to check for smooth travel. If travel is not smooth, check each runway track to ensure that it is properly leveled, and that the runways are parallel. **Also, check to make sure that only one end truck is clamped to the bridge.** Level bridge. Adjust at column connections if needed.

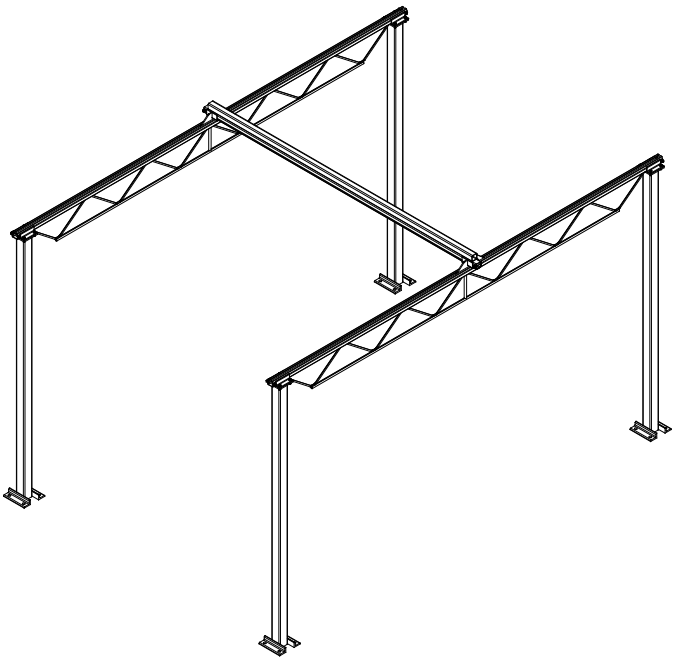


Diagram 4H. *Completed crane installation.*

STEP 5 - HOIST ATTACHMENT

5.1 Wire rope hoist attachment (***diagram 5A***)
Attach wire rope hoist to hoist trolley using four 10mm hex bolts and 10mm lock washers included with wire rope hoist. Terminate power as required.

5.2 Standard hoist trolley attachment (***diagram 5B***)
Attach hoist to hoist trolley by snapping hoist suspension hook over the trolley saddle clevis pin of hoist trolley.

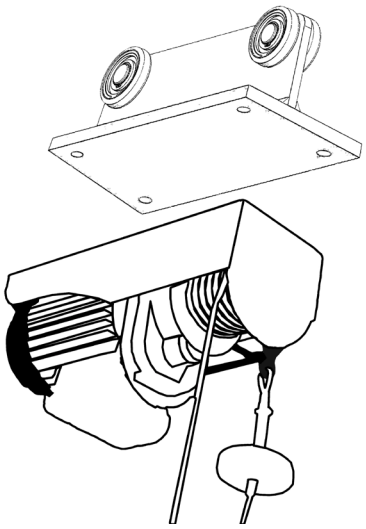


Diagram 5A. *Wire rope hoist attachment.*

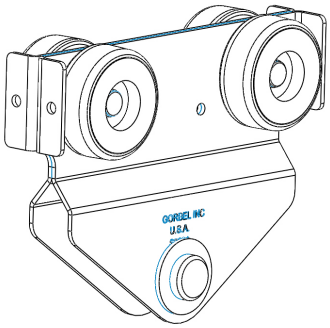


Diagram 5B. *Standard hoist trolley.*

STEP 6 - RUNWAY TAGLINE INSTALLATION

6.1 Loop cable through turnbuckle and turn back of cable on a thimble. Apply clamp as close to thimble as possible. Tighten u-bolt to 10 ft.-lbs. of torque.

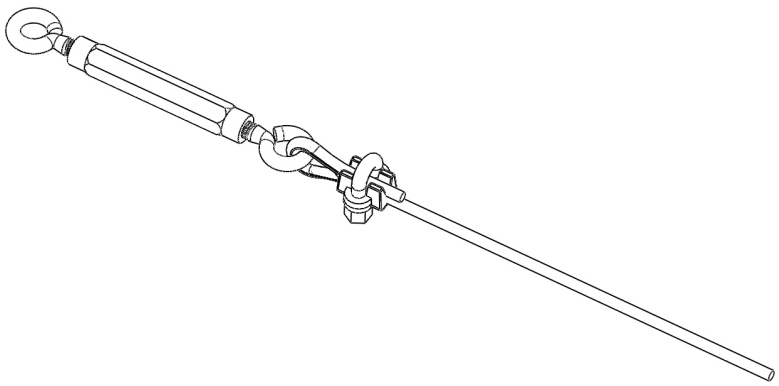


Diagram 6A. *Attaching turnbuckle and thimble to left end of cable.*

STEP 6 - RUNWAY TAGLINE INSTALLATION (CONTINUED)

6.2 Loop other end of cable around a thimble. Apply clamp as close to thimble as possible. Adjust cable as shown in ***diagram 6B***. Tighten u-bolt to 10 ft.-lbs. of torque.

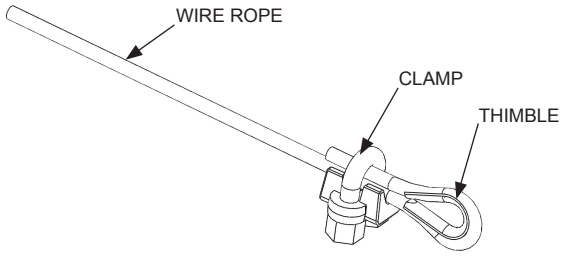


Diagram 6B. *Attaching thimble to right end of cable.*

Diagram 6C.

6.3 Attach tagline assembly using 1/2-13, 3” long hex bolt as shown in ***diagram 6D***.

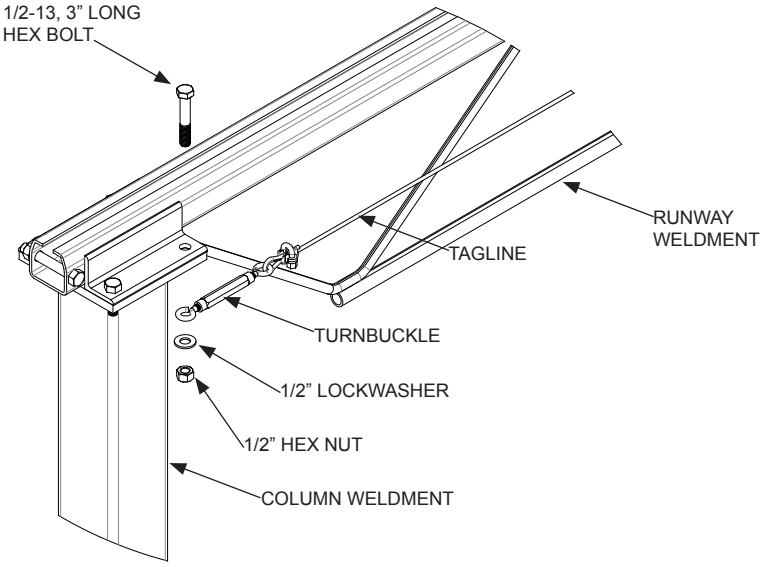


Diagram 6D. *Installing tagline on runway.*

6.4 Adjust cable tension using turnbuckle. Do not overtighten. Place S-hooks over tagline.

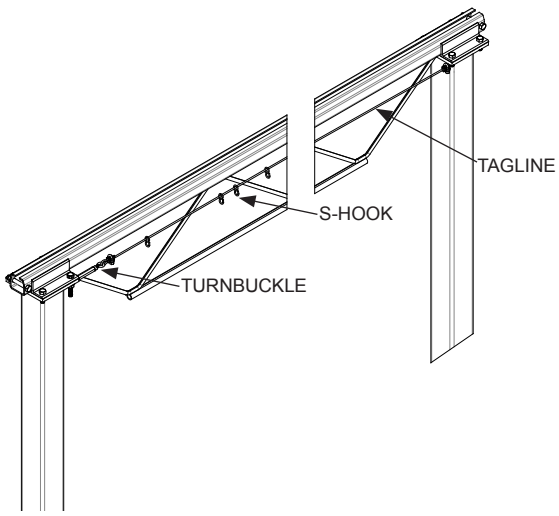


Diagram 6E. *Attaching tagline assembly.*

STEP 7 - COLUMN EXTENSION INSTALLATION

7.1 Place column extension weldment on top of column weldment. Make sure that slots in base plate are aligned. Use (4) 1/2-13, 2” long hex bolts, hex nuts and lockwashers per column.

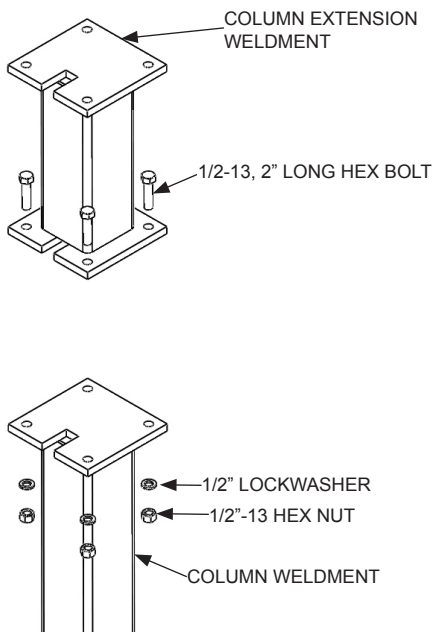


Diagram 7A. *Attaching column extension to column weldment.*

7.2 Tighten hex nuts until lockwashers are flattened.

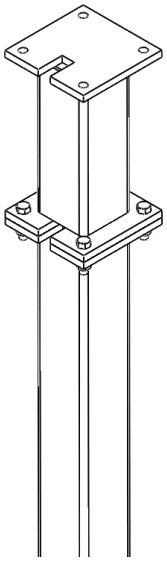


Diagram 7B. *Assembled column extension.*

CRANE OPERATOR INSTRUCTIONS

Overhead cranes generally handle materials over working areas where there are personnel. Therefore, it is important for the Crane Operator to be instructed in the use of the crane and to understand the severe consequences of careless operation. It is not intended that these suggestions take precedence over local codes. However, a thorough study of the following information should provide a better understanding of safe operation and afford a greater margin of safety. It must be recognized that these are suggestions for the Crane Operator's use. It is the responsibility of the owner to make operators aware of all federal, state and local rules and codes, and to make certain operators are properly trained.

Qualifications

Crane operation, to be safe and efficient, requires skill: the exercise of extreme care and good judgment, alertness and concentration, and rigid adherence to proven safety rules and practices. In general practice, no person should be permitted to operate a crane:

- Who cannot speak the appropriate language or read and understand the printed instructions.
- Who is not of legal age to operate this type of equipment.
- Whose hearing or eyesight is impaired (unless suitably corrected with good depth perception).
- Who may be suffering from heart or other ailments which might interfere with the operator's safe performance.
- Who is under the influence or impaired by alcohol, legal, or illegal drugs.
- Unless the operator has carefully read and studied this operation manual.
- Unless the operator has been properly instructed.
- Unless the operator has demonstrated his instructions through practical operation.
- Unless the operator is familiar with hitching equipment and safe hitching equipment practices.

Handling the Bridge Travel Motion

Before using the bridge of the crane, the operator should be sure the hook is high enough to clear any obstructions. Before a load is handled by the crane, the bridge should be brought into position so that it is directly over the load. Start the bridge slowly and bring it up to speed gradually. Approaching the place where it is desired to stop the bridge, reduce the bridge speed.

Handling the Trolley Motion

Before a load is handled, the hoist shall be positioned directly over the load that is to be handled. When the slack is taken out of the slings, if the hoist is not directly over the load, bring it directly over the load before hoisting is continued. Failure to center the hoist over the load may cause the load to swing upon lifting. Always start the trolley motion slowly and reduce the trolley speed gradually.

Handling the Hoist Motion

Refer to the lifting (hoist) equipment's operating instructions.

GENERAL SUGGESTIONS

Know Your Crane

Crane operators should be familiar with the principal parts of a crane and have a thorough knowledge of crane control functions and movements. The crane operator should be required to know the location and proper operation of the main conductor disconnecting means for all power to the attachments on the crane.

Responsibility

Each crane operator should be held directly responsible for the safe operation of the crane. Whenever there is any doubt as to SAFETY, the crane operator should stop the crane and refuse to handle loads until: (1) safety has been assured or (2) the operator has been ordered to proceed by the supervisor, who then assumes all responsibility for the SAFETY of the lift.

Do not permit **ANYONE** to ride on the hook or a load.

Inspection

Test the crane movement and any attachments on the crane at the beginning of each use. Whenever the operator finds anything wrong or apparently wrong, the appropriate corrective action should be taken.

Operating Suggestions

One measure of a good crane operator is the smoothness of the crane operation. The good crane operator should know and follow these proven suggestions for safe, efficient crane handling.

1. The crane should be moved smoothly and gradually to avoid abrupt, jerky movements of the load. Slack must be removed from the sling and hoisting ropes before the load is lifted.
2. Center the crane over the load before starting the hoist to avoid swinging the load as the lift is started. Loads should not be swung by the crane to reach areas not under the crane.
3. Crane-hoisting ropes should be kept vertical. Cranes shall not be used for side pulls.
4. Be sure everyone in the immediate area is clear of the load and aware that a load is being moved.
5. Do not make lifts beyond the rated load capacity of the crane, sling chains, rope slings, etc.
6. Make certain that before moving the load, load slings, load chains, or other lifting devices are fully seated in the saddle of the hook with hook latch closed (if equipped with hook latch).
7. Check to be sure that the load and/or bottom block is lifted high enough to clear all obstructions when moving boom or trolley.
8. At no time should a load be left suspended from the crane unless the operator has the push button with the power on, and under this condition keep the load as close as possible to the floor to minimize the possibility of an injury if the load should drop. When the crane is holding a load, the crane operator should remain at the push button.
9. Do not lift loads with sling hooks hanging loose. If all sling hooks are not needed, they should be properly stored, or use a different sling.
10. All slings or cables should be removed from the crane hooks when not in use (dangling cables or hooks hung in sling rings can inadvertently snag other objects when the crane is moving).
11. Operators shall not carry loads and/or empty bottom blocks over personnel. Particular additional caution should be practiced when using magnet or vacuum devices. Loads, or parts of loads, held magnetically could drop. Failure of power to magnets or vacuum devices can result in dropping the load. Extra precaution should be exercised when handling molten metal in the proximity of personnel.
12. Whenever the operator leaves the crane the following procedure should be followed:
    - Raise all hooks to an intermediate position.
    - Spot the crane at an approved designated location.
    - Place all controls in the "off" position.
    - Open the main switch to the "off" position.
    - Make visual check before leaving the crane.
13. In case of emergency or during inspection, repairing, cleaning or lubrication, a warning sign or signal should be displayed and the main switch should be locked in the "off" position. This should be done whether the work is being done by the crane operator or by others.
14. Contact with trolley end stops shall be made with extreme caution. The operator should do so with particular care for the safety of the persons below the crane, and only after making certain that any persons on the other cranes are aware of what is being done.
15. ANY SAFETY FEATURES AND MECHANISMS BUILT-IN OR OTHERWISE PROVIDED WITH THE CRANE BY THE COMPANY ARE REQUIRED FOR THE SAFE OPERATION OF THE CRANE. DO NOT, UNDER ANY CIRCUMSTANCES, REMOVE OR OTHERWISE IMPAIR OR DISABLE THE PROPER FUNCTIONING OF ANY CRANE SAFETY MECHANISMS OR FEATURES BUILT-IN OR OTHERWISE PROVIDED BY THE COMPANY FOR SAFE OPERATION OF THE CRANE. ANY REMOVAL, IMPAIRMENT OR DISABLING OF ANY SUCH SAFETY MECHANISMS OR FEATURES OR OTHER USE OR OPERATION OF THE CRANE WITHOUT THE COMPLETE AND PROPER FUNCTIONING OF ANY SUCH SAFETY MECHANISMS OR FEATURES AUTOMATICALLY AND IMMEDIATELY VOIDS ANY AND ALL EXPRESS AND IMPLIED WARRANTIES OF ANY KIND OR NATURE.

LIMITED WARRANTY

It is agreed that the equipment purchased hereunder is subject to the following LIMITED warranty and no other. The Company, warrants the manual push-pull Shop Crane by Gorbel products to be free from defects in material or workmanship for a period of two years or 1,000 hours use from date of shipment.This warranty shall not cover failure or defective operation caused by operation in excess of recommended capacities, misuses, negligence or accident, and alteration or repair not authorized by The Company. No system shall be modified after manufacture without the written authorization of The Company. Any field modification made to the system without the written authorization of The Company shall void The Company's warranty obligation. OTHER THAN AS SET FORTH HEREIN, NO OTHER EXPRESS WARRANTIES, AND NO IMPLIED WARRANTIES, ORAL OR WRITTEN, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE BY THE COMPANY WITH RESPECT TO ITS PRODUCTS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED. THE COMPANY SHALL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR ANY INCIDENTAL, SPECIAL AND/OR CONSEQUENTIAL DAMAGES WHATSOEVER, WHETHER OR NOT FORESEEABLE, INCLUDING BUT NOT LIMITED TO DAMAGES FOR LOST PROFITS AND ALL SUCH INCIDENTAL, SPECIAL AND/OR CONSEQUENTIAL DAMAGES ARE HEREBY ALSO SPECIFICALLY DISCLAIMED. The Company's obligation and Purchaser's or end user's sole remedy under this warranty is limited to the replacement or repair of The Company's products at the factory, or at the discretion of The Company, at a location designated by The Company. Purchaser or end user shall be solely responsible for all freight and transportation costs incurred in connection with any warranty work provided by The Company hereunder. The Company will not be liable for any loss, injury or damage to persons or property, nor for damages of any kind resulting from failure or defective operation of any materials or equipment furnished hereunder. Components and accessories not manufactured by The Company are not included in this warranty. Purchaser's or end user's remedy for components and accessories not manufactured by The Company is limited to and determined by the terms and conditions of the warranty provided by the respective manufacturers of such components and accessories.

A) DISCLAIMER OF IMPLIED WARRANTY OF MERCHANTABILITY

The Company and Purchaser agree that the implied warranty of merchantability is excluded from this transaction and shall not apply to the goods involved in this transaction.

B) DISCLAIMER OF IMPLIED WARRANTY OF FITNESS FOR PARTICULAR PURPOSE

The Company and Purchaser agree that the implied warranty of fitness for particular purpose is excluded from this transaction and shall not apply to the goods involved in this transaction.

C) DISCLAIMER OF EXPRESS WARRANTY

The Company's agents, or dealer's agents, or distributor's agents may have made oral statements about the machinery and equipment described in this transaction. Such statements do not constitute warranties, and Purchaser agrees not to rely on such statements. Purchaser also agrees that such statements are not part of this transaction.

D) DISCLAIMER OF SPECIAL, INCIDENTAL AND CONSEQUENTIAL DAMAGES

The Company and Purchaser agree that any claim made by Purchaser which is inconsistent with The Company's obligations and the warranty remedies provided with The Company's products, and in particular, special, incidental and consequential damages, are expressly excluded.

E) DEALER OR DISTRIBUTOR NOT AN AGENT

The Company and Purchaser agree that Purchaser has been put on notice that dealer or distributor is not The Company's agent in any respect for any reason. The Company and Purchaser also agree that Purchaser has been put on notice that dealer or distributor is not authorized to incur any obligations or to make any representations or warranties on The Company's behalf other than those specifically set forth in The Company's warranty provided in connection with its product.

F) MERGER

This warranty agreement constitutes a final and complete written expression of all the terms and conditions of this warranty and is a complete and exclusive statement of those terms.

G) PAINTING

Every crane (excluding components) receives a quality paint job before leaving the factory.

Title and Ownership:

Title to the machinery and equipment described in the foregoing proposal shall remain with The Company and shall not pass to the Purchaser until the full amount herein agreed to be paid has been fully paid in cash.

Claims and Damages:

Unless expressly stated in writing, goods and equipment shall be at Purchaser's risk on and after Seller's delivery in good shipping order to the Carrier. Any modifications or alterations to equipment and equipment not provided by The Company are the responsibility of the owner.

Cancellations:

If it becomes necessary for the purchaser to cancel this order wholly or in part, he shall at once so advise The Company in writing. Upon receipt of such written notice all work will stop immediately. If the order entails only stock items, a flat restocking charge of 15% of the purchase price will become due and payable by Purchaser to The Company.

Returns:

No equipment, materials or parts may be returned to The Company without express permission in writing to do so. Returns are subject to a restocking fee. Once installed, products may not be returned. Products must be in their original packaging (skidded and banded). Customer is responsible for return freight.

Changes and Alterations:

The Company reserves the right to make changes in the details of construction of the equipment, as in its judgment, will be in the interest of the Purchaser; will make any changes in or additions to the equipment which may be agreed upon in writing by the Purchaser; and The Company is not obligated to make such changes in products previously sold any customer.

Third Party Action:

Should The Company have to resort to third party action to collect any amount due after thirty (30) days from date of invoice, the Purchaser agrees to pay collection costs, reasonable attorney's fees, court costs and legal interest.

Owner Responsibilities:

Owner takes responsibilities for all applicable building, safety and other regulatory codes in their area.

Equal Employment Opportunity:

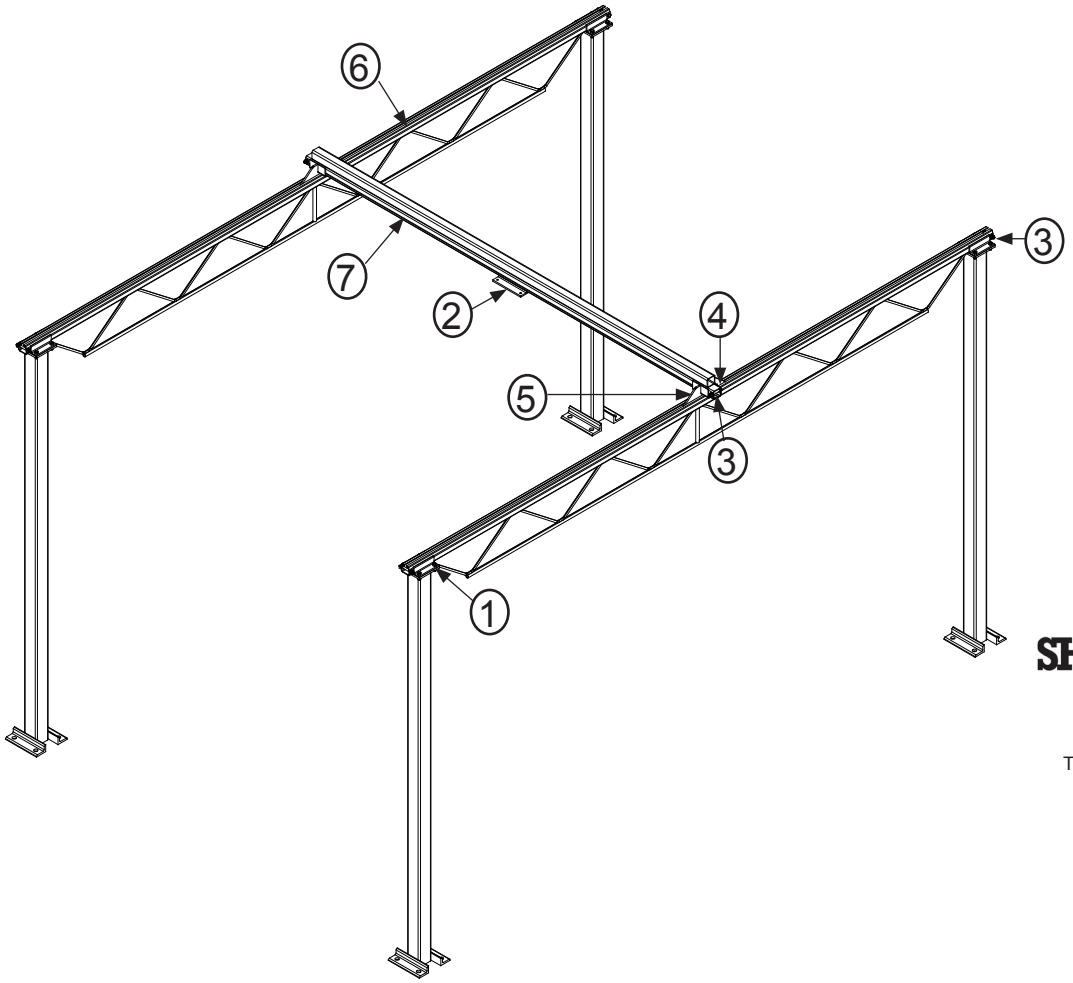
The Company agrees to take affirmative action to ensure equal employment opportunity for all job applicants and employees without regard to race, color, age, religion, sex, national origin, handicap, veteran, or marital status. The Company agrees to maintain non-segregated work facilities and comply to rules and regulations of the Secretary of Labor or as otherwise provided by law or Executive Order.

INSPECTION AND MAINTENANCE SCHEDULE

GORBEL® SHOP CRANE: INSPECTION AND MAINTENANCE SCHEDULE			
ITEM	**COMPONENT**	**MAINTENANCE**	**FREQUENCY***
1	**Runway/Column Hardware**	Check for full compression of lockwasher.	Every 1,000 hours
2	**Hoist Trolley / Wire Rope Trolley**	Check clevis pin. Check cotter pin. (Cotter pin should be fully wrapped around clevis pin.) Check clevis bolt and hardware.	Every 1,000 hours
3	**End Stops (both runway and bridge)**	Check for full compression of lockwasher.	Every 1,000 hours
4	**Wheels**	Check for cracks and/or grooves: all of these increase pull forces. If any of these conditions exist, wheels should be replaced.	Every 1,000 hours
5	**End Trucks**	Check for proper clamping hardware attachment. Ensure correct position on bridge to match specified cantilevers. Inspect end truck wheels following instructions for wheels above. Make sure body is free of any bent materials, cracked or broken welds. Check for full compression of lockwasher on clamping hardare.	Every 1,000 hours
6, 7	**Runway and Bridge Weldments**	Clean interior of rail of dust or dirt particulate. If environment has excessive dust or airborn particulates inspection may be required more frequently.	Every 1,000 hours

***Federal, state and local codes may require inspection and maintenance checks more often. Please check the federal, state and local code manuals in your area.**

WARNING
Any changes in rolling effort or unusual noises must be immediately identified and corrected. It is not necessary to lubricate the track or bearings. Lubricating may attract airborne particles and may increase the rolling resistance. (Do not use such substances as WD-40®, silicone sprays, oil or grease on bearings or on track flanges.)



600 Fishers Run, P.O. Box 593
Fishers, NY 14453-0593
Toll Free Phone: (855) 99-CRANE
E-Mail: info@shopcrane.com
http://www.shopcrane.com

© 2011 Shop Crane
All Rights Reserved