

INSTRUCTIONS AND PARTS LIST

CRANE BRIDGE KITS

CATALOG NUMBERS 905360, 905361 & 905362

PUSH TYPE

TO BUILD UNDERHUNG CRANE BRIDGES

THE INFORMATION CONTAINED IN THIS MANUAL IS FOR INFORMATIONAL PURPOSES ONLY AND COLUMBUS MCKINNON CORPORATION DOES NOT WARRANT OR OTHERWISE GUARANTEE (IMPLIEDLY OR EXPRESSLY) ANYTHING OTHER THAN THE COMPONENTS THAT COLUMBUS MCKINNON CORPORATION MANUFACTURES AND ASSUMES NO LEGAL RESPONSIBILITY (INCLUDING, BUT NOT LIMITED TO CONSEQUENTIAL DAMAGES) FOR INFORMATION CONTAINED IN THIS MANUAL.

GENERAL

These crane bridge kits contain all parts needed, except the bridge beam and the trolley stop angles to build underhung, single girder crane bridges in rated loads and spans (center-to-center distance between runway beams) charted below.



Figure 1.

SIZES OF BRIDGES THAT CAN BE BUILT WITH THESE KITS

(*) Rated Load (tons)	(**) BEAM SIZES FOR VARIOUS SPANS										
	Spans to 10 ft. 0"	Spans to 12 ft. 0"	Spans to 14 ft. 0"	Spans to 16 ft. 0"	Spans to 18 ft. 0"	Spans to 20 ft. 0"	Spans to 22 ft. 0"	Spans to 24 ft. 0"	Spans to 26 ft. 0"	Spans to 28 ft. 0"	Spans to 30 ft. 0"
KIT CATALOG NUMBER 905360											
1/4	S6 x 12.5	S6 x 12.5	S6 x 12.5	S6 x 12.5	S6 x 12.5	S7 x 15.3	S7 x 15.3	S8 x 18.4	S8 x 18.4	S10 x 25.4	S10 x 25.4
1/2	S6 x 12.5	S6 x 12.5	S6 x 12.5	S7 x 15.3	S7 x 15.3	S8 x 18.4	S8 x 18.4	S10 x 25.4	S10 x 25.4	S10 x 25.4	S12 x 31.8
1	S6 x 12.5	S7 x 15.3	S7 x 15.3	S8 x 18.4	S8 x 18.4	S10 x 25.4	S10 x 25.4	S10 x 25.4			
KIT CATALOG NUMBERS 905361 AND 905362											
1/4	S6 x 12.5	S6 x 12.5	S6 x 12.5	S6 x 12.5	S6 x 12.5	S7 x 15.3	S7 x 15.3	S8 x 18.4	S8 x 18.4	S10 x 25.4	S10 x 25.4
1/2	S6 x 12.5	S6 x 12.5	S6 x 12.5	S7 x 15.3	S7 x 15.3	S8 x 18.4	S8 x 18.4	S10 x 25.4	S10 x 25.4	S10 x 25.4	S12 x 31.8
1	S6 x 12.5	S7 x 15.3	S7 x 15.3	S8 x 18.4	S8 x 18.4	S10 x 25.4	S10 x 25.4	S10 x 25.4	S12 x 31.8	S12 x 31.8	S12 x 40.8
1-1/2	S7 x 15.3	S8 x 18.4	S8 x 18.4	S10 x 25.4	S10 x 25.4	S10 x 25.4	S12 x 31.8	S12 x 31.8	S12 x 40.8	S12 x 40.8	S12 x 40.8
2	S8 x 18.4	S10 x 25.4	S10 x 25.4	S10 x 25.4	S10 x 25.4	S12 x 31.8	S12 x 31.8	S12 x 40.8	S12 x 40.8	S18 x 54.7	S18 x 54.7

* Rated load is based on maximum combined hoist and trolley weights of: 300 pounds for 1/4, 1/2 and 1 ton hoists; 400 pounds for 1½ and 2 ton hoists. Bridge designed in accordance with latest edition of CMAA Specification No. 74, using Lift-Tech trolleys.

** Beam sizes listed are American Standard I-Beam sections. Use ASTM A36 grade steel, first quality, free of rust and excessive mill scale.

(*) Rated Load (tons)	(**) BEAM SIZES FOR VARIOUS SPANS										
	Spans to 10 ft. 0"	Spans to 12 ft. 0"	Spans to 14 ft. 0"	Spans to 16 ft. 0"	Spans to 18 ft. 0"	Spans to 20 ft. 0"	Spans to 22 ft. 0"	Spans to 24 ft. 0"	Spans to 26 ft. 0"	Spans to 28 ft. 0"	Spans to 30 ft. 0"
KIT CATALOG NUMBER 905360											
1/4	W6 x 12	W6 x 12	W6 x 12	W6 x 12	W6 x 12	W8 x 15	W8 x 15	W8 x 18	W8 x 18	W8 x 21	W10 x 22
1/2	W6 x 12	W6 x 12	W6 x 12	W8 x 15	W8 x 15	W8 x 18	W8 x 18	W8 x 21	W10 x 22	W10 x 26	W10 x 26
1	W8 x 15	W8 x 15	W8 x 15	W8 x 18	W8 x 18	W8 x 21	W10 x 22	W10 x 26			
KIT CATALOG NUMBERS 905361 AND 905362											
1/4	W6 x 12	W6 x 12	W6 x 12	W6 x 12	W6 x 12	W8 x 15	W8 x 15	W8 x 18	W8 x 18	W8 x 21	W10 x 22
1/2	W6 x 12	W6 x 12	W6 x 12	W8 x 15	W8 x 15	W8 x 18	W8 x 18	W8 x 21	W10 x 22	W10 x 26	W10 x 26
1	W8 x 15	W8 x 15	W8 x 15	W8 x 18	W8 x 18	W8 x 21	W10 x 22	W10 x 26	W10 x 26	W10 x 30	W14 x 34
1-1/2	W10 x 17	W10 x 19	W10 x 19	W8 x 22	W10 x 22	W10 x 26	W10 x 26	W10 x 30	W12 x 35	W12 x 35	W14 x 38
2	W10 x 19	W10 x 19	W10 x 26	W10 x 26	W10 x 26	W10 x 26	W10 x 30	W12 x 35	W12 x 35	W12 x 40	W12 x 40

* Rated load is based on maximum combined hoist and trolley weights of: 300 pounds for 1/4, 1/2 and 1 ton hoists; 400 pounds for 1½ and 2 ton hoists. Bridge designed in accordance with latest edition of CMAA Specification No. 74, using Lift-Tech trolleys.

** Beam sizes listed are American Standard Wide Flange Beam sections. Use ASTM A36 grade steel, first quality, free of rust and excessive mill scale.

Each kit includes four end truck frames, four end ties and the required hardware for attaching truck frames to bridge I-Beam.

Kits are available with pressed steel wheels or solid steel wheels:

Catalog No.	Wheel Dia.	Load Rating	Kit Wt.
Truck Kits with Pressed Steel Wheels			
905360	4"	1/4 - 1 ton	290#
905361	5"	1/4 - 2 ton	300#
Truck Kits with Solid Forged Steel Wheels			
905362	4"	1/4 - 2 ton	310#

Maximum recommended runway beam flange is 8". Greater width requires longer end tie angles.

Runway beams must be properly designed to support bridge, hoist, trolley and rated load. Runway beams must be level and parallel within $\pm 1/8"$.

MATERIAL TO BE PURCHASED LOCALLY TO COMPLETE A CRANE BRIDGE

1. **Bridge Beam.** Obtain one length of American Standard Section I-Beam of the size recommended (see chart on page 1) for the required capacity and span of bridge. The beam that you order must be a minimum length of the span plus the runway beam flange width (use average width of both beams) plus 9-1/8" if your kit has pressed steel wheels or 10" if your kit has solid steel wheels. See Figure 2. If desired, the beam can be extended beyond the end trucks at one or both ends of the bridge to the maximum dimension shown in Figure 2. The length of beam ordered would vary accordingly.

2. **Trolley Stops.** Four (4) angles must be cut to size per Figure 2.

WARNING

Trolley stops (clip angles) must be installed on both ends of bridge beam (see Figure 2) to prevent hoist trolley from running off end of beam, which could result in injury to operator and others and damage to load and other property.

INSTRUCTIONS FOR ASSEMBLING CRANE BRIDGE

- Set I-beam for bridge on a level surface.
- Layout and scribe the centerline (over the web) of the flange at each end of the I-beam.
- Scribe lines 2-3/8" from the toe of truck side angles near center of trucks as shown in Figure 2.
- Locate center of truck and layout and scribe lines locating center of truck as well as hole locations (centered on truck centerline) given by dimension A in Figure 2.
- Lay outside truck halves in position on I-beam. Line up I-beam and truck centerlines. For minimum length I-beam the toe of the truck will line up with the end of the I-beam. Other than minimum length must be compensated for.

6. Square truck halves on top of I-beam and securely clamp in place. Check squareness by measuring and comparing the distances between the truck halves at each end of the trucks.

7. Position the inner truck halves a distance of the runway beam flange width plus 1-1/8" for pressed steel wheels or 2" for solid steel wheels away from the outer truck halves as shown in Figure 2.

8. Line up I-beam and truck centerlines; square, clamp and check as described in step 6.

9. Check center to center of trucks. This may be done by measuring from the back of the inside truck angle on one end of the bridge to the back of the outside truck angle on the other end of the bridge. This should equal the span length.

10. Drill 4 holes 41/64" diameter thru truck and beam flange at hole locations scribed at both ends of bridge.

11. Assemble truck end tie angles as shown in Figure 2. Bolt up outside holes using 1/2" diameter bolts from kit, square and clamp end ties to inner truck halves.

12. Using holes in truck as a template, drill 17/32" diameter holes in end ties.

13. Mount trolley stops to I-beam web in position shown in Figure 2. Stops may be welded or bolted in place. If bolted, drill holes using 21/32" diameter drill as indicated in Figure 2. 5/8" diameter bolts with self-locking nuts should be used to secure stops.

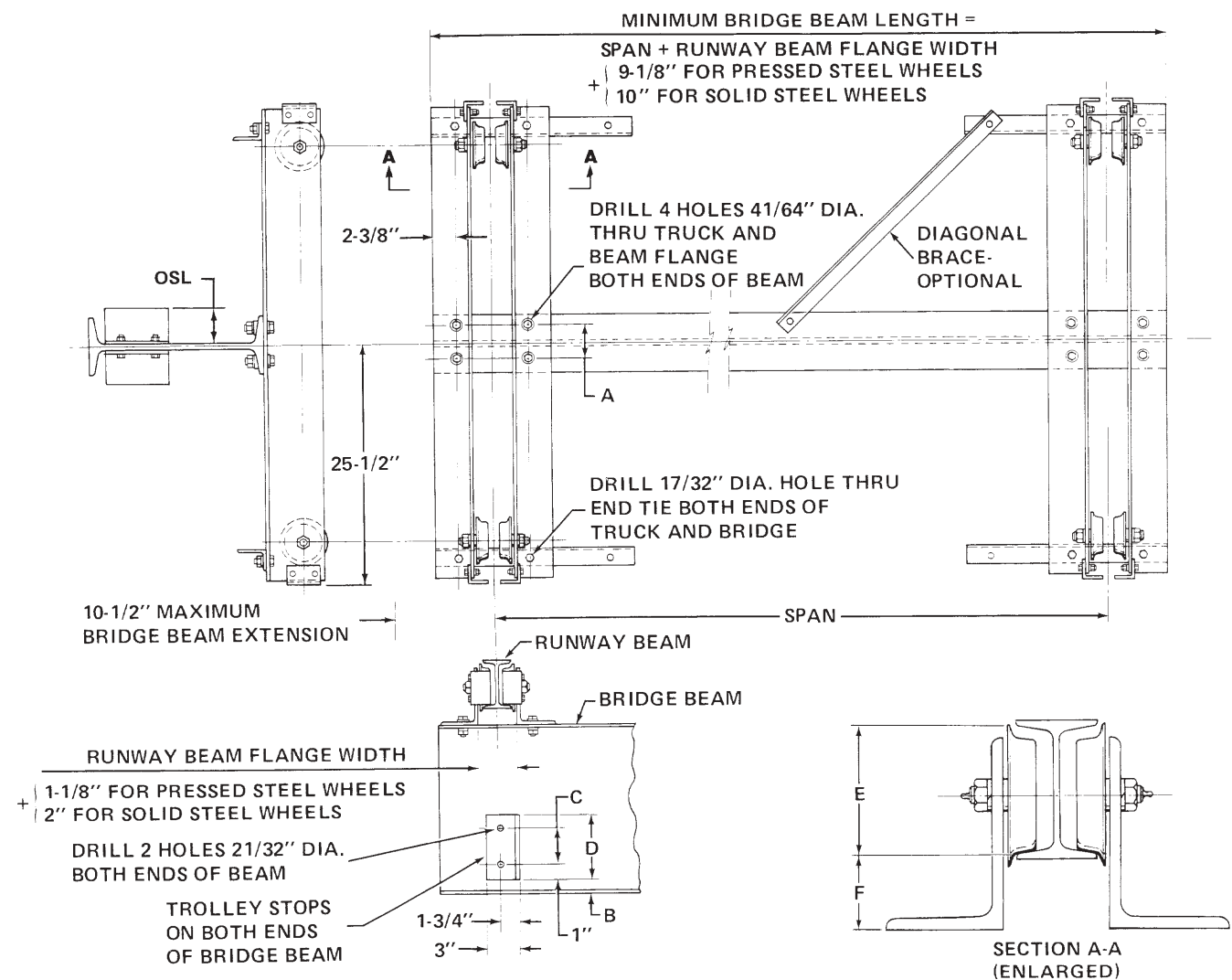
14. Assemble trucks on runway beams using end tie angles to hold in place. Check clearance of wheel flange to beam flange. It should be 1/8" to 1/4".

15. Assemble I-beam to trucks using 5/8" diameter bolts furnished with kit. Flat washer is to go under the bolt head and the beveled washer goes between the I-beam flange and the nut. Tighten all bolts and nuts using the turn-of-nut method. This is done by alternately bringing bolts and nuts to a "snug-tight" condition to insure that mating surfaces are brought into full contact with each other. Then, make a final 1/2 turn on all bolts and nuts.

CAUTION

Do not substitute standard bolts and nuts for the special truck connecting bolts and nuts furnished with kit. Only high-strength bolts (S.A.E., grade 5) and elastic collared self-locking nuts, as furnished, are acceptable for attaching truck frames to bridge beam. High strength bolts are identified on the top of the head by three radial lines, equally spaced at 120 degrees. Self-locking nuts must have two threads, minimum, extending thru nut. If necessary, discard flat washer to get two threads.

16. If it is desired to increase the rigidity of the bridge, four angles (one to each corner) may be added in the position shown as "Optional" (at 45° to the bridge I-beam) in Figure 2.



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Size of Bridge Beam	A	Trolley Stop Angle Size* (4 Req'd.)	B	C	D	OSL
6" x 12.5	2"	3 x 3 x 3/8	1"	2"	4"	1-1/2"
7" x 15.3	2-1/4"	3 x 3 x 3/8	1"	3"	5"	1-5/8"
8" x 18.4	2-1/4"	3 x 3 x 3/8	1"	3"	5"	1-3/4"
10" x 25.4	2-3/4"	3-1/2 x 3 x 3/8	1-1/4"	3"	5"	2-1/8"
12" x 31.8	3"	3-1/2 x 3 x 3/8	1-1/4"	3"	5"	2-1/4"
15" x 42.9	3-1/2"	4 x 3 x 3/8	1-1/2"	3"	5"	2-1/2"
18" x 54.7	3-1/2"	4 x 3 x 3/8	1-1/2"	3"	5"	2-3/4"

*Trolley frame or bumpers should contact trolley stops. If not, cut out standing leg (OSL) back to dimension shown.

Catalog Number	Minimum Beam Height	E	F
905360	5"	4-9/16"	1-7/8"
905361	6"	5-9/16"	1-3/8"
905362	6"	4-7/8"	1-7/8"

Figure 2.

PAINTING

After assembly, all plain steel surfaces should be painted. Thoroughly clean surfaces of oil spots and rust using a suitable solvent. It is recommended that a suitable primer be applied before a finish coat of high gloss enamel especially suited for steel surfaces.

MARKING

Codes require that the capacity of the bridge be shown on both sides of crane, legible from the floor. Normal practice for marking is to use capacity in tons, for example: 1 TON, 2 TON, etc. Stencil forms are readily available that may be used with brush-on or pressurized spray-can paint.

NOTICE: The crane builder and user are responsible for making crane and also to check for compliance with all local, state and national codes.

OPERATING PRECAUTIONS

DO NOT load bridge beyond rated capacity.

DO NOT subject bridge to side loads. Always center trolley over load when hoisting.

DO NOT stand and **DO NOT** cause or allow others to stand or get under any load the bridge is supporting. **DO** keep clear and make sure others keep clear, of any load the bridge is supporting.

DO NOT ram bridge into end stops, other bridge, or any obstruction on beam. Improper and careless operation can result in a hazardous condition for operator and load.

ALWAYS be sure load is clear of obstruction before traversing load.

⚠ WARNING

These crane bridges are not designed nor intended to be used for support or transport of people or for transporting loads over people.

If crane bridge is mounted on an open-end runway rail, then end stops must be installed to prevent crane bridge from running off the end of the runway rail resulting in injury to the operator and others and damage to load and other property. End stops per trolley stop table in Figure 2 may be used and installed per instructions given.

Refer to hoist and trolley instruction manuals for safety warnings on hoist and trolleys.

INSPECTION AND MAINTENANCE

Inspect the bridge on a regular maintenance schedule. Check to make sure wheel axle nuts and all connections are tight. Check wheel tread surfaces for wear or damage. Check truck sides for any evidence of overload or damage. Replace any worn or damaged parts using only factory approved replacement parts.

NOTES

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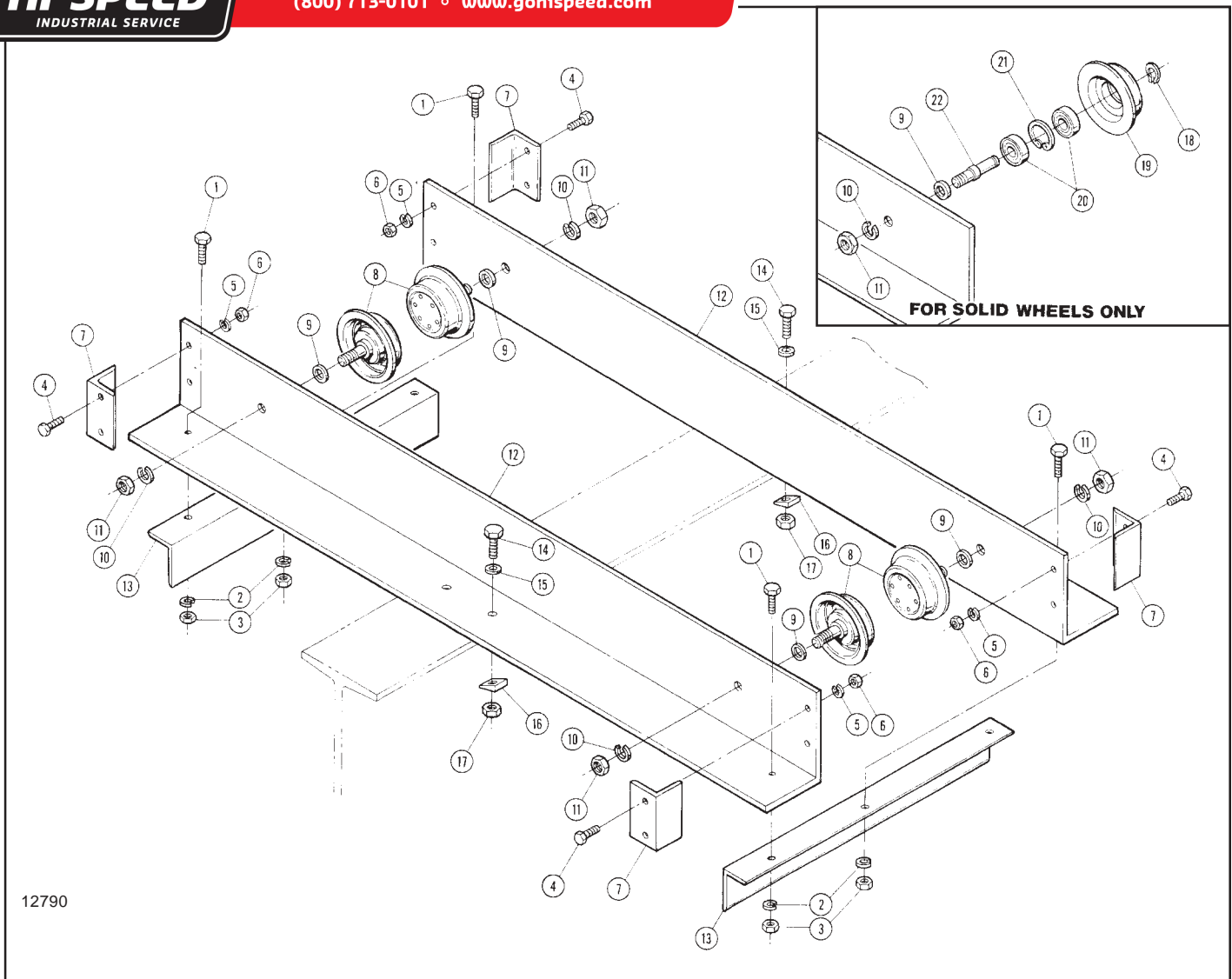


Figure 3. Truck Parts

Ref. No.	Description	Key Numbers			Qty.
		Cat. No. 905360	Cat. No. 905361	Cat. No. 905362	
1	Hex Head Bolt	BTK-300	BTK-300	BTK-300	4
2	Lockwasher	BTK-301	BTK-301	BTK-301	4
3	Hex Nut	BTK-302	BTK-302	BTK-302	4
4	Hex Head Bolt	BTK-300	BTK-300	BTK-300	8
5	Lockwasher	BTK-301	BTK-301	BTK-301	8
6	Hex Nut	BTK-302	BTK-302	BTK-302	8
7	End Stops	BTK-303	BTK-303	BTK-304	4
8	Wheel Assembly	BTK-305	BTK-306	BTK-307	4
9	Spacer Washer	BTK-308	BTK-309	BTK-309	4
10	Lockwasher	BTK-310	BTK-311	BTK-311	4
11	Hex Nut	BTK-312	BTK-313	BTK-313	4
12	Truck Side	BTK-314	BTK-315	BTK-315	2
13	End Tie	BTK-316	BTK-316	BTK-316	2
14	Hex Head Bolt - High Strength	BTK-317	BTK-317	BTK-317	4
15	Flat Washer	BTK-318	BTK-318	BTK-318	4
16	Beveled Washer	BTK-319	BTK-319	BTK-319	4
17	Self-Locking Nut	BTK-320	BTK-320	BTK-320	4
18	Retaining Ring	—	—	BTK-321	4
19	Wheel	—	—	BTK-322	4
20	Ball Bearing	—	—	BTK-323	8
21	Retaining Ring	—	—	BTK-324	4
22	Axle	—	—	BTK-325	4



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Recommended Spare Parts for Your Crane Kit

Certain parts of your crane will, in time, require replacement under normal wear conditions. It is suggested that the following parts be purchased for your crane as spares for future use.

1 Set of Wheels

Note: When ordering parts always furnish Model Number of crane kit.

Parts for your crane are available from your authorized repair station.
For the location of your nearest repair station, write:

IN USA

Yale•Lift-Tech
P.O. Box 769
Muskegon, MI 49443-0769

Phone: **800 742-9269**
Fax: **800 742-9270**

Columbus McKinnon Corporation
140 John James Audubon Parkway
Amherst, NY 14228

Phone: **800 888-0985**
Fax: **716 689-5644**

Coffing Hoists
P.O. Box 779
Wadesboro, NC 28170

Phone: **800 477-5003**
Fax: **800 374-6853**

IN CANADA

Columbus McKinnon Limited
P.O. Box 1106
Cobourg, Ontario K9A 4W5

Phone: **800 263-1997**
Fax: **800 603-0011**

WARRANTY

WARRANTY AND LIMITATION OF REMEDY AND LIABILITY

A. Seller warrants that its products and parts, when shipped, and its work (including installation, construction and start-up), when performed, will meet applicable specifications, will be of good quality and will be free from defects in material and workmanship. All claims for defective products or parts under this warranty must be made in writing immediately upon discovery and in any event, within one (1) year from shipment of the applicable item unless Seller specifically assumes installation, construction or start-up responsibility. All claims for defective products or parts when Seller specifically assumes installation, construction or start-up responsibility and all claims for defective work must be made in writing immediately upon discovery and in any event, within one (1) year from completion of the applicable work by Seller, provided; however, all claims for defective products and parts made in writing no later than eighteen (18) months after shipment. Defective items must be held for Seller's inspection and returned to the original f.o.b. point upon request. **THE FOREGOING IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES WHATSOEVER, EXPRESS, IMPLIED AND STATUTORY, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS.**

B. Upon Buyer's submission of a claim as provided above and its substantiation, Seller shall at its option either (i) repair or replace its product, part or work at either the original f.o.b. point of delivery or at Seller's authorized service station nearest Buyer or (ii) refund an equitable portion of the purchase price.

C. This warranty is contingent upon Buyer's proper maintenance and care of Seller's products, and does not extend to normal wear and tear. Seller reserves the right to void warranty in event of Buyer's use of inappropriate materials in the course of repair or maintenance, or if Seller's products have been dismantled prior to submission to Seller for warranty inspection.

D. The foregoing is Seller's only obligation and Buyer's exclusive remedy for breach of warranty and is Buyer's exclusive remedy hereunder by way of breach of contract, tort, strict liability or otherwise. In no event shall Buyer be entitled to or Seller liable for incidental or consequential damages. Any action for breach of this agreement must be commenced within one (1) year after the cause of action has accrued.

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