SAFETY PRECAUTIONS

Each CM Rigger Manually Lever Operated Chain Hoist is built in accordance with the specifications contained herein and at the time of manufacture complies with our interpretation of applicable sections of ANSI/ASME B30.21, ANSI/ASME HST-3M and the Occupational Safety and Health Act.

The safety laws for elevators and dumbwaiters specify construction details that are not incorporated in Columbus McKinnon Corporation industrial hoists. We recommend the use of equipment that meets state and national safety code for such use. Columbus McKinnon Corporation cannot be responsible for applications or adjustments other than those for which Columbus McKinnon Corporation equipment is recommended.

*Copies of these standards may be obtained from: The American National Standards Institute, 1430 Broadway, New York, NY 10018, U.S.A.

Improper operation of a hoist can create a potentially hazardous situation which, if not avoided, could result in death or serious injury. To avoid such a potentially hazardous situation, the operator shall:

1. NOT operate a malfunctioning or unusually performing hoist.
2. NOT operate the hoist until you have thoroughly read and understood this Operating, Maintenance and Parts Manual.
3. NOT operate a hoist which has been modified without the manufacturer’s approval or certification to be in conformity with applicable OSHA regs.
4. NOT lift or pull more than rated load for the hoist.
5. NOT use damaged hoist or hoist that is not working properly.
6. NOT use hoist with twisted, kinked, damaged or worn load chain.
7. NOT operate with any lever extension (cheater bar).
8. NOT attempt to “free chain” the hoist while a load is applied.
9. NOT use the hoist to lift, support, or transport people.
10. NOT lift loads over people and make sure all personnel remain clear of the supported load.
11. NOT attempt to lengthen the load chain or repair damaged load chain.
12. Protect the hoist’s load chain from weld splatter or other damaging contaminants.
13. NOT operate hoist when it is restricted from forming a straight line from hook to hook in the direction of loading.
14. NOT use load chain as a sling, or wrap load or chain around load.
15. NOT apply the load to the tip of the hook or to the hook latch.
16. NOT apply load unless load chain is properly seated in the chain wheel(s) or sprocket(s).
17. NOT apply load if bearing prevents equal loading on all load supporting chains.
18. NOT operate beyond the limits of the load chain travel.
19. NOT leave load supported by the hoist unattended unless specific precautions have been taken.

CAUTION

Improper operation of a hoist can create a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. To avoid such a potentially hazardous situation, the operator shall:

1. Maintain a firm footing or be otherwise secured when operating the hoist.
2. Check brake function by tensioning the hoist prior to each lift or pulling operation.
3. Use hook latches. Latches are to retain slings, chains, etc. under slack conditions only.
4. Make sure the hook latches are closed and not supporting and parts of the load.
5. Make sure the load is free to move and will clear all obstructions.
6. Avoid swinging the load or hook.
7. Avoid lever “flyback” by keeping a firm grip on the lever until operating stroke is completed and the lever is at rest.
8. Inspect the hoist regularly, replace damaged or worn parts, and keep appropriate records of maintenance.
9. Use the hoist manufacturer’s recommended parts when repairing the unit.
10. Lubricate load chain per hoist manufacturer’s recommendations.
11. NOT use the load chain limiting or warning device to measure load.
12. NOT operate except with manual power.
13. NOT permit more than one operator to pull on lever at the same time. More than one operator is likely to cause hoist to overload.
14. NOT allow your attention to be diverted from operating the hoist.
15. NOT allow the hoist to be subjected to sharp contact with other hoists, structures or objects through misuse.
16. NOT adjust or repair the hoist unless qualified to perform such adjustments or repairs.
SAFETY PROCEDURES

1. The rigger must be kept clean to assure proper operation of the pawls and liftwheel. Before use, check to be sure both pawls are free and engage ratchet. For lubrication of unit after cleaning, see page 4. The cover must be flat and firmly in place at all times. Make sure there is no foreign material in the ratchet, cover and pawl area before operating.

2. When preparing to lift or move a load be sure that the attachments to both hooks are firmly seated in the saddles of the hooks. Avoid off-center loading of any kind especially loading on the point of the hook. Do not load the hook latch as it is to retain slack chain as an aid in hook-up only.

3. When pulling or tensioning, move the load only enough to load the unit, then check to be sure holding pawl is engaging and that attachments to hooks and load are firmly seated. Continue movement only after you are assured the load is free of all obstruction.

4. Do not load beyond the rated capacity. Overload can cause immediate failure or cause damage resulting in future failure even at less than rated capacity.

5. The rigger has been designed for hand powered operation only. Do not use an extension on the handle. A handle pull of approximately 100 pounds will result in rated capacity on the unit, any greater pull is an indication of either an overload or an incorrectly maintained unit.

6. Under no condition should the holding pawl be pried out of engagement when a load is on the unit, since this will allow the load to be released in a sudden and uncontrolled manner.

7. Do not use this or any other materials handling equipment for lifting or moving persons.

8. Warn other personnel of your intention to move a load in their area.

9. Do not leave a load on the unit unattended.

10. Do not take up load chain to the point where the end ring or hook block is jammed against frame.

11. Read warnings and instructions on handle before each use.

12. Do not wrap load chain around the load or bring the load in contact with the tool.

13. Do not operate the Rigger unless it is rigged to pull in a straight line from hook to hook, and the frame is free to swivel on the upper hook. Refer to the following illustrations.

WARNING

ALLOWING THE LOAD TO BEAR AGAINST THE HOOK LATCH AND/OR HOOK TIP CAN RESULT IN LOSS OF LOAD.

DO NOT ALLOW THE LOAD TO BEAR AGAINST THE HOOK LATCH AND/OR HOOK TIP. APPLY LOAD TO HOOK BOWL OR SADDLE ONLY.

INSPECTION

To maintain continuous and satisfactory operation, a regular periodic inspection procedure must be initiated so that worn or damaged parts can be replaced before they become unsafe.

The frequency of inspection must be determined by the individual application.

For normal usage under normal conditions, these inspections are to be performed daily, monthly, or quarterly and should include the following items:

- Holding and driving pawls for proper operation and engagement with the teeth of the liftwheel-daily.
- Load chain for lubricant, wear, damaged links or foreign material-daily.
- Hooks for damage, cracks, twists, latch engagement and latch operation-monthly.
- Chain for excessive wear or stretch every three months.
- Worn, cracked or distorted parts such as hook blocks, frame, hoist hanger, chain guide, direction lever, springs, handle, cover, sheave wheel, liftwheel and driving pawl shaft every three months.
- Loose or missing screws, nuts and snap rings every three months.

When the unit is subjected to heavy usage or dusty, gritty, moist or corrosive atmospheric conditions, shorter time periods must be assessed.

Inspection must be made of all parts for unusual wear, corrosion or damage, in addition to those specifically mentioned in the schedule.

Any parts that are deemed unserviceable are to be replaced with new parts before the unit is returned to service. It is very important that the unserviceable parts be destroyed to prevent their possible future use as a repair item and properly disposed of.

Preventative Maintenance

In addition to the above periodic inspection procedure, a preventative maintenance program should be established to prolong the useful life of the tool and maintain its reliability and continued safe use. The program should include the periodic inspections with particular attention being paid to the lubrication of various components using the recommended lubricants.

CM REPAIR/REPLACEMENT POLICY

All Columbus McKinnon (CM) Riggers are thoroughly inspected and performance tested prior to shipment. If any properly maintained Rigger within 1 year of shipment develops a performance problem due to a material or workmanship defect, as verified by CM, repair or replacement of the unit will be made to the original purchaser without charge. This repair/replacement policy applies only to Riggers installed, maintained and operated as outlined in this manual, and specifically excludes parts subject to normal wear, abuse, improper installation, improper or inadequate maintenance, hostile environmental effects, and unauthorized repairs/modifications.

CM reserves the right to change materials or design if, in its opinion, such changes will improve its product. Abuse, repair by an unauthorized person, or use of non-CM replacement parts voids the guarantee and could lead to dangerous operation. For full “Terms of Sale”, see Sales Order Acknowledgement. Also, refer to the back page for Limitations of Warranties, Remedies and Damages and Indemnification and Safe Operation.
Before operating the Rigger, familiarize yourself with the nomenclature shown in Figures 3 and 4.

1. Free Wheeling: In this condition the chain can be pulled through the Rigger in either direction by hand. This allows quick and easy attachment of the load. Set directional lever to unload position and release pawls as shown in Figure 2.

2. Attachment To The Load: The CM Rigger can be used in any position provided it is rigged to pull in a straight line from hook to hook. It is important that the frame is free to swivel on the upper hook. Under no condition should the frame be allowed to touch the load or bear on any support when in use as this might cause bending of the hook or frame and possible failure. When operating in limited areas, it is recommended that attachments or slings be used to keep the frame and handle from being obstructed.

3. Operation (see Safety Procedures): After attachment of load, the slack in the chain can be taken up by pulling on the end ring attached to the loose end of the chain. Set directional lever to “load”. Operate the handle up and down and the load will be pulled or tensioned. Shift directional lever to “unload” position and load will be loosened one tooth at a time by the same operation of the handle. When operating the handle, make certain that the load is retained by the Rigger before releasing handle.

**MAINTENANCE**

**HOOK INSPECTION**

Hooks damaged from chemicals, deformations or cracks, or that have more than a 10 degree twist from the plane of the unbent hook or excessive opening or seat wear must be replaced.

Also, on latch type hooks, hooks that are opened and allow the latch to disengage the tip, must be replaced.

**WARNING**

IF NOT USED AS DIRECTED, RIGGER MAY CAUSE INJURY.

TO AVOID INJURY:

USE ONLY AS DIRECTED BELOW

**WARNING**

Use as directed above. Failure to do so may cause injury to you and others.

1. **DO NOT** exceed capacity shown on frame or lower hook block.
2. **DO NOT** use to lift people or loads over people.
3. **DO NOT** use unless the Rigger’s frame and chain form a straight line between hooks.
4. **DO NOT** use if the frame is in contact with any object.
5. **DO NOT** use if the unit is damaged or malfunctions.
6. **DO NOT** use extension on lever. Use hand power only.
7. **DO NOT** use if chain is twisted, kinked or damaged.
8. **DO NOT** release handle until load is transferred to Rigger.
Any hook that is twisted or has excessive throat opening indicates abuse or overloading of the unit. Other load sustaining components of the tool should be inspected for damage.

Check to assure latch is not damaged or bent and that it operates properly with sufficient spring pressure to keep the latch tightly against the tip of the hook and allows the latch to spring back to the tip when released. If the latch does not operate properly, it should be replaced.

Use Figure 5 to determine when the hook must be replaced.

![Hook Throat Openings](image)

<table>
<thead>
<tr>
<th>Capacity (Tons)</th>
<th>Replace Hook When Opening is Greater Than:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4</td>
<td>1-3/16</td>
</tr>
<tr>
<td>1 1/2</td>
<td>1-3/16</td>
</tr>
</tbody>
</table>

Figure 5. Maximum Allowable Hook Throat Opening

LOAD CHAIN

Cleaning and Inspection

First clean the load chain with a non-acid or non-caustic type solvent then slack the chain and make a link-by-link inspection for nicks, gouges, twisted links and excessive wear or stretching. Worn chain should be gaged throughout its entire length and replaced if beyond serviceable limits.

![Number of Links in Gage](image)

![Gaging Load Chain Wear](image)

![WARNING](image)

THE LUBRICANTS USED IN AND RECOMMENDED FOR THE RIGGER MAY CONTAIN HAZARDOUS MATERIALS THAT MANDATE SPECIFIC HANDLING AND DISPOSAL PROCEDURES

TO AVOID INJURY:

HANDLE AND DISPOSE OF LUBRICANTS ONLY AS DIRECTED IN APPLICABLE MATERIAL SAFETY DATA SHEETS AND IN ACCORDANCE WITH APPLICABLE LOCAL STATE AND FEDERAL REGULATIONS.

![WARNING](image)

LOAD CHAIN

Cleaning and Inspection

First clean the load chain with a non-acid or non-caustic type solvent then slack the chain and make a link-by-link inspection for nicks, gouges, twisted links and excessive wear or stretching. Worn chain should be gaged throughout its entire length and replaced if beyond serviceable limits.

![Gaging Load Chain Wear](image)

GAGING LOAD CHAIN WEAR

To determine if load chain should be continued in service, check gage lengths as indicated in Figure 6. Chain worn beyond length indicated, nicked, gouged or twisted should be replaced before returning tool to service. Chain should be clean, free of twists and pulled taut before measuring. In cases where the wear is localized and not beyond serviceable limits, it is sometimes possible to reverse the load chain, end for end, and allow a new section to take the wear. Proper installation of the load chain is covered below.

![Gaging Load Chain Wear](image)

IMPORTANT:

Do not use replaced chain for other purposes such as lifting or pulling. Load chain may break suddenly without visual deformation. For this reason, cut replaced chain into short lengths to prevent use after disposal.

Assembling Load Chain

Load chain must be assembled to units with weld side of standing links facing away from the liftwheel. Refer to Figure 3 and 4 for proper relation of lower hooks to upper hooks (frame is marked "Hook Side"). On 1 1/2 ton units, the chain must have an odd number of links and when assembling chain to liftwheel, always start with an upstanding link, (this is to assure chain can be attached to dead end with no twist). Check to be sure there is not twist in chain before attaching lower hook block and dead end screw.

Lubrication

(After Cleaning or Disassembly)

Coat the four liftwheel journals, frame stud for holding pawl, the three journals of the driving pawl shaft, lower sheave journals, tips of driving and holding pawls, seat for hook knob, edge of frame where holding pawl spring contacts same and surfaces of cover where it contacts the liftwheel and handle with a medium coat of grease (master Lubricant Co. Lubriko M-32, Dow Corning Corp. Molykote BR-2-S, or equal).

IMPORTANT: To assure extra long life and top performance, be sure to lubricate the various parts of the tool using the lubricant specified above. If desired, these lubricants may be purchased from CM.
ORDERING INFORMATION

The following information must accompany all correspondence or repair parts orders.

1. Tool capacity.
2. Serial Number-stamped on the tool frame.

For parts orders also specify:

1. Quantity desired.
2. Key Number of Part
3. Part Name
4. Part Number

When ordering replacement parts, consideration should be given to the need to replace other items, (springs, fasteners, etc.) and items that may be damaged or lost during disassembly or just unfit for future use because of deterioration from age or service.

![Figure 7. Exploded View 3/4-1½ Ton CM® Rigger](image)

**WARNING**

Using “Commercial” or other Manufacturer's parts to repair the CM Rigger may cause load loss.

**TO AVOID INJURY:**

Use only CM supplied replacement parts. Parts may look alike but CM parts are made of specific materials or processed to achieve specific properties.

### CM RIGGER PARTS LIST

<table>
<thead>
<tr>
<th>KEY NUMBER</th>
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<th>PART NAME</th>
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<td>Clover Leaf Chain Guide</td>
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<td>623-103</td>
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<td>Chain Guide Attaching Screw</td>
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<td>Support Snap Ring</td>
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<td>Driving Pawl</td>
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<td>Driving Pawl Shaft</td>
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<td>1</td>
<td>Driving Pawl Spring</td>
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<td>623-117</td>
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<td>Upper Hook with Latch</td>
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<td>623-118</td>
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<td>Upper Hook Washer</td>
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<td>Lower Hook Block</td>
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<td>1</td>
<td>Hook Block Screw (Special)</td>
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### CM RIGGER PARTS LIST-Continued

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<td>Lower Sheave Wheel</td>
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<td>Capacity Label-Handle Support</td>
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<td>Latch Kit</td>
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*For Export units, part numbers for the frame capacity labels are 923954 for 700 Kg. unit and 923955 for 1400 Kg. unit.

The Following Parts Were Used On Discontinued Units

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<tr>
<th>KEY NUMBER</th>
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<tbody>
<tr>
<td>623-133</td>
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<td>Holding Pawl (with Hole for Spring)</td>
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<td>623-134</td>
<td>1</td>
<td>Holding Pawl Spring (both ends bent ½&quot;)</td>
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<td>623-135</td>
<td>1</td>
<td>Liftwheel Spacer (See Note Below)</td>
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<td>623-138</td>
<td>1</td>
<td>Pawl Spacer</td>
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</table>

Note: Refer to instruction sheet 1f-5407; Spacer 923733 used only on units without liftwheel cover that contain liftwheel 23023 (623-101).
LIMITATION OF WARRANTIES, REMEDIES AND DAMAGES

The warranty stated below is given in place of all other warranties, express or implied, of merchantability, fitness for a particular purpose, or otherwise, no promise or affirmation of fact made by any agent or representative of Seller shall constitute a warranty by Seller or give rise to any liability or obligation.

Seller warrants that on the date of delivery to the carrier the goods are free from defects in workmanship and materials.

SELLER’S SOLE OBLIGATION IN THE EVENT OF BREACH OF WARRANTY OR CONTRACT OR FOR NEGLIGENCE OR OTHERWISE WITH RESPECT TO GOODS SOLD SHALL BE EXCLUSIVELY LIMITED TO REPAIR OR REPLACEMENT, F.O.B. SELLER’S POINT OF SHIPMENT. OF ANY PARTS WHICH SELLER DETERMINES TO HAVE BEEN DEFECTIVE OR IF SELLER determines that such repair or replacement is not feasible, to a refund of the purchase price upon the return of the goods to Seller.

Any action against Seller for breach of warranty, negligence or otherwise, must be commenced within one year after such cause of action occurs.

NO CLAIM AGAINST SELLER FOR ANY DEFECT IN THE GOODS SHALL BE VALID OR ENFORCEABLE UNLESS BUYER’S WRITTEN NOTICE THEREOF IS RECEIVED BY SELLER WITHIN ONE YEAR FROM THE DATE OF SHIPMENT.

Seller shall not be liable for any damage, injury or loss arising out of the use of the goods if, prior to such damage, injury or loss, such goods are (1) damaged or misused following Seller’s delivery to carrier; (2) not maintained, inspected, or used in compliance with applicable law and Seller’s written instructions and recommendations; or (3) installed, repaired, altered or modified without compliance with such law, instructions or recommendations. UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES AS THOSE TERMS ARE DEFINED IN SECTION 2-715 OF THE UNIFORM COMMERCIAL CODE.

INDEMNIFICATION AND SAFE OPERATION

Buyer shall comply with all applicable laws, rules and regulations of federal, state, and local agencies. Buyer shall use and require its employees to follow such instructions and manuals and to use reasonable care in the use and maintenance of the goods. Buyer shall not remove or permit anyone to remove any warning or instruction signs on the goods. In the event of personal injury or damage arising from the use of the goods, Buyer shall within 48 hours thereafter give Seller written notice of such injury or damage. Buyer shall cooperate with Seller in investigating any such injury or damage and in the defense of any claims arising therefrom.

If Buyer fails to comply with this section or if any injury or damage is caused, in whole or in part, by Buyer’s failure to comply with applicable federal and state safety requirements, Buyer shall indemnify and hold Seller harmless against any claims, loss or expenses for injury or damage arising from the use of the goods.

CM HOIST PARTS AND SERVICES ARE AVAILABLE IN THE UNITED STATES AND IN CANADA

As a CM Hoist user, you are assured of reliable repair and parts services through a network of Master Parts Depots and Service Centers that are strategically located in the United States and Canada. These facilities have been selected on the basis of their demonstrated ability to handle all parts and repair requirements promptly and efficiently.

Below is a list of the Master Parts Depots in the United States and Canada. To quickly obtain the name of the U.S. Service Center located nearest you, call (800) 689-0986. Fax: (716) 689-5644. In the following list, the Canadian Service Centers are indicated.

### UNITED STATES MASTER PARTS DEPOT

| California | Otto Systems, Inc. | 12010 Bloomfield Ave. | Santa Fe Springs, CA 90670 | 312/462-1612 | Fax 312/462-1617 | 800/596-7392 | 716/689-5644 |
| Ohio | Homier Electric Company, Inc. | 1521 East Washington Street | Indianapolis, IN 46201 | 317/639-4261 | Fax 317/639-4342 | 800/733-2231 | 312/462-1642 |
| Iowa | VMI Hoist & Crane Services | 901 17th Street NE | Cedar Rapids, IA 52406 | 319/365-4662 | Fax 319/365-8075 | 800/365-4662 | 312/462-1614 |
| Texas | ABEL Equipment Co., Inc. | 3710 Cavalier Drive | Garland, TX 75042 | 214/466-7000 | Fax 214/466-7000 | 800/362-4601 | 905/365-7000 |
| Wisconsin | Trestor Hoist & Equipment, Inc. | 1164 Campbell Drive | Menomonee Falls, WI 53051 | 414/228-0700 | Fax 414/228-0700 | 800/234-6098 | 716/689-5644 |

### CANADIAN SERVICE CENTERS

| Manitoba | King’s Electric Motors, Inc. | 633 Tyne Avenue | Winnipeg, Manitoba R2L 1J5 | 204/663-5332 | Fax 204/663-4059 | 800/362-4601 | 905/365-7000 |
| Ontario | R & W Hoist Repair, Ltd. | 790 Redwood Square | Units 5, 6, & 7 | 519/362-0898 | Fax 519/362-0898 | 800/362-0898 | 905/365-7000 |
| Quebec | Hercules Slings & Cable | 800 TransCanada Highway | Pointe-Claire, Quebec H9R 1B1 | 514/242-5511 | Fax 514/242-5555 | 800/362-0898 | 514/242-5511 |

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