

**OPERATING,
MAINTENANCE &
PARTS MANUAL**

**MANUALLY LEVER
OPERATED
CHAIN HOIST**



CM[®] Puller

Capacities: 3/4, 1-1/2, 3 and 6 tons (750, 1500, 3000 and 6000 kg.)

Follow all instructions and warnings for inspecting, maintaining and operating this hoist. The use of any hoist presents some risk of personal injury or property damage. That risk is greatly increased if proper instructions and warnings are not followed. Before using this hoist, each operator should become thoroughly familiar with all warnings, instructions and recommendations in this manual. Retain this manual for future reference and use.

Forward this manual to operator. Failure to operate equipment as directed in manual may cause injury.

Before installing hoist, fill in the information below.

Model No. _____

Serial No. _____

Purchase Date _____

Rated Load _____

CM HOIST PARTS AND SERVICE 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 Depots in the United States and Canada. To quickly obtain the name of the U.S. Service Center located nearest you, call (800) 888-0985. Fax: (716) 689-5644. In the following list, the Canadian Service Centers are indicated.

UNITED STATES MASTER PARTS DEPOT	CANADIAN SERVICE CENTERS
<p>CALIFORNIA OTTO SYSTEMS, INC. 12010 Bloomfield Ave. Sante Fe Springs, CA 90670 562/462-1612 or 800/596-7392 Fax 562/462-1617 or 2439 Verna Court San Leandro, CA 94577 510/667-3730 or 800/508-6886 Fax 510/667-3726</p>	<p>ALBERTA **COLUMBUS McKINNON, LTD. 10311-174th Street Edmonton, Alberta T8H 1N3</p>
<p>COLORADO MATERIALS HANDLING EQUIPMENT CO. 1740 W. 13th Ave. Denver, CO 80204 303/573-5333 or 800/873-5333 Fax 303/893-3854</p>	<p>NOVA SCOTIA *W & A MOIR 95 Ilsley Ave. Dartmouth, Nova Scotia B3B 1L5 902/468-7720 Fax 902/468-3777</p>
<p>GEORGIA ACE INDUSTRIES, INC. 6295 McDonough Drive Norcross, GA 30093 770/441-0898 or 800/733-2231 Fax 770/441-0326</p>	<p>ONTARIO *R & W HOIST REPAIR, LTD. 790 Redwood Square Units 5, 6, & 7 Oakville, Ontario L6L 6N3 905/825-5500 Fax 905/825-5315</p>
<p>ILLINOIS CM CHICAGO PARTS & SERVICE 7747 West Van Buren Street Forest Park, IL 60130 877/511-3170 Fax 708/771-7326</p>	<p>*TORONTO ELECTRIC HOIST SALES & SERVICE 72 Crockford Blvd. Scarborough, Ontario M1R 3C4 416/755-7716 Fax 800/461-0290</p>
<p>INDIANA HORNER ELECTRIC COMPANY, INC. 1521 East Washington Street Indianapolis, IN 46201 317/639-4261 Fax 317/639-4344</p>	<p>*MASLACK SUPPLY, LTD. 488 Falconbridge Road Sudbury, Ontario P3A 4S4 705/566-1270 Fax 705/566-4208</p>
<p>IOWA TEC-INDUSTRIAL 1958 West River Drive Davenport, IA 52808 319/323-3233 Fax 317/336-5161</p>	<p>*COLUMBUS McKINNON, LTD. P.O. Box 1106 10 Brook Road, North Cobourg, Ontario K9A 4W5 905/372-0153 Fax 905/372-3078</p>
<p>LOUISIANA BEERMAN PRECISION, INC. 4206 Howard Ave. New Orleans, LA 70125 504/486-9391 Fax 504/486-7482</p>	<p>QUEBEC *HERCULES SLING & CABLE 2525 Louis A. Amos Lachine, Quebec H8T 1C3 514/631-5511 Fax 514/636-1084</p>
<p>MASSACHUSETTS ABEL DISTRIBUTORS, INC. 50 Parker Street, Unit 2 Newburyport, MA 01950 978/463-0700 Fax 978/463-5200</p>	<p>*LEGER HOIST EQUIPMENT CO. 7995-17th Ave. Montreal, Quebec H1Z 3R2 514/376-3050 Fax 514/376-0657</p>
<p>MICHIGAN GAYLORD HOIST SALES & SERVICE 34471 Industrial Road Livonia, MI 48150 734/261-1910 Fax 734/261-1788</p>	<p>*ARE ALSO MASTER PARTS DEPOTS **MASTER PARTS DEPOT ONLY</p>
<p>MISSOURI INDEPENDENT ELECTRIC MACHINERY 4425 Oliver Street Kansas City, MO 66106 913/362-1155 Fax 913/904-3330</p>	
<p>NEW YORK VOLLAND ELECTRIC EQUIPMENT CO. 75 Innsbruck Drive Buffalo, NY 14227 716/656-9900 Fax 716/656-8898/8899</p>	
<p>NORTH CAROLINA SOUTHERN ELECTRIC SERVICE CO., INC. 2225 Freedom Drive Charlotte, NC 28208 704/372-4832 or 800/487-3726 Fax 704/342-2604</p>	
<p>OHIO MAZZELLA LIFTING TECHNOLOGIES 21000 Aerospace Parkway Cleveland, OH 44142 440/239-5700 or 800/362-4601 Fax 440/239-5707</p>	
<p>PENNSYLVANIA AMICK ASSOCIATES, INC. 11 Sycamore Street Carnegie, PA 15106-0529 412/429-1212 or 800/445-9456 Fax 412/429-0191</p>	
<p>RAM MOTORS & CONTROLS, INC. 5460-B Pottsville Pike Leesport, PA 19533 610/916-8000 or 877/916-8018 Fax 610/916-7957</p>	
<p>TEXAS ABEL EQUIPMENT CO., INC. 3710 Cavalier Drive Garland, TX 75042 972/272-7706 Fax 972/272-6955</p>	
<p>HYDRAULIC EQUIPMENT SERVICES, INC. 1021 North San Jacinto Street Houston, TX 77002 713/228-9601 Fax 713/228-0931</p>	
<p>WISCONSIN TRESTER HOIST & EQUIPMENT, INC. W136 N4863 Campbell Drive Menomonee Falls, WI 53051 262/790-0700 or 800/234-6098 Fax 262/790-1009</p>	

Hoist safety is up to you...

WARNING — DO NOT APPLY MORE THAN RATED LOAD.

1 CHOOSE THE RIGHT HOIST FOR THE JOB...

Choose a Puller with the capacity for the job. Know the capacities of your hoists and the weight of your loads. Then match them.

The application, the size and type of load, the attachments to be used and the period of use must also be taken into consideration in selecting the right hoist for the job.



Remember the Puller was designed to ease our burden and carelessness not only endangers the operator, but in many cases, a valuable load.

WARNING — DO NOT OPERATE DAMAGED OR MALFUNCTIONING UNIT.
— DO NOT OPERATE WITH TWISTED, KINKED OR DAMAGED CHAIN.

2 INSPECT

All Pullers should be visually inspected before use, in addition to regular, periodic maintenance inspections.

Inspect hoists for operation warning notices and legibility.

Deficiencies should be noted and brought to the attention of supervisors. Be sure defective Pullers are tagged and taken out of service until repairs are made.



Under no circumstances should you operate a malfunctioning hoist.

Check for gouged, twisted, distorted links and foreign material. Do not operate Pullers with twisted, kinked or damaged chain links.

Load chain should be properly lubricated.

Hooks that are bent, worn or whose openings are enlarged beyond normal throat opening should not be used. If latch does not engage throat opening of hook, hoist should be taken out of service.

Chains should be checked for deposits of foreign material which may be carried into the hoist mechanism.

Check brake for evidence of slippage under load.



WARNING — DO NOT PULL AT AN ANGLE. BE SURE PULLER AND LOAD ARE IN A STRAIGHT LINE.
— DO NOT USE UNLESS FRAME AND CHAIN FORM A STRAIGHT LINE BETWEEN HOOKS.
— DO NOT USE IF FRAME IS IN CONTACT WITH ANY OBJECT.
— DO NOT USE LOAD CHAIN AS A SLING.
— DO NOT USE AN EXTENSION ON THE LEVER.

3 USE HOIST PROPERLY

Be sure the Puller is solidly held in the uppermost part of the support hook arc.

Be sure Puller and load are in a straight line. Do not use unless frame and chain form a straight line between hooks.

Be sure load is hooked securely. Do not tip load the hook. Do not load hook latch. Hook latch is to prevent detachment of load under slack chain conditions only.

Do not operate with Puller Frame resting against any object. Apply the load gently. Do not jerk it.

Never use an extension on the lever! You're dangerously overloading the Puller if you exceed the rated lever pull or if you have to use a lever extension to lift or pull a load.

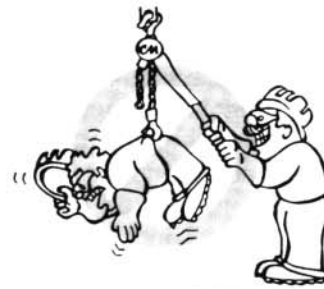
WARNING — DO NOT LIFT PEOPLE OR LOADS OVER PEOPLE.

4 PRACTICE CAUTION ALWAYS

Do not lift co-workers with a Puller.

Make sure everyone is clear of the load when you apply tension.

Do not remove or obscure operational warning notices.



5 OPERATOR SERVICE

CLEANING
Pullers should be kept clean and free of dust, dirt, moisture, etc., which will in any way affect the operation or safety of the equipment.

LUBRICATION
Chain should be properly lubricated.

AFTER REPAIRS
Carefully operate the hoist before returning it to full service.

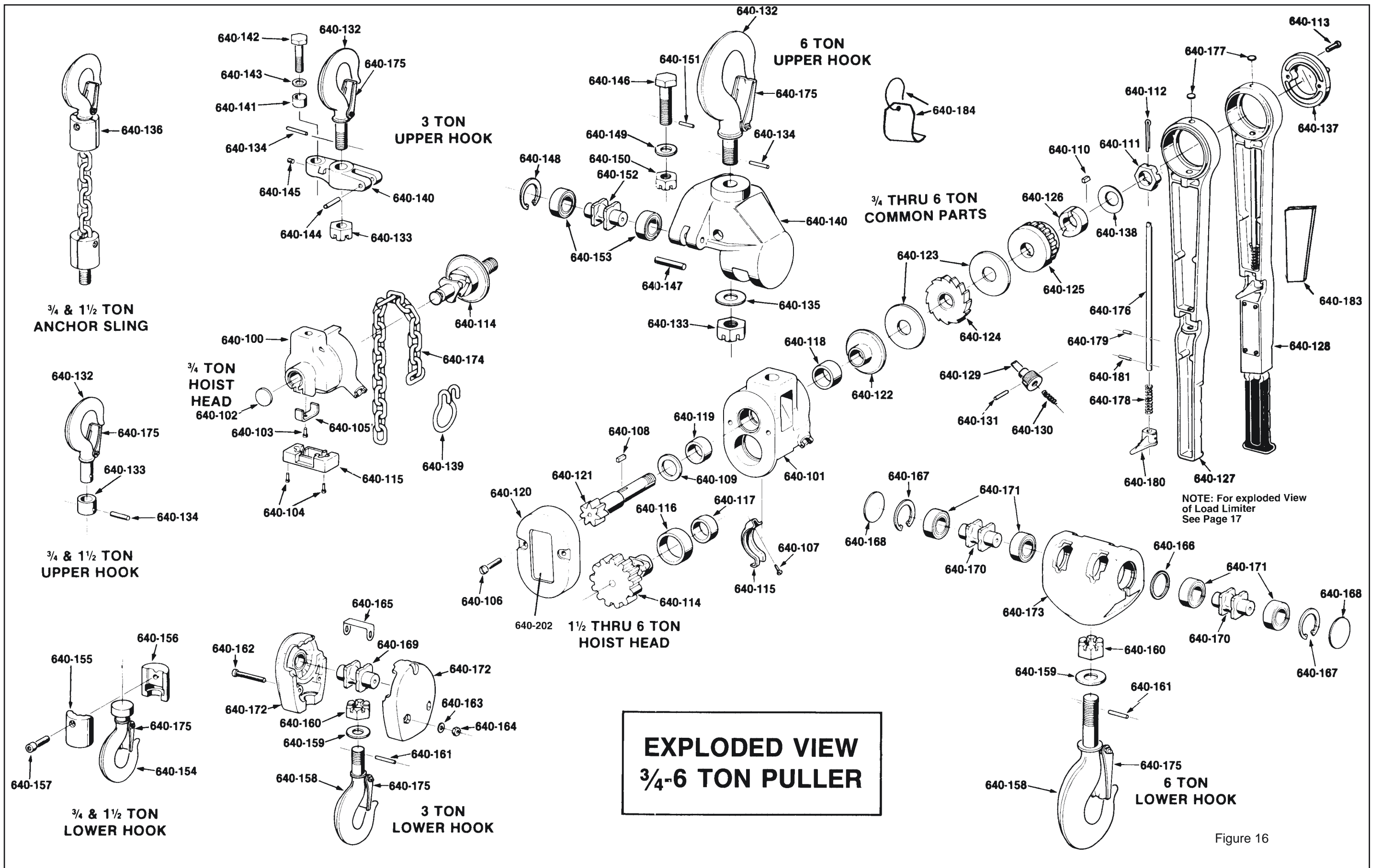


Figure 16

REPAIR PARTS

ORDERING INFORMATION

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

- 1) Puller capacity
- 2) Serial Number - this is stamped on the Puller frame (640-100 or 640-101).

For parts orders also specify

- 1) Quantity desired
- 2) Key number of part
- 3) Part Name
- 4) Part number of the part

When ordering replacement parts, consideration should be given to the need to replace other items, (bushings, 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.

Parts should be ordered from CM's Master Parts Depots conveniently located throughout the United States and Canada. Refer to the inside of the front cover of this manual to locate the Master Parts Depot nearest you.



WARNING

USING "COMMERCIAL" OR OTHER MANUFACTURER'S PARTS TO REPAIR THE CM PULLERS 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 PULLER PARTS LIST

KEY NO.	NO. REQ'D.	PART NAME	PART NUMBER			
			CAPACITY - TONS			
			3/4	1-1/2	3	6
640-100	1	Frame with Bushings (3/4 Ton)	40684C	-		
640-101	1	Frame with Bushings (1 1/2-6 Tons)	-	40695C	40695C	
640-102	1	Frame Expansion Plug	940787	-		
640-103	1	Stripper Screw	982688	-		
640-104	2	Chain Guide Attaching Screw	987274	-		
640-105	1	Stripper	40728	-		
640-106	2	Gear Cover Screw	-	982689		
640-107	1	Chain Guide Attaching Screw	-	982565		
640-108	1	Friction Hub Key	-	40917		
640-109	1	Pinion Thrust Washer	-	40789		
640-110	1	Brake Cam Key	40824			
640-111	1	Brake-Adjusting Nut	40785			
640-112	1	Brake Adjusting Nut Cotter Pin	940805			
640-113	2	Lever Cap Screw	982717			
640-114	1	Liftwheel	40130	40140		
640-115	1	Chain Guide	40698C	24718		
640-116	1	Liftwheel Bushing (Gear End)	-	40816		
640-117	1	Liftwheel Bushing (Brake End)	-	40819		
640-118	1	Pinion Shaft Bushing (Brake End)	-	40818		
640-119	1	Pinion Shaft Bushing (Pinion End)	-	40819		
640-120	1	Gear Cover	-	40512	40513	
640-121	1	Pinion Shaft	-	40480		
640-122	1	Friction Hub	-	40446		
640-123	2	Friction Washer	40904			
640-124	1	Ratchet with Bushing	40662			
640-125	1	Lever Ratchet Hub For Units Not Equipped With Load Limiter	40570			
640-126	1	Brake Cam	40122			
640-127	1	Lever Assembly (includes Lever, Expansion Plug, Limiter.Plunger, Plunger Spring, Spring Pin, Trigger and Trigger Pin)	40663 For Units And Without Load Limiter. 40928 For Units With Load Limiter			
640-128	1	Load Sentry Assembly	4096	4098		
640-129	1	Ratchet Plunger	40517			
640-130	1	Ratchet Plunger Spring	40742			
640-131	1	Ratchet Plunger Spring Pin	983880			
*640-132	1	Upper Hook Assembly (includes latch)	40601C	40603C	40605C	40607C
640-133	1	Upper Hook Nut or Collar	986383	40445	40382	940834
640-134	1	Upper Hook Pin	983768	45841	982335	983787
640-135	1	Upper Hook Washer	-			40736
640-136	1	Anchor Sling	4071	4072	-	
640-137	1	Lever Cap	40576			

CM PULLER PARTS LIST (Continued)

KEY NO.	NO. REQ'D.	PART NAME	PART NUMBER			
			CAPACITY - TONS			
			3/4	1 1/2	3	6
640-138	1	Disc Spring	82297			
640-139	1	End Ring	40471			
640-140	1	Hoist Hanger	-		40151C	40171C
640-141	1	Adapter Sleeve	-		40790	-
640-142	1	Hanger Screw (3 Ton)	-		982587	-
640-143	1	Hanger Screw Washer (3 Ton)	-		940807	-
640-144	1	Dead End Pin (3 Ton)	-		40851	-
640-145	1	Hoist Hanger Set Screw (3 Ton)	-		986304	-
640-146	1	Hanger Screw (6 Ton)	-			40500
640-147	1	Dead End Pin (6 Ton)	-			40853
640-148	1	Bearing Retainer Snap Ring	-			40740
640-149	1	Hanger Screw Washer (6 Ton)	-			45930
640-150	1	Hanger Screw Nut (6 Ton)	-			40383
640-151	1	Hanger Screw Nut Pin (6 Ton)	-			983791
640-152	1	Upper Sheave	-			40172
640-153	2	Upper Sheave Bearing	-			88429
*640-154	1	Lower Hook Assembly (includes Latch)	40602	40604		-
640-155	1	Hook Block Drilled	40120	40142		-
640-156	1	Hook Block Tapped	40121	40143		-
640-157	1	Hook Block Screw	40854	40855		-
*640-158	1	Lower Hook Assembly (includes Latch)	40602	40604	40606	40608
640-159	1	Lower Hook Washer	-		50454	40736
640-160	1	Lower Hook Nut	-		40382	940834
640-161	1	Lower Hook Nut Pin	-		982335	983787
640-162	3	Lower Hook Block Screw	-		940812	-
640-163	3	Lower Hook Block Screw L.W.	-		940830	-
640-164	3	Lower Hook Block Screw Nut	-		945820	-
640-165	1	Reeving Caution Plate	-		45757	-
640-166	1	Lower Sheave Bearing Spacer	-			40796
640-167	2	Bearing Retainer Snap Ring	-			40740
640-168	2	Expansion Plug	-			940737
640-169	1	Lower Sheave (3 Ton)		-	40166	-
640-170	2	Lower Sheave (6 Ton)	-			40172
640-171	4	Sheave Bearing (6 Ton)	-			88429
640-172	2	Lower Hook Block (3 Ton)	-		40689C	-
640-173	1	Lower Hook Block (6 Ton)	-			40176C
640-174	1	Load Chain (specify length required)	85839	85847		
640-175	2	Latch Kit	45661	45662	45663	45665
640-176	1	Lever Plunger	40462			
640-177	1	Lever Expansion Plug	940801			
640-178	1	Lever Plunger Spring	40735			
640-179	1	Lever Plunger Pin	983766			
640-180	1	Lever Trigger	40113C			
640-181	1	Lever Trigger Pin	983768			
640-183	1	Warning Label	40975			
640-184	1 Ea.	Operating Tag and Tie	Order Tag 40976 and Tie 982979			
640-200	1	Load Limiter Kit (Includes Lever)	4190	4191		
640-201	1	Lever Ratchet Hub for Units Equipped with Load Limiters	40182			
640-202	1	Capacity of CM Label	-	40908	40907	

* If Latchlok Hook is required, part numbers are:
 Upper Hook-1000 for 3/4 ton, 1002 for 1-1/2 ton, 1004 for 3 ton and 1027 for 6 ton.
 Lower Hook-1001 for 3/4 ton, 1003 for 1-1/2 ton, 1005 for 3 ton and 1007 for 6 ton.

Note: When ordering parts, always furnish rated load and serial number of hoist on which the parts are to be used.
For the location of the nearest CM Master Parts Depot, see the list located on the inside front cover.

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 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 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 accrues.


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 and require its employees to comply with directions set forth in instructions and manuals furnished by Seller and 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 to property or business 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 or state safety requirements, Buyer shall indemnify and hold Seller harmless against any claims, loss or expense for injury or damage arising from the use of the goods.

 WARNING
ALTERATIONS OR MODIFICATIONS OF EQUIPMENT AND USE OF NON-FACTORY REPAIR PARTS CAN LEAD TO DANGEROUS OPERATION AND INJURY.
TO AVOID INJURY:
<ul style="list-style-type: none">• DO NOT ALTER OR MODIFY EQUIPMENT• DO USE ONLY FACTORY PROVIDED REPLACEMENT PARTS



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