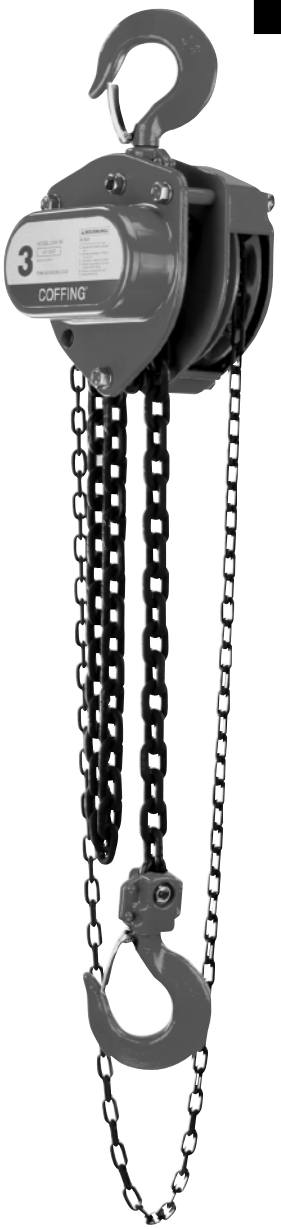
Manual Chain

LHH680-6

Operating, Maintenance & Parts Manual

LHH Series



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.

Should you have any questions or have problems with this product, please call Coffing Hoists at **(800) 477-5003**.

Before using hoist, fill in the information below:

Model No. _____

Serial No. _____

Purchase Date _____

COFFING®
HOISTS

Country Club Road
P.O. Box 779
Wadesboro, NC 28170 USA
TEL: (800) 477-5003
FAX: (800) 374-6853

SAFETY PRECAUTIONS

Each Coffing LHH Series Manually 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 *American Society of Mechanical Engineers Code (ASME) B30.16 and the *American National Standards Institute ANSI/ASME HST-2M. *Copies of this Standard can be obtained from ASME Order Department, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300, U.S.A.

⚠ WARNING

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 the manufacturer's Operating and Maintenance Instructions or Manuals.
3. **NOT** operate a hoist which has been modified without the manufacturer's approval or certification to be in conformity with applicable OSHA regulations.
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** use the hoist to lift, support, or transport people.
8. **NOT** lift loads over people and make sure all personnel remain clear of the supported load.
9. **NOT** attempt to lengthen the load chain or repair damaged load chain.
10. Protect the hoist's load chain from weld splatter or other damaging contaminants.
11. **NOT** use load chain as a sling or wrap load chain around load.
12. **NOT** apply the load to the tip of the hook or to the hook latch.
13. **NOT** apply load unless load chain is properly seated in the chain wheel(s) or sprocket(s).
14. **NOT** apply load if bearing prevents equal loading on all load supporting chains.
15. **NOT** operate beyond the limits of the load chain travel.
16. **NOT** leave load supported by the hoist unattended unless specific precautions have been taken.
17. **NOT** allow the chain or hook to be used as an electrical or welding ground.
18. **NOT** allow the chain or hook to be touched by a live welding electrode.
19. **NOT** remove or obscure the warnings on the hoist.
20. **NOT** operate a hoist which has NOT been securely attached to a suitable support.
21. **NOT** operate a hoist unless load slings or other approved single attachments are properly sized and seated in the hook saddle.
22. **NOT** operate a hoist when it is restricted from forming a straight line from hook to hook in the direction of loading.
23. **NOT** lift loads that are NOT balanced and that the holding action is NOT secure, taking up slack carefully.
24. **NOT** operate a hoist unless all persons are and remain clear of the supported load.
25. Report malfunctions or unusual performances of a hoist, after it has been shut down until repaired.
26. **NOT** operate a hoist on which the safety placards or decals are missing or illegible.
27. Be familiar with operating controls, procedures, and warnings.

⚠ 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 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 any 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. Inspect the hoist regularly, replace damaged or worn parts, and keep appropriate records of maintenance.
8. Use the hoist manufacturer's recommended parts when repairing the unit.
9. Lubricate load chain per hoist manufacturer's recommendations.
10. **NOT** use the hoist load limiting or warning device to measure load.
11. **NOT** operate except with manual power.
12. **NOT** permit more than one operator to pull on a single hand chain at the same time. More than one operator is likely to cause hoist overload.
13. **NOT** allow your attention to be diverted from operating the hoist.
14. **NOT** allow the hoist to be subjected to sharp contact with other hoists, structures, or objects through misuse.
15. **NOT** adjust or repair the hoist unless qualified to perform such adjustments or repairs.

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GENERAL INFORMATION

This manual provides information for the safe operation and maintenance of Coffing Hand Chain Hoists. All persons operating or maintaining the hoist should be familiar with the information contained herein. Adherence to the precautions, procedures, and maintenance practices described should ensure long, reliable operation.

All persons responsible for the installation, operation, or maintenance of hoisting equipment should read American National Standard ANSI B30.16 for guidelines toward the safe operation of hoists. This standard contains rules pertaining to inspection requirements and records that may be required by some regulatory agencies.

HOIST CONSTRUCTION

This hand chain hoist provides an efficient means for lifting of freely suspended material loads within its load rating. The frame and covers of the hoist are of stamped steel construction.

The cast hand chain wheel and load activated brake provide smooth, precise spotting of loads.

INSPECTION PRIOR TO INITIAL USE

When unpacking the hoist, inspect carefully for any damage that may have occurred during shipping. Check for loose, missing, or damaged parts.

INSTALLATION

Be sure that the structures supporting the hoist are strong enough to support the full rated load of the hoist with a generous factor of safety. The hoist should be suspended directly over the load, so that the load can be lifted without side pull. The hoist body must be free to align itself between the two hooks. Do not restrain the hoist frame in any way, or allow it to rest directly against any part of the supporting structure.

TESTING

Apply a light load to the hoist and check for smooth operation and proper brake function. If the hoist works properly with a light load, connect the rated load to the hoist and raise the load just clear of the floor. Check that the brake holds the load before lifting any higher. No drifting of the hook should occur under any size load within the hoist's load rating.

Table 1 - General Specifications

Model	LHH-1/2B	LHH-1B	LHH-1½B	LHH-2B	LHH-3B	LHH-5B
Rated Load (lbs)	1000	2000	3000	4000	6000	10000
Weight (lbs)	20	23	33	44	65	74
Standard Lift (ft)	10-15-20	10-15-20	10-15-20	10-15-20	10-15-20	10-15-20
Pull on Hand Chain to Raise Load (lbs)	55	60	66	88	84	79
Hand Chain Overhaul for 1 Foot Lift (ft)	32	56	68	75	95	203
Throat Opening of Hooks (in)	15/16	1 1/8	1 3/8	1 3/8	1 9/16	1 7/8
Minimum Distance Between Hooks (in)	10 1/4	11 13/16	13 9/16	15	17 1/8	22 5/8
Load Chain Size Wire Diameter (mm)	5	6.3	7.1	8	10	7.1

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SAFETY RULES

Inspect the hoist for any sign of loose, broken or malfunctioning parts. Any malfunctioning hoist should be tagged as "out of order" and removed from service until the defect is corrected.

a. Do not overload the hoist.
b. Do not exert more than the hand chain pull to lift rated load by one operator (See Table 1). The hoist is designed to lift its rated capacity when a reasonable force is exerted. If effort appears to be excessive, recheck the load and use a larger capacity hoist if necessary.
c. Do not side load the hoist. Always pull in a straight line between hooks. Side loading over a sharp corner may fracture the hoist housing, load block or hook.
d. Be sure there are no twists in the load chain and make sure that load chain is free to move and will clear all obstructions. On a multiple chained hoist it is possible for the load block to be capsized or turned over one or more times causing the chain to twist.
e. Do not operate the hoist from an off balance position. Operator should have firm footing or be otherwise secured before operating the hoist.
f. Before raising or pulling a load, always check to see that it is held securely in the hook or sling chains, etc. Raise the load only until the load chain is taut and then recheck the rigging before continuing to raise the load.
g. Make sure that the slings and other rigging have sufficient capacity to support the load, and are in good condition.
h. DO NOT STAND BENEATH A LOAD! Do not move a load in such a manner as to endanger personnel.
i. Do not leave the hoist under load for extended or unattended periods unless specific precautions have been taken to provide protection.
j. Do not wrap the load chain around a load. USE A SLING!
k. Do not TIP-LOAD any hook, as this will exert undue strain in the hook, resulting in hook failure.
l. The hoist is designed for manual operation by one person. Do not attempt to operate hoist with other than the manual power furnished by one person.
m. DO NOT USE HOIST TO LIFT, SUPPORT OR OTHERWISE TRANSPORT HUMAN CARGO.
n. The hand chain is equipped with a safety link. When the safety link opens or deforms, stop at once and inspect for the cause.
o. Lifting a load with two hoists is not recommended. If operation is unavoidable, hoist the load with utmost care, keeping balance of the load.
p. Never run the load chain out too far. When operating beyond the range of lift, an excessive load that can cause damage will be imposed on the hoist.
q. Hoists are designed for lifting loads vertically and should not be used for horizontal or angle hoisting.
r. Extreme temperatures will lower the toughness of the hoist. Loads should be hoisted or lowered very slowly and carefully.
s. The hoisting operation should never be done with the bottom hook or load caught on a fixed object.
t. Never use the chain or hook as a ground for welding.
u. Use only genuine parts and chains supplied by the authorized distributor.

HANDLING THE LOAD

ATTACHING THE LOAD

a. The load should be attached to the hook by means of slings or other appropriate devices. Never wrap the load chain around a load.
b. Be sure the load is supported in the saddle of the hook and the latch is closed. Do not support a load on the tip of the hook.

LIFTING THE LOAD

a. Raise the load by pulling the right side hand chain. Lift the load just clear of the floor. Check that slings are secure in the hook, the load is well balanced, and the hoist brake is holding the load. Lift the load to desired height, always standing clear of the suspended load.
b. Lower the load by pulling the left side hand chain. Pull smoothly and slowly. Avoid "spinning" the hand chain.
c. Never jam the hook block into the bottom of the hoist, or run the hook down until the slack chain is pulled tight.

PREVENTIVE MAINTENANCE

Periodic inspection and lubrication is important to ensure long and satisfactory operation of the hoist. The recommended inspection intervals indicated in Table 2 are based on intermittent operation. The user should reduce or extend his inspection intervals based on usage and individual experience.

	Diameter of Link (mm)	Standard Dimension P (inch)	Permissible Limit P (inch)
1/2 Ton Load Chain	5	.590	.602
1 Ton Load Chain	6.3	.752	.767
1½ Ton Load Chain	7.1	.835	.850
2 Ton Load Chain	7.9	.953	.972
3 Ton Load Chain	10	1.193	1.216
5 Ton Load Chain	7.1	.835	.850
Hand Chain	5	.945	.984

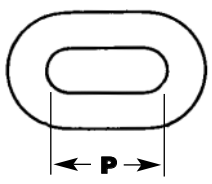

Figure 1 - Chain Wear Measurement

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Use calipers to check the chain for wear as shown in Figure 1. Replace any chain showing damage or wear beyond the wear limit shown. (Make certain the caliper anvils are small enough to seat in the links.)

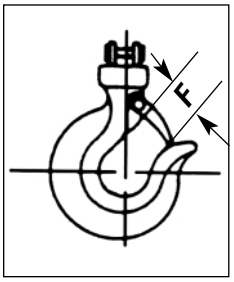
⚠ WARNING

If chain is worn or otherwise damaged, replace entire chain with new chain supplied by the hoist manufacturer. Do not substitute. Do not attempt to reweld damage.

HOOK DIMENSIONS (OPENING)

Inspect the hooks for deformations, chemical damage or cracks. Hooks damaged from chemicals, deformation or cracks, or hooks having throat openings greater than the "reject opening" shown in the table must be replaced. If the hook is twisted more than 10 degrees from the plane of the unbent hook, it must be replaced.

Capacity (ton)	Standard Dimension F (inch)	Reject Opening F (inch)
1/2	1.181	1.300 & Over
1	1.417	1.575 & Over
1½	1.535	1.693 & Over
2	1.653	1.811 & Over
3	1.890	2.086 & Over
5	2.205	2.440 & Over



DISASSEMBLY

Disassembly of the hoist is straightforward. Note the location and orientation of the various parts.

LUBRICATION

1. Good lubrication is vital to long chain life. The load chain should be kept well oiled with SAE 30 weight oil. Be sure that the oil is worked into the area between the links.
2. If the hoist is disassembled for inspection or repair, relubricate the moving parts according to Table 3.

⚠ CAUTION

The brake surfaces must be kept free of any trace of oil or grease. Apply lubricant sparingly to the parts near the brake to avoid oil contamination of the brake.

Table 3 - Recommended Lubricants

Part	Lubricant
Gears, bearings, pawl pivot pin, guide roller pin, hook shanks, and chain wheel threads	Any good quality NLGI #2 grease
Chain	SAE 30 weight oil
Brake parts, ratchet teeth	Do Not Lubricate

ASSEMBLY

Assembly is the reverse of disassembly. Be sure to note the following points.

1. The twin gears each have an "O" stamped on them which is used as a timing mark. The twin gears must be installed so that the timing marks both point to exactly the 9 o'clock position at the same time (See Figure 2).

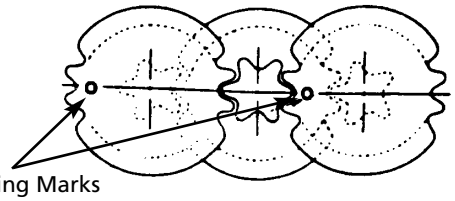


Figure 2 - Twin Gear Timing Marks

2. Assemble the brake parts as shown in the exploded view (Figure 3). Screw hand chain wheel down tight. Screw the nut down finger tight on the input shaft, then back it off approximately one-quarter turn and install the cotter pin.
3. Install chain by running a piece of wire or string between the chain guide roller and load sprocket and then over and around the load sprocket. Tie the chain to the wire or string and pull it into the hoist so that the first link is standing on edge in one of the slots of the load sprocket, with the weld away from the sprocket. Operate hoist in the UP direction, pulling about a foot of chain around the sprocket and out the hoist. Remove the cotter pin from the slack end pin and slide the pin to one side. Pull the end of the chain under the chain guide roller and hook the last link over the slack end pin, being sure the chain has no twist. Slide the slack end pin back into position and install the cotter pin through it.

⚠ CAUTION

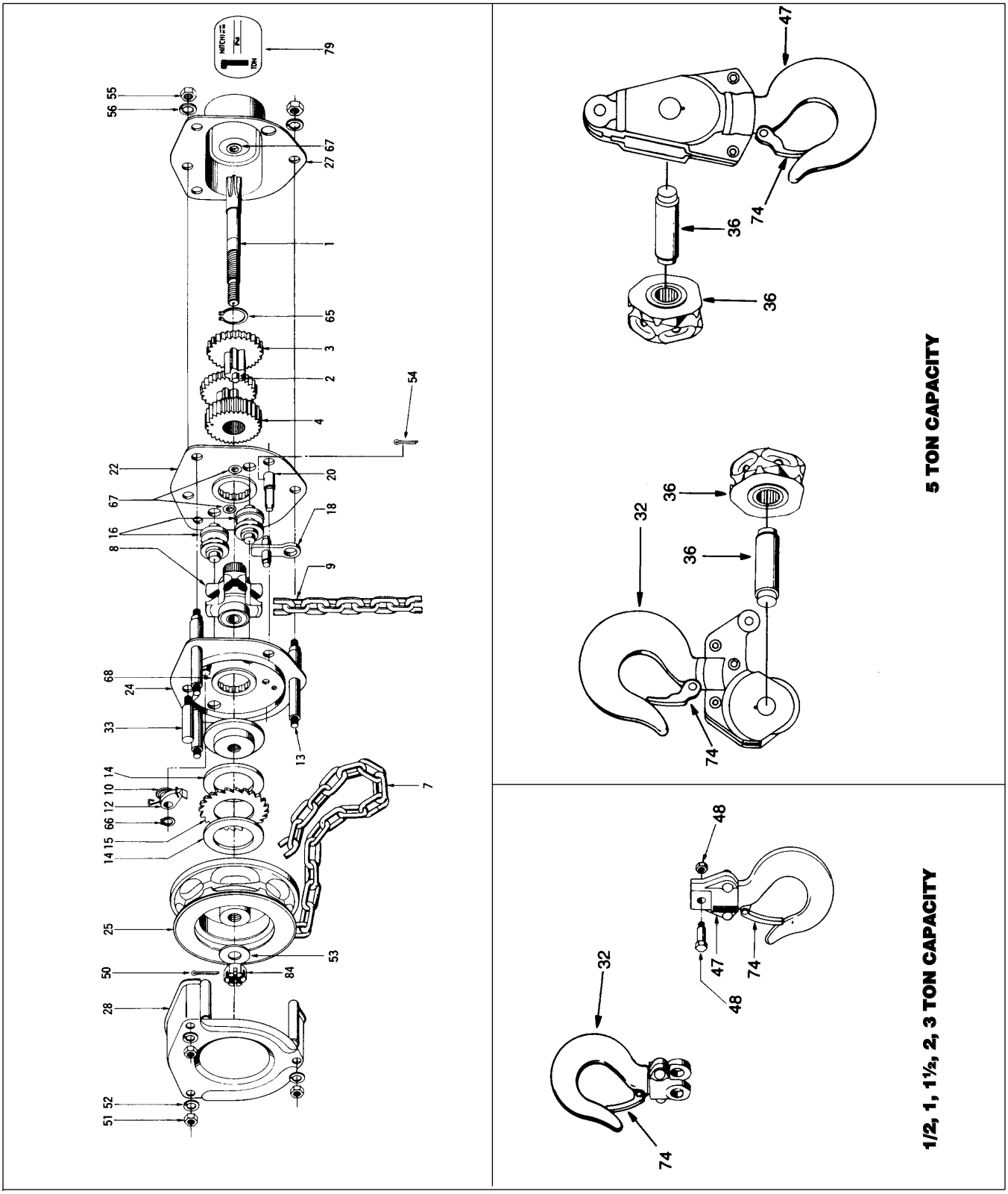
Be sure the slack end of chain passes between the chain guide roller and the load sprocket and under the chain guide roller.

Table 2 - Inspection Schedule

Interval	Inspection
Daily	a. Check hooks and hook latches for deformation or cracks. Twisted hooks or hooks with throat openings more than the reject openings listed in above table should be replaced. b. Visually check chain for wear and twist. c. Check brake for drift.
Quarterly	a. Check for loose screws, nuts, etc. b. Check load sprocket and hand chain wheel for wear.
Annually (See Disassembly)	a. Inspect for worn gears, bearings, pawl, pawl spring, ratchet, and shafts. b. Check for worn brake discs. c. Inspect hooks for cracks using magnetic particle or similar test. d. Clean chain in kerosene or other non-corrosive solvent and inspect for wear, nicks, or distortion of any kind.

Contact your nearest Coffing Hoists Service Center for parts and service. For a complete list, see pages 8 and 9. Please have the hoist model number, serial number, and part number with description available for reference.

Figure 3 - Exploded View



Parts list for 1/2 Ton, 1 Ton, 1½ Ton, 2 Ton, 3 Ton, and 5 Ton Models

Description	Consists of Index No.	1/2 Ton Part No.	1 Ton Part No.	1½ Ton Part No.	2 Ton Part No.	3 Ton Part No.	5 Ton Part No.
Pinion Shaft	1	GHH5001	JHH5001	KHH5001	LHH5001	NHH5001	KHH5001
Pinion Gear	2, 3 (Set of 2)	GHH5003T	JHH5003T	KHH5003T	LHH5003T	NHH5003T	KHH5003T
Load Gear	4	GHH5004	JHH5004	KHH5004	LHH5004	NHH5004	KHH5004
Load Sheave	8	GHE5008	JHE5008	KHE5008	LHE5008	NHH5008	KHH5008T
Hand Chain (Per Foot)	7	GHH5009J	GHH5009J	GHH5009J	GHH5009J	GHH5009J	GHH5009J
Load Chain (Per Foot)	9	GHH5009T	JHH5009T	KHH5009T	LHH5009T	NHH5009T	KHH5009T
Pawl Kit	10, 12, 66	GHH5099	JHH5099	KHH5099	LHH5099	NHH5099	KHH5099
Disc Hub	13	GHH5013	JHH5013	KHH5013	LHH5013	LHH5013	KHH5013
Friction Disc	14 (Set of 2)	GHH5014	JHH5014	KHH5014	LHH5014	LHH5014	KHH5014
Ratchet	15	GHH5015	JHH5015	KHH5015	LHH5015	LHH5015	KHH5015
Handwheel Cover	28	GHH5028	JHH5028	KHH5028	LHH5028	NHH5028	KHH5028
Top Hook	32 w/74	GHH5032T	JHH5032T	KHH5032T	LHH5032T	NHH5032T	PHH5032T
Bottom Hook	47, 48 w/74	GHH5047U	JHH5047U	KHH5047U	LHH5047U	NHH5047U	PHH5047U
Chain Fastening Bolt	48	GHH5048U	JHH5048U	KHH5048U	LHH5048U	NHH5048U	PHH5048U
Hardware Repair Kit Per Hoist	50, 51, 52 53, 54, 55 56, 65, 84	GHH5586	JHH5586	KHH5586	LHH5586	NHH5586	KHH5586
Bearing for Pinion	67 (Set of 4)	GHH5067	GHH5067	KHH5067	LHH5067	TR132713NR	KHH5067
Bearing for Load Sheave	68 (Set of 2)	GHE5005	JHE5005	KHE5005	LHE5005	TR506213NR	TR364710NR
Latch Kit	74	GHH5074U	JHH5074U	KHH5074U	KHH5074U	NHH5074U	PHH5074U
Chain Guide Kit	16 (2), 18, 20	GHH161820	JHH161820	KHH161820	LHH161820	NHH161820	KHH161820
Gear Side Plate	22 w/o 67, 68	GHH5022	JHH5022	KHH5022	LHH5022	NHH5022	KHH5022
Wheel Side Plate	24 w/o 68	GHE5024T	JHE5024T	KHH5024T	LHE5024T	NHE5024T	KHH5024T
Handwheel	25	GHH5025	JHH5025	KHH5025	LHH5025	NHH5025	KHH5025
Gear Cover	27 w/o 67, 79	GHH5027	JHH5027	KHH5027	LHH5027	NHH5027	KHH5027
Yoke Pin	33	RH4010033	RH4010033	RH4015033	RH4020033	RH4030033	RH4015033
Decal	79	LHH674 6	LHH674 7	LHH674 11	LHH674 8	LHH674 9	LHH674 10
Idle Sheave Assembly	36	-	-	-	-	-	PHH5042

When ordering spare parts, be sure to state part number, capacity, model number and quantities, referring to the above list.

High Performance Lifting™

COFFING® HOISTS

WARRANTY

Every hoist is thoroughly inspected and tested prior to shipment from the factory. Should any problems develop, return the complete hoist prepaid to your nearest Coffing® Authorized Warranty Repair Station. If inspection reveals that the problem is caused by defective workmanship or material, repairs will be made without charge and the hoist will be returned, transportation prepaid.

This warranty does not apply where: (**1**) deterioration is caused by normal wear, abuse, improper or inadequate power supply, eccentric or side loading, overloading, chemical or abrasive actions, improper maintenance or excessive heat; (**2**) problems resulted from repairs, modifications or alterations made by persons other than factory or Coffing® Authorized Warranty Repair Station personnel; (**3**) the hoist has been abused or damaged as a result of an accident; (**4**) repair parts or accessories other than those supplied by Coffing® are used on the hoist. Equipment and accessories not of the seller's manufacture are warranted only to the extent that they are warranted by the manufacturer.

EXCEPT AS STATED HEREIN, COFFING® MAKES NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

⚠ WARNING

Alterations or modifications of equipment and use of non-factory repair parts can lead to dangerous operation and injury.

TO AVOID INJURY:

- **Do not alter or modify equipment**
- **Do not use equipment to lift, support or otherwise transport people**
- **Do not suspend unattended loads over people**

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12/00