

OPERATION AND MAINTENANCE MANUAL for BEEBE

MODEL C3H005
1/2 TON MANUAL CHAIN HOIST

MODEL C3H010
1 TON MANUAL CHAIN HOIST

MODEL C3H015
1-1/2 TON MANUAL CHAIN HOIST

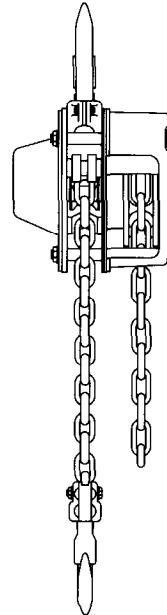
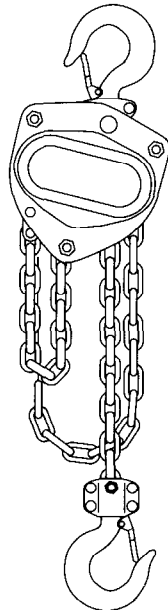
MODEL C3H020
2 TON MANUAL CHAIN HOIST

MODEL C3H025
2-1/2 TON MANUAL CHAIN HOIST

MODEL C3H030
3 TON MANUAL CHAIN HOIST

MODEL C3H050
5 TON MANUAL CHAIN HOIST

MODEL C3H080*
8 TON MANUAL CHAIN HOIST



WARNING:

* U.S. tons

Do not use this hoist for lifting, supporting, or transporting people or lifting or supporting loads over people.

Always operate, inspect and maintain this Hoist in accordance with American National Standards Institute Safety Code (ANSI B30.16) and any other applicable safety codes and regulations.

Read all the enclosed instructions and warning labels before installing, operating or repairing this hoist.

Refer All Communications to the Nearest
Ingersoll-Rand Material Handling Products
Office or Distributor.

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INGERSOLL-RAND®
MATERIAL HANDLING PRODUCTS

SAFETY SUMMARY

WARNING: Do not use this hoist for lifting, supporting, or transporting people or lifting or supporting loads over people.

WARNING: The supporting structures and load-attaching devices used in conjunction with this hoist must provide an adequate safety factor to handle the rated load, plus the weight of the hoist. If in doubt, consult a qualified structural engineer.

The National Safety Council, Accident Prevention Manual for Industrial Operations, Eighth Edition and other recognized safety sources make a common point: Employees who work near cranes or assist in hooking on or arranging a load should be instructed to keep out from under the load. From a safety standpoint, one factor is paramount: conduct all lifting operations in such a manner that if there were an equipment failure, no personnel would be injured. This means keep out from under a raised load and keep out of the line of force of any load.

To the best of our knowledge, INGERSOLL-RAND Material Handling Products hoists are manufactured in accordance with the latest standards in effect at time of manufacture.

However, contrary to common belief, the Occupational Safety and Health Act of 1970, as we understand it, generally places the burden of compliance with the user, not the manufacturer. Many OSHA requirements are not concerned or connected with the manufactured product but are, rather, connected with the final installation: "It is the owner's responsibility and user's responsibility to determine the suitability of a product for any particular use. Check all applicable industry, trade association, federal, state and local regulations. Read all operating instructions and warnings before operation."

Rigging: It is the responsibility of the operator to exercise caution, use common sense and be familiar with proper rigging techniques. See ANSI/ASME B30.9 for rigging information, American National Standards Institute, 1430 Broadway, New York, NY 10018.

NOTE: Using other than genuine INGERSOLL-RAND Material Handling Products parts will result in the void of warranty.

Hoists returned with opened, bent or twisted hooks; or without chain and hooks, will not be repaired or replaced under warranty.

SAFETY INSTRUCTIONS

1. Only allow qualified people (trained in safety and operation) to operate the hoist.
2. Only operate a hoist if you are physically fit.
3. When a "DO NOT OPERATE" sign is placed on the hoist controls, do not operate the hoist until the sign has been removed by designated personnel.
4. Before each shift, the operator should inspect the hoist for wear or damage.
5. Never use a hoist which inspection indicates is defective.
6. Periodically, inspect the hoist thoroughly and replace worn or damaged parts.
7. Lubricate the hoist regularly.
8. Do not use hoist if safety latch on a hook has been sprung or broken.
9. Check that the safety latches are engaged before using.
10. Never splice a hoist chain by inserting a bolt between links.
11. Only lift loads less than or equal to the rated capacity of the hoist. See warning labels attached to the hoist.
12. Never use the hoist chain as a sling.
13. Never operate a hoist when the load chain is not centered under the hook. Do not "side pull" or "yard."
14. Never operate a hoist with twisted, kinked, "capsized" or damaged load chain.
15. Do not force a chain or hook into place by hammering.
16. Never insert the point of the hook into a chain link.
17. Be certain the load is properly seated in the saddle of the hook.
18. Do not support the load on the tip of the hook.
19. Never run the load chain over a sharp edge. Use a sheave.
20. When using two hoists to suspend one load, select two hoists both having rated capacities equal to or more than the load to be lifted. This provides adequate safety in the event of a sudden load shift or failure of one hoist.
21. Pay attention to the load at all times when operating the hoist.

22. Always ensure that you, and all other people, are clear of the path of the load. Do not lift a load over people.
23. Never use the hoist for lifting or lowering people, and never allow anyone to stand on a suspended load.
24. Ease the slack out of the chain and sling when starting a lift. Do not jerk the load.
25. Do not swing a suspended load.
26. Never suspend a load for an extended period of time.
27. Never leave a suspended load unattended.
28. Never weld or cut a load suspended by the hoist.
29. Never use the hoist chain as a welding electrode.
30. Do not operate hoist if chain jumping, excessive noise, jamming, overloading, or binding occurs.
31. Keep the load from hitting the load chain.
32. Only operate the hoist with manual power.
33. After use, properly secure hoist and loads.

OPERATION

When facing the hand chain side of the hoist:

Rotate hand chain clockwise to raise load.

Rotate hand chain counterclockwise to lower load.

NOTE: The clicking sound of the pawl on the ratchet gear is normal when a load is being raised.

INSPECTION

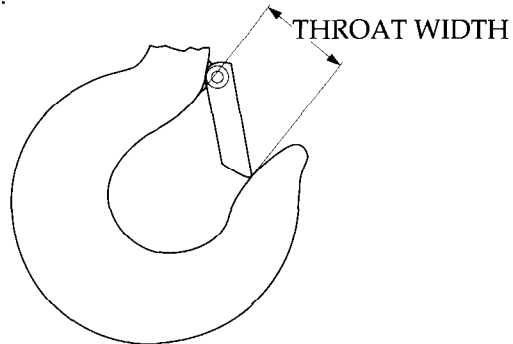
There are two types of inspection, the frequent inspection performed by the operator while using the hoist and periodic inspections performed by qualified personnel.

Frequent Inspection

On a hoist in continuous service, frequent inspection should be made at the beginning of each shift. In addition, visual inspections should be conducted during regular service for any damage or evidence of malfunction.

1. **OPERATION.** Check for visual or abnormal noises which could indicate a defect. Do not operate a hoist unless the chain feeds through the hoist and hook block smoothly. Listen for "clicking," binding or malfunctioning. If chain binds, jumps, or is excessively noisy, clean and lubricate the chain. If problem persists, replace the chain. Do not operate the hoist until all defects have been corrected. Check that hand chain moves freely and without binding or excessive drag. Hook should stop moving when hand chain stops moving.
2. **HOOKS.** Check for wear or damage, increase throat width, bent shank or bending of hook. Replace hooks with any increase in throat width or 10% bend. If the hook latch snaps past the tip of the hook, the hook is sprung and must be replaced. Check hook support bearings for lubrication and damage. Make sure that they swivel easily and smoothly. Repair or lubricate as necessary.

Model No.:	Throat Width:	
	in.	(mm)
C3H005	1.22	31.0
C3H010	1.34	34.0
C3H015	1.48	37.5
C3H020	1.57	40.0
C3H025	1.67	42.5
C3H030	1.81	46.0
C3H050	1.97	50.0
C3H080	3.13	79.5



3. **HOOK LATCH.** Check operation of the safety latch. Replace if broken or missing.
4. **CHAIN.** Examine each of the links for bending, cracks in weld areas or shoulders, transverse nicks and gouges, weld splatter, corrosion pits, striation — minute parallel lines and chain wear, including bearing surfaces between chain links. Replace a chain that fails any of the inspections. Check lubrication and lubricate if necessary. See "Load Chain" under "LUBRICATION."

NOTE: Excessive wear or stretching may not be apparent from visual observation. Also inspect chain by measuring five links in accordance with instructions in "Periodic Inspection."

NOTE: A worn load chain may cause the load sheave to wear rapidly. Inspect the load sheave and replace if damaged or worn.

5. **CHAIN REEVING.** Ensure welds on standing links are away from load sheave. Re-install chain if necessary. Make sure chain is not capsized, twisted or kinked. Adjust as required.

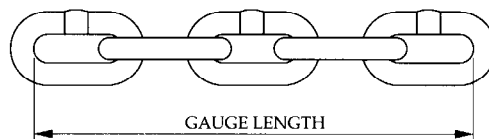
Periodic Inspection

According to ANSI/ASME B30.16-1987, frequency of periodic inspection depends on the severity of usage: NORMAL, yearly; HEAVY, semiannually; SEVERE, quarterly. Disassembly may be required for HEAVY or SEVERE usage. Keep accumulative written records of periodic inspections to provide a basis for continuing evaluation.

Inspect all the items in a frequent inspection. Also inspect the following:

1. FASTENERS. Check rivets, cap screws, nuts, cotter pins and other fasteners on hook and hoist body and chain bucket, if used. Replace if missing and tighten if loose.
2. ALL COMPONENTS. Inspect for wear, damage, distortion, deformation and cleanliness. If external evidence indicates the need, disassemble. Check gears, shafts, bearings, sheaves, chain guides, springs and covers. Replace worn or damaged parts. Clean, lubricate and reassemble.
3. HOOK. Inspect hooks for cracks using magnetic particle or other suitable method. Inspect hook retaining parts. Tighten or repair, if necessary.
4. CHAIN SHEAVES. Check for damage or excessive wear. Replace if necessary.
5. BRAKES. Ensure proper operation. Brake should not slip with test load (10% of capacity). If external inspection indicates the need, disassemble. Brake discs must be free of oil or grease, unglazed, uniform and at least 5/64 inch (2 mm) thick. Check all other brake surfaces for wear, deformation or foreign deposits. Check pawl brake, gear teeth should be undamaged, and stop gear rotation counterclockwise. Check pawl spring for damage. Clean and replace components as necessary.
6. SUPPORTING STRUCTURE. Check for distortion, wear and continued ability to support load.
7. LABELS. Check for presence and legibility. Replace if necessary.
8. CHAIN STOPPER PIN. Ensure stopper pin on chain hoist is engaged and unbent. Repair if damaged, replace if missing. See "Attaching End of Load Chain" under "MAINTENANCE."
9. LOAD CHAIN. Measure the chain for stretching by suspending a light load (50 to 100 pounds) from the hoist and measuring across five link sections all along the chain as illustrated below. When any five links in the working length reaches or exceeds the discard length, replace the entire chain. Always use a genuine INGERSOLL-RAND Material Handling Products replacement chain.

Model No.:	Part No.:	Chain Size: (mm)	Normal Length:		Discard Length:	
			in.	(mm)	in.	(mm)
C3H005	LCCF005	5.0	2.97	75.5	3.06	77.7
C3H010	LCCF010	6.3	3.76	95.5	3.87	98.3
C3H015	LCCF015	7.1	4.17	106.0	4.30	109.1
C3H020	LCCF020	8.0	4.76	121.0	4.91	124.6
C3H025	LCCF025	9.0	5.35	136.0	5.51	140.0
C3H030	LCCF015	7.1	4.17	106.0	4.30	109.1
C3H050	LCCF025	9.0	5.35	136.0	5.51	140.0
C3H080	LCCF025	9.0	5.35	136.0	5.51	140.0



LUBRICATION

Gears (25 and 27)

Unscrew nuts (31), on opposite side of hoist as hand chain, and remove spring washers (32) and gear cover (29). Remove old grease and replace with new. For temperatures -20 to 50 F (-29 to 10 C) use EP 1 grease or equivalent. For temperatures 30 to 120 F (-1 to 49 C) use EP 2 grease or equivalent.

Load Chain

WARNING: Failure to maintain clean and well lubricated load chain will void the manufacturer's warranty.

1. In a corrosive environment, lubricate more frequently than normal.
2. Lubricate each link of the chain and apply new lubricant over existing layer.
3. Lubricate hook and safety latch pivot points.
4. Use BEEBE Lubri-Link or a SAE 50 to 90W EP oil.
5. Clean chain with acid free solvent to remove rust or abrasive dust build-up. After cleaning, lubricate chain.
6. Lubricate load chain weekly, or more frequently, depending on severity of service.

MAINTENANCE

WARNING: Never perform maintenance on the hoist while it is supporting a load.

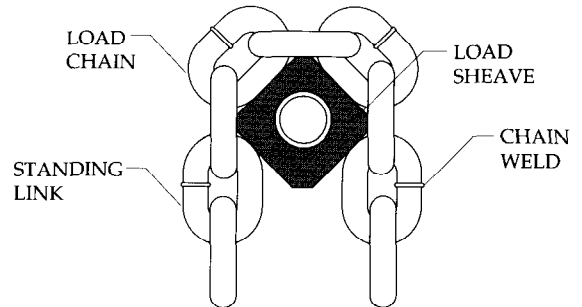
WARNING: Before performing maintenance, tag controls: DANGER - DO NOT OPERATE - EQUIPMENT BEING REPAIRED.

WARNING: Only allow qualified service personnel to perform maintenance.

WARNING: Test hoist to 125% of its rated capacity before returning to service.

Installing a New Load Chain

1. Ensure welds of "standing" links on the new chain are facing away from the load sheave (14).
2. Ensure load chain (47) is reeved between load sheave (14) and chain guides (20).
3. The bottom hook must be on left fall of load chain (47) and right fall must be attached to hoist body with stopper pin (23). Right and left are designated when viewed from the hand chain (48) side of the hoist.



Attaching End of Load Chain

1. Remove split pin (24) and stopper pin (23).
2. Make sure load chain (47) is not twisted, kinked or "capsized."
3. Position end link of load chain (47) between arms of stopper (22) and slide stopper pin (23) through end link.
4. Install split pin (24) and bend ends apart to secure stopper pin (23).

Disassembly

To remove brake discs (37), disassemble the hoist using the following procedure:

1. Remove nuts (45) and spring washers (46).
2. Remove wheel cover (44).
3. Remove split pin (43) and pull out wheel stopper pin (42). Remove wheel stopper (41).
4. While holding the load chain (47), remove hand wheel (40) by rotating counterclockwise. Remove first brake disc (37).
5. Remove ratchet gear (38) and bushing (39). Remove second brake disc (37).

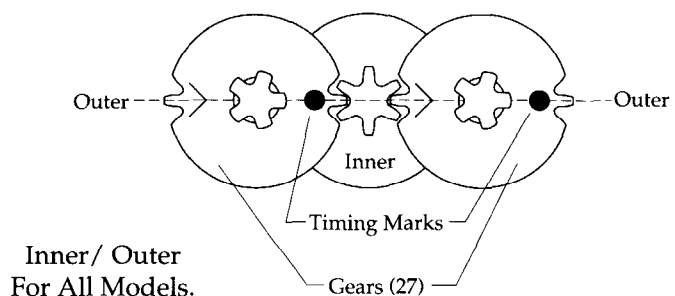
Assembly

WARNING: Keep brake discs clean, dry and free from oil and grease.

1. Place brake disc (37) on friction disc (36).
2. Slide bushing (39) over friction disc (36).
3. Install ratchet gear (38). Pawl (34) and ratchet gear (38) must "click" when gear (38) is rotated clockwise and must also stop gear (38) from rotating counterclockwise.
4. With brake surface towards brake disc (37), place hand wheel (40) on pinion (17) and rotate clockwise until clicking occurs. Hold load chain (47) to keep pinion (17) from rotating, if necessary.
5. Install hand chain (48) on hand wheel (40). Make sure hand chain (40) is untwisted and links are seated properly in chain pockets.
6. Align pilot holes in wheel stopper (41) and pinion (17).
7. Insert wheel stopper pin (42) through wheel stopper (41). Install split pin (43) and bend ends apart to secure stopper pin (42).
8. Position wheel cover (44) and secure with spring washers (46) and nuts (45).

Gear Timing

For proper operation, timing marks on gears (27) must be in the correct position.

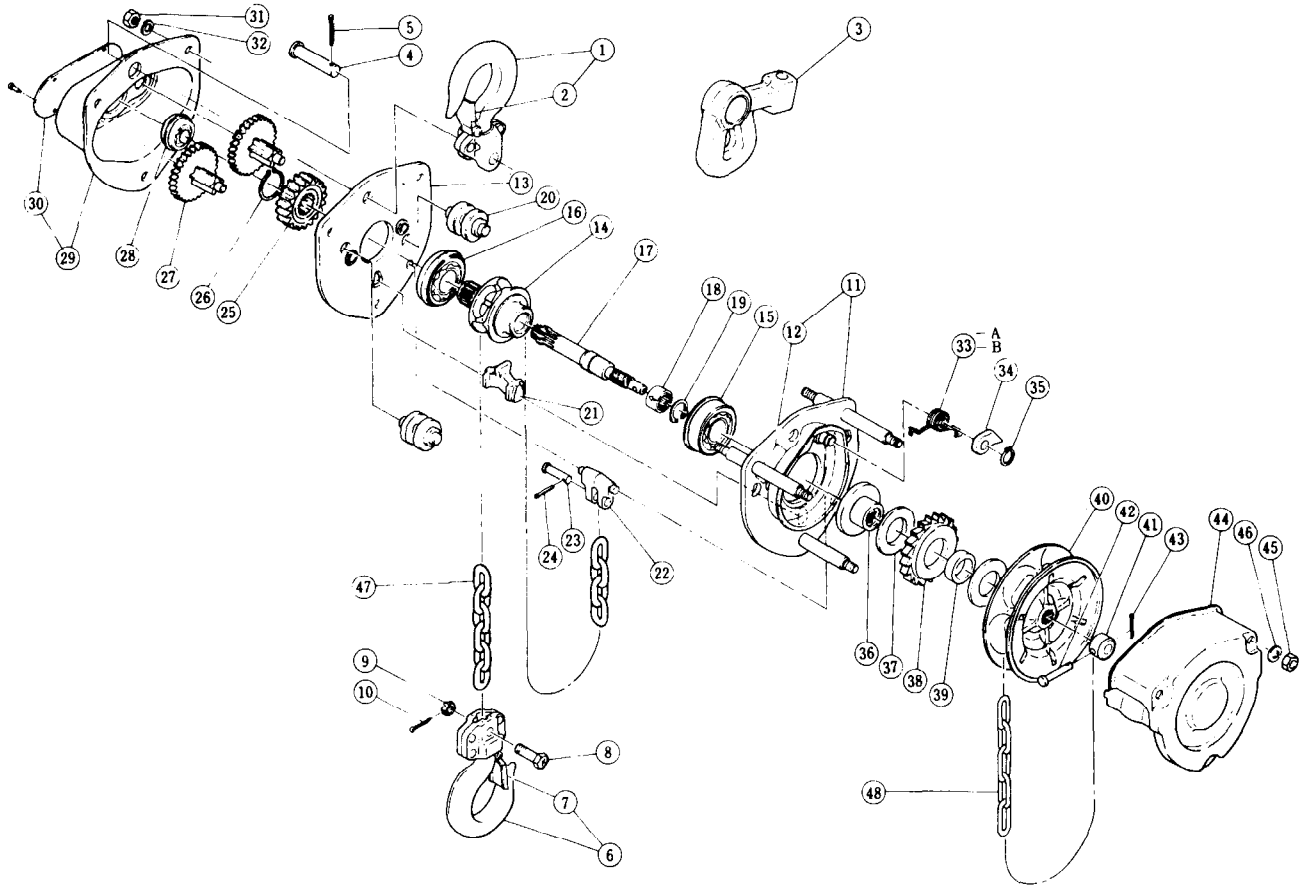


PARTS ORDERING INFORMATION

The use of replacement parts other than INGERSOLL-RAND Material Handling Products will invalidate the Company's warranty. For prompt service and genuine INGERSOLL-RAND Material Handling Products parts, provide your nearest Distributor with the following:

1. Complete model number as it appears on the nameplate: C3H plus capacity.
2. Part number and part name as shown in manual.
3. Quantity required.

C3H MANUAL CHAIN HOIST ASSEMBLY

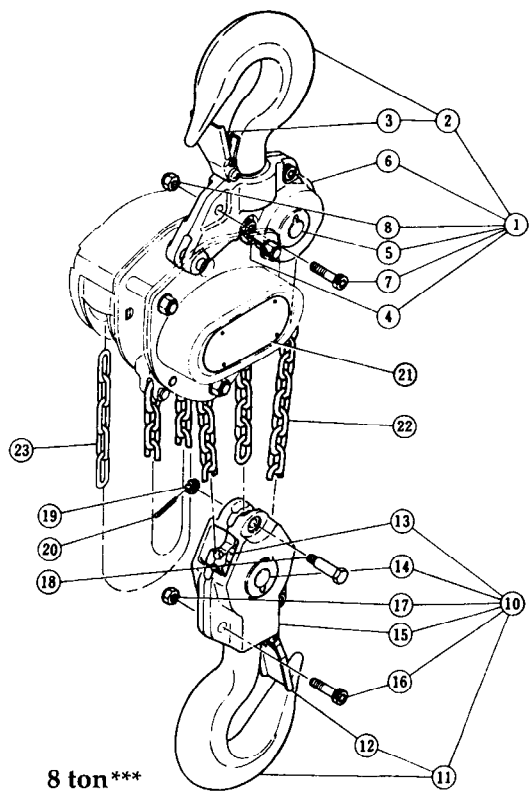
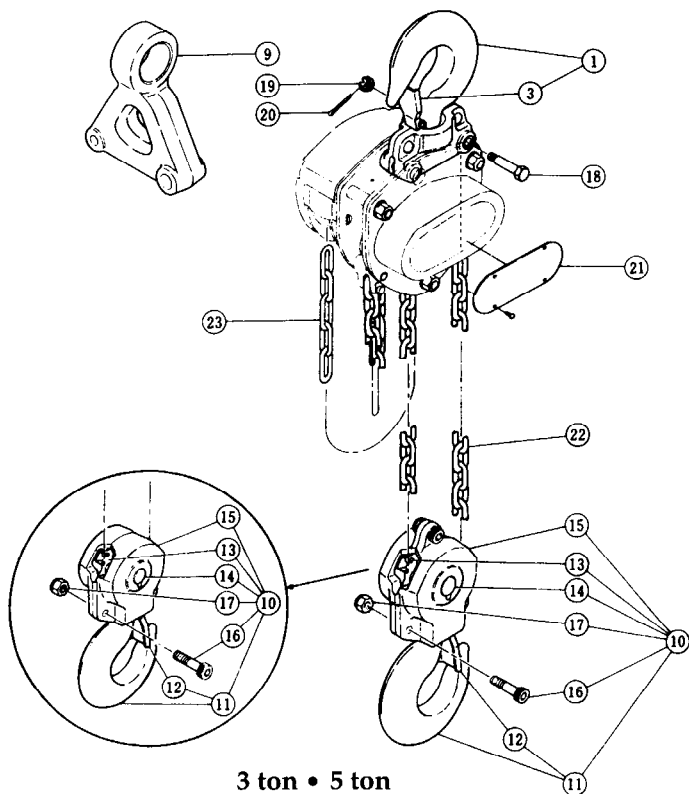


- Recommended Spares
- * The figure in parentheses is for 1/2 ton. X See parts list continuation for 3 ton.
- ** Pawl Spring A and B must be used as set. XX See parts list continuation for 5 ton.
- *** 8 U.S. tons

C3H MANUAL CHAIN HOIST PARTS LIST

ITEM NO.	DESCRIPTION OF PART	QTY. TOTAL	CAPACITY PART NO.				
			1/2 ton	1 ton	1-1/2, 3 ton	2 ton	2-1/2, 5, 8 ton**
1	Top Hook Set	1	71904	71952	71973 X	71997	72027 XX
2	Safety Lever Assembly	1	71905	71953	71974 X	71998	72002 XX
3	Suspender for UTP005	1	71906	---			
	Suspender for UTP010	1	71907		---		
	Suspender	1	---		71975 X	72029 XX	
4	Top Pin	1	71908	71954	71976	71999	72030
5	Split Pin	1	71909			72000	
• 6	Bottom Hook Set	1	71910	71955	71977 X	72001	72031 XX
• 7	Safety Lever Assembly	1	71905	71953	71974 X	71998	72002 XX
• 8	Chain Pin	1	71912	71957	71979	72003	72033
• 9	Slotted Nut	1	71913	71958	73318	72004	
• 10	Split Pin	1	71914	71959		72005	
11	Side Plate "A" Assembly	1	71915	71960	71981	72006	72034
12	Nameplate "F"	1	73319				
13	Side Plate "B" Assembly	1	71917	71961	71982	72007	72035
14	Load Sheave	1	71918	71962	71983	72008	72036
15	Ball Bearing	1	71919			72009	
16	Ball Bearing	1	71920		71984	72037	
17	Pinion	1	71921	71963	71985	72010	72038
18	Roller Bearing	1	71922			72011	
19	Snap Ring	1	71923			72012	
20	Chain Guide	2	71924	71964	71986	72013	72039
21	Stripper	1	71925	71965	71987	72014	72040
22	Stopper	1	71926	71966	71988	72015	72041
23	Chain Stopper Pin	1	71927	71967	71989	72016	72042
24	Split Pin	1	71928	71968			72043
25	Load Gear	1	71929	71969	71990	72017	72044
26	Snap Ring	1	71930		71991		72045
27	Gear #2 Assembly	2(1)*	71931	71970	71992	72018	72046
28	Ball Bearing	1	71932			72019	
29	Gear Cover	1	71933	71971	71993	72020	72047
30	Nameplate "B" with Rivets	1	73320	73321	73322 X	73323	73324 XX
31	Nut	3	71935			72022	72049
32	Spring Washer	3	71936			72023	72050
33A	Pawl Spring A**	1	71937				
33B	Pawl Spring B**	1	71938				
34	Pawl	1	71939				
35	Snap Ring	1	71940				
36	Friction Disc	1	71941			72053	
• 37	Brake Disc	2	71942			72054	
38	Ratchet Gear	1	71943			72055	
39	Bushing	1	71944			72056	
40	Hand Wheel	1	71945		71995	74024	72051
41	Wheel Stopper	1	71946			72025	
42	Wheel Stopper Pin	1	71947				
43	Split Pin	1	71948				
44	Wheel Cover Assembly	1	71949		71996	72026	72052
45	Nut	2	71950				
46	Spring Washer	3	71951				
47	Load Chain	1	LCCF005	LCCF010	LCCF015	LCCF020	LCCF025
48	Hand Chain	1	HCCF005				

C3H MANUAL CHAIN HOIST ASSEMBLY (Continued)



*** U.S. tons

C3H MANUAL CHAIN HOIST PARTS LIST (Continued)

ITEM NO.	DESCRIPTION OF PART	QTY. TOTAL	CAPACITY PART NO.		
			3 ton	5 ton	8 ton***
1	Top Hook Set	1	71978	71956	71911
2	Top Hook Assembly	1	---		72080
3	Safety Latch Assembly	1	72002	72032	72081
4	Idle Sheave Assembly	1	---		72074
5	Shaft Assembly	1	---		72083
6A	Top Yoke A	1	---		72084
6B	Top Yoke B	1	---		72085
7	Socket Bolt	3	---		72086
8	Lever Nut	3	---		72087
9	Suspender	1	72057	72070	---
• 10	Bottom Hook Set	1	72058	72071	72089
• 11	Bottom Hook Assembly	1	72059	72072	72090
• 12	Safety Latch Assembly	1	72002	72032	72081
13	Idle Sheave Assembly	1	72061	72074	
14	Shaft Assembly	1	72062	72075	
15	Bottom Yoke	2	72063	72076	72092
16	Socket Bolt	2(3)*	72064		72060
17	Lever Nut	2(3)*	72065		72073
• 18	Chain Pin	1	72066	72077	
• 19	Slotted Nut	1	72067	72078	
• 20	Split Pin	1	72005		
21	Nameplate B with/Rivets	1	73325	73326	73327
22	Load Chain	1	LCCF015	LCCF025	
23	Hand Chain	1	HCCF005		

• Recommended Spares

* The figure in parentheses is for 5 ton.

*** 8 U.S. tons

WARRANTY

INGERSOLL-RAND Material Handling Products ("Manufacturer") extends the following warranty to the original purchaser ("Purchaser") of each new product ("Product") manufactured or sold by it.

(a) Manufacturer warrants Product to be free from defects in material and workmanship under normal use and service for a period of one year from Manufacturer's original sale.

(b) Manufacturer's liability and Purchaser's sole remedy under this warranty, and for any and all other claims arising out of the purchase and use of Product, including any alleged negligence on the part of Manufacturer, is limited to repair or replacement, at Manufacturer's option, of such defective Product or part thereof, provided that the defective Product or part thereof is returned to Manufacturer's factory or authorized service center, transportation prepaid, and that examination by Manufacturer discloses that the Product is defective under the terms of this warranty.

(c) Manufacturer does not warrant components of products provided by other manufacturers. However, to the extent possible, Manufacturer will pass along to Purchaser applicable warranties of such other manufacturers.

(d) This warranty is conditioned upon installation and use of Product in accordance with Manufacturer's operating instructions. This warranty is IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Manufacturer shall have no liability or obligation as to any Product which has been misused, altered or changed in any way, including without limitation use of a "cheater" handle for extra leverage on hoists or pullers, conversion of hand winches or hoists to power operations* or use of any Product for lifting, lowering or moving persons.

(e) MANUFACTURER SHALL IN NO EVENT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES arising from the sale, delivery or use of Products.

Manufacturer neither assumes nor authorizes any person to assume for it any other liability or obligation in connection with sale and use of Products other than stated above. Caution: Purchaser and user are cautioned to examine specific, local or other regulations, including American National Standard Regulations, which may apply to a particular type of product before installing or putting to use.

*Except power rewinding pursuant to operating instructions

Please Note: Units purchased without chain and/or hooks must have Ingersoll-Rand Material Handling Products chain and hooks installed before the warranty is valid.

Shipping Damage

It is our policy to promote safe delivery of all orders.

This shipment has been thoroughly checked, packed and inspected before leaving our plant and receipt for it in good condition has been received from the carrier. Any loss or damage which occurs to this shipment while enroute is not due to any action or conduct of the manufacturer.

Visible Loss or Damage: If any of the goods called for on the bill of lading or express receipt are damaged or the quantity is short, do not accept them until the freight or express agent makes an appropriate notation on your freight bill or express receipt.

Concealed Loss or Damage: When a shipment has been delivered to you in apparent good condition, but upon opening the crate or container, loss or damage has taken place while in transit, notify the carrier's agent immediately.

Damage Claims: You must file claims for damage with the carrier. It is the transportation company's responsibility to reimburse you for repair or replacement of goods damaged in shipment. Claims for loss or damage in shipment must not be deducted from the Ingersoll-Rand invoice, nor should payment of Ingersoll-Rand invoice be withheld awaiting adjustment of such claims as the carrier guarantees safe delivery.

You may return products damaged in shipment to us for repair, which services will be for your account and form your basis for claim against the carrier.

NOTES

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