

OPERATORS' GUIDE

R-CH-SERIES

LEVER OPERATED 1-1/2, 3 & 6 TON CHAIN HOIST

Manufactured to meet
ASME B30.21



WARNING



All information found in this guide must be read and understood before use or testing of this tool.

Failure to read and understand all of these warnings and safe handling instructions could result in severe personal injury and or death.

NOTICE

Sizes, weights and tool specifications listed in this manual are subject to change without notice. Please consult factory for information & updates.



**RELIABLE EQUIPMENT
& SERVICE CO., INC.**

301 Ivyland Road • Warminster, PA 18974
Phone: 800-966-3530 • Fax: 215-357-9193
Visit us on the web at www.Reliable-Equip.com

DISTRIBUTED BY

REGISTRATION

UPON RECEIPT OF THIS TOOL, COMPLETE THE REGISTRATION BELOW.

COMPANY _____

ADDRESS _____

PHONE _____ **FAX** _____

SERIAL NUMBER _____

DATE OF PURCHASE _____

DEALER NAME _____



CAUTION

The information in this manual is intended to guide the user in the use and application of this tool. It is not intended as a substitute for proper training and experience in safe work practices for this type of equipment.

Consult your supervisor or safety personnel if you have any questions regarding the safe operation of this tool.

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If you have any questions regarding the information
found in this manual please contact RELIABLE EQUIPMENT
at 800-966-3530 or FAX 215-357-9193.



THIS SYMBOL INDICATES ITEMS OF EXTREME IMPORTANCE.

Safety of user and others may be in jeopardy if these instructions
are not read and understood.



RELIABLE EQUIPMENT & SERVICE CO., INC.



R-CH-3000

R-CH-6000

Manufactured to meet **ASME B30.21**

R-CH-3000

Capacity: 1-1/2 Ton
Approx Pull: 72 lbs.
Handle: 17 in.
Head: 11 in.
Stand. Lift: 55-1/2 in.
Weight: 15.25 lbs.

R-CH-6000

Capacity: 3 Ton
Approx Pull: 75 lbs.
Handle: 17 in.
Head: 15-7/8 in.
Stand. Lift: 54 in.
Weight: 21.25 lbs.

R-CH-3000 & R-CH-6000 **MANUALLY LEVER OPERATED** **1-1/2 & 3 TON LINK CHAIN HOIST**

The **R-CH Series** 1-1/2 & 3 ton hoists promise to provide years of dependable service, under the rigorous conditions demanded by the Power Utility & Construction Industries.

The **R-CH Series** hoists feature a time tested and field proven ratchet & pawl design for transmission and distribution applications.

FEATURES:

Light weight, compact design that is simple to operate and easy to maintain.

Cast steel alloy construction provides unmatched resistance to shock and fatigue.

The Ratchet and Pawl Mechanism provides safe operation in which one pawl is always engaged during lifting and lowering operations.

May be rigged for use in lifting, pulling or binding applications from any position.

Minimal head & face room required for operation.

Safety hooks rotate 360° and feature spring latches to provide secure support and load connections.

Quickly remove slack by pulling the free chain.

Redundant safety measures prevent handle rotation or chain release under load if the operator were to lose control of the handle.

5 Foot Standard lift. *Custom lift lengths available.*



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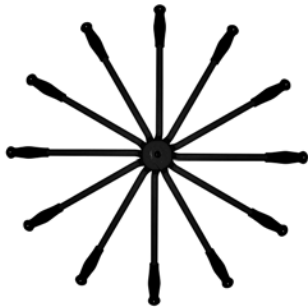
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Visit us on the web at www.Reliable-Equip.com

Familiarize yourself with the controls safety features and procedures required for the safe operation of your new hoist.

FAST LIFT

Turn Reversing Lever to "UP".
Insert a 1/2" square drive ratchet wrench into load sheave, opposite handle.

**ONLY USE FAST LIFT
IN THE UP POSITION**



12 HANDLE POSITIONS

Even in the tightest spots you will be able to make the most of each stroke.
Select the lever position that makes the most of the available space, your reach, pull, and weight.

Pull Spring
Loaded Handle
OUT

Rotate handle to
desired position



Allow handle
to re-seat

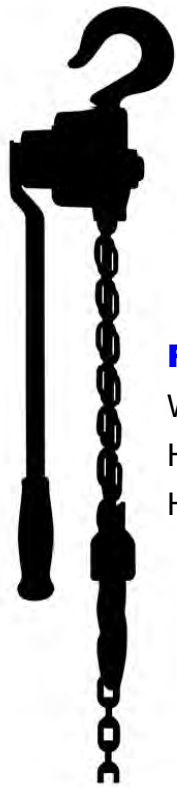


HANDLE STROKE

This hoist requires one of the shortest strokes available in a comparable hoist. Requiring approx. 16 inches of stroke to raise or lower the load and minimal clearance.

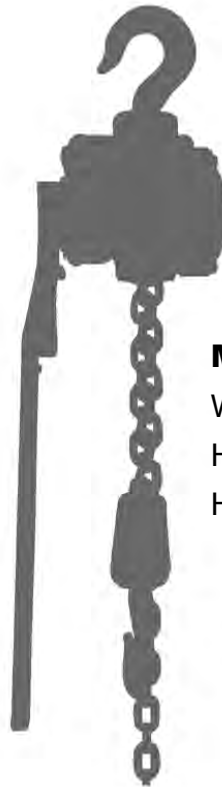


Hoist Size Matters - 1-1/2 ton Models are shown



R-CH-3000

Wt: 15.25 lbs.
Head: 11 in.
Handle: 17 in.



MA-30

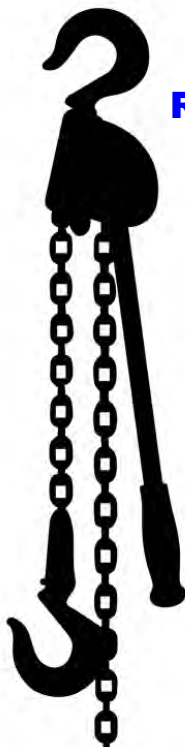
Wt: 23 lbs.
Head: 15 in.
Handle: 20.5 in.



C309-0439

Wt: 22 lbs.
Head: 16 in.
Handle: 20 in.

Side View



R-CH-3000

The **RELIABLE R-CH-Series** hoists offer the most power in the smallest, lightest steel hoist body.



MA-30

Compare the CH-Series hoists with any Lever Type 1-1/2 - 3 Ton Hoist, and you'll know why the **R-CH Series** is the right choice for your next hoist purchase.



C309-0439



WARNING

BEFORE USING THIS TOOL, READ THE WARNINGS and the recommended practices described in this manual. Failure by the operator to read and fully understand these warnings will leave this person unqualified to use and operate this tool. Property damage, severe personal injury, and/or death could result by not following these warnings.

These warnings will appear in appropriate locations when they are pertinent to the particular subject being shown. Read each one carefully and follow them strictly.



Eye Protection

WARNING

Always wear eye protection to avoid injury from flying debris. Failure to do so may result in serious personal injury.



Skin Irritation

WARNING

Oil and lubricants may cause irritation. Use care to prevent contact with skin. In case of accidental contact, wash



Hard Hat

WARNING

Always wear a hard hat to avoid injury from falling debris. Failure to do so can result in serious personal injury.



Foot Protection

WARNING

Always wear foot protection. Failure to do so can result in serious personal injury.



Check Capacity & Load

WARNING

Overloading or improper rigging a hoist may cause failure, resulting in serious personal injury and/or death.



Protective Gloves

WARNING

Always wear protective gloves. Failure to do so can result in serious personal injury.



GENERAL SAFETY



DANGER

THIS UNIT IS NOT INTENDED FOR PERSONNEL LIFTING.

Overhead loads can fall.

DO NOT ALLOW ANYONE TO STAND UNDER OR NEAR LOAD.

Maintain operator control at all times.

Failure to observe this warning could result in serious injury or death.

USE ALL APPROPRIATE AND APPLICABLE PERSONAL SAFETY EQUIPMENT as required by the operating company.

INSPECT TOOL BEFORE USE. Replace any worn, damaged or missing parts. A damaged or improperly assembled tool may injure operator and/or nearby personnel.

KEEP ALL PARTS OF THE BODY AWAY from moving parts of the tool.

MAKE SURE there is no person in close proximity to you, the tool, or the work area, who could be injured by any operation being performed, tool malfunction, or flying/falling debris.

DO NOT OVEREXTEND your position by overreaching or unbalancing the footing necessary to maintain physical control of your body and the tool.

ALWAYS MAINTAIN a firm grip on the tool to avoid loss of control during an operation, causing property damage, serious injury or death.

DO NOT PERFORM ADDITIONAL ACTIVITIES which divert attention from this operation.

USE THIS TOOL FOR THE MANUFACTURERS' INTENDED PURPOSE ONLY.

OBSERVE CLOSELY ALL OF THE SAFETY RULES FOR A PARTICULAR JOB CLASS

Operation/Safety methods may vary in accordance with the working guidelines established by each utility or contractor. Ensure that you fully comply with all safe operation guidelines required by your employer.



WARNING

ELECTRICAL SHOCK HAZARD

Always wear and use the necessary clothing, equipment and safety practices to protect against electrical shock.

Failure to observe this warning can result in serious injury or death.

**FAILURE TO HEED THESE WARNINGS COULD RESULT IN
PROPERTY DAMAGE, SERIOUS PERSONAL INJURY OR DEATH.**

GENERAL MAINTENANCE

It is recommended that a planned inspection routine be established.

Inspection intervals and procedures should be determined with respect to frequency and severity of use, as well as exposure to conditions that may cause wear or deterioration during use and storage. **Refer to ASME B30.21**

An ***Inspection Check List*** can be found later in this manual.

Confirm operation of all components, and inspect each part for wear, cracks, bending and distortion.

Frequent Inspections should be performed daily to monthly by the trained operator or other designated person, and does not require a written report.

Under **NORMAL** usage and conditions the hoist should receive a monthly inspection.

Under **HEAVY** usage or adverse conditions the hoist should be inspected weekly to monthly.

Under **SEVERE** usage or extreme conditions the hoist should be inspected daily to weekly.

Periodic Inspections are in-depth in nature but DO NOT require complete disassembly.

Some disassembly may be required to permit a more detailed inspection. A written test report is recommended and should be kept on file for later reference as needed.

Under **NORMAL** usage and conditions the hoist should receive a yearly inspection.

An evaluation by a designated person may indicate the hoist to require disassembly for a more detailed inspection.

Under **HEAVY** usage, a semiannual inspection may be required. An evaluation by a designated person may indicate the hoist to require disassembly for a more detailed inspection.

Under **SEVERE** usage, a quarterly inspection may be required. An evaluation by a designated person may indicate the hoist to require disassembly for a more detailed inspection.

Inspection of Hoists NOT in Regular Use: Refer to **ASME B30.21-1.3.4**

For a hoist that has been unused for 1-5 months, refer to **Frequent Inspections** above.

For a hoist that has remained idle in excess of 6 months, refer to **Periodic Inspections** above.

Clean all parts thoroughly with an acid-free solvent. Keep chain clean and free from rust. (Use of CRC-3-36 or equivalent is recommended) **WARNING:** Read and follow all safety and handling instructions for cleaning solvents and lubricants. Do NOT use commercial rust removers.

Lubrication - HOOKS: Allow a few drops of gear oil to run along shank into Frame Assembly.

Apply a light coating of lubriplate to internal assembly

Apply a few drops of gear oil between Sprocket Pin and Bushing and work into assembly.

LOAD CHAIN: Lubricate entire chain (Use of CRC 3-36 or equivalent is recommended)

WARNING: Read and follow all safety and handling instructions for lubricants.

Refer to lubrication chart found on the next page and specific lubrication instructions for all parts as described in the **Assembly** section of this manual.

WARNING: Never apply grease to the chain.

All maintenance or disassembly should take place on a flat, clean work surface covered with towels or wipers so as to have a clean space for the disassembled parts.

Discard the worn or damaged parts and replace with new factory authorized parts.

LEVER OPERATED CHAIN HOIST

INSPECTION & MAINTENANCE CHECK LIST

MANUFACTURED BY: RELIABLE EQUIPMENT & SERVICE CO., INC.
 MODEL # REL-6000H CAPACITY 6,000 LBS DOUBLE CHAIN - ROLLER TYPE

SERIAL # _____ ENTERED SERVICE ON ____/____/____ CREW # _____

Subject of Inspection	Conditions requiring additional inspection or repair	Frequency of Inspection			OK	Service Required
		Frequent Daily	Periodic Monthly	Periodic Yearly		
All functional mechanisms, Lever, Control Lever	Improper Operation, Binding, or Unusual Sounds	●	●	●		
Load Chain	Inadequate lubrication, excessive wear, damage, or distortion, cracked, spread or twisted links, corrosion or obstruction	●	●	●		
Hooks Safety Latches	Stretched throat opening, Distortion, damaged hook latch, wear, chemical or environmental damage, worn hook bearing. Cracks Use dye penetrant, magnetic particle Magnaflux, or other suitable detection method	●	●	● ●		
Lever Parts: Lever	Bends, cracks, distortion Straightness, ability to operate	●	●	●		
Pawls, Release Spring and Pawl Springs Bushing/Bearing	Wear, binding Bends, excessive wear Deformation, breaks, corrosion Excessive wear, scoring	●	●	●		
Load Sheave, Operating Cam Chain Attachments	Distortion, cracks, damaged teeth, damaged, Stripped threads			●		
Reverse Ring Free Chain Ring	Excessive wear, loose or missing pins			●		
Frames, Swivels	Cracks, distortion, excessive wear			●		
Lifting & Holding Pawls	Excessive wear, binding			●		
Reverse Spring, Free Chain Spring Pawl Springs	Deformation, breaks, corrosion			●		
Pins, Bolts, Rivets	Looseness, thread damage, corrosion			●		
Warning Labels	Missing, damaged, or illegible			●		

NOTE: Refer to Maintenance and Inspection Sections of the Hoist Maintenance Manual for additional details.

For additional information regarding frequency of inspection, see General Maintenance.

DAILY MAINTENANCE

The life, reliability, and safety of the tool is dependent on proper inspection & maintenance. Clean and inspect all surfaces (ie; hooks, latches, body, lever, chain, safety pin, etc...)

Refer to the ***Inspection Check List*** found in this manual for items which require attention.

WARNING: Tool frame, handles and chain may cut or pinch. Please use extreme caution.

Worn or damaged parts (i.e. bent handle or chain) may malfunction during operation, causing more extensive damage to the tool, load and/or severe injury to the operator or bystander.

All parts must be replaced with new parts if signs of wear or damage are evident.

Keep WARNING Labels clean and legible. DO NOT REMOVE, replace decals when necessary.

Observe during operation for any damage caused by or related to the applications in progress.

NOTE: Any unsatisfactory findings MUST be remedied before returning hoist to field operation.

WARNING

**READ
OPERATING
AND
MAINTENANCE
INSTRUCTIONS**

DO NOT: 1. USE WITH MORE THAN RATED LOAD. 2. LIFT PEOPLE OR LOADS OVER PEOPLE. 3. USE A HANDLE EXTENDER (CHEATER BAR). 4. USE IF DAMAGED OR MALFUNCTIONING. 5. SIDE-PULL HOIST. 6. USE WITH TWISTED KINKED OR DAMAGED CHAIN. 7. REMOVE OR OBSCURE THIS LABEL.

WARNING

RH-WL

RECOMMENDED LUBRICATION SCHEDULE

COMPONENT	TYPE OF LUBRICANT	TYPE & FREQUENCY OF SERVICE		
		HEAVY	NORMAL	INFREQUENT
Load Chain	Penetrating Oil w/ graphite or SAE 20-30 gear oil	Daily	Weekly	Monthly
Sprocket Shaft	Bearing Grease/Oil (Consult Factory) Multi Purpose - Lithium Base	Monthly	Yearly	Yearly
Top Hook	SAE 20-30 Gear Oil	Monthly	Yearly	Yearly
Bottom Hook		Weekly	Monthly	Yearly
Super Sprocket Pin & Bushing		Monthly	Yearly	Yearly
Locking Pawl		Service at Periodic Inspection		
Reverse Ring Stop Pin Rocker Arm & R.A. Shaft-Pin Assy R.A Center Post, Reverse Cam				
Reversing Ring - Shoulder Pin Assy.				
Internal lever Parts	Bearing Grease Calcium Base w/ Graphite			
This Lubrication Schedule is based on a hoist operating under NORMAL conditions. Operation under adverse conditions (i.e. dust, extreme heat, corrosive environments) may require more frequent Lubrication.				

**IF YOU HAVE QUESTIONS REGARDING THE REPAIR AND MAINTENANCE
OF THIS TOOL, CONTACT RELIABLE EQUIPMENT AT 800-966-3530**

PRE-OPERATION

This tool requires regular inspection and testing by qualified trained personnel.

Refer to Inspection criteria found later in this manual, and practices established by local authority.

Review acceptable safe practices, local usage and safety requirements.

Visual inspection of the hoist condition and operation, as well as the support structure, rigging and load are required. **DO NOT OPERATE A DAMAGED OR MALFUNCTIONING HOIST.**

NOTE: Stress caused by repetitive operation may reduce the integrity of support structure. Check hoist capacity and load. Overloading may damage hoist and cause personal injury or death.

OPERATION

Read entire manual prior to using this tool. Refer to all safety cautions and warnings.

This tool is to be used by qualified trained personnel only.

Observe all safe working practices as dictated by local codes and the operating authority.

If you are unsure of these practices please obtain training for the required application.

1. **CLEAR THE AREA OF OBSTRUCTIONS** to the load and the proper operation of the hoist. Ensure that there is no person in close proximity to you, the tool, or the work area, who could be injured by any operation being performed, tool malfunction, or flying/falling debris.
2. Before beginning any operation, ensure that subject is within the capacity listed for the hoist. Ensure that the hoist has been properly inspected and is in good operating condition.
DO NOT OVERLOAD THE HOIST. Check the load. Use a larger capacity hoist if needed.
DO NOT USE THE HOIST LOAD LIMITING OR WARNING DEVICE TO MEASURE LOAD.
3. **Secure the hoist to a suitable support device by use of the top hook.**
Apply a small amount of **Lubriplate** or equivalent between the hook and the support device. Hoist must be able to self adjust in order to form a straight line with the direction of the load. Ensure that the safety latch has closed completely and is operating properly.
NOTE: Failure to use and secure latch may compromise the security/safety of the load, resulting in severe damage and/or personal injury or death.
Check and correct/replace any twist or kink in the load chain prior to making a connection.
DO NOT USE ANY CHAIN THAT HAS SIGNS OF ELONGATION, WEAR OR DAMAGE.
NEVER WRAP LOAD CHAIN AROUND THE LOAD.
ENSURE THAT THE LOAD CHAIN IS PROPERLY SEATED IN THE SPROCKETS.
4. **Raise Handle until an audible CLICK is heard, HOLD Reversing Lever in FREE position, and pull on Load Chain to lower.**
NOTE: Hold both the Handle and Control Lever while operating in FREE Chain Mode.
NEVER ATTEMPT TO “FREE CHAIN” UNIT WITH ANY LOAD APPLIED.
5. **Attach the bottom hook to the load using a sling or other acceptable device.**
DO NOT TIP LOAD THE HOOK. (hook strain and or failure may result)

Ensure that the safety latch has closed completely and is operating properly.

NOTE: Failure to use and secure latch may compromise the security/safety of the load, resulting in severe damage and/or personal injury or death.

5. Ensure that the slings and other rigging are in good condition and have sufficient capacity (at least equal to the combined weight of the hoist, and it's safe load) to support the load. Ensure that the sling or approved single attachment is properly seated in the Hook saddle. Ensure equal loading and unrestrained performance of the supporting chains/slugs.
DO NOT SIDE LOAD. Operation should be performed in a straight line between hooks. Side loading may cause damage to the hoist and compromise the safety of the load.
Take up slack by pulling on the free end of the chain.

5a. TO RAISE OR PULL THE LOAD - Turn the Reversing Lever to the "UP" position.

5b. TO LOWER OR REMOVE LOAD - Turn the Reversing Lever to the "DOWN" position.

NOTE: Movement of the Control Lever between the markers is common.

DO NOT restrict movement of the Control Lever during this operation.

DO NOT OVEREXTEND YOUR POSITION by overreaching or unbalancing the footing necessary to maintain physical control of your body and the tool.

DO NOT STAND BENEATH THE LOAD or endanger any other persons while raising or moving the load.

NOTE: This unit is equipped with a **FAST LIFT** feature. (Refer to photo page ____)

A 1/2" Square Drive Ratchet may be installed onto the Load Sheave (opposite Handle). This feature allows faster operation and/or light operation in tight areas where the standard handle can not be used.

Raise or pull load only until the chain is taut. Inspect rigging before continuing.

Check load balance, **move load a few inches**, check load holding action before continuing.

ONLY OPERATE UNIT WITH HAND FORCE SUPPLIED BY A SINGLE OPERATOR

DO NOT USE A HANDLE EXTENSION, CHEATER BAR OR ADDITIONAL PERSONNEL.

Additional force or leverage should not be required to operate your hoist within the rated working capacity. Check the hoist operation and load again.

Use a larger capacity hoist if needed.

6. **Extend the lifting lever upward completely. Raise, pull or lower load by operating the lever/handle down and repeat operation.**



CAUTION: DO NOT RELEASE THE LEVER WHILE UNDER LOAD

Lever "Fly Back" may occur. The locking pawl will engage at the end of each lever stroke. The action should be notable and audible. If stroke cannot be completed, remain in control of the lever until it returns to the stop position.

7. **Continue as described above to move the load as required by the operation.**

DO NOT LEAVE THE HOIST UNDER LOAD unattended or for extended periods of time.

Additional precautions must be taken to ensure safety and provide protection.

Consult a qualified person for applicable safety practices related to your application.

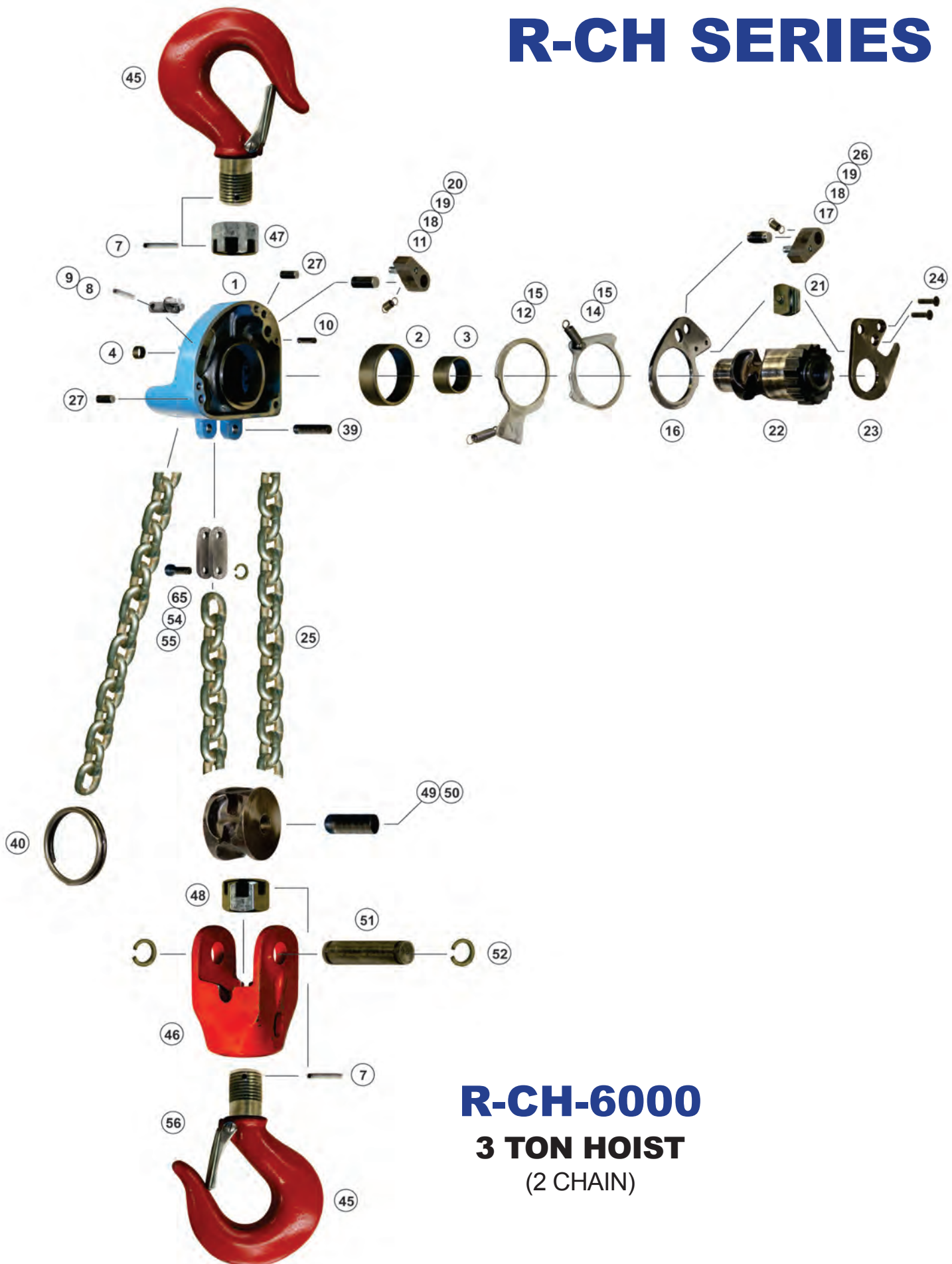
OPTIONAL APPLICATIONS:

TO USE THE HOIST IN THE INVERTED POSITION. (UP = Tension, DOWN = Slack)

CONVERSION OF MULTIPLE CHAIN HOIST TO THE NEXT SMALLER CAPACITY

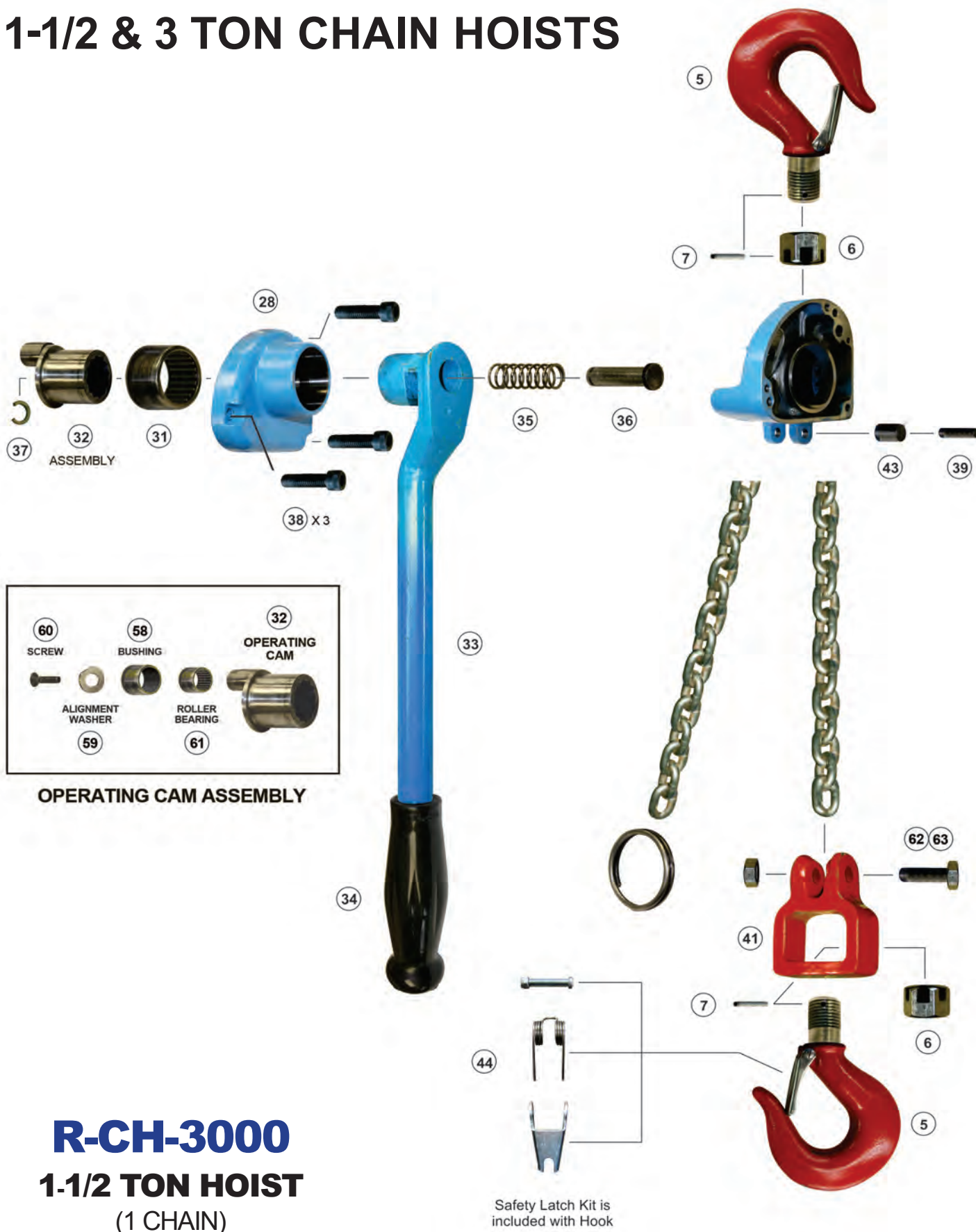
Enables the hoist to perform longer lifts and/or faster operation.

R-CH SERIES



R-CH-6000
3 TON HOIST
(2 CHAIN)

1-1/2 & 3 TON CHAIN HOISTS

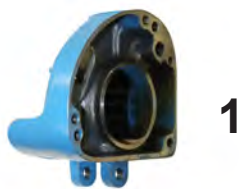


R-CH-3000
1-1/2 TON HOIST
(1 CHAIN)

R-CH-SERIES-1-1/2&3TONCHAINHOISTS

#	PART #	DESCRIPTION	QTY
1	R-000501	BODY (LEFT FRAME) R-CH-3000 ONLY	1
	R-000557	BODY (LEFT FRAME) R-CH-6000 ONLY	1
2	R-000502	LARGE SHEAVE BUSHING	1
3	R-000503	SMALL SHEAVE BUSHING	1
4	R-000504	CONTROL BUSHING	1
5	R-000505	HOOK (1-1/2 TON) R-CH-3000 ONLY	2
6	R-000506	CASTLE NUT - 5/8-18 R-CH-3000 ONLY	2
7	R-000507	ROLL PIN (1/8" X 1")	2
8	R-000508	CONTROL MECHANISM	1
9	R-000509	CONTROL MECHANISM LEVER	1
10	R-000510	HOLDING PAWL SPRING ANCHOR PIN	1
11	R-000511	HOLDING PAWL PIN	1
12	R-000512	FREE CHAIN RING	1
	R-000512-P	PIN, SPRING ANCHOR, FREE CHAIN	1
14	R-000514	REVERSE RING	1
	R-000514-P	PIN, SPRING ANCHOR, REVERSE RING	1
15	R-000515	REVERSE RING / FREE CHAIN RING SPRING	2
16	R-000516	INSIDE RATCHET PLATE	1
17	R-000517	LIFTING PAWL PIN	1
18	R-000518	PAWL - LIFTING OR HOLDING	2
19	R-000519	PAWL CONTROL PIN 3/16 X .875	2
20	R-000520	HOLDING PAWL SPRING	1
21	R-000521	BEARING SHOE W/ SPRING ANCHOR	1
22	R-000522	LOAD SHEAVE	1
23	R-000523	OUTSIDE RATCHET PLATE	1
24	R-000524	FLAT HEAD SCREWS (10-32X3/4")	2
25	R-000525	COIL CHAIN (5 ' OR 10' LENGTH)	1

26	R-000526	LIFTING PAWL SPRING		1
27	R-000527	ALIGNMENT DOWEL PINS		2
28	R-000528	COVER (RIGHT FRAME)		1
31	R-000531	ROLLER BEARING		1
32	R-000532	OPERATING CAM		1
33	R-000533	HOIST LEVER		1
34	R-000534	GRIP, LEVER		1
35	R-000535	SPRING, LEVER NUT		1
36	R-000536	LEVER NUT PIN		1
37	R-000537	C RING, LEVER NUT		1
38	R-000538	CAP SCREWS (1/4-28X7/8")		3
39	R-000539	PIN		1
40	R-000540	DEAD END RING		1
41	R-000541	COIL SWIVEL (SINGLE CHAIN)	R-CH-3000 ONLY	1
43	R-000543	SPACER	R-CH-3000 ONLY	1
44	R-000544	SAFETY LATCH ASSEMBLY	R-CH-3000 ONLY	1
45	R-000545	HOOK (3 TON)	R-CH-6000 ONLY	2
46	R-000546	BOTTOM BLOCK (2 CHAIN)	R-CH-6000 ONLY	1
47	R-000547	CASTLE NUT (BODY) ROUND 3/4x16	R-CH-6000 ONLY	1
48	R-000548	CASTLE NUT (BLOCK) HEX 3/4 X 16	R-CH-6000 ONLY	1
49	R-000549	BUSHING, SPROCKET, BLOCK	R-CH-6000 ONLY	1
50	R-000550	SPROCKET, BLOCK	R-CH-6000 ONLY	1
51	R-000551	SHAFT, BLOCK SPROCKET	R-CH-6000 ONLY	1
52	R-000552	C RING, BLOCK SPROCKET SHAFT	R-CH-6000 ONLY	2
54	R-000554	LINK PIN	R-CH-6000 ONLY	1
55	R-000555	C RING, LINK PIN	R-CH-6000 ONLY	1
56	R-000556	SAFETY LATCH ASSEMBLY	R-CH-6000 ONLY	1
58	R-000558	BUSHING, CAM		1
59	R-000559	ALIGNMENT WASHER, CAM		1
60	R-000560	SCREW, CAM		1
61	R-000561	ROLLER BEARING, CAM		1
62	R-000562	SHOULDER BOLT, COIL SWIVEL	R-CH-3000 ONLY	1
63	R-000563	LOCK NUT, COIL SWIVEL	R-CH-3000 ONLY	1
64	R-000564	SPACER, LINK PLATE	R-CH-6000 ONLY	1
65	R-000565	LINK PLATE	R-CH-6000 ONLY	2



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14, 15



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18, 19



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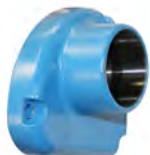
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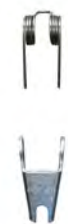
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44



R-CH-3000 PARTS & ASSEMBLY



1 (57)



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3



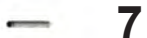
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47



7



8



9



10



11



12, 15



14, 15



16



17



18, 19



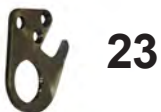
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18, 19



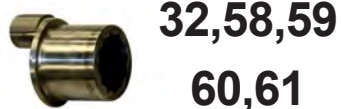
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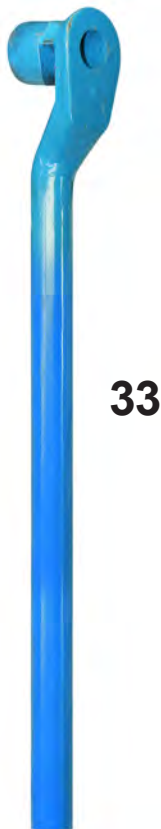
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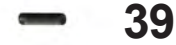
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49, 50



51, 52



64



65



54



55



56

R-CH-6000 PARTS & ASSEMBLY

Inspection, Disassembly and Repair

All maintenance or disassembly should take place on a flat, clean work surface covered with towels or wipers so as to have a clean space for any disassembled parts.

Inspect each part for wear, cracks, bending and distortion. Discard worn or damaged parts and replace with new factory authorized parts.

Clean and lubricate all parts and assemblies during inspection, and before re-assembly.

Dirt is among the leading causes of hoist failure.

FREQUENT INSPECTION

Inspect the hooks for environmental or chemical damage, cracks or distortion. (Twist in excess of 10° or throat openings in excess of 1-1/4 inch) **DO NOT** include Latch Assembly when measuring

NOTE: If hooks show signs of distortion due to overloading or abuse inspect all load bearing hoist components.

Ensure that both hooks swivel freely.

Inspect operation of Safety Latch Assemblies.

Check hoist body (Frame) for cracks, damage or distortion which may have been caused by misuse, overloading or dropping.

Inspect assemblies and observe (watch & listen) **operation of all control mechanisms.**

Lifting Lever (operation and positioning)

Reversing Lever

Inspect Load Chain Assembly

NOTE: Clean and lubricate chain before inspection.

Test lifting and lowering operations under nominal load (50 -100 lbs.) while observing chain and sprocket function.

Chain feed and stripping operations should be smooth and should not bind or jump.

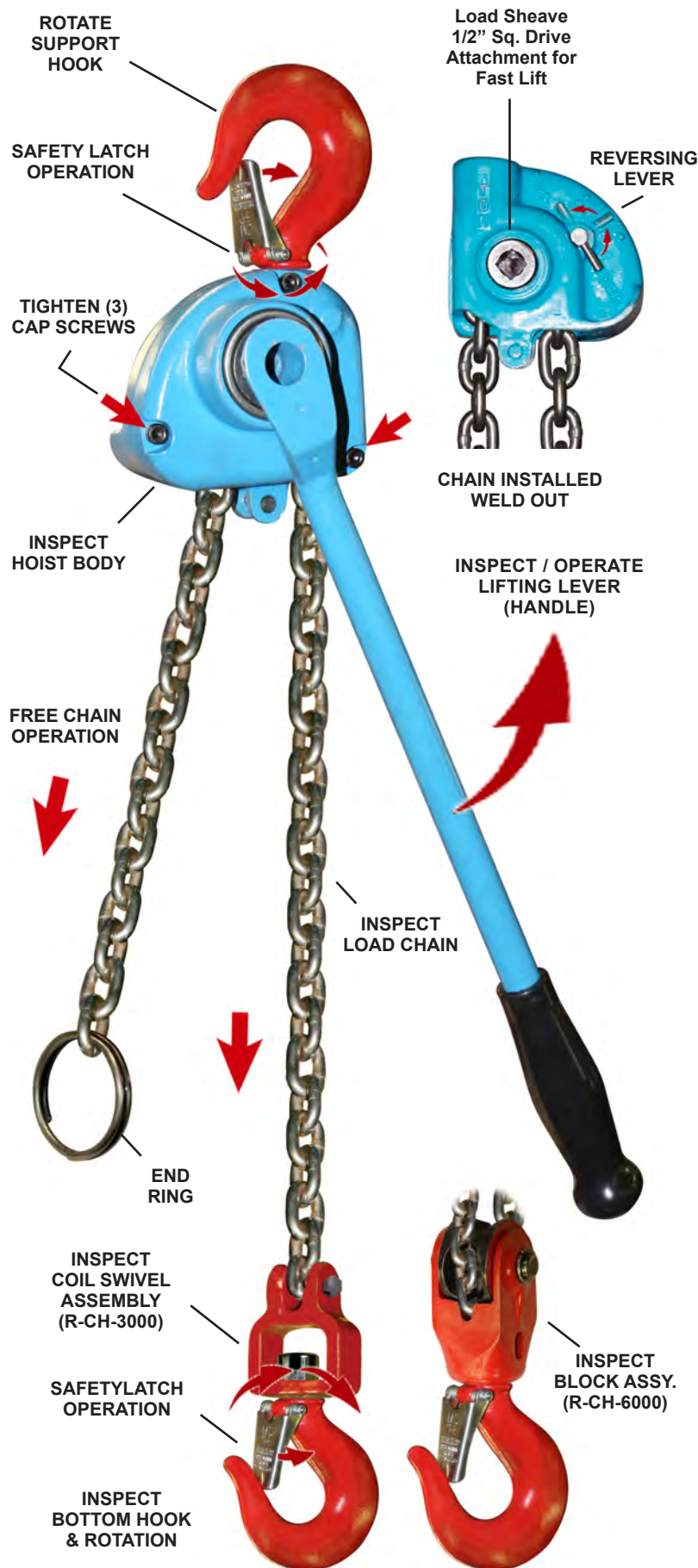
NOTE: Observe audible cues (i.e., strain, popping)

Check chain for elongation. (under nominal load)

Measure a 15 link section that normally travels over the load sprocket using a caliper type gauge. Measure from the leading edge of one chain link to the trailing edge of the 15th link.

This measurement should be 12.5 inches.

Chain has been compromised and should be replaced if measurement exceeds 12.81 inches.



CHAIN REMOVAL & INSPECTION

Remove End Ring, and Hook (REL-CH-3000)

Remove Chain: Raise handle, place reversing lever in the FREE position.

Pull on chain above the bottom hook to remove.

Clean and lubricate chain thoroughly.

See cleaning under **General Maintenance**

See lubrication under **Assembly** in this manual.

Inspect Load Chain for:

Elongation, bending, cracking, or damaged welds

Compare links in heavily used areas of chain to links at the free end to assess chain condition.

Locked, bent or obstructed joints.

All joints should operate under light manipulation.

Corrosion, pitting or discoloration of chain.

Wear or damage (i.e. gouges, nicks, weld splatter)

NOTE: Excessive wear, damage or deterioration described above should be addressed immediately. Manufacturer recommends replacement with chain and connecting links from RELIABLE EQUIPMENT.

PERIODIC INSPECTION

Inspect each part for wear, cracks, bending and distortion. Discard worn or damaged parts and replace with new factory authorized parts.

Clean and lubricate all parts and assemblies during inspection, and before disassembly.

If any Conditions requiring additional inspection or repair are found hoist shall be immediately tagged and repaired by a trained, designated technician before returning to operation.

Inspect all parts and operations as required by frequent and chain inspection criteria.

Inspect Retaining Ring for wear or distortion.

Check hoist body (Frame) for cracks, damage or distortion which may have been caused by misuse, overloading or dropping.

DISASSEMBLY OF HOIST BODY

Remove (3) Socket Head Cap Screws.

Separate left frame from right frame. (Handle UP)
Light force with a soft mallet may be required to separate the Frame.

NOTE: Use CAUTION to avoid personal injury or damage to the Hoist Body/Frame Assembly.

Refer to Inner Hoist Assembly Illustration at the top of the following Page.

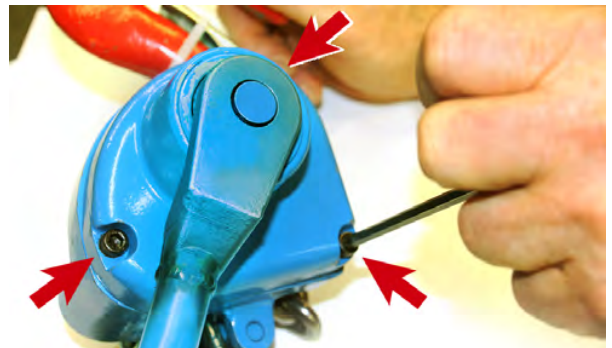
**Remove
End Ring**



**Rotate Control Lever
to FREE position**

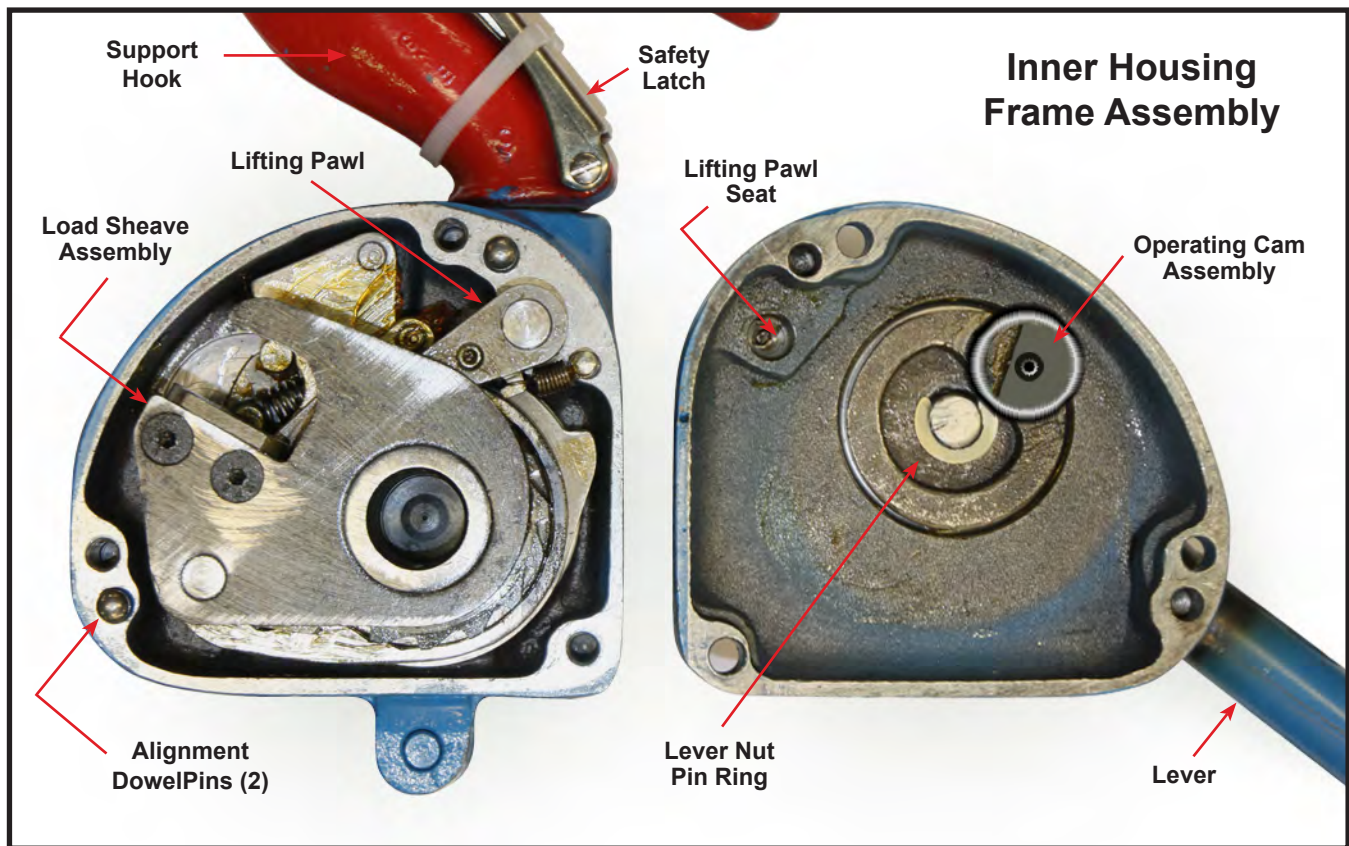


**Pull Chain
to remove from
Hoist Body**



**Carefully open
hoist body with
the Handle UP
loose parts may
fall out.**



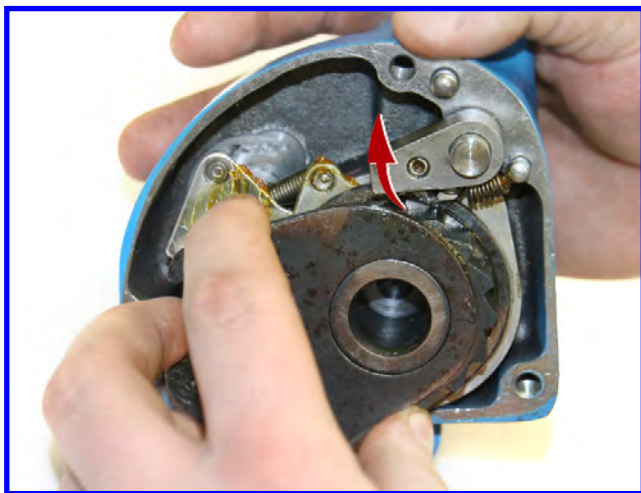


REMOVE LOAD SHEAVE ASSEMBLY:

Release Lifting Pawl from the Load Sheave.

Turn Load Sheave Assembly as needed to align flat (refer to illustration right) with the bottom of the housing.

Pull Load Sheave straight out from Housing.



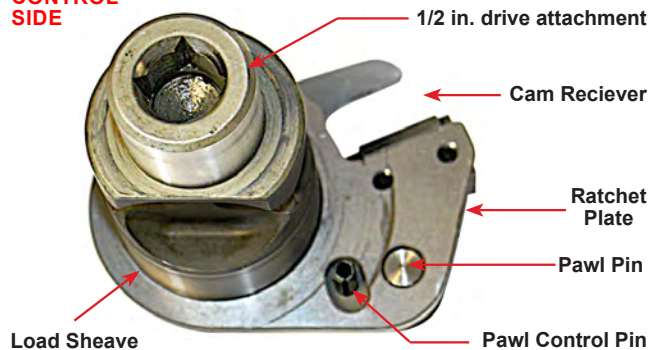
Observe Operation of the Assembly & Inspect :

Check Load Sheave and Chain Sprocket, and Bearing Shoe for wear, damage, or distortion.

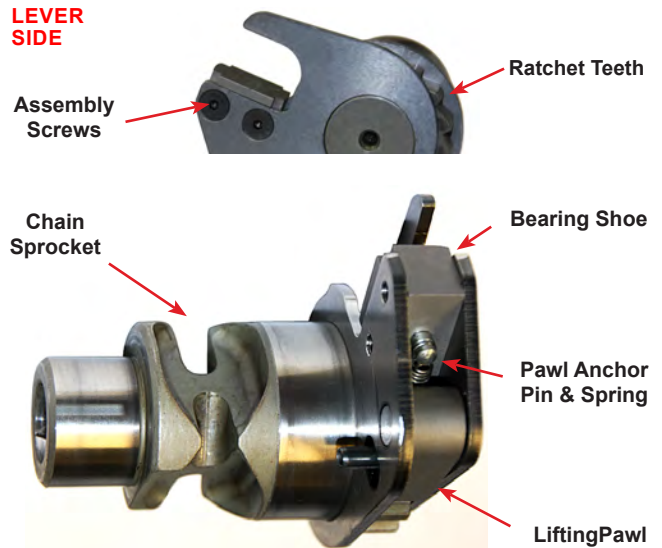
Inspect Ratchet teeth between Ratchet Plates for wear, damage, distortion or rounding.

LOAD SHEAVE ASSEMBLY

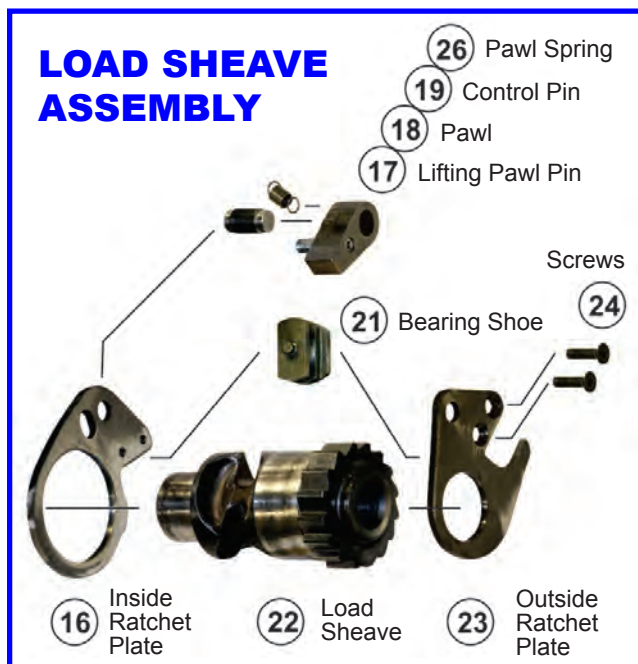
CONTROL SIDE



LEVER SIDE



Inspect Locking Pawl and L.P. Spring, and Pawl Control Pin for wear, damage, or distortion. Check Assembly screws and tighten as needed. **Check all Frame surfaces & Bearings which mate with Sprocket Shaft, for wear and scoring.**



Complete Disassembly is not recommended.

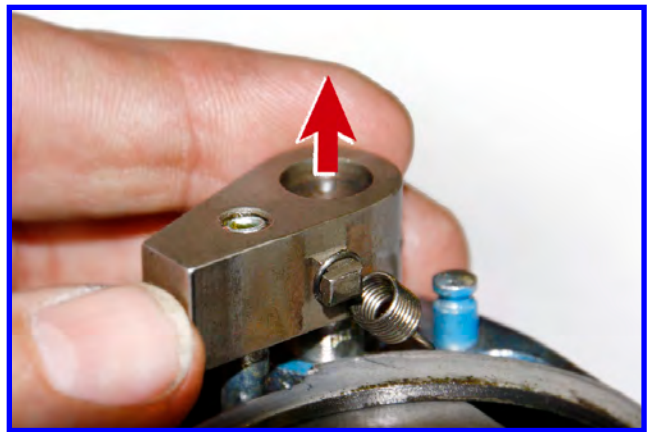
In the event that an inspection reveals the need for repair or replacement of a part or assembly: Repair and testing should be performed by a trained, designated technician before returning hoist to operation.

Remove Assembly Screws for disassembly of Load Sheave mechanism.

Refer to the Load Sheave Assembly Drawing Inspect and replace any parts that show signs of distortion, damage or wear.

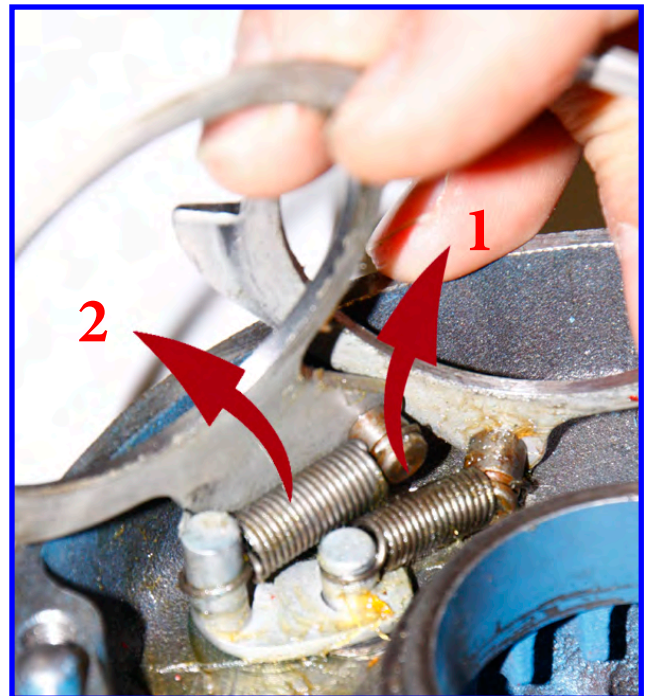


DISCONNECT PAWL SPRING from Spring Anchor Pin seated in Left Frame.



Lift Pawl straight up to remove from Pawl Pin.

Note: If Pin is removed with Pawl, Clean with penetrant and separate parts. Inspect for distortion. *Parts that do not move freely may function improperly.* **Inspect Holding Pawl, Pin, Spring & Spring Pin** replace any parts that show signs of distortion, damage or wear.



Inspect Free Chain Ring, Reversing Ring, both Springs, and control mechanism for wear, damage or distortion.

Note: When lifting rings to inspect, tilt Reversing Ring (1) up, then tilt Free Chain Ring (2) up and slightly to the left.

**DO NOT DISASSEMBLE
IF DAMAGE IS NOT EVIDENT**

Place Free Chain Ring (2) over Frame Hub, then place Reversing Ring (1) over Hub.

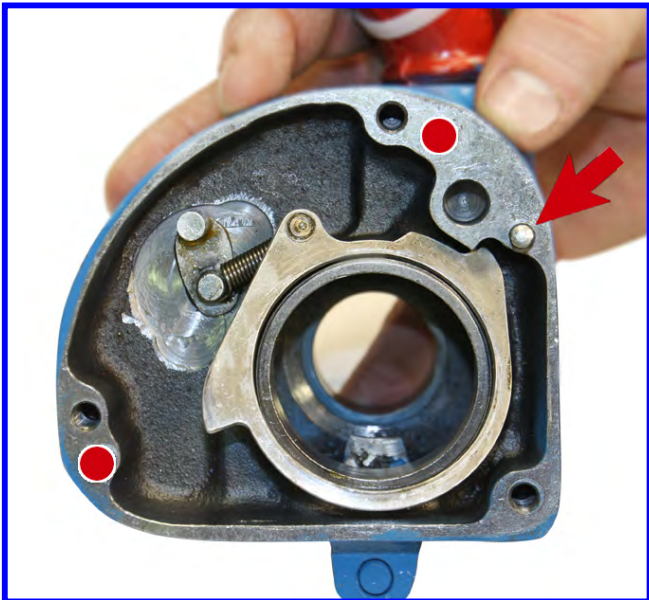
If disassembly for repair is required, proceed with removal steps below as needed.



Remove Free Chain Ring and Spring from Control Mechanism.



Remove Holding Pawl Pin



Remove Spring Anchor Pin (arrow) and two (2) Alignment Dowels (circles) before turning Hoist Body.



Drive Control Lever from Mechanism



CONTROL MECHANISM REMOVAL



Remove Mechanism through Hoist Body.

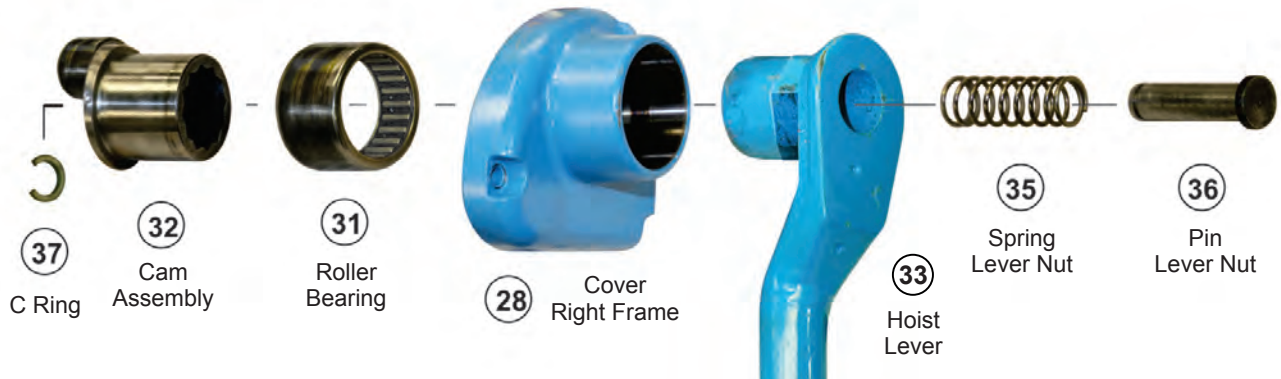


LEVER SIDE DISASSEMBLY:



Remove Lever Nut C Ring

LEVER SIDE ASSEMBLY



Upon removal of the C Ring the Lever Nut Pin can be removed.

This will release the Operating Cam, Hoist Lever, and Lever Nut Spring.

If O-ring is not damaged or worn do not remove.

Roller Bearing and End Rings are pressed into the Cover (Right Frame).

Removal is not recommended without the means to properly install or replace.

Inspect, clean, and lubricate all parts before assembly. Replace any worn or damaged parts.

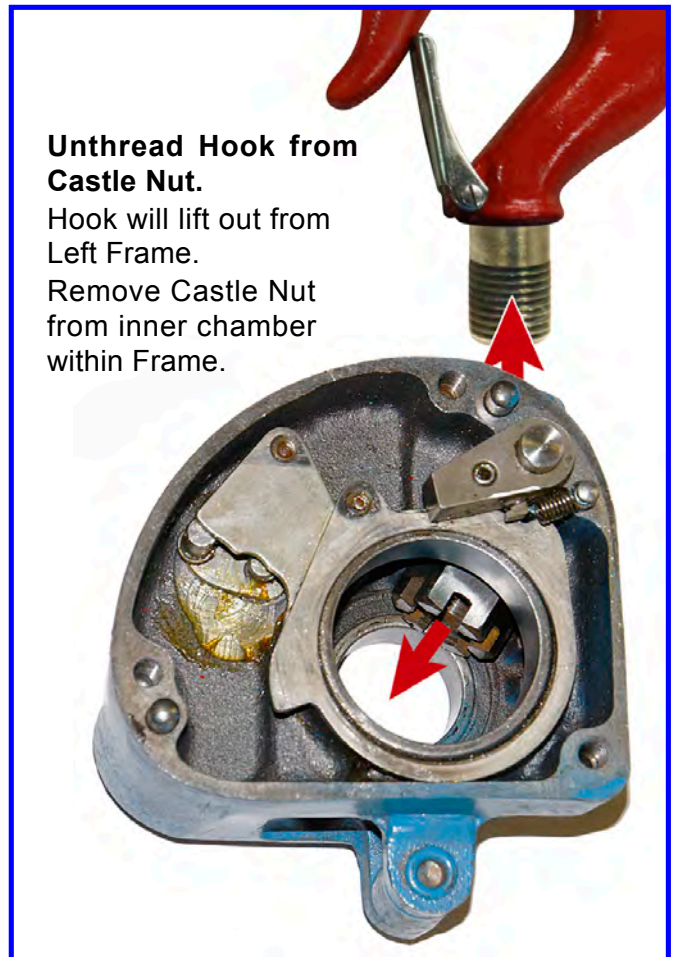
REMOVAL OF SUPPORT HOOK



Unthread Hook from Castle Nut.

Hook will lift out from Left Frame.

Remove Castle Nut from inner chamber within Frame.



The Safety Hook can be replaced without complete disassembly. *If the hook has been damaged, the manufacturer recommends a thorough inspection of the Castle Nut, to ensure that the integrity of the part has not been compromised.*

IF YOU HAVE ANY QUESTIONS REGARDING THE REPAIR AND MAINTENANCE OF THIS TOOL, CONTACT THE MANUFACTURER OR A FACTORY AUTHORIZED SERVICE FACILITY.

BOTTOM HOOK DISASSEMBLY

Removal of the Bottom Hook Assembly for either model hoist is essential for thorough periodic inspection.

R-CH-3000 - The assembly is removed from the chain by pressing out the Coil Pin.

ONLY remove Coil Pin for Chain replacement.

Inspect the Coil Pin - Ensure that the Pin is secure within the Coil Swivel.

Punch Roll Pin through stem of Hook, above the Castle Nut. Unthread Hook from Castle Nut and remove Hook from the Coil Swivel.

R-CH-6000 - The assembly is removed from the chain by removal of the C Ring and the Link Pin, and pulling Chain through Sprocket & Block Assembly.

Disassemble Block/Sprocket by removing C Rings and pressing out the Sprocket Shaft.

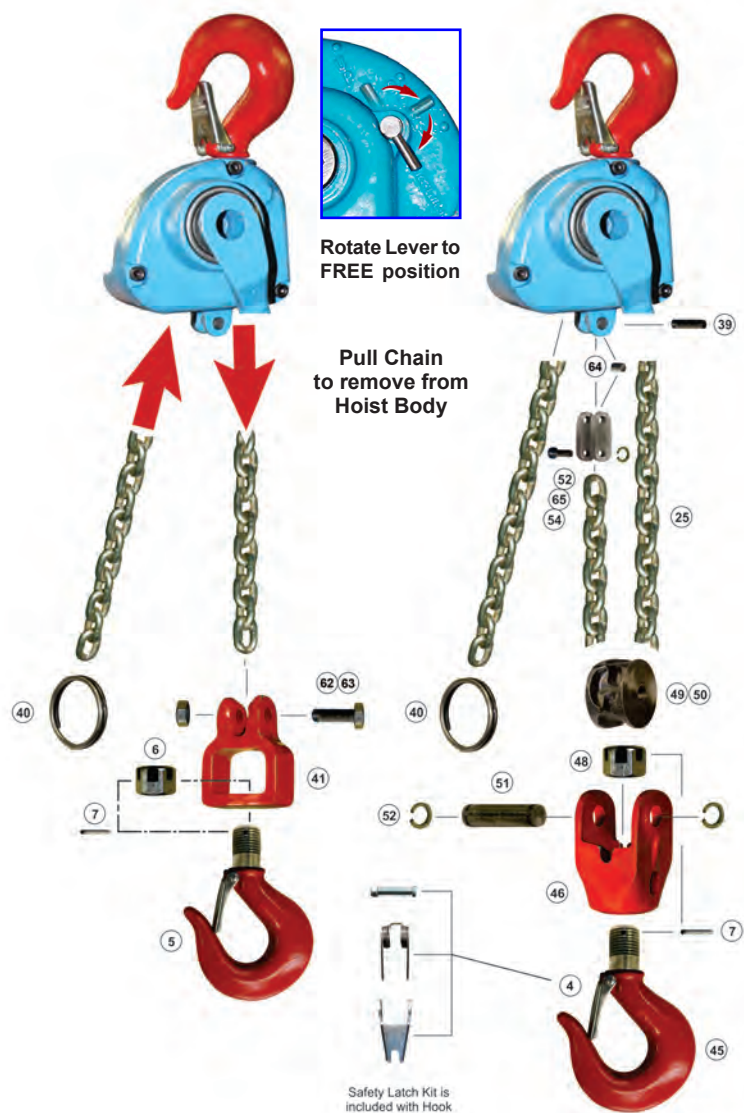
Hook Removal - Punch Roll Pin through stem of Hook, above the Castle Nut.

Unthread Hook from Castle Nut and remove Hook from the Bottom Block.

Inspect Bottom Block, Hook & Castle Nut

Inspect each part for wear, cracks, bending and distortion. Discard worn or damaged parts and replace with new factory authorized parts.

Clean and lubricate all parts and assemblies during inspection, and before re-assembly.



TEST HOIST UPON COMPLETION OF ANY DISASSEMBLY OR MAINTENANCE

Testing should be performed by a trained, designated service technician.

Observe the operation of the hoist through several NO LOAD operating cycles. Ensure that slack chain can be taken up by pulling on free end of chain. Turn the control lever to the DOWN position, push thumb latch and ensure that free chain can be obtained by pulling on lower hook.

Attach a nominal load (approximately 50-100 lbs.) to the hook and observe the operation of the hoist through several lifting and lowering cycles. If operation appears smooth and unrestricted, test hoist with rated load.

Test the **R-3000-CH** at 3,000 lbs. Test the **R-6000-CH** at 6,000 lbs.

Hoist must perform smoothly in both raising and lowering operations. If hoist fails to perform smoothly, proceed with required steps of Frequent, and Periodic Inspections as needed to resolve any operational issues before returning hoist to use in any application.

LEFT FRAME ASSEMBLY

Press Bushing #s 2, 3, & 4 into Left Frame, half of Hoist Body (# 1).

Insert Castle Nut (#47) into chamber within Frame and thread Hook (#45) into Nut through the Frame.

Install Roll Pin (#7) below Castle Nut to prevent loosening during use.

Install Control Mechanism (# 8) through Frame and install Control Lever (#9).

Insert Spring Anchor Pin (# 10), two Alignment Dowels (#27), and Holding Pawl Pin (#11) into Frame seats.

Install Reverse Ring and Spring Assy. (# 14, & 15) onto Control Mechanism. Reference Photo A (Right)

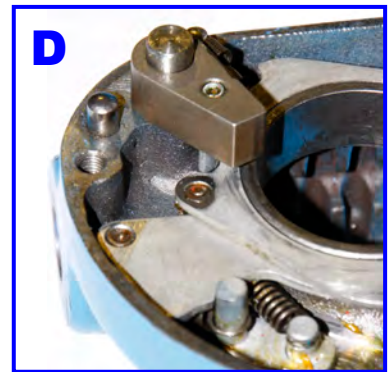
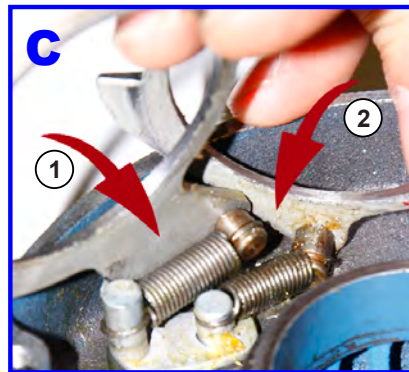
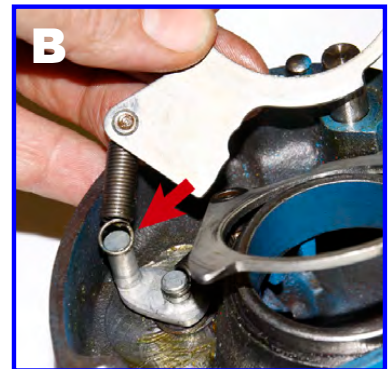
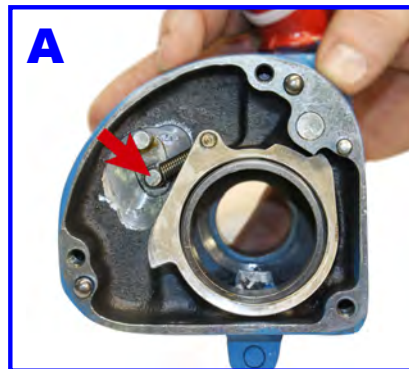
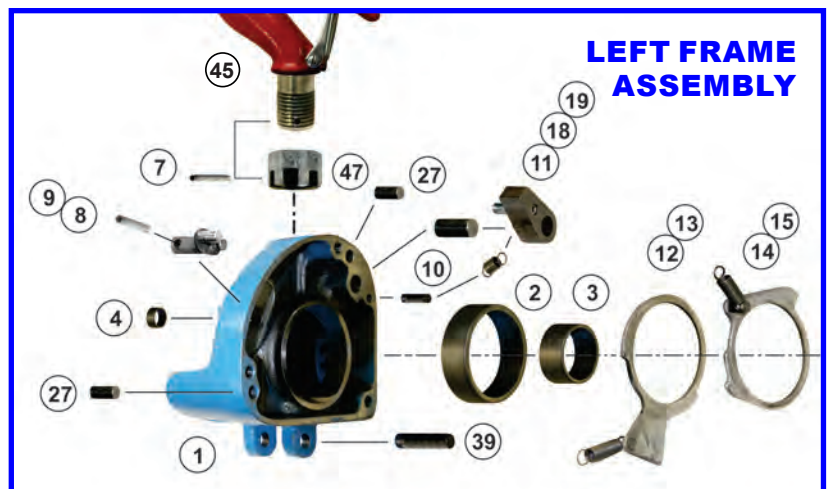
Install Free Chain Ring & Spring Assy. (# 12, & 13) onto Control Mechanism. Reference Photo B (Right)

Install Free Chain Ring over hub (1st).
Install Reverse Ring over hub (2nd).
Reference Photo C (Right)

Install Holding Pawl & Control Pin Assy. (# 18 & 19) onto Pawl Pin (# 11).

Align Rings & Pawl as shown in Photo D.
Connect Holding Pawl Spring (# 19) onto Holding Pawl Anchor Pin.

Install Claw Pin (#39) into Left Frame.



LOAD SHEAVE ASSEMBLY

Insert Pawl Pin (# 17) through Lifting Pawl Assembly (#18 & 19).

Connect Spring (#26) to Lifting Pawl.

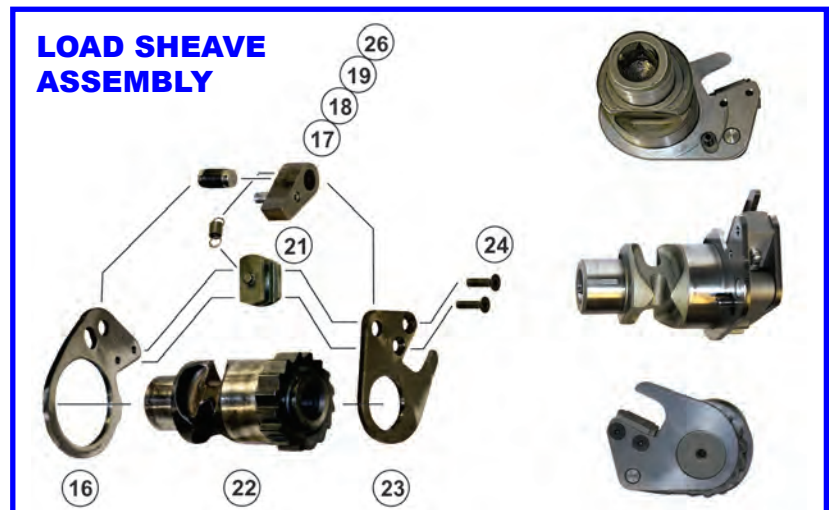
Insert Load Sheave (#22) between Inside and Outside Ratchet Plates (#16 & 23).

Insert Lifting Pawl Assembly between Inside & Outside Ratchet Plate Assy. Allow Pawl Control Pin to move freely within slot of Inside Ratchet Plate.

Insert Bearing Shoe (#21) between Plate Assembly, resting upper Shoe (flat) in Cam receiver and aligning with screws.

Install Flat Head Hex Screws (#24) and tighten assembly while checking alignment of all components.

Install Pawl Spring (#26) onto Spring Anchor Pin.



LEVER SIDE ASSEMBLY



LEFT FRAME ASSEMBLY

Press Bushing #s 2, 3, & 4 into Left Frame, half of Hoist Body (#1).

Insert Castle Nut (#47) into chamber within Frame and thread Hook (#45) into Nut through the Frame.

Install Roll Pin (#7) below Castle Nut to prevent loosening during use.

Install Control Mechanism (#8) through Frame and install Control Lever (#9).

Insert Spring Anchor Pin (#10), two Alignment Dowels (#27), and Holding Pawl Pin (#11) into Frame seats.

Install Reverse Ring and Spring Assy. (#14, & 15) onto Control Mechanism.

Reference Photo A (Right)

Install Free Chain Ring & Spring Assy. (#12, & 13) onto Control Mechanism.

Reference Photo B (Right)

Install Free Chain Ring over hub (1st). Install Reverse Ring over hub (2nd).

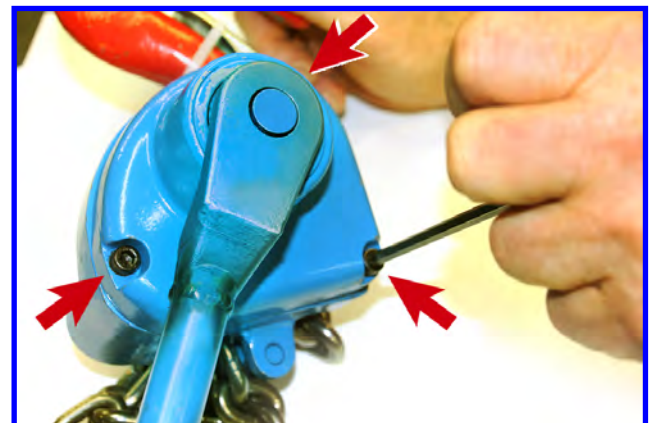
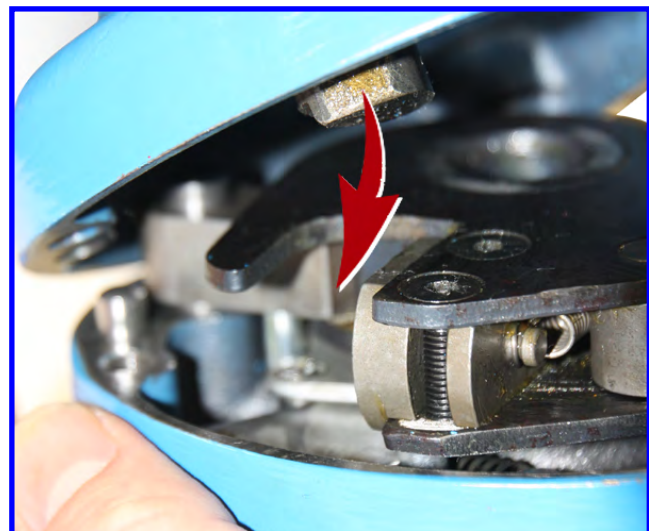
Reference Photo C (Right)

Install Holding Pawl & Control Pin Assy. (#18 & 19) onto Pawl Pin (#11).

Align Rings & Pawl as shown in Photo D.

Connect Holding Pawl Spring (#19) onto Holding Pawl Anchor Pin.

Install Pin (#39) into Left Frame.

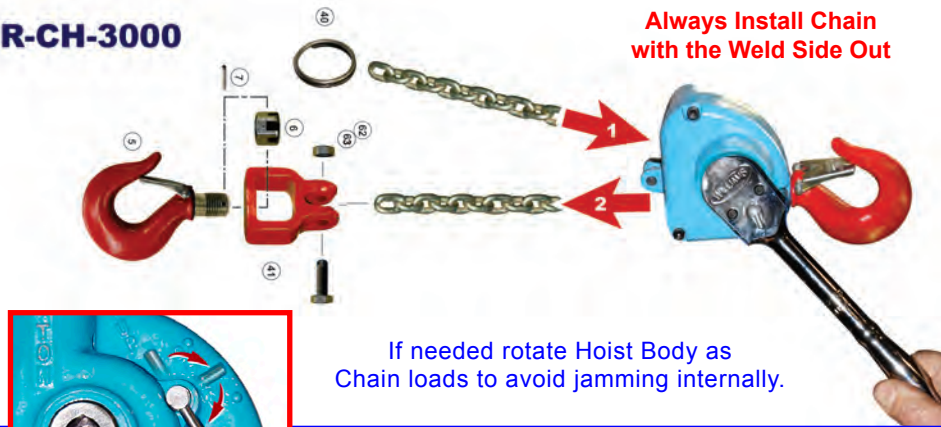


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LOAD CHAIN INSTALLATION

R-CH-3000



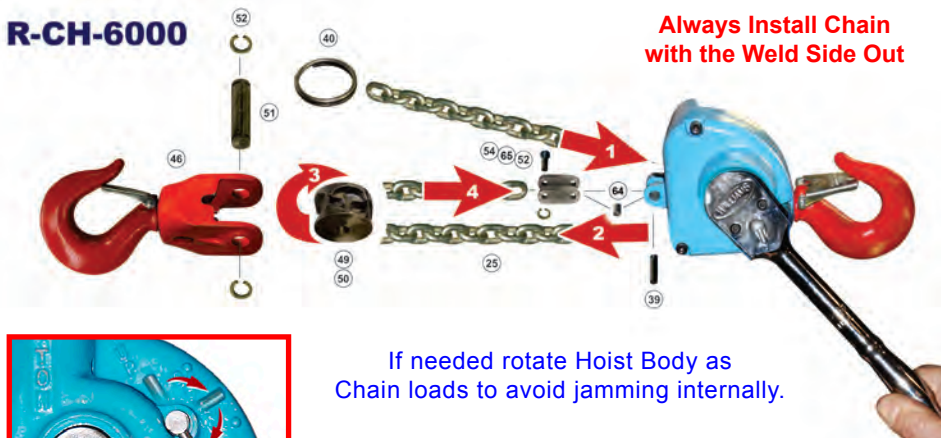
R-CH-3000

Rotate Control Lever to the FREE position.
Insert the Chain into Hoist (weld out) from bottom and work the first link into the sprocket. (1)

Using a 1/2 in. drive rotate Sheave & Sprocket until the Chain is expelled from the lower Port of the Hoist Body. (2)

Install the End Ring and the Coil Swivel Assembly as needed.

R-CH-6000



R-CH-6000

Rotate Control Lever to the FREE position.
Insert the Chain into Hoist (weld out) from bottom and work the first link into the sprocket. (1)

Using a 1/2 in. drive rotate Sheave & Sprocket until the Chain is expelled from the lower Port of the Hoist Body. (2)

NOTE: Hook must be installed into Bottom Block Assembly before installation of Block Sprocket.

Chain should be installed around Bottom Sprocket (3) at this time.

Install Bottom Block Assembly.

Install (2) Links onto Chain using Link Pin and C Ring, and install onto Pin below the Hoist Body. (4)

Install the End Ring.



CONTACT

Reliable Equipment

800-966-3530

with any questions
related to the **SAFE**
Use, Operation and
or Maintenance of
this Lever Hoist.



RELIABLE EQUIPMENT & SERVICE CO., INC.

R-CH-12000

MANUALLY LEVER OPERATED 6 TON LINK CHAIN HOIST

The **R-CH Series** 6 ton hoists promise to provide years of dependable service, under the rigorous conditions demanded by the Power Utility & Line Construction Industries.

The **R-CH-12000** feature a time tested and field proven ratchet & pawl design for transmission and distribution applications.

FEATURES:

The ratchet and pawl mechanism provides safe operation in which one pawl is always engaged during lifting and lowering operations.

Cast steel alloy construction provides unmatched resistance to shock and fatigue.

Minimal head & face room required for operation.

May be rigged for use in lifting, pulling or binding applications from any position.

Safety hooks rotate 360° and feature spring latches to provide secure support and load connections.

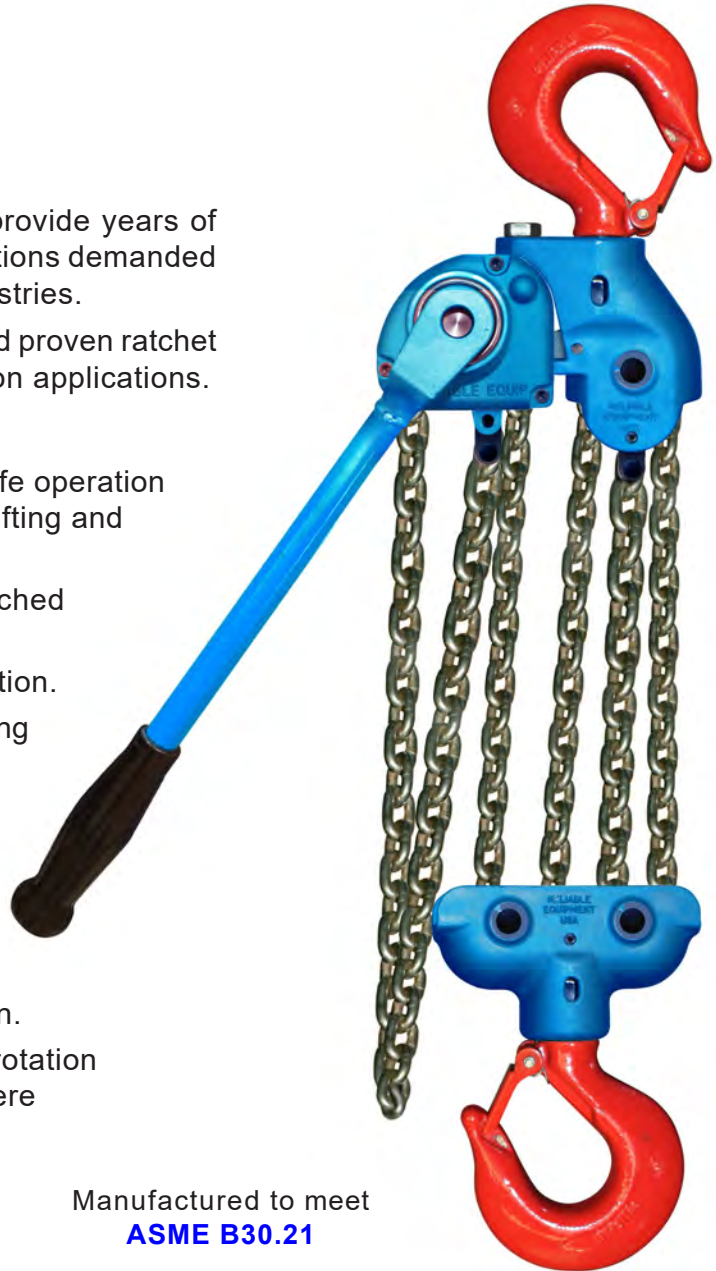
The compact design is simple to operate and easy to maintain.

Quickly remove slack by pulling the free chain.

Redundant safety measures prevent handle rotation or chain release under load if the operator were to lose control of the handle.

5 Foot Standard lift.

Custom lift lengths available.



Manufactured to meet
ASME B30.21

R-CH-12000

Rated Capacity:	6 Ton
Approx. Pull:	81 lbs.
Lever Length:	17 in.
Minimum Head Room:	19-1/2 in.
Standard Lift:	53-1/2 in.
Approx. Weight:	46 lbs.



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R-CH-12000

UPPER FRAME ASSEMBLY

Assembly and Testing should be performed by a trained, designated service technician.

FIGURE 1

A) Install 6 ton threaded hook through Upper Frame and secure inside with Castle Nut, and Pin from side.

B) Insert the Block Sprocket with Sprocket Bushing (pre-installed) through Side of Frame and Down.

C) Install Sprocket Shaft through Upper Frame and Sprocket, Secure "C" Rings (Sprocket Shaft) on BOTH sides.

FIGURE 2

A) Install Chain Shedder from rear of Upper Frame and install 2 Dowel Pins from each side of frame.

B) Insert the (2) Link Plates and Spacer between the lugs at base of Upper Frame.

C) Install the Spring Pin into the side of the Frame through the Link Plates/Spacer and into the opposite side of the Frame. (Inspect for proper assembly)

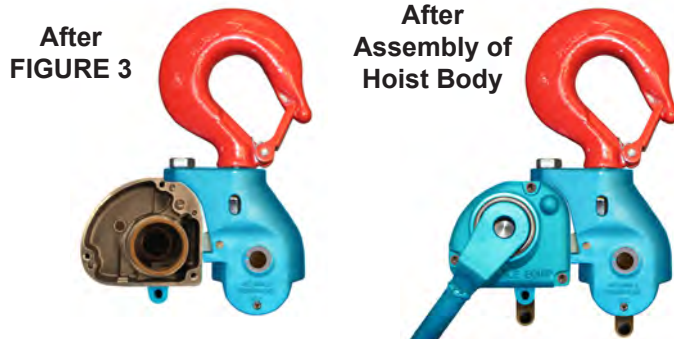
FIGURE 3

A) Install Body (Left Frame) below Upper Frame by inserting bolt down through Upper Frame and Host Body.

B) Secure inside with Castle Nut, and Pin from side.

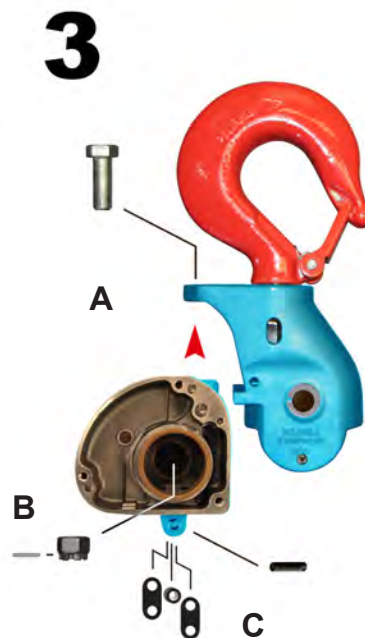
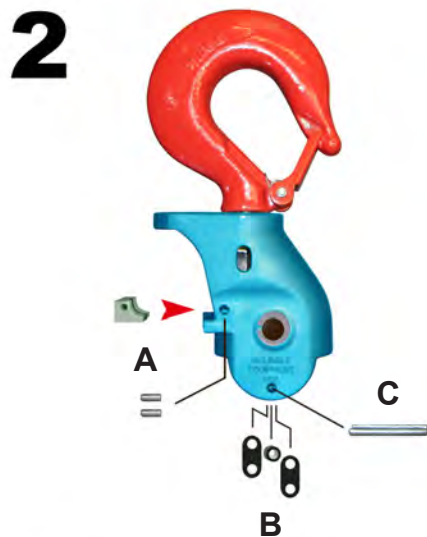
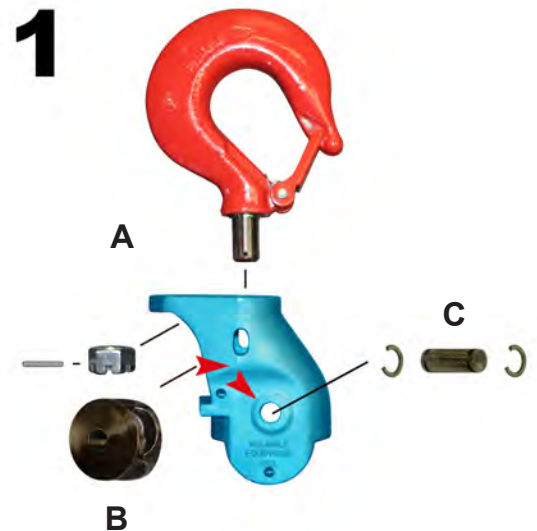
C) Insert the 2 Link Plates and Spacer between the lugs at base of Hoist Body. Secure with Groove Pin.

NOTE: Do NOT install Lower Pin on Link until later.



REFER TO: Left Frame Assembly, Load Sheave Assembly, Lever Side Assembly sections earlier in this manual for Assembly Instructions related to the hoist body and mechanical workings.

WARNING: If you have any technical question or concern related to the inspection, assembly or testing of your Hoist, **CALL 1-800-966-3530** to speak with a hoist technician.

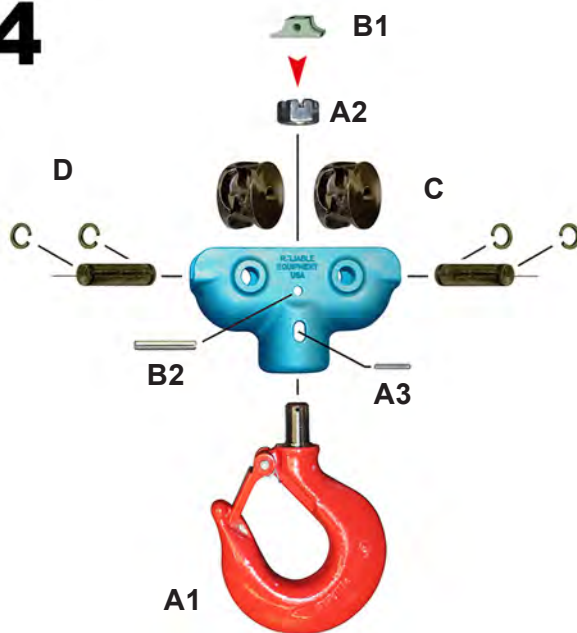


R-CH-12000 - 6 TON CHAIN HOISTS

#	PART #	DESCRIPTION	QTY
1	R-000582	BODY (LEFT FRAME) R-CH-12000 ONLY	1
2	R-000502	LARGE SHEAVE BUSHING	1
3	R-000503	SMALL SHEAVE BUSHING	1
4	R-000504	CONTROL BUSHING	1
5	R-000578	HOOK (6 TON)	2
6	R-000506	CASTLE NUT (1-1/2 TON <u>ONLY</u>) 5/8-18	2
7	R-000507	ROLL PIN (1/8" X 1") (1-1/2 TON <u>ONLY</u>)	2
8	R-000508	CONTROL MECHANISM	1
9	R-000509	CONTROL MECHANISM LEVER	1
10	R-000510	HOLDING PAWL SPRING ANCHOR PIN	1
11	R-000511	HOLDING PAWL PIN	1
12	R-000512	FREE CHAIN RING	1
13	R-000512-P	PIN, SPRING ANCHOR, FREE CHAIN	1
14	R-000514	REVERSE RING	1
	R-000514-P	PIN, SPRING ANCHOR, REVERSE RING	1
15	R-000515	REVERSE RING SPRING	1
16	R-000516	INSIDE RATCHET PLATE	1
17	R-000517	LIFTING PAWL PIN	1
18	R-000518	PAWL - LIFTING OR HOLDING	2
19	R-000519	PAWL CONTROL PIN 3/16 X .875	2
20	R-000520	HOLDING PAWL SPRING	1
21	R-000521	BEARING SHOE W/ SPRING ANCHOR	1
22	R-000522	LOAD SHEAVE	1
23	R-000523	OUTSIDE RATCHET PLATE	1
24	R-000524	FLAT HEAD SCREWS (10-32X3/4")	2
25	R-000525	COIL CHAIN (5 ' OR 10' LENGTH)	1
26	R-000526	LIFTING PAWL SPRING	1
27	R-000527	ALIGNMENT DOWEL PINS	2
28	R-000528	COVER (RIGHT FRAME)	1
31	R-000531	ROLLER BEARING	1
32	R-000532	OPERATING CAM	1

33	R-000533	HOIST LEVER	1
34	13612A	GRIP, LEVER	1
35	R-000535	SPRING, LEVER NUT	1
36	R-000536	LEVER NUT PIN	1
37	R-000537	C RING, LEVER NUT	1
38	R-000538	CAP SCREWS (1/4-28X7/8")	3
39	R-000539	PIN, CLAW	1
49	R-000549	BUSHING, SPROCKET, BLOCK	1
50	R-000550	SPROCKET, BLOCK	1
51	R-000551	SHAFT, BLOCK SPROCKET	1
52	R-000552	C RING, BLOCK SPROCKET SHAFT	2
54	R-000554	LUG HOOK PIN (CLAW PIN)	1
55	R-000555	C RING LUG HOOK (C RING, CLAW)	1
58	R-000558	SLEEVE, CAM BEARING	1
59	R-000559	WASHER, CAM BEARING	1
60	R-000560	CAP SCEW, 8-32X3/8 SH NYLOCK	1
61	R-000561	NEEDLE BEARING	1
62	R-000562	SHOULDER BOLT	1
63	R-000563	LOCK NUT	1
64	R-000564	SPACER, LINK PLATE	2
65	R-000565	LNK PLATE	4
71	R-000571	SPRING PIN, 5/16 X 2-1/4 SLOTTED	1
72	R-000572	INSERT, UPPER FRAME	1
73	R-000573	INSERT, LOWER FRAME	1
74	R-000574	DOWEL PIN, 5/16 X 3/4	2
75	R-000575	CASTLE NUT, 7/8-14	2
76	R-000576	UPPER FRAME	1
77	R-000577	LOWER FRAME	1
78	R-000578	HOOK	2
80	R-000580	BOLT, WITH HOLE	1
81	R-000581	SPRING PIN, 5/32 X 1-1/14 (HOOK)	2
82	R-000582	BODY, 6 TON	1
83	R-000583	SPRING PN, 5/16 X 2-1/2	1

4



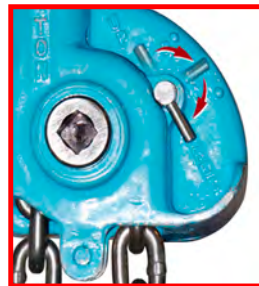
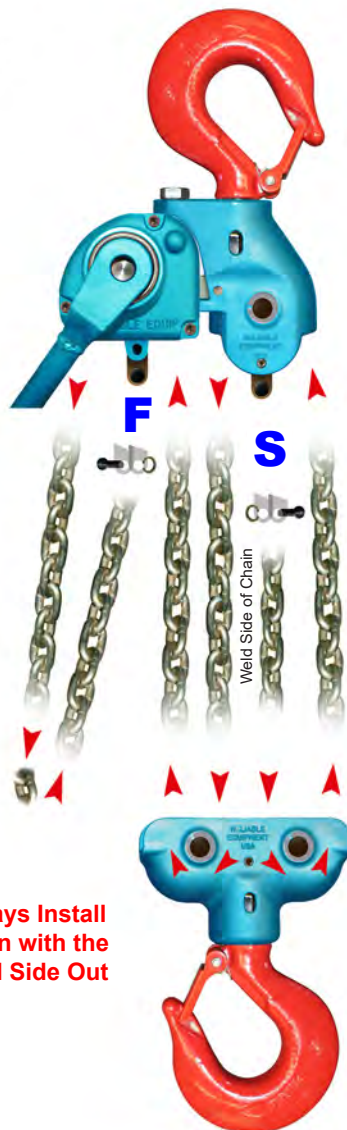
R-CH-12000 LOWER FRAME ASSEMBLY

NOTE: Hook must be installed into Bottom Block Assembly before installation of Block Sprockets.

Figure 4

- A)** Install 6 ton threaded Hook (A1) through Lower Frame and secure with Castle Nut (A2) inside, and Pin (A3) through opening on the side.
- B)** Insert the Shedder(B1) into the Lower Frame and secure with Spring Pin (B2) through side.
- C)** Insert the (2) Block Sprockets with Sprocket Bushing (pre-installed) into Lower Frame.
- D)** Install Sprocket Shafts through Lower Frame and Sprockets, Secure "C" Rings (Sprocket Shaft) on BOTH sides.

5



LOAD CHAIN INSTALLATION

Rotate Control Lever to the FREE position. (Left)

Call **RELIABLE** at **800-966-3530** with any questions related to the safe Use, Operation, and/or Maintenance of this Lever Hoist.

Figure 5

Install the Chain onto the End Link below the Upper Frame (S) (Start). Secure with Link Pin and "C" Clip.

Feed Chain into the Lower Frame (1) with weld OUT.

NOTE: Do NOT twist Chain to compensate.

Re-install Chain at Link if needed.

Install Bottom Block Assembly.

Follow the diagram (Shown Left)

NOTE: If needed rotate Hoist Body as Chain loads to avoid jamming internally.

Install the Chain onto the End Link below the Hoist Body (F) (Finish). Secure with Link Pin and "C" Clip.

TEST HOIST UPON COMPLETION OF ANY DISASSEMBLY OR MAINTENANCE

Refer to: Inspection and Maintenance Sections.

NOTE: Hoist Parts, Repair, Inspection and Certification of ALL HOIST BRANDS is available from **RELIABLE EQUIPMENT**.

Contact your area **RELIABLE** representative.

INSPECTION RECORD

Date	REMARKS (Include Parts and Service Required)	Inspector

If you have any questions regarding the information found in this manual please contact **RELIABLE EQUIPMENT** at the address, phone or fax numbers shown below.



**RELIABLE EQUIPMENT
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