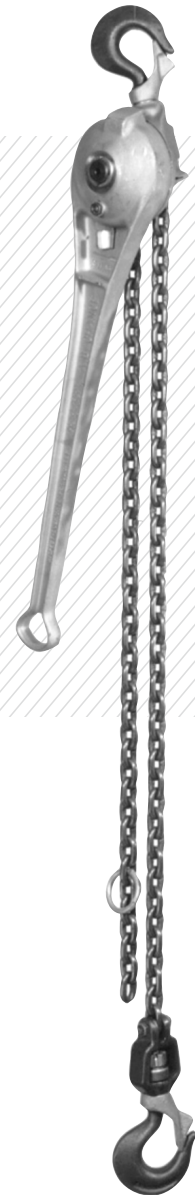


RACHET LINK CHAIN HOISTS

Operating and
Service Instructions



IMPORTANT

Keep this manual readily
available for future reference



Introduction

Thank you for purchasing a CHANCE® Chain Hoist:

- ¾-ton (1500 lbs/680 kg) Ratchet Link Chain Hoist (Cat. No. C3090438)
- 1-ton (2000 lbs/907 kg) Ratchet Link Chain Hoist (Cat. No. 3011S)
- 1½-ton (3000 lbs/1361 kg) Ratchet Link Chain Hoist (Cat. No. C3090439)
- 2-ton (4000 lbs/1814 kg) Ratchet Link Chain Hoist (Cat. No. 4012)
- 3-ton (6000 lbs/2722 kg) Ratchet Link Chain Hoist (Cat. No. C3090440)

Your safety, and the safety of others, is very important. The warnings and instructions contained in this manual are for your safety. Failure to follow safety warnings and instructions could result in serious injury or death.

All information in this publication is based on the latest product information available at the time of printing. Hubbell Power Systems reserves the right to make changes at any time without notice and without incurring any obligation.

This Owner's Manual must always be kept with the hoist and should remain with the hoist if it is transferred or sold.

These instructions neither cover all details or possible situations in which you may use a chain hoist, nor do they provide for every possible contingency to be encountered in relation to installation, operation, or maintenance. Before each use, think through each use, your safety, and the safety of others.

Should additional information and details be desired or if situations arise which are not covered adequately for your purpose, please contact Hubbell Power Systems.

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Important Safety Information

Read and Understand Owner's Manual Before Use

This Owner's Manual contains important information for protecting yourself and others and preventing equipment problems. Failure to follow these safety instructions and precautions can lead to property damage, serious injuries, or death. Always read this entire manual before operating the chain hoist.

The employer or hoist owner is responsible for compliance with all applicable federal, state, and local regulations/codes and OSHA regulations. The instructions in the manual are not intended as a substitute for proper training and experience in the safe operation of the product. Only competent technicians familiar with the product should install, operate, or service it.



Read and Understand Owner's Manual Before Use

Safety Messages

Throughout this manual DANGER, WARNING, CAUTION, NOTICE, and the SAFETY ALERT SYMBOL will be used.



This is the SAFETY ALERT symbol.

The SAFETY ALERT symbol is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible serious injury or death. It may also have one of the following signal words.



DANGER

DANGER

Indicates a hazardous situation that, if not avoided, will result in death or serious injury.



CAUTION

CAUTION

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.



WARNING

WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.



NOTICE

NOTICE

Indicates a hazardous situation that, if not avoided, could result in property damage.



Symbol Index



Entanglement Hazard



Wear Protective Gloves



NEVER use hoist to lift or move persons



Electrical Shock Hazard



ALWAYS wear head and eye protection



NEVER walk or stand under a suspended load



Crush Hazard



Wear Eye Protection



Read, understand, and follow the warnings and instructions in this manual and on the hoist

CAUTION

The equipment covered in this instruction guide must be installed, used, and serviced only by competent personnel familiar with and following good work and safety practices. This equipment is for use by such personnel and this instruction manual is not intended as a substitute for adequate training and experience in safe procedures for this type of equipment.

The information contained in this instruction guide has been compiled as a result of review of the product, its intended application, and use considerations. However, this instruction guide does not cover all details or situations in equipment use, nor does it provide for every possible contingency to be encountered in relation to installation, operation, or maintenance. Should additional information and details be desired or specific situations arise which are not covered adequately for the user's purpose, consult your supervisor and the appropriate rules for safe work practices. If further information is desired, contact Hubbell Power Systems.



Safety Symbols





This entire book is filled with **important safety information—please read it** carefully. Before mounting and using your chain hoist, read and follow all mounting instructions and safety messages.

ALWAYS be aware of and comply with all federal, state, and local safety regulations, industry standards, and internal safety guidelines.



NEVER use hoist to lift or move persons. Chain hoists are NOT designed to lift personnel.



Work Area Safety

1. DO NOT allow hoist to come in contact with an electrical source.
2. Keep work area clean and well lit. Cluttered or dark areas can lead to accidents.
3. Keep bystanders, children, and visitors away from the chain hoist and the load. Distractions can cause you to lose control. Always protect others from overhead loads.
4. NEVER walk or stand under a suspended load.  
5. NEVER operate this hoist if you are not familiar with how the hoist works.
6. NEVER use a hoist as a load binder.
7. NEVER use a hoist beyond rated capacity.
8. NEVER use replacement parts other than those supplied by Hubbell/ CHANCE®.
9. NEVER use a cheater or extend the handle on the hoist.
10. NEVER allow the chain to come in contact with any object.
11. NEVER use the hoist if the pull is not a straight line hook-to-hook.
12. NEVER leave a load suspended in the air.
13. NEVER use a hoist as a tow line.

Work Area Safety
Continued on page 7



Work Area Safety

14. NEVER use a hoist that is worn or malfunctioning.
15. ONLY use hoist in ambient temperature range of -10°C to +50°C (14°F to 122°F)
16. ALWAYS wear personal protective gear when using the hoist.  
17. NEVER use hotstick ring to bear load. Ring is only rated to support the load of the tool.

Maximum Load Ratings

Catalog Number	Max. Load
C3090438	1500 lbs / 680 kg
3011S	2000 lbs / 907 kg
C3090439	3000 lbs / 1361 kg
4012	4000 lbs / 1814 kg
C3090440	6000 lbs / 2722 kg

Operating Instructions

WARNING

Always inspect the hoist for wear, damage, and proper operation before each use.

Considering the Work Area:

Based on the job to be accomplished, the structure to which the hoist is to be attached, and the type and weight of the load to be moved, determine the position and how the hoist is to be attached.

CAUTION

Once the load is lifted into position, the "SHIFT KEY" must be in the "UP" position for holding the load. This will help prevent accidental lowering of the load.

The chain may be quickly extended to hook to a load by operating the "RELEASE LEVER" on the handle with the "SHIFT KEY" in the "DOWN" position.

The handle may be operated in one of two positions on this hoist. To move the handle from one side to the other, with no load on the hoist, operate and hold the "RELEASE LEVER" while swinging the handle through the "6 o'clock" position to the other side.



Operating Instructions

If accessories, such as slings or wire grips, are used with the hoist, the rated working load of these items must be equal to or greater than the load.

Lifting Loads:

Based on the job to be accomplished, the structure to which the hoist is to be attached, and the type and weight of the load to be moved, determine the position and how the hoist is to be attached.

WARNING

The hoist must be positioned so the load hook and the housing hook are in a straight-line pull. The chain and/or housing must not be forced out of line, which could cause binding or damage to equipment. The handle and controls of the hoist must be free to operate and must not contact objects which could cause the controls to move or damage the hoist.

The load must seat in the bottom of the hook, so the load is in line with the shank of the hook and centerline of the chain. **DO NOT LOAD HOOKS ON THE POINT.**

The safety latches must be closed to secure the hook and prevent accidental loss of the load. **NEVER ALLOW THE LOAD TO BEAR ON THE SAFETY LATCHES.**

You should ALWAYS operate the hoist from a safe position when lifting a load.

The safe positions are BESIDE the hoist and NEVER under the load. These safe positions will help prevent the load from striking you if the load falls.

WARNING

The hoist is intended for industrial or utility use. NEVER lift people or loads over people.

Make sure the work area is clear of all unnecessary equipment and personnel before moving a load.

Personnel and equipment should be moved clear of the area in case the load falls.

Lift the load by moving the handle in full, even strokes. Do not slam or jerk the handle. If excessive force is required to operate the handle, the hoist is probably overloaded. Check the load and/or rigging before proceeding. If the load is greater than the rating of the hoist, **DO NOT LIFT THE LOAD.**

WARNING

Never overload the hoist. Never use a cheater or extend the handle.



Operating Instructions

CAUTION

Self-ratcheting will damage the hoist and the quickly moving handle can cause injury.

Lowering Loads:

Holding onto the handle, set the "SHIFT KEY" to the "DOWN" position. Operate the handle until the "WORKING DOG" engages the ratchet wheel tooth. Additional pressure on the handle in the same direction will release the "HOLDING DOG". While maintaining control, slowly move the handle in the opposite direction; lowering the load until the "HOLDING DOG" engages the ratchet wheel. The "WORKING DOG" will then release, allowing the operator to repeat this movement to lower the load.

When the hoist is completely unloaded, the "RELEASE LEVER" may be operated to extend the chain for unhooking.

WARNING

Never operate the "RELEASE LEVER" while the hoist is loaded.

Care and Storage

CHANCE® hoists will give many years of satisfactory performance if handled and stored properly.

The CHANCE® hoist is easy to maintain by adhering to the following recommendations.

1. Always hang the hoist freely with a straight line between the housing hook and the load hook.
DO NOT JAM THE HOIST OR CHAIN AGAINST ANY OBJECT.
2. **DO NOT** use the hoist if it does not operate properly or is damaged in any way.
3. Stop pulling before the load hook is pulled tight to the housing. Continued pulling may damage the hoist.
4. **NEVER allow the handle to fly free** or the hoist to self-ratchet.
5. **NEVER** throw or drop the hoist.
6. Keep the chain clean. Inspect the chain and hoist before each use. Do not use a hoist if the chain or hooks show signs of stretching or damage.

Care and Storage
Continued on page 10



Care and Storage

7. All hoists must be periodically cleaned, inspected, and re-lubricated. Intervals will depend on usage and operating conditions. The oilite bearings must be lubricated with 30 wt. oil. All other moving parts must be lubricated with a film of light grease. Greases that become stiff when exposed to cold should not be used—they impair the mechanism.
8. Extra care must be used when lowering a light or "bouncing" load such as a span of conductor. If the handle is "flipped", the hoist can self-ratchet, causing severe wear on the dogs, ratchet teeth, and stop areas of the hoist.
9. When operating the handle, do not "slam" the handle. A smooth, steady pressure in each direction moves the load efficiently and does not cause damage to the equipment.
10. Store in clean and dry location out of direct sunlight.
11. Avoid areas where extreme temperatures are present.
12. **DO NOT** store where moisture, oil, caustic chemicals or their vapors, or other degrading material may be present.
13. Equipment that is damaged or awaiting inspection by a trained individual should not be stored with in-use chain hoists.
14. Heavily soiled, wet, or contaminated hoists should be cleaned and dried before storage and each use.

Inspection Procedure

Prior to each use, the hoist must be thoroughly inspected. It is recommended that the user establish a procedure for routine inspection, repair, and testing of this hoist, based on usage, to ensure a safe working environment. If any component of the hoist fails inspection, the hoist needs to be tagged "DO NOT USE" and removed from service until proper repairs and testing have been completed.

1. Thoroughly clean all exterior metal parts with solvent and dry.
2. Inspect the chain for any signs of wear, stretching, or damage. If there is any doubt about the integrity of the chain, replace it.
3. Inspect housing for wear. This includes rounded edges, elongated holes, worn pins, or battered areas caused by impacts. All castings should be inspected closely for cracks or other signs of damage. Replace any parts that do not appear normal.
4. Inspect the hook assemblies for damage, bending, twisting, or opening of the hook throat. Safety latches must be in place and working properly.



Periodic Routine Maintenance Procedure

It is recommended that the user establish a timeline for the routine inspection, repair, and testing of this hoist. At a minimum, routine maintenance should be performed annually. More frequent maintenance may be necessary as determined by the user based upon environmental factors, handling, usage, and the age of the hoist.

! WARNING



Always wear safety glasses and other appropriate protective equipment during the following procedures. Use the correct tools for the operations being performed.

1. After properly inspecting the hoist, check operation of the hoist thoroughly by lifting and lowering a minimum of 500 lbs (rated load preferred). Lifting and lowering operations should be checked by operating the hoist in the two positions of operation, that is, using both downward and upward strokes to lift and lower the test load.
2. After load testing, thoroughly examine the exterior hoist parts for damage. Check hooks for bending or "opening" caused by incorrectly loading the hook tip or jamming the housing out of line during loading—replace if bent or opened. For swivel hook models, inspect bearings for wear. On all models check all castings for wear, taking corrective measures if necessary.
3. Disassemble Handle Sub-Assembly of hoist carefully (refer to disassembly instructions and exploded view of hoist components on pages 15-25 if needed). Wash all parts in a suitable cleaner, remove all oxides and foreign material. Examine mechanism for damaged or excessively worn parts, refer to the accompanying photographs for typical examples. Replace all parts showing evidence of excessive wear or indications of damages.

Particular attention should be given to the following areas:

Inspect all faces for impact damage

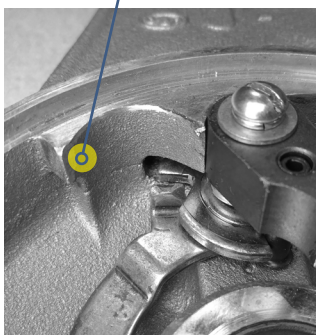


FIG. 1 Handle "STOP" Area

Inspect tip of Unloader Plate, Screw and Housing Stop area

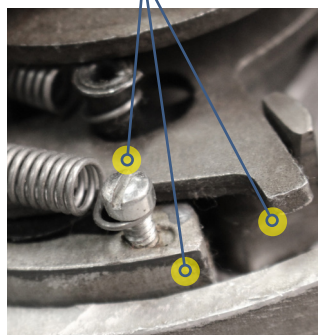


FIG. 2 Housing "STOP" Area

Inspect for severe crease or damaged edges



FIG. 3 Working Dogs

Inspect for Pin wear at point of contact with Unloader Plate

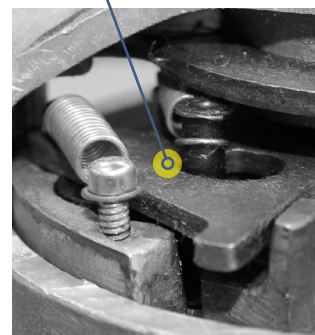


FIG. 4 Dog Pin and Unloader Plate Spacing



Periodic Routine Maintenance Procedure

3A. Handle-Sub-Assembly

- (1) Examine "stop" surfaces for damage caused by improper practices such as allowing handle to self-ratchet, and "slamming" the handle during use. Refer to **Fig. 1**. Excessive battering results in eroding of "stop" surfaces on both the handle and housing. This can shear the housing spring retaining screw. As the surfaces erode, clearance between the tip of the unloader plate and the screw is reduced enough to allow the unloader plate to strike the screw. Refer to **Fig. 2**. Screw shearing can also occur if the hoist is allowed to "self-ratchet"; refer to **Fig. 6**. The momentum of the unloader plate can cause it to exceed its normal amount of travel and strike the spring screw.
- (2) Handle damage caused by applying "cheaters" (extensions) to increase leverage and other improper practices is quite common on hoists in need of repair. Such hoists may have been dangerously overloaded from such usage. Any hoist exhibiting evidence of this type of treatment, and even undamaged hoists, should be carefully examined—particularly the principle load carrying members. The holding and working dog assemblies (dogs) must be checked and replaced if they show any evidence of creasing, chipping, or cracking. The ratchet teeth on the forged, heat-treated shaft must be checked for missing or damaged teeth. Replace if necessary. Refer to **Fig. 3**.
- (3) The handle dog (dog) should be examined for damage as outlined in part (2), and in addition, the dog pin should be examined for bending or wear in the area that the pin contacts the camming surface of the unloader plate. Refer to **Fig. 3** and **4**.

3B. Housing Sub-Assembly (E3090477P) and related parts.

- (1) Examine "stop" surfaces, the mating surfaces to the handle "stops". Refer to **Fig. 5** and **6**. Reasons for damage and possible malfunctions are the same as outlined in section 3A, part (1). Replace housing if damaged or worn.

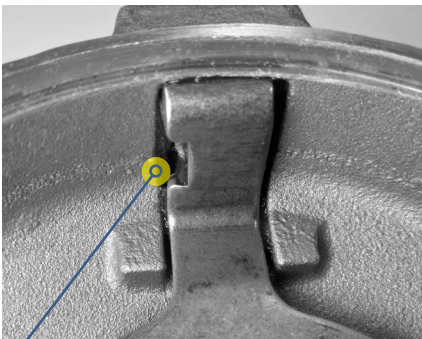
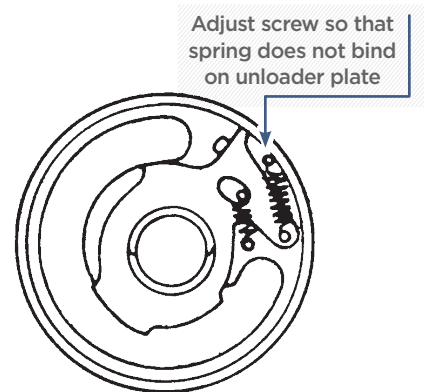


FIG. 5 Inspect Stop Bolt inside handle for damage, metal fragments



FIG. 6 Damaged Screw and Housing due to Self-Ratcheting



Periodic Routine Maintenance Procedure

3B. Continued: Housing Sub-Assembly (E3090477P) and related parts.

(2) Housing Hook should be replaced if the hook has been sprung or bent by misuse. Refer to disassembly instructions for replacement procedure (page 17, step 9). Excessive hook play in the housing may be an indication that the bearing seat in the aluminum housing is worn, in which case, replace the housing. Refer to **Fig. 7** for correct replacement hook adjustment.

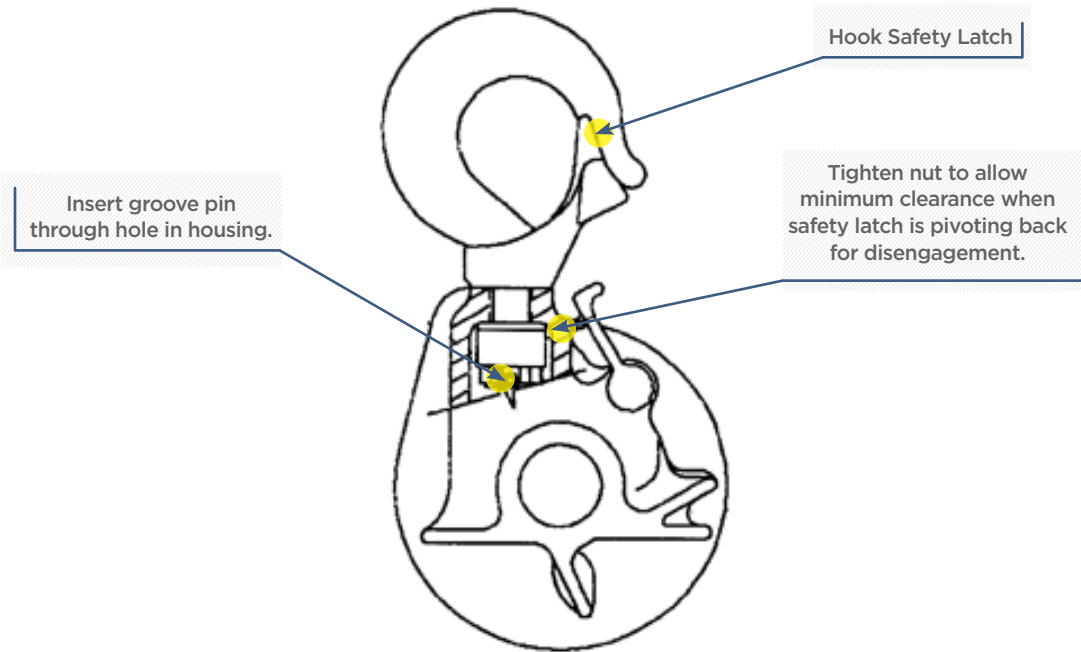


FIG. 7 Safety Hook Housing

(3) Shift key (P3090043P) should be examined for breakage or bending, particularly the camming surfaces. **Fig. 8** and **Fig. 9** show the correct position of the shift key when the shift key finger (O19296P) is in "UP" or "DN" position.

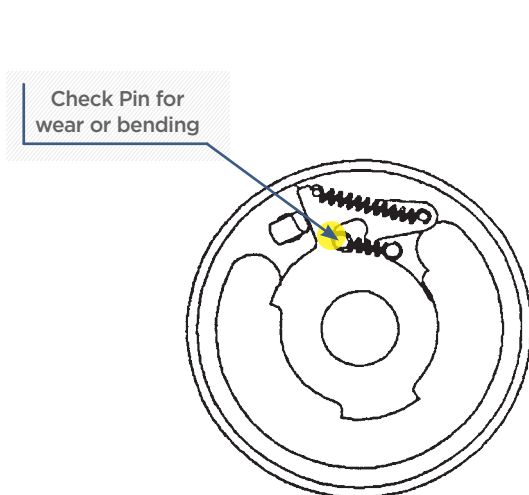


FIG. 8 Shift Key in "Up" Position

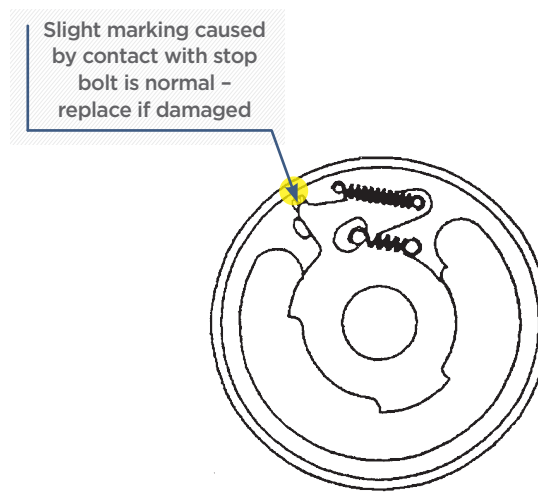


FIG. 9 Shift Key in "DN" Position

Periodic Routine Maintenance Procedure

3B. Continued: Housing Sub-Assembly (E3090477P) and related parts.

- (4) Shaft (P3090791P). Factory replacement of this part is seldom necessary on hoists returned for repair. Replacement is generally required because of extreme mistreatment of the hoist: Breakage of the ratchet teeth caused by severe shock loading, repeated self-ratcheting, severe impacts to the hoist, or allowing foreign matter to be carried into the chain pockets and wedging, causing breakage of the chain pocket sides.
- (5) Unloader plate (E3090356P) inspect for breakage or wear on camming surfaces. Refer to **Fig. 9**. Depending on the age of the hoist, one of two unloader plate and working dog styles may be used (refer to **Fig. 10**). Both are inspected in the same manner



FIG. 10

4. Lubrication

After repairs or routine cleaning, the hardened steel parts should be lightly lubricated with grease. Greases that become stiff when exposed to cold should not be used—they impair the mechanism.

5. Reassembly

To reassemble, follow disassembly instructions in the reverse manner replacing parts in the same position as noted when removed. After reassembly, recheck operation thoroughly. .



WARNING

Hoists MUST be thoroughly load tested prior to returning to service.

Working conditions will dictate frequency necessary for lubrication and cleaning. Use in sandy or dusty areas will require frequent servicing. Exposure to salt spray or other corrosive environments will also increase necessity for servicing. Disassemble hoist carefully, refer to disassembly instructions and exploded view of hoist components.



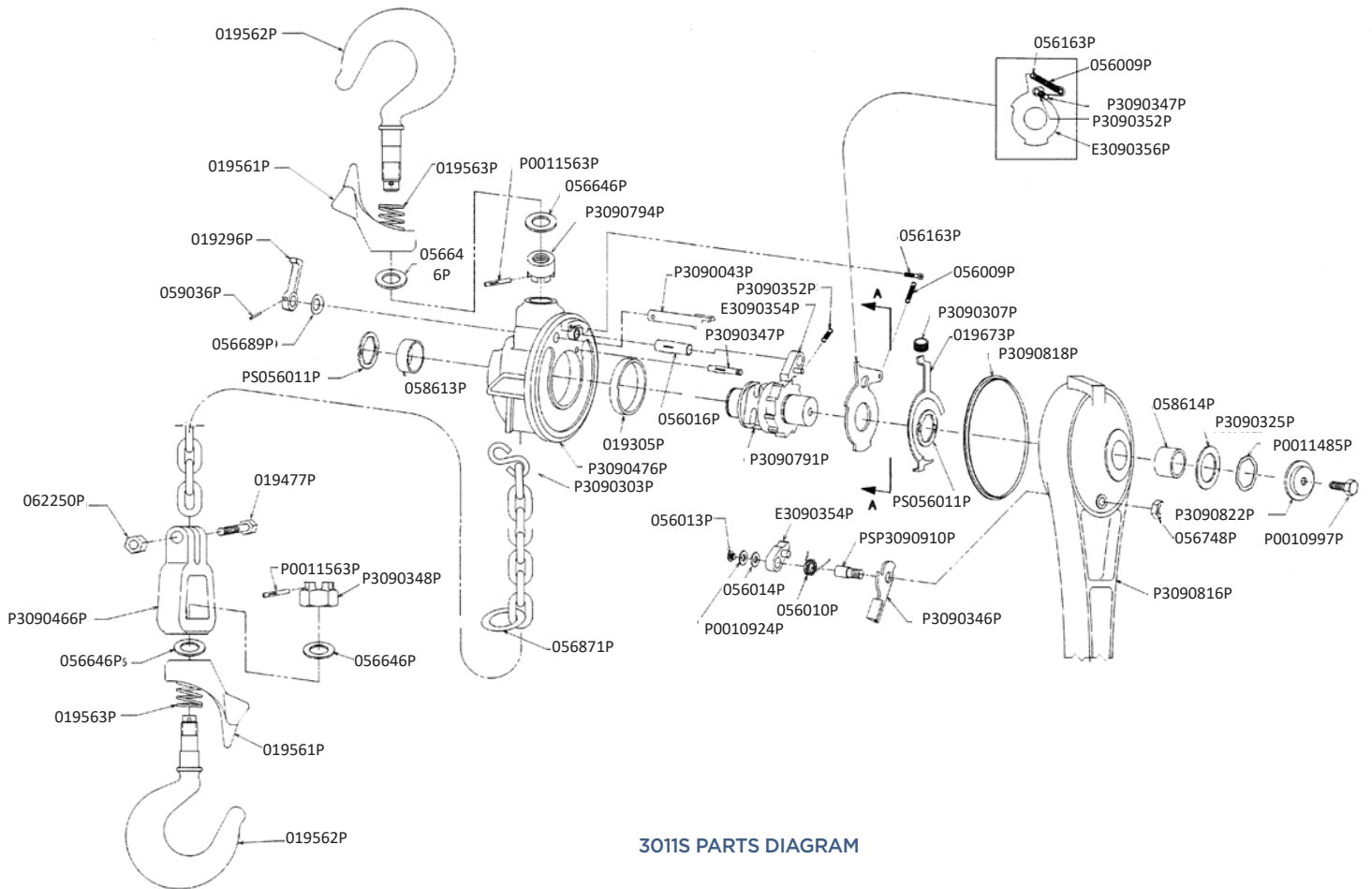
Parts and Disassembly

! WARNING



Always wear safety glasses and other appropriate protective equipment during the following procedures. Use the correct tools for the operations being performed.

Parts Diagram for Models 3011S and C3090438



3011S PARTS DIAGRAM



Replacement Parts List for Models 3011S and C3090438

Handle Sub-assembly	E3090819P
*Handle	P3090816P
Oilite Bearing	058614P
Release Key+	P3090346P
Hex Jam Nut+	056748P
Stop Bolt+	019673P
Spring+	056010P
Machine Screw+	056013P
Washer (Bronze)+	056014P
Dog Assembly+	E3090354P
Lockwasher	P0010924P

Housing Sub-assembly (SAFETY)	E3090477P
Housing	P3090476P
Nut	P3090794P
Washer	056646P
Shift Key	P3090043P
Shift Key Finger+	019296P
Screw+	056163P
Oilite Bearing	058613P
Oilite Bearing	019305P
Pin+	059036P
Washer (Spring)+	056689P
Hook	019562P
Safety Latch	019561P
Spring	019563P
Pin+	P3090347P
Groove Pin	P0011563P
Pin	056016P

WORKING DOG Sub-Assembly+	E3090354P
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UNLOADER PLATE Sub-Assembly+	E3090356P
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CHAIN & HOOK ASSEMBLY W/Safety Hook (Complete)	024000P
Chain	019353P
Swivel	P3090466P
Thrust Washer	056646P
Hex Nut	P3090348P
Groove Pin	P0011563P
Bolt	019477P
Hex Nut	062250P
Hook	019562P
Safety Latch	019561P
Spring	019563P
S Hook	P3090303P

REMAINING PARTS NOT REQUIRING SUB-ASSEMBLIES	
Shaft	P3090791P
Spring+	P3090307P
Spring+	056009P
Spring+	P3090352P
Snap Ring+	PS056011P
Washer+	P3090325P
Wear Strip+	P3090818P
Ring	056871P
Washer	P0011485P
Cap	P3090822P
Bolt	P0010997P
S Hook	P3090303P

LUBRICANTS AVAILABLE	
Chance Tool Lube+	M1909

C3090349 Repair Kit — Includes all items marked with +

*New Shift Key (P3090043P) required if handle (or handle assembly) is replacing No. 24433 or No. 19671 handle assembly, or handle.



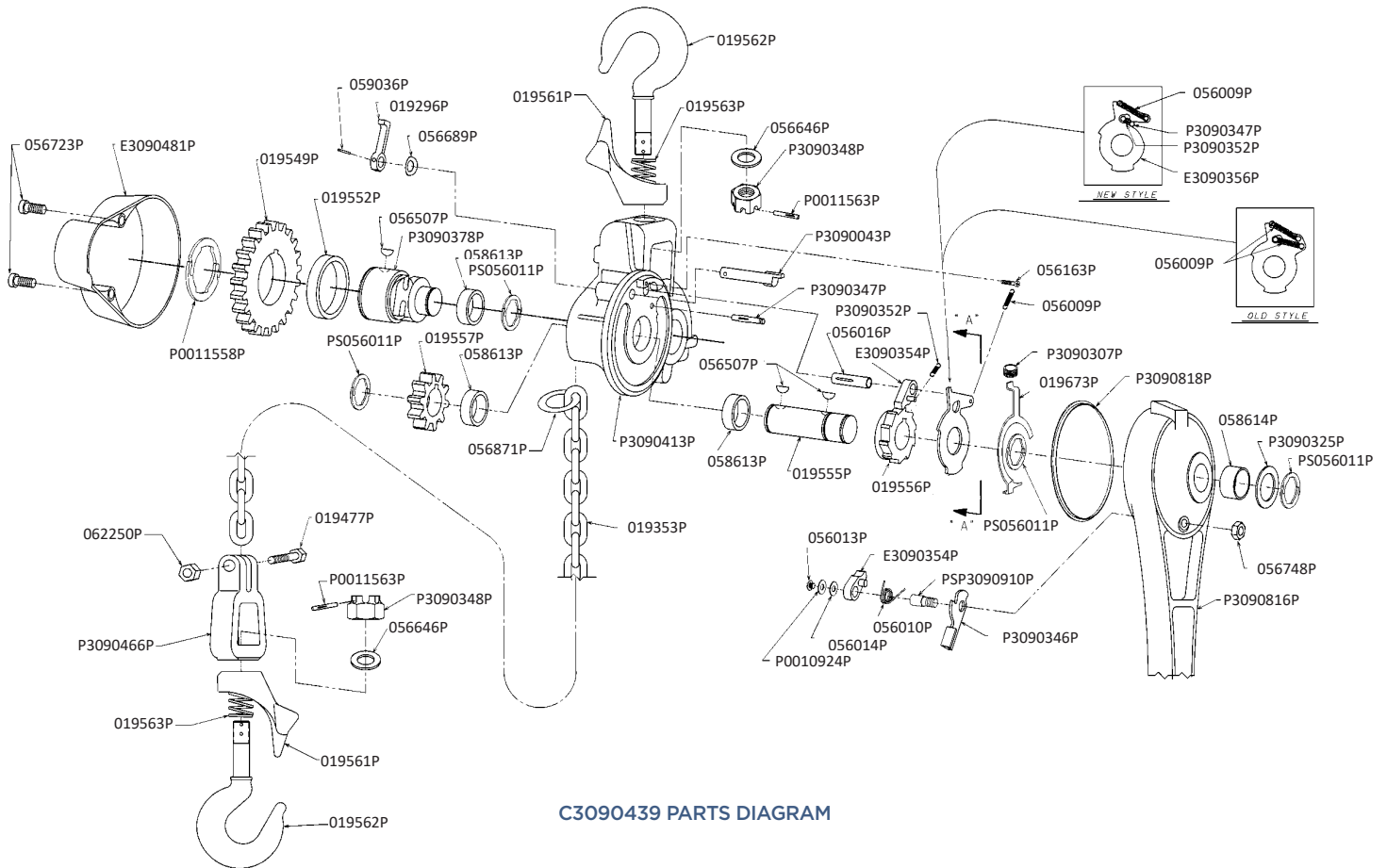
Disassembly Instructions for Models 3011S and C3090438

To best visualize these instructions, study and refer to the exploded view of the hoist and parts list.

1. Remove bolt in Handle Assembly (P0010997P) from shaft (P3090791P). Then remove cap (P3090822P) and washer (P0011485P)..
2. Push "release key" (P3090346P) in the indented area of the handle in the direction marked "release" to disengage the handle dog (E3090354P) from the unloader plate and lift handle (P3090816P) off the shaft. This will expose the mechanism.
3. The dog inside the Handle Assembly (E3090354P) may be removed by first removing screw (056013P) and washer (056014P) from the post supporting the dog. Torsion spring (056010P) can be removed, after the dog, if needed.
4. When reassembling handle, dog, (E3090354P) and spring (056010P), place the short leg of the spring to the pin on the dog, and the long leg of the spring against handle housing (P3090816P).
5. If necessary, to replace the release key (P3090346P), remove nut (056748P) and press the dog assembly (E3090354P) out of housing (P3090816P) with a careful and steady force. In replacing the dog assembly, be certain it is pressed in straight, using an even pressure, and that release key is in position before pressing post into housing.
6. The housing dog (E3090354P) can be removed by unhooking the long extension spring (056009P) from the unloader plate (E3090356P) and screw (056163P) in the housing and the short extension spring (P3090352P) from the dog post and spring anchor pin (P3090347P). Remove snap ring (PS056011P) and remove unloader plate and lift dog (E3090354P) off post.
7. In replacing the housing dog, make sure the pin, which is permanently secured to the dog, is faced to the outside so that it will project through the unloader plate when unloader plate is replaced on the shaft.
8. To remove shaft (P3090791P) (the ratchet gear and chain socket are integral), remove ring (056871P) and free the end of the chain (019353P). This will allow the chain to be "pulled" through the housing (on reassembly, ensure the welded side of chain is away from chain socket). Remove Interlocking Snap Ring (PS056011P) by carefully prying one end apart using screwdriver. Take care to ensure parts do not fly away when ring un-snaps. The shaft (P3090791P) can then be slid through its bearing.
9. Hook (019562P) is assembled to housing (P3090476P) and the nut is pinned in place. If hook is to be replaced, it must be sawed through shank adjacent to the top of the housing.
10. The shift key (P3090043P) can be removed by backing out the drive-lock pin (059036P) holding the shift key finger (019296P) to the shift key.
11. The Oilite bearings (058613P, 058614P, 019305P) can be removed and replaced by pressing them out and pressing the new ones in.



Parts Diagram & Replacement Parts List for Model C3090439



HANDLE Sub-assembly	E3090819P
Handle	P3090816P
Oilite Bearing	O58614P
Release Key+	P3090346P
Hex Jam Nut+	O56748P
Spring+	O56010P
Machine Screw+	O56013P
Stop Bolt+	O19673P
Spring+	P3090307P
Washer+	O56014P
Lockwasher	PO010924P

SWIVEL HOOK Sub-assembly	O24000P
Chain	O19353P
Swivel	P3090466P
Thrust Washer	O56646P
Castle Nut	P3090348P
Pin	PO011563P
Bolt	O19477P
Hex Nut	O62250P
Hook	O19562P
Safety Latch	O19561P
Spring	O19563P

UNLOADER PLATE Sub-Assembly+	E3090356P
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Replacement Parts List for Model C3090439

WORKING DOG Sub-Assembly+ E3090354P

HOUSING Sub-assembly E3090414P

Housing	P3090413P
Bearing (Oilite)	019552P
Bearing	058613P
Pin (Driv-Lok Type)	056016P
Pin+	P3090347P

REMAINING PARTS NOT REQUIRING SUB-ASSEMBLIES

Pocket Wheel	P3090378P
Spur Gear	019549P
Woodruff Key+	056507P
Pinion Shaft	019555P
Ratchet Wheel	019556P
Shift Key	P3090043P
Gear Cover	E3090481P
Shift Key Finger+	019296P
Washer+	056689P
Spring+	P3090352P

REMAINING PARTS NOT REQUIRING SUB-ASSEMBLIES (CONTINUED)

Spring	019565P
Cap Screw	056723P
Driv-Lok Pin+	059036P
Spring+	056009P
Machine Screw+	056163P
Hook	019562P
Safety Latch	019561P
Snap Rings+	PS056011P
Wear Strip+	P3090818P
Thrust Bearing	056646P
Machine Screw	056013P
Washer	056014P
Torsion Spring	056010P
Castle Nut	P3090348P
Pin	P0011563P
Pinion	019557P
Ring	056871P
Snap Ring	P0011558
Washer+	P3090325P

LUBRICANTS AVAILABLE

Chance Tool Lube+	M1909
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+C3090349 Repair Kit — Includes all items marked with +



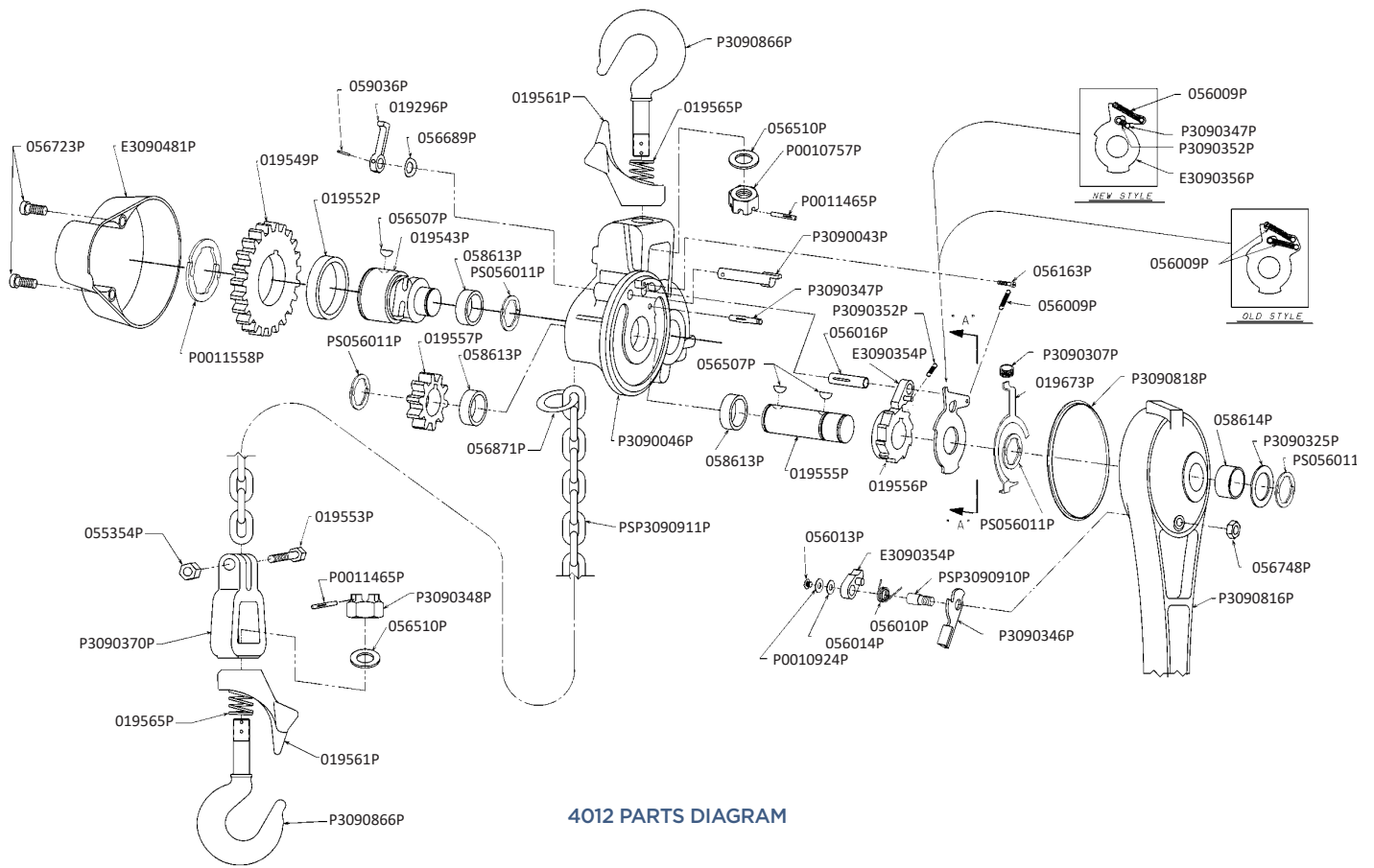
Disassembly Instructions for Model C3090439

To best visualize these instructions, study and refer to the exploded view of the hoist and parts list.

1. Remove snap ring (PS056011P) from shaft (O19555P) on outside of Handle Assembly.
2. Push "Release Key" (P3090346P) in the indented area of the handle in the direction marked "Release" to disengage the working dog from the unloader plate and lift handle (P3090816P) off the shaft. This will expose the mechanism.
3. The working dog in the Handle Assembly may be removed by first removing screw (O56013P) and washer (O56014P) from the post supporting the dog. If needed for replacement, Torsion Spring (O56010P) can be removed after the dog has been removed..
4. When reassembling working dog and spring (O56010P), place the short leg of the spring to the pin on the dog on the side facing handle (P3090816P), and the long leg of the spring against the handle housing (P3090816P).
5. If it is necessary to replace the release key (P3090346P), press the dog assembly (E3090354P) out of handle (P3090816P) with a careful and steady force. In replacing the dog assembly, be certain it is pressed in straight, using an even pressure, and that release key (P3090346P) is in position before pressing post into handle.
6. The holding dog in the housing can be removed by unhooking the two extension springs from the unloader plate and from screw (O56163P) in the housing. Remove snap ring (PS056011P) and slide unloader plate off shaft (O19555P), after which dog can be lifted off post (O56016P).
7. After unloader plate has been removed, ratchet (O19556P) may be slipped off the shaft. Then woodruff key (O56507P) may be removed. Shaft (O19555P) with pinion (O19557P) intact may be slipped out of bearing bore.
8. In replacing the holding dog, make sure the pin which is permanently secured to the dog is faced to the outside, so that it projects through the unloader plate when it is replaced on the shaft.
9. To remove the ratchet gear and chain socket, remove the ring (O56871P) and free the end of the chain, this will allow the chain to be "pulled" through the housing (on reassembly, ensure the welded side of chain is away from chain socket). Then by removing interlocking snap ring (PS056011P), the chain socket with gear (O19549P) will slide out in one piece.
10. Hook may be removed from the housing after pressing groove pin (P0011563P) from the nut and unscrewing hook from nut.
11. The shift key (P3090043P) can be removed by backing out the Driv-Lok pin (O59036P) holding the shift key finger (O19296P) to the shift key.
12. The oilite bearing (O58613P, O58614P) can be removed and replaced in the accepted manner of pressing them out and pressing the new ones in.



Parts Diagram for Model 4012



4012 PARTS DIAGRAM



Replacement Parts List for Model 4012

HANDLE	
Sub-assembly	E3090819P
Handle	P3090816P
Oilite Bearing	058614P
Release Key+	P3090346P
Hex Jam Nut+	056748P
Spring+	056010P
Machine Screw+	056013P
Stop Bolt+	019673P
Spring+	P3090307P
Washer+	056014P
Lockwasher	P0010924P

UNLOADER	
Sub-Assembly+	E3090356P

SWIVEL HOOK	
Sub-assembly	E3090371P
Chain	PSP3090911P
Swivel	P3090370P
Thrust Washer	056510P
Castle Nut	P0010757P
Pin	P0011465P
Bolt	019553P
Hex Nut	055354P
Hook	P3090866P
Safety Latch	019566P
Spring	019565P

WORKING DOG	
Sub-Assembly+	E3090354P

LUBRICANTS AVAILABLE	
Chance Tool Lube+	M1909

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REMAINING PARTS NOT REQUIRING SUB-ASSEMBLIES	
Pocket Wheel	019543P
Spur Gear	019549P
Woodruff Key+	056507P
Pinion Shaft	019555P
Ratchet Wheel	019556P
Shift Key	P3090043P
Gear Cover	E3090481P
Shift Key Finger+	019296P
Washer+	056689P
Spring+	P3090352P
Spring	019565P
Cap Screw	056723P
Driv-Lok Pin+	059036P
Spring+	056009P
Machine Screw+	056163P
Hook	P3090866P
Safety Latch	019566P
Snap Rings+	PS056011P
Wear Strip	P3090818P
Thrust Bearing	056510P
Machine Screw	056013P
Washer	056014P
Torsion Spring	056010P
Castle Nut	P0010757P
Pin	P0011465P
Pinion	019557P
Ring	056871P
Snap Ring	P0011558P
Washer+	P3090325P
Housing	P3090046P
Bearing (Oilite)	019552P
Bearing	058613P
Pin (Driv-Lok Type)	056016P
Pin+	P3090347P



Disassembly Instructions for Model 4012

To best visualize these instructions, study and refer to the exploded view of the hoist and parts list.

1. Remove snap ring (PS056011P) from shaft (019555P).
2. Push "Release Key" (P3090346P) in the indented area of the handle in the direction marked "Release" to disengage the working dog from the un-loader plate and lift handle (P3090816P) off the shaft. This will expose the mechanism.
3. The working dog in the Handle Assembly may be removed by first removing screw (056013P) and washer (056014P) from the post supporting the dog. Torsion spring (056010P) can be removed, after the dog has been removed, for re-placement, if needed.
4. When reassembling working dog and spring (056010P), place the short leg of the spring to the pin on the dog on the side facing handle (P3090816P), and the long leg of the spring against the handle housing (P3090816P).
5. If it is necessary to replace the release key (P3090346P), press the dog assembly (E3090354P) out of handle (P3090816P) with a careful and steady force. In replacing the dog assembly, be certain it is pressed in straight, using an even pressure, and that release key (P3090346P) is in position before pressing post into handle.
6. The holding dog in the housing can be removed by unhooking the two extension springs from the unloader plate and from screw (056163P) in the housing. Remove snap ring (PS056011P) and slide unloader plate off shaft (019555P), after which dog can be lifted off post (056016P).
7. After unloader plate has been removed, ratchet (019556P) may be slipped off the shaft. Then woodruff key (056507P) may be removed. Shaft (019555P) with pinion (019557P) intact may be slipped out of bearing bore.
8. In replacing the holding dog, make sure the pin which is permanently secured to the dog is faced to the outside, so that it projects through the unloader plate when it is replaced on the shaft.
9. To remove the ratchet gear and chain socket, remove the ring (056871P) and free the end of the chain, this will allow the chain to be "pulled" through the housing (on reassembly, ensure the welded side of chain is away from chain socket). Then by removing interlocking snap ring (PS056011P), the chain socket with gear (019549P) will slide out in one piece.
10. Hook (P3090866P) may be removed from the housing after pressing groove pin (P0011465P) from the nut (P0010757P) and unscrewing hook from nut.
11. The shift key (P3090043P) can be removed by backing out the Driv-Lok pin (059036P) holding the shift key finger (019296P) to the shift key.
12. The oilite bearing (058613P, 058614P) can be removed and replaced in the accepted manner of pressing them out and pressing the new ones in.



Parts Diagrams & Replacement Parts List for Model C3090440

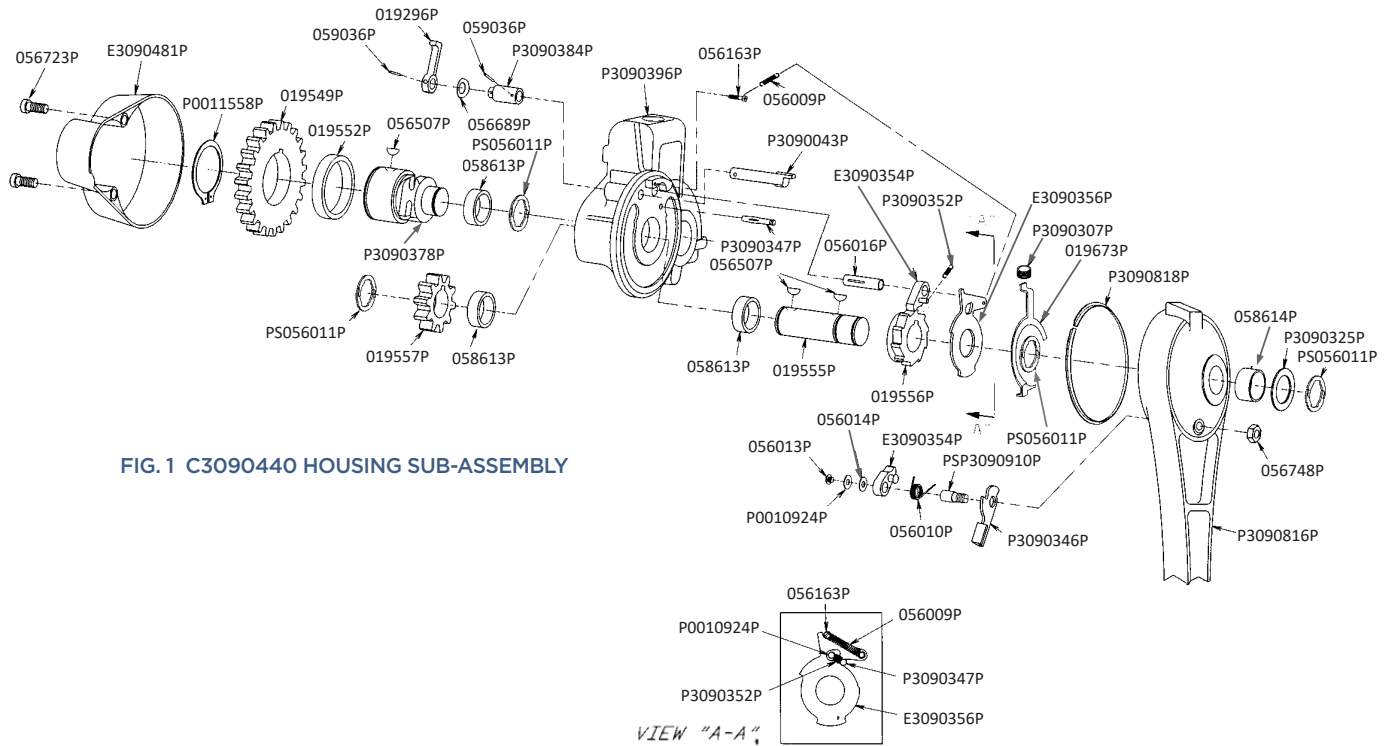


FIG. 1 C3090440 HOUSING SUB-ASSEMBLY

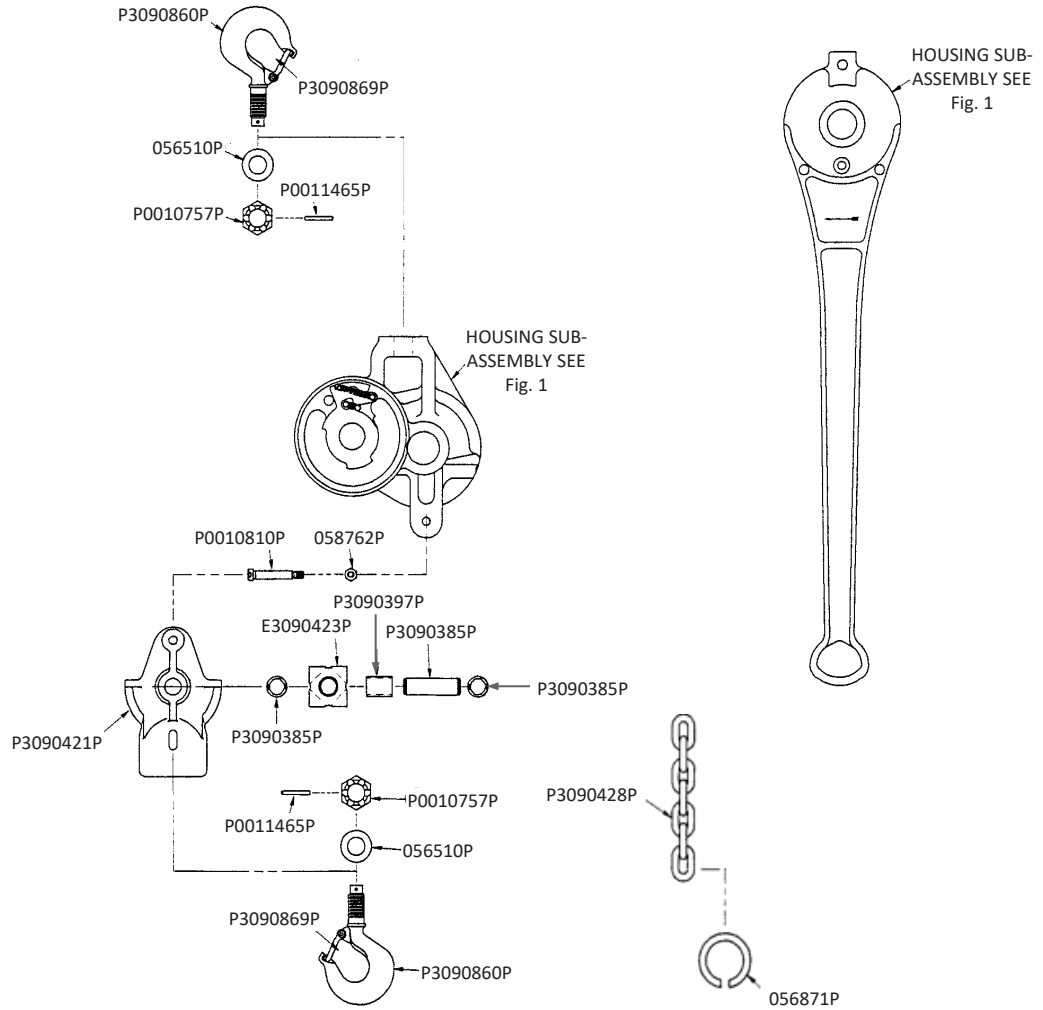
Description	Part No.
Handle	P3090816P
Handle Assembly	E3090819P
Oilite Bearing	058614P
Release Key+	P3090346P
Hex-Jam Nut+	056748P
Spring+	056010P
Machine Screw+	056013P
Stop Bolt+	019673P
Spring+	P3090307P
Washer+	056014P
Unloader Plate+	E3090356P
Dog Assembly+	E3090354P

Description	Part No.
Lockwasher+	P0010924P
Housing	P3090396P
Oilite Bearing	019552P
Bearing	058613P
Driv-Lok Pin	056016P
Pocket Wheel	P3090378P
Spur Gear	019549P
Woodruff Key+	056507P
Pinion Shaft	019555P
Ratchet Wheel	019556P
Shift Key	P3090043P
Gear Cover	P3090417P
Shift Shaft Extension	P3090384P

Description	Part No.
Shift Key Finger+	019296P
Washer+	056689P
Cap Screw	056723P
Driv-Lok Pin+	059036P
Spring+	056009P
Machine Screws+	056163P
Snap Rings+	PS056011P
Wear Strip+	P3090818P
Pinion	019557P
Snap Ring	P0011558P
Washer+	P3090325P
Spring+	P3090352P
Pin (Driv-Lok Type)	P3090347P



Parts Diagrams for Model C3090440



Description	Part No.
Top or Bottom Hook for 3 Ton	P3090860P
Nut	058762P
Safety Latch Kit for 3 Ton	P3090869P
Ring-Chain End	056871P
Hook Nut, 3 Ton	P0010757P
Washer, 3 Ton	056510P
Pin, 3 Ton	P0011465P
Bottom Block 3 Ton (2 Chain)	P3090421P

Description	Part No.
Idler Sprocket w/Bearing-All Models	E3090423P
Bearing only (Idler Sprocket)	P3090397P
Axle-Bottom Block 3-4 1/2 Ton only	P3090385P
Retaining Ring-Axle-All	P3090382P
Pin-Chain Anchor 3 & 4 1/2 Ton	P0010810P
Chain 3 Ton	P3090428P

LUBRICANTS AVAILABLE

Chance Tool Lube+	M1909
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C3090349 Repair Kit — Includes all items marked with +



Disassembly Instructions for Model C3090440

To best visualize these instructions, study and refer to the exploded view of the hoist and parts list.

1. Remove snap ring (PS056011P) from shaft (O19555P).
2. Push "release key" (P3090346P) in the indented area of the handle in the direction marked "release" to disengage the working dog from the unloader plate and lift handle assembly off the shaft. This will expose the mechanism.
3. The working dog in the Handle Assembly may be removed by first removing screw (O56013P) and washer (O56014P) from the post supporting the dog. If needed for replacement, Torsion Spring (O56010P) can be removed after the dog has been removed.
4. When reassembling working dog and spring (O56010P), place the short leg of the spring to the pin on the dog, on the side facing handle (P3090816P), and the long leg of the spring against the handle housing (P3090816P).
5. If it is necessary to replace the release key (P3090346P), press the dog assembly (E3090354P) out of handle (P3090816P) with a careful and steady force. In replacing the dog assembly, be certain it is pressed in straight, using an even pressure, and that release key (P3090346P) is in position before pressing post into handle.
6. The holding dog in the housing can be removed by unhooking the two extension springs from the unloader plate and from screw (O56163P) in the housing. Remove snap ring (PS056011P) and slide unloader plate off shaft (O19555P) after which dog can be lifted off post (O56016P).
7. After unloader plate has been removed, ratchet (O19556P) may be slipped off the shaft. Then woodruff key (O56507P) may be removed. The shaft (O19555P) may be slipped out of bearing bore.
8. In replacing the holding dog, make sure the pin which is permanently secured to the dog is faced to the outside, so that it projects through the unloader plate, when it is replaced on the shaft.
9. To remove the ratchet gear and chain socket, disconnect chain end and pull out of housing (on reassembly, ensure the welded side of chain is away from chain socket). Then by removing interlocking snap ring (PS056011P), the chain socket and gear (O19549P) will slide out in one piece.
10. Hook (P3090860P) may be removed from the housing after pressing roll pin (P0011465P) from the nut (P0010757P) and unscrewing hook from nut.
11. The shift key (P3090043P) can be removed by backing out the Driv-Lok pin (O59036P) holding the shift key finger (O19296P) to the shift key.
12. The bearings (O58613P, O58614P) can be removed and replaced in the accepted manner of pressing them out and pressing the new ones in.



Reassembly Instructions

To reassemble, follow these instructions in the reverse manner replacing parts in the same position as noted when removed (with all models, ensure the welded side of the hoist chain is always facing away from chain socket). It is important that the hoist be inspected, cleaned, and relubricated periodically depending on working conditions.

Testing

After assembly, the hoist must be checked for proper operation and load tested.

Suspend the hoist from a support that can hold the test loads. With a load of 100 lbs on the hoist, carefully raise and lower the load. The handle should be operated to rotate the shaft at least one complete revolution, (three full chain links) in one tooth increments to ensure all teeth are tested.

A load equal to the rating of the hoist should then be raised and lowered in a similar manner. Attention to the operation of all controls and the action of the hoist during testing is essential to make sure the hoist is safe to return to duty. If the hoist passes the above tests, the hoist may be returned to service.

Refer any questions about the use, application, testing, or repair parts of this hoist to:
Hubbell / CHANCE, 210 N. Allen St., Centralia, MO 65240

Phone: +1 573-682-5521



These products should only be installed, used, or serviced by adequately trained personnel. These instructions are not a substitute for adequate training in the safe use of these products, and they do not address all situations that may be encountered when using these products. When using any product, always read and follow the installation and operating instructions and warnings for the product, all applicable federal, state, and local safety regulations, industry standards, and your employer's internal safety guidelines and operating instructions. Failure to follow applicable safety rules and instructions may result in serious injury, death, and property damage.

The user is responsible for the safe installation and use of any product, and must evaluate the conditions at the time of use and consult with their employer's internal safety guidelines or safety experts hired by your employer, as needed.

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Operating and installation instructions are available on the Hubbell Power Systems, Inc. website: hubbellpowersystems.com*



hubbellpowersystems.com

For product inquiries, please contact your local sales representative or customer service representative.

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