

CHANCE HOIST INSTRUCTION MANUAL

OPERATING & SERVICING THE CHANCE 3/4-TON CHAIN HOIST

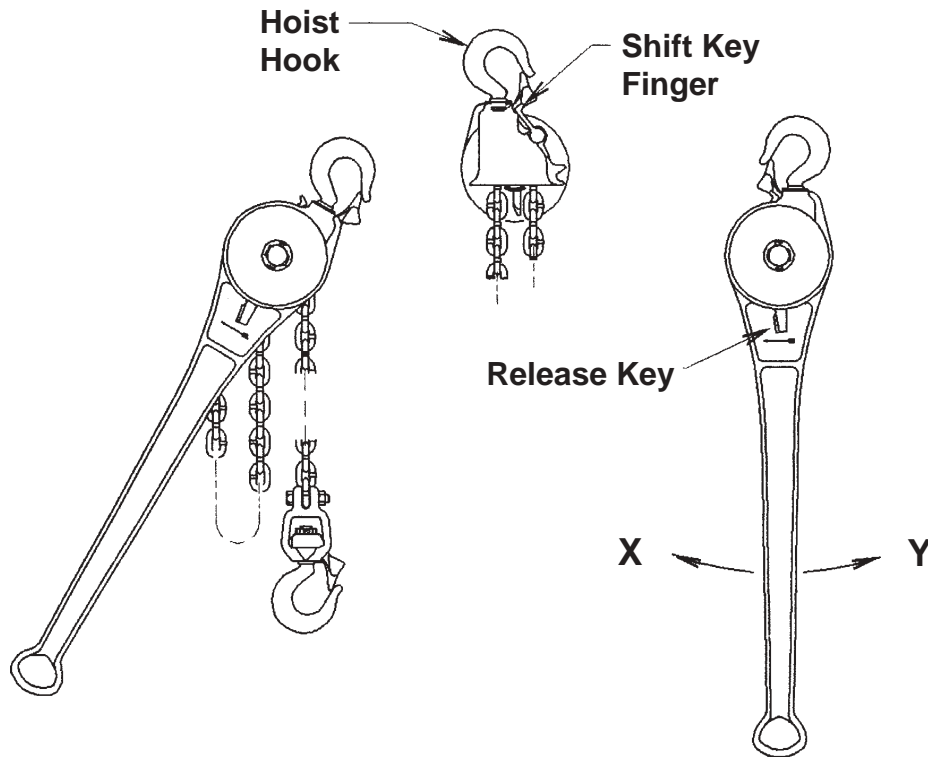


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POWER SYSTEMS, INC.



CHANCE 3/4-TON HOIST

The 3/4-ton hoist, proof-tested to 2,250 pounds is rated to lift loads up to and including 1,500 pounds. Relatively light in weight, these rugged hoists are well-balanced for easy handling, fast operating to get the hoisting job done quickly.

Simple Controls Are Easy to Operate

The simple controls can be operated without removing heavy work gloves or rubber gloves. Linemen like its well-balanced, easy to grip handle. The half-link and full-link take-up for accuracy and speed. There are easy-working hooks on both the housing and chain that swivel freely to allow for unwinding action of rope or wire under tension. The hooks can be pulled in to a minimum distance of 11 inches for working in cramped quarters. The chain "Free Wheels" for ease in hooking to the load. The control lever locks automatically when the hoist is pulling a strain . . . thus a load cannot be accidentally dropped by moving lever while under load.

Ratchet-Type Handle

Note that the handle is shaped for easy gripping, has a ball-end to keep the hand from slipping off. This ratchet-type handle can be operated from either side of the housing . . . to avoid guys, poles, conductors, or other obstructions that would interfere with the lever-motion of the handle. The flexible, heavy-steel load chain will not kink, bind, or uncouple.

Simple, Sturdy Construction

The hoist housing and handle are made of heat-treated aluminum; the one piece shaft of hardened steel. Extremely simple, yet sturdy, the construction of the Chance hoist insures long, dependable service. All working joints are fitted with permanently-lubricated oilite bearings. All working parts are fully enclosed in the housing unit to provide protection for the hoist mechanism, and to cover gearing for safety.

To Position Hoist for Use:

WARNING

When placing the hoist in operating position, care must be taken to make sure that the load hook and housing hook of the hoist are on the same centerline . . . If the hoist is restricted from adjusting itself to form a straight line with the direction of loading, damage to the hoist could occur.

The hoist may be operated in any convenient position and the handle may be operated on either side of chain as shown by the arrows (X) and (Y) on the drawings. To provide an upward or downward stroke for lifting or lowering, generally it is more convenient to lift or lower on a downward stroke. To put the hoist in free-wheeling, turn the shift key finger to the "Dn" (Down) position and hold the release key in the direction of the arrow. Pull the chain in the "Up" direction approximately 2 links, then pull on the hook side of the chain to get sufficient slack to hook onto the load. **Caution: Free-wheeling action should only be initiated under "No Load" conditions to take up slack. Simply pull on the free end of the chain. The hoist will ratchet even though the release key is not depressed.**

To Lift a Load:

Turn the shift key finger to "Up" and operate handle. The handle may be operated on either side of chain as shown by the arrows (X) and (Y) on the drawing.

To Lower a Load:

Turn the shift key finger to "Dn" (Down) and operate the handle. The handle may be operated on either side of chain by the arrows (X) and (Y) on the drawing.

To Shift Handle:

To change position of handle from side marked (X) to side marked (Y), press release key in direction of arrow.

CAUTION

The equipment covered in this instruction guide should 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 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 appli-

cation and use considerations. However, this instruction guide goes 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.

CARE

The Chance hoist is designed to provide long and rugged service. Observing the suggestions listed below will increase the service life of the hoist.

1. The hoist should be inspected, cleaned and re-lubricated periodically, depending on usage conditions.
2. When lowering a light or "bouncing" load, do not flip or otherwise cause the handle to become self-ratcheting. Allowing the handle to self-ratchet causes undue wear on the stop areas and reduces the wear life of the hoist. In addition, **CAUTION: Do not allow hoist to self-ratchet. The free-ratcheting handle could strike the operator.**
3. When operating the handle, it is not necessary to "slam" the handle past the ratcheting position. Constant impact will increase wear of the hoist mechanism.

PERIODIC MAINTENANCE

The hoist is designed to provide rugged service. Initiating a program of periodic inspection, cleaning and repair will increase the service life of the hoist.

Time intervals between routine cleaning and inspection will depend entirely upon severity of usage and the environment in which the hoist is operated. A program of regular maintenance can best be determined by the user to suit his particular needs.

Without question: any hoist not functioning properly, or showing external damage, should be tagged as defective and sent to the repair area.

Extensive repairs should be attempted only by personnel with a reasonable degree of mechanical aptitude. Sound judgment must be exercised in determining degree or extent of repairs necessary. Replacing a single faulty part in an otherwise worn assembly is not as desirable as an extensive rebuild. Hoists returned to the A. B. Chance Company for repair are thoroughly cleaned, checked, and rebuilt to "near new" condition.

INSTRUCTIONS FOR SERVICING THE CHANCE C309-0457 HOIST

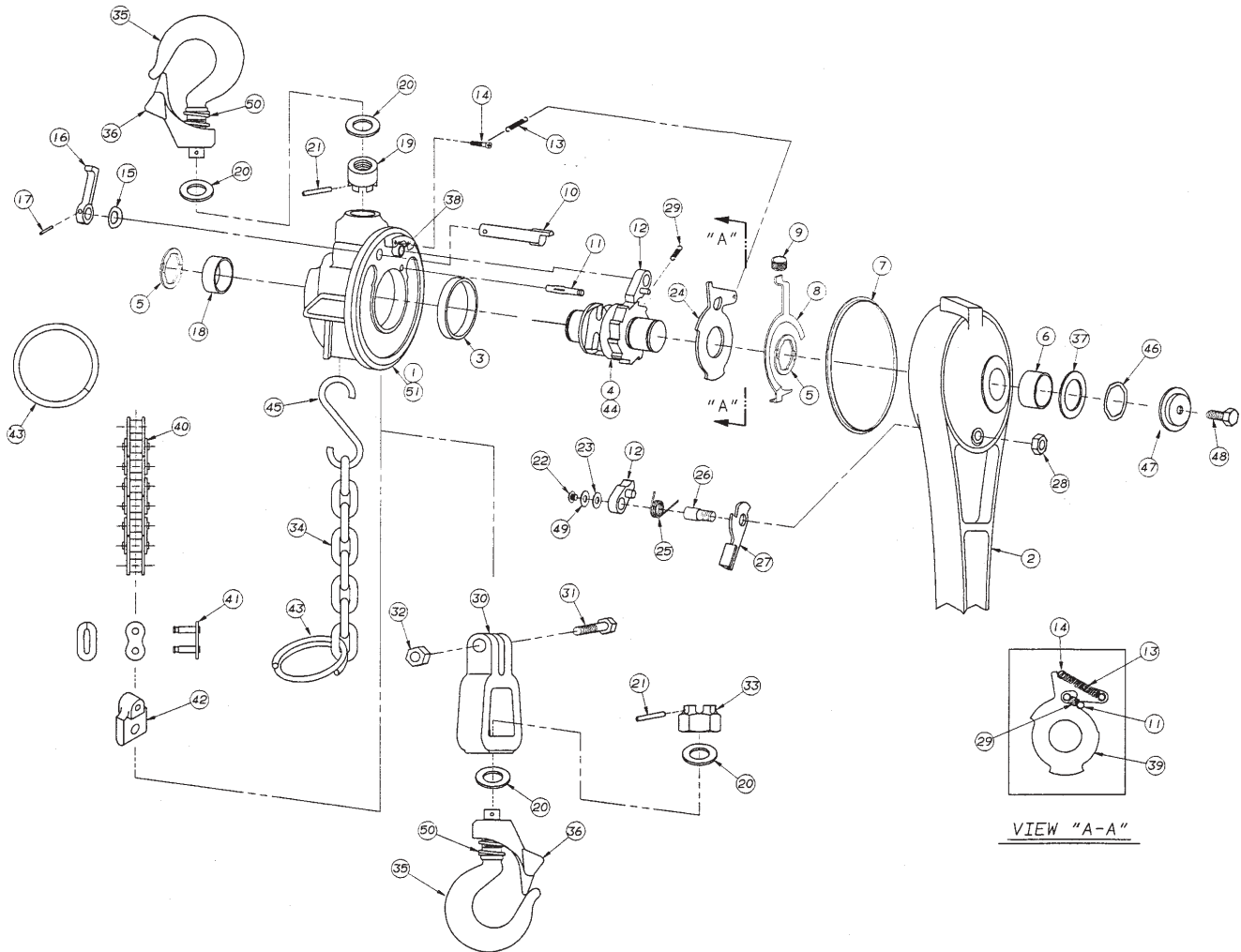
1. Check operation of the hoist thoroughly by lifting and lowering a minimum of 500 lb. (Rated load preferred). Lifting and lowering operations should be checked by operating the hoist in the two positions of operation. That is, using both downward and upward strokes to lift and lower the test load.
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 hoist carefully. Refer to disassembly instructions and exploded view of hoist components. 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:
4. Lubrication: After repairs or routine cleaning, the hardened steel parts should be lightly re-lubricated with grease. Greases that become stiff when exposed to cold should not be used — they impair the mechanism. Conditions the hoists are subjected to will dictate frequency of lubricating and cleaning. Use in sandy or dusty areas will dictate frequent servicing. Exposure to salt spray or other corrosive environments will also increase necessity for frequent attention.
5. Reassemble: Recheck operation thoroughly as specified in Section 1. This is most important.

Any hoist not functioning properly after servicing or disassembly and that the reason for malfunctioning cannot be determined should be returned to the A. B. Chance Company for rework.

Date or repair or inspection should be stamped on the housing.

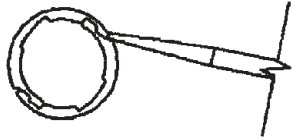
To best visualize the principle of operation of the chain hoist, a cut-away handle, similar to the one pictured in this manual, can prove invaluable. Trouble shooting malfunctions in hoists can also be aided by a cut-away handle.

Repair Parts List for Chance 3/4-Ton Hoist

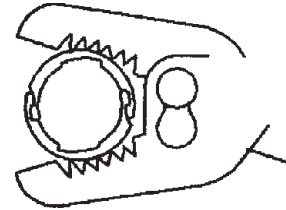


No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	P309-0044	Housing-Link	18	058613	Bearing, Small	35	019562	Hook
2	P309-0816	Handle	19	P309-0794	Nut	36	019561	Safety Latch
3	019305	Bearing, Large	20	056646	Washer	37	P309-0325	Washer
4	P309-0791	Shaft - Link	21	P001-1563	Pin	38	056016	Pin (Drive Lok)
5	056011	Snap Ring	22	056013	Screw	39	E309-0356	Unloader Plate
6	058614	Bearing, Handle	23	056014	Washer	40	P309-0454	Roller Chain
7	P309-0818	Wear Ring	24	E309-0356	Unloader Plate	41	P309-0455	Connecting Link
8	019673	Stop Bolt	25	056010	Torsion Spring	42	P309-0449	Swivel Adapter
9	P309-0307	Spring	26	019486	Dog Post	43	P130-0007	Chain End Ring - Roller
10	P309-0043	Shift Key	27	P309-0346	Release Key	44	P309-0453	Shaft - Roller
11	P309-0347	Pin (Drive Lok)	28	056748	Nut	45	P406-0005	S-Hook
12	E309-0354	Dog Assembly	29	P309-0352	Spring	46	P001-1485	Wave Washer
13	056009	Spring	30	P309-0466	Swivel	47	P309-0775	Cap
14	056163	Screw	31	019477	Bolt	48	P001-0997	Machine Bolt
15	056689	Washer	32	062250	Nut	49	P001-0924	Lockwasher
16	019296	Shift Key Finger	33	P309-0348	Castle Nut	50	019563	Coil Spring
17	059036	Pin (Drive Lok)	34	019353	Chain	51	P309-0476	Housing-Roller

Disassembly Instructions for Periodic Inspection and Repair or Replacement of Parts for 3/4-Ton Hoist



To remove interlocking snap ring, pry one end apart using a screwdriver. Parts may fly away when ring unsnaps.



To reinstall, hook the end and close with pliers.

In order to best visualize these instructions, study and refer to the exploded view of the hoist.

1. Remove bolt (P001-0997) from shaft.
2. Push “release key” (P309-0346) in the indented area of the handle in the direction marked “release” to disengage the handle dog (E309-0354) off the shaft. This will expose the mechanism.
3. The handle dog (E309-0354) may be removed by first removing screw (056013) and washer (056014) from the post supporting the dog. Tension spring (056010) can be removed after the dog if needed.
4. When reassembling handle dog (E309-0354) and spring (056010), place the short leg of the spring to the pin on the dog, and the long leg of the spring against the handle housing (P309-0816).
5. If necessary to replace the dog post (019486) or release key (P309-0346), press the dog post out of housing (P309-0044) with a careful and steady force. In replacing the new dog post, be certain it is pressed in straight using an even pressure and that release key is in position before pressing post into handle.
6. The housing dog (E309-0354) can be removed by unhooking the long extension spring (056009) from the unloader plate and screw (056163) in the housing and the short extension spring (E309-0352) from the dog post and spring anchor pin (E309-0347). Remove snap ring (056011) and remove unloader plate and lift dog off post (056016).
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 projects through the unloader plate when it is replaced on the shaft.
8. To remove shaft (P309-0379) (the ratchet gear and chain socket are an integral part), remove ring (P130-0007) and free the end of the chain (019353). This will allow the chain to be “pulled” through the housing. Then by removing interlocking snap ring (056011), the shaft can be slid through its bearing in the housing (P309-0044).
9. Hook (019562) is assembled to housing (P309-0044) 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 (P309-0043) can be removed by backing out the drive-lock pin (059036) holding the shift key finger (019296) to the shift key.
11. The oilite bearing (058613, 058614, 019305) can be removed and replaced in the accepted manner of pressing them out and pressing the new ones in.

To reassemble, follow these instructions in the reverse manner replacing parts in the same position as noted when removed.

It is important that the hoist be inspected, cleaned, and relubricated periodically depending on usage conditions.



FIG. 1
Principle "Stop" Area of Handle

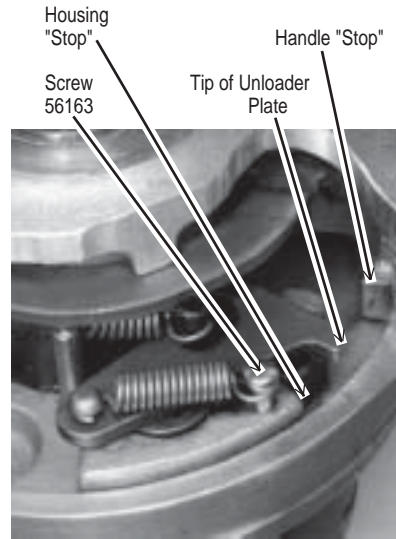


FIG. 2
Cut Away View of "Stop" Area

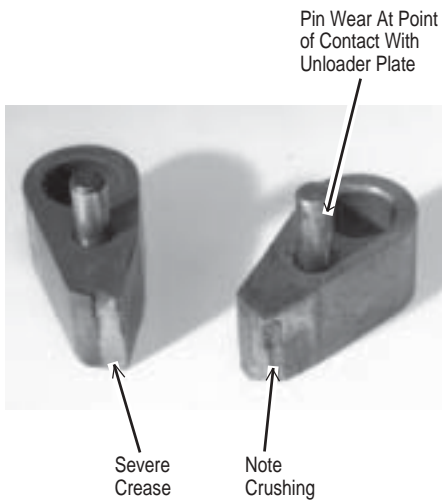


FIG. 3
Damaged Pawls

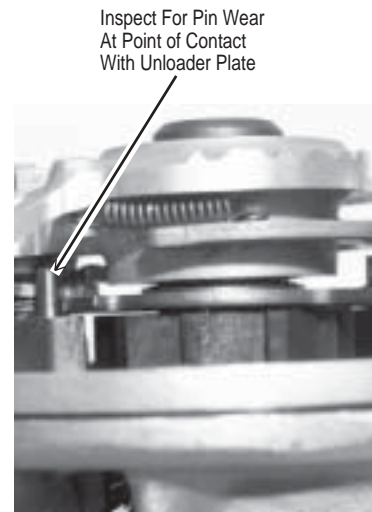


FIG. 4
Cut Away Showing Paul Pin & Unloader Plate Relationship

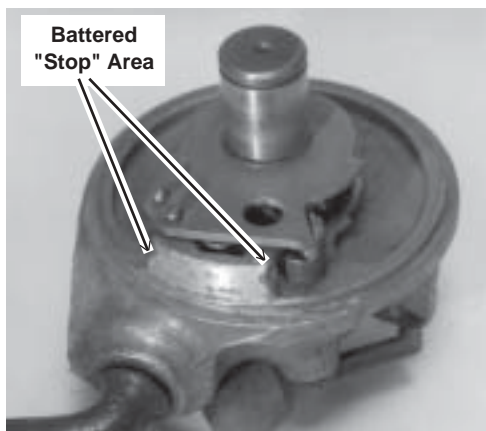


FIG. 5
Damaged Housing

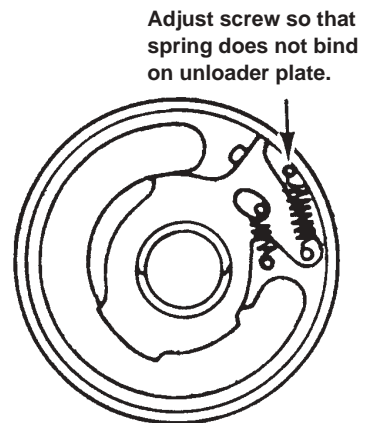


FIG. 6
New Housing

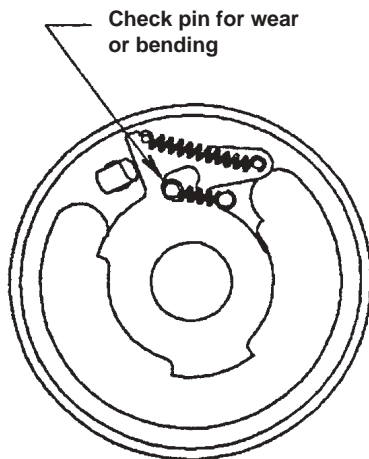


FIG. 7 Shift Key in "Up" Position

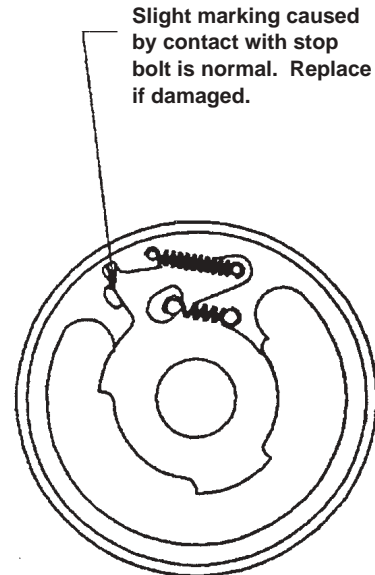


FIG. 8 Shift Key in "Down" Position



FIG. 9 Pocket Wheel Damage



FIG. 10 Ratchet Tooth Damage

Handle Subassembly

1. Examine "stop" surfaces for impact damages caused by such improper practices as allowing handle to self-ratchet and "slamming" the handle unnecessarily during use. (Refer to Fig. 1).

Excessive battering and subsequent eroding of the "stop" surfaces of both the handle and housing can cause shearing of the housing spring retaining screw (056163). As the surfaces are eroded away, the 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". 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 returned to the factory for repair. Such hoists may have been

dangerously overloaded as a result of such usage. Any hoist exhibiting evidence of this type of treatment, and even undamaged hoists, should be most carefully examined, particularly the principle load carrying members. The holding and working dog assemblies (pawls) must be checked and replaced if they show any evidence of creasing, chipping or cracking. The ratchet teeth on the forged heat-treated shaft (P309-0379) must be checked for missing or damaged teeth, and replaced if necessary. (Refer to Fig. 9 & 10.)

3. The handle dog (pawl) 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 & 4.)
4. Stop bolt (019673): Check for bending or breakage. Replace if necessary.

Housing Sub-Assembly and Related Parts

1. Examine “stop” surfaces. The mating surfaces to the handle “stops”. Reasons for damage and possible malfunctions are the same as outlined in Section A, Part I. Replace housing if damaged or worn. (Refer to Fig. 2.)
2. Housing hook should be replaced if the hook has been sprung or bent by misuse. Refer to disassembly instructions for replacement procedure.
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.
3. Shift Key (P309-0044) should be examined for breakage or bending, particularly the camming surfaces. Fig. 7 and Fig. 8 show the correct position of the shift key when the shift key finger (019296) is in “Up” or “Dn” position.
4. Shaft (P309-0791): 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, or repeated self-ratcheting, using the hoist as a maul, foreign matter carried into the chain pockets and wedging causing breakage of the chain pocket sides (Fig. 9 & 10).
5. Unloader plate (E309-0356): Inspect for breakage or wear on camming surfaces.
6. Chain: Examine links for damage or wear. Thoroughly clean and remove any oxides or dirt. Coat chain with a light coat of machine oil.

NOTE: Because Chance has a policy of continuous product improvement, it reserves the right to change design and specifications without notice.