BULLETIN No. CF-9409-MCE-09

Original Instruction

OWNER'S (OPERATOR'S) MANUAL AND SAFETY INSTRUCTIONS FOR KITO MANUAL CHAIN HOIST

CF SERIES

ALWAYS SAVE THIS BOOK FOR FUTURE REFERENCE.

KITO

CONTENTS

1. DEFINITIONS

⚠ WARNING **: indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.**

⚠ CAUTION **: indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.**

WLL: indicate maximum mass (working load limit) which a hoist is designed to support in general service.

2. INTENDED PURPOSE

This hoist has been designed for vertically lifting and lowering loads, by hand, under normal atmospheric conditions of the work place.

3. MOUNTING

⚠ WARNING

NEVER Avoid the following when mounting the chain hoist.
Failure to comply with these instructions may result in death or severe injury.
- Ensure that only trained or competent persons install the chain hoist.
- Do not install the chain hoist within the range of movement of other devices (equipment), such as a trolley.

ALWAYS Comply with the following instructions when installing the chain hoist.
Failure to comply with these instructions may result in death or severe injury.
- Check that the structure for mounting the chain hoist has sufficient strength.
- Fix the Top Hook to the structure securely.
- Before using the chain hoist with a trolley, read the Instruction Manual of the trolley carefully and install it by adjusting the rail width.
- Install a stopper at both ends of the traversing rail for the trolley.

4. BEFORE USE

4.1 Safety summary

Danger exists when heavy loads are transported, particularly when the equipment is not being used properly or is poorly maintained. Because accidents and serious injury could result, special safety precautions apply to the operation, maintenance and inspection of the KITO manual chain hoist CF series.

⚠ WARNING

NEVER use a hoist for lifting, supporting or transporting people.

NEVER lift or transport loads over or near people.

NEVER lift more than WLL which is shown on the name plate.

ALWAYS let people around you know when a lift is about to begin.

ALWAYS read the operation and safety instructions.

Remember proper rigging and lifting techniques are the responsibility of the operator. Check all applicable safety codes, regulations and other applicable laws for further information about the safe use of your hoist.

More detailed safety information is contained in the following pages. For additional information, please contact KITO Corporation or your authorized KITO dealer.

4.2 Safety instructions

⚠ WARNING

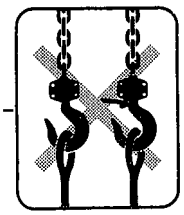
4.2.1 Before use

ALWAYS allow the instructed (trained in safety and operation) people to operate the hoist.

ALWAYS check the hoist before daily use according to the “Daily inspection” (Refer to 7.2).

ALWAYS make sure that the chain length is long enough for the intended job.

ALWAYS check that the hook latches work properly and replace missing or broken hook latches (Refer to 7.3).



ALWAYS check the brake (Refer to 7.3).

ALWAYS oil the load chain regularly (Refer to 8.1.2).

ALWAYS use two hoists which each has WLL equal to or more than the load to be lifted whenever you must use two hoists to lift a load. This will provide adequate protection in the event that a sudden load shift or failure of one hoist occurs.

NEVER use a hoist without a hoist name plate.

NEVER use modified or deformed hooks.

NEVER use non-authentic chains on the hoist.

4.2.2 While operation

ALWAYS make sure that the load is properly seated in the hook.

ALWAYS tighten the slack out of the chain and sling when starting a lift to prevent a sudden loading.

NEVER operate a hoist unless the load is centered under the hoist.

NEVER use the hoist chain as a sling.

NEVER use a twisted, kinked, damaged or stretched load chain.

NEVER swing a suspended load.

NEVER support a load on the tip of the hook.

NEVER contact the load chain over an edge.

NEVER weld or cut a load suspended by a hoist.

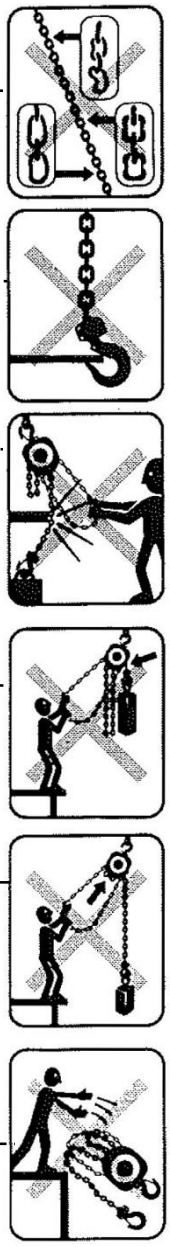
NEVER use the hoist chain as a welding electrode.

NEVER operate a hoist so far that the bottom hook touches the hoist body.

NEVER operate a hoist so far that the load chain pulls the anchorage.

NEVER operate a hoist if excessive noise occurs.

NEVER use the capsized load chain.



4.2.3 After operation

ALWAYS set the load down safely after carrying.

NEVER suspend a load for an extended period of time.

NEVER leave a suspended load unattended.

NEVER throw a hoist.

4.2.4 Maintenance

ALWAYS let the qualified service personnel inspect the hoist periodically (Refer to 7.3).

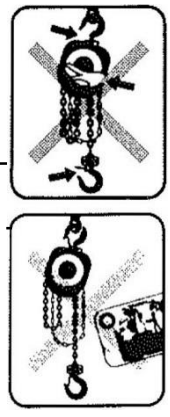
NEVER splice, add and weld a load chain for extension.

4.2.5 Others

ALWAYS consult the manufacturer or your dealer if you plan to use a hoist in an excessively corrosive environment (salt water, sea air and/or acid, explosive environment or other corrosive compounds, etc.).

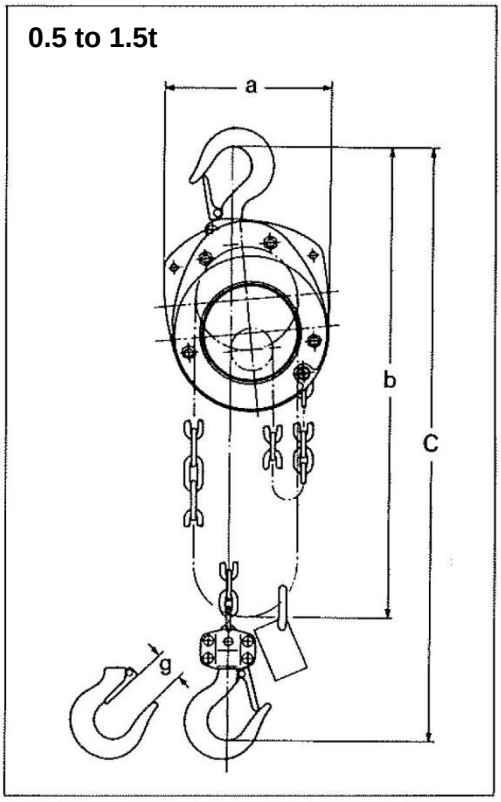
NEVER use a hoist which has been taken out of service until the hoist has been properly repaired or replaced.

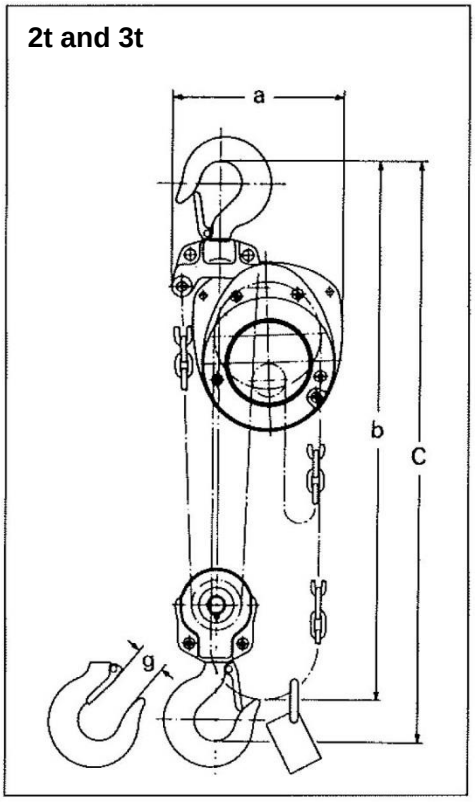
NEVER remove or obscure the warning tags and labels.



Warning tags are installed on a hand chain.

5. MAIN SPECIFICATIONS





Code	WLL (t)	Std. lift (m)	Min. distance between hooks: C (mm)	Chain pull to lift full load (N)	Chain o'hauled to lift load *one meter (m)	Test load (t)	Net weight (kg)	Load chain dia. (mm) x pitch (mm)	Load chain fall (lines)	Weight for additional one meter of lift (kg)	a (mm)	b (m)	g (mm)
CF005	0.5	2.5	325	300	19	0.75	10	5.0 x 15.1	1	1.5	150	2.5	27
CF010	1	2.5	370	360	31	1.5	12	6.3 x 19.1	1	1.8	174	2.5	29
CF015	1.5	2.5	440	420	41	2.36	17	7.1 x 21.2	1	2.1	203	2.5	34
CF020	2	3.0	510	400	63	3	21	6.3 x 19.1	2	2.7	204	3.0	36
CF030	3	3.0	590	460	81	4.75	28	7.1 x 21.2	2	3.2	240	3.0	42.5

Remark: Any lift of chain is available on request.

* Length of the hand chain necessary to lift a load 1m.

Allowable ambient conditions

Operation temperature : -40°C to +60°C

Operation humidity : 100%

Non-asbestos material;

Friction plates are made of asbestos free material.

6. OPERATION

6.1 Intended purpose of hoist operation

⚠ WARNING

This hoist has been designed for vertically lifting and lowering loads, by hand, under normal atmospheric conditions of the work place.
However, since dealing with heavy loads may involve unexpected danger, all the "Safety instructions" (Refer to 3.2) must be followed.

6.2 Safety working environment

⚠ WARNING

The operator must be aware of the following points while using the hoist.
(1) The operator must have a clear and unobstructed view of the entire travel area before operating the hoist. When not possible, a second or more persons must serve as scouts in the nearby area.
(2) The operator must check the entire travel area is safe and secure before operating the hoist.

6.3 Operation

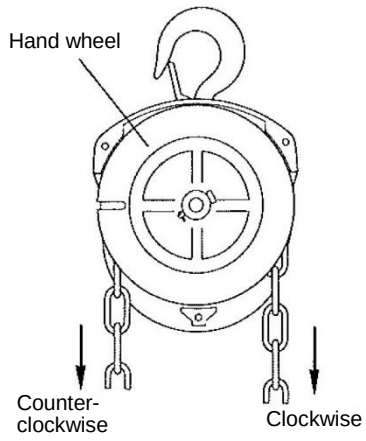
⚠ CAUTION

ALWAYS take care hand or clothes not to be caught in a chain, idle sheave or other moving parts.

(1) Face the hand chain wheel side of the hoist.
(2) To raise the load, pull hand chain clockwise.
(3) To lower the load, pull hand chain counterclockwise.
(4) There are risks of overheating of the breaking system during prolonged lowering of loads. If you are considering of the use under such condition, consult KITO.

Remark: The clicking sound of the pawl when a load is being raised indicates normal operation.

Fig. 5-1 Hand wheel rotation



6.4 Hoist storage

⚠ CAUTION

Observe the following points when storing the hoist.

ALWAYS store the hoist in no load condition.

ALWAYS wipe off all dirt and water.

ALWAYS oil the chain, top pin, chain pin and hook latches.

ALWAYS hang in a dry place.

ALWAYS check the hoist for abnormalities when using the hoist after a period of non-use according to the periodic inspection procedures (Refer to 6.3).

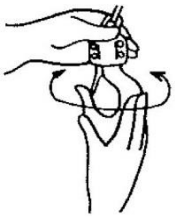
7. INSPECTION

7.1 Outline

There are two types of inspection, the daily inspection performed by the operator before using the hoist, and the more thorough periodic inspection performed by qualified service personnel who have the authority to remove the hoist from service.

7.2 Daily inspection

Before each work shift, check the following points;

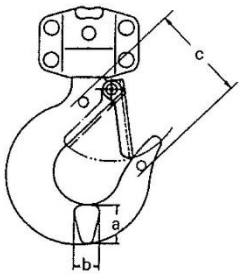
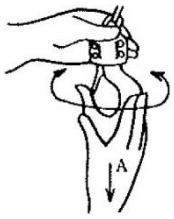
Item	Inspection method	Discard limit/criteria	Remedy
1. Name plate	Check visually.	The name plate is attached and clearly legible.	Replace the name plate.
2. Function			
1) Lifting	Pull the right hand chain, seen facing the wheel, to lift the load.	The pawl makes a clicking sound while the chain is being taking up.	Overhaul and service.
2) Lowering	Pull the left hand chain, seen facing the wheel, to lower the load.	The chain lowers, but the pawl does not make a clicking sound.	Overhaul and service.
3. Hook latches	Check visually.	Top and bottom hook latches are in place and in proper condition.	Replace the part.
4. Hook	Check visually.	Top and bottom hooks are not too wide.	Replace the hook.
	Turn the swivels by hand.	Shall turn smoothly.	Replace the hook.
5. Load chain	Check visually.	No obvious rust or corrosion.	Remove rust.
	Check visually.	Lubrication must be on surface.	Oil the load chain.
	Check visually	No twists or harmful flaws	Replace the load chain.
6. Miscellaneous	Check visually.	No missing nuts and/or split pins.	Replace the parts.

7.3 Periodic inspection

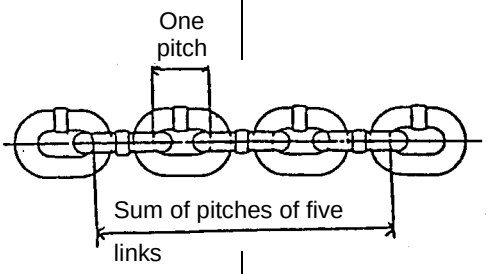
Periodic inspection should be made at the interval shown below and should follow the given procedures.

NORMAL (Normal use): Semiannual inspection
HEAVY (Frequent use): Quarterly inspection
SEVERE (Excessively frequent use): Monthly inspection

Figures in parentheses are Fig. No. in "PARTS LIST". (Refer to page 22 to 23.)

<table>
<tr><th>Item</th><th>Inspection method</th><th>Discard limit/criteria</th><th>Remedy</th></tr>
<tr><td>Name plate</td><td>Check visually.</td><td>WLL indication is clear.</td><td>Attach the name plate.</td></tr>
<tr><td>Hook [1, 4, 44, 56, 66, 75]
(Top and bottom)</td><td></td><td></td><td></td></tr>
<tr><td>1. Deformation/ twist of hook opening</td><td>Measure dimension "c"(shown in the next) at time of purchase with slide calipers.</td><td>No deformation comparing with original shape (at time of purchase)</td><td>Replace the hook.</td></tr>
<tr><td></td><td>Check visually.</td><td>Twist shall not be large enough to detect visually.</td><td>Replace the hook.</td></tr>
<tr><td>2. Wear
 
</td><td>Measure "a" and "b" with slide calipers.</td><td>NEVER use the hook if dimension "a" or "b" becomes less than 90% of normal.
<table><tr><th rowspan="2">WLL (t)</th><th colspan="2">a (mm)</th><th colspan="2">b (mm)</th></tr><tr><th>Normal</th><th>Discard</th><th>Normal</th><th>Discard</th></tr><tr><td>0.5</td><td>17.0</td><td>15.3</td><td>12.1</td><td>10.9</td></tr><tr><td>1</td><td>21.8</td><td>19.6</td><td>16.0</td><td>14.4</td></tr><tr><td>1.5</td><td>26.5</td><td>23.9</td><td>19.5</td><td>17.6</td></tr><tr><td>2</td><td>30.0</td><td>27.0</td><td>21.8</td><td>19.6</td></tr><tr><td>3</td><td>37.5</td><td>33.8</td><td>27.2</td><td>24.5</td></tr></table></td><td>Replace the hook.</td></tr>
<tr><td>3. Hook flaw</td><td>Check visually.</td><td>No great damage permitted.</td><td>Replace the hook.</td></tr>
<tr><td>4. Hook movement</td><td>Turn hook.
 
</td><td>Shall turn smoothly.</td><td>Replace the hook.</td></tr>
</table>

<table>
<tr><th>Item</th><th>Inspection method</th><th>Discard limit/criteria</th><th>Remedy</th></tr>
<tr><td>5. Top/bottom fixture damage [fittings of 1, 4, 44, 56, 66, 75]</td><td>Check visually.</td><td>No slack or missing rivets, nuts or bolts</td><td>Replace the hook.</td></tr>
<tr><td>6. Idle sheave rotation [55, 61 70]</td><td>Hold the load chain with both hands and turn the idle sheave by moving the chain up and down.</td><td>Smooth rotation  </td><td>Overhaul.</td></tr>
<tr><td>7. Hook latch [2, 6, 45, 57, 67, 76]</td><td>Check visually.</td><td>Proper positioning and smooth workıng</td><td>Replace the hook latch or hook.</td></tr>
<tr><td>Load chain [42]

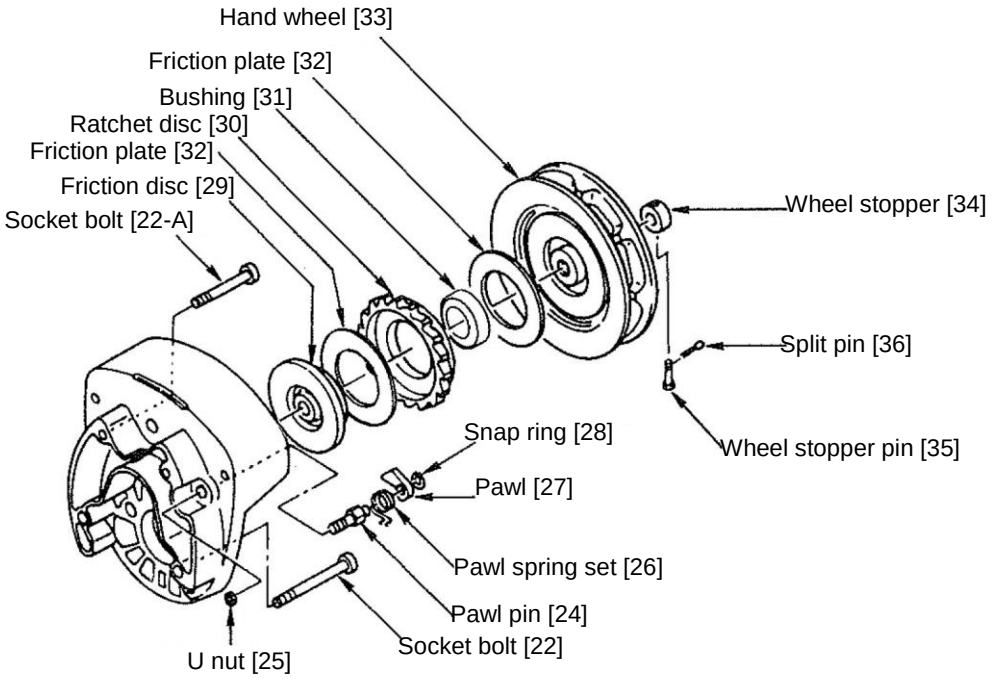
1. Wear
  </td><td>Measure with slide calipers.</td><td>Measure the sum of pitches of five chain links and check that the maximum length does not exceed the value shown in table below.
<table><tr><th>WLL (t)</th><th>Sum of pitches of five links (mm)</th><th>Discard limit (mm)</th></tr><tr><td>0.5</td><td>75.5</td><td>77.7</td></tr><tr><td>1, 2</td><td>95.5</td><td>98.3</td></tr><tr><td>1.5, 3</td><td>106.0</td><td>109.1</td></tr></table></td><td>Replace the chain.</td></tr>
<tr><td>2. Rust, flaw, deformation</td><td>Check visually.</td><td>No obvious rust (Apply oil as necessary.)

No twist or harmful flaw.</td><td>Remove rust.

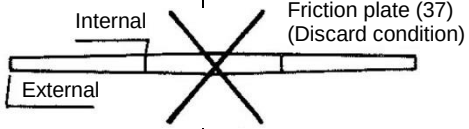
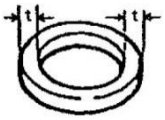
Replace the load chain.</td></tr>
<tr><td>Hook yoke
(Top set [1, 44, 66])
(Bottom set [4, 56, 75])
Joint of top/bottom fittings with top pin [3] and chain pin [7, 46]</td><td>Measure hole diameter of joint area in two directions at right angle.</td><td>Deformation not permitted (if each measured value differs more than 0.5mm).</td><td>Replace the part.</td></tr>
<tr><td>Function

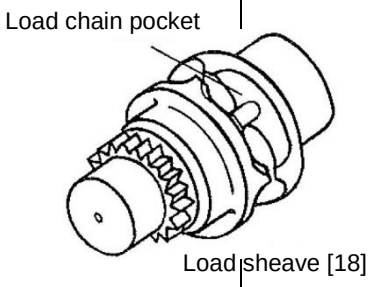
1. Lifting and lowering</td><td>Lift and lower a light load.</td><td>No abnormal difficulty in lifting or lowering</td><td>Overhaul and service.</td></tr>
</table>

Item	Inspection method	Discard limit/criteria	Remedy
2. Brake function	Lift and lower a light load.	Confirm that none of the problems listed below occur during lifting and lowering. (1) Lifting is impossible. (2) Load falls when the operator removes his hands. (3) Load falls during unwinding. (4) Load slips down slowly.	Overhaul and service.
Brake parts	Overhaul and check.		

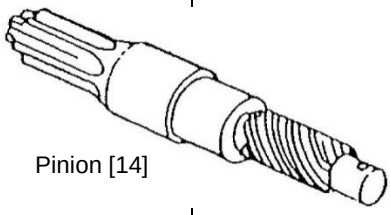


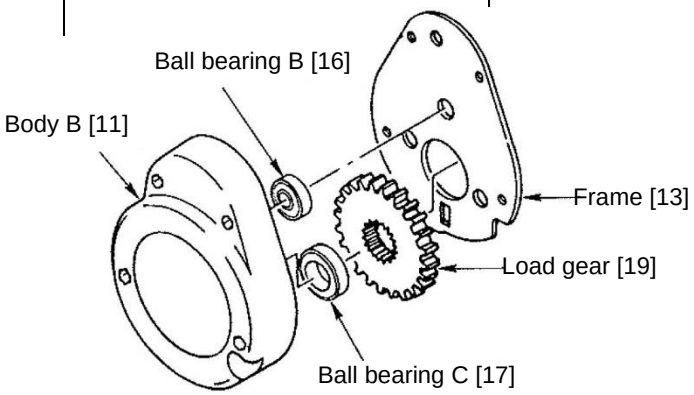
1. Flaw on brake surface [31, 31-A, 32]	Check visually.	No flaw due to scratching or gouging by foreign matter	Replace the part.
2. Wear on friction plate [32]	Measure with side calipers.	Retain uniform thickness and friction plates shall not be worn more than 0.5mm. For all types: Normal thickness: 3mm Discard limit: 2.5mm	Replace the part.

<table>
<tr><th>Item</th><th>Inspection method</th><th>Discard limit/criteria</th><th>Remedy</th></tr>
<tr><td>3. Flatness of friction plate [32]
 
</td><td>Check clearance with straight gauge.</td><td>Clearance shall be uniform.
Internal part shall not be thicker than external part.</td><td>Replace the part.</td></tr>
<tr><td>4. Wear and oil of bushing [31]</td><td>Check radial thickness (t) with slide caliper and oil existence.
 

Bushing [31]
t: Radial thickness</td><td>Radial thickness (t) shall be uniform. Oil shall be contained. Refer to table below.
<table><tr><th>WLL (t)</th><th>Normal thickness: t (mm)</th><th>Discard limit (mm)</th></tr><tr><td>0.5</td><td>3</td><td>2</td></tr><tr><td>1, 1.5, 2, 3</td><td>4</td><td>3</td></tr></table></td><td>Replace the part.</td></tr>
<tr><td>5. Wear and rust of ratchet disc [30]</td><td>Check visually.</td><td>The tooth wear shall not be more than 1.5 mm.</td><td>Replace the part.</td></tr>
<tr><td>6. Wear of pawl [27]</td><td>Check visually.</td><td>Pawl tip wear is not found.</td><td>Replace the part.</td></tr>
<tr><td>7. Deformation and rust of pawl spring A, B [26]</td><td>Check visually.</td><td>No bend or deformation
No rust permitted</td><td>Replace the part.</td></tr>
<tr><td>Lifting system</td><td></td><td></td><td></td></tr>
<tr><td>1. Wear and deformation of load sheave [18]</td><td>Check visually.
 
</td><td>No large wear, no deformation or no burr due to load chain contact is permitted on the surface of load chain pocket.</td><td>Replace the part.</td></tr>
</table>

Item	Inspection method	Discard limit/criteria	Remedy
2. Wear and flaw of pinion [14] and load gear [19]	Check visually.	Teeth shall be free from large wear or flaw.	Replace the part.
3. Wear and deformation of hand wheel [33]	Check visually.	No large wear or no deformation on the surface of hand chain pocket	Replace the part.
		Turn and check if it touches the cover.	Replace the part.
Frame [13]			
1. Flaw on frame	Check visually.	No flaw or crack	Replace the frame.
Miscellaneous			
1.Wear on chain guide [20]	Check visually.	No excessive wear or press mark is permitted.	Replace the part.
2. Flaw on guide roller [20-A]	Check visually.	Shall turn lightly.	Replace the part.
	Check visually.	No large deformation.	Replace the part.
3. Deformation of stripper [21]	Check visually.	No large crush or damage on stripper tip is permitted.	Replace the part.
4. Deformation of tail pin [40]	Check visually.	No large deformation	Replace the part.





8. MAINTENANCE

⚠ WARNING

(1) **NEVER** perform maintenance on the hoist while it is supporting a load.
(2) Before performing maintenance, attach the tag;
["DANGER": **NEVER** OPERATE EQUIPMENT BEING REPAIRED.]
(3) Only allow qualified service personnel to perform maintenance.
(4) After performing any maintenance on the hoist, **ALWAYS** test to WLL before returning to service.

⚠ CAUTION

ALWAYS take care hand or clothes not to be caught in a chain, idle sheave or other moving parts.

8.1 Lubrication

8.1.1 Applying grease to gear

Remove body B (11) in the way of "8.2 Overhaul" (Refer to page 13 and 14).
Remove old grease and replace with new grease (standard grease(1)), at annual inspection.
Temperature range of standard grease is -40°C to +60°C.
If the hoist is used at temperature below -40°C or above +60°C, consult the manufacturer or dealer since some parts shall be changed.
Note: (1) Calcium soap grease equivalent of NLGI (National Lubricating Grease Institute)/#2

8.1.2 Load chain

⚠ WARNING

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

ALWAYS lubricate load chain weekly, or more frequently, depending on severity of service.

ALWAYS lubricate more frequently than normal in a corrosive environment.(2)

ALWAYS use machine oil equivalent to ISO VG46 or 68.

Note: (2) KITO has a corrosion-resistant chain as an option. For information of KITO's regular and corrosion-resistant chain, please ask your dealer.

8.2 Overhaul, assembly and adjustment

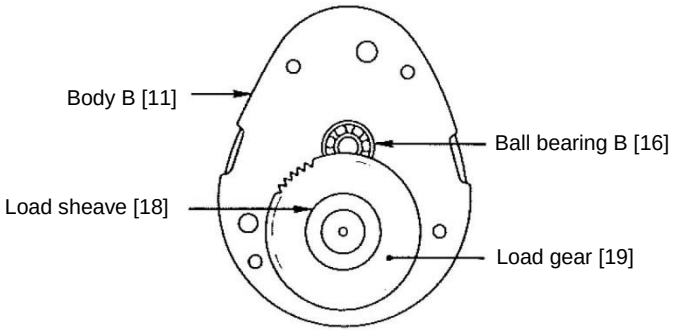
8.2.1 Overhaul

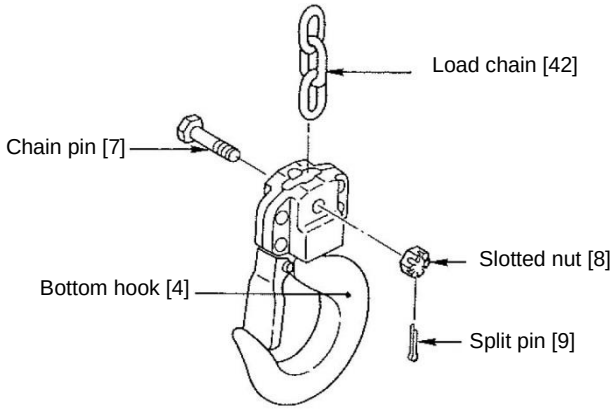
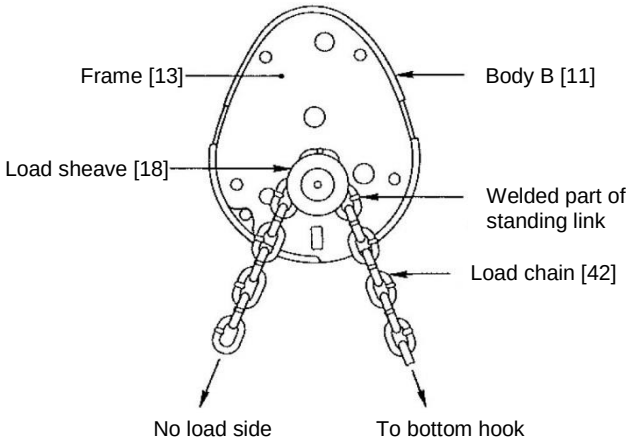
Figures in parentheses are Fig. No. in “PARTS LIST”. (Refer to page 22 and 23.)

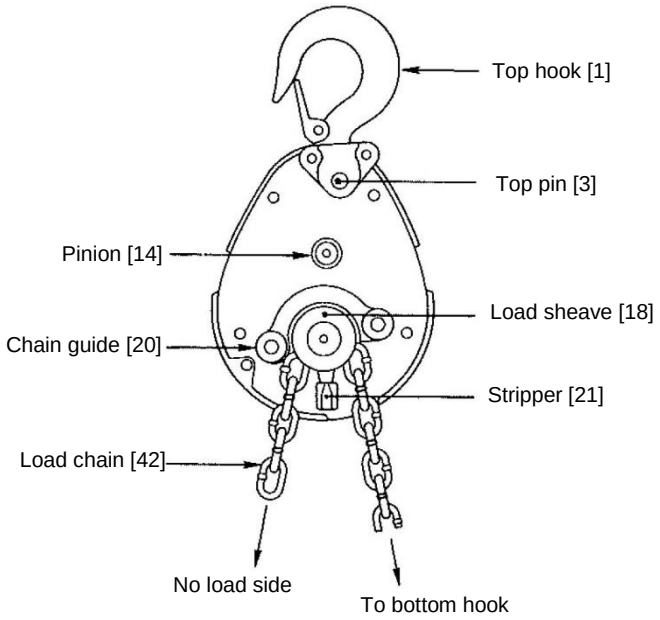
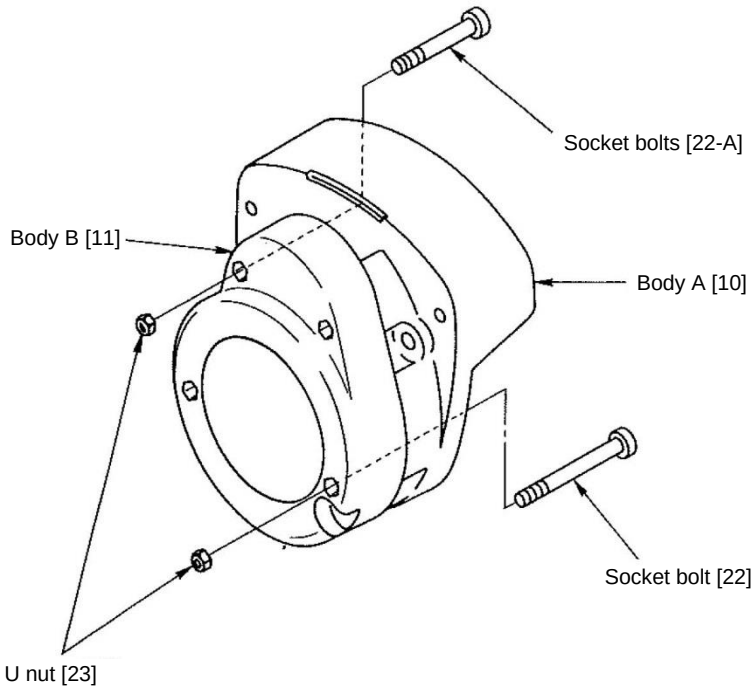
Overhaul procedures	Remarks
1. Put a hoist with wheel cover side up.	
2. Unscrew three nuts [38] (with the spring washers [39]) fixing the wheel cover [37].	
3. Remove the wheel cover [37] from the body A [10].	
4. Insert the standing link of the hand chain [43] into the notch of the hand wheel [33] and remove the hand chain by turning the hand wheel counterclockwise.	Bring the notch of the hand wheel to the right hand.
5. Pull out the split pin [36] from the wheel stopper pin [35] and remove the wheel stopper pin and the wheel stopper [34] from the pinion [14].	
6. Remove the hand wheel [33] from the pinion [14] by turning the hand wheel counterclockwise.	If the hand wheel is too tight to turn by hand, put the hand chain on the hand wheel back again and pull it down hard. It will release the brake.
7. Remove two friction plates [32], the ratchet disc [30] and the bushing [31] from the friction disc [29].	
8. Remove the friction disk [29] from the pinion [14] by turning counterclockwise holding the end of the pinion with fingers.	
9. Remove the snap ring [28] from the pawl pin [24] (on the side plate A [10]) and then remove the pawl [27] and pawl spring set [26].	
10. Unscrew the pawl pin [24].	The pawl pin is fixed with the U nut [25].
11. Unscrew four socket bolts [22, 22-A] connecting body A [10] and B [11].	Four socket bolts are fixed with U nuts [23] on the body B side.
12. Separate the body A [10] and B [11].	
13. Take ball bearing A [15] and C [17-A] out of the body A [10].	Remove the bearing by tapping the ball bearing A and C with a wooden hammer from the brake side.
14. Remove top hook [1] and top pin [3] from the body B [11].	

Overhaul procedures	Remarks
15. Remove pinion [14], chain guide [20] (or guide rollers [20-A]), stripper [21], tail pin [40], and load chain [42]. 16. Remove the frame [13]. 17. Take load sheave [18] out of the load gear [19]. 18. Remove the load gear [19]. 19. Unscrew tap socket bolt [41] from the body B [11]. 20. Pull the split pin [9] out of the slotted nut [8] and remove the slotted nut and chain pin [7] from the bottom hook [4].	

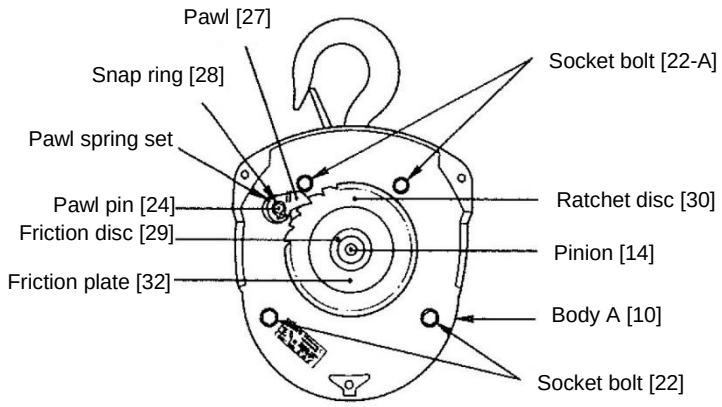
8.2.2 Assembly and adjustment

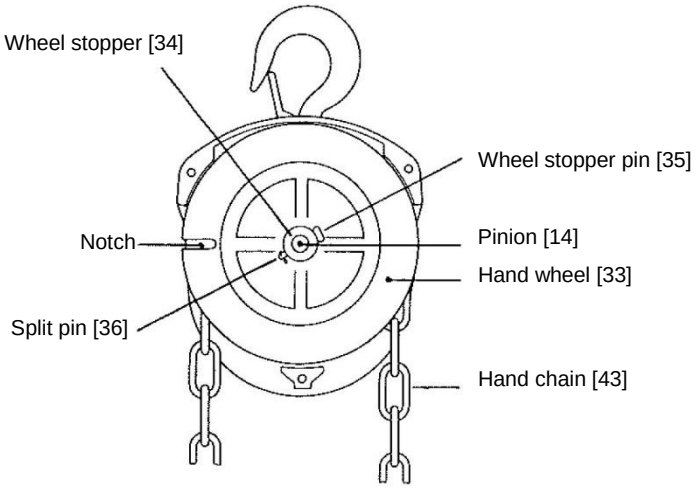
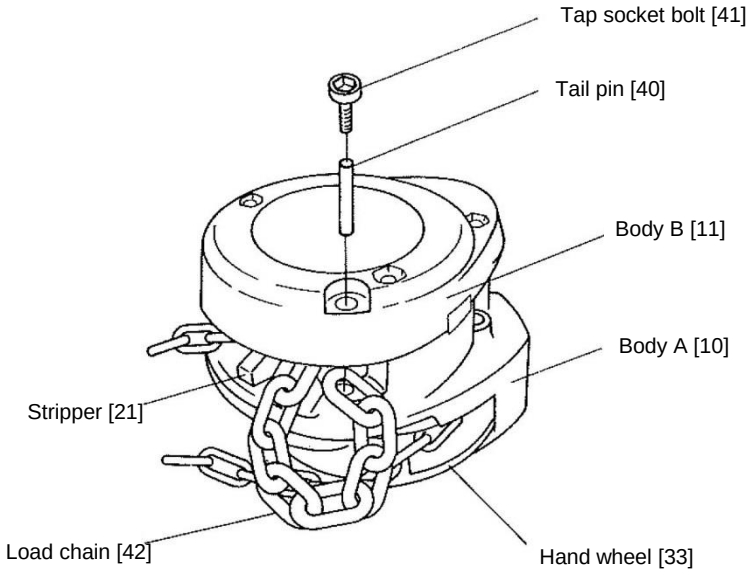
Assembly procedures	Remarks
1. Wipe off old grease from the body B [11] and frame [13]. 2. Apply new grease to the ball bearing B [16] and C [17] on the body B [11]. 3. Insert load sheave [18] into the load gear [19] and put them together on the ball bearing C [17].  4. Apply new grease to the load gear [19]. 5. Put frame [13] on the body B [11] according to pattern. 6. Insert the end of the load chain [42] to the bottom hook [4] and fix them with the chain pin [7], slotted nut [8] and split pin [9].	**⚠ CAUTION** **ALWAYS** bend the split pin securely.

Assembly procedures	Remarks
	
7. Wind load chain [42] round the load sheave [18] so that the bottom hook side comes to right hand and the end link of the other side becomes standing to the load sheave pocket. 	**⚠ CAUTION** Put the welded part of the standing chain link outward.
8. Put chain guide [20] (or guide rollers for 0.5t [20-A]) on the frame [13]. 9. Put stripper [21] on the frame [13]. 10. Insert pinion [14] shaft from its gear side into the frame [13]. 11. Insert top pin [3] into the frame [13] and put top hook [1] to the top pin.	Fit the larger boss of chain guide [20] into holes on frame [13].

Assembly procedures	Remarks
	
12. Grease ball bearing A [15] and insert it into the body A [10].	
13. Put the body A [10] with the ball bearings [15, 17-A] side down on the body B [11].	Make sure each part is completely set between body A [10] and frame [13].
14. Insert four socket bolts [22, 22-A] into the body A [10] and turn the whole body sideways. Then fix the bolts with the U nuts [23] holding the U nuts with fingers.	Insert short socket bolts [22-A] to the upper holes and long socket bolts [22] to the lower holes.
	

Assembly procedures	Remarks
15. Insert pawl pin [24] into the body A [10] and fix it with the U nut [25].	
16. Apply machine oil to the pawl pin [24] and join pawl spring A, B [26] and the pawl [27] respectively to it. Fix the pawl with snap ring [28].	Make sure the pawl spring is fixed to the pawl and the snap ring is securely set at the groove of the pawl pin.
17. Put friction disc [29] to the pinion [14].	
18. Wipe our any dirt on the friction disc [29], friction plates [32] and both sides of the ratchet disc [30] and check that bushing [31] contains oil soaked inside. Then place the friction plate, bushing, ratchet disc (while turning the pawl [27] counterclockwise) and friction plate respectively on the friction disc. (Make sure that the pawl meshes with the ratchet disc properly.)	**NEVER** apply oil since the brake is “dry-type”. Wipe out thoroughly any oil and dirt on the brake. The gear of the ratchet disc shall point at the pawl. Otherwise, the hand wheel cannot be assembled later. In case the bushing does not have oil inside, soak it in tarbin oil for a day. Install it in without wiping the oil. Make sure that the pawl meshes with the ratchet disc properly.
19. Wipe out the dirt of the hand wheel [33] and apply machine oil to the threaded part of it. Screw it in the pinion [14] shaft all the way down.	
20. Place the wheel stopper [34] on the head of the pinion [14], insert the wheel stopper pin [35] and fix it with a split pin [36].	**ALWAYS** bend the split pin securely after inserting into the wheel stopper pin.



Assembly procedures	Remarks
21. Set the notch of the hand wheel to the left hand. Insert the standing link of the hand chain [43] into the notch of the hand wheel [33] and reeve the hand chain by turning the hand wheel clockwise.  	
22. Put wheel cover [37] on the body A [10] and fix them with the spring washers [39] and screws [38].	
23. Put a hoist with body B [11] side up. Place the slack end of the load chain between body A [10] and body B [11]. Then insert tail pin [40], and screw tap socket bolt [41] into the body B.  	Make sure the load chain is not twisted.

9. TROUBLESHOOTING

Situation	Cause	Explanation	Remedy
The pawl makes the proper clicking sound but fails to lift the load.	Worn friction plates	When used at high frequency without performing maintenance regularly, the friction plates will wear down. This will create gaps between the friction disc, bushing and hand wheel, and cause the brake to slip.	Disassemble and replace the friction plates and bushing.
The pawl produces absolutely no sound and fails to lift the load.	The pawl has been improperly assembled.	If the pawl is assembled facing the other way, or otherwise assembled incorrectly, it will not cleanly mesh with the ratchet disc.	Disassemble and then reassemble parts correctly.
	The pawl is not moving smoothly.	Unless maintenance is performed regularly, dirt will adhere to the grease on the pawl and pawl shaft. Movement will become sluggish and the pawl will remain stuck in the kicked out position.	Same as above
The chain is tight when lifting, even without a load. (A squeaking noise can be heard at times.)	Worn load gear teeth	Unless maintenance is performed regularly, greased parts will dry, resulting in wear and damage, and improper meshing of gears.	Disassemble and replace the pinion, load gear, body B, frame and ball bearing.
	Worn or damaged bearing.		
Improper lowering or the chain is extremely tight when lowering.	The brake is too tight.	Due to shock during work, or because the load was left suspended for a long period of time, the brake tightened.	Free the brake forcibly by jerking the hand chain.
	The brake is rusted.	Unless maintenance is performed regularly, rusting will occur.	Disassemble and replace parts where necessary.
The hoist drops the load the instant lowering is started.	The braking surface is dirty.	During assembly, the braking surface must be wiped cleaned of dirt.	Disassemble and then reassemble parts correctly.
	The braking surface is oily.	The braking surface must not be allowed to become soiled with grease or machine oil because it is a dry-type brake.	Disassemble and then reassemble parts. Do not oil or grease the braking surface or friction plates.
Load slipping	The braking surface is oily.	Same as above	Same as above
	The braking surface is dirty.	During assembly, the braking surface must be wiped cleaned of dirt.	Disassemble and then reassemble parts correctly.

10. WARRANTY

KITO Corporation ("KITO") extends the following warranty to the original purchaser ("Purchaser") of new products manufactured by "KITO" (KITO's Products).

(1) KITO warrants that KITO's Products, when shipped, shall be free from defects in workmanship and/or materials under normal use and service and "KITO" shall, at the election of "KITO", repair or replace free of charge any parts or items which are proven to have said defects, provided that all claims for defects under this warranty shall be made in writing immediately upon discovery and, in any event, within one (1) year from the date of purchase of KITO's Products by "Purchaser" and provided, further, that defective parts or items shall be kept for examination by "KITO" or its authorized agents or returned to KITO's factory or authorized service center upon request by "KITO".

(2) KITO does not warrant components of products provided by other manufacturers. However to the extent possible, "KITO" will assign to "Purchaser" applicable warranties of such other manufacturers.

(3) Except for the repair or replacement mentioned in (1) above which is "KITO"'s sole liability and purchaser's exclusive remedy under this warranty. "KITO" shall not be responsible for any other claims arising out of the purchase and use of KITO's Products, regardless of whether "Purchacer"'s claims are based on breach of contract, tort or other theories, including claims for any damages whether direct, indirect, incidental or consequential.

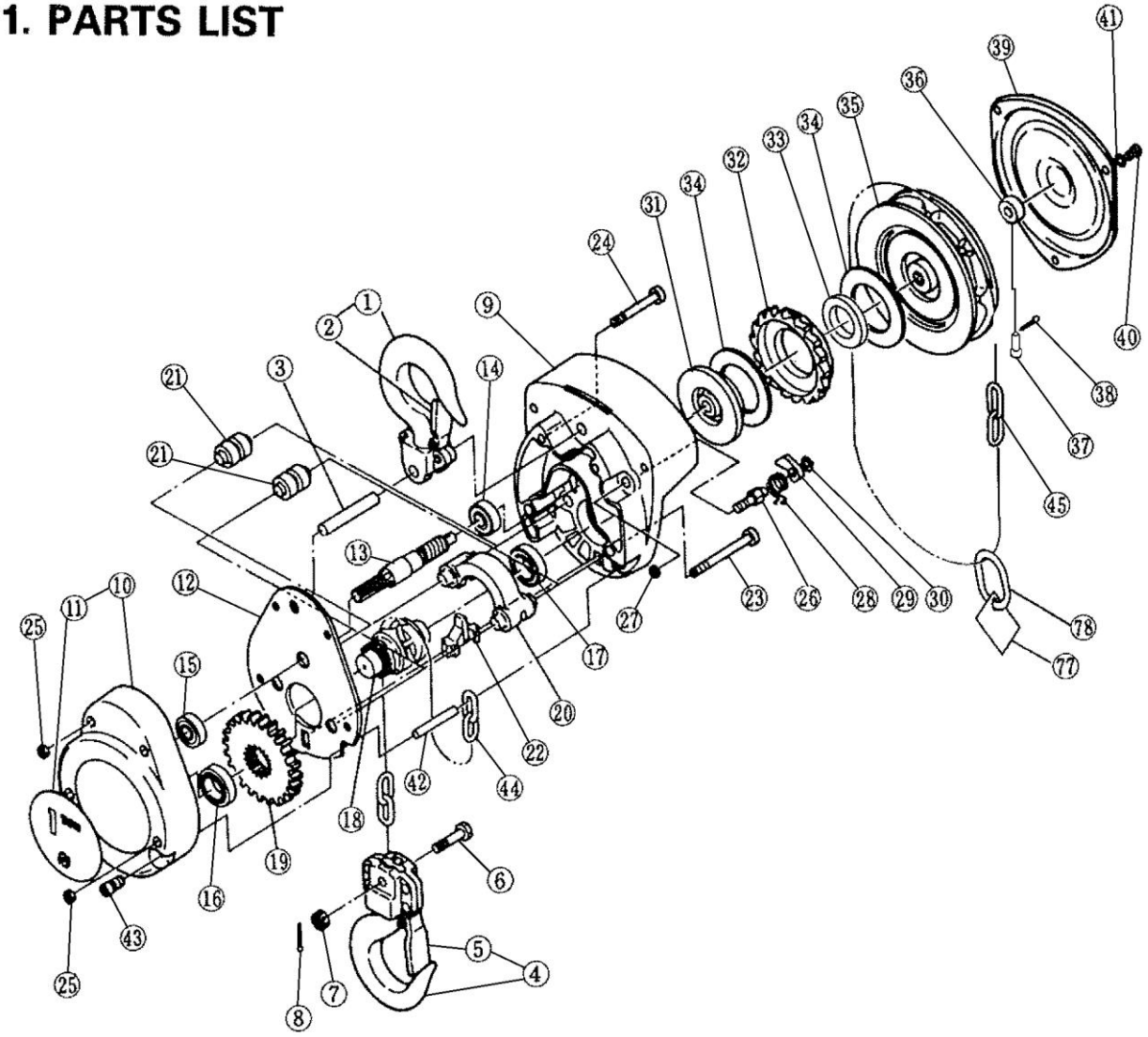
(4) This warranty is conditional upon the installation, maintenance and use of KITO's Products pursuant to the product manuals prepared in accordance with content instructions by "KITO". This warranty shall not apply to KITO's Products which have been subject to negligence, misuse, abuse, misapplication or any improper use or combination or improper fittings, alignment or maintenance.

(5) "KITO" shall not be responsible for any loss or damage caused by transportation, prolonged or improper storage or normal wear and tear of KITO's Products or for loss of operating time.

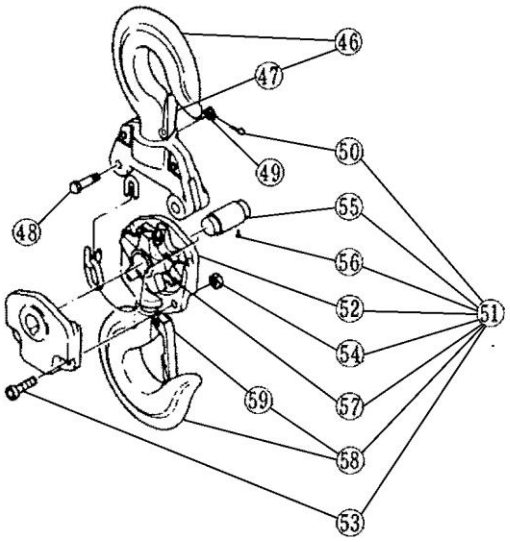
(6) This warranty shall not apply to KITO's products which have been fitted with or repaired with parts, components or items not supplied or approved by "KITO" or which have been modified or altered.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITTED TO ANY WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

11. PARTS LIST



Additional parts for 2t and 3t



2t, 3t

Fig. No.	Part No.	Part name	No. per hoist	Part Cord				
				WLL				
				0.5t	1t	2t	1.5t	3t
1	1001	Top hook assembly	1	C1FA005-1001	C1FA010-1001	———	C2FA015-1001	———
2	1071	Hook latch assembly	1	C3BA005-1071	C1FA005-1071	———	C1FA010-1071	———
3	163	Top pin	1	C1FA005-9163	C1FA010-9163	———	C1FA015-9163	———
4	1021	Bottom hook complete set	1	C3BA005-1021	C3BA010-1021	———	C3BA015-1021	———
5	1071	Hook latch assembly	1	C3BA005-1071	C1FA005-1071	———	C1FA010-1071	———
6	041	Chain pin	1	C3BA005-9041	C3BA010-9041	———	C3BA015-9041	———
7	049	Slotted nut	1	C3BA005-9049	C3BA010-9049	———	C3BA010-9049	———
8	096	Split pin	1	J1PW01-016010	J1PW01-020012	———	J1PW01-020012	———
9	1101	Body A with Name plate F	1	C4FA005-1101	C4FA010-1101		C4FA015-1101	
10	102	Body B	1	C1FA005-9102	C1FA010-9102		C1FA015-9102	
11	800	Name plate B	1	C4GE005-9800	C4GE0105-9800	C4GE020-9800	C4GE015-9800	C4GE030-9800
12	105	Frame	1	C1FA005-9105	C1FA010-9105		C1FA015-9105	
13	111	Pinion	1	C4FA005-9111	C4FA010-9111		C4FA015-9111	
14	120	Ball bearing A	1	J1GR010-06002	J1GR010-06003			
15	130	Ball bearing B	1	J1GR000-06201			J1GR000-06202	
16	140	Ball bearing C	1	J1GR000-06004	J1GR000-06005		J1GR000-06006	
17	141	Ball bearing D	1	J1GR010-06004	J1GR010-06005		J1GR010-06006	
18	116	Load sheave	1	C1FA005-9116	C1FA010-9116		C1FA015-9116	
19	114	Load gear	1	C1FA005-9114	C1FA010-9114		C1FA015-9114	
20	178	Chain guide(for1t & over cap)	1	———	C1FA010-9178		C1FA015-9178	
21	161	Guide roller (for 0.5t cap)	2	C1FA005-9161	———	———	———	———
22	162	Stripper	1	C1FA005-9162	C1FA010-9162		C1FA015-9162	
23	185	Socket bolt for body	2	J1BE1-0807022	J1BE1-0808022		J1BE1-0808522	
24	186	Socket bolt for body	2	J1BE1-0806022	J1BE1-0807022		J1BE1-0807522	
25	184	U Nut for body	4	C2BA100-9074				
26	156	Pawl pin	1	C1FA015-9156				
27	160	U Nut	1	C2BA100-9074				
28	5158	Pawl spring set	1	C1FH015-5158				
29	155	Pawl	1	C1FA015-9155				
30	157	Snap ring	1	J1SS000-00008				
31	153	Friction disc	1	C3BA005-9153	C3BA020-9153			
32	152	Ratchet disc	1	C4FA005-9152	C4FA015-9152			
33	154	Busing	1	C3BA005-9154	C3BA020-9154			
34	150	Friction plate	2	C3BA005-9151	C3BA020-9151			
35	115	Hand wheel	1	C4FA005-9115	C4FA010-9115		C4FA015-9115	
36	159	Wheel stopper	1	C1FA005-9159	C1FA015-9159			
37	167	Wheel stopper pin	1	C3BA005-9167				
38	182	Split pin	1	J1PW01-020008				
39	171	Wheel cover	1	C2FA005-9171	C2FA010-9171		C2FA015-9171	
40	187	Screw	3	C1FA015-9187				
41	188	Spring washer	3	J1WS012-20060				
42	164	Tail pin	1	C1FA005-9164	C4FA010-9164		ER1ES9334	
43	181	Tap socket bolt	1	C1FA005-9181	C1FA015-9181			
44	841	Load chain	1	KCF050	KCF063		KCF071	
45	842	Hand chain	1	KHCF050				
77	931	Warning tag (CE-G,LD)	1	ER1BS9686				
78	045	Chain stopper link	1	L5BA032-9045				

Additional parts for 2t & 3t

46	1001	Top hook assembly	1	———	———	C1FA020-1001	———	C2FA030-1001
47	1071	Hook latch assembly	1	———	———	C1FA015-1071	———	C1FA020-1071
48	041	Chain pin	1	———	———	C1FA020-9041	———	C3BA030-9041
49	049	Slotted nut	1	———	———	C2BA015-9049	———	C2BA015-9049
50	085	Split pin	1	———	———	J1PW01-020012	———	J1PW01-020012
51	1021	Bottom hook complete set	1	———	———	C2FA020-1021	———	C3BA030-1021
52	031	Bottom yoke	2	———	———	C1FA020-9031	———	C3BA030-9031
53	081	Bolt	2	———	———	J1BE1-0802525	———	J1BE1-1003232
54	082	Lever nut	2	———	———	C2BA100-9074	———	C2BA200-9074
55	053	shaft	1	———	———	C2FA020-9053	———	C3BA030-9053
56	083	Spring pin	1	———	———	C2FA020-9083	———	J1PS11-050010
57	051	Idle sheave	1	———	———	E5FS010L9051	———	C1FA050-1051
58	2001	Bottom hook assembly	1	———	———	C3BA020-2001	———	C3BA020-2001
59	1071	Hook latch assembly	1	———	———	C1FA015-1071	———	C1FA020-1071

Remark : When ordering replacement part ,please specify Capacity,Fig. No.,part name,Part cord and quantity

CONTENTS OF EC DECLARATION OF CONFORMITY

We, **KITO Corporation**,
2000, Tsuijiarai, Showa-cho,
Nakakoma-gun, Yamanashi, 409-3853, Japan

declare under our sole responsibility that the products:

Hand chain operated chain hoist **CF, model CF4**

in capacity range of 500 kg up to 3 tonnes,

to which this declaration relates is in conformity with the following EC directives and standards.

EC directives:

Machinery Directive	**2006/42/EC**

Harmonized standards:

EN ISO 12100: 2010	**Risk assessment and risk reduction**
EN 818-7: 2002 +A1: 2008	**Short link chain for lifting purposes, increased quality, grade V, certified by Fachausschuss Metall und Oberflächenbehandlung**
EN 13157: 2004 +A1: 2009	**Hand powered cranes**

Authorized representative for the arrangement of the technical documents:

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