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# OWNER'S (OPERATOR'S) MANUAL AND SAFETY INSTRUCTIONS FOR CB SERIES CHAIN HOIST (MODEL M3)

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BEFORE USING THIS PRODUCT:

**ALWAYS SAVE THIS BOOK FOR FUTURE REFERENCE**

**ALWAYS READ OWNER'S (OPERATOR'S) MANUAL AND SAFETY INSTRUCTIONS**

**⚠ WARNING**

**: IMPROPER chain hoist use could result in death or serious injury. To avoid these hazards:**

**: NEVER hoist loads over or near people.**

**: NEVER work under or near hoisted loads.**

**: ALWAYS operate, inspect, and maintain this hoist in accordance with applicable safety codes and regulations.**

These safety instructions contain important information to help you use the chain hoist in a safe manner. Please refer to this Owner's (Operator's) Manual for additional safety information.

# KITO

## CONTENS

DEFINITION	1
1. BEFORE USE	1
1.1 Safety Summary	1
1.2 Safety Instructions	2
2. MAIN SPECIFICATIONS	5
3. OPERATION	7
3.1 Safety Consideration	7
3.2 Operation	7
3.3 Hoist Storage	7
3.4 Principle and Operations of the Overload Limiter	7
4. INSPECTION	8
4.1 Outline	8
4.2 Daily Inspection	8
4.3 Periodic Inspection	9
5. MAINTENANCE	14
5.1 Lubrication	14
5.2 Overhaul, Assembly and Adjustment	15
6. WARRANTY	24
7. PARTS LIST	25

# DEFINITION

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

## 1. BEFORE USE

### 1.1 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 Manual Chain Hoist.

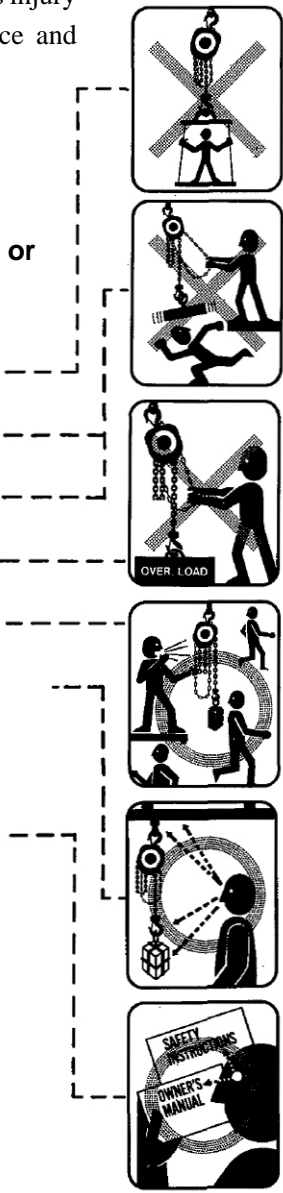
Following these simple rules can help to avoid hoisting accidents;

**⚠ WARNING** : **IMPROPER chain hoist use could result in death or serious injury. To avoid these hazards.**

- NEVER** use a hoist for lifting, supporting or transporting people.
- NEVER** lift or transport loads over or near people.
- NEVER** work near or under hoisted loads.
- NEVER** lift more than rated load.
- ALWAYS** let people around you know when a lift is about to begin.
- ALWAYS** make sure that the supporting structures and load-attaching device are strong enough to hold the weight of the load and hoist.
- ALWAYS** read Owner's (Operator's) manual and safety instructions.

Remember, proper rigging and lifting techniques are the responsibility of the operator. Be sure to read and understand the instructions contained in this manual before using your hoist. 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.



## 1.2 Safety Instructions

Serious injury could result if the following safety instructions are not followed.

**⚠ WARNING** : **IMPROPER chain hoist use could result in death or serious injury. To avoid these hazards:**

### “ALWAYSs”

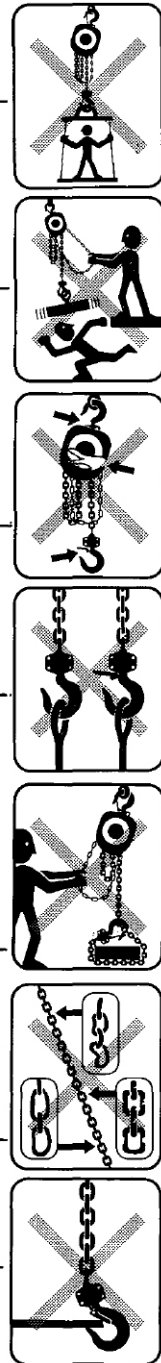
- ALWAYS** make sure that you and others are clear of the load before lifting begins.
- ALWAYS** allow only qualified (trained in safety and operation) people to operate the hoist.
- ALWAYS** operate a hoist only if you are physically fit.
- ALWAYS** check the hoist before daily use according to the Recommended Daily Inspection (Refer to Sec. **4.2**).
- ALWAYS** let the authorized personnel inspect the hoist periodically (Refer to Sec. **4.3**).
- ALWAYS** make sure that the chain length is long enough for the intended job.
- ALWAYS** check that the hook latches are in proper working order before use (Refer to Sec. **4.3**).
- ALWAYS** replace all missing or broken hook latches.
- ALWAYS** be sure that the hoist’s rated capacity, which is found on the hoist’s label, is well in excess of the weight of the load.
- ALWAYS** be sure that the load is properly seated in the saddle of the hook.
- ALWAYS** keep the load from hitting the chain.
- ALWAYS** use two hoists which have rated capacities 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.
- ALWAYS** check the brake before use (Refer to Sec. **4.3**).
- ALWAYS** check for loose or missing parts before use.
- ALWAYS** lubricate the hoist regularly (Refer to Sec. **5.1**).
- ALWAYS** pay attention to the load at all times when operation the hoist.
- ALWAYS** ease the slack out of the chain and sling when starting a lift to prevent a sudden loading.

- ALWAYS** secure a hoist and loads properly after use.
- ALWAYS** consult the manufacturer or your dealer if you plan to use a hoist in a dusty, moist or greasy environment.
- ALWAYS** consult the manufacturer or your dealer if you plan to use a hoist in an excessively corrosive environment.
- ALWAYS** operate the hoist with manual power.

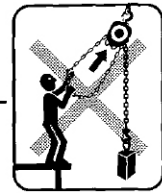
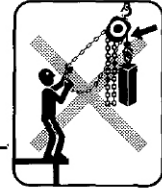
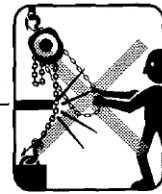
**⚠ WARNING** : **IMPROPER chain hoist use could result in death or serious injury. To avoid these hazards:**

**“NEVERs”**

- NEVER** use the hoist to transport people.
- NEVER** lift a load over people.
- NEVER** work near or under hoisted loads.
- NEVER** operate a hoist if damaged or malfunctioning.
- NEVER** use a hoist which has been taken out of service until the hoist has been properly repaired or replaced.
- NEVER** use a hoist if the hook latch is missing or broken.
- NEVER** lift a load unless it is directly under the hook.
- NEVER** splice a hoist chain.
- NEVER** use non-authentic KITO chains on the hoist.
- NEVER** use the hoist chain a sling.
- NEVER** force a chain or hook into place by hammering.
- NEVER** jerk a load to prevent a sudden loading.
- 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.



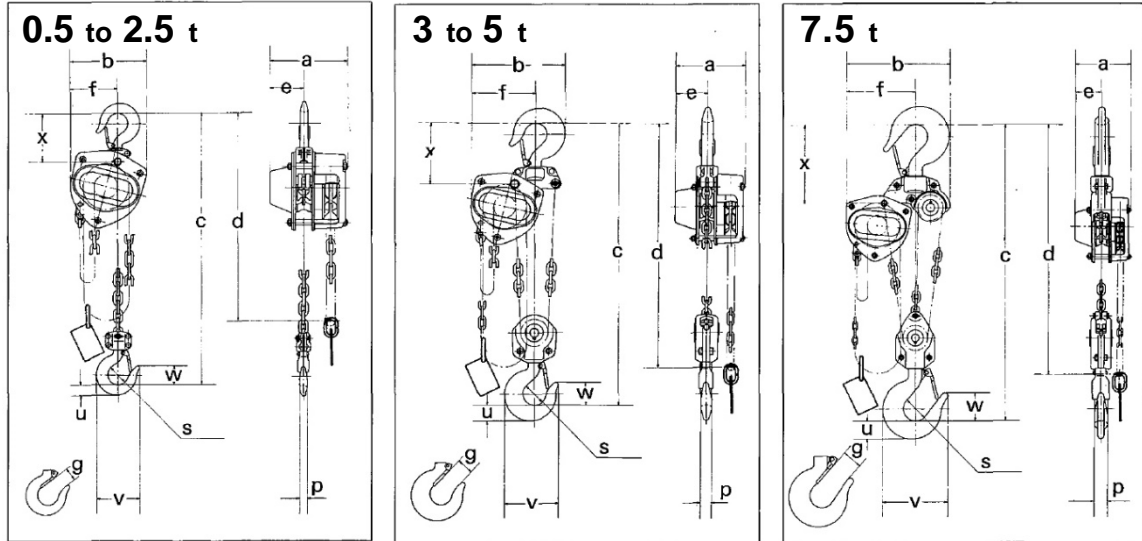
- NEVER** suspend a load for an extended period of time.
- NEVER** leave a suspended load unattended.
- NEVER** run the load chain over a sharp edge.
- NEVER** weld or cut a load suspended by a hoist.
- NEVER** use the hoist chain as a welding electrode.
- NEVER** use the hoist with rusty chain.
- NEVER** wind so far that the hook touches the block.
- NEVER** unwind so far that no unloaded chain is left.
- NEVER** operate a hoist if chain jumping, excessive noise, jamming, overloading or binding occurs.
- NEVER** use a hoist without chain stopper (or tail pin) at the end of no load side chain.
- NEVER** throw a hoist.
- NEVER** use a hoist without a name plate or warning tag and label or with illegible name plate, warning tag and label.
- NEVER** remove or obscure the warning tag.
- NEVER** use modified or deformed hooks.
- NEVER** use a motor to operate a manual hoist.
- NEVER** use a hoist near fire or where hot objects may touch it.
- NEVER** use the hoist in temperatures below -40 °C (-40 °F) or above +60 °C (+ 140 °F).
- NEVER** lift the bottom hook closer to the top hook than minimum distance. (Refer to Sec. 2: Dimensions table)



**WARMOMG TAG** is installed on a hand chain.

## 2. MAIN SPECIFICATIONS

Unit system is the metric one (SI unit system) in the following table.



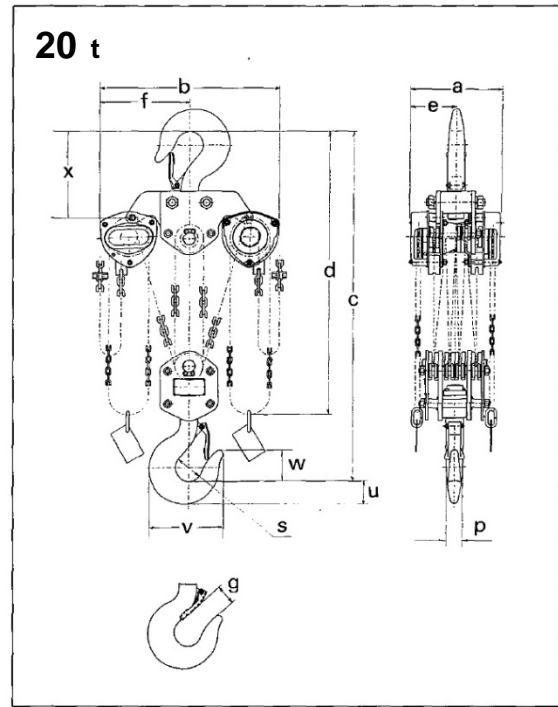
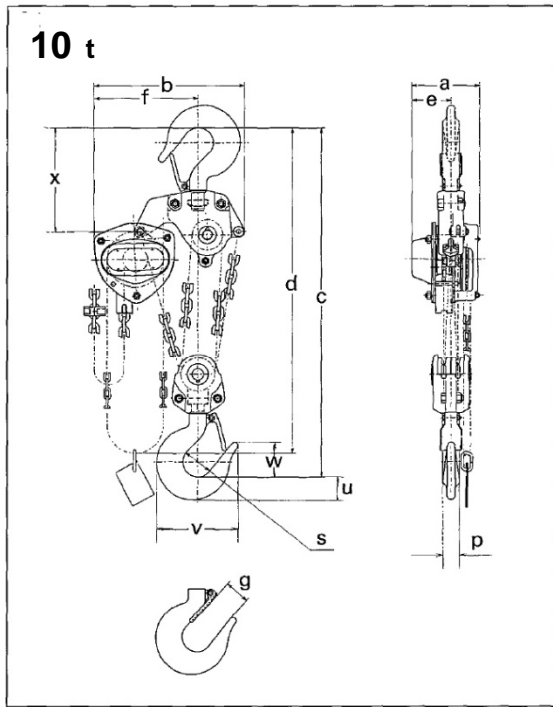
### Specifications

Model	Code	Nominal Capacity (t)	Std. Lift (m)	Chain Pull to Lift Full Load (kg)	Chain O'hauled to Lift Load One Meter (m)	Test Load (t)	Net Weight (kg)	Shipping Weight (Approx) (kg)	Load Chain Dia. (mm)x Fall (lines)	Weight in kg for Additional One Meter of Lift (kg)
M3	CB005	0.5	2.5	24	25	0.75	10	10.5	5.0x1	1.5
M3	CB010	1	2.5	29	43	1.5	11.5	12	6.3x1	1.8
M3	CB015	1.5	2.5	35	57	2.36	14.5	15	7.1x1	2.1
M3	CB020	2	3.0	36	70	3	20	21	8.0x1	2.3
M3	CB025	2.5	3.0	33	99	3.75	27	28	9.0x1	2.7
M3	CB030	3	3.0	36	114	4.75	24	26	7.1x2	3.2
M3	CB050	5	3.0	34	198	6.3	41	43	9.0x2	4.4
M3	CB075	7.5	3.5	35	297	9.5	63	66	9.0x3	6.2

- Any lift of chain is available on request. Because KITO chains are specially heat-treated, only authentic KITO chains should be used on your hoist. **Never** attempt to lengthen your chain by attaching additional chain links with any other means. KITO can supply almost any length of chain desired. Simply specify the length of chain desired when ordering.

### Dimensions

Model	Nominal Capacity (t)	Min. Distance between Hooks :C (mm)	a (mm)	b (mm)	d (m)	e (mm)	f (mm)	g (mm)	s (mm)	p (mm)	u (mm)	v (mm)	w (mm)	x (mm)
M3	0.5	285	158	161	2.5	69	99	27	35.5	12.1	17	77	35	89
M3	1	295	162	161	2.5	71	99	29	42.5	16	21.8	93	41	101
M3	1.5	350	171	182	2.5	78	112	34	47.5	19.5	26.5	106	47	119
M3	2	375	182	202	3	87	125	36	50	21.8	30	116	49	124
M3	2.5	420	192	233	3	91	143	40	53	24.3	33.5	127	53	136
M3	3	510	171	235	3.1	78	162	42.5	56	27.2	37.5	138	57	148
M3	5	600	192	282	3.6	91	194	46.5	63	34.5	47.5	161	67.5	172
M3	7.5	770	192	373	4.2	91	253	72.5	85	47.5	63	231	97.5	275



**Specifications**

Model	Code	Nominal Capacity (t)	Std. Lift (m)	Chain Pull to Lift Full Load (kg)	Chain O'hailed to Lift Load One Meter (m)	Test Load (t)	Net Weight (kg)	Shipping Weight (Approx) (kg)	Load Chain Dia. (mm)x Fall (lines)	Weight in kg for Additional One Meter of Lift (kg)
M3	CB100	10	3.5	36	396	12.5	83	91	9.0x4	7.9
M3	CB150	15	3.5	37	594	20	155	165	9.0x6	11.4
M3	CB200	20	3.5	36x2	396x2	25	235	305	9.0x8	15.8

● Any lift of chain is available on request. Because KITO chains are specially heat-treated, only authentic KITO chains should be used on your hoist. **Never** attempt to lengthen your chain by attaching additional chain links with any other means. KITO can supply almost any length of chain desired. Simply specify the length of chain desired when ordering.

**Dimensions**

Model	Nominal Capacity (t)	Min. Distance between Hooks :C (mm)	a (mm)	b (mm)	d (m)	e (mm)	f (mm)	g (mm)	s (mm)	p (mm)	u (mm)	V (mm)	W (mm)	X (mm)
M3	10	760	192	438	4.2	111	308	72.5	85	47.5	63	231	97.5	295
M3	15	1020	268	492	4.7	119	337	80	100	60	80	275	110	320
M3	20	1180	374	746	4.8	187	373	81	110	67	90	301	125	351



## 3. OPERATION

### 3.1 Safety Consideration

#### **WARNING**

: Improper operation could result in death or serious injury. To avoid these hazards, only operate the chain hoist by hand. Power operation may result in structural damage or premature wear. This damage or wear may cause a part to break and cause the load to fall.

### 3.2 Operation

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.

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

### 3.3 Hoist Storage

#### **WARNING**

: **IMPROPER chain hoist use could result in death or serious injury. To avoid these hazards:**

- 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 regular inspection procedures (Refer to Sec. 4.3).

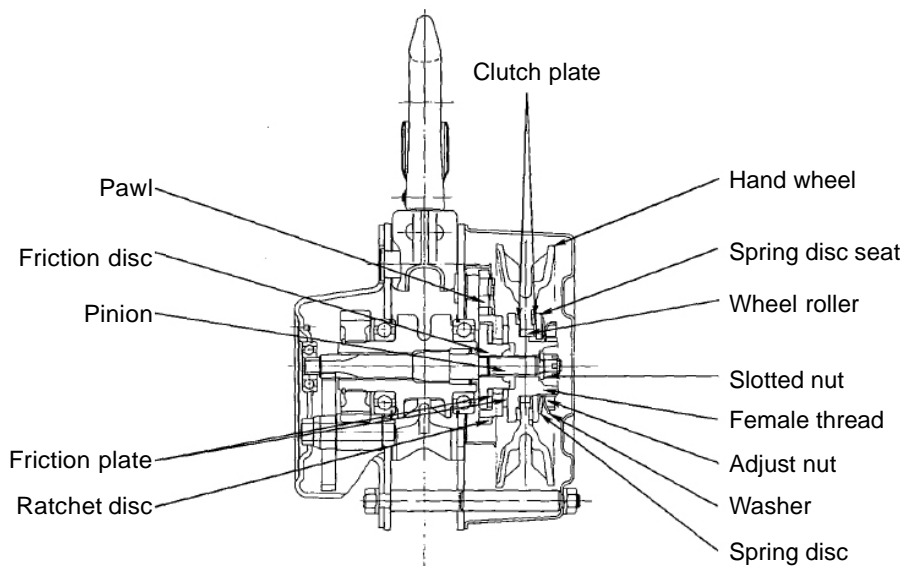
### 3.4 Principle and Operation of the Overload Limiter (OPTIONAL)

#### **WARNING**

: **IMPROPER chain hoist use could result in death or serious injury. To avoid these hazards:**

: **NEVER disassemble or attempt to adjust the overload limiter assembly. Any attempt to do so will void the warranty. Contact your closest KITO Dealer, if service is required.**

The overload limiter device has been developed to avoid overloading. When an applied load exceeds the preset value, the hand chain wheel rotates idly. The device is friction clutch mechanism which is concentrically equipped on pinion shaft between hand chain wheel and mechanical brake.



## 4. INSPECTION

### 4.1 Outline

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

### 4.2 Daily Inspection

Before each work shift, check the following points:

- (1) Check that the name plate showing the hoist capacity is attached and clearly legible.
- (2) Check that the warning tag and label are attached and clearly legible.
- (3) Check for visual defects or abnormal noises which could indicate a defect.
- (4) Check that the top and bottom hook latches are in place and in proper condition.
- (5) Make sure the openings of the top and bottom hooks are not too wide, that the swivel rotates freely and that the hook latch is in position and works normally.
- (6) Check for wear or damage, increased throat width, bent shank or bending of hook.
- (7) Check that the chain does not have excessive rust or corrosion and that it is not dry due to lack of lubricant.
- (8) When facing the hand chain side of the hoist with no load:  
The brake is operating normally if the pawl "clicks" when the hand chain is wound in a clockwise direction and does not "click" when operated in the counter- clockwise direction.
- (9) Check lubrication and lubricate if necessary. (Refer to Sec. 5.1)

(10) Check that the chain is assembled normally and that there is no twisting.

(11) Check for loose or missing nuts and for missing split pins.

### 4.3 Periodic Inspection

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

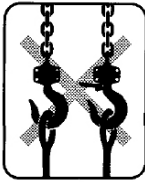
NORMAL (Normal use): Semiannual inspection

HEAVY (Frequent use): Quarterly inspection

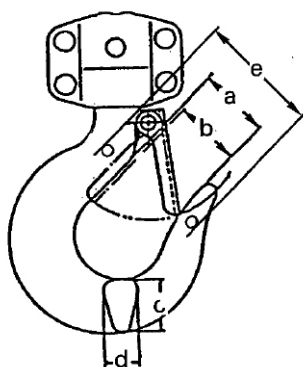
SEVERE (Excessively frequent use): Monthly inspection

<Periodic Inspection Procedure>


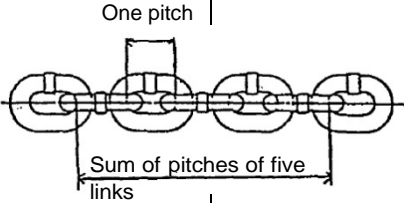
Figures in parentheses are Figure NOS. in Parts List.

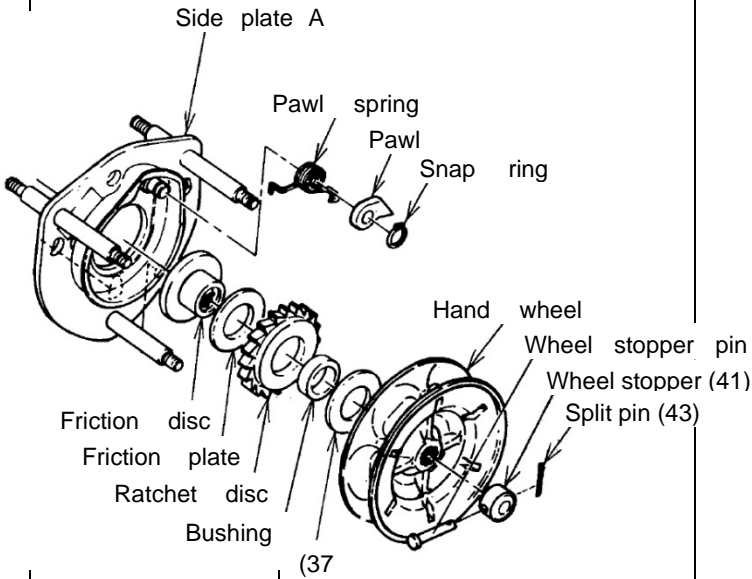
Item	Inspection Method	Discard Limit/Criteria	Measures
Indications	Check visually.	○ Capacity indication is clear.	Attach the name plate.
<b>HOOK</b> [1, 6, 55, 78] (Top and Bottom)			
1. Deformation/ twist of hook opening	Measure dimension "e" between two embossed marks at time of purchase with calipers.	○ No deformation from original shape (at time of purchase).	Replace the hook.
	Check visually.	○ Twist shall not be large enough to detect visually.	Replace the hook.
2. Wear	Measure "c" and "d" with slide calipers.	○ Never use the hook if dimension "c" or "d" becomes less than 90% of normal	Replace the hook.

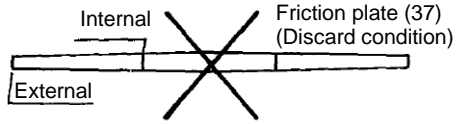

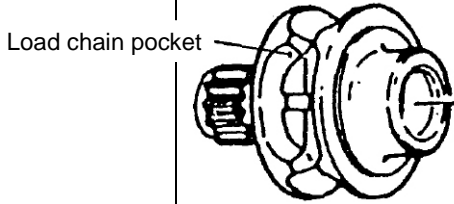
**Table 1** (Reference dimensions)



Type (t)	a(mm)		b(mm)		c (mm)		d(mm)	
	Normal	Normal	Normal	Normal	Discard	Normal	Discard	
½	31.0	27.0	17.0	15.3	12.1	10.9		
1	34.0	29.0	21.8	19.6	16.0	14.4		
1½	37.5	34.0	26.5	23.9	19.5	17.6		
2	40.0	36.0	30.0	27.0	21.8	19.6		
2½	42.5	40.0	33.5	30.2	24.3	21.9		
3	46.0	42.5	37.5	33.8	27.2	24.5		
5	50.0	46.5	47.5	42.8	34.5	31.1		
7½	79.5	72.5	63.0	56.7	47.5	42.8		
10	79.5	72.5	63.0	56.7	47.5	42.8		
15	95.0	80.0	80.0	72.0	50.0	45.0		
20	95.0	81.0	90.0	81.0	56.0	50.4		

Item	Inspection Method	Discard Limit/Criteria	Measures																		
3. Hook flaws	Check visually.	○ No great damage permitted.	Replace the hook.																		
4. Hook movement	Turn hook.	○ Shall turn smoothly.	Replace the hook.																		
5. Top/bottom fixture damage [Fittings of 1, 6, 55, 78]	Check visually.	○ No slack or missing rivets, nuts or bolts.	Replace the hook.																		
6. Idle sheave rotation [57, 81]	Hold the load chain with both hands and turn the idle sheave by moving the chain up and down.	○ Smooth rotation.	Overhaul.																		
7. Hook latch [2, 7, 56, 80]	Check visually.	○ Proper positioning and smooth working.	Replace the latch or hook.																		
																					
<b>LOAD CHAIN</b> [47, 110]																					
1. Wear	Measure with slide calipers.	○ Measure the sum of pitches of five chain links and check that the maximum length does not exceed value shown in table 2.	Replace the chain.																		
																					
<b>Table 2</b>																					
<table border="1"> <thead> <tr> <th>Type (t)</th> <th>Sum of pitches of five links (mm)</th> <th>Discard limit (mm)</th> </tr> </thead> <tbody> <tr> <td>½</td> <td>75.5</td> <td>77.7</td> </tr> <tr> <td>1</td> <td>95.5</td> <td>98.3</td> </tr> <tr> <td>1½, 3</td> <td>106.0</td> <td>109.1</td> </tr> <tr> <td>2</td> <td>121.0</td> <td>124.6</td> </tr> <tr> <td>2½, 5, 7½, 10, 15, 20</td> <td>136.0</td> <td>140.0</td> </tr> </tbody> </table>				Type (t)	Sum of pitches of five links (mm)	Discard limit (mm)	½	75.5	77.7	1	95.5	98.3	1½, 3	106.0	109.1	2	121.0	124.6	2½, 5, 7½, 10, 15, 20	136.0	140.0
Type (t)	Sum of pitches of five links (mm)	Discard limit (mm)																			
½	75.5	77.7																			
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1½, 3	106.0	109.1																			
2	121.0	124.6																			
2½, 5, 7½, 10, 15, 20	136.0	140.0																			
2. Rust, flaws, deformation	Check visually.	○ No obvious rust (Apply oil as necessary.) ○ No twists or harmful flaws.	Remove rust. Replace the load chain.																		
<b>HOOK YOKE</b> (Top set [1, 54]) (Bottom set [6, 77]) Joint of Top/bottom fixtures with top pin [4] and chain pin [8, 106]	Measure hole diameter of joint area in two directions at right angle.	○ Deformation not permitted (if each measured value differs more than 0.5mm, it is not a circle).	Replace the part.																		

Item	Inspection Method	Discard Limit/Criteria	Measures
<p><b>FUNCTION</b></p> <p>1. Lifting and lowering</p> <p>2. Brake</p>	<p>Lift and lower a light load.</p>	<ul style="list-style-type: none"> <li>○ No abnormal difficult in lifting or lowering.</li> <li>○ Confirm that none of the problems listed below occur during lifting and lowering: <ul style="list-style-type: none"> <li>• Lifting impossible.</li> <li>• Load falls when the operator removes his hands.</li> <li>• Load fall during unwinding.</li> <li>• Load slips down slowly.</li> </ul> </li> </ul>	<p>Overhaul and service.</p> <p>Overhaul and service.</p>
<p><b>BRAKE</b> (Inside mechanism)</p>	<p>Overhaul and check.</p>		
<p>1. Flaws and wear on the brake surface [36,37, 38, 39]</p>	<p>Check visually.</p>	<ul style="list-style-type: none"> <li>○ Should free of scars or gouged flaws on the braking surface.</li> <li>○ The braking surface should not be excessively worn with the tool marks erased and surface lustered.</li> </ul>	<p>Replace the part.</p>
<p>2. Wear on friction plate [37]</p>	<p>Measure with slide calipers.</p>	<ul style="list-style-type: none"> <li>○ Retain uniform thickness and friction plate shall not be worn more than 0.5 mm.</li> </ul> <p>For all types;</p> <p>Normal thickness: 3 mm</p> <p>Discard limit: 2.5mm</p>	<p>Replace the part.</p>

Item	Inspection Method	Discard Limit/Criteria	Measures									
3. Flatness of friction plate [37]	Check clearance with straight gauge.	<ul style="list-style-type: none"> <li>○ Clearance shall be uniform. Internal part shall not be thicker than external part.</li> </ul> 	Replace the part.									
4. Bushing [39]; wear and oil	Check radial thickness (t) with calipers and oil existence.	<ul style="list-style-type: none"> <li>○ Radial thickness (t) shall be uniform. Oil shall be contained. Refer to table 3.</li> </ul>  <p>Bushing (39) t: Radial thickness</p> <table border="1" data-bbox="798 683 1324 896"> <caption>Table 3</caption> <thead> <tr> <th>Type (t)</th> <th>Normal thickness: t (mm)</th> <th>Discard limit (mm)</th> </tr> </thead> <tbody> <tr> <td>½, 1, 1½, 3</td> <td>3</td> <td>2</td> </tr> <tr> <td>2, 2½, 5, 7½, 10, 15, 20</td> <td>4</td> <td>3</td> </tr> </tbody> </table>	Type (t)	Normal thickness: t (mm)	Discard limit (mm)	½, 1, 1½, 3	3	2	2, 2½, 5, 7½, 10, 15, 20	4	3	Replace the part.
Type (t)	Normal thickness: t (mm)	Discard limit (mm)										
½, 1, 1½, 3	3	2										
2, 2½, 5, 7½, 10, 15, 20	4	3										
5. Ratchet disc [38]; wear and rust	Check visually.	<ul style="list-style-type: none"> <li>○ The tooth wear shall not be more than 1.5 mm.</li> <li>○ No rust</li> </ul>	Replace the part.									
<b>LIFTING SYSTEM</b>												
1. Load sheave [14]; wear and deformation	Check visually.	<ul style="list-style-type: none"> <li>○ No large wear or no deformation or no burr due to load chain contact is permitted on the surface of load chain pocket.</li> </ul>  <p>Load chain pocket</p> <p>Load sheave (14)</p>	Replace the part.									
2. Gears [25,27]; wear and flaw	Check visually.	<ul style="list-style-type: none"> <li>○ Teeth shall be free from large wear or flaws.</li> </ul>	Replace the part.									

Item	Inspection Method	Discard Limit/Criteria	Measures
3. Hand wheel [40]; wear and deformation	Check visually.	<ul style="list-style-type: none"> <li>○ No large wear or no deformation on the surface of hand chain pocket.</li> <li>○ Turn and check if it touches the cover.</li> </ul>	<p>Replace the part.</p> <p>Replace the part.</p>
<p><b>SIDE PLATES</b> [11, 13]</p> <p>1. Deformation of top pin hole</p> <p>2. Slack stay bolt restraint</p>	<p>Check visually.</p> <p>Tap.</p>	<ul style="list-style-type: none"> <li>○ Hole shall not be oval.</li> <li>○ No slack is permitted.</li> </ul>	<p>Replace the part.</p> <p>Replace the frame.</p>
<p>The diagram shows an exploded view of mechanical components. At the top is a 'Top hook (1)'. Below it is a 'Stay bolt'. To the left is 'Side plate A (13)' with a 'Top pin hole' indicated. To the right is 'Side plate A (11)' which is shown partially assembled with the stay bolt.</p>			
<p><b>MISCELLANEOUS</b></p> <p>1. Deformation of stripper [21]</p> <p>2. Flaw on guide roller [20]</p>	<p>Check visually</p> <p>Check visually</p>	<ul style="list-style-type: none"> <li>○ No large crush or damage on stripper tip is permitted.</li> <li>○ Shall turn lightly.</li> <li>○ No large deformation.</li> </ul>	<p>Replace the part.</p> <p>Replace the part.</p>

## 5. MAINTENANCE

### **WARNING**

- : IMPROPER chain hoist use could result in death or serious injury. To avoid these hazards:**
- : NEVER perform maintenance on the hoist while it is supporting a load.**
- : Before performing maintenance, attach the tag:  
["DANGER": DO NOT OPERATE EQUIPMENT BEING REPAIRED.]**
- : Only allow qualified service personnel to perform maintenance.**
- : After performing any maintenance on the hoist, always test to its rated capacity before returning to service.**

### 5.1 Lubrication

#### 5.1.1 Applying Grease to Gears

Unscrew nuts (31), on the opposite side of hand chain wheel, and remove spring washers (32) and gear case (29). Remove old grease and replace with new grease (standard grease\*), at annual inspection.

Temperature range of standard grease is -40°C (-40°F) to +60°C (140°F).

If the hoist is used at temperature below -40°C (-40°F) or above +60°C (140°F), consult the manufacturer or dealer since some parts shall be changed.

\* Recommended brand: Shell Albania #3 or calcium soap grease equivalent of NLGI (National Lubricating Grease Institute)/#3

#### 5.1.2 Load Chain

### **WARNING**

- : IMPROPER chain hoist use could result in death or serious injury. To avoid these hazards:**
- : 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. \*

**ALWAYS** use rust preventive oil equivalent to ISO VG32.

**ALWAYS** clean chain with an acid free solvent only to remove rust or abrasive dust build-up. After cleaning, lubricate the chain.

**ALWAYS** lubricate each link of the chain and apply new lubricant over existing layer.

\* A corrosion-resistant chain is available as option. For information on the capabilities and limitations of KITO's regular and corrosion-resistant chain, please ask your dealer.



## 5.2 Overhaul, Assembly and Adjustment

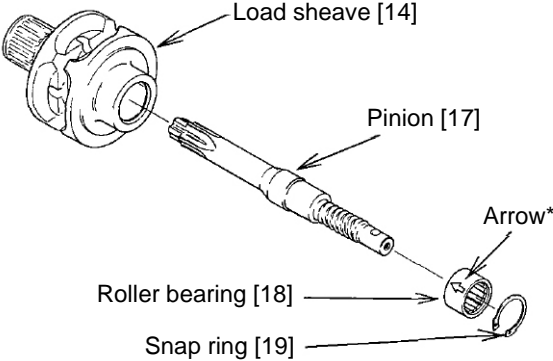
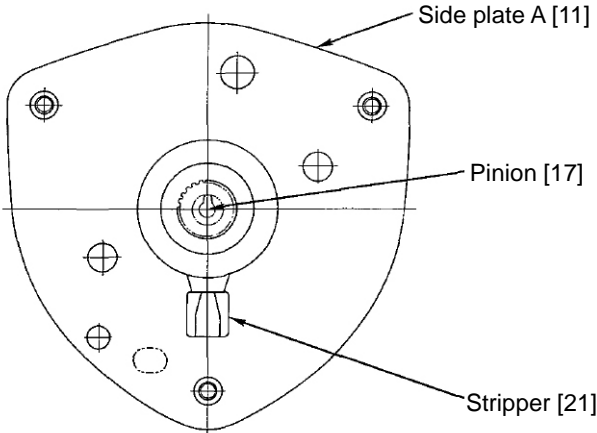
### 5.2.1 Overhaul

Figures in parentheses are Figure Nos. in Parts List.

Overhaul Procedures	Remarks
<ol style="list-style-type: none"> <li>1. Put a hoist with wheel cover side up.</li> <li>2. Unscrew three nuts [45] (with the spring washers [46]) fixing the wheel cover [44] and remove the wheel cover from the side plate A [11].</li> <li>3. Remove the hand chain [48] from the hand wheel [40].</li> <li>4. Pull out the split pin [43] from the wheel stopper pin [42] and remove the wheel stopper pin and the wheel stopper [41] from the pinion [17].</li> <li>5. Remove the hand wheel [40] from the pinion [17] by turning the hand wheel counterclockwise.</li>   <li>6. Remove two friction plates [37], the ratchet disc [38] and the bushing [39] from the friction disc [36].</li> <li>7. Unscrew the friction disc [36] from the pinion [17] by turning counterclockwise holding the end of the pinion with fingers.</li> <li>8. Remove the snap ring [35] from the pawl pin (on the side plate A) and then remove the pawl [34] and pawl spring A and B [33].</li> <li>9. &lt;For 7½ t and smaller types&gt;  <p style="margin-left: 40px;">Pull the split pin [24] out from the stopper pin [23] and remove the load chain [47] and the stopper pin from the anchorage [22].</p> <p style="margin-left: 40px;">&lt;For 10 t and larger types&gt;  <p style="margin-left: 80px;">Pull the split pin [52] out from the end pin [51] and remove the load chain [47] and the end pin.</p> <p style="margin-left: 80px;">Unscrew two socket bolts (with the spring washers) fixing the stoppers [114] and remove the stoppers.</p> </p></li> <li>10. Remove the load chain [47] from the load sheave [14] by pulling the load chain toward the bottom hook.</li> <li>11. Remove the split pin [5] from the top pin [4], then remove the top pin and the top hook [1] from the side plate A [11] and B [13].</li> <li>12. Put a hoist with gear case side (or name plate side) up.</li> </ol>	<p>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.</p>

Overhaul Procedures	Remarks
<p>13. Unscrew three nuts [31] (with the spring washers [32]) fixing the gear case [29], remove the gear case from the side plate B [13], and take the ball bearings [28] out from the gear case.</p> <p>14. Remove two pairs of the gear #2 [27] (½ t has one pair) from the side plate B [13].</p> <p>15. Remove the snap ring [26] from the load sheave [14], then the load gear [25] from the load sheave.</p> <p>16. Remove the side plate B [13] from the side plate A [11] and then take the ball bearing [16] out from the side plate B.</p> <p>17. Remove the guide rollers [20], load sheave (attached to the pinion [17]), stripper [21] and anchorage [22] (For 10 t larger types : cross guide [53]) from the side plate A [11], then remove the ball bearing [15] from the side plate A.</p> <p>18. Remove the snap ring [19] in the load sheave [14].</p> <p>19. Remove the pinion [17] and the roller bearing [18] from the load sheave [14].</p> <p>20. Pull the split pin [10] out from the slotted nut [9] and remove the slotted nut and chain pin from the bottom hook [6].</p>	<p>Hold the load sheave with a hand and remove the bearing by tapping the pinion with a wooden hammer.</p>

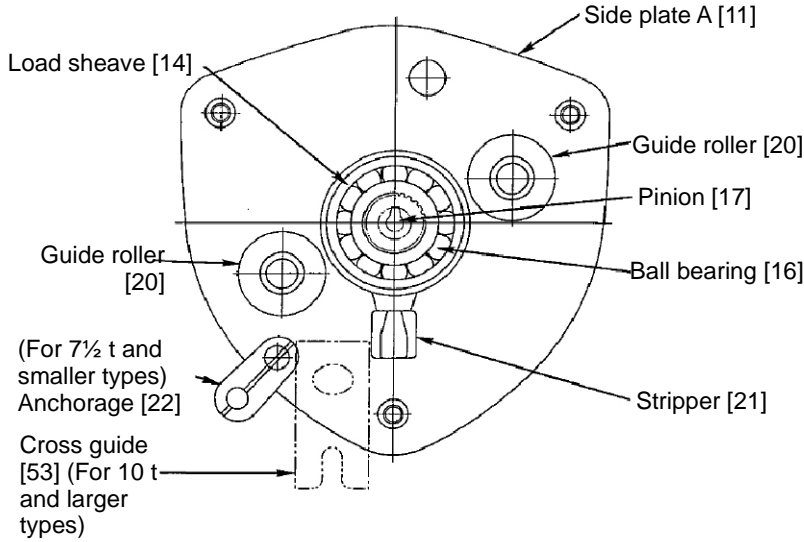
## 5.2.2 Assembly and Adjustment

Assembly Procedures	Remarks
<p>1. Apply grease to the rollers of the roller bearing [18] and insert the pinion [17] (from the side of the brake screw) into the roller bearing and insert them together into the load sheave [14]. Fix them with a snap ring [19].</p>	<p>The arrow* direction on the outer side of the roller bearing shall be faced to pinion gear side. When inserting, use a screwdriver on the bearing and tap it with a wooden hammer.</p>
 <p>The diagram illustrates the assembly of the roller bearing [18], pinion [17], and snap ring [19] into the load sheave [14]. The roller bearing [18] is shown with an arrow* pointing towards the pinion gear side. The pinion [17] is inserted into the roller bearing [18], and the snap ring [19] is used to secure the assembly into the load sheave [14].</p>	<p><b>⚠ WARNING</b></p> <p>Always make sure that the snap ring is correctly seated.</p>
<p>2. Put the side plate A [11] with a brake cover side down and insert the ball bearing [15] (with a snap ring side up) into the side plate A. Grease the balls of ball bearing shown in the side plate A.</p> <p>3. Insert the load sheave [14] with a part of involute serration side (pinion gear side) up into the ball bearing [15]. The stripper [21] must be put as well.</p>	
 <p>The diagram shows the side plate A [11] with the pinion [17] and stripper [21] installed. The side plate A [11] is shown with the pinion [17] and stripper [21] installed. The side plate A [11] is shown with the pinion [17] and stripper [21] installed.</p>	
<p>4. &lt;For 7½ t and smaller types&gt; Put the guide rollers [20] and the anchorage [22] in the side plate A [11].</p> <p>&lt;For 10 t and larger types&gt; Put the guide rollers [20] and the cross guide [53] in the side plate A [11].</p>	<p>Put the cross guide so that the longer arm fits to the side plate A.</p>

Assembly Procedures	Remarks
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- Grease the balls of the ball bearing [16].  
Insert it with the snap ring side down to the shaft of the load sheave [14].

As for the ball bearing of the load sheave, make sure that the snap ring is placed on the side of the load sheave where the load chain reeves.



- Join the side plate B [13] to the side plate A [11].
- Mesh the load gear [25] with the involute serration of the load sheave [14] and fix it with a snap ring [26].

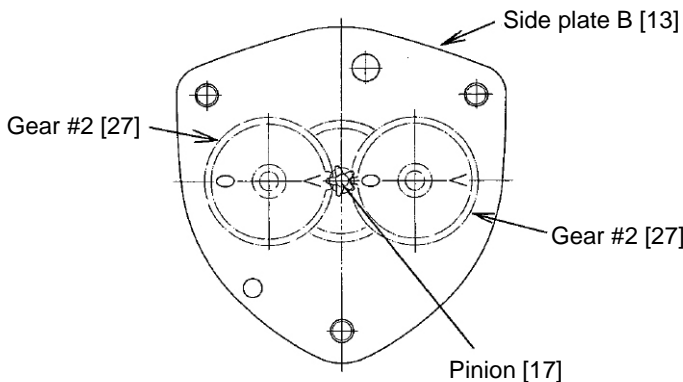
In case it is difficult to join the two, tap it with a wooden hammer. Be careful not to let the stripper, guide roller, and anchorage fall down.

**⚠ WARNING**

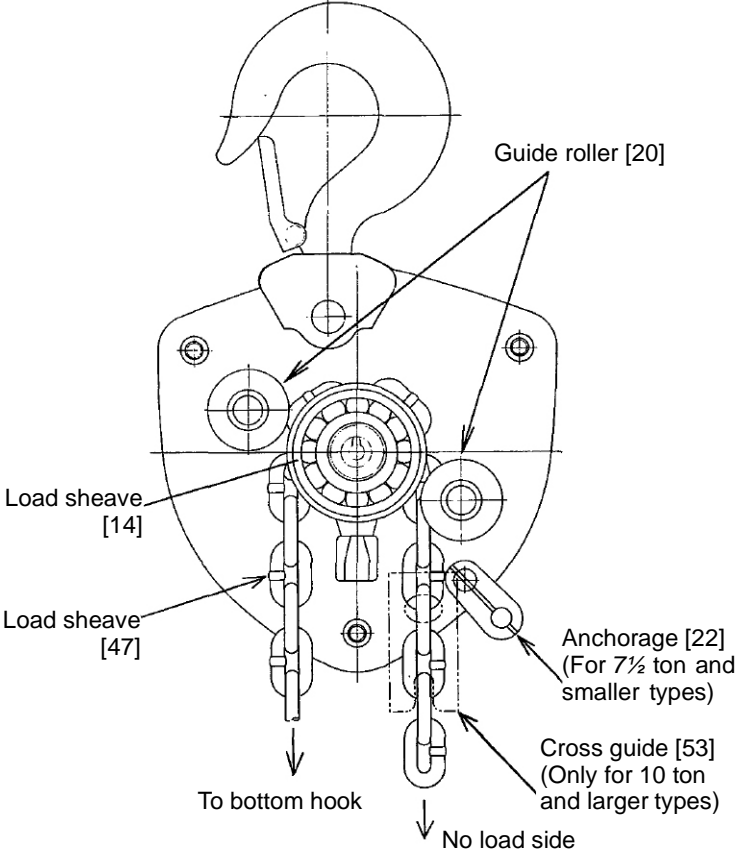
Always make sure the snap ring is completely set at the bottom of the ditch.

- Grease the two pairs of the gear #2 [27], the load gear [25] and the gear of the pinion [17]. Put them in the gear plain bearing (bearing A) of the side plate B [13]. Letters O and V on the gears must face to each other as shown in the below picture. Do not forget to apply grease to the boss on the both sides of the gear #2.

It is not necessary to adjust the letters in case of the ½ t model, for it has only one pair of the gear #2.



Assembly Procedures	Remarks
<p>9. Grease the balls of the ball bearing [28] and insert it with the snap ring down into the end of the pinion [17] shaft.</p> <p>10. Join the gear case [29] to the side plate A [11] and fix them with the three spring washers [32] and nuts [31].</p> <p>11. Place the top hook [1] between the side plate A [11] and B [13]. Then insert top pin [4], and fix it with the split pin [5].</p>	<div data-bbox="1054 499 1286 546" data-label="Section-Header"> <p><b>⚠ WARNING</b></p> </div> <p data-bbox="1054 568 1366 680">Always bend the split pin firmly after inserting it into the top pin.</p>
<div data-bbox="347 607 1027 1285" data-label="Image"> <p>The diagram is a technical drawing of a gear assembly. It shows a central gear with a pinion shaft. A top hook is positioned above the gear. A top pin is inserted through the top of the gear housing. A split pin is used to secure the top pin. The side plate A is shown as a shield-shaped component with several mounting holes. Labels with arrows point to the Top hook [1], Top pin [4], Split pin [5], and Side plate A [11].</p> </div>	
<p>12. Place the hand wheel [40] side upward.</p>	

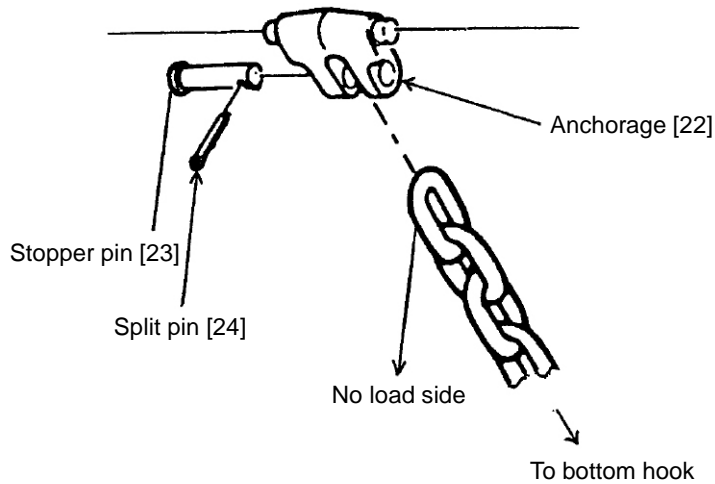
Assembly Procedures	Remarks
<p>13. Reeve the load chain [47] turning the pm10n [17] shaft clockwise through the space between the left (bottom hook side) guide roller [20] and the load sheave [14].</p> <p>For 10 t or larger hoists, pass the no load end of the chain through the cross guide [53].</p> 	<p><b>⚠ WARNING</b></p> <p>Put the welded part of the vertical chain link outward and reeve it through the load sheave. Pull it out between the right guide roller (no load side) and the load sheave.</p> <p>It is recommended for this process to position the unit so that the side plate A [11] faces left and the side plate B [13] faces right.</p>

Assembly Procedures

Remarks

14. <For 7½ t and smaller types>

Pull the end of the load chain [47] out between the right guide roller [20] and the load sheave [14] (no load side) and insert it to the anchorage [22]. Insert the stopper pin [23] and fix it with a split pin [24].

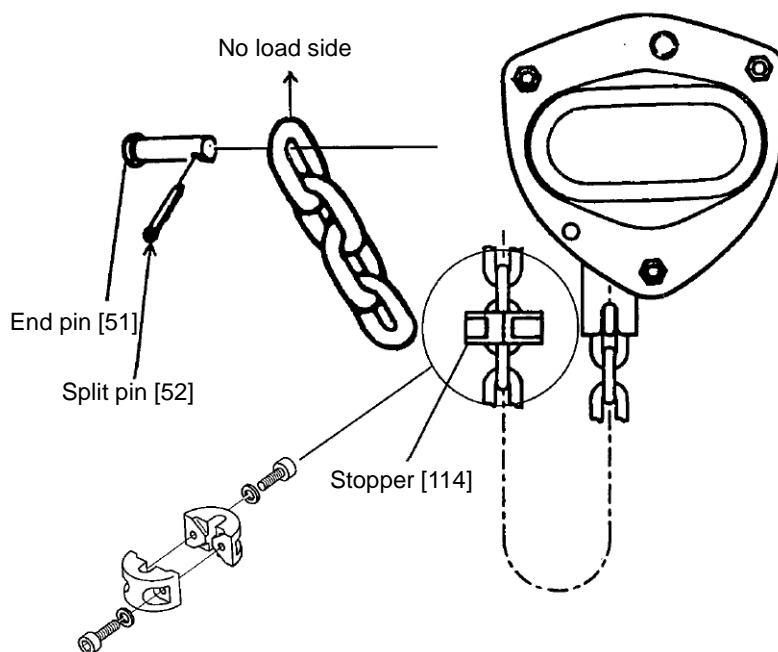


<For 10 t and larger types>

Connect the no load end of the load chain [47] to end pin [51] which is to be inserted from gear case [29] side.

Use a split pin [52] to secure the end pin.

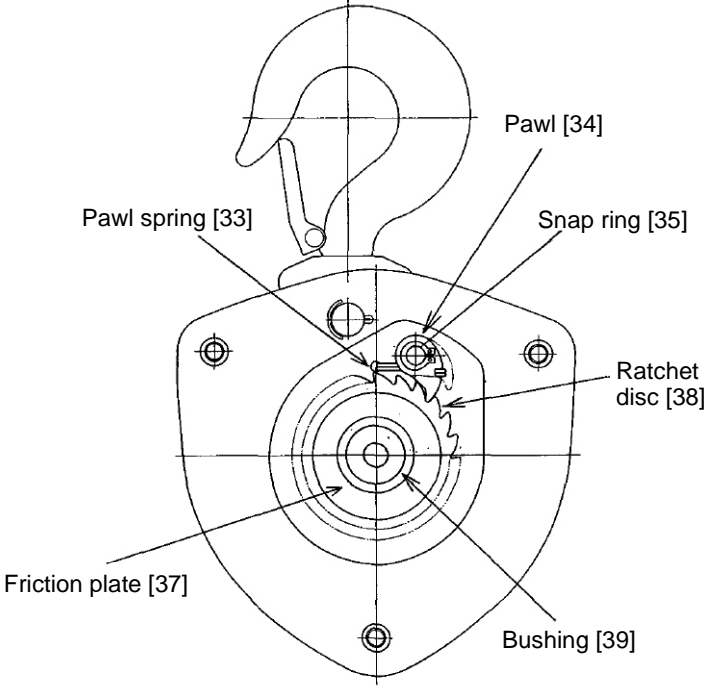
Fix stoppers [114] to the ninth link from the no load end of the load chain by assembling with socket bolts and spring washers.



**⚠ WARNING**

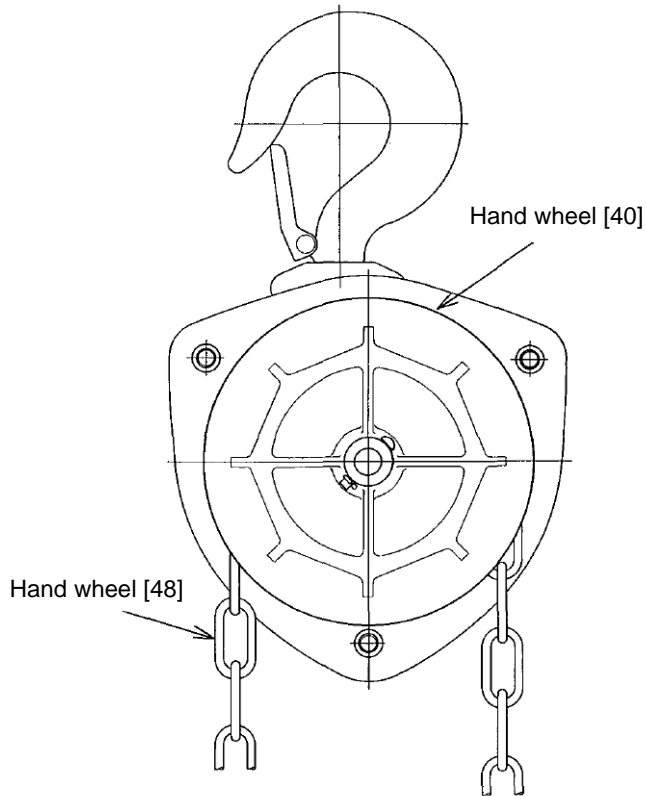
Make sure the load chain is not twisted and the split pin in the stopper pin is bent thoroughly.

Screwed hole side of one stopper shall face to non-screwed hole side of the other stopper. Socket bolt shall be inserted from the non-screwed side.

Assembly Procedures	Remarks
<p>15. Apply recommended oil * to the pawl pin (in side plate A [11]) and join the pawl spring A, B [33] and the pawl [34] respectively to it. Fix them with a snap ring [35].</p> <p>* JIS K2246 General Class 1, No.1 (NP-9), Lubricating oil type long-term rust preventive oil (Antirust Terami LN-H, ENEOS)</p> <p>16. Put the friction disc [36] to the pinion [17] shaft (while turning the pawl [34] counterclockwise).</p> <p>17. Wipe out any dirt on the friction disc [36], friction plates [37] and both sides of the ratchet disc [38] and check if the oil of the bushing [39] (bushing with containing oil) is applied enough. Then place the friction plate, bushing, ratchet disc and friction plate respectively on the friction disc. (Make sure that the pawl meshes with the ratchet disc properly)</p>	<p><b>⚠ WARNING</b> Make sure the pawl spring is touching to the pawl and the snap ring is completely set at the bottom of the groove.</p> <p><b>⚠ WARNING</b> <b>Never</b> apply oil since the brake is 'dry system'. Wipe out thoroughly any oil and dirt on the brake. The gear of the ratchet disc should point at the pawl. Otherwise, the hand wheel cannot be assembled later. In case the bushing does not have oil inside, soak it in <b>turbine</b> oil for a day. Install it in without wiping the oil. Make sure that the pawl meshes with the ratchet disc properly.</p>
	
<p>18. Wipe out the dirt of the hand wheel [40] and apply machine oil to the threaded part of it. Screw it in the pinion [17] shaft all the way down.</p> <p>19. Place the wheel stopper [41] on the head of the pinion [17], insert the wheel stopper pin [42] and fix it with a split pin [43].</p>	<p><b>⚠ WARNING</b> <b>Never</b> forget to bend the split pin after inserting into the wheel stopper pin.</p>

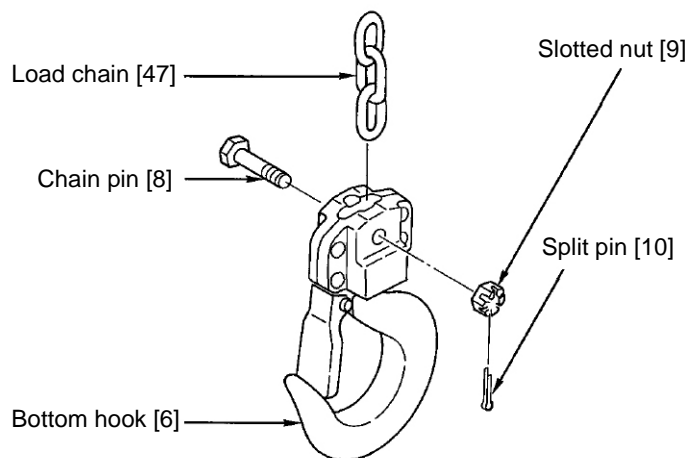


20. Put the hand chain [48] around the hand wheel [40].



21. Join the wheel cover [44] to the side plate A [11] and fix them with the spring washer [45] and the nut [46].

22. Insert the other end of the load chain [47] to the bottom hook [6] [and fix them with the chain pin [8], slotted nut [9] and split pin [10].



**⚠ WARNING**

Always bend surely the split pin.

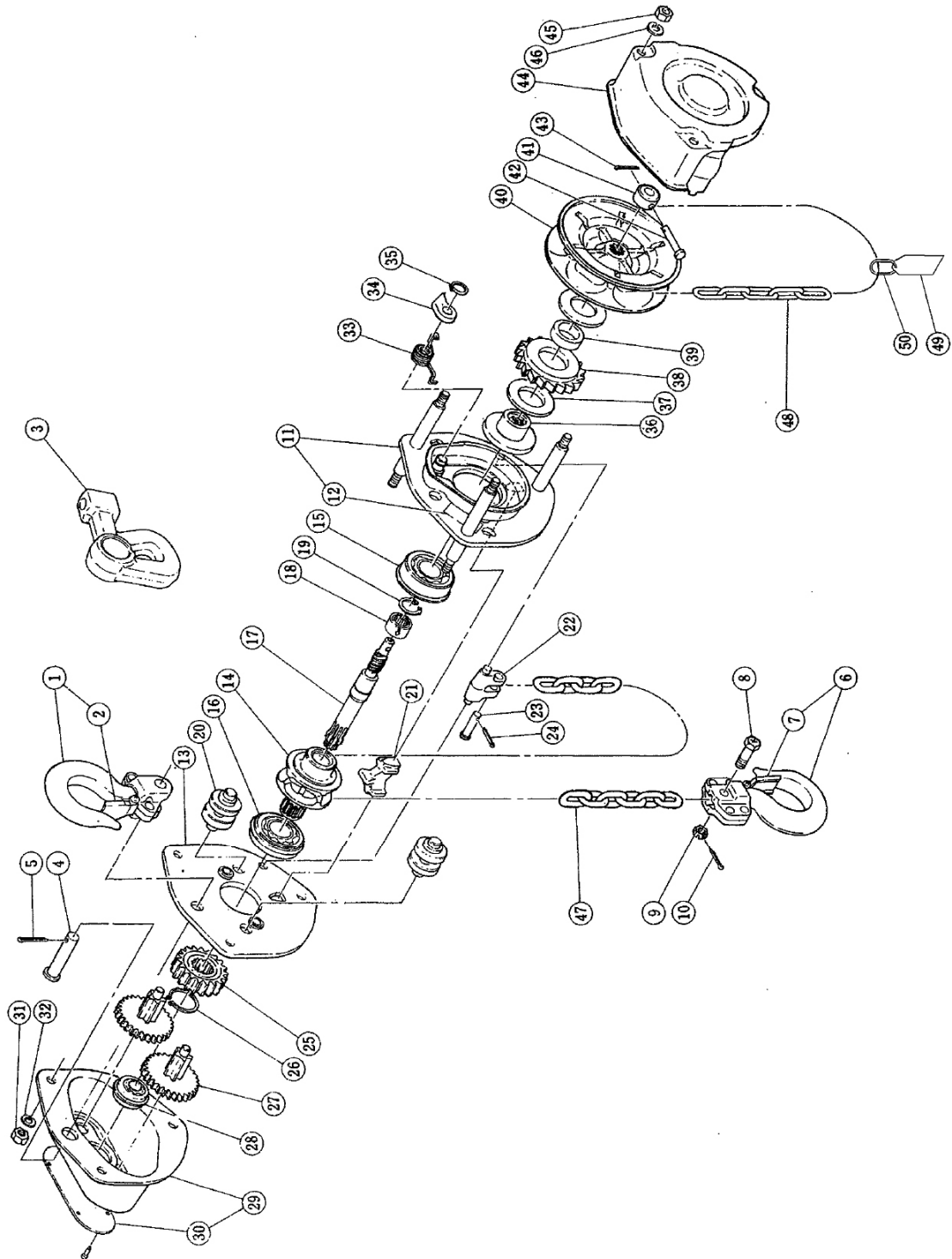
## 6. WARRANTY

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

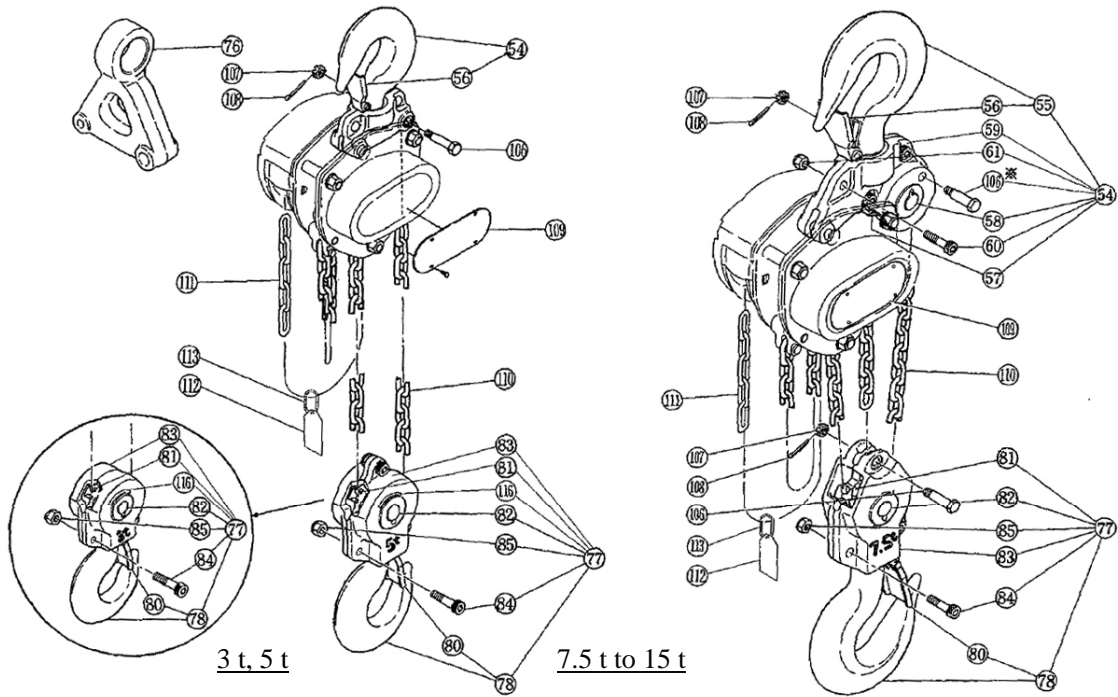
- (1) "Kito" warrants that Kito's Products, when shipped, shall be free from defects in workmanship and/or materials under normal use and service and "Kito" shall, at the election of "Kito", repair or replace free of charge any parts or items which are proven to have said defects, provided that all claims 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 "Kite'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 Kite's Products, regardless of whether "Purchaser'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 keto'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 LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

# 7. PARTS LIST



Additional parts for 3 t and larger types.



\* The Chain pin of 10 t model is located on top yoke to connect the Load chain.

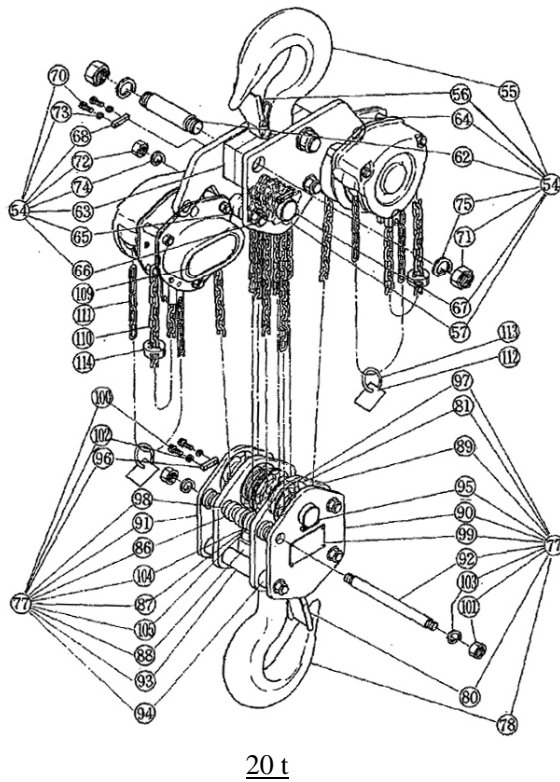


Fig. No.	Part No.	Part name	No. per hoist	Capacity (t)				
				0.5	1	1.5	3	2
1	1001	Top hook set	1	C1FA005-1001	C1FA010-1001	C2FA015-1001	—————	C3BA020-1001
2	1071	Hook latch assembly	1	C3BA005-1071	C1FA005-1071	C1FA010-1071	—————	C1FA015-1071
3	*	Suspender for TSP005	1	T7PC005-9004	—————			
	*	Suspender for TSG010	1	T7GC010-9004		—————		
	*	Suspender	1	—————	T7GC020-9004	—————	T7GC020-9004	
4	163	Top pin	1	C3BA005-9163	C3BA010-9163	C3BA015-9163		C3BA020-9163
5	198	Split pin	1	J1PW01-030018		J1PW01-030025		
6	1021	Bottom hook set	1	C3BA005-1021	C3BA010-1021	C3BA015-1021	—————	C3BA020-1021
7	1071	Hook latch assembly	1	C3BA005-1071	C1FA005-1071	C1FA010-1071	—————	C1FA015-1071
8	41	Chain pin	1	C3BA005-9041	C3BA010-9041	C3BA015-9041	—————	C3BA020-9041
9	49	Slotted nut	1	C3BA005-9049	C3BA010-9049	C3BA010-9049	—————	C3BA020-9049
10	96	Split pin	1	J1PW01-016010	J1PW01-020012	J1PW01-020012	—————	J1PW01-020014
11	5101 (1)	Side plate A assembly	1	C3BA005-4101	C3BA010-4101	C3BA015-4101		C3BA020-4101
12	806	Name plate F	1	C3BA005-9806				
13	5102 (1)	Side plate B assembly	1	C3BA005-5102	C3BA010-5102	C3BA015-5102		C3BA020-5102
14	116	Load sheave	1	C3BA005-9116	C3BA010-9116	C3BA015-9116		C3BA020-9116
15	140	Ball bearing	1	J1GR002-06006				J1GR002-06007
16	145	Ball bearing	1	J1GR002-06005		J1GR002-06006		
17	111 (1)	Pinion	1	C3BA005-9111	C3BA010-9111	C3BA015-9111		C3BA020-9111
18	130	Roller bearing	1	C3BA005-9130				C3BA020-9130
19	118	Snap ring	1	C3BA005-9118				C3BA020-9118
20	161	Guide roller	2	C3BA005-9161	C3BA010-9161	C3BA015-9161		C3BA020-9161
21	162	Stripper	1	C3BA005-9162	C3BA010-9162	C3BA015-9162		C3BA020-9162
22	176	Anchorage	1	C3BA005-9176	C3BA010-9176	C3BA015-9176		C3BA020-9176
23	177	Stopper pin	1	C3BA005-9177	C3BA010-9177	C3BA015-9177		C3BA020-9177
24	196	Splint pin	1	J1PW01-020012	J1PW01-025015			
25	114	Load gear	1	C3BA005-9114	C3BA010-9114	C3BA015-9114		C3BA020-9114
26	117	Snap ring	1	J1SS000-00022		J1SS000-00028		
27	5112 (1)	Gear #2 assembly	(3)	C3BA005-5112	C3BA010-5112	C3BA015-5112		C3BA020-5112
				1	2	2		2
28	135	Ball bearing	1	J1GR002-6200				J1GR002-06201
29	6103	Gear case assembly	1	C3BA005-6103	C3BA010-6103	C3BA015-6103		C3BA020-6103
30	800 (1)	Name plate B with rivets	1	C3BG005-9800	C3BG010-9800	C3BG015-9800	—————	C3BG020-9800
31	181	Nut	3	J1NA001-20080				J1NA001-20100
32	186	Spring washer	3	J1WS011-20080				J1WS011-20100
33	5179	Pawl spring set (A & B) (2)	1	C3BA005-5179				
34	155	Pawl	1	C3BA005-9155				
35	157	Snap ring	1	J1SS000-00010				
36	153 (1)	Friction disc	1	C3BA005-9153				C3BA020-9153
37	151 (1)	Friction plate	2	C3BA005-9151				C3BA020-9151
38	152 (1)	Ratchet disc	1	C3BA005-9152				C3BA020-9152
39	154 (1)	Bushing	1	C3BA005-9154				C3BA020-9154
40	115 (1)	Hand wheel	1	C3BA005-9115		C3BA015-9115		C3BA020-9115
41	159	Wheel stopper	1	C1FA005-9159				C1FA015-9159
42	167	Wheel stopper pin	1	C3BA005-9167				
43	199	Split pin	1	J1PW01-020008				
44	5171	Wheel cover assembly	1	C3BA005-5171		C3BA015-5171		C3BA020-5171
45	182	Nut	3	J1NA001-20080				
46	187	Spring washer	3	J1WS011-20080				
47	841	Load chain	1	K6QB050J00000	K6QB063J00000	K6QB071J00000		K6QB080J00000
48	842	Hand chain	1	K7NA050J00000				
49	931	Warning tag	1	L4BD008-9931				
50	45	Chain stopper link	1	L5BA032-9045				
51	164	End pin	1	—————				
52	197	Split pin	1	—————				
53	176	Cross guide	1	—————				

Notes: \* See trolley part lists.

(1) When ordering replacement part, use the symbol M3B in place of M3 for 2.5 t, 5 t and larger types, because there are no interchangeability.

(2) Pawl spring A and B must be used as a set.

(3) Each number in "Capacity (t)" columns is No. per hoist.

Remark: Every part quantity becomes twice of the number in the column "parts per hoist" for 20 t hoist.

Fig. No.	Part No.	Part name	No. per hoist	Capacity (t)						
				2.5	5	7.5	10	15	20	
1	1001	Top hook set	1	C3BA025-1001	-----	-----	-----	-----	-----	-----
2	1071	Hook latch assembly	1	C1FA020-1071	-----	-----	-----	-----	-----	-----
3	*	Suspender for TSP005	1	-----	-----	-----	-----	-----	-----	-----
	*	Suspender for TSG010	1	-----	-----	-----	-----	-----	-----	-----
	*	Suspender	1	T7GC025-9004	-----	-----	-----	-----	-----	-----
4	163	Top pin	1	-----	-----	-----	-----	C3BA025-9163	-----	-----
5	198	Split pin	1	-----	-----	-----	-----	J1PW01-030025	-----	-----
6	1021	Bottom hook set	1	C3BA025-1021	-----	-----	-----	-----	-----	-----
7	1071	Hook latch assembly	1	C1FA020-1071	-----	-----	-----	-----	-----	-----
8	41	Chain pin	1	C3BA025-9041	-----	-----	-----	-----	-----	-----
9	49	Slotted nut	1	C3BA020-9049	-----	-----	-----	-----	-----	-----
10	96	Split pin	1	J1PW01-020014	-----	-----	-----	-----	-----	-----
11	5101 (1)	Side plate A assembly (M3B)	1	-----	-----	-----	-----	C3BA025-4101	-----	-----
12	806	Name plate F	1	-----	-----	-----	-----	C3BA005-9806	-----	-----
13	5102 (1)	Side plate B assembly	1	-----	-----	-----	-----	C3BA025-5102	-----	-----
14	116	Load sheave	1	-----	-----	-----	-----	C3BA025-9116	-----	-----
15	140	Ball bearing	1	-----	-----	-----	-----	J1GR002-06007	-----	-----
16	145	Ball bearing	1	-----	-----	-----	-----	J1GR002-06007	-----	-----
17	111 (1)	Pinion	1	-----	-----	-----	-----	C3BA025-9111	-----	-----
18	130	Roller bearing	1	-----	-----	-----	-----	C3BA020-9130	-----	-----
19	118	Snap ring	1	-----	-----	-----	-----	C3BA020-9118	-----	-----
20	161	Guide roller	2	-----	-----	-----	-----	C3BA025-9161	-----	-----
21	162	Stripper	1	-----	-----	-----	-----	C3BA025-9162	-----	-----
22	176	Anchorage	1	C3BA025-9176	-----	-----	-----	-----	-----	-----
23	177	Stopper pin	1	C3BA025-9177	-----	-----	-----	-----	-----	-----
24	196	Split pin	1	J1PW01-025018	-----	-----	-----	-----	-----	-----
25	114	Load gear	1	-----	-----	-----	-----	C3BA025-9114	-----	-----
26	117	Snap ring	1	-----	-----	-----	-----	J1SS000-00032	-----	-----
27	5112 (1)	Gear #2 assembly (M3B)	(3)	-----	-----	-----	-----	C3BA025-5112	-----	-----
				-----	-----	-----	-----	2	-----	-----
28	135	Ball bearing	1	-----	-----	-----	-----	J1GR002-06201	-----	-----
29	6103	Gear case assembly	1	-----	-----	-----	-----	C3BA025-6103	-----	-----
30	800 (1)	Name plate B with rivets	1	C3BG025-9800	-----	-----	-----	-----	-----	-----
31	181	Nut	3	-----	-----	-----	-----	J1NA001-20120	-----	-----
32	186	Spring washer	3	-----	-----	-----	-----	J1WS011-20120	-----	-----
33	179	Pawl spring (A & B) (2)	1	-----	-----	-----	-----	C3BA005-5179	-----	-----
34	155	Pawl	1	-----	-----	-----	-----	C3BA005-9155	-----	-----
35	157	Snap ring	1	-----	-----	-----	-----	J1SS000-00010	-----	-----
36	153 (1)	Friction disc (M3B)	1	-----	-----	-----	-----	C3BA025-9153	-----	-----
37	151 (1)	Friction plate (M3B)	2	-----	-----	-----	-----	C3BA025-9151	-----	-----
38	152 (1)	Ratchet disc (M3B)	1	-----	-----	-----	-----	C3BA025-9152	-----	-----
39	154 (1)	Bushing (M3B)	1	-----	-----	-----	-----	C3BA025-9154	-----	-----
40	115 (1)	Hand wheel (M3B)	1	-----	-----	-----	-----	C3BA025-9115	-----	-----
41	159	Wheel stopper	1	-----	-----	-----	-----	C1FA015-9159	-----	-----
42	167	Wheel stopper pin	1	-----	-----	-----	-----	C3BA005-9167	-----	-----
43	199	Split pin	1	-----	-----	-----	-----	J1PW01-020008	-----	-----
44	5171	Wheel cover assembly	1	-----	-----	-----	-----	C3BA025-5171	-----	-----
45	182	Nut	3	-----	-----	-----	-----	J1NA001-20080	-----	-----
46	187	Spring washer	3	-----	-----	-----	-----	J1WS011-20080	-----	-----
47	841	Load chain	1	K6QB090J00000	-----	-----	-----	-----	-----	-----
48	842	Hand chain	1	K7NA050J00000	-----	-----	-----	-----	-----	-----
49	931	Warning tag	1	L4BD008-9931	-----	-----	-----	-----	-----	-----
50	45	Chain stopper link	1	L5BA032-9045	-----	-----	-----	-----	-----	-----
51	164	End pin	1	-----	-----	-----	-----	C3BA100-9164	-----	-----
52	197	Split pin	1	-----	-----	-----	-----	J1PW01-025018	-----	-----
53	176	Cross guide	1	-----	-----	-----	-----	C3BA100-9176	-----	-----

Notes: \* See trolley part lists.

(1) When ordering replacement part, use the symbol M3B in place of M3 for 2.5 t, 5 t and larger types, because there are no interchangeability.

(2) Pawl spring A and B must be used as a set.

(3) Each number in "Capacity (t)" columns is No. per hoist.

Remark: Every part quantity becomes twice of the number in the column "parts per hoist" for 20 t hoist.

Fig. No.	Part No.	Part name	No. per hoist	Capacity (t)						
				3 (D)	5	7.5	10	15	20	
54	1001	Top hook set	1	C3BA030-1001	C3BA050-1001	C3BA075-1001	C3BA100-1001	C3BA150-1001	C3BA200-1001	
55	1	Top hook	1	-----				C3BA150-9001	C3BA200-9001	
	2001	Top hook assembly	1	-----		C3BA100-2001		-----		
56	1071	Hook latch assembly	1	C1FA020-1071	C1FA030-1071	P1VS200-1071		C2BA150-1071	C3BA200-1071	
57	1051	Idle sheave assembly	(3)	-----		C3BA050-1051		C3BA150-1051		
				1	1	2	3			
58	5053	Shaft assembly	1	-----		C3BA050-5053		-----		
59A	11	Top yoke A	1	-----		C3BA075-9011	C3BA100-9011	-----		
	16	Top yoke A	1	-----				C3BA150-9016	-----	
59B	12	Top yoke B	1	-----		C3BA075-9012	C3BA100-9012	-----		
	17	Top yoke B	1	-----				C3BA150-9017	-----	
60	81	Socket bolt	(3)	-----		J1BE1-1204040		-----		
				3	1	-----				
61	82	Lever nut	(3)	-----		C2BA400-9074		-----		
				3	1	-----				
-	86	Socket bolt	2	-----			J1BE1-1606060	-----		
-	87	U nut	2	-----			C3BA100-9087	-----		
62	10	Top suspension shaft	2	-----				C3BA150-9010	C3BA200-9010	
63	11	Top yoke	2	-----						C3BA200-9011
64	12	Top plate A assembly	(3)	-----				C3BA150-5012	C3BA200-5012	
				1	2	-----				
-	14	Top plate B	1	-----				C3BA150-9014	-----	
65	18	Guide	(3)	-----				C3BA150-9018		
				4	6	-----				
66	19	Stay bolt	2	-----				C3BA150-9019	C3BA200-9019	
-	43	Top plate	1	-----				C3BA150-9043	-----	
67	53	Top shaft	1	-----				C3BA150-9053	C3BA200-9053	
68	56	Key plate	2	-----				C2BA050-9056		
-	66	Collar	2	-----				C3BA150-9066	-----	
70	83	Socket bolt	4	-----				J1BE1-0801414		
71	84	Nut	4	-----				J1NA001-10300		
72	85	Nut	4	-----				J1NA001-10200		
73	87	Spring washer	4	-----				J1WS011-20080		
74	88	Spring washer	4	-----				J1WS011-20200		
75	89	Spring washer	4	-----				J1WS011-20300		

Note: \* See trolley part lists.

- (1) When ordering replacement part, use the symbol M3B in place of M3 for 2.5 t, 5 t and larger types, because there are no interchangeability.  
(3) Each number in "Capacity (t)" columns is Parts per hoist.

Fig. No.	Part No.	Part name	No. per hoist	Capacity (t)						
				3 (D)	5	7.5	10	15	20	
76	*	Suspender for TSP & TSG	1	T7GC030-9004	T5GC050-9004	-----				
77	1021	Bottom hook set	1	C3BA030-1021	C3BA050-1021	C3BA075-1021	C3BA100-1021	C3BA150-1021	C3BA200-1021	
78	2021	Bottom hook	1	-----				C3BA150-2021	C3BA200-2021	
		Bottom hook assembly	1	C3BA030-2001	C3BA050-2001	C3BA100-2001	C3BA100-2001	-----		
80	1071	Hook latch assembly	1	C1FA020-1071	C1FA030-1071	P1VS200-1071		C2BA150-1071	C3BA200-1071	
81	1051	Idle sheave assembly	(3)	C1FA050-1051	C3BA050-1051		-----	C3BA150-1051		
				1	1	1	-----	3	4	
	1052	Idle sheave assembly	2	-----			C3BA100-1052	-----		
82	5053	Shaft assembly	1	C3BA030-5053	C3BA050-5053	C3BA050-5053	-----			
	5054	Bottom shaft assembly	1	-----			C3BA100-5054	-----		
83	2031	Bottom yoke	2	C3BA030-2031	C3BA050-2031	C3BA075-9031	C3BA100-9031	-----		
84	81	Socket bolt	☆(3)	J1BE1-1003232		J1BE-1204040		-----		
				2	3	2	-----			
	88	Socket bolt	2	-----			J1BE1-1605050	-----		
85	82	Lever nut	(3)	C2BA200-9074		C2BA400-9074		-----		
				2	3	2	-----			
	87	U nut	1	-----			C3BA100-90871	-----		
86	18	Guide	(3)	-----				C3BA150-9018		
								6	8	
87	26	Hook Support	2	-----				C3BA150-9026	C3BA200-9026	
88	30	Bottom yoke	1	-----				C3BA150-9030	C3BA200-9030	
89	34	Bottom plate A	(3)	-----				C3BA150-9034	C3BA200-9034	
								1	2	
90	35	Bottom plate B	1	-----				C3BA150-9035	C3BA200-9035	
91	36	Bottom plate C	1	-----				C3BA200-9036		
92	38	Stay-bolt	4	-----				C3BA150-9038	C3BA200-9038	
93	39	Collar A	2	-----				C3BA200-9039		
94	40	Collar B	4	-----				C3BA200-9040		
95	54	Bottom shaft	1	-----				C3BA150-9054	C3BA200-9054	
96	56	Key plate	2	-----				C2BA050-9056	C2BA050-9056	
97	58	Washer A	2	-----				C3BA200-9058		
98	66	Collar	4	-----				C3BA200-9066		
99	69	Name plate A with rivets	1	-----				C3BA150-9069	C3BA200-9069	
100	83	Socked bolt	4	-----				J1BE1-0801414		
101	85	Nut	8	-----				J1NA001-10200		
102	87	Spring washer	4	-----				J1WS011-20080		
103	88	Spring washer	8	-----				J1WS011-20200		
104	91	Tongued washer	4	-----				C3BA150-9091		
105	92	Bolt	4	-----				J1BA1-1003030		
106	41	Chain pin	1	C3BA030-9041	C3BA050-9041			-----		
107	49	Slotted nut	1	C2BA015-9049	C3BA020-9049			-----		
108	85	Split pin	1	J1PW01-020012	J1PW01-020014			-----		
	97	Split pin	1	-----				J1PW01-020014	-----	
109	800 (1)	Name plate B with rivets	(3)	C3BG030-9800	C3BG050-9800	C3BG075-9800	C3BG100-9800	C3BG150-9800	C3BG200-9800	
				1	1	1	1	1	2	
110	841	Load chain	1	K6QB071J00000	K6QB090J00000					
111	842	Hand chain	(3)	K7NA050J00000					-----	
				1					2	
112	931	Warning tag	(3)	L4BD008-9931					-----	
				1					2	
113	45	Chain stopper link	(3)	L5BA032-9045					-----	
				1					2	
114	45	Stopper assembly	(3)	-----			ER1ES1041			
							1			2
116	805	Name plate C	1	C3BA030-9805		-----				

Note: \* See trolley part lists.

(1) When ordering replacement part, use the symbol M3B in place of M3 for 2.5 t, 5 t and larger types, because there are no interchangeability.

(3) Each number in "Capacity (t)" columns is Parts per hoist.



# ASSEMBLY FOR OVERLOAD LIMITER

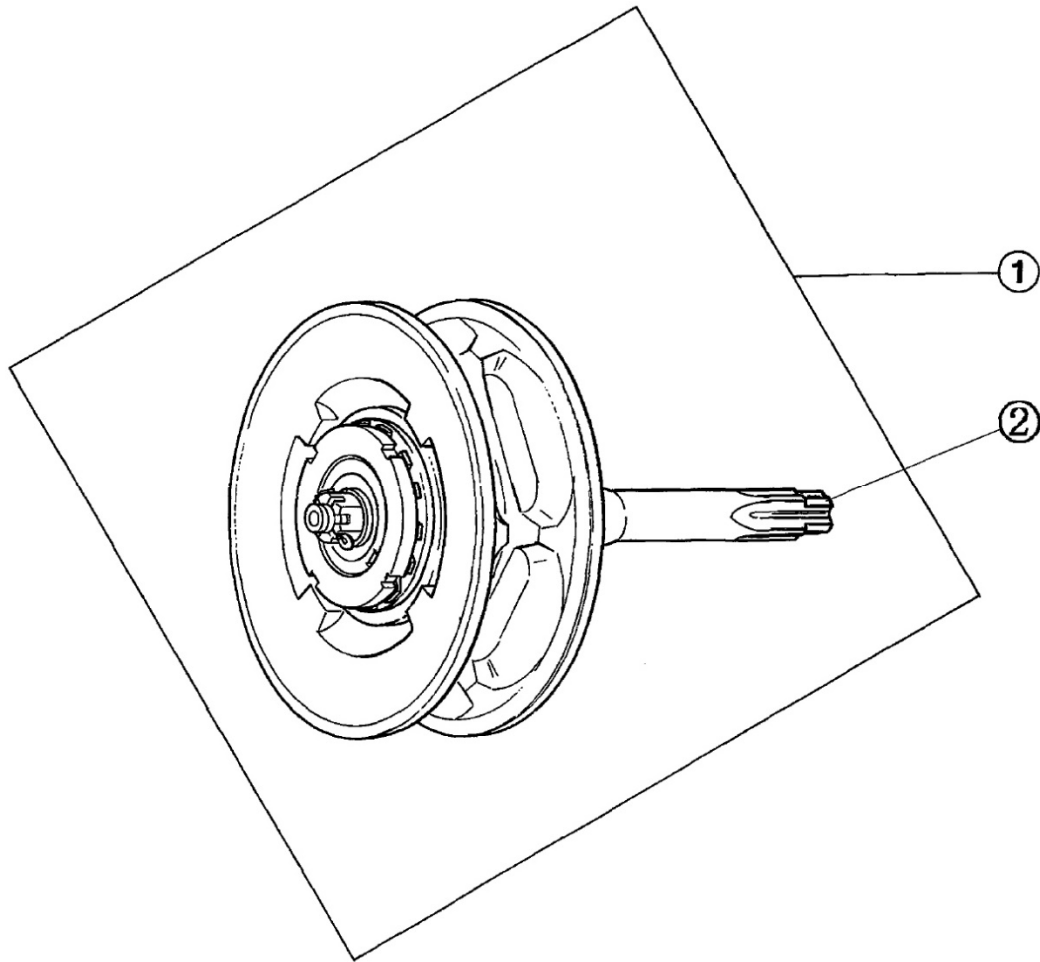


Fig. No.	Part No.	Part name	No. per hoist	Capacity (t)						
				0.5	1	1.5	3	2	2.5	5
1	1111	OLL Kit	1	C3YA005-1111	C3YA010-1111	C3YA015-1111	C3YA020-1111	C3YA025-1111	7.5	10
2	111	Pinion	1	C3YA005-9111	C3YA010-9111	C3YA015-9111	C3YA020-9111	C3YA025-9111	15	20

Note: When ordering replacement, part, use the symbol M3B in place of M3 for 2.5 t, 5 t and larger types, because there are no interchangeability  
 Remark: Every part quantity becomes twice of the number in the column "parts per hoist" for 20t hoist.

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