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CAUTION

- These inspections assume that the hoist is used under normal conditions. In case of use in special environments such as salt water, seawater, acidic, alkaline or explosive atmospheres, confirm with your dealer in advance.
- Ensure that competent people periodically conduct inspections and maintenance corresponding to instructions in this manual and the maintenance manual otherwise please confirm with your dealer.

To maintain continuous and satisfactory operation, a regular inspection procedure must be initiated to replace worn or damaged parts before they become unsafe.

1. Inspection Classification

Inspection intervals must be determined by the individual application and are based on the type of service to which the hoist will be subjected and the degree of exposure to wear, deterioration or malfunction of the critical components.

The type of service to which the hoist is subjected can be classified below.

- **Normal Service** – service that involves operation with randomly distributed loads within the rated load limit, or uniform loads less that 65% of rated load for not more than 15% of the time.
- **Heavy Service** – service that involves operation within the rated load limit which exceeds normal service.
- **Severe Service** – service that involves normal or heavy service with abnormal operating conditions.

The three general classifications are herein designated as DAILY, FREQUENT and PERIODIC, with respective intervals between inspections as defined below.

DAILY Inspection - visual examinations by the operator or other designated people before daily operation

FREQUENT Inspection – visual examinations by the operator or other designated people with intervals per the following criteria:

- Normal service – monthly
- Heavy service – weekly to monthly
- Severe service – daily to weekly

Records are not required.

PERIODIC Inspection – visual inspection by a designated people with intervals per the following criteria:

- Normal service – yearly
- Heavy service – semiannually – 6 months
- Severe service – quarterly – 3 months

Records are to be kept for continuing evaluation of the condition of the hoist.

2. Daily Inspection

Refer to “Owner’s(Operator’s) Manual & Safety Instructions.”

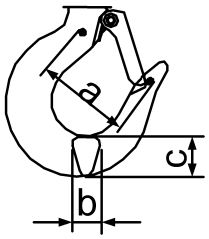
3. Frequent Inspection

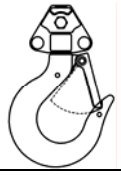
Evaluation and resolution of the results of the frequent inspections shall be made by a designated person so that the hoist is maintained in safe working condition.

⚠ WARNING Do not use components beyond the stated criteria or KITO-unauthorized ones.

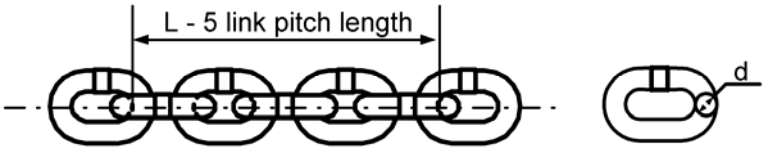
In addition to the daily inspections, perform the following checks.

Table 1 Frequent Inspection Methods and Criteria

Item	Method	Criteria	Action
3.1. Functions			
Put the hoist under a light load and check the following items of “Function - ……”			
Function – Lifting	Set the select lever to ‘UP’ and lift the load 20 cm to 30 cm.	Moving the lever forward and backward should make clicking sounds.	Repair or replace as necessary.
Function – Lowering	Set the select lever to ‘DN’ and lower the load 20 cm to 30 cm.	Moving the lever only backward, not forward, should make clicking sounds.	Repair or replace as necessary.
Function – Abnormal Sounds	Auditory	Should have no damped clicking or irregular sounds.	Repair or replace as necessary.
Function – Pull	Function	Should not be extremely heavy.	Repair or replace as necessary.
Function – Braking	Function	Should not slip.	Repair or replace as necessary.
3.2. Hooks			
Hooks – Stretch	Measure 	Record the following sizes, a, b and c at the time of purchase. <table><tr><th>Measured when new (mm)</th><th>Discard limit</th></tr><tr><td>a: b: c:</td><td>Over the measured 5 % or more reduction 5 % or more reduction</td></tr></table>	Replace
Hooks – Abrasion		<table><tr><th>Capacity (tonnes)</th><th>a* (mm)</th><th colspan="2">b (mm)</th><th colspan="2">c(mm)</th></tr><tr><th></th><th>Nominal</th><th>Standard</th><th>Discard</th><th>Standard</th><th>Discard</th></tr><tr><td>0.25</td><td>39</td><td>11</td><td>10.5</td><td>12.5</td><td>11.9</td></tr><tr><td>0.5</td><td>45.5</td><td>12</td><td>11.4</td><td>15</td><td>14.3</td></tr></table> *These values are nominal since the dimensions are not controlled to a tolerance. The measurements at the time of purchase become the reference ones. Subsequent measurements are compared to these references to make determinations about hook deformation/strectch.	Replace

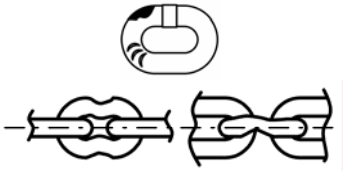
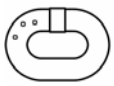
Item	Method	Criteria	Action
Hooks – Deformation, Scars	Visual 	- Should not be significantly twisted or deformed. - The shank portions of the hook should be evenly worn. - Should have no deep scars. - Should have no loose or missing rivets, bolts or nuts. - Should have no welding sparks.	Replace
Hooks – Swivel	Visual, Function 	The hook should rotate.	Replace
Hooks – Hook Latches	Visual, Function 	- Should be held in place on the tip of the hook. - Should move smoothly. **⚠ WARNING** Do not use the hook with the latch missing.	Replace the hook latch

3.3. Load Chain

Load Chain – Wear	Measure 		Replace

Capacity (tonnes)	L dimension (mm)		d dimension (mm)	
	Standard	Discard	Standard	Discard
0.25	45.5	46.8	3.2	2.9
0.5	60.5	62.3	4.3	3.9

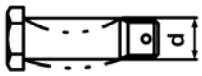
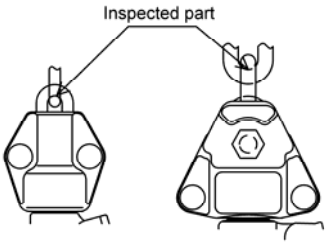
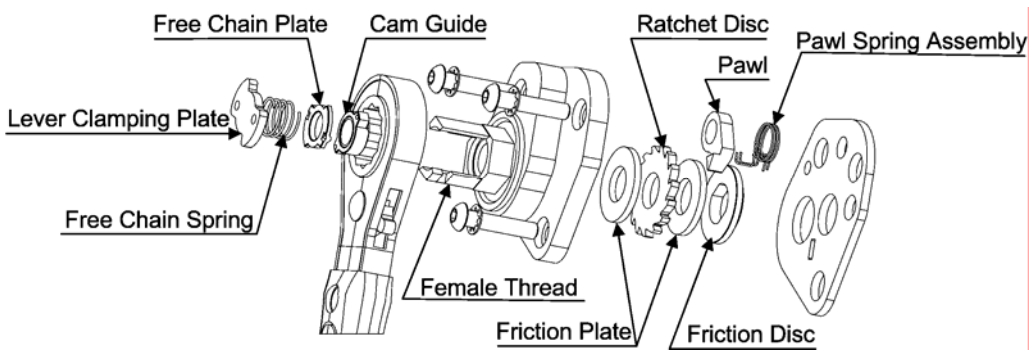
Notice: If wear on the load chain is found, make sure to check that on the load sheave.

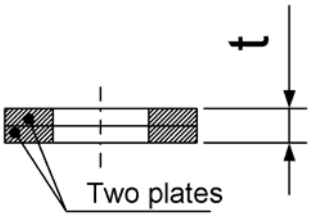
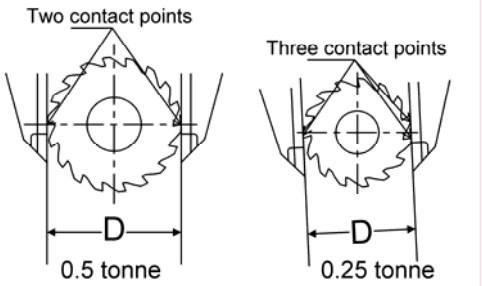
Load Chain – Rust	Visual	Should be free of significant rust. **⚠ WARNING** Make sure to lubricate the load chain frequently.	Replace
Load Chain – Deformation, Scars	Visual 	- Should be free of deformation (such as twist.) - Should be free of deep scars or dents.	Replace
Load Chain – Welding Sparks	Visual 	Should be free of welding sparks. **⚠ WARNING** Make sure to avoid welding sparks on the hoist.	Replace

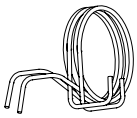
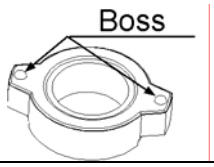
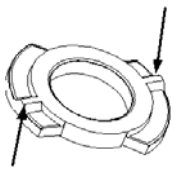
4. Periodic Inspection

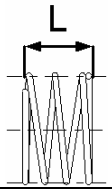
In addition to the frequent inspections, perform the following checks.

Table 2 Periodic Inspection Methods and Criteria

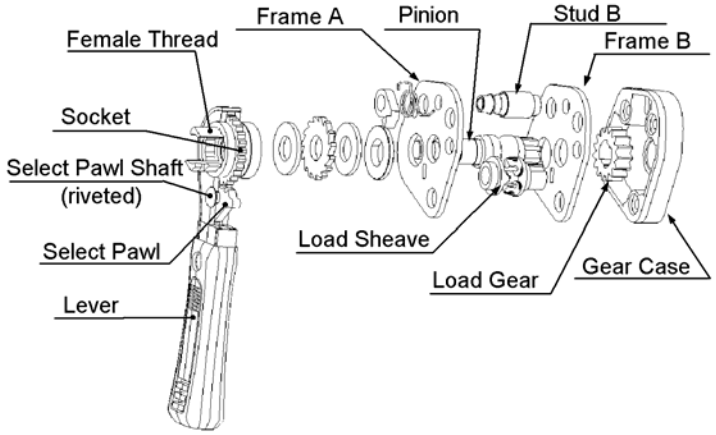
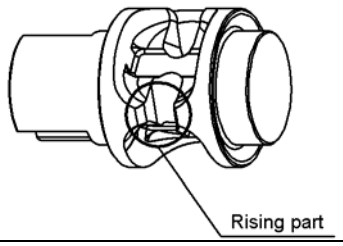
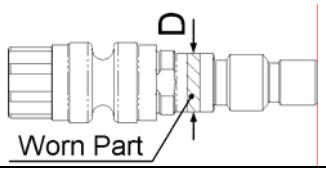
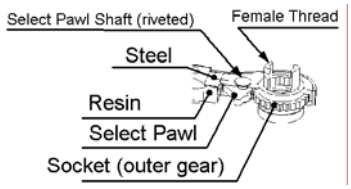
<table>
<tr><th>Item</th><th>Method</th><th>Criteria</th><th>Action</th></tr>
<tr><td colspan="4">4.1. Chain Pin
Chain pin for 0.5 tonne.</td></tr>
<tr><td>Chain Pin – Deformation</td><td rowspan="2">Visual, Measure
  </td><td>- Significantly deformed pin should be discarded.
- Should be free of scars or deformation on the thread.
<table><tr><th rowspan="2">Capacity (tonnes)</th><th colspan="2">d dimension (mm)</th></tr><tr><th>Standard</th><th>Discard</th></tr><tr><td>0.5</td><td>5.0</td><td>4.5</td></tr></table></td><td>Replace.</td></tr>
<tr><td>Chain Pin – Wear</td><td>Replace.</td></tr>
<tr><td>Chain Pin – Rust</td><td>Visual</td><td>Should be free of significant rust.</td><td>Replace.</td></tr>
<tr><td>Yoke – Hole Deformation</td><td>Measure
Check the diameters of the top pin and chain pin hole.
  </td><td><table><tr><th rowspan="3">Capacity (tonnes)</th><th colspan="4">Diameter (mm) for</th></tr><tr><th colspan="2">Chain pin</th><th colspan="2">Top pin</th></tr><tr><th>Standard</th><th>Discard</th><th>Standard</th><th>Discard</th></tr><tr><td>0.25</td><td></td><td></td><td>8.3</td><td>8.8</td></tr><tr><td>0.5</td><td>5.2</td><td>5.7</td><td>10.3</td><td>10.8</td></tr></table></td><td>Replace the hook set.</td></tr>
<tr><td>Load Chain – Wear</td><td>Measure
  </td><td>- Should be free of significant wear on the linking part of the first link at the bottom hook and be free of deformation and bends.
- Refer to dimensions of “Load Chain –“ in 3 Frequent Inspection</td><td>Replace the load chain.</td></tr>
<tr><td colspan="4">4.2. Braking and Free Chaining System</td></tr>
<tr><td>Braking & Free Chaining System – Components</td><td colspan="3">  </td></tr>
</table>

<table>
<tr><th>Item</th><th>Method</th><th>Criteria</th><th>Action</th></tr>
<tr><td>Braking System – Friction Surface</td><td>Visual</td><td>The surfaces of the friction disc, friction plate, ratchet disc and female thread should be free of scars, gouges or wear.</td><td>Replace</td></tr>
<tr><td>Braking System – Friction Plate</td><td>Measure
 
</td><td>- Should be free of scars or cracks.
<table>
<tr><th rowspan="2">Capacity (tonnes)</th><th colspan="2">t: thickness of 2 friction plates (mm)</th></tr>
<tr><th>Standard</th><th>Discard</th></tr>
<tr><td>All</td><td>5.0</td><td>4.5</td></tr>
</table></td><td>Replace both plates.</td></tr>
<tr><td>Braking System – Ratchet Disc</td><td>Measure
 

Measure D dimension diffrently for the number of cogs.</td><td><table>
<tr><th rowspan="2">Capacity (tonnes)</th><th colspan="2">D dimension (mm)</th></tr>
<tr><th>Standard</th><th>Discard</th></tr>
<tr><td>0.25</td><td>33.8</td><td>32.4</td></tr>
<tr><td>0.5</td><td>42</td><td>40.5</td></tr>
</table></td><td>Replace</td></tr>
<tr><td>Braking System – Pawl</td><td>Visual
 
</td><td>As shown in the left picture, the side of the pawl should not be worn.</td><td>Replace</td></tr>
<tr><td>Braking System – Pawl Spring Assembly</td><td>Visual
  </td><td>Should not be deformed or scarred.</td><td>Replace</td></tr>
<tr><td>Free Chaining System – Cam Guide</td><td>Visual
 
</td><td>Should not be worn on the bosses as shown in the left picture, and not be worn or damaged on the other parts.</td><td>Replace</td></tr>
<tr><td>Free Chaining System – Free Chain Plate</td><td>Visual
  </td><td>Should not be worn on the rising parts as shown in the left picture.</td><td>Replace</td></tr>
<tr><td>Free Chaining System – Lever Clamping Plate</td><td>Visual</td><td>- Should be free of bends.
- Should not be worn or scarred on the holes for the socket head bolts</td><td>Replace</td></tr>
</table>

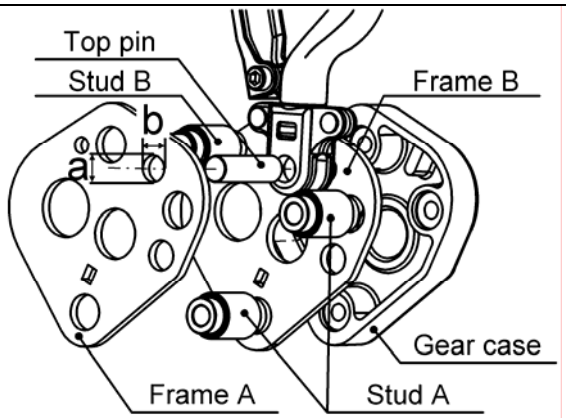
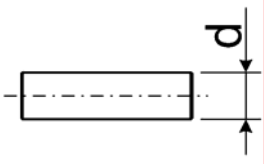
<table>
<tr><th>Item</th><th>Method</th><th>Criteria</th><th>Action</th></tr>
<tr><td>Free Chaining System –
Free Chain Spring</td><td>Measure
 
</td><td><table>
<tr><td rowspan="2">Capacity (tonnes)</td><td colspan="2">L dimension (mm)</td></tr>
<tr><td>Standard</td><td>Discard</td></tr>
<tr><td>ALL</td><td>10.3</td><td>9.3</td></tr>
</table></td><td>Replace</td></tr>
<tr><td>Braking System – Rust</td><td>Visual</td><td>All parts should be free of rust.</td><td>Replace</td></tr>
</table>

4.3. Lifting System

<table>
<tr><td>Lifting system– Components</td><td colspan="3"> 
</td></tr>
<tr><td>Lifting system – Load Sheave</td><td>Visual
 
</td><td>Should be free of wear in the pockets or scars on the rising parts.</td><td>Replace</td></tr>
<tr><td>Lifting system – Load Gear Cogs</td><td>Visual</td><td>Should not be chipped, unevenly worn or scarred.</td><td>Replace</td></tr>
<tr><td>Lifting system – Pinion Deformation</td><td>Visual</td><td>A deformed pinion should be discarded.</td><td>Replace</td></tr>
<tr><td>Lifting system – Pinion Wear in Contact with Ratchet Disc</td><td>Measure
 
</td><td><table>
<tr><td rowspan="2">Capacity (tonnes)</td><td colspan="2">D dimension (mm)</td></tr>
<tr><td>Standard</td><td>Discard</td></tr>
<tr><td>0.25</td><td>13.5</td><td>12.8</td></tr>
<tr><td>0.5</td><td>17</td><td>16.2</td></tr>
</table></td><td>Replace</td></tr>
<tr><td>Lifting system – Pinion Cogs</td><td>Visual</td><td>A deformed pinion should be discarded.</td><td>Replace</td></tr>
<tr><td>Lifting system – Lever</td><td>Visual
 
</td><td>- Should be free of loose caulking on rivet.
- Should be free of deformation or damage on bosses of female thread.
- Should be free of bends or cracks on steel.
- Should be free of missing, cracks or deformation on resin.
- Should be free of looseness which results in missing contact between select pawl and socket outer gear.</td><td>Replace</td></tr>
</table>

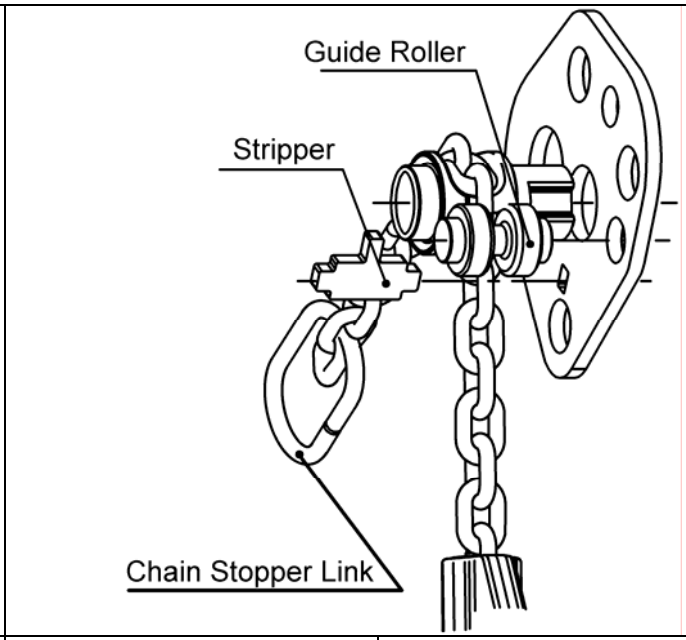
Item	Method	Criteria	Action
Lifting system – Socket	Visual	Should be free of wear or deformation which results in missing contact.	Replace
Lifting system – Select Lever Cogs	Visual	Should be free of wear or deformation which results in missing contact.	Replace
Lifting system – Select Lever Operation	Visual	- Should be moved smoothly and shift the operation mode securely. - After shifting, should be free of missing or idle contact. - Should hold nutural position securely.	Replace

4.4. Body

Body – Components			
Body – Frame A, B Stud A, B Top Pin Hole	Visual	- Should be free of major deformation or significant scars. - The difference in size between a and b in the above picture should be 0.5 mm or less. - The bearing holes should not be deformed.	Replace.
Body – Gear Case Brake Cover	Visual	- Should be free of major deformation or significant scars. - Should be free of deformed or loose holes for studs.	Replace.
Body – Top Pin	Measure 	Should be free of significant deformation. Capacity (tonnes) / d dimension (mm): Standard / Discard 0.25 / 8 / 7.6 0.5 / 10 / 9.5	Replace.

Item	Method	Criteria	Action

4.5. Others

Others – Components			
Others – Stripper	Visual	Should be free of cracks or deformation on the tip.	Replace.
Others – Chain Stopper Link	Visual	- Should not be open or significantly deformed.	Replace a set of load chain.
Others – Guide Roller	Visual	Should be free of damage or significant deformation.	Replace.

4.6. Preoperational Checks

Before reuse, reassemble properly the hoist in accordance with the maintenance manual and perform the following the checks.

Checks under No Load – Lifting	Function, Auditory Set the select lever to 'UP' and make lifting operation with the load-side chain pulled slightly.	- The lever should be operated smoothly. - Moving the lever forward and backward should make clicking sounds.	Repair or replace as necessary.
Checks under No Load – Lowering	Function, Auditory Set the select lever to 'DN' and make lowering operation with the load-side chain pulled slightly.	- The lever should be operated smoothly. - Moving the lever only backward, not forward, should make clicking sounds.	Repair or replace as necessary.
Checks under No Load – Free Chaining	Function Set the select lever to 'N' and turn the chain knob counterclockwise with the no-load-side chain pulled lightly for the free chaining mode to adjust the chain length.	- The chain should be pulled smoothly. - The free chain knob should be easily pulled or reset.	Repair or replace as necessary.
Checks under the rated load	Function Lift and lower the rated load from 20 to 30 cm. Check the functions in accordance with "Function - ……" of 3 Frequent Inspection.	See "Function - ……" of 3 Frequent Inspection.	See "Function - ……" of 3 Frequent Inspection.