1) SAFE OPERATING PRACTICES

Improper operation of the chain hoist will possibly cause a dangerous situation such as falling of lifted loads and so on. Carefully read this manual for proper operation before setting up, installation, operation, maintenance and inspection of the chain hoist.

Do not begin to operate it before you have familiar with its knowledge, safety information and all the special cautions.

The cautions in handling the unit are classified into two levels in this manual;

- **WARNING** This symbol is used to indicate that a death or serious injuries will be caused in all probability to the user or persons around when the products are improperly used.
- **CAUTION** This symbol is used to indicate that damage may be caused to the user or persons around or only material loss will occur when the products are improperly used.

Even the matters indicated “CAUTION” may bring a serious result depending on the situation. Strictly observe both the notices as they contain very important matters.

**Examples of the symbol:**

- **Mark** indicates that there are warning/caution matters in a sketch. In a sketch a concrete warning (“Caution for falling of load” in case of the symbol on the left) is described.
- **Mark** indicates actions are prohibited. In a sketch or a concrete caution warning is described.
- **Mark** indicates that any action will be required or directed. In a sketch a concrete caution warning (“General notices for operation” in case of the symbol on the left) is described.

The manual must be kept in place where the operator can read it whenever he needs.

1. General

**WARNING**

- The unit should be operated only by those who are familiar with the manual and contents of the instruction label.
- Do not lift a load which exceed the rated load.
- Do not stay under a suspended load and do not move a load over persons.
- Do not use a chain hoist which was damaged or causes abnormal sound and/or vibration.
- Do not use a chain hoist with twisted, kinked damaged, severely worn, deformed, or elongated load chains.
- Never make modifications to the chain hoist and its accessories.

2. Installation and Setting-up

- Inspection before operation and periodic inspection must be by all means carried out.
- The installation work should be performed only by the specialist contractor or experienced technician.
- The chain hoist should not be installed in poor places distanced from the provision where it is, for example, exposed to rain, water or other undesirable chemicals.

**CAUTION**

- Attach a stopper to the end of the traverse and travel rails.
- Make sure that a location on which the chain hoist is installed has a sufficient strength.
- Suspension the chain hoist in a manner that it can freely swing about.

3. Operation and Handling

**WARNING**

- Do not get on a suspended load.
- Do not leave a suspended load unattended.
- Do not allow your attention to be diverted from operating the chain hoist.
- Do not use the chain hoist for the oblique pulling.
- Do not carry out turn-over of a suspended load.
- Do not use the chain hoist for the earth lifting(For example, hooking fixed objects such as houses or structures).
- Turnover should be done by means of a device specialized in that purpose or only by a skilled person.
- Pause before operation that the hand chain properly function. Do not operate the chain hoist when the hand chain is in disorder.
- Do not operate the electric welding on a suspended load.
- Do not allow the load chain to be used as a ground (earth) for the welding machine.
- Do not allow the load chain to be touched by a live welding electrode.
- Do not operate the chain hoist in such a manner that a load and/or its hand chain is suspended from any structure.

**CAUTION**

- Do not use the chain hoist with a damaged safety latch of the hook.
- Do not have the chain hoist body or trolley hit against opponents or other structures.
- Do not use the chain hoist with the nameplate and label attached to the body removed or left unclear.
- Operate the chain hoist only by means of a manual pulling force (of the operator).
- Do not throw away or drag the chain hoist.
- Stop lifting once when the load chain becomes tense to check safety.
- In lifting a load with two chain hoists, select a chain hoist of which rated load exceeds the load to be lifted. Always keep the hoist body and the load chain soot that dust, sands and the like will not be deposited on them.
- Make sure that the range of lift of the chain hoist is sufficient for the intended work.
- Always lubricate the load chain before use.
- Pay attention that the load chain should not be over-lowered.

4. Maintenance, Inspection and Modification

**WARNING**

- Never use parts other than genuine ones made by us.
- Never do shortening or lengthening of the load chain.
- Do not move load chains made by other manufacturers than us.
- Our load chain is different from other manufacturers’ chains in terms of strength, hardness, elongation and dimensions.
- You are therefore strictly requested not to apply any other manufacturers’ chains to our chain hoist.
- Only specialists authorized by the employer may carry out the maintenance, inspection or repair.
- Carry out the maintenance, inspection or repair as instructed.
- When any disorder is found in the maintenance or inspection, immediately make repair before re-operating the chain hoist.

**CAUTION**

- Whenever carrying out the maintenance, inspection or repair, prepare a warning indication of “Under working” (“Under Inspection”, etc.).

Note:

- Inspections requiring dismantling and assembling of the unit should be carried out by dealers of our products.

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**PROPER HANDLING AND CAUTIONS**

**Slinging method**

**WARNING**

- Inspect all the tools to be used on the day before use.
- Wrong slinging may cause quite dangerous situations such as fallen loads etc.
- Avoid slinging methods as shown below, with all very dangerous.

1) How to apply a load to the hook

2) Never wind a load chain directly around a load regardless of its weight. It is quite dangerous, since the load chain may be broken.

**Fig.1**

- It is dangerous to wind the load chain around the hook of a chain etc., because the strength of the chain will be reduced to 1/3 to 1/5 of the normal value.

**Fig.2**

- The load chain twisted should not be loaded, as the bearing capacity of the chain will be reduced in a twisted state. Be sure to bend the load chain into straight before applying a load.

**Fig.3**

- Do not suspend the top hook on a single wire rope. The hook cover may be worn out due to the movement of the wire rope being detached.

**CAUTIONS DURING OPERATION**

**WARNING**

- Never lift a load beyond the rated load of the unit (over-loading).
- Operating the large crane in conditions of overloading or earth-lifting will cause a dangerous situation, such as damage of the chain hoist and the like.
- Do not perform over-lifting and over-lowering.
- Do not give a shock to the chain hoist.
- Do not get on a load to be lifted and do not stay under a load lifted.
- Do not use a chain hoist which is not in order.
- Do not use the chain hoist in the incorrect manners as shown below, which are quite dangerous.

5) Do not lift on a load to be lifted and do not stay under a load lifted. It is prohibited by law to get a load lifted by the chain hoist.

**Fig.4**

- Do not apply an overload to the chain hoist, that is, do not apply a load exceeding the number of times (rated load) indicated on the nameplate. The chain hoist is designed to be capable of lifting the rated load only.
- The chain hoist is designed to be capable of lifting the rated load only. It means that the load exceed the rated load (over-loaded) on the chain hoist is in a serious disorder when the hand chain has to be pulled with force more than the said value.
- Never continue to use the chain hoist in such conditions where the hand chain cannot be easily pulled.

**Fig.5**

- Do not give an impact to the chain hoist.
- Sever accident may happen, if a load suddenly falls regardless of the height and gives a shock to the chain hoist.

**Fig.6**

- Do not perform over-winding, that is, over-lifting or over-lowering.
- Check whether the chain hoist is overwound or not when the hand chain cannot be easily pulled during operation.

**Fig.7**

- Do not apply a bending force to the hook of the chain hoist. Such bending force as shown in Fig.6 are very dangerous and should be absolutely avoided.
- The hook clearly deformed as shown in Fig.9 should be scrapped and exchanged with a new and genuine one.

**Fig.8**

- Carry out the routine inspection before use of the chain hoist. Refer to the daily inspection and Fig.10 in the next page.

**Fig.9**

- Notice about the manipulation of the hand chain: It should be avoided that the hand chain will be abruptly jammed when it is manipulated with or without a load or a load is lifted by means of another power. Otherwise, the hand chain will be partially deformed or damaged, or the pinion shaft will be eventually broken. In an extreme case, such a dangerous accident as falling down of the suspended load can happen.

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**II MAINTENANCE AND INSPECTION**

**DAILY INSPECTION**

**WARNING**

- For daily operation, be sure to carry out the following check prior to operation.
- In case of any abnormality, stop operating the hoisting unit and take proper counter-measure by a specialist possessing enough knowledge on the unit or by a dealer of our products.
- Do not make continuous running under abnormal condition as it is very dangerous and might lead to an severe accident.
PERIODIC INSPECTION

In case of trouble and/or any abnormality, stop operating the hoisting unit and take proper counter-measures by a specialist possessing enough knowledge on the unit or by a dealer of our products. It may happen that the load chain and the hooks fail in a dangerous state even if they show no remarkable changes in their function. It is therefore indispensable to make a periodic measuring check based on "the Methods for Maintenance and Inspection" as stated below. The periodic inspection should be normally made once a month. Exchange damaged or deformed parts with new ones.

(V) CRITERIA FOR USING AND CHECKING CHAIN HOISTS (BASED ON JIS B 8802)

WARNING

(1) Make sure that the class of the chain hoist is fit for conditions of its use.
(2) The chain hoist should not be used to lift a load exceeding the rated load except for testing purpose.
(3) For our chain hoist, never use load chains made by any other manufacturers than us.
(4) Do not use the chain hoist of which range of load is not sufficient.
(5) Do not use a bottom hook which is equipped with a safety latch of which has no safety effect.
(6) Do not use chain block on which chain stoppers are missing.
(7) Do not use and check the load chain directly around a folded load.
(8) Do not hang a load on the tip of the hook.
(9) Do not quickly pull the hand chain on lifting and lowering operation.
(10) Do not perform over-lifting and over-lowering.
(11) Do not walk below a suspended load.
(12) Avoid to pull a load in oblique direction.
(13) Avoid an operation of so-called earth-lifting.
(14) Before operation, check the load chain for twisting or tangling. The chain hoist can be used only after such twisting and tangling are corrected.
(15) When the chain hoist is used in special conditions such as lower or higher temperatures, or corrosive atmosphere, etc., consult us before use.
(16) The chain hoist should not be modified by the users. If any modification is required, it should be done by us.
(17) Do not leave the chain hoist for many hours with a load suspended.
(18) Make a routine inspection before use.
(19) Immediately stop operating the chain hoist when an abnormally big pulling force for the hand chain is required.
(20) Do not drop the chain hoist from a higher place.
(21) Apply a lubricant to the load chain before use.
(22) Use the chain hoist, applying lubricants to its gears, bearings and points which are liable to wear.
(23) The chain hoist should be applied with antitrust to be kept for a long period.
(24) Consult us whenever special usage of the chain hoist is required.

2. Criteria for check

(1) Use the chain hoist by checking it daily and periodically.
(2) Refer to Table 1 (which gives check items, check methods and check criteria to be used in the daily check. However, items other than those specified should be also checked, when the chain hoist is frequently used, or in special cases.
(3) The periodic inspection should be made in accordance with the table 1 (9) When the chain hoist is repaired, check it on periodic check items given in Table 1 (9) after its repair, and make sure that it works in a normal state. Use spare parts only made by us.
(4) Refer to checking before use.
(5) Periodic check is usually made in intervals of six months or one year depending on the frequency of use.
(6) Check the items with the mark "C" in Table 1.

TABLE 1 CRITERA FOR CHECK

<table>
<thead>
<tr>
<th>Type of check</th>
<th>Periodic check</th>
<th>Check items</th>
<th>Check method</th>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARKING AND THE LIKE</td>
<td></td>
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<tr>
<td>MARKING (nameplate)</td>
<td>Visual</td>
<td>Present of marking/nameplate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade of the load chain</td>
<td>Visual</td>
<td>Check for the grade of the load chain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FUNCTION</td>
<td></td>
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<td></td>
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<tr>
<td>Function</td>
<td>Visual</td>
<td>Check for the function in the periodic inspection should be performed after checking the chain hoist body etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOOK</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Opening of hook</td>
<td>Visual</td>
<td>Check visually in daily check and by measurement in periodic check</td>
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<td></td>
</tr>
<tr>
<td>Wear</td>
<td>Visual</td>
<td>Free from severe wear and corrosion</td>
<td></td>
<td></td>
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<tr>
<td>Hooks and other harmful defects</td>
<td>Visual</td>
<td>Free from cracks and other harmful defects</td>
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<td></td>
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<tr>
<td>Latch</td>
<td>Visual</td>
<td>Free from severe rot and operates properly</td>
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<td></td>
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<td>LOAD CHAIN</td>
<td></td>
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<tr>
<td>Pitch elongation</td>
<td>Visual</td>
<td>Don't use load chains with pitch elongation of 2% minimum (Prepare a list of standard dimensions before use.)</td>
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<tr>
<td>Wear</td>
<td>Visual</td>
<td>Don't use load chains which are worn in diameter by 10% or more.</td>
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<td></td>
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<tr>
<td>Hooks</td>
<td>Visual</td>
<td>Free from deformation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hooks and other harmful defects</td>
<td>Visual</td>
<td>Free from cracks and other harmful defects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrosion</td>
<td>Visual</td>
<td>Free from severe rot</td>
<td></td>
<td></td>
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<tr>
<td>HAND CHAIN</td>
<td></td>
<td></td>
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<tr>
<td>Hand chain</td>
<td>Visual or by measurement</td>
<td>Free from serious deformation and pitch elongation</td>
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<tr>
<td>BODY</td>
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<td></td>
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<tr>
<td>Frame</td>
<td>Visual</td>
<td>Free from deformation and severe corrosion</td>
<td></td>
<td></td>
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<tr>
<td>Gear case</td>
<td>Visual</td>
<td>Free from severe deformation and corrosion</td>
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<td>Geart</td>
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<tr>
<td>Load sheave and idle sheave</td>
<td>Visual</td>
<td>Free from severe wear and deformation</td>
<td></td>
<td></td>
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<tr>
<td>Chain stopper pin</td>
<td>Visual</td>
<td>Check visually after deformation and loose snap ring</td>
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<td></td>
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<tr>
<td>BELT AND NUTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bolts, nuts, split pins, snap rings, etc.</td>
<td>Visual</td>
<td>(1) In daily check, the presence of nuts, split pins, etc., which can be seen from outside should be checked, and nuts, gears, bearings, etc., should not get loose. (2) Periodic check, observance of the said parts should be checked internally and externally.</td>
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<tr>
<td>BRAKE</td>
<td></td>
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<tr>
<td>Wear of Brake linings</td>
<td>By measurement</td>
<td>Free from severe wear(based on the maker's instructions)</td>
<td></td>
<td></td>
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<tr>
<td>Brake screws</td>
<td>Visual or by measurement</td>
<td>Free from severe wear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ratchet and ratchet wheel</td>
<td>Visual or by measurement</td>
<td>Free from severe wear</td>
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<tr>
<td>OTHERS</td>
<td></td>
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<td></td>
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<tr>
<td>Others</td>
<td>Visual or by measurement</td>
<td>Free from other harmful defects in operation</td>
<td></td>
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</tr>
</tbody>
</table>

INSPCTION CERTIFICATE

The goods have passed rigid inspection by us ahead of delivery in accordance with our standard in terms of test load and all other respects in good and satisfactory condition.

INSPECTOR T. _INSPECTOR_NAME_