



Owner's (Operator's) Manual & Safety Instructions Manually Lever Operated Chain Hoist Model LX1B

Issued January 2010. Revised August,2012(revision 03)

WARNING

This equipment must not be installed, operated or maintained by any person who has not read and understood all the contents of this manual. Failure to read and comply with the contents of this manual can result in serious bodily harm or death, and/or property damage.

Fill in the following product information for identification and future reference to avoid referring to the wrong manual for information or instructions on installation, operation, inspection, maintenance, or parts.

Model Code :

Serial Number :

Date of Purchase :

Dealer :

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1. Important Information and Warnings

1.1. Regarding This Instructions Manual

This manually lever-operated chain hoist model LX is designed to lift and lower a load by using manual force, and hold it by using the braking device under normal working conditions, not intended to transport a person.

KITO will not be held liable for any malfunction, lack of performance or accident if the product is being used in conjunction with any other equipment. If the product is to be used for unintended purposes, please confirm with your dealer in advance.

The following symbols are used in this manual to identify the degree or level of hazard seriousness.

 **DANGER** This symbol indicates an imminently hazardous situation which, if not avoided, **will** result in **death or serious injury**, and property damage.

 **WARNING** This symbol indicates a potentially hazardous situation which, if not avoided, **could** result in **death or serious injury**, and property damage.

 **CAUTION** This symbol indicates a potentially hazardous situation which, if not avoided, **may** result in **minor or moderate injury**, or property damage.

Even the caution situations may result in serious injury or death depending on conditions. Therefore, notice should be taken whenever encountering them.

Always keep this manual in a convenient place for operator's reference.

1.2. Prohibited Practices

1.2.1. General

Improper usage or negligent maintenance of the hoist may result in dangerous situations arising such as a lifted load dropping. Before installing, operating or maintaining, read and comply with both this manual for the safety and operation instructions, and notes for all the equipments.

⚠ DANGER



- Do not use the hoist to support, lift or transport people.
- Do not go under a lifted load or its path, and do not move the lifted load over people.
- Do not lift more than the rated load.
- Do not modify the product or its accessories.
- Do not disassemble the bottom yoke for the hoist with the product code, LX003, as shown in Table 2-1.

⚠ CAUTION

- Before moving the load, warn all people in the vicinity.
- Do not operate the hoist unless the contents of this operating manual and the warning labels are fully understood.

1.2.2. Prior to Operation

⚠ CAUTION

- This manual is intended for the operator who will use the hoist. Prior to operation, all of the safety and operating instructions must be fully understood.
- Before operating the hoist, secure the workplace as follows:
 - Ensure to arrange the workplace to work smoothly.
 - Ensure to keep a good view to monitor the operation, otherwise arrange watch personnel.
- Before lifting a load, ensure that the hoist is out of the free chaining mode
- Be sure to wear the proper clothing and personal protective equipment when using and operating the product.

⚠ WARNING

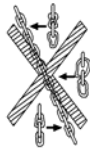
- Do not use a deformed or scarred hook.
- Replace components with new ones authorized by KITO.

⚠ CAUTION

- Make sure that the nameplate is readable.
- Before operation, make sure to perform all inspections given in "5.1 Daily Inspection."
- Use a proper hoist for your purpose, capacity and lift.
- Ensure to check that the hook latches are not deformed or scarred, and are moving smoothly.
- Ensure to check that the brake and free chaining functions properly work.
- Ensure to check that the load chain is well-lubricated.

1.2.3. Operation

⚠ WARNING



- Do not use the hoist with deformed or scarred load chain.



- Do not use the load chain as a sling.



- Do not use the hoist as a fulcrum.



- Do not support a load on the tip of the hook.



- Do not impede the chain over an edge of e.g. a steel plate.



- Do not perform welding or cutting operation on the load being suspended.



- Do not use the hoist by stepping on the lever.



- Do not extend the lever by attaching a pipe to it.

- Ensure to avoid welding sparks on the hoist and load chain.
- Do not swing a lifted load.
- Do not use the load chain as an earth for welding.
- Do not lift excessively until the bottom yoke comes into contact with the hoist body.
- Do not lower excessively until the chain stopper comes into contact with the hoist body.
- Do not use a damaged hoist or one having abnormal sounds.
- Do not use a hoist with the loose lever grip.
- Do not leave a lifted load unattended for a long time.
- Do not pull or impede the no-load-side chain under a load.
- Do not apply a load to the stopper link or the load chain on the link side

⚠ CAUTION

- Ensure to place a load properly on the middle of the hook saddle.
- Before lifting, ensure to eliminate load chain slack to avoid a shock load.
- Do not hurt your hands between the top hook and the lever while operating the lever.
- There are risks of overheating of the braking system during prolonged lowering of loads. If you are considering of the use under such condition, consult KITO.
- When any abnormality is observed during the operation, stop the operation immediately, indicate "FAILURE" and contact with the maintenance engineers.

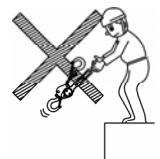
1.2.4. After operation

⚠ WARNING

- Do not drag or throw the hoist when carrying it.

⚠ CAUTION

- After operating, ensure to put the load down securely to avoid dropping it.



1.2.5. Inspection and Maintenance

⚠ CAUTION

- Ensure that competent people periodically conduct inspections and maintenance corresponding to "5 Inspection" and "6 Maintenance", otherwise please confirm with your dealer.
- Indicate "CHECKING" when performing the inspection.
- Wear protection equipment such as protection goggles and gloves depending on the work contents.
- Pay attention to work method, work procedure and work posture.
- Wear helmet and safety belt when carrying the high lift work.
- Remove the oil or grease attached to the product or spilt on the floor.
- Keep the work area clean when disassembling the product.

⚠ WARNING

- Do not extend or weld the load chain.
- Always use KITO original grade V load chains marked "KITO." KITO shall not be responsible for any claims or damage arising from the use of other chains.

1.2.6. Others

⚠ CAUTION

- In case of use in special environments such as salt water, seawater, acidic, alkaline or explosive atmospheres, confirm with your dealer in advance.
- When not in use of the lever operated chain hoist, store it at dry place where appropriate for the weight and size.

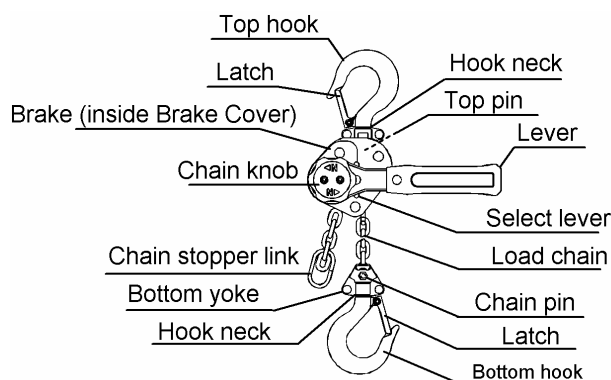
⚠ WARNING

- Do not use the hoist which is out of order or under repair.
- Do not use the hoist with warning labels or tags missing.

2. Technical Information

2.1. Specifications

2.1.1. Schematics



Note: Nameplate on back side

2.1.2. Operating Conditions and Environment

Temperature Range: -40° to +60°C (-40° to +140°F)

Humidity: 100% or less, this is not underwater device.

Material: No special materials such as sparkless and asbestos.

Table 2-1 Hoist Specifications

Capacity (tonnes)	Product Code	Standard Lift (m)	Pull to Lift Rated Load (N)(kgf)	Load Chain Diameter x Pitch (mm)	Chain Fall Lines	Test Load (tonnes)	Net Weight (kg)
0.25	LX003	1.0	200(20)	3.2 × 9.0	1	0.38	1.6
0.5	LX005	1.2	310(31)	4.3 × 12.0	1	0.75	2.6

- This device was tested on the required static and dynamic test provided on the European standard EN13157.

3. Mounting

⚠ WARNING

Avoid the following when mounting the hoist.

NEVER

Failure to comply with these instructions may result in death or severe injury.

- Ensure that only trained or competent persons install the hoist.
- Do not install the hoist within the range of movement of other devices (equipment), such as a trolley.

Comply with the following instructions when installing the hoist.

ALWAYS

Failure to comply with these instructions may result in death or severe injury.

- The safety factor of the lever hoist is 4:1. The hoist may lift and hold a load more than the rated load check that the structure for mounting the hoist has sufficient strength.
- Fix the Top Hook to the structure securely.

⚠ CAUTION

Comply with the following instructions when installing the hoist.

ALWAYS

Failure to comply with these instructions may result in injury or damage to property.

- Install the hoist to avoid impeding the hoist.
- Install the Load Chain with sufficient length for lifting work.

4. Operation

4.1. Introduction

Operating a heavy load may result in hazardous situations. Before operating, read and comply with all of the information in this clause and "1.2 Prohibited Practices."

4.2. Free Chaining

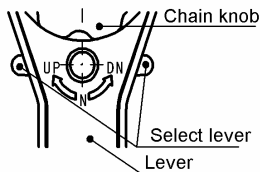
⚠ DANGER

- Do not operate the hoist in free chaining mode under a load.
- When the hoist holds a load, ensure to set the select lever to the lifting ('UP') position, and to avoid operating the chain knob.
- Do not pull the no-load-side chain with the select lever set to the lowering ('DN') position, which will cause the lever to revolve and can be hazardous.

4.2.1. Features

- Free chaining can freely feed the load chain as the brake is released under no load situations.
- With the select lever set to the neutral position and the no-load-side chain pulled lightly, turning the chain knob counterclockwise releases the mechanical brake to pull the load chain in either direction to its needed length.

4.2.2. How to Operate



1. Move the select lever to the neutral ('N') position as shown in the left picture.
2. With the no-load-side chain pulled lightly, turn the chain knob counterclockwise.
3. In this mode, the load chain can be pulled through the hoist to its required length. If the hoist does not shift into free chaining mode, hold the no-load-side chain and make some lowering operations to release the brake.

When a load under 7 kg is applied to the load chain, the brake does not operate. Do not apply any load to the load chain in free chaining mode, except for the positional adjustment of the load chain by an operator.

⚠ CAUTION

- Do not pull the load chain suddenly in free chaining mode.
 - Excessive pulling may make a brake and can not feed the chain.
 - In this case, set the select lever to the lowering ('DN') position, make some lowering operations, and then start over.
- Free chaining with the chain knob on the top as shown in Figure 4.1 may cause a braking force. In this case, direct the top of the knob towards the horizontal side as shown in Figure 4.2 in free-chaining.



Figure 4.1



Figure 4.2

4. To reset the hoist for load operation, with the load-side chain pulled lightly, turn the chain knob clockwise or make lifting operation to eliminate the clearance to the friction plate and operate by using the lever.

4.3. Load Operation

4.3.1. How to Operate

⚠ DANGER Do not operate the chain knob in lifting or lowering.

⚠ CAUTION Before operating, make sure that the hoist is out of the free chaining mode and the select lever position meets your operation demands.

The following table shows select lever position and lever operation for lifting and lowering.

Table 4-1 Hoist & Lever Operation

Hoist Operation	Select Lever	Lever Operation
Lifting	UP	Clockwise
Lowering	DN	Counterclockwise

⚠ CAUTION

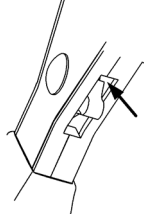
- Under no load or light load (region of 3kg) conditions, in the case that the load chain does not move against your operation, operate the lever with the load-side chain pulled lightly. (Standard manner.)

5. Inspection

To maintain continuous and satisfactory operation, a regular inspection procedure must be initiated to replace worn or damaged parts before they become unsafe. Three classes of inspection - DAILY (prior to operation performed by an operator), FREQUENT and PERIODIC – must be performed by only trained or competent personnel.

5.1. Daily Inspection

Table 5-1 Daily Inspection Methods and Criteria

Item	Method	Criteria	Action
Nameplate, Warning Tag	Visual	Should be affixed properly and readable.	Replace, however Gear Case for Nameplate.
Function – Lifting	Set the select lever to 'UP' and make lifting operation with the load-side chain pulled slightly.	Moving the lever forward and backward should make clicking sounds.	Repair or replace as necessary.
Function – Lowering	Set the select lever to 'DN' and make lowering operation with the load-side chain pulled slightly.	Moving the lever only backward, not forward, should make clicking sounds.	Repair or replace as necessary.
Function – Free Chaining	Set the select lever to 'N', and with the no-load-side chain pulled lightly, turn the chain knob counterclockwise to adjust the chain length in free chaining mode.	The chain should be able to be pulled in a smooth manner. The chain knob should be easily rotated forward and backward.	Apply lubricant to the contact of the pawl and cogs through the lever window as shown in the following picture, or replace as necessary. 

Item	Method	Criteria	Action
Hooks – Condition	Visual, Function	Should not be deformed. Should turn smoothly.	Replace
Hooks – Yoke bolts & nuts for LX003*	Visual	Should not be loose.	Replace
Hooks – Latches	Visual	Should not be deformed or scarred.	Replace
Load Chain	Visual	Should be free of severe rust. Should be coated with lubricant. Should not be deformed or scarred.	Replace Clean/Lubricate Replace
Others	Visual	Bolts, nuts, split pins, grip or screws should not be loose or missing. Hoist should not be scarred or damaged. Chain stopper link at no-load side should not be missing or deformed.	Replace.

Note: *Either a riveted or bolted bottom yoke is attached to the hoist for LX003.

6. Maintenance and storage

For hoist maintenance or storage, comply with the following points.

Care

DANGER

- Do not lubricate the friction plate of the mechanical brake.

WARNING

- Do not drag or throw the hoist when carrying.
- The use of chains other than those supplied by KITO is not permitted.
- Wipe off dust and moisture, and apply oil to the neck of hook and the load chain.
- Always ensure that oil is applied to the load chain, the chain pin (for LX005), the top pin, the hook necks, the hook latches and the select lever. Refer to "2.1.1 Schematics."
- Perform all inspections given in "5 Inspection" if irregularity of the hoist is found after operation.

Storage

- When not in use, ensure that it does not encumber other works.
- Before storing the hoist, rotate the lever counterclockwise several times.
- Do not store the hoist under load conditions.
- Store the hoist in a dry and clean area.
- When installing outdoors, cover the hoist to avoid exposure to rain or store in a place with covering against rain.

7. Warranty

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

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, if there is anything 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.

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.

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

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

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.

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.

8. Repair Part List

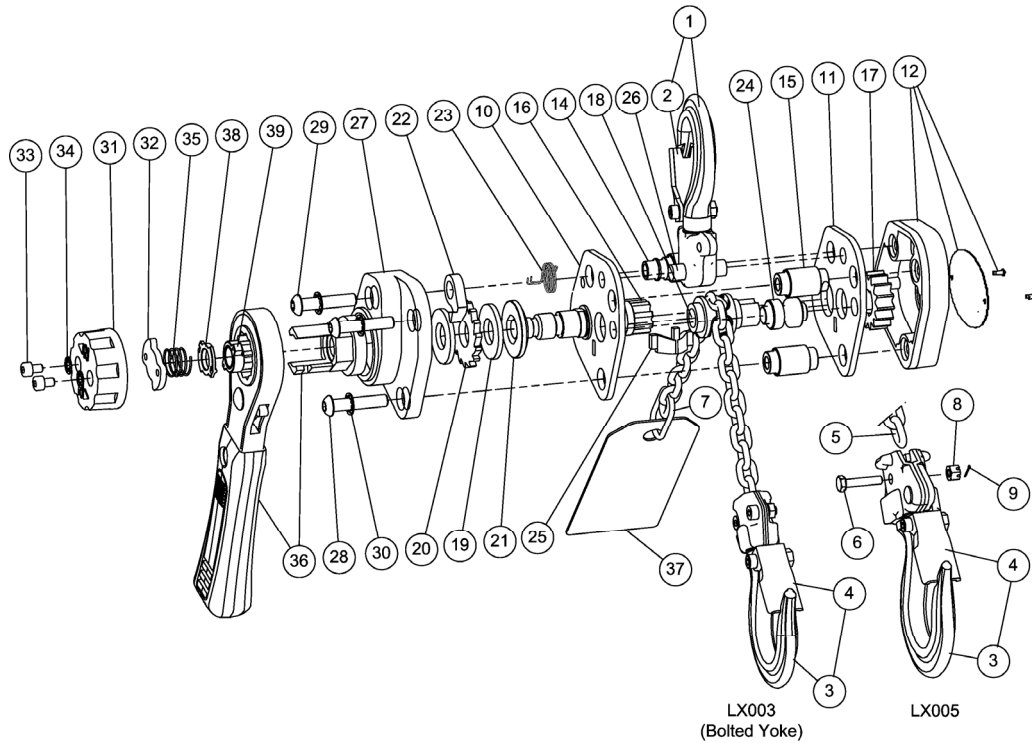


Figure No.	Part No.	Part Name	Parts per Hoist	Capacity (tonnes)	
				0.25	0.5
1	1001	Top Hook Set	1	L1XA003-1001	L1XA005-1001
2	1071	Latch Assembly	1	L1XA003-1071	L1XA005-1071
3	1011	Bottom Hook Set for 1 m lift	1	L1XA003-1011	_____
	1012	Bottom Hook Set for 2 m lift	1	L1XA003-1012	_____
	1013	Bottom Hook Set for 3 m lift	1	L1XA003-1013	_____
	1014	Bottom Hook Set for 4 m lift	1	L1XA003-1014	_____
	1021	Bottom Hook Set	1	_____	L1XA005-1021
	1071	Latch Assembly	1	L1XA003-1071	L1XA005-1071
5	841	Load Chain	1	_____	KAUN043-0000
6	41	Chain Pin	1	_____	L1LA005-9041
7	45	Chain Stopper Link	1	L1XA003-9045	L1LA005-9045
8	49	Slotted Nut	1	_____	L1LA005-9049
9	42	Split Pin	1	_____	J1PW01-016008
10	101	Frame A	1	L1XA003-9101	L1XA005-9101
11	102	Frame B	1	L1XA003-9102	L1XA005-9102
12	103	Gear Case Assembly (Other)	1	L1XD003-5103	L1XD005-5103
	103	Gear Case Assembly (Europe)	1	L1XG003-5103	L1XG005-5103
14	105	Stud B	1	L1XA003-9105	L1XA005-9105
15	104	Stud A	2	L1XA003-9104	L1XA005-9104
16	111	Pinion	1	L1XA003-9111	L1XA005-9111
17	114	Load Gear	1	L1XA003-9114	L1XA005-9114
18	116	Load Sheave	1	L1XA003-9116	L1XA005-9116
19	151	Friction Plate	2	L1XA003-9151	L1XA005-9151
20	152	Ratchet Disc	1	L1XA003-9152	L1XA005-9152
21	153	Friction Disc	1	L1XA003-9153	L1XA005-9153
22	155	Pawl	1	L1XA003-9155	_____
23	158	Pawl Spring Assembly	1	L1XA003-1158	_____
24	161	Guide Roller	1	L1XA003-9161	L1XA005-9161
25	162	Stripper	1	L1XA003-9162	L1XA005-9162
26	163	Top Pin	1	L1XA003-9163	L1XA005-9163
27	172	Brake Cover	1	L1XA003-9172	L1XA005-9172
28	173	Button Head Socket Screw	2	L1XA003-9173	_____
	174	Button Head Socket Screw	2	_____	L1XA003-9174
29	174	Button Head Socket Screw	1	L1XA003-9174	L1XA005-9174
30	175	Internal Tooth Lock Washer	3	J1WH012-20060	_____
31	201	Chain Knob	1	L1XA003-9201	_____
32	202	Lever Clamping Plate	1	L1XA003-9202	L1XA005-9202
33	206	Socket Head Cap Screw	2	J1BE2-0400606	_____
34	204	Conical Lock Washer	2	L1XA003-9204	_____
35	205	Free Chain Spring	1	L1XA003-9205	_____
36	4211	Lever Assembly	1	L1XA003-4211	L1XA005-4211
37	868	Warning Tag CE (Other)	1	E7AR003S9868	_____
	868	Warning Tag CE-G (Europe)	1	ER1BS9686	_____
38	209	Free Chain Plate	1	L1XA003-9209	_____
39	203	Cam Guide	1	L1XA003-9203	_____

CONTENTS OF EC DECLARATION OF CONFORMITY

We, **KITO Corporation**,
2000 Tsuijjarai, Showa-cho,
Nakakoma-gun, Yamanashi-ken, 409-3853, Japan
declare under our sole responsibility that the products:

Manually lever operated chain hoist
in capacity range of 250 kg and 250 kg

LX, model LX1

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

EC directives:

Machinery Directive **2006/42/EC**

Harmonized standards:

EN ISO 12100:2010 **Safety of machinery**

EN 818-7:2002+A1:2008 **Short link chain for lifting purposes,
increased quality, grade V, certified by
Fachausschuss Metall und Oberflächenbehandlung**

EN 13157:2004+A1:2009 **Hand powered lifting equipment,
except for the requirement of "5.2.6 Operating effort"**

The person authorized to compile the technical file

Udo Kleinevoß

Technical manager

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