

KITO

LL No. ER2-1202-CE-00



Original Instruction

Electric Chain Hoist ER2—High-Function Series

Dual-speed Inverter (VFD) [125kg-5t]

Limit Lock

Owner's Manual (Supplement)

Introduction

This limit lock is designed as a kit for the ER2 electric chain hoist – high function series, which enhances their functionality as well as allows easing your work load on the push-button operation by setting both upper and lower stops anywhere suitable to your work load path.

Safety Precautions

DANGER



Mandatory

- If you wish to incorporate this limit lock unit with an ER2 you already own, be sure to contact your nearest Kito sales outlet or service shop.
- It is imperative to have a qualified specialist customize your hoist with this kit.
- This owner's manual addresses specific characteristics of the limit lock unit. Prior to use, read this manual and the "ER2 Series Electric Hoist (125kg-5t) Owner's Manual" (separate manual) and follow their instructions.

Failure to follow these instructions may cause a serious accident, resulting in a grave injury or death.

CAUTION



Prohibited

- Do not use the limit lock unit with any hoist other than the ER2 electric chain hoist.

Failure to follow these instructions may cause a serious accident, resulting in a grave injury or death.



Mandatory

- After making limit lock position settings, it is imperative to check and make sure the bottom hook stops correctly at the set positions.

Failure to comply with these instructions may result in injury and/or physical damage.

Product Specifications

Applicable Model : ER2 Electric Chain Hoist (125kg to 5t)
Voltage : 3-Phase 230V-50Hz, 380-415V-50Hz

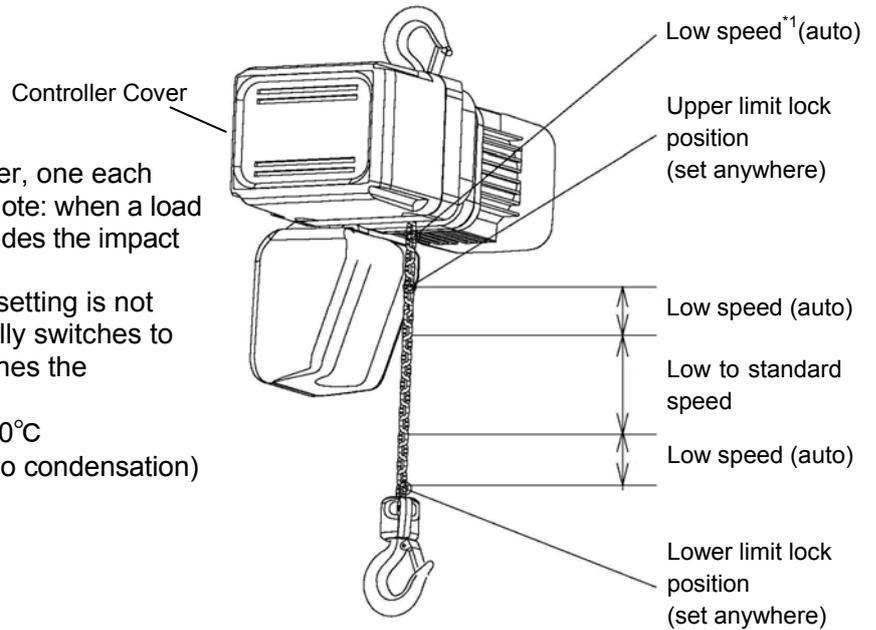
Limit Lock Function

Registration points: upper/lower, one each
Stop precision : $\pm 10\text{mm}$ (Note: when a load is on the chain, this figure excludes the impact of chain stretch)

*1 Even if a limit lock position setting is not made, the hoist automatically switches to low speed when it approaches the upper/lower limits.

Operating range : -20°C to 40°C

Operating humidity: 85%RH (no condensation)



Making Settings

Limit Lock Position

Activating this function makes it to set one upper and lower limit each anywhere within the lifting range with just a push of a button. (When shipped no limit lock positions are set.)

<Registration Procedure>

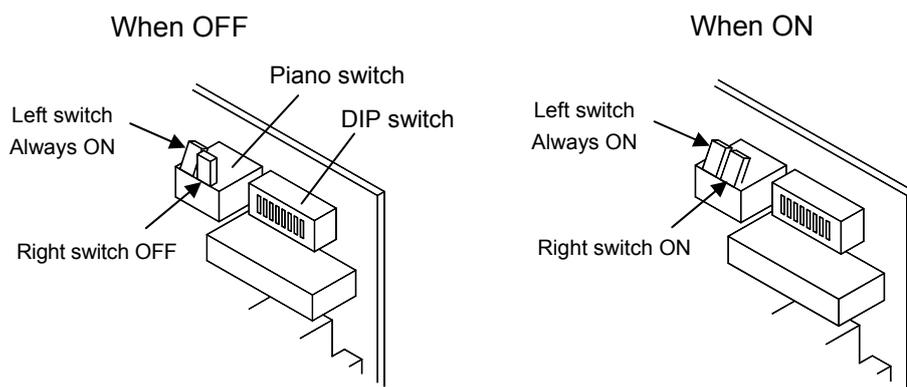
1. Initial setting
2. Registering the chain length
3. Registering limit lock positions
4. Resetting the origin

1. Initial setting

In order to activate the limit lock function, first turn on the initialize setting. (It is activated under the factory default.)

<Making Settings>

Open the controller cover and switch the right side (S) of the piano switch on the interface board to ON (press down). This allows settings to be made.



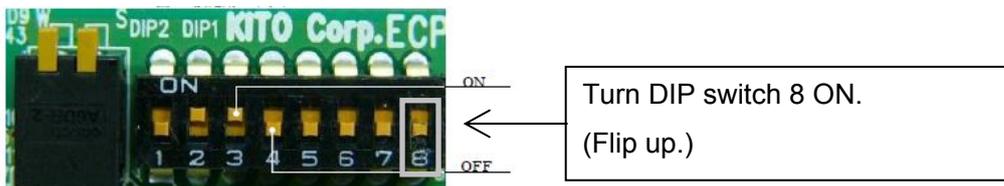
2. Registering the chain length

Registering the chain length allows you to set precise positions for stopping anywhere you wish. Further, as the hoist approaches the upper/lower limits, it automatically switches to low speed operation, thus avoiding a shock when operating the hoist to its limits. (If your hoist came with the chain already assembled, its chain length is already registered, so this step is not necessary.)

⚠ CAUTION	
! Mandatory	<ul style="list-style-type: none">• Even though the chain length may have been registered when the product was shipped, if a conversion kit is being incorporated into an existing product, or if the hook or chain have been replaced, the chain length must be registered again. (When the kit is shipped by itself, the chain length is not registered, so it must be done.) <p>Failure to comply with these instructions may result in malfunction and/or a serious accident.</p>

<Registration Procedure>

1. Turn on the electric chain hoist.
2. If you open the controller cover, you'll see the DIP switches on the board (figure below).
Turn switch number 8 to ON (flip the switch up). This allows registration to be made.
3. Cause the upper and lower limit switches to actuate once each in that order by operating the hoist to its limits.
This completes chain length registration.
4. After making these settings, return the DIP switch to its OFF position. (Flip the switch back down.)



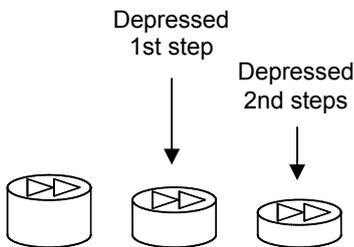
⚠ DANGER	
⊘ Prohibited	<ul style="list-style-type: none">• When running the hoist to its limits, do not put a load on the hoist. <p>Failure to follow this instruction may cause a serious accident, resulting in a grave injury or death.</p>
! Mandatory	<ul style="list-style-type: none">• When operating the DIP switch during chain length registration, take care not to get a shock or to short any of the board parts. <p>Failure to follow this instruction may cause a serious accident, resulting in a grave injury or death.</p>

⚠ CAUTION	
! Mandatory	<ul style="list-style-type: none">• After making these settings, return the DIP switch to its OFF position.• The positions 1 to 7 on the DIP switch vary between ON and OFF depending on the model, so do not change these settings. <p>Failure to comply with these instructions may result in malfunction and/or a serious accident.</p>

3. Registering limit lock positions

<Registration Procedure>

The following procedure explains how to set or cancel limit lock positions for the upper and lower limits. As shown in the table below, the setting method uses 3 buttons, namely the emergency stop and   buttons.



Step	Register		Cancel	
	Upper limit position	Lower limit position	Upper limit position	Lower limit position
1	Make sure the piano switch on the S side (right side) is ON.			
2	Press the emergency stop button			
3	Lifting  1st step Press and hold 5+ seconds	Lowering  1st step Press and hold 5+ seconds	Lifting  2nd step Press and hold 5+ seconds	Lowering  2nd step Press and hold 5+ seconds
4	Rotate the emergency stop button to release it			

Turning the piano switch OFF (switching it forward) after registration allows the current setting state to be saved.

(*If saved, the ability to change the set stop position status is lost.)

 DANGER	
 Prohibited	<ul style="list-style-type: none"> When running the hoist to its limits, do not put a load on the hoist. <p>Failure to follow this instruction may cause a serious accident, resulting in a grave injury or death.</p>
 Mandatory	<ul style="list-style-type: none"> Register limit lock positions only after registering the chain length (see page 4). Never operate the piano switches if there is power to the chain hoist. <p>Failure to follow this instruction may cause a serious accident, resulting in a grave injury or death.</p>

4. Resetting the origin

The set positions for the upper and lower limit may change if there is an emergency stoppage such as if there is a power outage while operating the hoist.

Before operating the hoist after the power is restored, you must Reset the Origin.

*The hoist will only operate in low speed until you Reset the Origin.

 DANGER	
 Mandatory	<p>When resetting the origin, lower the hoist for a moment and put it in an unloaded state. Failing to do so will prevent a proper reset and may lead to a serious accident.</p> <p>Failure to follow this instruction may cause a serious accident, resulting in a grave injury or death.</p>

<Origin Reset Method>

1. Press the emergency stop button.
2. Depress the lift to the 2nd step for 5+ seconds.
3. Rotate the emergency stop button to release it.
4. Lift the hoist until the upper limit switch actuates.
5. With the upper limit switch actuated, press the emergency stop button in and simultaneously press the  button in to the 1st step for 5+ seconds.
6. Rotate the emergency stop button to release it.

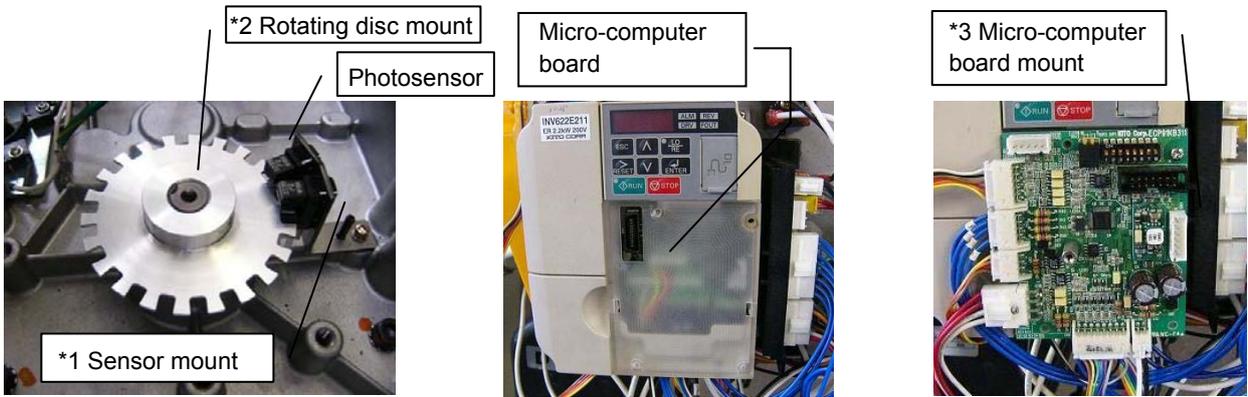
*After resetting the origin, set up the limit lock position for the upper limit again.

Maintenance Management

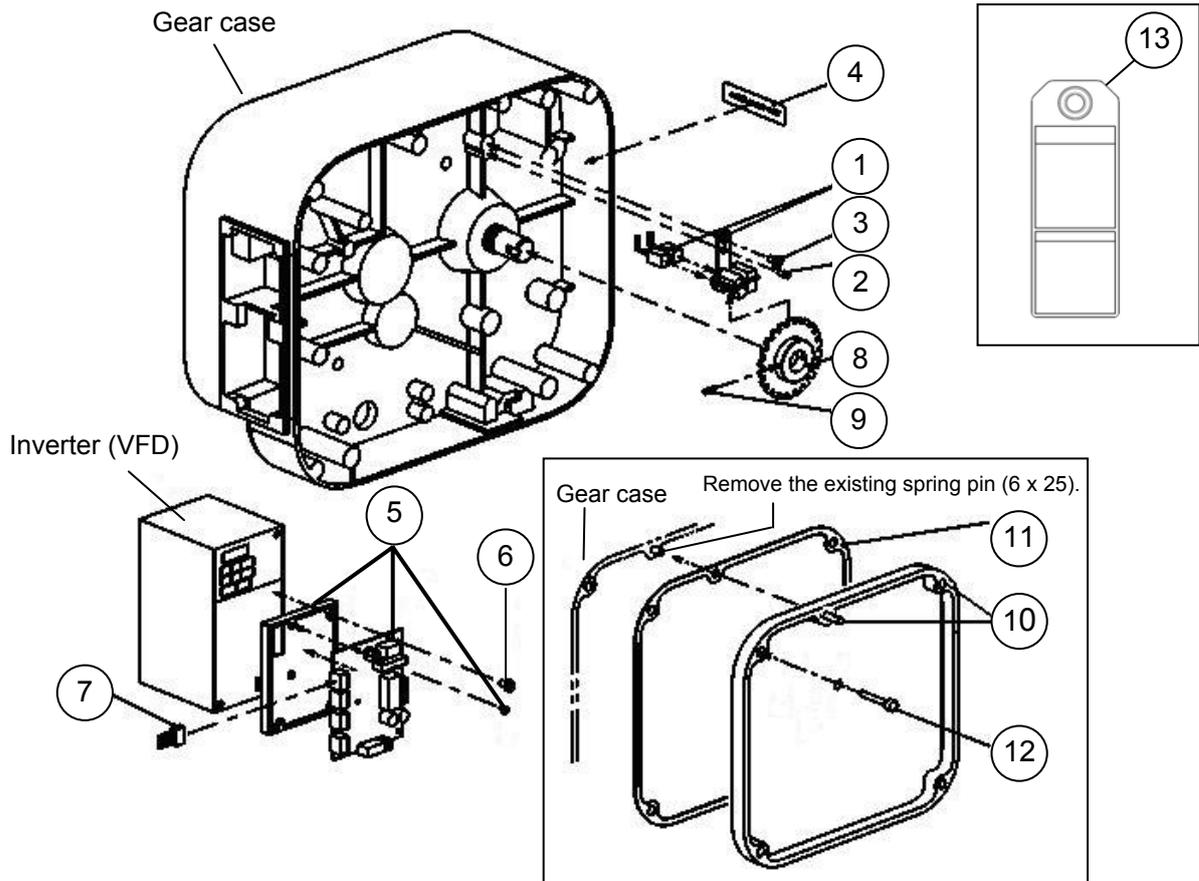
Please perform the daily and periodic inspections based on the following inspection sheet.
 For information on inspections other than for this product, refer to "ER2 Series Electric Chain Hoist (125kg to 5t) Parts List" (separate document) and perform the inspections as indicated.

Limit Lock Unit Inspection Sheet

Item	Periodic Inspection		Inspection Method	Criteria	When out of Specification
	Daily	Periodically			
Screws		○	Visual	None loose	Tighten securely.
Sensor precision	○	○	Operate	Stop precision within $\pm 10\text{mm}$	Reset the origin Or replace parts
Sensor mount *1		○	Touch with your hands and confirm it is properly mounted.	The sensor mounting parts should not rattle.	Tighten securely.
Rotating disc mount*2		○		The rotating disc should not rattle.	Tighten securely.
Micro-computer board mount*3		○		The micro-computer board should not rattle.	Replace parts



Parts List



Required with the 004IS and 005IS when 380V or more is used

Figure No.	Part No.	Part Name	Quantity per unit	Part code	Remark
1	1669	Photosensor assembly	1	ER2B11669	
2	672	Spring pin	1	E5SE005S9451	
3	676	Pan head machine screw	1	J1AK2-5000808	
4	818	Identification label	1	ER2BS9818	
5	5677	Micro-computer assembly	1	*ER2Bxxxxx5B7	
6	679	Pan head machine screw	1	J1AK2-3001515	
7	682	Micro-computer lead wire	1	ER2BEE0319B3	
8	674	Rotating disc	1	*ER2xx9674	
9	675	Plate screw	1	J1TB011-03008	
10	5684	Spacer C assembly	1	ER2CS5684	Required with the 004IS and 005IS when 380V or more is used
11	117	Packing C	1	ER2CS9117	
12	673	Socket bolt	4	J1BE1-0505518	
13	693	Tag IK	1	SWD9693ZC	

* The parts codes vary depending on the model of ER2 electric chain hoist, so when ordering parts let us know which model of ER2 electric chain hoist you have.

For information on standard ER2 electric chain hoist parts, refer to "ER2 Series Electric Chain Hoist (125kg to 5t) Parts List (separate document).

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