

# KITO

OM-ED3ZZZ-CEE-05

Original Instruction



---

**OWNER'S (OPERATOR'S) MANUAL AND SAFETY  
INSTRUCTIONS FOR KITO ELECTRIC CHAIN HOIST**

**EDIII** SERIES

---

*ALWAYS SAVE THIS BOOK FOR FUTURE REFERENCE.*

# CONTENTS

1. DEFINITIONS .....	1
2. INTENDED PURPOSE .....	1
3. BEFORE USE .....	1
3.1 Safety summary.....	1
3.2 Safety instructions.....	2
3.2.1 Before use .....	2
3.2.2 While operation .....	2
3.2.3 After operation.....	3
3.2.4 Maintenance.....	3
3.2.5 Others.....	3
4. MAIN SPECIFICATIONS.....	4
4.1 Specifications.....	4
4.2 Mechanical classification (Grade) and life.....	5
4.3 Specifications and dimensions .....	6
4.4 Special features .....	7
5. PREPARATION AND CHEKING BEFORE USE .....	8
5.1 Packed contents.....	8
5.2 Preparation and checking before use.....	8
5.3 Before using, prepare and check the following five items.....	9
(1) Gear oil supply.....	9
(2) Chain container assembly .....	9
(3) Assembling push button cord and curled cord.....	10
(4) Load chain lubrication .....	11
(5) Power supply cable specifications .....	11
5.4 Installing trolley .....	12
(1) MINI trolley.....	12
(2) Installing trolley to rail.....	13
(3) TS series trolley (480kig only) .....	13
6. OPERATION .....	14
6.1 Single speed type .....	14
6.2 Dual speed type.....	14
6.3 Dual speed cylinder type.....	15
6.4 Electric chain hoist with trolley .....	16
7. INSPECTION.....	16
7.1 Inspection classification.....	16
7.2 Occasionally used hoist.....	17
7.3 Inspection record.....	17
7.4 Inspection method and judgement criteria .....	17
8. MAINTENANCE.....	21
8.1 Gear lubrication.....	21
8.2 Load chain lubrication .....	21
8.3 Mechanical brake with friction clutch.....	22
9. CONNECTION DIAGRAM.....	22
9.1 Single speed type .....	23
9.2 Dual speed type.....	24
9.3 Dual speed cylinder type.....	25
10. TROUBLE SHOOTING AND SOLUTIONS .....	26
11. WARRANTY .....	28
12. PARTS LIST .....	29

# 1. DEFINITIONS

**⚠ DANGER** : indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

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

**⚠ CAUTION** : indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

**WLL:** indicates maximum mass (working load limit) which a hoist is designed to support in general service.

## 2. INTENDED PURPOSE

This hoist has been designed for vertically lifting and lowering by means of the pendant push button switches and cylinder switches and horizontally carrying loads by means of manual trolley under normal atmospheric conditions of the work place.

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

## 3. BEFORE USE

### 3.1 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 KITO electric chain hoist EDIII series.

#### **⚠ WARNING**

**NEVER** use a hoist for lifting, supporting or transporting people.

**NEVER** lift or transport loads over or near people.

**NEVER** lift more than WLL which is shown on the hoist name plate.

**ALWAYS** let people around you know when a lift is about to begin.

**ALWAYS** read the operation and safety instructions.

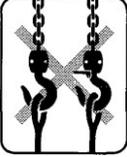
Remember proper rigging and lifting techniques are the responsibility of the operator. Check all applicable safety codes, regulations and other applicable laws for further information about the safe use of your hoist.



## 3.2 Safety instructions

### **⚠ WARNING**

#### 3.2.1 Before use

- ALWAYS** allow the instructed (trained in safety and operation) people to operate the hoist.
- ALWAYS** check the hoist before daily use.
- ALWAYS** make sure that the chain length is long enough for the intended job.
- ALWAYS** check that the hook latches work properly and replace missing or broken hook latches. 
- ALWAYS** check the brake before use.
- ALWAYS** use two hoists which each has WLL equal to or more than the load to be lifted whenever you must use two hoists to lift a load.
- ALWAYS** use KITO original load chains marked “KITO”. KIRO shall not be responsible for any claims or damages arising from the use of other chains.
- ALWAYS** check and keep oil to be on the surface of the load chain.
- NEVER** use a hoist without a hoist name plate.
- NEVER** use modified or deformed hooks.
- NEVER** use a hoist in explosive atmosphere.

#### 3.2.2 While operation

- ALWAYS** make sure that the load is properly seated in the hook.
- ALWAYS** tighten the slack out of the chain and sling when starting a lift to prevent a sudden loading.
- ALWAYS** avoid excessive inching operation.
- ALWAYS** make sure the hoist motor completely stops before reversing.
- ALWAYS** use a hoist within the “Duty rating”, ED%.
- ALWAYS** make sure that Proper limit switch actuation and motor stopping when the hook rises at upper limit under no load.
- ALWAYS** make sure that No deformed, peeled and cracked cushion rubber.
- ALWAYS** make sure that No damaged chain spring (option), and minimum free length, 75mm (130mm), of the chain spring.  
Note: Initial free length of the spring 85mm (150mm). ( ): 60-240kg.

**NEVER** dropping or releasing a load could result in death or serious injury. To avoid this hazard, do not operate the bottom hook release mechanism (hook cam) when the hoist with cylinder-controlled or optional detachable hook is under load.

**NEVER** operate unless the load is centered under the hoist.

**NEVER** use the hoist chain as a sling.

**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** contact the load chain over an edge.

**NEVER** weld or cut a load suspended by a hoist.

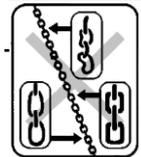
**NEVER** use the hoist chain as a welding electrode.

**NEVER** operate a hoist if chain jumping or excessive noise occurs.

**NEVER** use the limit switch or friction clutch as limit switch regularly, otherwise a hoist will be severely damaged to bring serious injury. These devices are for emergency use only.

**NEVER** pull the push button cord.

**NEVER** handle the arm-fitting during the hoist operation.



### 3.2.3 After operation

**NEVER** leave a suspended load unattended, and/ or for an attended period of time.

**NEVER** throw or drop the hoist when carrying it.

### 3.2.4 Maintenance

**ALWAYS** let the qualified service personnel inspect the hoist periodically.

**ALWAYS** oil the load chain.

**ALWAYS** have KITO or an authorized dealer adjust the friction clutch.

**NEVER** splice, add and weld a load chain for extension.

**NEVER** touch live electrical parts.

### 3.2.5 Others

**ALWAYS** consult the manufacturer or your dealer if you plan to use a hoist in an excessively corrosive environment (salt water, sea, air and/or acid, explosive environment or other corrosive compounds, etc.)

## 4. MAIN SPECIFICATIONS

### 4.1 Specifications

The following specifications are common to all KITO electric chain hoists EDIII series.

Table 4-1 Specifications

Item		Detail
Working temperature range (°C)		-20 to + 40
Working humidity range (%)		85 or less
Protection	Hoist	IP 54
	Push button	IP 65
	Cylinder switch	IP 44
Electric power supply		Single phase, 230V, 50Hz *
Noise level (dB)		83 (A scale)
Sound power level (dB)		94 (A scale)

- Remarks: (1) Contact KITO or authorized KITO dealer for information on using the hoist outside the working temperature or humidity range.
- (2) Noise level were measured at a distance of 1m horizontally from the hoist during normal operation.
- (3) \* The hoist can be also used for 220V-50Hz and 240V-50Hz, Single phase.

## 4.2 Mechanical classification (Grade) and life

Safety and life for electric chain hoists are guaranteed only when the said equipment is operated in accordance with the prescribed grade.

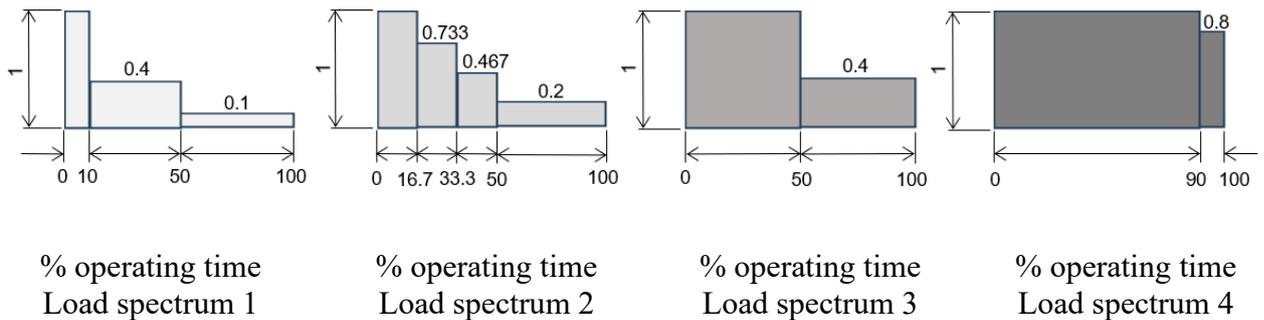
KITO electric chain hoists EDIII series have been designed for grade 1Am in the FEM regulations (FEM 9.511).

Details are provided in Table 4-2.

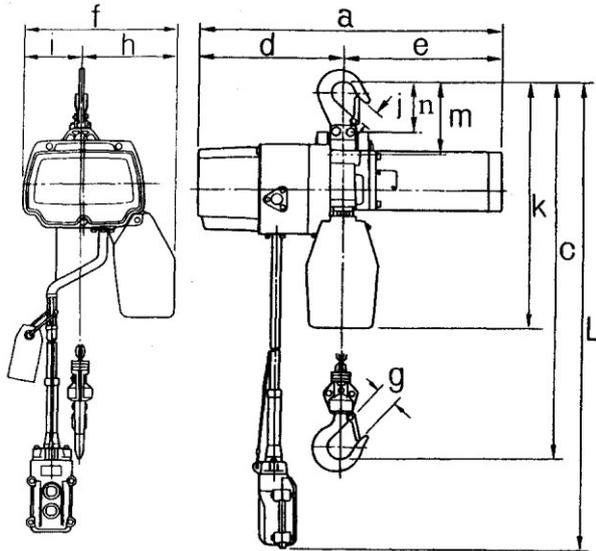
Average daily operating time and total operating time are determined by load distribution.

Table 4-2 Mechanical classification

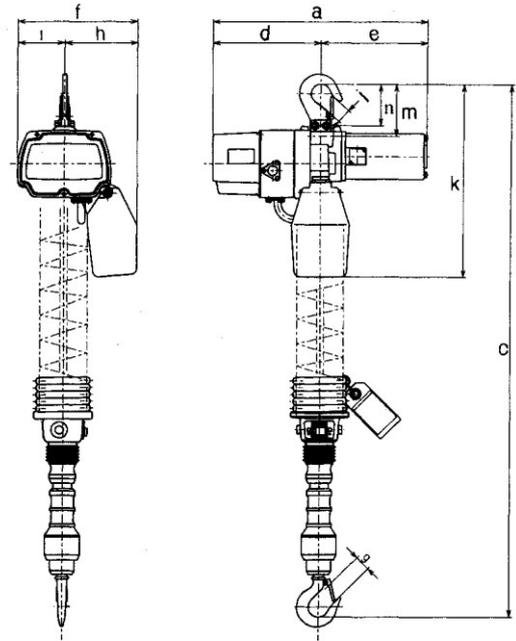
Load Spectrum (Load Distribution)	Definitions	Cubic Mean Value	Average Daily Operating Time (h)	Total Operating Time (h)
1 (light)	Mechanisms or parts thereof, usually subject to very small loads and in exceptional cases only to maximum loads.	$k \leq 0.50$	2-4	6300
2 (medium)	Mechanisms or parts thereof, usually subject to small loads but rather often to maximum loads.	$0.50 < k \leq 0.63$	1-2	3200
3 (heavy)	Mechanism or parts thereof, usually subject to medium loads but frequently to maximum loads.	$0.63 < k \leq 0.80$	0.5-1	1600
4 (very heavy)	Mechanism or parts thereof, usually subject to maximum or almost maximum loads.	$0.80 < k \leq 1.00$	0.25-0.5	800



### 4.3 Specifications and dimensions



Single speed type and Dual speed type



Dual speed cylinder type

Power Supply		230V-50Hz																						
Type	Single Speed Type						Dual Speed Type						Dual Speed Cylinder Type											
Model	ED06S	ED10S	ED18S	ED16S	ED24S	ED48S	ED06S	ED10S	ED18S	ED16S	ED24S	ED48S	ED06S	ED10S	ED18S	ED16S	ED24S							
WLL (kg)	60	100	180	160	240	480	60	100	180	160	240	480	60	100	180	160	240							
Motor Output (W)	300			600			300			600			300			600								
Intermittent Duty	% ED		30	20	30			30	20	30			30	20	30									
	Max. Starting Frequency (Time per hour)		180	120	180			180	120	180			180	120	180									
Rated Current (A)	230V		3			5			3			5			3			5						
Lifting Speed (m/min)	High		20.1	12.5	7.7	19.2	12.9	6.7	20.1	12.5	7.7	19.2	12.9	6.7	20.1	12.5	7.7	19.2	12.9					
	Low		-	-	-	-	-	-	4	3	3	4	3	2	4	3	3	4	3					
Standard Lift (m)	3						3						1.8											
Push Button Cord Length: L (m)	2.5						2.5						-											
Load Chain Diameter (mm)	4						4						4											
Net Weight (kg)	11.5			15.5			21(21.5)*1			12.0			16.0			21(21.5)*1			14.5			18.5		
Min. Distance Between Hooks: C(mm)	315			330			520			315			330			520			945			960		
IP (Degree of Protection)	IP54																							
Insulation	F																							
Dimensions (mm)	a	364			428			364			428			364			428							
	d	187			205			187			205			187			205							
	e	177			223			177			223			177			223							
	f	205			219			229			205			219			229							
	h	125			135			155			125			135			155							
	i	80			84			74			80			84			74							
	g	25			24			25			24			25			24							
	j	25			24			25			24			25			24							
	k	340			362			454			340			362			454							
	m	92			149			92			149			92			149							
	n	73			104			73			104			73			104							

- WLL: Indicates maximum mass (working load limit) which a hoist is designed to support in general service.
- Control: Direct voltage control.
- The lifting speed is equal to the average value of the lifting/ lowering speed at the rated load capacity. The speed will vary according to the load.

**⚠ CAUTION**

Actual power source voltage should not exceed max. allowable voltage: 264V

The lifting speed varies according to the actual power source voltage as shown in following table.

## Relationship between power source voltage and lifting speed

Rated Voltage (V)	Actual Power Source Voltage/Operation Voltage (V)	Lifting Speed (m/min)					
		300w			600w		
		60kg	100kg	180kg	160kg	240kg	480kg
230	220/220	19.3	11.9	7.3	18.3	12.4	6.1
	220/230	20.1	12.5	7.7	19.2	12.9	6.4
	240/240	21	13	8	20	13.5	6.7

## 4.4 Special features

### (1) Brake

Both dynamic brake and mechanical brake provide high braking capability for the most sure way to stop the load at the desired positions. The mechanical brake uses non-asbestos material.

### (2) Hook and hook latch

Drop-forged heat treated hooks will not fracture but open slowly when over loaded excessively. Built-in bearing assures easy swiveling of bottom hook. In addition, the hook latch adds another safety.

### (3) Friction clutch

This hoist equips with friction clutch mechanism, specially developed by KITO, that causes the motor to idle when over loaded, thus preventing the load from being lifted. Also, the motor turns idly at the lift and lower limits to prevent overwinding. The mechanism works also when lifting grounded overloads. It is not necessary to adjust the friction clutch under normal usage. The friction clutch uses non-asbestos material.

### (4) Emergency stop device (option)

This button is used to stop the hoist in an emergency situation. It is a red and mushroom type button. When pressed, power to the equipment is shut off and the button locks automatically. Turn it to the right to release the lock and to enable re-start.

# 5. PREPARATION AND CHEKING BEFORE USE

## 5.1 Packed contents

Before using, make sure the following contents are packed:

Hoist unit (containing oil)

Chain container (including bolt, nut, and split pin for attaching to hoist unit) available as option.

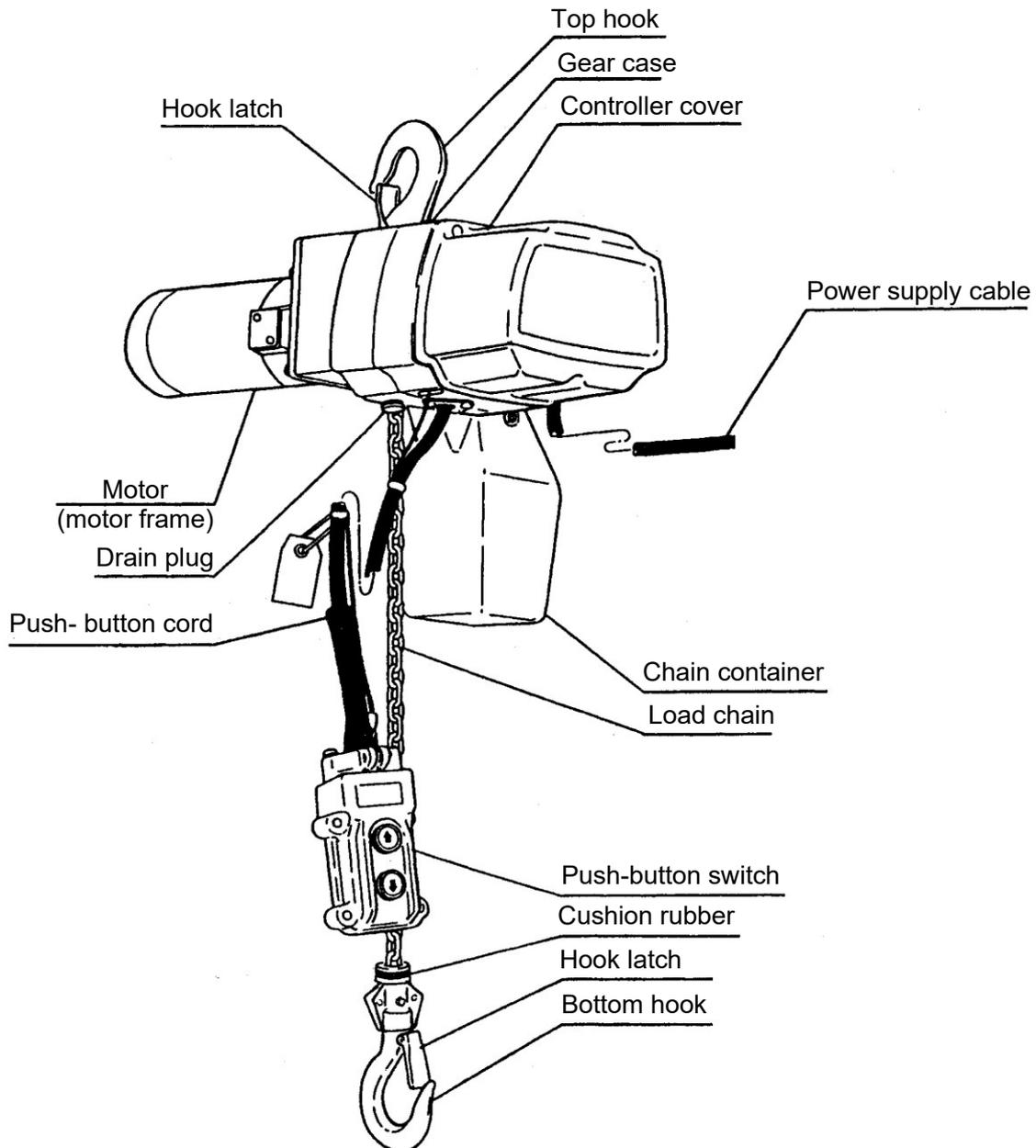
Push button and cord (the dual speed cylinder type is equipped with a curled cord and fastening belt.)

Load chain

Owner's (Operator's) manual and safety instructions.

## 5.2 Preparation and checking before use

The appearance and profile are as shown in the next;



## 5.3 Before using, prepare and check the following five items.

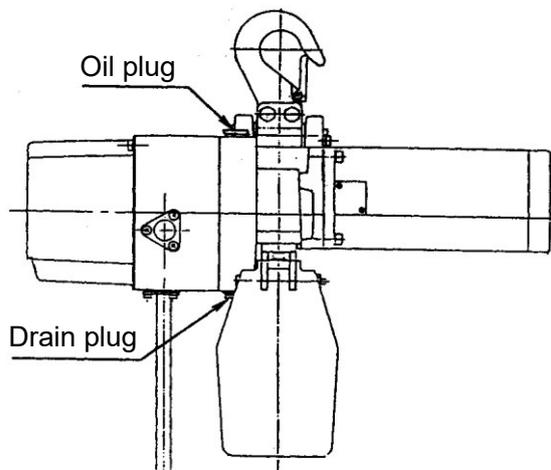
### (1) Gear oil supply

Gear oil is pre-supplied in the gear box.

To change gear oil: Remove oil plug and drain from gear box. Drain contaminated oil completely, fasten drain plug, supply the specified gear oil sufficiently from the oil plug hole, then firmly fasten the oil plug.

#### **▲ WARNING**

Use of the hoist without sufficient oil can cause immediate and severe damage to the hoist's gear and clutch mechanisms, which can result in hoist malfunctioning. To avoid these hazards, **NEVER** use the chain hoist without sufficient oil. Refer to the following table.



Gear oil quantity

W.L.L. (kg)	Oil Quantity (l)
60	0.27
100	
180	
160	0.35
240	
480	

Use of oils other than the specified Kito's gear oil might not allow full exertion of the built-in friction clutch, which can cause load to drop. To avoid these hazards:

**ALWAYS** use the specified Kito's oil



To avoid oil leak, make sure to firmly fasten drain plug.

### (2) Chain container assembly

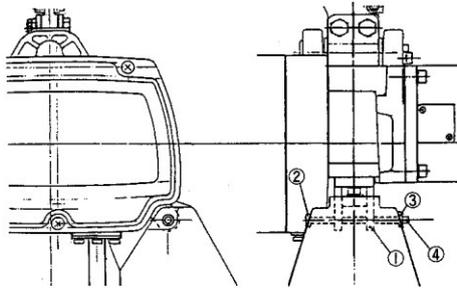
The chain container stores the load chain on the no-load side. In connecting it to the hoist body, fasten it completely and pay attention to the following points:

#### **▲ CAUTION**

Firmly fasten bolt and nut as shown in the following figure appearing on the next page.

**ALWAYS** be sure that the load chain on the no-load side is properly stored in the chain container and stored correctly from the end.

**NEVER** store chain in the chain container which exceed the specified length of the chain container.



Assembly procedure:

Attach the chain container to the chain guide ① with socket bolt ② and U-nut ③.

Attach the split pin ④ to prevent the U-nut ③ from dropping. Bend pin ends 90° or more.

(3) Assembling push button cord and curled cord

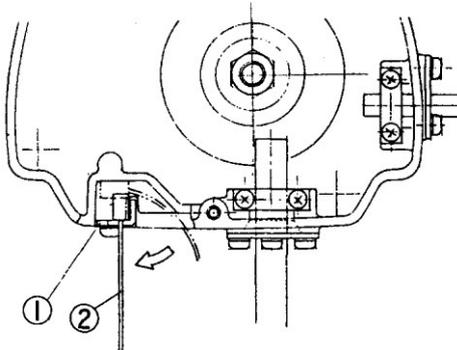
a. Single and dual speed types

While the push button cord is being connected to the hoist body, the strain relief wire may not be connected yet. After the push button cord connecting, be sure to assemble the end of the strain relief wire to the hoist body.

**CAUTION**

Short circuit and electric shock may result if the push button cord is pulled when the strain relief wire is not connected to the hoist body.

**ALWAYS** make sure that the strain relief wire is properly attached to the hoist body as described in the next.

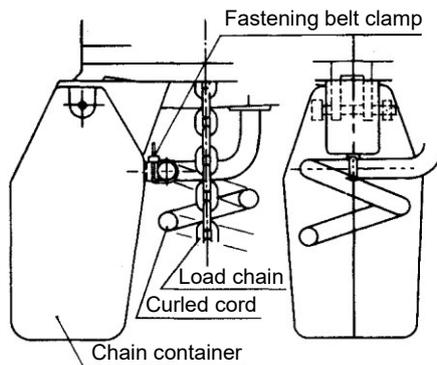


Assembly procedure:

As illustrated, hook the strain relief wire ② to the cable support L ① of the hoist body.

b. Dual speed cylinder type

While the curled cord is being connected to the hoist body, it may not be fixed to the chain container yet. As illustrated, attach it to the chain container so that the clamp of the fastening belt faces the way it does in the figure and so that the load chain comes to the center of the curled cord at that time.



**⚠ WARNING**

To avoid damage on the curled cord, fix the curled cord to the chain container with the fixing band.  
To avoid wear between load chain and chain guide straighten up load chain before fitting the curled cord to the chain container.  
To avoid damaging the curled cord, attach the chain container so that the fastening belt clamp faces up.

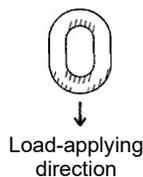
(4) Lubricating the load chain

**⚠ WARNING**

Chain lubrication is a critical factor in the service life of a load chain. Apply enough machine or gear oil regularly.

Lubrication Procedures

- Vertically suspend the chain under no load conditions.
- Remove dust or water drops from the chain
- Apply lubricant around the sections where the chain links come into contact with each other and the load sheave or idle sheave as shown in the following figures.



- After the chain lubrication is done, lift and lower without any load to spread the lubricant thoroughly.

Please consult with KITO Corporation if any of lubricants are not allowed at your site.

(5) Power supply cable specifications

Use a power supply cable of an outer diameter specified in the below table in relation with a distance to power source.

Use a three conductors cable including Ground wire as for power supply cable.

Power Supply Cable Diameter (normal cross-section area of conductor)	Max. Length of Power Supply Cable (m)
2.0mm <sup>2</sup>	30
1.25mm <sup>2</sup>	15

**[Connection to power supply source]**

**⚠ CAUTION**

**ALWAYS** ground the electric chain hoist before using.

**NEVER** ground the electric chain hoist to a gas pipe as this can create the possibility of explosion.

In addition to grounding, **ALWAYS** connect to a power supply source equipped with an earth leakage breaker.  
Actual power source voltage should not exceed max. allowable voltage: 264V

Suitable for use on a circuit capable of delivering not more than 5kA RMS symmetrical amperes, 240V maximum.  
(SCCR 5kA)

## 5.4 Installing trolley

### (1) MINI trolley

Attachment of adjusting spacers

Remove the top hook of the electric chain hoist and fit together adjusting spacers to the trolley with the top yoke. 34 adjusting spacers (3.2mm thickness) and 2 Adjusting Spacer-Bs (1mm) are accompanied. With 32 of Adjusting Spacer as shown in the following table, fix the trolley frames' distance so that Dimension A approximately equals Dimension B (beam width) plus 3mm as illustrated.

#### (Reference)

Beam Width (mm)		Inside Trolley Frame	Outside Trolley Frame
50	H-beam	Right/left, 8 pcs. each	Right/left, 8 pcs. each
68	H-beam	Right/left, 11 pcs. each	Right/left, 5 pcs. each
	I-beam		
98	H-beam	Right/left, 16 pcs. each	Right/left, 0 pcs. each
100	I-beam		

#### ⚠ WARNING

Incorrect number of adjusting spacers may cause the trolley not to move or to drop. To avoid these hazards:

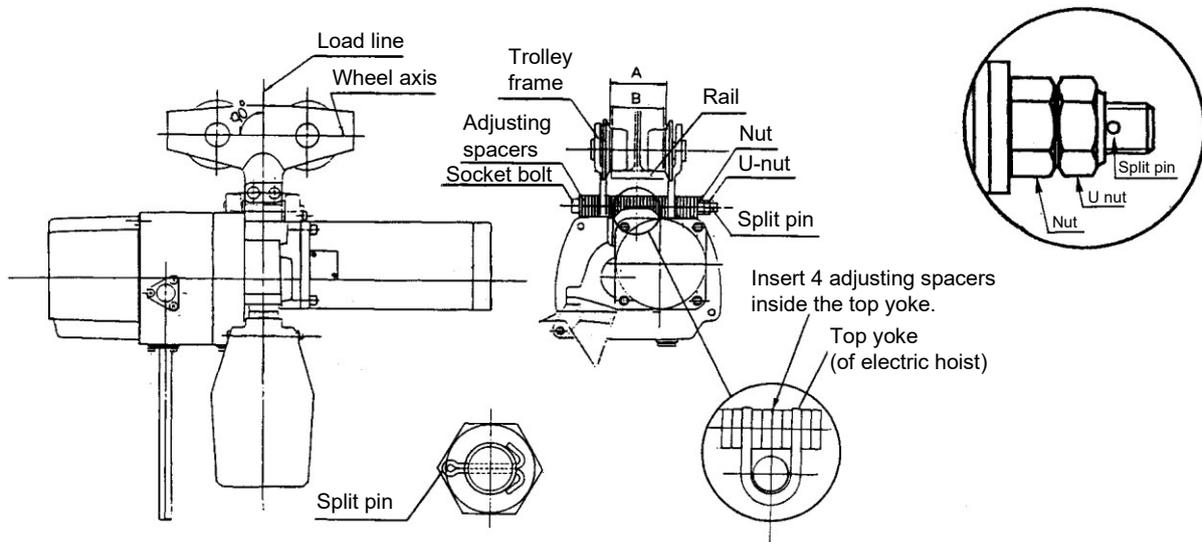
**ALWAYS** make sure to use all 32 pieces and confirm that  $A-B \approx 3 \text{ mm}$ .

Fitting of socket bolt

Set the trolley so that the wheel axis is right angle to the load line. Attach the socket bolt, nut and U nut (double nut system), adjusting the clearance of 2mm or less between the split pin hole and U nut with 2 Adjusting Spacers and 2 Adjusting Spacer-Bs, and then tighten them and secure the split pin to the bolt.

#### ⚠ WARNING

To avoid the trolley from dropping, firmly fasten the socket bolt, nut and U nut. Insert split pin and bend its ends 90° or more.



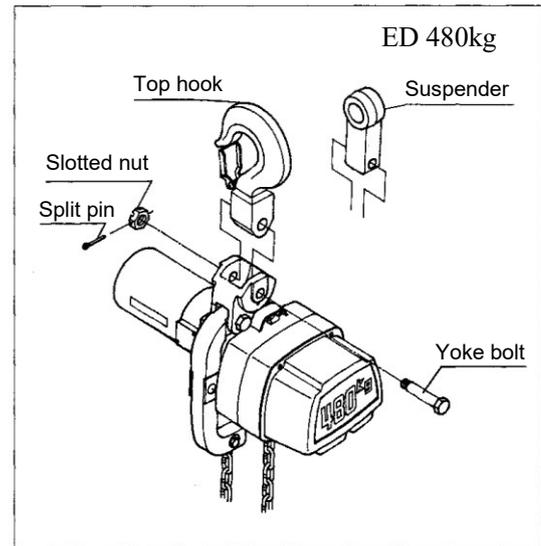
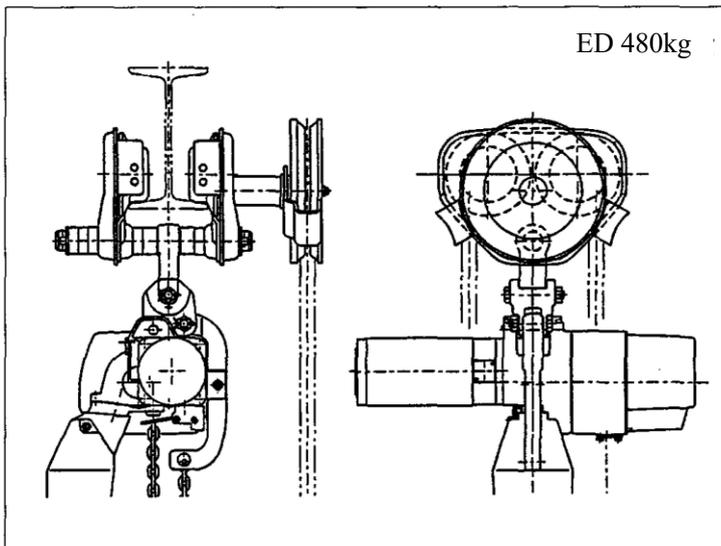
(2) Installing trolley to rail

**▲ WARNING**

For all trolley suspended electric chain hoists, rail stops must be installed at each end of the rail. Failure to install rail stops will allow the hoist and trolley to fall off the end of the rail and thus cause an accident that could result in injury and/or property damage. The stops must be positioned so as to not exert impact force on the electric chain hoist frame or trolley wheels. They must contact the ends of the trolley side frame.

Rail stops should be attached with buffers to alleviate trolley impact force.

(3) TS series trolley (480kg only)



\* For more details of connection with TS series trolley, refer to the manual of TS series trolley

## 6. OPERATION

As soon as pre-usage preparation and checks have been completed, the hoist will be ready for operation.

### **▲ WARNING**

In shifting operation between lifting up and lowering down under the loaded condition, ensure to avoid the immediate reverse operation before the hoist motor completely stops. If not avoided, it could result in the hoist's damage.

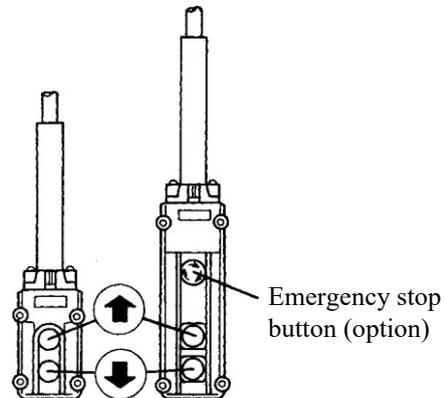
Ensure to avoid the excessive inching operation. (Inching operation: very frequent lifting or lowering operations in a very short time for positioning the hook with very small, repeated hook movements.) If not avoided, it could result in the hoist's damage.

### 6.1 Single speed type

The push button switch is single step push in type. Push  to lift and  to lower.

Emergency stop device (option)

This button is used to stop lifting or lowering in an emergency situation. It is a red, mushroom type button, located in the upper most position on the push button switch box. When pushed, power to the equipment is shut off and the button locks automatically. Turn it to the right to release the lock.



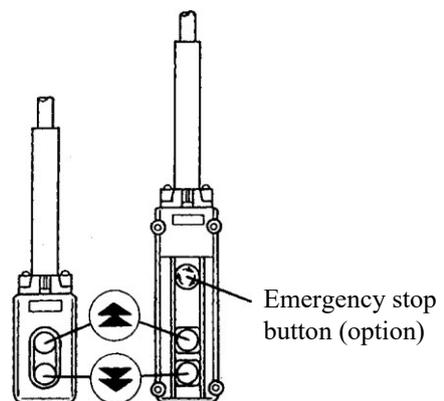
**Single speed type**

### 6.2 Dual speed type

The push button switch is dual step push in type. The first step is for low speed operation and the second step for high speed. Push  to lift and  to lower.

#### **[Low speed adjustment procedure]**

The push button can be adjusted by setting the low speed side for the actual power source voltage in each country. However, if the low speed does not work or is too fast or slow (owing to voltage and frequency fluctuation), adjust the switch in the following way:



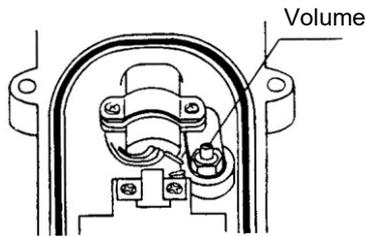
**Dual speed type**

**⚠ DANGER**

**NEVER** touch live portions of cables, terminals, and terminal screws during adjustment so as not to incur electric shock.

**ALWAYS** make sure to turn power off before servicing.

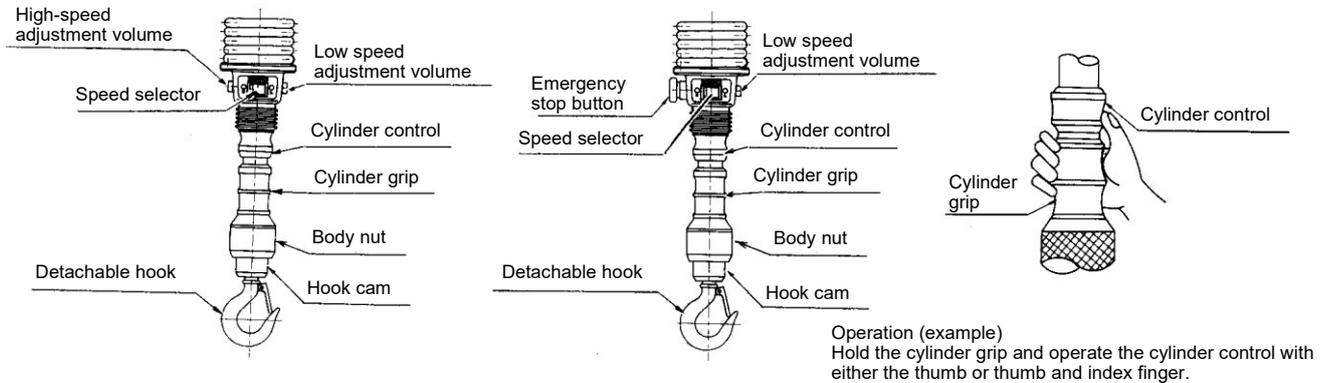
Open the back lid of the push button switch (as depicted in the next illustration).  
 Turn the volume clockwise to increase speed or counterclockwise to lower it.  
 Close the back lid of the push button switch.



**6.3 Dual speed cylinder type**

(1) This is a handling switch type hoist. The switch is directly attached to the bottom hook.  
 As illustrated, the switch is cylinder shaped. Load is lifted when the switch is flipped up and lowered when flipped down.

- \* The operation box has an alternate lightning switch.
- \* High or low lifting speed is selected by the alternate switch.
- \* “H” on the left side for high speed, “L” on the right side for low speed.



**Emergency stop type**

**[Speed adjustment procedure]**

If the hoist does not operate or have the proper speed, adjust the speed volume as follows:

- \* For increasing the lifting speed, turn the volume clockwise.
- \* For decreasing the lifting speed, turn the volume counterclockwise.

(2) The bottom hook is detachable. Detachment and setting are described next.

To detach bottom hook:

Holding the body nut, turn the hook cam to be the left (counterclockwise).

To set the bottom hook:

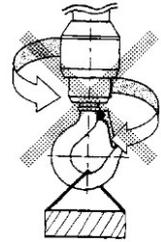
The bottom hook can be set by simply pushing it in from underneath.

## **⚠ WARNING**

**ALWAYS** make sure the hook cam is completely locked.

**NEVER** dropping or releasing a load could result in death or serious injury.

To avoid this hazard, do not operate the bottom hook release mechanism (hook cam) when the hoist with cylinder-controlled or optional detachable hook is under load.



## 6.4 Electric chain hoist with trolley

To operate the electric chain hoist with trolley, move it horizontally by either pushing the lifted load or the load chain.

## **⚠ WARNING**

**NEVER** pull the curled cord, push switch or push button cord. Pulling the curled cord, push button switch or push button cord may disconnect cord wires. Disconnected wire (s) may cause a short circuit in the hoist body or any surrounding conductor, giving the operator electric shock.

**ALWAYS** move the horizontally by grasping the cylinder grip or pushing the load.

**ALWAYS** pay your attention on your back when you attempt to push a lifted load or the load chain.

# 7. INSPECTION

## 7.1 Inspection classification

- (1) Initial inspection: Prior to initial use, all new, altered, or modified hoists shall be inspected by designated personnel to ensure compliance with the applicable provisions of this Manual.
- (2) Inspection procedure for hoists in regular service is divided into two general classifications based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the nature of the critical components of the hoist and the degree of their exposure to wear, deterioration, or malfunction. The two general classifications are herein designated as daily and periodic with respective intervals between inspections as defined below.
  - (a) Daily inspection: visual examinations by the operator or other designated personnel.
  - (b) Periodic inspection: visual inspection by designated personnel.
    - 1) normal service; yearly
    - 2) heavy service; semiannually
    - 3) severe service; quarterly
    - 4) special or infrequent service as recommended by a qualified person before the first such occurrence and as directed by the qualified service personnel for any subsequent occurrences.

## 7.2 Occasionally used hoist

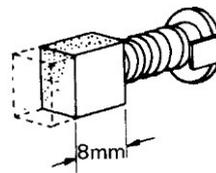
- (1) A hoist which has been idle for a period one month or more but less than one year shall be given an inspection conforming to the requirements of section 7.4 before it is placed in service.
- (2) A hoist which has been idle for a period of one year shall be given an inspection conforming to the requirements of section 7.4 before it is placed in service.

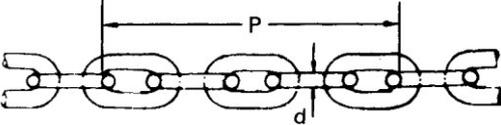
## 7.3 Inspection record

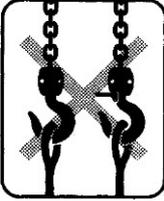
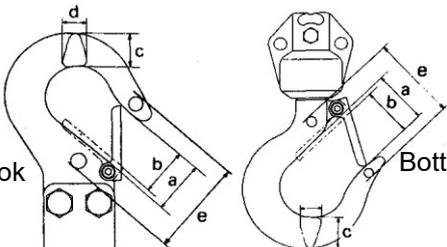
Dated inspection reports and records should be maintained at time intervals and such records are stored where they are available to authorized personnels.

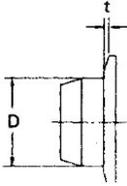
## 7.4 Inspection methods and judgement criteria

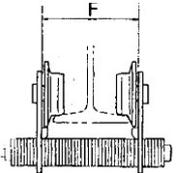
Item	Inspection Methods	Discard Limit/Criteria	Remedy
<b>1. Hoist body</b>			
(1) Casting damage	Check visually.	• No cracks on hoist body.	Replace.
(2) Abnormal sounds during operation	Lift and lower a light load.	• No vibration or irregular noise from the motor or from inside the hoist body.	Overhaul.
(3) gear oil quantity; contamination	Check visually.	• Change gear oil regularly, matching usage frequency.	Replace.
(4) Controller cover and case damage	Check visually.	• No deformation or cracks.	Replace.
(5) Name plate damage	Check visually.	• Capacity should be legible	Replace.
(6) Cable and cord joint damage	Check visually.	• No damage or loose screws.	Replace/repair.
(7) Brake function	Check brake slipping on lifting or lowering with no load.	• Braking distance: approx. 5 chain links.	Ask service shop to inspect and repair.
	Check brake slipping on lifting or lowering with rated load at high speed.	• Braking distance: approx. 5 chain links.	Ask service shop to inspect and repair.
(8) Brush	Check visually.	• The discard limit of this brush is 8mm (brush should not be worn past this limit).	Replace.



Item	Inspection Methods	Discard Limit/Criteria	Remedy												
<b>2. Operation switch</b>															
(1) Function	Operate switch with no load.	<ul style="list-style-type: none"> <li>The bottom hook shall lift and lower based on push button switch and cylinder switch indications.</li> </ul>	<p>Check power source and make sure cord is connected. Replace if defective (electrical equipment included).</p> <p>Replace.</p>												
(2) Emergency stop function	Operate switch with no load.	<ul style="list-style-type: none"> <li>To change from the low to high speed. (Dual speed and dual speed cylinder types)</li> <li>Make sure the hoist stops instantaneously when the emergency stop button is operated while lifting or lowering.</li> </ul>	<p>Check power source and make sure cord is connected. Replace if defective (electrical equipment included).</p> <p>Replace.</p>												
(3) Case cracking	Check visually.	<ul style="list-style-type: none"> <li>No cracks.</li> </ul>	Replace.												
(4) Loose wiring joints	Check visually.	<ul style="list-style-type: none"> <li>No loosening or missing of screws.</li> </ul>	Repair.												
<b>3. Load chain</b>															
(1) Appearance	Check visually.	<ul style="list-style-type: none"> <li>Load chain shall be oiled.</li> </ul>	Supply oil.												
(2) Load chain Appearance	Check visually for greasing and twisting.	<p>Load chain is well lubricated.</p>  <p>Load chain is not twisted or capsized.</p>	<p>If chain is dry, apply the specified lubricant in the section '5.2(4)'.</p> <p>If chain is twisted, untwist it and restore it to normal chain condition.</p>												
(3) Wear	Measure with calipers.	<ul style="list-style-type: none"> <li>Dimension "P" or "d" shall be within the following values:</li> </ul>	Replace.												
Unit (mm)															
		<table border="1"> <thead> <tr> <th rowspan="2">Chain Diameter (d)</th> <th rowspan="2">Number of Measured Chain Links</th> <th colspan="2">Sum of Pitches (P) of Measured Chain Links</th> <th rowspan="2">Wear Limit of d</th> </tr> <tr> <th>Normal</th> <th>Discard</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>5</td> <td>60.5</td> <td>62.3</td> <td>3.3</td> </tr> </tbody> </table>		Chain Diameter (d)	Number of Measured Chain Links	Sum of Pitches (P) of Measured Chain Links		Wear Limit of d	Normal	Discard	4	5	60.5	62.3	3.3
Chain Diameter (d)	Number of Measured Chain Links	Sum of Pitches (P) of Measured Chain Links				Wear Limit of d									
		Normal	Discard												
4	5	60.5	62.3	3.3											
															

Item	Inspection Methods	Discard Limit/Criteria	Remedy																															
<p><b>4. Hook</b> (1) Deformation</p> 	<p>Check visually.</p> <p>Measure dimension “e” between two embossed marks at time of purchase with calipers.</p> <p>Measure with calipers.</p>	<ul style="list-style-type: none"> <li>No deformation from original shape (at time of purchase).</li> <li>No deformation from original shape (at time of purchase).</li> <li>Dimensions “c” and “d” are within their limits.</li> </ul>	<p>Replace.</p> <p>Replace.</p> <p>Replace.</p>																															
(Reference values)																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"></th> <th colspan="2" style="text-align: center;">c mm</th> <th colspan="2" style="text-align: center;">d mm</th> </tr> <tr> <th colspan="2"></th> <th style="text-align: center;">Normal Size</th> <th style="text-align: center;">Discard Limit</th> <th style="text-align: center;">Normal Size</th> <th style="text-align: center;">Discard Limit</th> </tr> </thead> <tbody> <tr> <td colspan="2" style="text-align: center;">Bottom hook</td> <td style="text-align: center;">17.0</td> <td style="text-align: center;">16.2</td> <td style="text-align: center;">12.1</td> <td style="text-align: center;">11.5</td> </tr> <tr> <td colspan="2" style="text-align: center;">Top hook</td> <td style="text-align: center;">17.0</td> <td style="text-align: center;">16.2</td> <td style="text-align: center;">7.0</td> <td style="text-align: center;">6.5</td> </tr> <tr> <td rowspan="2" style="text-align: center; vertical-align: middle;">480 kg</td> <td style="text-align: center;">Bottom hook</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">23.5</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">21.0</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">17.5</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">16.0</td> </tr> <tr> <td style="text-align: center;">Top hook</td> </tr> </tbody> </table>						c mm		d mm				Normal Size	Discard Limit	Normal Size	Discard Limit	Bottom hook		17.0	16.2	12.1	11.5	Top hook		17.0	16.2	7.0	6.5	480 kg	Bottom hook	23.5	21.0	17.5	16.0	Top hook
		c mm		d mm																														
		Normal Size	Discard Limit	Normal Size	Discard Limit																													
Bottom hook		17.0	16.2	12.1	11.5																													
Top hook		17.0	16.2	7.0	6.5																													
480 kg	Bottom hook	23.5	21.0	17.5	16.0																													
	Top hook																																	
 <p style="display: flex; justify-content: space-around;"> <span>Top hook</span> <span>Bottom hook</span> </p>																																		
<p>(2) Flaws</p> <p>(3) Bend at shank of bottom hook</p> <p>(4) Bottom hook movement</p> <p>(5) Deformation of bottom yoke</p> <p>(6) Hook latch</p> <p>(7) Rotation of idle sheave</p>	<p>Check visually.</p> <p>Check visually.</p> <p>Turn hook.</p> <p>Check visually.</p> <p>Check visually.</p> <p>Turn idle sheave by lifting the load chain up and down, as illustrated.</p>	<ul style="list-style-type: none"> <li>No deep flaws.</li> <li>Never use if bent.</li> <li>Hook should turn lightly.</li> <li>Should be free from deformation.</li> <li>No deformation from original shape (at time of purchase).</li> </ul> <p>The idle sheave rotates smoothly.</p>	<p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Inspect and repair if rotation is not smooth.</p>																															
																																		

Item	Inspection Methods	Discard Limit/Criteria	Remedy									
<p><b>5. Chain spring and Cushion rubber</b></p> <p>(1) Chain spring deformation (Option)</p> <p>(2) Cushion rubber deformation</p>	<p>Check visually.</p> <p>Check visually.</p>	<p><b>NEVER</b> use deformed chain spring as illustrated or unspringy one, and make sure that the size of free chain spring is the minimum of 75mm (130mm) the initial size of the spring is 85mm (150mm) * ( ) 60-240kg</p> <p><b>NEVER</b> use a cushion rubber if it is deformed as illustrated.</p>  	<p>Replace chain spring with a new one if deformed.</p> <p>Replace cushion rubber with a new one if deformed.</p>									
<p><b>6. Chain container</b></p>	<p>Check visually.</p>	<ul style="list-style-type: none"> <li>Chain container should not be damaged.</li> <li>Screws and pins should not be loosened or damaged.</li> <li>No foreign matter or dust.</li> </ul>	<p>Replace with new ones if damaged.</p> <p>Replace with new ones if damaged.</p> <p>Remove any foreign matter or dust.</p>									
<p><b>7. Electric cable</b></p> <p>(1) Damage of electric cable</p> <p>(2) Loose of electric cable connection</p> <p>(3) Poor grounding</p>	<p>Check visually.</p> <p>Check visually.</p> <p>Check visually.</p>	<ul style="list-style-type: none"> <li>No damage.</li> <li>No loosening.</li> <li>Shall be grounded.</li> </ul>	<p>Replace.</p> <p>Repair.</p> <p>Ground.</p>									
<p><b>8. Mini trolley (60-240 kg)</b> <b>In the case of 480kg, refer to the manual of TS series trolley.</b></p> <p>(1) Function</p> <p>(2) Falling of split pins</p> <p>(3) Wheel wear</p>	<p>Move (trolley) under no-load condition.</p> <p>Check visually.</p> <p>Measure with calipers.</p> 	<ul style="list-style-type: none"> <li>Should run smoothly.</li> <li>Not fall.</li> <li>Contact face and flange wear should be within the following limits:</li> </ul> <table border="1" data-bbox="756 1644 1422 1778"> <thead> <tr> <th colspan="2">Diameter of Tread D (mm)</th> <th>Discard Limit of Flange</th> </tr> <tr> <th>Normal</th> <th>Discard limit</th> <th>t (mm)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>38</td> <td>1.5</td> </tr> </tbody> </table>	Diameter of Tread D (mm)		Discard Limit of Flange	Normal	Discard limit	t (mm)	40	38	1.5	<p>Replace.</p> <p>Repair.</p> <p>Replace.</p>
Diameter of Tread D (mm)		Discard Limit of Flange										
Normal	Discard limit	t (mm)										
40	38	1.5										

Item	Inspection Methods	Discard Limit/Criteria	Remedy
(4) Frame deformation	Check visually. Measure with calipers. 	<ul style="list-style-type: none"> <li>• No deformation.</li> <li>• Frame top dimensions “F” shall not exceed dimensions before use by 5% or more.</li> </ul>	Replace. Replace.

## 8. MAINTENANCE

### ⚠ WARNING

**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.

**ALWAYS** lock-out power source before conducting maintenance.

After performing any maintenance on the hoist, always test to its rated capacity before returning to service.

### 8.1 Gear lubrication

Change gear oil at least once a year.

### ⚠ WARNING

To change oil, **ALWAYS** remove both the oil plug and drain plug to drain contaminated oil completely before supplying the specified Kito’s new gear oil.

Use of oils other than the specified Kito’s gear oil might not allow full exertion of the friction clutch, which can cause load to drop.

To avoid these hazards:

Always use the specified Kito’s gear oil.

### 8.2 Load chain lubrication

Refer to ‘5.3 (4) Lubricating the load chain

### ⚠ WARNING

**ALWAYS** lubricate load chain weekly, or more frequently, depending on severity of service.

**ALWAYS** lubricate more frequently than normal in corrosive environment. (Salt water, sea air and/or acid or other corrosive compounds)

**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.

### 8.3 Mechanical brake with friction clutch

The mechanical brake with friction clutch has both slip clutch and brake functions.

#### **⚠ WARNING**

**NEVER** disassemble and adjust the mechanical brake with friction clutch.

**ALWAYS** contact your local KITO dealer in case of malfunction of mechanical brake with friction clutch.

## 9. CONNECTION DIAGRAM

The electric instruments of the controller (contactor and converter) are installed on a panel and contained in the hoist body.

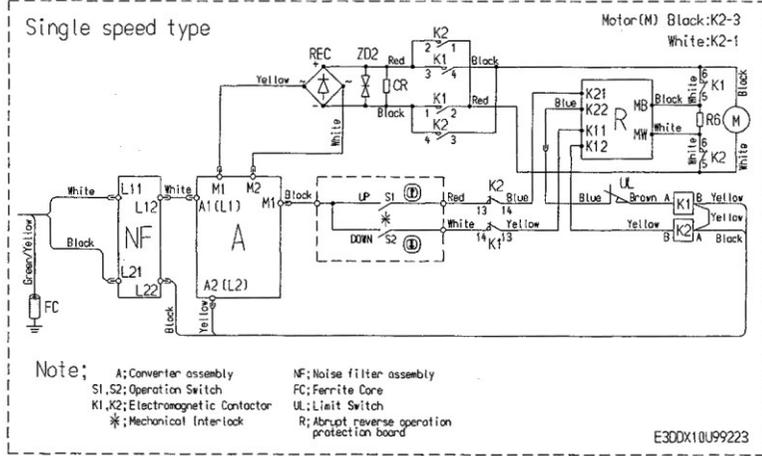
To check the connection, open the controller cover of the hoist body. Make sure that lead wires are connected correctly and firmly, referring to the following connection diagram.

#### **⚠ DANGER**

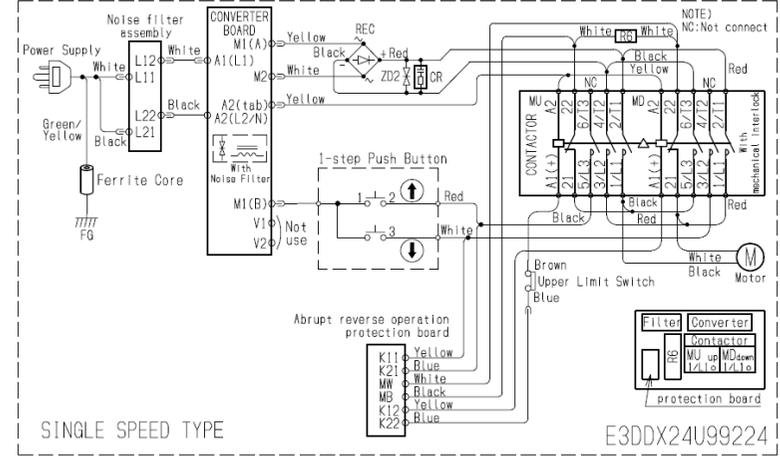
To avoid possible electric shock, **ALWAYS** make sure to turn off the power source before checking the connection.

# 9.1 Single speed type

## (1) Standard (without emergency stop device) type

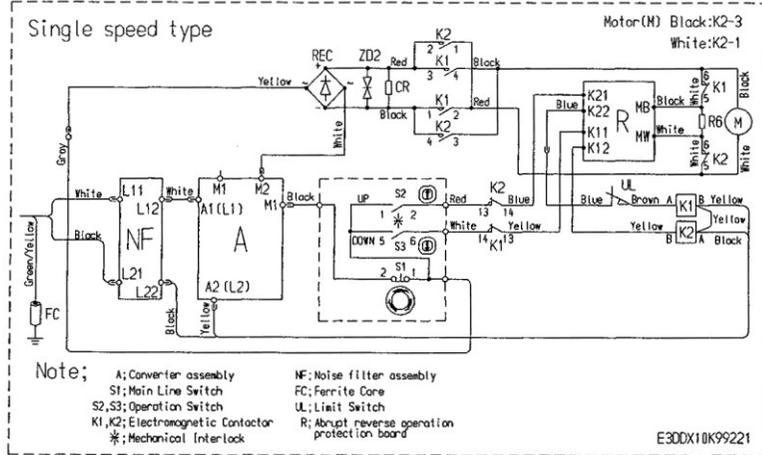


Motor output 300W  
(WLL 60kg, 100kg, 180kg)

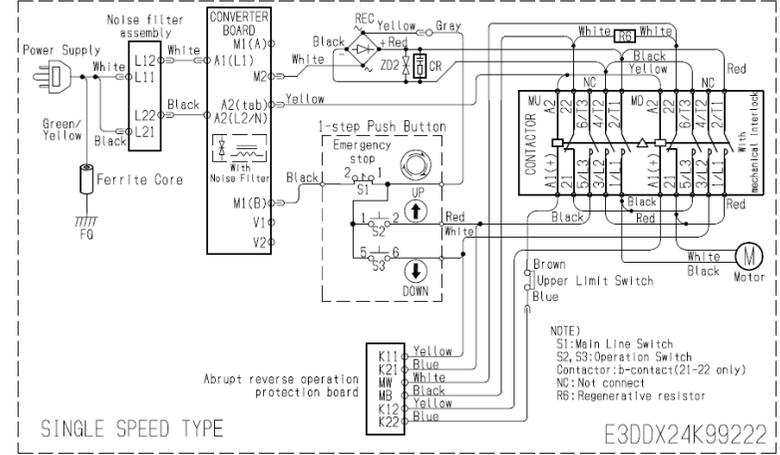


Motor output 600W  
(WLL 160kg, 240kg, 480kg)

## (2) Emergency stop type



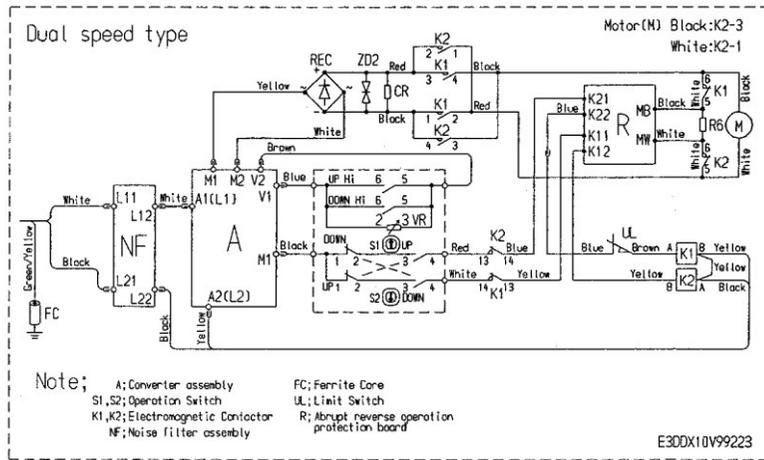
Motor output 300 W  
(WLL 60kg, 100kg, 180kg)



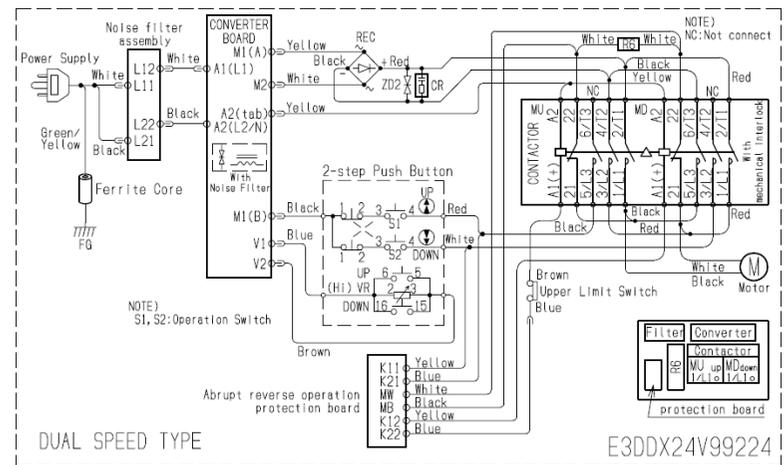
Motor output 600W  
(WLL 160kg, 240kg, 480kg)

## 9.2 Dual speed type

### (1) Standard (without emergency stop device) type

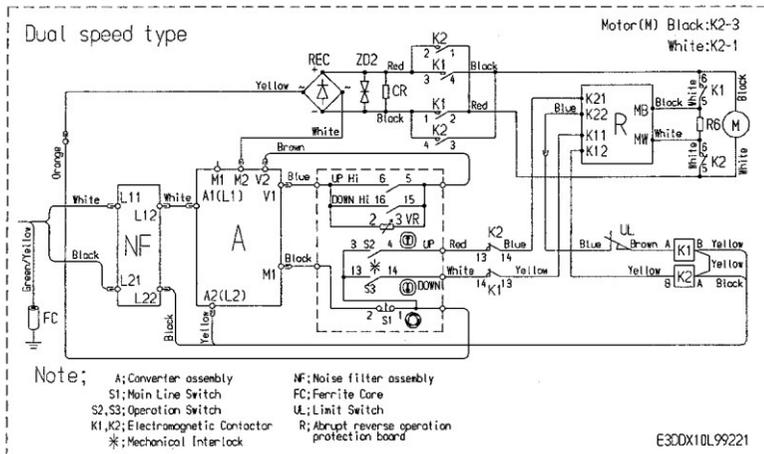


Motor output 300 W  
(WLL 60kg, 100kg, 180kg)

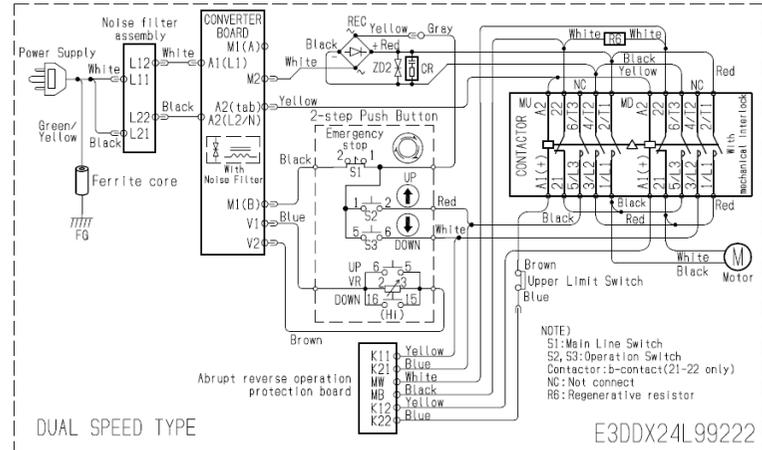


Motor output 600W  
(WLL 160kg, 240kg, 480kg)

### (2) Emergency stop type



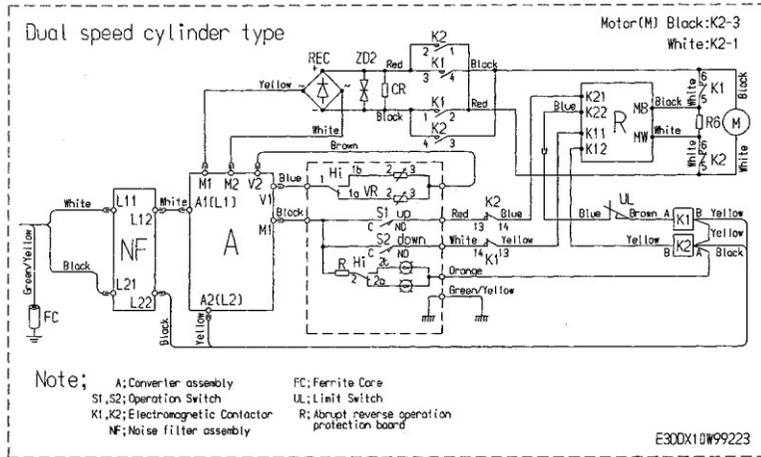
Motor output 300W  
(WLL 60kg, 100kg, 180kg)



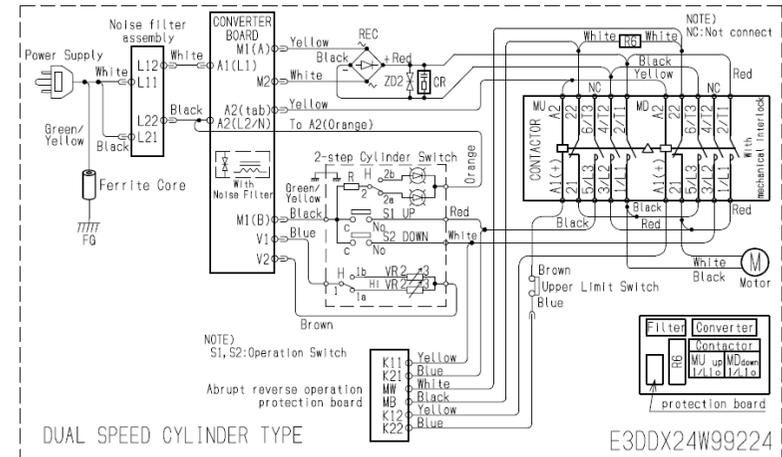
Motor output 600W  
(WLL 160kg, 240kg, 480kg)

## 9.3 Dual speed cylinder type

### (1) Standard (without emergency stop device) type

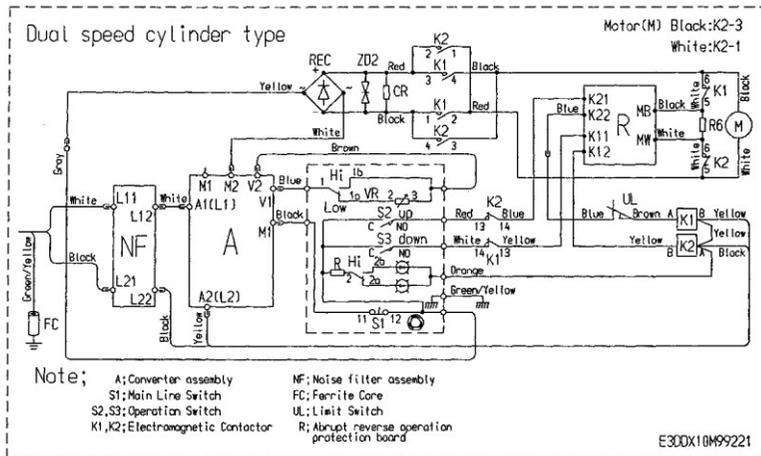


Motor output 300W  
(WLL 60kg, 100kg, 180kg)

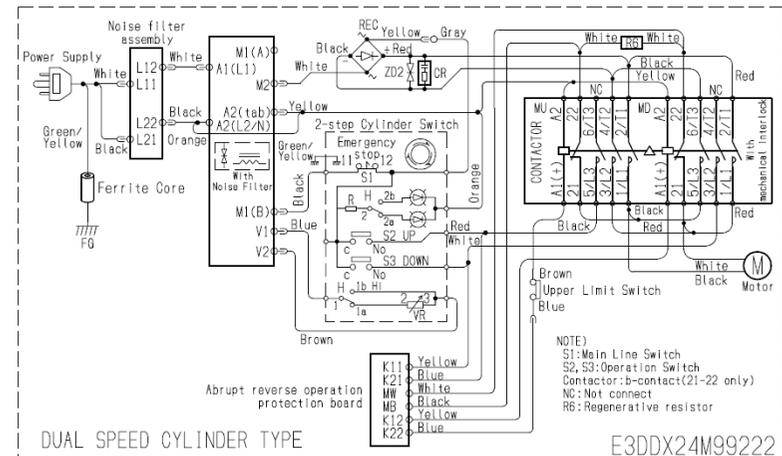


Motor output 600W  
(WLL 160kg, 240kg)

### (2) Emergency stop type



Motor output 300W  
(WLL 60kg, 100kg, 180kg)



Motor output 600W  
(WLL 160kg, 240kg)

## 10. TROUBLE SHOOTING AND SOLUTIONS

Situation	Condition		Cause	Remedy
Both lifting and lowering are not possible.	<ul style="list-style-type: none"> <li>When the push button switch or cylinder switch is operated, a clicking sound is heard from the electric instruments unit.</li> </ul>	<ul style="list-style-type: none"> <li>Fuse has burned out.</li> </ul>	<ul style="list-style-type: none"> <li>Motor has been burned out due to too much use.</li> </ul>	<ul style="list-style-type: none"> <li>Replace motor.</li> <li>Use under rated conditions.</li> </ul>
			<ul style="list-style-type: none"> <li>Abnormal voltage.</li> </ul>	<ul style="list-style-type: none"> <li>Use under rated voltage.</li> </ul>
		<ul style="list-style-type: none"> <li>Fuse is normal.</li> </ul>	<ul style="list-style-type: none"> <li>Rectifier abnormality.</li> </ul>	<ul style="list-style-type: none"> <li>Replace rectifier.</li> </ul>
			<ul style="list-style-type: none"> <li>Writing abnormality.</li> </ul>	<ul style="list-style-type: none"> <li>Rewrite as normal.</li> </ul>
	<ul style="list-style-type: none"> <li>The push button or cylinder switch works, but no clicking sound is heard from the electric instruments unit.</li> </ul>	<ul style="list-style-type: none"> <li>Fuse is normal.</li> </ul>	<ul style="list-style-type: none"> <li>Power cable/push button cord has been disconnected.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the power cable/push button cord.</li> </ul>
			<ul style="list-style-type: none"> <li>Voltage drop.</li> </ul>	<ul style="list-style-type: none"> <li>Use under rated voltage.</li> </ul>
Either lifting or lowering does not work.	<ul style="list-style-type: none"> <li>When the push button or cylinder switch is operated, a clicking sound is heard from the electric instruments unit.</li> </ul>		<ul style="list-style-type: none"> <li>Brush wear.</li> </ul>	<ul style="list-style-type: none"> <li>Replace brush.</li> </ul>
			<ul style="list-style-type: none"> <li>Chain guide wear.</li> </ul>	<ul style="list-style-type: none"> <li>Replace chain guide.</li> </ul>
			<ul style="list-style-type: none"> <li>Overload (lifting impossible).</li> </ul>	<ul style="list-style-type: none"> <li>Use within rated load.</li> </ul>
	<ul style="list-style-type: none"> <li>The push button or cylinder switch is operated but no clicking sound is heard from the electric instruments unit.</li> </ul>		<ul style="list-style-type: none"> <li>Push button cord defect or disconnection.</li> </ul>	<ul style="list-style-type: none"> <li>Replace cord.</li> </ul>
Lifting/ lowering speed is too slow.	<ul style="list-style-type: none"> <li>Speed is not only too slow but constant.</li> </ul>		<ul style="list-style-type: none"> <li>Voltage drop.</li> </ul>	<ul style="list-style-type: none"> <li>Use under the rated voltage.</li> </ul>
			<ul style="list-style-type: none"> <li>Deteriorated speed control function of controller.</li> </ul>	<ul style="list-style-type: none"> <li>Replace with a normal one.</li> <li>Replace control panel complete set.</li> </ul>
	<ul style="list-style-type: none"> <li>Motor stops with excessive slip under light load.</li> </ul>		<ul style="list-style-type: none"> <li>Deteriorated clutch brake function.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the set of mechanical brake with friction clutch.</li> </ul>
	<ul style="list-style-type: none"> <li>When winding, a motor sound is heard but load lifting tends to stop in the middle.</li> </ul>		<ul style="list-style-type: none"> <li>Overload.</li> </ul>	<ul style="list-style-type: none"> <li>Use within rated load.</li> </ul>

Situation	Condition	Cause	Remedy
Brake slippage.	• Braking distance is too long, even under no load conditions.	• Motor has become demagnetized, owing to too frequent use.	• Replace with a normal one.
		• Improper contact of electromagnetic contactors.	
		• Deteriorated resistor for dynamic braking.	
	• The load cannot be held at the level when stopping operation.	• Improper gear oil use.	• Replace the specified gear oil.
	• Within rated load, lifting/ lowering speed is slow.	• Deterioration of clutch brake.	• Replace the set of mechanical brake with friction clutch.
Oil leakage.	• Oil leakage from case joint and chain guide.	• Defective gear case packing/oil seal.	• Replace with a normal one.
		• Loosened assembly bolts.	• Fasten with normal torque.
	• Leakage from oil plug.	• Loosened oil plug.	• Fasten oil plug.
A clicking sound is heard from the load chain during lifting.	—	• Wear of load sheave.	• Replace with a normal one.
		• Wear of load chain.	
		• Rust on load chain.	
Electric shock.	—	• Accumulation of moisture/foreign matter on electrical instruments.	• Remove moisture/foreign matter.
		• Improper grounding.	• Secure correct grounding.

Ask your local Kito dealer to repair.

For maintenance, a fuse shown in the table is attached in the controller cover (the capacity/ name plate side) as a spare.

#### Fuses for maintenance

WLL (kg)	Speed Type	Fuse Rating (A)	Nos. per Hoist
60, 100, 180	Single	5	2
	Dual	5	2
		0.1	1
160, 240, 480	Single	10	2
	Dual	10	2
		0.1	1

# 11. 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 “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.
- (4) 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.
- (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.

# 12. PARTS LIST

■ Controller cover, gear case, body, motor, top/bottom hook, load chain, chain guide, chain container

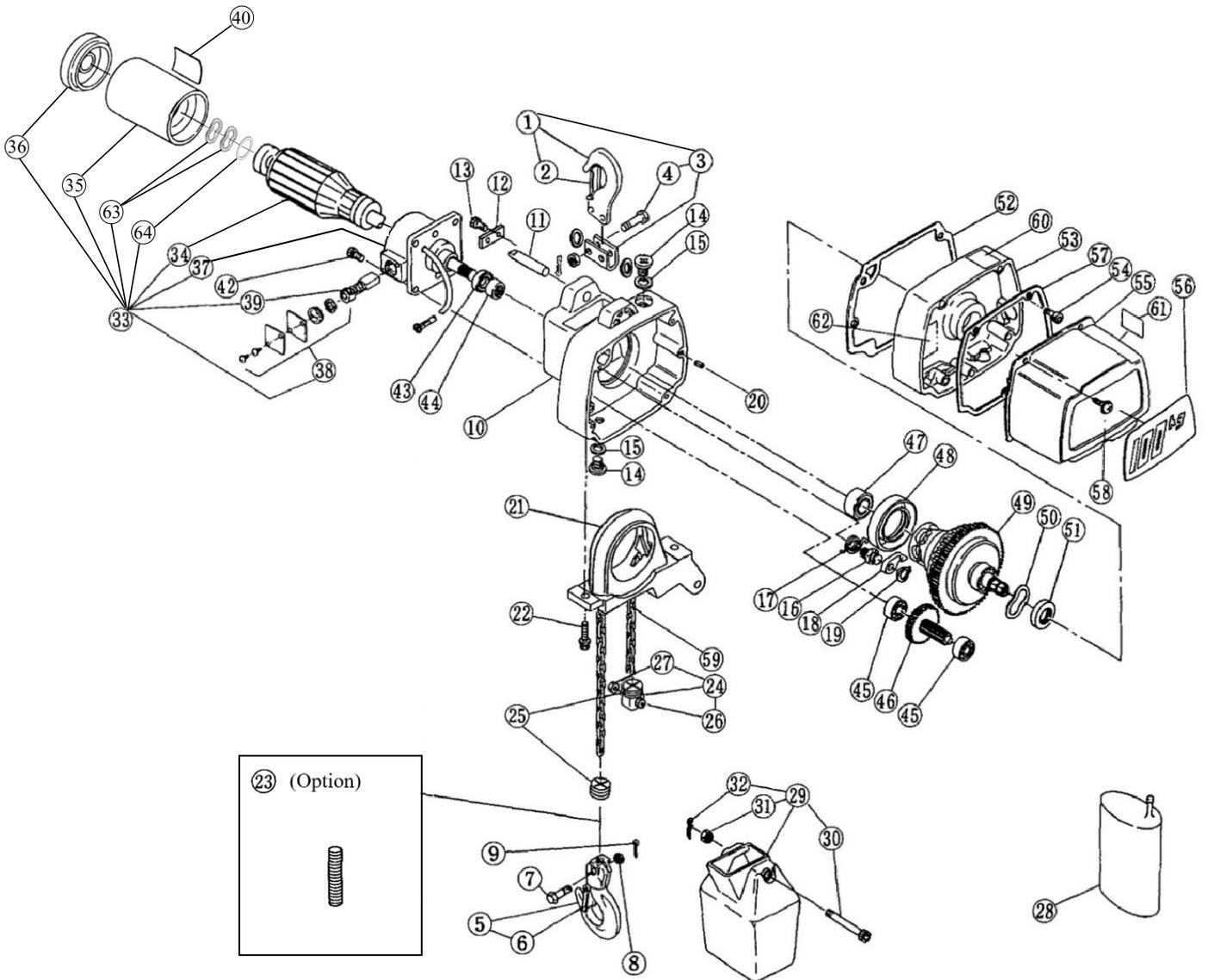


Fig No.	Part No.	Part Name	Nos. per Hoist	WLL (kg)				
				60kg	100kg	180kg	160kg	240kg
1	E2D1001	Top hook assembly	1	E2DBX10S1001	←	←	←	←
2	E2D1071T	Hook latch assembly T	1	L4BA008-1071	←	←	←	←
3	E2D1011	Top yoke complete set	1	E2DBX24S1011	←	←	←	←
4	E2D5091	Top pin assembly	2	C3BA010-1041	←	←	←	←
5	E2D1021	Bottom hook complete set	1	E2DBX10S1021	←	←	←	←
6	E2D1071B	Hook latch assembly B	1	L1LA005-1071	←	←	←	←
7	E2D041	Chain pin	1	E1DBX10S9041	←	←	←	←
8	E2D049	Slotted nut	1	E1DBX10S9049	←	←	←	←
9	E2D096	Split pin	1	J1PW02-016008	←	←	←	←
10	E3D101	Body	1	E3DBX10S9101	←	←	E3DBX24S9101	←
11	E2D117	Top pin E	1	E2DBX10S9117	←	←	E2DBX24S9117	←
12	E2D118	Shaft stopper	1	×	×	×	E2DBX24S9118	←
13	E2D072	Socket bolt with spring washer	2	×	×	×	J1BG2-0501010	←
14	E2D111	Oil plug	2	E5FE003S9111	←	←	←	←
15	E2D112	Plug packing	2	E2YS005-9109	←	←	←	←
16	E2D269	Pawl pin	1	E2DBX10S9269	E2DBX18S9269	←	E2DBX10S9269	←
17	E2D270	Pawl spring	1	E1DBX10S9270	E2DBX18S9270	←	E1DBX10S9270	←
18	E2D268	Pawl	1	L4BA015-9155	L4BA008-9155	←	L4BA015-9155	←
19	E2D271	Snap ring	1	J1SS000-00011	J1SS000-00009	←	J1SS000-00011	←
20	E2D114	Set pin	2	J1PS11-050010	←	←	←	←
21	E3D401	Chain guide	1	E3DBX10S9401	←	←	E3DBX24S9401	←
22	E2D451	Socket bolt with spring washer	2	J1BG2-0601818	←	←	←	←
23	E3D421	Chain spring (option)	1	E3DBX10S9421	←	←	←	←
25	E3D046	Cushion rubber	2	E3DBX10S9046	←	←	←	←
24	E3D1045	Stopper complete set	1	E1DBX10S1045	←	←	←	←
26	E2D086	Socket bolt with spring washer	1	J1BG2-0502020	←	←	←	←
27	E2D087	Lever nut	1	C2BA020-9074	←	←	←	←
28	E3D901	Gear oil for to ED2	1	E2DBX06S5901	←	←	E2DBX24S5901	←
		Gear oil for to ED2B	1	E3DHX10S5901	←	←	E3DHX24S5901	←
29	E2D1831	Chain container (3)	1	E2DBX10S1831	←	←	←	←
	E2D1835	Chain container (6)	1	E2DBX10S1835	←	←	←	←
30	E2D854	Socket bolt BP	1	E2DBX10S9854	←	←	←	←
31	E2D853	U nut	1	E2DBX10S9853	←	←	←	←
32	E2D852	Split pin	1	J1PW02-016008	←	←	←	←
33	E2D1051D	Motor complete set	1	E2DDX10S1501	←	←	E2DDX24S1501	←
34	E2D5508D	Armature assembly	1	E2DDX10S9508	←	←	E2DDX24S9508	←
35	E2D5507	Stator assembly	1	E2DDX10S9507	←	←	E2DBX24S9507	←
36	E2D509	Motor cover	1	E2DBX24S9509	←	←	←	←
37	E2D506	Motor flange	1	E2DDX10S9506	←	←	E2DDX24S9506	←
38	E2D1510	Lid assembly	1	E2DDX10S1513	←	←	←	←
39	E2D502	Carbon brush	2	E2DDX10S9512	←	←	←	←
63	-----	Set spring	2	E2DBX24S9514	←	←	←	←
64	-----	Washer	1	E2DBX24S9515	←	←	←	←
40	E2D802	Name plate M for Single speed	1	E2DDX10A9802	←	E2DDX18A9802	E2DDX24A9802	←
		Name plate M for Dual speed	1	E2DDX06B9802	E2DDX10B9802	E2DDX18B9802	E2DDX16B9802	E2DDX24B9802

Fig No.	Part No.	Part Name	Nos. per Hoist	WLL (kg)				
				60kg	100kg	180kg	160kg	240kg
42	E3D451	Socket bolt with spring washer	4	J1BG2-0602222	←	←	←	←
	E2D162	Socket bolt with spring washer	4	J1BG2-0601818 Note 1	← Note 1	← Note 2	← Note 1	← Note 3
43	E2D221	Oil seal	1	E1DBX10S9221	←	←	←	←
44	E2D222	Needle roller bearing	1	E2DBX10S9222	←	←	←	←
45	E2D231	Ball bearing	2	J1GR0A0-06000	←	←	←	←
46	E2D1223	Gear #2 assembly	1	E2DBX06S1223	E2DBX10S1223	E2DBX18S1223	E2DBX16S1223	E2DBX24S1223
47	E2D238	Ball bearing	1	J1GR0B0-06002	←	←	J1GR0B0-06202	←
48	E2D236	Oil seal	1	E1DBX10S9236	←	←	E2DBX24S9236	←
49	E2D5234	Friction clutch assembly (incl. Load sheave)	1	E2DHX06S5234	E2DHX10S5234	E2DHX18S5234	E2DHX16S5234	E2DHX24S5234
50	E2D311	Set spring	1	E1DBX10S9311	←	←	E1DBX20S9311	←
51	E2D239	Oil seal	1	E6SE005S9221	←	←	E1DBX20S9239	←
52	E2D125	Gear case packing	1	E2DBX10S9125	←	←	E2DBX24S9125	←
53	E2D105	Gear case	1	E2DBX10S9105	←	←	E2DBX24S9105	←
54	E2D152	Socket bolt with spring washer	4	J1BG1-0503232	←	←	J1BG1-0504040	←
55	E2D104	Controller cover	1	E1DBX10S9104	←	←	E1DBX20S9104	←
56	E3D801	Name plate B	1	E3DDX06A9801	E3DDX10A9801	E3DDX18A9801	E3DDX16A9801	E3DDX24A9801
57	E2D109	Controller cover packing	1	E1DBX10S9109	←	←	E1DBX20S9109	←
58	E2D151	Machine screw with spring washer	3	J1AP2-5001010	←	←	←	←
59	E2D841	Load chain	1	(See Table1)				
60	E2D865	Warning seal EO	1	E2DPX10S9865	←	←	←	←
61	E2D866	Warning seal EE	1	E2DPX10S9866	←	←	←	←
62	E2D867	Warning seal EF	1	E2DPX10S9867	←	←	←	←

Note 1: Lot No before 6ASY8681

Note 2: Lot No before 6ASY8680

Note 3: Lot No before 6ASY8312

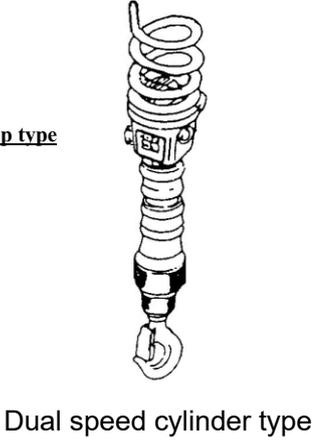
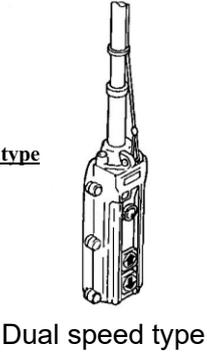
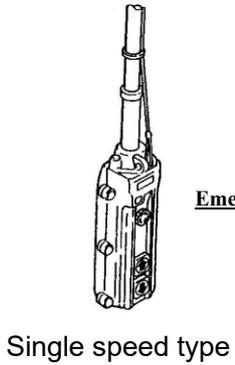
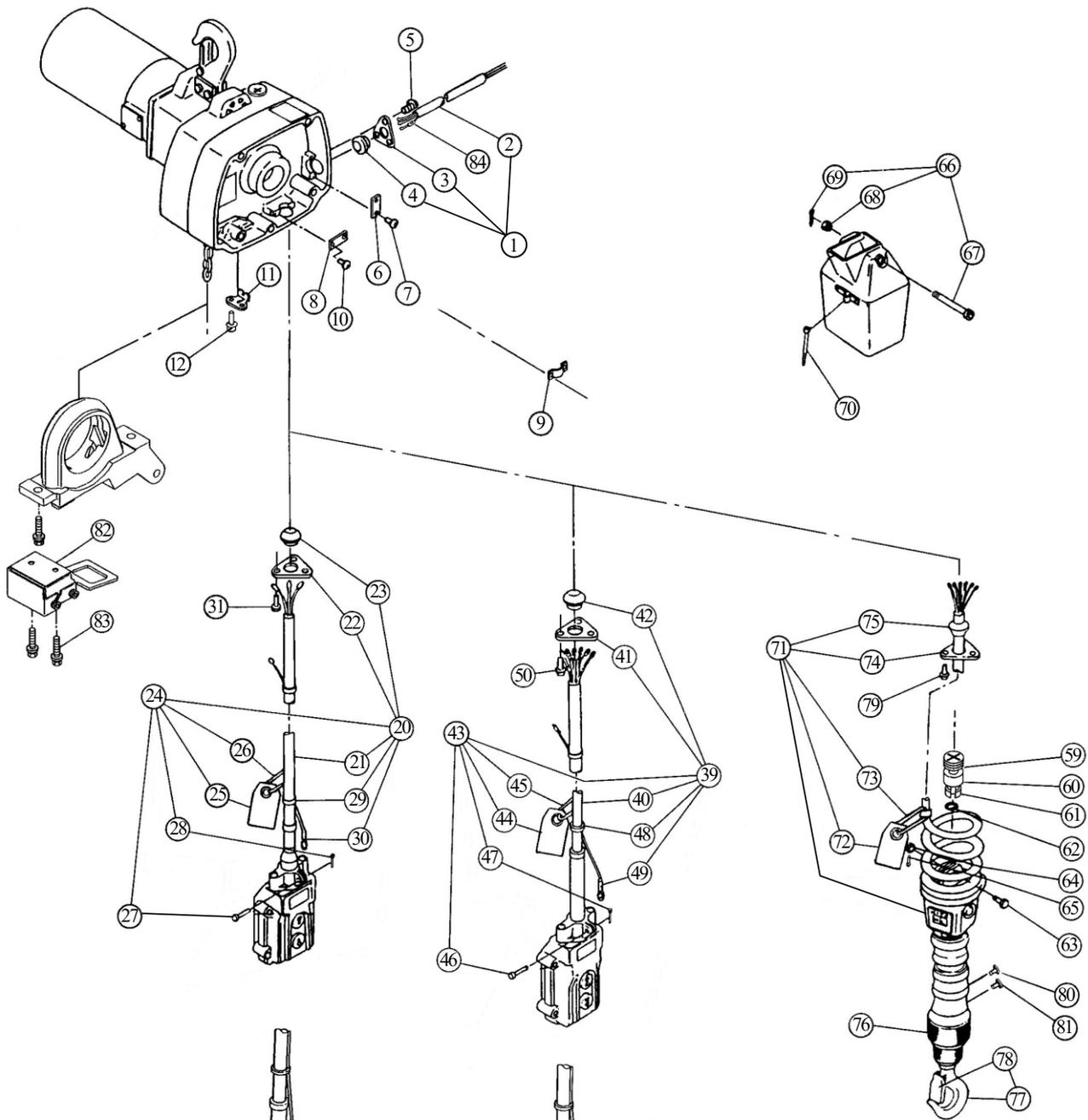
When you order 'Fig No. 42 Socket bolt with spring washer,' please check Lot No of your body and make sure to correspond each other.

**Table 1: Load chain**

**Item code is set according to the lift length.**

Lift	60kg	100kg	180kg	160kg	240kg
1.8m (For cylinder type)	K7ZN040-00246	←	←	←	←
3m	K7ZN040-00328	←	←	←	←
4m	K7ZN040-00428	←	←	←	←
6m	K7ZN040-00631	←	←	←	←
10m	K7ZN040-01035	←	←	←	←
15m	K7ZN040-01538	←	←	←	←
20m	K7ZN040-02044	←	←	←	←
30m	K7ZN040-03053	←	←	←	←

**Power supply cable, push button, cylinder switch**



### Power Supply Cable: Common for Single, Dual Speed and Cylinder Type

Fig No.	Part No.	Part Name	Nos. per Hoist	WLL (kg)					Re-mark
				60kg	100kg	180kg	160kg	240kg	
1	E2D1521	Power supply cable 3C complete set	1	Z6CE210E1053	←	←	Z6CE224E1053	←	For 5m
				Z6CE210E1103	←	←	Z6CE224E1103	←	For 10m
				Z6CE210E1153	←	←	Z6CE224E1153	←	For 15m
2	E2D521	Power supply cable 3C	1	VCTF3C×2mm <sup>2</sup>	←	←	←	←	
3	E2D537	Cable holder C	1	E1DBX10S9537	←	←	←	←	
4	E2D524	Cable packing C8	1	E1DBX10S9524	←	←	←	←	
5	E2D555	Machine screw with spring washer	3	J1AP2-5001010	←	←	←	←	
6	E2D541	Cable clamp E8	1	E2DBX10S9541	←	←	←	←	
7	E2D551	Machine screw with spring washer	2	J1AP2-4001616	←	←	←	←	
8	E2D541	Cable clamp E8 (Single speed)	1	E2DBX10S9541	←	←	←	←	
9	E2D542	Cable clamp E12 (Dual/Cylinder)	1	E2DBX10G9542	←	←	←	←	
10	E2D551	Machine screw with spring washer	2	J1AP2-4001616	←	←	←	←	
11	E2D543	Cable support L	1	E2DBX10S9543	←	←	←	←	
12	ED552	Machine screw with spring washer	2	J1AP2-5001010	←	←	←	←	
84	E3D169	Ferrite core	1	E3DDX10K9169	←	←	←	←	

### Push button: Components differ for Single, Dual Speed and Cylinder Type

Single-speed type (For emergency stop type)

Fig No.	Part No.	Part Name	Nos. per Hoist	WLL (kg)					Re-mark
				60kg	100kg	180kg	160kg	240kg	
20	E2DC1607E	Push button cord 4C complete set	1	Z6BE201E1026	←	←	Z6BE201E1026	←	For 3m
				Z6BE201E1036	←	←	Z6BE201E1036	←	For 4m
				Z6BE201E1056	←	←	Z6BE201E1056	←	For 6m
				Z6BE201E1096	←	←	Z6BE201E1096	←	For 10m
				Z6BE201E1146	←	←	Z6BE201E1146	←	For 15m
				Z6BE201E1196	←	←	Z6BE201E1196	←	For 20m
				Z6BE201E1296	←	←	Z6BE201E1296	←	For 30m
21	E2DC607E	Push button cord 4C	1	ZECR401-0000	←	←	←	←	
22	E2D537	Cable holder C	1	E1DBX10S9537	←	←	←	←	
23	E2DC526	Cable packing C9	1	E2DDX10A9526	←	←	←	←	
24	E2DC2615E	Push button switch S assembly	1	E2DDX10A2615	←	←	←	←	
25	E2DC868	Warning tag CE	1	ER1BS9686	←	←	←	←	
26	E2D787	Tag holder	1	E7SE003S9787	←	←	←	←	
27	-----	Cord chain pin	1	E3ES002-9541	←	←	←	←	
28	-----	Split pin	1	J1PW02-016010	←	←	←	←	
29	-----	Lock belt	3	E1DBX10G9861	←	←	←	←	
30	-----	Fixing sleeve	1	×	×	×	×	×	
31	E2D555	Machine screw with spring washer	3	J1AP2-5001010	←	←	←	←	

### Dual-speed type (For emergency stop type)

Fig No.	Part No.	Part Name	Nos. per Hoist	WLL (kg)					Remark
				60kg	100kg	180kg	160kg	240kg	
39	E2DC1607E	Push button cord 6C complete set	1	Z6BD210E1026	←	Z6BD218E102	Z6BD210E102	←	For 3m
				Z6BD210E1036	←	Z6BD218E103	Z6BD210E103	←	For 4m
				Z6BD210E1056	←	Z6BD218E105	Z6BD210E105	←	For 6m
				Z6BD210E1096	←	Z6BD218E109	Z6BD210E109	←	For 10m
40	E2DC607E	Push button cord 6C	1	ZECR601-0000	←	←	←	←	
41	E2D537	Cable holder C	1	E1DBX10S9537	←	←	←	←	
42	E2D525	Cable packing C12	1	E1DBX10S9525	←	←	←	←	
43	E2DC2615E	Push button switch D assembly	1	E2DDX10B2615	←	E2DDX18B2615	E2DDX24B2615	←	
44	E2DC868	Warning tag CE	1	ER1BS9686	←	←	←	←	
45	E2D787	Tag holder	1	E7SE003S9787	←	←	←	←	
46	-----	Cord chain pin	1	E3ES002-9541	←	←	←	←	
47	-----	Split pin	1	J1PW02-016010	←	←	←	←	
48	-----	Lock belt	3	E1DBX10G9861	←	←	←	←	
49	-----	Fixing sleeve	1	×	×	×	×	×	
50	E2D555	Machine screw with spring washer	3	J1AP2-5001010	←	←	←	←	

### Dual-speed cylinder type

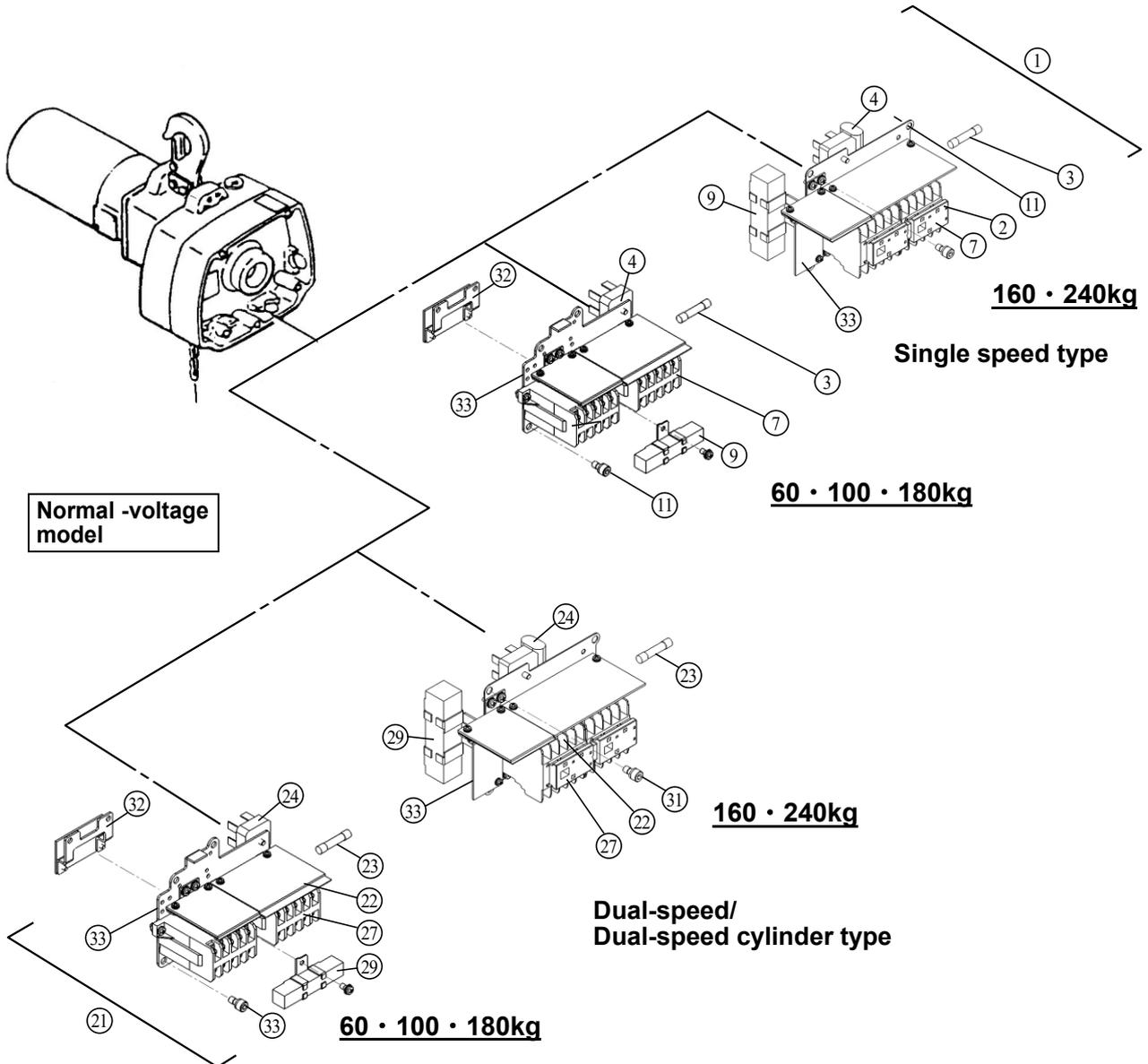
Fig No.	Part No.	Part Name	Nos. per Hoist	WLL (kg)					Remark
				60kg	100kg	180kg	160kg	240kg	
59	E3D046	Cushion rubber	2	E3DBX10S9046	←	←	←	←	
60	E2D044	Stopper collar	1	E1DBX10G9044	←	←	←	←	
61	E2D045	Stopper	2	E1DBX10G9045	←	←	←	←	
62	-----	Snap ring	1	J1SR000-00020	←	←	←	←	
63	E2D041	Chain pin	1	E1DBX10S9041	←	←	←	←	
64	E2D049	Slotted nut	1	E1DBX10S9049	←	←	←	←	
65	E2D096	Split pin	1	J1PW02-016008	←	←	←	←	
66	E2D1831	Chain container (3m lift for cylinder type)	1	E2DBX10G1831	←	←	E2DBX24G1831	←	
67	E2D854	Socket bolt BP	1	E2DBX10S9854	←	←	←	←	
68	E2D853	U nut	1	E2DBX10S9853	←	←	←	←	
69	E2D852	Split pin	1	J1PW02-016008	←	←	←	←	
70	E2D861	Clamp	1	E1DBX10G9861	←	←	←	←	
71	E2DC1607E	Push button cord 8C complete set	1	Z6BZ210E1020	←	Z6BZ218E1020	Z6BZ210E1020	←	for 1.8m
72	E2DC868	Warning tag CE	1	ER1BS9686	←	←	←	←	
73	E2D787	Tag holder	1	E7SE003S9787	←	←	←	←	
74	E2D537	Cable holder C	1	E1DBX10S9537	←	←	←	←	
75	E2D525	Cable packing C12	1	E1DBX10S9525	←	←	←	←	
76	E2D5041	Detachable fitting E	1	E1ADX20-5041	←	←	←	←	
77	E2D1002	Detachable hook assembly	1	E1ADX20-1002	←	←	←	←	
78	E2D1071	Hook latch assembly	1	L4BA008-1071	←	←	←	←	
79	E2D555	Machine screw with spring washer	3	J1AP2-5001010	←	←	←	←	
80	-----	Flat head screw	1	×	×	×	×	×	
81	-----	Flat head screw	1	×	×	×	×	×	

### Common for Single, Dual Speed and Cylinder Type

Fig No.	Part No.	Part Name	Nos. per Hoist	WLL (kg)				
				60kg	100kg	180kg	160kg	240kg
82	E3D1411	Limit switch assembly	1	E3DEX10S1411	←	←	←	←
83	E3D422	Socket bolt with spring washer	2	J1BG2-0401010	←	←	←	←

## Electric component

Component parts are different by either normal or low voltage type as well as either single or dual speed type.



**Normal-voltage model (single-speed type)**

Fig No.	Part No.	Part Name	Nos. per Hoist	WLL (kg)					Re-mark
				60kg	100kg	180kg	160kg	240kg	
1	E3DC1601	Control panel complete set	1	E3DDX10K1601	←	←	E3DDX24K1601	←	
2	E2D616	Converter assembly	1	E2DDX10A1616	←	←	E2DDX24A9616	←	
3	E2D664A	Fuse set	*1	E2DDX10S1676	←	←	E1DBX10S1644	←	
4	E2D622	Silicone stack assembly	1	E3DDX10K5622	←	←	E2DPX24S5622	←	
5	E2D667	Machine screw with spring washer	2	J1AW2-3000808	←	←	J1AP2-3000808	←	For converter
6	E2D663	Machine screw with spring washer	1	J1AW2-4001818	←	←	J1AP2-4001818	←	For silicone stack
7	E2D617	Electromagnetic contactor	2	E2DDX10S9617	←	←	×	×	
		Electromagnetic contactor complete set	1	×	×	×	MGC2331YA	←	
8	E2D661	Machine screw with spring washer	4	J1AP2-4001010	←	←	×	×	For contactor
	-----	Machine screw with spring washer	4	×	×	×	J1AP2-4001414	←	For base
9	E2D619	Resistor	1	E2DDX10S9619	←	←	E2DDX24S9619	←	
10	E2D665	Machine screw with spring washer	1	J1AW2-4000808	←	←	J1AP2-4000808	←	For resistor
32	E3D371	Abrupt reverse operation protection board	1	E3DEX10S5371	←	←	E3DEX24S5371	←	
33	E3D170	Noise filter	1	E3DDX10K9170	←	←	E3DDX24K9170	←	
11	E2D651	Socket bolt with spring washer	3	J1BG2-0501010	←	←	×	×	
			4	×	×	×	J1BG2-0501010	←	

\*1: Contents of fuse set are tabulated in page 27.

**Normal-voltage model (dual-speed/dual-speed cylinder type)**

Fig No.	Part No.	Part Name	Nos. per Hoist	WLL (kg)					Re-mark
				60kg	100kg	180kg	160kg	240kg	
21	E3DC1601	Control panel complete set	1	E3DDX10L1601	←	←	E3DDX24L1601	←	
22	E2D616	Converter assembly	1	E2DDX10B1616	←	←	E2DDX24B9616	←	
23	E2D664A	Fuse set	*1	E2DDX10R1676	←	←	E1DBX10R1644	←	
24	E2D622	Silicone stack assembly	1	E3DDX10K5622	←	←	E2DPX24S5622	←	
25	E2D667	Machine screw with spring washer	2	J1AW2-3000808	←	←	J1AP2-3000808	←	For converter
26	E2D663	Machine screw with spring washer	1	J1AW2-4001818	←	←	J1AP2-4001818	←	For silicone stack
27	E2D617	Electromagnetic contactor	2	E2DDX10S9617	←	←	×	×	
		Electromagnetic contactor complete set	1	×	×	×	MGC2331YA	←	
28	E2D661	Machine screw with spring washer	4	J1AP2-4001010	←	←	×	×	For contactor
	-----	Machine screw with spring washer	4	×	×	×	J1AP2-4001414	←	For base
29	E2D619	Resistor	1	E2DDX10S9619	←	←	E2DDX24S9619	←	
30	E2D665	Machine screw with spring washer	1	J1AW2-4000808	←	←	J1AP2-4000808	←	For resistor
32	E3D371	Abrupt reverse operation protection board	1	E3DEX10S5371	←	←	E3DEX24S5371	←	
33	E3D170	Noise filter	1	E3DDX10K9170	←	←	E3DDX24K9170	←	
31	E2D651	Socket bolt with spring washer	3	J1BG2-0501010	←	←	×	×	
			4	×	×	×	J1BG2-0501010	←	

\*1: Contents of fuse set are tabulated in page 27.

■ Trolley related

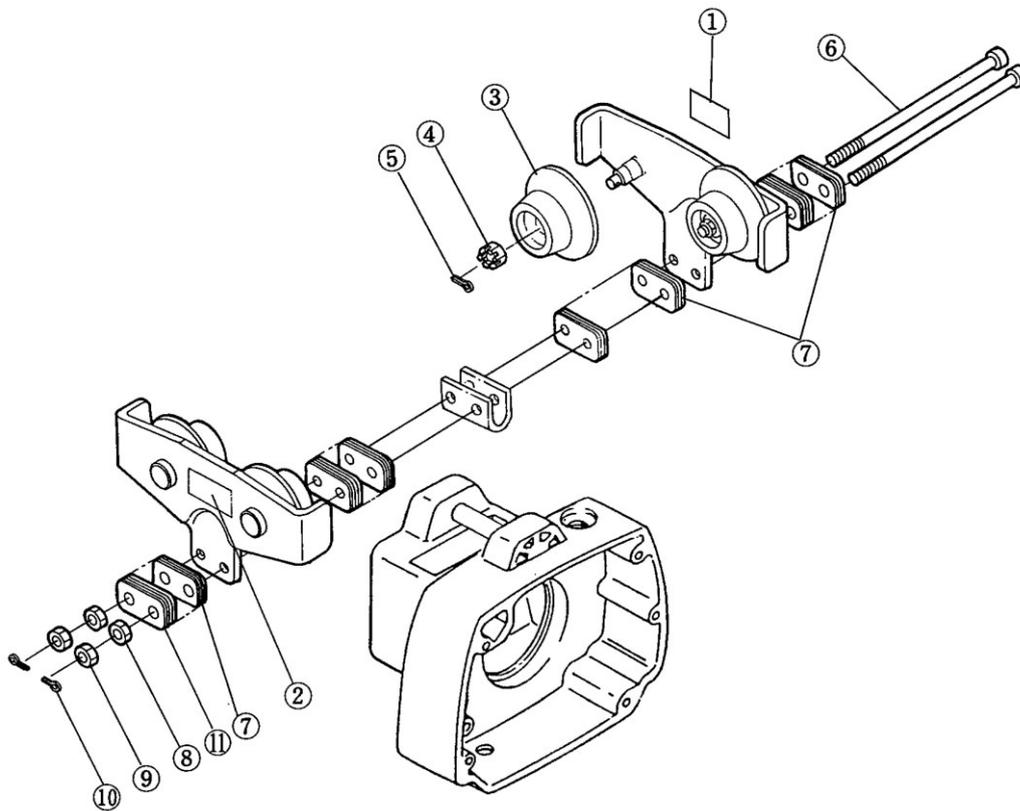


Fig. No.	Part No.	Part Name	Nos. per Trolley	WLL (kg)
				250kg
1	T1H 801	Name plate C	1	T1HAX30-9801
2	T1H 800	Name plate B	1	T1HAX20-9800
3	T1H5102	Track wheel assembly	4	T1HAX20-9102
4	T1H 152	Slotted nut	4	C3BA010-9049
5	T1H 153	Split pin	4	J1PW01-020012
6	T1H 115	Socket bolt	2	T1HAX20-9115
7	T1H 116	Adjusting spacer	34	T1HAX20-9116
8	T1H 157	Nut	2	J1NA002-30080
9	T1H 155	U nut	2	T1HAX30-9155
10	T1H 156	Split pin	2	J1PW01-020012
11	T1H117	Adjusting spacer B	2	T1HAX30-9117

# PARTS LIST (480kg)

## ■ Top/bottom hook, suspender, chain container (480kg)

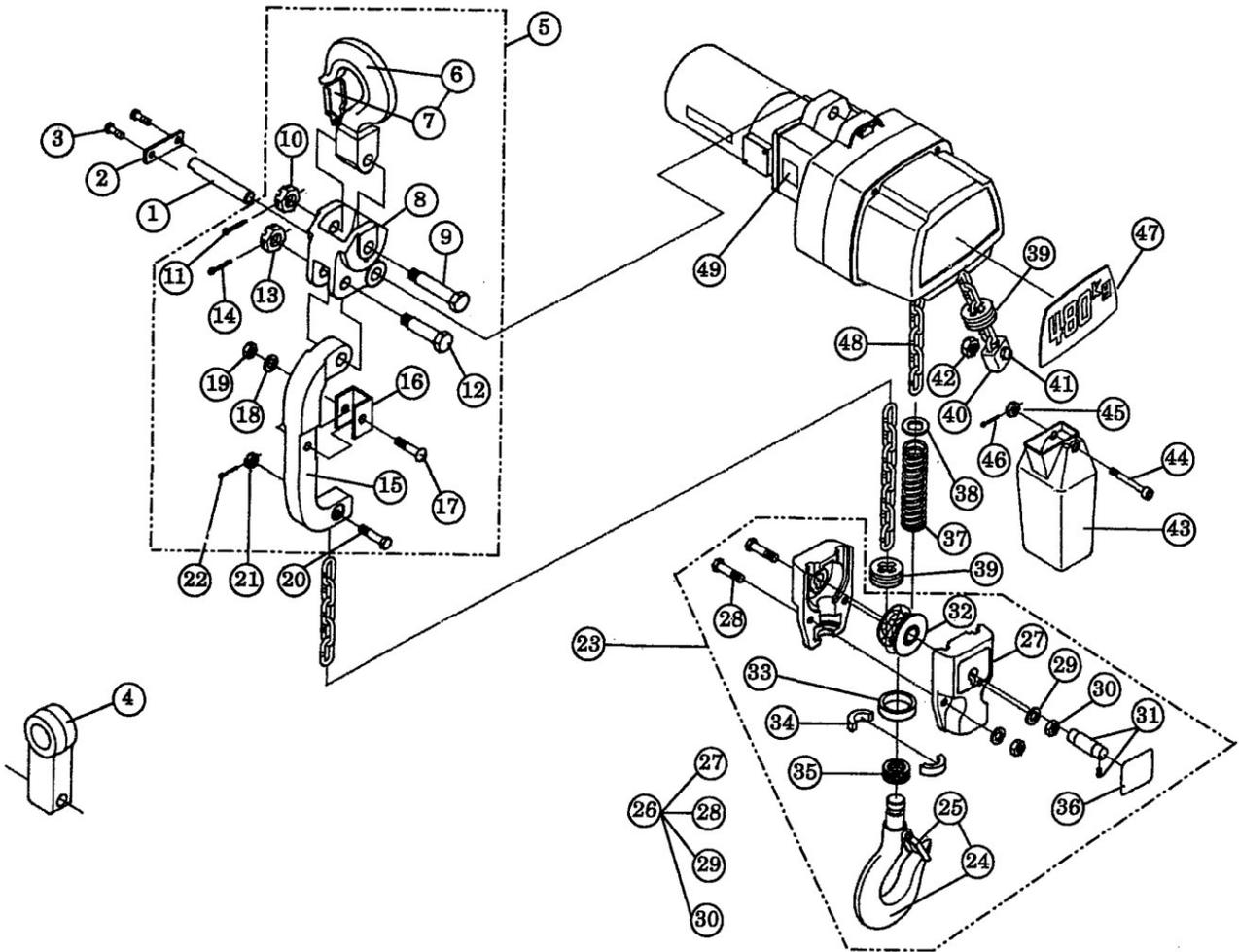


Fig. No.	Part No.	Part Name	Nos. per Hoist	Supplement	Remark
1	E2D-117	Top pin E	1	E2DBX24S9117	
2	E2D-118	Shaft stopper	1	E2DBX24S9118	
3	E3D-155	Socket bolt with spring washer	2	J1BG2-0501010	
4	T7PB-004	Suspender PB	1	T7PB005-9004	PT Connect
	T7GB-004	Suspender GB	1	T7GB010-9004	GT Connect
5	E3D-1470	Connection yoke complete set	1	E3DBX48S1470	
6	E3D-460	Top hook assembly	1	E3DBX48S6460	
7	E3D-461	Hook latch assembly	1	C1FA005-1071	
8	E3D-470	Connection yoke	1	E3DBX48S9470	
9	E3D-471	Yoke bolt	1	E5SE005L9006	
10	E3D-472	Slotted nut	1	J1NL001-10100	
11	E3D-473	Split pin	1	J1PW01-025018	
12	E3D-581	Connection bolt	1	E3DBX48S9581	
13	E3D-582	Slotted nut	1	J1NL001-10100	

Fig No.	Part No.	Part Name	Nos. per Hoist	Supplement	Remark
14	E3D-583	Split pin	1	J1PW01-025018	
15	E3D-580	Joint yoke	1	E3DBX48S9580	
16	E3D-592	Protection pad	1	E3DBX48S9592	
17	E3D-593	Truss head machine screw	1	J1AG2-5003535	
18	E3D-594	Washer	1	J1WD012-00050	
19	E3D-595	U nut	1	E2DBX10S9853	
20	E1D-041	Chain pin	1	E1DBX10S9041	
21	E1D-049	Slotted nut	1	E1DBX10S9049	
22	E1D-096	Split pin	1	J1PW02-016008	
23	E3D-1480	Bottom hook complete set	1	E3DBX48S1480	
24	E3D-2480	Bottom hook assembly	1	E3DBX48S2480	
25	E3D-491	Hook latch assembly	1	ER1BS1002	
26	E3D-2485	Bottom yoke assembly	1	E3DBX48S2485	
27	E3D-485	Bottom yoke	2	E3DBX48S9485	
28	E3D-496	Bolt	2	J1BA1-0602518	
29	E3D-498	Spring lock washer	2	J1WS011-20060	
30	E3D-497	Nut	2	J1NA001-20060	
31	E3D-6489	Bottom shaft assembly	1	E3DBX48S6489	
32	E3D-6487	Idle sheave assembly	1	E3DBX48S6487	
33	E3D-482	Thrust collar A	1	E2YS005-9026	
34	E3D-483	Hook stopper	2	E5FS005L9027	
35	E3D-481	Thrust bearing	1	J1GS000-51103	
36	E3D-597	Name plate C	1	E3DBX48S9597	
37	E3D-590	Chain spring	1	E3DBX48S9590	
38	E3D-591	Washer	1	E3DBX48S9591	
39	E3D-046	Cushion rubber	2	E3DBX10S9046	
40	E3D-1045	Stopper complete set	1	E1DBX10S1045	
41	E2D-086	Socket bolt with spring washer	1	J1BG2-0502020	
42	E2D-087	Lever nut	1	C2BA020-9074	
43	E2D-1835	Chain container (6) (plastic type)	1	E2DBX10S1835	Lift: 3m
	E2D-1833	Chain container (15) (canvas type)	1	E2DBX10S1833	Lift: 3.1-7.5m
	E2D-1834	Chain container (30) (canvas type)	1	E2DBX10S1834	Lift: 7.6-15m
44	E2D-854	Socket bolt BP	1	E2DBX10S9854	For plastic type
				E2DBX10S9851	For canvas type
45	E2D-853	U nut	1	E2DBX10S9853	
46	E2D-852	Split pin	1	J1PW02-016008	
47	E2D-801	Name plate B	1	E3DDX48A9801	
48	E2D-841	Load chain	1	(See Table 2)	
49	E3D-599	Warning seal E (Finger protection)	1	E3DBX48S9599	

**Table 2: Load chain**

Item code is set according to the lift length.

lift	480kg
3m	K7ZN040-00655
4m	K7ZN040-00856
6m	K7ZN040-01260
10m	K7ZN040-02066
15m	K7ZN040-03075



DECLARATION OF CONFORMITY

**KITO**

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

**Electric chain hoist ED3**

for use with or without the relevant serial trolleys in capacity range of 60 kg up to 480 kg

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

EC directives:

<b>Machinery Directive</b>	<b>2006/42/EC</b>
<b>EMC Directive</b>	<b>2014/30/EU</b>
<b>Low Voltage Directive</b>	<b>2014/35/EU</b>

Harmonized standards:

<b>EN ISO 12100: 2010</b>	<b>Risk assessment and risk reduction</b>
<b>EN 818-7: 2002+A1: 2008</b>	<b>Short link chain for lifting purposes</b>
<b>EN ISO 13850: 2015</b>	<b>Emergency stop</b>
<b>EN 60204-1: 2018</b>	<b>Electrical equipment of machines</b>
<b>EN 61000-6-2: 2005</b>	<b>Electromagnetic compatibility - Immunity</b>
<b>EN 61000-6-4: 2007</b>	<b>Electromagnetic compatibility - Emission</b>

National standards:

<b>FEM 9.511: 1986</b>	<b>Classification of mechanisms</b>
<b>FEM 9.683: 1995</b>	<b>Section of lifting and travel motors</b>

# KITO

**KITO Europe GmbH**

Heerdter Lohweg 93, D-40549 Düsseldorf, Germany

TEL: +49-(0)211-528009-00

FAX: +49-(0)211-528009-59

E-mail: [info@kito-europe.eu](mailto:info@kito-europe.eu)

Website: [kito.com](http://kito.com)

**KITO corporation****Tokyo Head office:**

SHINJUKU NS Building 9F, 2-4-1, Nishi-Shinjuku, Shinjuku-ku, Tokyo 163-0809, Japan

Website: [kito.co.jp](http://kito.co.jp)

**Head office & Factory:**

2000 Tsujijarai Showa-Cho, Nakakoma-Gun, Yamanashi 409-3853, Japan

Website: [kito.co.jp](http://kito.co.jp)