



Original Instruction

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

EDIII SERIES

ALWAYS SAVE THIS BOOK FOR FUTURE REFERENCE.

KITO

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.

Carry out installations, inspections, operations, maintenance management in accord with the laws and standards of the country and region where the product is used. An application before installation or a test before beginning usage may be required. Furthermore, the tester may be required to have specific qualifications. Be sure to check the laws and standards of the corresponding country and region before the product.



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.

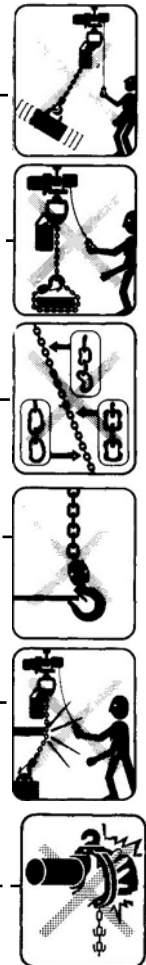
NEVER operate a hoist if chain jumping or excessive noise occurs.

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.

NEVER strike the stopper or the structure by the body size or the trolley.



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.

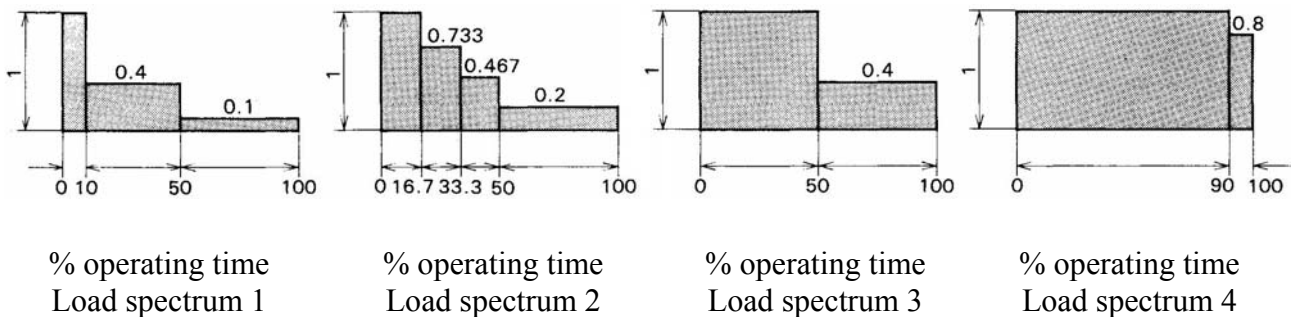
KITO electric chain hoists EDIII series have been designed for grade 1Am in the FEM regulations (FEM 9.511).

Details are provided in Table 4-2.

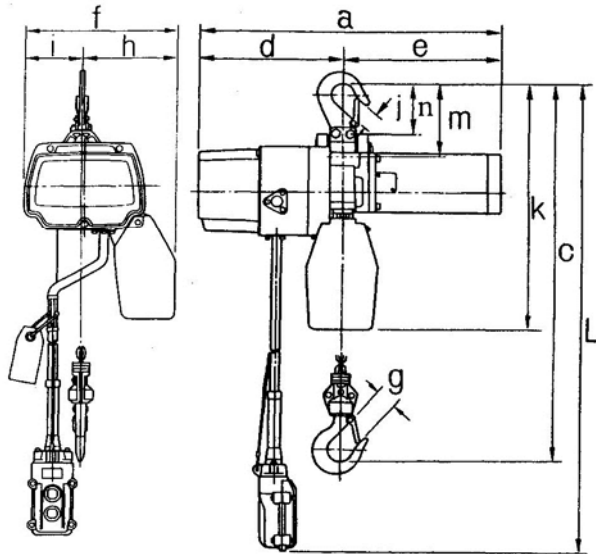
Average daily operating time and total operating time are determined by load distribution.

Table 4-2 Mechanical classification

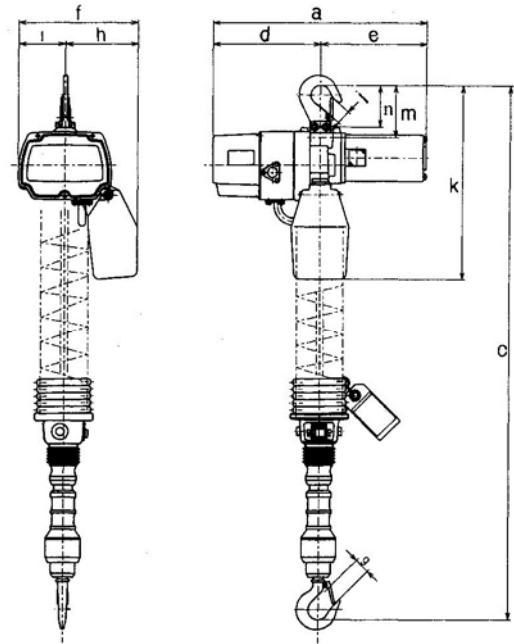
Load spectrum (Load distribution)	Definitions	Cubic mean value	Average daily operating time (h)	Total operating time (h)
1 (light)	Mechanisms or parts thereof, usually subject to very small loads and in exceptional cases only to maximum loads.	$k \leq 0.50$	2-4	6300
2 (medium)	Mechanisms or parts thereof, 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												IP44					
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	205		219		223		
	h	125			135		155	125		135		155	125		135		155		
	i	80			84		74	80		84		74	80		84		74		
	g	25					24	25					24	25					
	j	25					24	25					24	25					
	k	340			362		454	340			362		454	340			362		
	m	92				149		92				149		92					
n	73				104		73				104		73						

- 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.

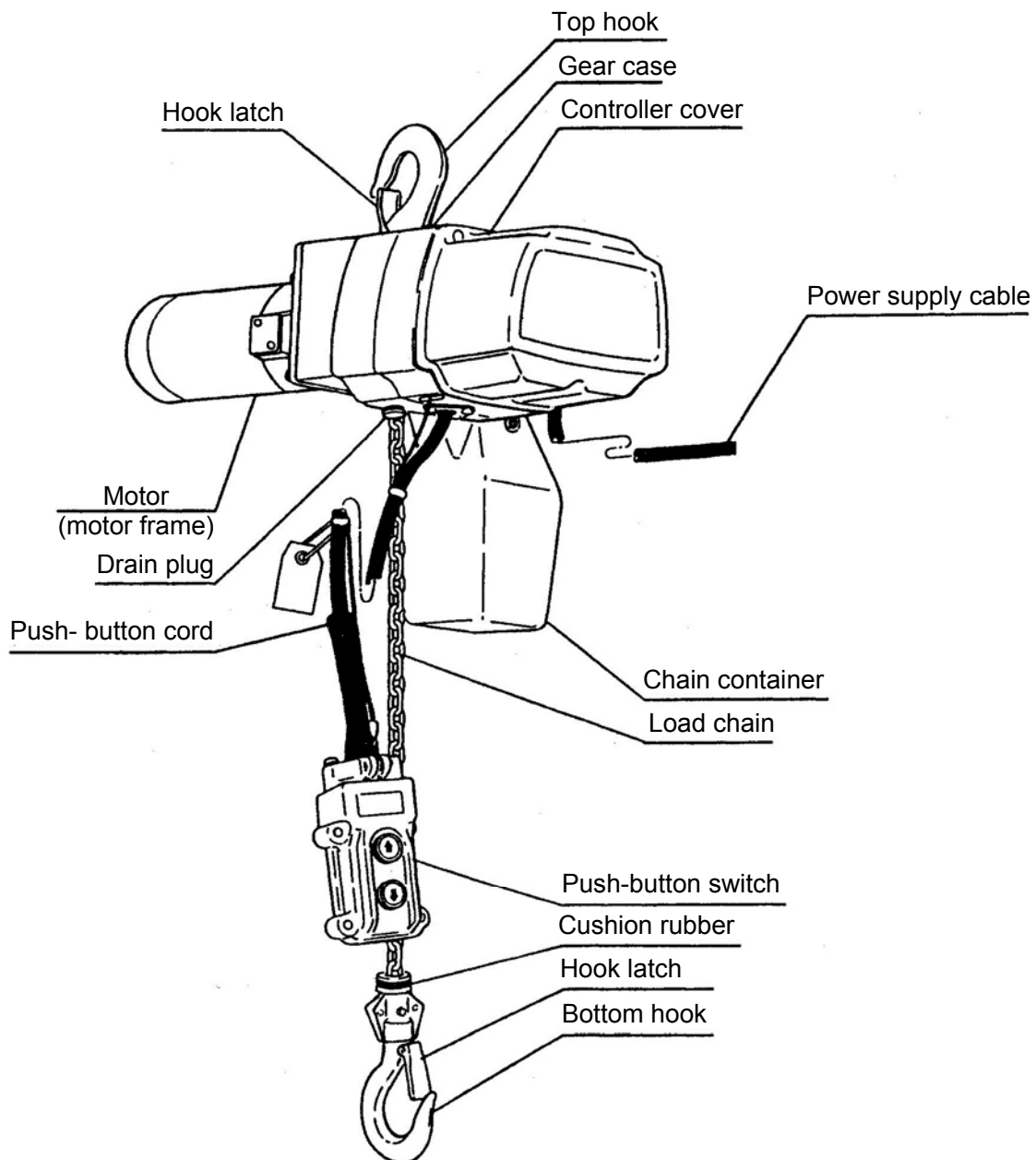
Push button and cord (the dual speed cylinder type is equipped with a curled cord and fastening belt.)

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.

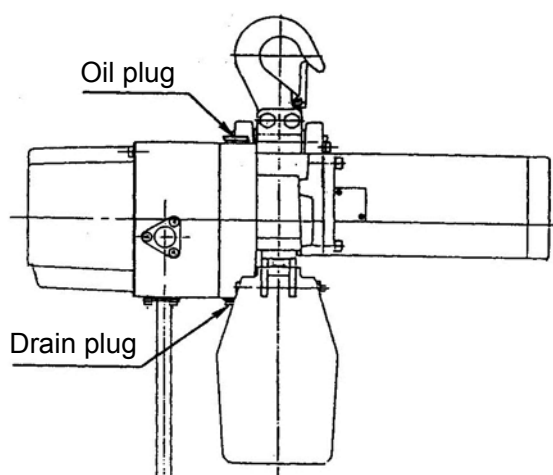
(1) Gear oil supply

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

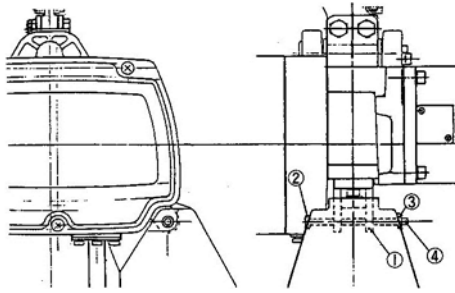
The chain container stores the load chain on the no-load side. In connecting it to the hoist body, fasten it completely and pay attention to the following points:

⚠ 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

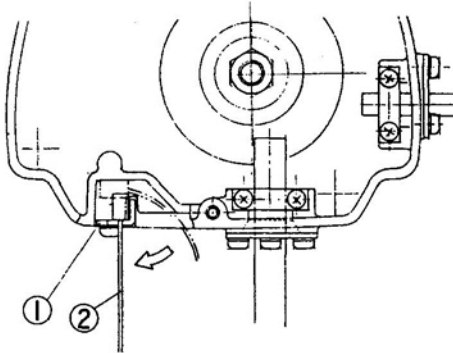
a. Single and dual speed types

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.

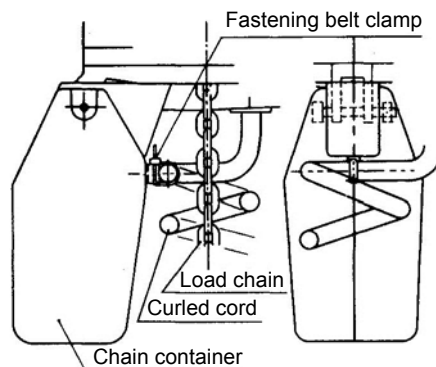


Assembly procedure:

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.

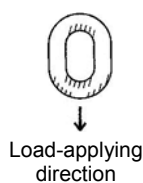
(4) Lubricating the load chain

⚠ 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 ²	30
1.25mm ²	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

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:

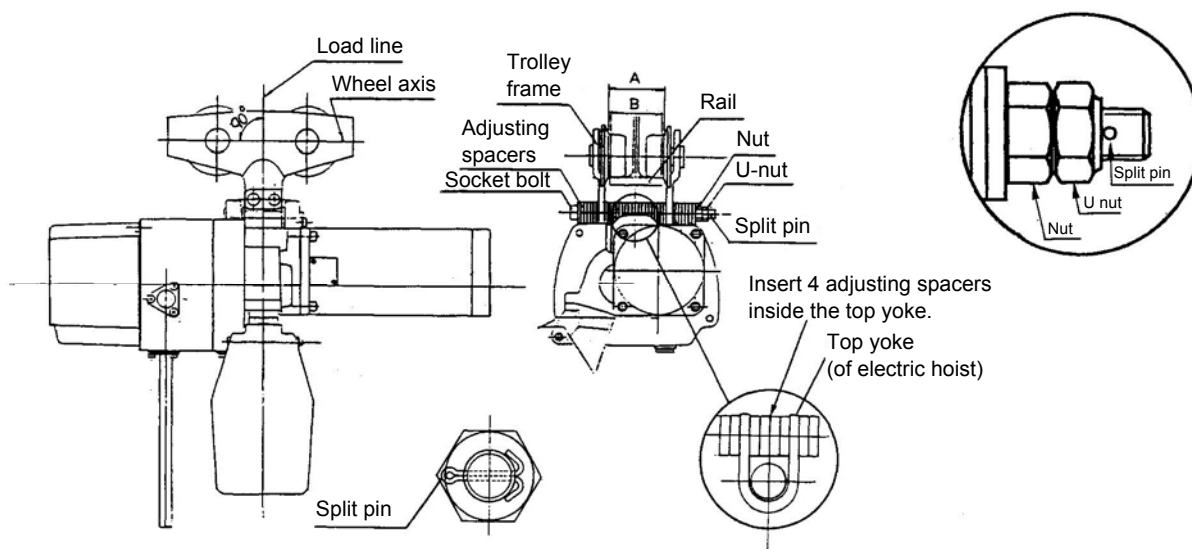
ALWAYS make sure to use all 32 pieces and confirm that $A-B \approx 3 \text{ mm}$.

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.



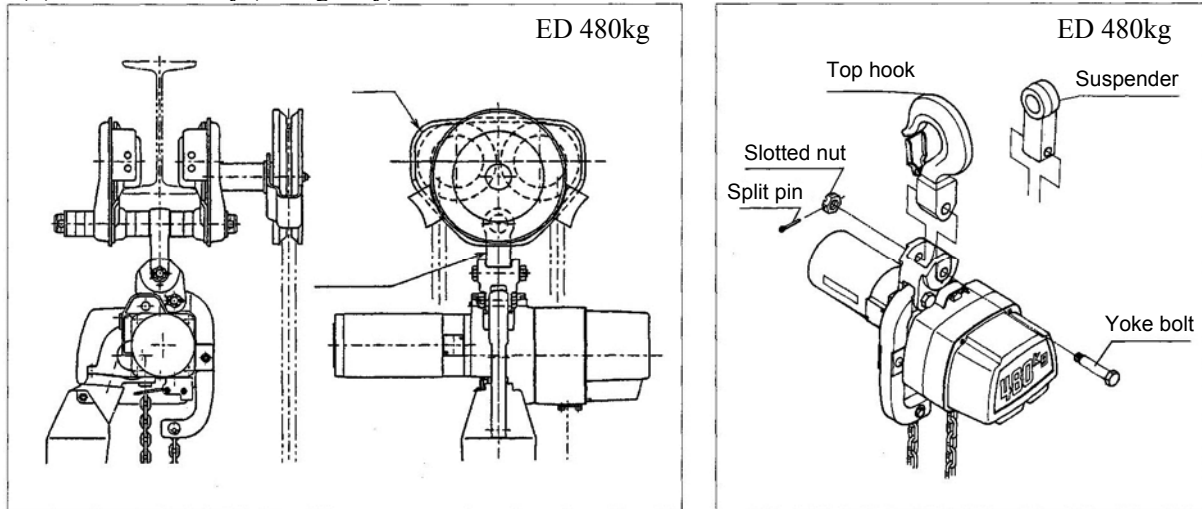
(2) Installing trolley to rail

⚠ 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.

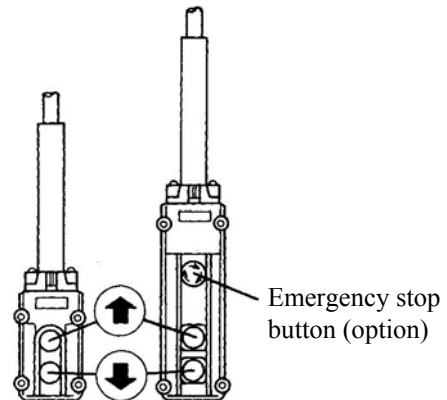
Ensure to avoid the excessive inching operation. (Inching operation: very frequent lifting or lowering operations in a very short time for positioning the hook with very small repeated hook movements.) If not avoided, it could result in the hoist's damage.

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.



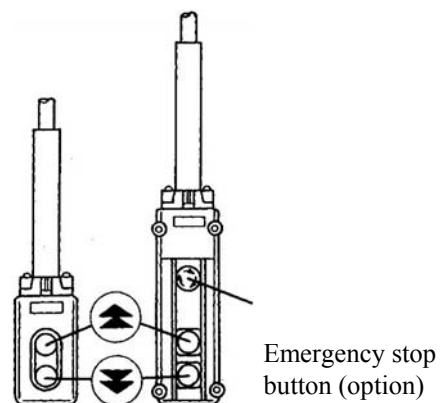
Single speed type

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:



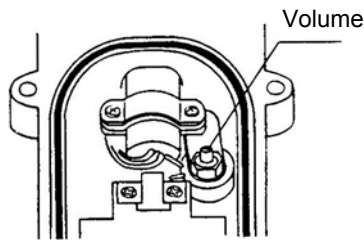
Dual speed type

⚠ 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.

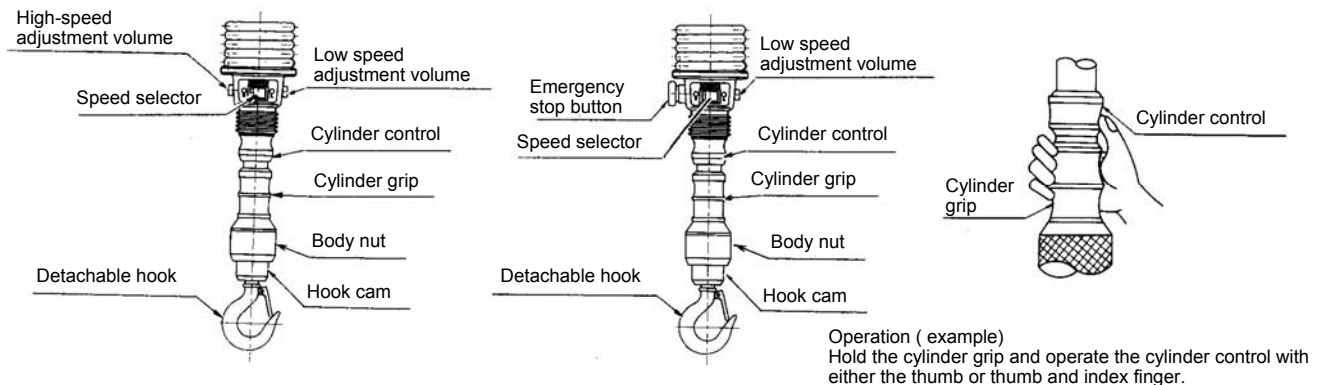
Open the back lid of the push button switch (as depicted in the next illustration).
Turn the volume clockwise to increase speed or counterclockwise to lower it.
Close the back lid of the push button switch.



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:

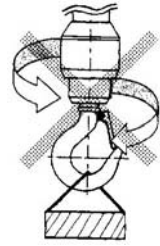
The bottom hook can be set by simply pushing it in from underneath.

⚠ 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 a 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 a 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.

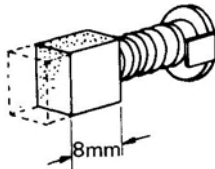
7.2 Occasionally used hoist

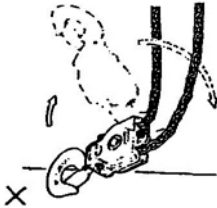

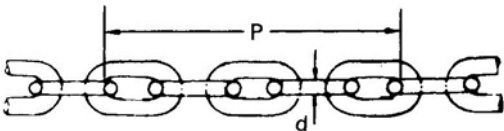
- (1) A hoist which has been idle for a period one month or more but less than one year shall be given an inspection conforming to the requirements of section 7.4 before it is placed in service.
- (2) A hoist which has been idle for a period of one year shall be given an inspection conforming to the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

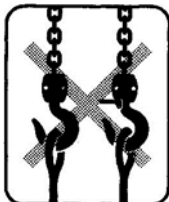
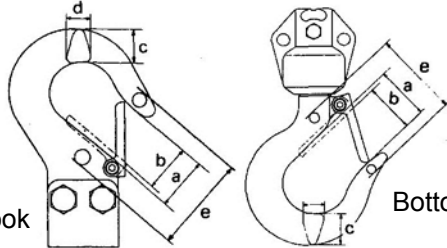

7.3 Inspection record

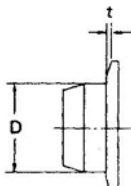
Dated inspection reports and records should be maintained at time intervals and such records are stored where they are available to authorized personnels.

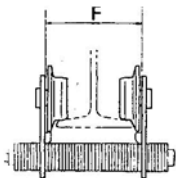
7.4 Inspection methods and judgement criteria

Item	Inspection methods	Discard limit/criteria	Remedy
1. Hoist body			
(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 8 mm (brush should not be worn past this limit). 	Replace.

Item	Inspection methods	Discard limit/criteria	Remedy												
2. Operation switch															
(1) Function	Operate switch with no load.	<ul style="list-style-type: none">The bottom hook shall lift and lower based on push button switch and cylinder switch indications.	Check power source and make sure cord is connected. Replace if defective (electrical equipment included).												
(2) Emergency stop function	Operate switch with no load.	<ul style="list-style-type: none">To change from the low to high speed. (Dual speed and dual speed cylinder types)Make sure the hoist stops instantaneously when the emergency stop button is operated while lifting or lowering.	Replace. Check power source and make sure cord is connected. Replace if defective (electrical equipment included).												
(3) Case cracking	Check visually.	<ul style="list-style-type: none">No cracks.	Replace.												
(4) Loose wiring joints	Check visually.	<ul style="list-style-type: none">No loosening or missing of screws.	Repair.												
3. Load chain															
(1) Appearance	Check visually.	<ul style="list-style-type: none">Load chain shall be oiled.	Supply oil.												
(2) Load chain Appearance	Check visually for greasing and twisting.	Load chain is well lubricated.	If chain is dry, apply the specified lubricant in the section '5.2(4)'.												
		 Load chain is not twisted or capsized.	If chain is twisted, untwist it and restore it to normal chain condition.												
(3) Wear	Measure with calipers.	<ul style="list-style-type: none">Dimension “P” or “d” shall be within the following values:	Replace.												
<div style="text-align: right;">Unit (mm)</div> <table><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><tr><td>4</td><td>5</td><td>60.5</td><td>62.3</td><td>3.3</td></tr></table> <div style="text-align: center;"></div>				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																													
4. Hook (1) Deformation 	Check visually. Measure dimension “e” between two embossed marks at time of purchase with calipers. Measure with calipers.	<ul style="list-style-type: none">No deformation from original shape (at time of purchase).No deformation from original shape (at time of purchase).Dimensions “c” and “d” are within their limits.	Replace. Replace. Replace.																													
(Reference values)																																
		<table><tr><th rowspan="2"></th><th colspan="2">c mm</th><th colspan="2">d mm</th></tr><tr><th>Normal size</th><th>Discard limit</th><th>Normal size</th><th>Discard limit</th></tr><tr><td colspan="2">Bottom hook</td><td>17.0</td><td>16.2</td><td>12.1</td><td>11.5</td></tr><tr><td colspan="2">Top hook</td><td>17.0</td><td>16.2</td><td>7.0</td><td>6.5</td></tr><tr><td rowspan="2">480 kg</td><td>Bottom hook</td><td rowspan="2">23.5</td><td rowspan="2">21.0</td><td rowspan="2">17.5</td><td rowspan="2">16.0</td></tr><tr><td>Top hook</td></tr></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		
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480 kg	Bottom hook	23.5	21.0	17.5	16.0																											
	Top hook																															
																																
	Top hook		Bottom hook																													
(2) Flaws	Check visually.	<ul style="list-style-type: none">No deep flaws.	Replace.																													
(3) Bend at shank of bottom hook	Check visually.	<ul style="list-style-type: none">Never use if bent.	Replace.																													
(4) Bottom hook movement	Turn hook.	<ul style="list-style-type: none">Hook should turn lightly.	Replace.																													
(5) Deformation of bottom yoke	Check visually.	<ul style="list-style-type: none">Should be free from deformation.	Replace.																													
(6) Hook latch	Check visually.	<ul style="list-style-type: none">No deformation from original shape (at time of purchase).	Replace.																													
(7) Rotation of idle sheave	Turn idle sheave by lifting the load chain up and down, as illustrated.	The idle sheave rotates smoothly. 	Inspect and repair if rotation is not smooth.																													

Item	Inspection methods	Discard limit/criteria	Remedy									
5. Chain spring and Cushion rubber												
(1) Chain spring deformation (Option)	Check visually.	NEVER 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	Replace chain spring with a new one if deformed.									
(2) Cushion rubber deformation	Check visually.	NEVER use a cushion rubber if it is deformed as illustrated.	Replace cushion rubber with a new one if deformed.									
6. Chain container												
	Check visually.	<ul style="list-style-type: none">Chain container should not be damaged.Screws and pins should not be loosened or damaged.No foreign matter or dust.	Replace with new ones if damaged. Replace with new ones if damaged. Remove any foreign matter or dust.									
7. Electric cable												
(1) Damage of electric cable	Check visually.	<ul style="list-style-type: none">No damage.	Replace.									
(2) Loose of electric cable connection	Check visually.	<ul style="list-style-type: none">No loosening.	Repair.									
(3) Poor grounding	Check visually.	<ul style="list-style-type: none">Shall be grounded.	Ground.									
8. Mini trolley (60-240 kg) In the case of 480kg, refer to the manual of TS series trolley.												
(1) Function	Move (trolley) under no-load condition.	<ul style="list-style-type: none">Should run smoothly.	Replace.									
(2) Falling of split pins	Check visually.	<ul style="list-style-type: none">Not fall.	Repair.									
(3) Wheel wear	Measure with calipers.	<ul style="list-style-type: none">Contact face and flange wear should be within the following limits:	Replace.									
		<table><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><tr><td>40</td><td>38</td><td>1.5</td></tr></table>		Diameter of tread D (mm)		Discard limit of flange	Normal	Discard limit	t (mm)	40	38	1.5
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"> • No deformation. • Frame top dimensions “F” shall not exceed dimensions before use by 5% or more. 	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.

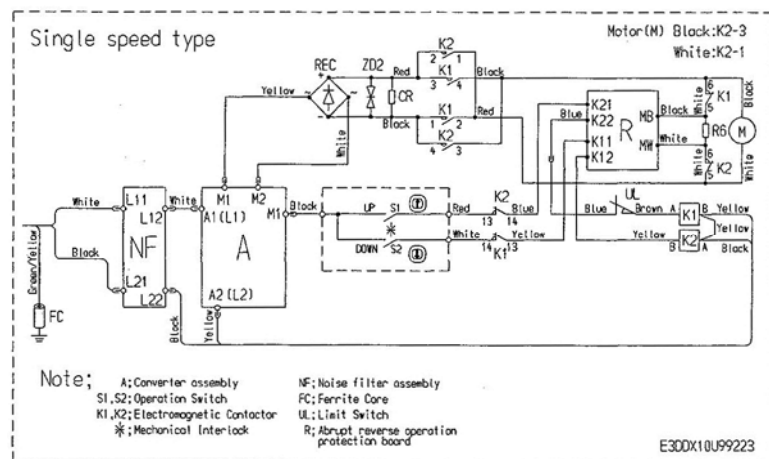
To check the connection, open the controller cover of the hoist body. Make sure that lead wires are connected correctly and firmly, referring to the following connection diagram.

⚠ DANGER

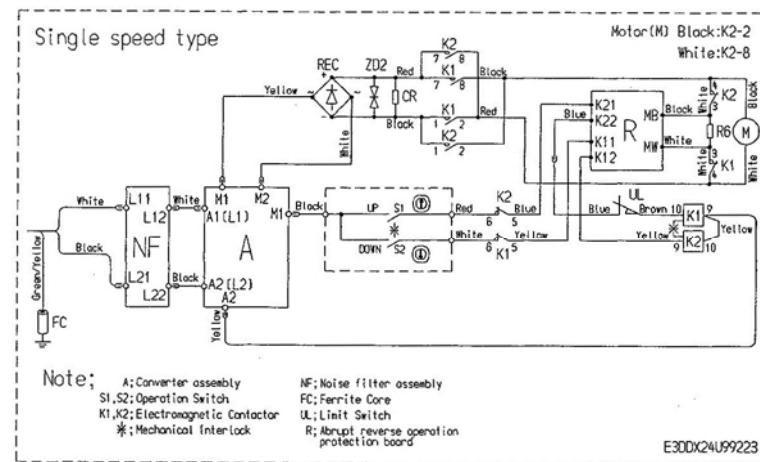
To avoid possible electric shock, **ALWAYS** make sure to turn off the power source before checking the connection.

9.1 Single speed type

(1) Standard (without emergency stop device) type

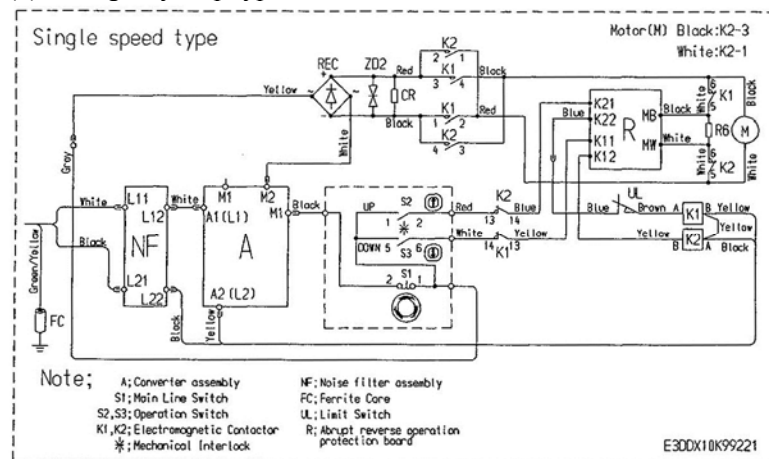


Motor output 300W
(WLL 60kg, 100kg, 180kg)

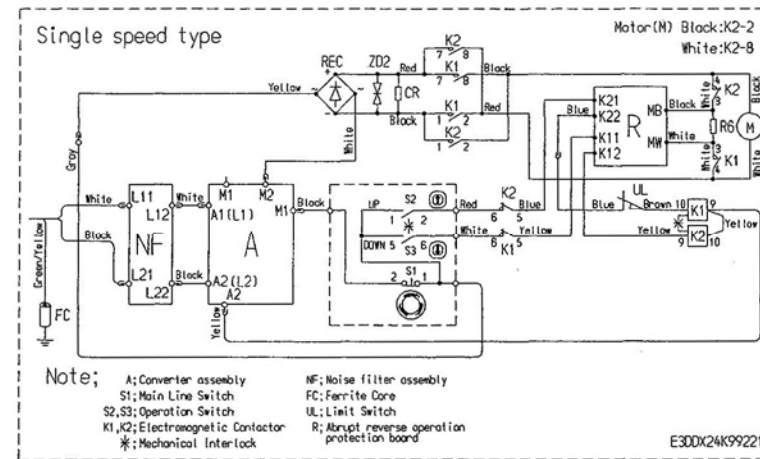


Motor output 600W
(WLL 160kg, 240kg, 480kg)

(2) Emergency stop type



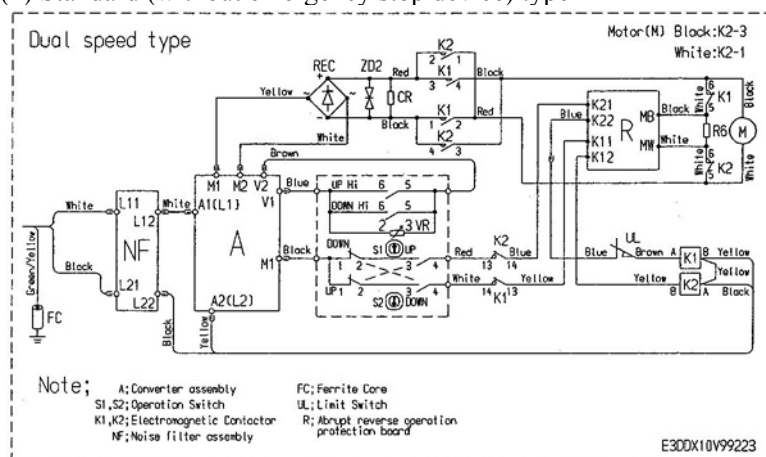
Motor output 300 W
(WLL 60kg, 100kg, 180kg)



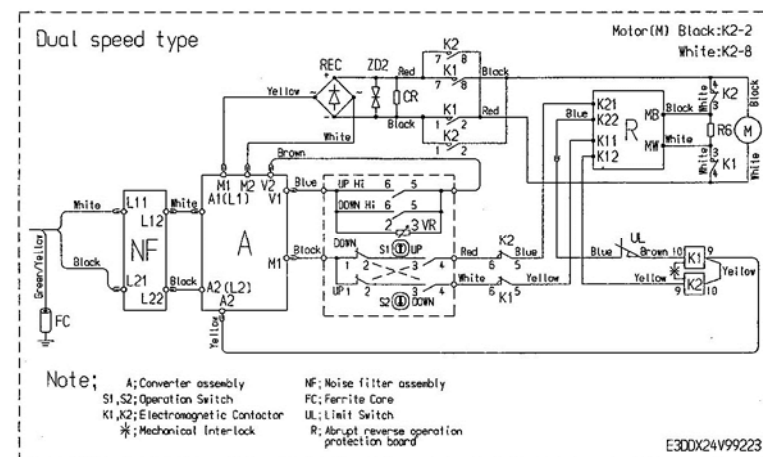
Motor output 600W
(WLL 160kg, 240kg, 480kg)

9.2 Dual speed type

(1) Standard (without emergency stop device) type

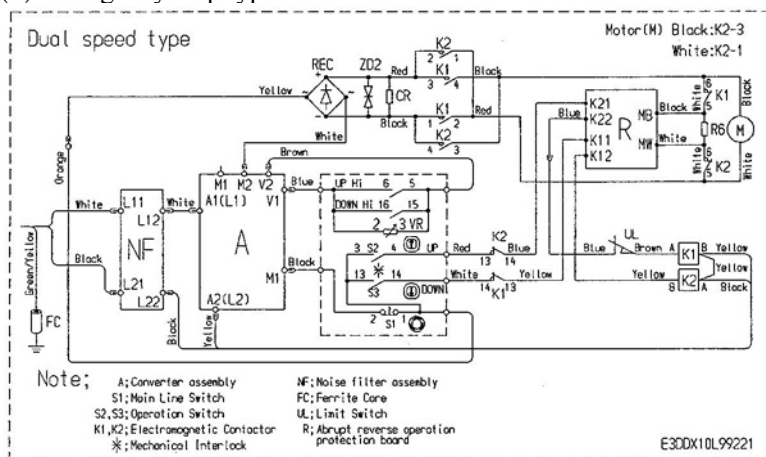


Motor output 300 W
(WLL 60kg, 100kg, 180kg)

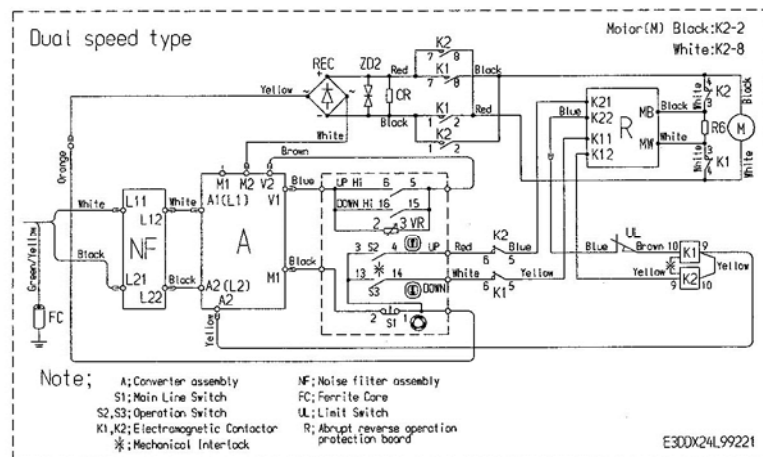


Motor output 600W
(WLL 160kg, 240kg, 480kg)

(2) Emergency stop type



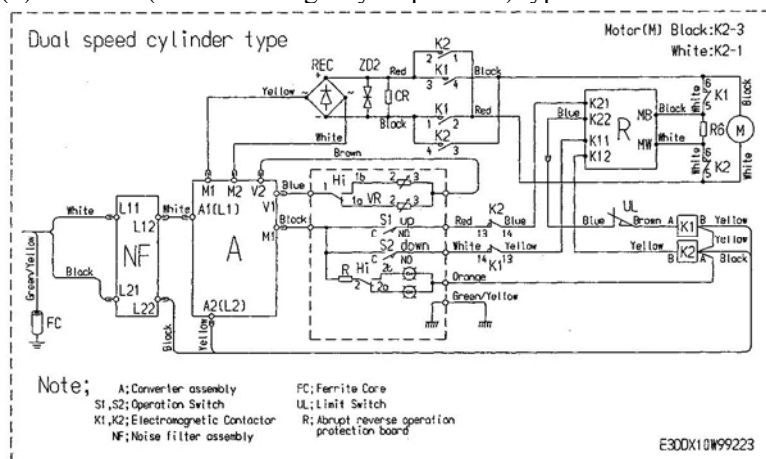
Motor output 300W
(WLL 60kg, 100kg, 180kg)



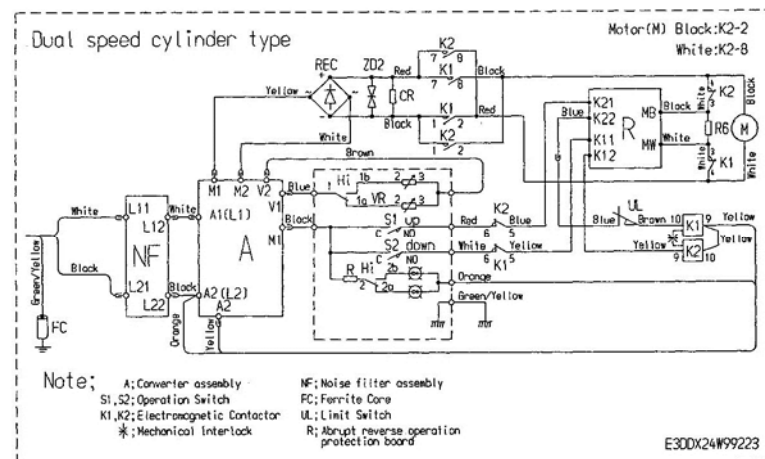
Motor output 600W
(WLL 160kg, 240kg, 480kg)

9.3 Dual speed cylinder type

(1) Standard (without emergency stop device) type

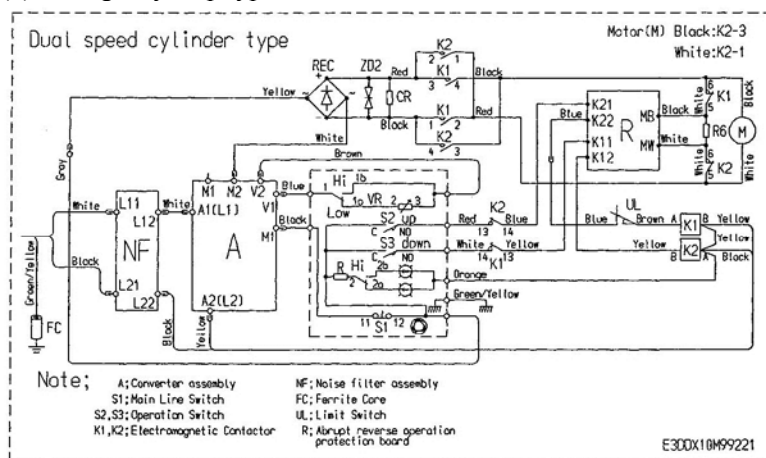


Motor output 300W
(WLL 60kg, 100kg, 180kg)

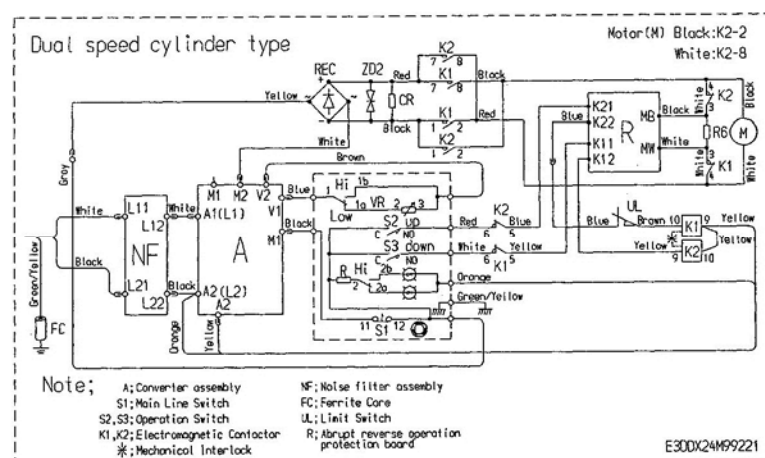


Motor output 600W
(WLL 160kg, 240kg)

(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.	• When the push button switch or cylinder switch is operated, a clicking sound is heard from the electric instruments unit.	• Fuse has burned out.	• Motor has been burned out due to too much use.	• Replace motor. • Use under rated conditions.
			• Abnormal voltage.	• Use under rated voltage.
		• Fuse is normal.	• Rectifier abnormality.	• Replace rectifier.
			• Writing abnormality.	• Rewrite as normal.
	• The push button or cylinder switch works, but no clicking sound is heard from the electric instruments unit.	• Fuse is normal.	• Power cable/push button cord has been disconnected.	• Replace the power cable/push button cord.
			• Voltage drop.	• Use under rated voltage.
Either lifting or lowering does not work.	• When the push button or cylinder switch is operated, a clicking sound is heard from the electric instruments unit.		• Brush wear.	• Replace brush.
			• Chain guide wear.	• Replace chain guide.
			• Overload (lifting impossible).	• Use within rated load.
	• The push button or cylinder switch is operated but no clicking sound is heard from the electric instruments unit.	• Push button cord defect or disconnection.	• Replace cord.	
Lifting/ lowering speed is too slow.	• Speed is not only too slow but constant.		• Voltage drop.	• Use under the rated voltage.
			• Deteriorated speed control function of controller.	• Replace with a normal one. • Replace control panel complete set.
	• Motor stops with excessive slip under light load.	• Deteriorated clutch brake function.	• Replace the set of mechanical brake with friction clutch.	
	• When winding, a motor sound is heard but load lifting tends to stop in the middle.	• Overload.	• Use within rated load.	

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

When ordering replacement parts, please specify the following points;

- 1) Hoist and trolley WLL (rated capacity) and speed type (single or dual).
- 2) Model number stated in name plate.
- 3) Correct part name and part number.
- 4) Lineal length of chain, power supply cable or push button cord, when necessary.
- 5) Emergency stop device.

Geden Sie bitte bei der Bestellung von Ersatzteilen die folgenden Punkte an:

- 1) Nutzlast (WLL) des Flaschenzuges und der Laufkatze angeben. Im weiteren ist der Geschwindigkeitstyp erforderlich (1-Geschwindigkeit und 2-Geschwindigkeiten).
- 2) Die auf dem Typenschild angegebene Modell-Nummer.
- 3) Korrekte Ersatzteilbezeichnung und Ersatzteilnummer.
- 4) Laufmeterlänge für Lastkette, Stromversorgungskabel oder Druckknopfkabel, falls erforderlich.
- 5) Nothaltvorrichtung (NOT-AUS).

Pour la commande des pièces de rchange, veuillez spécifier les points suivants :

- 1) Puissance nominale du palan et du chariot et vitesse de lavage (à une ou deux vitesses).
- 2) Numéro de modèle indiqué sur la plaque d'identification.
- 3) Désignation et numéro exacts de la pièce.
- 4) Longueur linéaire de la chaîne, du câble d'alimentation et du câble de commande, si nécessaire.
- 5) Dispositif d'arrêt d'urgence.

Al colocar el pedido de repuestos, rogamos especificar los siguientes puntos:

- 1) WLL (capacidad nominal) y tipo de velocidad (única o doble) del montacargas y del trole cargador.
- 2) Número de modelo que figura en la placa indicadora.
- 3) Número y nombre correctos de la pieza.
- 4) Longitud lineal de la cadena, del cable de alimentación o del cordón del botón pulsador, de requerirse.
- 5) Dispositivo de parada de emergencia.

Nell'ordinare le parti di ricambio, si prega di specificare sempre i punti seguenti:

- 1) La portata nominale del paranco e del carrello e il tipo di velocità (singola o doppia).
- 2) Il numero di modello indicato sulla targhetta.
- 3) La denominazione del ricambio e il suo codice.
- 4) La lunghezza lineare delle catene, del cavo di alimentazione e del cavo pulsantiera, se necessario.
- 5) Arresto di emergenza.

Ao solicitar peças de reposição, especifique por obséquio os seguintes itens:

- 1) Elevador e rolador WLL (capacidade nominal) e tipo de velocidade (simples ou dupla).
- 2) Número do modelo, que consta da placa de identificação.
- 3) Nome e número correctos da peça.
- 4) Comprimento linear da corrente, do cabo de suprimento de força ou do fio do interruptor por botão de pressão, quando necessários.
- 5) Dispositivo de parada de emergência.

Wanneer u onderdelen bestelt, gelieve de volgende gegevens te verstrekken;

- 1) WLL VAN DE TAKEL EN LOOPKAT (toelaatbaar vermogen) en type van snelheid (enkelvoudig of tweevoudig)
- 2) Modelnummer als aangegeven op naamplaatje.
- 3) Juiste naam en nummer van onderdeel.
- 4) Lineaire lengte van ketting, voedingskabel of bedieningskabel, indien vereist.
- 5) Noodstopinrichting.

Angiv følgende punkter ved bestilling af reservedele:

- 1) Talje og løbekat WLL (tilladelig kapacitet) og hastighedstype (én eller to hastigheder)
- 2) Det på navneskiltet angivne modelnummer.
- 3) Reservedelens korrekte navn og nummer.
- 4) Lineær længde af kæde, strømforsyningskabel eller styretrykkabel efter behov.
- 5) Nødstopanordning

Exploded views and part names of the electric chain hoist are given in the following.

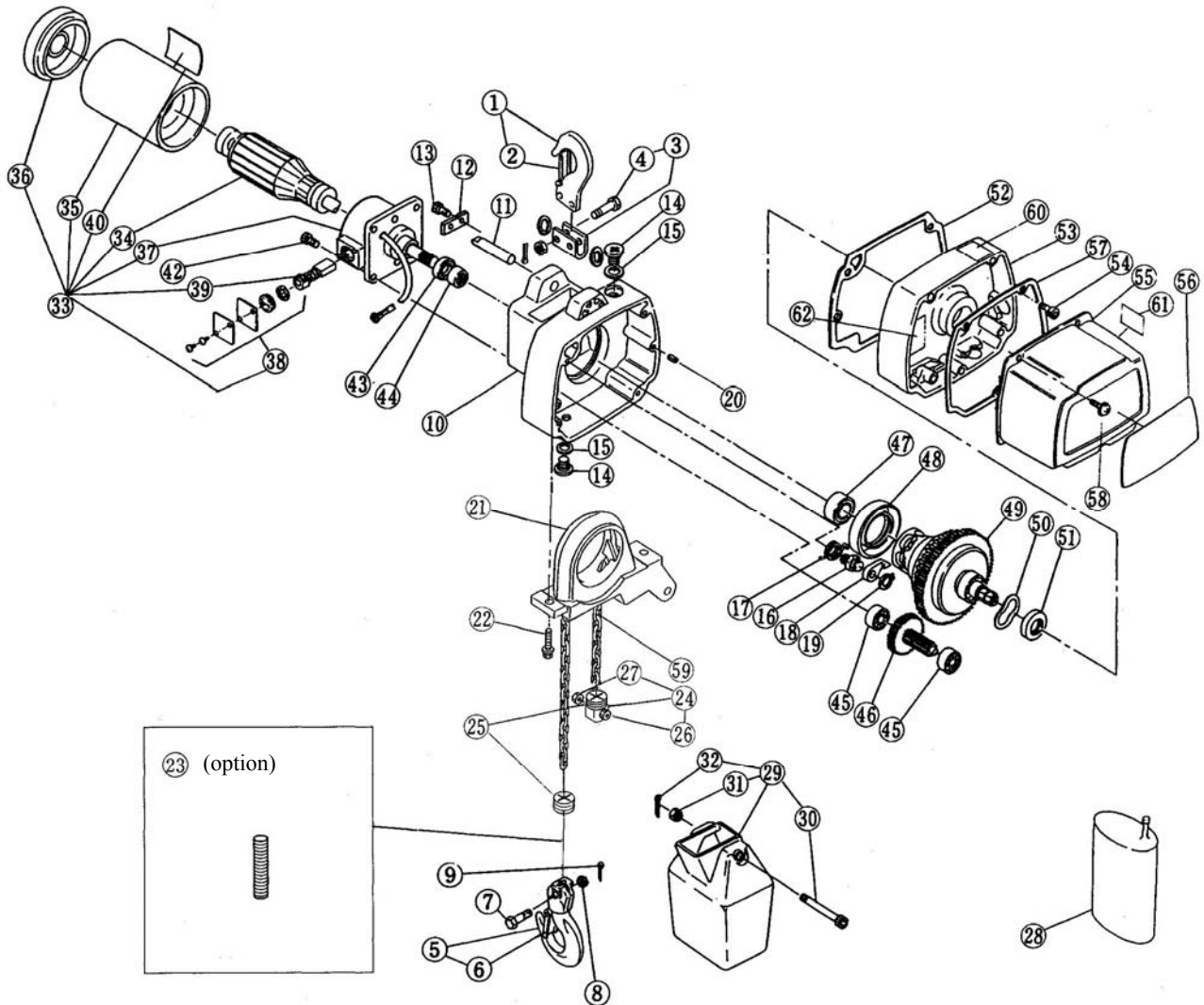


Fig. Nr.	Ersatzteil Nr.	Ersatzteilbezeichnung	Zahl pro Flaschenzug					
Fig No.	No de pièce	Designation de la pièce	Nombre par palan					
No. de Fig.	No de pieza	Nombre de la pieza	Núemros por montacargas					
Fig. N°	Ricambio N°	Denominazione del ricambio	No. per paranco					
Fig. N°	Peça N°	Nome da peça	Número por corrente					
Nr. van afb.	Nr. van onderdeel	Naam van onderdeel	Aantal per takel					
Nr. på fig.	Nr. på reservedel	Navn på reservedel	Antal pr. talje					
Fig No.	Part No.	Part Name	Nos. Per Hoist	WLL (kg)				
				60	100	180	160	240
1	E2D1001	Top hook assembly	1					
2	E2D1071T	Hook latch assembly T	1					
3	E2D1011	Top yoke complete set	1					
4	E2D5091	Top pin assembly	2					
5	E2D1021	Bottom hook complete set	1					
6	E2D1071B	Hook latch assembly B	1					
7	E2D041	Chain pin	1					
8	E2D049	Slotted nut	1					
9	E2D096	Split pin	1					
10	E3D101	Body	1					
11	E2D117	Top pin E	1					
12	E2D118	Shaft stopper	1	_____				
13	E2D072	Socket bolt with spring washer	2	_____				
14	E2D111	Oil plug	2					
15	E2D112	Plug packing	2					
16	E2D269	Pawl pin	1					
17	E2D270	Pawl spring	1					
18	E2D268	Pawl	1					
19	E2D271	Snap ring	1					
20	E2D114	Set pin	2					
21	E3D401	Chain guide	1					
22	E2D451	Socket bolt with spring washer	2					
23	E3D421	Chain spring (option)	1					
24	E3D1045	Stopper complete set	1					
25	E3D046	Cushion rubber	2					
	E2D086	Socket bolt with spring washer	1					
	E2D087	Lever nut	1					
28	E3D901	Gear oil	1					
29	E2D1831	Chain container (3m lift)	1					
	E2D1835	Chain container (6m lift)	1					
30	E2D854	Socket bolt BP	1					
31	E2D853	U nut	1					
32	E2D852	Split pin	1					

Fig No.	Part No.	Part Name	Nos. Per Hoist	WLL (kg)				
				60	100	180	160	240
33	E2D1051D	Motor complete set for 230V, 50Hz	1					
34	E2D5508D	Armature assembly for 230V, 50Hz	1					
35	E2D5507	Stator assembly	1					
36	E2D509	Motor cover	1					
37	E2D506	Motor flange	1					
38	E2D1510	Lid assembly	2					
39	E2D502	Carbon brush	2					
40	E2DC802	Name plate M (1)	1					
		Name plate M (2) (3)	1					
42	E2D162	Socket bolt with spring washer	4	Note 1		Note 2	Note 1	Note 3
	E3D451	Socket bolt with spring washer	4	Note 4		Note 5	Note 4	Note 6
43	E2D221	Oil seal	1					
44	E2D222	Needle roller bearing	1					
45	E2D231	Ball bearing	2					
46	E2D1223	Gear #2 assembly	1					
47	E2D238	Ball bearing	1					
48	E2D236	Oil seal	1					
49	E2D5234	Friction clutch assembly (incl. Load sheave)	1					
50	E2D311	Set spring	1					
51	E2D239	Oil seal	1					
52	E2D125	Gear case packing	1					
53	E2D105	Gear case	1					
54	E2D152	Socket bolt with spring washer	4					
55	E2D104	Controller cover	1					
56	E3DC801	Name plate B (single speed)	1					
		Name plate B (dual speed or cylinder)	1					
57	E2D109	Controller cover packing	1					
58	E2D151	Machine screw with spring washer	3					
59	E2D841	Load chain	1					
60	E2D865	Warning seal EO	1					
61	E2D866	Warning seal EE	1					
62	E2D867	Warning seal EF	1					

Note 1: Lot No before that of Note 4

Note 2: Lot No before that of Note 5

Note 3: Lot No before that of Note 6

Note 4: Lot No on & after 6ASY8681

Note 5: Lot No on & after 6ASY8680

Note 6: Lot No on & after 6ASY8312

When either of '10 Body' or '42 Socket bolt with spring washer' is ordered, please also the counterpart of it.

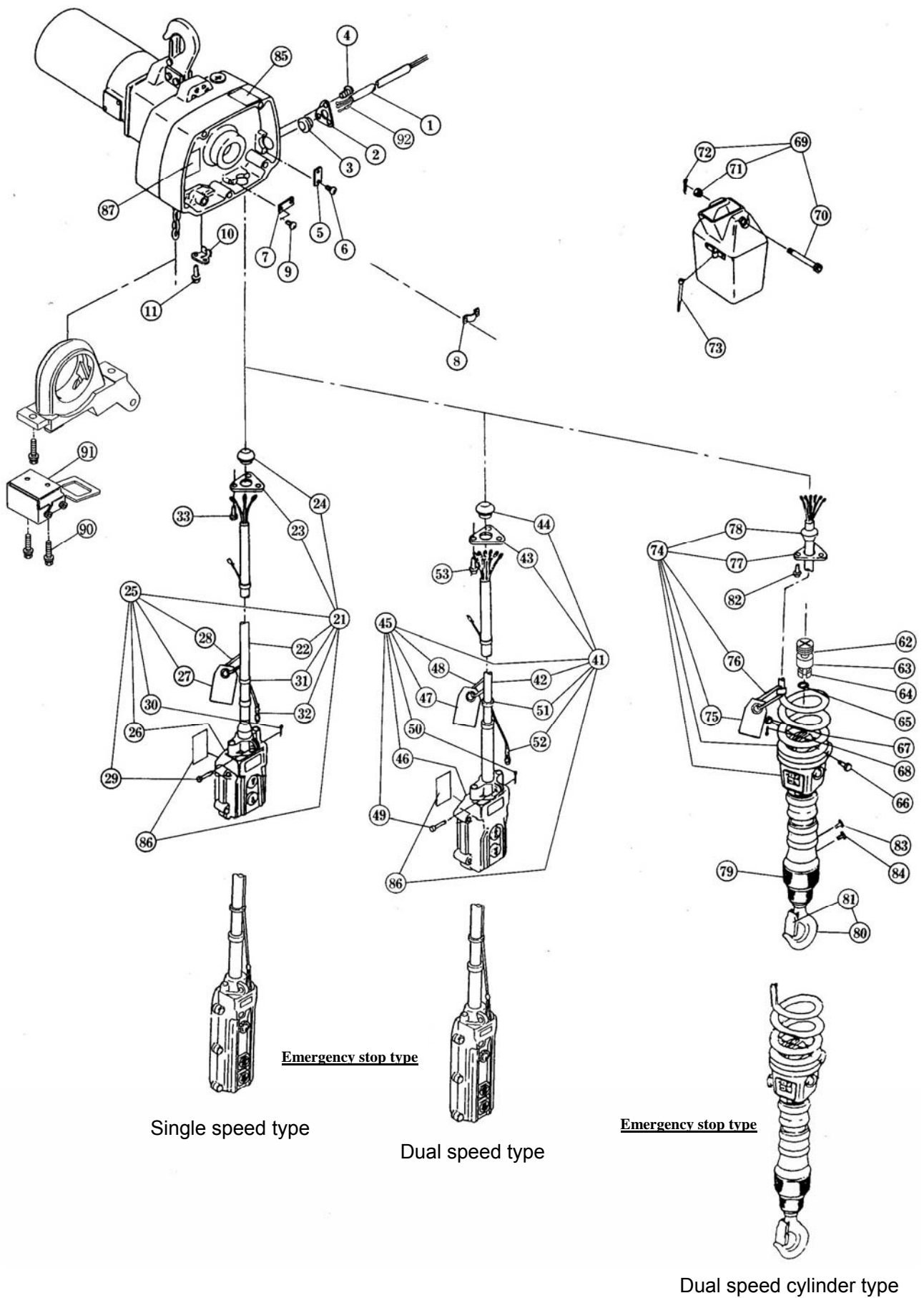


Fig No.	Part No.	Part Name	Nos. Per Hoist		WLL (kg)				
			(1)		60	100	180	160	240
1	E2D521	Power supply cable 3C		1					
2	E2D537	Cable holder C		1					
3	E2D524	Cable packing C8		1					
4	E2D555	Machine screw with spring washer		3					
5	E2D541	Cable clamp E8		1					
6	E2D551	Machine screw with spring washer		2					
7	E2D541	Cable clamp E8 (Single speed)		1					
8	E2D542	Cable clamp E12 (Dual/Cylinder)		1					
9	E2D551	Machine screw with spring washer		2					
10	E2D543	Cable support L		1					
11	ED552	Machine screw with spring washer		2					
92	E3D169	Ferrite core		1					
21	E2DC1607	Push button cord 3C complete set	N	1					
	E2DC1607E	Push button cord 4C complete set	Y	1					
22	E2D607	Push button cord 3C	N	1					
	E2DC607E	Push button cord 4C	Y	1					
23	E2D537	Cable holder C		1					
24	E2D524	Cable packing C8	N	1					
	E2DC526	Cable packing C9	Y	1					
25	E2DC2615	Push button switch S assembly	N	1					
	E2DC2615E	Push button switch S assembly	Y	1					
26	E2D1615	Push button switch S	N	1					
	E2DC1615E	Push button switch S	Y	1					
27	E2DC868	Warning tag CE		1					
28	E2D045	Chain stopper link		1					
29	———	Cord chain pin		1					
30	———	Split pin		1					
31	E2D640	Lock belt		3					
32	———	Fixing sleeve		1					
33	E2D555	Machine screw with spring washer		3					
41	E2DC1607	Push button cord 6C complete set	N	1					
	E2DC1607E	Push button cord 6C complete set	Y	1					
42	E2D607	Push button cord 6C	N	1					
	E2DC607E	Push button cord 6C	Y	1					
43	E2D537	Cable holder C		1					
44	E2D525	Cable packing C12		1					
45	E2DC2615	Push button switch D assembly	N	1					
	E2DC2615E	Push button switch D assembly	Y	1					
46	E2D1615	Push button switch D	N	1					
	E2DC1615E	Push button switch D	Y	1					
47	E2DC868	Warning tag CE		1					
48	E2D045	Chain stopper link		1					
49	———	Cord chain pin		1					
50	———	Split pin		1					
51	E2D640	Lock belt		3					
52	———	Fixing sleeve		1					
53	E2D555	Machine screw with spring washer		3					

Note: (1) N: Part for standard (without emergency stop device) type.

Y: Part for emergency stop type.

Fig No.	Part No.	Part Name	Nos. Per Hoist		WLL (kg)				
			(1)		60	100	180	160	240
62	E3D046	Cushion rubber		2					
63	E2D044	Stopper collar		1					
64	E2D045	Stopper		2					
65	—	Snap ring		1					
66	E2D041	Chain pin		1					
67	E2D049	Slotted nut		1					
68	E2D096	Split pin		1					
69	E2D1831	Chain container (3m lift for cylinder type)		1					
70	E2D854	Socket bolt BP		1					
71	E2D853	U nut		1					
72	E2D852	Split pin		1					
73	E2D861	Clamp		1					
74	E2DC1607	Push button cord 7C complete set	N	1					
	E2DC1607E	Push button cord 8C complete set	Y	1					
75	E2DC868	Warning tag CE		1					
76	E2D045	Chain stopper link		1					
77	E2D537	Cable holder C		1					
78	E2D525	Cable packing C12		1					
79	E2D5041	Detachable fitting E		1					
80	E2D1002	Detachable hook assembly		1					
81	E2D1071	Hook latch assembly		1					
82	E2D555	Machine screw with spring washer		3					
83	—	Flat head screw		1					
84	—	Flat head screw		1					
85	E2D865	Warning seal EO		1					
86	E2D866	Warning seal EE		1					
87	E2D867	Warning seal EF		1					
90	E3D1411	Limit switch assembly		1					
	E3D1411-C	Limit switch assembly (2)		1					
91	E3D422	Socket bolt with spring washer		2					

Note: (1) N: Part for standard (without emergency stop device) type.

Y: Part for emergency stop type.

(2) For 'Control panel complete set' equipped with reverse-operation protection board.

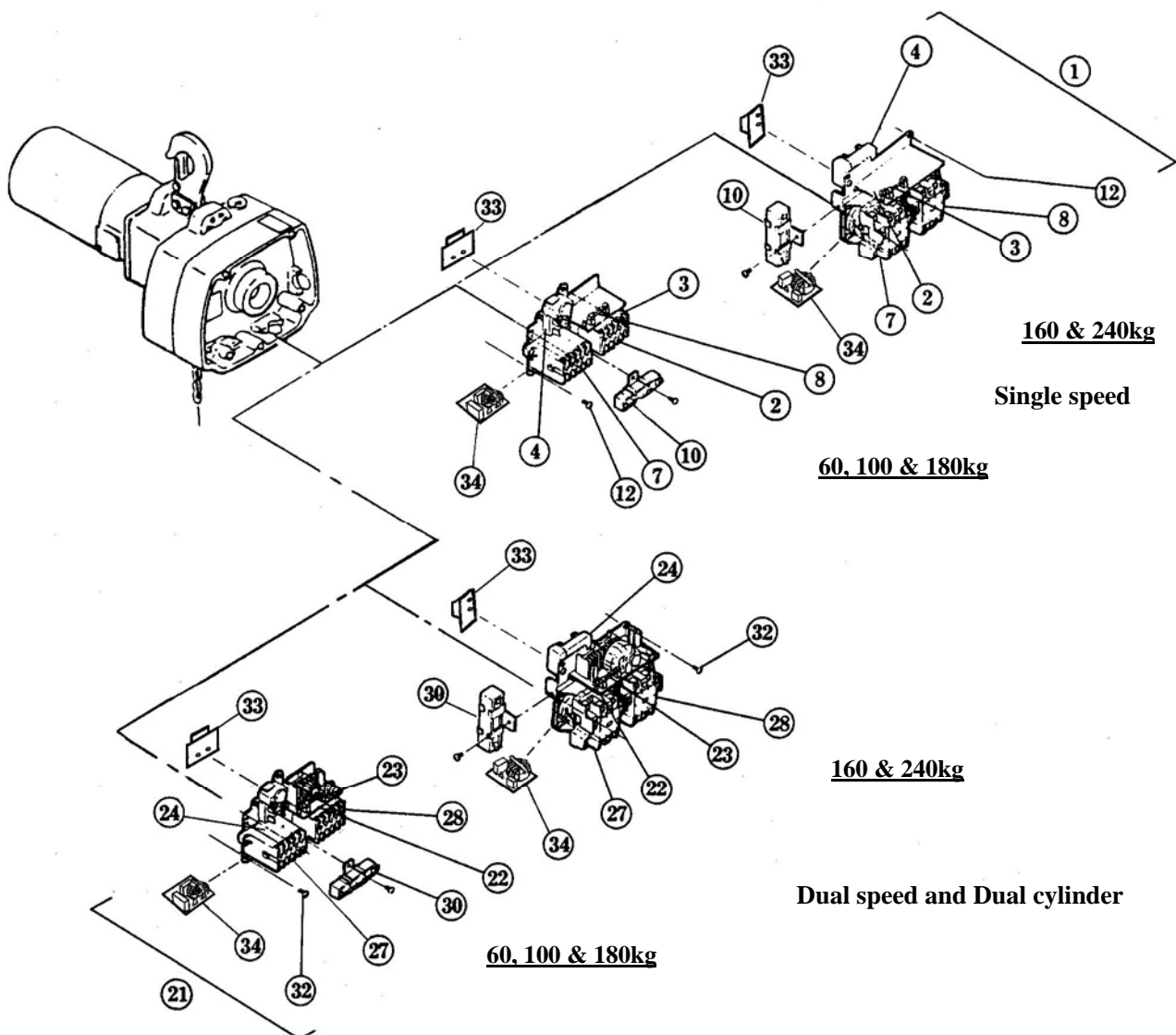


Fig No.	Part No.	Part Name	Nos. Per Hoist	WLL (kg)				
				60	100	180	160	240
1	E3DC1601	Control panel complete set	1					
	E3DC1601-C	Control panel complete set (2)	1					
2	E2D616	Converter assembly	1					
3	E2D664	Fuse set	*					
4	E2D622	Silicone stack assembly	1					
5	E2D667	Machine screw with spring washer	2	For converter			—————	
6	E2D663	Machine screw with spring washer	1	For silicone stack				
7	E2DC1617	Electromagnetic contactor assembly	1					
8	E2DC1620	Electromagnetic contactor assembly	1					
9	E2D661	Machine screw with spring washer	5	For contactor and resistor			—————	
		Machine screw with spring washer	2	—————			For converter	
10	E2D619	Resistor	1					
11	E2D665	Machine screw with spring washer	9	—————			For contactor and resistor	
33	E3D371	Abrupt reverse operation protection board	1					
34	E3D170	Noise filter	1					
12	E2DC741	Socket bolt with spring washer	3				—————	
			4	—————				
21	E3DC1601	Control panel complete set	1					
	E3DC1601-C	Control panel complete set (2)	1					
22	E2D616	Converter assembly	1					
23	E2D664	Fuse set	*					
24	E2D622	Silicone stack assembly	1					
25	E2D667	Machine screw with spring washer	2	For converter			—————	
26	E2D663	Machine screw with spring washer	1	For silicone stack				
27	E2DC1617	Electromagnetic contactor assembly	1					
28	E2DC1620	Electromagnetic contactor assembly	1					
29	E2D661	Machine screw with spring washer	5	For contactor and resistor			—————	
		Machine screw with spring washer	2	—————			For converter	
30	E2D619	Resistor	1					
31	E2D665	Machine screw with spring washer	9	—————			For contactor and resistor	
33	E3D371	Abrupt reverse operation protection board	1					
34	E3D170	Noise filter	1					
32	E2DC741	Socket bolt with spring washer	3				—————	
			4	—————				

Note (1) * Contents of fuse set are tabulated in page 27.

(2) Equipped with reverse-operation protection board.

Exploded views and part names of the trolley are shown below.

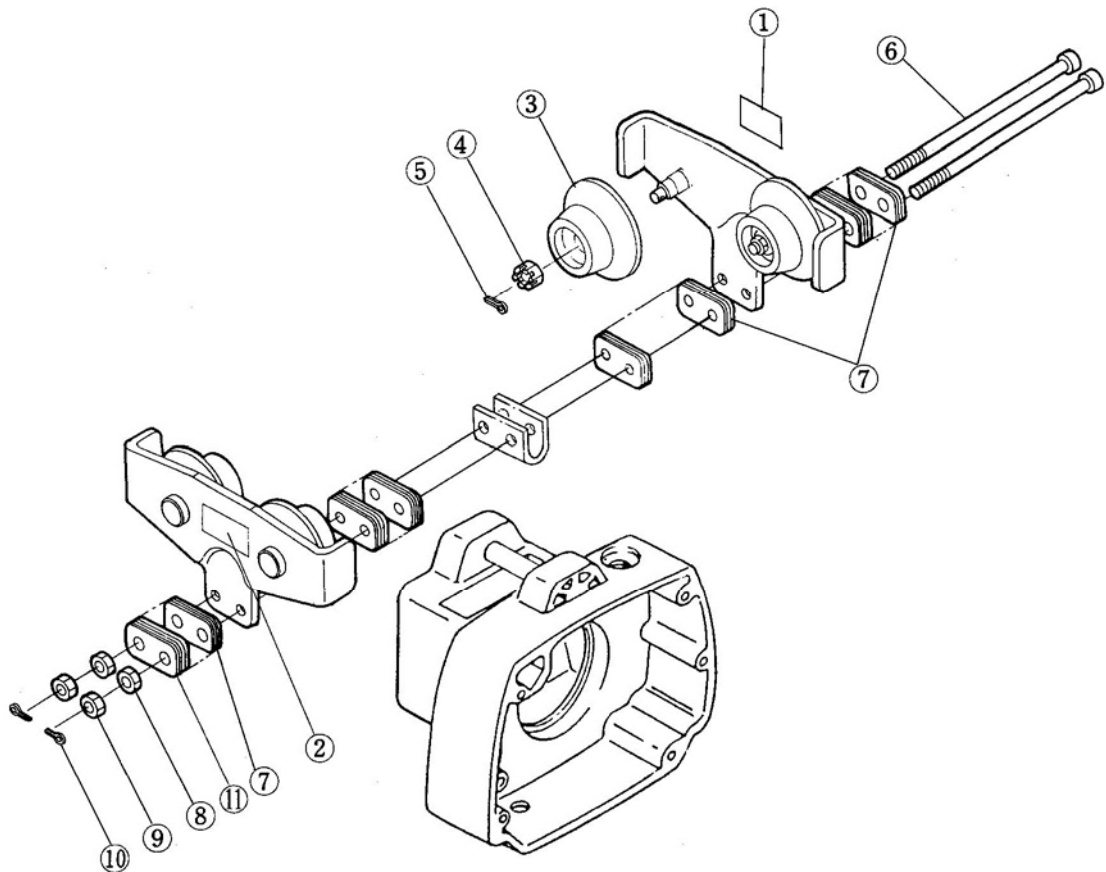


Fig. No.	Part No.	Part Name	Nos. Per Trolley	WLL (kg)
				250kg
1	T1H 801	Name plate C	1	
2	T1H 800	Name plate B	1	
3	T1H5102	Track wheel assembly	4	
4	T1H 152	Slotted nut	4	
5	T1H 153	Split pin	4	
6	T1H 115	Socket bolt	2	
7	T1H 116	Adjusting spacer	34	
8	T1H 157	Nut	2	
9	T1H 155	U nut	2	
10	T1H 156	Split pin	2	
11	T1H117	Adjusting spacer B	2	

PARTS LIST (480kg)

Exploded views and part names of the electric chain hoist are given in the following.

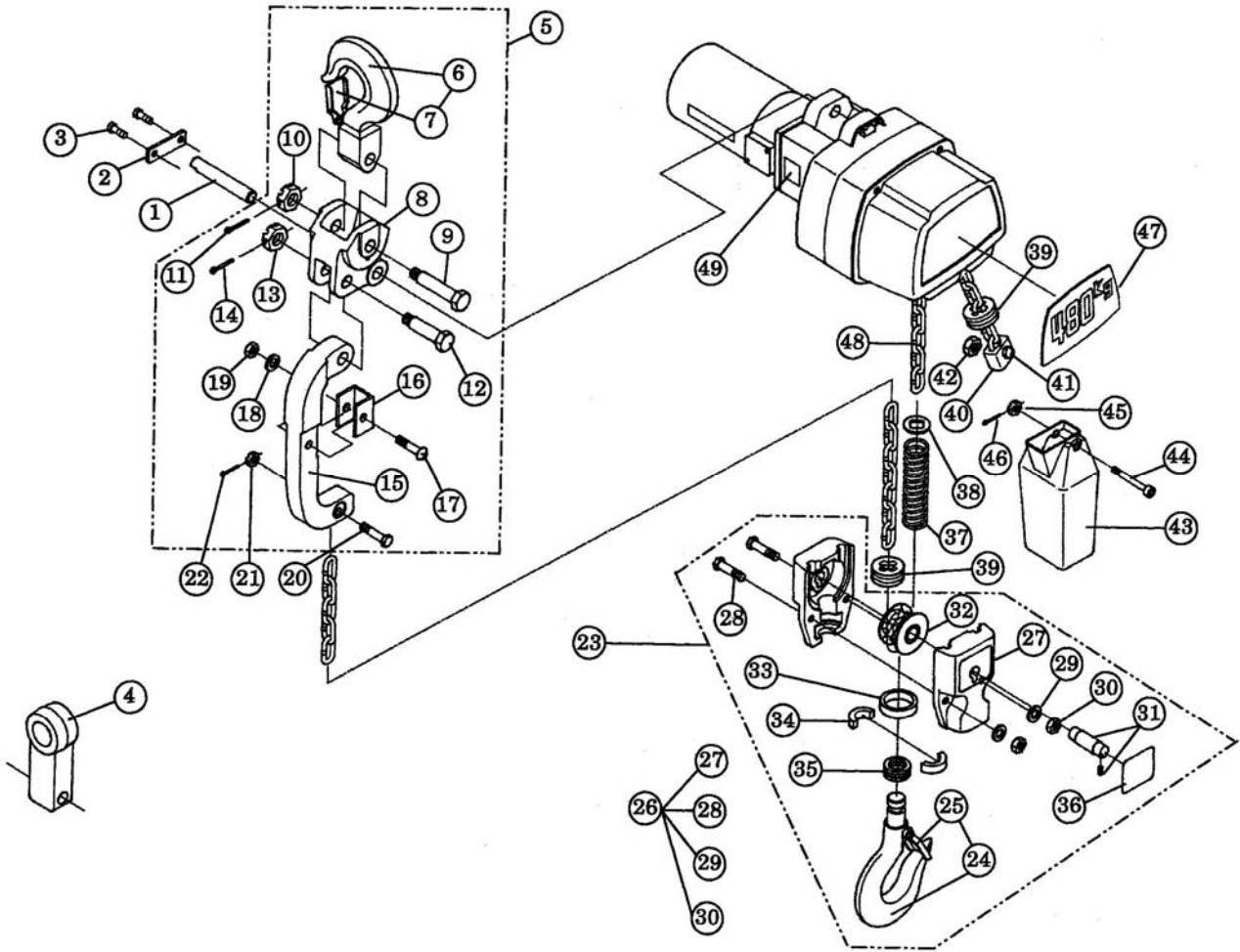


Fig. No.	Part No.	Part Name	Nos. Per Hoist	Supplement
1	E2D-117	Top pin E	1	
2	E2D-118	Shaft stopper	1	
3	E3D-155	Socket bolt with spring washer	2	
4	T7PB-004	Suspender PB	1	PT Connect
	T7GB-004	Suspender GB	1	GT Connect
5	E3D-1470	Connection yoke complete set	1	
6	E3D-460	Top hook assembly	1	
7	E3D-461	Hook latch assembly	1	
8	E3D-470	Connection yoke	1	
9	E3D-471	Yoke bolt	1	
10	E3D-472	Slotted nut	1	
11	E3D-473	Split pin	1	
12	E3D-581	Connection bolt	1	
13	E3D-582	Slotted nut	1	

Fig No.	Part No.	Part Name	Nos. Per Hoist	Supplement
14	E3D-583	Split pin	1	
15	E3D-580	Joint yoke	1	
16	E3D-592	Protection pad	2	
17	E3D-593	Truss head machine screw	1	
18	E3D-594	Washer	1	
19	E3D-595	U nut	1	
20	E1D-041	Chain pin	1	
21	E1D-049	Slotted nut	1	
22	E1D-096	Split pin	1	
23	E3D-1480	Bottom hook complete set	1	
24	E3D-2480	Bottom hook assembly	1	
25	E3D-491	Hook latch assembly	1	
26	E3D-2485	Bottom yoke assembly	1	
27	E3D-485	Bottom yoke	2	
28	E3D-496	Bolt	2	
29	E3D-498	Spring lock washer	2	
30	E3D-497	Nut	2	
31	E3D-6489	Bottom shaft assembly	1	
32	E3D-6487	Idle sheave assembly	1	
33	E3D-482	Thrust collar A	1	
34	E3D-483	Hook stopper	2	
35	E3D-481	Thrust bearing	1	
36	E3D-597	Name plate C	1	
37	E3D-590	Chain spring	1	
38	E3D-591	Washer	1	
39	E3D-046	Cushion rubber	2	
40	E3D-1045	Stopper complete set	1	
41	E2D-086	Socket bolt with spring washer	1	
42	E2D-087	Lever nut	1	
43	E2D-1835	Chain container (6)	1	Lift: 3m
	E2D-1833	Chain container (15)	1	Lift: 3.1-7.5m
	E2D-1834	Chain container (30)	1	Lift: 7.6-15m
44	E2D-854	Socket bolt BP	1	
45	E2D-853	U nut	1	
46	E2D-852	Split pin	1	
47	E2D-801	Name plate B	1	
48	E2D-841	Load chain	1	
49	E3D-599	Warning seal E (Finger protection)	1	



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:

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

Harmonized standards:

EN ISO 12100-1 and EN ISO 12100-2	Safety of machinery
EN 818-7	Short link chain for lifting purposes
EN 418	Emergency stop equipment
EN 60204-1	Electrical equipment of machines
EN 61000-6-2	Electromagnetic compatibility
EN 61000-6-4	Electromagnetic compatibility

National standards:

FEM 9.511	Classification of mechanisms
FEM 9.683	Section of lifting and travel motors



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