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

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*ALWAYS SAVE THIS BOOK FOR FUTURE REFERENCE.*



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## ED II Series (Single-phased, Model ED2B) Noise Filter Box Operation Manual for CE Mark

This manual is to specify installation procedures for Noise Filter Box (Model Code C5) which prevents noise generated in the ED2B electric chain hoist from being transmitted back to the power supply.

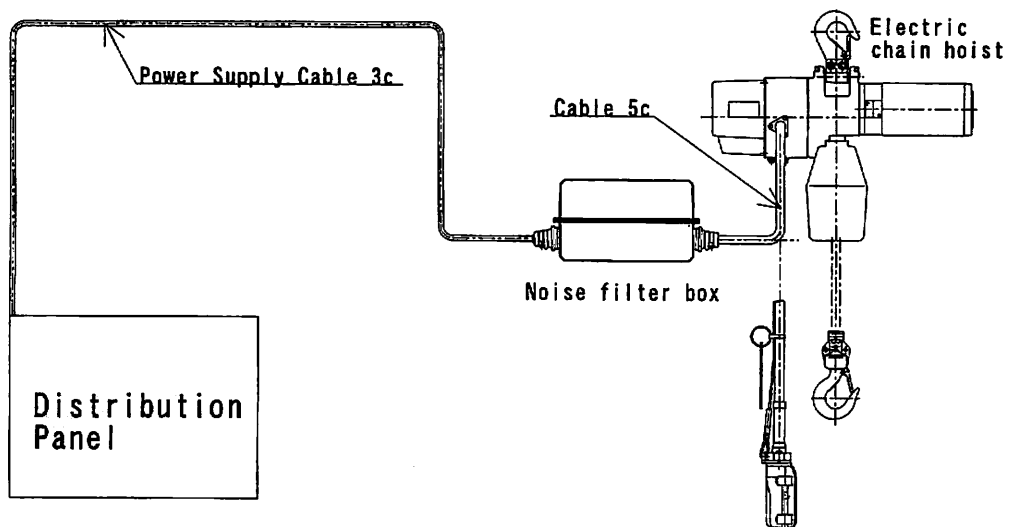
### **⚠ CAUTION**

#### Notes

- Never use CE marked ED2B hoist without the box.
- Read ED2B Owner's Manual for CE Mark thoroughly and comply with the instructions.
- The box applies only to the ED2B hoist.
- Use KITO-specified noise filter box and accessories.
- Never connect one noise filter box to two hoists or more.

#### Installation procedures of Noise Filter Box

- Remove the power supply cable(3c:3conductors) from the hoist.
- Connect the cable(3c) and another cable(5c) of 250mm or less to the box.
- Wire the other end of the cable(5c) to the hoist, referring to Figure 1 and 2.
- Wire the other end of the cable(3c) to a distribution panel.



AS/Z000WM-ED-T001

Figure 1 Schematics

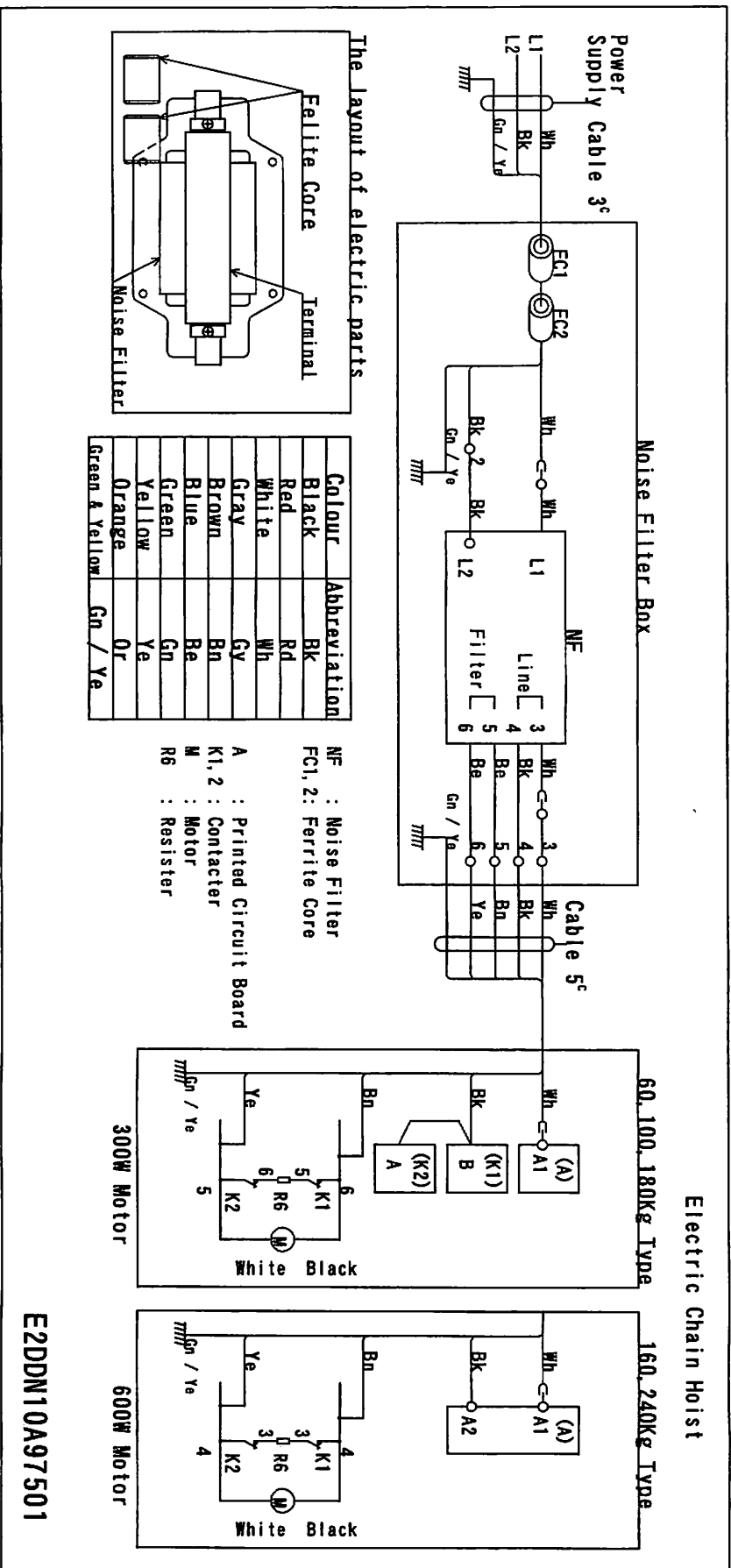


Figure 2 Wiring Diagram

# 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.

## 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 EDII 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 chains or authorized 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.

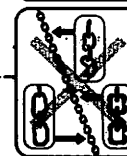
**ALWAYS** use a hoist within the "Duty rating", ED%.

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

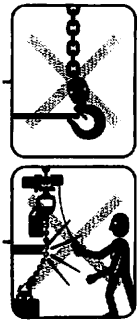
**NEVER** use the hoist chain as a sling.

**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 friction clutch as limit switch regularly, otherwise a hoist will be severely damaged to bring serious injury.
- NEVER** pull the push button cord.



### 3.2.3 After operation

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

### 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 ED II 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 22 |
| Electric power supply          | Single phase, 230V, 50Hz * |       |
| Noise level (dB)               | 83                         |       |

- 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.

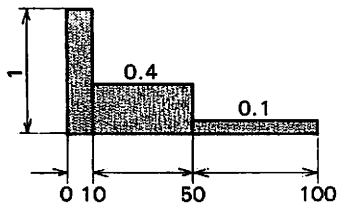
KITO electric chain hoists EDII series have been designed for grade 1Am in the FEM regulations (FEM 9.511).

Details are provided in Table 4-2.

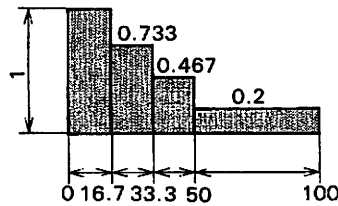
Average daily operating time and total operating time are determined by load distribution.

**Table 4-2 Mechanical classification**

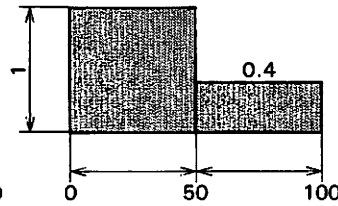
| Load spectrum<br>(Load distribution) | Definitions  | Cubic mean<br>value  | Average daily<br>operating time (h) | Total operating<br>time (h) |
|--------------------------------------|--|----------------------|-------------------------------------|-----------------------------|
| 1<br>(light)                         | 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<br>(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<br>(heavy)                         | Mechanisms or parts thereof, usually subject to medium loads but frequently to maximum loads.                    | $0.63 < k \leq 0.80$ | 0.5-1                               | 1600                        |
| 4<br>(very heavy)                    | Mechanisms or parts thereof, usually subject to maximum or almost maximum loads.                                 | $0.80 < k \leq 1.00$ | 0.25-0.5                            | 800                         |



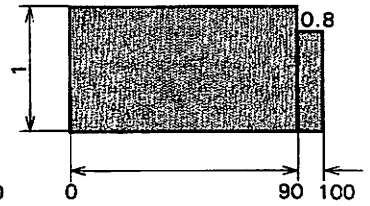
% operating time  
Load spectrum 1



% operating time  
Load spectrum 2

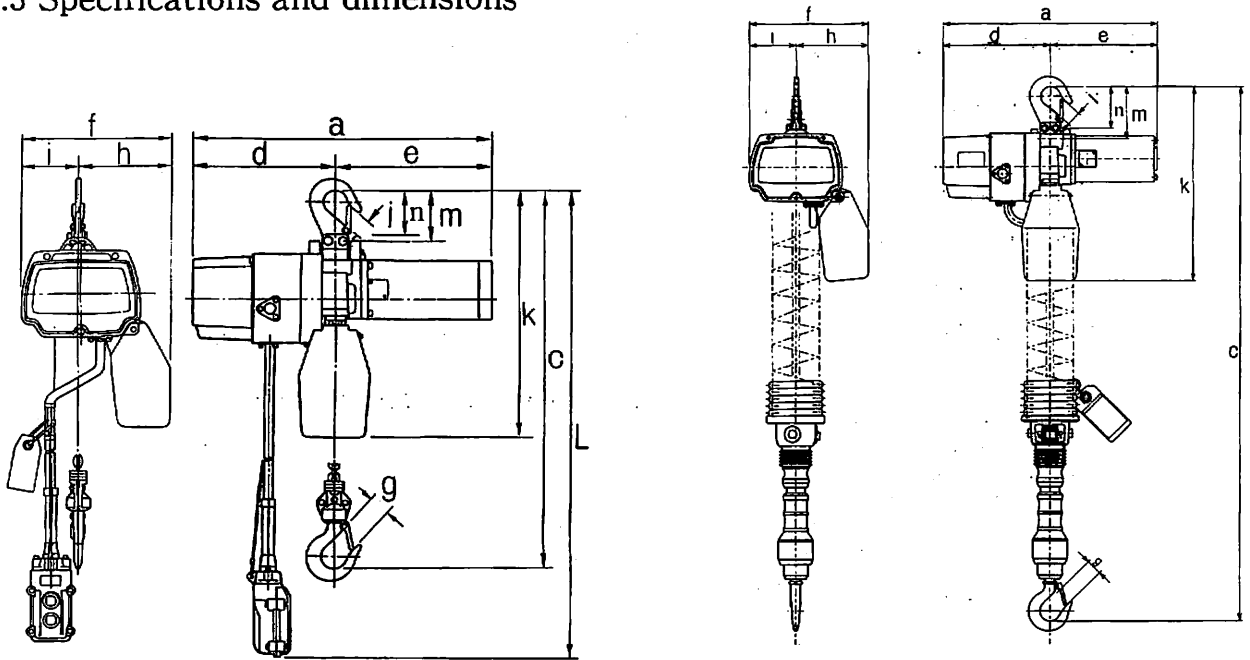


% operating time  
Load spectrum 3



% operating time  
Load spectrum 4

### 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 | ED06ST          | ED10ST | ED18ST | ED16ST | ED24ST | EDC06SD                  | EDC10SD | EDC18SD | EDC16SD | EDC24SD |      |      |  |  |  |     |  |     |  |
| WLL (kg)                            | 60                                       | 100       | 180   | 160   | 240   | 60              | 100    | 180    | 160    | 240    | 60                       | 100     | 180     | 160     | 240     |      |      |  |  |  |     |  |     |  |
| Motor output (W)                    | 300                                      |           |       |       |       | 600             |        |        |        |        | 300                      |         |         |         |         |      |      |  |  |  |     |  |     |  |
| Intermittent duty                   | %ED                                      | 30        |       | 20    |       | 30              |        | 20     |        | 30     |                          | 30      |         | 20      |         | 30   |      |  |  |  |     |  |     |  |
|                                     | Max. starting frequency (Times per hour) | 180       |       | 120   |       | 180             |        | 120    |        | 180    |                          | 180     |         | 120     |         | 180  |      |  |  |  |     |  |     |  |
| Rated Current (A)                   | 3  |           | 5     |       | 3     |                 | 5      |        | 3      |        | 5                        |         | 3       |         | 5       |      |      |  |  |  |     |  |     |  |
| Lifting speed (m/min)               | High                                     | 20.1      | 12.5  | 7.7   | 19.2  | 12.9            | 20.1   | 12.5   | 7.7    | 19.2   | 12.9                     | 20.1    | 12.5    | 7.7     | 19.2    | 12.9 |      |  |  |  |     |  |     |  |
|                                     | Low                                      | -         | -     | -     | -     | -               | 4      | 3      | 3      | 4      | 3                        | 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)                     | 10.5                                     |           | 11    |       | 14.8  |                 | 11     |        | 11.5   |        | 15.3                     |         | 14      |         | 14.5    |      | 18.3 |  |  |  |     |  |     |  |
| Min. distance between hooks: C (mm) | 300                                      |           |       |       |       | 325             |        |        |        |        | 300                      |         |         |         |         | 325  |      |  |  |  | 930 |  | 955 |  |
| 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   |                 |        | 205    |        |        | 219                      |         |         | 205     |         |      | 219  |  |  |  |     |  |     |  |
|                                     | h  | 125       |       |       | 135   |                 |        | 125    |        |        | 135                      |         |         | 125     |         |      | 135  |  |  |  |     |  |     |  |
|                                     | i  | 80        |       |       | 84    |                 |        | 80     |        |        | 84                       |         |         | 80      |         |      | 84   |  |  |  |     |  |     |  |
|                                     | g  | 27        |       |       |       |                 | 27     |        |        |        |                          | 27      |         |         |         |      |      |  |  |  |     |  |     |  |
|                                     | i  | 25        |       |       |       |                 | 25     |        |        |        |                          | 25      |         |         |         |      |      |  |  |  |     |  |     |  |
|                                     | k  | 340       |       |       | 362   |                 |        | 340    |        |        | 362                      |         |         | 340     |         |      | 362  |  |  |  |     |  |     |  |
|                                     | m  | 92        |       |       |       |                 | 92     |        |        |        |                          | 92      |         |         |         |      |      |  |  |  |     |  |     |  |
| n                                   | 73                                       |           |       |       |       | 73              |        |        |        |        | 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<br>(V) | Actual power source<br>voltage / Operation<br>voltage (V) | Lifting speed (m/min) |       |       |       |       |
|----------------------|---|-----------------------|-------|-------|-------|-------|
|                      |   | 300w                  |       |       | 600w  |       |
|                      |   | 60kg                  | 100kg | 180kg | 160kg | 240kg |
| 230                  | 220/220   | 19.3                  | 11.9  | 7.3   | 18.3  | 12.4  |
|                      | 230/230   | 20.1                  | 12.5  | 7.7   | 19.2  | 12.9  |
|                      | 240/240   | 21                    | 13    | 8     | 20    | 13.5  |

## 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 CHECKING BEFORE USE

## 5.1 Packed contents

Before using, make sure the following contents are packed :

Hoist unit (containing oil)

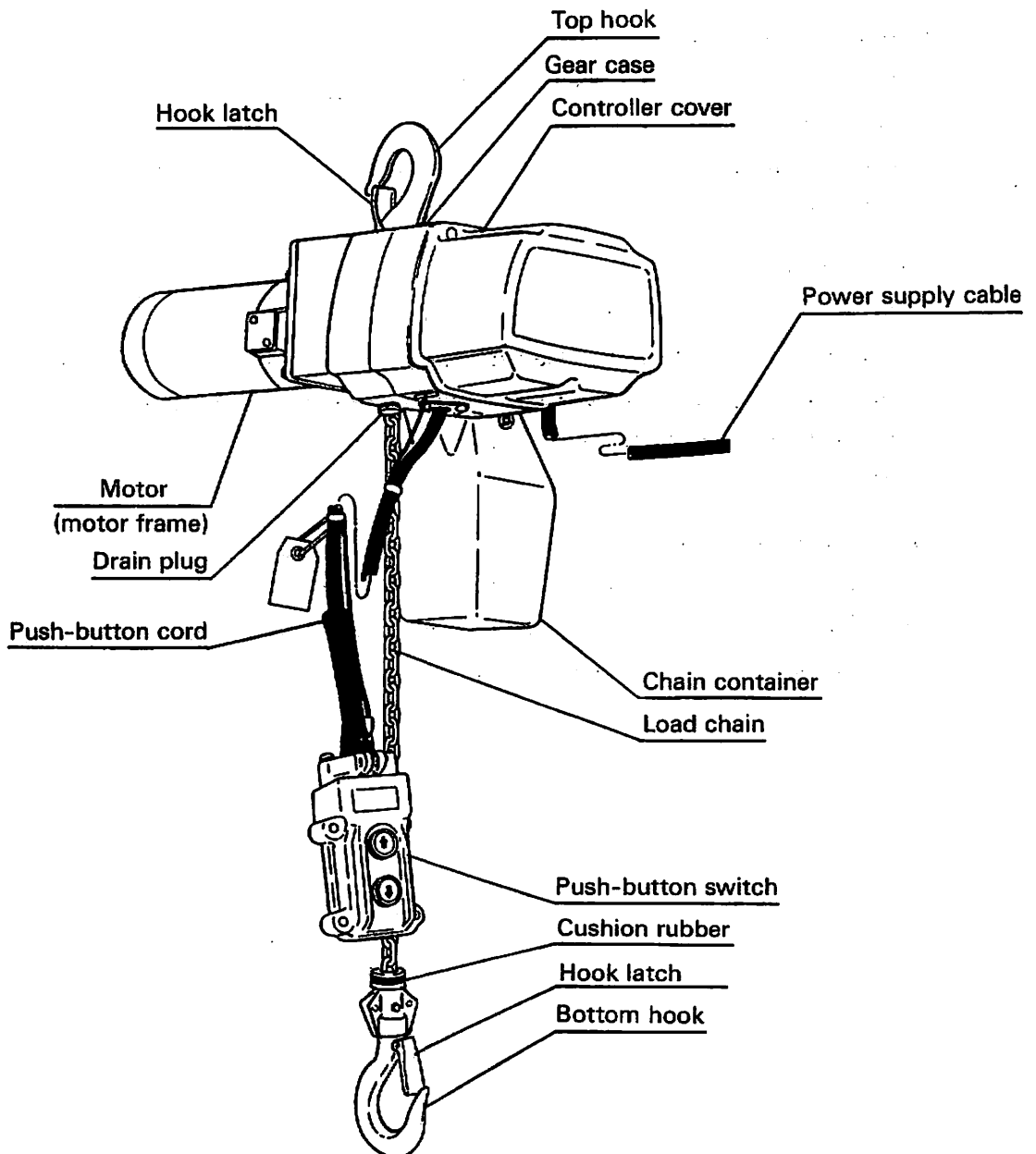
Chain container (including bolt, nut, and split pin for attaching to hoist unit) available as option.

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

Load chain

## 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.

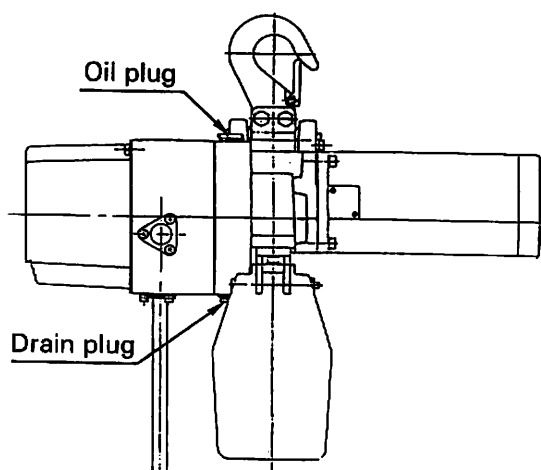
#### (1) Gear oil supply

Gear oil is pre-supplied in the gear box.

To change gear oil: Remove oil plug and drain plug 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.<br>(kg) | Oil quantity<br>(ℓ) |
|----------------|---------------------|
| 60             | 0.27                |
| 100            |                     |
| 180            |                     |
| 160            | 0.35                |
| 240            |                     |

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 gear oil.



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

#### (2) Chain container assembly

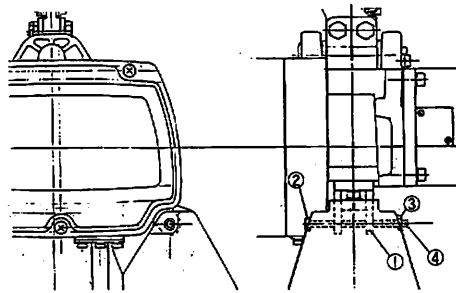
The chain container stores the load chain on the no-load side. In connecting it to the hoist body, fasten it completely and pay attention to the following points:

#### **▲ 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

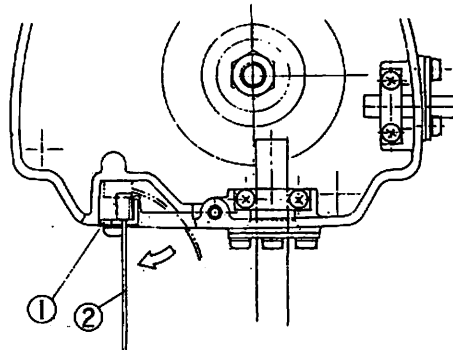
#### a. Single and dual speed types

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.

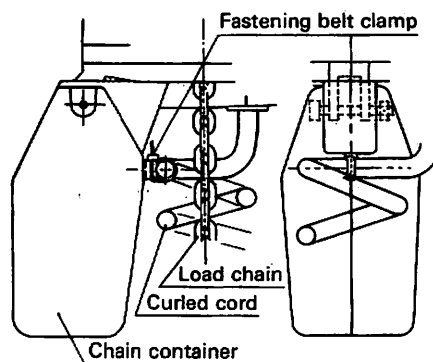


Assembly procedure :

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 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.

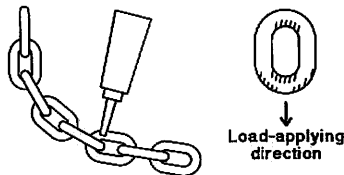
(4) Lubricating the load chain

**⚠ WARNING**

Chain lubrication is a critical factor in the service life of a load chain. KITO's specified chain lubricant or equivalents to industrial general lithium grease (NLGI No.0), can provide a longer service life. Use of machine oil or gear oil requires regularly application.

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<br>(nominal cross-section<br>area of conductor) | Max. length of<br>power supply cable<br>( 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.

## 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:

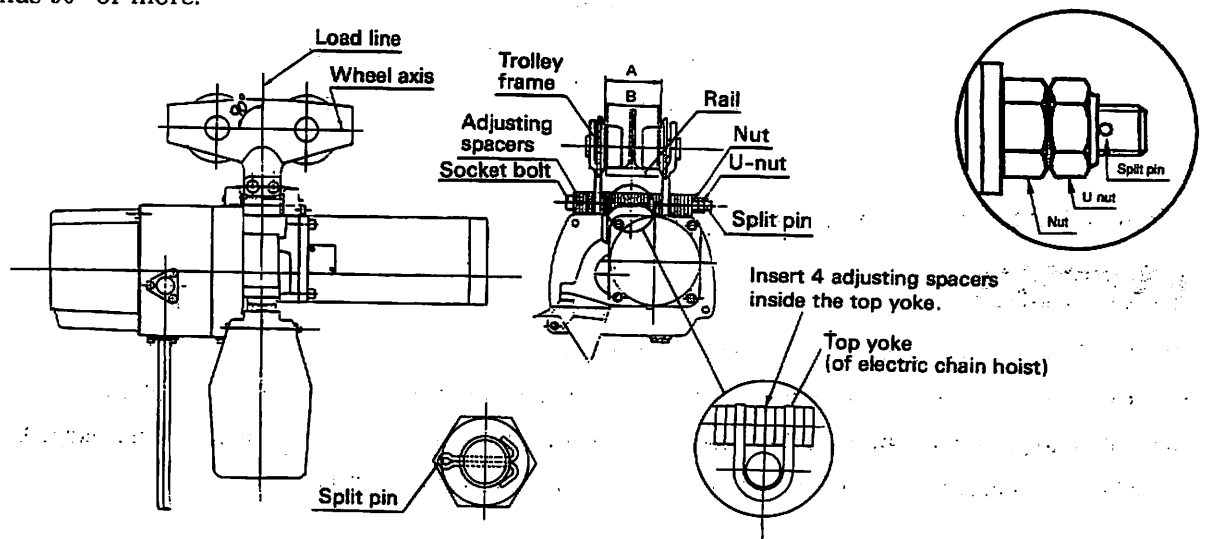
**ALWAYS** make sure to use all 32 pieces and confirm that  $A - B \approx 3$  mm.

#### 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 frames.

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

## 6. OPERATION

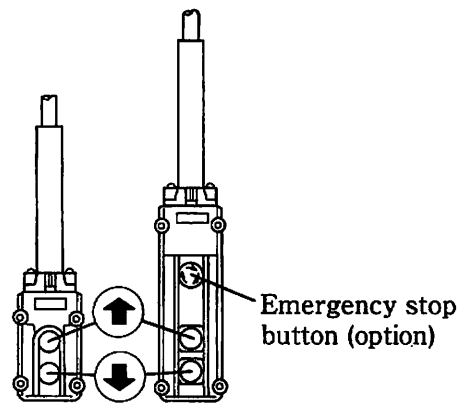
As soon as pre-usage preparation and checks have been completed, the hoist will be ready for operation.

### 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.



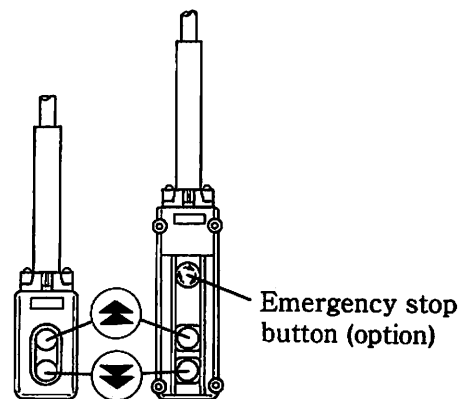
Single speed type

### 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**

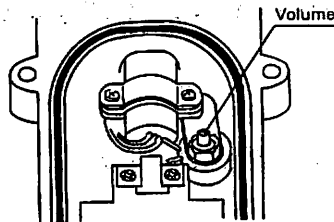
**NEVER** touch live portions of cables, terminals, and terminal screws during adjustment so as not to incur electric shock.

**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.



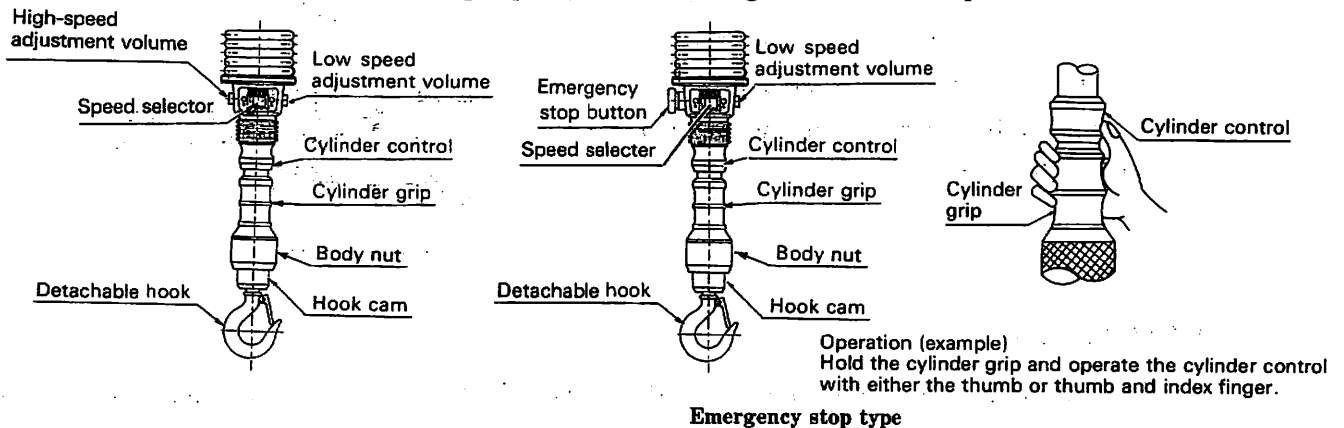
### 6.3 Dual speed cylinder type

- (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 lighting 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.



(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.

## 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 button 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

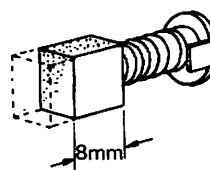
- (1) A hoist which has been idle for a period one month or more but less than one year shall be given an inspection conforming to the requirements of section 7.4 before it is placed in service.
- (2) A hoist which has been idle for a period of one year shall be given an inspection conforming to the 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                                  |
|---------------------------------------|--|---|---|
| <b>1. Hoist body</b>                  |  |   |   |
| (1) Casing 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  |
|---|------------------------------|---|---|
| <b>2. Operation switch</b><br>(1) Function<br><br>(2) Emergency stop function<br><br>(3) Case cracking<br>(4) Loose wiring joints | 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>   | Check power source and make sure cord is connected. Replace if defective (electrical equipment included).<br><br>Replace. |
|   | Operate switch with no load. | <ul style="list-style-type: none"> <li>To change from 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> | Check power source and make sure cord is connected. Replace if defective (electrical equipment included).                 |
|   | Check visually.              | <ul style="list-style-type: none"> <li>No cracks.</li> </ul>  | Replace.  |
|   | Check visually.              | <ul style="list-style-type: none"> <li>No loosening or missing of screws.</li> </ul>  | Repair.   |

### 3. Load chain

(1) Appearance

(2) Wear

Check visually.

Measure with calipers.

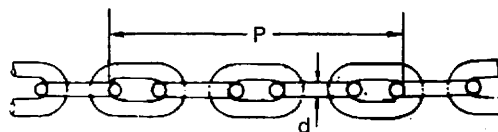
- Load chain shall be oiled.
- Dimension "P" or "d" shall be within the following values :

Supply oil.

Replace.

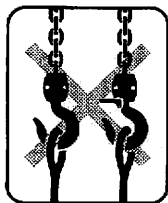
Unit (mm)

| 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             |



### 4. Hook

(1) Deformation



Check visually.

Measure dimension "e" between two embossed marks at time of purchase with calipers.

Measure with calipers.

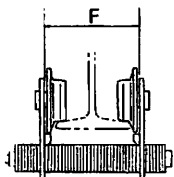
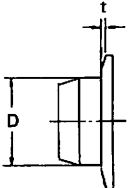
- No deformation from original shape (at time of purchase).
- No deformation from original shape (at time of purchase).
- Dimensions "c" and "d" are within their limits.

Replace.

Replace.

Replace.

| Item                                   | Inspection methods                      | Discard limit/criteria   | Remedy   |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
|--|---|--|--|---------------|--|------|--|-------------|---------------|-------------|---------------|-------------|------|------|------|------|----------|------|------|-----|-----|--|
| (Reference values)                     |   |  |  |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
|  |   | <table border="1"> <thead> <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> </thead> <tbody> <tr> <td>Bottom hook</td> <td>17.0</td> <td>16.2</td> <td>12.1</td> <td>11.5</td> </tr> <tr> <td>Top hook</td> <td>17.0</td> <td>16.2</td> <td>7.0</td> <td>6.5</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 |  |
|  | 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           |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
|  |   | <p style="text-align: center;">Top hook                      Bottom hook</p>   |  |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| (2) Flaws                              | Check visually.                         | <ul style="list-style-type: none"> <li>No deep flaws.</li> </ul>   | Replace.   |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| (3) Bend at shank of bottom hook       | Check visually.                         | <ul style="list-style-type: none"> <li>Never use if bent.</li> </ul>   | Replace.   |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| (4) Bottom hook movement               | Turn hook.                              | <ul style="list-style-type: none"> <li>Hook should turn lightly.</li> </ul>  | Replace.   |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| (5) Deformation of bottom yoke         | Check visually.                         | <ul style="list-style-type: none"> <li>Should be free from deformation.</li> </ul>   | Replace.   |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| (6) Hook latch                         | Check visually.                         | <ul style="list-style-type: none"> <li>No deformation from original shape (at time of purchase).</li> </ul>  | Replace.   |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| <b>5. Chain container</b>              | Check visually.                         | <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>   | Replace with new ones if damaged.<br>Replace with new ones if damaged.<br>Remove any foreign matter or dust. |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| <b>6. Electric cable</b>               |   |  |  |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| (1) Damage of electric cable           | Check visually.                         | <ul style="list-style-type: none"> <li>No damage.</li> </ul>   | Replace.   |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| (2) Loose of electric cable connection | Check visually.                         | <ul style="list-style-type: none"> <li>No loosening.</li> </ul>  | Repair.  |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| (3) Poor grounding                     | Check visually.                         | <ul style="list-style-type: none"> <li>Shall be grounded.</li> </ul>   | Ground.  |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| <b>7. MINI trolley</b>                 |   |  |  |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| (1) Function                           | Move (trolley) under no-load condition. | <ul style="list-style-type: none"> <li>Should run smoothly.</li> </ul>   | Replace.   |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| (2) Falling of split pins              | Check visually.                         | <ul style="list-style-type: none"> <li>Not fall.</li> </ul>  | Repair.  |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |
| (3) Wheel wear                         | Measure with calipers.                  | <ul style="list-style-type: none"> <li>Contact face and flange wear should be within the following limits :</li> </ul>   | Replace.   |               |  |      |  |             |               |             |               |             |      |      |      |      |          |      |      |     |     |  |

| Item                        | Inspection methods   | Discard limit/criteria  | Remedy               |   |  |                             |  |                            |        |               |
|-----------------------------|--|---|----------------------|---|--|-----------------------------|--|----------------------------|--------|---------------|
| (4) Frame deformation       | Check visually.<br>Measure with calipers.<br><br> | <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.<br>Replace. |   |  |                             |  |                            |        |               |
|                             |  |   |                      |  | <table border="1"> <thead> <tr> <th colspan="2" data-bbox="733 249 1114 320">Diameter of tread<br/>D (mm)</th> <th data-bbox="1119 249 1392 320">Discard limit<br/>of flange</th> </tr> <tr> <th data-bbox="733 327 848 356">Normal</th> <th data-bbox="852 327 1114 356">Discard limit</th> <th data-bbox="1119 327 1392 356">t (mm)</th> </tr> </thead> <tbody> <tr> <td data-bbox="733 362 848 391">40</td> <td data-bbox="852 362 1114 391">38</td> <td data-bbox="1119 362 1392 391">1.5</td> </tr> </tbody> </table> | Diameter of tread<br>D (mm) |  | Discard limit<br>of flange | Normal | Discard limit |
| Diameter of tread<br>D (mm) |  | Discard limit<br>of flange  |                      |   |  |                             |  |                            |        |               |
| Normal                      | Discard limit  | t (mm)  |                      |   |  |                             |  |                            |        |               |
| 40                          | 38   | 1.5   |                      |   |  |                             |  |                            |        |               |

## 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.

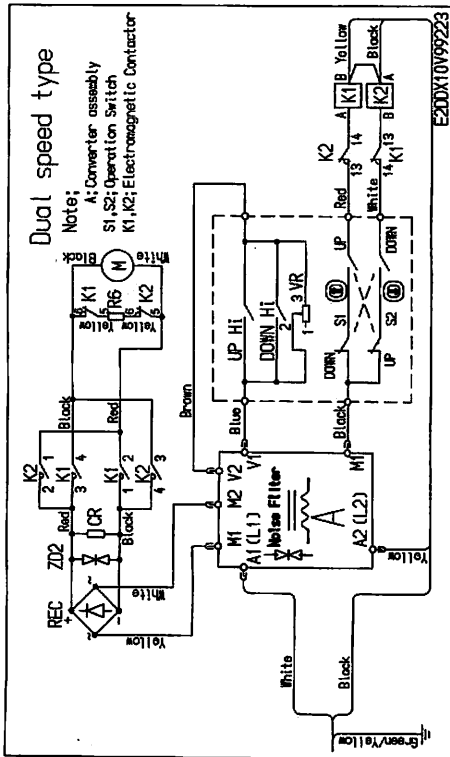
To check the connection, open the controller cover of the hoist body. Make sure that lead wires are connected correctly and firmly, referring to the following connection diagram.

### **▲ DANGER**

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

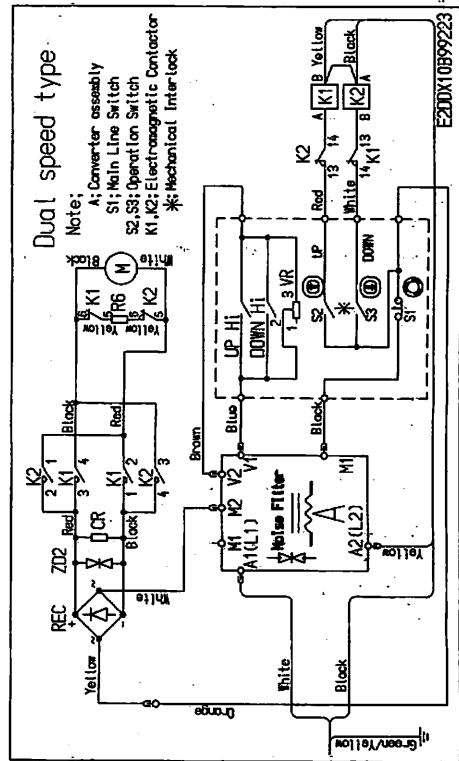
# 9-2 Dual speed type

(1) Standard (without emergency stop device) type

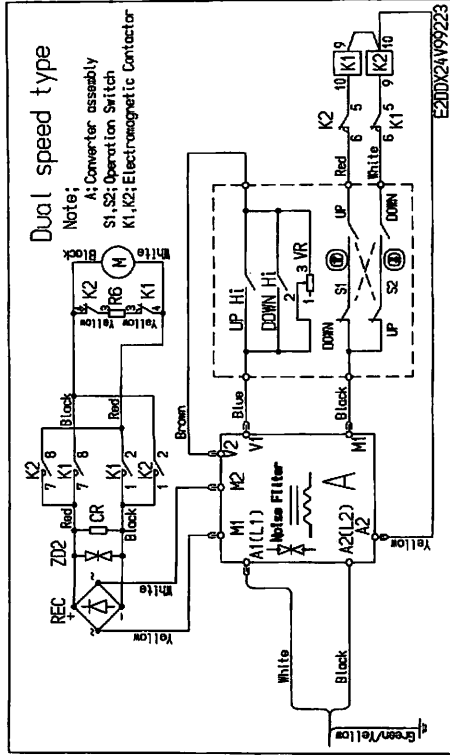


Motor output 300 W  
 (WLL 60kg, 100kg, 180kg)

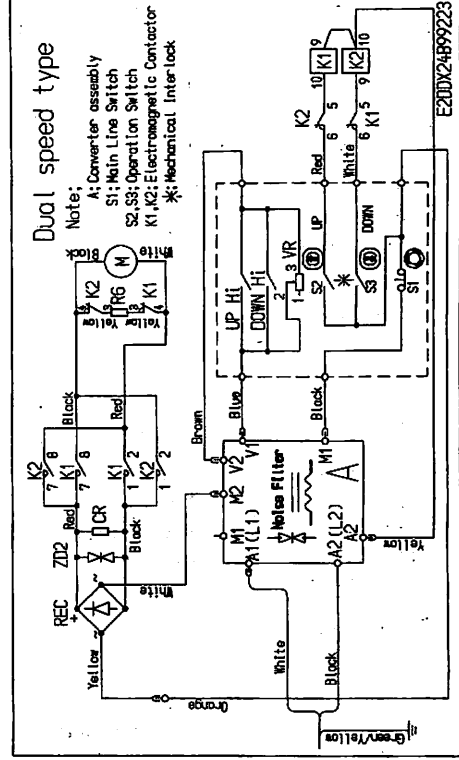
(2) Emergency stop type



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



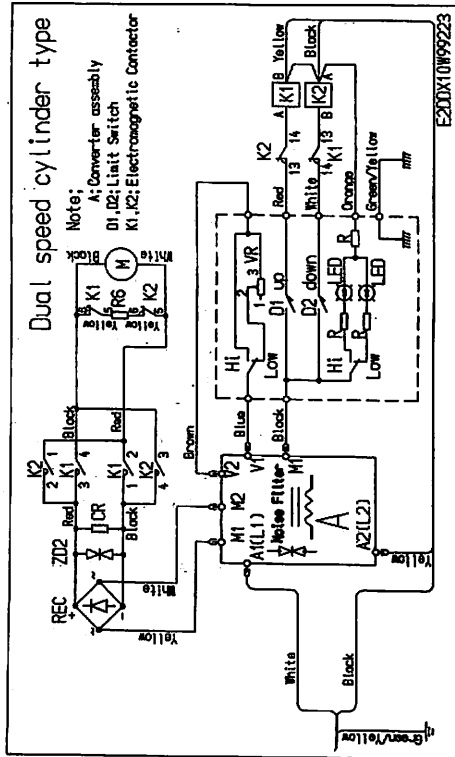
Motor output 600 W  
 (WLL 160kg, 240kg)



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

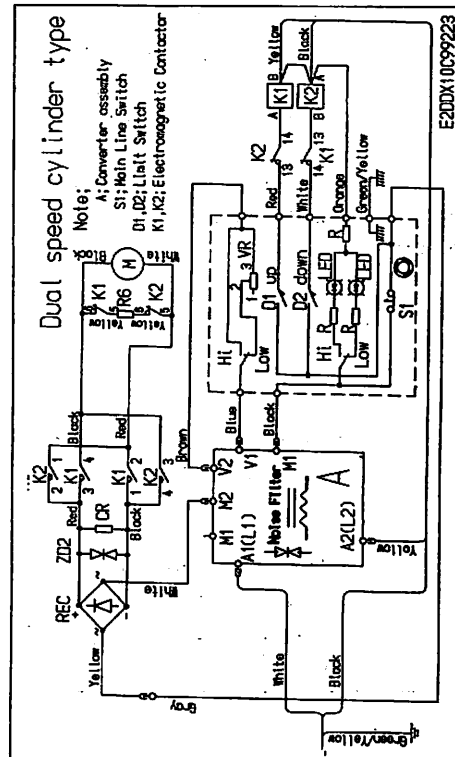
### 9-3 Dual speed cylinder type

(1) Standard (without emergency stop device) type

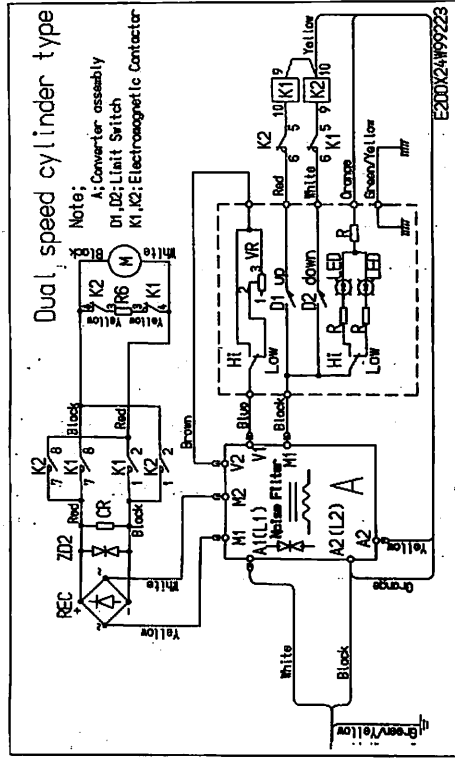


Motor output 300 W  
(WLL 60kg, 100kg, 180kg)

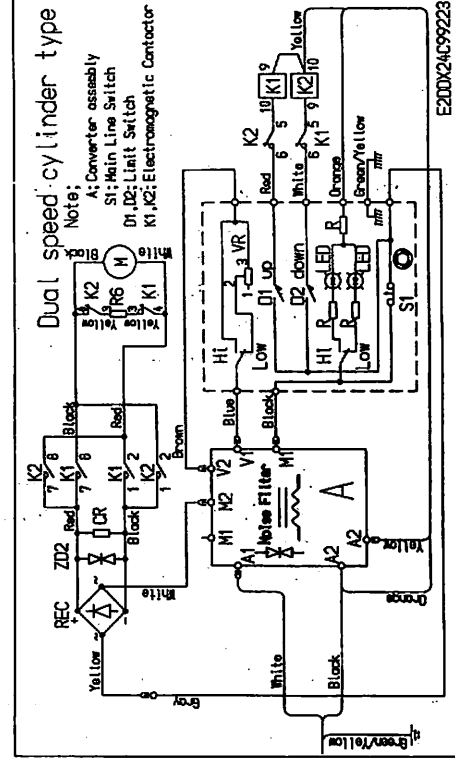
(2) Emergency stop type



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



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



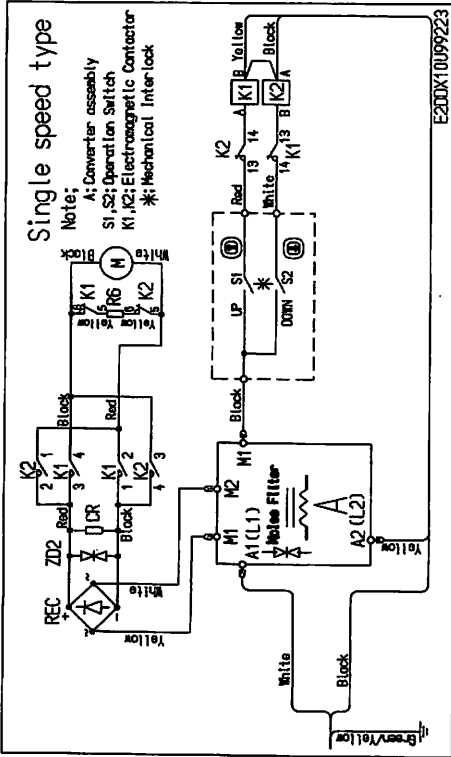
Motor output 600 W  
(WLL 160kg, 240kg)

# 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>Wiring abnormality.</li> </ul>                                       | <ul style="list-style-type: none"> <li>Rewire 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>                                    |   |

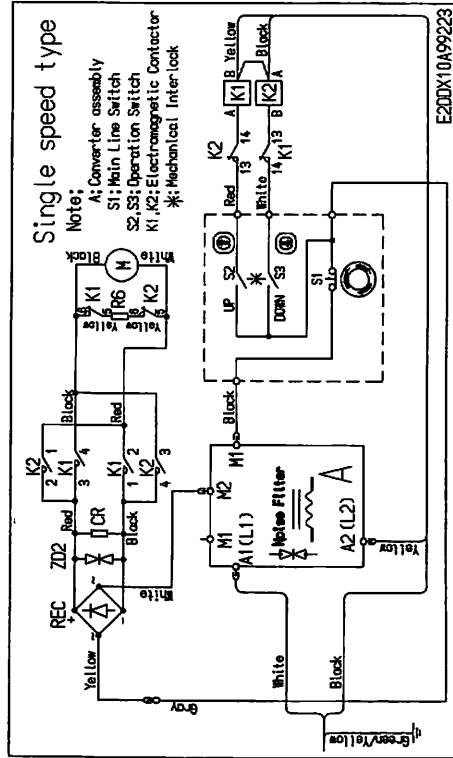
# 9-1 Single speed type

(1) Standard (without emergency stop device) type

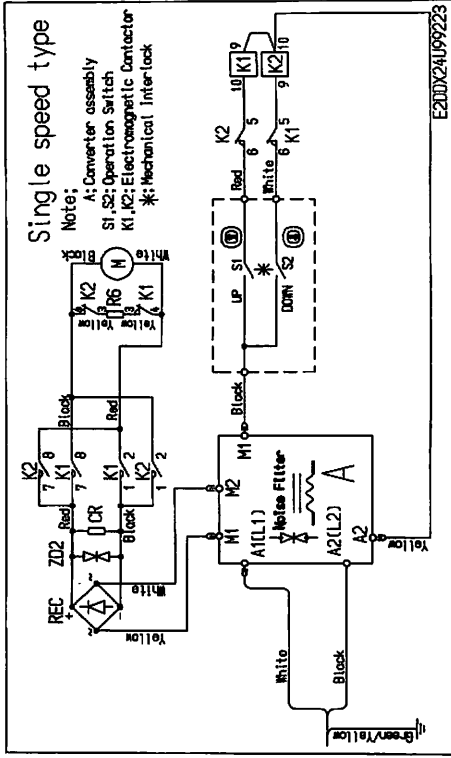


Motor output 300 W  
 (WLL 60kg, 100kg, 180kg)

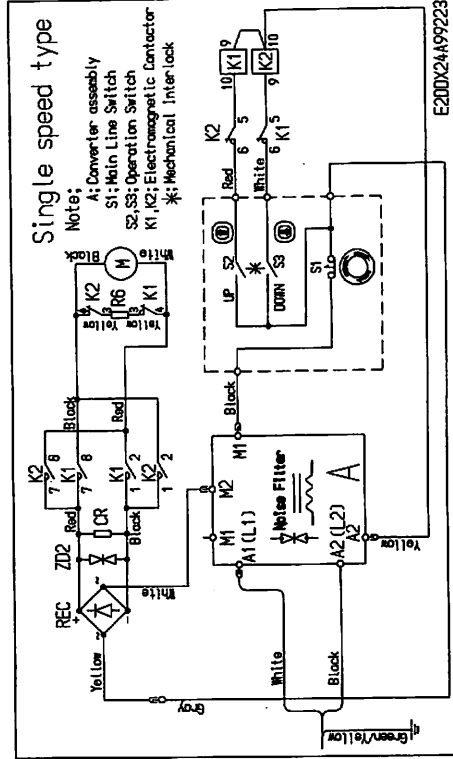
(2) Emergency stop type



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



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



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

| 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 can not 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              |
|            |            | 5              | 2              |
|            | Dual       | 0.1            | 1              |
| 160,240    | Single     | 10             | 2              |
|            |            | 10             | 2              |
|            | Dual       | 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.

Geben 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 Druckknopf-kabel, falls erforderlich.
- 5) Nothaltvorrichtung (NOT-AUS).

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

- 1) Puissance nominale du palan et du chariot et vitesse de levage (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.

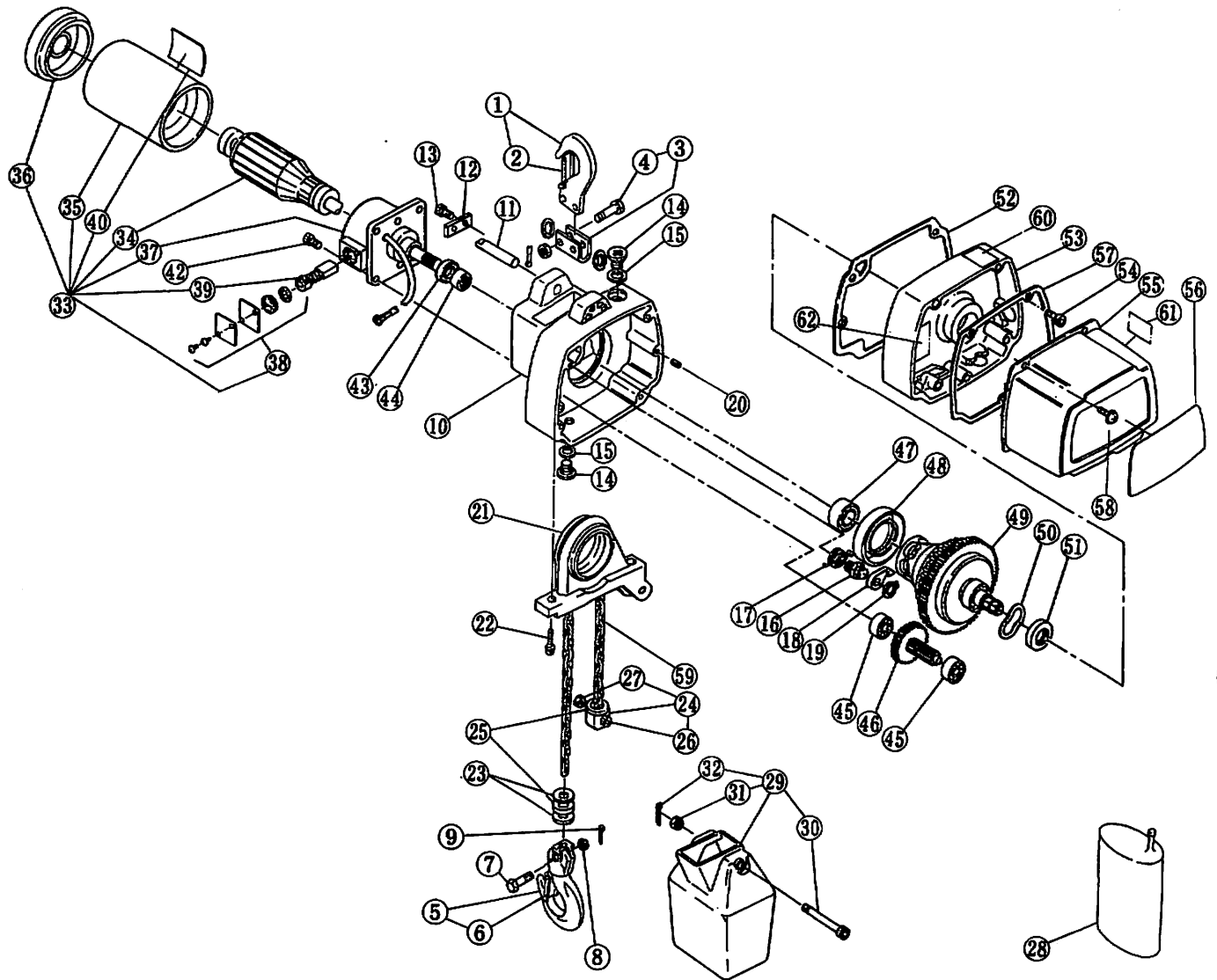
Wanneer u onderdelen bestelt, gelieve de volgende gegevens te verstrekken ;

- 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.

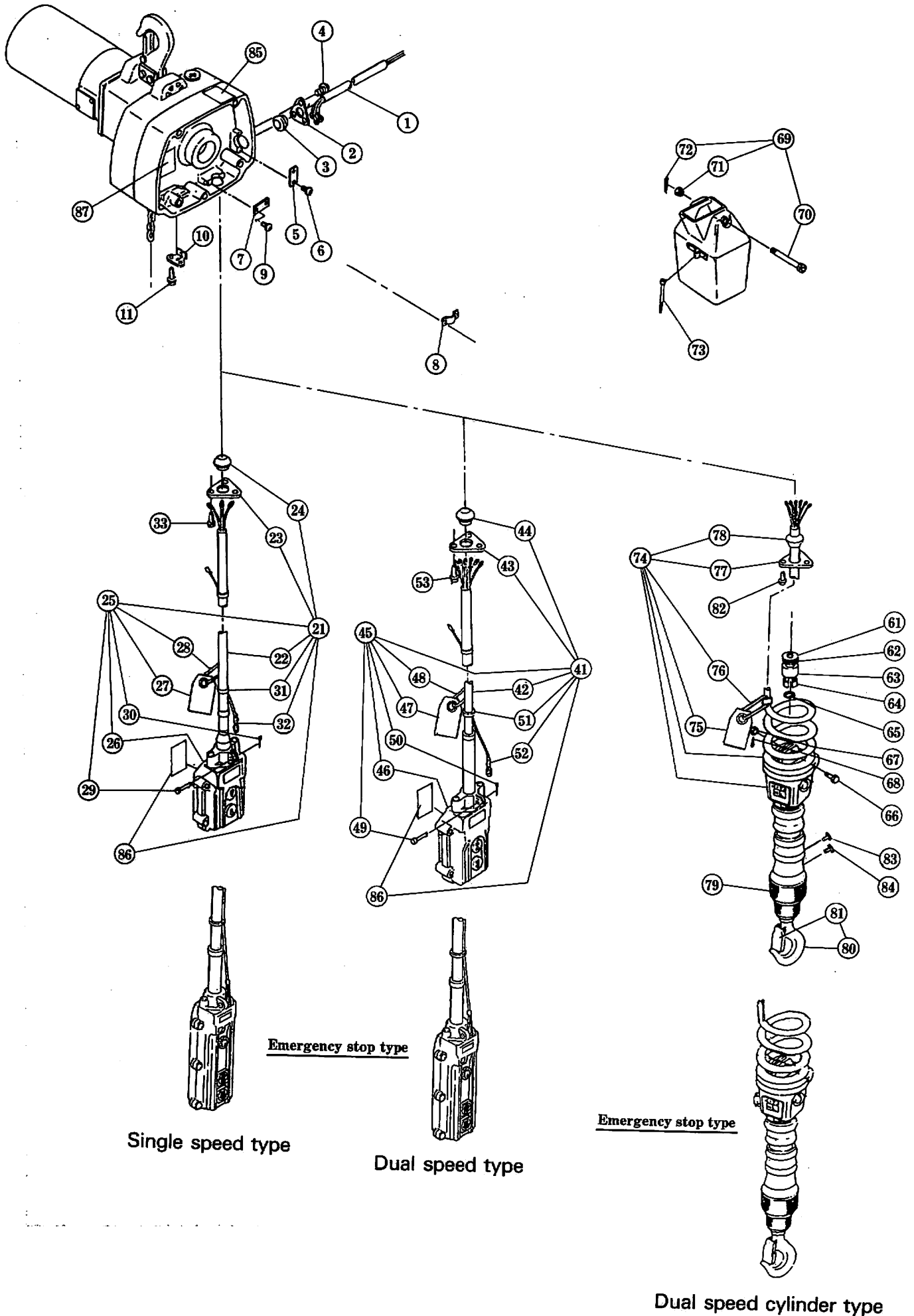


| Fig. Nr.     | Ersatzteil Nr.    | Ersatzteilbezeichnung          | Zahl pro Flaschenzug    |          |     |     |     |     |
|--------------|-------------------|--------------------------------|-------------------------|----------|-----|-----|-----|-----|
| Fig. No      | No de pièce       | Designation de la pièce        | Nombre par palan        |          |     |     |     |     |
| No. de Fig.  | No. de pieza      | Nombre de la pieza             | Números por montacargas |          |     |     |     |     |
| Fig. N°      | Ricambio N°       | Denominazione del ricambio     | No. per paranco         |          |     |     |     |     |
| Fig. N°      | peça N°           | Nome da peça                   | Número por corrente     |          |     |     |     |     |
| Nr. van aff. | 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            | E2D101            | 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            | E2D401            | Chain guide                    | 1                       |          |     |     |     |     |
| ㉒            | E2D451            | Socket bolt with spring washer | 2                       |          |     |     |     |     |
| ㉓            | E2D048            | Washer                         | 2                       |          |     |     |     |     |
| ㉔            | E2D1045           | Stopper complete set           | 1                       |          |     |     |     |     |
| 25           | E2D046            | Cushion rubber                 | 2                       |          |     |     |     |     |
| 26           | E2D086            | Socket bolt with spring washer | 1                       |          |     |     |     |     |
| 27           | E2D087            | Lever nut                      | 1                       |          |     |     |     |     |
| ㉘            | E2D901            | Gear oil(old)*                 | 1                       |          |     |     |     |     |
|              | E2D901B           | Gear oil(new)*                 | 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                       |          |     |     |     |     |

Note; \* When ordering Gear oil, please specify it is for Model Lot No. ED2(old type) or ED2B(new type) on Name plate P Because there is no interchangeability between old and new Gear oil.

| Fig No. | Part No. | Part Name                                    | Nos. Per Hoist | WLL (kg) |     |     |     |     |
|---------|----------|--|----------------|----------|-----|-----|-----|-----|
|         |          |  |                | 60       | 100 | 180 | 160 | 240 |
| ③③      | E2D1501D | 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              |          |     |     |     |     |
| 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              |          |     |     |     |     |
| ⑤⑩      | 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      | E2DC801  | Name plate B (1)                             | 1              |          |     |     |     |     |
|         |          | Name plate B (2)                             | 1              |          |     |     |     |     |
|         |          | Name plate B (3)                             | 1              |          |     |     |     |     |
| ⑤⑦      | E2D109   | Controller cover packing                     | 1              |          |     |     |     |     |
| ⑤⑧      | E2D151   | Machine screw with spring washer             | 3              |          |     |     |     |     |
| ⑤⑨      | E2D841   | Load chain                                   | 1              |          |     |     |     |     |
| ⑥⑩      | E2D865   | Warning seal EO                              | 1              |          |     |     |     |     |
| ⑥①      | E2D866   | Warning seal EE                              | 1              |          |     |     |     |     |
| ⑥②      | E2D867   | Warning seal EF                              | 1              |          |     |     |     |     |

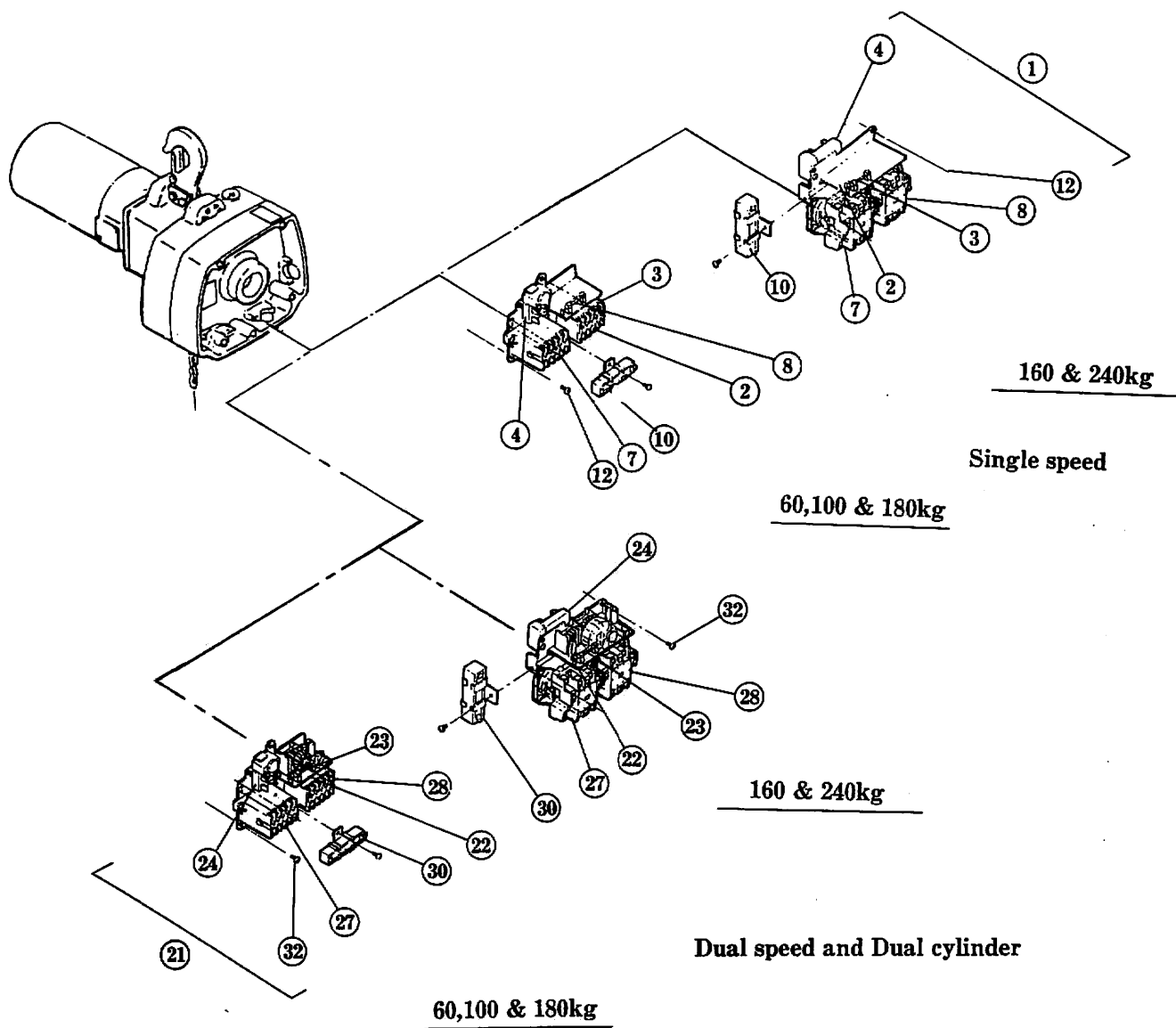
Note : (1) Parts for single speed type hoist.  
(2) Parts for dual speed type hoist.  
(3) Parts for dual speed cylinder type hoist.





| Fig No. | Part No.  | Part Name                                   | Nos. |           | WLL (kg) |     |     |     |     |
|---------|-----------|---|------|-----------|----------|-----|-----|-----|-----|
|         |           |   | (1)  | Per Hoist | 60       | 100 | 180 | 160 | 240 |
| 61      | E2D048    | Washer                                      |      | 1         |          |     |     |     |     |
| 62      | E2D046    | 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         |          |     |     |     |     |

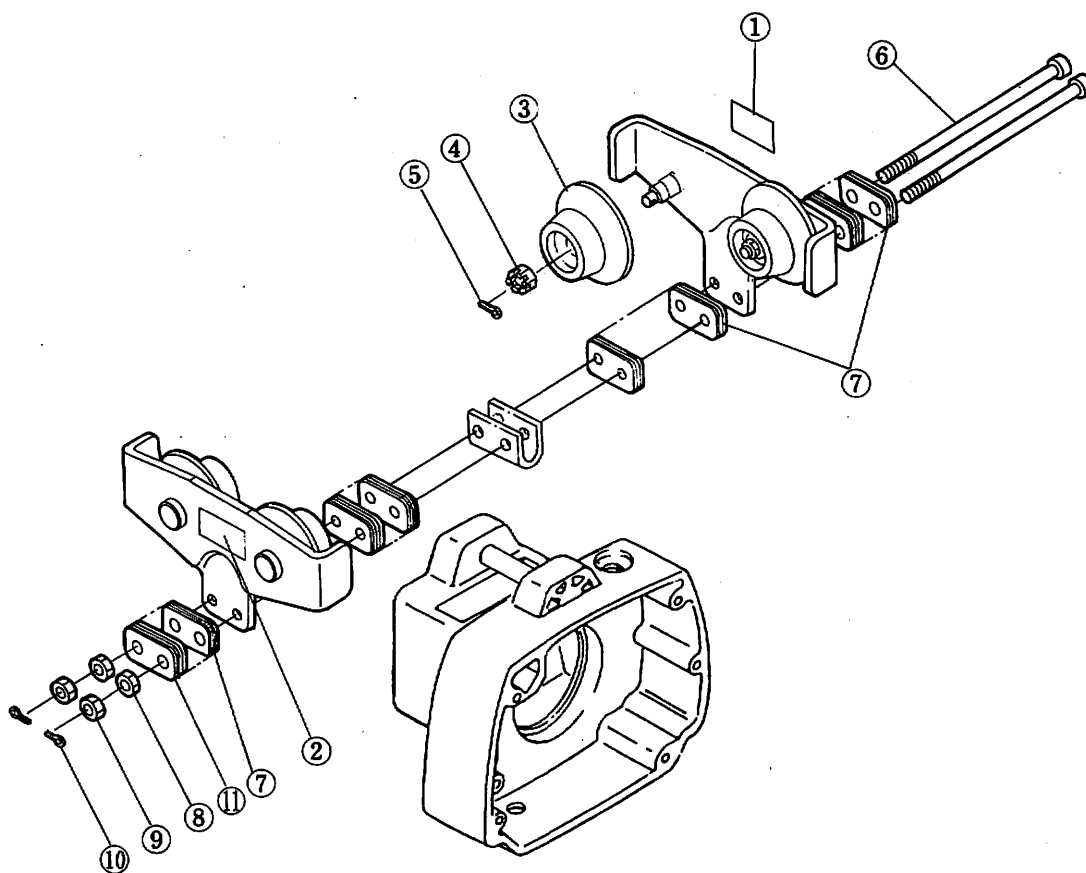
Note : (1) N : Part for standard (without emergency stop device) type.  
Y : Part for emergency stop type.



| Fig No. | Part No. | Part Name                          | Nos. Per Hoist | WLL (kg)                   |     |     |                            |     |
|---------|----------|------------------------------------|----------------|----------------------------|-----|-----|----------------------------|-----|
|         |          |                                    |                | 60                         | 100 | 180 | 160                        | 240 |
| ①       | E2DC1601 | Control panel complete set         | 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 |     |
| ⑫       | E2DC741  | Socket bolt with spring washer     | 3              |                            |     |     | —————                      |     |
|         |          |                                    | 4              | —————                      |     |     |                            |     |
|         |          |                                    |                |                            |     |     |                            |     |
|         |          |                                    |                |                            |     |     |                            |     |
| ⑬       | E2DC1601 | Control panel complete set         | 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 |     |
| ⑭       | E2DC741  | Socket bolt with spring washer     | 3              |                            |     |     | —————                      |     |
|         |          |                                    | 4              | —————                      |     |     |                            |     |

Note (1) ※ Contents of fuse set are tabulated in page 25.

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                |          |



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