

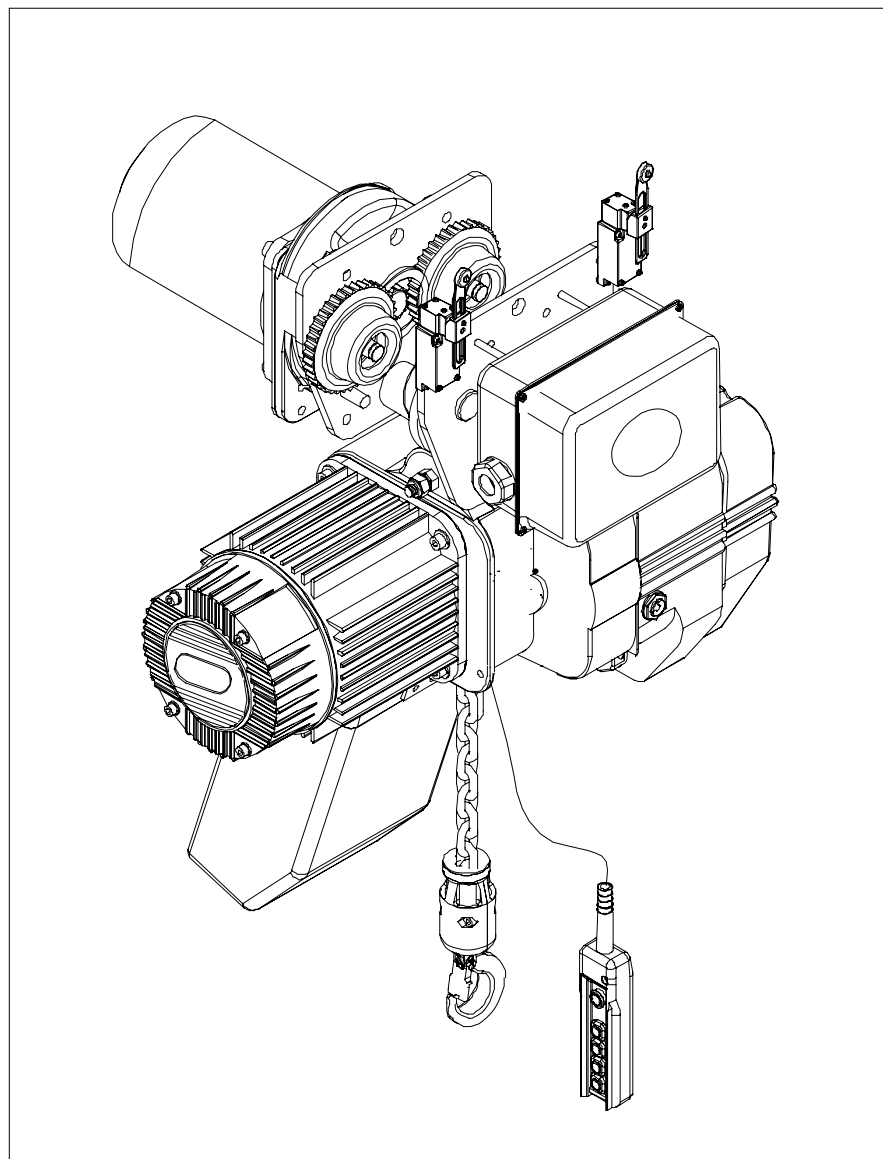


# KUKDONG

## ELECTRIC CHAIN HOIST

“KD-1 TYPE”

OPERATING & MAINTENANCE MANUAL



KUKDONG HOIST CO., LTD.

<http://www.kdhoist.com>

# Contents

## 1. Safety instruction

1-1. Sign of Danger, Warning, Caution -----	1
1-2. Notice to safety -----	1

## 2. How to operate KD-1 type

2-1. Operating conditions -----	4
2-2. Hoist classification of KD-1 type -----	4
2-3. Loading time rate and operating frequency -----	4
2-4. Model name of KD-1 type -----	4

## 3. Treatment of KD-1 type

3-1. Checkpoints before installation -----	5
3-2. Chain bucket -----	5
3-3. Power switch and power cable size -----	6
3-4. Warning points after installation -----	6
3-5. Checkpoints during operating -----	7

## 4. Maintenance and Inspection

4-1. Inspection before operation (Daily inspection) -----	9
4-2. Periodical inspection -----	9
4-3. Check of brake and how to adjust -----	9
4-4. Check of hook and load chain -----	10
4-5. Checkpoints of electric chain hoist -----	11
4-6. Checkpoints of trolley -----	12
4-7. Test points after periodical inspection -----	12
4-8. Checkpoints of lubrication and refueling -----	13
4-9. First-aid -----	13

## 5. How to connect trolleys

5-1. How to connect trolley type and KD type hoist -----	14
5-2. How to install trolley on the runway beam -----	14
5-3. How to connect electric power source -----	15

## 6. The circuit diagram of electric chain hoist

6-1. KD-1 - 0.5, 1, 2ton AC3ph 220/400/415/440V, 50/60Hz (Hook suspension type) -----	16
6-2. KD-1 - 0.5, 1, 2ton AC3ph 380V, 50/60Hz (Hook suspension type) -----	17
6-3. KD-1M - 0.5, 1, 2ton AC3ph 220/400/415/440V, 50/60Hz (Motorized trolley type) -----	18
6-4. KD-1M - 0.5, 1, 2ton AC3ph 380V, 50/60Hz (Motorized trolley type) -----	19
6-5. KDT-1 - 0.5, 1, 2ton (Dual speed type) -----	20

## 7. Part list

7-1. Electric chain hoist assembly -----	22
7-2. Body assembly -----	23
7-3. Trolley assembly -----	25
7-4. Hook & Chain assembly -----	27
7-5. KDL-1M Body assembly (0.5, 1, 2Ton) -----	29
7-6. KDL-1M Trolley assembly (0.5, 1, 2Ton) -----	31
7-7. KDL-1M Hook & Chain assembly (0.5, 1, 2Ton) -----	33

## 1. Safety Inspection

We are very pleased that you purchased our hoist, KUKDONG Hoist.

We hope that you would use our hoist with safe and long time without any trouble under periodical inspection and maintenance after select according to correct working service. Besides, it could be caused serious injury or damage of property by falling or rotating material, high voltage or hot surface through carelessness.

Installation, maintenance and repairing of hoist must be executed by a qualified person or a trained engineer under safety instruction.

You must keep a safety instruction on user's manual to prevent from potential danger.

We are not responsible for any accidents or problems which are not kept a safety instruction indicated user's manual and any article of danger, warning and caution for hoist

### 1-1. Sign of Danger, Warning and Caution

It is saying to danger, warning and caution to safety in this user's manual. The sign is defined as under.



**“DANGER” : This sign indicates a very dangerous situation like death or serious injury through carelessness.**



**“WARNING” : This sign indicates a potential dangerous situation like death or serious injury through carelessness.**



**“CAUTION” : This sign indicates a dangerous situation like light injury through carelessness.**

### 1-2. Notice to safety



- (1) Please do not walk pass under lifting equipment like hoist and crane etc. It could be caused death or severe injury by falling material.
- (2) Please use the hoist, suitable for explosive proof at the place of flammability, explosion, gas, dust etc.  
Non explosive proof hoist could be caused damage of human and material by fire, explosion etc.
- (3) Please do not lift overload. It could be caused each part's trouble or motor burnt and reduce the life time of hoist. Besides, it could be caused severe damage of human and material by accident.
- (4) Please do not operate hoist when any operators or workers are working under hoist. It could be caused death or severe injury.
- (5) Please do install a safety zone with chain, tape and set up the mark of warning sign in the dangerous area when maintenance and inspection. It could be caused serious damage of human and material in case that unexpected operation would be happened by falling or mistake.

## WARNING

- (1) Installation, maintenance and repairing of hoist must be executed by a qualified person or a trained engineer under safety instruction.
- (2) You must keep the notice to safety on user's manual to prevent from potential danger for sure.
- (3) Please do an earth according to the related specification before turn power on. It could be caused danger of electric shock if wires would be changed or would not connect an earth.
- (4) Please do not modify control circuit on purpose. Besides, please do not bend or pull power cable or lead wire strongly. It could be caused danger of fire, electric shock or any error.
- (5) Please do not touch hoist body with the body or any materials. It could be got severe human injury.
- (6) Please do not exceed the rated lifting length. Even if hoist has extra length 1-1.5m, it could be caused a serious problem of product as you exceed the rated lifting length frequently.
- (7) Please make sure the following notice when you hang up the load or any freight.
  - You must know the weight of load as correct as you know.
  - Please make a sure the center of balance of the load as the load has a various shape.
  - Please do use suitable and safe tools for the load and shape.
  - Please make angle within 60° when you use wire rope or chain.  
The more angles are, the more tension of chain is.
  - Please do not hang up the load with one fall. To be taken center of the load is very difficult and the load is biased.
  - Please do select rope or chain or assistant tools according to weight of the load. To be used thick rope against light weight is very dangerous conversely.
  - Please do not suspend the end of hook. The center of hook is stronger than other part. Biased makes weak and it is very dangerous as the strength of end of hook is about 40%.
- (8) Please do release or remove or transform the function of limit switch device, overload protector, emergency stop device, traversing limit switch device, safety latch device of hook or crash stop these devices from hoist.
- (9) Installation, maintenance and repairing of hoist must be executed by a qualified person or a trained engineer under safety instruction.
- (10) Please do not modify spare parts or components. We are not responsible for serious damage or human injury by these behaviors.
- (11) You must turn power off before maintenance and inspection and set up the sign of warning. It could be damaged by unwanted operation or electric shock.

## CAUTION

- (1) Please prepare for reasonable protection procedure to prevent from unexpected accident by a unqualified person(the elder, the disable, children etc).
- (2) Unsuitable person related to operation(a drunken person, a medicine taker) must not do any working like installation, operation and maintenance etc.
- (3) Please do use suitable and safe tools for load and shape after checking of weight of load.
- (4) A excessive voltage alteration(over  $\pm 10\%$ ) and frequency alteration(over  $\pm 5\%$ ) is caused a shortage of torque and overheating. Besides, if the length of cable becomes long, voltage dropping is serious. So, please keep within 2% of voltage dropping.
- (5) Please do appoint a manager in charge of hoist to prevent from unexpected accident or troubles.


- (6) Please do not do inching operation as less as you can. A frequent inching operation is caused the problem of motor, brake and magnetic contactor.
- (7) Please do not do a sudden reversing operation. A sudden reversing operation is caused any big damage to the hoist.
- (8) Please do hang up the load correctly. Please do not hang up the load at the end of hook and do not run with moving the load.
- (9) Please do not do an inclined operation.
- (10) Please do control push button switch carefully. Please be careful that push button cable gets caught on any obstacle on the way moving. Please do turn power off after finish the operation. A severe collision or hitting is caused any error or broken.
- (11) Please do oil or grease reasonable at the right time and please be careful of any contaminants when oiling.
- (12) Please do check all electric components and device at a fixed time.
- (13) Please do cover a cover for sure after all inspection or maintenance and please do not operate any devices before the finish.

## 2. How to operate KD-1 type

### 2-1. Operating condition

Periodical inspection and maintenance of a hoist after installation can help you use the machine for long time without any problem. But unreasonable use of the machine without regard to working conditions can cause its breakdown.

The manufacturer is not responsible for problems caused by user's behavior that it is not observed the specifications and the notice in the user's manual.

 **WARNING** Please read the manual before using the hoist.

### 2-2. Hoist classification of KD-1 type

(Table-1)

Rating of loading	Average daily operation time [h]	≤0.25	≤0.5	≤1	≤2
Light	When normally working with approx. 1/3 of W.L.L. and rarely with W.L.L.	I	I	II	III
Medium	When normally working with approx. 1/3 to 2/3 of W.L.L. and sometimes with W.L.L.	I	II	III	IV
Heavy	When normally working with approx. 2/3 of W.L.L. and often with W.L.L.	II	III	IV	V
Very Heavy	When normally working with W.L.L. or near W.L.L.	III	IV	V	-

 **WARNING** Please make sure that Grade M3 manufactures the hoist (JIS/ISO).

### 2-3. Loading time rate and operating frequency

$$(1) \text{ Loading time rate}(\%ED) = \frac{\text{Loadingtime}}{\text{Loadingtime} + \text{Stoptime}} \times 100$$

(2) Loading time rate of the hoist = 25%ED (Dual speed = 20%ED)

(3) Duty rating = 30minutes (Dual speed = 5/15minutes)

### 2-4. Model name of KD-1 type (Standard type)

(Table-2)

HOOK SUSPENSION TYPE	MONORAIL TYPE	GEARED TROLLEY TYPE	PLAIN TROLLEY TYPE
KD(T)-1-0.5Ton(S)	KD(T)-1M-0.5Ton(S)	KD(T)-1G-0.5Ton(S)	KD(T)-1P-0.5Ton(S)
KD(T)-1-1Ton(S)	KD(T)-1M-1Ton(S)	KD(T)-1G-1Ton(S)	KD(T)-1P-1Ton(S)
KD(T)-1-2Ton(D)	KD(T)-1M-2Ton(D)	KD(T)-1G-2Ton(D)	KD(T)-1P-2Ton(D)

**【 Please ask manufacturer for special type, except for standard type. Refer to page 40 】**

Notice) T : Dual Speed, S : Single Fall, D : Double fall

### 3. Treatment of KD-1 type

#### 3-1. Checking points before installation

Please make sure of following points before installation of products.

- (1) Type
- (2) Capacity
- (3) Lift
- (4) Power source
- (5) Push button switch length
- (6) Chain bucket size
- (7) Checkpoint when placing order for special type
- (8) Check beam type ("I-BEAM" or "H-BEAM") when installation of trolley.

Refer to page 14, 15 (How to connect trolley).

#### 3-2. Chain bucket

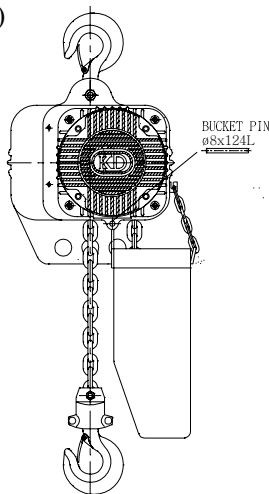


- (1) Please use the standard chain bucket.

It is caused broken and deformation of load chain  
(Table-3)(Table-4)(FIG.2)

- (2) How to install chain bucket. (Fig.1)

(Fig.1)



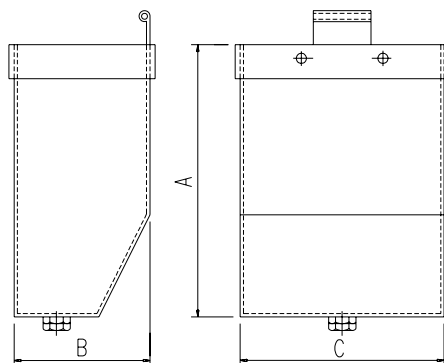
(Table-4)

SIZE	DIMENSION(mm)		
	A	B	C
S1-0	400	150	220
S1-1	400	200	220
S1-2	500	200	300
S1-3	600	200	300
S1-4	700	220	340
S1-5	800	220	340
S1-6	900	220	340

(Table-3. Chain bucket Size)

LIFT (m)	CAPACITY(ton)		
	0.5	1.0	2.0
1	P	P	P
2	P	P	P
3	P	P	P
4	P	P	P
5	P	P	S1-1
6	P	P	S1-1
7	P	P	S1-1
8	P	P	S1-1
9	S1-1	S1-1	S1-1
10	S1-1	S1-1	S1-2
11	S1-1	S1-1	S1-2
12	S1-1	S1-1	S1-2
13	S1-1	S1-1	S1-2
14	S1-1	S1-1	S1-3
15	S1-1	S1-1	S1-3
16	S1-1	S1-1	S1-3
17	S1-1	S1-1	S1-3
18	S1-1	S1-1	S1-4
19	S1-2	S1-2	S1-4
20	S1-2	S1-2	S1-4
21	S1-2	S1-2	S1-4
22	S1-2	S1-2	S1-4
23	S1-2	S1-2	S1-4
24	S1-2	S1-2	S1-5
25	S1-2	S1-2	S1-5
26	S1-2	S1-2	S1-5
27	S1-3	S1-3	S1-5
28	S1-3	S1-3	S1-5
29	S1-3	S1-3	S1-6
30	S1-3	S1-3	S1-6

(Fig.2)



- N.B)**
1. Chain bucket(P) is made by plastic.
  2. Chain bucket(S1) is made by steel.
  3. A specific link chain is required in case of installation of chain bucket. (P, S1)

### 3-3. Power switch and power cable size

Power switch and the thickness of power cable greatly affect the functions of hoist and its secure operating. Please prepare for power switches and power cable according to Table-5.

(Table-5)

Type	Capacity [ton]	Hoisting Motor [kw]	Traversing Motor [kw]	Power Switch [A]	Electric cord thickness[mm <sup>2</sup> ]			
					Cord length[m-max]			
					10	20	30	40
KD-1	0.5(S)	0.8	-	10	3.5	3.5	3.5	3.5
	1(S), 2(D)	1.5	-	15	3.5	3.5	3.5	3.5
KD-1M	0.5(S)	0.8	0.4	10	3.5	3.5	3.5	3.5
	1(S), 2(D)	1.5	0.4	15	3.5	3.5	3.5	3.5

※ Above contents in chart are based on 220V 60Hz / ※ S : Single Fall, D : Double Fall



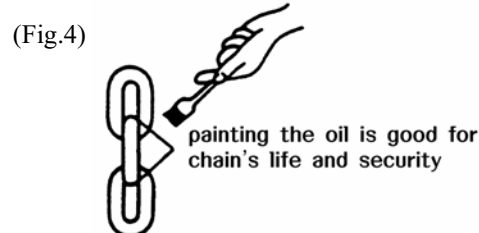
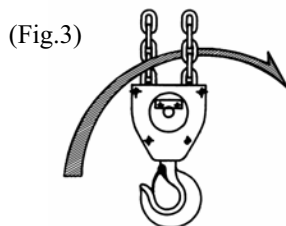
**If there is much distance between hoist and power, use bigger power, use bigger power cable than standard requirements as there may be a dropping of electric pressure or overheating of hoist motor and cable etc.**

### 3-4. Warning points after installation

- (1) If there are more chains than two, check if chains get twisted like Fig.3  
(Twisted chain caused chain's breaking)
- (2) Apply oil on the chains surely, which will lengthen the life span of chains and prevent from troubles (Refer to Fig.4). Also, keep chains clean all the time or it will be caused chain's breaking.



**Please do not use grease absolutely.**

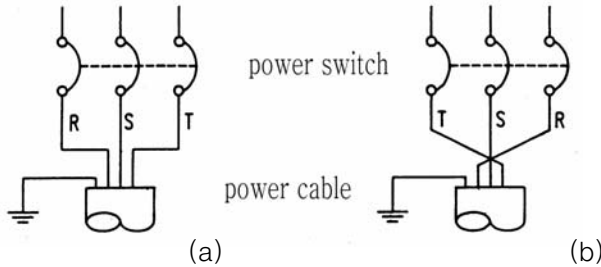


- (3) If the bottom hook will not go up, but go down when you press “↑” of push button switch at the state of unload(Negative operation), change the connection of 2 phases among three phases of R, S, T as shown in Fig.5 and then it will work well and normally.





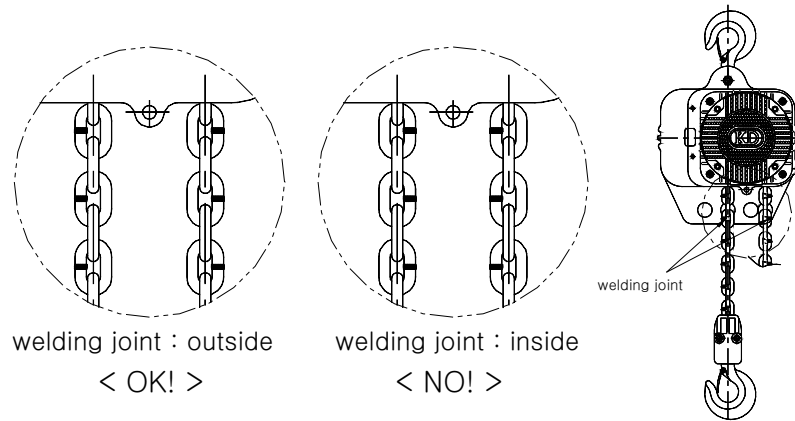
**If you keep operating the machine in the opposite direction in the state of negative phase, it will be caused serious damages to the machine. We are not allowed to do it.**



(Fig.5)

In case that (a) is negative operation, change the connection of 2 phases R and T like (b).

- (4) When you install load chain into hoist, the welding part of the load chain is positioned outside so that the welding part is not faced to load sheave like Fig.6. (In time of repairing and replacing the load chain)



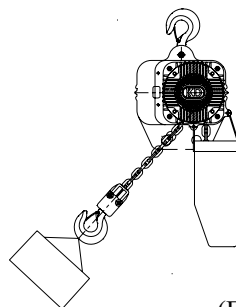
(Fig.6)

### 3-5. Checkpoint on operating

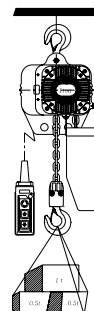


**Please do make sure the following notice.**

- (1) We are not allowed to modify any hoist to elevator for human or cargo.
- (2) Please do not operate an inclined operation. (Fig.7)  
(It is caused any trouble to hoist.)
- (3) Please must operate under the rated load and please do not stand and pass under the load. (Fig.8)



(Fig.7)



(Fig.8)

### (1) Checkpoints before operating



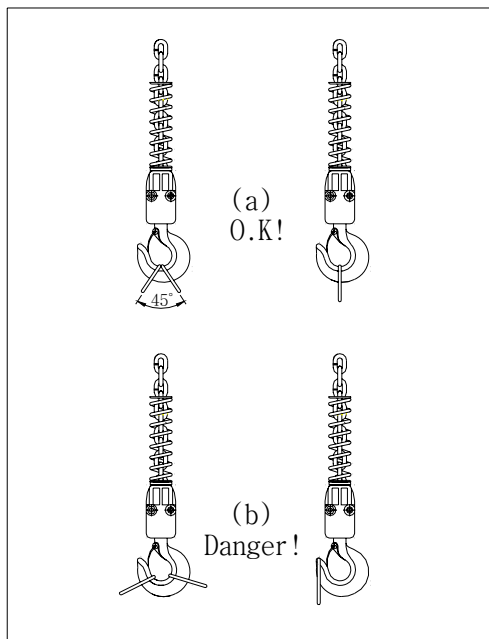
**DANGER**

**Do not do a deformation load chain intentionally.**

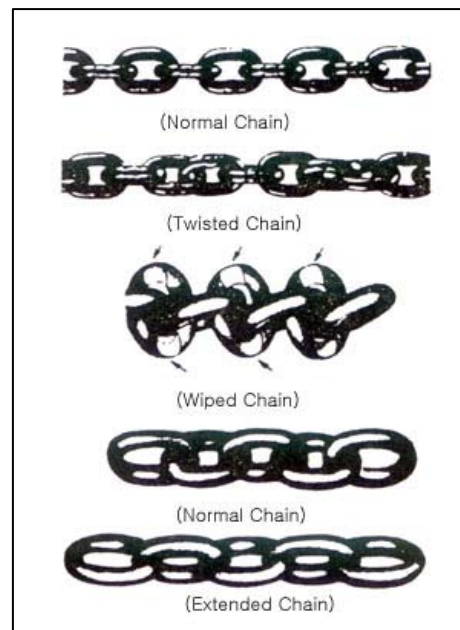
- ① Is oil applied on the load chain?
- ② Are the load chains entangled if the load chains are more than two?
- ③ Does it work downward though you press “↑” of push button?
- ④ Does the push button work smoothly?
- ⑤ Does the slip clutch work at the state of unload?
- ⑥ Does the brake work well without slip? [page 9, Table-8]
- ⑦ Does a trolley work well without any interference on the monorail?

### (2) Checking points on operating

- ① Never drag the push button cable to move a trolley when you want to connect trolley.
- ② At normal use, do not use over load limit switch. It is a way to prevent breakdown of a hoist.
- ③ Press the push button switch securely and thoroughly.
- ④ Put up goods normally to hook block and never use the machine irregularly.(Fig.9)
- ⑤ Do not use the hoist when the load chains are entangled.(Fig.10)
- ⑥ Do not do any sudden plugging or continual inching operation



(Fig.9)



(Fig.10)

### (3) Checkpoints after operation



**CAUTION**

- ① Turn off the power switch surely after using the hoist.
- ② Do not stop operation it when it is loaded.
- ③ Be sure to cover a hoist lest rain or water should leak in the main part when it is installed outside.

## 4. Maintenance and Inspection

It is very important to check the hoist daily, monthly and yearly to preserve its long lift-span and be sure to observe the following notice to security when checking of hoist.



### WARNING

- (1) Turn power switch off and control power switches with associates.
- (2) Never check hoist when a hoist is loaded.
- (3) Set the sign of “repairing” or “checking” when repairing or maintenance.

### 4-1. Inspection before operation (daily inspection)

- (1) Checkpoint before operation
  - (a) Is oil applied on the load chains?
  - (b) Are the load chains entangled or twisted?
  - (c) Is safety latch attached normally?
  - (d) Does slip clutch work normally at the state of unload?
  - (e) Does the hoist brake work normally without slip?
  - (f) Does the operation of trolley(left direction and right direction) work normally?
  - (g) Is the weight of goods loaded on a hoist reasonable?
  - (h) Is it sure that there is no one under loaded goods?

### 4-2. Periodical inspection

Since parts and components of the machine will wear away and will not work well after long use, inspect the machine periodically according to checkpoints for secure working.

- (1) monthly inspection (once a month, in the presence of a manger)
- (2) yearly inspection (once a year, in the presence of a manager and a trained person)

### 4-3. Check of brake and how to adjust



### WARNING

**DC brake consists of the following picture and Adjusting of gap is as under.**

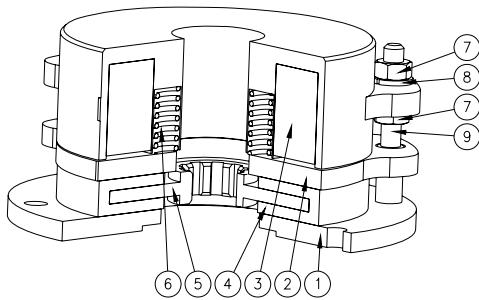
- If the gap of brake is open over 0.6mm, please adjust to be 0.3mm like ⑧ and ⑨. (Fig.11)
- If the gap of brake is under 0.3mm, motor could be burnt.



### CAUTION

#### Hints to install and check DC brake

- (1) Please do use and change AC power source into DC power source through rectifier.
- (2) Please do use coil voltage DC90V when input power is 220V, 380V.  
In case of 440V, please do use coil voltage DC190V.
- (3) Please do not expose brake coil and output the wire to heat.
- (4) Please do not test 500V Mega insulation against brake.



No.	Name	Q'ty
1	Flange	1
2	Armature	1
3	Brake Coil	1
4	Lining	1
5	Lining plate	1
6	Spring	4
7	Hex. Nut – M6	6
8	Spring washer – M6	3
9	Stay bolt	3

(Fig.11) Structure of DC brake

#### 4-4. Check of hook, load chain

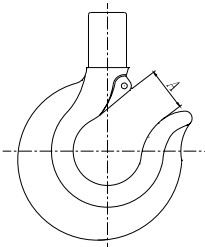


Hook and load chain can be worn away as a long time goes by. Besides, it is also opened and rusted according to working places and conditions. You must inspect and judge based on Table-6, Table-7 as hook and load chain is very important parts on hoist.

In case that the limited dimension is over, do replace them with new one for safety.

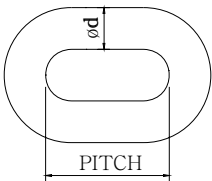
##### (1) Hook

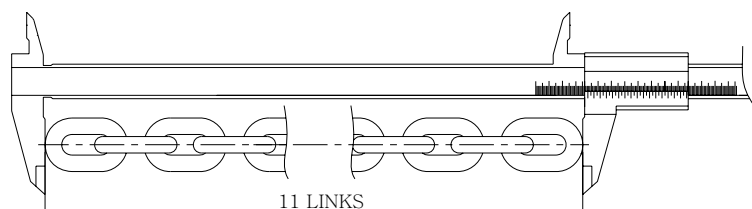
(Table-6)

	Standard (ton)	Normal dimension(A) (mm)	Using limit(A) (mm)
	0.5 • 1	30.5	36
	2	33.5	37

##### (2) Load chain

(Table-7)

	Type	Standard load (ton)	Chain diameter Ød (mm)	Standard dimension Pitch (mm)	Using limit 11 links(mm)
	KD-1	0.5 1 • 2	7.1	21.2	251.4



(Fig.12) How to measure load chain

#### 4-5. Checkpoints of electric chain hoist

(Table-8)

Division	Overhauling subject	Overhauling standard	Usual time	Periodic time
Main body	External view	No damage, crack and deformation	⊙	⊙
	Abnormal sound	No noises form the motor and the gear	⊙	⊙
	Gear case	No abrasion such as rust, damage and breakdown		⊙
	Reduction gear section	No deformation and breakdown of gear		⊙
		No abrasion and deformation of bearing		⊙
	Load sheave	No hard abrasion, damages and deformations		⊙
Load chain	Rust & cracks	No rust(erosion), cracks(flaws) and few abrasion	⊙	⊙
	Dimensions	Diameter and pitch should be fit to the standards	⊙	⊙
	Oiling conditions	Coated with oil properly	⊙	⊙
Top & Bottom hook	Opening	Not get wider than the standards dimensions		⊙
	Holders	No harmful damages, deformation and not opening		⊙
	Bottom swivel hook	No problems with bearing		⊙
	Bolt & Nut	No abrasion and curves		⊙
Overload limit	Slip clutch operation	Proper function of the slip clutch guide	⊙	⊙
Brake	Slipping	Within 10mm when you operate host 2~3 times with rated load	⊙	⊙
Electric components	Cabtyre cable	No breakage and damages of the rubber covered cables No disconnection		⊙
	Push button switch	Effective connection and proper functioning	⊙	⊙
	Motor	No overheating and humming		⊙
	Insulated resistance	Insulation resistance exceeds 2MΩ by DC500V Megger		⊙
Others	Connection parts	Bolts, nuts, springs, washers, pins and etc should be assembled normally		⊙
	Name plate	Features and specifications of hoist should be attached.		⊙
	Chain bucket	Assembled parts should be fixed firmly with bolts		⊙
		Good conditions and no foreign object in it		⊙
Emergency switch		Power off surely		⊙

#### 4-6. Checkpoint of trolley

(Table-9)

Division	Overhauling subject	Overhauling standard	Usual time	Periodic time
Plain trolley	Side plates	No bending and damages		○
	Connecting parts	No looseness breakage and missing and no breaking away from the right place		○
	Wheel, Roller	No abrasion of wheel, roller and gear		○
		Well lubricated gears	○	○
		Rotate smoothly		○
	Bearing	Proper engagement with shafts and rotate smoothly		○
	Name plate	Exact specifications should be written		○
Motorized trolley	Reduction gear section	No damages breakage and abrasion		○
		Well lubricated roller gears		○
		No backlash in the gears and bearings		○
	Brake	Stop smoothly without casting too long	○	○
	Name plate	Exact specifications should be written		
	Electric components	Cabtyre cables : No breakage and damages of the rubber covered cables No disconnection		○
		Motor : No overheating and humming		○
		Insulation resistance exceeds 2MΩ by DC500V Megger		○
Geared trolley	Hand wheel	No excessive wear in the ratcheted section and pocket sections to engage with hand chain		○
	Name plate	Exact specifications should be written		○
	Pinion shaft	Well lubricated for smooth rotation		○
	Hand chain	No excessive elongation and deformation that cause smooth engagement with the hand wheel pockets		○

#### 4-7. Test points after periodical inspection

(Table-10)

Overhauling subject	Overhauling contents
Unloading test	Does the hoist works as the signs of push button indicate?
Limit switch test	Does the hoist works at the state of unloads and rated load normally?
Rated capacity test	When the hoist works “↑”, “↓”, “←” and “→” direction, are there any noises and vibrations and is there any brake slipping?
Overloading test	Are there any problems at test load?

#### 4-8. Checkpoint of lubricating and refueling

(Table-11)

No.	Refueling parts	Kind of oil	Refueling time	Amount	Caution
1	Top hook pin, Bottom hook block	Cup grease (SHELL M.M.P #2)	Yearly	Adequate	
2	Gear section	MACHINE OIL (SHELL MEROPA 220)	Yearly	800cc	Refuel after removing impurity in gear box
3	Load chain	"	Often	Adequate	Coating on surface of chain. (Not be dried)

**Caution)** We are using SHELL product. In case of using other oil,  
use same grade like ISO 220 grade.

#### 4-9. First aid

(Table-12)

Condition	Checkpoints	Broken condition	Solution
When it does not operate initially?	Is power supplied certainly?	It will not work though you press “↑” and “↓” of push button	- Press the push button for sure - Connect wires perfectly
		Motor generates much heat and many noise	- Combine wires completely as it may be because the input wires are broken. - Check if the three-phase power is supplying normally. - Replace the rectifier for a brake with a new one if it is out. - Check if the brake works when it is applied.
		It does not work after upper or lower limit switch is operated	- Turn handle of limit switch normally.
	Is the single-phase working?	Motor makes noises and heat from motor rises.	- Check if the voltage is normal - Inspect the breaking of power wires or power switches and check if the fuse is normal.
In case of stop The motor when hoist is working	Imperfect connection	When the power wires, terminal, switches are not connected perfectly.	- Exchange or repair
	Excessive load	Motor makes noises and excessive current flows.	- Use it within the range of rated load.
Braking trouble	The poor braking state	The lining of brake is worn out.	- Adjust the gap of brake. - Repair or replace the lining of brake
	Chain keeps running down slowly	Mechanical troubles of a brake	- Ask for help from special agents for after sale service
Electric accident	Leakage	When you touch the body, the chains and etc., you feel electricity.	- Make sure of a perfect earth. - Check the insulation resistance - Dry the moisture around switches completely.

## 5. How to connect trolleys

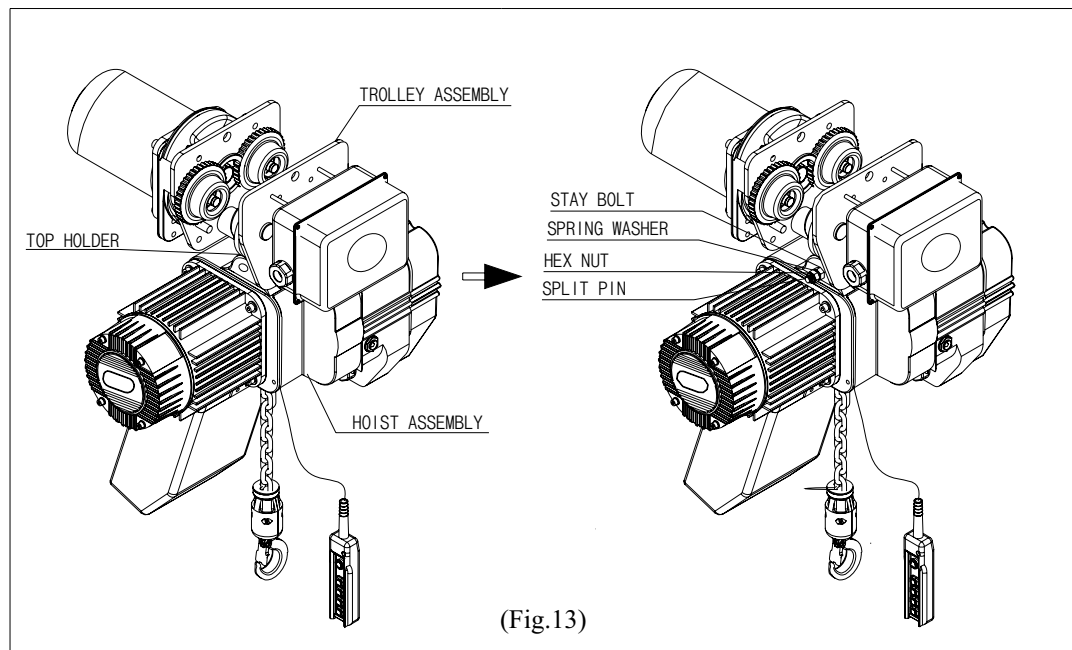
When you connect trolley, you can use it in various ways with KD hoist.

Select a model among the following three trolley types.

- (1) Electric motorized trolley : MODEL-KD-1M
- (2) Geared trolley : MODEL-KD-1G
- (3) Plain trolley : MODEL-KD-1P

### 5-1. How to connect trolley and KD type hoist (Fig.13)

- (1) Please approach the top holder of trolley to the stay bolt hole of hoist.
- (2) Please insert a stay bolt between the hole on the top of hoist and the hole of top holder.
- (3) Please screw up the spring washer and nuts after insert.
- (4) Please fix them with split pins after screwing up.



### 5-2. How to install trolley on the runway beam

When you install a trolley on I-beam or H-beam type, set them up in the following way.

- (1) Please check the width of the beam and trolley.  
(Roller wheels of trolley are divided into two ; one is for I-beam and the other is for H-beam.)
- (2) Please assemble them by adjusting the adjusting collar on the stay bolts to the inside or the outside of side place.

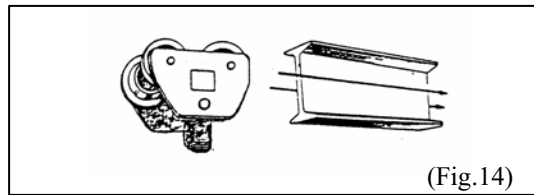
(Table-13)

Capacity(ton)	Range of application BEAM breath(mm)			
	Collar(no.)	0	2	4
0.5, 1		75	100	125
2		100	125	150

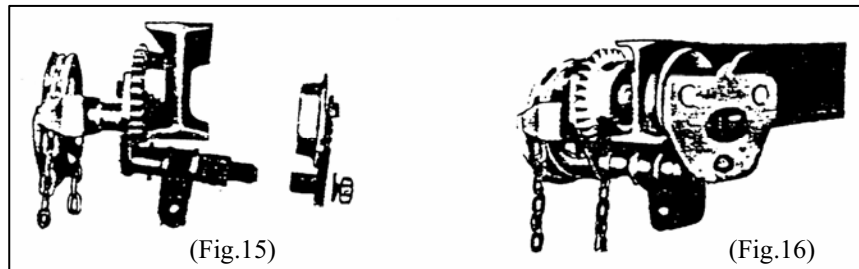
Note) Since KUKDONG hoist is manufactured as standards based on above table-13, adjust intervals and collars in accordance with the width of beam.



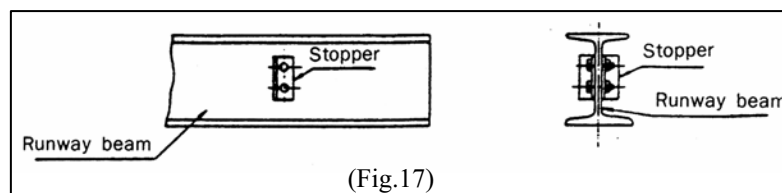
- (3) The best way is to install a trolley from the end of the runway beam. (Fig.14)



- (4) If you install in the center of beam as another way, after unscrewing stay bolts of the trolley and removing the side plate, put a trolley on one end of a beam and set the other side of the side plate to the stay bolt hole and screw them up. (Fig.15, 16)



Since the trolley can fall down from the runway beam, be sure to attach stoppers to both ends of runway beam. (Fig.17)



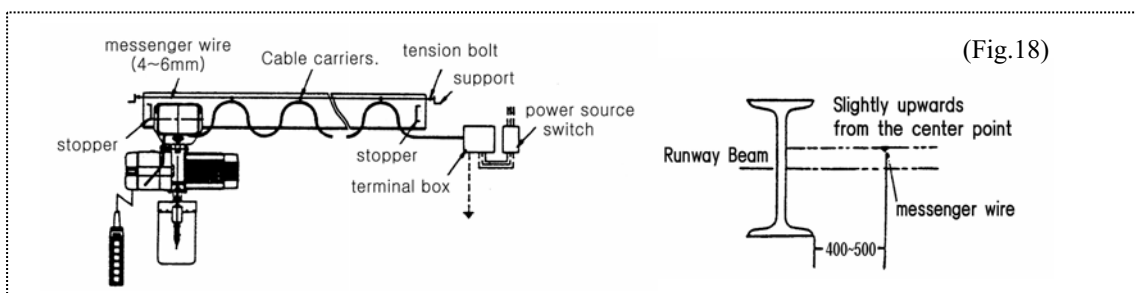
- (5) When you install an electric motorized trolley on the curved runway beam, it is normal to attach the plate on the side of motor to the outside of curved runway beam.

### 5-3. How to connect electric power source

- (1) The main power cable should be installed in parallel with the runway beam and the power wire should move together when a trolley moves. (Fig.18)

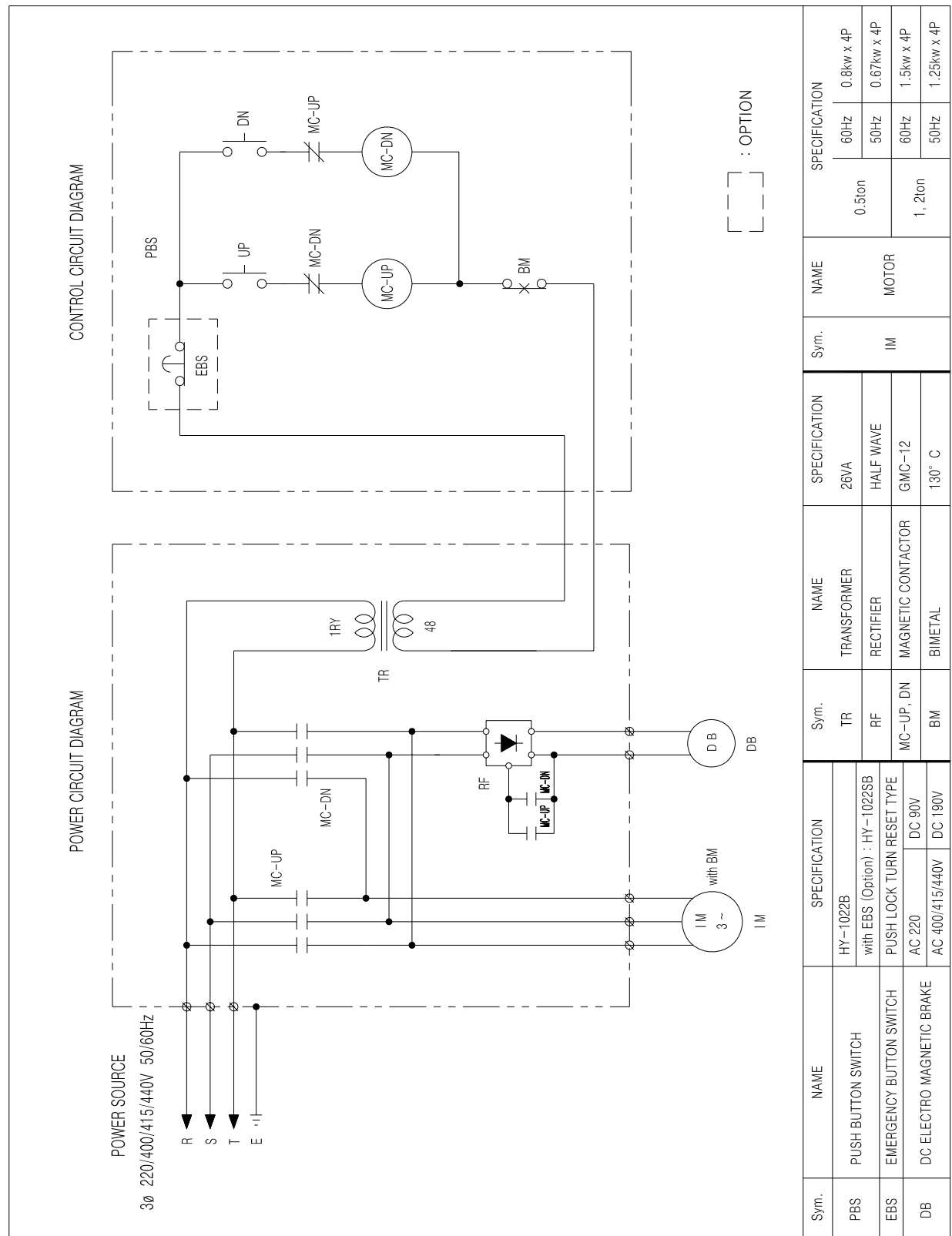
Install the trolley from the ending part of runway beam.

- (2) The cable carriers should be installed at intervals of 1.5meters.  
 (3) The curved runway beam should be installed in a different way. As an instance, the cable carriers follow the runway beam.  
 (4) Since the rotating radius of curved runway beam is different according to the capacity of hoist, consult with agents about the specifications of right products related to your working places.

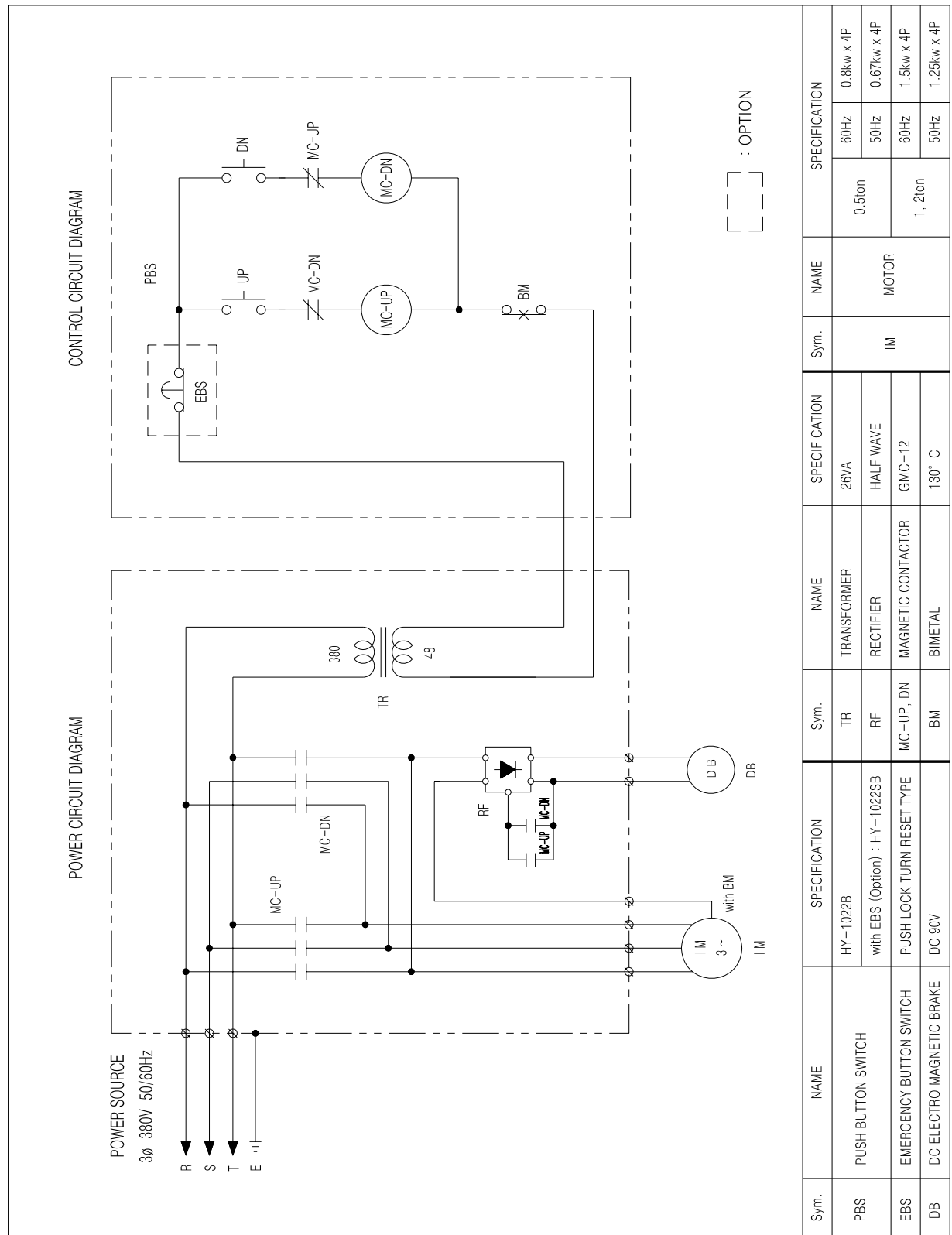


## 6. The circuit diagram of electric chain hoist

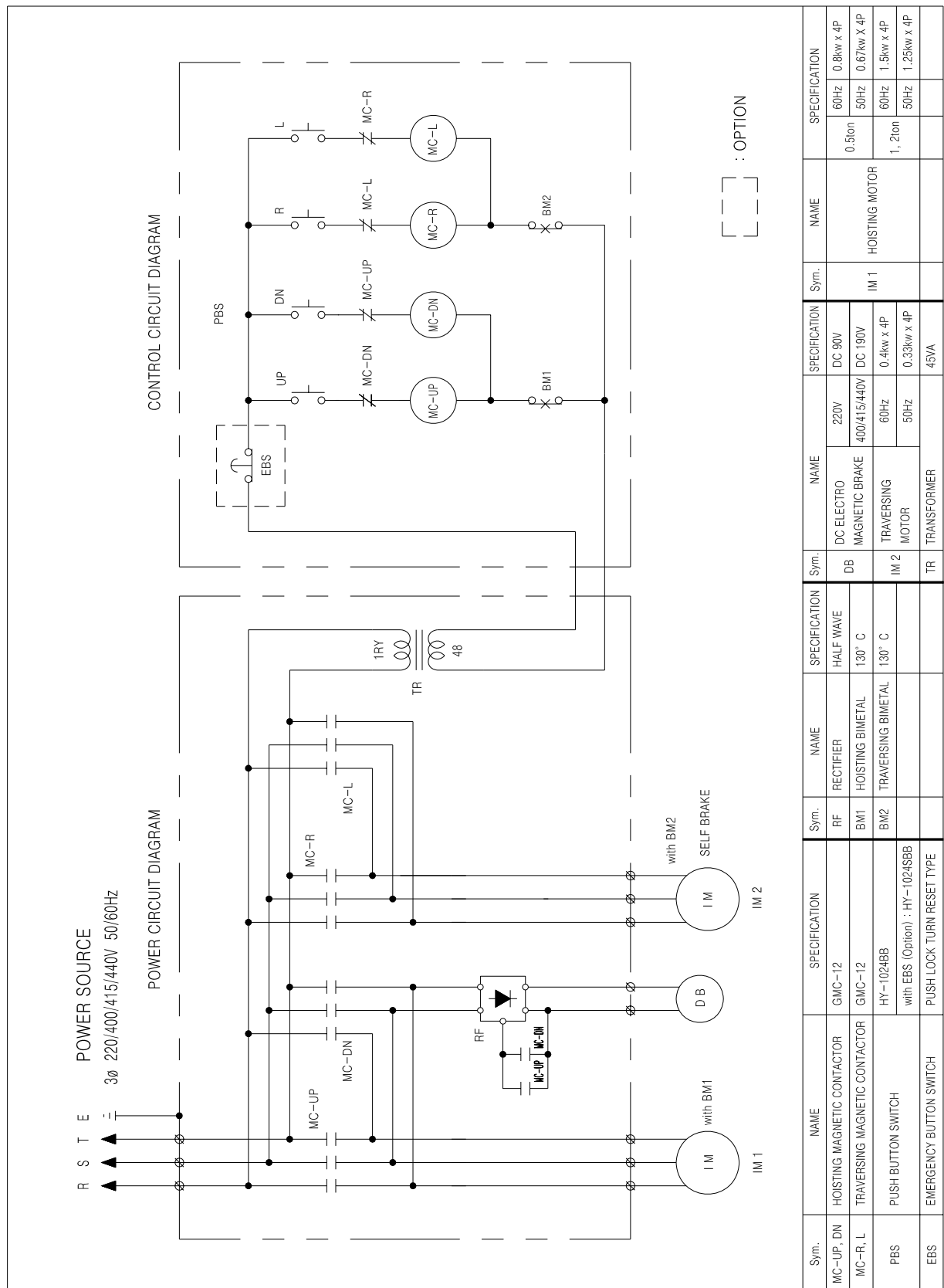
### 6-1. KD-1 | 0.5, 1, 2ton AC 3ph 220/400/415/440V, 50/60Hz ( Hook suspension type ) ]



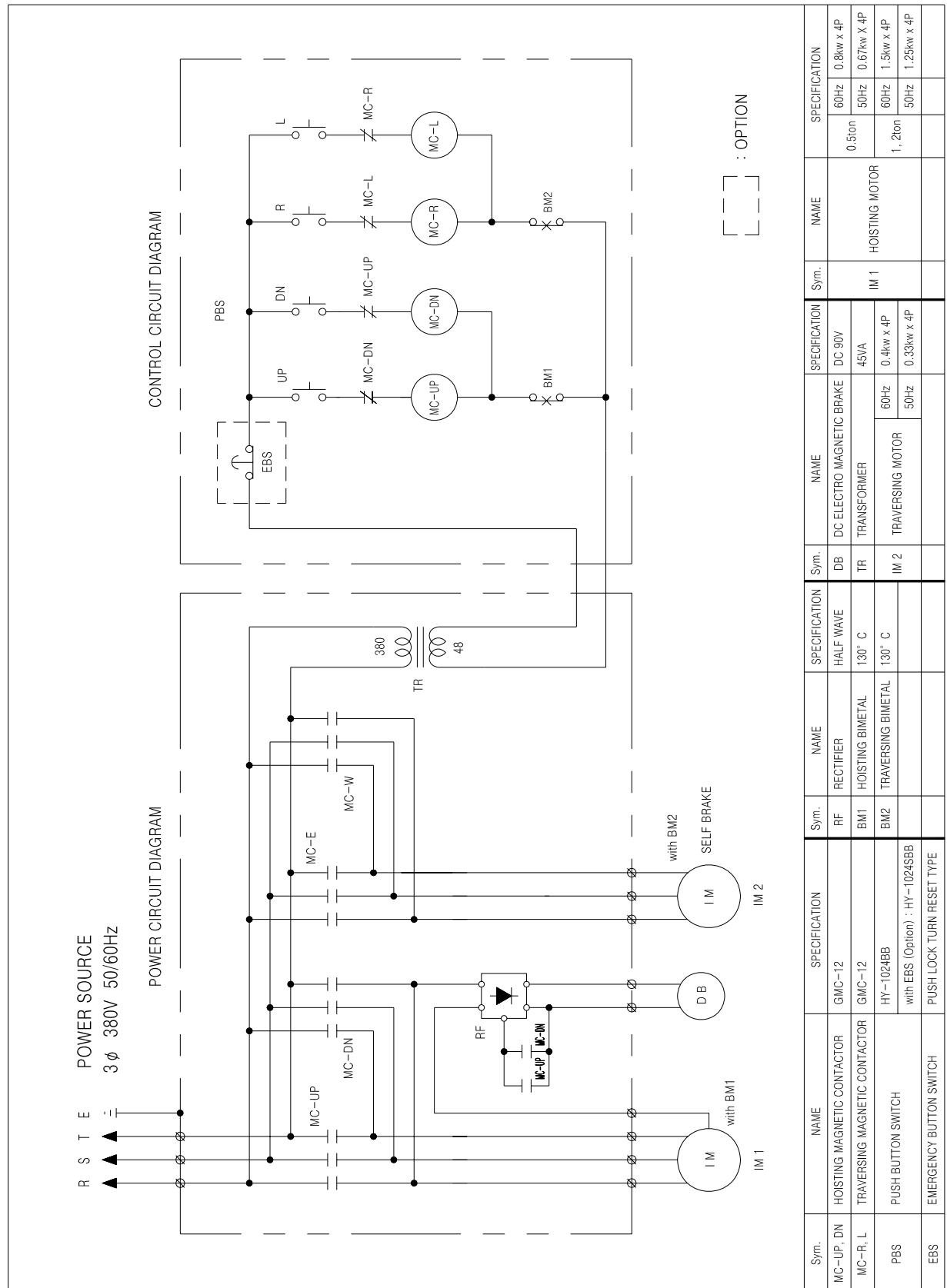
## 6-2. KD-1 | 0.5, 1, 2ton AC 3ph 380V, 50/60Hz ( Hook suspension type ) |



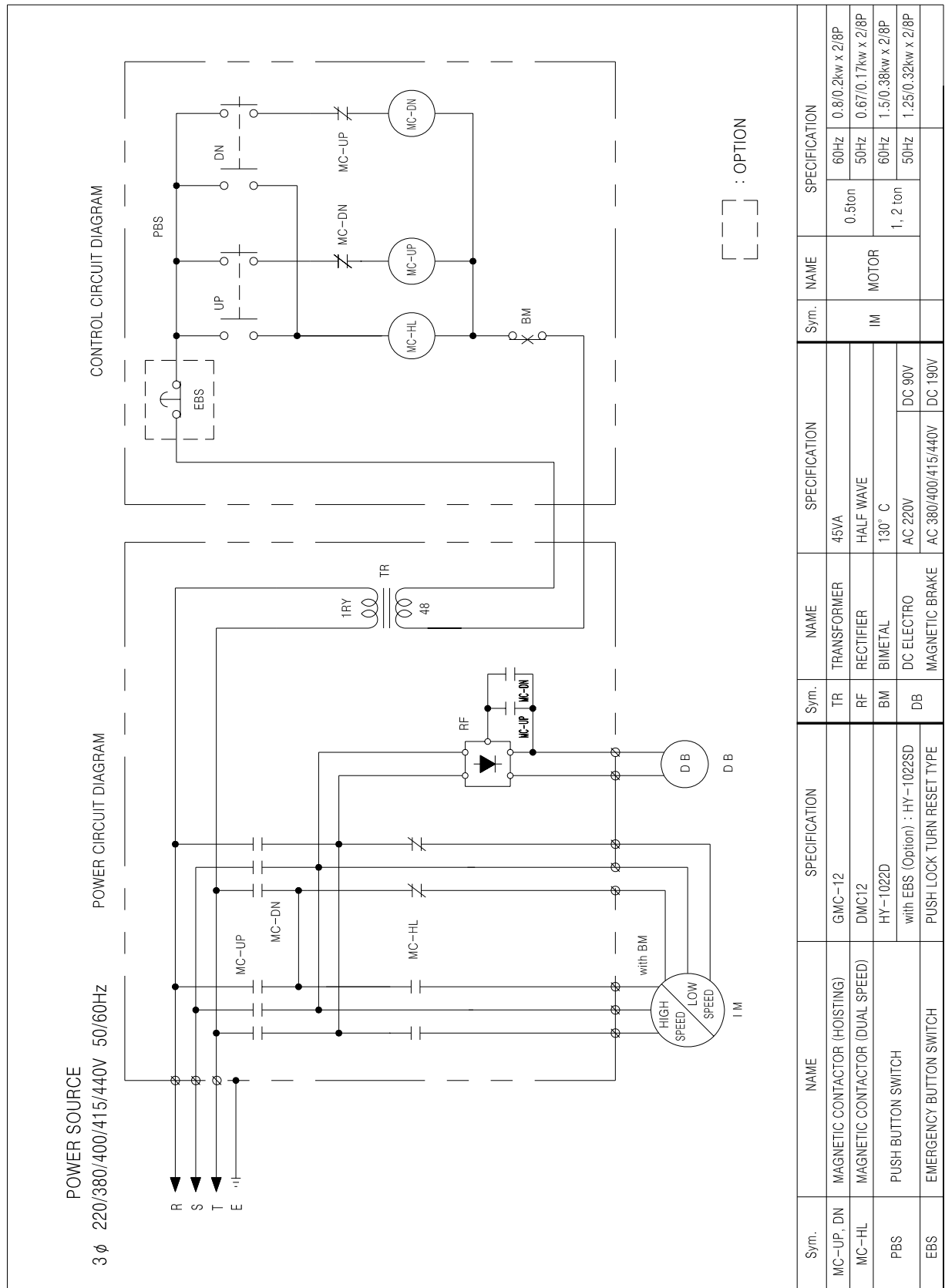
**6-3. KD-1M [ 0.5, 1, 2ton AC 3ph 220/400/415/440V, 50/60Hz ( Motorized trolley type ) ]**



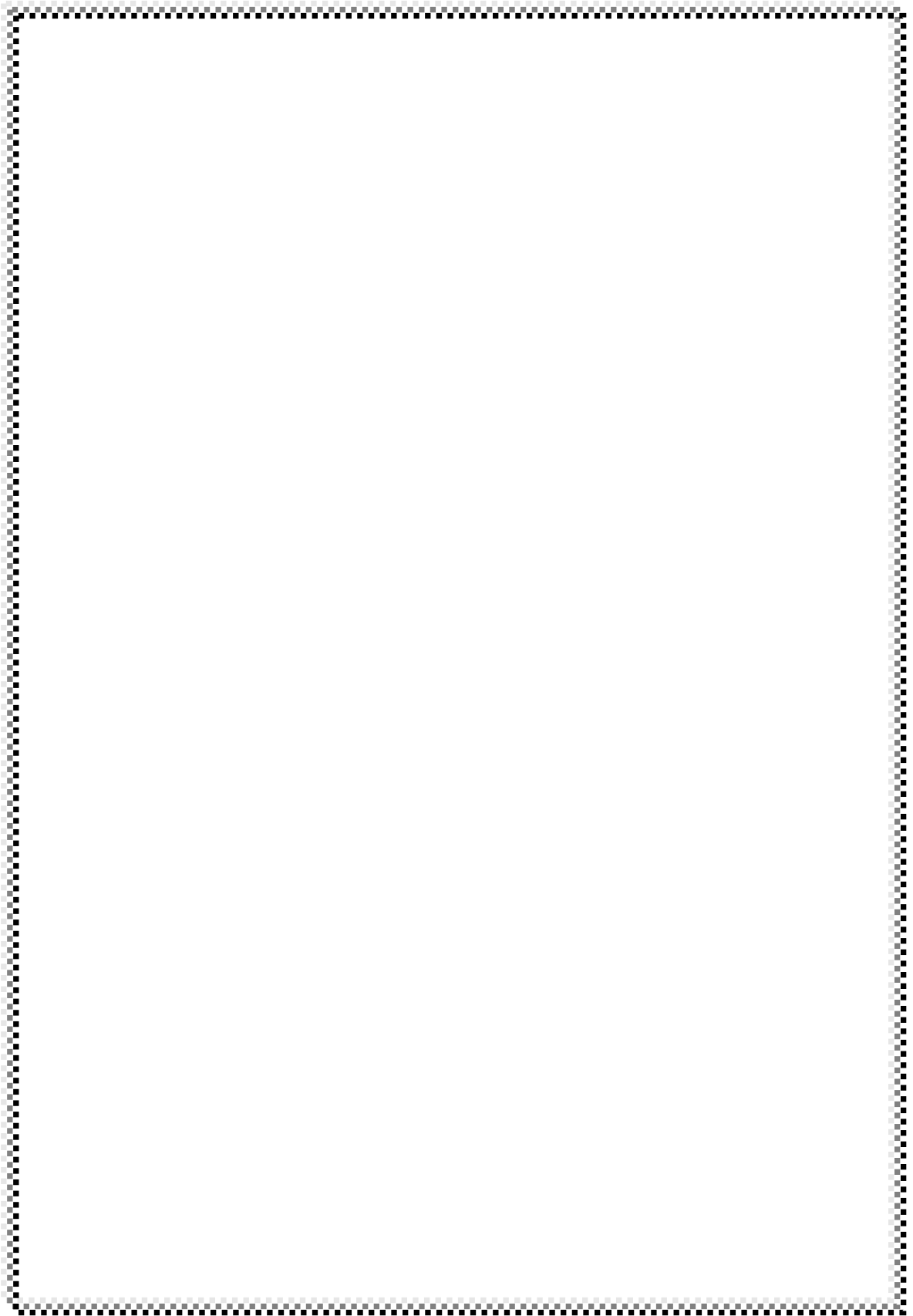
# 6-4. KD-1M [ 0.5, 1, 2ton AC 3ph 380V, 50/60Hz ( Motorized trolley type ) ]



## 6-5. KDT-1 [ 0.5, 1, 2ton AC 3ph ( Dual speed type ) ]

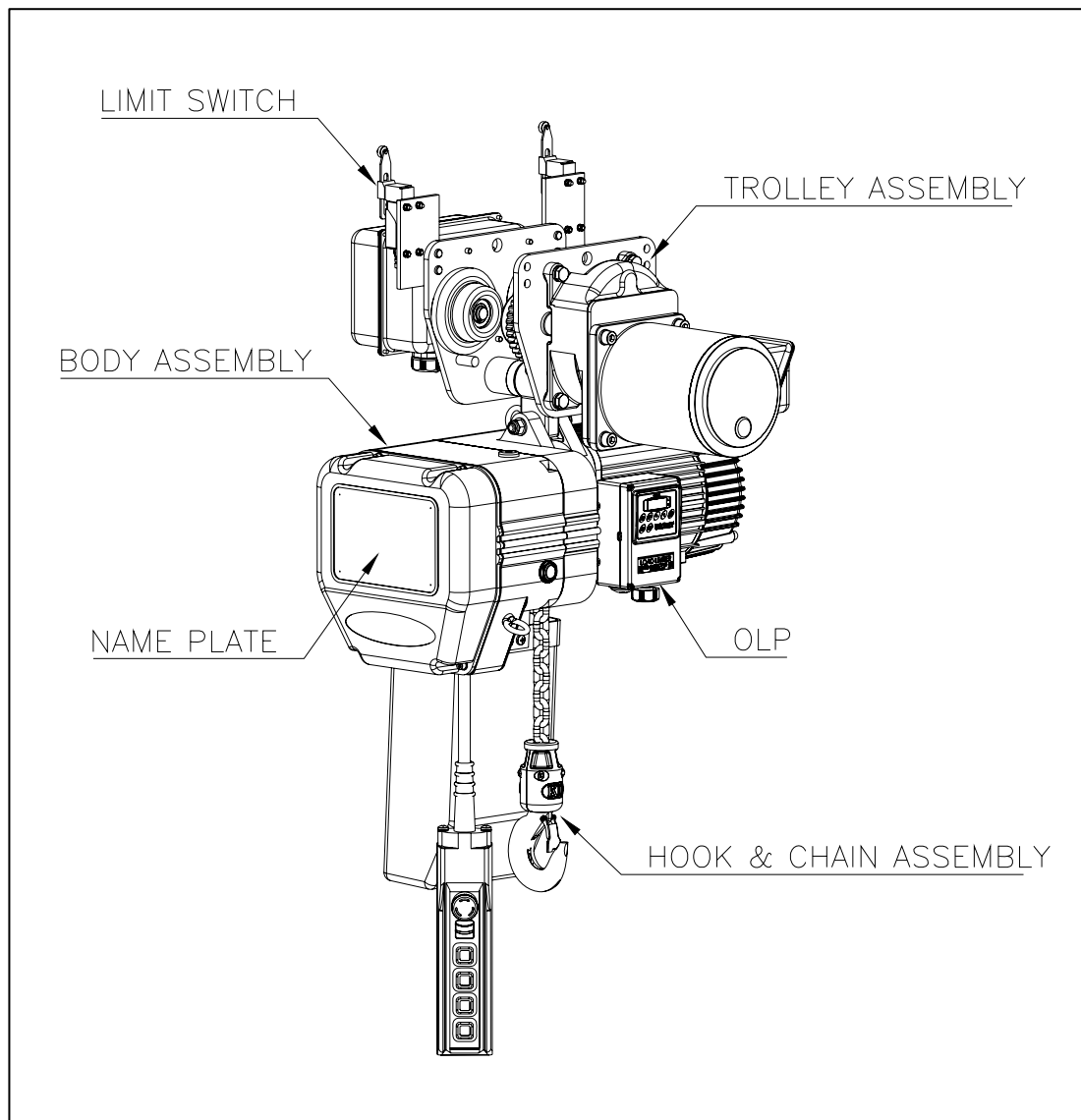


## < MEMO >

A large rectangular area with a dashed border, intended for a memo. The border is composed of small black and white squares, creating a checkered effect. The interior of the rectangle is completely blank white space.

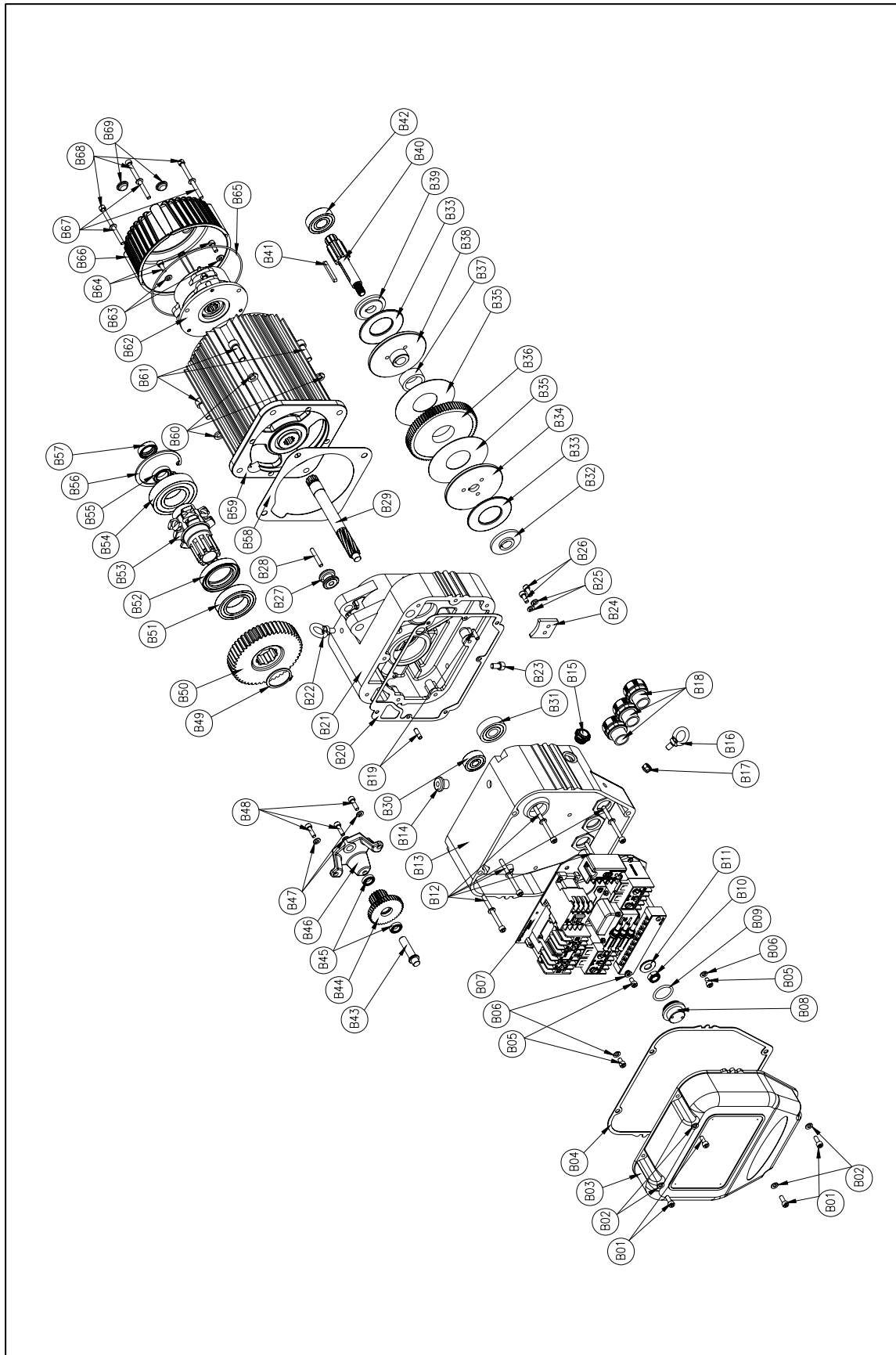
## 7. PART LIST

### 7-1. ELECTRIC CHAIN HOIST ASSEMBLY



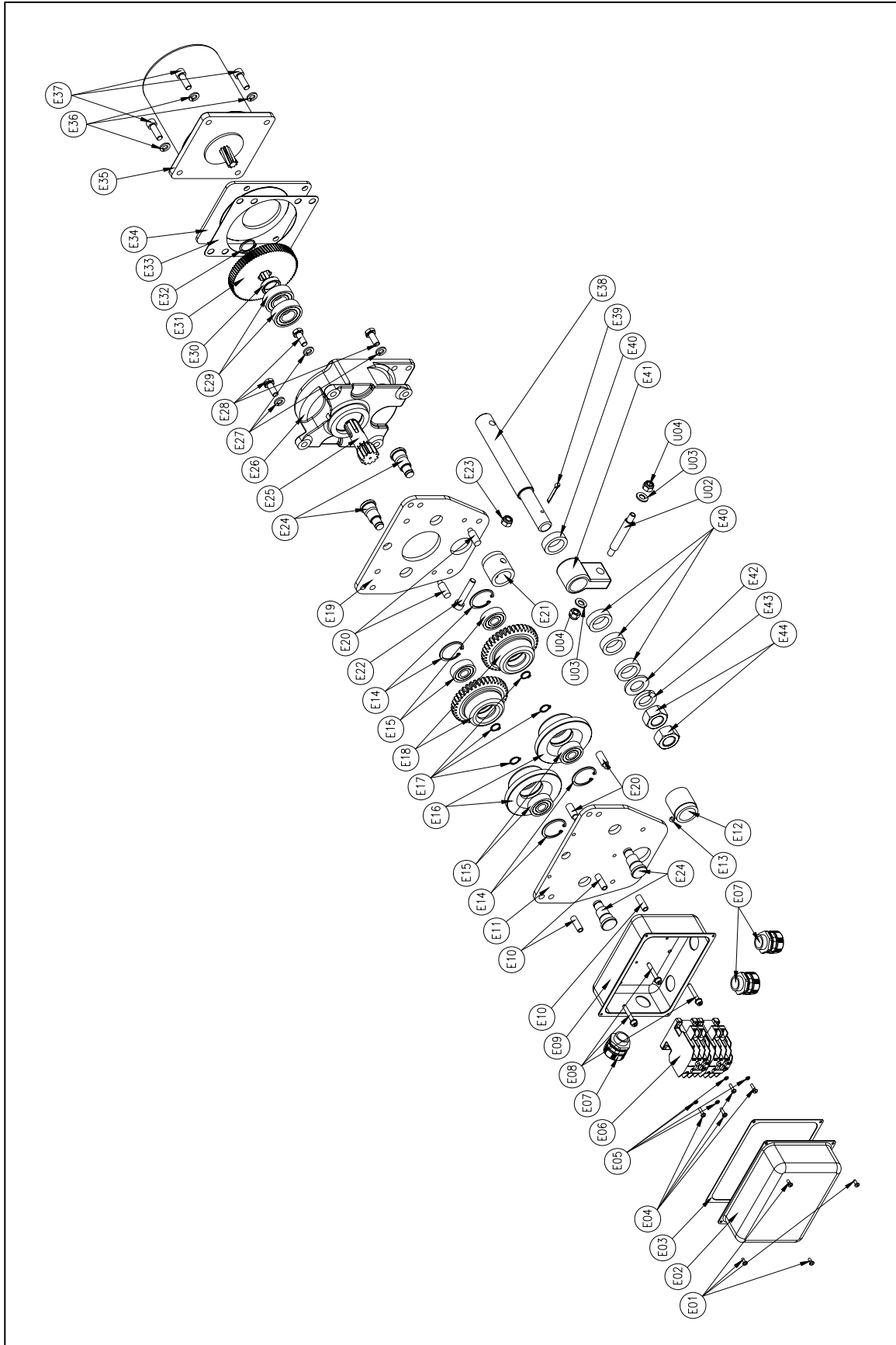


## 7-2. BODY ASSEMBLY



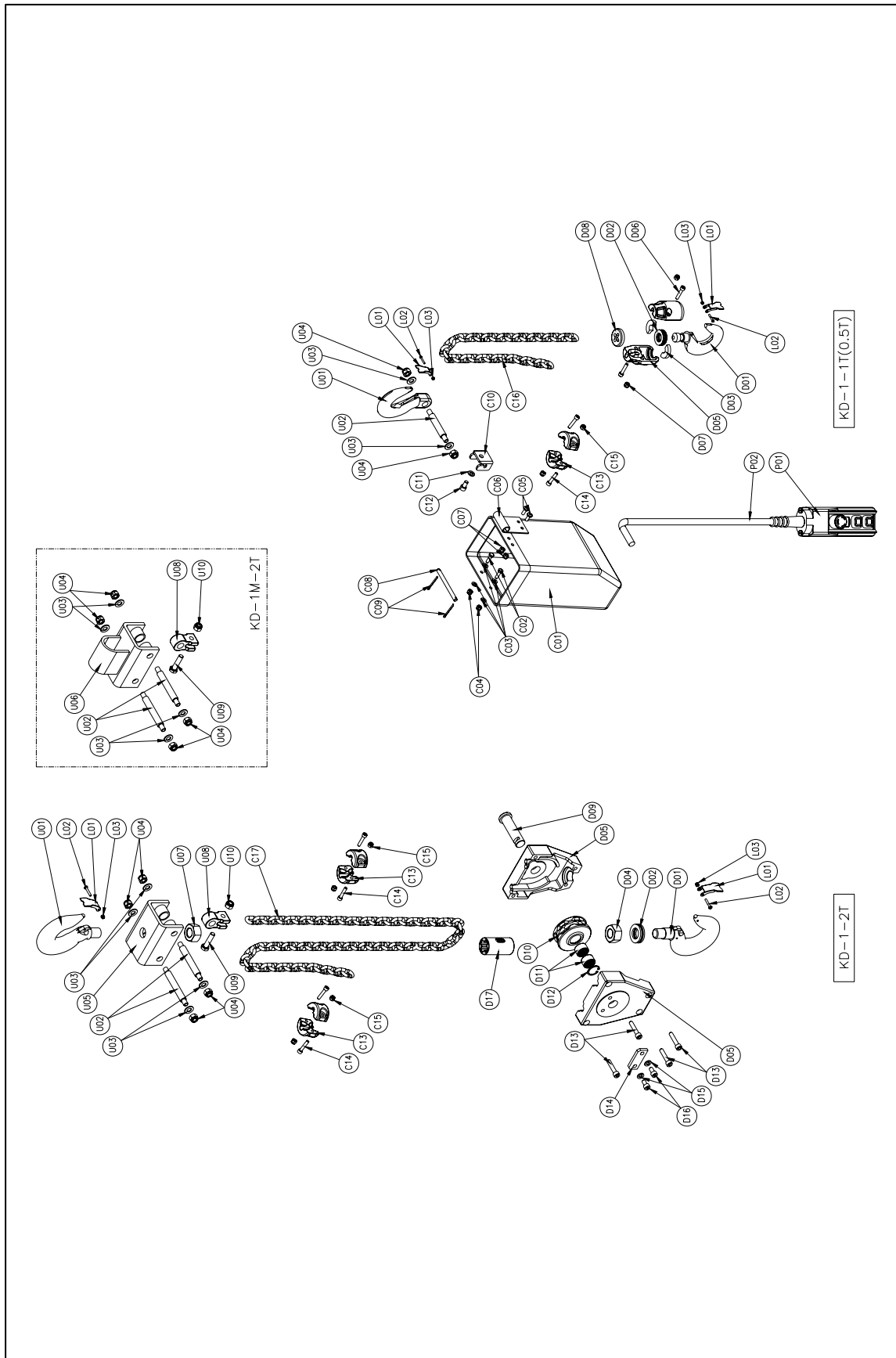
PART No.	PART NAME	SIZE	Q'TY	REMARK	PART No.	PART NAME	SIZE	Q'TY	REMARK
B01	SOCKET HEAD BOLT	M6x15	4		B36	PINION GEAR		1	KD-1 / KDT-1
B02	SPRING WASHER	M6	4		B37	BUSH	Ø40x Ø30x15	1	
B03	ELECTRIC FIELD COVER		1		B38	PRESSURE PLATE B	Ø104x19	1	
B04	ELECTRIC FIELD COVER GASKET		1		B39	PRESSURE PLATE A	Ø54x7.2	1	
B05	SOCKET HEAD BOLT	M6x10	3		B40	2nd PINION	Ø27.5x131.5	1	
B06	SPRING WASHER	M6	3		B41	KEY	2R-5x5x45L	1	
B07	ELECTRIC CONTROL ASS'Y		1		B42	BALL BEARING	6204zz	1	
B08	TORQUE CONTROLLER CAP	Ø40x24	1		B43	2nd PINION GEAR SHAFT	Ø18x59	1	2spd. Only
B09	O-RING	P25x Ø3.5	1		B44	2nd PINION GEAR	Ø61.4x37	1	2spd. Only
B10	Hex. LOCK NUT	M12xP1.25	1	Steel Lock	B45	BALL BEARING	6801zz	1	2spd. Only
B11	TORQUE CONTROLLER WASHER	T2x Ø28x Ø13	1		B46	SUPPORTER		1	2spd. Only
B12	SOCKET HEAD BOLT	M6x75	6	High-Tension	B47	SPRING WASHER	M6	3	2spd. Only
B13	GEAR CASE-B		1		B48	SOCKET HEAD BOLT	M6x20	3	2spd. Only
B14	OIL CAP	Ø24x18	1		B49	SNAP RING	S40	1	
B15	OIL GAUGE	PT 1/2	1	#S21	B50	LOAD GEAR	Ø127.3x25	1	
B16	EYE BOLT	M8	1		B51	BALL BEARING	6008zz	1	
B17	Hex. LOCK NUT	M8	1		B52	OIL RETAINER	45x68x12	1	
B18	CABLE GRAND	NEC-01-20A	3		B53	LOAD SHEAVE	Ø7.1	1	
B19	SPRING PIN	Ø6x20	2		B54	BALL BEARING	6208zz	1	
B20	GEAR CASE GASKET		1		B55	BALL BEARING	6804zz	1	
B21	GEAR CASE A		1		B56	SNAP RING	R80	1	
B22	EYE BOLT	M8	1		B57	OIL RETAINER	20x32x8	1	
B23	SOCKET HEAD BOLT	M8x15	1	OIL DRAIN BOLT	B58	MOTOR GASKET		1	
B24	STRIPPER		1		B59	HOISTING MOTOR		1	KD-1 / KDT-1
B25	SPRING WASHER	M6	2		B60	SPRING WASHER	M10	4	
B26	SOCKET HEAD BOLT	M6x15	2		B61	SOCKET HEAD BOLT	M10x30	4	
B27	GUIDE ROLLER	Ø28x21	1		B62	DC ELECTRO MAGNETIC BRAKE	DC-90/DC-190	1	
B28	GUIDE ROLLER PIN	Ø6x39	1		B63	SPRING WASHER	M6	3	
B29	PINION SHAFT		1		B64	SOCKET HEAD BOLT	M6x15	3	
B30	BALL BEARING	6301zz	1		B65	O-RING	Ø2.4xPCD163	1	
B31	BALL BEARING	6303zz	1		B66	BRAKE COVER		1	
B32	PRESSURE PLATE D	Ø54x11.2	1		B67	SPRING WASHER	M6	4	
B33	CONICAL SPRING	T3x Ø80x Ø41	2		B68	SOCKET HEAD BOLT	M6x80	4	
B34	PRESSURE PLATE C	Ø104x6	1		B69	DUST CAP	Ø20x6	2	
B35	PAPER LINING	T1x Ø108	2						

### 7-3. TROLLEY ASSEMBLY



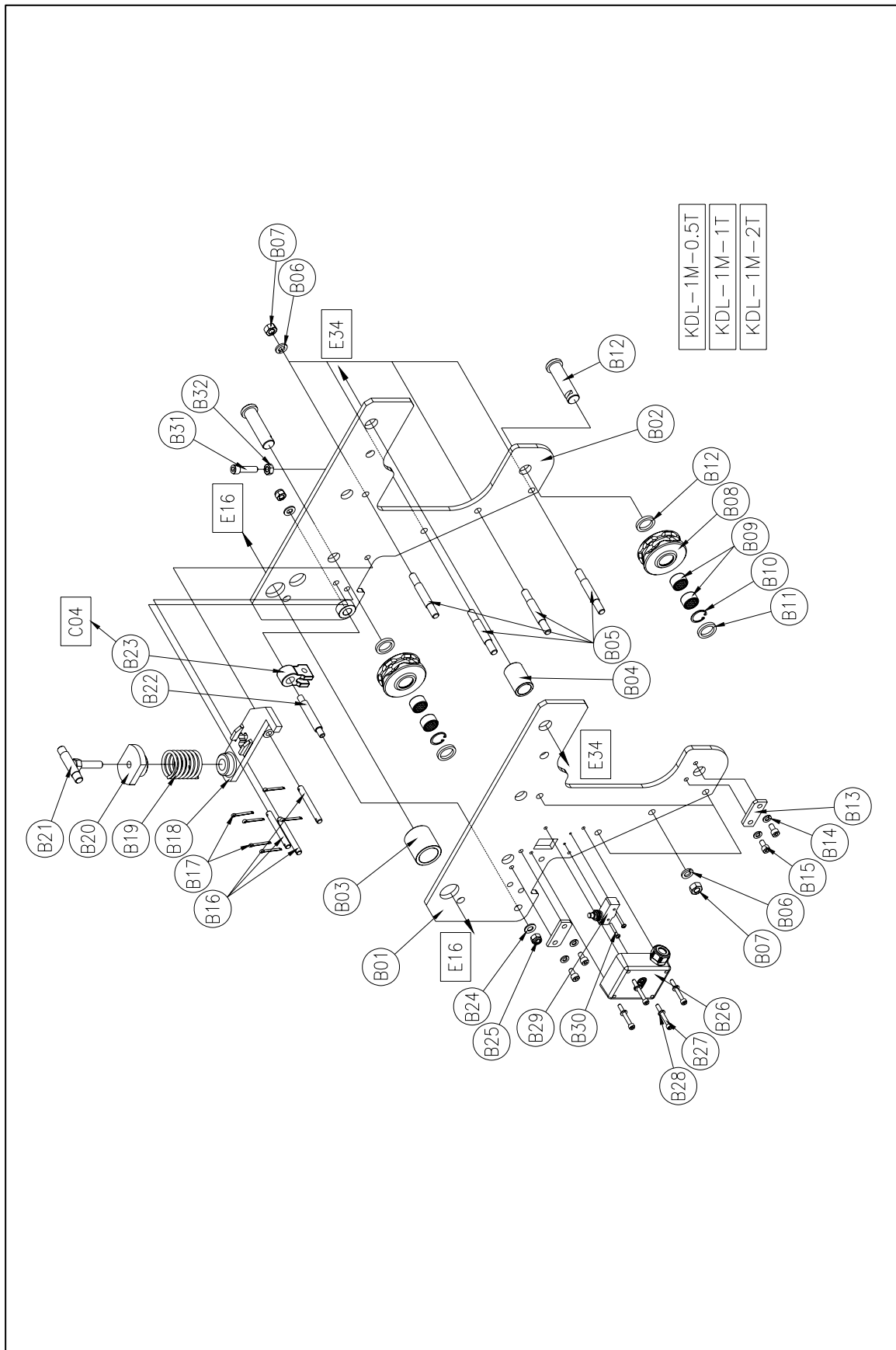
PART No.	PART NAME	SIZE		Q'TY	REMARK	PART No.	PART NAME	SIZE		Q'TY	REMARK
		0.5T, 1T	2T					0.5T, 1T	2T		
E01	TAP SCREW	M4x10		4		E26	OUT PINION	Ø33.5x84	Ø35x102	1	
E02	SWITCH HOLDER COVER	KMT-0.4kw		1		E27	REDUCER CASE	KMT-0.4kw		1	
E03	SWITCH HOLDER GASKET	KMT-0.4kw		1		E28	SPRING WASHER	M10		4	
E04	ROUND HEAD BOLT	M4x15		4		E29	Hex. HEAD BOLT	M10x25		4	
E05	SPRING WASHER	M4		4		E30	BALL BEARING	6205zz		2	
E06	MAGNETIC CONTACTOR	DM-12C		1		E31	REDUCER COLLAR	Ø34x3.4x9L		1	
E07	CABLE GRAND	NEC-01-20A		2	Hole Cover : 1ea	E32	PINION GEAR			1	
E08	SOCKET HEAD BOLT	M6x45		3		E33	SNAP RING	S25		1	
E09	SWITCH HOLDER	KMT-0.4kw		1		E34	TROLLEY GASKET			1	
E10	STAY PIPE	Ø6.5x Ø10x28L		3		E35	REDUCER COVER			1	
E11	PLAIN SIDE PLATE	T8x230x200 T12x296x217		1		E36	TRAVERSING MOTOR	0.4kw x 4P		1	
E12	PLAIN SIDE COLLAR PIPE	Ø42.7x6.4x44L Ø48.6x7.1x47L		1		E37	SPRING WASHER	M10		4	
E13	SOCKET HEAD STOP BOLT	M8x15		1	Cup point	E38	SOCKET HEAD BOLT	M10x30		4	
E14	SNAP RING	R42	R62	4		E39	STAY BOLT	Ø30x262L	Ø35x300L	1	
E15	BALL BEARING	6302zz	6305zz	4		E40	SPLIT PIN	Ø5x32	Ø5x36	1	
E16	PLAIN WHEEL	Ø103x40	Ø135.8x50	2		E41	COLLAR	T12.5xØ42.4x Ø 30	T12.5x Ø48.6x Ø66.8	4	
E17	SNAP RING	S15	S25	4		E42	HANGER		PART No. U06	1	
E18	GEARED WHEEL	Ø103x40	Ø135.8x50	2		E43	PLAIN WASHER	M24	M30	1	
E19	GEAR SIDE PLATE	T8x230x200	T12x296x217	1		E44	SPRING WASHER	M24	M30	1	
E20	STAY PIN	Ø12x42L		4		E45	Hex. NUT	M24	M30	2	
E21	GEAR SIDE COLLAR PIPE	Ø42.7x6.4x44L Ø48.6x7.1x47L		1							
E22	SOCKET HEAD BOLT	M10x55	M10x60	1	High-Tension						
E23	Hex. LOCK NUT	M10		1		U02	TOP HOOK PIN	Ø14x97L	Ø14x117L	1	2T : 2ea
E24	WHEEL PIN	Ø28x53L	Ø40x68L	4		U03	PLAIN WASHER	M10		2	2T : 4ea
E25	SNAP RING	R42		1		U04	Hex. LOCKL NUT	M10		2	2T : 4ea

## 7-4. HOOK & CHAIN ASSEMBLY



PART No.	PART NAME	SIZE		Q'TY	REMARK	PART No.	PART NAME	SIZE		Q'TY	REMARK
		0.5T, 1T	2T					0.5T, 1T	2T		
U01	TOP HOOK			1		L01	SAFETY LATCH & SPRING			1	
U02	TOP HOOK PIN	Ø14x97L	Ø14x115L	1	2T : 2ea	L02	ROUND HEAD BOLT	M4x20	M4x25	1	
U03	PLAIN WASHER		M10	2	2T : 4ea	L03	Hex. LOCK NUT		M4	1	
U04	Hex. LOCK NUT		M10	2	2T : 4ea						
U05	TOP HOLDER		KD-1	1	2Ton Only	C01	CHAIN BUCKET				Plastic or Steel
U06	TOP HOLDER		KD-1M	1	2Ton Only	C02	Hex. HEAD BOLT		M6x20	2	
U07	Hex. NUT		M22	1		C03	PLAIN WASHER		M6	2	
U08	CHAIN STOP HOLDER		Ø7.1	1		C04	Hex. LOCK NUT		M6	2	
U09	Hex. HEAD BOLT		M10x40	1	High-Tension	C05	ROUND HEAD BOLT		M6x15	2	
U10	Hex. LOCK NUT		M10	1		C06	CHAIN BUCKET PLATE			1	for Plastic Bucket
						C07	Hex. LOCK NUT		M6	2	
D01	BOTTOM HOOK			1		C08	CHAIN BUCKET PIN		Ø8x97	1	
D02	THRUST BEARING	#51104	#51105	1		C09	SPLIT PIN		Ø3.2x32	2	
D03	COTTER	Ø35.5x10.2		2		C10	CHAIN BUCKET BRACKET			1	
D04	Hex. NUT		M22	1		C11	SPRING WASHER		M8	1	
D05	BOTTOM HOLDER			2		C12	SOCKET HEAD BOLT		M8x15	1	
D06	SOCKET HEAD BOLT	M6x30		2		C13	CHAIN STOP HOLDER		Ø7.1	2	2T : 4ea
D07	Hex. LOCK NUT	M6		2		C14	SOCKET HEAD BOLT		M6x30	2	2T : 4ea
D08	SLIP CUSHION			1	1Ton Only	C15	Hex. LOCK NUT		M6	2	2T : 4ea
D09	IDLE SHEAVE PIN		Ø30x87L	1		C16	LOAD CHAIN		Ø7.1 x P21.2		2T : 2fall
D10	IDLE SHEAVE		Ø7.1	1							
D11	NEEDLE BEARING		HK2216	2		P01	PUSH BUTTON			1	3P, 5P, 7P
D12	SNAP RING		R28	1		P02	CONTROL CABLE				
D13	SOCKET HEAD BOLT		M8x40	4							
D14	KEY PLATE		T6x60x25	1							
D15	SPRING WASHER		M8	2							
D16	SOCKET HEAD BOLT		M8x15	2							
D17	STOPPER		Ø38x70	1							

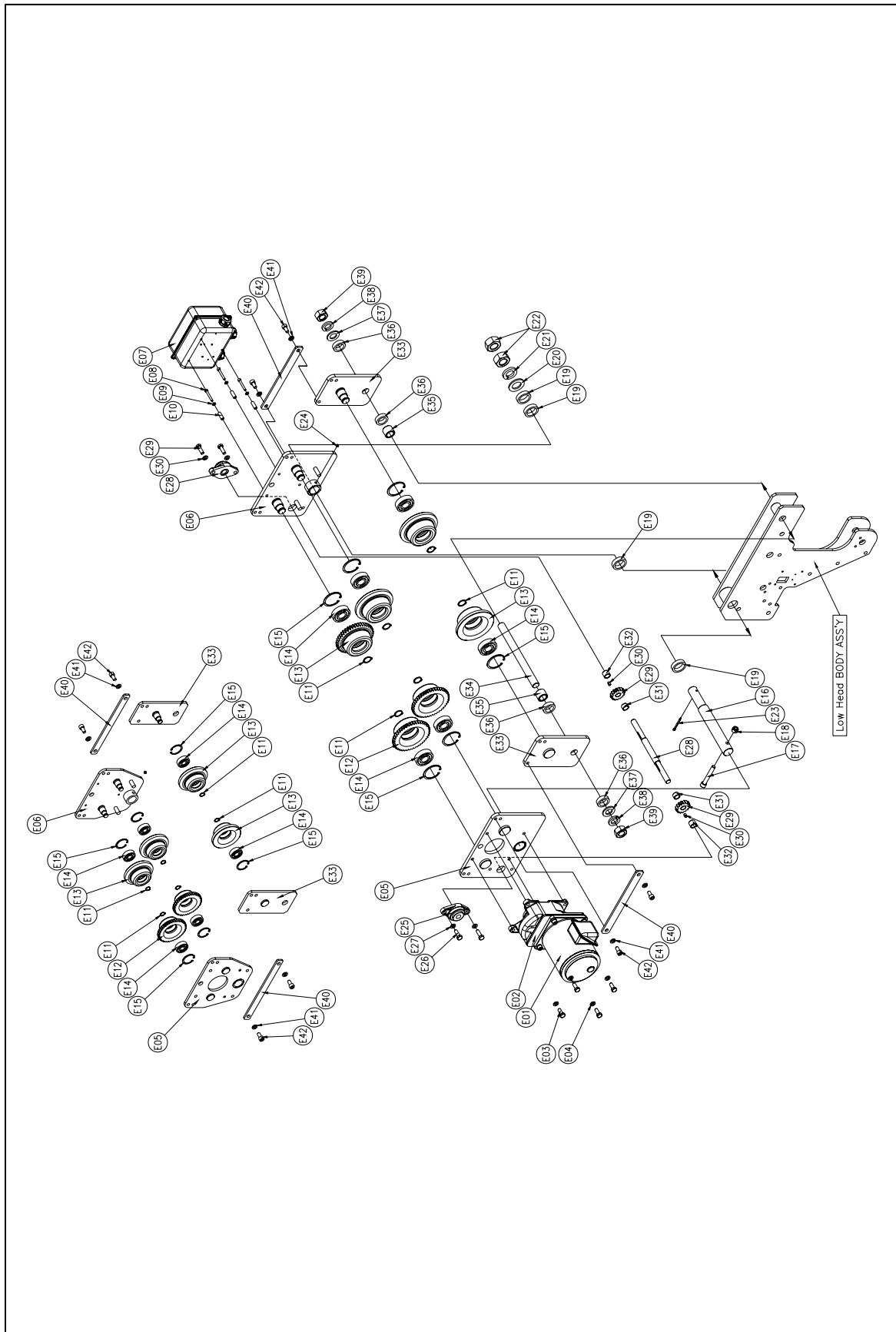
## 7-5. BODY ASSEMBLY for LOW HEAD TYPE



PART No.	PART NAME	SIZE		Q'TY	REMARK	PART No.	PART NAME	SIZE		Q'TY	REMARK
		0.5T, 1T	2T					0.5, 1T	2T		
B01	SIDE PLATE B			1		B22	STOP HOLDER PIN	-	Ø14x97	1	2Ton Only
B02	SIDE PLATE A			1		B23	CHAIN STOP HOLDER	-	Ø7.1	1	2Ton Only
B03	TROLLEY CENTER COLLAR PIPE	Ø42.7x6.4x50	Ø48.6x6.9x50	1		B24	PLAIN WASHER		M10	2	2Ton Only
B04	SUB TROLLEY CENTER COLLAR PIPE	Ø27.2x2.9x50	Ø34x4.5x50	1		B25	Hex. LOCK NUT		M10	2	2Ton Only
B05	STAY PIN	Ø14x102		4		B26	LIMIT SWITCH COVER	110x80x85 (ABS B85G)		1	
B06	SPRING WASHER	M12		8		B27	SOCKET HEAD BOLT	M6x25		4	
B07	Hex. NUT	M12		8		B28	SPRING WASHER	M6		4	
B08	IDLE SHEAVE	Ø7.1		2		B29	Micro LIMIT SWITCH	Z4G1P05B		1	
B09	NEEDLE BEARING	HK2216		4		B30	ROUND HEAD BOLT	M4x30		2	
B10	SNAP RING	R30		2		B31	SOCKET HEAD BOLT	M10x40		1	
B11	SHEAVE COLLAR	Ø34xØ25x5t		4		B32	Hex. NUT	M10		1	
B12	IDLE SHEAVE PIN	Ø30x87		2							
B13	KEY PLATE	T6x60x25		2		C04	Hex. HEAD BOLT	-	M10x40	1	High-Tension
B14	SPRING WASHER	M8		4		E16	STAY BOLT	Ø30x262	Ø35x300	1	Main Trolley
B15	SOCKET HEAD BOLT	M8x15		4		E34	STAY BOLT	Ø20x247	Ø24x290	1	Sub Trolley
B16	SUPPORT PIN	Ø10x85		3							
B17	SPLIT PIN	Ø4x32		6							
B18	LIMIT HANDLE	Ø7.1		1							
B19	COIL SPRING	Ø5x62		1							
B20	SPRING POSITIONER	Ø38.5x15		1							
B21	SPRING RECEIVER			1							

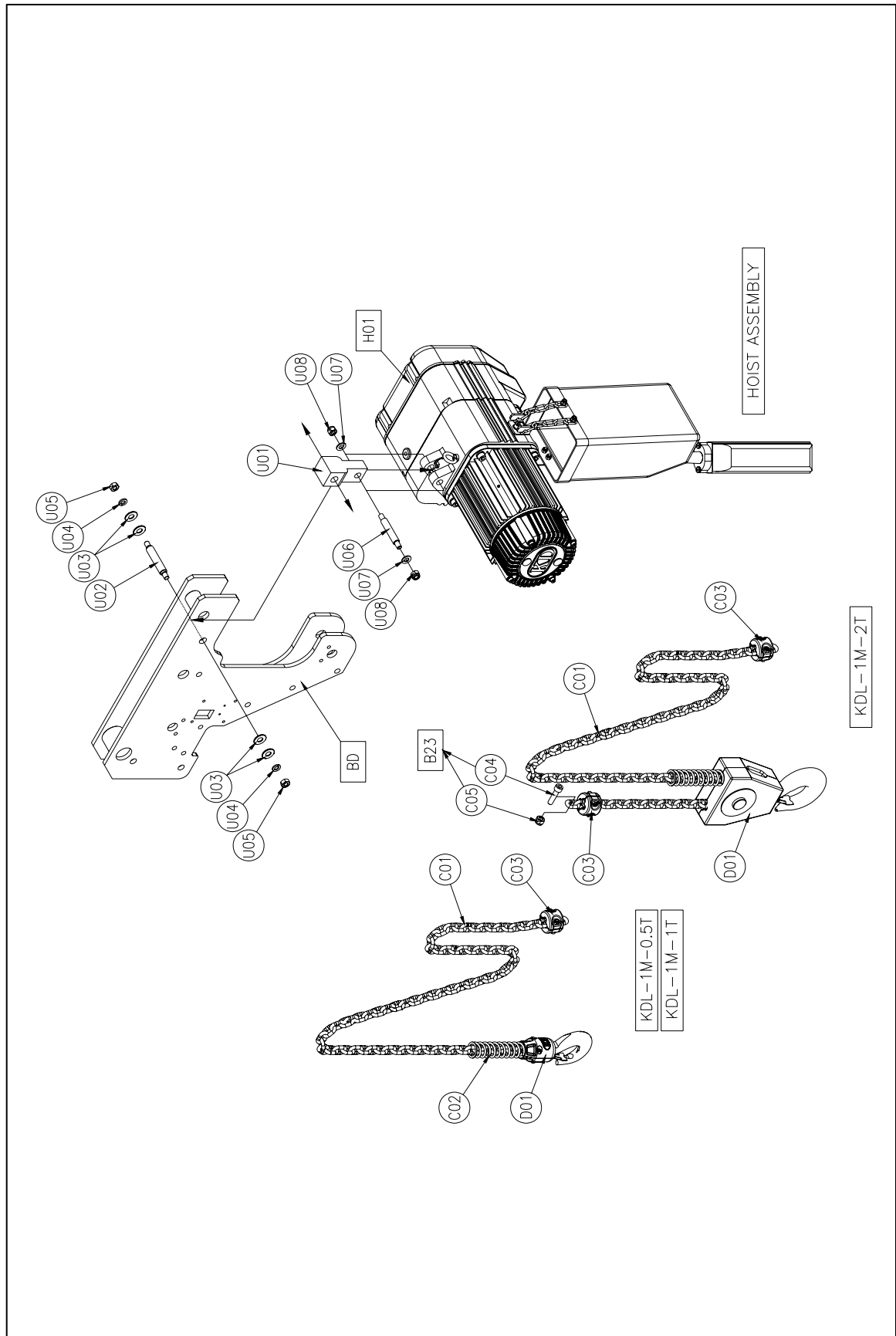


## 7-6. TROLLEY ASSEMBLY for LOW HEAD TYPE



PART No.	PART NAME	SIZE			Q'TY	REMARK	PART No.	PART NAME	SIZE			Q'TY	REMARK
		0.5T, 1T	2T						0.5T, 1T	2T			
E01	TRAVERSING MOTOR	0.4kw x 4P			1		E22	Hex. NUT	M24	M30		4	
E02	REDUCER CASE	KMT-0.4kw			1		E23	SPLIT PIN	Ø5x32	Ø5x55		1	
E03	Hex. HEAD BOLT	M10x25			4		E24	SOCKET HEAD STOP BOLT	M8x15			1	CUP POINT
E04	SPRING WASHER	M10			4		E25	BALL BEARING	-	UCFL203		2	Flange type
E05	GEAR SIDE PLATE	T8x230x200			1		E26	Hex. HEAD BOLT	-	M10x30		4	
E06	PLAIN SIDE PLATE	T8x230x200			1		E27	SPRING WASHER	-	M10		4	
E07	SWITCH HOLDER	KMT-0.4kw			1		E28	IDLE SHAFT	-	Ø20x290		1	2Ton Only
E08	SOCKET HEAD BOLT	M6x45			3		E29	IDLE GEAR	-	Ø51x17		2	2Ton Only
E09	SPRING WASHER	M6			3		E30	KEY	-	6x6x12L		2	2Ton Only
E10	STAY PIPE	Ø6.5xØ10x28			3		E31	IDLE COLLAR A	-	Ø21.7x2.65x12.5		4	2Ton Only
E11	SNAP RING	S15	S25		6		E32	IDLE CALLAR B	-	Ø21.7x2.65x17.3		2	2Ton Only
E12	GEARED WHEEL	Ø103(2ea)			-		E33	SUB TROLLEY SIDE PLATE	T8x100x200	T12x136x217		2	
E13	PLAIN WHEEL	Ø103(4ea)					E34	SUB TROLLEY STAY BOLT	Ø20x247	Ø24x290		1	
E14	BALL BEARING	6302zz			6		E35	SUB TROLLEY COLLAR A	Ø27.2x2.9Tx24.5	Ø34x4.5Tx25.5		2	
E15	SNAP RING	R42	R62		6		E36	SUB TROLLEY COLLAR B	Ø45xØ21x12.5	Ø45xØ26x12.5		4	
E16	STAY BOLT	Ø30x262			1		E37	PLAIN WASHER	M20	M24		2	
E17	SOCKET HEAD BOLT	M10x55			1	High-Tension	E38	SPRING WASHER	M20	M24		2	
E18	Hex. LOCK NUT	M10			1		E39	Hex. NUT	M20	M24		2	
E19	COLLAR	Ø42.4xØ30x12.5T			4		E40	FIXING PLATE	T6x30x280	T6x30x253		2	
E20	PLAIN WASHER	M24	M30		1		E41	SPRING WASHER	M10			4	
E21	SPRING WASHER	M24	M24		1		E42	SOCKET HEAD BOLT	M10x20			4	

## 7-7. HOOK & CHAIN ASSEMBLY for LOW HEAD TYPE



PART No.	PART NAME	SIZE		Q'TY	REMARK
		0.5T, 1T	2T		
U01	HANGER			1	
U02	HANGER PIN		Ø16x105	1	
U03	SPACER		T2xØ28xØ13	4	KD-1 Torque Control Washer
U04	SPRING WASHER		M10	2	
U05	Hex. LOCK NUT		M10	2	
U06	TOP HOOK PIN		Ø14x97	1	
U07	PLAIN WASHER		M10	2	
U08	Hex. LOCK NUT		M10	2	
D01	BOTTOM HOOK ASS'Y	1 fall Line	2fall Line	1	
C01	LOAD CHAIN	Ø7.1x1fall	Ø7.1x2fall	-	
C02	BOTTOM HOOK SPRING		Ø4.5x125	1	
C03	CHAIN STOP HOLDER	2ea	4ea	-	
	SOCKET HEAD BOLT	2ea	4ea	-	M6x30
	Hex. LOCK NUT	2ea	4ea	-	M6
C04	Hex. HEAD BOLT	-	M10x40	1	2Ton Only
C05	Hex. LOCK NUT	-	M10	1	2Ton Only
H01	HOIST BODY ASS'Y			1	KD-1
BD	Low Head BODY ASS'Y			1	KDL-1M
B23	CHAIN STOP HOLDER	-	Ø7.1	1	2Ton Only

# KUKDONG

## PRODUCTS

- ELCTRIC CHAIN HOIST(0.5~30ton)
- ELCTRIC CHAIN HOIST(0.25ton)
  - MINI HOIST
- ELECTRIC CHAIN HOIST(0.25~0.5ton)
  - KES 90(Single phase)
- CHAIN BLOCK(0.5~30ton)
- LEVER BLOCK(0.75~6ton)
- CRANE :
  - SUSPENSION CRANE
  - OVER HEAD CRANE
  - JIB CRANE
  - GANTRY CRANE
- GEARED & PLAIN TROLLEY(0.5~30ton)
- GEARED MOTOR(0.4Kw,0.75Kw,1.5Kw)
- END CARRIAGE(SADDLE)
- LOAD CHAIN

### ▼ Head Office

630-2, Sunggok-dong, Danwon-gu, Ansan-city,  
Kyunggi-do, KOREA  
TEL: 82-31-491-5311  
FAX: 82-31-492-0473  
<http://www.kdhoist.com>  
e-mail:kukdong@kdhoist.com

### ▼ A / S Office

TEL: 080-380-0001

### ▼ Overseas DEPT.

TEL: 82-2-783-4203  
FAX: 82-2-784-6340  
<http://www.kdhoist.com>  
e-mail:kukdong@kotis.net

**KD** KUKDONG HOIST CO.,LTD.