

**KIO-Winch**

# **ELECTRIC MINI WINCH**

**MODEL**

**K10-300L · K10-360 · K10-500**



## **OWNER'S MANUAL**

**INSTALLTION  
OPERATION  
MAINTENANCE  
SAFETY PRECAUTION  
REPAIR PARTS**

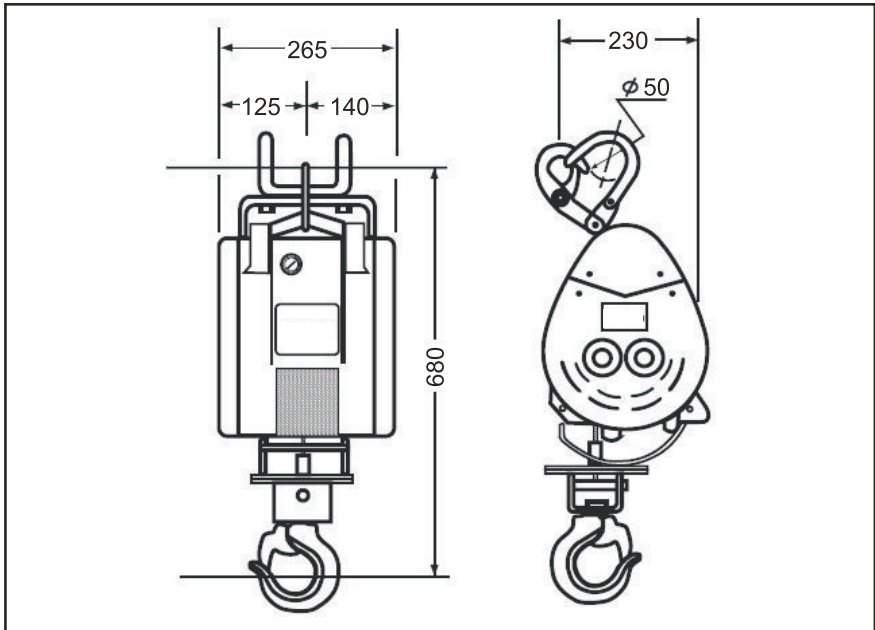


### **▲ CAUTION ▲**

**READ AND UNDERSTAND THIS MANUAL  
BEFORE INSTALLATION AND OPERATION  
OF TOUR ELECTRIC WINCH PRODUCTS**

# 1. SPECIFICATUON

MODEL		KIO-300L	KIO-360	KIO-500
Liftint load top layer kg		300	360	500
Speed m/min		18	18	12
Motor kw	110V	1600W/13A	1800W/13A	1800W/13A
	220/240V	1600W/7A	1800W/7A	1800W/7A
Lifting height m		58	38	29
Wire rope $\Phi$ mm $\times$ m		5 $\times$ 60	6 $\times$ 40	6.35 $\times$ 30
Winch weight kg		23	23	28
Gross weight kg		30	30	35



- Lightweight & compact desing allow mounting convenient.
- When rope touches the limit arm, hoisting is automatically stopped.
- A sensor arm stops the motor when the rope is reverse winding.
- Dynamic brake designs for both static and dynamic loading.
- It operates on household power source.
- Plug-in cords allow portability with easy.
- 360° universal joint saddle hook with safety latch.

Mini winch with built-in safety

devices feature easy control of lifting for a wide range of applicability for warehouse, storage areas, factories, house areas, conatruction sites, job sites and plumbing.

## 2. INSTALLMENT PRECAUTION

### 2.1 ENVIRONMENT PRECAUTION:

 <b>WARNING</b>	
	<ul style="list-style-type: none"> <li>The following environmental conditions may result in the possible causes of winch trouble.</li> </ul>

- Low temperature below -10°C high temperature above 40°C or humidity above 90% conditions.



- In a organic chemistry of explosive power conditions



※Cause explosion

- In heavy acid or salty conditions

※Cause malfunction of spare part

- In the rain or snow

※Cause rust or short circuit





- In a heavy general powder conditions

※Cause maifuncion of performances



### 2.2 CONTINUOUS RATING:

 <b>PRECAUTION</b>	
	<ul style="list-style-type: none"> <li>Never hois over the rated percentage duty cycle</li> </ul>

The life of the winch is depending on the conditions of the load and working frequency.

In the long time operation, make sure to use the machine within its continuous ratings.

Continuous ratings means the working duty cycle(%ED)is subject to the eated voltage rated frequency and a 63% of rated load.

$$\text{Percentage duty cycle (\%ED)} = \frac{T_b}{T_b+T_s} \times 100(\%)$$

T<sub>b</sub>: total sum of overall loading operating hours

T<sub>s</sub>: total sum of stopping hours

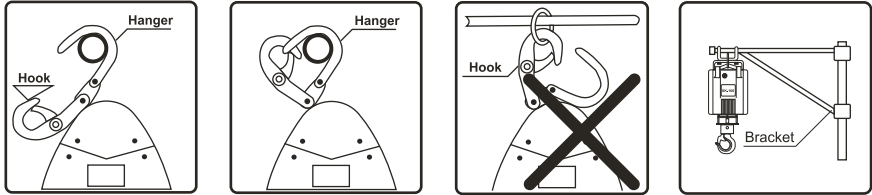
T<sub>b</sub>+T<sub>s</sub> = approximately 1 to 10 min

The maximum of starts of the machine means the ummber of starts of motor per 1 working hour including the pause hours of winch which is value of number working times added with the number of inching.

## 2. 3 MOUNTING:

The winch designed to be hanged or mounted on a firm or stable bar or a bracket.  
When hanging, do not allow the body or load to be caught by any construction of frame, or other obstruction.

Be sure to lock the hanger for extra safety.



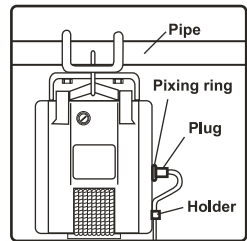
## 2. 4 PLUG INSERTION:

### 2. 4(a) Power core insertion:

Insert the power plug into the power receptacle of the winch, and tighten it by turning the locking ring, clockwise.

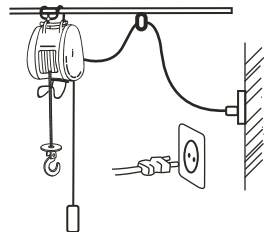
Be sure to lock the cord by a holder, Do not allow the cords to be caught by wire rope and drum.

The length of power cord is subject to the distance of 20 meter, for any other case, please use a power cable by 3.5mm<sup>2</sup> to prevent a considerable voltage drop to be happened.



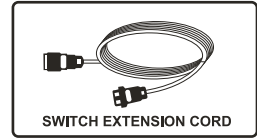
The selection of power cord section

Section	Cord Length
2.0mm <sup>2</sup>	20m
3.5mm <sup>2</sup>	35m



## 2. 4 (b) Grounding:

To prevent the risk of electric shock, the power plug must be plugged into a matching outlet and grounded in good condition.



## 2. 4 (c) Switch cord connection:

- (1) Insert the switch plug into the switch receptacle of the winch and tighten it by turning the locking ring clockwise.  
Be sure to hook the cord by a holder.
- (2) To extend the length of to switch cord, please adopt a switch extension cord (10M).

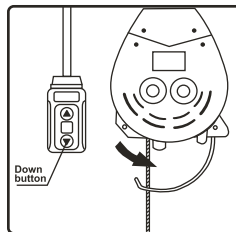
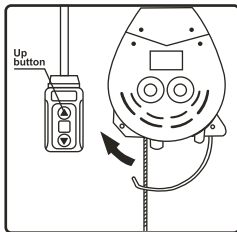
# 3. WORKING METHODS

## 3. 1 PREPARATION BEFORE WORKING:

- Be sure to carefully check all safety and environmental conditions.
- A minimum of five (5) wraps of wire rope wound around the drum is necessary.  
A wire rope should be discarded and not be used again if rope shows sign of excessive wear too many broken wires. Corrosion or other defects.
- Make sure to connect the main power source and grounding.
- It's not safe to lift loads exceeding the rated load.
- Connect power source at rated voltage.  
(It will cause maladjusted working if input voltage falls out of rated voltage by  $\pm 10\%$ )

## 3. 2 UP AND DOWN SWITCHING:

To lift a load, press  $\uparrow$  button and drum will rotate as shown below operation.  
To lower a load, press  $\downarrow$  button and drum will rotate as shown below.



When the button is released, the drum will stop moving

# 4. HANDING PRECAUTION

## 4. 1 ENVIRONMENT PRECAUTION:

<b>⚠ WARNING</b>	
	<ul style="list-style-type: none"> <li>• Pay best attention to the following instruction. Obvious mistakes in operaton may result in personal inquiry or equipment damage.</li> </ul>

- Never try to lift a load more than the rated cap.



- Never hitch a ride on the hook, sling or load being moving.



- ※ Winches are not to be used for lifting or lowering people.

- Don't work, walk or stand under an operating winch.

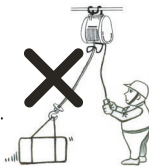


- Always remain in control, Never neglect the winch while actually hoisting a load.



- While working, never stand under a lifting load or within the conveying area.

- Always look up when working around winch, there is potential danger overhead.

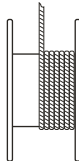


- Never gravitate a load freely.



- ※ Be sure to lift a load vertically. Slack may allow wires to be caught in the drum.

- A minimum of five (5) wraps of rope around the drum is necessary to support the load rated.



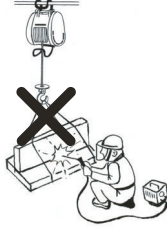
- Prior to starting of use, carry out the dally checking without fall, and after confrmring the safety of function.



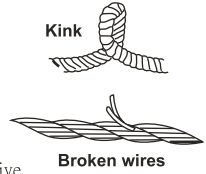
- If having a counter rotation incurred, make sure to correct its tuning direction.

- Prior to lifting. Make sure to have a precise performance of brake. If any malfunction of brake happened, stop the operation immediately.

- When load suspended in air, it will not allow to be weiding.
- Never weld a load while actually lifting a load.



- Wire rope with one or more of the following defects shall be removed or replaced immediately.
  - (1)kink
  - (2)distortion
  - (3)corrosion
  - (4)showing sings of excessive wear or of having broken wies not less than 10 pcs.



- Stop the operation if there is any queer noise or vibration in the gear box to be happeded.
- Do not connect the wire rope with the grounding of welding machine.
- While welding, do not have any contact with the welding objects because of having spark.

- Do not pull the switch cord to move a load.
- Do not over continuous ratings.

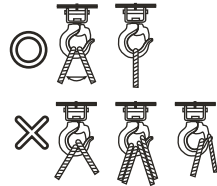


- Never plugging (istant reverse-wind) and inching.

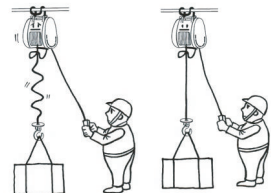
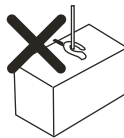


- In order to prevent the layer down due to over loosening of rope, irregular winding, etc.,operate according to the suitable operating method.

- Use a winch by fixing so securely that the rope around the drum is uneven.
- Be sure to fix a rope in the center of swivel hook.
- Be sure to stop operation immediately when the wire rope become fully slackened.
- Avold catching the hook or lifting a load on a fixed obstruction.

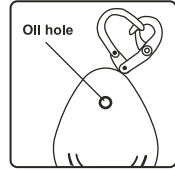


- Always leave the push button switch positioned immediately after use.
- Make sure that the load being liflting are well balacned and secured before starting.
- Avoid water splashes on the push button switch.
- Never wrap the load with the wire rope.



## 5. 1 OIL LUBRICATION:

Winch are prefabricated at the factory and do not require initial lubrication. Relubrication interval depends upon service. Recommended oil replenishment quantity & intervals are as follows.

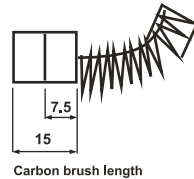
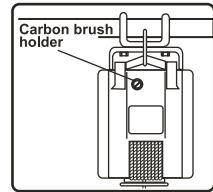


Grease Grade	Quantity				
	NLGI NO.0	K10-300L	K10-360	K10-500	Intervals
Caltex Multifak Ep	300cc	300cc	300cc	1 Year	
Cosmogear SE220					

## 5. 2 CARBON BRUSH REPLACEMENT :

<b>WARNING</b>	
	<ul style="list-style-type: none"> <li>• Clean the accumulated powder of carbon brush periodically to ascertain the insulation resistance up to 1MΩ.</li> </ul>

- It is essential to check the carbon brush periodically. If its length is left less than 7.5mm resulting from wearing, it is absolute necessary to replace carbon brush immediately.
- While replacing, smoothly insert carbon brush into carbon holder in the first place, then put brush cap into the hole.
- Before tightening the carbon brush holder, make sure to position O ring.
- A set of carbon brush consists of 2 pieces of carbon brush. Ascertain to replace 2 pieces of carbon brush on opposite sides of the winch body at the same time.



## 5. 3 BRAKING:

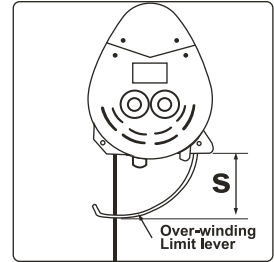
- Braking devices are composed of a mechanical brake and an electronically generated brake. The braking distance from the time of braking until stopping completely should be within 1.5% of rope length to the wound in during 1 minute.
- Owing to the rope speed on no load is faster than that on rated load, the braking distance on no load will be longer, but still within 1.5% of rope length.
- The rope speed on no load is 1.5-1.8 times of rated speed on rated load.



## 5. 4 OVER-WINDING LIFT PREVENTION DEVICE:

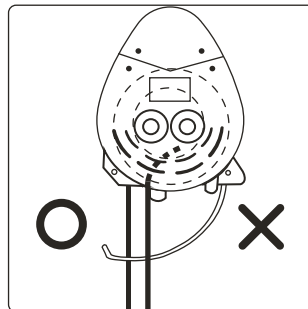
- A special mechanism prevents a over-winding when lifting.
- When the swivel hook touches the limit lever. Lifting is automatically stopped.
- However, if the limit lever is set too close to the winch body, it will cause serious damage to the limit lever and the winch body.
- A sdoodted distance (s) between the limit lece and winch body is as follows.

MODEL	K10-300L	K10-360	K10-500
DISTANCE	70-90mm	70-90mm	70-90mm

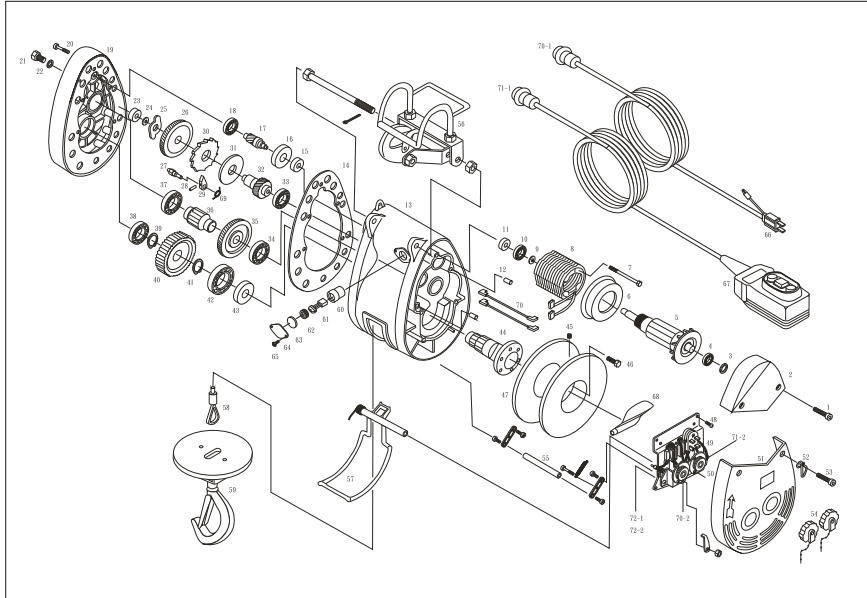


## 5. 5 REVERSE WINDING PREVENTION DEVICE:

- A special mechaning provonts a over reverse-winding when lowering.
- Whan lawsning, a wire rope is fully extended, the wire rope will be shifted its position form to X.
- When a wire rope thouches the limit lever of over-winding prevention device. Lowing will be automatically stopped.
- When the wire rope is shifted to the position of X. Pull it and press the ↑ button to return its position to 0.

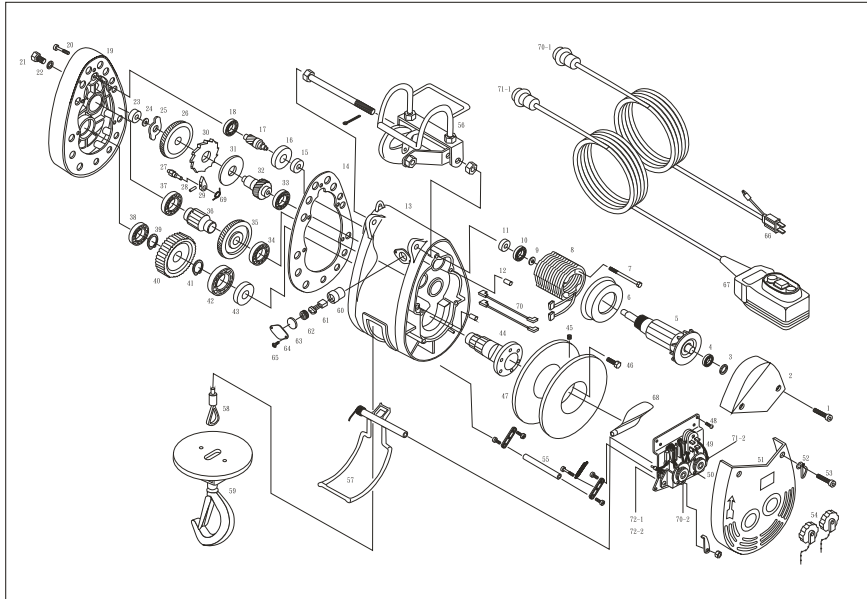


# K10-300L/360



NO.	DESCRIPTION	Q'TY	NO.	DESCRIPTION	Q'TY	NO.	DESCRIPTION	Q'TY
1	HEX BOLT	3	24	BUST	1	47	DRUM	1
2	MOTORCOVER	1	25	1/2CIRCLE-KEY	1	48	SCREW	4
3	WASHER	1	26	2ND GEAR	1	49	CONTROL ASS'Y	1
4	BEARING	1	27	SET BOLT	1	50	PLASTIC PACKING	1
5	ROTOR+1ST PIONIN	1	28	SPRING	1	51	ELECTRIC COVER	1
6	FAN COVER	1	29	PAWL	1	52	RING	1
7	HEX-BOLT	2	30	RATCHET	1	53	HEX BOLT	4
8	FIELD COIL ASSY	1	31	BRAKE-DISK	1	54	CONNECTORS CAP	2
9	C RING	1	32	3RD SHAFT	1	55	DOWN LIMIT ARM ASSY	1
10	BEARING	1	33	BEARING	1	56	SUPSPENSION HOOK ASSY	1
11	OIL RING	1	34	BEARING	1	57	UP LIMIT ARM ASSY	1
12	KNOB PIN	2	35	3RD GEAR	1	58	WIRE ROPE ASSY	1
13	GEAR CASE	1	36	4TH SHAFT	1	59	SWIVEL HOOK	2
14	PACKING	1	37	BEARING	1	60	CARBON HOLDER	2
15	BEARING	1	38	BEARING	1	61	CARBON BRUSH	2
16	1ST GEAR	1	39	C RING	1	62	BRUSH CAP	2
17	2ND SHAFT	1	40	4TH GEAR	1	63	O RING	2
18	BEARING	1	41	C RING	1	64	BRUSH COVER	2
19	GEAR CASE COVER	1	42	BEARING	1	65	SCREW	4
20	HEX BOLT	7	43	OIL RING	1	66	POWER CORD ASSY	1
21	HEX BOLT	1	44	OUTPUTSHAFT	1	67	BUTTON CORD ASSY	1
22	O RING	1	45	P.T.SCREW	1	68	ROPE STOPPER	1
23	BEARING	1	46	HEX BOLT	6			

# K10-500



NO.	DESRIPION	Q'TY	NO.	DESRIPION	Q'TY	NO.	DESRIPION	Q'TY
1	HEX BOLT	3	24	BUST	1	47	DRUM	1
2	MOTORCOVER	1	25	1/2CIRCLE-KEY	1	48	SCREW	4
3	WASHER	1	26	2ND GEAR	1	49	CONTROL ASS'Y	1
4	BEARING	1	27	SET BOLT	1	50	PLASTIC PACKING	1
5	ROTOR+1ST PIONIN	1	28	SPRING	1	51	ELECTRIC COVER	1
6	FAN COVER	1	29	PAWL	1	52	RING	1
7	HEX-BOLT	2	30	RATCHET	1	53	HEX BOLT	4
8	FIELD COIL ASSY	1	31	BRAKE-DISK	1	54	CONNECTORS CAP	2
9	C RING	1	32	3RD SHAFT	1	55	DOWN LIMIT ARM ASSY	1
10	BEARING	1	33	BEARING	1	56	SUPSPENSION HOOK ASSY	1
11	OIL RING	1	34	BEARING	1	57	UP LIMIT ARM ASSY	1
12	KNOB PIN	2	35	3RD GEAR	1	58	WIRE ROPE ASSY	1
13	GEAR CASE	1	36	4TH SHAFT	1	59	SWIVEL HOOK	2
14	PACKING	1	37	BEARING	1	60	CARBON HOLDER	2
15	BEARING	1	38	BEARING	1	61	CARBON BRUSH	2
16	1ST GEAR	1	39	C RING	1	62	BRUSH CAP	2
17	2ND SHAFT	1	40	4TH GEAR	1	63	O RING	2
18	BEARING	1	41	C RING	1	64	BRUSH COVER	2
19	GEAR CASE COVER	1	42	BEARING	1	65	SCREW	4
20	HEX BOLT	7	43	OIL RING	1	66	POWER CORD ASSY	1
21	HEX BOLT	1	44	OUTPUTSHAFT	1	67	BUTTON CORD ASSY	1
22	O RING	1	45	P.T.SCREW	1	68	ROPE STOPPER	1
23	BEARING	1	46	HEX BOLT	6			