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Instruction Manual

- Operation
- Installation
- Maintenance
- Parts

BL170

BL260

BL340

BL490

Brushless Mini Electric Winch

Complies to AS1418.2

READY THIS MANUAL BEFORE USING THESE PRODUCTS

This manual contains important safety, installation, operation and maintenance and maintenance information. Make this manual available to all persons responsible the operation, installation and maintenance of the mini electric winch.

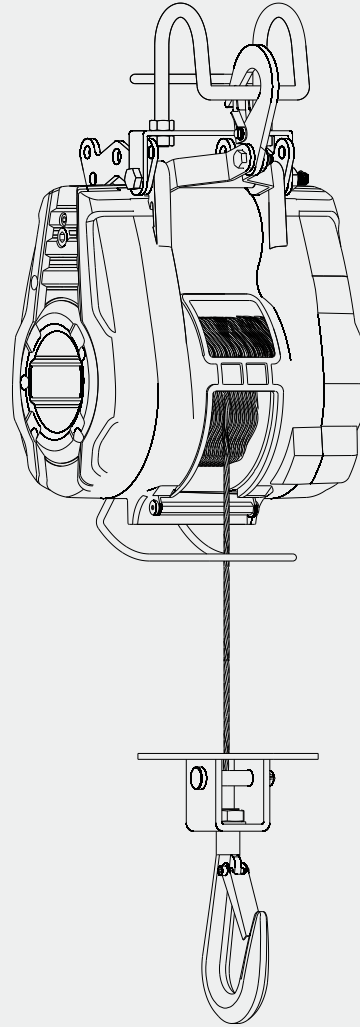


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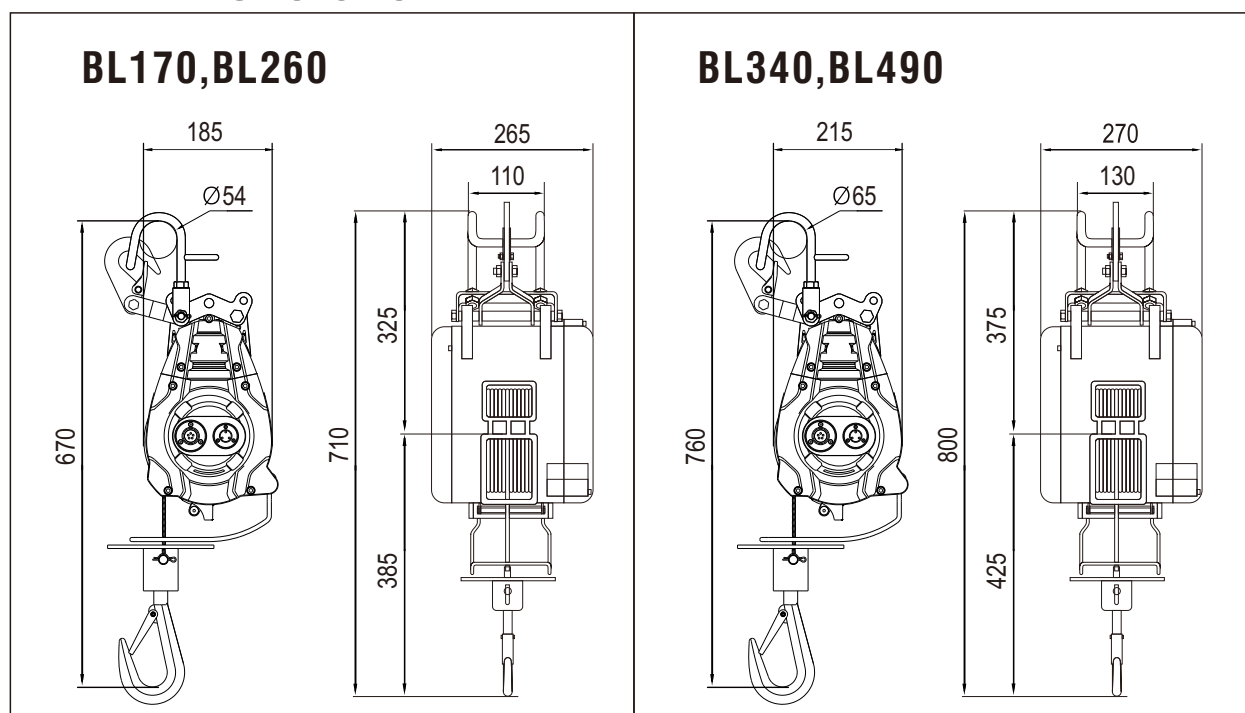
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1. Technical Information

1.1 Specifications

Model		EWH170	EWH260	EWH340	EWH490
Rated Load		170kg	260kg	340kg	490kg
Lifting Height		30m	30m	60m	30m
Wire Rope Dia.		5mm	5mm	5mm	6mm
Motor		1700w	2100w	2400w	2800w
Lifting Speed	50Hz 60Hz	6-21m/min	7-19m/min	6-17m/min	5-16m/min
Net Weight		21kg	21kg	27kg	26kg
Power Supply		Single-phase, 100V-120V, 200V-240V, 50/60Hz AC			
Pendant Control Length		7m			
Power Cord Length		4.8m			

1.2 Dimensions



2. Pre-Operational Precautions

2.1 Safety Precautions

The winch has been designed to give safe and dependable service if operated according to the instructions. Please read and understand this manual before installation and operation of the winch.

Follow these general safety precautions:

- Confirm that the winch complies with the using conditions.
 - Keep the winch secure strongly and the rope is not wound to be deviated to the drum.
 - Don't use unsuitable pulleys or accessories concerned.
 - Don't use unsuitable rope in construction, strength or having any defects.
 - Pay attention to the grounding, it provides a path of least resistance for electric current to reduce the risk of shock.
 - Check the winch for smooth operation without load before loading operation.
 - Make sure the wire rope to be wound evenly in the first layer on the drum, rewind it, if a mixed windings in existence.
 - If a wire rope is found an uneven winding or accumulated at one side of the drum, align it adequately.
-
1. The winch is not to be used to life, support or otherwise transport personnel.
 2. A minimum of five (5) wraps of rope around the drum is necessary to support the load rated
 3. The owner and / or the operator shall have an understanding of these operating instructions and the warning before operating the electrical winch. Failure to follow these warnings may result in loss of load, damage to the winch, property damage personal, or fatal injury.
 4. The owner shall retain this manual for further reference to important warnings, installation operating and maintenance instructions.

2.2 Environmental Precautions

The following environmental conditions may result in the possible causes of winch trouble.

- Low temperature below -10°, high temperature above 40° or humidity above 90% conditions.
- In an organic chemistry or explosive power conditions.
- In heavy acid or salty conditions.
- In the rain or snow condition.
- In a heavy general powder conditions.

2. Pre-Operational Precautions

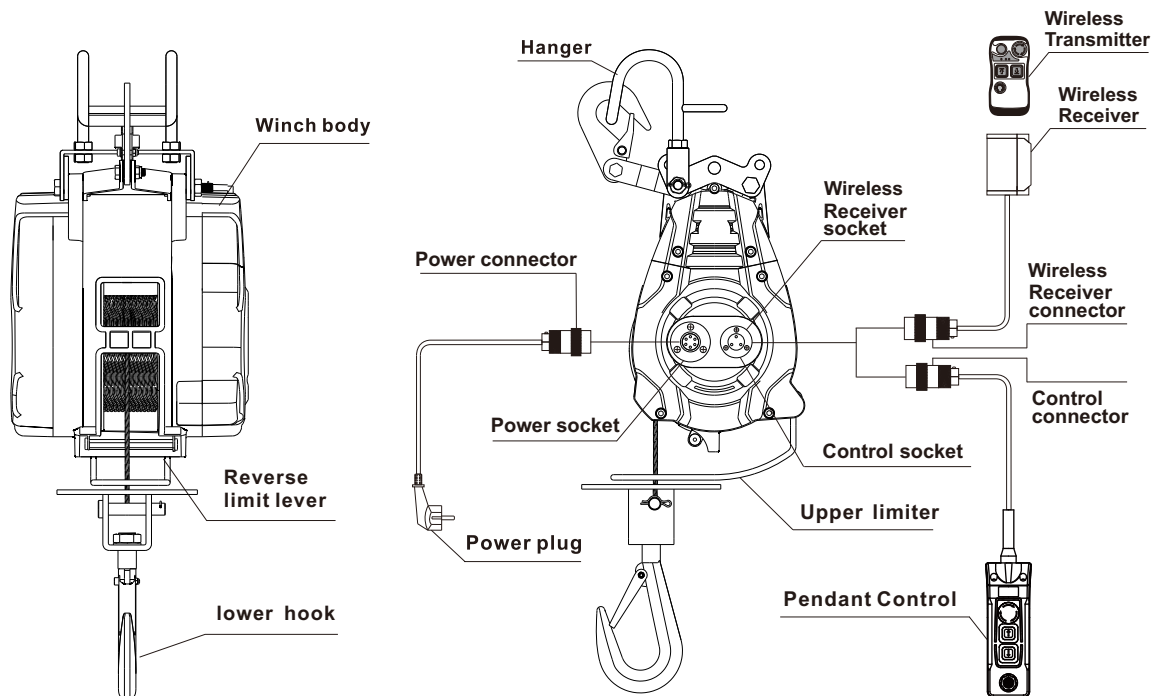
2.3 Handling Precautions

- To prevent the risk of electric shock, the power plug must be plugged into a matching outlet and grounded in good condition.
- Never try to lift a load higher than the rated load.
- 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 free.
- Be sure to lift a load vertically. Slack may allow wires to be caught in The drum.
- Prior to starting of use, carry out the daily checking without fail, and after confirming the safety of function. If having a counter rotation incurred, make sure to correct its rotation 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 welding.
- Wire rope with one or more of the following defects shall be removed or replaced immediately.
 - 1) kink, 2) distortion, 3) corrosion, 4) Broken wires more than 10%,
 - 5) Decreasing of diameter more than 7%
- Stop the operation if there is any queer noise or vibration in the gear box to be happened.
- 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.
- Never plugging (instant reverse-winding) or inching.
- Do not over the short time ratings of the winch.
- In order to prevent the layer down due to over loosening of rope irregular winding,
- Use a winch by fixing so securely that the rope around the drum is even.
- Be sure to fix a rope in the center of weight hook.
- Avoid catching the hook or lifting a load on a fixed obstruction.
- Always leave the pendant switch positioned immediately after use.
- Make sure that the load being lifting is well balanced and secured before starting.
- Avoid water splashes on the pendant switch.
- Never wrap the load with the wire rope.

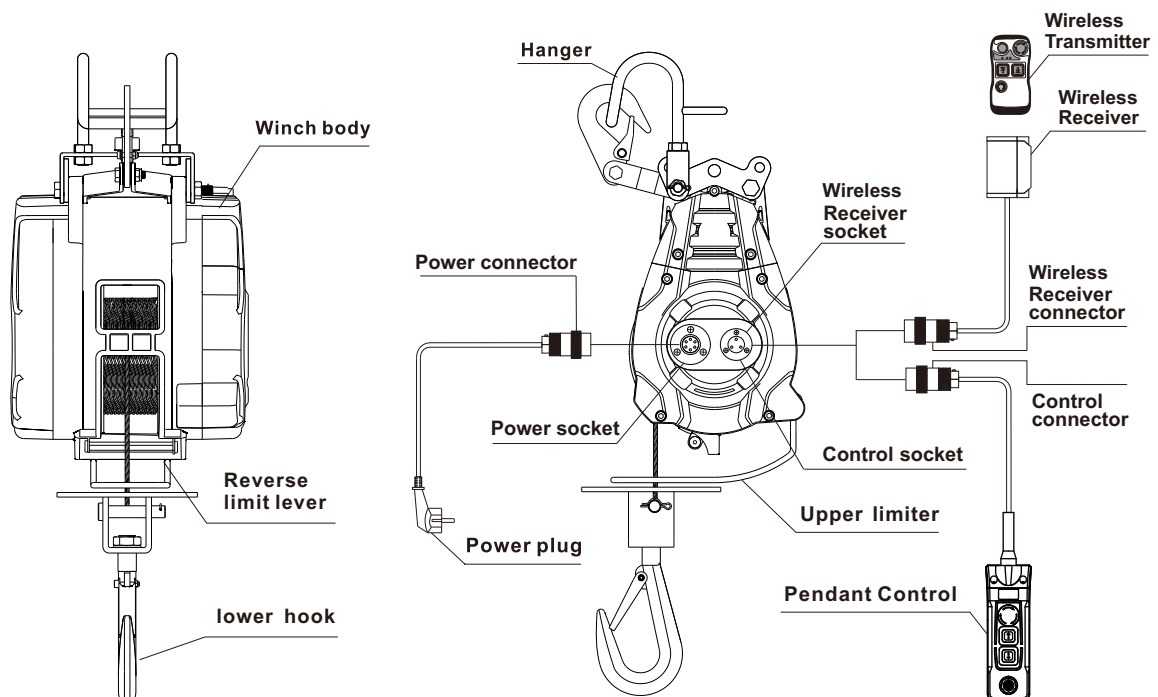
3. Installation

3.1 Winch Assembly

With Pendant Control and Remote Control (BL170,BL260)



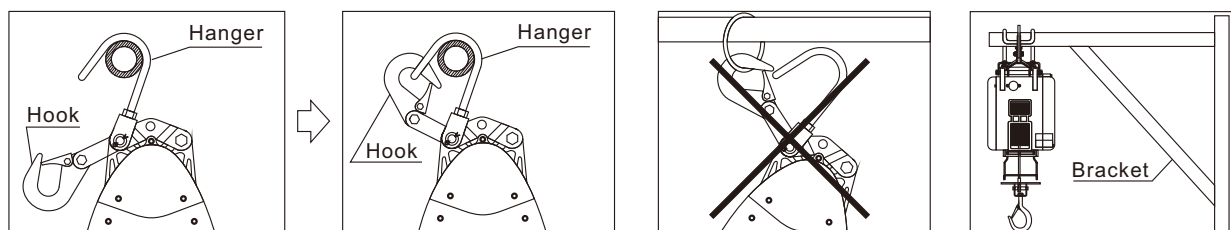
With Pendant Control and Remote Control (BL340,BL490)



3. Installation

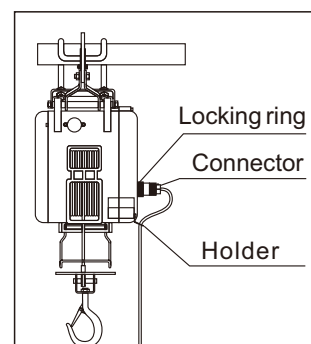
3.2 Mounting

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.



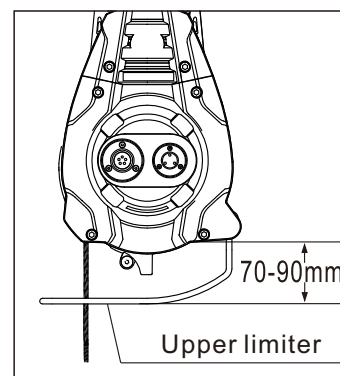
3.3 Connector insertion

- Insert the pendant control and power connector into pendant control and power socket of winch and clockwise tighten it by turning the locking ring. Be sure to lock the lead by a holder. Do not allow it to be caught by wire rope, drum or other obstacle.
- The length of power cord is subject to the distance of 20 meter, for any other cases, please use a bigger section cord such as 2.0 mm or 3.5 mm or a magnetic switch equipped to prevent a considerable voltage drop to be happened.



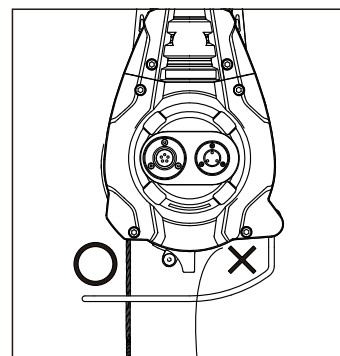
3.4 Upper Limit Prevention

- A special mechanism prevents an upper limit lift when lifting.
- When the lower hook touches the upper limiter. Lifting is automatically stopped.
- However, if the upper limiter is set too close to the winch body, it will cause serious damage to the limiter and the winch body.
- A suggested distance between the limiter and winch bottom is between 70-90mm.



3.5 Reverse Limit Prevention

- A special mechanism prevents a reverse limit when lowering.
- When lowering, a wire rope is fully extended, the wire rope will be shifted its position from O to X.
- When a wire rope touches the limit lever of reverse limit 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 O.



4. Maintenance and Replacement

4.1 Ratchet Brake Replacement & Adjustment

- It is highly recommended that any adjustments are carried out by a qualified technician at an authorized service center.

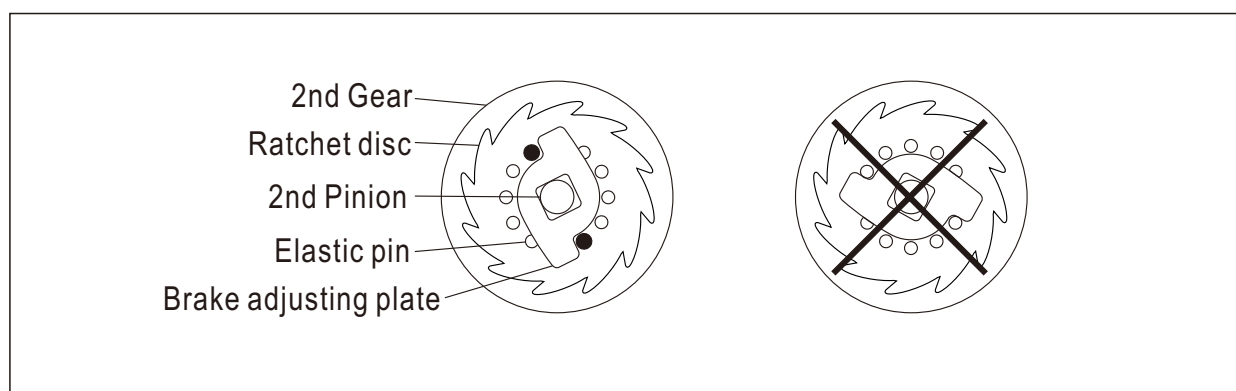
- Ratchet brake replacement & adjustment procedures.

Step 1. Remove retaining ring and elastic pin.

Step 2. Tighten 2nd gear / 2nd pinion counter-clockwise until holding to the ratchet brake.

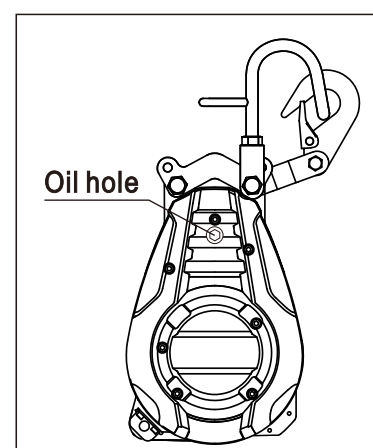
Step 3. Find the closed pole between elastic pins and brake adjusting plate (one between four selections), then put the brake adjusting plate onto the square hole of 2nd pinion.

Step 4. Insert elastic pins and lock the retaining ring.



4.2 Oil Lubrication

Gear lubrication is an important component in insuring long life of your winch. The type of lubricant will have a great influence. Winch are pre-lubricated at the factory and do not require initial lubrication. Re-lubrication interval depends upon service. Consult your local lubricant distributor on the selection that best fits your climate and application.



Grease Grade	Quantity	Intervals
Caltex Multifak EP, Cosmogear Sp460	250 cc	1 Year

4. Maintenance and Replacement

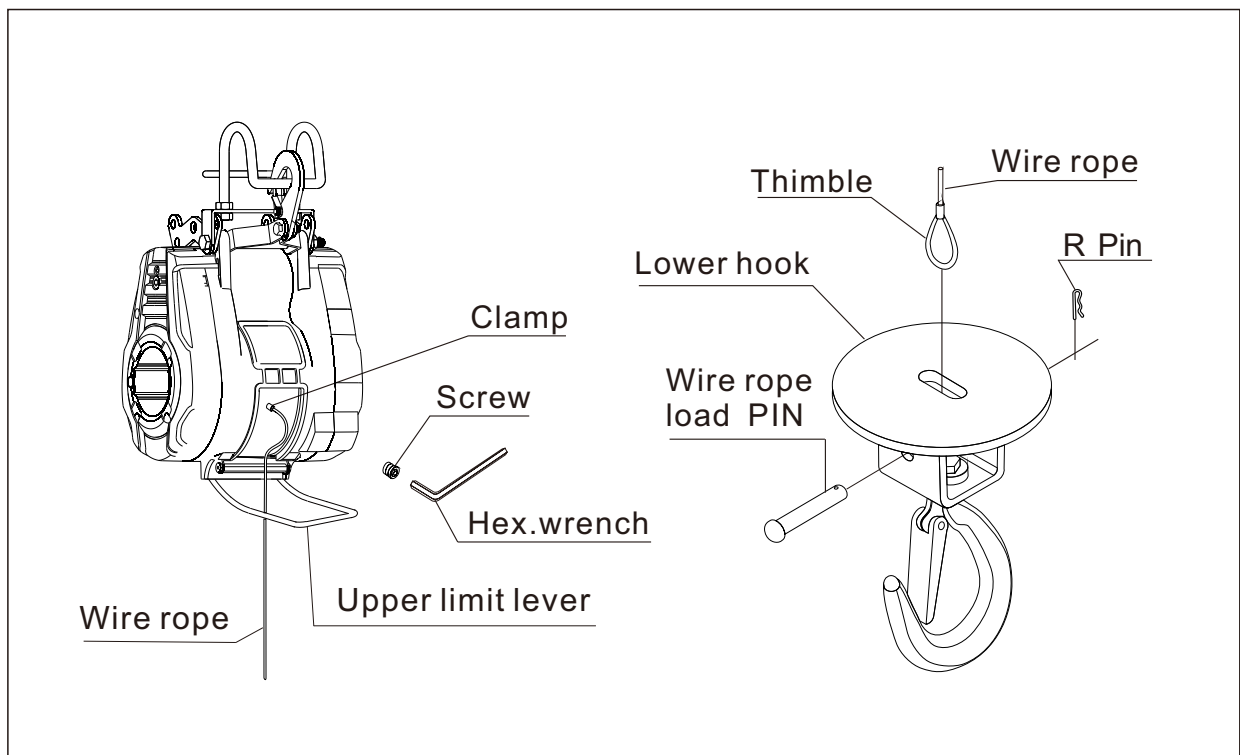
4.3 Wire Rope Replacement

Lower Hook

- Put a new wire rope through the hole of the round plate of lower hook.
- Insert a wire rope load pin through the thimble of wire rope.
- Insert a R pin through the wire rope load pin and bent it by pliers.

Drum

- Let a new wire rope with clamp through the limit lever and insert it into the hole of the drum.
- Put a screw into the hole of the drum and tighten it by a hexagon wrench.
- Press the ↑ button to rotate the drum in the lifting direction.
- An uneven winding of wire rope may cause the load to be swing, that will damage the rope and reducing its service life.



5. Checking Reference

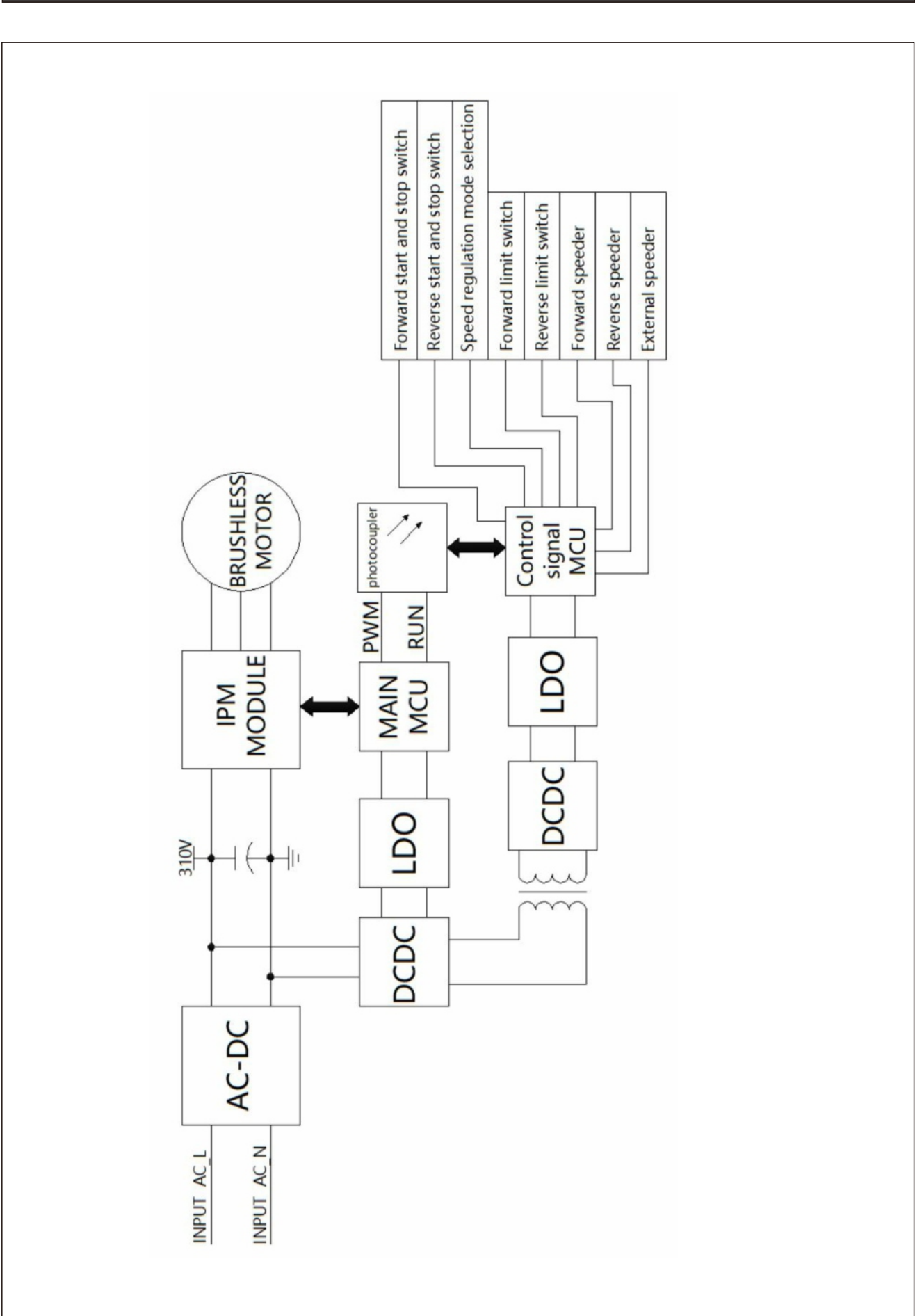
- The specified person performs the checking of winch.
- Divide the checking into daily checking and periodic checking.
- The checking items and checking method in daily and periodic checking shall be carried out and different according to the using frequency.

Checking Items			Checking Methods	Classification of Checks			
				Daily	Periodical		
					3 Months/ 20 Hours	1 Year	Years or 250 Hours
1	Brake	Performance Wearing of ratchet brake	Visual Decomposition check	▲			▲
2	Motor	Condition of insulation Staining , damage	Measuring,50MΩmin Visual	▲	▲		
3	Pendant control and Remote control	Working Outer damage of pendant control cords Attaching condition of earth line	Manual Visual Visual	▲ ▲ ▲	▲		
4	Safety device	Upper limiter function Reserve limiter function Distortion of upper limit lever Wrong rotary direction-winding	Visual Visual Visual Visual	▲ ▲ ▲ ▲			
5	Wire rope	Kink phenomena Broken wires more than 10% Decreasing of diameter more than 7% Deforming or corrosion	Visual Visual Visual Visual	▲ ▲ ▲ ▲			
6	Lower hook and load pin	Distortion Damage Loosening	Visual Visual Visual	▲ ▲ ▲			
7	Drum	Rupture of flange Wearing	Visual Visual	▲	▲ ▲		
8	Gear trains	Damage, wearing Condition of oil feeding	Visual Measuring	▲		▲	
9	Fastenings	Loosening	Manual	▲		▲	
10	Marking	Label and warning tag	Manual				

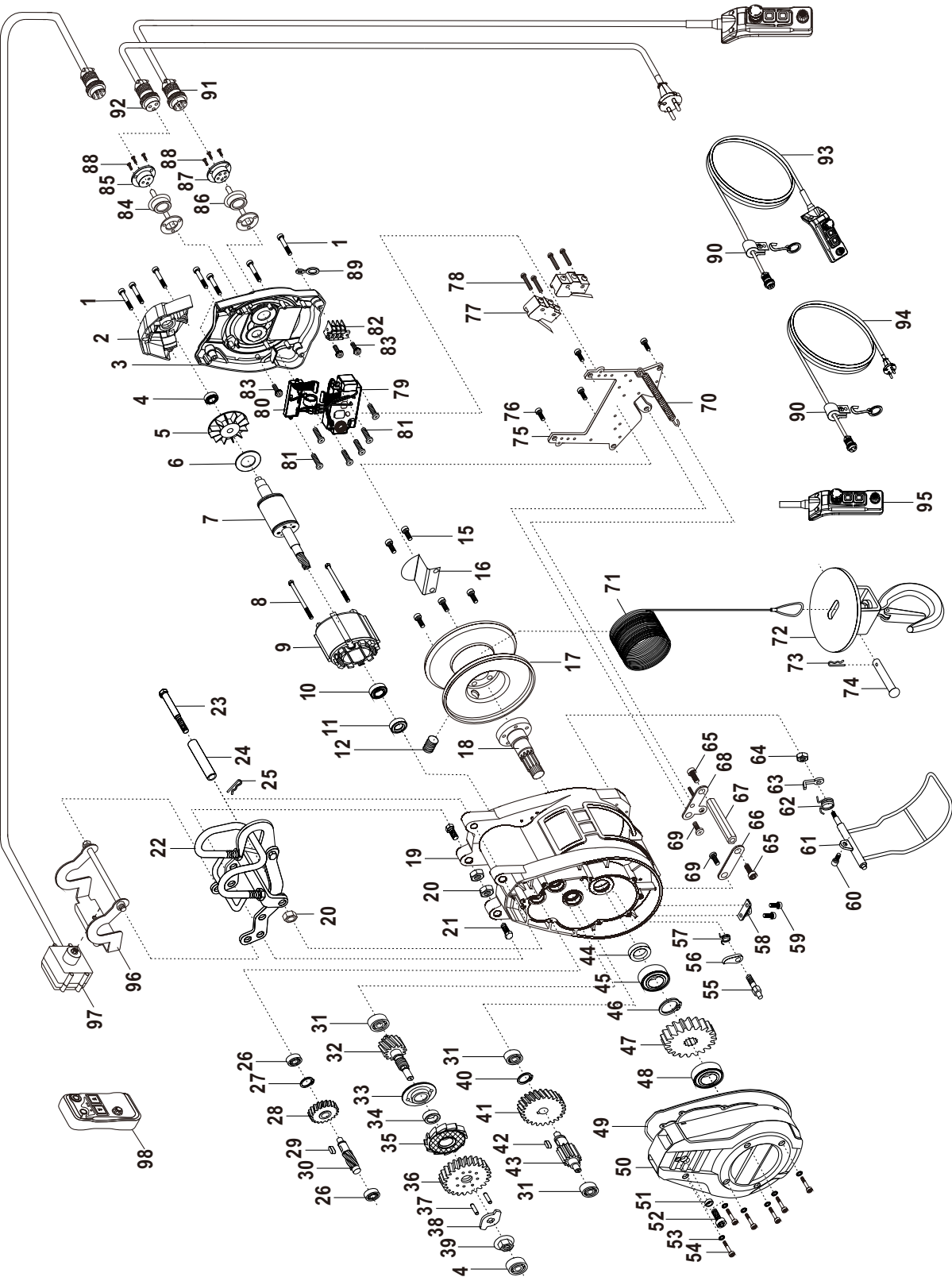
6. Trouble Shootings

Before performing any trouble shooting on the electric chain hoist, de-energize the supply of electricity as hazardous voltages are present in the electric chain hoist and in connections between components.

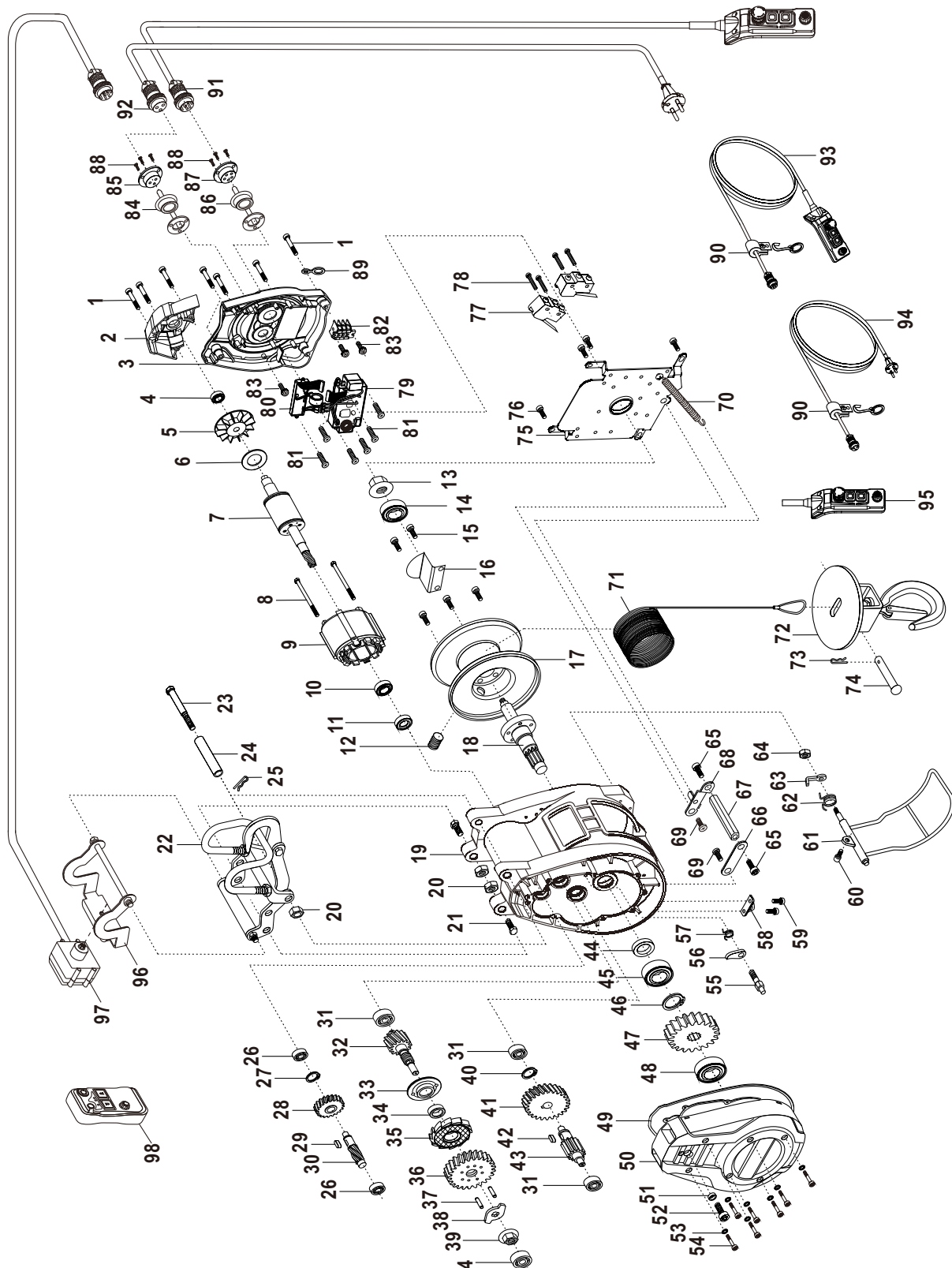
Symptom	Possible cause	Remedy
No reaction or open circuit	Damaged motor resulting from overload	Replace motor
	Open circuit on power lead or pendant control cable	Check power lead or control cord
	Damaged Motor or operating controller	Check Motor or operator control CPU
	Damaged motor resulting from overload	Replace motor
	Disconnection of power plug or control cable	Check or repair
Can lift, but fail to lower	Disconnection Down spring plate of limit switch	Adjust or re-stall the limit switch
	Burnt limit switch	Replace switch
	Malfunction of the contact of switch	Replace switch
Can lift, but fail to lift	Malfunction of the Down contact of switch	Replace switch
	Malfunction of the Up contact of switch	Replace switch
	Burnt Up switch	Replace switch
Short circuit	Melted contact of pendant control	Replace button contact of control
	Burnt motor	Replace motor
Fail to lift rated load	Overload	Reduce load
	Burnt parts of rotor winding	Replace rotor winding
	Short circuit on the commutator of the rotor core or burnt parts of rotor coils	Replace commutator of the rotor core
Fail to hold load after stopping	The gap of ratchet brake and brake Hub is too much	Replace the ratchet brake assembly
	The oil is too dirty or included	Replace oil
Abnormal sound in gear box	Insufficient oil resulting from oil	Replace oil seal and refill with sufficient oil
	Distortion of gear box	Repair or replace gear box



8. Part drawing (BL170,BL260)



8. Part drawing (BL340,BL490)



8. Part Name (BL170,BL260,BL340,BL490)

No.	Part Name	No.	Part Name	No.	Part Name
1	Socket Head Cap Screw	34	Brass Bushing	67	Reverse Limit Lever
2	Motor Cover	35	Ratchet Brake Assembly	68	Limit Lever Supporter B
3	Controller Cover	36	2nd Gear	69	Screw
4	Ball Bearing	37	Elastic Pin	70	Spring
5	Fan	38	Brake Adjusting Plate	71	Wire Rope
6	Wind Guide Ring	39	Lock Nut	72	Lower Hook set
7	Rotor	40	Retaining ring	73	R Pin
8	Socket Head Cap Screw	41	3rd Gear	74	Wire Rope Load Pin
9	Stator	42	Key	75	Panel Plate
10	Ball Bearing	43	3rd Pinion	76	Socket Head Cap Screw
11	Oil Seal	44	Oil Seal	77	limit Switch
12	Threaded Stud	45	Ball Bearing	78	Screw
13	Lock Nut	46	Retaining ring	79	Motor Controller
14	Ball Bearing	47	Load Gear	80	Operating Controller
15	Socket Head Cap Screw	48	Ball Bearing	81	Screw
16	Drum Side Cover	49	Gasket	82	Terminal Block
17	Drum	50	Gear Cover	83	Screw
18	Output Shaft	51	O-Ring	84	Power Socket Cap
19	Housing	52	Socket Head Cap Screw	85	Power Socket
20	Hex Nut	53	Elastic Washer	86	Control Socket Cap
21	Hex Screw	54	Socket Head Cap Screw	87	Pendant Control Socket
22	Upper Hook set	55	Pawl Pin	88	Screw
23	Hex Bolt	56	Pawl	89	Cable Support
24	Bushing	57	Pawl Spring	90	Cable Hanger
25	R Pin	58	Upper Limit Holder	91	Pendant Control Connector
26	Ball Bearing	59	Socket Head Cap Screw	92	Power Connector
27	Retaining ring	60	Socket Head Cap Screw	93	Pendant Control set
28	1st Gear	61	Upper Limit Lever	94	Power Cable set
29	Key	62	Spring	95	Pendant Control
30	1st Pinion	63	Lock Washer	96	Wireless Receiver Bracket
31	Ball Bearing	64	Hex Nut	97	Wireless Receiver
32	2nd Pinion	65	Socket Head Cap Screw	98	Wireless Transmitter
33	Brake Hub	66	Limit Lever Supporter A		