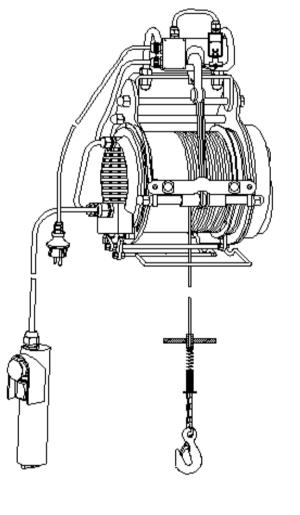
# Models 110VSH500 110VSH500WRC 110VSH800 110VSH800WRC 240VSH500 240VSH500WRC 240VSH800 240VSH800WRC

# **Pro Series Electric Hoist**

# **Operation Instructions**





### **Dear Customer**

Your New Generation Electric Hoist is easy to use. This powerful multifunctional hoist is an indispensable tool for every Commercial, Industrial or DIY use.

This new electric hoist was manufactured in compliance with applicable standards and the equipment safety act.

When using power tools, some safety measures must be taken to avoid injuries and damages.

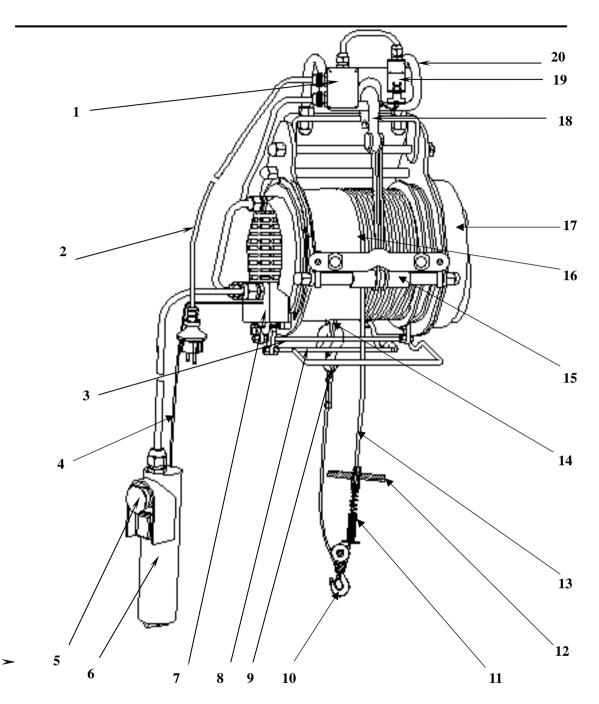
Please read these instructions and keep them in a safe place, so as to have them at hand at any time.

We are not liable for any accidents or damages caused by non-compliance of these instructions!

Suitable for commercial or professional applications!

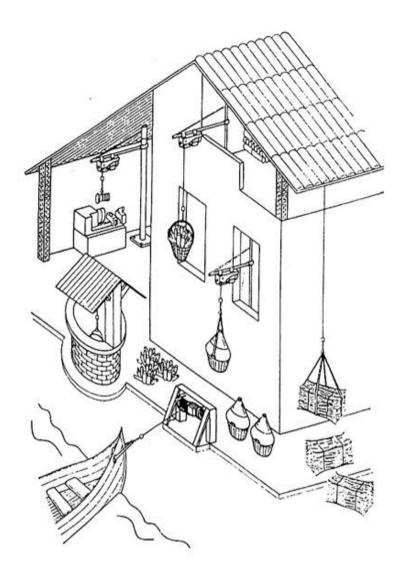
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# Overview

11. Spring buffer unit
12. Limit weight
13. Steel cable line
14. Double line hook hanging device
15. Automatic rope rolling device
16. Steel rope drum assembly
17. Gear box
18. Additional Protection hook
19. Safety switch
20. Hanging hook rack



# **Area of Application**

The Pro Series New Generation Electric Hoist is impressive with its minimal volume, unique design, lightweight, easy to install, and reliable usage. The motor uses a 110v or 230v 50HZ single-phase power supply and it is an ideal tool for lifting loads at various interior construction sites.

# Operation

The traditional electric hoists currently in the market have some defects as below:

1, Old and heavy construction and occupies a big space when in operation, in turn is difficult to install in many applications.

2, Steel rope of most standard hoists on the market don't have a unique rope roller device, this in turn causes damage and compression on hoist cable reducing life of the hoist cable considerably.

Our aim was to resolve the above common problem by developing according to customer feedback a Pro Series New Generation Electric Hoist which has the following main features:

1, Simple structure with steel hanger, easy to install, equipped with additional protection hook to make sure operation safety and reduce accident risk.

2, New designed Gear Transmission mechanism enhance greatly the Mechanical Transmission Efficiency.

3, Creative to use unique and innovative Automatic Rope Rolling, thoroughly solve the problem of easy-broken, squeezed, messed of steel rope, and the layer-overlapping when direction change of steel rope. With this device, completely ensure the steel rope wind totally orderly and tightly, to avoid the irregular squeeze and damage, therefore greatly improve the safety performance of steel rope.

4, Convenient way to change the steel rope in minutes, no need to disassemble the rope drum and machine.

5, Meet the Latest European Standard Attestation with Up and Down limit position device, enhancing greatly the operation security.

# This Pro Series New Generation Electric Hoist has got Patent of Invention in many foreign countries and China.

### Important Information

- While lifting a load if the raising power is low, low enough that the load can't be raised, check if the voltage on-site is 230V.
- The machine works efficiently with a voltage of 230V, if the voltage does not meet the requirements, one must reduce the load.
- Contact the dealer, manufacturer or professional repairman when the machine has a fault.

# **Primary Structure**

a, <u>Load hoisting motor</u>: This motor is a magnetic single-phase capacitor motor and is isolated in accordance with Class B. The magnetic mechanism is constructed as a break and serves as a reliable safety.

b, <u>Gear Box</u>: Here the triple reduction gearing is used. The cogwheel and the shaft are made out of a high quality, heat-treated, hard and tempered steel. The motor and the gear box are integrated as a single unit. The housing is produced through an aluminum die-casting and it is compact and nice.

c, <u>Hoisting drum</u>: The hoisting drum is welded together with a high quality seamless steel tube, inside which is mounted the motor.

d, <u>Frame work</u> is die-casted of high quality sheet steel. Its purpose is to protect and secure the electric pulley.

e, <u>Hook</u>: the hook is forged from high quality carbon steel. With the pulley hook, the lifted weight is doubled.

f, <u>Suspension style</u>: it is hanging coordinated with high-quality carbon steel hook and suspension bar, and equipped with hanging protect hook. Double-protection hanging effectively guarantee the sliding risk.

g, <u>Automatic rope rolling device</u>: this device can eliminate the elastic force of steel rope therefore making the steel rope wind neat and tightly with no mess and no squashed cable, in turn will greatly enhance the lifetime of steel rope over 30,000 cycles. The cable **MUST** never be operated in the down direction **WITHOUT** a small load or tension applied, failure to do so will result in damage to roller guide system and hoist cable.

h, <u>Handle controller</u>: On the controller there is a dual-direction switch, to raise and lower the hook. In addition there is an emergency shut-off switch, in order to stop the machine in case of an emergency.

i, Upper and Lower limited position device:

- When the load weight is raised and makes contact with the end-switch/stop ring, the end-switch will stop the circuit for safety.
- When the load weight is lowered and the steel rope is going to be unrolled, the steel rope will then press on the down limit brake and the brake is applied. For guaranteed safety, the switch contact is activated in order to interrupt the circuit and stop the machine.

j. The Pro Series New Electric Hoist is unique designed that it can't work without installing additional protection hook, thus insure the personal security better.

# Safety Information



Never use the machine to transport persons or animals! Never stand or work under a hoisted load.

Qualified trained person 16+ can only operate the machine.

Keep the immediate working environment clean.

Disordered work spaces and workbenches can cause accidents.

#### Please consider environmental influences

Ensure good illumination for your workspace. Do not use the device in potential fire hazard, easily flammable fluids or explosive surroundings, do not expose it to unnecessary weather influences, such as rain, damp, sun exposure, dust or cold.

#### Protect yourself from electrical shock

Avoid physical contact with grounded surfaces (e.g. pipes, heat radiators, stoves or refrigerators.

#### Keep this device away from unauthorized persons

Prevent children and helpers from touching the cable winch while it is operated. Please be sure that children and other persons keep sufficient distance to the work space.

#### Store the cable winch in a proper manner when it is not in use

Store the machine at a dry, high or lockable place, out of the reach of children including plastic bags, boxes, Styrofoam and etc.

#### Do not overload the cable winch, in any case!

Please do not exceed the maximum load capacity (see data plate, not load hook!). Do not use 2 or more machines to load same object.

#### Forbid to lift an attached/fixed object

It is prohibited, to lift a weight crookedly, or to pull it along the floor. It is prohibited, to\_transport hot molten masses.

#### Don't use the machine in the aggressive environments or under low temperatures.

#### Wear safety work clothes

Never wear loose clothing or jewelry; this could be caught by movable parts of the machine. Always wear safety equipment (such as rubber gloves, non-slip footwear, hearing and hair protection and etc.) is recommended when working.

#### Only use the power cord for its intended use

Never carry the tool or pull on the power cord and never pull on the cord to disconnect the power plug from the power outlet. Keep the power cord away from heat, oil and sharp edges. Check the power cable before every use for damages. Never use the winch, if the rope is worn out, knotted itself, or has a kink. Allow the cable to be replaced by a qualified professional.

#### Please be sure to maintain upright body position

Ensure a safe position and always maintain your balance, and not at an extreme angle Always make sure, that no bodily parts come into contact with the rotating pieces of the winch. Disconnect the cable winch from the power network when not in use Always disconnect the power plug from the power outlet if the device is not in use and prior to performing any maintenance.

#### Always work carefully and with an amount of caution

Please use common sense while working. Do not operate it if you are tired or under the influence of medicine, alcohol, drugs, or other narcotics.

#### Inspect components for damages

Prior to operating, please inspect it for possible damaged components, in particular damaged safeguard components, in order to ensure proper working conditions and fulfilment of the intended function. Inspect the setting and connection of movable parts, inspect all components for breakage, connection and other conditions, which might influence of the correct operation. Damaged components, in particular damaged safety equipment, must be repaired or replaced by a professional unless otherwise stated in this user manual. Please have any damaged switches repaired by a professional. Never use the machine if it cannot be switched off or on using the main power switch.

#### Use only the manufacturer recommended accessories

The use of accessories or additional devices other than the ones described in this manual can lead to injuries.

#### Have your cable winch repaired only by a qualified electrician.

This power tool complies with applicable safety regulations. Repairs must be performed only by qualified electricians using original replacement parts; otherwise, serious injuries may occur.

#### Forbid to lift side-pull load.

#### Prohibit unwanted start-ups on loose steel rope.

Be sure to hoist the loads with lowest speed from the ground. And the cable should be tense but not unwound when start loading from the ground.

<u>The end switch is not allowed to be used as an off-switch or be dismantled.</u> The end-switch is a safety device to prevent that the weight is lifted over the boundary.

# If the brakes stop functioning and the load lowers quickly, one should press the off-switch immediately and then the On-switch.

After unloading, please send the machine in for repairs to a qualified professional.

Do not leave the load hanging in the air long-term, to prevent the deformation of the pieces. While the machine is in operation do not carry out any repairs or inspections.

It is prohibited to change any part of the pulley or to disassemble it.

Depending on the frequency of use, after 20 hours of continuous operation, the machine must be taken in for a thorough maintenance check (at least once a year minimum).

Discard the machine after 1000 hours of operation which is added up according to work duty. Make sure to operate the Emergency Stop Switch to stop machine in case of dangerous and emergency situation.

Reset the red switch head to operation status in the direction of the arrow (clockwise) until the danger has passed.

Туре	200/400	250/500	300/600	400/800
Rated voltage	230 <b>V~</b>	230 <b>V~</b>	230 <b>V~</b>	230 <b>V~</b>
Rated frequency	50 Hz	50 Hz	50 Hz	50 Hz
Power rating:	1000W	1000W	1050W	1300W
Rated current	4 .3A	4 .3A	4 .6A	5.6A
Max. loading capacity -for single cable -for double cable	200 kg 400 kg	250 kg 500 kg	300 kg 600 kg	400 kg 800 kg
Cable speed -for single cable -For double cable	8m/min 4m/min	8m/min 4m/min	8m/min 4m/min	8m/min 4m/min
Max. Hoisting height -for single cable -For double cable	38m / 19m	38m / 19m	34m / 17m	32m / 15m
Cable diameter	4.0mm	4,0 mm	4,5 mm	5,0mm
Tensile strength	1870 N/mm2	1870 N/mm2	1870 N/mm2	1870 N/mm2
Protection rating	IP65	IP65	IP65	IP65
Motor category	M1	M1	M1	M1
Work duty	S3 20%-10min	S3 20%-10min	S3 20%-10min	S3 20%-10min
Protection rating	1	1	1	1
NET Weight	29kg	36kg	30kg	37kg
Sound pressure level (LWA)	71 dB(A)	71 dB(A)	71 dB(A)	71 dB(A)

# **Technical Specifications**

 Please be clear the Work Duty before operation: S3 20%-10min, run 2min, rest 8min, one cycle of every 10min

• The standard equip of Hoisting height is 32m, if need longer please state clear when order.

The LWA values stated here only indicate the loudness emitted by this machine. Whether the operator is required to wear hearing protection can't be determined here. This depends on how much noise reaches the ear of the operator. And this, among other things, depends on the existing ambient conditions (such as other sources of noise nearby). Even though it may not be explicitly required, it is in your own interest to always wear hearing protection when operating this machine.

#### **Electric Principle Drawing**

Be sure to fix 10 Amp fuse or air switch on the loop of power supply when using this cable winch.

#### **Environmental Protection**



Discarded electric appliances are recyclable and should not be discarded in the domestic waste! Please actively support us in conserving resources and protecting the environment by returning this appliance to the collection centres (if available).

### Preparation

**CAUTION** This new electric hoist is designed for use with professional and construction applications! It is not intended use for lifting people. This device can be operated without hazards only if you read this user manual and safety instructions and closely follow all instructions.

Prior to start-up operation, please be sure to make some preparations:

- Make sure the voltage of your power network complies with the voltage listed on the data plate and that the device is equipped with the correct power plug.
- Please make no-loading test before start-up operation at first, and please check:
   a, The flexibility of up/down operating switch to insure the controlling of the hoisting and lowering of load hook..

b, The flexibility of up limit bracket to make sure the cut-off of circuit.

c. The flexibility of down limit bracket to make sure the cut-off circuit when the steel cable is nearly used up.

d, Any abnormal sounds when start-up operation.

e, The steel rope is possible damaged (split or bent), or reach 20 hours after using, change the rope immediately.

- Please inspect the brake disc before operating at every 20 hours after load, need to make 1.1 times mobile load test and 1.25 times dead load test, to check the brake disc.
   If the load lowers or the brake is not flexible, replace the relevant components in time.
- Please inspect the hook before operation is possible damaged or distortional, replace it in time.
- Operation using a residual current protective device (Red Emergency Stop Switch) offers additional protection under danger and in emergency circumstances, then screw the switch head as the arrow direction to recover operation after removing the danger.



Please be sure to lubricant parts. Daub the lubricant on the load hook, cable drum shaft, slow down box, and bearing every half a year.
 Please lubricant the nesting cable drum shaft when replacing the steel cable every time.

Please lubricant the nesting cable drum shaft when replacing the steel cable every time. Immediately replace the cable if damaged or splinted.

• Please perform any rework and maintenance tasks only if the power supply is isolated.

 Please inspect the device for transportation damages. Immediately report any possible damages to your seller.

#### Installation

The new electric hoist is easy to install with hanging hook rack. It can directly install on the crossbeam which external diameter is suggested  $\Phi$ 50mm. The crossbeam is fixed in the stand pillar, which is mounted in the work site as user's requirements. Pay attention to mount the stand pillar firmly enough to loading weight long period.

<u>Please make sure of the protection hook in the proper fixed position, put the safety key</u> in to the safety switch to enable operation. Failure to do so, the hoist will not power up <u>or move.</u>

### Operation

a ) The new generation electric hoist is operated using the operating handle. When operating the upper position of the switch, the load is hoisted up. When operating the lower position, the load is lowered. Never switch directly from hoisting to lowering or vice versa. Always stop the machine prior to changing directions.

b ) Operate the Emergency-Off switch to immediately stop the cable winch in case of an emergency and to secure against restart. To reset the device to operational status, first turn the Emergency-Off switch clockwise, which will unlock the red key. The cable winch is now operational.

c) This electric hoist is designed with limit configuration to limit stop. When load hook is hoisting up to topmost position, the limit weight touch the up limit bracket, the micro-switch of up limit bracket can cut off the circuit and make the motor stop to insure the safety of operations; When load hook is lowering down nearly to use up the cable, the micro-switch of down limit bracket start work and cut off the circuit and make the motor stop.

d) Attention! If the cable has been unwound to the point where the red indicator mark is visible, the cable winch must be stopped. Under no circumstances should the cable be unwound past this point'

e) If the cable winch cannot hoist a load immediately, switch it off immediately to prevent damages and accidents.

f) Please be sure that the load is securely fastened to the load hook. Maintain the largest possible distance to the load and steel cable during operation.

g) Upon lowering a load, please remember that the electric hoist may still unwind a few more centimetres after it was stopped. Therefore, please stop in sufficient time.

h) Please be sure that the steel cable cannot be moved more than 15° to the side.

i) The cable winch can be operated with a single or double cables, therefore the permissible rated load, see Technical Specifications, can vary.

j) After unpacking the items, check to make sure that all pieces and accessories correspond with the directions. Check to see if the rope winch has any dents or damage, if the cable connections have any defects and if the motor shows any signs of water damage. k) The electric pulley uses a single-phase energy power supply. The nominal voltage is 230V  $\pm$  5%, the nominal frequency is 50Hz + 1%. The motor must be safely grounded. In the circuitry of the power supply an over-current protection must be installed.

I) After connecting the power supply, the pulley can then be raised and lowered in Jog-mode. One can raise and lower start-up during a dry-run. First when the up and down movement is stable and the brakes work flawlessly, once can test the pulley with a dummy load.

m) The surrounding area temperature should be between 50-  $40^{\circ}$ C. The height about sea level needs to be under 1000m. The area dampness should be at 30-95%.

The temperature for the storage and transport should be about -25  $^\circ$ C up to 55  $^\circ$ C.

#### Intermittent rating

This machine is designed for operating type S3 20% - 10 min (periodic intermittent operation). The relative duty cycle is 20%, which means that the device can be operated at rated load for 2.0 minutes during each operating cycle and must then be switched off for 8.0 minutes to cool off. The device can therefore be continuously used for a duration of 20% of the total operating cycle of 10 minutes at rated load.

#### **Overload**

a) The cable hoist is not suitable for continuous operation. The motor is protected from overload and overheating by a thermol temperature switch.

b) If the permissible operating time is exceeded, the motor temperature will increase and the temperature switch will shut the cable hoist off. The temperature switch will automatically switch back on after a cooling phase, normally 8-10mins

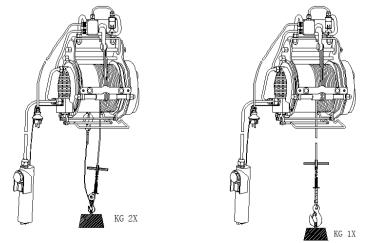
c ) In case of a strain on the cable hoist with a lesser load, the operating time will increase and the cooling time will decrease.

d) Attention! In case of direct exposure to sunlight, the temperature of the casing will increase significantly, which will also decrease the permissible operating time. It is therefore possible that the temperature switch will switch off after a short time period and the cable winch will shut down. Please wait until the device is cooled off.

#### **Operation with double cable line**

Loosen the nuts of the 3 screws located on the additional load hook and remove the cover plate located on the side. Place the steel cable around the deviating shaft and reattach the cover plate and nuts. Please be sure that the load hook / deviating shaft is installed properly and that the nuts are securely tightened.

Please insert the load hook attached to the cable into the hook bracket of the mounting casing.

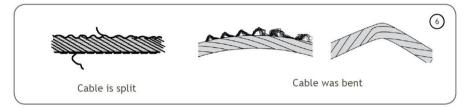


# **Maintenance and Cleaning**

Disconnect or isolate the power supply prior to performing any work on the device. Clean the device using a damp cloth and some liquid soap. Never use cleaning agents or solvents, these could damage the device's plastic parts and be harmful to the operator.

Regularly inspect the total length of the steel cable for damages as well as the functionality of the limit bracket (2) (Wind cable winch until the limit weight (5) activates the limit bracket of the limit switch).

If the steel cable is damaged (split or bent, see below), a professional must replace it using original replacement parts from the seller.



During assembly of the cable, it is imperative to remember the maximum limit weight (5) in order to ensure a secure limit stop.

Only Inspect the free movement of all mechanical components after the power plug has been disconnected or isolated.

Replace lost parts only with original parts.

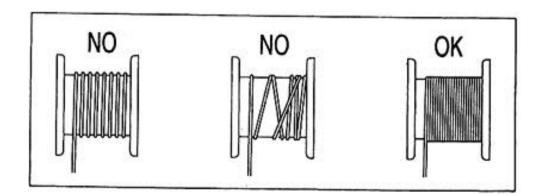
Return the device to your seller to ensure professional maintenance.

The machine should be inspected totally after 20 hours continuously use, time according to operation frequency, usually make a repair annually.

Important:

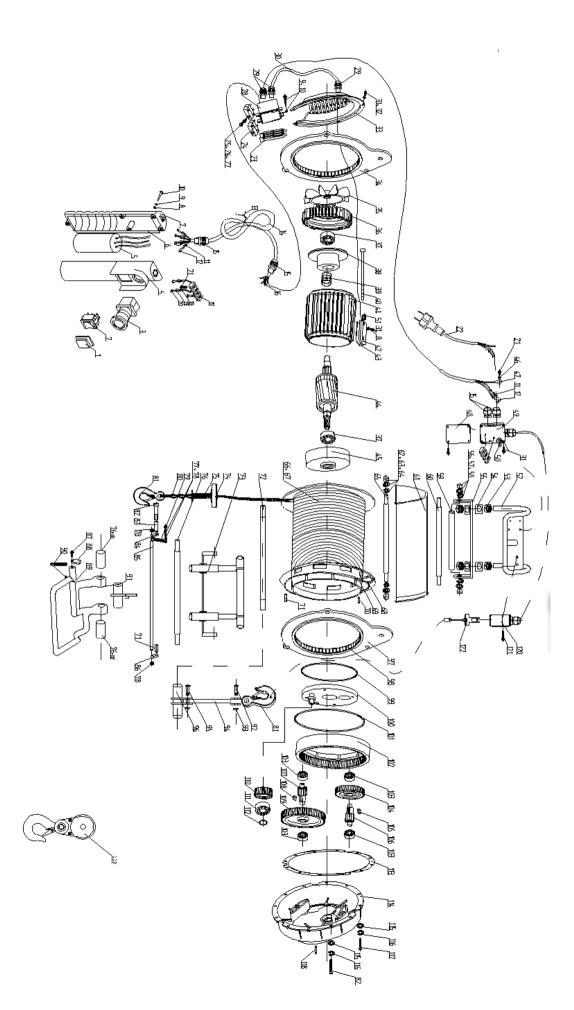
Winch or Hoist Cables are not covered by any warranty, it is the responsibility of the operator or user to maintain the cable and replace if becomes damaged or frayed.

# Correct winding of steel rope



# Problem-Solving

Common Malfunction	Cause	Solution
The Off-On-Switch is used but	1. It is not plugged into the power	1. Connect the item to the power
the motor does not turn	supply.	supply.
	2. The wires are broken or ripped.	2. Check the wires and plug it in
	3. Switch Malfunction	again to the outlet.
	4. The capacitor is burned through.	3. Repair switch or change it
	5. End-switch has not been reset	4. Change your capacitor
	or a limit switch error	5. Check the end-switch and
	6. The thermal switch has suffered a	replace the limit switch.
	wire break.	6. Wait until the item cools down,
		or replace the thermal switch.
The dual-direction switch has	1. The voltage offered is too	1. Adjust the work, depending on
been activated. The motor is	small.	the power supply
very loud, can however not	2. The capacitor has become	2. Change power supply.
pick-up the load.	damaged.	3. Allow the machine to be
	3. The brake is not completely open.	repaired from
After a power loss the brakes	<ul> <li>The air between the brakes is too</li> </ul>	<ul> <li>Allow the machine to be</li> </ul>
do not hold or the machine	large	repaired
slips down	<ul> <li>The brake spring is ripped.</li> </ul>	from a qualified repair service.
	<ul> <li>The brake disk is locked</li> </ul>	
	<ul> <li>The brake disk is at the start</li> </ul>	
	already dirty.	
The noise of the machine	1. Badly oiled	1. Oil/Grease machine officially.
becomes louder	2. After a long use, the cogwheel	2. Change the cogwheel or
	and bearings are damaged.	bearings.
	3. Badly installed or dent	3. Check installed parts or let
		a qualified
The rope winch has too much	1. Earthed error or is not possible	1. Checked earthed wires and
voltage.	2. The internal connectors are	properly connect them.
	touching the housing	2. Check all internal connections
End-switch is not functioning.	1. The end-switch is defect	1. Switch off or change
	2. End-switch is blocked	2. Check, repair, and change
		End switch



No.	components	Item	material	Nu	No.	components description	Item.	material	Num.
	description			m.					
1	Waterproof cover		Silica gel	1	41	Motor cover			1
2	Bilateral switch	Н	Y12-9-3	1	42	Waterproof box		PA	1
3	Emergency stop switch	LAIS	36: AC250V	1	43	Airproof loop of waterproof box		rubber	1
4	Up cover of controlling handle		PA	1	44	rotor			1
5	capacitor	45	5UF+15UF	1	45	Front cover		Alu.	1
6	Airproof loop of controlling handle		rubber	1	46	Spring washer	φ3	Q235	12
7	Lower cover of controlling handle		PA	1	47	Terminal piece	φ4×0.5	copper	1
8	Waterproof ring	φ4	PA	9	48	Up cover of switch box		PA	1
9	Flat washer	φ4	Q235	9	49	Lower cover of switch box		PA	1
10	Cross pan head screw	M4×16	;	9	50	Airproof loop of switch box		rubber	1
11	Plug-in reed jacket	6.3	PVC	6	51	Coil of waterproof cover		rubber	1
12	Plug-in reed	6.3	copper	6	52	Hanging hook rack		steel	1
13	binding			1	53	screw	M12	Q235	4
14	Controlling handle cable line			1	54	Flat washer	φ12	Q235	4
15	Cable gland	M16×∲9		5	55	Base of hook rack		Q235	1
16	Copper head of cable line		copper		56	M12 locknut		Q235	2
17	Connecting ending	3		1	57	$\Phi12$ flat washer		Q235	2
18	Eliciting line	0.75M	l copper		58	$\Phi12$ spring washer		65Mn	2
19	Plug-in reed jacket	4.8	PVC	4	59	Fix tube of hook rack		Q235	1
20	Plug-in reed	4.8	copper	4	60	Connecting pole of hook rack		45#	1
21	Cross pan head screw	M3×14	ł	12	61	Rope drum cover		PA6	1
22	Waterproof plug and cable line			1	62	nut	M10	45#	6
23	Lower cover of junction box		ABS	1	63	Spring washer	φ10	65Mn	6
24	Position limited switch			2	64	Flat washer	φ10	Q235	6
25	Snap ring	φ8	65Mn	3	65	Connecting pole of end plate		45#	1
26	Button spring loop		rubber	3	66	Rope drum assembly			1
27	Position limited button	φ8	Q235	3	67	Steel rope	φ4.5	45#	1
28	Junction box		ABS	1	68	Aluminum buckle		Q235	1
29	Cable gland	M16× ф7	PA	3	69	Rope pin		Q235	1
30	Cable line			1	70	Lock screw	M6×8	45#	4
31	Cross head screw	M4×12	2 45#	11	71	screw	M6  imes 12	45#	8
32	Flat screw	♦4×0.5× ♦7.5	Q235	11	72	Rope rolling pole		45#	1
33	Fan cover		PA	1	73	Rope rolling assembly			1
34	Left endplate assembly			1	74	Balance weight			1
35	fan		PA	1	75	Spring buffing assembly			1
36	End cover		Alu.	1	76	Connecting pole for pulley hook		45#	1

37	Rolling bear	6202		2		77	Cross pan head screw	M6×38	Q235	1
38	Black assembly			1		78	Outer hex bolt	M6	45#	6
39	Brake spring		65Mn	1	1	79	Lower position limited Spring	φ0.5	Q235	1
40	Outer hex bolt	M5  imes 17	Q235	4		80	Aluminum buckle		Alu.	
		5								
81	hook			1		101	Airproof loop	$\varphi184\!\times\varphi3$		1
82	lower position limited sleeve		Q235	1		103	bearing	6201		4
84	Lower position limited block		PA6	1		104	Helical gear		40Cr	1
85	Lower position limited pole		Q235	1		105	Flat key	5×18	45#	1
86	Lower position limited base		PA6	1		106	Gear box shaft I		40Cr	1
87	Inner hex bolt	M6  imes 20	45#	3		107	Gear box shaftII		40Cr	1
88	Up position limited block		PA6	1		108	Flat key	$5 \times 20$	45#	1
89	Up position limited frame		PA6	1		109	Spur gear		40Cr	1
90	Up position spring		65Mn	1	1	110	Idle gear		40Cr	1
91	Hook components		Q235	1		111	Ball bearing	3203-2RS		1
92	Fixed pin	φ8×25	45#	2		112	Snap ring	φ17	65Mn	1
93	Split pin			2		113	Washer paper			1
94	Connecting piece		Q235	1		114	Gear box		Alu.	1
95	Fixed pin	φ8×27	45#	1		115	washer	φ6	Q235	18
96	Load hook components			1		116	Spring washer	Φ6	Q235	18
97	Right end plate assembly			1		117	Inner six angle cylinder screws	M6×16	45#	11
98	Pin roller	φ8×12		11	1	118	$\phi6\! imes\!20$ cylinder pin			2
99	Airproof loop	φ150		1		119	Pulley assembly			1
		$\times \phi 2$								
100	Gear box components			1		120	switch			1
						121	Cross pan head screw	M4  imes 26	45#	2
76-0	Left up position limited sleeve			1		122	Plug-in components			1
1										
76-0	Right up position limited sleeve			1						
2										