Wire Rope Hoist

User Manual

I. Usage

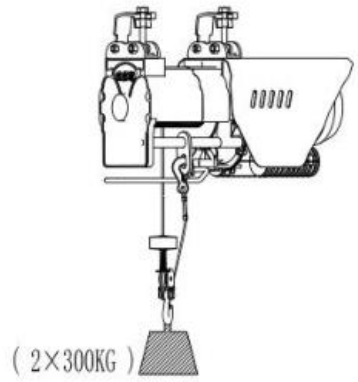
This Wire Rope Hoist is a new type of lifting device for bulky loads, which can be installed quickly and easily. It is an efficient high-speed aesthetically designed lifting device with an aluminum alloy body; it has high-end features such as a floor braking mechanism, and can be operated by one person. It is safe to use, easy to install, highly durable, has high lifting efficiency and delivers long service life. The motor uses 110V/50Hz single-phase power supply, and is an ideal semi-professional lightweight lifting device for material transportation, handling, loading and unloading, suitable for scaffolding construction sites, factories, warehouses, as well as for lifting requirements in households.

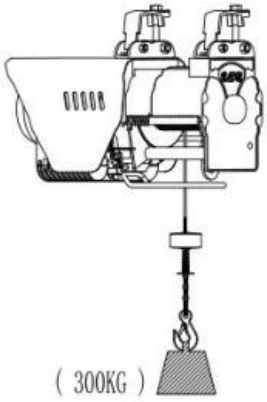
This Wire Rope Hoist has the following advantages:

1) Aluminum alloy body, aesthetically designed, with high-end features.
2) Fast and efficient: 15M/min.
3) Suspension buckle hook locking mechanism, which ensures that no swaying is caused when lifting loads, making it safe to use. It can be quickly installed and operated by one person, in strict compliance with GS certification standards.
4) Unique floor braking device, which prevents the hoist from running when the load lands or there is no load, which may result in the wire rope having more play, getting tangled or breaking, thereby enhancing the wire rope's service life.
5) Threaded groove rope drum and wire rope automatic reversing device.
6) Lifting height up to 25 m

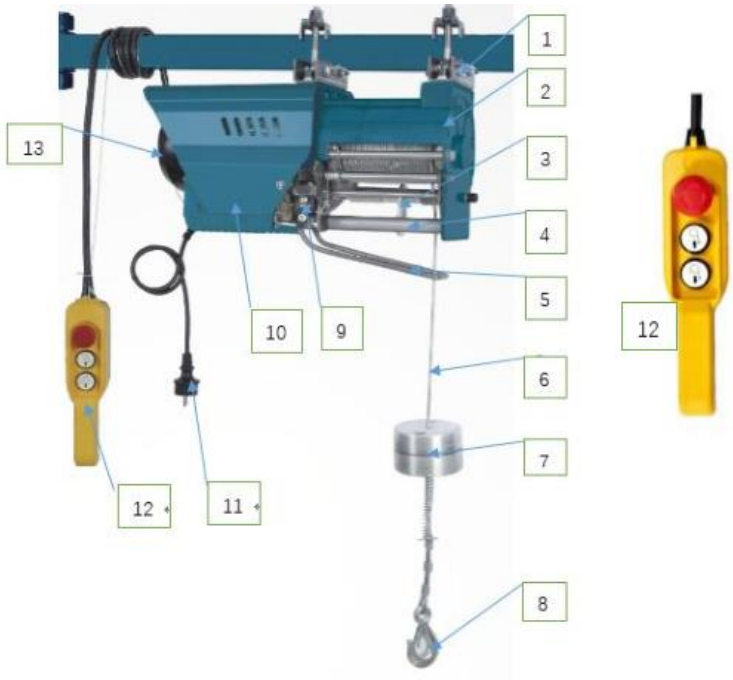
This Wire Rope Hoist is a new type of lightweight lifting equipment that can be used for material transportation, handling, loading and unloading, as well as a new type of vertical material transportation equipment that is indispensable in high-rise building construction.

Block and tackle combination, double lifting load:





II. Main Structure



1. Buckle 2. Aluminum alloy body 3. Double hook 4. Floor braking mechanism
5. Upper limit frame 6. Wire rope 7. Cylinder 8. Load hook
9. Floor brake switch 10. Housing 11. Power plug cord
12. Control handle (with cable) 13. Motor

1. Lifting motor ⑪: The motor is a single-phase capacitor induction motor with B-class insulation, and uses a paramagnetic mechanism for braking, ensuring safe and reliable use.
2. Speed reducer gearbox: Adopts double reduction gearing; the gear and shaft are made of high quality steel that has undergone quenching and heat treatment. The integrated motor and speed reducer gearbox housing is made of aluminum, and is compact, durable and aesthetic.
3. Lifting mechanism: Includes the rope drum (threaded groove rope drum, wire rope automatic reversing device), wire rope, cylinder and load hook.
4. Suspension structure ①: New suspension buckle hook locking mechanism ensures that the load doesn't sway when lifted, and is highly safe, easy to install, and can be operated by a single person.
5. Floor brake mechanism ④: Prevents the hoist from running when the load lands or there is no load, resulting in the wire rope having more play, getting tangled or breaking, thereby enhancing the service life of the wire rope; (When the cylinder touches the ground, the floor braking mechanism ④ shuts off the hoist as the torsion spring plate makes contact with the floor brake switch ⑨, ensuring safety).
6. Control handle: The control handle has bi-directional switches to control the lifting hook’s ascent and descent; it is also equipped with an emergency brake switch for emergency shutdown.

7. The product is designed with an upper and lower limit floor braking mechanism: 1) While lifting, when the cylinder touches the limit switch, the hoist is automatically switched off, ensuring safe operation; 2) While descending, when the cylinder lands on the ground, the button on the floor braking mechanism ④ touches the floor brake switch ⑨ causing the limit switch to cut off power supply, shutting off the hoist and thus ensuring safe operation as well as preventing the wire rope from getting tangled or damaged.

III. LiftinGear Wire Rope Hoist

Model	BLDN-YT-STL200/400
Rated voltage	230V
Rated frequency	50Hz
Rated power	1000W
Rated current	4.3A
Rated lifting capacity (KG) Single hook lifting capacity Double hook lifting capacity	 200KG 400KG
Lifting speed (m/min) Single rope lifting speed Double rope lifting speed	 15m/min 7.5m/min
Wire rope diameter (mm)	4.0mm
Lifting height (m) Single rope lifting height Double rope lifting height	 25m 12.5m
Motor level	M3
Work duty	S3 20%-10min
Insulation class	B
Protection level	IP54
Net weight of single unit	28.0KG
Noise value ※	71 dB(A)

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※ The value only indicates the maximum noise emitted by the unit. It does not indicate if the operators are required to wear hearing protectors, which depends on noise that reaches the operators' ears as well as noise in the surrounding environment (such as nearby sources). Even if there are no clear safety requirements, operators should always wear hearing protection devices while operating the device.

This product adopts S3 20% - 10 min intermittent operating cycle system; it runs for 2 min, and then shuts down for 8 min, intermittently working on a 10 min cycle.

IV. Installing and Commissioning Wire Rope Hoist

1. After opening this Rope Hoist packaging, check if the accessories and spare parts are consistent with the user manual, the hoist is not damaged in any way and wiring has been disconnected. Also check if the motor is wet or has water in it; if it does, then it should be completely dried before using to ensure that insulation resistance is greater than 0.5M Ω.

2. This Wire Rope Hoist uses a new suspension buckle locking mechanism for installation. Hang the buckle directly on the beam and lock the nut. The installed support beam's size should match that of the buckle. In the case of a round tube beam, the round tube buckle provided by the manufacturer can be used (It is recommended to use a round tube with external diameter of Ø48 mm with a solid wall for the support column**)**. If possible, select a rough surface rather than painted or smooth surface to increase adhesion. In any case, the verticality and rigidity of the Ø48 tube must be ensured. If the wire rope hoist needs to be installed according to the method shown in Figure 1, the support column should be installed in the corresponding work site as per the user's requirements. The support column should have a diameter of Ø48 mm with a solid wall support, and must be installed in a stable position, and capable of withstanding rated load-carrying weight for long durations. The corresponding hoist bracket must be securely installed. (As shown in Figure 1)

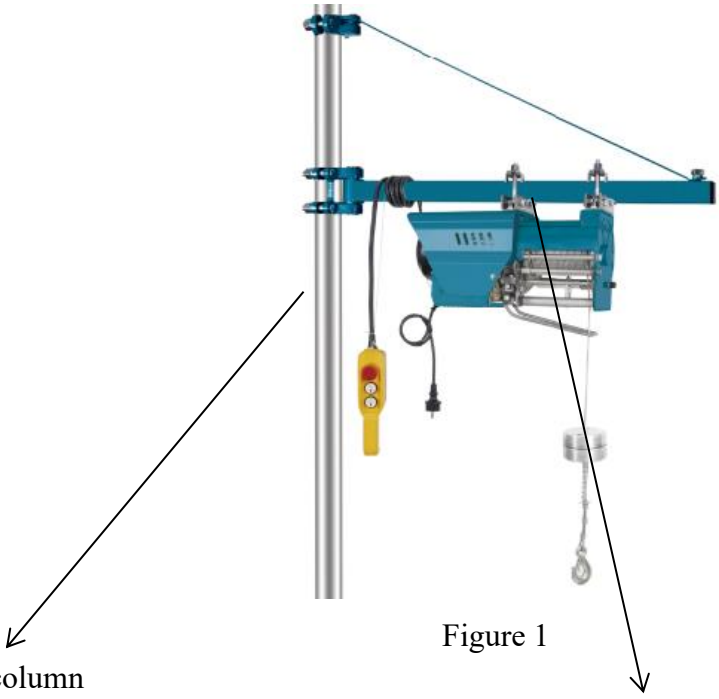


Figure 1

Support column

The support column and hoist bracket must be securely installed. The buckle must be securely installed and should not shake. The nuts should be fastened tightly so they don't loosen or fall off.

3. If the wire rope is damaged during use and needs to be replaced or you prefer using your own wire rope, ensure that the diameter, safety factor and other requirements meet the manufacturer's certification standards. (Wire rope winding method is shown in Figure 2)

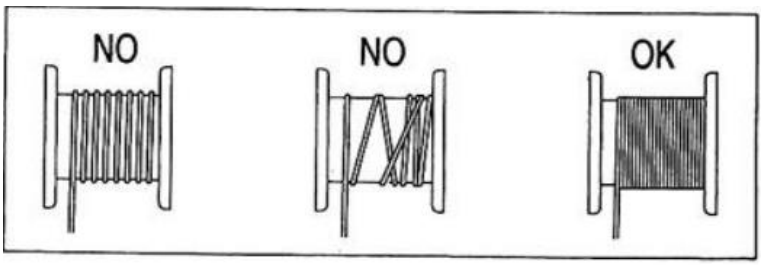


Figure 2

4, Double rope using pulley installation diagram (Figure 3)

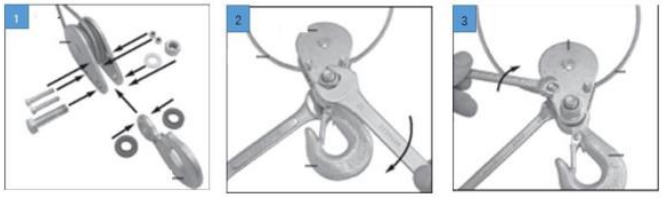
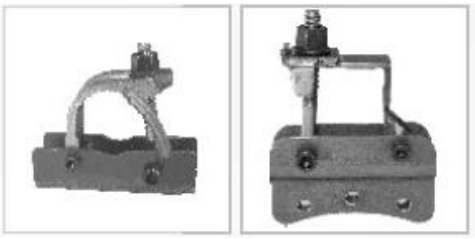


Figure 3

5. Buckle installation and usage diagram (Figure 4)



Type 1 Type 2

6. This Wire Rope Hoist adopt single-phase power supply with rated voltage of 110V ± 5%, and frequency of 50Hz ± 1%. The motor should be appropriately grounded, and power surge protection and leakage protection should be provided in the power supply circuit.
7. After switching on the this Wire Rope Hoist, the Up and Down switches can be used to conduct empty load test, and confirm reliable lifting and flexible braking before using with load.

8. This Wire Rope Hoist is equipped with an overheating protection device. If overheating causes the hoist to shut down, operations can be resumed after the motor cools down to a desired temperature. Therefore, while using the hoist to lift load, avoid unnecessarily using the Up/Down switch or it may damage the motor.
9. The working temperature for this Wire Rope Hoist is 0°C to 40°C; it should be used at an elevation less than 1,000 M above sea level; ambient humidity should be 30% to 95%; and storage and transportation temperature should be - 25°C to 55°C.
10. The end user should conduct Test 2 specified in Section 18.2.2 after the equipment has been installed, in accordance with EN60204-32:2008.

V. Safety Notice

Only specially trained personnel should operate this Wire Rope Hoists and must observe the following:
1. Read the user manual carefully before operating.
2. Operate the wire rope hoist strictly in accordance with the user manual.
3. Do not use the hoist to lift any person.
4. Operate the cable hoist at an ambient temperature between 0°C and 40°C, with relative humidity less than 85% at an altitude of maximum 1,000 meters.
5. Transport and storage temperature should be between - 25°C and 55°C, and maximum temperature should not exceed 70°C.
6. This Wire Rope Hoist motor (13) is equipped with a thermostat switch. When the wire rope hoist is running, the motor (13) may stop if it heats up excessively, and will automatically restart after cooling down.
7. Conduct an empty load operation test before actual usage; the following should be checked during the test:
a. Ensure that the bi-directional switches are working properly, the wire rope winding is clean, and the wire rope diameter is as per standards.
b. Ensure that the movement of the limit cylinder is flexible and that it can reliably switch off the hoist. Also ensure that the floor braking device touches the ground as soon as the cylinder (7) lands, and that the brake switch (9) promptly cuts off the power supply so that the wire rope does not get tangled.
c. Check for any abnormal sound while operating the hoist.
d. Power surge protection should be 2.25 ~ 2.5 times the rated current.
e. Check if the wire rope is damaged (if there is any breakage during use, the wire rope should be replaced immediately).
The wire rope must be replaced immediately if it is frayed or has any breakage as shown in the figure below.

f. Inspect the brake disc:
After every 20 hours, a 1.1 times' dynamic load hoisting (in motion) test and 1.25 times' static load hoisting (at rest) test should be conducted to check if the brake disc is working properly. If there is any slippage or brake failure, appropriate parts should be promptly replaced.
g. Check if there are any cracks or deformations in the lifting hook before using. Promptly replace the lifting hook in case there is any such damage.
8. Do not use the hoist to lift objects beyond the rated weight; using two or more hoists concurrently to lift the same object is strictly prohibited.
9. Using the hoist to pull fixed objects or heavy objects over the rated weight is strictly prohibited.
10. While lifting objects, ensure that no person is standing below the objects.
11. The rated lifting capacity of this Wire Rope Hoist is the lifting weight indicated on the rating plate.
12. While lifting objects, commence lifting at a minimum speed, and gradually increase the speed after ensuring that there is no play in the wire rope and it is completely taut; do not directly lift at a high speed if there is play in the wire rope.
13. The limit cylinder and floor braking device are not meant for stopping the hoist; they are safety devices to prevent hoisting objects beyond the height limit, and should not be removed.
14. If the lifted object falls quickly due to brake failure, immediately press the "Up" switch to manually lift the object, and then press the "Down" switch to manually control its descent. After unloading the hoist, send it to a qualified repair center for repair before reusing.
15. Do not suspend heavy objects in the air for a long time using the hoist, as it may permanently deform parts or lead to accidents. Do not inspect or repair the device while it is being used for actual hoisting operations.
16. Please ensure that all lubricated parts are sufficiently lubricated with appropriate grease. Apply calcium-based lubricant (grease) to the lifting hook, main axle, speed reduction gearbox, bearings and other parts every 6 months.
17. Do not randomly remove or change any installed components on this Wire Rope Hoist.
18. Conduct comprehensive maintenance of this Wire Rope Hoist based on the usage frequency, and if continuously used for up to 20 hours; maintenance must also be done least once a year.
20. Avoid excessively jogging the switches (for example, applying short bursts of current to the motor), and do not sway the load sideways.
21. This Wire Rope Hoist should be disposed after it has been used for 400 hours.
22. In the event of any dangerous or emergency situations, press the E-stop button to stop the hoist; resume using the hoist by manually rotating the button's head towards the arrow direction, after the danger is eliminated.

VI. Common Faults and Troubleshooting Methods

Common Faults	Main Cause	Troubleshooting Method
The motor doesn't run when the bi-directional switches are manually pressed	1. Power is not turned on 2. Wiring is disconnected or loose 3. Switch failure 4. Capacitor is burnt out 5. Limit cylinder is not reset, or the limit switch has failed 6. Hoist automatically shuts off due to heating	1. Turn on the power 2. Check wiring and repair if necessary 3. Repair or replace the switch 4. Replace the capacitor 5. Check the limit cylinder and the limit switch 6. Restart the hoist after it cools down or replace the thermostat switch
Loud motor noise or failure to lift load when the bi-directional switches are manually pressed	1. Supply voltage is too low 2. Capacitor is damaged 3. Brake disc is not completely disengaged	1. Adjust the power supply voltage 2. Replace the capacitor 3. Send to qualified repair center for repair
After power is switched off, there is brake failure or excessive slippage	1. There is excessive gap in the brake disc 2. Brake spring is broken 3. Brake disc has worn off 4. Brake disc is heavily greased	Send to qualified repair center for repair
Abnormal increase in noise while using this Wire Rope Hoist	1. Poor lubrication 2. Gear bearing damaged due to long-term use 3. Poor assembly or there is an obstruction in the hoist	1. Add sufficient lubricant 2. Check and replace gears or bearings 3. Re-examine assembly to repair the affected part
This Wire Rope Hoist gives electric shock	1. Grounding failure or no grounding 2. Internal wiring is touching the housing	1. Check the ground wire or conduct grounding 2. Check and repair the wiring
Limiter malfunction	1. Limit switch failure 2. Limit cylinder is blocked	1. Repair or replace the limit switch 2. Check and repair the limit cylinder
Floor brake device malfunction	1. Parts are damaged, screws are loose, push button fails to touch the floor brake switch in time	1. Check for loose or disconnected wiring, damaged parts, loose screws, and that the brake device is working properly 2. Send to qualified repair center for repair

VII. Maintenance

7.1 Cleaning

1) Keep all safety equipment, vents and motor housing free of dust or dirt as much as possible. Wipe the equipment with a clean cloth or blow with compressed air at low pressure to clean.
2) Clean the equipment immediately after use every time.
3) Clean the equipment regularly with wet cloth and soft soap. Do not use detergents or solvents as they may damage the equipment's plastic parts. Ensure that water does not enter the unit.

7.2 Maintenance

Important: Always ensure that the hoist is not connected to a power source before starting any repair or maintenance work.

In the following case: 1 cycle represents 1 lift movement with load. Periodic inspection refers to inspection after 100 cycles.

1) Regularly check if this Wire Rope Hoist's limit switch and floor braking mechanism are working properly. The following test should be carried out: When the cylinder on the wire rope reaches the maximum height, the limit plate on the limiter should be in contact with the pushbutton on the junction box assembly, and the motor should stop. When the cylinder lands on the ground, the limit plate on the floor braking mechanism should be in contact with the pushbutton on the floor brake switch, and the motor should stop (no load test).

2) Check the power cables and control cables regularly.

3) Regularly check if the various mechanical parts are loose.

4) The hoist must be inspected once every 30 cycles, and the wire rope must be in good condition. If it is damaged, it must be replaced with the wire rope stipulated in the technical data and must be securely fixed after replacement before using.

5) Tighten the limit bracket, limit spring and limit plate screws after every 1,000 cycles.

6) Check that the lifting hook and cylinder attached to the wire rope are in good condition after every 1,000 cycles, and are not tangled or wound up.

7) Before using this Wire Rope Hoist, check if the emergency stop switch and button on the control handle are working properly.

8) Check the braking system after every 1,000 cycles. If the motor generates abnormal noise or cannot reach the rated load, the braking system may require overhaul:

- Replace any damaged or worn parts and keep relevant maintenance document safely.

- If any non-scheduled maintenance work is required, please contact an authorized service center.

7.3 Ordering replacement parts:

Please specify the following information while ordering replacement parts:

1) The Wire Rope Hoist model.

2) Hoist number.

3) Hoist serial number.

4) Replacement parts requirement.

8. Storage
Keep the equipment and accessories away from children and store in a cool and dry place. Ideal storage temperature is between 5°C and 30°C. This Wire Rope Hoist should be stored in its original packaging.

9. Disposal and Recycling

The equipment is packed to prevent damage while transporting. This packaging uses raw material which can be reused or recycled.

The equipment and its accessories are made of various types of materials, such as metals and plastics.

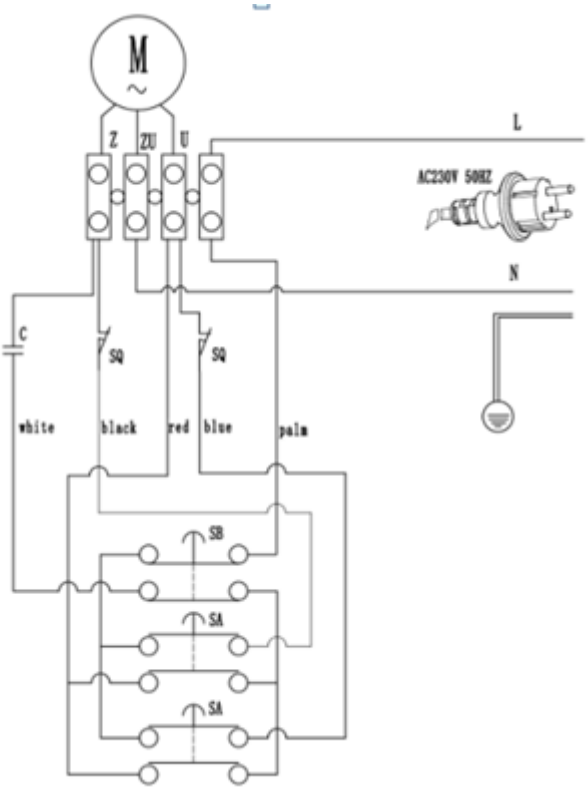
Defective parts must be treated as special waste. Consult your dealer or your local council.

Do not place any power tools in household waste.

In order to comply with European Directive 2012/19/EV on old electrical and electronic equipment, and implementation as per national legislation, old power tools must be separated from other waste, treated in an environment-friendly manner and sent to a recycling station.

Requirements for recycling alternative electrical equipment:

As an alternative to returning electrical equipment, owners are required to cooperate in properly recycling scrap equipment. The equipment can also be handed over to the return center, which will process the equipment in accordance with national commercial and industrial waste management legislation. This does not apply to accessories and auxiliary equipment, and does not include any electrical components contained in the enclosed equipment.



Electrical Wiring Diagram

Packing List

Wire Rope Hoist	1 unit
User Manual	1 copy
Square Buckle	1 set
Round Buckle	1 set