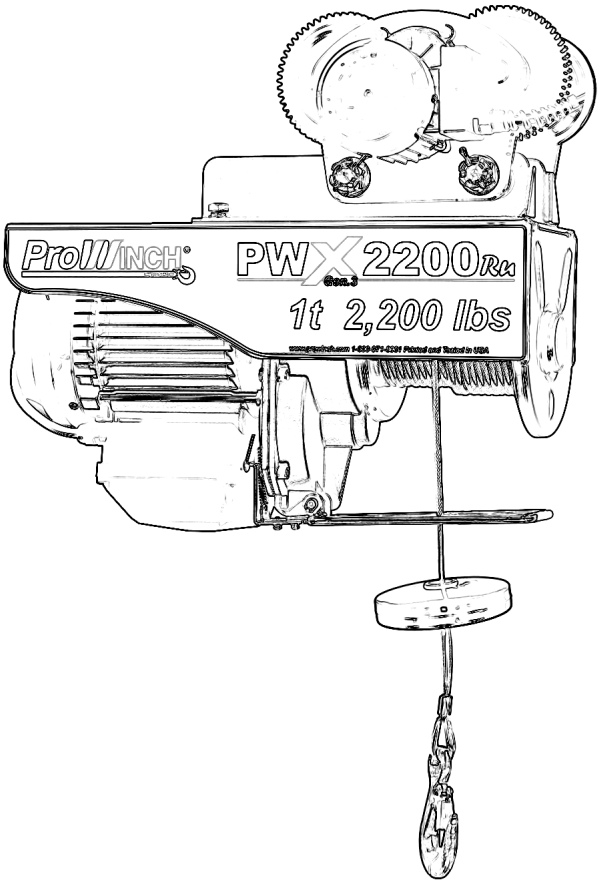
ProWINCH®

Reg. U.S. TM. Off.

PWA
PWX

User's Manual / Manual de usuario
Safety Warnings / Advertencias de seguridad



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Disclaimer

PROWINCH® DISCLAIMER

Prowinch® LLC declares that it has made all safety recommendations related to the purchased product to the customer. As a result, it does not assume any responsibility for any damages or losses that the client or third parties may suffer. These can be caused by or as a direct or indirect result of a breach or omission of instructions or safety warnings in the User Manual and Security Warnings provided with the unit purchased. Prowinch® LLC will not be liable for accidents and/or damages to persons and/or property resulting from the negligent use of the product. In no case does Prowinch® LLC assume any liability arising from using these voluntary recommendations and does not offer any guarantee concerning them. These recommendations do not take precedence over the current safety regulations of the plant. For purposes of enforcing the warranty of the product purchased, Prowinch® LLC, will only be liable for any damage when proven the user has followed each one of the warnings contained in the User Manual and Safety.

1. It is the sole responsibility of the Client / User to verify that the acquired equipment, products, and accessories comply with the characteristics, capacities, requirements, components, accessories, and other conditions for the use that the Client/user intends to give it.
2. It is also the sole responsibility of the Client / User to ensure that the equipment and products purchased are operated and maintained with adequate safety standards and by personnel properly trained in their use. The Client / User is also responsible for implementing all security measures necessary to prevent accidents or damages to people or property and for following the indications and warnings of the corresponding manual.
3. Any assistance provided by Prowinch® LLC in selecting the equipment, capacities, and characteristics required by the client is delivered free of charge and based on the information about the application, use, and requirements provided by the client. It is not the responsibility of Prowinch® LLC to verify the accuracy of the given information. It is the sole and exclusive responsibility of the client -or who will use the equipment and products acquired- to ensure that the specifications comply with the capabilities, characteristics, up-to-date maintenance, and everything necessary for a correct and safe operation about the intended use.
4. Prowinch® LLC recommends using winches with four brakes for personnel lifting. The use of winches with three brakes or less, or operating with safety standards less than required for personnel lifting is not recommended.
5. To guarantee the safety of the equipment's operators, it is necessary to conduct inspections and maintenance of the equipment according to the recommended frequency of its work cycle. It is mandatory to keep records and evidence, including written and photographic reports of: Maintenance, Start-up, Load Tests, Training, Certifications, Inspections, and Reports of failures and accidents.
6. The reports mentioned above must be emailed to registros@prowinch.com within the first seven calendar days after an event.
7. Compliance with timely implementation of mandatory activities described in points 6 and 7, in addition to all the activities mentioned in the corresponding guidelines, are the user's sole responsibility. Failure to comply with the preceding conditions releases Prowinch® LLC from any liability. The information contained in this manual may contain technical errors or inaccuracies. Prowinch® LLC is not responsible for errors, omissions, or incorrect information. This manual is subject to change without prior notice. Download the latest version available at www.prowinch.com. Always check www.prowinch.com for the latest information regarding this product.

Index

Thank you for purchasing our Prowinch® Electric Wire Rope Hoist. This User Manual provides important information for personnel involved with the installation, operation, and maintenance of this product. Read this User Manual before installing, operating, or maintaining the product.

1. SAFETY PRECAUTIONS

Prowinch® Electric Wire Rope Hoists are designed for safe and reliable service when operated according to this User Manual. Please respect and follow all warnings for the safety of personnel and others. Improper operation may cause severe injuries to personnel or damage equipment. Read and understand this User Manual carefully before installing and operating any Prowinch equipment. Always keep this User Manual in an accessible location for quick reference. The compact and lightweight structure of the PWA and PWX models and their ease of use make them a preferred hoist for daily use in factories, mines, seaports, warehouses, and other applications. Improperly installed, maintained, or operated hoists can cause serious accidents or death. This User Manual highlights symbols and notes for caution, warning, and danger. Following these indications dramatically improves the safety of the operator and personnel in the area.

Mandatory use of:

Hard Hat

Safety Glasses

Safety Gloves

Safety Shoes

1.1. Hoist Safety Precautions

WARNING:
This symbol warns of unsafe practices or situations which may cause damage to property and injuries to operators and other personnel.

DANGER:
This symbol indicates a potentially dangerous situation that if not avoided, may cause severe injuries or death.

DANGER

All operators and other users who are near the steel wire rope or its load must wear required safety equipment: gloves, safety helmet / hard hat, safety shoes and eye protection.

WARNING

Before installing, removing, inspecting, or performing any maintenance on the hoist, the main switch must be de-energized, locked out, and tagged out. Do not use this equipment in hazardous locations.

Read and understand the contents of this User Manual thoroughly before handling the electric wire rope hoist. Practicing correct and safe operating procedures and carrying out the recommended preventative maintenance will ensure a long, reliable, and safe service.

After a careful study and understanding of the User Manual, store it for future reference.

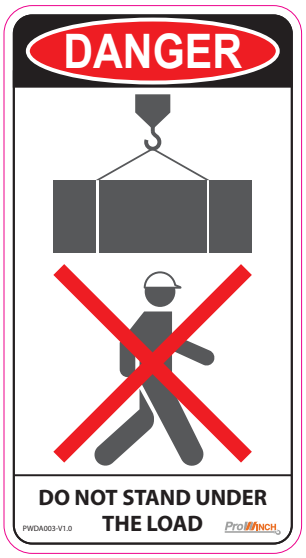
1.2. Before using the Equipment:

- Read and understand instructions in this User Manual and all the labels associated with the hoist before operating equipment.
- Wear appropriate clothing: Do not wear jewelry or loose-fitting clothing as they can get caught by the wire rope or hook.
- Wear leather gloves.
- Wear non-slip safety shoes, a helmet, and eye protection.
- Always perform a complete check of the hoist. Check for damaged parts or unusual conditions.
- Keep a safe distance: the suggested space is at least 1.5 times the hoist's wire rope length. A broken or loose wire rope may cause injuries or death.
- Check that the hoist and wire rope are appropriately lubricated.
- Secure the electric wire rope hoist to a suitable support.
- Visually inspect all electric wire rope hoists before each use, in addition to regular inspections and maintenance.

1.3. During Operation:

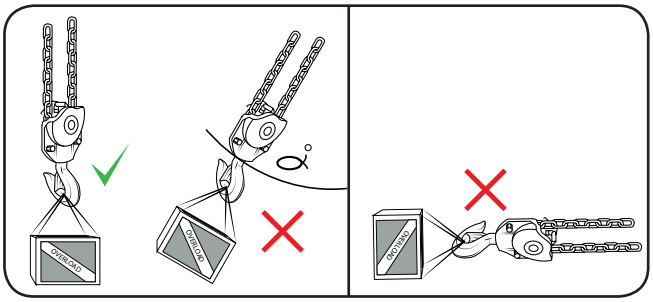
ALWAYS:

- Refer to the maximum load capacity displayed on the ID plate attached to the hoist, not the capacity of the hook.
- Stop operation immediately if unauthorized personnel enter the working area.
- Check the working condition of the hoist: If the motor overheats, stop the hoist and allow time for the equipment to cool down.
- Stop, check, and secure the load if the hoist stops or loses movement during operation.
- Focus on the operation. Pay attention at all times and keep a proper balance.
- Unplug the hoist after an operation.



NEVER:

- Never exceed the maximum load capacity of the hoist.
- Never operate a damaged or malfunctioning hoist.
- Never operate the hoist if it shows abnormal behavior.
- Never lift, support, or transport people or loads over people.
- Never walk or step on the wire rope.
- Never operate the electric wire rope hoist with twisted, kinked, damaged, or worn load wire rope.
- Never use the load wire rope as a sling around the load.
- Never operate a hoist if the ID plate or safety labels are missing or illegible.
- Never operate an electric hoist if exposed to rain or water.
- Never use if the operator is sick or not wholly attentive.
- Never leave the hoist unattended while energized or loaded.
- Never operate the hoist with a non-centered load.
- Never operate beyond the limits of the load wire rope or extend wire rope.
- Never use the load wire rope or hook as an electrical or welding ground.
- Never remove the labels placed on the electric wire rope hoist.
- Never use the hoist to lift loads at an angle or pull or drag load



1.4. Inspection, Maintenance and Repairs:

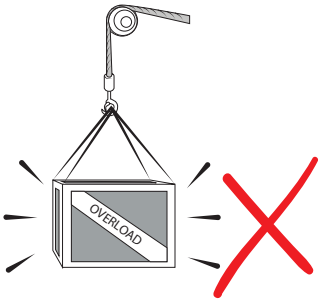
- Only trained and authorized personnel may perform repairs to the equipment.
- Use only original ProWinch® parts. The use of any other part immediately voids the warranty.
- Failure to use only original ProWinch® parts may create a dangerous condition for the operator.

ALWAYS:

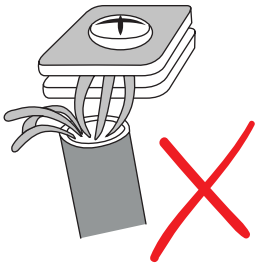
- Check that electrical connections remain in good condition
- Check the wire rope and keep it lubricated.
- Prevent others from stepping under a lifted load.
- Inspect and maintain the hoist regularly.
- Verify the correct installation of the hoist before using it.
- Avoid contact with explosive gases or materials.

NEVER:

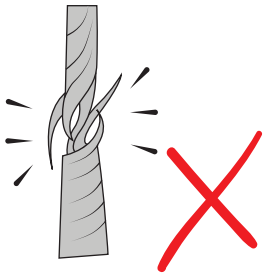
- Never overload the hoist.
- Never transport people or animals with the hoist.
- Never stand under a suspended load.
- Never use the hoist if exposed to rain, snow, or electrical storm.
- Never leave loads suspended for an extended period of time. This may cause damage to components and potential accidents.
- Never exceed the allowable operating temperatures stated in this User Manual (which will differ depending on the model).
- Never expose the hoist to water, sand, or corrosive environment



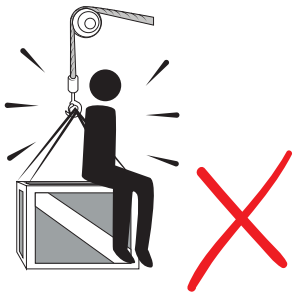
1. Do not overload.



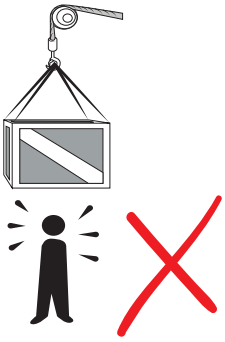
2. Check the proper crimp of the electrical connections.



2. Periodically check the wire rope and clean it if necessary.

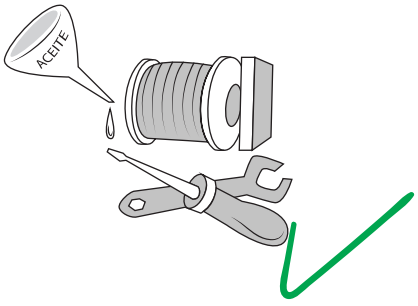


4. Do not transport people or animals with a hoist.

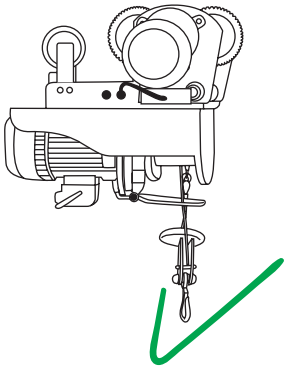


5. Do not step or walk under lifted load and prevent others from doing so.

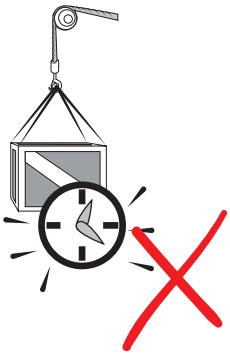
6. Do not use the hoist if e xposed to rain, snow or lightning.



7. Inspect and maintain your hoist regularly.

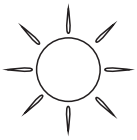


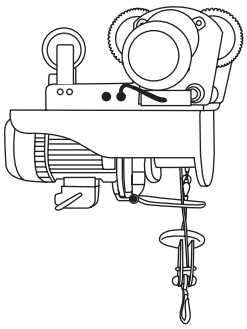
8. Always verify the correct hoist installation before use.



9. Do not leave the load lifted for long periods of time. It may cause deformation of the equipment and increase the risk of an accident.

Do not exceed the operating temperatures for which the hoist is designed. This range is indicated in this manual and may vary depending on the model.

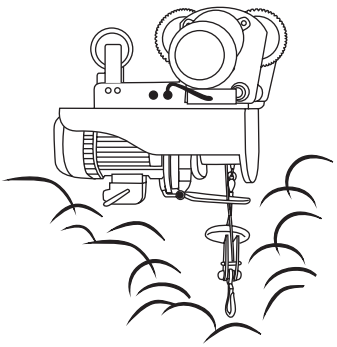


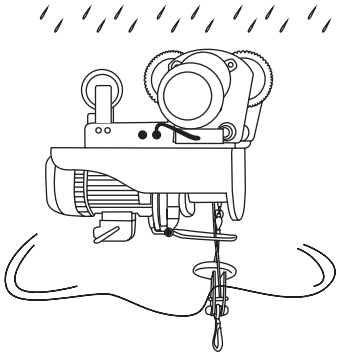


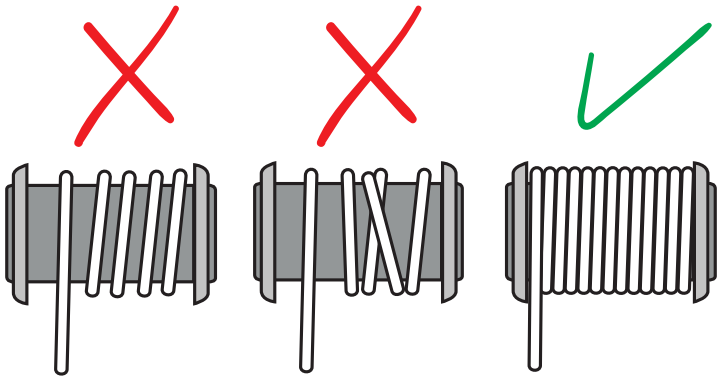
Avoid contact with gases or explosive materials.

Warning:

Exposure to water, sand, a corrosive environment, or other potentially harmful elements may damage the equipment







General precautions:

- Make sure the hoist is in proper working condition.
- Keep the hoist in good condition and ensure the wire rope does not protrude from the drum when winding.
- Do not use pulleys or accessories that are not compatible with this hoist.
- Do not use defective, worn, or broken wire ropes.
- To reduce the risk of electric shock, ensure that a qualified electrician electrically grounds the hoist.
- Before operating, ensure the hoist works appropriately, without load.
- Wind the steel cable in an orderly and uniform manner in the drum. If the steel cable starts tangling, it will be necessary to rewind it.
- Disconnect the equipment from the power supply when not in use to avoid accidents.

Wear appropriate clothing:

- Do not wear loose clothing or jewelry. Moving parts can pull these items inside the unit and cause injury.
- Wear leather gloves when maneuvering the wire rope. Do not handle the wire rope with bare hands since loose strands of wire can cause serious injuries.

Keep a safe distance:

- Make sure all people are away from the wire rope and load. When the hoist is in operation, keep a distance that is 1.5 times the length of the cable. The wire rope can whip and cause severe personal injury or death if the wire rope is loose or broken.
- Do not cross over the cable.
- It is necessary to ensure that anyone other than the required personnel stay away from the working area.

Do not abuse the Power cord:

- Never lift the hoist by the power cable or pull to disconnect.
- Move the power cord away from heat, oil, and sharp edges.
- Never unwind the entire cable. Keep at least five turns inside the drum.

Don’t overuse the hoist:

- If the engine appears to be overheating, shut down and allow time to cool down.
- If the hoist stops during operation, stop the process and check the load and trolley.
- Do not exceed the maximum capacity shown in the table. Loads should not exceed those measurements.
- Due to inertia, the load could drop several inches while stopping the hoist and lowering the load.

Check the damaged parts:

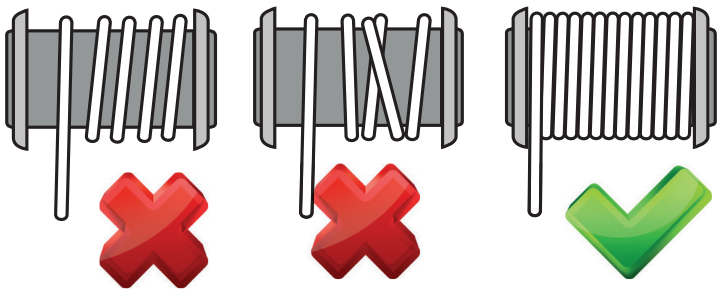
• •Before using, it is necessary to check the hoist thoroughly. An authorized Prowinch service center must repair or replace any damaged part.

Repair the Hoist:

• To repair, only use original Prowinch spare parts otherwise, you could place the operator in danger. Any replacement parts other than official Prowinch parts will cause the warranty to expire or be voided. Only use accessories explicitly manufactured for this hoist.
• If the hoist cable becomes worn out, you must replace it using the cable supplied by Prowinch from an authorized workshop.
•

Wind the cable:

• Before starting work, carefully check that the steel cable is wound correctly on the roll, with a pitch corresponding to the diameter of the cable.
• You must wear leather gloves to wind the cable. To wind correctly, keeping a small load on the cable is necessary. While the operator rolls the cable, another qualified person should guide it to its correct location. Start from far and as center as possible. Walk with the load on the cable while the hoist rolls up.
• Keep at least three turns of cable.
• Do not allow the cable to fall and approach the hoist.
• Turn off the hoist and repeat the process until only three feet of cable remain.
• Disconnect the remote control and/or cut off the power supply.
• Never wind the entire cable, always leave 25 cm to avoid any danger



WARNING

Improperly connecting the grounding wire can result in the risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

GROUNDED UNITS: HOISTS WITH 3- PRONG PLUGS

1. Units marked with "Grounding Required" have a 3-wire cord and 3-prong grounding plug. You must connect the plug to a properly grounded outlet. If the unit were to malfunction or break down electrically, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock. (See Figure A.)

2. The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the hoist's grounding system and never be attached to an electrically "live" terminal. (See Figure A.)

3. Your unit must be plugged into an appropriate outlet, properly installed, and grounded, following all codes and ordinances. The plug and outlet should look like those in the following illustration. (See Figure A.)

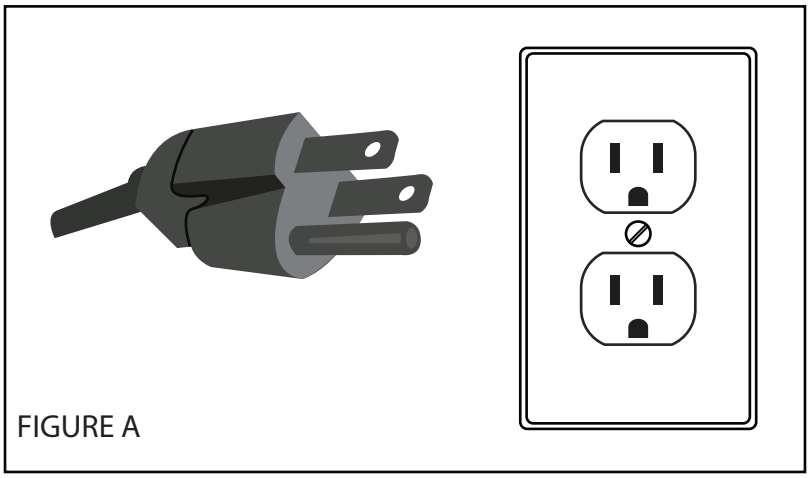


FIGURE A

DOUBLE INSULATED UNITS: HOISTS WITH 2-PRONG PLUGS

4. Units marked "Double Insulated" do not require grounding. They have a special double insulation system that satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc., the Canadian Standard Association, and the National Electrical Code. (See Figure B.)

5. Double insulated tools may be used in either of the 120-volt outlets shown in the following illustration. (See Figure B.)

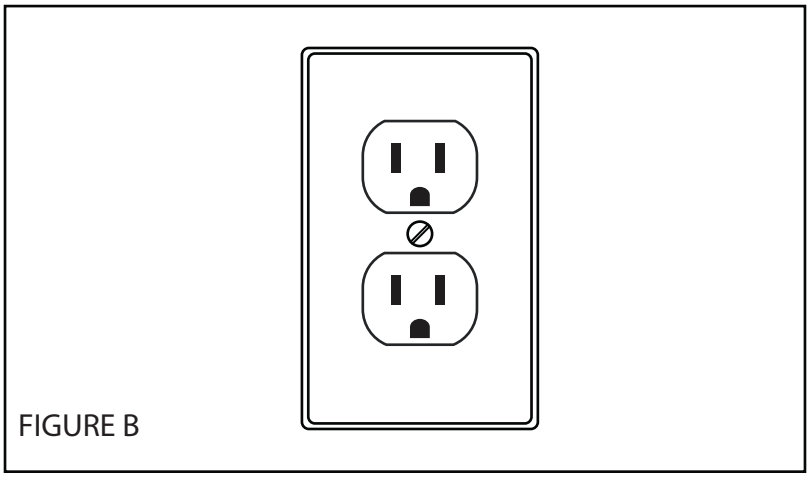


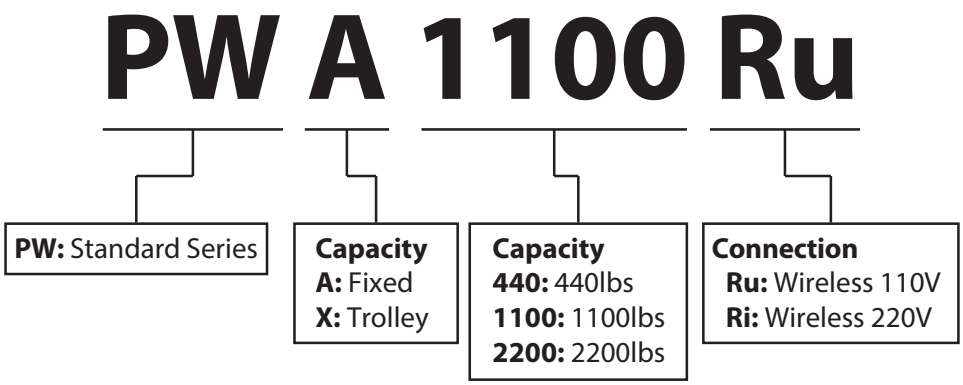
FIGURE B

EXTENSION CORDS

1. Grounded hoists require a 3-wire extension cord. Double Insulated tools can use either a 2- or 3-wire extension cord.
2. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a severe voltage drop, resulting in power loss and possible unit damage.
3. The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14- gauge cord can carry a higher current than a 16- gauge cord.
4. When using more than one extension cord to make up the total length, ensure each cord contains at least the minimum wire size required.
5. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size.
6. If you are using an extension cord outdoors, make sure it is marked with the suffix “W-A” (“W” in Canada) to indicate it is acceptable for outdoor use.
7. Ensure your extension cord is correctly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.
8. Protect your extension cords from sharp objects, excessive heat, and damp areas.

2. SPECIFICATIONS

2.1. Product Code.



2.2. Specification Chart (Prowinch® Electric Wire Rope hoists).

Item		Specs
Operating temperature range (°C)		-20° to ± 40°
Operating Humidity Range (%)		< 85%
Protection Class	Hoist	IP40
	Remote Control	IP65
Power		3 Phases, 200V - 600 V, 50/60Hz
Noise Level (db)	Single Speed Hoist	81db
	Double Speed Hoist	81db

Observations

Do not use Prowinch® Electric Wire Rope Hoists when the temperature or humidity exceeds the range stated in the Specification Chart.

Our hoists are designed to lift loads vertically under normal atmospheric and working conditions.

2.3. Load Level and Service Life

Hoist Duty Class	Typical Areas of Application	Operational Time Ratings at K = 0.65			
		Uniformly Distributed Work Periods		Infrequent Work Periods	
		Max. On Time, min/hr	Max. No. Starts/hs	Max. No. Time From Cold Start	Max. No. of Starts
H1	Heavy load use and utilities and infrequent use: Hoists used primarily to install and service heavy equipment, where loads frequently approach rated load and where the hoist is idle for 1- to 6-month periods between periods of operation.	7.5 (12.5%)	75	15	100
H2	Light machine shop, fabricating service, and maintenance. Randomly distributed loads and utilization. Rated loads infrequently handled. A total running time is less than 12.5% of the work period.	7.5 (12.5%)	75	15	100
H3	General machine shop, fabricating, assembly, storage, and warehousing. Loads and utilization are infrequent. Total running time is less than 25% of the work period.	15 (25%)	150	30	200
H4	High-volume handling of heavy loads, frequently approaching rated load, such as steel warehousing, machine and fabricating shops, mills, and foundries, with a total running time of less than 50% of the work period. Manual or automatic cycling of lighter loads with rated loads infrequently handled, such as in heat treating and plating operations, with total running time frequently 50% of the work period.	30 (50%)	300	30	300
H5	Bulk handling of material in combination with buckets, magnets, or other heavy attachments. Equipment is often enclosed, and cab operated. Usage is typically 100% and approaching continuous operation. The user must specify the exact details of the process, including the weight of the attachments for proper selection of the unit.	60 (100%)	600	N/A	N/A

Specifications

Working Conditions		Load	Time	Maintenance Interval (Months)	Expected Life [Working Hours]				
					800	1600	3200	6300	12500
Light	Hoist is subjected to normal and light loads and brought to maximum load on rare occasions.			6 - 12	H1	H2	H3	**H4**	**H5**
Normal	Hoist is subjected to moderate loads and brought to maximum load more frequently.	< 65%	< 25%	6 - 12	H2	H3	**H4**	**H5**	
Heavy	Hoists are often subjected to heavy weight infrequently operated to the maximum load.	> 65%	> 25%	3 - 6	H3	**H4**	**H5**		
Severe	Hoisting mechanism are subjected regularly to the maximum allowable load	Abnormal conditions Environmental, Geographical, etc <100% < Duty Cycle Limit		1 - 3	**H4**	**H5**			

2.4. Electric wire rope hoist Specifications.

	Modelo / Model	PWA440Ru	PWA1100Ru	PWA2200Ru	PWX440Ru	PWX1100Ru	PWX2200Ru
HOIST/ POLIPASTO	Capacity Capacidad	220 lb 1 line / 440 lb 2 lines 100 kg 1 linea / 200 kg 2 lineas	550 lb 1 line / 1100 lb 2 lines 249 kg 1 linea / 500 kg 2 lineas	1100 lb 1 line / 2200 lb 2 lines 500 kg 1 linea / 1000 kg 2 lineas	220 lb 1 line / 440 lb 2 lines 100 kg 1 linea / 200 kg 2 lineas	550 lb 1 line / 1100 lb 2 lines 249 kg 1 linea / 500 kg 2 lineas	1100 lb 1 line / 2200 lb 2 lines 500 kg 1 linea / 1000 kg 2 lineas
	Speed (per min) Velocidad (por min)	33 ft 1 line / 16 ft 2 lines 10 m 1 linea/ 5 m 2 lineas					
	Lifting Height Altura de Elevación	38 ft 1 line / 19 ft 2 lines 11.5 m 1 linea/ 5.7 m 2 lineas					
	Motor Power Potencia de Motor	460W	1000W	1450W	460W	1000W	1450W
	Rated Volt Voltaje Nominal	110V/120V @ 60 Hz					
	Rated Current Corriente Nominal	4.1 A	8.5 A	12.5A	4.1 A	8.5 A	12.5A
	Insulatión Grade Grado Aislamiento	Class B					
TROLLEY/CARRO	Traveling Speed (per min) Velocidad de Translado (por min)	*Not included / No Incluido*			52 ft / 16 m		
	Trolley Motor Power Potencia Motor Carro	*Not included / No Incluido*			110/120V @ 60 Hz 220 W		
	I Beam Width Ancho de la Viga I	*Not included / No Incluido*			2 ~ 4.5 in / 50 ~114 mm (optional shaft available for wider I-beams) (eje opcional para vigas mas amplias)		
	Wheel Diameter Diámetro de la Rueda	*Not included / No Incluido*			3.3 in / 85 mm		
	Min. Turn Radius Radio Mínimo de Giro	*Not included / No Incluido*			2.62 ft / 0.8 m		
	Net Weight Peso Neto	*Not included / No Incluido*			30 lb / 13 KG		
	Packing Dimension Dimensión de empaque	*Not included / No Incluido*			14x12x8 in / 350x300x200 mm		
	Total Weight Peso Total	*Not included / No Incluido*			33 lb / 15 kg		
ROPE/CABLE	Wire Rope Diameter Diámetro Cable	Ø 1/8 in | Ø 3 mm	Ø 11/64 in | Ø 4.3 mm	Ø 7/32 in | Ø 5.58 mm	Ø 1/8 in | Ø 3 mm	Ø 11/64 in | Ø 4.3 mm	Ø 7/32 in | Ø 5.58 mm
	Wire Rope Tensile Strength Resistencia del Cable a la tracción	1870N/mm²	1770N/mm²		1870N/mm²	1770N/mm²	
GENERAL	Operation Temperature Temperatura Operación	-4° ~ 104° F / -20° ~ 40° C					
	Operating Humidity Humedad de Operación	<85%					
	Enclosure Protection Class Clase de protección de cerramiento	IP40					
	Noise Level Nivel de Ruido	71 dB					
	Net Weight Peso Neto	48 lb / 22 kg	74 lb / 34 kg	73 lb / 33 kg	77 lb / 35 kg	104 lb / 47 kg	101 lb / 46 kg
	Total Weight Peso Total	52 lb / 24 kg	76 lb / 36 kg	75 lb / 34 kg	86 lb / 39 kg	112 lb / 51 kg	108 lb / 49 kg
	Packing Dimension Dimensión de empaque	18x14x6 in 460x360x160 mm	20x17x6 in 510x440x170 mm	22.2x9.6x12.7 in 565x245x325 mm	18x14x6 in 460x360x160 mm	20x17x6 in 520x440x170 mm	22.2x9.6x12.7 in 565x245x325 mm
	Duty Class Clase de Servicio	HST H1					
	Standards Normas	ETL/CETL approval					

2.5. Oil & Lubricant Recommendations

WARNING

Do not allow wire rope to run dry.

Lubricant greatly increases the life of wire rope. Weekly lubrication and cleaning is satisfactory, but under hot, dirty, and extreme conditions it may be necessary to clean the wire rope at least once a day and lubricate it several times between cleaning.

Suspension pins should be lubricated at least twice per year for normal usage; more frequently for heavier usage or severe conditions.

Item	Lubricant	Interval	
		Normal Working Conditions	Heavy / Severe Working Conditions
Wire rope	Lubriplate® Bar and Chain Oil 10-R	Weekly	Daily
	Gear Oil ISO46 – ISO68	Twice Weekly	Daily
Gearbox	Meropa 320 (TEXACO)	Twice per year	Every other month
Hooks, Suspension pins & components	General lithium grease	Weekly	Daily

3. INSTALLATION

WARNING

Before installing, removing, inspecting, or performing any maintenance on the hoist, the main switch must be unplugged, locked out, and tagged out. Do not use this equipment in hazardous locations.

Installation Process:

- Electric wire rope hoists must be grounded properly.
- Lock-out, tag-out, and unplug the hoist before performing any service.
- Customer must provide power supply cable, fuses, and main disconnect switch.
- Check supply voltage is same as nameplate voltage on hoist.
- Ensure that the voltage does not vary by more than ±10% from nominal value.
- Do not use conductors smaller than those listed in this User Manual to supply power to hoist.
- Never bypass limit switches, remove limit switch stops, or alter limit switch devices.

3.1 Unpacking

Hoist should be carefully inspected upon delivery for any damage that may have occurred during shipment or handling. Check the hoist frame for: dents or cracks, external cords for damaged or cut insulation, control station for cut or damaged enclosure, and wire rope for twists, loops or broken strings.

Check and document hoist characteristics:
a. Model number
b. Rated capacity (tonnage)
c. Lifting length of wire ropes (meter)
d. Power supply
e. Push button pendant assembly (2 button, 4 button or 6 button)
f. Specially ordered optional items
g. Beam width for trolley installation

3.2. Electrical Connections

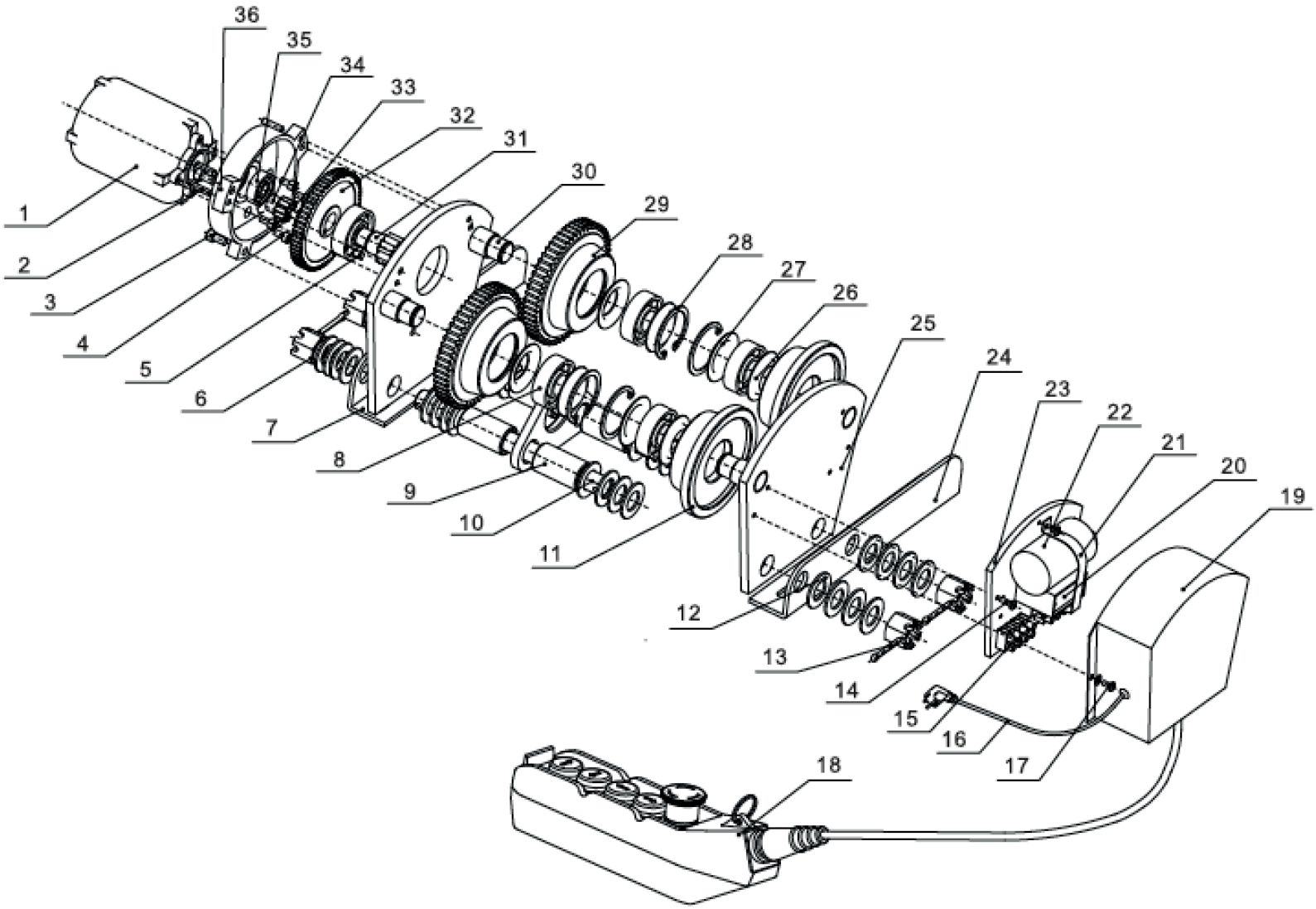
Operator and/or owner must provide main power supply hardware (cable, conductor bar, fuses, disconnect switch, etc.)

WARNING

Fuses and other current overload devices must be in place to protect power supply.
Do not use power supply cables with solid conductors.
An improper or insufficient ground connection creates an electrical shock hazard when touching any part of hoist or trolley

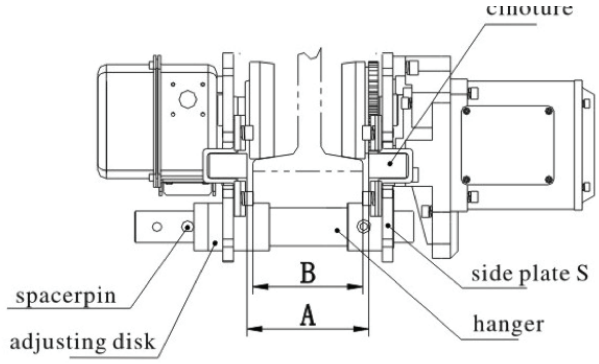
3.3. Install Trolley (models with trolley)

1.- Insert suspension pins into lateral plate G and lock it with suspension pin bolts and nuts.
2.- Install suspension pin with adjusting disk.
3.- Install suspension pin into hanger T. The nameplates of hoist and trolley should be in the same direction.
4.- Install additional gaskets into suspension pin before inserting it into lateral plate S.
5.- Install outside adjusting disk and spacer pin into suspension pin. Insert cotter pin into spacer pin.
6.- Cotter pin should be seen at the left side from front of trolley switch box.



3.4. Adjust Trolley Width (models with trolley)

• Adjust width of trolley according to drawing (right) for appropriate clearance.
• Size A is the dimension of two side plates that stretch outside completely.
• Size A must be approximate B (the width of rail flange) + 4mm.
• Adjust size A by increasing or decreasing adjusting disk. Insert cotter pin into spacer pin and bend two branches of cotter pin
until size A is correct.



Nut must be tight, insert cotter pin and bend it completely.

3.5. Install Trolley on I-Beam (models with trolley)

1. Install trolley at end side of beam and slip trolley which has already been connected with hoist to the appropriate place. This is the preferred method.

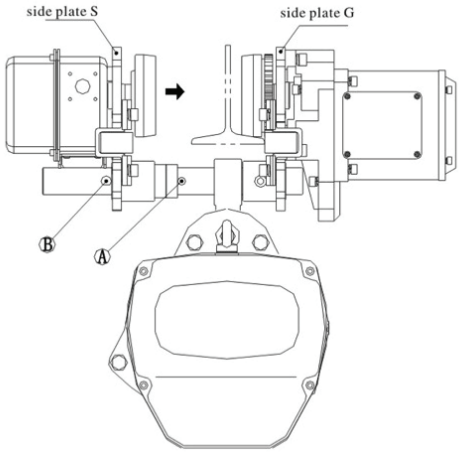
2. If first method is unavailable:

a) Unload brake stopper from hole A on suspension pin, and insert it into hole B. Insert cotter pin again and bend it completely.

b) Pull side plate S and G outside, then lift trolley until orbit wheel and orbit surface are in same horizontal position. Put orbit wheel of side plate G onto surface of orbit.

c) Hold side plate G and stop it from dropping from orbit. Firmly push side plate S and put its orbit wheel onto surface of beam.

d) Unload brake stopper from hole B and insert into hole A. Do not forget to bend cotter pin.



3.6. Supply Voltage

WARNING

Check supply voltage everyday before use. If voltage varies more than 10% of rated value, electrical devices may not function normally and cause damage to equipment.

WARNING

Do not connect equipment to power supply before completing the installation process.

1. OPERATION

1.1. Qualified Operator

Hoist operators are required to read and fully understand the operation section of this manual, all warnings contained in the manual, and labels attached to the equipment.

Operator training must be provided to ensure proper operation of equipment in compliance with instructions provided by the equipment manufacturer and the provisions of ASME B30, and proper rigging procedures for the attachment of loads to the hoist.

A safe and efficient operation of hoist requires an operator who exercises caution, common sense, and good judgment in anticipating the effects of operating the hoist. The operator must be fully alert, focused, and aware of the surroundings at all times.

The job must be strictly carried out under the good practices defined by the applicable international and national safety standards, such as ANSI, OSHAS and ASME.

This hoist must not be operated by someone who:

- Cannot read, understand and speak the language in which the security labels, ID Plate and User Manual of equipment is written.
- Does not meet the legal age requirements.
- Is under the influence of alcohol, drugs, or medication.
- Has visual or hearing impediments, or below normal reaction times.
- Has a history of or experiences seizures, mental, heart, or other illnesses that could interfere with a safe operation of the equipment.
- Has not been trained for the proper use of the hoist.
- Has not received and read the User Manual for the exact equipment.
- Has not demonstrated qualifications through a practical operation of hoist.

1.2 Handling Precautions

ALWAYS:

- Keep hoist in good condition and make sure wire rope is lubricated and free to operate.
- Make sure electrical connection is grounded.
- Make smooth movements; avoid sudden changes of directions.
- Check functions of hoist and trolley without any load before operation.
- De-energize equipment after using it to avoid unintentional operation.
- Keep everyone a distance of at least 1.5 times the length of wire rope. If load falls it can cause serious injuries and death.
- Make sure no one is beneath load.

NEVER:

- Use pulleys or other accessories that are not specifically approved for relevant hoist model.
- Hoist load with tip of hook.
- Hoist load which is not vertical to hook.
- Use hoist to pull or drag load.
- Exceed maximum capacity of hoist.

1.3 Recommended Operation

WARNING

Always conduct a complete inspection before starting the operation of the hoist. See ASME B30. Always inform all personnel in the work area that crane maneuvers are about to commence. Do not allow unauthorized personnel to be in the elevation area.

Start with Operational Test

1. Turn on the remote control and press and hold the start key until you see a green light flashing on the receiver.
2. Press the "down" button to lower the unloaded hook until the limit spring touches the limit switch. Be sure the hoist stops automatically before totally compressing the spring.
3. Press the "up" button to raise the unloaded hook until the limit spring touches the switch. Be sure the hoist stops automatically before totally compressing the spring.
4. Test the correct function of the emergency stop button. Press the emergency stop button when pressing "up" and "down" buttons. Ensure the hoist stops immediately after pressing the emergency stop switch. The hoist should not start again if any other button is pressed.
5. Rotate the emergency stop switch clockwise to its original position. When it bounces back, you can start the hoist again. If any of the above tests fail, the unit must remain out of service, lockout/tag-out power, and request authorized Prowinch personnel to check the circuit layout for the automatic locking emergency stop switch.
6. Check the lubricant condition of the load chain. Apply lubricant into the chain bag to protect the load chain.

Normal Operation

1. Check the direction of the chain eyes. All welding points should face the same direction. You cannot operate the hoist properly unless all welding chain eyes are in the same line.
2. Position the hoist vertically to the load. Before moving the trolley, ensure the hook's path is free from all obstacles.
3. Lower the hook near the master link to hoist load and make final adjustments to secure a 90º vertical lift operation without any lateral deviation. Improper lift angle may cause the load to swing.
4. Attach the hook to the load link and make sure there are no people in the working area. Check that no loose items can fall from the load.
5. Begin by hoisting the load two inches, then stop. Ensure the brakes are fully operational and the load does not lower while stopped. Also, ensure the load is balanced and secured. The load could shift when suspended.
6. Movement must be smooth and continuous to reach the desired position. Repeatedly pressing buttons may heat the motor and damage equipment.
7. Avoid sudden directional changes. These movements may damage the equipment, prematurely wear down brakes and cause accidents.

WARNING

If hoist model has double dual/speed capabilities, always start with slower speed to avoid sudden accelerations. Decelerate before completing a stop.

8. Avoid any obstacles while hoisting or moving the load.
9. Start movement of the trolley and ensure there is no swinging of the load and no obstacles in its path. Stop activity and make necessary adjustments if one of these conditions is present.

10. Once the desired position is reached, slowly stop the trolley. Position the load completely vertical to the desired spot where load will be lowered.
11. Gradually lower load until it is secured on resting surface. Avoid hitting surface at high speed. If necessary, stop movement before reaching surface and gradually lower to land load.

DANGER

NEVER leave load suspended without attention of the hoist operator!

1.4 Hoist Setup

WARNING

Disconnect unit from power before installation.

1. This Hoist is designed to be attached to a beam or steel pipe and be securely held in place by both of the Hangers (#23).

Note: The beam or steel pipe must be capable of carrying several times the weight of the Hoist and its designated maximum capacity. If in doubt, consult a registered engineer and building code.

Note: Make sure the area underneath or around the Hoist is clear of obstructions. Do not Hoist loads over people or animals.

2. After determining the location of the Hoist, make sure the beam or pipe is the proper size to fit inside of the Hangers (#23). Have a second person hold the top of the hoist flush against the beam or pipe. Line up the holes on each Hanger (#23) with the holes on the top of the Hoist. Thread in the two Screws (#21) and Washers (#20) per Hanger (#23) to secure the Hoist to the Beam or Steel Pipe. Check that it is secure. Before each use, check that the Hangers (#23) are securely fastened to the Hoist.

3. Ideally, the Hoist needs to be set-up within a reachable distance to a 3- prong power outlet without the need of an extension cord. However, extension cords are safe and acceptable when properly used.

WARNING

The Wire Rope (#56) must flow through the Wire Rope Guard (#29), and the Stopper (#31) must be securely attached to the end of the Cable (#56).

1. Plug the unit in and press the switch (#43) toward the “down” position to lower the hook (#34) to the load.

2. When connecting the hook (#34) to the load, you must ensure the load's connection point can hold the entire load's weight. If you are unsure, use a separate cable (not included) rated above maximum lift load capacity to surround the unit and tie it off securely. Then, attach the load completely inside the hook and safety tab on the hook (#34), and center the load under the hoist. The safety tab on the hook must latch or close over the connection point, or the cable or the load may fall, causing severe damage and injury.

3. Make sure no people or animals are near the immediate area. Never support a load over people or animals.

4. Standing clear, push the switch (#43) toward the “lift” position. Slowly raise the load enough to clear the floor or support system and check to be sure the load is fastened securely. Proceed only after you are confident the load is secure and free of all obstructions. You might have exceeded maximum lift capacity if the hoist does not lift the load. If you are under the maximum capacity and the hoist stops on its own, release the lift switch and stay clear while the motor has sufficient time to cool down. Then, resume the process.

5. When you are ready to lower the load, press the switch (#43) toward the “down” position.

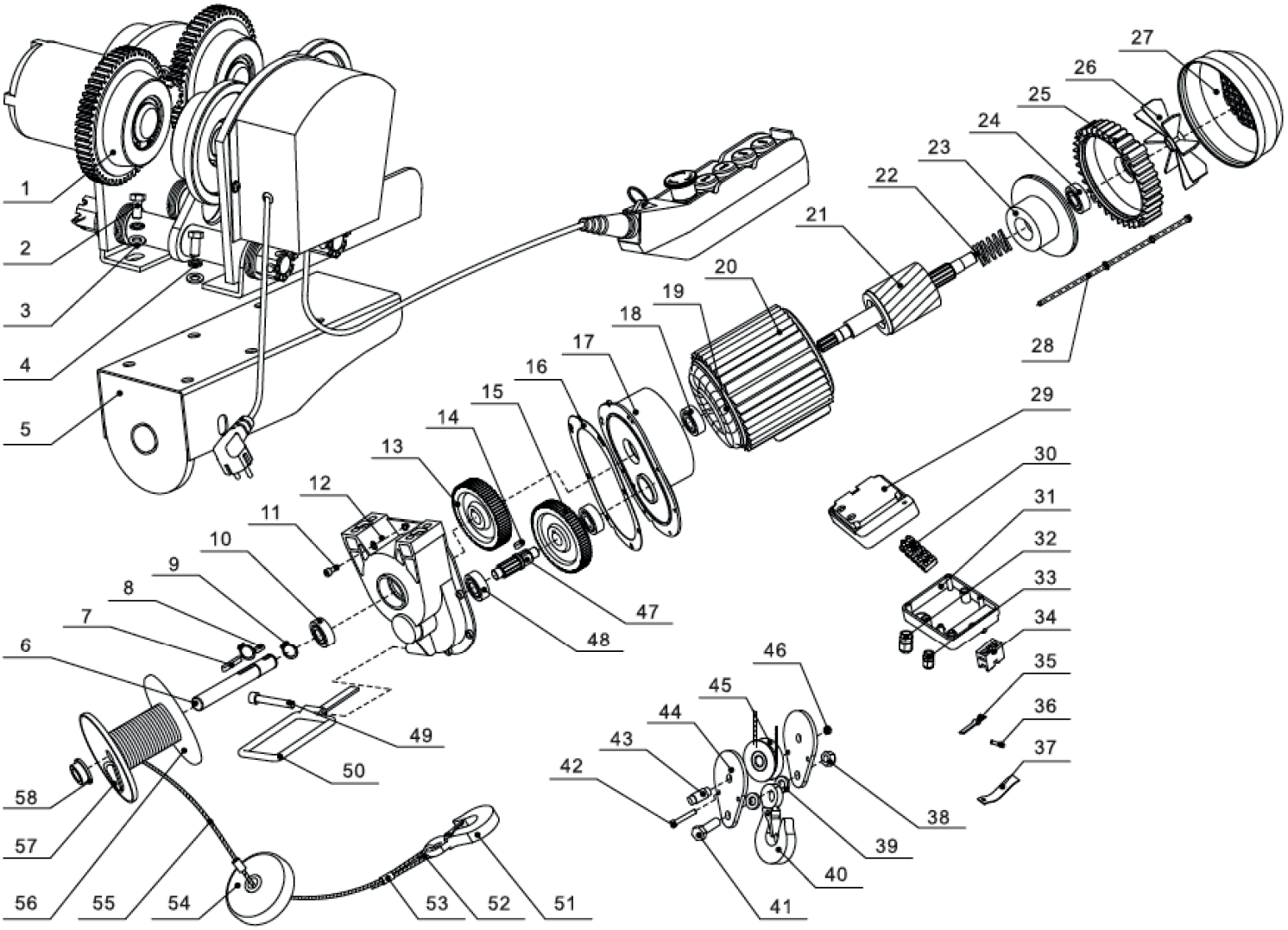
6. When the load is entirely on the ground, stay clear, shake, or move the load to make sure it is sitting firmly on the ground. Then, remove the hook (#34) from the load.

7. Push the Switch (#43) toward the “lift” position and bring the Stopper (#31) up to within a few inches of the Guard (#29)

8. When finished, unplug the unit.

1. ELECTRIC WIRE ROPE HOIST EXPLODED VIEW AND PARTS LIST

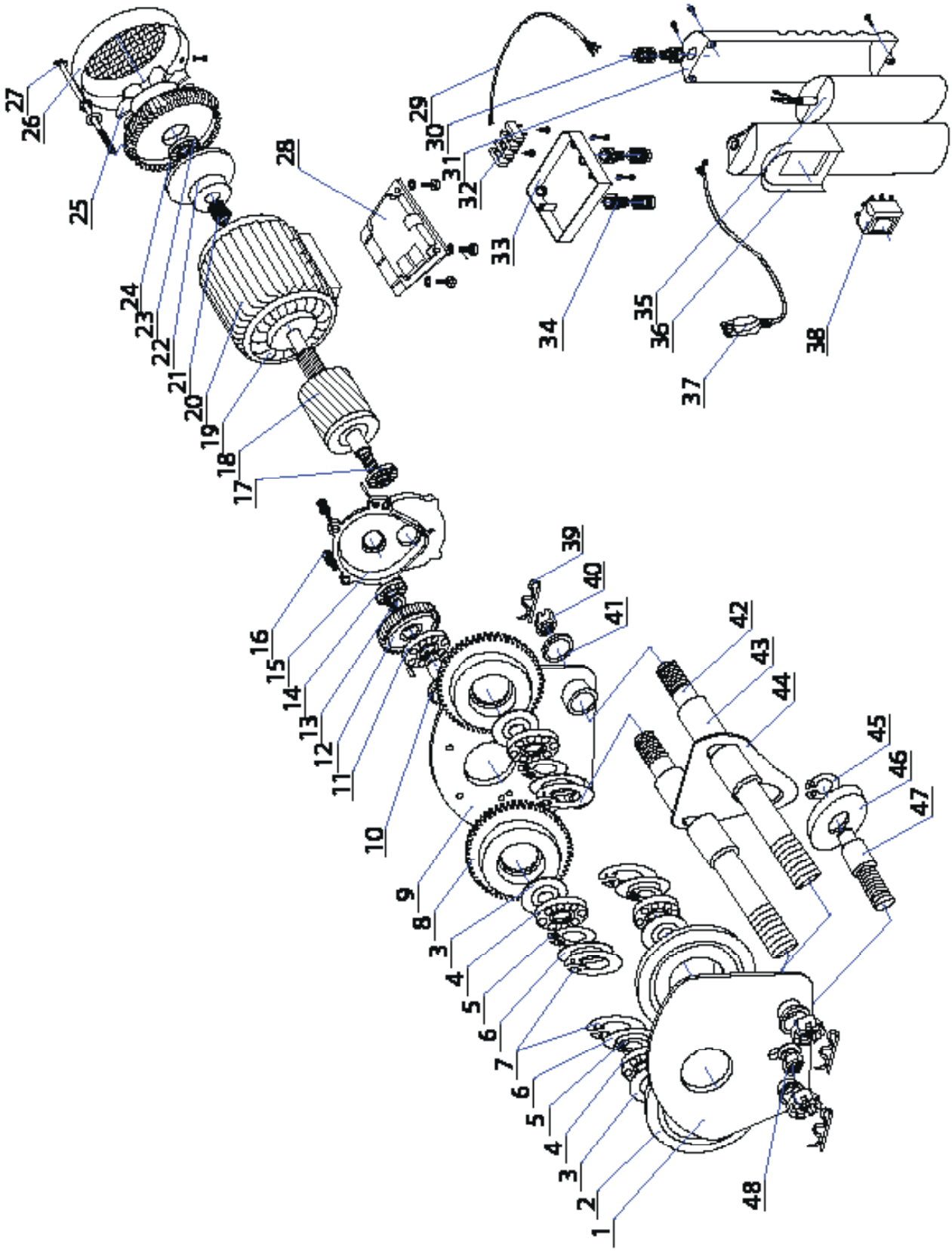
1.1 Motor and body assembly drawing



1.2 Motor and body assembly parts list

No.	Part Name	No.	Part Name
1	Traction Wheels	30	Terminal
2	Hexagon bolt	31	Cover
3	Flat washer	32	Holding fixture
4	Spring washer	33	Holding fixture
5	Support Structure	34	Safety switch
6	Rope roll shift	35	Breaker contactor
7	Flat key	36	Locating pin
8	Flat key	37	Spring tab
9	Elastic collar	38	Locknut
10	Bearing	39	Hook washer
11	Hexagon fillister head screw	40	Hook
12	Gear case	41	Hexagon Bolt
13	Gear	42	Hexagon Bolt
14	Flat washer	43	Wheel axle
15	Gear wheel	44	Splint
16	Cushion board	45	Pulley
17	Front cover	46	Hook fixed nut
18	Bearing	47	Gear Shaft
19	Stator	48	Bearing
20	Stator cover	49	Hexagon bolt
21	Rotor	50	Limiter
22	Tripping spring	51	Hook
23	Brake Component	52	Rope thimble
24	Bearing	53	Aluminum pipe
25	Aft closure	54	Block
26	Fan	55	Wire rope
27	Fan cover	56	Rope roll
28	Hexagon bolt	57	Wedge
29	Junction box	58	Bushing

1.4 Trolley assembly drawing



1.5 Trolley assembly parts list.

No.	Part Name	No.	Part Name
1	Cover fan	31	Stopper
2	Impeller	32	Clamp
3	Shield	33	Connector
4	Stator	34	Hook
5	Screw	35	Bearing
6	Bearing	36	Pinion
7	Basket	37	Key
8	Hub	38	Connector
9	Hub Gasket	39	Switch / Cable
10	Spring	40	Spring
11	Shaft	41	Screw
12	Bearing	42	Cover
13	Flange	43	Switch
14	Gasket	44	Screw
15	Bushing	45	Grip
16	Wheel	46	Condenser
17	Bearing	47	Grip
18	Crankcase	48	Screw
19	Support	49	Screw
20	Washer	50	Cable
21	Screw	51	Clamp
22	Screw	52	Terminal
23	Hanger	53	O-ring
24	Key	54	Cable
25	Shaft	55	Cable
26	Spool	56	O-ring
27	Cable	57	Clip
28	Bushing	58	Cable
29	Guard	59	Wheel
30	Screw		

1. OPERATION

1.1. Periodic Inspection

WARNING

After checking all requirements necessary to run this unit (hertz, amps, volts) printed on the side label of this unit, you may begin using it. If you require an extension cord, please follow the directions about the thickness and length of the cable.

WARNING

The electrical installation should meet the requirements for the peak consumption.
Note: Check the breaker threshold.

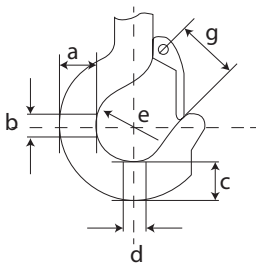
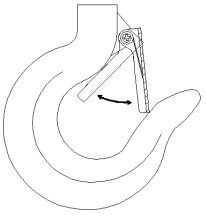
Instpection:

1. Periodically check the status of the wire rope.
2. Check and tighten the bolts and nuts.
3. Periodically check the correct functioning of the emergency stop.

WARNING

It is sole responsibility of the user to periodically check the wire rope, anchoring or any other part that may be damaged or worn out.

<table>
<tr><th>Items</th><th>Inspection Method</th><th colspan="3">Standards</th><th>Correction</th></tr>
<tr><td>Limit switch</td><td>Check by pushing button</td><td colspan="3">Operate until upper and lower limit cause automatic motor shutdown</td><td>Replace limit switch, disassemble and clean limit lever</td></tr>
<tr><td>Movement confirmation</td><td>Check by pushing button</td><td colspan="3">-Wire rope can roll up easily
-Motor shutdown immediately when operation stops
-All movements shutdown when E-stop button pushed
-Other buttons cannot cause movement when pushing the E-stop button -All movements return to normal operation when E-STOP button relieved</td><td></td></tr>
<tr><td>Brake</td><td>Check by pushing button</td><td colspan="3">Brake quickly activates and operation of bottom hook immediately stops (amount of movement of the load wire rope is within 2 to 3 rings)</td><td></td></tr>
<tr><td rowspan="5">Limit Spring</td><td rowspan="5">Visual inspection and measure dimensions</td><td rowspan="2">Wire rope</td><td colspan="2">Length of spring</td><td rowspan="5">Replace limit spring
  </td></tr>
<tr><td>Standard</td><td>Limits</td></tr>
<tr><td>Ø6.3</td><td>145</td><td>140</td></tr>
<tr><td>Ø7.1</td><td>145</td><td>140</td></tr>
<tr><td>Ø10.0</td><td>135</td><td>129</td></tr>
<tr><td>Ø11.2</td><td>160</td><td>152</td></tr>
</table>

<table>
<tr><th>Items</th><th>Inspection Method</th><th>Standards</th><th>Correction</th></tr>
<tr><td>Attrition and opening of the hook</td><td>Visually check and with vernier caliper tool
 
</td><td>No remarkable opening or attrition
<table>
<tr><th>Load</th><th>a</th><th>b</th><th>c</th><th>d</th><th>e</th><th>g</th></tr>
<tr><td>0.3 -0.5</td><td>27</td><td>18</td><td>25</td><td>17</td><td>35</td><td>28</td></tr>
<tr><td>1</td><td>34</td><td>24</td><td>30</td><td>24</td><td>42</td><td>32</td></tr>
<tr><td>2</td><td>46</td><td>29</td><td>39</td><td>30</td><td>49</td><td>40</td></tr>
<tr><td>3</td><td>56</td><td>35</td><td>49</td><td>34</td><td>59</td><td>48</td></tr>
<tr><td>5</td><td>67</td><td>43</td><td>67</td><td>44</td><td>60</td><td>48</td></tr>
<tr><td>7.5 - 10</td><td>82</td><td>55</td><td>80</td><td>48</td><td>85</td><td>80</td></tr>
<tr><td>15</td><td>110</td><td>78</td><td>120</td><td>80</td><td>120</td><td>90</td></tr>
<tr><td>20 - 25</td><td>142</td><td>95</td><td>155</td><td>98</td><td>150</td><td>115</td></tr>
</table></td><td></td></tr>
<tr><td>Deformation, damage and corrosion</td><td>Visual check</td><td>No remarkable deformation, harmful damage and corrosion</td><td>Replace hook</td></tr>
<tr><td>Hook safety block</td><td>Visual inspection, fold and unfold actions</td><td>-Can exactly fold inside the hook
-No deformation
Dangerous
-Do not use hook if safety block is loosening
Improper use will lead to death or serious injury</td><td>Replace hook safety block
  </td></tr>
<tr><td>Hook movements (rotate)</td><td>Visual inspection and manual rotation</td><td>-No remarkable space between bottom supporting and top
-equal at right and left
-easy to rotate 360°</td><td>Replace hook</td></tr>
</table>

1.2 Recommended Operation

WARNING

Before each use, inspect the general condition of the hoist. Check for loose screws, misalignment or binding of moving parts, cracked or broken parts, damaged electrical wiring, and any other condition that may affect its safe operation. If abnormal noise or vibration occurs, have the problem corrected before Further use. Do not use damaged equipment.

1. Wipe the Hoist down with a lint free cloth.

2. Check the cable for tears, excessive wearing, damage or frays. If you find any, do not use the Hoist until the cable is replaced by a qualified technician. Only use genuine replacement cable (Cable (#56)). Do not substitute rope or any other type of cable.

3. Periodically lubricate the cable with a light oil.

Pairing transmitter and receiver

Follow these instructions to pair the transmitter:

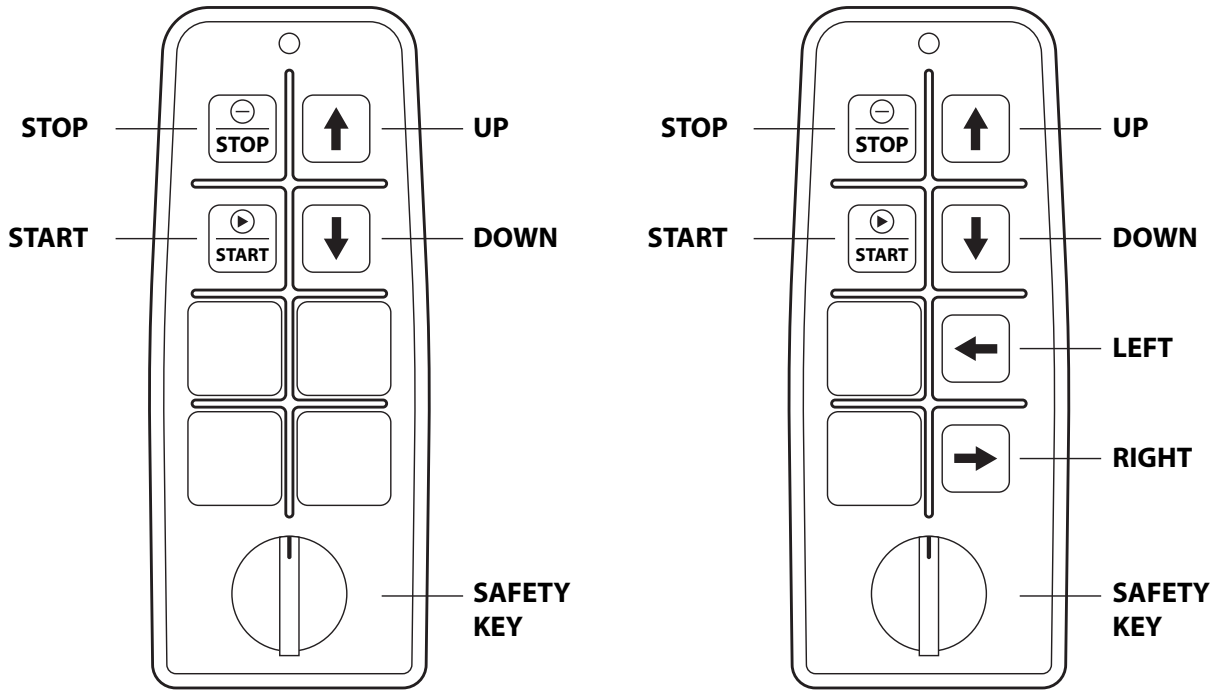
1. Disconnect the power supply from the receiver.
2. Remove the battery from the transmitter.
3. Return the battery to the transmitter, then hold down the "up" and "start" buttons until the Red LED on the transmitter flashes rapidly.
4. Re-connect the receiver to the power supply. The red LED on the transmitter will begin to flash slower. At this point, the transmitter and receiver are paired.

If you need to change the code and channel on the transmitter, complete one of the following:

TO COPY TRANSMITTER CODE AND CHANNEL TO THE RECEIVER
Press "UP" key to complete this operation.

TO COPY RECEIVER CODE AND CHANNEL TO THE TRANSMITTER
Press "DOWN" key to complete this operation.

If the process has been successful, the green LED on the transmitter will flash once.



7.1. During Operation:

Symptoms			Main Cause	Correction
Hoist does not operate	Brake is inaudible	Contactor is inaudible	Excessive voltage	Power
			Operating circuit break-off, electric parts over-heating	Power supply
				Internal wiring
				Contactor
				Transformer
				Up/Down limit switch
				Button switch
		Contactor is audible	Power circuit break-off, overheating motor, brake	Motor
				Brake
				Internal wiring
				Contactor (junction fusing)
	Brake is audible		Drive overheating, broken bearing	Gear
				Bearing
Operates without load only	Unable to lift (motor roar)		Default phase (single phase operation)	Power
				Feed power
				Motor
				Contactor (junction fusing)
	Slow lifting		Low voltage	Feed power
Unintended reaction from button	Inverse reaction from button		Wrong phase sequence wiring	Feed power
			Incorrect signal wiring	Internal wiring
				Button switch
	No reaction after pressing button		Circuit wire break	Internal wiring
				Button switch
			Electric installation parts	Contactor
				Up/Down limit switch
				Contactor
				Brake
				Feed power
				Internal wiring
				Button switch
				Wire rope
				Load pulley, bare pulley
				Gear
				Bearing
	Noise of brake	Running (grating)	Drag	Brake
		Stop	Wear of friction plate	Brake
	Abnormal noise of rail curve (grating)		Obstruction of orbit/wheel	Operation of trolley

Troubleshooting

Fault		Major Cause	Check Items
Does not move horizontally		Rail declining	Trolley movement
	Electric trolley /manual trolley	Inclined pull (wheel is lifting)	Trolley movement
	Electric trolley /manual trolley	Gear occlusion problem	Trolley movement
	Electric trolley /manual trolley	Brake fastening	Trolley movement
	Electric trolley	Electric faults	Trolley movement
Irregular movement and noise	Electric trolley /manual trolley	Rail & wheel interference	Trolley movement
		Side wheel lacks oil	
		Uneven wheel wear	
		Wheel deformation	
		Rail deformation, wear	
		Bearing wear	
		Brake wear	
Hook		Deformation	Hook
Wire rope		Wear or deformation	Wire rope
Electric shock upon touching machinery body or control switch		Equipment not properly grounded	Proper electric connection
Does not operate in non-load state	Brake inaudible	Supply power	Supply power voltage
		Operating circuit break-off, electric parts overheating	Cables
			Internal wiring
			Transformer
			Electrical relay
			Limit switch
			Push button switch
		Braking interval too large or small.	Motor
			Calibrate brake
		Tripping as motor overheats	Thermal protector
	Brake audible	Bearing burning out, driving component wear	Replace brake bearing
			Bearing
	Slow load operation	Voltage drop	Feed cable
	Low and high speed status not operating or working slow	Low voltage	Supply power
		Voltage drop	Feed cable
Movement does not correspond with switch button	Movement did not correspond with switch button	Motor wires connected	Motor
		Connection error	Internal wiring
			Push button switch
	Switch button did not work	Operating circuit break-off	Internal wiring
			Push button switch
		Electrical installation error	Limit switch

Condition	Reason	Action	Cause	Correction
No operation	Abnormal supply voltage	Power supply	Improper power supply	Check power supply regularly

Power Cable

Condition	Reason	Action	Cause	Correction
No operation	Wire break	Repair or change cable if broken	Strong force exerted	Firmly fix on cable support or other equipment
			(2 or more)	Use anti-vibration cable in movable part.
			Twisted, knotted	Straighten twists and knots
			Interference with other equipment	Use fixed cable and avoid outside interference
	Overheating	Check cables, exchange if overheating	Temperature rise due to off-capacity	Adopt the proper cable
			Binding cable used	Do not use binding cable
Starting slow or no operation	Off-capacity	Check cable diameter, replace cable if diameter is too small	Voltage drop	Adopt proper cable
Operation only in free load (single phase)	1 wire break or overheating	Refer to above break or overheating item		
Movement did not correspond with switch button (opposite)	Power line connection error	Replace wires	Wiring assembly error	Connect wire as per wiring diagram

Motor

Condition	Reason	Action	Cause	Correction
No operation	Coil burning (above 2 phase)	Measure phase resistance value; change motor if value is infinite.	Excessive current caused by high or low voltage	Operate under rated voltage
			Excessive current caused by overload	Operate under rated voltage
			Beyond short-term rating and intermittent cycle rating	Short-term rating, intermittent cycle rating, operate under rated voltage
				Avoid over-operation
			Excessive current caused by brake	Refer to brake
	Lead wire break (above 2 phase)	Measure phase resistance value; change motor if value is infinite.	Lead wire broken in assembly	Change motor coil
			Vibration, drop	Avoid excessive bumping in usage
Operation only in free load (single phase state)	Coil burning (1 phase only)	Measure phase resistance value; change motor if value is infinite	Poor electric isolation	Ensure foreign matter does not enter motor
	Leading wire break (1 phase only)	Measure phase resistance value; change motor if value is infinite	Leading wire break in assembly	Change motor coil
			Vibration, drop	Avoid excessive bumping

Brake

Condition	Reason	Action	Cause	Correction
No operation	Braking coil burning	Measure brake phase resistance value; change brake if value is infinite.	Excessive current caused by high or low voltage	Operate under rated voltage
				Avoid over-operation
			Excessive current caused by overload	Operate under rated voltage
				Confirm short-term rating, intermittent cycle rating, operate under rated voltage
			Excessive current caused by operation in singe phase state	Stop immediately if unable to lift load in single phase
	Friction plate beyond brake magnetism scope	Measure brake clearance, replace if space is over usage limit		Avoid over-operation
	Broken brake wire	Ensure wire is connected, replace if disconnected	Lead wire damaged during assembly	Replace coil brake
	Improper connection of brake wire terminal	Replace insert terminal when loose	Assembly error	Proper connection in assembly
	Rust	Replace brake if rust present	Exposure to water in storage	Ensure dry storage
			Condensation	Monitor usage environments
	Friction plate wear	Measure brake clearance, replace if space is over use limit		Avoid over-operation

Inside Wiring

Condition	Reason	Action	Cause	Correction
No operation	Break	Check cable, repair if wire break	Vibration, drop	Avoid excessive bumping in usage
			Leading wire damaged in assembly	Change motor coil
		Check connector, repair if wire break	Connector not properly set	Press by appropriate tool
	Wiring error	Refer to wiring diagram, ensure properly connected	Wiring error	Refer to wiring diagram, ensure properly connected
	Connector screws loose	Fastening	Improper fastening	Ensure effective fastening
	(overheating)		Vibration, drop	Avoid excessive bumping in usage
	Connector, insert terminal improper combination	Proper combination	Bad combination during assembly	Ensure combination is effective

Transformer

Condition	Reason	Action	Cause	Correction
No operation (contractor)	Coil burning, break	Measure coil resistance value; Change transformer if value infinite	Excessive voltage	Operate under rated voltage
				Avoid over-operation
			Excessive current caused by contactor	Refer to contactor items
			Vibration, drop	Avoid excessive bumping in usage
	Wire break	Check leading wire, repair or change transformer if wire	Vibration, drop	Avoid excessive bumping in usage

Contactor & Electric Reply

Condition	Reason	Action	Cause	Correction
Non-stop activation	Junction welding burn out	Change contactor if continuous welding or burn out. For electric reply, visual inspection of junction		Do not over-operate
			Excessive voltage (Excessive current)	Operate under rated voltage
			Excessive current due to overload	Operation under rated voltage
No operation	Coil burning	Measure coil resistance value. Change coil if value infinite.		Avoid over-operation
			Excessive voltage	Operate under rated voltage
			Vibration due to low voltage (Starting current added continuous)	Operate under rated voltage
		Replace contactor if action is not smooth. For electric reply, visual inspection for part breakage	Vibration, drop	Avoid excessive bumping in usage

Limit switch

Condition	Reason	Action	Cause	Correction
No operation (Contactor)	Contact fused	Operate limit switch. Check continuity of contactor, replace if result is negative	Limit switch overuse	Avoid overuse of switch
	Wire break	Inspect cable, change if wire breakage or replace limit switch	Vibration, drop	Avoid excessive bumping in usage
	Movable parts rusting	Check movable parts such as limit lever. Remove if rusty or replace if adhesive	Set in Up/Down limit for long time	Do not set in Up/Down limit
Motor did not stop upon reaching upper and lower limit	Contact welded	Operate limit switch. Check continuity of contactor, replace if does not open	Limit switch used frequently	Avoid overuse of limit switch
	Rusting of movable parts	Check movable parts such as limit lever. Remove if rusty or replace if adhesive	Infrequent usage; use in moist environments.	Regular inspection
	Wiring error	Reference wiring diagram. If limit switch cable is properly connected, it is inversely connected. Swap 2 wire power cords	Wiring error	Properly connect wire power cords as per wiring diagram

Push button switch

Condition	Reason	Action	Cause	Correction
No operation (Contactor)	Emergency button is pressed	Turn button right to recover	Emergency button not reset	Read User Manual before usage
	Switch gear fault	Conduction contacts, replace switch if off	Vibration, drop	Avoid excessive bumping in usage
	Wiring break	Check if button cable is correctly connected to switch device. Repair if broken	Vibration, drop	Avoid excessive bumping in usage
	Terminal screw loose	Tighten screw	Vibration, drop	Avoid excessive bumping in usage
	Button cable wire break	Replace cable or button cable when wire break	Cable coating damaged	Avoid contact with other equipment during operation
			Faulty installation	Install protection line firmly
Action does not correspond with display	Wiring error	Reference wiring diagram. If limit switch cable is properly connected, it is inversely connected. Swap 2 wire power cords	Wiring error	Properly connect wire power cords as per wiring diagram
Operation continues upon button release	Faulty switch gear part	Replace switch if not smooth.	Vibration, drop	Avoid excessive bumping in usage

Electric shock

Condition	Reason	Action	Cause	Correction
Electric shock upon touching machinery or control switch	Equipment not properly grounded	Measure earth resistance. If below 100Ω assemble ground wire	Improper ground wire connection	Firmly connect ground wire
			Ground wire bad connection	Assemble carefully to prevent loose screw
			Cable break	Do not apply excessive force on cable
	Dampness/ water	Clean, use once dry	Wet hands	Do not operate with wet hands

Hook

Condition	Reason	Action	Cause	Correction
Hook mouth open	Hook deformation	Replace hook if deformation is beyond permitted range.	Overload	Operate under rated voltage
			Lifting (hook connected with grounded object)	Do not lift grounded objects.
			Load hanging on hook head; hook pull horizontal	Lifting load properly with hook
			Hanger suspension errors	Lifting angle must be controlled within 120 °
			Load size exceeds rated hook	Using proper hook
Hook twist			Wire rope wrapped around load	Do not wrap wire rope
Head hook improper rotating	Bearing rust, corrosion	Hand rotation; maintain or replace if experiencing difficulty rotating	Inadequate lubrication; corrosion	Apply grease lubricant regularly; prevent hook contamination of chemical agents
	Bearing damage		Dust	Prevent foreign matter from entering head

Load pulley and empty pulley

Condition	Reason	Action	Cause	Correction
Irregular sound from springs (cracking sound)	Wear of pulley	Measure slot edge thickness and wire rope, replace if badly worn	Long-term operation with insufficient lubrication	Apply lubricating oil regularly
			Excessive operation	Avoid excessive operation
			Overload	Use under rated load
			Incline pull	Avoid incline pull

Bearing

Condition	Reason	Action	Cause	Correction
Unable to lift loads	Breakage	Replace bearing	High temperature or high frequency	Avoid use at high temperatures or high frequency

Trolley

Condition	Reason	Action	Cause	Correction
No drive due to wheel skid	Rail tilt	Confirm rail slope is within 1 °	Improper rail settings	Set up orbit correctly
No drive due to wheel skid	Apply oil above orbit wheel tread.	Ensure wheel is clean and unobstructed	Use in environment which outside material does not interfere with parts	Clean orbit regularly
Audible friction when travelling on curve track	Friction resistance between wheel and rail	Apply lubricating oil on track tread		
No drive on curve track	Interference of curve track and trolley	Confirm that orbit curve's radius is minimal bending radius	Curve track exceeding limit value	Avoid use on curve track exceeding limit value
Wheel raised and unable to be driven	Inclined pull (wheel raised)		Operation method	Correct use
Wheels stopped revolving	Faulty gear connec-tion	Ensure clean space between wheel and gear	Interference from outside material	Check regularly
Abnormal sound	Improper adjustment circle	Confirm adjustment circle number and insert position	Insufficient confirmation	Install correctly
	Wear of wheel	Confirm wear degrees	Traveling surface has bump	Confirm regularly
	Deformation of wheel	Check wheel bending and surface damage	Excessive collision, traveling surface deformed	Replace and use correctly
	Aging of wheel bearings	Confirm irregular sound exists when wheel rotates	Reaching service life	Replace
	Deformation and wear of track	Confirm rail wear and deformation	Overload or reaching service life	Replace and use correctly

Electric Trolley

Condition	Reason	Action	Cause	Correction
Wheels stopped revolving	Brake gelling	Open motor cover remove rust and dirt	Usage environment	Inspect regularly
	Electric fault	Refer to items of electric wire rope hoist		
Abnormal sound	Wear of edge guide wheel	Confirm wear degrees	Reaching service life	Confirm regularly
	Wear of friction slices	Confirm wear degrees of friction slices	Reaching service life	Confirm regularly

Pairing transmitter and receiver

Follow these instructions to pair the transmitter:

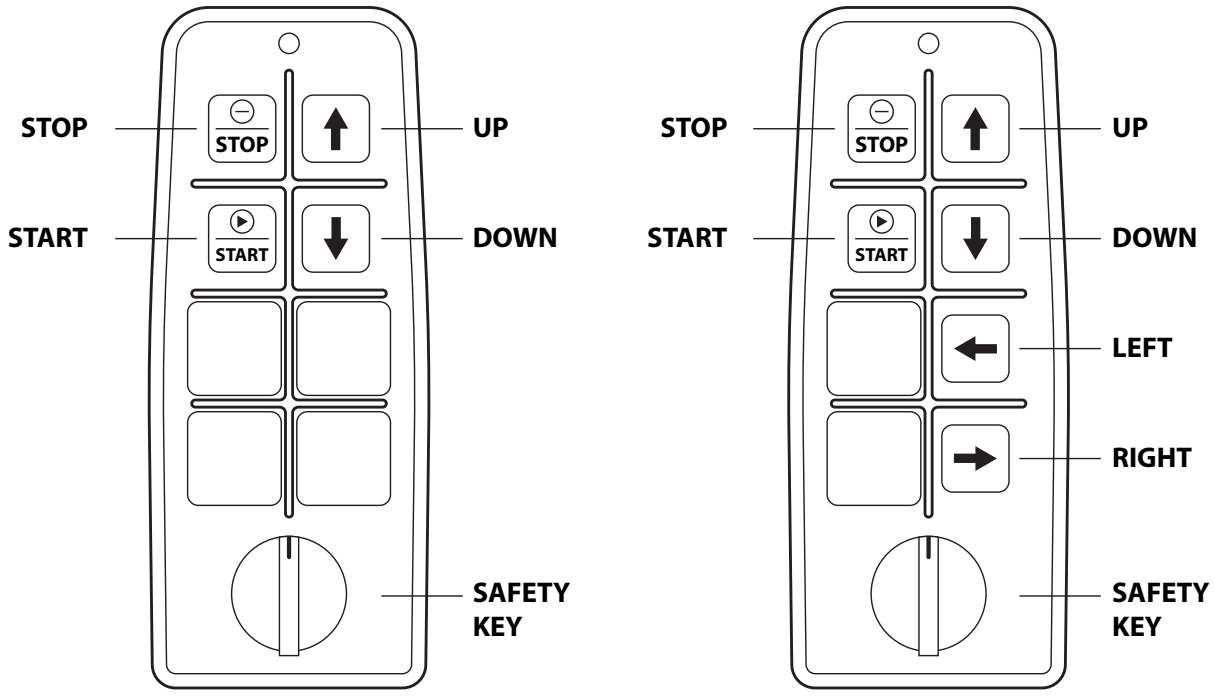
1. Disconnect the power supply from the unit.
2. Remove one battery from the transmitter.
3. While pressing the "up" and "stop" buttons replace the battery until the red LED on the transmitter flashes rapidly.
4. Re-connect the receiver to the power supply. The red LED on the transmitter will begin to flash slower. Press the "down" key on the transmitter. At this point, the transmitter and receiver are paired.

If you need to change the code and channel on the transmitter, complete one of the following:

TO COPY TRANSMITTER CODE AND CHANNEL TO THE RECEIVER
Press "UP" key to complete this operation.

TO COPY RECEIVER CODE AND CHANNEL TO THE TRANSMITTER
Press "DOWN" key to complete this operation.

If the process has been successful, the green LED on the transmitter will flash once.



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