



PWPHW Series

User's Manual / Manual de usuario

Safety Warnings / Advertencias de seguridad



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In this sense, Prowinch® LLC will not be liable for accidents and / or damages to persons and / or property resulting from the negligent use of the product.

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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 duly trained in the use thereof. The Client / User is also responsible for implementing all the 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 the selection of the equipment, the capacities and characteristics required by the clients is delivered free of charge and based on the information about the application, use and requirements indicated by the Client itself. It does not correspond to 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 in relation to the intended use.
4. Prowinch® LLC recommends the use of winches with 4 brakes for personnel lifting. The use of winches of 3 brakes or less or safety features lower than the best available for personnel lifting, is the sole responsibility of the customer.
5. In order to guarantee the safety of the personnel and users of the equipment it is necessary to carry out the inspections and maintenance of the equipment according to the recommended frequency in relation to its work cycle. It is mandatory to keep record and evidence the written and photographic reports of: Maintenance, Start-up, Load Tests, Training, Certifications, Inspections and Reports of failures and accidents.
6. The aforementioned reports must be sent by email to registros@prowinch.com within the first 7 calendar days after the occurrence of an event.
7. Compliance with the timely implementation of the mandatory activities described in points 6 and 7 in addition to all the activities mentioned in the corresponding rules applied are the sole responsibility of the user. Failure to comply with the foregoing conditions releases Prowinch® LLC from any type of Liability and Warranty to the team, customer, staff or user, or any other liability that could be attributed to Prowinch® LLC.

The information contained in this manual may contain technical errors or inaccuracies. Prowinch® LLC is not responsible for typing errors, omission 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.



WARNING

Hoists, Cranes and other Lifting and material-movement related equipment USERS, must be knowledgeable about the safe and proper use of this equipment and be aware of their responsibilities as outlined in all applicable standards and regulations.

The ASME/ANSI B30 Standard contains provisions that apply to the construction, installation, operation, inspection, testing, maintenance, and use of cranes and other lifting and material-movement related equipment.

As OSHA's, ASME and ANSI standards state, the installation, setup and operation of these units and equipment shall be performed by a qualified person.

OSHA requires rated load tests for new and altered cranes, OSHA's standard at 29 CFR 1910.179(k) states:

Operational tests.

Prior to initial use all new and altered cranes shall be tested to insure compliance with this section including the following functions:

Hoisting and lowering.

Trolley travel.

Bridge travel.

Limit switches, locking and safety devices.

The trip setting of hoist limit switches shall be determined by tests with an empty hook traveling in increasing speeds up to the maximum speed. The actuating mechanism of the limit switch shall be located so that it will trip the switch, under all conditions, in sufficient time to prevent contact of the hook or hook block with any part of the trolley.

Rated load test. Test loads shall not be more than 125 percent of the rated load unless otherwise recommended by the manufacturer.

Once a rated load test is performed, paragraph 1910.179(k)(2) requires that "[t]he test reports shall be placed on file where readily available to appointed personnel."

In order to ensure Safety and installation requirements Prowinch requires Load Tests to be performed prior to initial use for all Hoists, Winches and Cranes, as well as other related components. Not fulfilling this requirement is dangerous, could lead to equipment failure and will automatically void the warranty.

The B30 Standard is intended to:

(a) Prevent or minimize injury to workers, and otherwise provide for the protection of life, limb, and property by prescribing safety requirements.

(b) Provide direction to manufacturers, owners, employers, users, and others concerned with, or responsible for, its application.



WARNING

(c) Guide governments and other regulatory bodies in the development, promulgation, and enforcement of appropriate safety directives.

The equipment covered by the B30 Standard is subject to hazards that cannot be abated by mechanical means, but only by the exercise of intelligence, care, and common sense. It is therefore essential to have personnel involved in the use and operation of equipment who are competent, careful, physically and mentally qualified, and trained in the proper operation of the equipment and the handling of loads. Serious hazards include, but are not limited to, improper or inadequate maintenance, overloading, dropping or slipping of the load, obstructing the free passage of the load, and using equipment for a purpose for which it was not intended or designed.

Failure to Read, Understand and Follow the information in the corresponding ASME B30 Standard for your Hoist and Lifting equipment may result in severe INJURY or DEATH. It is YOUR RESPONSIBILITY to consider all risk factors and follow all the equipment related ASME B30 standard, which comprises the following volumes:

B30.1 Jacks, Industrial Rollers, Air Casters, and Hydraulic Gantries.

B30.2 Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist).

B30.3 Tower Cranes.

B30.4 Portal and Pedestal Cranes.

B30.5 Mobile and Locomotive Cranes.

B30.6 Derricks.

B30.7 Winches.

B30.8 Floating Cranes and Floating Derricks.

B30.9 Slings.

B30.10 Hooks.

B30.11 Monorails and Underhung Cranes.

B30.12 Handling Loads Suspended From Rotorcraft.

B30.13 Storage/Retrieval (S/R) Machines and Associated Equipment.

B30.14 Side Boom Tractors.

B30.15 Mobile Hydraulic Cranes.

B30.16 Overhead Hoists (Underhung).

B30.17 Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist).

B30.18 Stacker Cranes (Top or Under Running Bridge, Multiple Girder With Top or Under Running Trolley Hoist).

B30.19 Cableways.

B30.20 Below-the-Hook Lifting Devices.

B30.21 Lever Hoists.

B30.22 Articulating Boom Cranes.

B30.23 Personnel Lifting Systems.

B30.24 Container Cranes.

B30.25 Scrap and Material Handlers.



WARNING

B30.26 Rigging Hardware.
B30.27 Material Placement Systems.
B30.28 Balance Lifting Units.
B30.29 Self-Erecting Tower Cranes.
B30.30 Ropes.

DO NOT



WARNING

1. DO NOT Operate, install, or repair the hoist unless trained and authorized.
2. DO NOT Operate the hoist unless you have first read the operator's manual.
3. DO NOT Operate the hoist without appropriate PPE and without performing a pre-shift inspection.
4. DO NOT Operate the hoist if not complying with all required OSHA regulations.
5. DO NOT Lift more than the rated load.
6. DO NOT Lift people or lift loads over people.
7. DO NOT Wrap the hoisting rope or chain around the load.
8. DO NOT Operate with the chain/rope not properly seated in the sprockets, drum, or sheave.
9. DO NOT Operate unless the direction of the hook travel agrees with the direction shown on the control.
10. DO NOT Operate the hoist unless the hook travel limit devices function properly. (Test without a load PRE-SHIFT)
11. DO NOT Operate the hoist with twisted, kinked, damaged, dirty, or unlubricated chain or rope.
12. DO NOT Operate a damaged or malfunctioning hoist.
13. DO NOT Operate the hoist when the hook is not centered under the hoist
14. DO NOT Remove or obscure this tag or other WARNING & SAFETY LABELS.

DAILY CHECKLIST



WARNING

TAGGED HOIST: Ensure the crane or hoist is not tagged out of order.

CONTROL DEVICES: Test Run. Ensure all motions agree with control device marking.

BRAKES: Check all motions for excessive drift and abnormal stopping distances.

HOOK: Check for damage, cracks, nicks, gouges, deformations on throat opening, wear on saddle or load-bearing point, and twist.

HOOK LATCH: Check for proper operations.



WARNING

WIRE ROPE: Check for broken wires, broken strands, kinks, and deformation or damage to the rope structure.

CHAIN: Check for corrosion, wear, elongation, twist, nicks, or gouges. Keep Chain/Wire Rope Clean and Lubricated.

REEVING: Check the rope for proper reeving and that rope parts are not twisted.

LIMIT SWITCHES: Ensure that all limit devices stop lifting motion before the load block or chain/rope stop strikes the hoist.

OIL LEAKAGE: Check for any signs of oil leakage on the crane/hoist and the floor.

UNUSUAL SOUNDS: Check for unusual sounds from the hoist while operating.

WARNING & SAFETY LABELS: Ensure that labels are not missing and they are legible.

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Thank you for purchasing our Prowinch® Electric Crane. 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

The Prowinch® Electric Crane is designed for a safe and reliable service if operated according to the User Manual. Respect and follow all warnings for personnel and third party safety indications. Inadequate operation may cause serious risks of injuries to personnel or damage to the equipment. Read and understand this User Manual carefully before installing and commissioning the equipment. Always keep this User Manual in an accessible place for future reference. The compact and lightweight structure of the PWPHP models together with their ease of use makes them a preferred cranes for daily use in factories, mines, sea ports and warehouses.

Improperly installed, maintained, or operated cranes can be the cause of serious accidents or death. This User Manual highlights symbols and notes for caution, warning and danger. Following these indications greatly improves the safety of the operator and personnel in the area.

Mandatory use of:



Hard Hat



Safety Glasses



Safety Gloves



Safety Shoes

1.1. Crane Safety Precautions



WARNING:

This symbol indicates unsafe practices or situations which may cause damage to the property and even injuries to the personnel.



DANGER:

This symbol indicates a potentially dangerous situation which 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 crane, the unit must be unplugged, 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 crane. Practicing correct and safe operating procedures and carrying out the recommended preventative maintenance will ensure a long, reliable, and safe service.

After carefully reading and understanding the User Manual, store it for future reference.

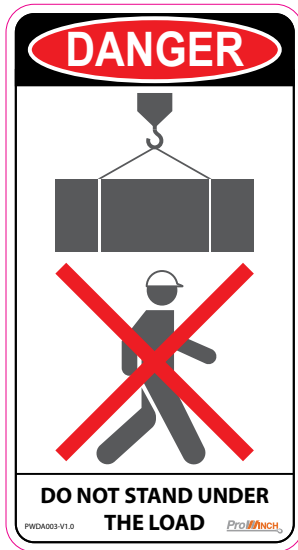
1.2. Before using the Equipment:

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

1.3. During Operation:

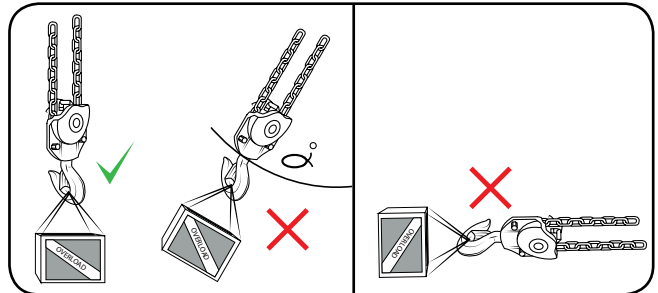
ALWAYS:

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



NEVER:

- **Never** exceed the maximum load capacity of the crane.
- **Never** operate a damaged or malfunctioning crane.
- **Never** operate the crane if it shows an abnormal behavior.
- **Never** lift, support, or transport people or loads over people.
- **Never** walk or step on the wire rope.
- **Never** operate the electric crane with twisted, kinked, damaged or worn wire rope.
- **Never** use the wire rope as a sling around load.
- **Never** operate a crane if the ID plate or safety labels are missing or illegible.
- **Never** operate an electric crane if exposed to rain or water.
- **Never** use if operator is sick or not completely attentive.
- **Never** leave the crane unattended while energized or loaded.
- **Never** operate the crane with non-centered load.
- **Never** operate beyond the limits of the wire rope or extend the cable.
- **Never** use the wire rope or hook as an electrical or welding ground.
- **Never** remove the labels placed on the electric crane.
- **Never** use the crane to lift load at an angle, nor pull or drag



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:

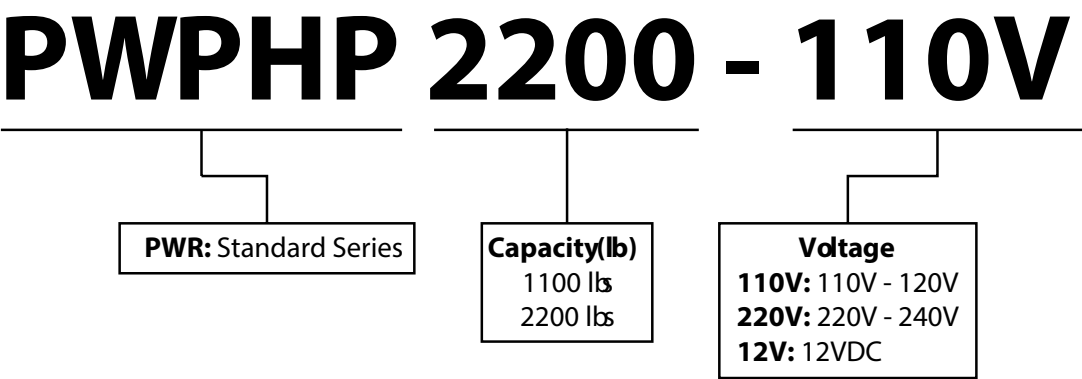
- Check the condition of electrical connections.
- Check the wire rope and keep it lubricated.
- Prevent others from stepping under lifted load.
- Inspect and maintain the crane regularly.
- Verify the correct installation of the crane before using.
- Avoid contact with explosive gases or materials.

NEVER:

- **Never** overload the crane.
- **Never** transport people or animals with the crane.
- **Never** stand under suspended load.
- **Never** use the crane if exposed to rain, snow, or lightning
- **Never** leave loads suspended for an extended period of time. This may cause component deformation and accidents.
- **Never** exceed the allowable operating temperatures stated in this User Manual (differs depending on the model).
- **Never** expose the crane to water, sand, corrosive materials or other substances which may damage the equipment.

2. SPECIFICATIONS

2.1. Product Code.



2.2. Specification Chart (For all models of Prowinch® Electric Cranes).

Item		Specs
Operating temperature range (°C)		-20° to ± 40°
Operating Humidity Range (%)		< 85%
Protection Class	Crane	IP55
	Button Switch	IP55
Power Supply		120VAC @ 60Hz / 12-24VDC
Noise Level (db)	Single Speed Crane	81db
	Double Speed Crane	81db

Observations

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

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

2.3. Load Level and Service Life

Crane 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	Powerhouse and utilities, infrequent handling. 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. Loads and utilization randomly distributed. Rated loads infrequently handled. Total running time not more 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 randomly distributed. Total running time not more than 25% of the work period.	15 (25%)	150	30	200
H4	High-volume handling of heavy loads, frequently near rated load in steel warehousing, machine and fabricating shops, mills, and foundries, with total running time not more than 50% of the work period. Manual or automatic cycling operations 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 often cab operated. Duty cycles approaching continuous operation are frequently necessary. User must specify exact details of operation, including weight of attachments.	60 (100%)	600	N/A	N/A

Working Conditions		Load	Time	Maintenance Interval (Months)	Expected Life [Working Hours]				
					800	1600	3200	6300	12500
Light	Light Mechanisms subjected normally to light loads and very rarely to the maximum load.			6 - 12	H1	H2	H3	H4	
Normal	Mechanisms subjected normally to moderate loads and frequently to the maximum load.	< 65%	< 25%	6 - 12	H2	H3	H4	H5	
Heavy	Mechanisms subjected normally to loads of heavy magnitude and frequently to the maximum load.	> 65%	> 25%	3 - 6	H3	H4	H5		
Severe	Mechanisms subjected regularly to the maximum load	Abnormal conditions Environmental, Geographical, etc <100% < Duty Cycle Limit		1 - 3	H4	H5			

2.4. Crane Specifications

Specifications		Model			
		PWPHP1100-110V	PWPHP1100-12V	PWPHP2200-110V	PWPHP2200-12V
Capacity (lb)		550 lbs - 1100 lbs		1100 lbs - 2200 lbs	
Lifting Speed (ft/min)		16 - 33 ft/min	12 - 24 ft/min	16 - 33 ft/min	12 - 24 ft/min
Motor Power (kW)		1 kW	2.7 kW	1.5 kW	3.3 kW
Insulation Grade		B	BBB		
Power Supply		120VAC @ 60Hz	12V	120VAC @ 60Hz	12V
Control Voltage		12V	12V	12V	12V
Net Weight (lb)		139 lbs	125 lbs	283 lbs	265 lbs
Dimensions	H	82 in / 2082 mm		85 in / 2159 mm	
	H1	46.5 in / 1181 mm		47 in / 1193 mm	
	H2	30 in / 762 mm			
	H3	3/4 in			
	L1	49 in / 1244 mm		51 in / 1295 mm	
	L2	42 in / 1066 mm		44 in / 1117 mm	
	L3	35 in / 889 mm		40 in / 1016 mm	
	D1	3.5 in / 88.9 mm		4 in /101.6	

BOOM Position	1100 lb - 0.5 t		
	1	2	31
A	1300 lbs	600 lbs	340 lbs
B	1150 lbs	580 lbs	290 lbs
C	1100 lbs	550 lbs	280 lbs

BOOM Position	2200 lb - 1 t		
		2	3
A	1600 lbs	1300 lbs	780 lbs
B	2300 lbs	1150 lbs	690 lbs
C	2200 lbs	1100 lbs	660 lbs

4. Oil & Lubricant Recommendations



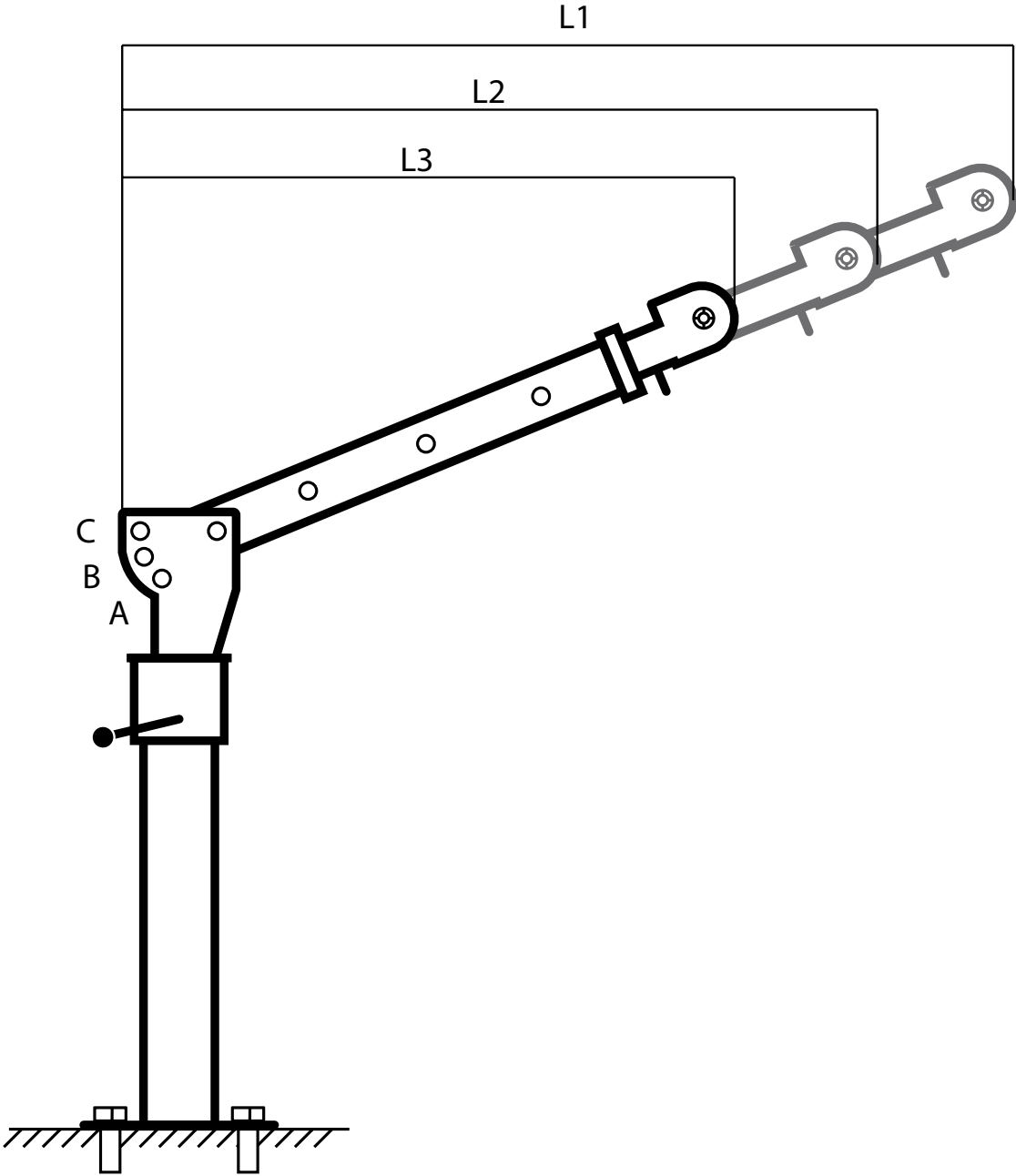
WARNING

Do not allow the wire rope to get dirty or rusted.

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.

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



Specifications		Model			
		PWPHP1100-110V	PWPHP1100-12V	PWPHP2200-110V	PWPHP2200-12V
Dimensions	H	82 in / 2082 mm		85 in / 2159 mm	
	H1	46.5 in / 1181 mm		47 in / 1193 mm	
	H2	30 in / 762 mm			
	H3	3/4 in			
	L1	49 in / 1244 mm		51 in / 1295 mm	
	L2	42 in / 1066 mm		44 in / 1117 mm	
	L3	35 in / 889 mm		40 in / 1016 mm	
	D1	3.5 in / 88.9 mm		4 in /101.6	

3. INSTALLATION



WARNING

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

Preparation Process:

- Electric motor must be grounded properly.
- Lock-out and tag-out the main disconnect switch in de-energized position before performing any service on the unit.
- Customer must provide power supply cable, fuses, and main disconnect switch.
- Check that the supply voltage is same as the nameplate voltage on the crane.
- Ensure that the voltage does not vary by more than $\pm 10\%$ from nominal value.
- Do not use cables with a gauge smaller than those listed in this User Manual to supply power to the crane.
- Never bypass limit switches, remove limit switch stops, or alter limit switch devices.

3.1 Unpacking

All crane boxes should be carefully inspected upon delivery for any damage that may have occurred during shipment or handling. Check the frame for: dents or cracks, external cords for damaged or cut insulation, control station for cut or damaged enclosure, and load chain for nicks and gouges.

Check and document crane characteristics:

- a. Model number
- b. Rated capacity (tonnage)
- c. Lifting length of the wire rope (feet)
- d. Power supply
- e. Push button pendant assembly (2 button, 4 button or 6 button)
- f. Specially ordered optional items

3.2 Anchoring the crane



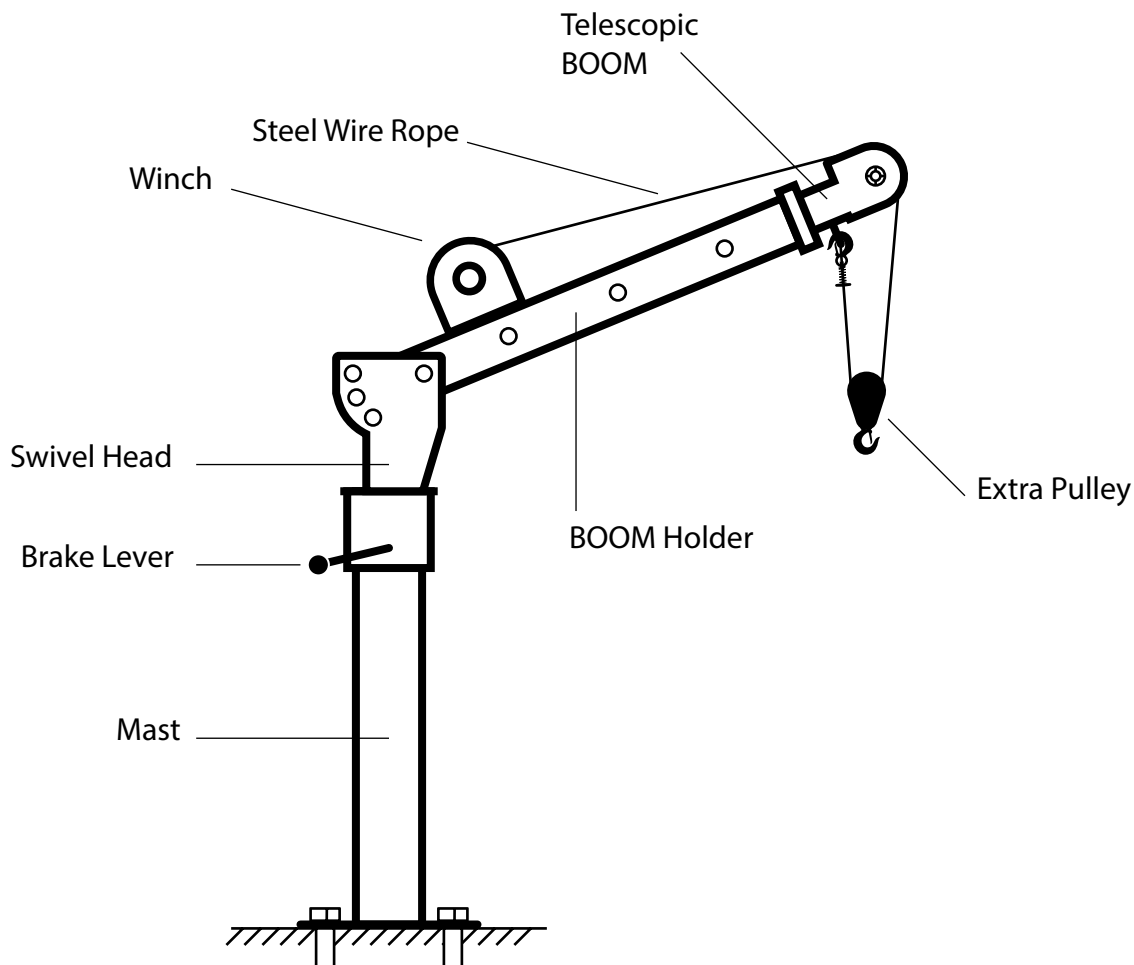
WARNING

The base where the crane will be anchored has to meet the structural requirement to handle the rated load.

Please refer to the Standards **ASME B30** for the correct Installation, Inspection, Maintenance and Use of the crane.

Installation Process:

1. Install and secure the base of the crane to a leveled surface (Fig. 1) that meet the requirements to support the rated capacity of the crane.
2. Install the swivel head (Fig. 2) on the mast, make sure it sits all the way in. Use the provided brake lever to prevent the swivel head from rotation during assembly.
3. Install and secure the boom as shown on (Fig.3)
4. Install and secure the crane winch on the mast
5. Feed the hook and wire rope through the crane pulley (Fig. 5). Additionally you may use the provided extra pulley to use the crane at it's maximum rated capacity.
6. Additionally you may use the provided pulley to hoist at the maximum rated capacity of the crane (Fig. 6).



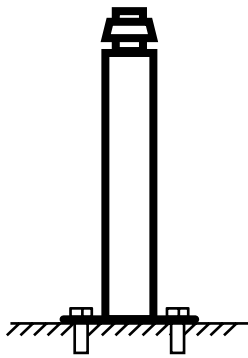


Fig. 1

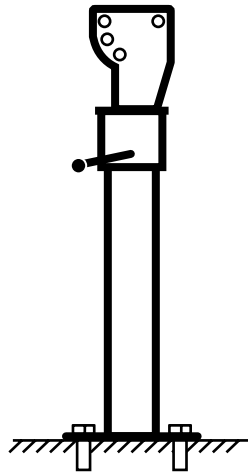


Fig. 2

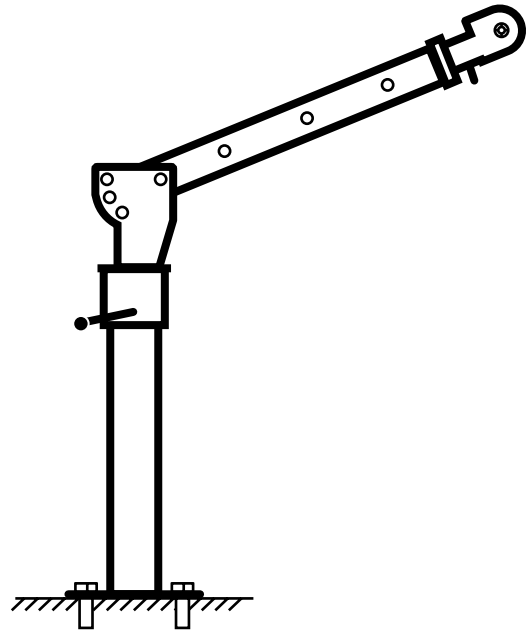


Fig. 3

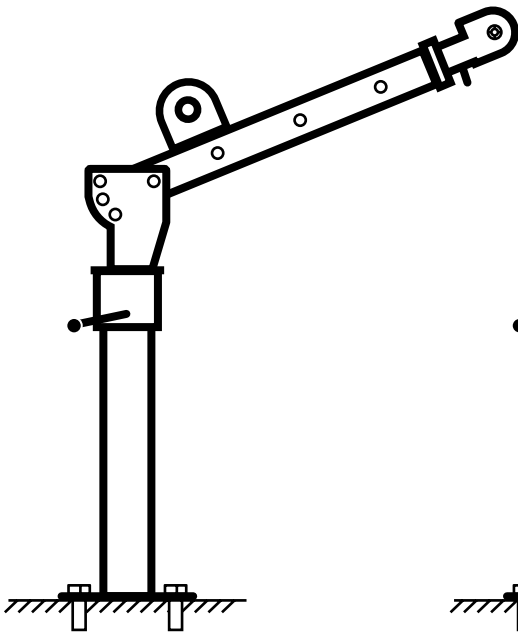


Fig. 4

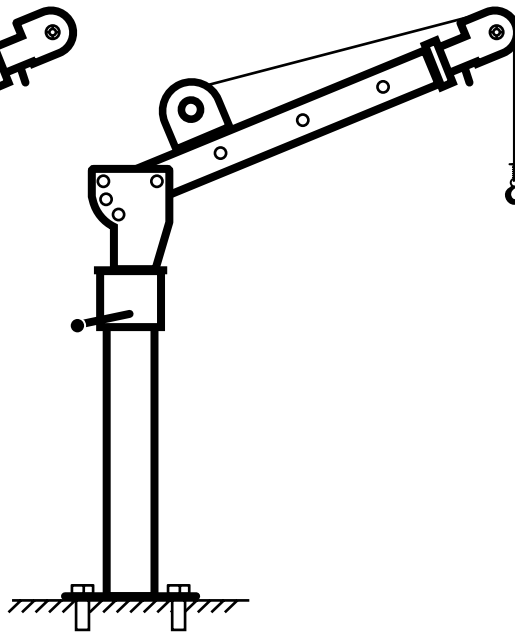


Fig. 5

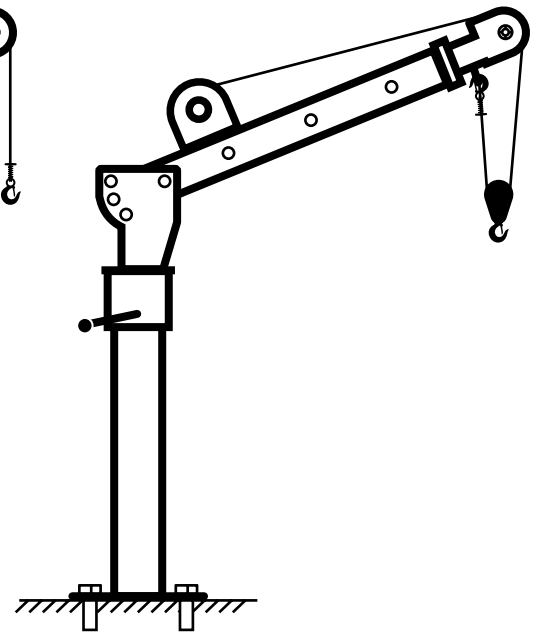


Fig. 6

3.3. 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 the crane.

3.7. 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.

4. OPERATION

4.1. Qualified Operator

Crane 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 crane.

Safe and efficient operation of crane requires an operator who exercises caution, common sense, and good judgment in anticipating the effects of operating the crane. 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, OSHA and ASME.

This crane must not be operated by individuals who:

- Cannot read, understand and speak the language in which the security labels, ID Plate and User Manual of equipment are 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 safe operation of the equipment.
- Has not been trained for the proper use of the crane.
- Has not received and read the User Manual for the exact equipment.
- Has not demonstrated qualifications through practical operation of crane.

4.2 Handling Precautions

ALWAYS:

- Keep crane in good condition and make sure chain is lubricated and free to operate.
- Make sure electrical connection is grounded.
- Make smooth movements; avoid sudden changes of direction.
- Check the function of the crane without a 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 the wire rope. If load falls it can cause serious injuries and death.
- Make sure no one is underneath the load.

NEVER:

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

4.3 Recommended Operation



WARNING

Always carry out a complete inspection before starting the operation of the crane.
Refer to the corresponding ASME B30 Standards
Always let all personnel know that crane maneuvers are about to begin
Do not allow Unauthorized Personnel to be in the lifting area.

Start with Operational Test

(To Start communication with the unit press **START** for **FIVE SECONDS - 120V Models Only**)

1. Press (down) button to lower the unloaded hook until the hook touches the ground. Be sure to stop before the hook touches the floor to keep the tension on the cable.
2. Press (up) button to raise the unloaded hook up. Stop before the hook or pulley reaches the arm.
3. Test correct function of emergency stop button. When pressing (up), and (down) buttons press the emergency stop button. Ensure the crane stops immediately after pressing the emergency stop switch. The crane should not start again if any other button is pressed.
4. If any of the above tests fail, the unit must remain out of service, lockout/tag-out power and request authorized personnel to check the circuit layout for the automatic locking emergency stop switch.
5. Check the integrity of the wire rope.
6. The crane cannot be operated properly unless the wire rope is in good condition.
- 6.1. Position the crane vertical to the load. Before rotation the load, make sure the hook's path is free from any obstacles.
- 6.2. Lower the hook near master link to hoist the load and make final adjustments to secure a 90° vertical lift operation without any lateral deviation. Improper lift angle may cause the load to swing.
- 6.3. 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.
- 6.4. Begin by hoisting the load two inches, then stop. Ensure the brakes are fully operational and the load doesn't lower while stopped. Also ensure the load is balanced and secured. The load may have shifted when suspended.
- 6.5. To reach a desired position, movements must be smooth and continuous. Repeatedly pressing buttons may heat up the motor and damage equipment.
- 6.6. Avoid sudden directional changes. These movements may damage the equipment, prematurely wear down brakes and cause accidents.



WARNING

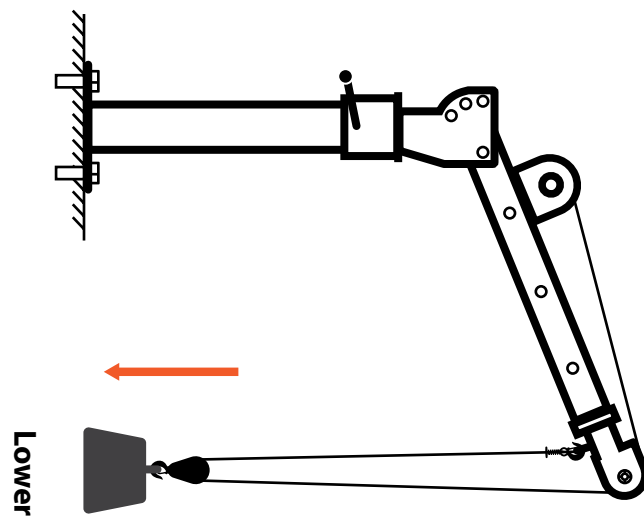
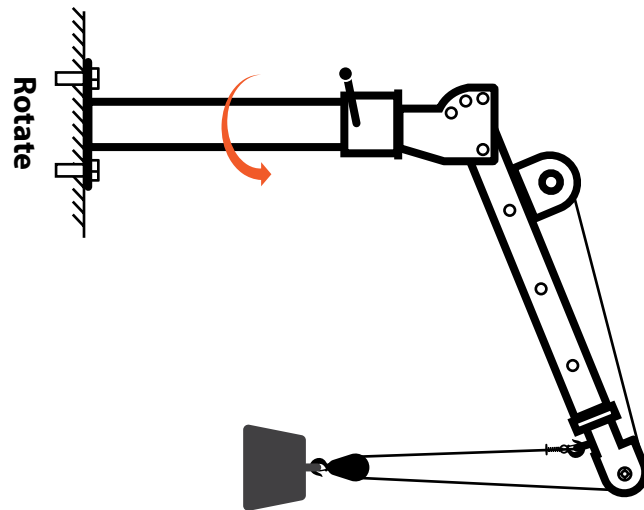
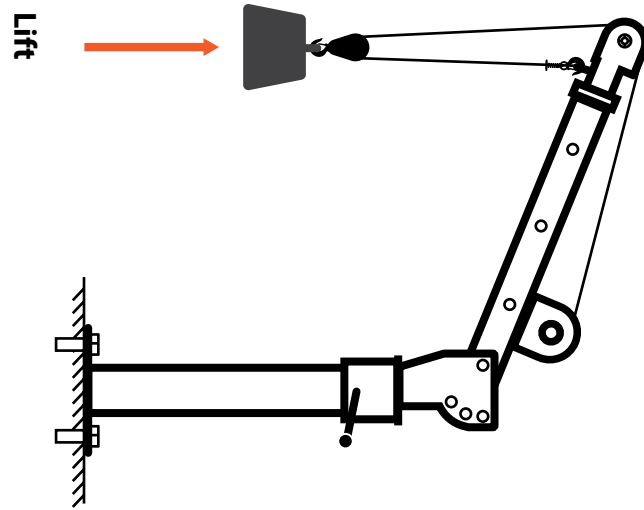
If the crane model has dual/speed capabilities, always start with slower speed to avoid sudden accelerations. Decelerate before completing a stop.

7. Avoid any obstacles while hoisting or rotating the load.
8. Start rotating the load and ensure that the load is not swinging and there are no obstacles in its path. Stop movement and make necessary adjustments if one of these conditions is present.
9. Once the desired position is reached, slowly stop the trolley. Position the load completely vertical to the desired spot where load will be lowered.

10. 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 crane operator!



4.4 Pairing a new transmitter (120V Models Only)

Follow these instructions to pair a new 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:

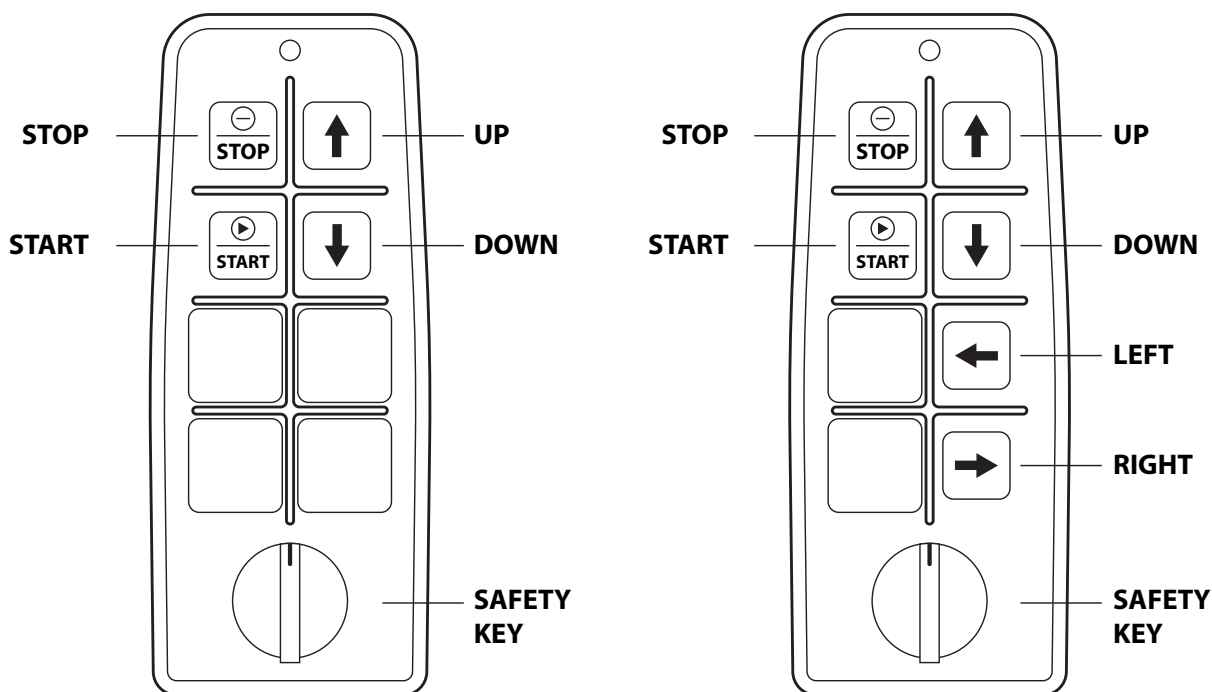
TO COPY TRANSMITTER CODE AND CHANNEL TO THE RECEIVER

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.

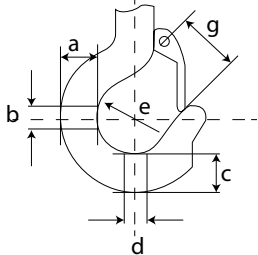



1. INSPECTION

1.1. Periodic Inspection

Items	Inspection Method	Standards	Correction
Marks such as name-plates, labels etc.	Visual check	Clear marks and no peeling	Proceed with cleaning, repairing and replacing. Record serial number for replacing
Deformation or damage of body parts		No remarkable deformation, damage, defect or chap	Replace parts which are deformed, damaged, and defective
Bolts, nuts, and cutters loose or falling off	Visual and tool check	<div>- Correct installation -A loose bolt will cause equipment failure</div> <div>- Ensure proper installation to avoid death or serious injury</div>	Precise installation

Items	Inspection Method	Standards			Correction
Limit switch	Check by pushing button	Operate until upper and lower limit cause automatic motor shutdown			Replace limit switch, disassemble and clean limit lever
Movement confirmation	Check by pushing button	-Load chain 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			
Brake	Check by pushing button	Brake quickly activates and operation of bottom hook immediately stops (amount of movement of the load chain is within 2 to 3 rings)			
Chain Spring	Visual inspection and measure dimensions	Chain	Length of spring		Replace chain spring 
			Standard	Limits	
			Ø6.3	145	140
			Ø7.1	145	140
			Ø10.0	135	129
			Ø11.2	160	152

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

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