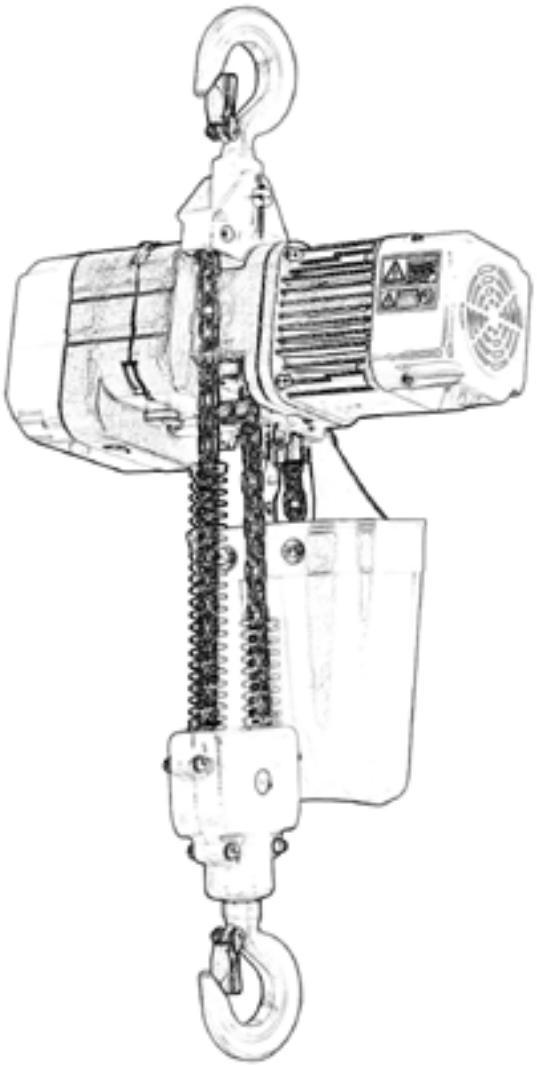
PWH
Powered Electric Chain Hoist

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



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PROWINCH® DISCLAIMER

Prowinch® LLC declares that it has made available to the Customer each and every one of the security warnings related to the purchased product and that, as a result, it does not assume any responsibility for any damages or losses that may be suffered by the client or third parties. Cause or as a direct or indirect consequence of the breach or omission of any of the instructions or safety warnings contained in the User Manual and Security Warnings corresponding to the unit purchased.
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. In no case does Prowinch® LLC assume any liability arising from the use of these voluntary recommendations, and does not offer any guarantee in relation to 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 it is possible to prove that the user has followed each and every one of the warnings contained in the User Manual and Safety Warnings.

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 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.

5. The aforementioned reports must be sent by email to registros@prowinch.com within the first 7 calendar days after the occurrence of an event.

6. 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.

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

8. This manual is subject to change without prior notice. Download the latest version available at www.prowinch.com.

9. Always check www.prowinch.com for the latest information regarding this product.

PWHF1000i

1 Ton Electric Chain Hoist 20 ft G80 Chain M3/H2 220/240V

PWHF1000iW

1 Ton Electric Chain Hoist 20 ft. FEC G80 Chain M3/H2 220/240V Wireless

PWHF1000u

1 Ton Electric Chain Hoist 20 ft G80 Chain M3/H2 220/240V

PWHF1000uW

1 Ton Electric Chain Hoist 20 ft. FEC G80 Chain M3/H2 220/240V Wireless

PWHF500i

1/2 Ton Electric Chain Hoist 20 ft. G80 Chain M3/H2 220/240V

PWHF500u

1/2 Ton Electric Chain Hoist 20ft. G80 Chain M3/H2 110~120V

PWHF500uW

1/2 Ton Electric Chain Hoist 20 ft. G80 Chain Wireless 120V

PWHC1000i

1 Ton Electric Chain Hoist Power Trolley 20 ft. G80 Chain M3/H2 220V

PWHC1000iW

1 Ton Electric Chain Hoist Power Trolley 20 ft. G80 Chain M3/H2 220/240V Wireless

PWHC1000u

1 Ton Electric Chain Hoist Power Trolley 20 ft. G80 Chain M3/H2 110/120V

PWHC1000uW

1 Ton Electric Chain Hoist Power Trolley 20 ft. G80 Chain M3/H2 110/120V Wireless

PWHC500i

1/2 Ton Electric Chain Hoist Power Trolley 20 ft. G80 Chain M3/H2 220V

PWHC500u

1/2 Ton Electric Chain Hoist Power Trolley 20 ft. G80 Chain M3/H2 110/120V

PWHC500uW

1/2 Ton Electric Chain Hoist Power Trolley 20 ft. G80 Chain M3/H2 110/120V Wireless

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.

Safety Bulletin

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.

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

SAFETY PRECAUTIONS

Prowinch® Electric Chain Hoist is designed for safe and reliable service if operated according to User Manual.

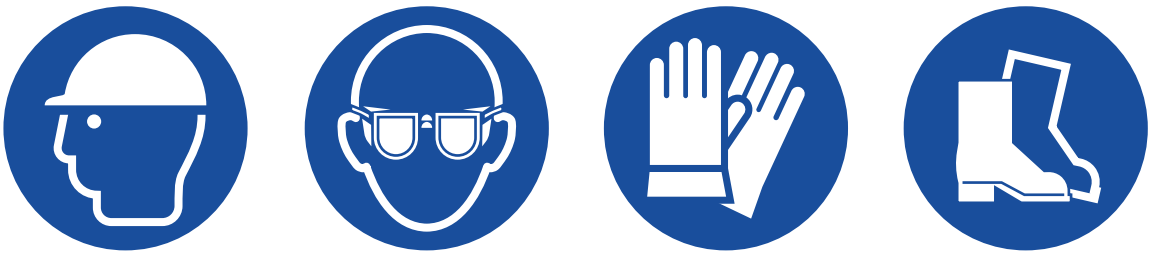
Respect all warnings for personnel and third party safety. Inadequate operation may cause injuries or damage equipment.

Read and understand this User Manual carefully before installation and commission of equipment. Keep this User Manual in an accessible place for consultation.

Hoists used improperly may harm users and result in wounds, injuries or death. This User Manual highlights symbols and notes for caution, warning and danger.

Attention to these areas ensures safety of operator.

Mandatory use of:



Hard Hat | Safety Glasses | Safety Gloves | Safety Shoes

Safety Precautions

WARNING:
This symbol indicates a dangerous situation which if not avoided may cause minor or moderate wounds. It is also used for indicating unsafe practices

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

Read and understand the contents of this User Manual thoroughly before handling the product. 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.

DANGER

All operators and other users who are near the steel chain 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 unit must be unplugged, locked out, and tagged out. Do not use this equipment in hazardous locations.

Before using equipment:

- Read and understand instructions in this User Manual and labels associated with hoist before operating equipment.
- Wear appropriate clothing: Do not wear jewelry or loose clothes as they might get attached to chain or hook.
- Wear leather gloves.
- Wear non-slippery safety shoes, helmet, and eye protection.
- Perform full check of hoist. Check for damaged parts or unusual characteristics. Keep a safe distance: suggested distance is at least 1.5 times length of hoist's chain. Broken or loose chain may cause injuries or death.
- Check hoist and chain are properly lubricated.
- Secure electric chain hoist to a suitable support.
- Visually inspect all electric chain hoists in addition to regular and maintenance inspections

During Operation:

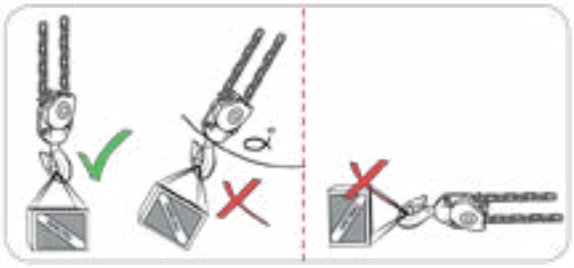
ALWAYS

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

NEVER

- Exceed maximum load capacity.
- Operate damaged or malfunctioning hoist.
- Operate hoist if behaving unusually.
- Lift, support, transport people, or lift or support loads over people.
- Walk over chain.
- Operate electric chain hoist with twisted, kinked, damaged or worn load chain.
- Use load chain as a sling around load.
- Operate a hoist if ID plate or safety labels are missing or illegible.
- Operate electric chain hoist when exposed to rain or water.
- Use if operator is sick or not completely attentive.

- Leave hoist unattended if energized or loaded.
- Operate hoist unless load is centered.
- Operate beyond limits of load chain or extend chain.
- Use load chain or hook as an electrical or welding ground.
- Remove labels on electric chain hoist.
- Use hoist to lift load at an angle, nor pull or drag load



Inspection, Maintenance and Repairs:

- Only trained and authorized personnel may make repairs to equipment.
- Use only original Prowinch® parts. The use of any other part immediately voids warranty.
- Failure to use only original Prowinch® parts may endanger operator.

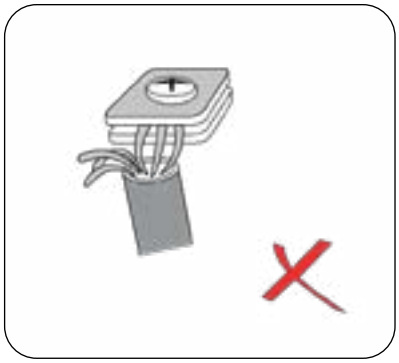
ALWAYS

- Check quality of electrical connections.
- Check chain and keep it lubricated.
- Prevent others from being beneath load.
- Regularly inspect and maintain hoist.
- Check correct installation of hoist before using.
- Avoid contact with explosive gases or materials.

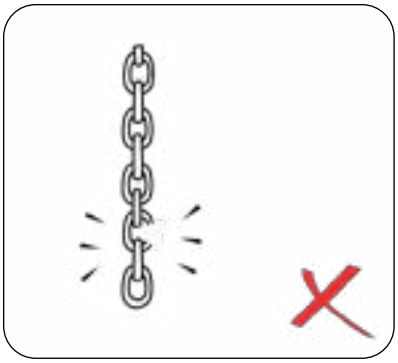
NEVER

- Overload.
- Transport people or animals.
- Stand below load.
- Use hoist if exposed to rain, snow, or electrical storm.
- Leave load suspended for extended period of time. This may cause component deformation an accident.
- Exceed designated operating temperatures stated in this User Manual (differ depending on model).
- Expose hoist to water, sand, corrosive environment or other substances which may damage equipment.

1. Do not overload

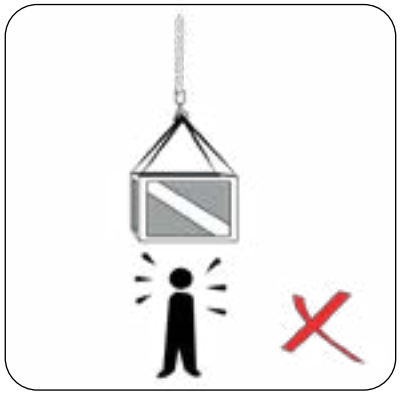


2. Check the quality of the electrical

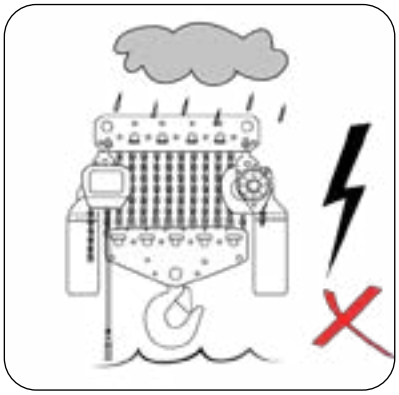


3. Periodically check the chain and keep it lubricated.

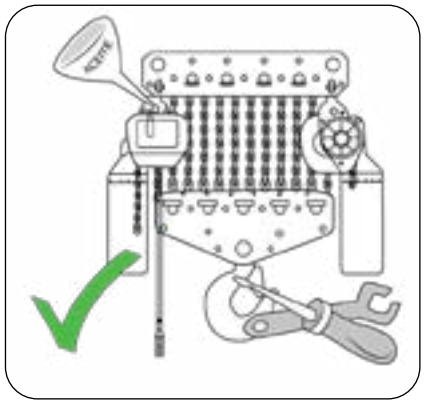
4. Do not transport people or animals.



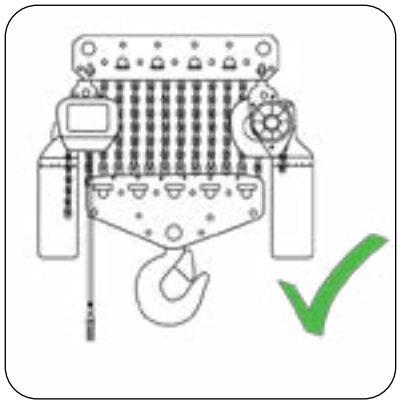
5. Do not place under load and prevent others from doing so.



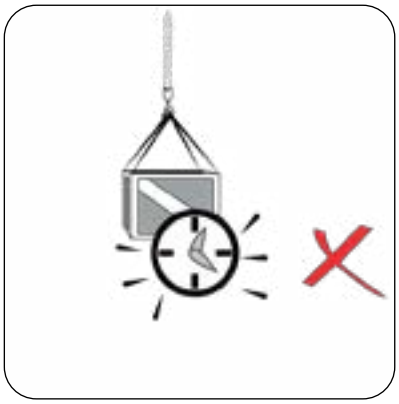
6. Do not use hoist if exposed to rain, snow or lightning.



7. Regularly inspect and maintain your hoist.



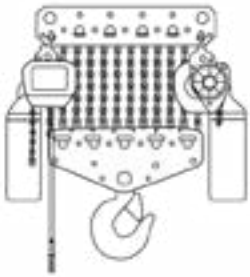
8. Always check correct hoist installation before use.



9. Do not leave the load suspended for long periods of time. It may cause deformation of the component or cause an accident.

GENERAL ENVIRONMENTAL PRECAUTIONS

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

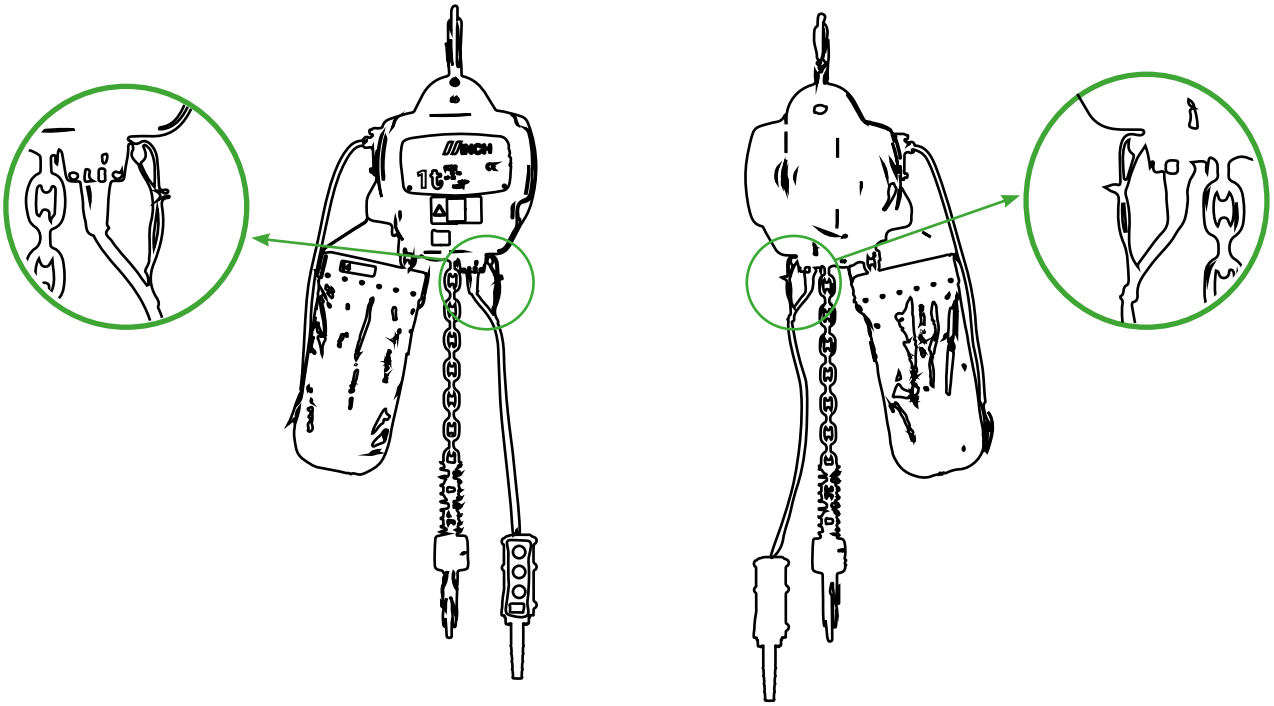


Avoid contact with gases or explosive materials.

When exposed to water, sand, corrosive environment and / or Other potentially harmful substances may damage the equipment.

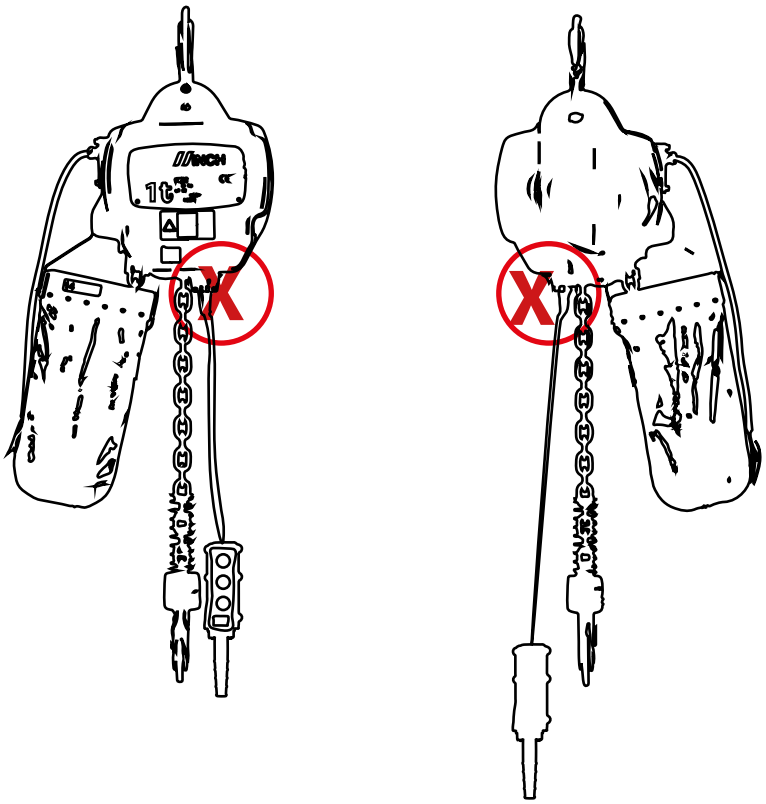
WARNINGS

Hanging Pendant Control



Make sure to connect both cables.

Hanging Pendant Control



DANGER:

Do not install the pendant control cable without the strain relief cable (steel cord).

1. Electric Trolley

The range of flange width is adjustable. Motor include disc type brakes. Side guide are to promote the trolley motion smooth and minimize the wear of wheel and beam.

2.Upper and lower limit switch

The limit switch will cut off the motor circuit and prevent the damage to hois structure and load chain when over-lifting or over-lowering happens.

3. Chain Wheel

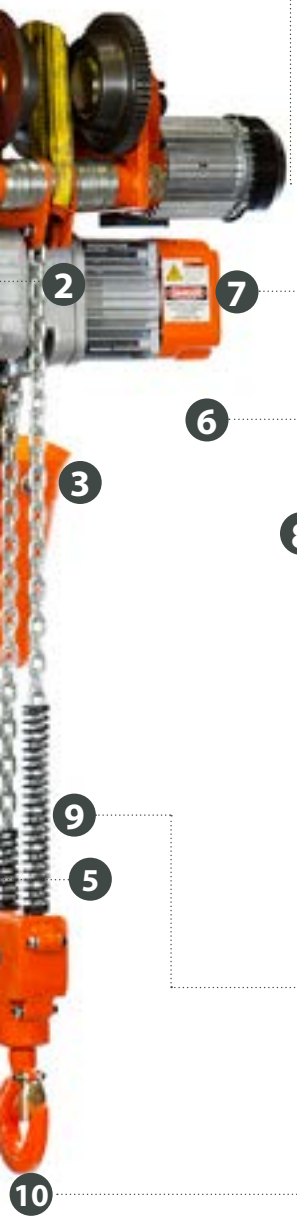
Increasing the number of load sheave pockets helps relieve vibrations produced by revolving polygonal sheave on the hoist's body and load chain.

4. Chain Bag

Canvas chain containers is a standard fittings. Operation fabricated steel containers are available for long lift applications.

5. Control System

The length of the control is 4 feet less than the lifting height, which allows it to be easily operated from ground-level. An optional wireless remote control is available for extra convenience.



6. Reverse Phase Protector

It's the special electrical installation of controlling the circuit not work in case of wirring error in the power supply.

7. Safe Brake System

Electric brake is designed for easy access and simple adjustment. It allows instant brake as soon as the electric power is cut off. Thus the braking safety while loading is guaranteed.

8.Heavy Dutty Stator

Light aluminum alloy shell, light but hard. The cooling fin is specially designed to ensure quick heat dissipation with the rate up to 40% and continuous service.

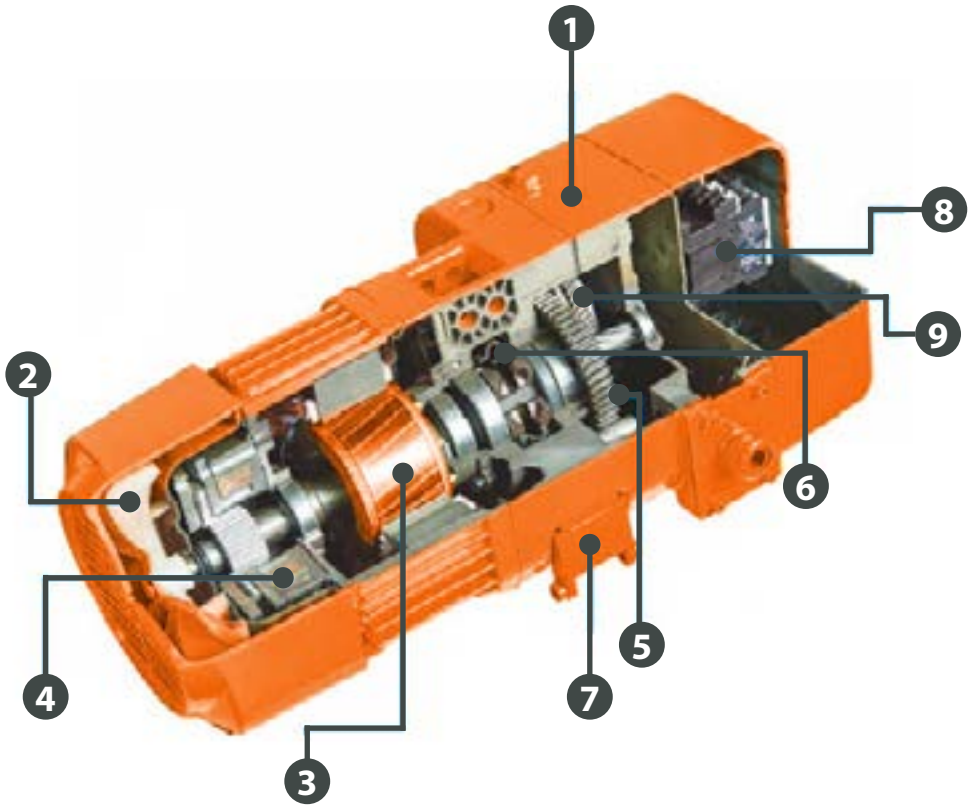
9.Load Chain

Canvas chain containers is a standard fittings. Operation fabricated steel containers are available for long lift applications.

10. Hooks

Load hook is forged carbon steel hook with a heavy-duty hook latch. Thrust bearing in hook allows 360

ADVANTAGES



1. All aluminum die-cast body, make hoist much lighter weight.
2. Cooling fan for motor, make hoist service much longer life.
3. Motor overheating protector
4. Brake system: Electronic magnetic brake
5. Safety clutch for overload protection
6. Unique guide structure
7. Limit switch for upper and lower: 20° lifting angle allowance
8. Self-lock contactor
9. Safety clutch

MAIN SPECIFICATIONS

Specification Chart (For all models of Prowinch® Electric chain hoists).

ITEM #	SPECS		
Operating temperature range (ºC)	-20 to + 40		
Operating humidity range (%)	85 Or Below		
Protection class	Hoist	IP55	
	Button Switch	IP55	
Power		3 phases, 200 - 600V, 50/60Hz	
Noise level (dB)	Single speed hoist	81	
Chain specs	Double speed hoist	81	
Chain specs	Working load limit	Diameter (mm)	Chain pitch (mm)
	0,3T, 0,5T	6,3	10
	1T, 2T, 3T	7,1	21
	1,5T, 2T	10	30
	2,5T, 3T, 5T, 7,5T, 10T, 15T, 25T	11,2	34

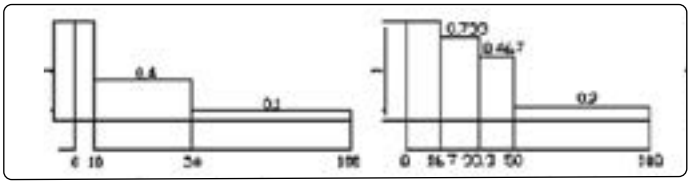
Observations

Do not use Prowinch® Electric Chain Hoists when temperature and humidity exceed range of Specification Chart.
Our hoists are designed to lift up and down under common atmospheric and working conditions.

Load Level And Service Life

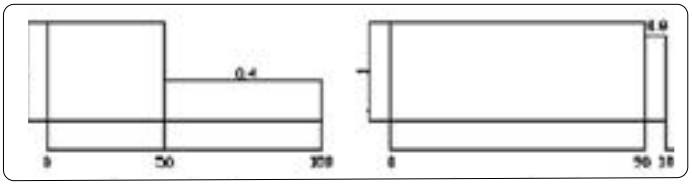
Guarantee of service life and safety for Prowinch® Electric Chain Hoists depends on proper installation, maintenance, and operation.
Our electric chain hoists are designed to meet 1Bm, 1Am and 2M Load Level in FEM standards FEM 9.51, depending on the model.
The working class of your chain hoist is rated on ID plate of equipment.

LOAD LEVEL	DEFINITION	CUBIC VALUE	AVERAGE DAILY OPERATION HOURS					
1 (light)	Mechanism and parts are frequently under light load, and there is under light load, and there is no max. load unless exceptional conditions.	K ≤ 0.50	≤ 2	2 ~ 4	4 ~ 8	8 ~ 16	≤ 16	> 16
2 (medium)	Mechanism and parts are frequently under light load, but also under max. load with low frequency	0.50 < K ≤ 0.63	≤ 1	1 ~ 2	2 ~4	4 ~ 8	8 ~ 16	≤ 16
3 (heavy)	Mechanism and parts are frequently under medium and heavy load.	0.63 < K ≤ 0.80	≤ 0.5	0.5 ~ 1	1 ~2	2 ~ 4	4 ~ 8	8 ~ 16
4 (overweight)	Mechanism and parts are frequently under max. or almost reach max. load.	0.80 < K ≤ 1	≤ 0.25	0.25 ~ 0.5	0.5 ~1	1 ~ 2	2 ~ 4	4 ~ 8
			1 BM	1:00 AM	2M	3M	4M	5M



% Operation hours
Load level 1

% Operation hours
Load level 2



% Operation hours
Load level 3

% Operation hours
Load level 4

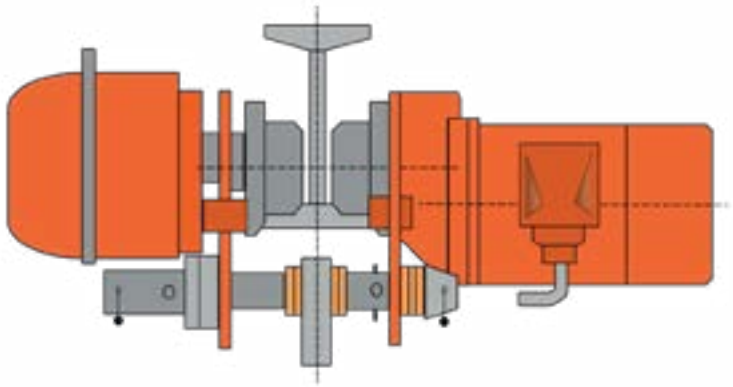
Selection of engines for lifting equipment

Group		Intermittent Service			Short-Term Service
F.E.M.	ISO	Cycles/h	Starts/h	(ED%)	Operation period min
1 DM	M1	15	90	15	7.5
1CM	M2	20	120	20	7.5
1 BM	M3	25	250	25	15
1:00 AM	M4	30	180	30	15
2 MW	M5	40	240	40	30
3M	M6	50	300	50	30
4M	M7	60	360	60	60
5M	M8	60	360	60	>60

Capacity (ton)	A	B	D	R	T	Speed (50HZ) m/min	Motor (Kw)	Min. Radius of turn	Beam Range
0.5	248	196	25	146	159	12.2	0.12	0.8	100

Capacity (ton)	A	B	D	R	T	Speed (50HZ) m/min	Motor (Kw)	Min. Radius of turn	Beam Range
1	315	212	31	142	231	nov-21	0.4	0.8	52 - 145
2	325	220	36	142	231	nov-21	0.4	0.9	82 - 185
3	340	250	43	142	231	nov-21	0.75	1.0	100 - 185
5	400	291	54	142	231	nov-21	0.75	1.5	100 - 220
7.5	400	291	54	142	231	nov-21	0.75	1.8	100 - 225
10	500	370	70	142	231	nov-21	0.75	2.0	150 - 255

Capacity (ton)	A	B	D	E	R	T	Speed (50HZ) m/min	Motor (Kw)	Min. Radius of turn	Beam Range
1	325	230	31	32	142	231	nov-21	0.4	0.8	52 - 145
2	375	245	31	44	142	231	nov-21	0.4	0.9	82 - 185
3	400	250	36	44	142	231	nov-21	0.75	1.0	100 - 185
5	420	290	43	44	142	231	nov-21	0.75	1.5	100 - 220

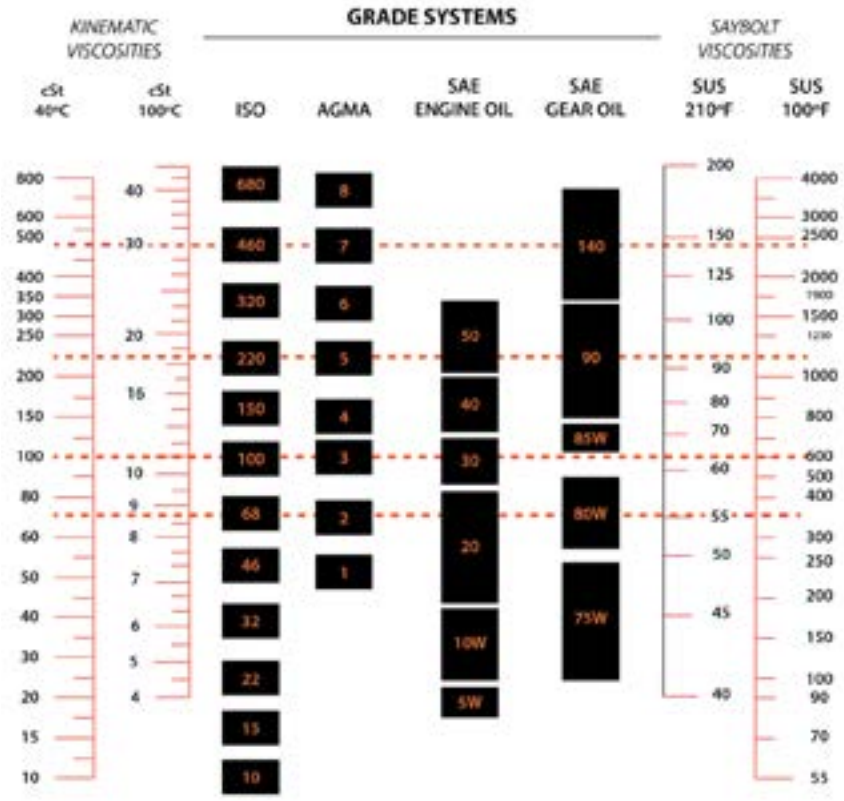


Oil & Lubricant Recommendations

Load Chain
Do not allow chain to run dry.

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

Apply sufficient lubricant to obtain natural runoff and full coverage, especially in interlink area.
Apply Lubriplate® Bar and Chain Oil 10-R or equal lubricant. Machine or gear oil (grade ISO VG 46 or 68 oil or equivalent) may be used as an alternative lubricant but must be applied more frequently.

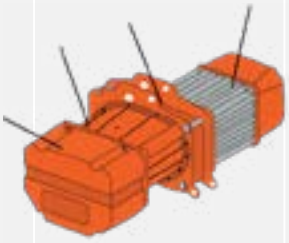
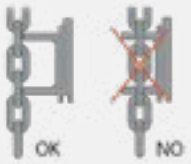


For dusty environments, it is acceptable to substitute a dry lubricant.

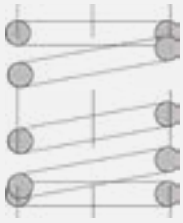
- Apply lubricant to areas of load chain (shaded areas in figure below) that contact load sheave.
- Hooks and Suspension Components
- Hooks and bearings should be cleaned and lubricated at least once per year for normal usage.
- Clean and lubricate more frequently
- for heavier usage or severe conditions.
- Suspension pins should be lubricated at least twice per year for normal usage; more frequently for heavier usage or severe conditions.

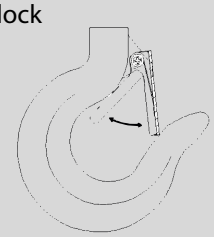
INSPECTIONS & MAINTENANCE

Periodic Inspection
Daily Inspection Of Electric Chain Hoists

ITEMS	INSPECTION METHODS	STANDARDS	Resolutions to Deviations
Marks such as name-plates, labels etc.	Visual check	No peeling and clear marks 	Proceed with cleaning, repairing and replacing. Record serial number for replacing
Deformation or dam-age of body parts 		No remarkable deforma-tion, damage, de-fect and chap	Replace parts which are deformed, damaged, and defective
Bolts, nuts, and cutters loose or falling off	Visual and tool check	• Correct installation • A loose bolt will cause equipment failure • Ensure proper installation to avoid death or serious injury	Precise installation
Extent of pitch	Check by chain mea-surement tool		

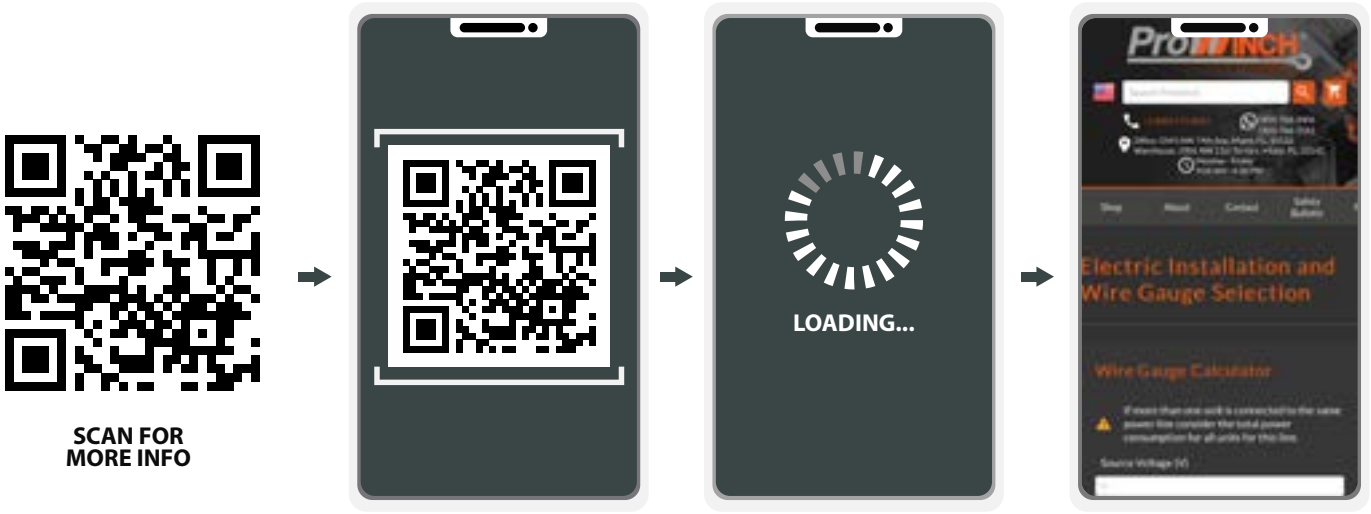
Attrition of chain di-am-eters	Check by chain measurement tool		
Deformation, damage, wind	Confirm chain is not stuck to welding spatters by visual inspec-tion	• No deep cut • No deformation • No welding spatters • No wind • No chap	Replace load chains
Rust and corrosion	Visual check	No remarkable rust and corrosion	Replace load chains
Distortion	Visual check	No distortion due to bot-tom block rollover of dou-ble chain models 	Correct distortion
Oil supply	Visual check	Adequate supply of oil 	Oiling

<table>
<tr><td>Limit switch</td><td>Check by pushing button</td><td>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>• 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</td><td></td></tr>
<tr><td>Brake</td><td>Check by pushing button</td><td>Brake quickly activates and operation of bottom hook immediately stops (amount of movement of the load chain is within 2 to 3 rings)</td><td></td></tr>
<tr><td>Chain spring</td><td>Visual inspection and measure dimensions</td><td><table><tr><th rowspan="2">CHAIN</th><th colspan="2">Length Of Spring</th></tr><tr><th colspan="2">Standard</th></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></td><td>Replace chain spring
  </td></tr>
</table>

<table>
<tr>
<td>Attrition and opening of the hook</td>
<td>Check by visual and vernier caliper</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>Replace hook safety block
  </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></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>

INSTALLATION PROCESS:

- Electric chain hoists must be grounded properly.
- Lock-out and tag-out the main disconnect switch in ed-energized position before performing any service on hoist.
- Customer must provide power supply cable, fuses, and main disconnect switch.
- Check supply voltage is same as nameplate voltage on hoist.
- Check 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.
- Check the electric installation and wire gauge selection at www.prowinch.com and Follow this simple steps)

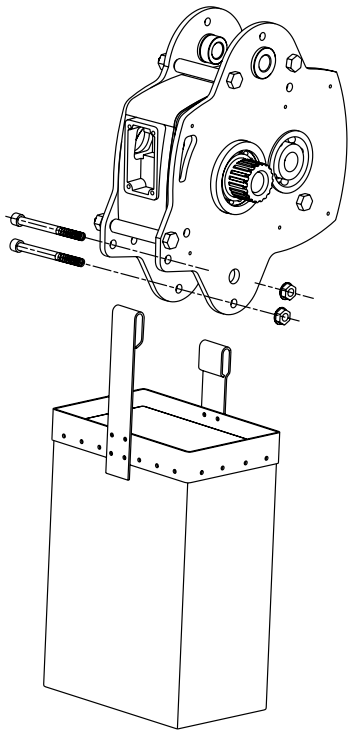


Check and document hoist characteristics:

- Model number
- Rated capacity (tonnage)
- Lifting length of load chain (meter)
- Power supply
- Push button pendant assembly (2 button, 4 button or 6 button)
- Specially ordered optional items
- Beam width for trolley installation

Chain Bag Assembly

Switch on power supply to hoist and have professional operate push button.



UNPACKING

Hoist should be carefully inspected upon delivery for damage which may have occurred during shipment or handling. Check hoist 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.

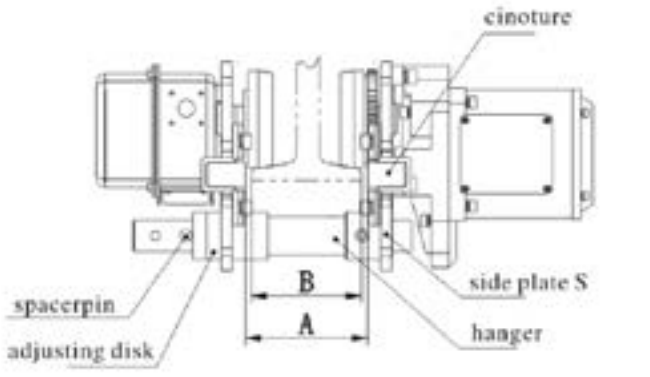
1 Chain Bag (Box	1Pcs
2 Control Wire Rope	1m
3 Button Switch	1 Pcs

Trolley Installation (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.

Adjust Trolley Width (models with trolley)

- Adjust width of trolley according to drawing (below) 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.

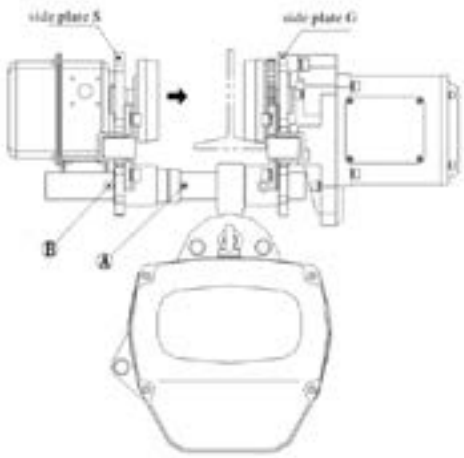


Nut must be tight, insert cotter pin and bend it completely.

Install Trolley Into 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:

- Unload brake stopper from hole A on suspension pin, and insert it into hole Insert cotter pin again and bend it completely.
- 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.
- 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.
- Unload brake stopper from hole B and insert into hole A. Do not forget to bend cotter pin.



OPERATION

Qualified Operator

Safe and efficient operation of hoist requires an operator who displays caution and good judgment. The operator must be fully alert, focused, and aware of surroundings.
Job must be strictly carried out under the good practices defined by international and national safety standards, such as ANSI, OSHAS and ASME.
Operator training must be provided to ensure proper operation of equipment in compliance with instructions provided by equipment manufacturer and the provisions of ASME B30.

This hoist must not be operated by someone who:

- Cannot read, understand and speak language of security labels, ID Plate and User Manual of equipment.
- Does not meet legal age requirements.
- Has visual or hearing impediments.
- Experiences mental, heart, or other illnesses that could interfere with safe operation of equipment.
- Has not been trained for use of hoist.
- Has not received User Manual for exact equipment.
- Has not demonstrated qualifications through a practical operation of hoist.

HANDLING PRECAUTIONS

ALWAYS:

- Keep hoist 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 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 chain. 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.

Recommended Operation

1. Press ↓ button lowering unloaded hook down until limit spring touches limit switch. Be sure hoist stops automatically before totally compressing spring.

2. Press ↑ button hoisting unloaded hook up until limit spring touches limit switch. Be sure hoist stops automatically before totally compressing spring.

3. Test correct function of emergency stop button. When pressing button ↑, ↓ press emergency stop button. Ensure hoist stops immediately after pressing emergency stop switch. Hoist should not start again if any other movement button is activated.

4. Rotate emergency stop switch clockwise to original position. When it bounces back, hoist can be started again. If any of the above tests fail, unit must remain out of service, lockout/tagout power and request maintenance authorized personnel to check circuit layout for automatic locking emergency stop switch.

5. Check lubricating condition of load chain (load chain has been lubricated before delivery, but could be dried in transportation). Apply lubricant into chain bag to protect load chain.

6. 6. Check direction of chain eyes. All welding points should be same direction. Hoist cannot be operated properly unless all welding chain eyes are in same line.

- Position hoist in vertical position to load. Before moving trolley, make sure path of hook is free from any obstacle.
- Lower hook near master link to hoist load and make final adjustments to secure a 90º vertical lift operation without any lateral deviation. Improper life angle may cause swinging of load.
- Attach hook to load link and make sure there are no people in working area. Check that no loose items can fall from load.
- Begin by hoisting load two inches and stop. Check brakes are fully operational and load doesn't lower while stopped. Also check load is balanced and secured. Load may have changed shape or center of gravity when suspended.
- To reach a desired position, movements must be smooth and continuous. Repeatedly pressing buttons may heat up motor and damage equipment.
- Avoid sudden directions changes. These movements may damage 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.

7. Avoid any obstacle when hoisting or traveling load.
8. Start movement of trolley and check there is no swinging of load and no obstacles in path. Stop movement and make necessary adjustments if one of these conditions is present.
9. Once desired position is reached, slowly stop trolley. Position load completely vertical to 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 hoist operator!

ELECTRICAL AND VOLTAGE SELECTION

Available voltages 3 phase 220V 60HZ , 380V 50HZ and 440V 60HZ
Before switching voltage!

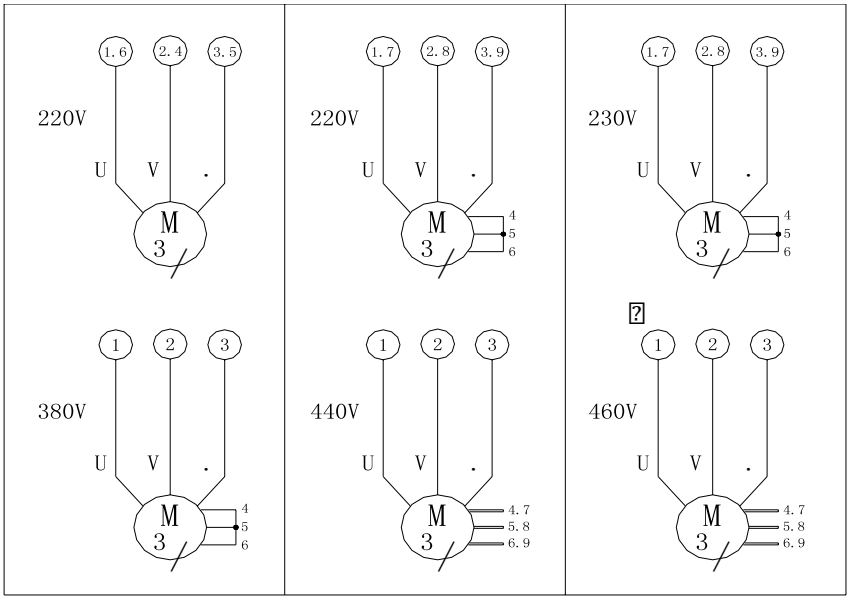
TROUBLESHOOTING

After unpacking, please careful check over the appearance of the cable, gear box and motor shell. Check the quantity of the bellowing items as well. Every set of our hoist should including the bellowing standard spare parts:

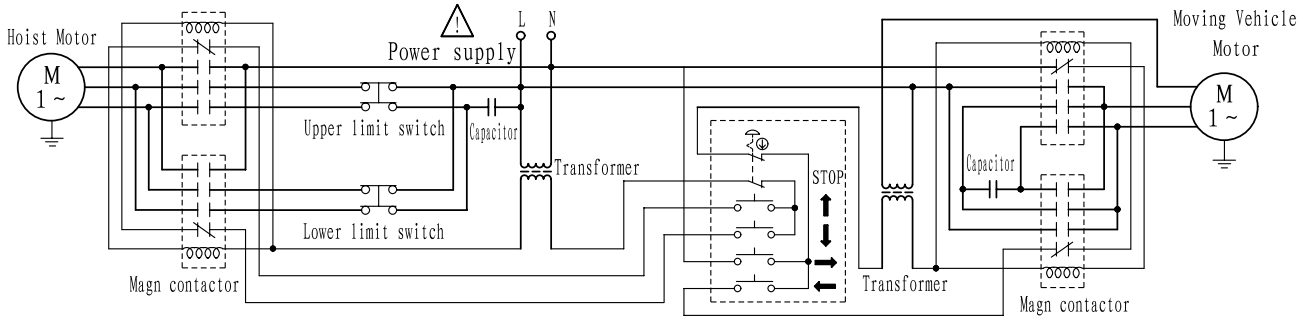
1. 2 directions wiring diagram for single speed
2. 4 directions wiring diagram for single speed
3. 6 directions wiring diagram for single speed
4. 2 directions wiring diagram for double speeds
5. 4 directions wiring diagram for double speeds
6. 6 directions wiring diagram for double speeds
7. Wiring diagram for single phase motor

The above mentioned wiring diagrams above are only for reference, user should take the one inside the electric box as the proper one.
The electric specifications can be made according to the follows:

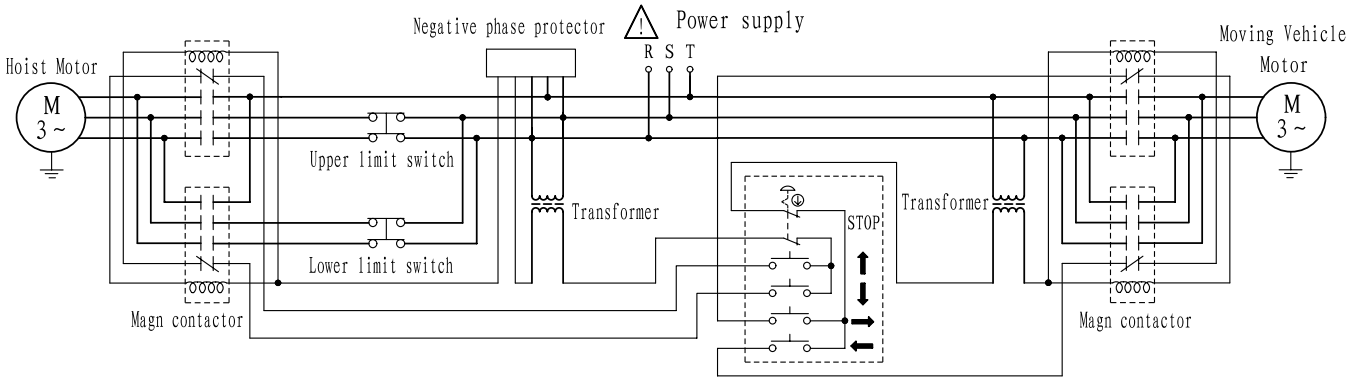
- 3 Phase
- Frequency
- Single or double voltage



PWH Single Phase Series Electric Chain Hoist Wiring Diagram



PWH Three Phase Series Electric Chain Hoist Wiring Diagram



PROWINCH® WARRANTY

LIMITED WARRANTY COVERAGE

PROWINCH products are warranted to the original purchaser for a period of three (3) years after the date of purchase only to be free from defects in material and workmanship when subjected to normal, proper and intended use. Within this period, PROWINCH will only repair or replace free of charge any part on a product, after examination, is determined by PROWINCH to be defective in material or workmanship and was not caused or substantially contributed to by other factors or circumstances beyond PROWINCH control, including (but not limited to) defective installation, maintenance or repair, product modification or alteration, any neglect misuse or excessive use, mishandling, product exposure to extreme or unsuitable conditions, normal wear and tear or failure to follow manufacturer's instructions. This warranty does not apply to damage that PROWINCH determines to be from repairs made or attempted by anyone other than PROWINCH authorized personnel.

Return of the product with a copy of proof of purchase to PROWINCH, freight prepaid and insured, are required for this warranty to be effective. If more than one year has elapsed from purchase date, proof of periodic and regular maintenance by an authorized service must also be provided for this warranty to be effective. PROWINCH does not cover freight or labor charges associated with the inspection and testing of products which are found by PROWINCH not to be a valid warranty claim.

DISCLAIMER

In no event shall PROWINCH be liable for any labor, removal and installation expenses, loss of time, manufacturing costs, transportation, materials, loss of profits, incidental, special, consequential or punitive damages, or for any costs, attorney fees, expenses, losses or delays, direct or indirect, alleged to be as a consequence of any damage to, failure of, or defect in any product including, but not limited to, any claims for loss of profits. PROWINCH disclaims any implied warranties, including without limitation, any implied warranty of merchantability or fitness for a particular use or purpose.

Acceptance of the exclusive repair and replacement remedies described herein is a condition of the contract for the purchase of every PROWINCH product. If you do not agree to this condition, you should not purchase the product.

Faults, Cause, and Correction

Faults			Major Cause	Check Items	Remarks
Does not operate in non-load state	Brake inaudible	Contactor is inaudible	Excessive voltage	Power	
			Operating circuit break-off, electric parts overheating	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 audible		Drive overheating, broken bearing	Gear	
				Bearing	
Operates in non-load state	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		Anti-phase wiring	Feed power	
			Incorrect 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	
				Load chain	
				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	

Faults, Cause, and Correction

Faults		Major Cause	Check Items	Remarks
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	
Load chain		Wear, extension, deformation	Load chain	
Load chain		Equipment not properly grounded	Proper electric connection	
Does not operate in nonload 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	
	Switch button did not work	Operating circuit break-off	Push button switch	
		Electrical installation error	Internal wiring	

Faults, Cause, and Correction

Faults		Major Cause	Check Items	Remarks
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	
Load chain		Wear, extension, deformation	Load chain	

Does not operate in nonload state	Brake inaudible	Supply power	Supply power voltage	
		Operating circuit break-off, electric parts overheating	Cables	
			Internal wiring	
			Transformer	
			Electrical relay	
			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	

Issues & Measures

Power supply

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 2phase)	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
	Friction plate wear	Measure brake clearance, replace if space is over use limit	Condensation	Monitor usage environments
				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 (overheating)	Fastening	Improper fastening	Ensure effective fastening
			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 in-finite.		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 fused	Operate limit switch. Check continuity of contactor,replace if can not stop	Limit switch used frequently	Avoid overuse of limit switch
	Rusting of moveable 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			Chain wrapped around load	Do not wrap chain
Head hook improper rotating	Bearing rust, corrosion	Hand rotation; maintain or replace if experiencing difficulty rotating	Inadequate grease lubricant; corrosion	Apply grease lubricant regularly; prevent hook contamination of chemical agents
	Bearing damage		Dust	Prevent foreign matter from entering head

Load Chain

Condition	Reason	Action	Cause	Correction
Chain twist	Bottom hook upturned	Reset hook	Bottom hook rotation during usage	Check hook state before operation
	Chain twist in machinery body	Reassemble chain guide and load chain	Improper assembly	Ensure proper assembly
Limit switch suddenly activated in decline	Chain twist or knot in chain bag	Confirm chain bag capacity (chain bag nameplate) replace with larger one if capacity insufficient	Chain bag inadequate capacity	Confirm lifting height and chain bag capacity
Crackling sound	Chain damage	Measure wear of chain link diameter. Replace if reaching wear limit	Long-term operation with insufficient lubrication	Apply grease lubricant regularly
Irregular sound from springs (cracking sound)	Wear of link part	Measure diameter on wear of chain, and replace when at wear limit	Excessive operation	Avoid excessive operation
			Overload	Use under rated load
			Incline pull	Ensure proper pull direction
			Wear of load pulley and empty pulley	Refer to load pulley and empty pulley
	Extension of pitch	Measure pitch and replace when exceeding limit	Overload	Use under rated load
Irregular sound	Damage or deformation on chain surface	Replace when obvious damage and deformation occur	Use under transition situation	Use under models with multiple chain
			Chain used improperly	Ensure proper assembly
	Mark on chain surface		Damaged by other equipment	Monitor surrounding environment throughout usage to avoid collisions
Discoloration	Rust, corrosion	Apply lubricants and replace when obvious rust and corrosion occurs	Lubricant exhausted	Apply lubricating oil regularly
			Exposure to water	Use in dry places
			Influenced by seawater or chemical agent	Inform us if used in special circumstances to safeguard range
Load chain fractured	Reaching service life	Check chain, replace if differing from benchmark specifications	Mechanical life	Operate correctly and manage properly including inspection before usage and regular check-ups

Chain Wheel

Condition	Reason	Action	Cause	Correction
Improper noise	Wear of chain wheel	Check wear degree on chain, wheel slot, and load chain. 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

Load pulley and empty pulley

Condition	Reason	Action	Cause	Correction
Irregular sound from springs (cracking sound)	Wear of pulley	Measure slot edge thickness and load chain, 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

Chain Guide

Condition	Reason	Action	Cause	Correction
Increased shaking	Wear of chain guide and guide pulley	Measure benchmark size and load chain, replace if badly worn and limit size exceeded	Incline pull	Avoid incline pull

Chain Wheel, Junction Part

Condition	Reason	Action	Cause	Correction
Unable to lift loads	Wear, breakage	Replace when obvious wear or breakage occur	Long-term operation with insufficient lubrication	Apply lubricating oil and inspect annually
			Long-term operation with insufficient lubrication (joint part of motor shaft)	Apply lubricating oil and inspect annually
Irregular operation	Wear, breakage		Limit switch used too frequently	Avoid excessive use of limit switch

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
Abnormal sound	Aging	Replace bearing		

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 traveling 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 connection	Ensure clean space between wheel and gear	Interference from out-side material	Check regularly
Abnormal sound	Improper adjustment circle	Confirm adjustment circle number and insert position	Insufficient confirma-tion	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, trav-eling 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 defor-mation	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 chain 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

Manual Trolley

Condition	Reason	Action	Cause	Correction
Unable to move hand chain	Bad connection between hand wheel and hand chain	Properly adjust hand chain on hand wheel	Excessive or improper usage	Replace worn or deformed components

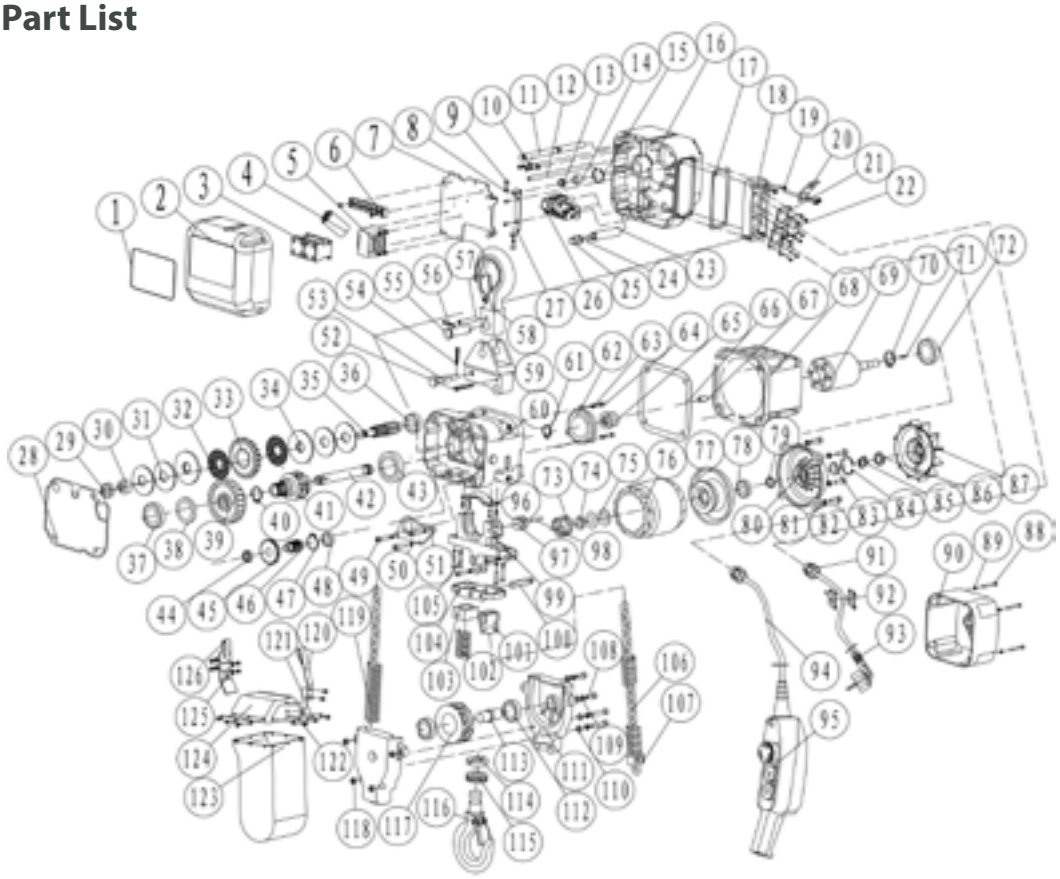
PWHC iW

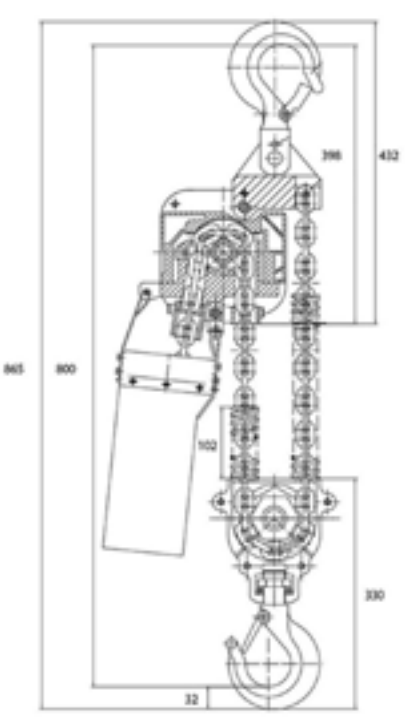
SINGLE SPEED

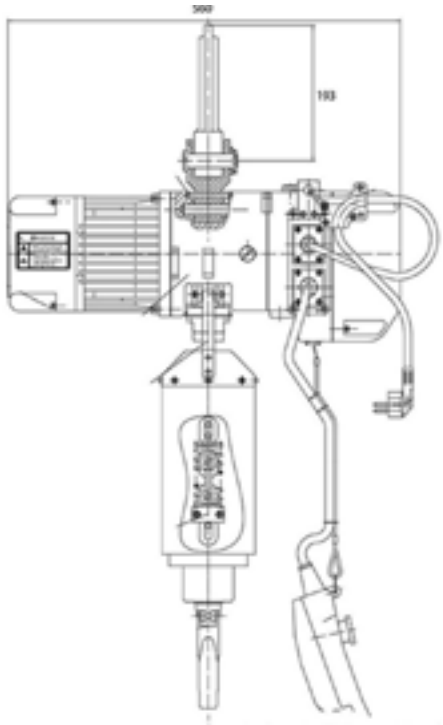
	Code		PWHC1000i	PWHC1000iW	PWHC1000u	PWHC1000uW
HOIST	Capacity	Lb	2200	2200	2200	2200
	Lifting Height	Ft	20 ft / 6m	20 ft / 6m	20 ft / 6m	20 ft / 6m
	Motor Power	kW	0.65 kW			
	Voltage	V	220~240V 50/60Hz 1 Phase			
	Motor Speed	RPM	4	4	8	8
	Insulation Grade	Grade	F			
	Chain Type	Grade	G80			
	Chain Dimensions	mm	8x24 mm	8x24 mm	8x24 mm	
CHAIN	Chain Falls	U	2			
	Chain Length	Ft	40 ft / 12 m			
	Operation Temperature	F°	-4 - 104 °F -20 - 40° C			
	Operating Humidity	%	<85%			
GENERAL	Noise Level	dB	7P dB			
	Control Voltage	V	24			
	Weight	Lb	282	282	291	291
	Duty Class	FEM/ISO	H2/M3/1Bm/Class B			
	Standards		ASME HST-1 , ASME B30.16 , EN14492-2 , EN60204-32			

3 Years Warranty

Part List







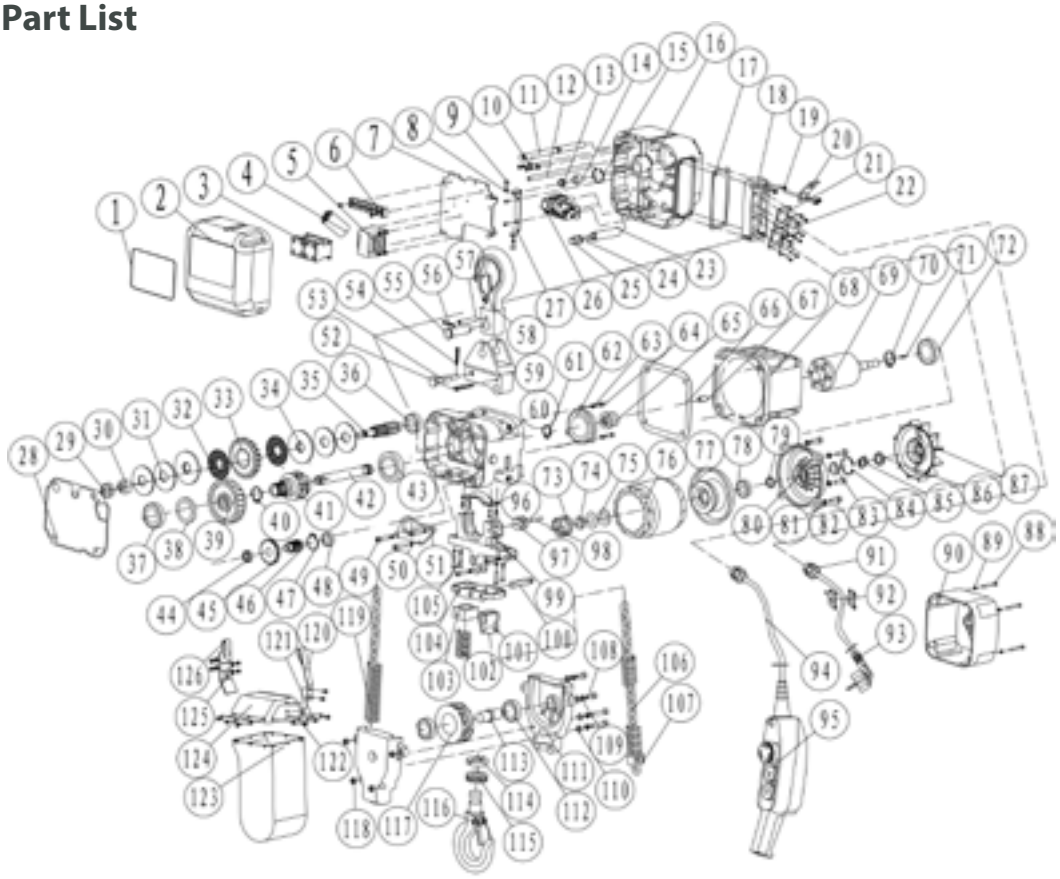
PWHCi /W

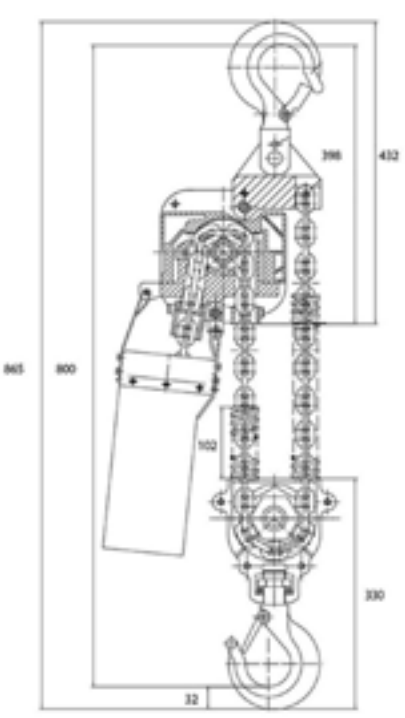
SINGLE SPEED

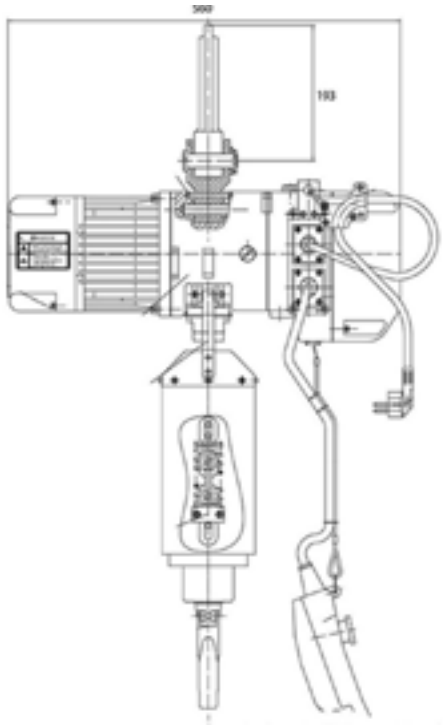
	Code		PWHC500i	PWHC500u	PWHC500uW
HOIST	Capacity	Lb	1100	1100	1100
	Lifting Height	Ft	20 ft / 6 m	20 ft / 6 m	20 ft / 6 m
	Motor Power	kW	0.65 kW	0.65 kW	0.65 kW
	Voltage	V	24V		
	Motor Speed	RPM	4	4	8
	Insulation Grade	Grade	F		
	Chain Type	Grade	G80		
	Chain Dimensions	mm	8x24 mm	8x24 mm	8x24 mm
CHAIN	Chain Falls	U	2		
	Chain Length	Ft	40 ft / 12 m		
	Operation Temperature	F°			
	Operating Humidity	%	<85%		
GENERAL	Noise Level	dB	7P dB		
	Control Voltage	V	24		
	Weight	Lb	234	277	269
	Duty Class	FEM/ISO	H2/M3/1Bm/Class B		
	Standards		ASME HST-1 , ASME B30.16 , EN14492-2 , EN60204-32		

3 Years Warranty

Part List







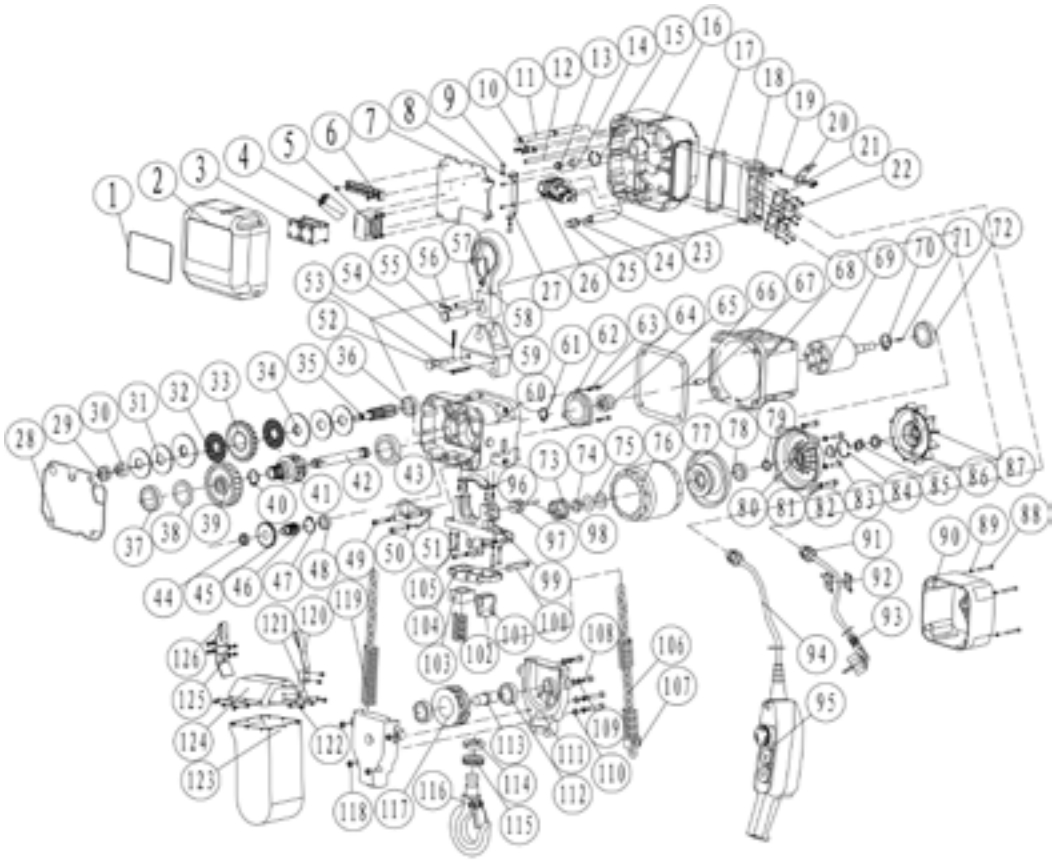
PWHFi / iW

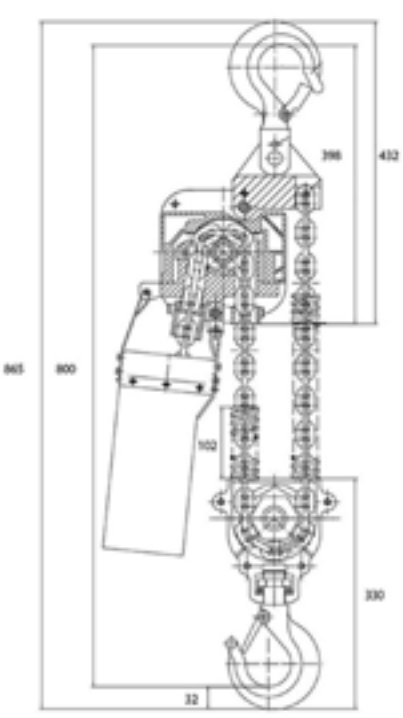
SINGLE SPEED

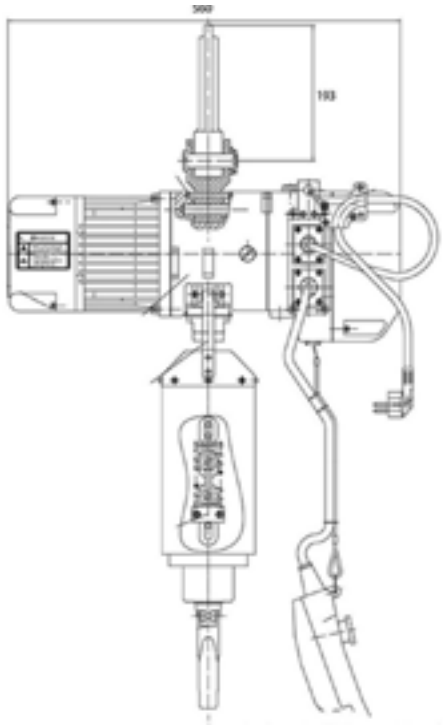
	Code		PWHF1000i	PWHF1000iW	PWHF1000u	PWHF1000uW
HOIST	Capacity	Lb	2200	2200	2200	2200
	Lifting Speed	Ft/Min	8 ft / 2.5 m	8 ft / 2.5 m	8 ft / 2.5 m	8 ft / 2.5 m
	Lifting Height	Ft	20 ft / 6 m	20 ft / 6 m	20 ft / 6 m	20 ft / 6 m
	Motor Power	kW	0.65 kW	0.65 kW	0.65 kW	0.65 kW
	Voltage	V	220~240V 50/60Hz 1 Phase			
	Motor Speed	RPM	4	4	8	8
	Insulation Grade	Grade	F			
	Chain Type	Grade	G80			
CHAIN	Chain Dimensions	mm	8x24 mm	8x24 mm	8x24 mm	
	Chain Falls	U	2			
	Chain Length	Ft	40 ft / 12 m			
	Operation Temperature	F°				
GENERAL	Operating Humidity	%	<85%			
	Noise Level	dB	7P dB			
	Control Voltage	V	24			
	Weight	Lb	150	160	171	154
	Duty Class	FEM/ISO	H2/M3/1Bm/Class B			
	Standards		ASME HST-1 , ASME B30.16 , EN14492-2 , EN60204-32			

3 Years Warranty

Part List





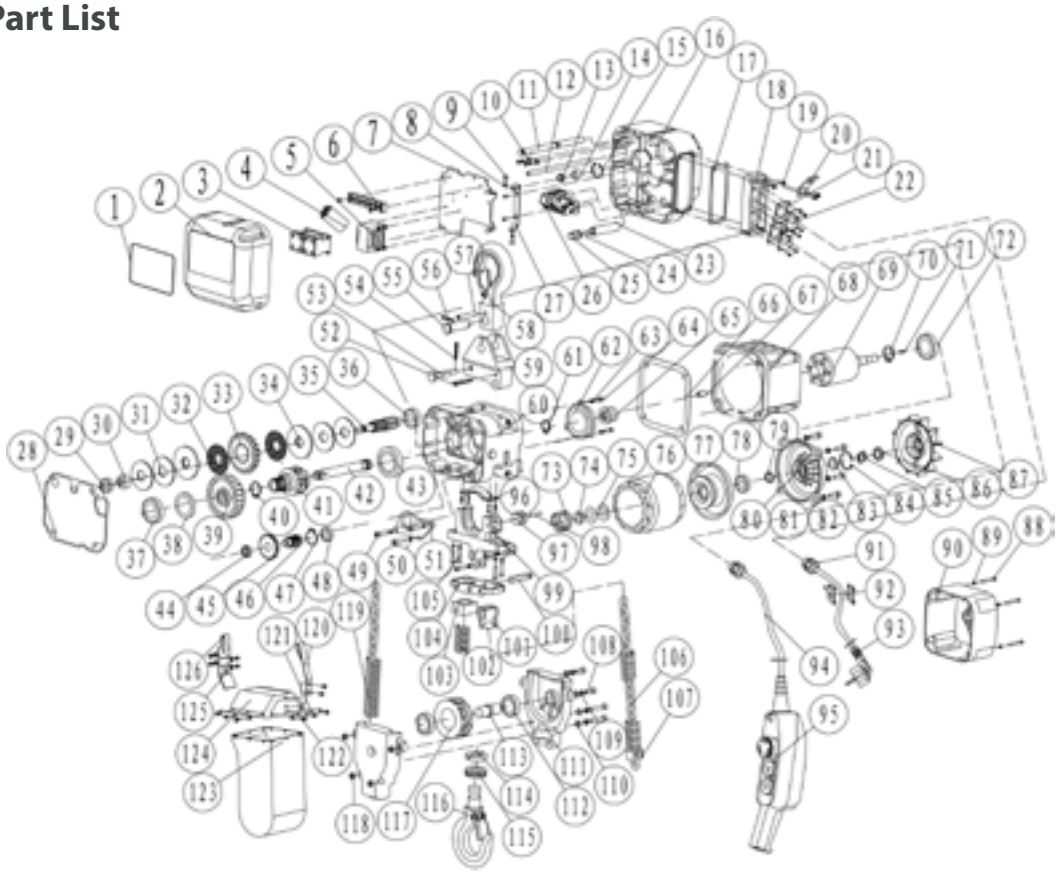


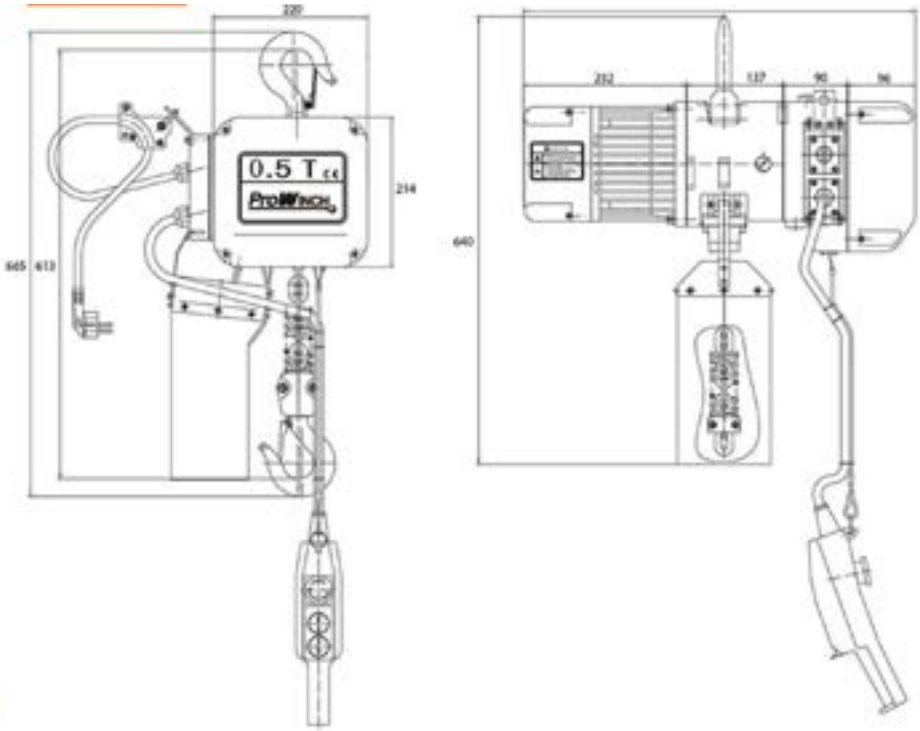
PWHFi / uW

SINGLE SPEED

	Code		PWHF500i	PWHF500u	PWHF500uW
HOIST	Capacity	Lb	1100	1100	2200
	Lifting Speed	Ft/Min	16,4	16,4	16,4
	Lifting Height	Ft	20 ft / 6 m	20 ft / 6 m	
	Motor Power	ft	0.65 kW		
	Voltage	V	110 / 60 hz		
	Motor Speed	RPM	4	4	8
	Insulation Grade	Grade	F		
	Chain Type	Grade	G80		
CHAIN	Chain Dimensions	mm	Ø 8 x 24		
	Chain Falls	U	1		
	Chain Length	Ft	20		
	Operation Temperature	F°			
GENERAL	Operating Humidity	%	<85%		
	Noise Level	dB	70 dB		
	Control Voltage	V	24		
	Weight	Lb	103	260	260
	Duty Class	FEM/ISO	H2/M3/1Bm/Class B		
	Standards	ASME HST-1 , ASME B30.16 , B30.17 , EN14492-2 , EN60204-32			

Part List





Dimensions in mm

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