

## Beacon Industries, Inc.

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### BEPFC-CB-15, POWERED ELECTRIC FLOOR CRANE INSTRUCTION MANUAL



#### **Receiving instructions:**

After delivery, IMMEDIATELY remove the packaging from the product in a manner that preserves the packaging and maintains the orientation of the product in the packaging; then inspect the product closely to determine whether it sustained damage during transport. **If damage is discovered during the inspection, immediately record a complete description of the damage on the bill of lading.** If the product is undamaged, discard the packaging.

#### **NOTES:**

- 1) Compliance with laws, regulations, codes, and non-voluntary standards enforced in the location where the product is *used* is exclusively the responsibility of the owner/end-user.
- 2) BEACON is **not liable** for any injury or property damage that occurs as a consequence of failing to apply either: a) the instructions in this manual; or b) information provided on labels affixed to the product. Neither is Beacon responsible for *any* consequential damages sustained as a result of failing to exercise sound judgment while assembling, installing, using or maintaining this product.

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## HAZARD IDENTIFICATION: explanation of signal words

This manual uses SIGNAL WORDS to indicate the likelihood of personal injuries, as well as the probable seriousness of those injuries, if the product is misused in the ways described. Other signal words call attention to uses of the product likely cause property damage.

The signal words used appear below along with the meaning of each word:



Identifies a hazardous situation which, if not avoided, **WILL** result in **DEATH** or **SERIOUS INJURY**. Use of this signal word is limited to the most extreme situations.



Identifies a hazardous situation which, if not avoided, **COULD** result in **DEATH** or **SERIOUS INJURY**.



Indicates a hazardous situation which, if not avoided, **COULD** result in **MINOR** or **MODERATE** injury.



Identifies practices likely to result in product/property damage, such as operation that might damage the product.

Each person who assembles, installs, uses, or maintains this product should read the entire manual **and fully understand the directions in advance**. **If after reading the manual you do not understand an instruction, ask your supervisor or employer for clarification, because failure to adhere to the directions in this manual might result in serious personal injury.**

## SAFETY GUIDELINES

Beacon diligently strives to identify foreseeable hazards associated with the use of its products. However, material handling is inherently dangerous and no manual can address every conceivable risk. The end-user ultimately is responsible for exercising sound judgment at all times.



Electrocution might result if any part of the product contacts electrified wires. Reduce the likelihood of electrocution by applying **common sense**:

- DO NOT *contact* electrified wires with any part of this device, your body, or clothing.
  - DO NOT use or store the product where contact with electrified wires is likely.
1. Always inspect the usage area before using the product & implement precautions that account for conditions.



If this product is used improperly or carelessly, the operator and/or bystanders might sustain serious personal injuries or even be killed. To reduce the likelihood of injury:

- ***Failure to read and understand the entire manual before assembling, installing, using or servicing the product is a misuse of the product.***
- Read the manual to refresh your understanding of proper use and maintenance procedures.
- DO NOT attempt to resolve any problem(s) with the product unless you are both authorized to do so and certain that it will be safe to use afterwards.
- DO NOT modify the product in any way UNLESS you first obtain written approval from Beacon Unauthorized modifications automatically void the Limited Warranty and might make the product unsafe to use.
- DO NOT exceed the maximum rated load (see Label 287 on product).
- Inspect the product before each use.
  - A. DO NOT use this product if the inspection reveals structural damage. Examples of structural damage include, but are not limited to, the following: 1) Cracked, broken or significantly deformed load-bearing members; 2) cracked welds; 3) missing or deformed safety chain/strap; 3) corrosion, severe wear, or other condition that affects the ability of the product to support weight or itself. Replace each part that fails to pass an inspection, and DO NOT use the product until it is fully restored to normal condition.
  - B. DO NOT use the product if any unusual noise or movement is observed. If a malfunction occurs, remove the unit from service and notify your supervisor & maintenance personnel about the issue.
- DO NOT use this device UNLESS all product labels (see "Label Placement Diagram") are readable and undamaged.



- Proper use, maintenance, and storage are essential for this product to function properly.
- o Always use this product in accordance with the instructions in this manual and consistent with any training relevant to machines, devices, etc. used in conjunction with this product.
  - o Keep the product clean & dry. Lubricate moving parts.
  - o FOR HYDRAULIC UNITS: Do not use brake fluid or jack oils in the hydraulic system. If oil is needed, use an anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F, (ISO 32 cSt @ 40°C), or Dexron transmission fluid.
  - o Contact the manufacturer for MSDS information

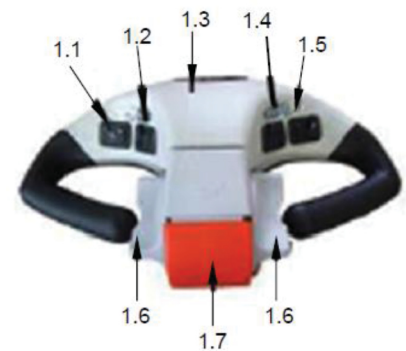
## Introduction

BEPFC-series powered shop cranes are designed to move loads quickly, easily, and safely. All units are equipped with a 24V DC drive and lift motor for handling heavy-duty jobs. Ergonomic handle features easy-to-operate throttle with infinite adjustment of forward and reverse speeds, lift/lower controls, proprietary safety-enhancing emergency reverse function, as well as a horn. Standard design includes an electromagnetic disc brake with automatic deadman feature that activates whenever the handle is released. The electrical system of each unit consists of two 12V, deep cycle, lead-acid batteries that provide 3-4 hours of operation when fully charged, up to 8 hours if used intermittently, an integral battery charger, and a battery charge gauge. Poly-on-steel wheels are durable and quiet.

NOTE: All information provided in this manual is accurate as of the date of publication. However, we reserve the right to modify the design of any and all products at any time without notice. Therefore, data that appears in this document are subject to change.

## Control Features

1. Control yoke / handle
  - 1.1. Extend the boom
  - 1.2. Retract the boom
  - 1.3. Horn
  - 1.4. Raise the boom
  - 1.5. Lower the boom
  - 1.6. Drive
  - 1.7. Emergency stop, "Belly Switch"



2. Dashboard Controls
  - 2.1. Receptacle for hand control option
  - 2.2. Battery charge meter
  - 2.3. Emergency stop (power on/off) switch
3. Battery charger cord



## Operation

Before using the crane, check the battery charge meter and confirm the battery is fully charged. Turn power on and test the following: the horn, the controls for extending and retracting the boom, and the controls for raising and lowering the boom. If all powered functions operate normally, the unit is ready for use.

Before the crane is loaded, perform the following:

- verify the load is evenly distributed and safely secured
- verify the crane will be operating on a level surface
- Verify the transport distance is a short distance. The longer the distance the higher the risk of injury or excessive drive system wear and tear.

Turn on battery power by pulling up on the **power switch**. Power switch is located on the dashboard, see item 2.3.

**RAISING AND LOWERING THE BOOM:** There are two buttons located on the right side of the handle. One is for raising the boom. The other one is for lowering the boom. Make sure that there is no one standing near the truck or the load while raising or lowering the boom.

**TRAVEL CONTROLS:** Two control wheels, one on each side of the belly switch, control direction and speed. Rotate either control wheel away from you to drive the truck forwards. Rotate either control wheel towards you to drive in reverse. The speed of travel is controlled by the degree of rotation in either direction, i.e. the farther you turn the controllers the faster the truck moves.

**BRAKING:** This truck is equipped with an electromagnetic brake. The brake is applied whenever the control yoke is within 10~15 degrees of the vertical/home position or within 5 degrees of the lower position. The brake activates regardless of the lateral (side-to-side) position of the yoke. Whenever the handle is released, it automatically returns to the vertical position and activates the brake. Always confirm that the brake is in normal operating condition before using the truck.

**EMERGENCY STOP BELLY SWITCH** (item 1.7 ON p. 3): A red emergency stop feature, a belly switch, is located at the top of the control yoke. When pressed and released, the switch interrupts drive functions which causes the unit to stop. If the belly switch is pressed and held down, the unit will immediately reverse travel direction, away from the operator, for ~3 seconds. If the belly switch is pressed and quickly released, the unit will immediately stop. Before the unit will operate normally after the belly switch has been activated, it must be reset. To reset functions, either move the yoke all the way up, the yoke will also automatically return to the upright/home position whenever the operator releases the yoke, or all the way down.

**EMERGENCY POWER SHUT-OFF SWITCH** (item 2.3 on p. 3): To turn power on, pull out the red button. To shut off all power, travel, lift-lower, and extend-retract functions, press the button down. In an emergency situation, pressing the button disconnects power and immediately stops all powered functions, unlike the belly switch which affects only the travel, forward and/or reverse, functions.

**HORN:** A button for activating the horn is located on the top side of the control handle.

## Specifications

Model		BEPFC-CB-15
Capacity		1,500 / 800 / 400 lbs
Lift Height		45¼ - 105"
Lift Speed	Loaded	1/2"/sec
	Unloaded	0.70"/sec
Lower Speed	Loaded	¾"/sec
	Unloaded	¼"/sec
Travel Speed	Loaded	2.18 mph
	Unloaded	2.8 mph
Drive Motor		24V/700W
Lift Motor		DC24V/2.0KW
Battery		2x12V/70-80Ah
Battery Charger		24V/12A
Gradeability		0%
Overall size		35x110x68"

## Battery and Battery Charger Operation

The batteries and the battery charger are located inside the housing. To charge the batteries:

1. Press the red on/off switch to turn off the power supply.
2. Before connecting the battery charger to the local power supply, check and insure that the voltages of both are the same.
3. Plug the AC extension cord from the charger into a wall outlet to turn on the charger. The charger automatically controls the charging process and matches the current requirements of the batteries. When the batteries are fully charged, the charger will continue to supply only enough current to maintain full charge levels.
4. When charging is finished, disconnect the AC plug from the wall outlet.

## Maintenance

Before working on the unit, turn off power, lower the boom, and confirm that the brakes are engaged working properly. Chock the wheels to secure the truck. Disconnect batteries before working on the electrical system.

1. Check electrical wiring for frays, etc. Inspect the batteries for leaks and accumulated corrosion.
2. Battery electrolyte level should be checked before charging the battery. The level should be maintained at 1/2 inch above the plates. Do not overfill. Charge the battery at the end of each day's usage. The battery should be charged at least once per week when not in use.
3. Before checking the hydraulic fluid level, park the truck on a level surface and fully lower the boom. Remove the filler cap and check the level of the fluid. Check the hydraulic hoses for significant wear, kinks, cuts, etc. Replace damaged hoses. Change the oil at least once a year. The oil should be changed as soon as it darkens, becomes gritty, or appears milky. Milky appearance indicates the presence of water. Replace the oil with AW-32 hydraulic fluid or its equivalent.

## Trouble Shooting

**If a malfunction occurs while performing any of the following tests, do not use it until the truck is restored to normal operating condition. The table below identifies several common issues and provides lists of possible causes. To resolve other issues, contact technical support at Beacon**

1. Verify the battery cable connections are tight on the batteries.
2. Verify there is no leakage of oil from previous use.
3. Pull the red button, item 2.3, up and check the battery charge indicator.
4. Test boom functions: rise, lower, extend and retract.
5. Test drive functions (forward and reverse).

6. Test brake operation by slowly driving forward and then raising the handle to the vertical position. The brakes should apply automatically. Repeat the test but this time move the control yoke to the lowered position to confirm automatic brake activation occurs.
7. Verify the emergency on/off switch and the belly switch function appropriately.

Problem	Possible Cause
Boom does not rise and motor does not run	<ul style="list-style-type: none"> <li>• Faulty wiring from fuse to lift switch in handle.</li> <li>• Faulty lift switch</li> <li>• Faulty wiring from lift switch to pump contactor.</li> <li>• Faulty lift contactor</li> <li>• Faulty wiring from battery positive terminal to pump contactor, or from pump contactor to pump motor</li> <li>• Brushes in pump motor worn out</li> <li>• Defective control circuit fuse</li> </ul>
Boom does not rise although motor runs	<ul style="list-style-type: none"> <li>• Low hydraulic pressure caused by:               <ul style="list-style-type: none"> <li>o Pressure relief valve needs adjustment</li> <li>o Pump check valve stuck open</li> <li>o Faulty solenoid valve</li> </ul> </li> <li>• Check oil level if boom does not fully rise</li> <li>• Check hydraulic pump operation</li> <li>• Defective control circuit fuse</li> </ul>
Boom does not lower and motor does not run	<ul style="list-style-type: none"> <li>• Faulty wiring from fuse to lowering switch in handle.</li> <li>• Faulty lowering switch</li> <li>• Faulty wiring from lowering switch to pump contactor.</li> <li>• Faulty lowering contactor</li> <li>• Faulty wiring from battery positive terminal to pump contactor or from pump contactor to pump motor</li> <li>• Brushes in pump motor worn out</li> <li>• Defective control circuit fuse</li> </ul>
Boom does not lower although motor runs	<ul style="list-style-type: none"> <li>• Low hydraulic pressure caused by:               <ul style="list-style-type: none"> <li>o Pressure relief valve needs adjustment</li> <li>o Pump check valve stuck open</li> <li>o Faulty solenoid valve</li> </ul> </li> <li>• Check oil level if boom does not fully rise or lower</li> <li>• Check hydraulic pump operation</li> <li>• Defective control circuit fuse</li> </ul>
No electrical power	<ul style="list-style-type: none"> <li>• Emergency stop button pressed</li> <li>• Loose battery connections</li> <li>• Blown control or power fuse</li> <li>• Faulty wiring from fuse to travel control switch</li> <li>• Faulty travel control switch</li> <li>• Faulty wiring from travel control switch to direction contactor</li> <li>• Faulty contactor</li> <li>• Check traction motor</li> </ul>

## LIMITED WARRANTY

Beacon Industries, Inc. ("Beacon") warrants this product to be free of defects in material and workmanship during the warranty period. *Our warranty obligation is to provide a replacement for a defective original part if the part is covered by the warranty, after we receive a proper request from the warrantee (you) for warranty service.*

### Who may request service?

Only a warrantee may request service. *You are a warrantee if* you purchased the product from Beacon or from an authorized distributor AND Beacon has been fully paid.

### What is an "original part"?

An original part is a part used to make the product as shipped to the warrantee.

### What is a "proper request"?

A request for warranty service is proper if Beacon receives: 1) a photocopy of the Customer Invoice that displays the shipping date; AND 2) a written request for warranty service including your name and phone number. Send requests by any of the following methods:

<u>Mail</u>	<u>Fax</u>	<u>Email</u>
Beacon Industries, Inc. 12300 Old Tesson Rd. St. Louis, MO 63128	(314) 487-0100 <u>Phone</u> (314) 487-7600	sales@beacontechnology.com

In the written request, list the parts believed to be defective and include the address where replacements should be delivered.

### What is covered under the warranty?

After Beacon receives your request for warranty service, an authorized representative will contact you to determine whether your claim is covered by the warranty. Before providing warranty service, Beacon may require you to send the entire product, or just the defective part or parts, to its facility in Angola, IN. The warranty covers defects in the following original dynamic components: motors, hydraulic pumps, electronic controllers, switches and cylinders. It also covers defects in original parts that wear under normal usage conditions ("wearing parts"), such as bearings, hoses, wheels, seals, brushes, and batteries.

### How long is the warranty period?

The warranty period for original components is 90 days. The warranty period begins on the date when Beacon ships the product to the warrantee. If the product was purchased from an authorized distributor, the period begins when the distributor ships the product. Beacon may extend the warranty period for products shipped from authorized distributors by *up to* 30 days to the duration necessary to account for shipping time.

### If a defective part is covered by the warranty, what will Beacon do to correct the problem?

Beacon will provide an appropriate replacement for any *covered* part. An authorized representative of Beacon will contact you to discuss your claim.

### What is not covered by the warranty?

1. Labor;
2. Freight;
3. Occurrence of any of the following, which automatically voids the warranty:
  - Product misuse;
  - Negligent operation or repair;
  - Corrosion or use in corrosive conditions;
  - Inadequate or improper maintenance;
  - Damage sustained during shipping;
  - Accidents involving the product;
  - Unauthorized modifications: DO NOT modify the product IN ANY WAY without first receiving written authorization from Beacon. Modification(s) might make the product unsafe to use or might cause excessive and/or abnormal wear.

### Do any other warranties apply to the product?

Beacon Industries, Inc. makes no other express warranties. All implied warranties are disclaimed to the extent allowed by law. Any implied warranty not disclaimed is limited in scope to the terms of this Limited Warranty.