

## ***Patriot Portable Material Hoist 850/1000/2000***

# Operator's Manual

Manual must be read carefully by all operators before hoist is set-up and used. Failure to follow all directions and warnings for safe mounting and operation will void warranty and could result in injuries or death. Please contact the factory with questions or concerns before operating hoist, and check with safety officer or local authorities on rules for safe operation.



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## 1.0 HOIST DESCRIPTION

Patriot series portable material hoists provide the greatest lifting capability for jobs where a portable hoist is appropriate. Exclusive features including shock-absorbing cycloidal speed reduction, quick disconnect control boxes, and two-speed operation are engineered to maximize hoist utility and minimize downtime.

Patriot hoists are rugged yet lightweight and simple to operate. All hoists are equipped with a single wire rope cable that is easy to replace and doesn't require field crimping. Safety features include a fail-safe brake, low voltage pendant controls. Electrical parts are NEMA 4 rated for outdoor use.

When mounted correctly on optional Hi-Tech SMM-11 Scaffold Monorail, PT-1 Trestle Monorail, or "I" Beam adapters, these versatile machines handle most construction and industrial hoisting applications. Mounts and adapters are not covered in this manual. Contact your distributor or the factory for information on these products.

## 2.0 OPERATOR'S RESPONSIBILITIES

- 2.1 *Read this manual before operating hoist.* It is the operator's responsibility to determine the suitability of the equipment for its intended use.
- 2.2 All operators must be thoroughly familiar with all hoist features and controls, and be physically capable of proper hoist operation.
- 2.4 It is the operator's responsibility to follow the safe operating practices outlined in this manual, and to implement a regularly scheduled inspection and daily maintenance program. All warning labels must be in place.
- 2.5 It is the operator's responsibility to insure that Patriot hoists are used for material handling only, and are not used for lifting, supporting, or transporting people or lifting loads over people at any time.
- 2.6 Operators must insure that all personnel are clear from path of hoist as well as beneath work area and that loads will clear all obstructions when lifting, lowering, or traveling horizontally.
- 2.7 It is the operator's responsibility to follow correct mounting directions and safety warnings for the various methods of mounting hoists. *Specific mounting directions are not covered in this manual.* Contact your distributor or the factory for information on these products.



**When lifting material with the hoist, check that lower area is secured to prevent anyone from walking under a suspended load. Be sure load is securely attached to hook with proper slings or lifting eyes. Check with local authorities or safety officer as to clear ground space required.**

### 3.0 GENERAL SAFETY GUIDELINES

- 3.1 At the beginning of each shift the operator should confirm that hoist mounting is secure. Make certain all anchorages, etc. are properly tightened. Hoist must be level at all times.
- 3.2 Operators must insure that cable is properly wound on drum, and not twisted or damaged. Slack cable should be taken in slowly. Keep hands clear of hoist lifting cable and spool at all times. *Serious injuries are possible if this precaution is not observed.*
- 3.2 Brake and limit switch must *always* be checked before using hoist.
- 3.3 Loads must be centered and level. Loads should never be dragged on the ground. Avoid swinging loads; guide cables may be required.
- 3.4 All extension cords must be provided with an approved ground lead and firmly connected to both the hoist and a suitable ground connection at the power source. Cords must be of industrial quality and of sufficient size to minimize voltage drop. Never use less than 12 gauge wire.
- 3.5 A ground fault interrupter (GFI) circuit breaker is highly recommended and may be required by the local electrical code. Check your code.
- 3.6 Be sure that electrical power cords are protected and suspended so they cannot become damaged or interfere with the operation of the hoist.
- 3.7 *Always* disconnect hoist from power supply before beginning any maintenance procedure.

**Keep hands clear of the hoist lifting cable and spool at all times. Serious injuries are possible if this precaution is not observed.**

### 4.0 OPERATING INSTRUCTIONS

- 4.1 Operators must insure that unit is plugged into proper power source and that there is adequate voltage to unit. *Operating hoist without adequate voltage will void warranty and may result in damage to hoist motor.*
- 4.2 Be certain area is clear of people and obstructions. Do not transport loads over the heads of workers below.
- 4.3 To lower the hook and load, the *DOWN* button on the control is pressed and held. On two speed hoists, press the button again to engage higher speed. This causes the brake to release and the cable to unwind. Once the button is released the motor will stop and the brake will be applied automatically. **Do not allow hoist cable to get slack on drum. Do not continue to unwind cable when there is not tension on drum.**
- 4.4 To raise the hook and load, press the *UP* button. On two speed hoists, press the button again to engage higher speed. The load will continue to be raised until the button is released or the upper limit switch is reached. **Slack cable should be taken in slowly. When rewinding slack cable, put some tension on cable. Use gloves and do not get hands near drum.**

- 4.5 Do not overload hoist. Overloading can be caused by jerking the load as well as by static overloading. Slack cable should be taken in slowly.
- 4.6 Keep your attention focused on load when hoist is in operation. Do not leave a load suspended while unattended.
- 4.7 Do not extend cable to the end. While wire rope cable manufacturers recommend letting cable out fully to “relax” cable prior to using it, safe operation of hoist requires leaving a minimum of three (3) wraps of cable on the drum at all times.
- 4.8 Lifting hook should always be secured when not operating hoist.
- 4.9 *Always* disconnect hoist from power supply before beginning any maintenance procedure.
- 4.10 To reduce damage the control box can be easily removed from the hoist when changing hoist location. The control box is held to the hoist frame by four removable pins. Pull box away from the motor, and store with the plug facing down to prevent water intrusion. To reinstall, align the plug connectors while pushing box toward motor.

## 5.0 TROUBLESHOOTING

- 5.1 Almost all problems in hoisting operations are electrical. If hoist doesn't operate at all, check your power source and circuit breakers.
- 5.2 If circuit breakers activate often, the problem is very likely low voltage to hoist under load. Have a qualified electrician check the voltage at the hoist when it is under load to see if it conforms to the data plate.
- 5.3 If lift goes down, but not up, check the upper limit switch adjustment.
- 5.4 If hoist will not lift load, the load may exceed the hoist's capacity or voltage to hoist is too low. If load and voltage are correct, check brake circuit.
- 5.5 Cable bunching up at one end of the drum indicates hoist is not level, or load is not centered under hoist.
- 5.6 When hoist is difficult to move horizontally, clean the wheels and/or rails.
- 5.7 The brake has an adjustable air gap that is pre-set at the factory to .015". The air gap may require adjustment after ~50,000 cycles. Contact factory for air gap adjustment instructions.



## 6.0 WIRE ROPE CABLE NOTES

The wire rope lift cable on Patriot hoists has been carefully selected and tested to provide safe service. Wire rope is considered a *consumable* part. The cable is not warranted in any manner; if it becomes kinked, cut, or broken, the entire cable must be replaced. **Splicing or repair of the cable is specifically NOT AUTHORIZED and voids warranty.**

Hoist capacity is affected by cable length and diameter. Follow factory specifications at all times. For best results, minimize cable length to ~10 ft. over lifting distance. For maximum safety, wire rope should be replaced after each job. Contact your Hi-Tech Hoist distributor or the factory for guidance or to order approved replacement cable.

## 7.0 SAFE STORAGE OF YOUR HOIST

Hoists should be wiped down and stored carefully in a clean, dry environment. A dedicated metal container is best. Use care that exterior parts are not damaged when handling or transporting hoist. Never store hoist in a damp or dusty place.

## 8.0 TECHNICAL SPECIFICATIONS

Specifications	Patriot 850	Patriot 1000	Patriot 2000
<b>Lifting Capacity</b>	850 Lbs.	1000 Lbs.	2000 Lbs.
<b>Lifting Height</b>	250' max	250' max	175' max
<b>Cable Diameter</b>	1/4" wire rope	1/4" wire rope	5/16 " wire rope
<b>Power (20 Amps)</b>	220v/1 phase/60hz	208/230v/3 phase/60hz	230v/3 Phase/60hz
<b>Speeds</b>	(2-speed) 23 - 90 fpm	(2-speed) 30 - 90 fpm	(2-speed) 16 - 50 fpm
<b>Weight</b>	205 Lbs.	215 Lbs.	230 Lbs.
<b>Size</b>	35"L x 12"W x 36"D	35"L x 12"W x 36"D	35"L x 12"W x 36"D
<b>Motor</b>	2 hp brake motor	3 hp brake motor	3 hp brake motor
<b>Options</b>	<i>I-Beam Roller Adapter Kits</i>		
	<i>Pendant Control Extensions; 50', 100', 150'</i>		

## 9.0 ACCESSORIES AVAILABLE

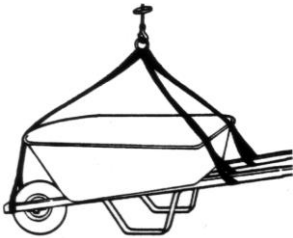


### Tilt Bucket

The steel **PTB-1** is used for transporting wet or dry materials.

700 lb Load Capacity  
(Approx 5 cu ft)

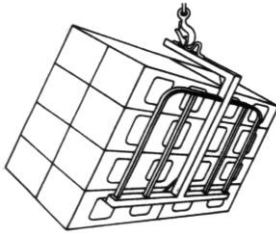
Size: 20" W x 26" L x 22" H



### Wheelbarrow Sling

The **PWS** is fabricated of nylon webbing and fits most common wheelbarrows.

1000 lb Load Capacity

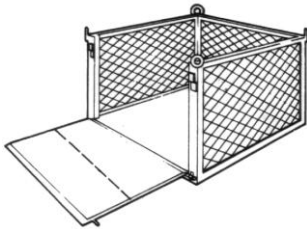


### Block Fork

The **PBF-7** is designed to lift 16 concrete blocks.

800 lb Load Capacity

Size: 29" W x 42" H



### Equipment Basket

The **PEB** is a general-purpose basket for lifting supplies and tools.

700 lb Load Capacity

Size: 36" W x 36" L x 24" H

Basket Sling Included



### Material Container

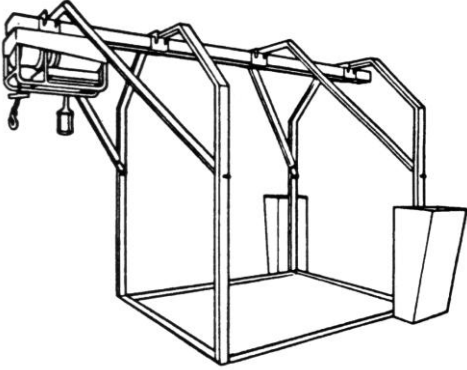
The **PMC** is a general all-purpose material container.

700 lb Load Capacity

Size: 36" W x 36" L x 12" H

Basket Sling Included

## Trestle Monorail Assembly



The **PT-1 Trestle Monorail** can be mounted on a rooftop or balcony. *Tie downs and/or ballasting are required.*

The 11 ft monorail has a 3 ½ ft overhang with a 50" W opening for bulky items.

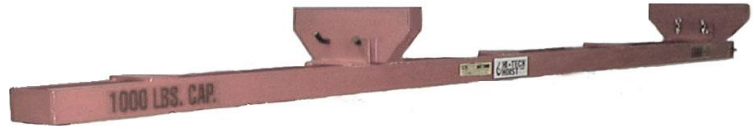
The unit is shown with the optional **PT-2 Ballast Containers** which are sold separately.

This monorail can be used with all Patriot portable hoists

2000 lb Load Capacity

Size: 51" W x 132" L x 85" H

## Scaffold Mounted Monorail (no single frame structures)



The **SMM-11 Scaffold Mounted Monorail System** utilizes two saddles that mount over the top of a scaffold frame with 7' cross braces. *Tie downs and/or ballasting are required.*

The unit allows you to lift and horizontally move material into the scaffold work area.

This monorail can be used with the Patriot 500, 850 and 1000 portable hoists.

1000 lb Load Capacity

The accessories shown must be mounted correctly per factory instructions. Mounting instructions are not covered in this manual. Contact your distributor or the factory for specific information on attaching or mounting these products. *Verify structure, ballast and anchorage requirements with a qualified engineer.* Due to Hi-Tech Hoist Corporation's continual product improvements, specifications are subject to change without notice.

**WARNING: All equipment must be used in compliance with federal, state and local laws, rules and regulations for health and safety in the country of use. Hoists and accessories are for material lifting only. Hi-Tech Hoist products are not for lifting people or things over people.**

## 10.0 Limited Product Warranty

Hi-Tech Hoist Corporation (HTH) warrants to the original purchaser that HTH hoists will be free from defects in materials and workmanship for a period of one year from the date of shipment. During the warranty period, HTH will, at its option: (1) provide replacement parts necessary to repair the product, (2) replace the control box or other part with a comparable product, or (3) repair the hoist in our factory. Purchaser must assist HTH in diagnosing issues, and follow HTH warranty processes.

HTH will replace any failed control box with a new or refurbished box, if we agree that it needs to be replaced. If HTH determines that you need a replacement control box, HTH will ship one to you along with instructions on installation and the return of the failed control box. Replacement control boxes will either be new or serviceably used, comparable in function and performance to the original, and warranted for the remainder of the original warranty period, or 30 days whichever is greater.

When you contact us, we will require a valid credit card number at the time you request a replacement, but we will not charge you for the replacement control box as long as you return the original to us within 15 days after you receive the replacement part. If we do not receive the original part from you within those 15 days, we will charge your credit card the then-current standard price for that item. We will pay to ship the item to you if you use an address in the United States. We will also include a prepaid shipping container with the replacement part for you to use in returning the control box to us.

***You must obtain a Return Authorization Number (RA#) from the factory prior to returning the hoist.*** If we determine that the problem is not covered under this warranty, we will notify you and inform you of service alternatives that are available to you on a fee basis. We will pay to ship the repaired unit back to you if you use an address in the United States.

If HTH determines your hoist requires service, you may be required to deliver it to our factory. You will be responsible for properly packaging your product, paying all shipping costs, loss or damage to the product during shipping, and any taxes, fees or charges associated with transporting the product to the factory.

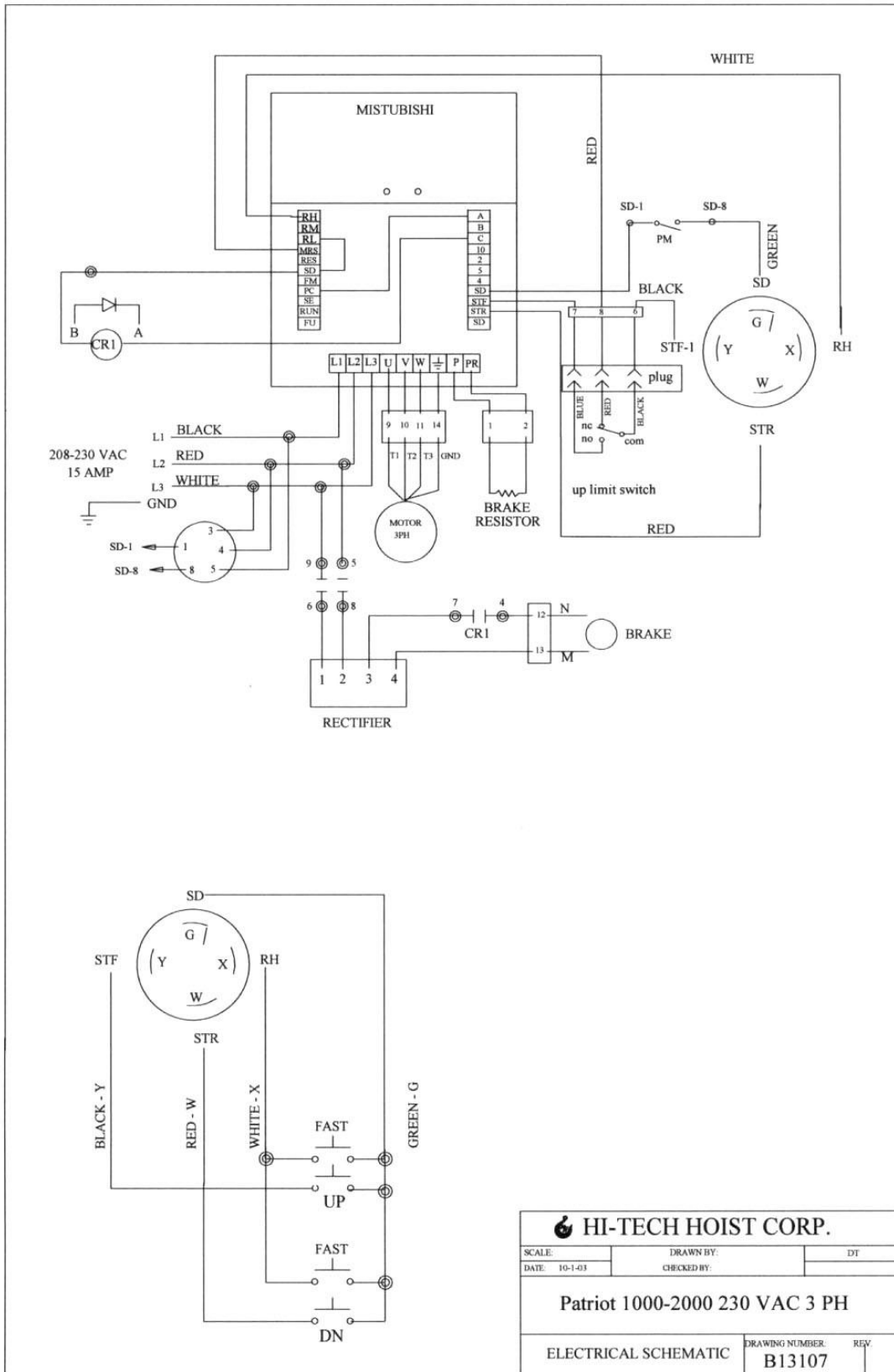
Wire rope cable is considered a *consumable* part. The cable is not warranted in any manner, if it becomes kinked, cut, or broken, the entire cable must be replaced. Splicing or repair of the cable is specifically not authorized and voids warranty.

**This limited warranty does not cover misuse or minor imperfections within design specifications or those that do not materially alter functionality. HTH does not warrant, and is not responsible for damages caused by misuse, abuse, accidents, or use of unauthorized service or parts.**





13.0 ELECTRICAL SCHEMATIC FOR PATRIOT 1000 / 2000



Failure to follow directions and warnings for safe mounting and operation will void warranty and could result in injuries or death. Please contact the factory with questions or concerns before operating hoist. Rev 10/03