

⚠ WARNING This equipment should not be installed, operated or maintained by any person who has not read and understood all the contents of this manual. Failure to read and comply with the contents of this manual can result in serious bodily injury or death, and/or property damage. Record the code and serial number in the space provided below. This information is located on a metal nameplate affixed to the product and also includes the capacity, serial no., unit weight and manufacturers date.

Code Number: _____

Serial Number: _____

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1.0 Important Information and Warnings

1.1 Terms and Summary

This manual provides important information for personnel involved with the installation, operation and maintenance of this product including Below the Hook Devices hereafter referred to as "BTH" device and Material Handling Equipment hereafter referred to as "MHE". Although you may be familiar with this or similar equipment, it is strongly recommended that you read this manual and any accompanying owner's manual supplements, before installing, operating or maintaining the product.

This manual DOES NOT provide important information regarding proper forklift certifications or training required for the correct operation of a forklift or similar equipment.

Danger, Warning, Caution and Notice – Throughout this manual there are steps and procedures that can present hazardous situations. The following signal words are used to identify the degree or level of hazard seriousness.

⚠ DANGER Danger indicates an imminently hazardous situation which, if not avoided, **will** result in **death or serious injury**, and property damage.

⚠ WARNING Warning indicates an imminently hazardous situation which, if not avoided, **could** result in **death or serious injury**, and property damage.

⚠ CAUTION Caution indicates a potentially hazardous situation which, if not avoided, **may** result **minor or moderate injury** or property damage.

NOTICE Notice is used to notify people of installation, operation, or maintenance information which is important but not directly hazard-related.

⚠ CAUTION

These general instructions deal with the normal installation, operation, and maintenance situations encountered with the equipment described herein. The instructions should not be interpreted to anticipate every possible contingency or to anticipate the final system, crane, or configuration that uses this equipment. For systems using the equipment covered by this manual, the supplier and owner of the system are responsible for the system's compliance with all applicable industry standards, and with all applicable federal, state, and local regulations/codes.

Record your Code and Serial Number of the BTH device or MHE, in the space provided, on the front cover of this manual. Doing so will assist in identification and future reference to avoid referring to the wrong manual for information or instructions on installation, operation, inspection, maintenance, or parts.

Use only Harrington authorized replacement parts in the service and maintenance of this BTH device or MHE.

WARNING

Equipment described herein is not designed for and **MUST NOT** be used for lifting, supporting, or transporting people or for lifting or supporting loads over people.

Equipment described herein should not be used in conjunction with other equipment unless necessary and/or required safety devices applicable to the system, crane, or application are installed by the system designer, system manufacturer, crane manufacturer, installer, or user.

Modifications to upgrade, rerate, or otherwise alter this equipment shall be authorized only by the original equipment manufacturer.

Refer to ANSI/ASME B30.20, "Safety Standard for Below-the-Hook Lifting Devices".

Refer to any applicable fork truck (forklift) safety codes, standards and regulations.

Failure to read and comply with any one of the limitations noted herein can result in serious bodily injury or death, and/or property damage.

NOTICE

It is the responsibility of the owner/user to install, inspect, test, maintain, and operate a BTH device in accordance with ANSI/ASME B30.20, "Safety Standard for Below-the-Hook Lifting Devices". If the BTH device is installed as part of a total lifting system, such as an overhead hoist, crane or monorail, it is also the responsibility of the owner/user to comply with the applicable ANSI/ASME B30 volume that addresses that type of equipment.

It is the responsibility of the owner/user to install, inspect, test, maintain, and operate MHE in accordance with applicable forklift codes, standards and regulations. If the MHE is installed as part of a total lifting system, it is also the responsibility of the owner/user to comply with applicable standards and regulations that addresses that type of equipment.

It is the responsibility of the owner/user to have all personnel that will install, inspect, test, maintain, and operate a BTH device or MHE, read the contents of this manual and applicable codes, standards and regulations. If the BTH device or MHE is installed as part of a total lifting system, such as an overhead hoist, crane or monorail, it is also the responsibility of the owner/user to comply with the applicable ANSI/ASME B30 volume that addresses that type of equipment.

If the BTH device or MHE owner/user requires additional information, or if any information in the manual is not clear, contact Harrington Hoists, Inc. or the distributor of the BTH device or MHE. Do not install, inspect, test, maintain, or operate this BTH device or MHE unless this information is fully understood.

A regular schedule of inspection of the BTH device in accordance with the requirements of ANSI/ASME B30.20 should be established and records maintained.

A regular schedule of inspection of the MHE in accordance with all requirements of applicable codes, standards and regulations should be established and records maintained.

2.0 Technical Information

2.1 Specifications

2.1.1 Operating Conditions and Environment:

Temperature Range: 25° to +150°F
(-4°C to +66°C)

Humidity: 100% or less

This is not an underwater device.

Material: No special materials such as spark resistant.

Do Not Use: In an alkaline/acidic or an organic solvent/explosive atmosphere.

2.1.2 BTH Device and MHE Specifications:

For standard product, refer to the Harrington Below-the-Hook & Material Handling Equipment Catalog for Model #, Capacity and dimensional information. For custom product specifications, also refer to the supplemental information accompanying the BTH device or MHE.

3.0 Preoperational Procedures

3.1 Mounting Location

- 3.1.1 **⚠WARNING** Prior to mounting the BTH ensure all suspension devices and supporting structure are adequately rated to support the BTH device and its loads. If necessary consult a professional that is qualified to evaluate the adequacy of the lifting/crane system and its supporting structure.
- 3.1.2 **⚠WARNING** Prior to mounting the MHE ensure all suspension devices and supporting structure are adequately rated to support the MHE and its loads. If necessary consult a professional that is qualified to evaluate the adequacy of the forklift/lifting system and its load bearing members.
- 3.1.3 **⚠WARNING** Specific to Material Stands
Confirm floor beneath Material Stands is solid and capable of supporting the Material Stands and the applied load.

3.2 Mounting/Using the BTH Device

- 3.2.1 Connect the attachment point(s) of the lifting equipment or rigging equipment through the bail(s) of the BTH device. The bail is a machined opening, shackle or ring located on the top of the BTH device, designed to receive the rigging hardware of the lifting equipment.
- 3.2.2 **⚠WARNING** Only use the bail of the BTH device as the attachment point to the lifting equipment or rigging equipment. Always ensure that the lifting equipment or rigging equipment is securely attached.
- 3.2.3 **⚠WARNING** Ensure that all hook latches are closed and load connection points are securely nested in the saddle of all hooks.

3.3 Preoperational Checks and Trial Operations for the BTH Device

- 3.3.1 **⚠WARNING** Confirm the adequacy of the rated capacity of the BTH device and all other components of the lifting system before use. Inspect all load suspension members/components, including the BTH device, for damage prior to use and replace or repair all damaged parts.
- 3.3.2 Record the BTH device Code and Serial Number in the space provided on the cover of this manual.
- 3.3.3 Ensure that the BTH device is properly installed to the lifting equipment or rigging equipment.
- 3.3.4 Confirm proper operation:
- Before operating read and become familiar with Section 4 – Operation/Use.
 - Before operating ensure that the BTH device meets the Inspection, Testing and Maintenance requirements of ANSI/ASME B30.20.
 - Before operating ensure that nothing will interfere with the full range of the lifting system's operation.

3.4 Mounting/Using the MHE

- 3.4.1 Slide the MHE on the forks of the forklift/lifting system.
- 3.4.2 If equipped with, secure the MHE to the lifting forks of the forklift/machine using the supplied fork clamping hardware and/or restraining chain(s).
- 3.4.3 **⚠WARNING** Only use the appropriate lifting fork attachment points for mounting the MHE to the forklift/lifting system.

3.5 Preoperational Checks and Trial Operations for the MHE

- 3.5.1 **⚠WARNING** Confirm the adequacy of the rated capacity of the MHE and all other components of lifting system before use. Inspect all load suspension members for damage prior to use and replace or repair all damaged parts.
- 3.5.2 Record the MHE Code and Serial Number in the space provided on the cover of this manual.
- 3.5.3 Ensure the MHE device is properly installed to the forklift/lifting system. If equipped with, secure the MHE to the lifting forks of the forklift/lifting system using the supplied fork clamping hardware and/or restraining chain(s).
- 3.5.4 Confirm proper operation:
- Before operating read and become familiar with Section 4 – Operation/Use.
 - Before operating ensure the MHE meets all Inspection, Testing and Maintenance requirements.
 - Before operating ensure that nothing will interfere with the full range of the lifting system's operation
- 3.5.5 **⚠WARNING** Specific to Material Stands
- Confirm floor beneath Material Stands is solid and capable of supporting the Material Stands and the applied load.
 - Confirm Material Stands are on a level surface to prevent load from sliding or shifting.
 - Confirm load does not exceed the Capacity of the Material Stand.
 - Confirm load will be evenly distributed between Material Stands

4.0 Operation/Use

4.1 Introduction

DANGER

Do **Not** Walk Under a Suspended Load

WARNING

Operators for lifting systems involving a BTH device or MHE shall be required to read the operation section of this manual, the warnings contained in this manual, instruction and warning labels on the BTH device, MHE or lifting system, and operation sections of ANSI/ASME B30.20, ANSI/ASME B30.16 and ANSI/ASME B30.10 or other applicable codes, standards or regulations. The operator shall also be required to be familiar with all controls before being authorized to operate the BTH device, MHE or lifting system.

BTH device and MHE users should be trained in proper rigging procedures for the attachment of the BTH device or MHE, to the loads and lifting equipment.

BTH device and MHE users should be trained to be aware of potential malfunctions of the equipment that require adjustment or repair, and to be instructed to stop operation if such malfunctions occur, and to immediately advise their supervisor so corrective action can be taken.

BTH device and MHE users should have normal depth perception, field of vision, reaction time, manual dexterity, and coordination.

BTH device and MHE users should **not** have a history of or be prone to seizures, loss of physical control, physical defects, or emotional instability that could result in actions of the operator being a hazard to the operator or to others.

BTH device and MHE users should **not** use a BTH device, MHE or operate lifting system when under the influence of alcohol, drugs, or medication.

BTH device and MHE is intended only for vertical lifting service or freely suspended unguided loads. Do **not** use BTH device and MHE for loads that are not lifted vertically, loads that are not freely suspended, or loads that are guided.

NOTICE

- Read ANSI/ASME B30.20, ANSI/ASME B30.16 and ANSI/ASME B30.10.
- Read the BTH device and MHE manufacturer's Operating and Maintenance Instructions.
- Read all applicable forklift/lifting equipment codes, standards and regulation, when using MHE.
- Read all labels attached to equipment.
- Do **not** use a BTH device or MHE before reading Owner's Manual.

4.2 Shall's and Shall Not's for Operation

WARNING

Improper operation of a BTH device or MHE can create a potentially hazardous situation which, if not avoided, could result in death or serious injury, and substantial property damage. To avoid such a potentially hazardous situation **THE OPERATOR SHALL:**

- **NOT** lift more than rated load for the BTH device or MHE.
- **NOT** use a BTH device or MHE which has been modified without the manufacturer's approval or certification to be in conformity with applicable OSHA regulations.
- **NOT** use a BTH device or MHE when the lifting system is restricted from forming a straight line from the mounting point to the loading point in the direction of loading.
- **NOT** use a damaged BTH device or MHE.
- **NOT** operate a malfunctioning or unusually performing BTH device or MHE.
- **NOT** use a BTH device or MHE to lift, support, or transport people.
- **NOT** lift loads over people.
- **NOT** remove or obscure the warnings on the BTH device or MHE.
- **NOT** use the BTH device or MHE in such a way that could result in shock or impact loads being applied to the BTH device or MHE.
- **NOT** leave load supported by the BTH device or MHE unattended unless specific precautions have been taken.
- **NOT** use a BTH device or MHE that is tagged "Out of Service" or otherwise designated as nonfunctioning.
- **NOT** use a BTH device or MHE on which the safety placards or decals are missing or illegible.
- Make sure the temperature of the load does not exceed the maximum allowable limits of the lifter.
- Be familiar with BTH device or MHE adjustments, procedures, and warnings.
- Make sure the unit is securely attached to a suitable support before applying load.
- Make sure BTH device or MHE, slings, attachments are properly sized and rigged.
- Make sure all hook latches are closed and load connection points are securely nested in the saddle of all hooks.
- Make sure load is balanced and load-holding action is secure before continuing.
- Make sure all persons stay clear of the supported load.
- Report Malfunctions or unusual performances of the BTH device or MHE and remove the BTH device or MHE from service until the malfunction or unusual performance is resolved.
- Warn personnel before lifting or moving a load.
- Warn personnel of an approaching load.

⚠ CAUTION

Improper operation of a BTH device or MHE can create a potentially hazardous situation which, if not avoided, could result in minor or moderate injury, or property damage. To avoid such a potentially hazardous situation **THE OPERATOR SHALL:**

- Maintain a firm footing or be otherwise secured when using the BTH device or MHE.
- Make sure hook latches are closed and not supporting any parts of the BTH device or MHE.
- Make sure the load is free to move and will clear all obstructions.
- Inspect the BTH device or MHE regularly, replace damaged or worn parts, and keep appropriate records of maintenance.
- Avoid swinging the load.
- Use the BTH device or MHE manufacturer’s recommended parts when repairing the unit.
- **NOT** allow your attention to be diverted from using the BTH device or MHE or lifting system.
- **NOT** allow the BTH device or MHE to be subjected to sharp contact with other BTH devices or MHE, structures, or objects through misuse.
- **NOT** adjust or repair the BTH device or MHE unless qualified to perform such adjustments or repairs.
- **NOT** operate manual controls with powered devices

5.0 Inspection

5.1 Initial Inspection – Prior to initial use, all new, altered, or modified BTH device or MHE shall be inspected by a designated person to ensure compliance with the applicable provisions of this manual.

5.2 Inspection Classification – The inspection procedure herein is based on ANSI/ASME B30.20. Inspections for BTH device or MHE in regular service are divided into EVERY LIFT, FREQUENT and PERIODIC groups based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the degree of service and usage the BTH device or MHE are subjected to. EVERY LIFT inspection should be made before/or during every lift. FREQUENT and PERIODIC inspections should be made with respective intervals between inspections as defined in Table 5-2.

Table 5-2 Inspection Intervals		
Service	FREQUENT Inspection	PERIODIC Inspection
Normal Service	Monthly	Yearly
Heavy Service	Weekly to Monthly	Semiannually
Severe Service	Daily to Weekly	Quarterly
Special or Infrequent Service	As recommended by a qualified person before and after each occurrence.	As recommended by a qualified person before the first such occurrence and as directed by the qualified person for any subsequent occurrences.

5.3 Every Lift Inspection

5.3.1 Inspections should be made before and/or during EVERY LIFT in accordance with Table 5-3, “Every Lift Inspection.” The operator shall inspect for any indication of damage, including observations during operation for any damage that might occur during the lift.

Table 5-3 Every Lift Inspection
Surface of the load for debris.
Condition and operation of the controls and moving/functional components.

5.4 Frequent Inspection

5.4.1 Inspections should be made on a FREQUENT basis in accordance with Table 5-4, “Frequent Inspection.” Included in these FREQUENT Inspections are observations made during operation for any defects or damage that might appear between Periodic Inspections. Evaluation and resolution of the results of FREQUENT Inspections shall be made by a designated person such that the BTH device or MHE is maintained in safe working condition.

Table 5-4 Frequent Inspection
All functional operating mechanisms for proper operation and adjustment, maladjustment.
Lifting system components for deformation, cracks, or significant wear.
Structural members for deformation, cracks, or excessive wear.
Loose or missing fasteners, nameplates, and warning labels.
Connection points between BTH device or MHE and/or support structure in accordance with ANSI/ASME B30.20 and ANSI/ASME B30.16.
Connection points between MHE and lifting equipment in accordance with applicable forklift standards and regulations

5.5 Periodic Inspection

- 5.5.1 Inspections should be made on a PERIODIC basis in accordance with Table 5-5, "Periodic Inspection." Evaluation and resolution of the results of PERIODIC Inspections shall be made by a designated person such that the BTH device or MHE is maintained in safe working condition.
- 5.5.2 For inspections where load suspension parts of the BTH device or MHE are disassembled, a load test per ANSI/ASME B30.20 must be performed on the BTH device or MHE after it is re-assembled and prior to its return to service.

Table 5-5 Periodic Inspection
Requirements of frequent inspection.
Evidence of loose bolts, nuts, or rivets.
Evidence of worn, corroded, cracked, or distorted parts such as handles, screws, pins, bushings, snap or spiral retaining rings, spacers, nuts, and suspenders.
Evidence of damage to supporting structure.
Function label on BTH device or MHE for legibility.
Warning label properly attached to the BTH device or MHE and legible.
Evidence of worn or damaged electrical components such as wires, motors, switches and controls.

5.6 Inspection Methods and Criteria

- 5.6.1 This section covers the inspection of specific items. The list of items in this section is based on those listed in ANSI/ASME B30.20 for the Every Lift, Frequent and Periodic Inspection.
- 5.6.2 Every Lift Inspection – Performed by the operator before and/or during every lift. Not intended to involve disassembly of the BTH device or MHE. Disassembly for further inspection would be required only if every lift inspection results so indicate. Disassembly and further inspection should only be performed by a qualified person trained in the disassembly and re-assembly of the BTH device or MHE.
- 5.6.3 Frequent Inspection - Not intended to involve disassembly of the BTH device or MHE. Disassembly for further inspection would be required only if frequent inspection results so indicate. Disassembly and further inspection should only be performed by a qualified person trained in the disassembly and re-assembly of the BTH device or MHE.
- 5.6.4 Periodic Inspection - Disassembly of the BTH device or MHE is required. Disassembly should only be performed by a qualified person trained in the disassembly and re-assembly of the BTH device or MHE.

Table 5-6 BTH Device or MHE Inspection Methods and Criteria			
Item	Method	Criteria	Action
Functional operating mechanisms.	Visual	Mechanisms should function properly. Components should not be deformed, scarred or show significant wear.	Repair or replace as required.
Mechanical and Lifting System – Components	Visual, Function	BTH Device or MHE components including BTH Device or MHE handles, suspenders, spacers, bushings, snap or spiral retaining rings, and pins, bails, hooks, latches, chains, shafts, pins, wire ropes, etc. should be free of cracks, distortion, significant wear and corrosion. Evidence of same can be detected visually.	Replace.
Bolts, Nuts and Rivets	Visual, Check with Proper Tool	Bolts, nuts and rivets should not be loose, deformed or corroded.	Tighten or replace as required.
Warning Labels	Visual	Warning Labels should be affixed to the BTH device or MHE and be legible.	Replace.
BTH Device or MHE Capacity Label	Visual	The label and plate that indicates the capacity of the BTH device or MHE should be legible and securely attached to the BTH device or MHE.	Replace.

6.0 Maintenance

6.1 For BTH device or MHE maintenance or storage, comply with the following points.

- 6.1.1 **CAUTION**
- Possibility of corrosion on components of the BTH device or MHE increases for installations where salt air and high humidity are present. Make frequent and regular inspections of the BTH device or MHE condition and operation.
 - Do not store the BTH device or MHE while supporting a load.
 - Remove any dirt or water on the BTH device or MHE.
 - Store the BTH device or MHE in a dry and clean area
 - Lubricate all pin, pivot, rack, bearing surfaces with NLGL 2 grease.
 - Perform all inspections given in "Section 5.0 Inspection" if irregularity of the BTH device or MHE is found after operation.

6.2 Disassembly/Assembly

- 6.2.1 Disassembly/assembly shall be performed by a qualified person, experienced with the repair, maintenance and inspection of BTH devices, MHE or similar equipment. If needed, contact factory for technical support.

7.0 Warranty

Warranty explanation and terms.

All products sold by Harrington Hoists, Inc. are warranted to be free from defects in material and workmanship from date of shipment by Harrington for the following periods:

- 1 year – Electric and Air Powered Hoists (excluding (N)ER2 Enhanced Features Models), Powered Trolleys, Powered Tiger Track Jibs and Gantries, Crane Components, Sling Chain, Spare / Replacement Parts, Below-The-Hook and Material Handling Equipment**
- 2 years – Manual Hoists & Trolleys, Beam Clamps**
- 3 years – (N)ER2 Enhanced Features Model Hoists**
- 5 years – Manual Tiger Track Jibs and Gantries, TNER Pull - Rotor Motor Brake**
- 10 years – (N)ER2 “The Guardian” Smart Brake**

The product must be used in accordance with manufacturer’s recommendations and must not have been subject to abuse, lack of maintenance, misuse, negligence, or unauthorized repairs or alterations.

Should any defect in material or workmanship occur during the above time period in any product, as determined by Harrington Hoist’s inspection of the product, Harrington Hoists, Inc. agrees, at its discretion, either to replace (not including installation) or repair the part or product free of charge and deliver said item F.O.B. Harrington Hoists, Inc. place of business to customer.

Customer must obtain a Return Goods Authorization as directed by Harrington or Harrington’s published repair center prior to shipping product for warranty evaluation. An explanation of the complaint must accompany the product. Product must be returned freight prepaid. Upon repair, the product will be covered for the remainder of the original warranty period. Replacement parts installed after the original warranty period will only be eligible for replacement (not including installation) for a period of one year from the installation date. If it is determined there is no defect, or that the defect resulted from causes not within the scope of Harrington’s warranty, the customer will be responsible for the costs of returning the product.

Harrington Hoists, Inc. disclaims any and all other warranties of any kind expressed or implied as to the product’s merchantability or fitness for a particular application. Harrington will not be liable for death, injuries to persons or property or for incidental, contingent, special or consequential damages, loss or expense arising in connection with the use or inability whatever, regardless of whether damage, loss or expense results from any act or failure to act by Harrington, whether negligent or willful, or from any other reason.

8.0 Parts Information

- 8.1 Replacement parts and part specifications are readily available from the factory. Contact your local Harrington Hoists, Inc. distributor or Harrington Hoists, Inc. with the Product Code and Serial Number from the equipment nameplate or the cover of this manual.
- 8.2 When applicable; refer to supplied Owner’s Manual supplements.



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BTHMHEOM

HARRINGTON

HOISTS AND CRANES

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Certificate of Inspection and Test

Below The Hook Device/Material Handling Equipment

This certifies that the following Harrington product:

- Conforms to the latest versions of ASME BTH-1 and ASME B30.20 where applicable.
- Was thoroughly inspected.
- Was subjected to a static load test in accordance with the latest version of ASME B30.20.

Code:	
Rated Capacity:	LBS
Serial No.:	
Test Date:	

Load Applied: _____ % of rated capacity

Other/Remarks: _____



Mark Miller
Quality Manager



Drew Schoenberger
Manager of Engineering