



## **SECTION I: Introduction and Outline**

We are pleased to submit information pertinent to the installation of your recently purchased **CINCINNATI** Modular Material Handling System (MMHS). Included are sections which deal with the required information to efficiently put this equipment into production.

We recommend that your Engineering, Maintenance, Production, and any other departments involved with this equipment, review this document and the entire contents of the PreInstallation website, prior to the Material Handling System installation. Please call **CINCINNATI INCORPORATED** Laser Technical Services at **513-367-7466** with any questions or suggestions. We will be pleased to help in any way possible. We may also be contacted at [lasersupport@e-ci.com](mailto:lasersupport@e-ci.com).

It is our sincere intent to build a solid foundation of mutual confidence, understanding, and cooperation by providing personal and written assistance with installation and start-up of this equipment.

### **SECTION OUTLINE**

- 
- A large, light gray watermark "MMHS 100" is visible in the background of the Section Outline section.
- I. Introduction and Outline
  - II. Foundation:
    - Foundation Print
    - Reinforcement Information
  - III. Pre-Equipment Arrival Preparation:
    - Information Concerning Preparation Prior to Equipment Arrival
  - IV. Equipment Identification:
    - Information Showing Machine & It's Major Components
  - V. Equipment Arrival:
    - Inspection and Unloading
  - VI. Equipment Preparation and Installation Suggestions:
    - Information on Cleaning, Leveling and General Preparation
  - VII. Equipment Service Connections:

Information on Electrical, Pneumatic,  
and Auxiliary Connections

VIII. Terms and Conditions:

Warranty/Service

IX. Additional Services Available

## **SECTION II:**

## **Foundation**

### **A. Foundation Print**

You will receive a link to download your foundation print. Please note, that foundation print is specifically for your machine.

### **B. Concrete Reinforcement Information**

The given foundation dimensions are minimum based on soil bearing capacity of 2,000 pounds per square foot. Should there be any doubts concerning your soil condition, we recommend core drilling of the foundation area. Based on the core samplings, a Certified Civil Engineer can design a foundation that will be cost effective and substantial enough to maintain permanent machine position.

The concrete used in the foundation must be 6" thick, rated at 4,000 psi, level within  $\frac{1}{2}$ ", and be properly cured prior to the setting of the machine. If a tower and lift are installed, tower feet should be designed for a max. load of 47,000 LBS. If a second tower is added, max. loading on feet increases to 52,000 LBS. Strength of concrete is normally determined by the number of bags of cement in the mix. The mix for 4,000 psi concrete is normally considered to be six bags per cubic yard. Curing of this concrete will normally take seven full days to reach the strength required for setting the machine.

Cincinnati Incorporated will provide shim material to compensate for floor variations up to  $\frac{1}{2}$  inch for the main structure. It will be the customers responsibility to provide additional shim material as needed, either through purchase from Cincinnati Incorporated or the customers own accord. No shim material will be provided for the cart rails. Any shim material needed for leveling of material cart rails is to be provided by customer. Any installation delays caused by extreme floor variances and the compensation thereof will be at the customers expense.

Reinforcement of the concrete is to be with steel to at least the extent of  $\frac{1}{5}$  of 1% of the cross sectional area of the concrete. As an example, you will need 288 square inches of steel for every 144 square inches of concrete. To determine the area in square inches of the steel you intend to use, please refer to the data manuals furnished by the steel suppliers. In most cases, the area is given for all bars and beams. The reinforcement should be installed uniformly through the total area of your foundation.

**Consult a registered local civil engineer with any questions concerning your foundation.**

### **IMPORTANT**

1. Expandable anchor bolts are acceptable.
2. Concrete slab under module mounting pads must be a continuous slab.

The intent of the foundation print and the above stated parameters are to provide the necessary information to construct a satisfactory foundation for your new **CINCINNATI** equipment. We recommend this type of foundation so the integrity of the machine housings and/or the operational running clearances are not affected by machine flexing due to inadequate foundations and/or anchoring. The **CINCINNATI INCORPORATED** machine warranty does not cover damage attributed to the failure of an insufficient foundation.

## **SECTION III: Pre-Equipment Arrival Preparation**

### **A. Pre-Installation Requirements and Suggestions**

We recommend reviewing the following in order to anticipate problems that may cause delays at equipment arrival:

1. Size of door opening.
2. Overhead clearances.
3. Plant obstructions enroute to machine foundation.
4. Capacity of cranes or other lifting devices.
5. Capacity of any rigging used.
6. Internal personnel or professional riggers.
7. Code requirements for all services. (electrical, etc.)
8. Lifting device to span lifting points, skates, spreader bar, chains, straps, shackles.
9. Location of equipment within plant to allow efficient operation and disassembly if necessary.

This information will enable the rigging of your machine from an overhead crane or to have it moved by acceptable floor methods.

A typical rigging crew with three riggers, a 20,000 lbs fork truck, with a fork mountable boom, and a 15,000 lbs truck will suffice. An 8,000 lbs truck could be considered supplemental and useful. Typical equipment, such as straps, chains, skates and toe jacks are necessary. More equipment might be needed, dependent upon system configuration.

Your Material Handling System is shipped disassembled. The approximate weights of the major modules are listed in table form on sheet 2 of the foundation print.

Foundation bolt torque is specified by the anchor manufacturer.

Please reference your foundation print and correlate it's position with your facilities building features to insure sufficient clearance for the machine, safety fence, light curtains or any other obstruction.

## **SECTION IV: Equipment Identification**

To assist you in identifying major components of your MMHS, you will find references to all major components on your Foundation print and *Section 1* of the *Operation, Safety and Maintenance Manual* included on this website. You might find it useful as the Material Handling System components are unloaded and then arranged in your factory.

Other documents included on the PreInstallation website are;

Operation Safety and Maintenance manual

Material Handling System Consumable Parts List

MSDS forms

These documents provide you with MSDS for all oil and grease supplies recommended for use in *Section 9* of the *Operation, Safety and Maintenance Manual*.

MMHS Maintenance Checklist

This document includes lubrication and maintenance schedules for the Material Handling System components.

MMHS Task List and CNC Format

This document describes the basic Task List format and CNC file requirements for the **CINCINNATI** Material Handling System.

## **SECTION V: Equipment Arrival**

All **CINCINNATI** equipment must pass a Quality Control inspection prior to being released for shipment. It is possible that a **Cincinnati service representative** will not be available upon arrival of your machine to your facility. We strongly recommend that the following steps be taken upon arrival of the equipment at your facility.

### **A. Inspect equipment upon arrival for damage.**

1. Equipment is shipped FOB Whitewater, Ohio, unless otherwise specified.
2. The equipment should be inspected before unloading for such things as rust (due to torn shipping tarp), machinery movement resulting in damaged valves, piping, structural damage, etc. Damage should be noted on the shipper's bill of lading and a hidden damage claim filed.
3. In the event equipment is damaged, a claim should be filed with the carrier. We suggest contacting a **CINCINNATI INCORPORATED** Service Representative for necessary estimates of repair so they can be undertaken before start-up. Should **CINCINNATI INCORPORATED** Field Personnel be required to investigate any damage claim, a formal purchase order from the machine owner will be required.

### **B. Verify that all equipment has arrived and is unloaded from carrier.**

1. Compare received equipment to PACKING LIST.
2. In the event all equipment was not received, a claim should be filed with the carrier and a **CINCINNATI INCORPORATED** Branch Officer or authorized distributor should be contacted so missing parts can be shipped before start-up.

### **C. Equipment unloading.**

1. In the unlikely event a Cincinnati Representative is not present, it is the customer's responsibility to properly unload all equipment from the carrier.
2. Lifting provisions have been provided for the Transporter unit. All other components have no designated lifting provisions. Proper rigging techniques should be used for all components. When in doubt, contact **Cincinnati Incorporated** for appropriate information.
3. Refer to the "Approximate Shipping Weights" table on the foundation print for the shipping weights of the modules.

## **SECTION VI: Equipment Preparation and Installation**

### **Suggestions**

#### **A. Preparation**

1. Your Modular Material Handling System should be placed on a foundation within 1/2 inch of level.
2. Preparations for such levelness should be made before installation.



## **SECTION VII:**                      **Equipment Service Connections**

The foundation print contains electrical full load current information for the machine. This information will be used to determine wire and conduit sizes for the electrical supply line to the machine location. The supply should be in position so not to cause delays in start-up when the machine is ready to be powered up.

It is very important that Local, State, and National electrical codes be checked prior to connecting the service wire to the machine disconnect switch.

Unless your local electrical codes are more restrictive, use the current National Electrical Code (NFPA 70 2011 Edition) to size the electrical service drop for the machine as follows:

1. The full load current is listed on the foundation print and the machine nameplate. Using the 60 degree C and 75 degree C columns for copper wire in Table 310-15(B)(16), size the supply conductors for 125% of the full load current. For disconnect switches rated 100 amps or above, use the 75 degree column (where permitted by the manufacturer). Wire rated above 75 degrees C can be used but the ampacity shall be sized from either the 60 degree or 75 degree C columns.
2. After the wire size and type has been determined, refer to Chapter 9, Table I, for sizing the conduit. See Tables 3A, 3B and 3C for the number of conductors (all of the same size) permitted in conduit trade sizes or tubing 1/2 inch through 6 inch.
3. Machine must be properly grounded in accordance with the National Electric Code NFPA 70, 2002 Edition, Article 250, Sections 50 thru 70. **CINCINNATI INCORPORATED** recommends using an individual electrode per Article 250-52 (5) to avoid interference from other equipment.

Connect the equipment grounding wire to the ground lug adjacent to the disconnect switch.

Use NEMA 12 type fittings for the incoming service and ground wire connections to the machine in order to maintain the oil tight integrity of the electrical enclosures.

### **A. INPUT POWER REQUIREMENTS**

The equipment furnished contains electronic controls which are sensitive to input power fluctuations and high voltage transients. The main power supplied should be as "clean" as possible to prevent control errors and increase machine reliability. Protection against normal high voltage spikes and voltage fluctuations is built into the machine control. Unless otherwise specified on the foundation plan, limits on input power for proper machine operation as follows (NFPA 79 Section 3-7):

Supply Voltage:              Rated Voltage +/- 10%

Supply Frequency: Rated Frequency +/- 2%

Impulse Voltage:            Not to exceed 200% peak voltage up to 1 millisecond duration with a rise time of 500 nanoseconds to 500 microseconds.

Voltage Drop: Not to exceed a reduction of 50% of peak voltage for 1/2 cycle or 20% for one cycle with more than one second between successive reductions.

\* NOTE: A drive isolation transformer (DIT) is required for voltages other than 460/3/60. Note the KVA ratings on foundation print. For direct connection without a transformer the service must be **WYE connected 460VAC +/-10%**

If variations from these parameters do exist, please contact **CINCINNATI INCORPORATED** for line conditioning recommendations or additional information.

## **B. GROUNDING REQUIREMENTS**

Equipment grounding supplied by the customer for safe and proper operation shall consist of the following GROUNDING ELECTRODE SYSTEM and GROUNDING CONDUCTOR.

## **C. COMPRESSED AIR REQUIREMENTS**

The foundation print (Page 1) specifies the requirements for compressed air when required on the machine. The sizes of all air connections will be shown on the foundation print.

## **D. AUXILIARY EQUIPMENT**

Any auxiliary equipment that will be attached to or used in conjunction with **CINCINNATI INCORPORATED** machines, shall have an R-C suppression network in parallel with each inductive load (relay coil, solenoid, etc.) which is turned on and off during normal operation. The suppression network should be located as close as possible to each inductive load.

Please contact **CINCINNATI INCORPORATED** if additional information or parts are required.

## **SECTION VIII: Terms and Conditions**

Please refer to our Terms and Conditions document on the PreInstallation website.

## **SECTION IX:**

## **Additional Services Available**

---

After your new **CINCINNATI** Modular Material Handling System is installed and operational, we are also prepared to become a part of your maintenance team to assist you in keeping your **CINCINNATI** MMHS operating at its peak efficiency. Our Planned Maintenance Service Program was developed out of a need by many customers to keep their equipment operational with fewer problems. It provides for timely inspections, routine maintenance on a scheduled basis, and factory expertise and backing. Please let us know if the program and/or programs would be of assistance to you. If so, we will be pleased to provide additional information or quote a program suitable for your operation.