

## 5 SAFE OPERATING PRACTICES

The operation of an electric chain hoist can be categorized by the various sequential parts of a particular cycle of use. The typical sub-sections are:

- **BEFORE EACH SHIFT or THE FIRST TIME THE HOIST IS USED EACH SHIFT**
- **BEFORE OPERATING A HOIST AND APPLYING A LOAD**
- **MOVING THE LOAD**
- **PARKING THE LOAD**

**Taking precedence over any specific rule, however, is the most important rule of all:**

**“USE COMMON SENSE.”**



**WARNING:**

**HOIST OPERATORS SHOULD READ THIS MANUAL AND THE WARNINGS CONTAINED IN THIS MANUAL; INSTRUCTION AND WARNING LABELS ON THE HOIST; AND THE OPERATION SECTION OF ASME B30.16. HOIST OPERATORS ARE TO BE FAMILIAR WITH THE HOIST AND HOIST CONTROLS BEFORE BEING AUTHORIZED TO OPERATE THE HOIST.**

**HOIST OPERATORS ARE TO BE FAMILIAR WITH PROPER RIGGING PROCEDURES TO BE FOLLOWED IN THE ATTACHMENT OF LOADS TO THE HOIST HOOK.**

**HOIST OPERATORS MUST BE AWARE OF POTENTIAL MALFUNCTIONS OF THE EQUIPMENT THAT REQUIRE ADJUSTMENT OR REPAIR, AND STOP THE OPERATION IF SUCH MALFUNCTIONS OCCUR, AND IMMEDIATELY ADVISE THEIR SUPERVISOR SO CORRECTIVE ACTION CAN BE TAKEN.**

**HOIST OPERATORS ARE NOT TO OPERATE A HOIST WHEN UNDER THE INFLUENCE OF ALCOHOL OR DRUGS; OR UNDER THE INFLUENCE OF MEDICATION THAT COULD RESULT IN ACTIONS BY THE OPERATOR THAT MAY CAUSE A HAZARD TO THE OPERATOR OR OTHERS.**

**HOISTS ARE INTENDED ONLY FOR VERTICAL LIFTING SERVICE OF FREELY SUSPENDED UNGUIDED LOADS; AND ARE NOT INTENDED TO LIFT LOADS THAT ARE NOT LIFTED VERTICALLY, LOADS THAT ARE NOT FREELY-SUSPENDED, OR LOADS THAT ARE GUIDED. IF SUCH CONDITIONS EXIST, THE OPERATOR SHOULD CONTACT THE SUPERVISOR OR THE MANUFACTURER OF THE HOIST FOR INSTRUCTIONS.**

**DO NOT LIFT PERSONNEL OR LOADS OVER PEOPLE.**

## 5.1 Before Each Shift or The First Time the Hoist is Used Each Shift

Operation of an overhead electric powered chain hoist involves more than operating the controls of the hoist. The operator must consider and anticipate the motions and actions that will occur as a result of operating the controls. In accordance with the requirements of ASME B30.16, the hoist operator should perform daily (pre-start) inspections at the start of each shift, or at the time the hoist is first used during each shift. The daily inspection is a visual and audible examination of the hoist. Records of the daily inspection are not required except as required by the hoist owner/user.

Daily inspection items that should be performed by the operator at the start of each shift, or at the time the hoist is first used during the shift, include the below items:

<b><u>ITEM</u></b>	<b><u>INSPECTION CHECK POINTS</u></b>
Tagged Hoist	Check that hoist is not tagged with an out-of-order sign.
Control Devices	Check that all travel motions agree with control device markings. When checking hoist travel motion, always use "UP" control first.
Brakes	Check that all travel motions do not have excessive drift and that stopping distances are normal.
Hook	Check for hook latch presence and that it operates properly.
Load Chain	Check for nicks, gouges, and any type of deformation or damage to the chain. Check for lubrication of load chain.
Reeving	Check that load chain is properly reeved, that load chain is not kinked or twisted, and that load chain parts are not twisted about each other.
Limit Devices	Check that the primary upper limit device stops lifting motion of the hoist load block at the upper limit of travel.  If furnished, check that the lower limit device stops lowering motion of hoist load block at lower limit of travel.
Oil Leakage	Check for any sign of oil or grease leakage on the hoist and on floor area beneath hoist.
Unusual Sounds	Check for any unusual sounds from hoist and hoist mechanism while operating the hoist.
Warning & Safety Labels	Check that warning and other safety labels are not missing and that they are legible.

**It is Recommended That the Operator:**

- **SHALL** perform a daily inspection. Refer to the above INSPECTION CHECK POINTS.
- **SHALL** visually inspect load chain for nicks, gouges, any type of deformation or damage, and check load chain for proper lubrication.
- **SHALL** visually inspect hooks for nicks, gouges, deformed throat opening, wear on saddle or load bearing point, and twisting.
- **SHALL** visually inspect hook latches for proper operation or damage that does not allow roper operation.
- **SHALL** test operation of the primary upper limit device of the hoisting motion.
- **SHALL** report to supervisor if warning label or labels are missing or illegible.
- **SHALL** report to supervisor any damage or malfunctions.
- **SHALL NOT** operate hoist if any damage or malfunctions exist.
- **SHALL NOT** operate hoist if it is tagged with an out-of-order sign.

**WARNING:**

**IF ANY DAMAGE OR MALFUNCTIONS ARE NOTED IN THE DAILY INSPECTION ITEMS, THE OPERATOR SHALL NOT OPERATE THE HOIST, AND SHALL IMMEDIATELY ADVISE THE SUPERVISOR SO CORRECTIVE ACTION CAN BE TAKEN. IF THE HOIST IS TAGGED WITH AN OUT-OF-ORDER SIGN, THE OPERATOR SHALL NOT OPERATE THE HOIST.**

**HOIST OPERATORS SHOULD BE AWARE OF MALFUNCTIONS OF THE EQUIPMENT THAT COULD OCCUR DURING OPERATION, AND SHOULD IMMEDIATELY STOP OPERATION IF SUCH MALFUNCTIONS OCCUR, AND SHOULD IMMEDIATELY ADVISE THE SUPERVISOR SO CORRECTIVE ACTION CAN BE TAKEN.**



**WARNING: IF CORRECTIVE ACTION HAS NOT BEEN COMPLETED BY THE END OF THE SHIFT, THE OPERATOR SHALL ADVISE THE OPERATOR OR OPERATORS ON THE NEXT SHIFT THAT CORRECTIVE ACTION IS REQUIRED ON THE HOIST AND VERIFY THAT THE HOIST IS TAGGED WITH AN OUT-OF-ORDER SIGN.**



**NOTE: THE HOIST OPERATOR SHALL NOT PERFORM FREQUENT OR PERIODIC INSPECTIONS, OR PERFORM MAINTENANCE ON A HOIST UNLESS THE OPERATOR HAS BEEN TRAINED TO PERFORM SUCH INSPECTIONS OR MAINTENANCE, AND IS DESIGNATED BY THE HOST OWNER/USER TO PERFORM SUCH INSPECTIONS OR MAINTENANCE.**

## 5.2 Before Operating A Hoist and Applying a Load

- Bring the hoist directly over the load.
- Lower the load hook so it can be attached directly to the load, the slings, or any other device used to rig the load. The load, sling(s), or other lifting device should be fully seated in the saddle or bowl of the hook. Verify that the hook latch is operational and closes the throat opening of the hook. Make sure that the hook latch is not supporting any part of the load or the slings or device used to attach the load to the hook. Verify that the weight of the load to be lifted does not exceed the rated load capacity of the hoist.
- Slack should be taken out of the hoisting chain(s) and slings, if used, before attempting to lift the load.
- The load should be lifted only a few inches and stopped to check:
  - That the load is properly balanced;
  - That slings, if used, are properly positioned;
  - That load or sling is seated in the saddle, base, or bowl of the load hook; and
  - That the hoist holding brake stops and holds the load before continuing with the lift.

If a particular motion (hoisting motion / trolley motion / bridge motion) has multiple speeds, always start the motion with the slowest speed and then increase speed until the desired speed is obtained. Some multiple-speed hoists may have other features that affect the lifting motion and the operator should become familiar with the operation of such features. Refer to the [LoadMate® Series Electric Chain Hoist](#) Installation and Maintenance Manual furnished with the hoist.

The operator must verify that all personnel are clear of the load and the path of the load, and that the load will clear all obstacles before lowering or landing a load. When lowering the load, if an electric chain hoist has multiple travel speeds, the lowering speed should be decreased to the slowest travel speed before stopping or landing the load. Place blocks under the load ("block load") before landing if slings or other lifting devices must be removed from under the landed load.

A load should never be left suspended and unattended unless specific precautions to prevent the load from inadvertent lowering have been instituted and are in place, and guards or barriers are utilized on the floor to prevent people from entering the area affected by the suspended load. When the hoist is not in use, the empty load hook should be raised and positioned above head level for storage. Seven feet or greater above floor level is recommended.

### It is Recommended that the Operator:

- **SHALL** be familiar with all operating controls of the hoist.
- **SHALL** be familiar with this [Electric Chain Hoist Operator's Manual](#) provided by [R&M Materials Handling, Inc.](#), instruction and WARNING labels on the hoist, and the OPERATION section of ASME B30.16.
- **SHALL** be familiar with the operations to be performed.
- **SHALL NOT** operate hoist if any damage or malfunctions exist.

- **SHALL** report to the supervisor any damage or malfunctions.
- **SHALL NOT** operate hoist if it is tagged with an out-of-order sign.
- **SHALL** center hoist over load.
- **SHALL NOT** operate a hook mounted hoist when the hoist is restricted from forming a straight line from top hook to load hook in the direction of loading.
- **SHALL NOT** use the load chain as a sling to wrap around the load.
- **SHALL** attach the load to the hoist load hook by suitable means such as slings or lifting devices.
- **SHALL** verify that the size of the attachment part of the sling or other lifting device to be used is compatible with the size of the hoist load hook.
- **SHALL** verify that the capacity of the attachment part of the sling or other lifting device to be used is compatible with the capacity of the hoist load hook and the weight of the load to be lifted.
- **SHALL** only attach loads to the hoist load hook that do not exceed the rated load capacity of the hoist.
- **SHALL** verify that the attachment part of the sling or other lifting device is properly seated in the base, bowl, or saddle of the hoist load hook.
- **SHALL** verify that the hook latch operates properly and that the hook latch properly bridges and closes the hook throat opening.
- **SHALL** verify that the latch of the hoist hook will not support any part of the load.
- **SHALL** verify that the load or any part of the load will not be applied to and/or not supported by the tip or point of the hook.
- **SHALL** verify that load will be properly balanced when it is lifted.
- **SHALL** verify that side loads will not be applied to the hoist when the load is lifted.
- **SHALL** verify that load chain is not kinked or twisted, and that load chain parts are not twisted about each other.
- **SHALL** verify that hoist load chain is properly seated in the chain sprockets.
- **SHALL NOT** use the hoist load limiting device or load warning device (if provided) to measure the load to be lifted.
- **SHALL** notify personnel in the area that a load will be lifted and verify that all personnel are clear of the load.
- **SHALL** verify that when the load is lifted, it will clear all material, machinery, or other obstructions in the area.

## 5.3 Moving the Load



**WARNING: DO NOT LIFT PERSONNEL. DO NOT LIFT LOADS OVER PEOPLE.**



**NOTE: HOISTS ARE INTENDED ONLY FOR VERTICAL LIFTING SERVICE OF FREELY SUSPENDED, UNGUIDED LOADS. DO NOT USE A HOIST TO LIFT LOADS THAT ARE NOT LIFTED VERTICALLY, LOADS THAT ARE NOT FREELY SUSPENDED, OR LOADS THAT ARE GUIDED. IF SUCH CONDITIONS EXIST, THE OPERATOR SHOULD CONTACT THE SUPERVISOR FOR INSTRUCTIONS.**

When trolleys are used with a hoist, trolley motion is the traverse travel motion direction of the trolley hoist unit. Control device markings for this motion should be as stated in the HOIST TYPES section of this manual. Regardless of the marking designation used, the operator should be fully aware of the direction of trolley motion that will occur when the control device is activated.

If a load is to be lifted with the hoist hook before moving the trolley, refer to the HOIST MOTION section of this manual. If a powered trolley has multiple travel speeds, always start motion with the slowest speed and then increase speed until the desired speed is obtained. Motorized trolleys may have electronic devices that provide controlled acceleration of the motor and offer a soft or controlled start.

When bringing the trolley to a stop, if a powered trolley has multiple or variable travel speeds, it is recommended that the travel speed be decreased to the slowest speed before stopping the trolley to minimize load swing.

### It is Recommended that the Operator:

- **SHALL NOT** engage in any activity that will divert the attention of the operator.
- **SHALL NOT** lift, lower, or transport a load with the hoist until the operator and all other personnel are clear of the load and the path of the load.
- **SHALL** verify that the load and hoist will clear all obstacles before moving or rotating the load.
- **SHALL** avoid moving loads over personnel.
- **SHALL NOT** lift, lower, or transport personnel by means of the hoist, trolley, hoist hook, or load.

- **SHALL** slowly inch the load hook into engagement with the load to eliminate load chain slack and minimize impact loading the hoist.
- **SHALL** avoid unnecessary inching and quick reversals of direction.
- **SHALL** only lift the load a few inches to verify that the load is properly balanced before continuing with the lift.
- **SHALL** only lift the load a few inches to verify that the hoist braking system is functioning properly before continuing with the lift.
- **SHALL** avoid swinging of the load or hoist load hook when the trolley (if applicable) or hoist is traveling.
- **SHALL** avoid sharp contact between trolleys or between trolley and stops (if applicable).
- **SHALL NOT** use the hoist load limiting device or load warning device (if provided) to measure the load to be lifted.
- **SHALL NOT** use hoist limit devices as a normal means of stopping the hoist.
- **SHALL NOT** use the slip clutch as a normal means of stopping the hoist
- **SHALL NOT** permit continuous contact between the hoist body and the load block / slack fall stop.

## 5.4 Parking the Load

### It is Recommended that the Operator:

- **SHALL NOT** lower a load with the hoist until the operator and all other personnel are clear of the load and the path of the load.
- **SHALL** verify that the load will clear all obstacles before lowering the load.
- **SHALL** block loads before landing if slings or other lifting devices must be removed from under the landed load.
- **SHALL** exercise care when removing a sling from under a landed and blocked load.
- **SHALL NOT** leave a suspended load unattended unless specific precautions to prevent the load from inadvertent lowering have been instituted and are in place.
- **SHALL** position the hoist load block and load hook above head level for storage when the hoist is not in use. Seven feet or greater above floor level is recommended.

## 5.5 Hoist Limit Devices

Powered hoists must be equipped with an upper limit device that will prevent the hoist load block from exceeding the upper limit of travel. Depending on the shape or size of the load being lifted, it may be impossible for some part of the load to come into contact with some part of the hoist, trolley, crane, or building structure before the load block reaches the upper limit of travel. The operator must consider this possibility when it is required to lift the load to a level of close proximity to the hoist.

Powered hoists may have additional travel limit devices depending on the specific purchase specifications of the hoist. However, in such cases, the upper limit device that is activated to stop the upper limit of travel is considered the primary upper limit device.

Operation of the primary upper limit device, on powered hoists, is one of the items the hoist operator must check during the daily inspection to be performed at the start of each shift, or at the time the hoist is first used during each shift.



**CAUTION: The primary limit device that controls the upper limit of travel is an emergency device only. It shall not be used as an operational means to stop travel during normal operations.**

## 5.6 General Recommendations

It is Recommended that the Operator:

- **SHALL** know hand signals used for hoist and crane operations if a signal person is used in the operation, and accept signals of only persons authorized to give hand signals.
- **SHALL** obey a stop signal regardless who gives it.
- **SHALL NOT** adjust or repair a hoist unless qualified and authorized to perform maintenance.
- **SHALL NOT** use the hoist limiting device or load warning device (if provided) to measure the load to be lifted.

## 5.7 Recommended General Do Not's

It is Recommended that the Operator:

- **DO NOT** operate a hoist that is damaged or has any actual or suspected mechanical or electrical malfunction.
- **DO NOT** attempt to lengthen load chain or repair damaged load chain.
- **DO NOT** use the load chain, any part of the hoist, or the load block and hook as a ground for welding.
- **DO NOT** allow a welding electrode to be touched to the load chain or load hook.
- **DO NOT** remove or obscure any instructions, warnings or warning labels on the hoist.
- **DO NOT** walk under a suspended load or allow other personnel to walk under a suspended load.
- **DO NOT** perform or allow any other person to perform **ANY** work on a suspended load that requires a worker to be positioned under the suspended load.



### **WARNING:**

**DO NOT WALK UNDER A SUSPENDED LOAD.**

**DO NOT PERFORM ANY WORK ON A SUSPENDED LOAD THAT REQUIRES A WORKER TO BE POSITIONED UNDER THE SUSPENDED LOAD.**

**IF IT IS ESSENTIAL THAT A WORKER BE POSITIONED UNDER A SUSPENDED LOAD TO PERFORM WORK ON THE SUSPENDED LOAD; SUCH WORK SHALL NOT BE STARTED OR PERFORMED UNTIL OTHER AUXILIARY SUPPORTING MEANS ARE PLACED UNDER THE SUSPENDED LOAD. FAILURE TO USE OTHER AUXILIARY SUPPORTING MEANS COULD RESULT IN SERIOUS BODILY INJURY OR DEATH, AND/OR PROPERTY DAMAGE.**

## 5.8 Operator Hand Signals

Hoist operators are normally involved in rigging the load, attaching the load to the hoist load hook, and other tasks related to the load for which they have skills in addition to those required for operation of the hoist. Therefore, in addition to the specific information required to operate the hoist, hoist operators should be familiar with rigging procedures and practices. In many applications, a single hoist may be operated by several workers as part of their regular job responsibility.

In some instances, when a hoist is used on an overhead crane or when a hoist is used as a component in a larger material handling system, other persons, such as a signal person, in addition to the hoist operator, may be involved. Operations that involve an operator (either hoist or crane) and a signal person (normally the rigging or hookup person) require hand signals between the signal person and the hoist or crane operator unless voice communication, such as telephone, radio, or an equivalent method, is used. Where hand signals are used, the operator must be familiar with and understand hand signals, and must respond to hand signals from the designated signal person except to obey a stop signal regardless who gives it. When voice communication between the signal person and the operator is used, a dedicated channel is required in order to eliminate any commands from other personnel in the area that could be confusing the operator.

Refer to standard hand signals, as shown in ASME B30.2, for use in overhead hoist, and overhead crane and gantry crane operations. A copy of the standard hand signals should be posted where the application requires both an operator and a signal person. Special hoist or crane operations may require the use of additional hand signals or modifications of the standard hand signals. When special signals are required, they should be documented by the crane owner / user, and agreed upon, and understood, by the signal person and hoist or crane operator. Special signals should not conflict with standard signals.

Operators, rigging personal, signal persons, and maintenance personnel **SHALL** be required to know the location and operation of the main runway conductor disconnecting means for all hoists (and cranes, if applicable) in the area.



**NOTE: Do not release operators and users from the responsibility of obtaining, reading, and fully understanding the strict execution and observation of ALL procedures in the [LoadMate® Electric Chain Hoist OPERATOR'S MANUAL](#). This will better qualify personnel to operate the hoist in a safe manner.**