

# Rigging Installation Checklist

## Introduction

The following list is designed to help determine that the equipment is installed properly and will continue to operate correctly during the final inspection and after the system is put into service. This list will help the installer check their own work and to prepare for final inspection for acceptance of the systems.

If there is a fire curtain, the local fire inspector or authority having jurisdiction (AHJ) may require a demonstration of the curtain operation before granting a certificate of occupancy to the building owner.

### **⚠WARNING**

**J.R. Clancy has provided this list as a guide for checking theatrical rigging installations. While every effort has been made to provide a comprehensive list, it is impossible to cover every situation. The responsibility and liability for performing safe, proper installation work lies with the firm and/or individuals performing the work. If you have any questions or concerns, please contact us at 1-800-836-1885 or visit our website.**

## Notes

1. A copy of the checklist should be kept in the permanent record for the system.
2. The review should be conducted before lights, tracks, or curtains are attached to the battens to ensure that the actual system rigging is being inspected.
3. Cross out any items in the listing that do not apply to the sets being reviewed.
4. Each set should be operated in both directions over its full travel.
5. Use scaffolding or man-lifts to access all equipment if a gridiron or catwalks are not available.
6. Note any potential hazards noted around the stage environment, regardless of whether they are directly related to the stage equipment.
7. Before leaving the project, be sure that all required warnings and system instruction signs have been installed in the proper locations and quantities, and that they are easily visible to staff and other users of equipment.

# Motorized Rigging Systems Installation Checklist

## ⚠ WARNING

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### Hoists:

- Check the hoist data label against the location and winch data on shop drawings
- Check the hoist mounting:
  - Hoist must be level and plumb
  - Bolts and anchors must be properly installed and tightened
  - Welding, if required, must be per codes and manufacturer's shop drawings
- Verify drum rotation and travel direction of lines
- Verify that cables are correctly wound on drums and blocks
- Verify settings of limit switches and encoders
- Check load brake operation if so equipped
- Check gearbox oil level and breather, if so equipped
- Verify that all bearings and grease fittings are accessible
- Verify that all information and safety labels are installed
- Verify that all safety guards are installed

### Controls:

- Check all controls for proper operation
- Verify that the E-Stop halts all system machines
- Verify that the disconnect removes all power
- Verify that the controls are accessible and permit easy viewing of operated equipment
- Note that programmable controls require turn-on by the manufacturer

### Blocks:

- Check location and mounting of all blocks, including clips, welds and bolts; Check that needed flat washers and lock washers or lock nuts are in place and tight
- Verify operation of idler sheaves
- Sight along each set to ensure blocks and cable drops are in a straight line
- Check that cables are inside of spacers
- Check for proper fleet angles and clear cable travel without any rubbing against other cables, the blocks, or the building

- Verify that cables do not rub or cross over each other between blocks or sag bars

### Cables and Fittings:

- Check lift and guide lines to determine that they are in the correct locations and not rubbing at any point
- Check all fittings; Check Nicopress® fittings with the correct gauge; Check the number and spacing of cable clips; Use a torque wrench to check cable clip nuts
- Check all turnbuckles and shackles and be sure they are moused
- Check trim chains for proper installation and double load path
- Check lift line terminations to make sure that they are taped or that heat shrink tubing has been applied to cover the ends
- Check cable connections and dead wraps at drums

### Battens and Tracks:

- Battens and tracks must be straight and level
- Check splices for bolts and tight nuts
- Check for batten end caps and any required identification or labels
- Check tracks for ease of operation, proper track splices, and kinks in operating lines

### Operation:

- Operate empty set in both directions over its full travel while checking for vibration and noise
- Repeat the operation with a heavy load attached
- Look for smooth operation
- Check roller chains for the proper amount of slack
- Check high and low trims

- Check that all needed warning and system instruction signs have been installed**

Checked by: \_\_\_\_\_

Check Date: \_\_\_\_\_

# Manual Rigging Systems Installation Checklist

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### **Locking Rail and Guides:**

- Visually check all mounting bolts and welds at the locking rail to ensure they are present, proper and that bolts and nuts are properly tightened with flat and lock washers as necessary
- Check that all rope lock mounting bolts are installed and properly tightened; Verify that oval ring is in place
- Check the tension blocks to be sure they lock up and float as necessary
- Verify that the hand lines are properly routed
- Verify that T-Bars or J-Guides are plumb and straight, have accurate joints between sections, and that nuts and bolts are tight; Tap on the guides and listen for loose connections
- Look at floor and stop battens and all wall knee connections
- Check top and bottom stop battens for tight connections; Verify that all bolts are in place
- Check that auxiliary stop battens are in place

### **Counterweight Arbors:**

- Verify that all spreader plates are properly spaced among weights and stop collars are down and locked
- Check the guide shoes for smooth operation on guide rails
- Check that all arbor rod nuts are tight and arbor is square

### **Blocks:**

- Check location and mounting of all blocks, including clips, welds and bolts; Check that needed flat washers and lock washers or lock nuts are in place and tight
- Verify operation of idler sheaves
- Sight along each set to ensure blocks and cable drops are in a straight line
- Check that cables are inside of spacers
- Check for proper fleet angles and clear cable travel without any rubbing against other cables, the blocks, or the building
- Verify that cables do not rub or cross over each other between blocks or sag bars
- Check electric cable pickups for proper location and travel of electric cables

### **Cables and Fittings:**

- Check lift and guide lines to determine that they are in the correct locations and not rubbing at any point
- Check all fittings; Check Nicopress® fittings with the correct gauge; Check the number and spacing of cable clips; Use a torque wrench to check cable clip nuts
- Check all turnbuckles and shackles and be sure they are moused
- Check trim chains for proper installation and double load path
- Check lift line terminations to make sure that they are taped or that heat shrink tubing has been applied to cover the ends
- Verify rope and cable connections at arbors

### **Battens and Tracks:**

- Battens and tracks must be straight and level
- Check splices for bolts and tight nuts
- Check for batten end caps and any required identification or labels
- Check tracks for ease of operation, proper track splices, and kinks in operating lines

### **Operation:**

- Check the balance of all sets
- Check rope locks for proper adjustment — do not over tighten; Rope locks should hold an imbalance of about 50 pounds
- Operate empty set in both directions over its full travel while checking for vibration and noise
- Repeat the operation under heavy load
- After balancing sets make final check of spreader plate location, and locked stop collars

- Check that all needed warning and system instruction signs have been installed**

**Checked by:** \_\_\_\_\_

**Check Date:** \_\_\_\_\_

# Fire Safety Curtain Installation Checklist

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### Fire Curtain:

- Check the smoke seal at top of curtain
- Check curtain guide system for smooth operation and possible interferences
- Check smoke pocket connections — look for air gaps and possible interferences
- Check safety chain terminations
- Verify curtain balance
- Check all fire line components

### Counterweight Arbor:

- Verify that all spreader plates are properly spaced among weights and stop collars are down and locked
- Check the guide shoes for smooth operation on guides
- Check that all arbor rod nuts are tight and arbor is square

### Blocks:

- Check location and mounting of all blocks, including clips, welds and bolts; Check that needed flat washers and lock washers or lock nuts are in place and tight
- Verify operation of idler sheaves
- Sight along the set to ensure blocks and cable drops are in a straight line
- Check that cables are inside of spacers
- Check for proper fleet angles and clear cable travel without any rubbing against other cables, the blocks, or the building
- Verify that cables do not rub or cross over each other between blocks

### Cables and Fittings:

- Check lift and guide lines to determine that they are in the correct locations and not rubbing at any point
- Check all fittings; Check Nicopress® fittings with the correct gauge; Check the number and spacing of cable clips; Use a torque wrench to check cable clip nuts
- Check all turnbuckles and shackles and be sure they are moused
- Check trim chains for proper installation and double load path
- Check lift line terminations to make sure that they are taped or that heat shrink tubing has been applied to cover the ends
- Verify rope and cable connections at arbors

- Check connections at battens

### Brail Fire Curtains:

- Check mounting bolts and adjustments on fire curtain hoist
- Verify that hand crank is present and properly stored
- Check travel path terminations at clew guide and guide cables
- Check the brake operation and tension in the fire line
- Verify there is room for the operator to work

### Motorized Fire Curtains:

- Check the hoist mounting: bolts, welding, level, and plumb
- Verify drum rotation & travel direction of lines
- Verify proper settings of limit switches and encoders
- Check gearbox oil level and breather, if so equipped
- Check access to all bearings and grease fittings
- Check adjustment and operation of clutch
- Verify installation of all information and safety labels and safety guards
- Verify that controls are visible and accessible

### Curtain Testing:

- The curtain should close within 30 seconds and stay closed with no gap at the floor (most codes require the curtain to take at least 5 seconds to travel the last 8 feet to the floor)
- Drop the fire curtain from all release locations (listen for any strange noises and eliminate the causes)
- Check the dashpot for leaks and adjustment
- Check the hydraulic speed governor for leaks and adjustment
- Verify operation of the SureGuard® II system
- Check operation of the fire line system
- Check ease of curtain operation and resetting

- Check that all needed warning and system instruction signs have been installed**

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Check Date: \_\_\_\_\_