



VENUE

DATE

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This Product is offered to you conditioned upon your acceptance without modification of the terms, conditions and notices in this manual and disclaimer itself and the limited warranty. The Buyer may not modify, copy, distribute, transmit, reproduce, publish, license, create derivative work, transfer or sell any information related to this product or service. IWEISS Inc (IWEISS) reserves the right to change the terms, conditions, and notices under which their products are offered.

The information in this manual will not cover all possible situations, nor could such inclusive instructions be written by the equipment manufacturer due to the various processes of mounting theatrical equipment. This manual is intended to provide a guide to the safe and efficient operation of the furnished stage equipment and its routine maintenance. No manual can replace your duty to exercise constant vigilance and common sense. IWEISS is not responsible for any damage that results from your failure to comply with this manual.

IWEISS Inc liability to any party injured or suffering a loss in connection with the purchase, set up, use, operation, maintenance or control of any Product, (User) is contained exclusively in the limited warranty which is attached to and made part of this Operation & Maintenance Manual.

User accepts the limited Warranty of IWEISS Inc as in effect with respect to the Product Line, a copy of which shall be included as part of this Manual and the packaging included with the Machine. User acknowledges receipt of the limited warranty currently in effect. The limited warranty of IWEISS Inc is in lieu of all other warranties, whether expressed or implied. User shall keep a copy of IWEISS Inc limited warranty and this Operation & Maintenance Manual intact and available for reference at any time and limit the use of the product to persons fully familiar with the warranty and the Manual. User acknowledges and agrees that liability of IWEISS with respect to the machine shall be limited solely to the aforementioned limited Warranty of IWEISS Inc. In the event User maintains, repairs, services or operates the machine in a manner in any way inconsistent with the contents of this Operation & Maintenance Manual, such action shall effectively terminate any IWEISS warranty for such machine product.

- Read this manual carefully before installing or using this product. Failure to do so can result in injury or death.
- The procedures in the manual are for use by qualified personnel only.
- Use of this hoist is undertaken at User's own direction and risk.
- If User has any questions or uncertainty regarding use of this hoist or any item contained in this manual - the machine should not be operated.

WARNING! Improper installation or maintenance can cause the load to fall.

- Machines can impose significant loads on the structure to which they are attached. The installer is responsible for verifying that a licensed structural engineer has determined that the structure can withstand the imposed loads.
- Equipment must be installed by personnel trained in the Industry Standards of theatrical rigging.
- Do not substitute or modify components provided with this equipment.
- Do not exceed the total capacity of the hoist, plainly marked on the Identification Label.
- The IWEISS Machinery is only to be used to lift equipment, NEVER to be used for lifting people.
- The IWEISS Machinery weighs several hundred pounds each, plus the weight of any packaging. Use appropriate handling equipment and safe work practices. Follow all OSHA guidelines for material handling and safety practices.

DANGER! Electrocution Hazard!

- Remove power source before opening electrical panels. Use lockout / tag out systems whenever servicing equipment.
- Electrical equipment must be installed by qualified electricians as per the electrical riser supplied. Buyer must adhere to all local & national codes

WARNING! Moving parts can cut or crush.

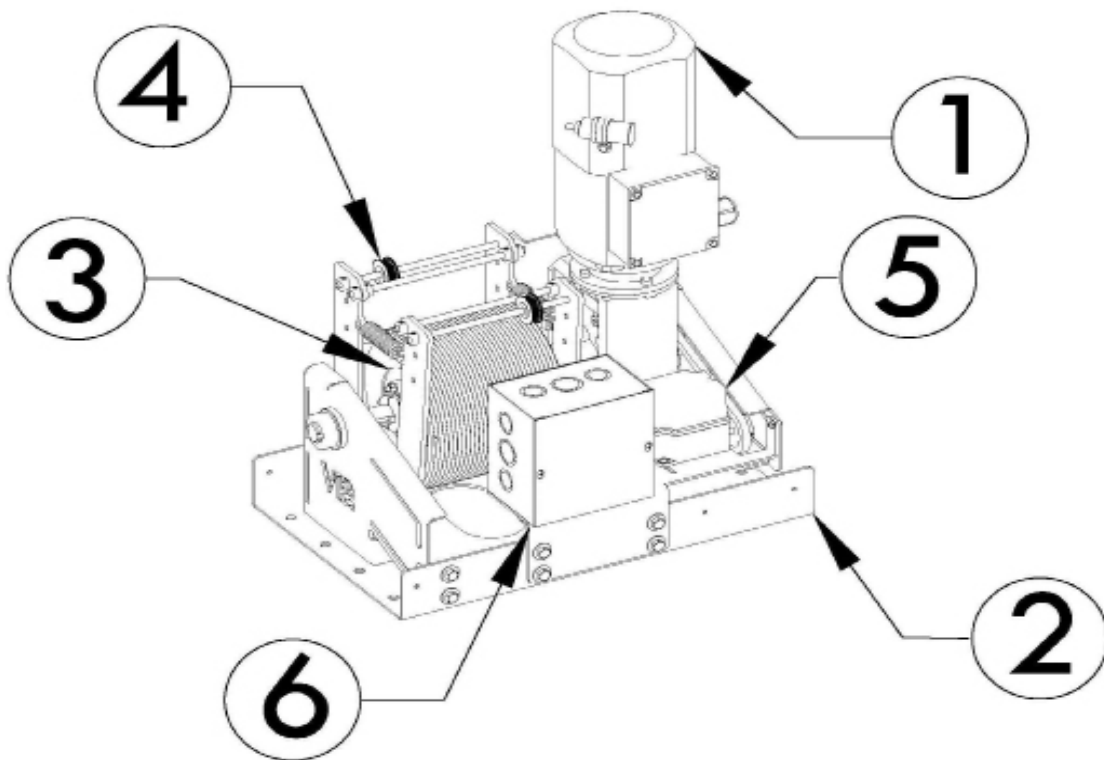
- Keep body parts away from machinery in motion.
- Remove power source before working on machinery.
- Always check for people or obstructions before operating.

- Installation of this equipment must comply with local building codes.
- Equipment must be installed according to manufacturer's drawings. Individual component information is listed in the bill of materials of these drawings.
- Curtain Machine Systems must be inspected by qualified personnel at least every year or more frequently depending on use and local, state, and federal laws. Do not install in locations that prohibit access or prevent removal of any machine covers. A "Qualified Person" is someone who has been fully trained in the use and maintenance of the machine.
- IWEISS machines are designed for use in temperatures between 50° and 90°F (10°-38°).
- Do not expose machines to rain or extreme humidity.
- The recommended working load and duty cycle of each machine is marked on the Identification Label. Do not exceed.
- The machinery must be protected from oil, dust and other contaminants.
- Installation of electrical power and control devices must be coordinated prior to the installation of the hoist.

Identify the components of the Curtain Machine:

⚠WARNING

The Curtain Machine should only be installed by personnel totally familiar with the product and the industry guidelines for safe rigging standards.



(Actual machine design may vary)

1. Gearmotor: The motor is a 3 phase gearmotor with integral brake mounted to the side of the winch frame.

2. Winch Frame: The winch frame is made from plate steel. The entire perimeter of the device is to be considered the frame. The frame has a series of mounting points on the sides of the frame along with the bottom base angles.

3. Grooved Drum/Drive Shaft: The steel drum is grooved for 3/16" operating line and will rotate on a keyed drive shaft. The Drive Shaft is a solid round steel member that is connected to the gearmotor and the grooved drum.

4. Cable Tension Device: These help maintain tension within the operating line. These pivot back and forth as cable tension increases and decreases

5. Adjustable Limit: This is the black or yellow housing connected via Chain and sprocket to the drive shaft.

6. Electrical Junction Box: This electrical enclosure houses the cable terminals for the gearmotor, limits and potential encoder. All wiring terminations from the motor control cabinet to the curtain machine occur here.

Control station: The control station will typically be mounted to the proscenium wall. See the following descriptions for use:

Key Switch: The key switch removes power from the control station and motion will not be allowed with the key in the off position.

NOTE: The key does not remove high voltage power from the system and the main disconnect should be used when servicing.

Open Button: This button is used to move the curtain open allowing the stage area to be open for display.

Close Button: This button is used to move the curtain closed allowing the stage area to be masked by the curtain.



NOTE: If the E-STOP (if provided) OR ultimate limit is deployed the system should not be activated again until communication, visual and verbal, has been established between the operator and all spotters, as well as a complete evaluation and determination of why the E-STOP/ultimate was used. Once all matters are reviewed and security and safety is insured, the system is ready to be operated again, confirm the direction in which the machine needs to move and continue with operation.

For the safety of all concerned, the operating buttons are momentary push buttons, otherwise known as dead man buttons. These buttons will allow the piece to move in its desired direction until the piece has hit its limit position or when the button has been released. **CONTINUE TO HOLD THE BUTTONS FIRMLY DOWN UNTIL MACHINE HAS MOVED TO ITS DESIRED LIMIT LOCATION.**

1. Unload the packaged machinery.

Curtain Machines are shipped on a pallet. While packaged you must:

- Protect pallets from rain and humidity.
- Use safe material handling practices.

-Store packaged machinery in clean and dry locations that are protected from impact or other abuse.

2. Installation layout must occur with the proper alignment of the machine to the diverter pulleys utilizing proper fleet angle of no greater than 1.5 degrees.

3. Once layout is confirmed use at minimum (4) 3/8" anchors, as determined by a licensed engineer and per the instructions of the anchor manufacturer, in the perimeter mounting holes provided in the base of the frame.

4. Install the Motor Control Cabinet and Control Station per the supplied wiring diagrams.

5. Once power to both control and motor is confirmed quick compress each directional button on the control station to confirm proper drum rotation.

****NOTE: No limits have been factory set and a potential collision of equipment is possible**.**

6. Install 3/16" Non-stretch operating cord to the drum utilizing 3 dead wraps on each line of the cord installed onto the drum. Terminating the cord to the drum should be preferred as specified by the cord manufacture. **IMPORTANT:** Ensure the cable page direction is correct in relation to the direction of the curtain's movement when the control buttons are depressed.

7. Terminate the other end of the drive line as required by the movement element (typically a master carrier of a curtain track system).

8. Prior to running the system to full travel, test the operation by moving the curtain in each direction by only 1/3rd of the available travel. Review for any misalignment or slack in the operation cord. Adjust as required.

9. Once all rigging, cord terminations and cable tension has been confirmed, set the limit according to the instructions on the following page.

****NOTE: Changing speed velocity will alter the manner and timing in which the limits stop the curtain from moving. Best practice is to set the limits at a slower speed and adjust accordingly as the desired speed is adjusted and ultimately achieved.**

A. Setting the Limits

Limit switches determine the amount of travel allowed in the system. These positions are set during the installation process and should not have to be re-adjusted. This system has a total of 4 limit positions:

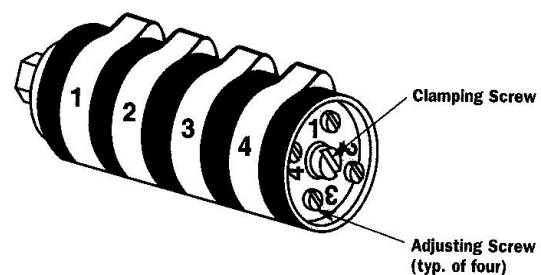
- Ultimate CLOSE limit position
- Primary CLOSE limit position
- Primary OPEN limit position
- Ultimate OPEN limit position

THESE LIMIT POSITIONS MUST BE SET DURING INSTALLATION, PRIOR TO THE USE OF THE CURTAIN MACHINE.

In this system, the Ultimate positions are set just inches past the Primary positions. IT IS THE INSTALLER’S RESPONSIBILITY TO SET ALL OF THE LIMIT POSITIONS IN ORDER TO OPERATE AND MAINTAIN THE MACHINE IN THE SPECIFIC INSTALLATION.

If for any reason the system over runs the Primary position, the Ultimate limit will stop the system from moving and completely shut it down, similar to the E-STOP. However, if the Ultimate limit is reached [see note below], an “Over-ride” button (if equipped) must be engaged in order to re-start the system. The system must then be run in the opposition direction of the limit to get back to normal settings. This “Over-ride” button is located in the MCC.

PLEASE NOTE: IF THE OVER-TRAVEL LIMIT IS ENGAGED, A FULL INSPECTION OF THE SYSTEM MUST BE PERFORMED BEFORE OPERATING THE SYSTEM OUT OF ITS OVERTRAVEL POSITION TO SEE WHAT PROBLEMS OCCURRED TO ALLOW THE OVERTRAVEL TO BE REACHED.



On top of the center cam there are five screws:

- Center (clamping) screw = Located at the center of cam stack
- Screw #1 = Ultimate Down limit position
- Screw #2 = Primary Down limit position
- Screw #3 = Primary Up limit position
- Screw #4 = Ultimate Up limit position

Please follow these steps to reset your limit positions.

1. Drive the machine to its desired position. Starting with the closed position tends to be easiest. Locate the limit device with the center stack of cam per the above illustration.
2. Loosen the center clamp screw half a turn, counterclockwise.
3. Rotate the coordinating numbered screw (the #2 for the Primary closed position) in the cam stack until the limit cam engages the base switch and creates an audible click. You must confirm the correct direction to rotate the cam prior to adjusting the screw.
4. Once complete, tighten down the center clamp screw.
5. To adjust the Ultimate limit positions, rotate the cams in the same fashion, however, leave them to rest in position so that it would engage directly behind the Primary position limit.
6. Repeat the same steps for setting the open positions limits.
7. When all limits have been set, perform a 5 time full travel duty cycle to confirm that the limits in both directions are operating correctly.
8. Once all the limits are set, confirm that the center clamp screw is tight. Close and bolt the limit enclosure lid.

DATE OF Installation:

⚠WARNING

The Curtain Machine should only be installed by personnel totally familiar with the product and the industry guidelines for safe rigging standards.

- Confirm that the operating line of the curtain is clear of all obstructions.
- Turn on the control cabinet.
- Confirm the direction that you intend to move the machine and press the corresponding button.
- You **MUST** keep eye contact with the curtain movement at all times. If something doesn't look right or sound right you must **STOP** moving the machine immediately.
- The control station is made with momentary pushbuttons, meaning that once you remove your finger from the button, the hoist will stop moving. Once the hoist moves to a limit position, the hoist will automatically stop moving.

Inspections

a) Annual Maintenance Inspection – The Curtain machine requires an ANNUAL MAINTENANCE INSPECTION to ensure safety and trouble-free operation. Inspect on a scheduled basis and keep records [See Maintenance Log]. These records will provide information on length of service and any changes which might indicate worn parts. Industry Standards require that a safety inspection be performed by a professional stage rigging company, employing ETCP certified riggers, at least once a year.

Copy of completed Annual Maintenance Logs should be sent to IWEISS via fax OR email in a timely fashion in order to maintain Warranty. In the event that the Maintenance Logs are not received, the Warranty will be void.

b) Routine Visual Inspection – The User should always be familiar with the equipment and its various components. When the equipment is in operation, any change in sound or look should be noted. The frequency of the Routine Visual Inspection depends on the usage and severity of the operating conditions. At a minimum, the owner should look for problems (nicked/kinked cables, loose fittings, obstructions, oil drips, etc.) and conduct a full visual inspection at least once a month.

Maintenance of the Curtain Machine should only be performed by an approved firm with ETCP Certified Riggers.

⚠WARNING

Power supply must be locked out before and during any checks or maintenance is performed

- Components in the power disconnect box should be checked. Turn the power off at the circuit breaker panels and install a tag out notice for that hoist. Excessive dirt should be vacuumed from the cabinet interior to prevent contact arcing and premature relay failure.
- Inspection for signs of metal shavings, metal dust, leaking oil, etc.
- Check and tighten, if needed, motor mounting, all mounting bolts, cap screws.
- Check and tighten, if needed, machine frame mounting to structure.
- Inspect the drive cable, attachments at the grooved drum, and lifting live end.
- Clean the motor fans to keep them from overheating.
- Inspect the tension of the limit chain.
- Inspect the connection of wires to terminals as well as the tightness of the screws on the limit switch.
- If applicable, keep safety guards in place except when access is required for service.
- Confirm that the electrical feed to the MCC cabinet is tight, as well as the conduit strain relief.
- Inspect all cable terminations in the system.
- Curtain Machines are equipped with a gearmotor. Every year a sample of the oil in the gearbox may be inspected for color; metal shaving, etc... Please contact the manufacture to correctly perform this action.

The first step in troubleshooting any circuit is to obtain a clear understanding of the circuit and its function. If you are unaware of how a power or control circuit works, then you should refer to a qualified technician to troubleshoot this portion.

Next, gain an understanding of the problem. Troubleshooting is very difficult if you do not know what you are looking for. Obtain information from the operator who uses the equipment. Often he can help to describe and isolate the problems more quickly.

ELECTRICAL TROUBLESHOOTING SHOULD ONLY BE PERFORMED BY QUALIFIED ELECTRICAL TECHNICIANS

Eliminate the obvious, no matter how simple:

- Is the unit turned on?
- Are the disconnects turned on?
- Check the fuses, circuit breakers and overload relays.
- Are limit switches tripped or blocked?
- Look for overheating or warm areas, signs of leakage, smells, and recently made changes.
- THEN use the following procedures to isolate the problem to the control circuits, power circuit, load, or incoming power.

Troubleshooting the incoming power supply, fuses and circuit breakers:

1. One of the most common problems found in all electrical circuits is a blown fuse or a tripped circuit breaker. This is because the fuse or breaker is sized to open or trip in case of trouble. The device that has opened or tripped has done so because of some fault on the line. This fault may be located in any load connected to the line, a combination of loads, the wiring, or even the fuse or breaker itself. In any case, the fuse must be replaced or the breaker reset.
2. Although circuit breakers usually have an indicator to tell when they are tripped. Check the incoming power supply for incoming power. It is a common mistake to assume that power is present on incoming lines. Remember that these lines are also protected by other fuses and breakers that may have tripped or failed for any reason.

3. Use a voltmeter to check the voltage between each pair of power leads. The supply voltage should be within 10% of the voltage rating on the motor nameplate and other connected devices. If the voltage is present, but out of specification, contact the manufacturer with results. If the voltage is correct, check the enclosure for proper ground. To test for ground, connect one side of the voltmeter to an unpainted metal part of the enclosure and touch the other side of each of the line terminals. A voltage difference should be indicated on the voltmeter.

4. Next test the fuses or breaker for an open circuit. Apply power to the fuses or breaker. To prevent any possible feedback through the connected loads, it may be necessary to disconnect the load side of the fuses or breaker. Connect the meter from the line side of one fuse to the load side of another (never the same one). A full voltage reading (phase to phase, not phase to ground) indicates a good fuse.

Troubleshooting a control circuit:

1. Eliminate the incoming power as the source of trouble by connecting a voltmeter or test light across the terminals and verifying that the proper voltage is present.

2. Once the control circuit has been determined to be the source of the problem, continue by jumping each control device until the problem is found.

Troubleshooting limit switches:

1. Rotary limit switches should have:

- a. Locking screws tight on switch cams.
- b. Switches making contact with cams.
- c. Wires tight in terminals.

The limited warranty stated below is given in place of all other warranties, express or implied, of merchantability, fitness for a particular purpose, or otherwise, no promise or affirmation of fact made by any agent or representative of seller shall constitute a warranty by seller or give rise to any liability or obligation.

Seller warrants that on the date of delivery to carrier the equipment is free from defects in workmanship and materials.

Seller's sole obligation in the event of breach of warranty or contract or for negligence or otherwise with respect to equipment sold shall be exclusively limited to repair or replacement, F.O.B. Seller's point of shipment, of any parts which Seller determines to have been defective or if Seller determines that such repair or replacement is not feasible, to a refund of the purchase price upon return of the equipment to Seller.

Any action against Seller including but not limited to breach of warranty, breach of contract, product defect, negligence or otherwise, must be commenced within one year after such cause of action accrues.

Seller shall not be liable for any damage, injury or loss arising out of the use of the equipment if, prior to such damage, injury or loss, such equipment is (1) damaged or misused following the Seller's delivery to carrier; (2) not maintained, inspected, or used in compliance with applicable law and Seller's Operation & Maintenance Manual; or (3) installed, repaired, altered or modified without compliance with such law, or manual.

INDEMNIFICATION AND SAFE OPERATION

Buyer shall comply and require its employees to comply with directions set forth in instructions and manuals furnished by Seller and shall use and require its employees to follow such instructions and manuals and to use reasonable care in the use and maintenance of the equipment. Buyer shall not remove or permit anyone to remove any warning or instruction signs on the equipment. In the event of personal injury or damage to property or business arising from the use of the equipment, Buyer shall within 48 hours thereafter give Seller written notice of such injury or damage and shall cooperate in the handling of any claims arising therefrom.

If Buyer fails to comply with this section or if any injury or damage is caused, in whole or in part, by Buyer's failure to comply with applicable federal or state safety requirements and/or Buyer's failure to follow Seller's Operation

& Maintenance Manual, Buyer shall indemnify and hold Seller harmless against any claims, loss or expense for injury or damage arising from the use of the equipment.

Buyer shall indemnify, defend, and hold Seller harmless.

HOW TO CONTACT IWEISS:

IWEISS Inc 815 Fairview Avenue Unit 10

Fairview, NJ 07022

Phone (201)402-6500

Fax (201)402-6530

PRODUCTUSEREQUIREMENTS

This Maintenance Log is provided as a tool for use by a qualified person while inspecting any hoist. Although an attempt has been made to include all of the most important points of maintenance, no such list can anticipate the particular circumstances of every installation. It is the responsibility of the qualified person to make a reasonable effort to identify hazardous conditions not mentioned herein and formally advise the owner to take corrective action.

IMPORTANTSAFETYINFORMATION

See Identification Label on the unit for serial number, manufacture date and contact number.

WARNING! Improper installation or maintenance can cause the load to fall.

- Do not substitute or modify components provided with this unit. Use only parts provided by IWEISS

- Do not exceed the total capacity of the hoist. It is plainly marked on the Identification Label.

DANGER! Electrocutation Hazard!

- Remove power source before opening electrical and inspection panels. Use lockout / tag out systems where necessary.

- Electrical equipment must be serviced by qualified personnel only.

WARNING! Moving parts can cut or crush.

- Keep body parts away from machinery in motion.

- Remove power source before working on machinery.

INSTRUCTIONS FOR USE

- 1.Prior to maintenance, obtain and review a copy of the Winch Operation and Maintenance Manual for the hoist being maintained.

- 2.Inspect each of the items on the Log and verify that the machinery is serviced and adjusted according to the requirements of the maintenance manual. Remove the covers from the machine as required.

- 3.Replace the covers and repeat the process for each machine on site.

- 4.Make sure that the Identification Label is still adhered on each unit. Contact IWEISS for a new label if necessary.

- 5.Make contact with the authorized person at the venue and make sure that the manual and maintenance log are available for use.

- 6.File copies of the Maintenance Log with the Owner along with any recommendations for service. Complete the Certificate of Maintenance email a copy to IWEISS.



The following chart lists items to be checked and noted on an annual basis. Confirm that each line has been addressed, as well as any notes from the inspection, and initial. Repeat for each individual hoist in the system.

- Components in the power disconnect box should be checked. Turn the power off at the circuit panels and install a tag out notice for that hoist. Excessive dirt should be vacuumed from the cabinet interior to prevent contact arcing and premature relay failure.
- Inspect and look for signs of metal shavings, metal dust, leaking oil, hydraulic fluid, etc. Check and tighten, if needed, motor mounting, all mounting bolts, and cap screws.
- Inspect the operating rope for opening or fatigue around the wraps of the drum.
- Clean motor fans to keep them from overheating.
- Inspect the tension of the limit chain.
- Inspect the connection of wires to terminals as well as the tightness of the screws on the limits switch.
- Keep safety guards in place except when access is required for service
- Confirm that the cable connections to moving devices are properly installed
- Inspect the mounting of anchors to the building structure.
- Run the hoist and listen for strange noise after movement feel for any excessive heat.

NOTES:

Is this a New Installation or Yearly Maintenance?

I have inspected this curtain machine and I have verified that the machinery is configured and maintained according to the Maintenance Manual.

Print Name

Signature

Company Name