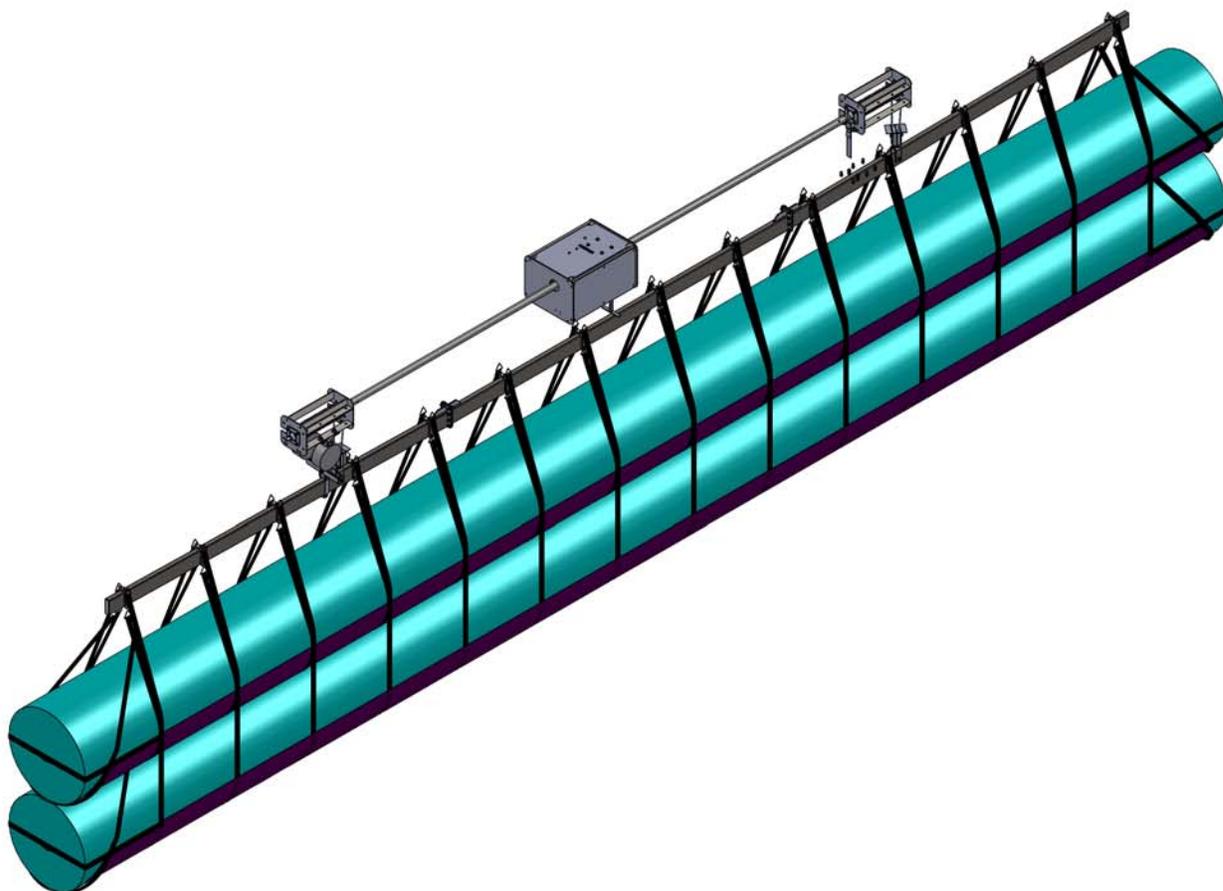


Mat Mover

Item Numbers:

91107000, 91107002, 91107050, 9110052



Porter[®]

Installation, Operation, and Maintenance Manual

SAVE THESE INSTRUCTIONS FOR FUTURE USE

OPERATION AND MAINTENANCE MANUAL

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SAFETY INSTRUCTIONS

- Read and understand all instructions before use to avoid injury.
- Improper use of product can result in serious injury.
- Read all product safety labels.
- All electrical work shall be performed by a licensed electrician in accordance with state and local codes and ordinances.
- This manual is meant to serve as a general guideline for the safe installation and use of this product. Variables outside the control of Porter must be taken into consideration, with the explicit requirement that installation and maintenance are performed in a safe and secure manner. Any deviation from Porter provided installation documents without written consent will void all warranties. Contact a Porter representative immediately should a conflict necessitating a design revision exist.
- Keep this instruction manual for future reference.

WARNING

Inadequate structures may collapse under substantial loads.
Ensure walls are designed with capacity to support hoist and equipment being lifted.
Auxiliary loads, impact loads, and increased load due to eccentricities shall be included in design.

WARNING

Unbalanced loads may not stay engaged on load bar.
Only engage hoist when all straps are firmly seated and loads are equally distributed on both sides of the load bar.
DO NOT lift if only one side of the load bar hooks are in use.

NOTICE

An architect or structural engineer **must** give written approval for the support design and any structural modifications, including the steel specifications, before the unit may be installed.

Do not attempt to assemble load bar away from the hoist and then carry it into place. The load bar is heavy and difficult to transport once assembled.

Load bar will travel up to 20" laterally (along the axis of the shafts) as the mat is hoisted.

Load bar has built in camber to prevent slings from sagging at ends, even under maximum allowable bar loading (4800lbs.).

Do not substitute the factory provided hardware. High strength Grade 8 hardware is used at cable connections. All hardware at structural attachments is at least Grade 5.

Check that all hardware connections are adequately tightened before raising hoist.

Key switch shall be mounted on the wall in a location such that the equipment it is controlling is in full view of the operator. If the Mat Mover is less than 6' from a wall, the key switch shall be located on that wall beyond the length of the mat, or on an adjacent or opposite wall.



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GUARANTEE

All materials and workmanship of basic materials are guaranteed to be free and clear of defects. Defective material will be repaired or replaced, at our option, subsequent to complete information being received by us concerning the nature of the defect for a period of one year from the date established by the certificate of occupancy or certificate of substantial completion, whichever shall occur first or otherwise documented and signed by an officer of Porter Athletic, Inc.

NAME OF PROJECT:	

NAME OF DEALER:	NAME OF INSTALLATION COMPANY:
PHONE #:	PHONE #:

Porter Order Number _____
 Date of Shipment _____
 Date of Substantial Completion _____

The equipment for this project has been custom fabricated according to the Owner's/Architect's specification. Care has been taken to fabricate and install this equipment to provide years of safe, satisfactory use and trouble free service.

The key to satisfactory service is proper operation and care. Should any malfunctions occur, please notify your maintenance supervisor and your local Porter Dealer or Representative.

INVENTORY AND INSPECTION

Inventory parts listed on the packing list to ensure parts required are accounted for. Inspect all components for possible shipping damage. Report any shortages to Porter's Customer Service Department immediately. On visible freight damage, sign as damaged, and file a freight damage claim with the carrier immediately. Failure to report shortages or hidden freight damage directly to Porter's Customer Service Department within three working days will place the financial burden for the missing or replacement parts with the installer or general contractor.

PREPARATION OF INSTALLATION AREA

Ensure an adequate path is available to install equipment and sufficient space is available in the vicinity of the project. The floor should be protected with a suitable material to prevent damage to the floor or equipment, if necessary. Upon completion of installation, immediate area should be left in broom-clean condition.

REQUIRED TOOLS AND EQUIPMENT

To Be Provided by the Installer:

- Scaffold or Lift
- Wire cutter/stripper
- Measuring tape, Laser Measuring Device
- Level, Plumb Bob, Laser Plumb
- Electronic Test Box
- Hand tools: Phillips and flat head screwdrivers, wrench, socket driver, etc.
- Electric drill, drop cord, cable cutter, vise grip pliers, etc.



STRUCTURAL DESIGN GUIDELINES

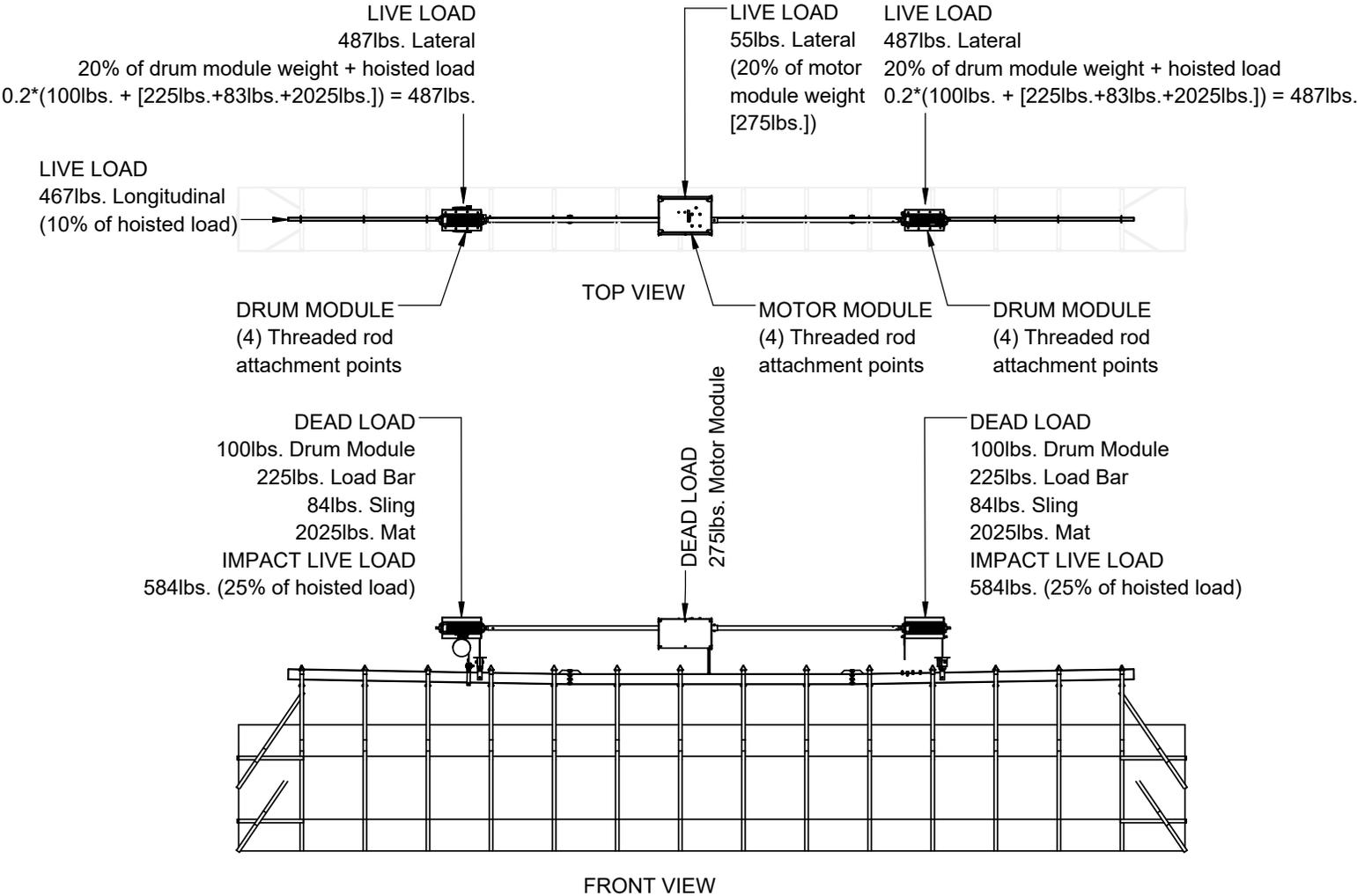
The most critical part of the Mat Mover installation is the structural support members. The structural supports for the system are to comply with the building design, and be located according to the design documents. This also applies to wall attached units. The wall to which the Mat Mover attaches must be capable of supporting the loads applied by the unit. Six (6) wall mount brackets are provided by Porter. The project specific shop drawings by Porter contain the necessary attachment details and anchor locations. **Approval by the architect/structural engineer is mandatory!**

If the support members are not in place, notify the architect and/or owner at once.

NOTICE

An architect or structural engineer **must** give written approval for the support design and any structural modifications, including the steel specifications, before the unit may be installed.

TYPICAL LOADING DIAGRAM (ASSUMING TWO STANDARD 45' x 45' MATS)

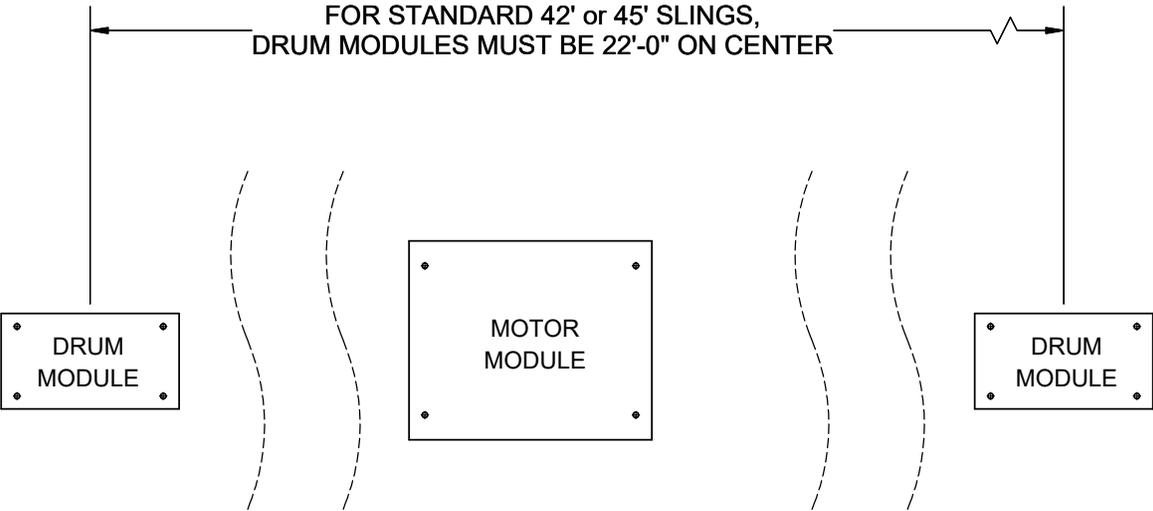


Locate equipment per construction documents. Ensure adequate structure is in place to support equipment. Suggested design loads are provided above. **Approval by the architect/structural engineer is mandatory!**

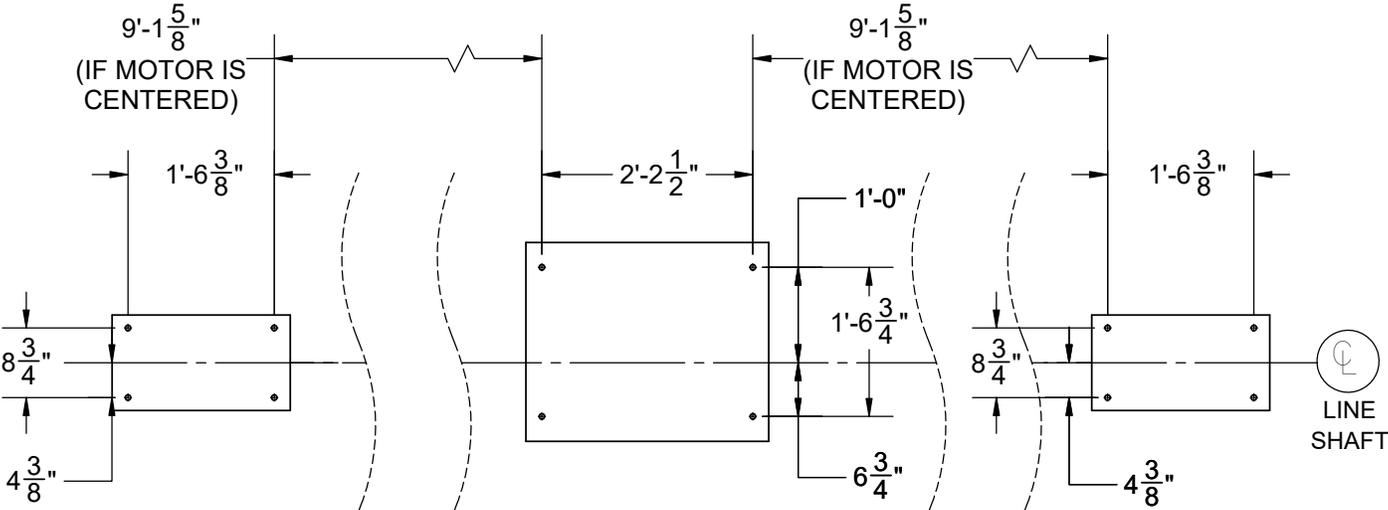
STRUCTURAL DESIGN GUIDELINES

CRITICAL MOUNTING DIMENSIONS CEILING MOUNTED INSTALLATIONS

MODULE SPACING



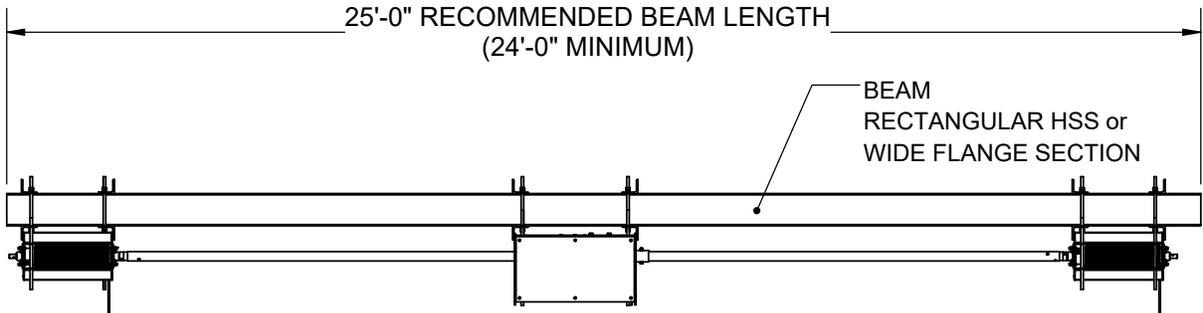
MOUNTING HOLE DIMENSIONS



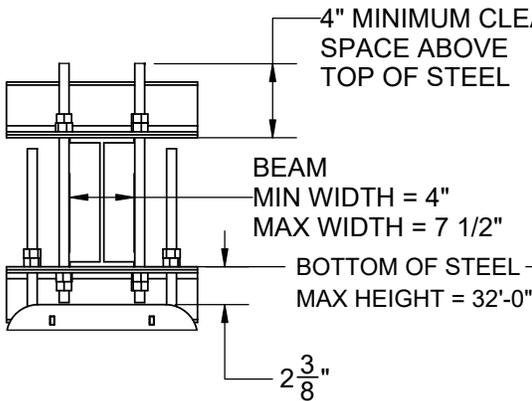
CEILING MOUNTED INSTALLATION

PARALLEL SUPPORT STEEL

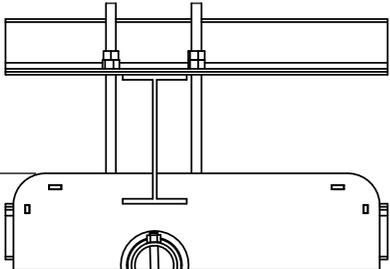
SANDWICH ATTACHMENT DETAILS



DRUM MODULE DETAIL

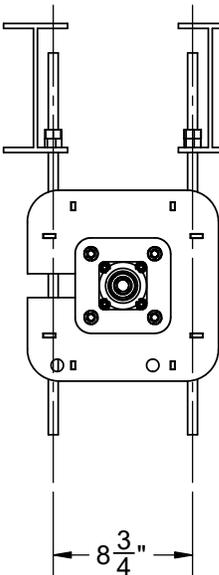


MOTOR MODULE DETAIL

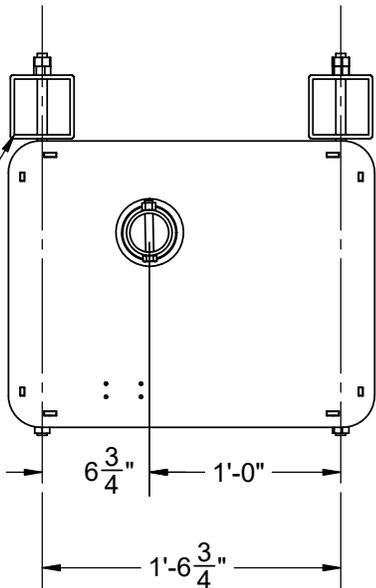


DIRECT ATTACHMENT DETAILS

DRUM MODULE DETAIL



MOTOR MODULE DETAIL



PARALLEL BEAMS MAY BE
RECTANGULAR HSS OR
WIDE FLANGE

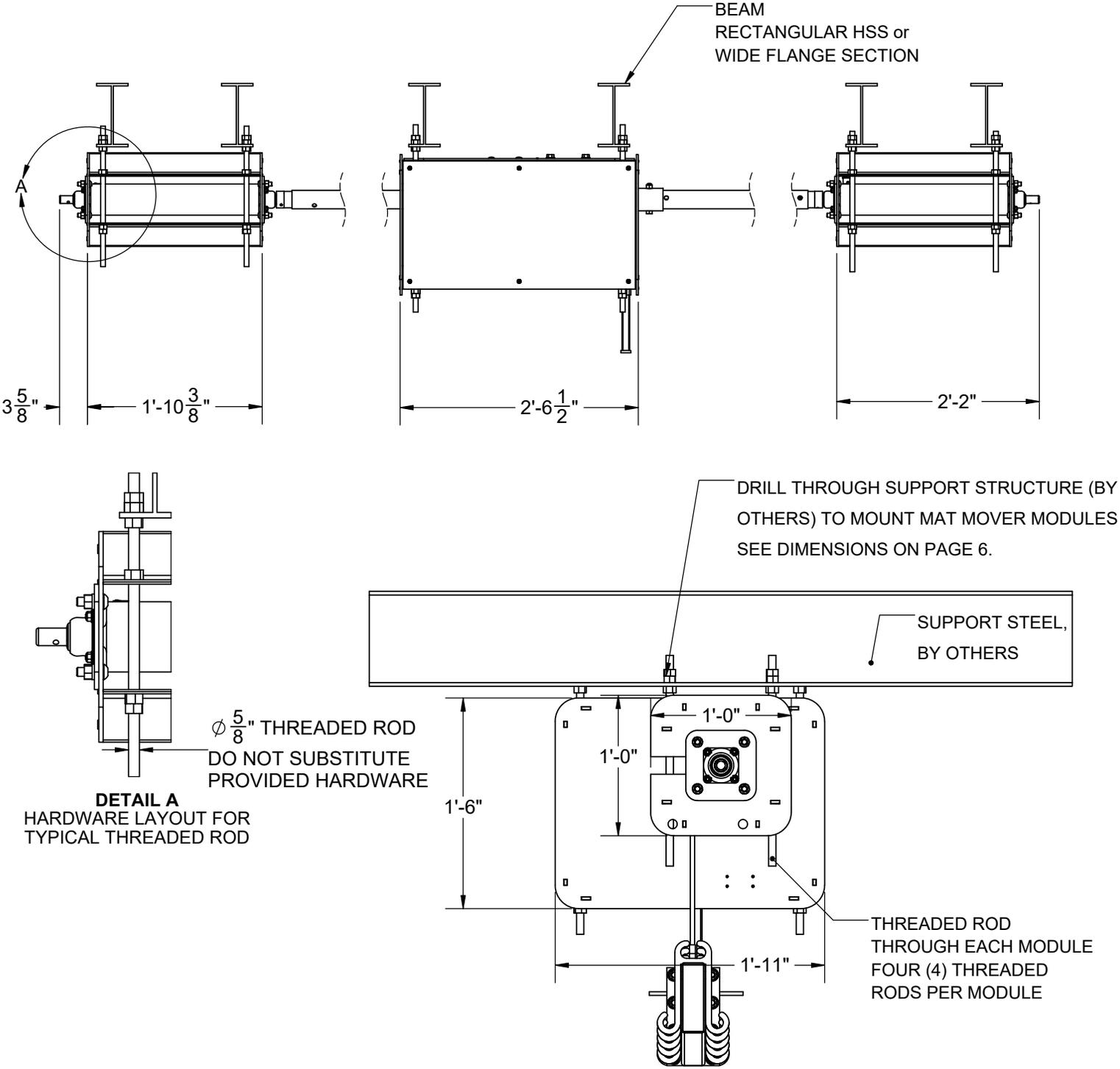
RECTANGULAR HSS BEAM
ATTACHMENT EXAMPLE

WIDE FLANGE BEAM
ATTACHMENT EXAMPLE

CEILING MOUNTED INSTALLATION

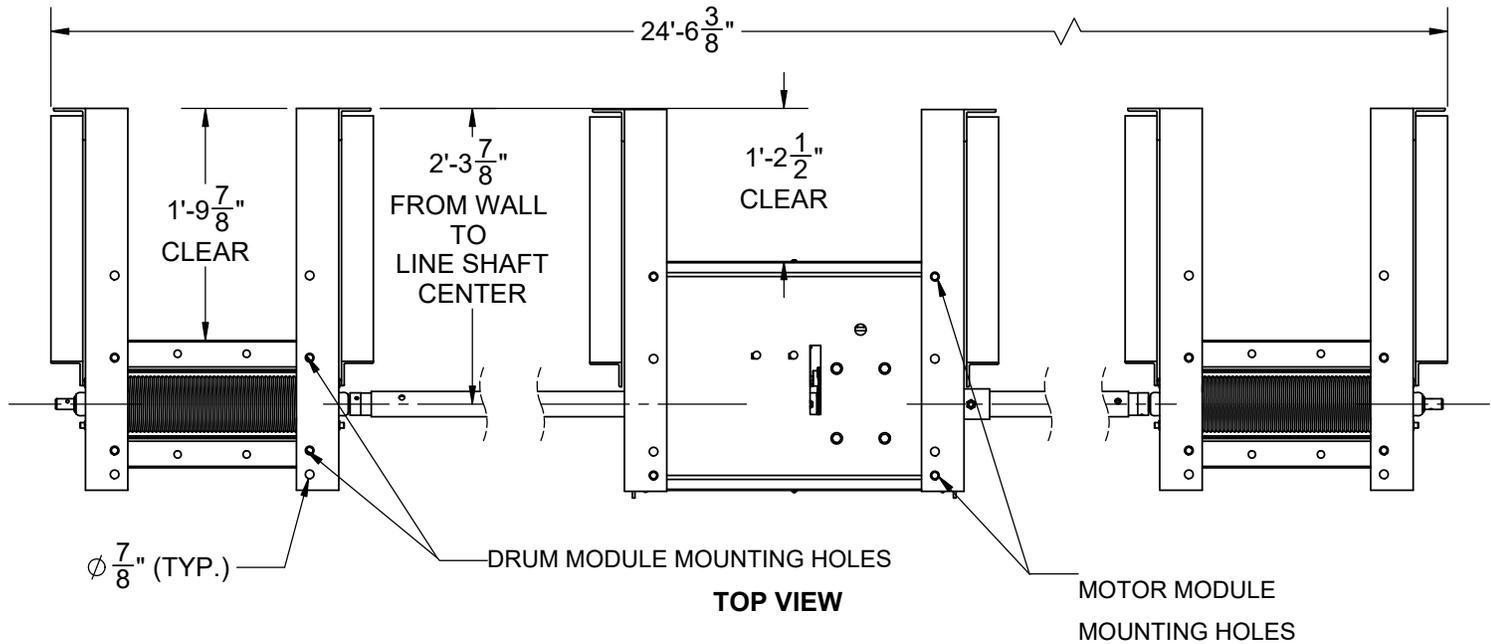
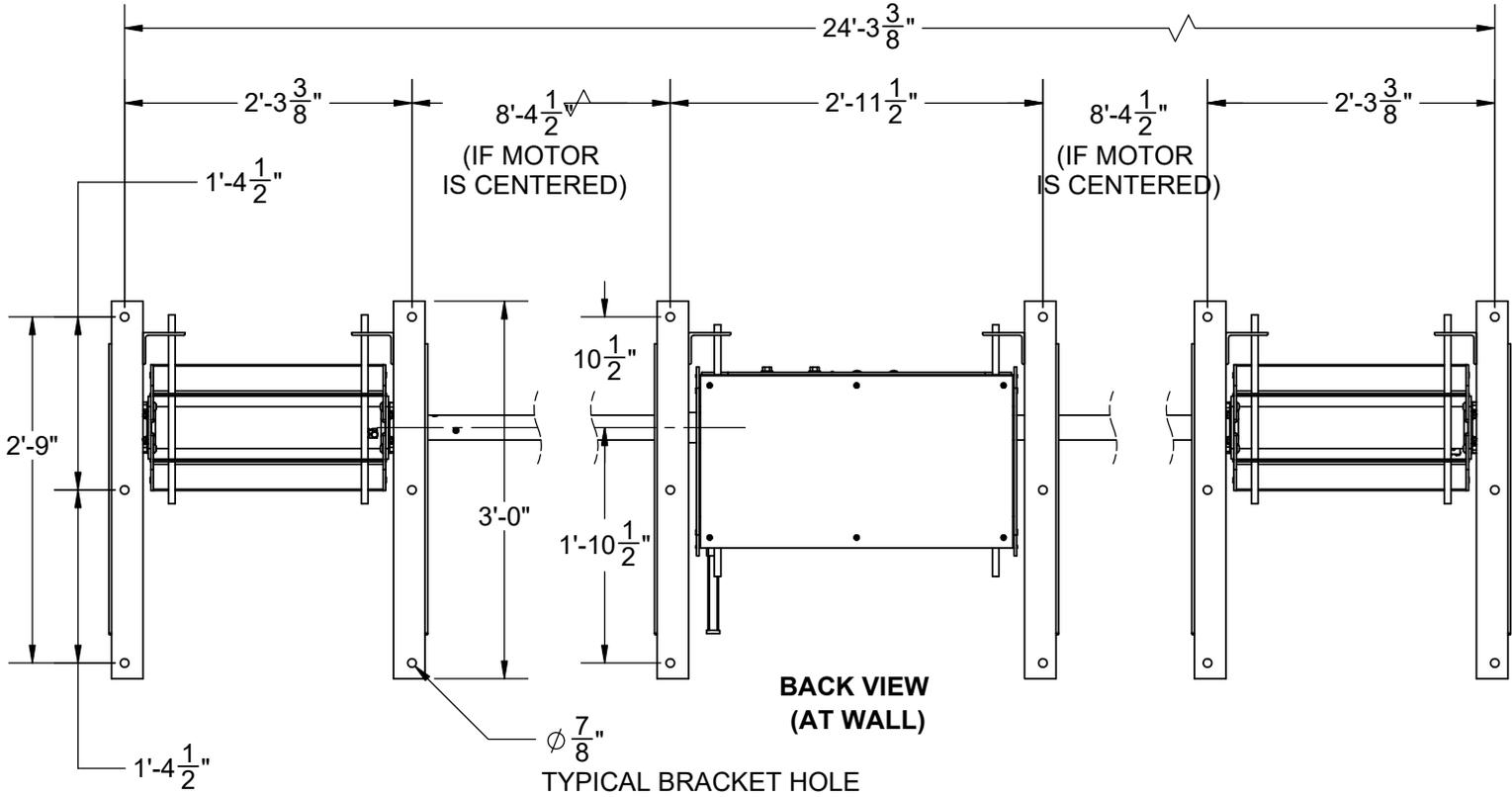
PERPENDICULAR SUPPORT STEEL

DIRECT ATTACHMENT DETAILS



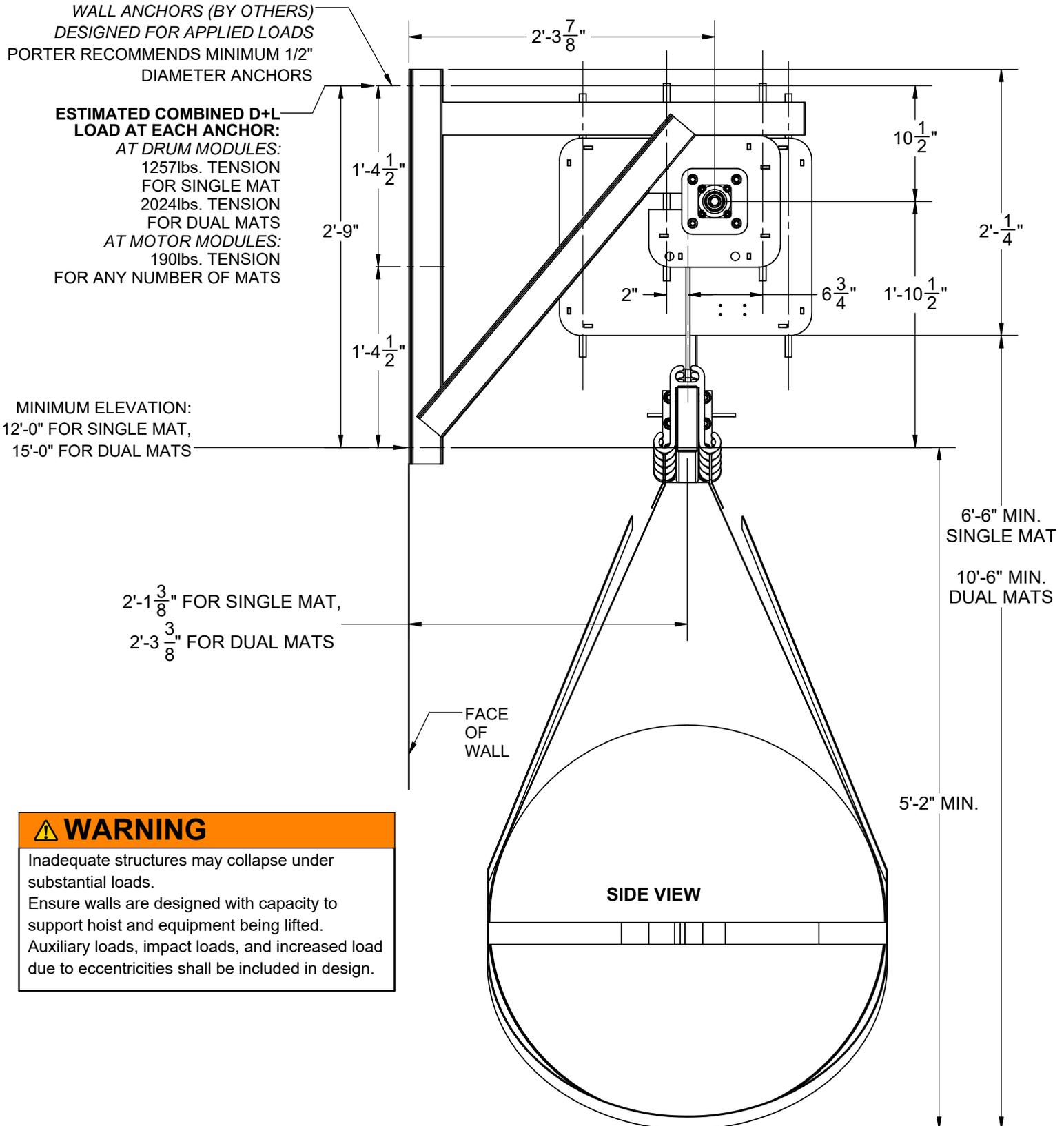
WALL MOUNTED INSTALLATION

CRITICAL MOUNTING DIMENSIONS WALL MOUNTED INSTALLATION

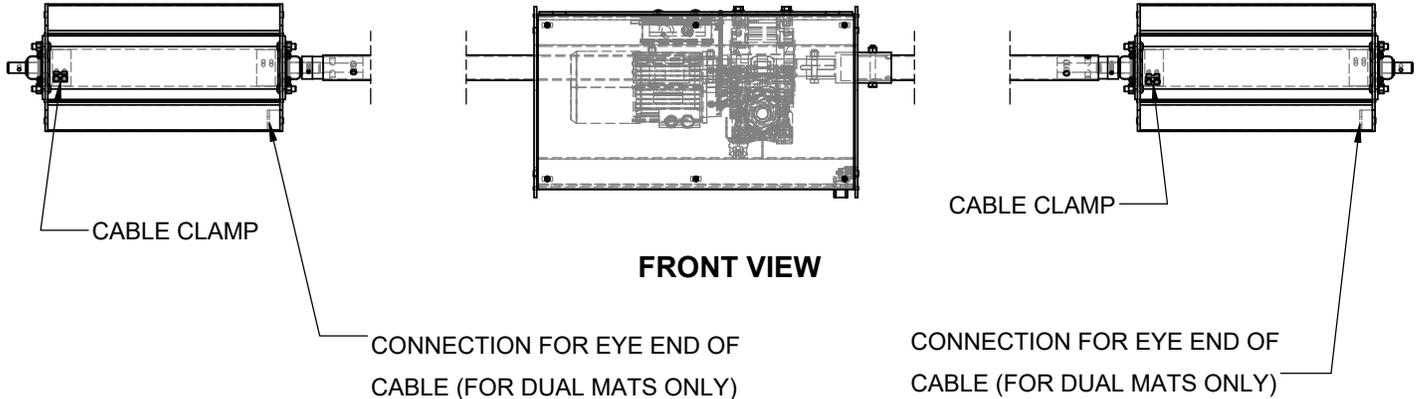
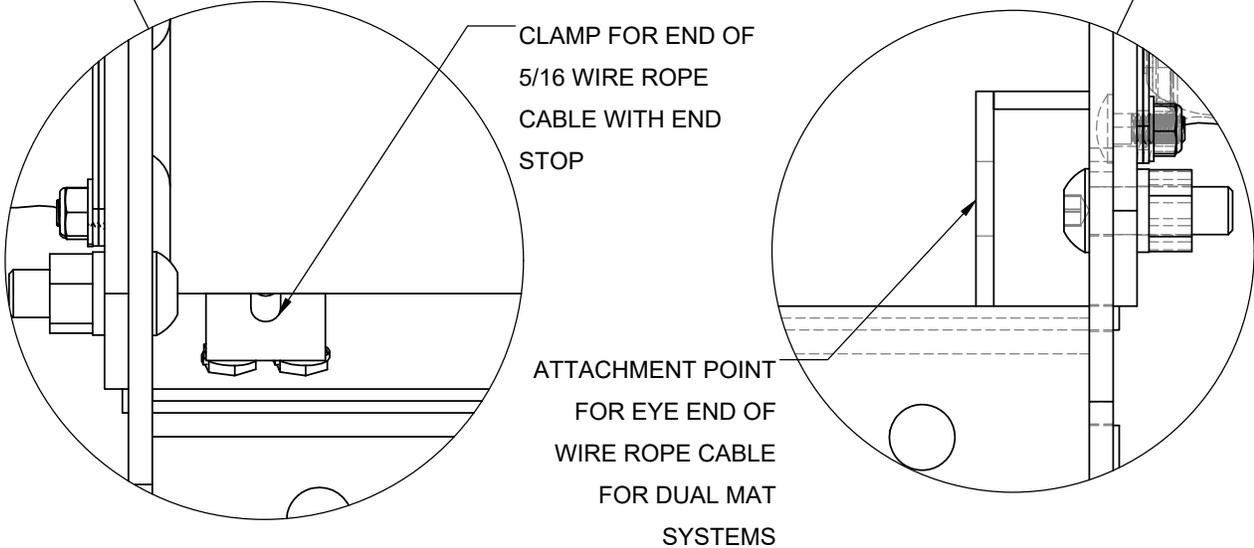
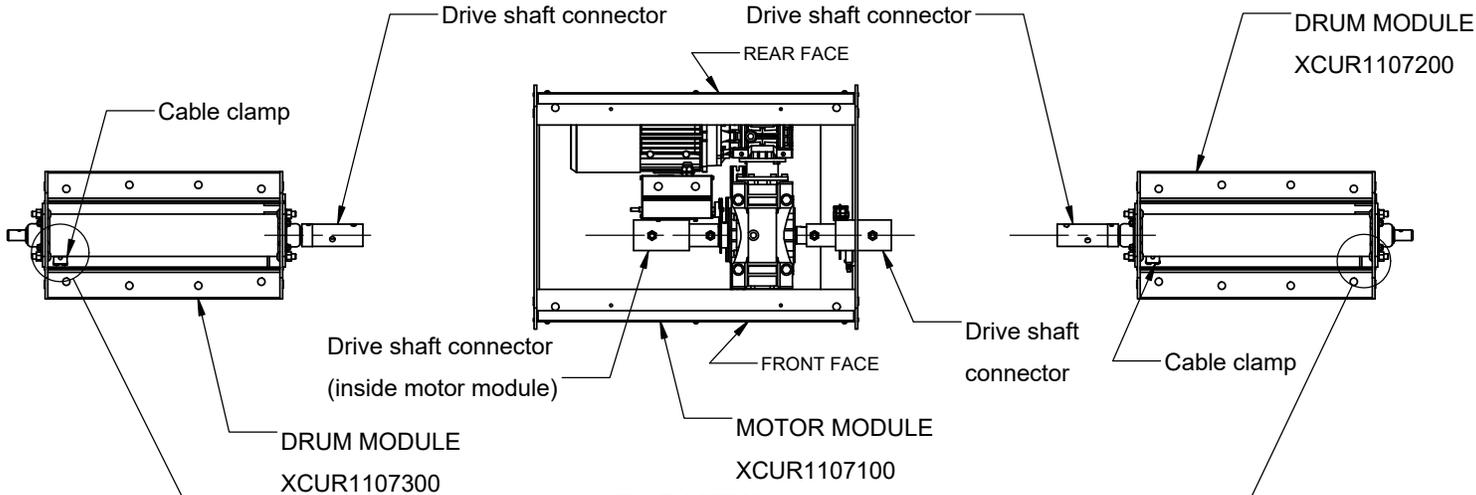


WALL MOUNTED INSTALLATION

CRITICAL MOUNTING DIMENSIONS WALL MOUNTED INSTALLATION

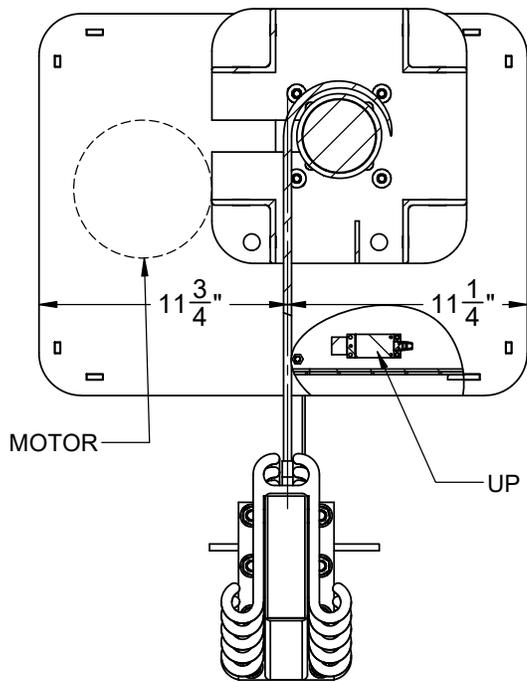
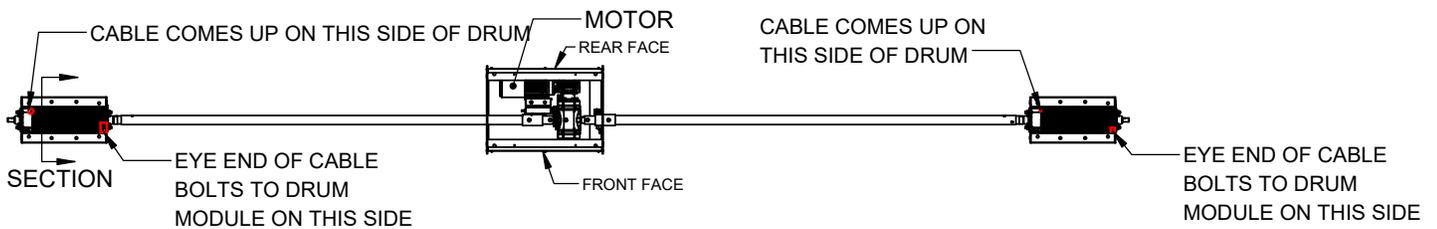
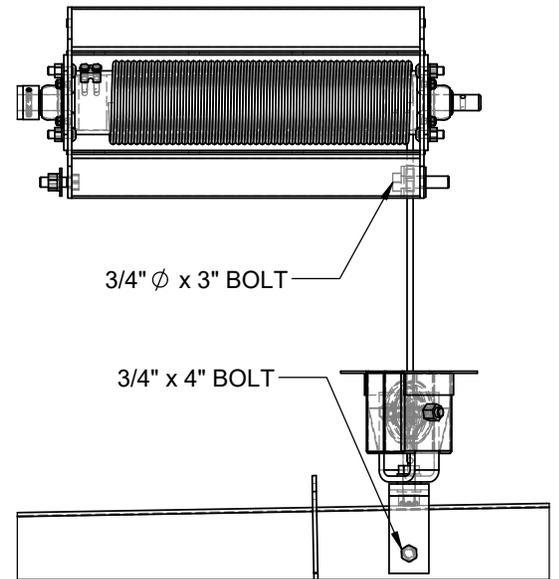


DRUM ORIENTATION

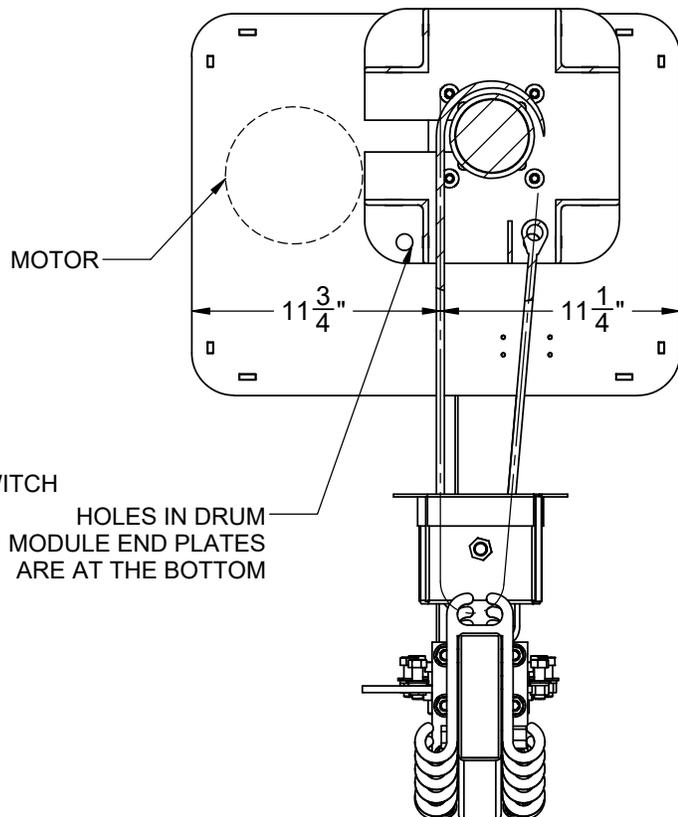


CABLE WRAPPING

Check that the cable is wrapping in the correct direction and the unit is phased correctly. Do not confuse crossed key switch direction of travel with improper phasing, or improper phasing with crossed key switch direction of travel. The phasing must be corrected before any changes are made at the key switch terminal. Proper phasing can be identified by matching motor direction of travel with the limit switch operation for that direction of travel. For example, if the motor is turning the cable drum in the "UP" direction, and the "UP" limit stops that direction of travel, the unit is phased properly. The same logic applies to the "DOWN" direction functioning with the "DOWN" limit switch. The phasing check of the Mat Mover® should be performed before the cable and load bar are installed. Failure to confirm proper phasing may result in the load bar overriding the upper limit switch, causing structural damage to the Mat Mover®, building structure, or both!



**SECTION VIEW
SINGLE SLING**



**SECTION VIEW
DUAL SLINGS**

DRIVE SHAFT INSTALLATION

Once all three modules are in place, connect the modules with line shaft. Line shaft sections may need to be cut to length and spliced on site. Two line shaft splices are included. Use the splices as a template for drilling holes through the line shaft.

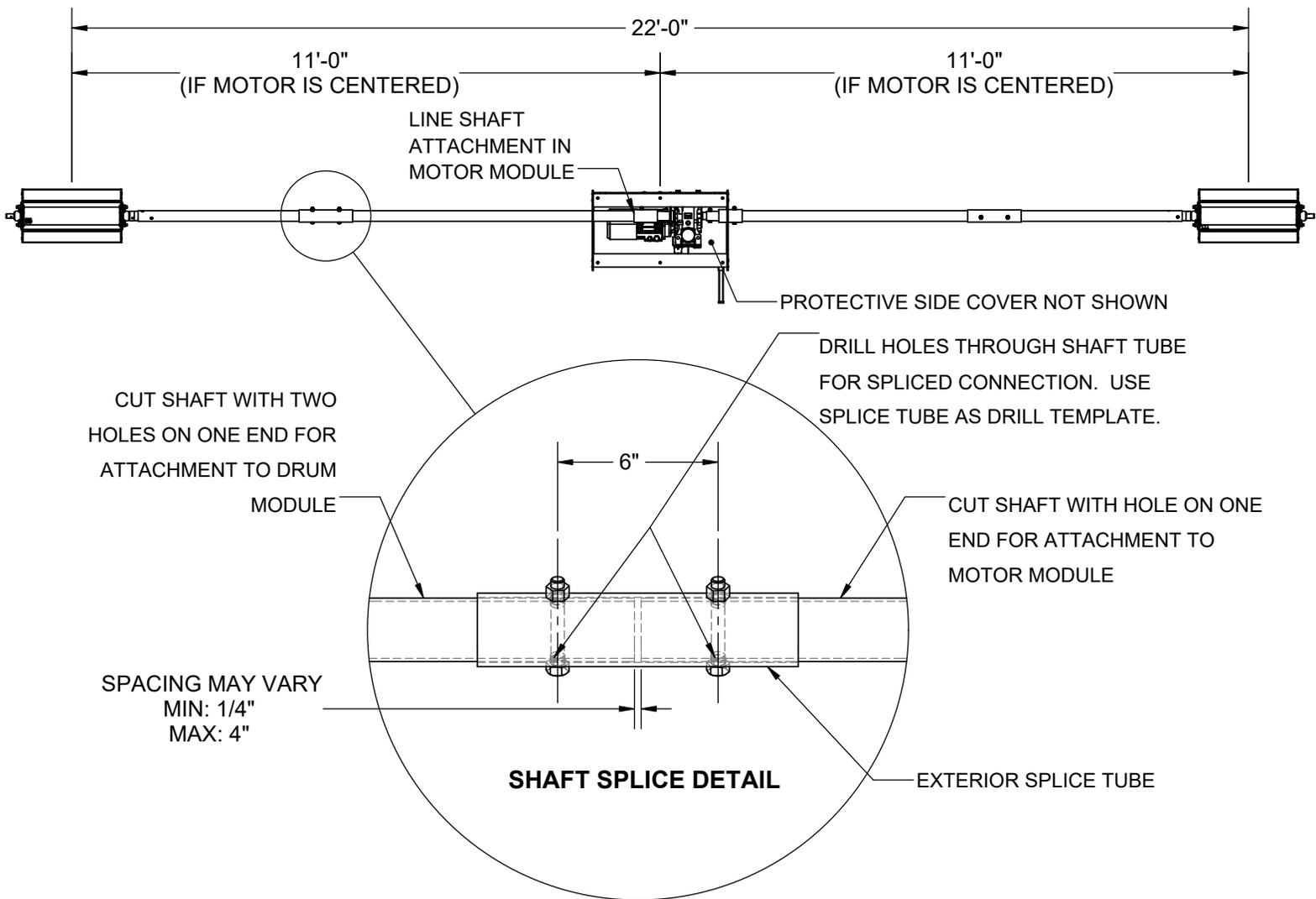
First, slide one piece of the hollow line shaft onto the drum module. The pre-drilled holes should align with the holes on the internal drive shaft connector of the drum module. **DO NOT INSTALL HARDWARE.** Support the shaft temporarily from above with cable or chain if necessary. The shaft should be able to move along its axis several inches.

Then, slide the shaft splice onto the in-place shaft.

After that, slide the second piece of shaft into position in the external connector of the motor module. Secure hardware attaching the motor module to the line shaft.

Align pre-drilled shaft holes with connector on drum module. Ensure gap between shaft sections is between 1/4" and 4". Secure line shaft to drum module with 1/2" diameter hardware.

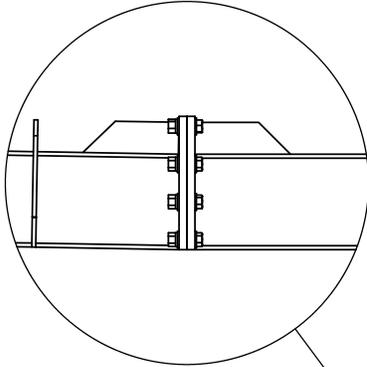
Slide splice over gap between line shaft sections. **STOP! CHECK DRUM ALIGNMENT.**



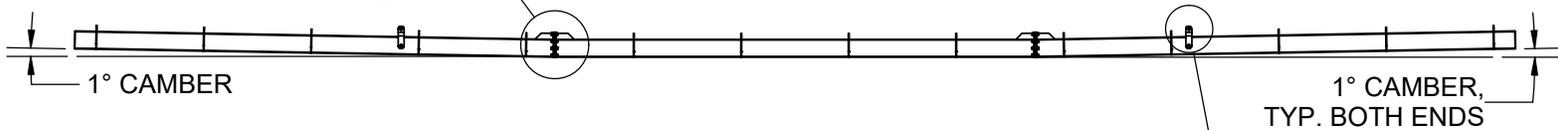
DRUMS MUST BE POSITIONED AT THE SAME POINT OF ROTATION! DO NOT DRILL FINAL LINE SHAFT HOLES UNTIL DRUMS ARE ALIGNED!

Once drums are aligned, complete line shaft connections with splices. Use splices as a template to drill holes in shaft sections, ensuring holes are each at least 1" from the end of the shaft section. Secure with 1/2" diameter hardware. Repeat for shaft connection between the other side of the motor module and the other drum module.

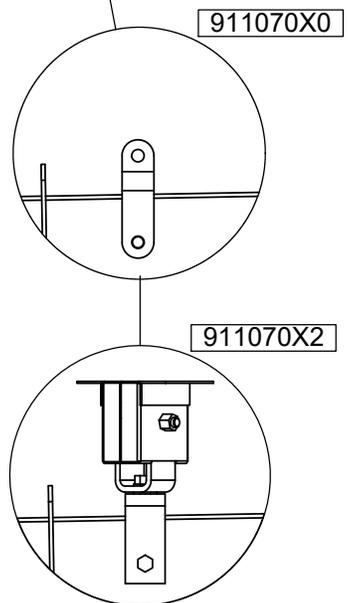
LOAD BAR ASSEMBLY



The load bar shall be assembled in place, directly below the hoist. The load bar, when assembled, is approximately 450 lbs. Having appropriate protection for the floor in place, lay the center and two end portions in line, with the flanges butting each other. Using the sixteen (16) 1/2" x 1-3/4" long Grade 5 machine bolts provided, fasten together, utilizing lock washers and hex nuts.



For units hoisting one (1) sling only (911070X0), the 5/16" cable is attached directly to the load bar clamp (see above). The 5/8" x 4" long Grade 8 bolts must be used at this connection. The 5/16" cables must now be secured to each drum by means of the cable block and two (2) 5/16"x 1-3/4" long machine bolts provided for each drum. Note that the barrel end of the cable terminates at the drum, and must be installed inline with the drum rotation, ensuring the cable rotation does not wind (the initial cable wrap) 180° against the barrel end.



For units hoisting more than one (1) mat (911070X2), two (2) swivel pulleys are provided for attachment to the load bar. Do not substitute the factory provided hardware. Grade 8 bolts (and a nylock nut at the sheave) are shipped assembled. It is necessary to disassemble the pulley to route the cable down from the hoist, around the sheave and back up to the frame assembly to be secured. Secure the barrel end of the 5/16" cables to each drum, as described in the above paragraph.

Check all hardware connections to ensure they are tight. Re-check clamp or pulley connection at load bar and verify Grade 8 bolts and nylock nuts were used. Remember that the grade of bolt cannot be substituted! Now, raise load bar to approximately 3'-0" above finished floor. You are now ready to set the "lower" limit switch.

NOTICE

Do not attempt to assemble load bar away from the hoist and then carry it into place. The load bar is heavy and difficult to transport once assembled.

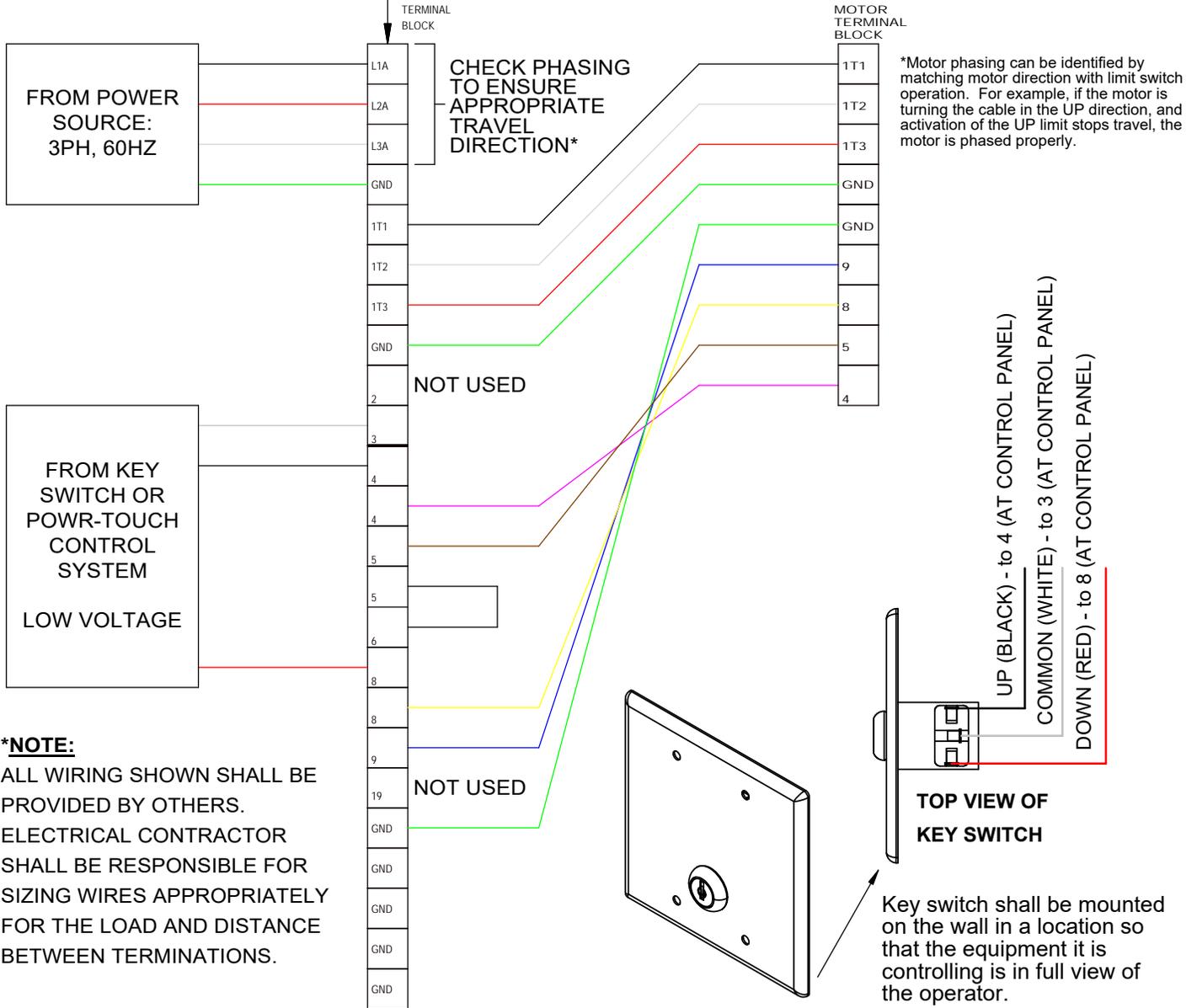
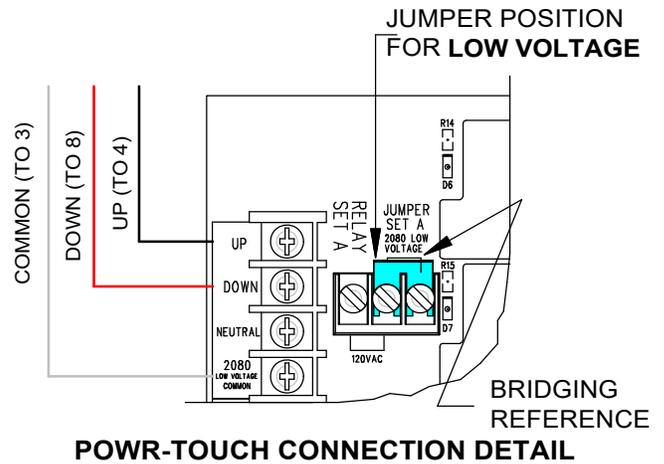
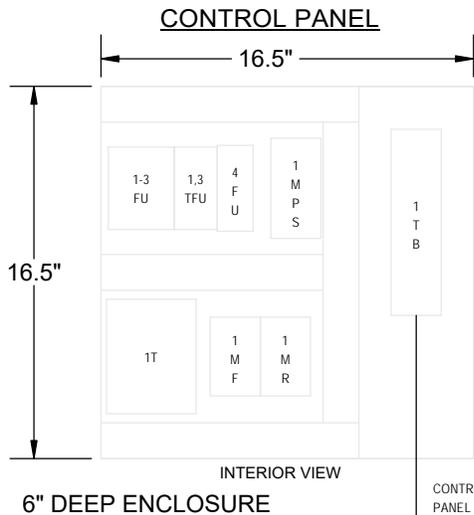
Load bar will travel up to 20" laterally as the mat is hoisted.

Do not substitute the factory provided hardware for the cable attachments. High strength Grade 8 hardware is used at these connections.

Check that all hardware connections are adequately tightened before raising hoist.

Load bar has built in camber to prevent slings from sagging at ends, even under maximum allowable bar loading (4800lbs.).

ELECTRICAL CONNECTION DETAILS



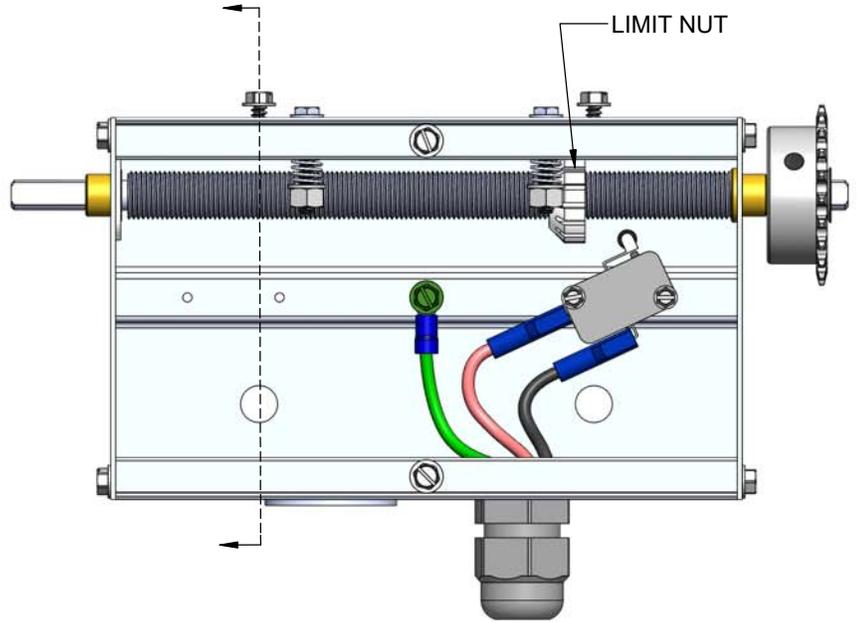
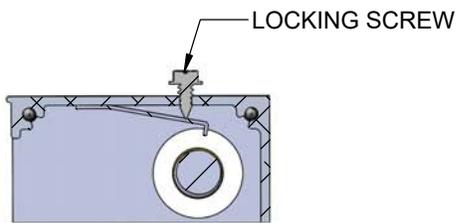
***NOTE:**
ALL WIRING SHOWN SHALL BE PROVIDED BY OTHERS. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING WIRES APPROPRIATELY FOR THE LOAD AND DISTANCE BETWEEN TERMINATIONS.

KEY SWITCH CONNECTION DETAIL

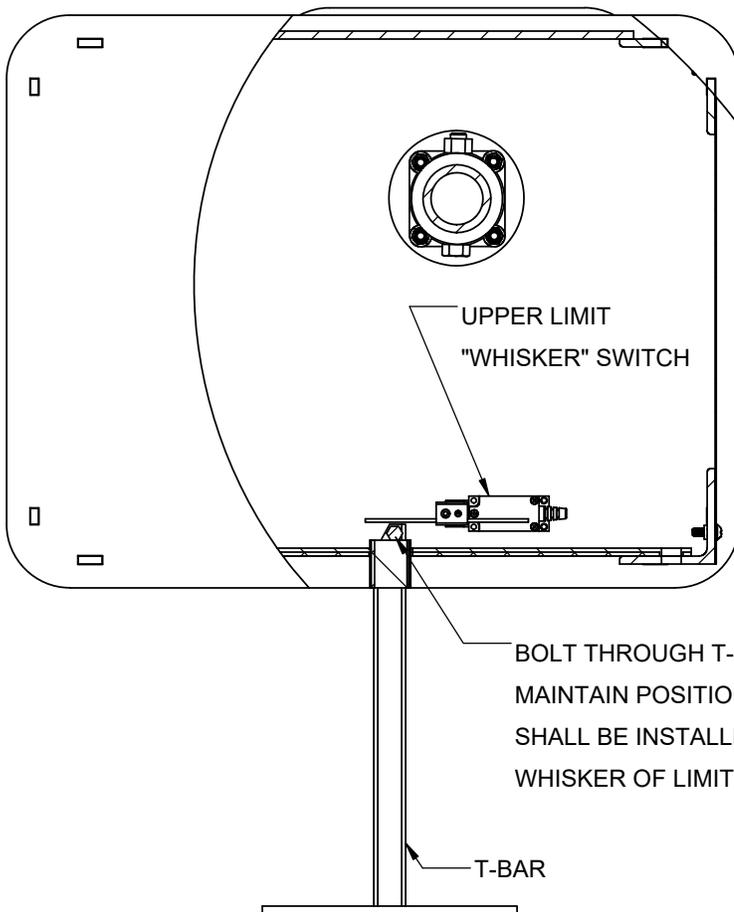
LIMIT SETTING INSTRUCTIONS

Use the key switch or control system to move the unit to the desired "fully lowered" height. At the motor module, open the limit box and move the limit nut over by rotating it until it activates the switch.

Install 1/4" diameter self-drilling screws on side of limit box to lock guide plate in place.



T-BAR INSTALLATION

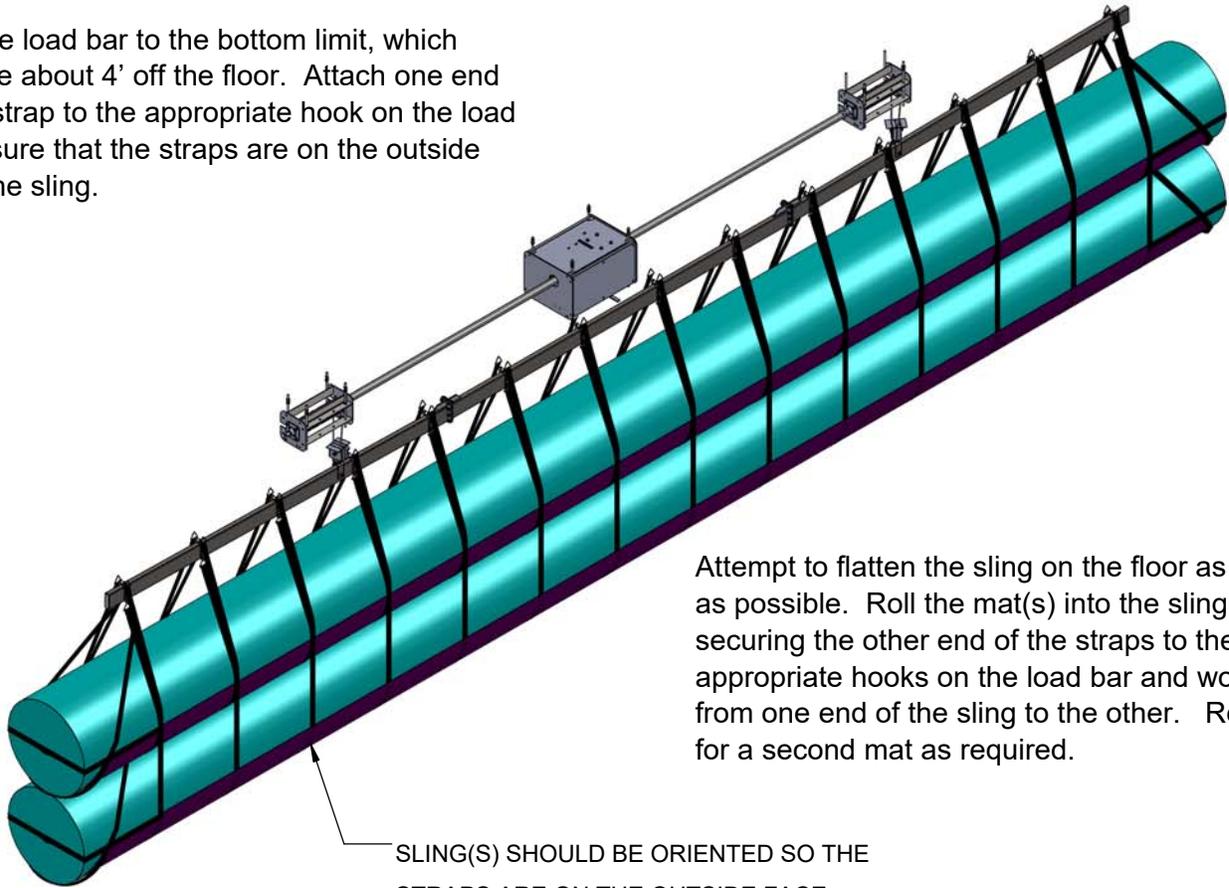


Insert T-bar through square tube in frame. Align T-bar *below* limit switch. Thread screw into hole on T-bar.

Ensure the T-bar is properly aligned with both the load bar and the upper limit switch.

SLING ATTACHMENT AND MAT LOADING

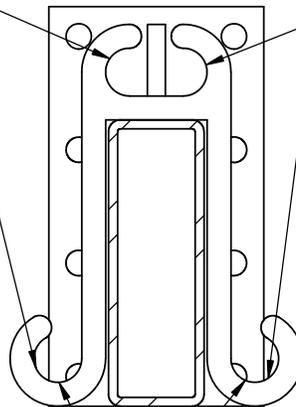
Lower the load bar to the bottom limit, which should be about 4' off the floor. Attach one end of each strap to the appropriate hook on the load bar. Ensure that the straps are on the outside face of the sling.



Attempt to flatten the sling on the floor as much as possible. Roll the mat(s) into the sling, securing the other end of the straps to the appropriate hooks on the load bar and working from one end of the sling to the other. Repeat for a second mat as required.

SLING(S) SHOULD BE ORIENTED SO THE STRAPS ARE ON THE OUTSIDE FACE

FOR SIDE-BY-SIDE DUAL MATS, USE THESE HOOKS TO LOAD THE FIRST MAT IN THE FIRST SLING.



FOR SIDE-BY-SIDE DUAL MATS, USE THESE HOOKS FOR THE SECOND MAT AND SLING.

⚠ WARNING

Unbalanced loads may not stay engaged on load bar.
Only engage hoist when all straps are firmly seated and loads are equally distributed on both sides of the load bar.
DO NOT lift if only one side of the load bar hooks are in use.

FOR SINGLE MATS OR THE FIRST SLING LOADED (UPPER SLING) OF DUAL MATS STACKED ONE ON TOP OF THE OTHER, USE THESE BOTTOM HOOKS.

OPTIONAL SAFETY-STRAP ATTACHMENT

SAFETY STRAPS AND ATTACHMENTS FOR THE WHOLE MAT MOVER ARE INCLUDED IN PART NUMBER: **XSAF79751**

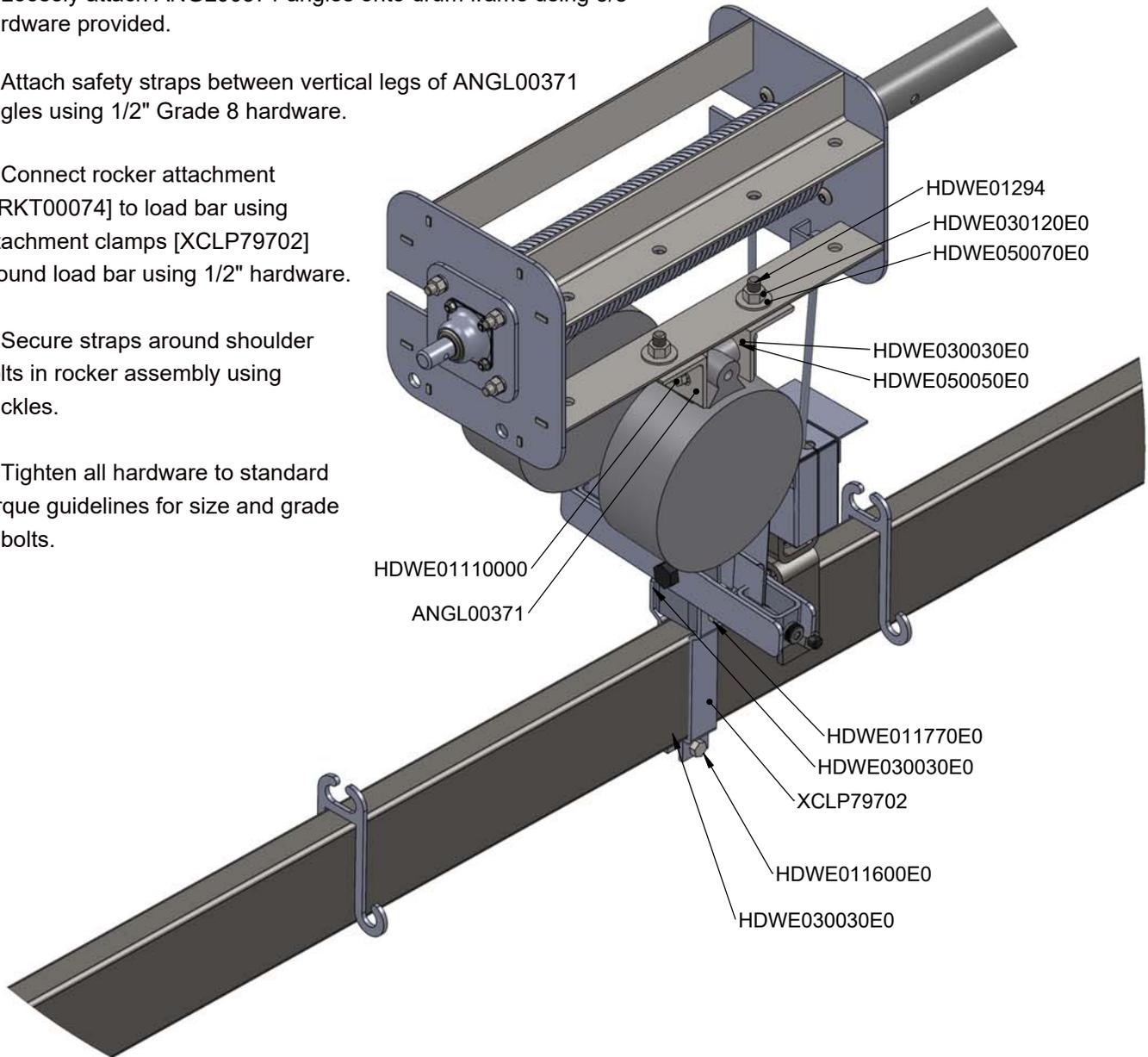
1. Loosely attach ANGL00371 angles onto drum frame using 5/8" hardware provided.

2. Attach safety straps between vertical legs of ANGL00371 angles using 1/2" Grade 8 hardware.

3. Connect rocker attachment [BRKT00074] to load bar using attachment clamps [XCLP79702] around load bar using 1/2" hardware.

4. Secure straps around shoulder bolts in rocker assembly using buckles.

5. Tighten all hardware to standard torque guidelines for size and grade of bolts.



TROUBLESHOOTING GUIDE

SYMPTOM	POSSIBLE SOLUTION
Unit is traveling in the wrong direction	Ensure the key switch wires are landed correctly.
Unit is traveling in the wrong direction	Ensure cable is wrapped properly.
Limits are not stopping unit	Check that the unit is phased properly.
Limit nut is travelling away from, instead of towards, limit switch	Check that the limits are functional at stopping travel in the correct direction. If so, limit switch may need to be moved to the opposite side of the limit box.
Load bar is not hitting T-bar	Check that the cable is wrapped toward the center of the motor module.

REPLACEMENT PARTS LIST

PART NUMBER	PART DESCRIPTION
91107451CXX	45FT SINGLE MAT SLING; COLOR ?
91107452CXX	45FT DOUBLE MAT SLING; COLOR ?
FRME11076C09	LOAD BAR WELDMENT; MIDDLE; 13FT 4IN; GRAY
FRME11077C09	LOAD BAR WELDMENT; END; 13FT 4IN; GRAY
XSAF79751	MAT MOVER SAFETY STRAPS OPTIONAL ACCESSORY SET
ELEC00322	WHISKER LIMIT
ELEC00269600	LIMIT BOX
ELEC00321	MOTOR
HDWE58142000	5/8"-11 x 24" LONG THREADED ROD
FRME00193008	T-BAR WELDMENT; 18" LONG
PULY00040108	DUAL MAT MOVER LOAD BAR PULLEY ASSEMBLY
ROPE00091065	5/16" WIRE ROPE CABLE; 65' LONG
ELEC00138208	MAT MOVER CONTROL PANEL; 208V



601 Mercury Drive, Champaign, IL 61822

www.porterathletic.com

(888) 277-7778

 **WARNING:** This product can expose you to Titanium Dioxide, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

E

SAVE THESE INSTRUCTIONS FOR FUTURE USE