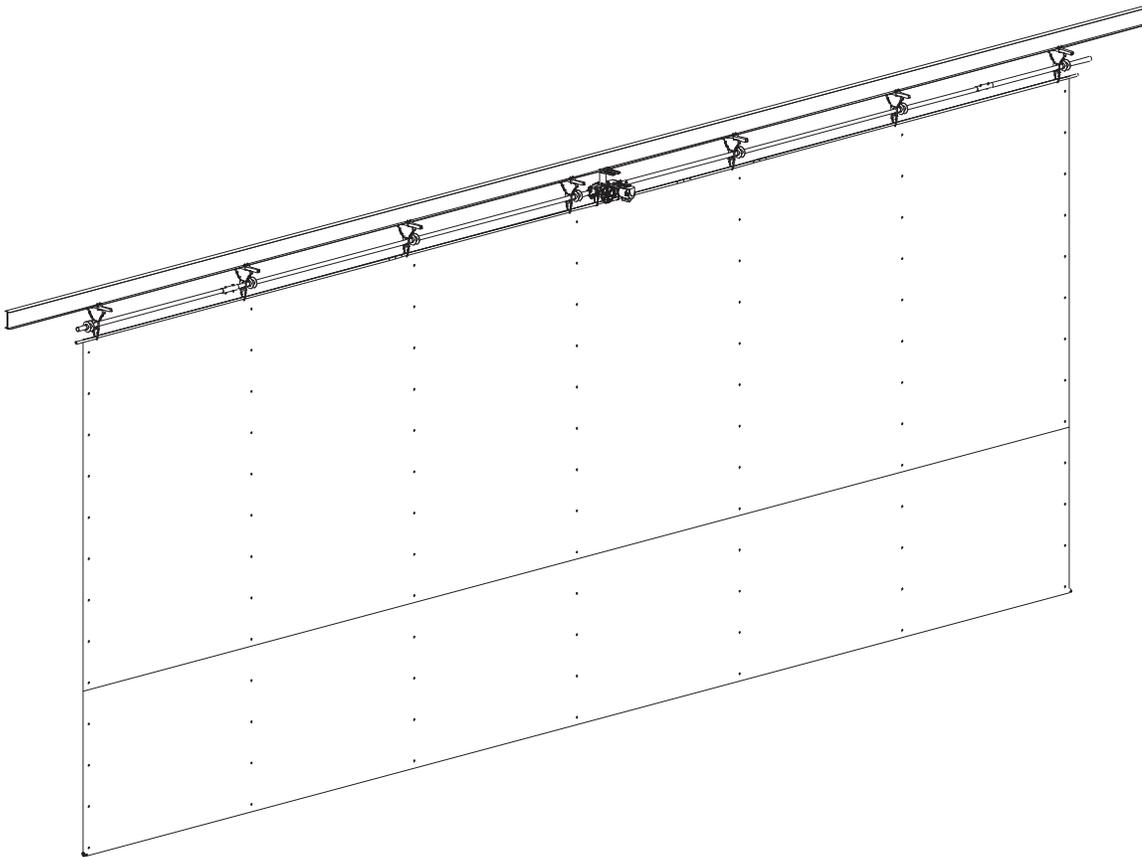


ROLL FOLD DIVIDER CURTAIN

No.'s 670 AND 690



Porter[®]

Installation, Operation, and Maintenance Manual

SAVE THESE INSTRUCTIONS FOR FUTURE USE



INSTRUCTIONS: Dealer and/or Installation Supervisor,
Please give this book to the Owner/Customer

NAME OF PROJECT:	

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

Porter Order Number _____

Date of Scheduled Shipment _____

Date of Substantial Completion _____

The gymnasium 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 supervisor and call your local Porter Dealer or Representative.



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PORTER LIMITED PRODUCT WARRANTY

Product Line: 670/690 Fold Up Curtain (the “Equipment”)

Porter Athletic (“Porter”) provides the below limited warranty (the “Limited Warranty”) to the original purchaser of the Equipment and only as to the facility in which the Equipment was originally installed. The Limited Warranty extends from the time the Equipment is installed by qualified installers and continues based on the timeline listed below under the terms and conditions stated below.

Limited Warranty Terms and Conditions

Porter warrants the Equipment against defects in material or factory workmanship which cause failure of the Equipment within the applicable Limited Warranty period and provided that notification of defects, together with proof of purchase, is given to Porter at Porter@porterathletic.com within thirty (30) days of discovery of such defect. Porter, once it confirms the existence of a covered defect will, at its sole discretion, repair or replace the defective Equipment with comparable Equipment or will provide a refund of the purchase price prorated over the remaining Limited Warranty period. In the event of repair or replacement, the Limited Warranty includes labor, materials, and freight during the first year of the Limited Warranty and then materials only for the balance of the Limited Warranty period based on the Limited Warranty coverage time period shown below for each category. All other costs, expenses or losses are excluded, including, but not limited to, costs for maintenance of the Equipment. The manner of fulfillment of the Limited Warranty (including investigation, timing of response, labor, and manner of shipment, if applicable) is at the sole discretion of Porter.

Standard Limited Warranty Coverage Time Period

1 year - Structural Components, Mechanical Components, Electrical Components, Fabric
Other components—may be covered by separate warranty, please see product information sheets

Exclusions and Conditions: This limited warranty excludes and does not apply to:

- Damage, whether natural or manmade, including, but not limited to fire, flood, wind, lightning or other acts of nature or God.
- Normal maintenance items such as fuses and belts.
- Normal wear and tear
- Use for other than intended purpose or use not in accord with generally approved practices
- Abuse, neglect, vandalism, alterations, modifications or misuse – as determined by Porter
- Equipment not installed by Porter Athletic Approved Installers
- Natural variations occurring in product finishes are not considered defects.
- User attached accessories
- Damage caused by operation of Equipment by persons not properly trained to operate it
- Equipment not routinely inspected and maintained by facility personnel or operators in accordance with the Porter Operation and Maintenance Manual.

In cases where repair or replacement of Equipment is deemed necessary, color or texture shall be in accord with that offered by Porter at the then current time.

Porter’s liability under this Limited Warranty is limited to repair or replacement of defective Equipment or a prorated refund as described above. The sole and exclusive remedy against Porter, or its parent, affiliates, subsidiaries, or distributors shall be for the repair, replacement or prorated refund, at Porter’s sole discretion, of any defective Equipment as provided herein. IN NO EVENT SHALL PORTER OR ITS PARENT, AFFILIATES, SUBSIDIARIES, OR DISTRIBUTORS BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RELATING TO, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE EQUIPMENT, INCLUDING WITHOUT LIMITATION, ANY LABOR AND /OR OTHER INSTALLATION EXPENSES INCURRED IN CONNECTION WITH THE REPLACEMENT OR REPAIR OF DEFECTIVE EQUIPMENT, EXCEPT TO THE EXTENT OTHERWISE SET FORTH HEREIN, OR ANY OTHER INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, LOSS OF REVENUE, PROFITS OR OPPORTUNITY.

This document constitutes Porter’s Limited Warranty in its entirety and no other provisions express or implied exist. This Limited Warranty excludes, without limitation, any implied warranties of merchantability or fitness for a particular purpose. Any modifications of this Limited Warranty must be in writing and signed by an officer of Porter. No other person, agent or representative of Porter or any distributor or dealer has any authority to change or modify this Limited Warranty, either verbally or in writing.

Porter reserves the right to change required inspection and maintenance provisions for the Equipment from time to time and upon notification of such change, Customer must abide by those revised provisions or this limited warranty is void.

Various states may have laws affecting your rights under this Limited Warranty.

PORTER EXTENDED LIMITED PRODUCT WARRANTY

Product Line: 670/690 Fold Up Curtain (the “Equipment”)

Porter Athletic (“Porter”) provides the below extended limited warranty (the “Extended Limited Warranty”) to the original purchaser of the Equipment and only as to the facility in which the Equipment was originally installed. The Extended Limited Warranty extends from the time the Equipment is installed by qualified installers and continues based on the timeline listed below under the terms and conditions stated below, including, but not limited to, the required inspections and maintenance referenced below (the “Maintenance Program”).

Extended Limited Warranty Terms and Conditions

Porter warrants the Equipment against defects in material or factory workmanship which cause failure of the Equipment within the applicable Extended Limited Warranty period and provided that notification of defects, together with proof of purchase, is given to Porter at Porter@porterathletic.com within thirty (30) days of discovery of such defect. Porter, once it confirms the existence of a covered defect and compliance with the Maintenance Program, will, at its sole discretion, repair or replace the defective Equipment with comparable Equipment or will provide a refund of the purchase price prorated over the remaining Extended Limited Warranty period. In the event of repair or replacement, the Extended Limited Warranty includes labor, materials, and freight during the first year of the Extended Limited Warranty and then materials only for the balance of the applicable Extended Limited Warranty based on the Extended Limited Warranty coverage time period shown below for each category. All other costs, expenses or losses are excluded, including, but not limited to, costs for maintenance of the Equipment. The manner of fulfillment of the Extended Limited Warranty (including investigation, timing of response, labor, and manner of shipment, if applicable) is at the sole discretion of Porter.

Extended Limited Warranty Coverage Time Period

15 years – Structural Components (Structure Pipes, and Ceiling attachments)

10 years – Mechanical (Line Shafts, Pulleys, Hinges, Roller Assembly, Straps)

5 years -- Electrical Components (Winches, Control Systems)

Other components – Covered by separate warranty, please see product information sheets

Exclusions and Conditions: This Extended Limited Warranty excludes and does not apply to

- Equipment not properly inspected or maintained by a Porter certified inspector at least annually in accordance with the Maintenance Program set forth in the current Porter Installation, Operation and Maintenance Manual for Basketball Backstops of the series covering the involved Equipment which is delivered with the product, is available on line at www.porterathletic.com, or which may be ordered from Porter.
- Damage, whether natural or manmade, including, but not limited to fire, flood, wind, lightening or other acts of nature or God.
- Normal maintenance items such as fuses and belts.
- Normal wear and tear
- Use for other than intended purpose or use not in accord with generally approved practices
- Abuse, neglect, vandalism, alterations, modifications or misuse – as determined by Porter
- Equipment not installed by Porter Athletic Approved Installers
- Natural variations occurring in product finishes are not considered defects.
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- Damage caused by operation of Equipment by persons not properly trained to operate it
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In cases where repair or replacement of Equipment is deemed necessary, color or texture shall be in accord with that offered by Porter at the then current time.

Porter’s liability under this Extended Limited Warranty is limited to repair or replacement of defective Equipment or a prorated refund as described above. The sole and exclusive remedy against Porter, or its parent, affiliates subsidiaries, or distributors shall be for the repair, replacement or prorated refund, at Porter’s sole discretion, of any defective Equipment as provided herein. IN NO EVENT SHALL PORTER OR ITS PARENT, AFFILIATES, SUBSIDIARIES, OR DISTRIBUTORS BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RELATING TO, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE EQUIPMENT, INCLUDING WITHOUT LIMITATION, ANY LABOR AND /OR OTHER INSTALLATION EXPENSES INCURRED IN CONNECTION WITH THE REPLACEMENT OR REPAIR OF DEFECTIVE EQUIPMENT, EXCEPT TO THE EXTENT OTHERWISE SET FORTH HEREIN, OR ANY OTHER INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, LOSS OF REVENUE, PROFITS OR OPPORTUNITY.

This document constitutes Porter’s Extended Limited Warranty in its entirety and no other provisions express or implied exist. This Extended Limited Warranty excludes, without limitation, any implied warranties of merchantability or fitness for a particular purpose. Any modifications of this Extended Limited Warranty must be in writing and signed by an officer of Porter. No other person, agent or representative of Porter or any distributor or dealer has any authority to change or modify this Extended Limited Warranty, either verbally or in writing.

Porter reserves the right to change required inspection and maintenance provisions for the Equipment from time to time and upon notification of such change, Customer must abide by those revised provisions or this Extended Limited Warranty is void.

Various states may have laws affecting your rights under this Extended Limited Warranty.

MODEL No. 670 AND 690 ROLL-FOLD® DIVIDER CURTAINS OVERVIEW OF MANUAL

WARNING

READ ALL INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING TO OPERATE THIS EQUIPMENT.

FAILURE TO COMPLY WITH THE FOLLOWING INSTRUCTIONS AND WARNINGS MAY RESULT IN SERIOUS INJURIES AND/OR PROPERTY DAMAGE.

This manual has been prepared to assist you with the installation, operation and maintenance of the No. 670 and 690 Roll-Fold® Divider Curtains.

Enclosed in this manual is an inspection list for your equipment, including operational information.

We recommend that you read this manual to become familiar with the operation of the No. 670 and 690 Roll-Fold® Divider Curtains, and then assign it to the person responsible for the maintenance and inspection program. If you need additional copies of this manual, please let us know.

The safest equipment can be damaged when used by the untrained. We suggest that qualified personnel supervise all utilized equipment.

For ease of administering this maintenance program, we suggest that your equipment be numbered, and a file maintained on its location, name of manufacturer, original item number, date of purchase, and maintenance performed. This will be useful when ordering replacement parts and keeping track of maintenance. Defective equipment must be marked "DO NOT USE", and the circuit breaker must be turned off and also tagged "DO NOT USE", until replacement or repairs are completed.

Inspections should be performed periodically, depending upon the nature of the equipment and its use. When the equipment is exposed to heavy use, special inspections should be made in addition to the normal maintenance program. At the minimum, a yearly inspection of the system is recommended.

Any structural and/or electrical deviation from the Porter installation manuals and drawings, without written authorization, will void all warranties.

LIABILITY

Liability is not only an issue with the installation and maintenance of this product, but it also extends to the proper operation by the end user. The operational instructions must be read and understood before operating this equipment!

This manual for the model No. 670 & 690 Roll-Fold[®] Divider Curtains, which provides explicit examples of a variation of overhead attachments, is meant to serve as a general guideline only, for the safe installation of this product. Variables must be taken into consideration which are outside of Porter's control, including, but not limited to, steel joist variations which include splice plate interference, web panel point attachments if specified by the architect, conduit interference, HVAC and sprinkler interference, non-grouted cells of block walls, spacing and frequency of wall ties, appropriate selection of wall anchors for the given wall composition, proper installation of said anchors, embed depth of the anchors, etc. It is Porter's explicit requirement that this product be installed in a safe and secure manner. Any structural deviation from Porter installation drawings without written authorization will void all warranties. Contact the factory immediately should such a condition exist, necessitating a design revision. All anchor and fastening methodology is to comply with the International Conference of Building Officials (ICBO), the Uniform Building Code (UBC), the Industrial Fastener Institute (IFI), and all state regulatory agencies, such as The Division of the State Architect (DSA) in California.

General Hardware Guidelines

- Do not substitute hardware without written authorization from the factory.
- Minimum Grade 5 hardware is to be utilized at all attachments, unless specified otherwise. Refer to the specific part drawing in this manual for the proper grade of hardware.
- On eyebolt applications, a turned eye is not acceptable. Utilize forged eyebolts or, if necessary, a turned eye that is welded closed.
- Do not substitute for the factory-supplied cable and cable clamps. The quality of the 1/8" cable and clamps can vary widely from different manufacturers, and are not all suited for curtain applications.
- All "S" hook connections must be crimped closed.
- All Nicopress[®] clamps must be installed utilizing the proper tool and technique listed in this manual, ensuring a "worn" tool is **NOT** used. Nicopress[®] clamps must be copper. Never use aluminum clamps.

MODEL NO. 670 AND 690 ROLL- FOLD[®] DIVIDER CURTAIN OPERATIONAL INSTRUCTIONS

WARNING

The 670 and 690 Divider Curtain is powered by an electric winch, which develops tremendous forces. This equipment is to be operated **only** by qualified personnel to avoid structural damage or possible injury to the operator and other individuals in the gymnasium.

Caution should be exerted at all times for safety reasons, keeping the following guidelines in mind:

- **ONLY** authorized, **TRAINED** personnel are to operate the 670 and 690 Divider Curtain. Authorized personnel is defined as an individual (or individuals) who is at least 21 years of age, has witnessed the proper operation of the unit, and is sanctioned by the facility as being responsible for the operation of the divider curtain.
- The key switch or Powr-Touch[®] pad, which controls the divider curtain, must be flush mounted on the wall, located in full view of the operator, and not directly beneath the equipment.
- Always make sure the area below the divider curtain and in the path of travel is clear of all individuals when raising and lowering the unit.
- The divider curtain may be raised or lowered by placing the “UP” OR “DOWN” key into the key switch, and turning as indicated on the switch cover plate. Refer to the separate Powr-Touch[®] manual for the key pad type operation.
- The key that operates the unit should be retained at all times by a designated authorized person, or kept in a lock box. **Make sure that the key is never left in the key switch unattended!**
- It is critical the operator visually monitor the area around the curtain through the entire raising and lowering travel cycles, making certain no one is at or near the curtain travel. Pay particular attention to the unit as it nears a limit switch cut-off juncture. If the limits are not stopping the curtain at the “**DOWN**” position with minimal cable slack, or allowing the curtain to raise higher than the top of the curtain fabric, contact your Porter representative immediately.

Again the safest equipment can be damaged when used by the untrained. It is imperative the procedures set forth in this manual are strictly observed.

Note: The key switch must be labeled with the following operational instructions, as shown. If your key switch is not labeled properly, contact your Porter dealer immediately.



MODEL NO. 670 AND 690 MAINTENANCE CHECK LIST

Porter recommends a maintenance inspection take place at least once a year by a Porter Certified Inspector, using the attached check list. Porter recommends the same check list be used as a guide for additional inspections by facility personnel or operators every 6 months. Any abnormal movement or sound during operation is cause for an immediate and thorough inspection. The annual inspection by a Porter Certified Inspector is required to maintain the extended limited warranty.

1. GENERAL

Before inspecting, be certain to follow all OSHA guidelines concerning the use of scaffolds and lifts. The proximity of the scaffold or lift to the curtain must be of adequate distance to provide working clearance, so as not to have the curtain contact the lift during operational checks.

Make certain the Porter key switch, Powr-Touch[®] pad, or control system are not substituted and is located within full view (but not beneath) the divider curtain. Check the walls in close proximity to the curtain for any type of protrusion that may interfere with the raising or lowering of the unit (i.e., new scoreboard, chinning bars, etc.).

2. ELECTRIC WINCH

Although virtually maintenance-free, the electric winch should also be periodically inspected for proper operation of the limit switch assembly and key switch. Refer to the key switch/limit switch instructions that come with the winch for adjustment procedure.

Inspect the connection to the superstructure, ensuring all hardware is tight. The hardware at the building connection is also to be inspected for tightness. Ensure the lineshaft hardware is securely attached to the winch with no sign of line-shaft "key-holing"

If Porter belt drive system is present, ensure belt is tight and that both pulleys are secure. Ensure set screws and keys are tight.

If Porter 720 direct drive system is present, ensure gearing is free of obstruction and shows no abnormal sign of wear.

Ensure Winch and line shaft systems are clear of power chords.

3. LINE SHAFT

Inspect the line shaft for proper rotation on the two (2) roller bearing wheels at each roller bracket location. If the line shaft is not seated symmetrically on the two roller bearings, adjust the turnbuckles accordingly.

Inspect the entire line shaft length for concentricity during rotation. If any part of the line shaft rotates with a cam effect (wobble), replace that length of line shaft. Make certain the cause of deflected shaft is identified and remedied, such as a roller support assembly being greater than 3'-0" from a cable drum.

Inspect all hardware at line shaft splices and the winch output shafts, tightening as necessary.

4. LINE SHAFT SUPPORTS

All support fittings, shaft and pipe splices, support rods, etc. should be inspected for fatigue cracks, loose bolts or set screws, and corrosion, on an annual basis. Replace defective parts as required.

5. ROLLER BRACKET SUPPORTS AND TOP CURTAIN CONNECTIONS

Inspect all turnbuckles and “S” hook connections, making certain the hardware is all “closed”. Alignment of the roller assembly is to be inspected for a smooth rotation of the line shaft.

6. HOISTING CABLES

Inspect all 1/8” galvanized hoisting cables for kinking or fraying, replacing as necessary.

7. CABLE DRUMS

Make certain all cable drums are secured with two (2) 5/16” x 7/16” lg. rivets or self drilling screw, and **not** just a set screw. All cable must be within the side drum plates. If any cable is winding outside the drum on the line shaft, this is an indication of an incorrect up or down limit switch adjustment. Refer to the limit switch section of this manual for adjustment procedure. Adjust so that the cable has minimum build up on itself through the travel of the curtain by adjusting the location.

8. TOP AND BOTTOM CURTAIN POCKET CONCEALED PIPES

Inspect both the top and bottom pockets, ensuring the concealed pipe is not separating. At the bottom hem, the pipe is to be secured to the fabric at each cable line with a 5/16” bolt through the curtain, the bottom pipe, and secured with a cap nut (see **Figure O**). If padded bottom tube is present, confirm padding does not need replaced.

9. SUPERSTRUCTURE

Visually inspect all super structure and connections for any sign of abnormal deflection or structural cracks. Check all hardware to confirm it is present and secure.

10. FABRIC

Inspect the curtain for any tears or holes in the fabric. Additional fabric can be obtained through Porter Athletic, to be used for patching. Industrial vinyl cement will easily bond the vinyl patch to the curtain. Also, check the fabric for signs of tearing or loosening at the seams. Check grommets at all pull-up lines. The fabric may be cleaned with a mild solution of soap cleaner and water, or Power Foam sold by Rigmar Industries of Elk Grove Village, Illinois (1-800-323-0779).

11. UNIVERSAL JOINTS (690 CURTAIN ONLY)

Check that each universal joint is properly free to allow for proper transferring of the rotation of the line shaft. Lubricate if necessary. Ensure all hardware is secure.

670 or 690 DIVIDER CURTAIN INSPECTION REPORT

The following page should be copied and returned to Porter Athletic by a Porter Certified Inspector after each inspection.

Porter Order Number _____
Project Name _____
Name of Selling Dealer _____
Date of Scheduled Shipment _____
Date of Substantial Completion _____

(Information should be found on the first page of Installation manual)

Inspecting Company Name _____
Porter Certified Inspector Name _____
Inspection Date _____

Summary of Inspected Equipment, Include any replaced, repaired, damaged, or worn parts. _____

Please attach the checklist of each equipment inspected

670 AND 690 CURTAIN INSPECTION CHECKLIST

Please refer to previous pages for details on inspections.

This checklist is to assist you in your inspection program.

As you are making the inspection, enter "S" for satisfactory, or "R" for repair and replace.

INSPECT ALL ITEMS FOR EACH CURTAIN											
ELECTRIC WINCH											
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
LINESHAFT											
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
LINESHAFT SUPPORTS											
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
ROLLER BRACKET SUPPORTS AND TOP CURTAIN CONNECTIONS											
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
HOISTING CABLES											
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
CABLE DRUMS											
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
TOP AND BOTTOM POCKET CONCEALED PIPES											
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
STRUCTURE											
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
FABRIC											
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
UNVIERSAL JOINTS (690 CURTAIN ONLY)											
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
OTHER EQUIPMENT											
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12

INSTALLATION 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 ASSEMBLY AREA

Moving the curtain after assembly is both difficult and awkward. For that reason, the assembly of the curtain should take place below or near the curtain overhead support location. The floor should be protected with a suitable material, covering the entire length of the curtain in the assembly area to prevent damage to the floor or curtain. In addition, the floor and the covering must be free of any debris generated from assembly procedures prior to fabric installation.

TOOLS / EQUIPMENT REQUIRED

To Be Provided by the Installer:

- Scaffold or Lift
- Hand tools, electric drill, drop cord, vise grip pliers, etc.
- Bolt Cutter
- Cable Cutter
- Measuring tape, Laser Measuring Device
- Level, Plumb Bob, Laser Plumb
- Nico-Press Crimper "VM" Size
- Electronic Test Box (02080-PWR)
- "U" Type 1/8" Cable Clamps
- Nico-Press Checking Gauge — "Oval M" Size
- Ropes & Pulleys
- OPTIONAL: ELEC00201000— cheater box for powering equipment with extension chord

690 LAYOUT INSTRUCTIONS

NOTE: FOR RADIUS CURTAINS ONLY

The layout of the 690 curtain is one of the hardest and most important steps during the install of the curtain.

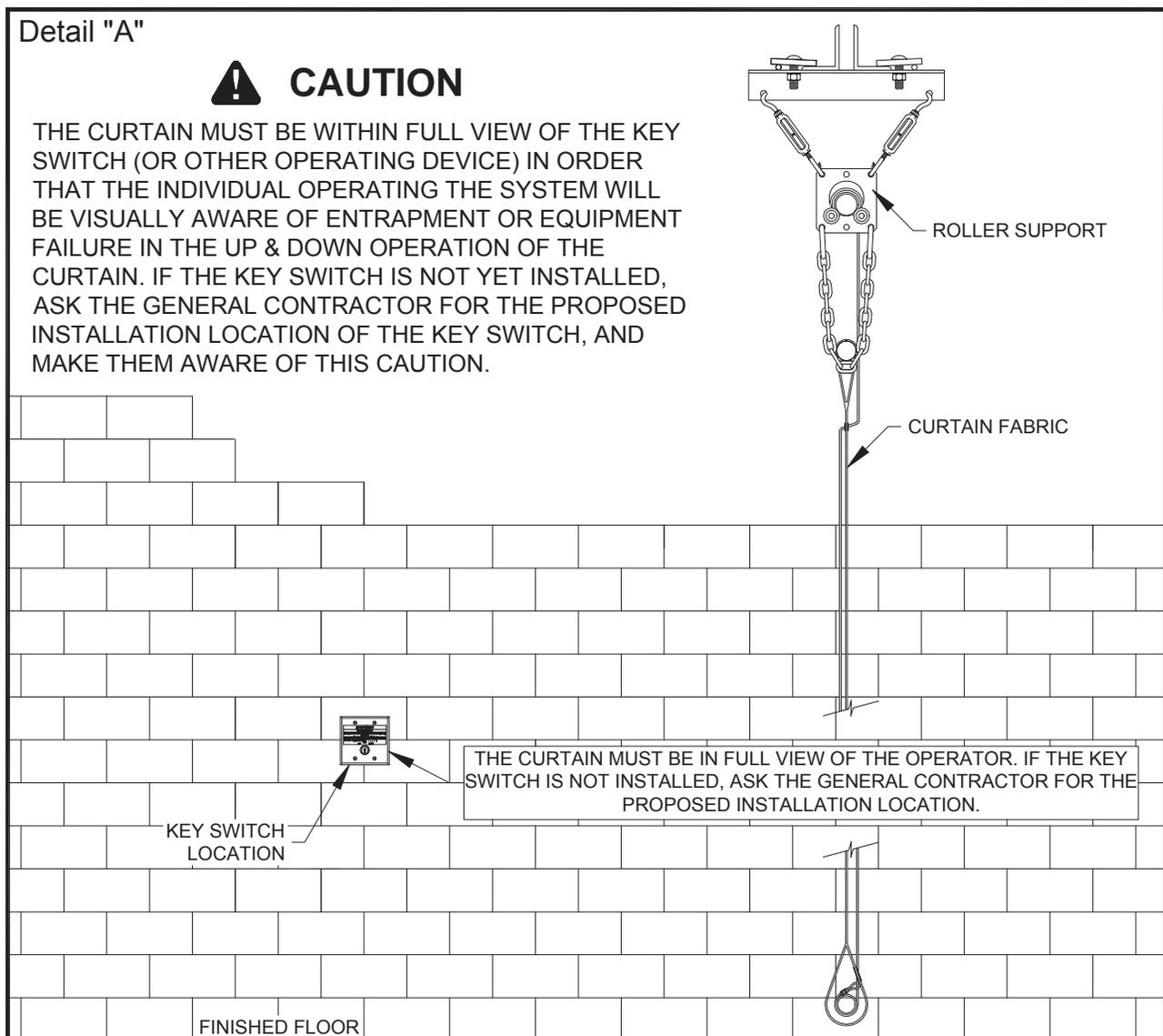
Start by locating the center radius and reference points. Porter tries to locate everything from this point, so check its location using striping and other references.

If possible, take a string to the radius point and measure on the string the exact radius. With one person holding the string at the center point, another can mark out the curtain profile. The cable pickup points correspond with grommets in the fabric, so it is important to locate these first. Mark the cable pickup points along the line.

Next, determine the winch locations and mark that on the floor. Locate the line shaft supports. These should be close to the radius but may not be exactly on. Check to make sure the provided line shaft lengths will allow these support fittings. The more you are able to make the line shaft curve the better the operation. The line shaft supports can be moved slightly to make this work but the cable pick up points should stay above the grommets.

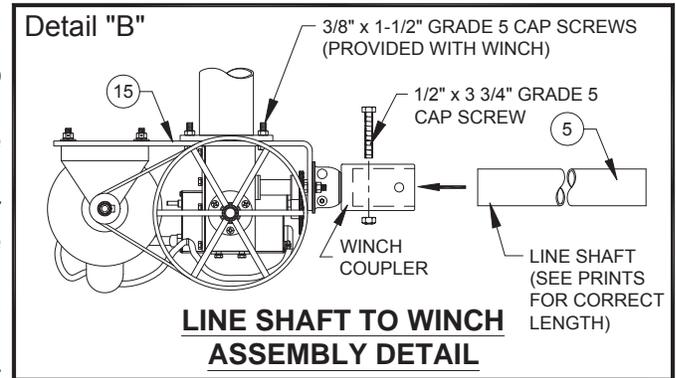
INSTALLATION OF WINCH AND LINE SHAFT

1. Unpack and check all parts and verify quantities with packing list. Verify the location of the curtain with the architectural prints. If the winch location needs to be relocated from the installation prints, the line shaft lengths may not work. Contact the factory immediately for additional splices or line shaft lengths. If the curtain is to be located on a court centerline, be sure to consult with the architect's "court striping plan." Notify the owner, project superintendent or architect if conflicting situations arise. Do not proceed with installation until all conditions are clarified and settled. Failure to do so may result in relocating the curtain at the **installer's expense! This step is critical!**
2. Locate centerline of curtain on gymnasium floor. Study curtain installation drawings and all details of roller bracket assemblies, drum cable assemblies and winch mounting assembly before proceeding with installation. Make certain the curtain will clear all potential obstacles (HVAC, backstops in the up **AND** down position, etc.).



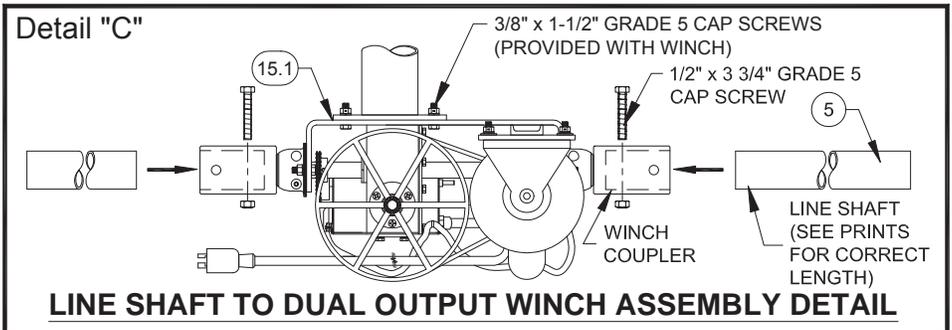
INSTALLATION OF WINCH AND LINE SHAFT

3. With the winch sitting on the floor, and the floor area protected, slide the 2-3/8" O.D. line shaft completely into the winch coupler(s). The installation prints will call out the proper sequence lengths of the line shaft. Support the opposite end of the line shaft before drilling. Utilizing the two existing holes in the winch coupler as guides, drill one 17/32" diameter hole through both walls of the line shaft. Secure the line shaft to the coupler by inserting one 1/2" x 3-3/4" lg. grade 5 cap screw provided, **before** drilling the second hole (See Details "B" or "C"). This will keep the line shaft in place and provide proper alignment for the second hole. Now drill the second hole, utilizing the additional hole in the line shaft coupler. Insert a second 1/2" cap screw to ensure a proper fit. Now remove the two 1/2" cap screws, and remove the line shaft section from the winch assembly.



XCUR winch shown, refer to job installation prints for exact detail

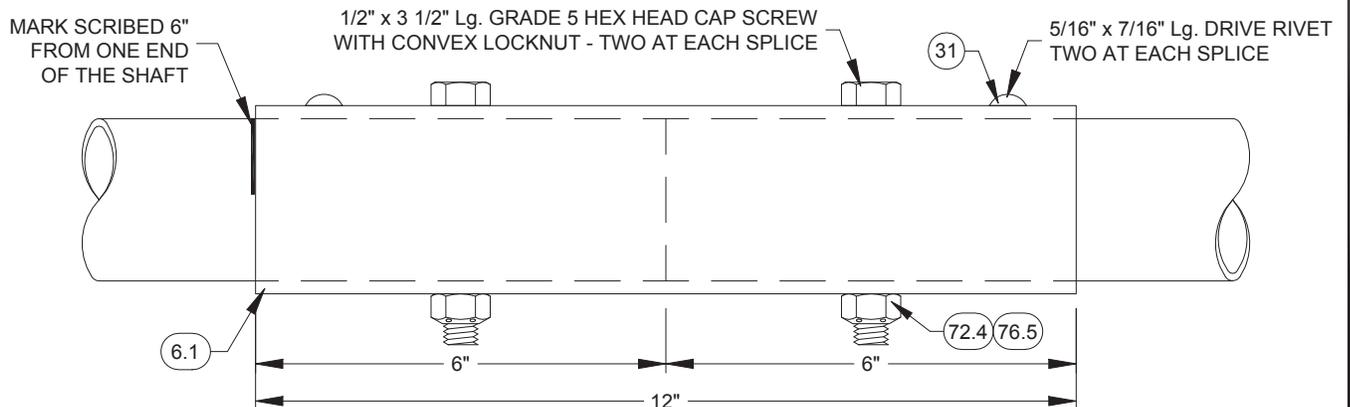
4. On the opposite end of the line shaft in which the two 17/32" diameter holes were drilled, scribe a line 6" from the end (opposite of the holes). Now slide the line shaft coupler on to the shaft, and drill a 5/16" diameter hole at the pilot hole, through one wall of the shaft. Secure the coupler to the shaft with a 5/16" x 7/16" lg. drive rivet. (See Detail "D") This will now allow you to drill a 17/32" diameter hole through the line shaft at the pilot hole for this size, without the shaft turning. Insert the 1/2" x 3-1/2" lg. grade 5 cap



Detail "D"

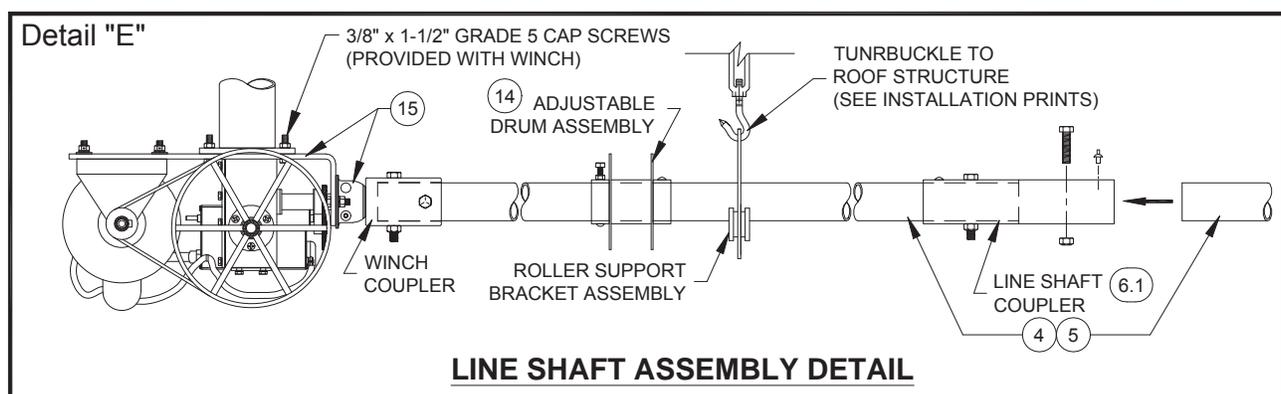
⚠ CAUTION

ALL LINE SHAFT CONNECTIONS TO BE MADE WITH 1/2" x 3 1/2" GRADE 5 SCREWS PROVIDED, AND TO HAVE THE GRADE "C" CONVEX LOCKNUTS TIGHTENED WITH A TORQUE WRENCH, TO A MINIMUM 20 ft/lb SETTING.



INSTALLATION OF WINCH AND LINE SHAFT

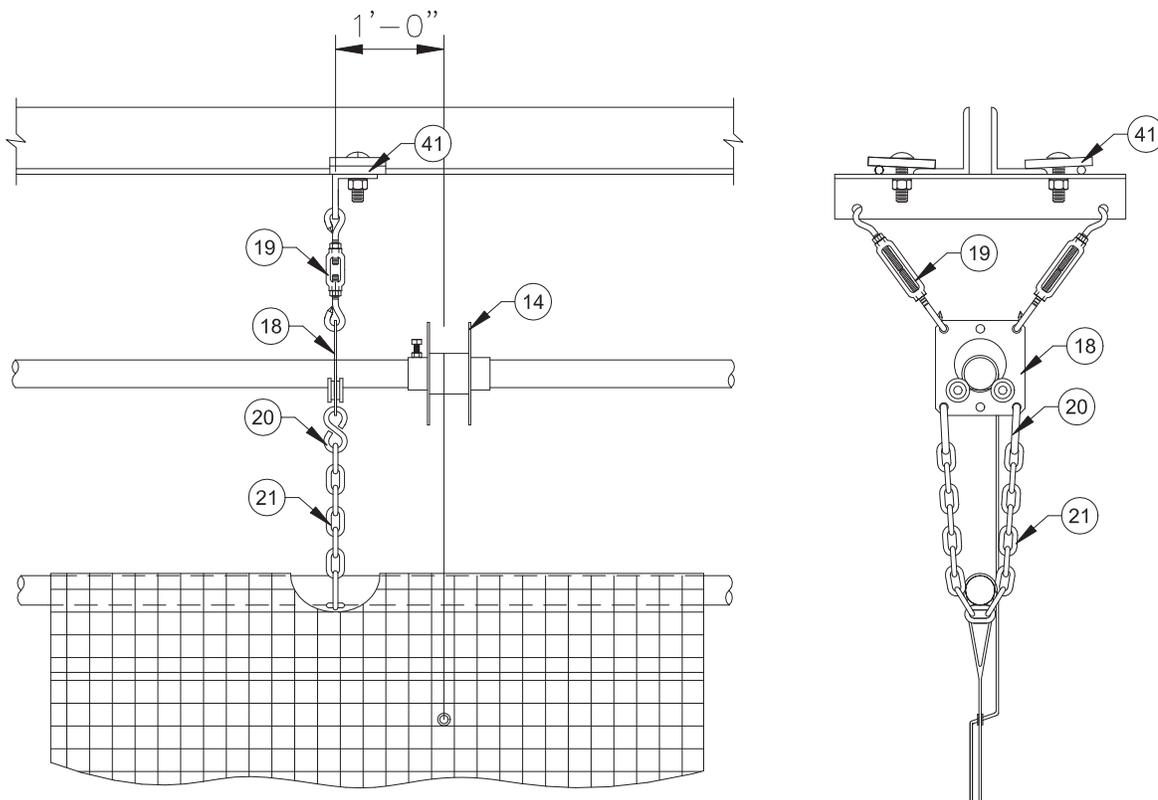
6. Locate the winch support adapter, and mount as detailed on the project-specific installation prints.
7. Now secure the winch to the winch support adapter, and attach with the four (4) 3/8" x 1-1/2" grade 5 cap screws, lockwashers, and grade "C" convex lock nuts. The winch coupler (output shaft) now determines the elevation for the line shaft. Sight down the length of the curtain area to determine if there is any interference with the shaft location. If interference exists, contact the factory. A longer winch adapter and drop brackets may be required.
8. Now mount the first and second roller support attachments to the support structure as detailed and dimensioned on the installation print. The brackets are provided with vertical adjustments to level the line shaft. See Details on pages 14 or 28 for typical line shaft support attachments. See installation drawings for job-specific details.
9. Referring to the installation drawing, determine how many drums must be slid onto each section of line shaft before proceeding. Just before securing the line shafts to the winch and to the coupler, it will be necessary to slide the proper amount of drums onto each section.
10. Slide the pre-drilled line shaft assembly from step no. 3 into the winch coupler output shaft (15), and support the opposite end from the roller bracket. Is the drum slid onto the shaft? Secure the shaft to the winch coupler, utilizing two (2) 1/2" x 3-3/4" lg. grade 5 cap screws, and secure with 1/2" grade "C" convex locknuts, tightened to a minimum 20 ft/lb setting (See Detail "D").
11. After the first line shaft section is in place, secure the next section (from Step No. 5) to it. Slide the next section into the line shaft coupler until it bottoms out on the previous section. Drill for and install the 5/16" x 7/16" lg. drive rivet. Then drill for and install the 1/2" x 3-1/2" lg. grade 5 cap screw, and secure with a 1/2" grade "C" convex locknut, to a minimum 20 ft/lb setting. Repeat for all remaining line shaft sections. (See Detail "D").
12. Make certain the line shaft is level. This is critical to the proper operation of the unit. Adjust as necessary at each roller support attachment. **DO NOT PROCEED UNTIL THE LINESHAFT IS LEVEL!**



LINE SHAFT SUPPORT

1. Ideally, the roller support brackets are to be 1'-0" offset from the take-up cable lines (again, refer to the installation print). If an obstruction occurs at the dimensioned support location, the offset may be increased, but never more than 3'-0" from the take-up cable line. Refer to Detail "F" for a typical roller support attachment.
2. Attach the turnbuckles and roller support brackets as shown. Be certain to crimp the turnbuckle hooks closed. Attach the 5/16" "S" hooks to each end of the 3/16" chain, and hook on to the roller support bracket. The chain will secure the top pipe in the curtain hem to the structure.

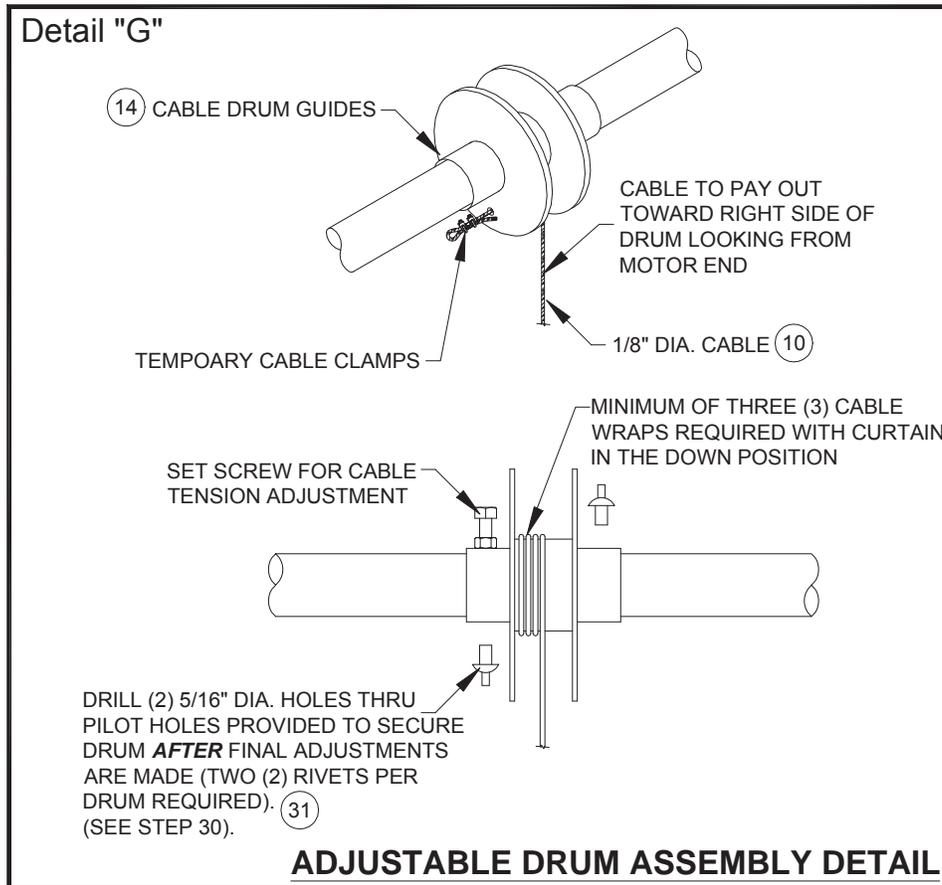
Detail "F"



TYPICAL ROLLER SUPPORT ATTACHMENT

ASSEMBLY AND ADJUSTMENT OF CABLE DRUMS

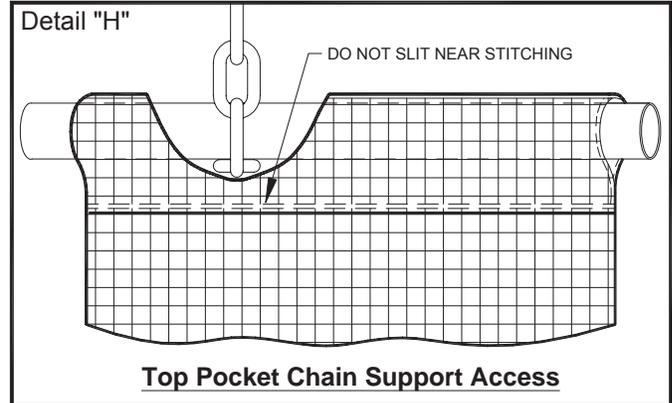
Center the cable drum assemblies (as installed in step 9) on the shaft per the dimensions given on the installation print. Check the centerline of each cable drum to ensure the location is correct. The cable drum location can be marked on the floor with tape, and transferred up to the line shaft by a plumb bob or laser. The cable drums are **not** to be secured with rivets to the line shaft until the curtain fabric is in position. Spin the drums so that all the cable holes in the side plates are facing directly toward the floor (this will help with the adjustment of the drums). Once this is done secure the drums in place temporarily with the set screw located on the drum (See Detail "G").



PREPARING THE FABRIC FOR INSTALLATION

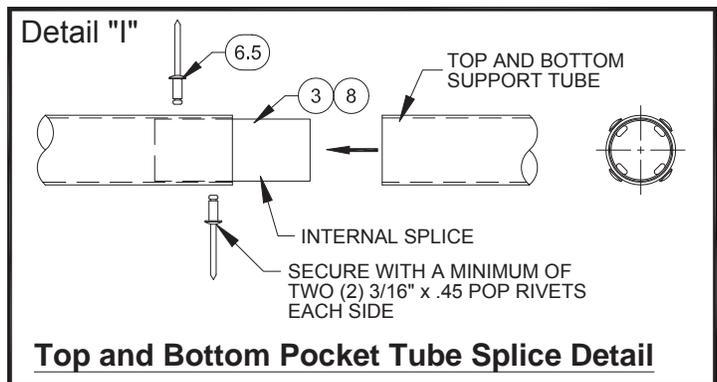
1. Clean the floor area (with broom and dust mop) and unfold curtain fabric. If working over an unfinished floor, lay out a tarp to keep the fabric from picking up dust and dirt.
2. When laying out the curtain, have the grommets in the bottom pocket facing up. Position the bottom of the curtain close to the centerline of the drive shaft so that the initial folding leaves the top on top.

3. Once the support chain locations are properly transferred to the fabric, the next step would be to cut out semi-circles with a utility knife in the top pocket. Be certain to protect the finished floor before commencing. A roll of tape or 3 1/2" pipe cap can be used as a template to provide a neat cut (See Detail "H"). The material at the top pocket can also be slit **after** the fabric is hoisted in the air to secure the chain support around the top 1 5/16" tube.

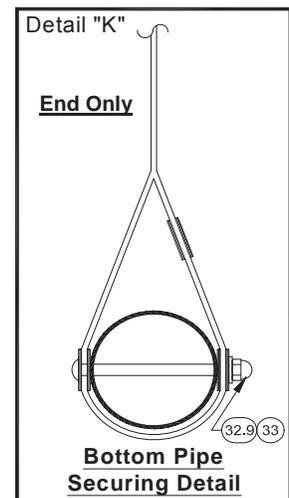
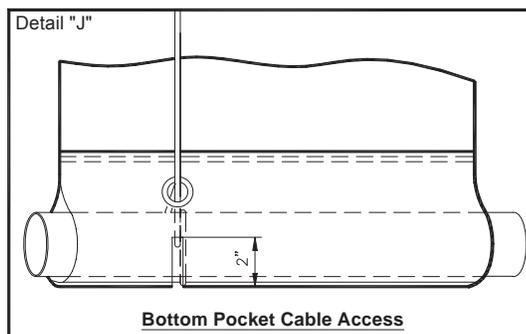


4. Sleeve the 1 5/16" O.D. tubing in the top pocket of the curtain, taking care that the sleeves are fully engaged. Note that the tubing will be longer than the curtain fabric. Each splice must be secured with a minimum of four (4) 3/16" x .45 Lg. rivets. (See Detail "I"). (Installers may want to wrap splices with duct tape so that heads of rivets do not cut or hang up on the mesh when sliding the top tube through the top pocket.)

5. Taking care to protect the finished floor, slit the bottom pocket below each grommet line, 2" up from the bottom, through both vinyl walls (See Detail "J"). Sleeve the 1 5/16" O.D. tubing in the bottom pocket, ensuring the weighted tubing with a hole drilled at one end is at each end of the curtain. Again, each splice must be secured with a minimum of four (4) 3/16" x .45 Lg. rivets. Install a plastic cap at each end, making certain the cap is fully engaged on the tubing. Using a utility knife, slit the cap at the hole location, creating an access for the 3/8" x 2 1/2" Lg. (3 1/4" Lg. for curtains with a padded tube) round socket head cap screw. Insert the cap screw through the curtain grommet, tubing and through the opposite curtain grommet, and secure with a 3/8" lock type acorn nut (See Detail "K").

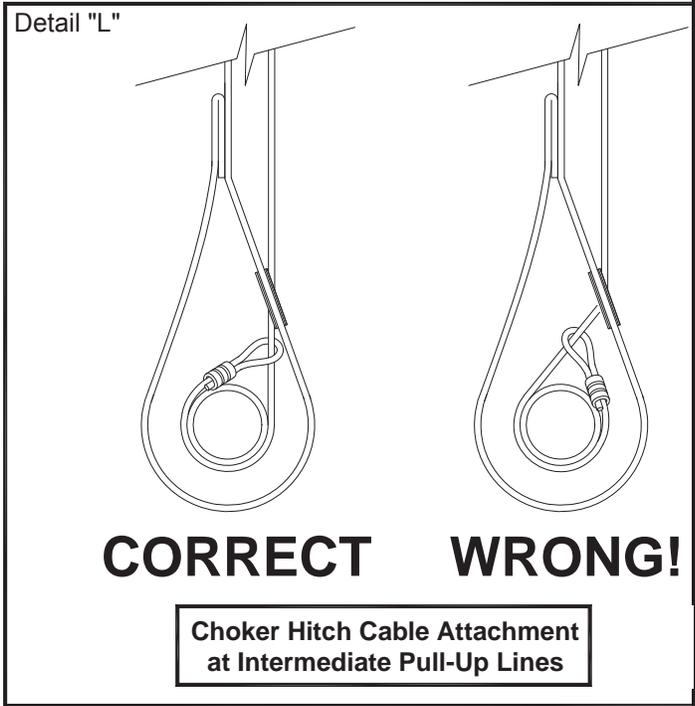


6. Once the bottom tube is secure you must then route the cable through the vertical grommet lines, it may be advantageous to insert a 3/8" hollow tube through the grommet lines, with the fabric folded in an accordion manner, but is not necessary (See Detail "M").



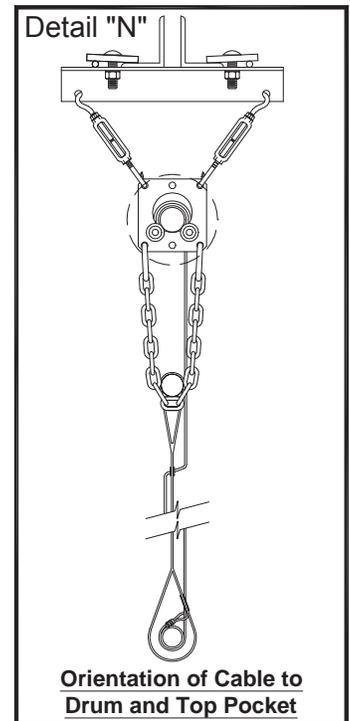
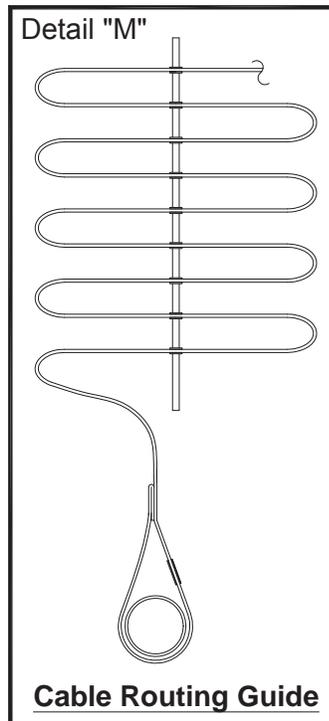
INSTALLATION OF THE PICK UP CABLES

1. The cables are sent pre-cut with a loop clamped on one end. The looped end will terminate in the bottom pocket. Inspect the Nicopress® clamps for any sharp edges, and wrap with duct tape, as necessary.
2. Insert the straight end of cable into the single grommet in the bottom pocket.
3. Work the cable across the top of the pipe, then down and around and, finally back up through the same grommet.
4. Insert the plain end of the cable through the loop at the opposite end and pull until the loop seats itself inside the bottom pocket, creating a choker hitch. Be certain the Nicopress® clamp is located on the top of the pipe, and not on the side. If installed incorrectly, the clamp will fatigue the fabric (See Detail "K"). All intermediate cables loop around the pipe as shown.



5. The next step in the installation of the pick up cables is to feed the plain end of the cable through all remaining grommets, using either the 3/8" hollow tube method (Detail "M"), or aligning all of the grommets and threading the cable through. The side of the fabric on which the cable exits the last grommet, is the side the cable must attach to the cable drum assembly (See Detail "N").
6. Once the cables are all fed through all of the grommets in the fabric you must secure the cables to the drum assemblies. Use a 1/8" U-bolt type cable clamp for the initial attachment of the cable ends to the drum assemblies. **Do not** cut excess cable at this point! (See Detail "G")

Optional: For installers experienced with the Model 670-1 & 670-2, feed the cable through the hole in the drum and pull tight. Leave 24" of cable and cut. Install Nicopress® clamp over a looped end (Same as the opposite end of the cable.) Rotate the drum (be certain to rotate in proper direction so cable is not underslung (See Detail "M") until the cable is taught.

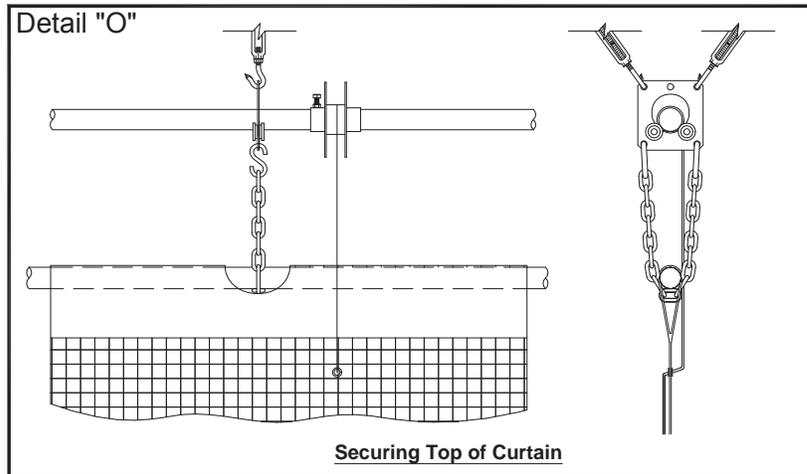


Important: Three (3) initial wraps of cable are to be on each drum with the curtain in the "Down" position, 1" off of the finished floor.

HOISTING CURTAIN AND FINAL ADJUSTMENTS

1. The next step is hoisting the curtain up and securing the top pocket of the curtain to the roller support attachments with the 3/16" chain (See Detail "O").

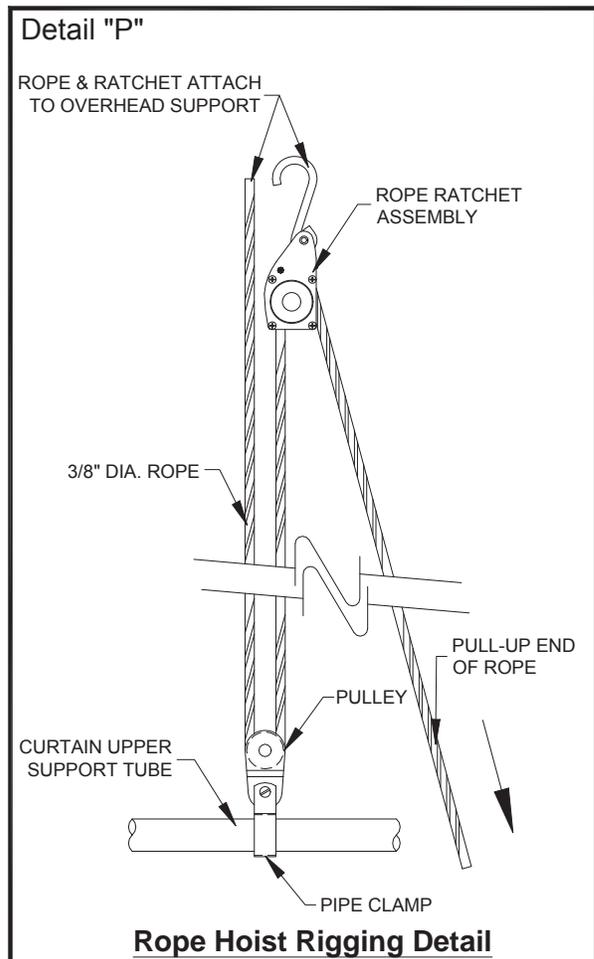
If electric has not been put in place at time of install then utilize the "Cheater" Box Assembly with plug (Porter part no. ELEC00201000 or equal) for drop cord operation. Should the winch not lift the curtain in place, plug the extension cord in as close to the circuit panel as possible.



If no electric is available at the time of installation, the method of raising the curtain fabric to the support assemblies is by utilizing a 02080-INS installation kit (See Detail "P"). The kit consists of a set of ropes, pulleys, clamps and rope ratchet mechanisms. The Kit provides a block and tackle type mechanical advantage, along with a ratchet type lock to prevent the curtain from falling while being raised. Start raising the curtain slowly and evenly, continue raising the curtain until the upper support tube can be attached to the support assemblies. Feed 3/16" proof coil chain through the slit in the top pocket, under the 1 5/16" tube and secure to support assembly with "S" hooks. Make adjustments as required to maintain a consistent distance between the support assemblies and top of curtain. Curtain fabric must also maintain an equal distance of one inch above the finished floor along its entire length.

Make certain the top of the curtain is level, with a 1" gap between the bottom pocket and the finished floor.

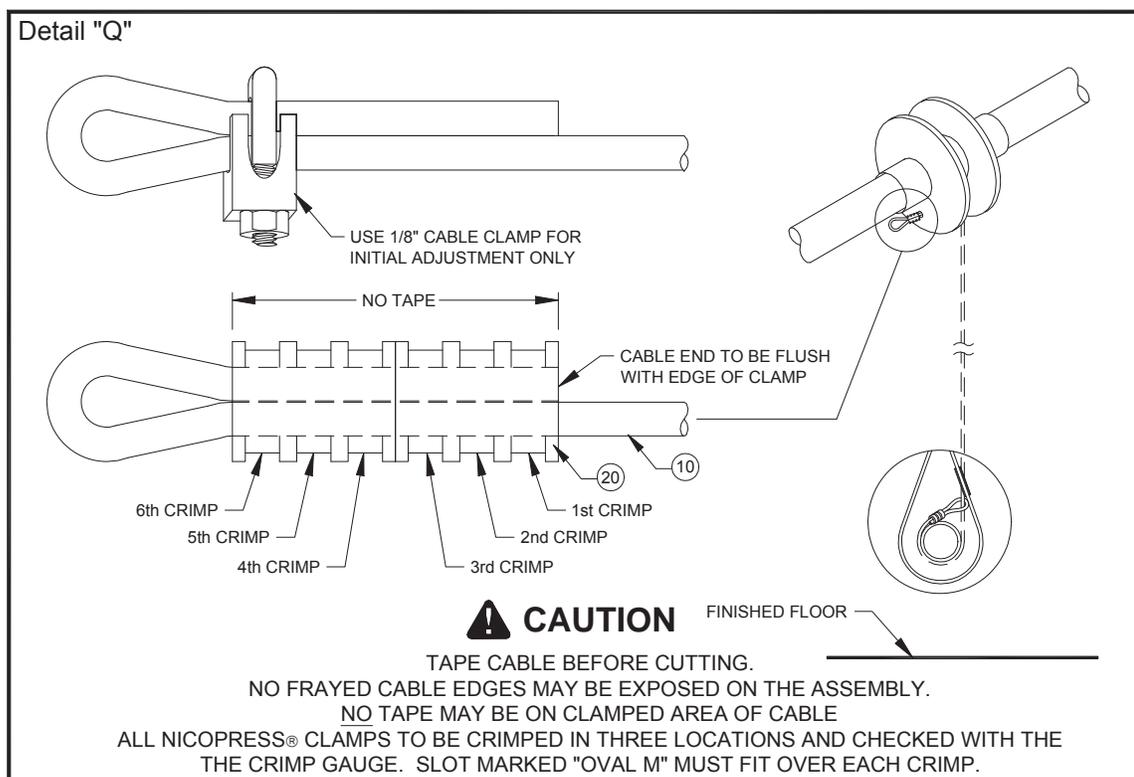
2. With the curtain in the "down" position, adjust the cable tension by rotating each drum manually, ensuring each cable on the line shaft has even tension. Once this is done, the drum ends of the cable will require two (2) Nicopress® clamps to secure the cable. Cut the existing excess cable and secure the loop with two (2) 1/8" Nicopress® clamps, again referring to Detail "Q".



- Remove all tape from area of cable to be secured with clamp
- Slide two clamps over two widths of cable, forming a loop, and insert cable thimble.
- The cable must be flush with the end of the Nicopress® clamp.

HOISTING CURTAIN AND FINAL ADJUSTMENTS

- Crimp the Nicopress® clamp in the sequence shown in Detail "Q" – first at the end furthest away from the loop, next at the middle of the clamp and last at the end closest to the loop. Now crimp the second clamp in the sequence shown.
 - Three (3) crimps must be visible on each Nicopress® clamp.
 - Check each assembly with the gauge. Check all three crimps. The slot on the gauge marked "Oval M" must fit over each crimp. If it does not, then the crimp is too loose. The cable assembly must be rejected. The crimping tool must be adjusted accordingly.
3. Energize winch (either by the key switch or "Cheater" Box), to raise the curtain no more than two feet off the ground. Inspect each take up drum to ensure the cable is aligned and that all slack is out of cable pull up lines. Adjust the drum(s) horizontally on the line shaft. Now check that the curtain is plumb, and level to the floor. Leveling and relieving any slack in any of the cable pull up lines can be done by adjusting the cable drum assemblies (spinning the drum on the line shaft to achieve proper tension). After adjustments are made, cycle the curtain up and down to ensure proper adjustments have been made. Once the curtain is plumb and level, lower the curtain close to but not directly in the full down position, and start your final adjustments. The final adjustment stage consists of the following:
- Ensure a **minimum** of three wraps of cable are on each drum with the curtain 1" above the finished floor.
 - Closing all "S" hooks. (20)
 - Closing all Turnbuckles. (19)
 - Drill for and install two (2) drive rivets (31) to each of the adjustable drum assemblies (14) on the line shaft. (See Detail "G")



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

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