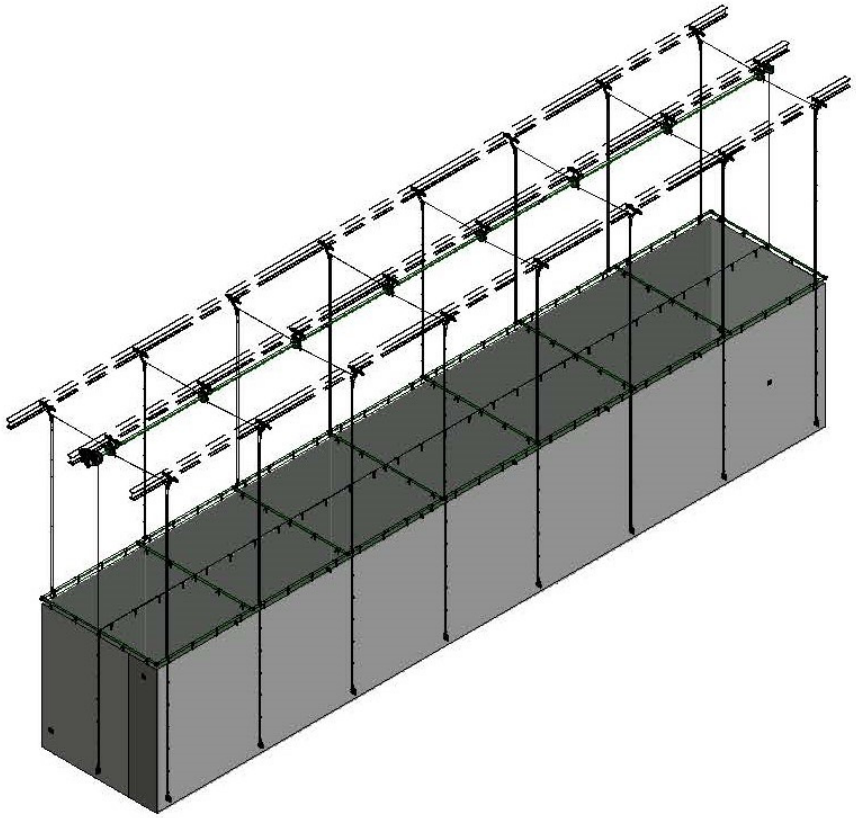
Bottom Lift Cage

Models: 4080BL



Operation and Maintenance Instructions

Please read all instructions before attempting operation of these units

SAVE THESE INSTRUCTIONS FOR FUTURE USE

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Introduction/Liability Disclaimers

Thank you for your purchase of a Model 4080BL Bottom Lift Multi-Sport Cage. To ensure that our equipment will provide years of use to you, we are including this operation, and maintenance guide. This guide will provide information on the proper operating procedures, and preventative maintenance of your gymnasium Bottom Lift Cage.

Please do not substitute for factory parts. If any parts are missing, do not substitute non-factory parts. Please contact your dealer and allow them to determine if substitute parts are acceptable.

It is recommended that an individual who has been properly trained perform operation of the Bottom Lift Cage. No one under the age of 18 should operate the cage, unless properly supervised.

To prevent normal wear and tear from shortening the life of the cage, preventative maintenance inspections and repairs should be performed at least once per year. If the cage is subject to high or unusual usage, inspections should be scheduled to occur more frequently. If items are found to be nonconforming, replacements can be ordered from an authorized dealer. When contacting your dealer, please have information regarding the name of the project, and any applicable warranty information.

Please note that manufacturer assumes no responsibility for the building structure to support its products. We believe it is the responsibility of the building designers to determine the correct structure size to support our products. We will provide your structural engineers with all required weight and loading information as required for the project in order for them to calculate the appropriate structure.

Tools Required:

Hammer
3/8" Hand Drill
Drill Bits – 3/16" and 1/2" with 3/8" Shank
3/8" Ratchet Wrench with 1/2" and 9/16" Sockets
1/2" Ratchet Wrench with 9/16", 11/16" and 3/4" Sockets
Wrenches – 1/2", 9/16", 11/16" and 3/4"
3/16" Allen Wrench
4" C-Clamps (2)
4' Level
File (half round)
25' Tape Measure
Cable Cutters
Utility Knives
Wire Stripper
Small Screwdriver
Ratcheting Pulleys (3-5 depending on length of curtain)
75' Ropes (3-5 depending on length of curtain)
100' 14-4 Wire (depending on length of curtain)
Wire Nuts
Duct Tape
Block of Wood (for tapping)
Broom
Shop Vac
Protective Covering for Floor

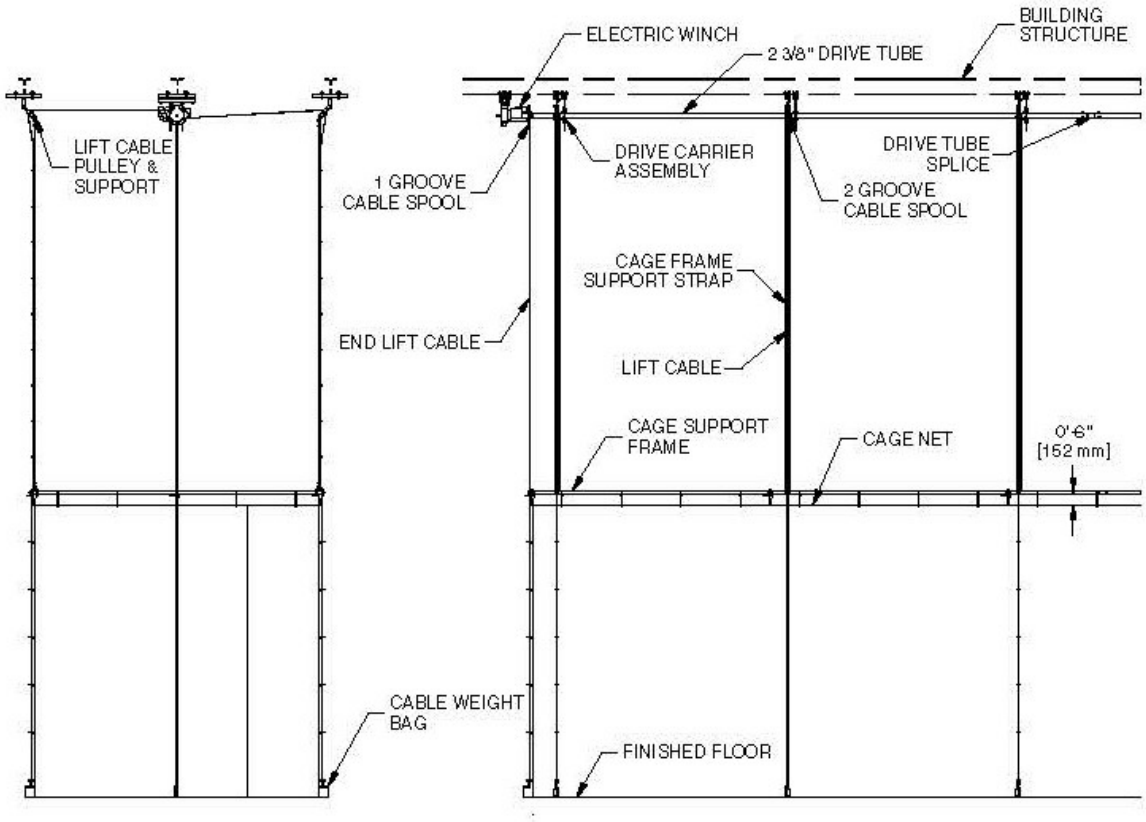
IMPORTANT: A minimum of three people is recommended to be available to assist with the installation.

RECOMMENDED BOLT TORQUE				
Bolt Size	Wrench Size	In-Lbs	Ft-Lbs	Nm
1/4"	7/16"	66 to 90	5.5 to 7.5	8 to 10
5/16"	1/2"	132 to 180	11 to 15	15 to 20
3/8"	9/16"	234 to 318	19.5 to 26.5	27 to 36
7/16"	11/16"		31 to 42.5	43 to 58
1/2"	3/4"		47 to 65	64 to 88
9/16"	7/8"		68 to 90	93 to 122
5/8"	15/16"		94 to 130	128 to 176
3/4"	1-1/8"		166 to 230	226 to 312
7/8"	1-5/16"		269 to 372	365 to 504
1"	1-1/2"		402 to 566	546 to 767

INSTALLATION

1 Installation instructions below are general in nature. Your exact installation needs to follow the parts and any specific instruction included in your specific project's production drawings.

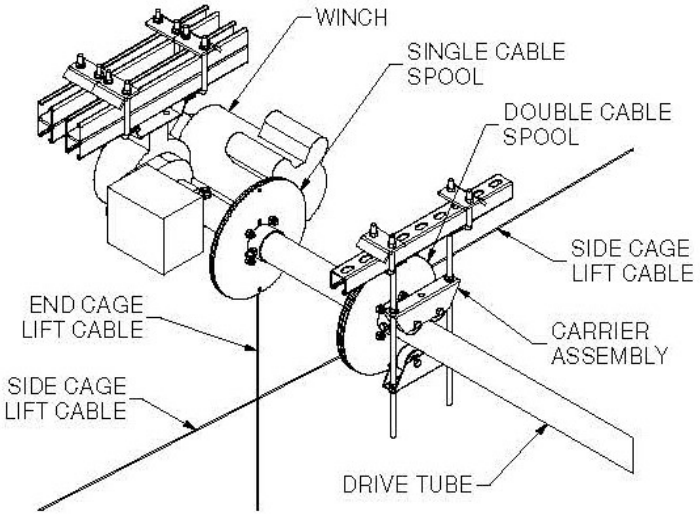
2 Locate, identify and count all parts before starting the installation to ensure that all are correct and correspond to the packing list/production drawings. Also review production drawings to ensure that building conditions have not changed since the initial field check. Verify overall height and width noted on drawings.



DRIVE TUBE INSTALLATION

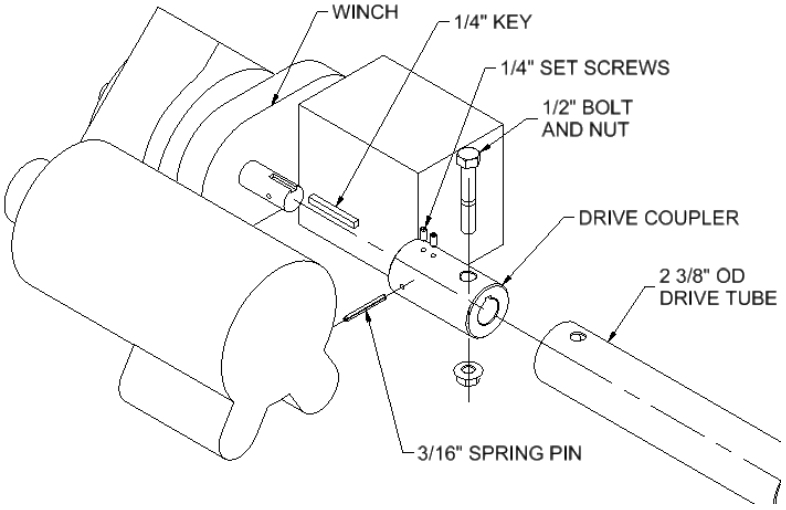
The drive shaft installation will be comprised of mounting the winch, mounting the carrier assemblies installing the spools and drive tube then connecting the cables to the spools.

The connection to the building structure may look different than the typical Uni-strut connection shown in the illustration in these instructions. Refer to your install drawings for the exact connection for your project.



1 **Winch installation**.

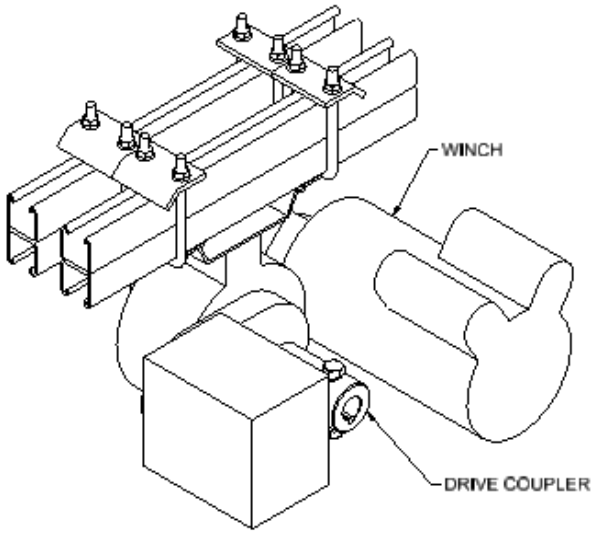
a. Unpack the winch, confirming the part number is correct for your installation.
b. Install the drive coupler as shown in the illustration to the right. Be sure that the key, the 3/16" spring pin is installed and the setscrews are tightened to the shaft. Loosely install the ½" bolt and nut at this time. Note: It may be necessary to rotate the winch shaft to allow for installation of the Spring Pin. When completed, rotate the shaft so that the ½" bolt is vertical so that drive shaft may be installed at a later time.



⚠ WARNING

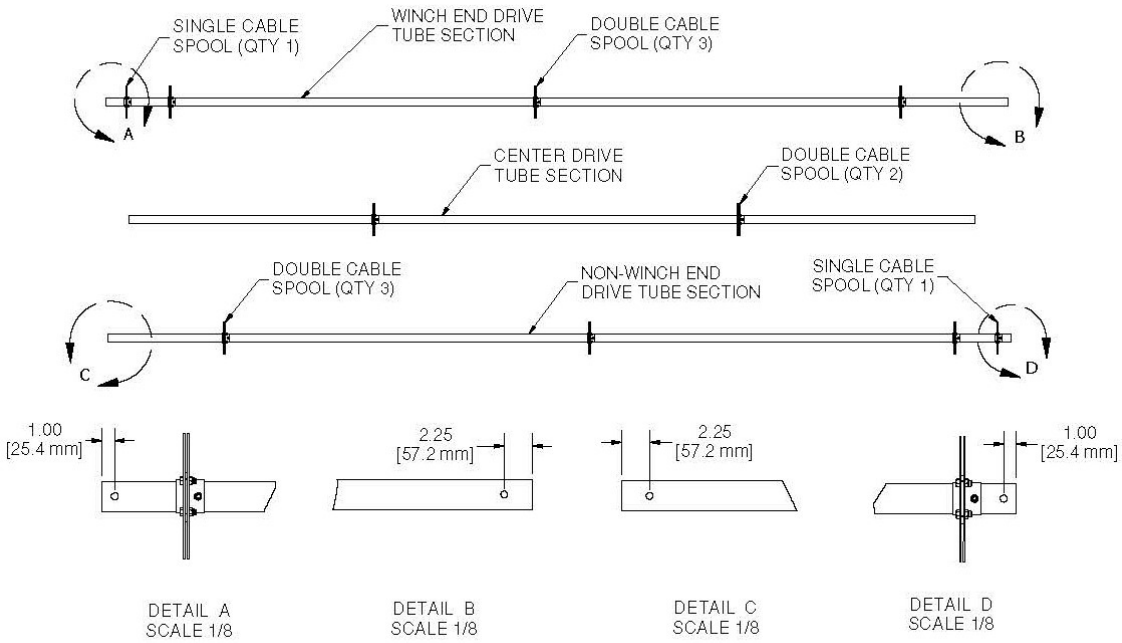
Failure to install the spring pin and/or the square key and securely tighten the set screws could allow the coupler to slip off the shaft allowing the cage to free fall resulting in damage to the cage and/or injury to personnel.

c. Attach the winch and coupler to the building structure using the parts as indicated in your projects installation drawing package.



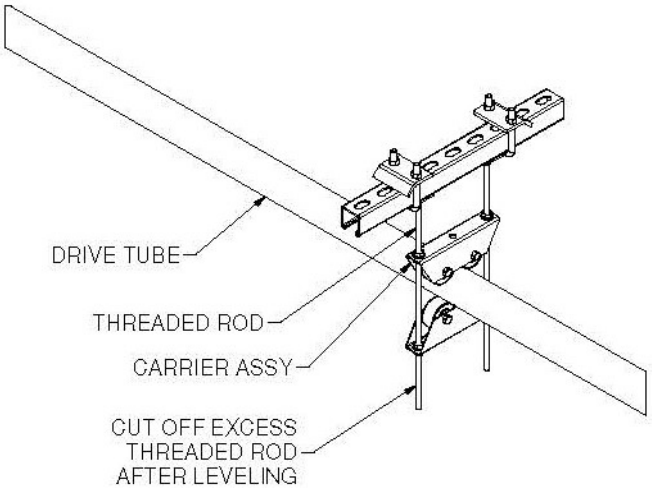
2 Drive Tube Preparation

a. Layout the 3 drive tube sections as shown in the illustration below.
b. Slide the spool sections onto each drive tube section as shown. Make sure the long hub portion of the spool is facing away from the winch.



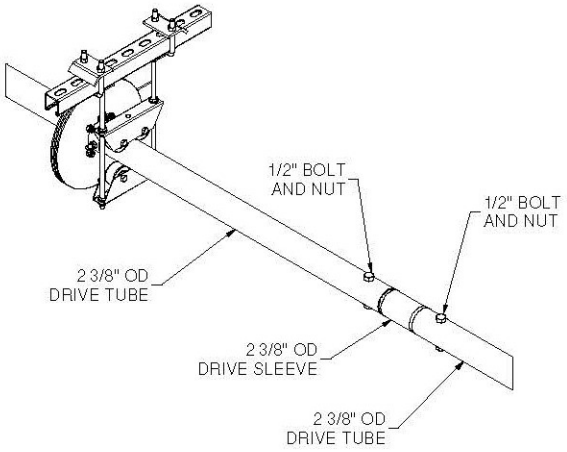
3 Carrier installation

a. Refer to installation drawing package for the locations of the drive tube carriers and spools.
b. Begin installing the drive pipe and carriers from the winch end by installing the winch end drive tube section first.
c. Install the drive tube carrier assembly as shown in the illustration to the right using 3/8" threaded rod. There will be a top and bottom carrier assy.
d. Each carrier will be secured to the threaded rod with (4) Flanged wiz lock nuts.
e. Connect the drive tube to the winch as shown on the previous page and then adjust the carrier threaded rod nuts to make the drive tube section level.
f. Repeat the process with each drive tube section.



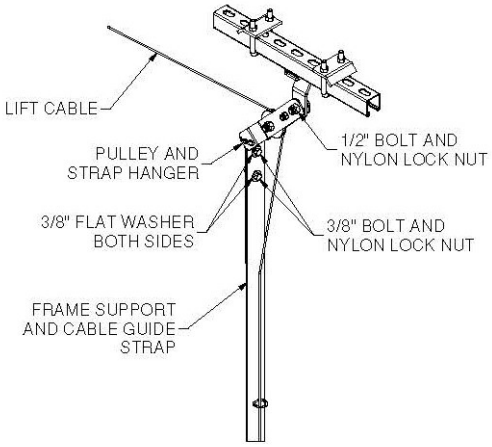
4 Drive tube splice installation

a. Install the drive tube splice into the end of the sections of the drive tube. Align the holes in the drive tube with the holes in the drive sleeve.
b. Install the 1/2" bolt and nut in each hole and tighten securely.

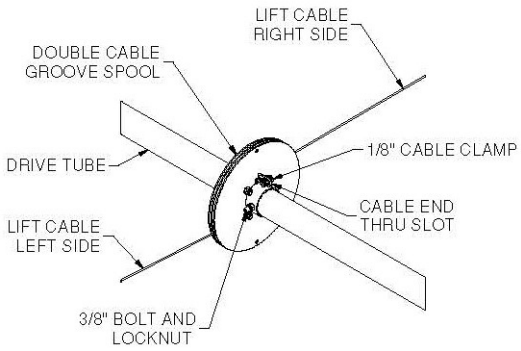


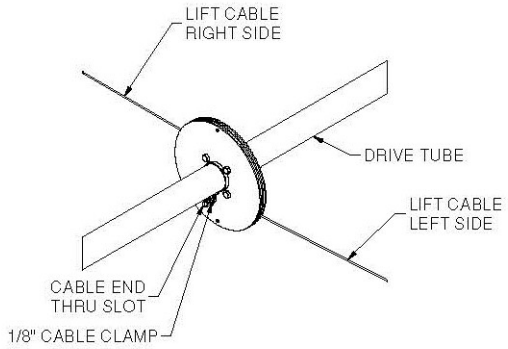
5 Frame support strap & Pulley hanger installation

a. Refer to the installation drawing package for the locations of the strap hangers and pulleys.
b. Attach the pulley & strap hanger to the building support structure.
c. Connect the top of the strap to the hanger using the pin and keeper on the hanger bracket. Make sure the "D" rings on the strap are facing outward from the cage.
d. Thread the 1/8" cable through the "D" rings on the strap, over the pulley, and over to the drive shaft.
e. Repeat this step for each of the lift points on both sides of the cage.



6 Spool installation





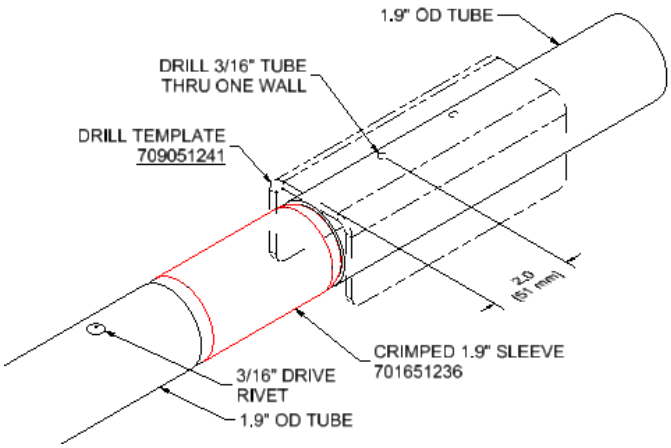
a. Refer to the installation drawing package for the locations of the spools. It is important that the double groove spools are directly in line with the strap hanger & pulleys on each side.
b. Make sure the cable end slots in the spools are vertical. Using the hole in the spool hub, mark the drive tube for the location of the hole.
c. Drill a 7/32” hole through the drive tube.
d. Slide the spool back into location and install the 3/8” bolt and locknut.
e. Lay the right side lift cable into the cable groove and pull the end of the cable through the slot in the plate.
f. Lay the left side lift cable into the opposite cable groove and pull the end of the cable through the slot in the opposite plate.
g. Make a loop of the right side lift cable on the end protruding from the slot and install a 1/8” cable clamp to prevent the cable from being pulled back through the slot. Repeat this on the left lift cable end protruding from the slot.
h. Repeat this process for each of the spools and lift cable points.

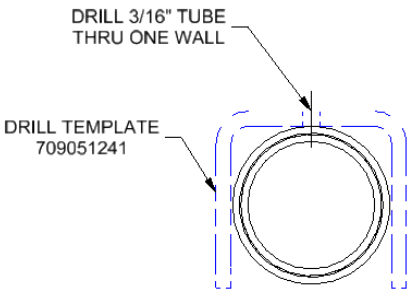
7 Frame Installation

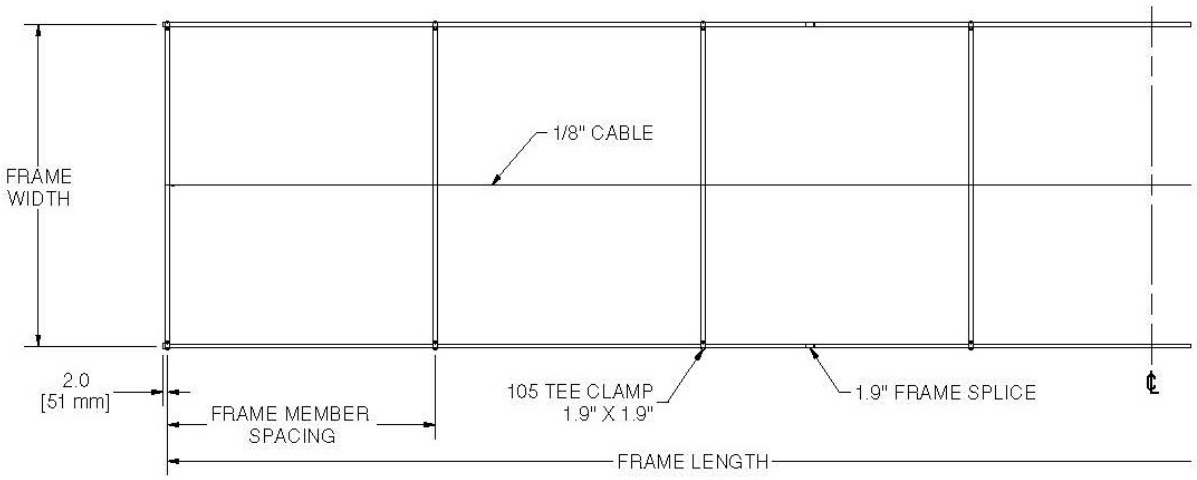
a. Assemble the two long side tubes of the frame using the longer sections of 1.9” OD tubing as shown in the installation drawing package furnished with the shipment and the 1.9” frame splices.
b. Secure the frame splices to the 1.9” OD tubing with 3/16” drive rivets as shown in the following illustrations.
c. Using the following illustrations as a guide and referring to the installation drawing package for proper dimensions, assemble the cage lift frame.

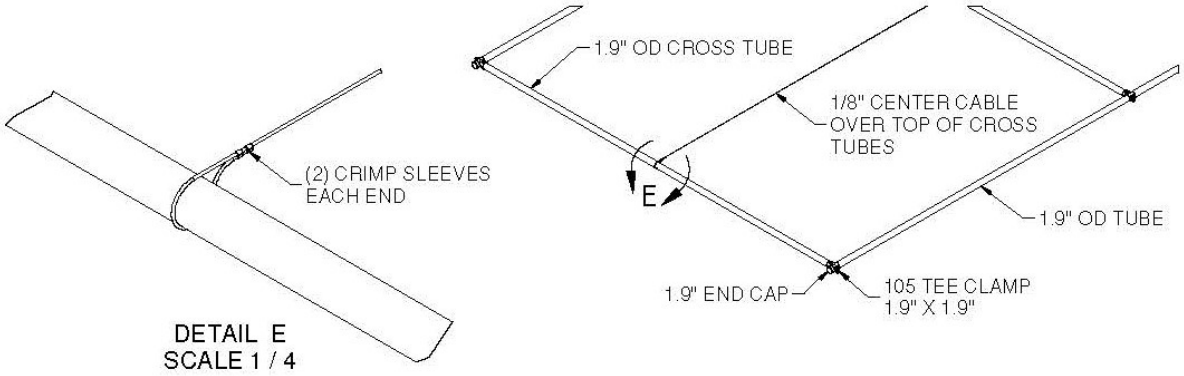
NOTE:

In most installations, it is easier to assemble the two long sides of the frame. Raise each side individually and attach the support straps before assembling the cross tubes and center cable to make up the lift frame assembly.



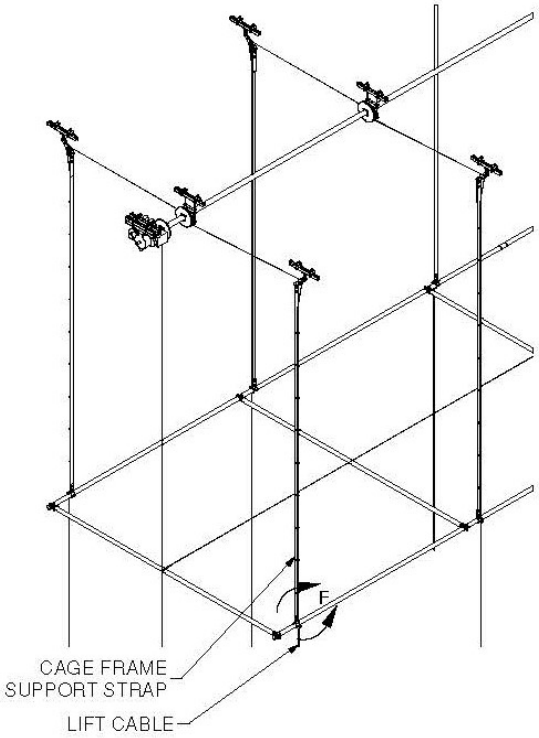


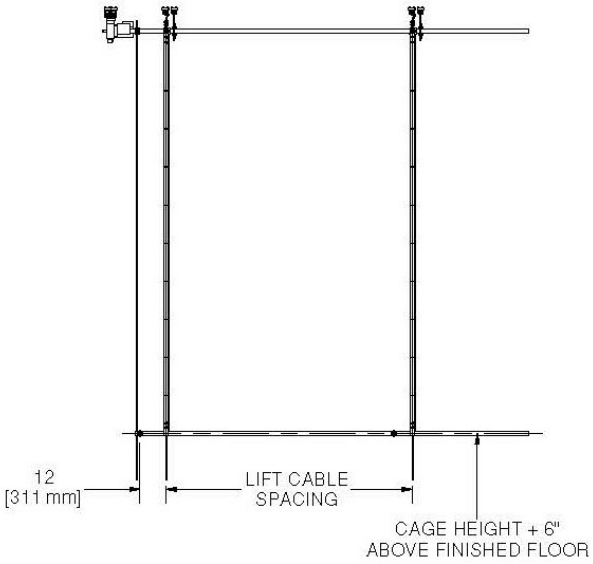




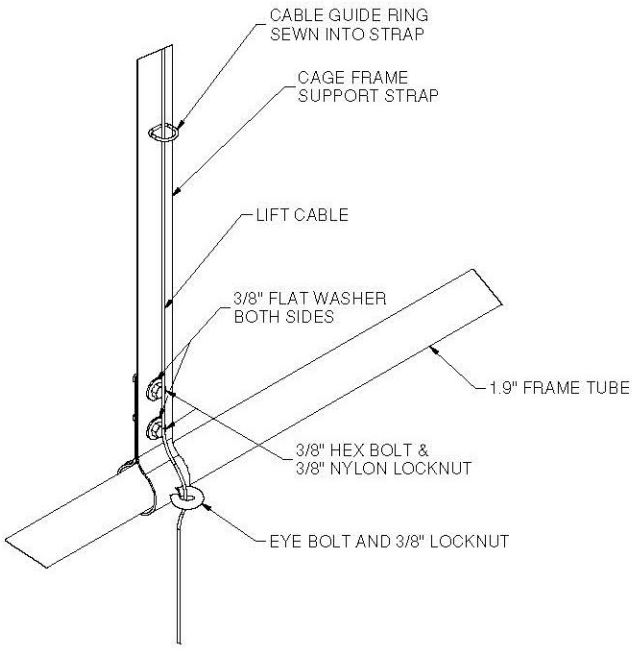
8 **Frame Connections**

a. The following illustrations show the connections of the lift frame to the support straps. Refer to the installation drawing package for proper location dimensions.





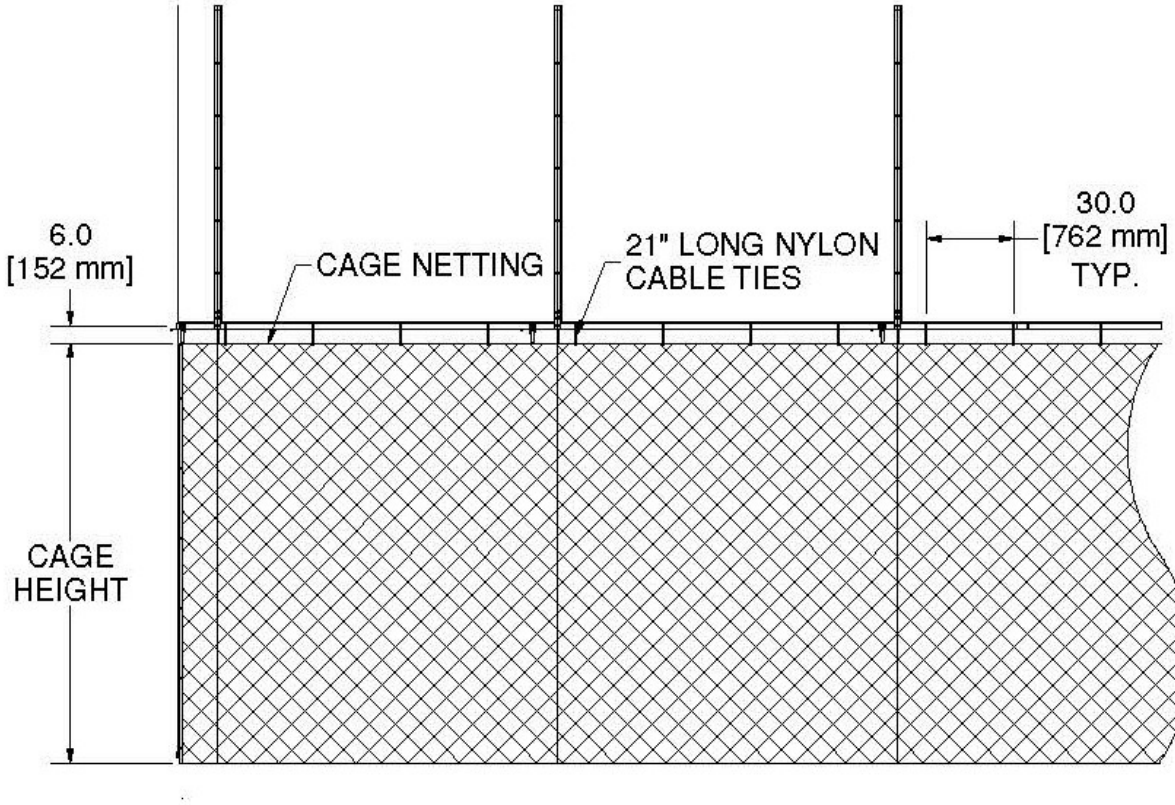
b. Raise the frame side tubes to the cage height + 6". Wrap the bottom of the support strap around the 1.9" side tube and secure with two 3/8" hex bolts, flat washers, and locknuts.
c. Repeat this process for all of the connection straps on each side.
d. Check the side tubes for level and equal height above the finished floor.
e. Install the cross tubes at the dimensions shown on the installation drawing package.
f. Install the center 1/8" cable as shown in the previous illustration.
g. At each strap connection to the frame, Drill a 13/32" hole through the center of the 1.9" pipe and strap. Install the eye bolt and nut as shown in detail F.



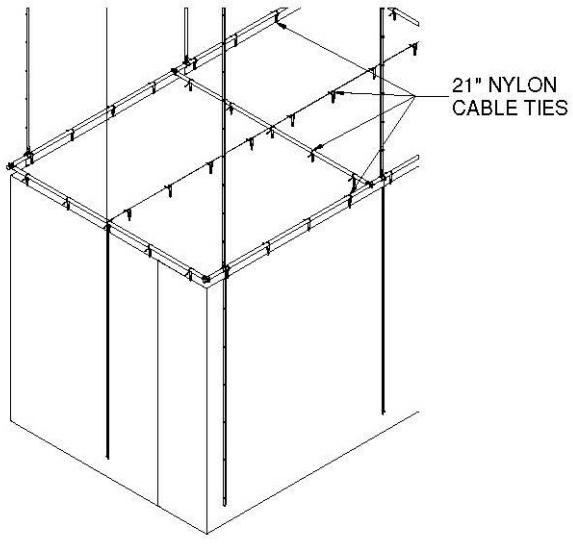
DETAIL F

h. Starting at the top, route each lift cable down through the cable guides in the support strap and then through the eye bolt.

9 **Net Installation**

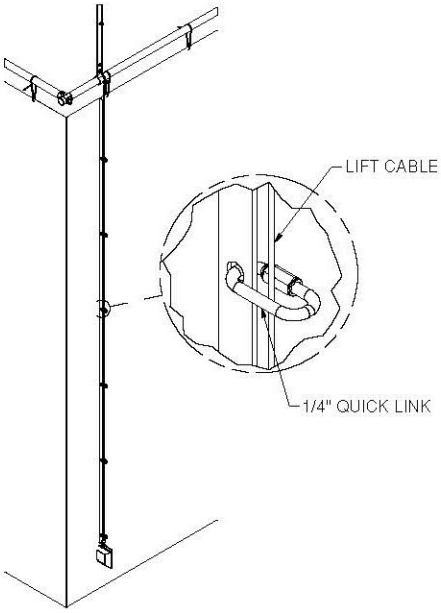


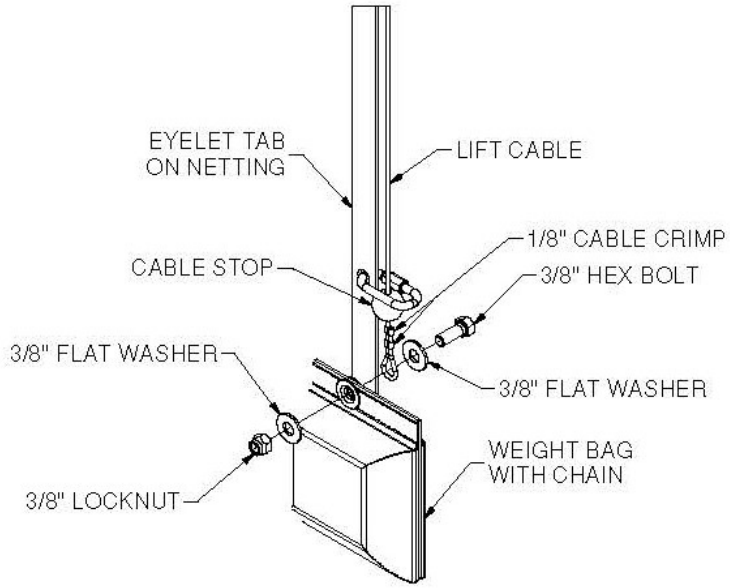
a. Pull the netting up to the cage lift frame and attach the netting using the 21” long nylon cable ties. Adjust the length of the cable tie to allow for 6” between the net and the lift frame.
b. The cable ties should be no greater than 30” apart and should be looped over the nylon cord of the edge of the netting around the perimeter.
c. On the cross tubes and 1/8” cable in the center of the net, attach the nylon cable ties to netting.
d. There should be about 12” of netting drooped on the floor after the cable ties have been installed.



10 **Installing the lift cables and weight bags**

a. Install a ¼" quick link in each grommet on each of the eyelet tabs of the net.
b. Route the 1/8" lift cable down through each quick link.
c. Slide the cable stop onto the end of the lift cable. Make sure the large opening of the cable stop is facing down.
d. Approximately 3" below the lowest quick link, make a loop in the cable just large enough for a 3/8" bolt to pass through. Install two (2) 1/8" cable crimps to secure the loop in the cable. Check each crimp with guage.
e. Trim the loose end of the cable back to flush with the top cable crimp.
f. Install the weight bag with chain using the 3/8" hex bolt, 3/8" flat washers, and 3/8" nylon locknut.
g. Slide the cable stop down over the cable crimps.
h. Repeat the process for each of the lift cables around the net.

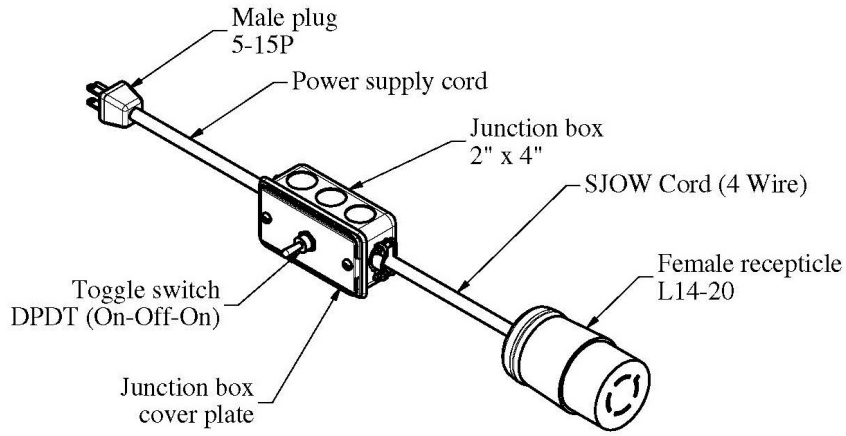


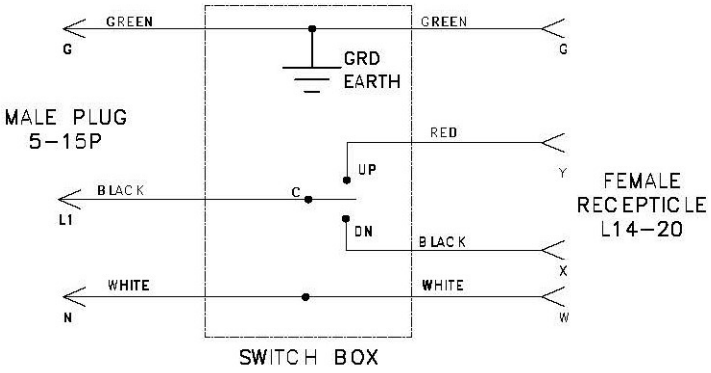


11 Connect electricity to the motor and operate the cage to set the limit switches. Most installations will require temporary wiring to be connected for power to set the motor limits and test the curtain. Permanent wiring will be installed later by the electrical contractor.

For temporary power to the motor, a test cord as shown can be manufactured locally or purchased from the factory. In order to provide the required voltage and amperage to the motor, the cord must meet the required wire sizes for the specified distance.

Extension cord for testing must be 16-3 or heavier up to 25 feet run, 14-3 or heavier for 25 to 50 feet run, 12-3 or heavier for 50 to 90 feet run, and 10-3 or heavier for 90 to 140 feet runs.





Test Cord Schematic

⚠ CAUTION

Operating the motor with insufficient voltage and/or amperage will damage the motor control box.

Damage caused due to inadequate electrical supply will not be covered under warranty.

Setting Limit Switches

a. With the cage in the down position, there should be about 2" of clearance between the bottom of the cage and the floor. Be sure that the hoist is unplugged before proceeding.
b. Make sure the hoist motor is UNPLUGGED from the test cord.
c. Loosen the retaining screw on the limit box cover and remove the cover.
d. Press the black index locking bar away from the down direction index wheel so it can rotate freely. Rotate the wheel until the switch "clicks" indicating that the switch is active.
e. Connect the power by plugging the motor into the test cord and raise the cage to the up position. Check that the cage is folding correctly and not creasing or binding the vinyl.

⚠WARNING

The motor and electrical circuit is now HOT.

Do not handle any wires, use only the key switch to operate the cage.

f. The cage should be raised no higher than necessary and the grommets or D-rings should fold onto on themselves evenly. Uneven folding of the vinyl can cause excessive wear.
g. Press the black index locking bar away from the up direction index wheel so it can rotate freely. Rotate the wheel until the switch "clicks" indicating that the switch is active.
h. Reconnect the power.

i. The cage should be raised and lowered several times to make sure that the cables are tracking properly and the limit switches are set correctly. Make sure that the bottom of the cage is parallel to the floor.
j. Replace the cover on the limit box and securely tighten the screw.
k. Determine whether to leave the cage in the up or down position. Leaving the cage in the down position will help to remove wrinkles from the vinyl.
l. Disconnect the temporary wiring and leave these instructions with the electrician or general contractor.
m. **Make sure Facility Electrician or Facility Manager has a copy of the wiring schematic that was furnished with the installation drawings.**

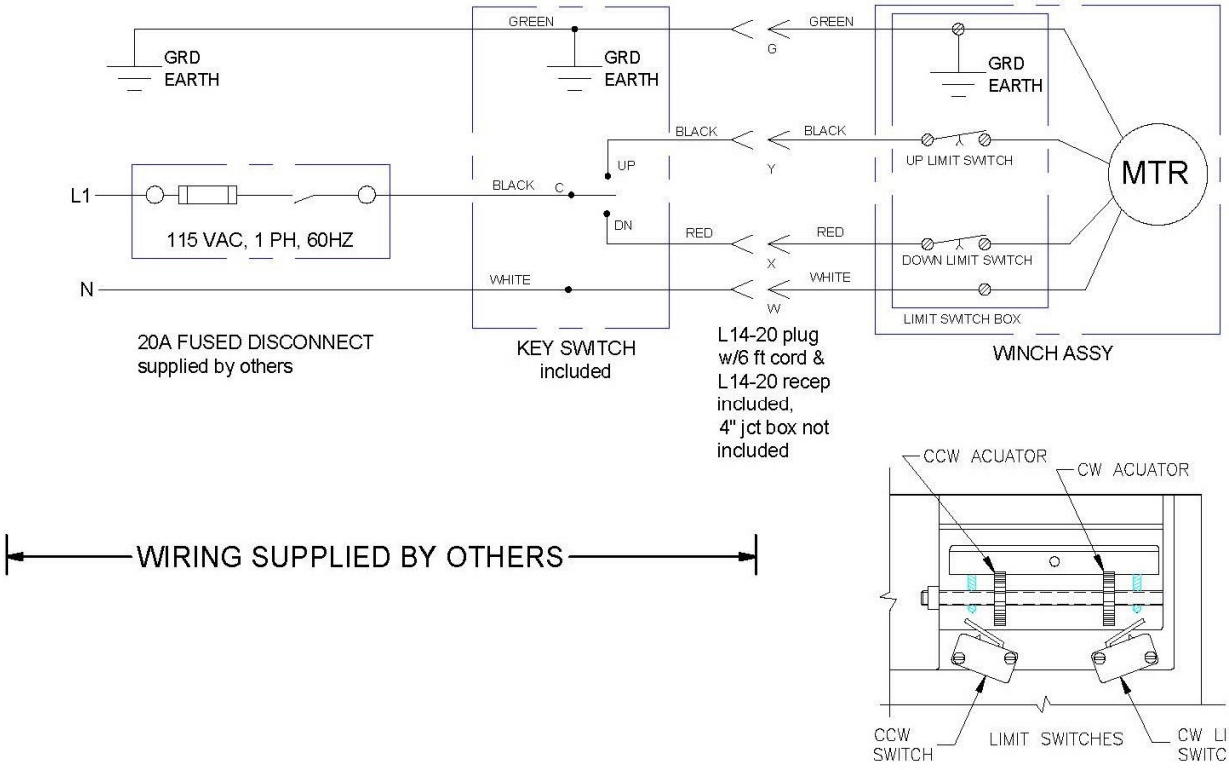
Permanent Wiring Motors for Installation

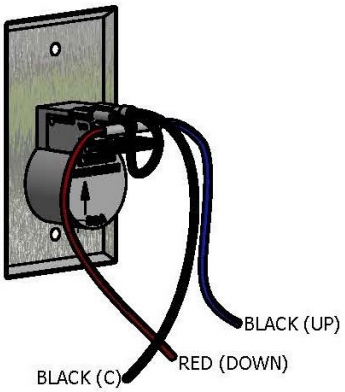
A qualified electrician should complete all permanent wiring.

Always refer to the electrical schematic furnished with the installation drawings at time of delivery of the product.

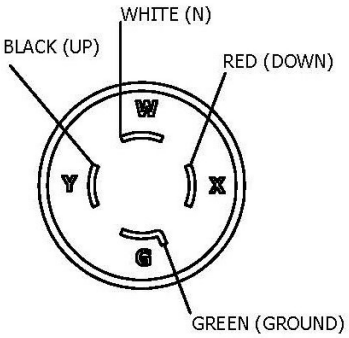
The following electrical schematic and information is for reference only.

1 HP 115VAC, 1PH, 60Hz, 20Amp Service





KEY SWITCH



L14-20 RECEPTICLE

ELECTRICAL REQUIREMENTS

MINIMUM CIRCUIT REQUIREMENTS
-DEDICATED 115VAC, 1PH, 60HZ,
20 AMP SERVICE

MOTOR SPECIFICATION
-1 HP 115V, 1PH, 60HZ, 13 FLA
INSTANT REVERSING, THERMAL O/L

MINIMUM WIRE SIZE
(copper wire, 3% max voltage drop)
0-70 ft.....12 ga.
70-110 ft.....10 ga.
110-175 ft.....8 ga.
175-280 ft..... 6 ga.
280-440 ft.....4 ga.

Important Note:
Locate the switch or control pad so that the operator has full view of the cage at all times during operation.

12 The cage is now ready for use.

Operation

PLEASE DO NOT ATTEMPT TO OPERATE THIS EQUIPMENT BEFORE READING THE FOLLOWING INFORMATION!!!

MODEL #4080 BOTTOM LIFT CAGE

PRODUCT OVERVIEW

The following information is designed to assist you with the operation and maintenance of your Model #4080 Bottom Lift Cage. We recommend that you carefully read this literature to become familiar with your new divider curtain, then develop an operation and maintenance program for the designated operator of the curtain.

⚠ CAUTION

Only trained and authorized personnel should operate this equipment.

Operation by untrained or unauthorized personnel may result in damage to the cage structure and/or injury to anyone near the cage.

This cage has been manufactured with safety in mind, but even the safest equipment can be damaged or cause damage to a person or persons when operated by unauthorized or untrained users.

⚠ WARNING

Before operating the cage, make sure the area around and under the cage is clear of obstructions, equipment, and people. Make certain no persons are near or under the cage during operation.

Failure to follow this procedure could result in equipment damage and/or serious personal injury.

- Tremendous force is created when this cage is in motion.
- Only authorized personnel may operate cage.
- Care must be taken to make sure the cage and areas above and below the cage are free and clear of any obstructions.
- Do not stand directly below the cage when raising or lowering.
- Never swing or sway cage.
- Structure and motor units were designed to lift the weight of the cage only.
- Never hang from sides or bottom of cage during operation or when cage is in the lowered position.
- Never attach or place foreign objects on the cage.

OPERATION OF THE MODEL #4080BL BOTTOM LIFT CAGE:

1. The key switch used to control the up/down motion of this cage must be flush mounted on a wall that gives the operator a clear and full view of the cage. Never operate the cage if conditions do not allow for a clear and full view of the cage.

⚠ CAUTION
Operator must keep the cage in view at all times during operation. Failure to watch the cage in motion may result in damage to the cage structure and/or injury to anyone near the cage.

2. The cage may be raised or lowered by turning the key to the appropriate "Up" or "Down" position, as indicated on the switch cover plate.
3. The key that operates the cage must remain in the possession of the authorized operator.

NEVER LEAVE THE KEY UNATTENDED IN THE KEY SWITCH

4. The motor that controls the movement of the cage has been programmed to stop the cage at a predetermined full "up" and full "down" position. Should the cage stop before it reaches these predetermined positions the motor may have over heated and need to cool off. Allow the divider to rest for approximately 20 minutes and try to run again. If the divider still does not run contact your dealer or installation company immediately.

This cage has been custom manufactured according to the Owner's/Architect's specifications. When operated and maintained with proper care, this cage should provide years of safe, trouble-free service.

MAINTENANCE INFORMATION – PLEASE RETAIN FOR FUTURE REFERENCE!!!

MODEL #4080BL BOTTOM LIFT CAGE

MAINTENANCE OVERVIEW

!!!ALWAYS DISCONNECT POWER SOURCE BEFORE PERFORMING ANY MAINTENANCE CHECK OR OPERATION ON THIS EQUIPMENT!!!

STRUCTURE:

We recommend a yearly inspection (or more frequently depending on usage) of the nuts and bolts, checking for tightness. Refer to recommended bolt torque chart at the right.

RECOMMENDED BOLT TORQUE			
BOLT SIZE	WRENCH SIZE	In-Lbs	Ft-Lbs
1/4	7/16	66 to 90	5.5 to 7.5
5/16	1/2	132 to 180	11 to 15
3/8	9/16	234 to 318	19.5 to 26.5
7/16	11/16		31 to 42.5
1/2	3/4		47 to 65
9/16	7/8		68 to 90
5/8	15/16		94 to 130
3/4	1 1/8		166 to 230
7/8	1 5/16		269 to 372
1	1 1/2		402 to 566

MOTOR:

The motor that operates your Bottom Lift Cage does not require any maintenance. We do recommend however, that the limit switches be checked on a regular basis to ensure the settings are accurate.

⚠WARNING

When removing the motor or servicing the motor that requires disconnecting the drive shaft, first lower the cage to the full down position. If the cage cannot be lowered to the full down position, tie the bottom batten to the top batten in several places to prevent the cage from moving.

Failure to lower the cage or secure the bottom batten to the top batten could result in the cage unfolding uncontrollably when the motor is removed or the drive shaft is disconnected resulting in damage to the cage and/or serious injury to anyone near or under the cage.

CABLES AND STRAPS:

Check all lift cables and support straps for signs of wear or fraying.

CAGE NETTING:

The netting should be checked on a regular basis for tears. Should the netting become damaged, it must be repaired or replaced. Contact your dealer or installation company for information on repair or replacement of the netting.

This Model #4080BL Bottom Lift Cage has been custom manufactured according to the Owner's/Architect's specifications. When operated and maintained with proper care, this cage should provide years of safe, trouble free service.

ATTENTION: MAINTENANCE DEPARTMENT

To confirm that you have received maintenance and warranty information, and to better serve you if you contact us, please fill out the following information and fax or mail to the address below.

Please refer to the facility name and/or the installation company below when you contact Performance Sports Systems, and include it on any correspondence.

I have received the maintenance and warranty information provided by Performance Sports Systems on the 4080BL Bottom Lift Cage.

Facility/School Name: _____

Installation Date: _____ Installed by: _____

Maintenance Dept. Contact: _____

Signature: _____ Date: _____

Fax to: 1-317-774-9841

Attn: Customer Service

Or

Mail to:

Customer Service

9200 E. 146th St., Ste. A

Noblesville, IN 46060

800-848-8034

Maintenance Check Sheet

Date: _____ **Unit:** _____

Unit Supports / Brackets / Hinges

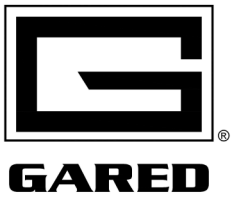
-Tubes; dents, stress spots, etc.	☐ OK	☐ Repair	☐ Replace
-Bolts; loose, deformed, etc.	☐ OK	☐ Repair	☐ Replace
-Brackets/Hinges; bent, not rotating, etc.	☐ OK	☐ Repair	☐ Replace

Winch/Cable/Chains

-Winch; binding, loose, etc.	☐ OK	☐ Repair	☐ Replace
-Cable; fraying	☐ OK	☐ Repair	☐ Replace
-Chains; deforming, broken/bent links	☐ OK	☐ Repair	☐ Replace
-Hardware; Quick links	☐ OK	☐ Repair	☐ Replace

Cage Netting

-Netting; torn, missing eyelets	☐ OK	☐ Repair	☐ Replace



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