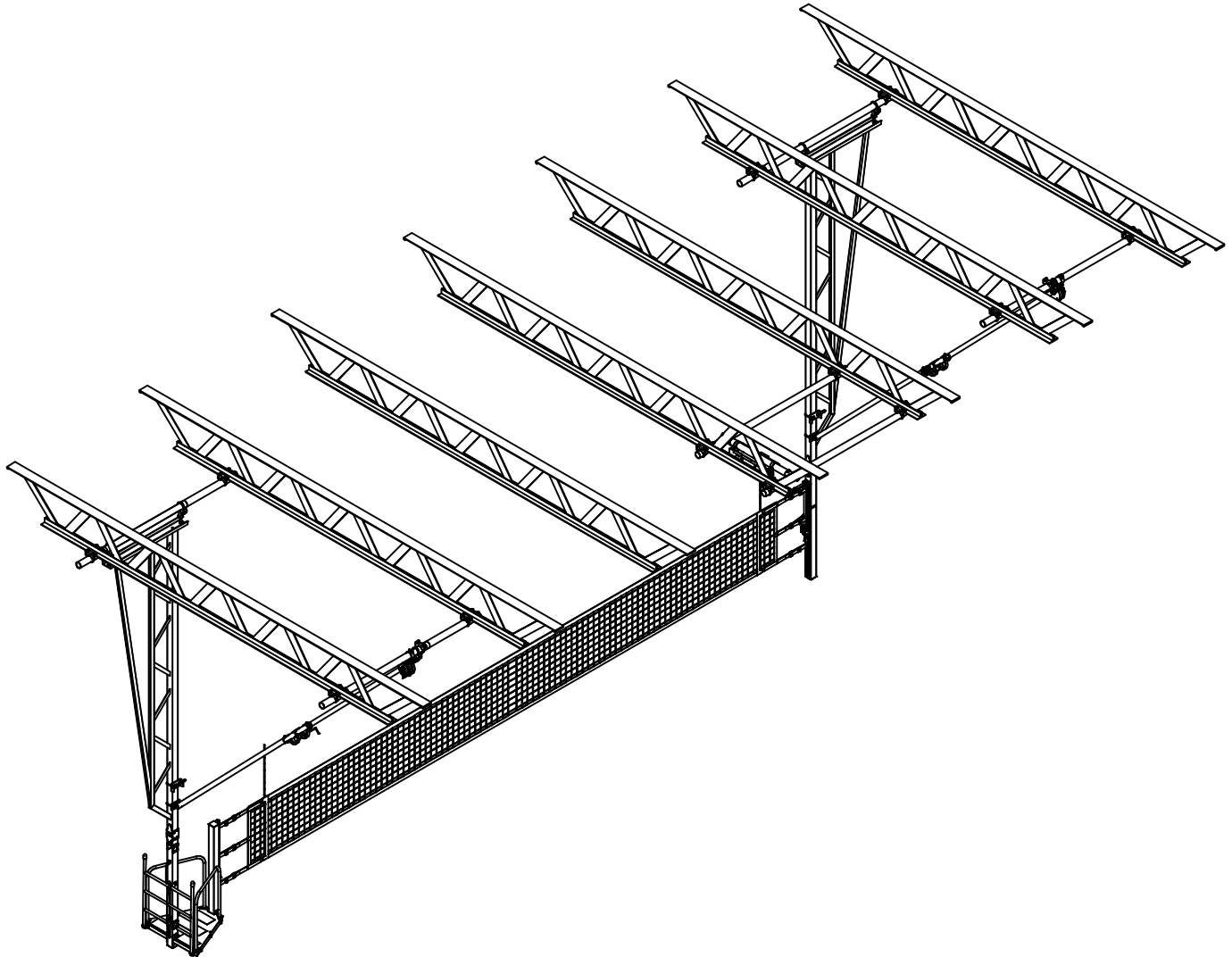


Skymaster® Volleyball System

MODELS: 8101, 8101R, 8101-ENA, 8101R-ENA



Please read & understand all instructions before attempting installation or operation of these units.

Installation and Assembly Instructions, Operators Manual, and Maintenance Manual



Gared Holdings, LLC
9200 E. 146th St.
Noblesville, IN 46060

Model: 8101 and 8101R
Skymaster Volleyball System

FILE LOC. Q:\Inventor Files\Installation Instructions\Volleyball\Skymaster 8100

DATE	SHT. NO.	PART NO.	REV
7/28/2022	1 OF 39	601751772	C

Ceiling Suspended Volleyball System

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Introduction

Thank you for your purchase of a Skymaster® Volleyball System. To ensure that our equipment will provide years of use to you, we are including this installation, operation, and maintenance guide. This guide will provide information on the proper assembly and installation methods, operating procedures, and preventative maintenance of your ceiling suspended volleyball system.

Please note that a Bill of Materials is being included with this guide. Please check that all of the parts called out on the Bill of Materials are present prior to beginning assembly and setup. Please do not substitute for factory parts. Please contact the manufacturer's customer service department and allow them to determine if substitute parts are acceptable.

It is recommended that an individual who has been properly trained perform assembly and set up of the volleyball system. No one under the age of 18 should attempt assembly or set up of the unit, unless properly supervised.

To prevent normal wear and tear from shortening the life of the unit, preventative maintenance inspections and repairs should be performed at least once per year. If the units are 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 the manufacturer or one of its authorized dealers. When contacting the manufacturer or dealer, please have information regarding the dealer/installer who sold the unit, the name of the project, and any applicable warranty information.

Before proceeding with assembly, read all instructions and assembly procedures. Make sure all parts have been received and are not damaged.

Ceiling Suspended Volleyball System

Tools Required:

Hammer
 Electric Drill with 11/32" Drill Bit
 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", 3/4" and 1-5/16"
 Torque Wrenchs 5-75 Ft-Lbs. and 31-150 Ft-Lbs.
 3/16" Allen Wrench
 4" C-Clamps (2)
 4' Level
 File (half round)
 25' Tape Measure
 Cable Cutters
 Utility Knives
 Wire Stripper
 Screwdrivers (assorted sizes)
 Ratcheting Pulleys
 75' Ropes
 Wire Nuts
 Duct Tape
 Block of Wood (for tapping)
 Broom
 Shop Vac
 Protective Covering for Floor

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

Ceiling Suspended Volleyball System

The following parts list are inclusive of all hardware and components to assemble the Skymaster unit. NOT included in these parts lists are the hardware and components required to attach the unit to the overhead building structure (i.e. beam clamps, structural pipe, etc.) Please refer to your packing list enclosed with the shipment for those parts.

Below is a list of the hardware and quantities are per unit. When multiple units are to be installed, refer to the packing list enclosed with the shipment for total quantities of these items shipped.

Major components list is on the following page.

Hardware List				
Item	Part Number	Description	QTY	
			8101	8101R
50	1115-30-00	3/8" QUICK LINK	2	2
51	1282-30-00	5/16" UNIVERSALS NAP LINK	1	1
52	223-4-20-16Z	SCREW, MACH PAN HD PHIL 1/4-20 UNC X 1	16	16
53	3125-30-00	1/4" CABLE THIMBLE	2	2
54	3225-30-00	1/4" CABLE CLAMP (FORGED CLIP)	4	4
55	501-5-18-16	BOLT, CARRIAGE 5/16-18 UNC X 1		4
56	501-5-18-52	BOLT, CARRIAGE 5/16-18 UNC X 3.25		8
57	502-4-20-14	HEX BOLT, 1/4-20 UNC X 0.875		12
58	502-5-18-12Z	HEX BOLT. 5/16-18 UNC X 0.75		8
59	502-5-18-16	HEX BOLT. 5/16-18 UNC X 1		3
60	502-5-18-24Z	HEX BOLT, 5/16-18 UNC X 1.5	2	2
61	502-5-18-44	HEX BOLT, 5/16-18 UNC X 2.75	2	2
62	502-6-16-40	HEX BOLT, 3/8-16 UNC X 2.5		2
63	502-6-16-80	HEX BOLT, 3/8-16 UNC X 5		5
64	502-8-13-16	HEX BOLT, 1/2-13 UNC X 1	12	12
65	502-8-13-64	HEX BOLT, 1/2-13 UNC X 4	2	2
66	545-5-18Z	HEX NUT, NYLON LOCK 5/16-18	4	5
67	545-6-16Z	HEX NUT, NYLON LOCK 3/8-16		3
68	545-8-13	HEX NUT, NYLON LOCK 1/2-13	2	2
69	548-5-18Z	HEX NUT, SERRATED FLANGE 5/16-18		20
70	548-6-16	HEX NUT, SERRATED FLANGE 3/8-16		4
71	548-8-13	HEX NUT, SERRATED FLANGE 1/2-13	20	20
72	561-4	FLAT WASHER 1/4		12
73	561-5	FLAT WASHER 5/16		2
74	561-6	FLAT WASHER 3/8		7
75	562-4Z	SPLIT LOCK WASHER 1/4	16	28
76	562-5	SPLIT LOCK WASHER 5/16		2
77	571-6-16-16	SELF TAPPING SCREW, 3/8-16 UNC X 1	20	20
78	921041000	ABRASIVE ANTISLIP TAPE		56 in
79	571-4-16	1/4" X 1" SELF DRILLING (TEK #33)	4	4

Ceiling Suspended Volleyball System

Major Components				
Item	Part Number	Description	QTY	
			8101	8101R
1	601751772	MANUAL - 8101-8101R SKYMASTER	1	1
2	604401462	8001 VB BRIDGE MAST-ANY HEIGHT	2	2
3	161655628	SWING HANGER ASS'Y, 3.5" EXTENDED	4	4
4	1448-11-08	EYEBOLT ASSEMBLY, 7/8"-9 X 6"	4	4
5	604406160	BRKT, OHVB LIFT	2	2
6	101051043	U-BOLT, 1/2-13 X 4 X 4.0 SQ	4	4
7	161655633	CLAMP ASS'Y, 3.5 X 2.38 SWING HINGE	2	2
8	161655636	PULLEY HANGER ASSEMBLY, 3.5"	2	2
9	1005-07-00	#5 SWIVEL EYE BLOCK (3-1/2" PULLEY)	2	2
10	2375-04-00PC	TUBE,RND,2.375 OD X 0.083 WALL	See Packing List	
11	503955559	2.38" ADJ BRACE HINGE ASS'Y W/BRKR	2	2
12	604401740	POST WELDMENT, 8100 NET (69.0")	2	1
13	604401742	POST WELDMENT, 8100 REF STAND		1
14	604401473	POST COVER PLATE	4	4
15	604406158	HINGE WELDMENT, OHVB BRACE	2	2
16	604406188	SPACER, SAFSTOP BRKT	2	2
17	604401284	SKYMASTER HAND RAIL RH WELDED		1
18	604401751	GUIDE RAIL, 8100OHVB (64")	2	2
19	604401475	REF STAND FLOOR FRAME WELDMENT		2
20	604401478	SKYMASTER HAND RAIL LH WELDED		1
21	604401479	FLOOR PLATE - 8001R REF STAND		1
22	604401746	LADDER WELDMENT, 8100 SKYMASTER		1
23	604401167	PULL HANDLE		1
24	604552249	7200 END POST RAIL ASSEMBLY	1	1
25	604553795	LONG STRAP WINCH RAIL ASSEMBLY, 7200	1	1
26	3025-30-00	1/4" GALVANIZED AIRCRAFT CABLE-7X19	See Packing List	
27	1100	SAFESTOP SAFETY LOCKING STRAP	2	2
28	8194	ELEC HOIST,DBL DRUM 115V 1PH 60HZ W/KEY	1	1
29	604406167	BRKT WELDMENT, LADDER HINGE		2
30	101131065	1/2 X 7/8 X 14GA MACHINE BUSHING ZN	12	12
31	604406170	LATCH, LADDER		1
32	701501117	SIDE PLATE, SAFE STRAP BRACKET	4	4
33	101651035	4" PLUG FOR SQUARE TUBE	2	4
34	604401692	STRAP, FOLDING LADDER PULL		1
35	601651422	VB REF STAND LEG RUBBER FOOT 1.5" OD TUBE		2

The list of Pads and Accessories are on the next page.

Ceiling Suspended Volleyball System

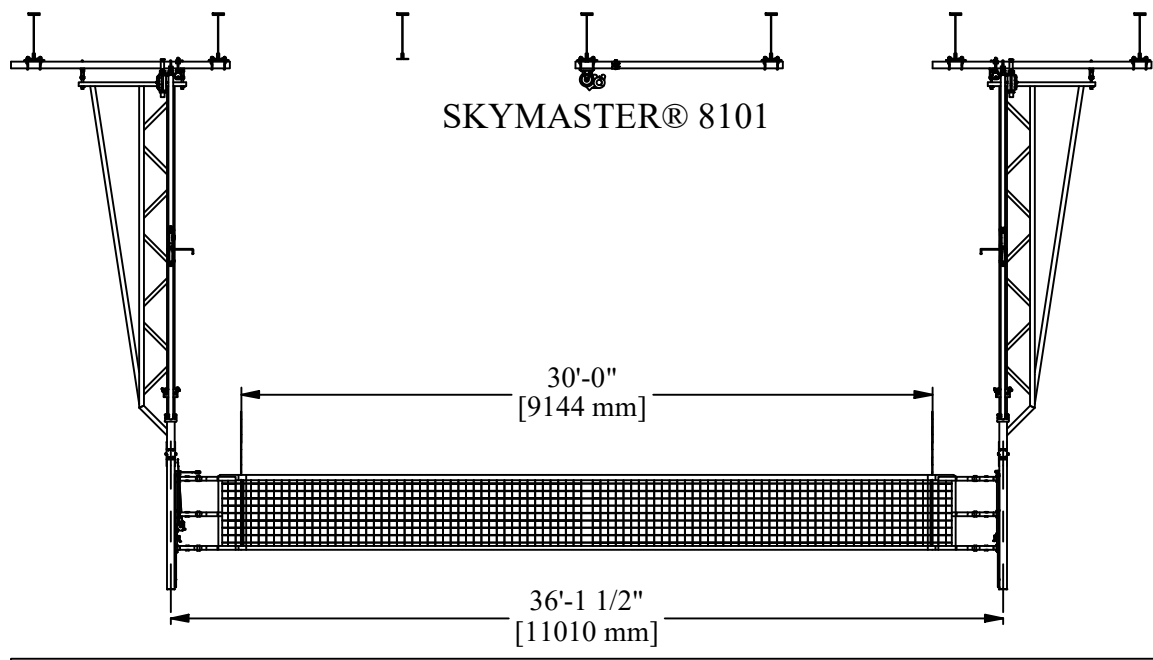
Pads and Accessories				
Item	Part Number	Description	QTY	
			8101	8101R
36	884404069	PAD, HAND RAIL SKYMASTER		4
37	884404078	PAD, FOLDING LADDER (3) RUNG		2
38	884403588	PAD, SKYMASTER REF STAND RH		2
39	884404080	PAD, UPRIGHT 8100R REF POST		1
40	884404081	PAD, 8100R REF CROSS TUBE		1
41	884404079	PAD, UPRIGHT 8100 WINCH POST	2	1
42	601651165	VOLLEYBALL NET, 7000 SERIES	1	1
43	7607-22-00	NET SIDELINE MARKER	2	2
44	1028-22-00	NET ANTENNA	2	2
45	6251	BUCKLE COVERS SET OF (6)	1	1
46	121971504	LABEL, "MANUFACTURED BY PSS"	1	1
47				
48				
49	124651582	WARNING LABEL - WINCH TIGHTENING	1	1

Contact Gared Customer Service at 800-325-2682 or PSS Customer Service at 800-848-8034 for assistance with replacement of any parts missing or damaged.

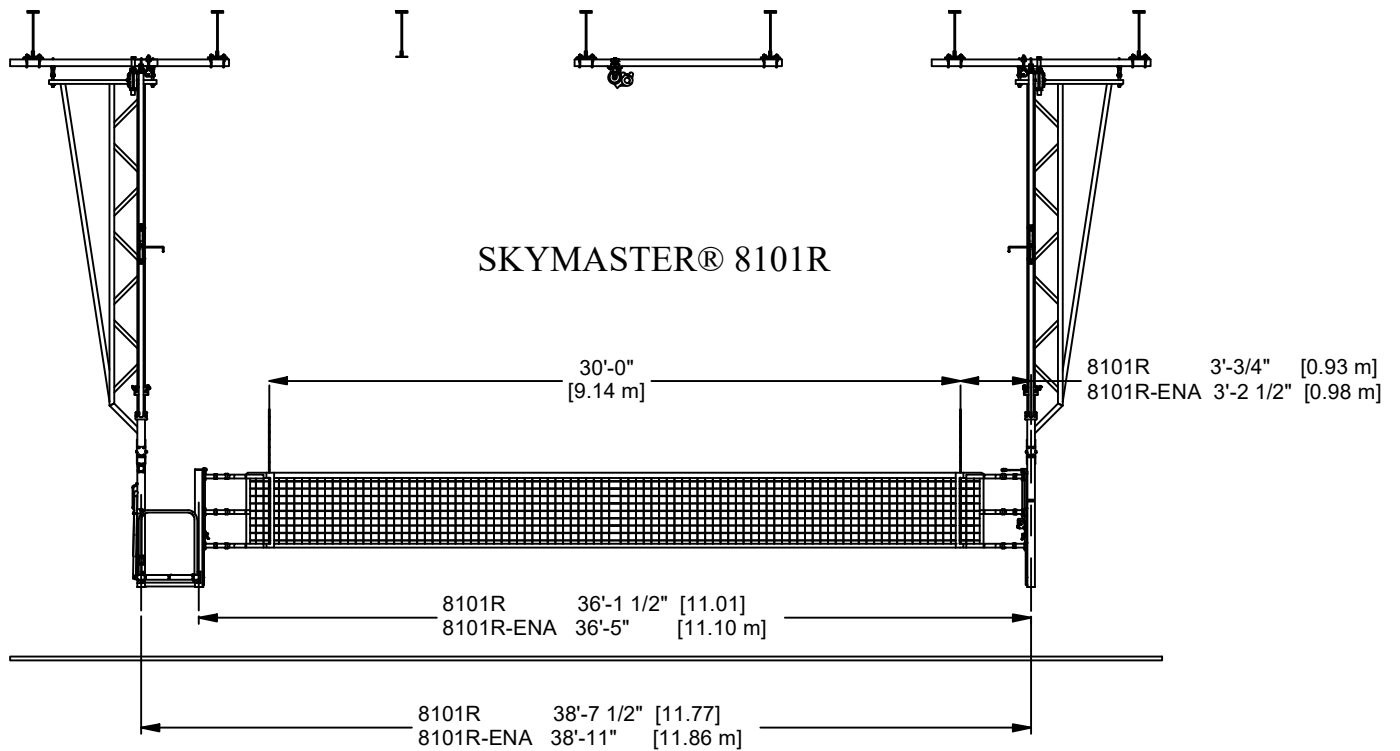
Installation Instructions

The following illustrations show an overview of the 8101 Ceiling Suspended Volleyball System and the 8101R Ceiling Suspended System with Referee Stand. See installation prints provided for all overhead structure details.

See additional installation and operation for Electric Net Adjuster models starting on sheet 29.

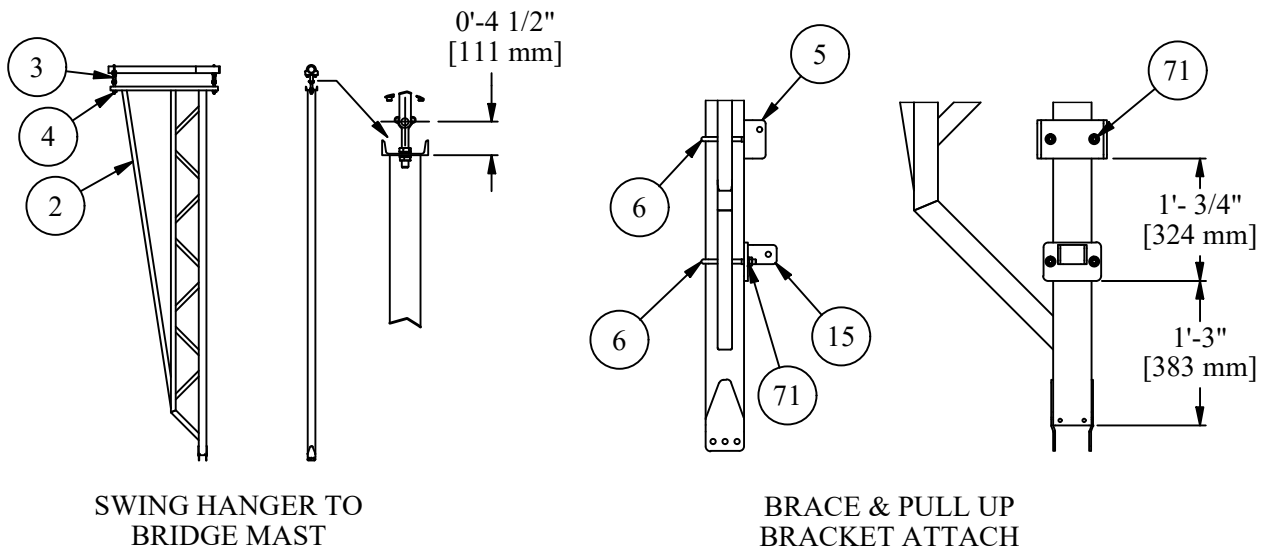


Ceiling Suspended Volleyball System

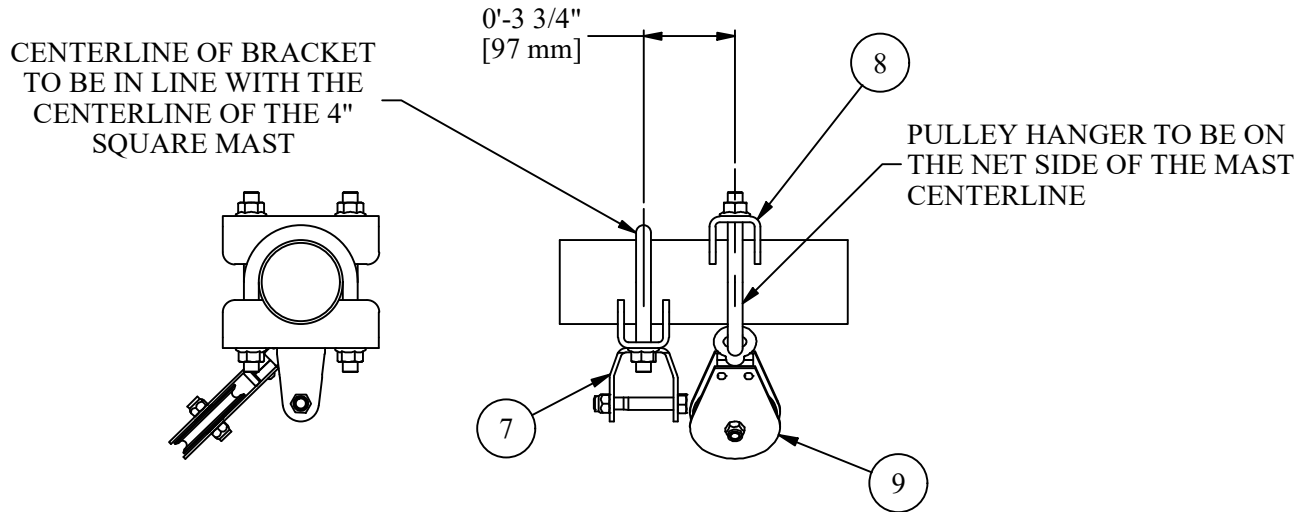


Attachment Details

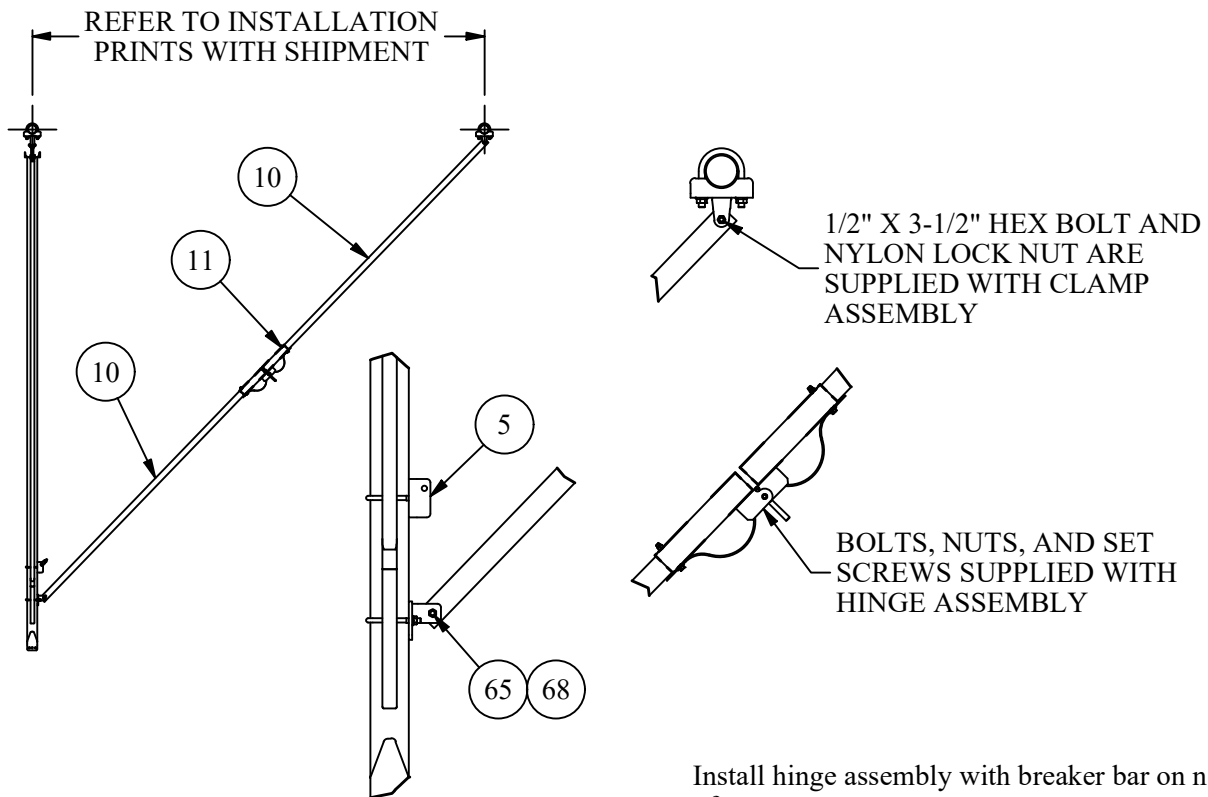
These illustrations show some key attachment details. Use as a guide for proper assembly.



Ceiling Suspended Volleyball System



PULLEY HANGER AND UPPER FOLDING BRACE BRACKET

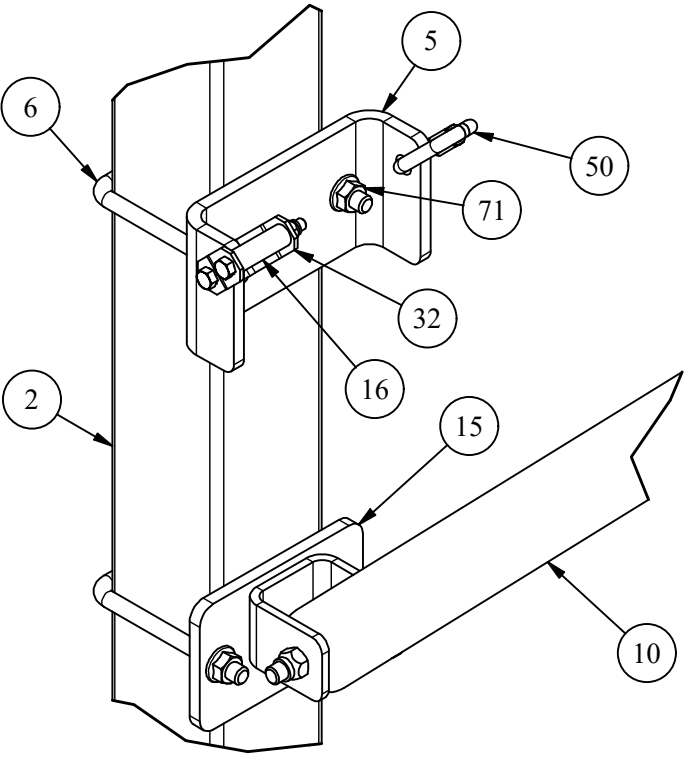
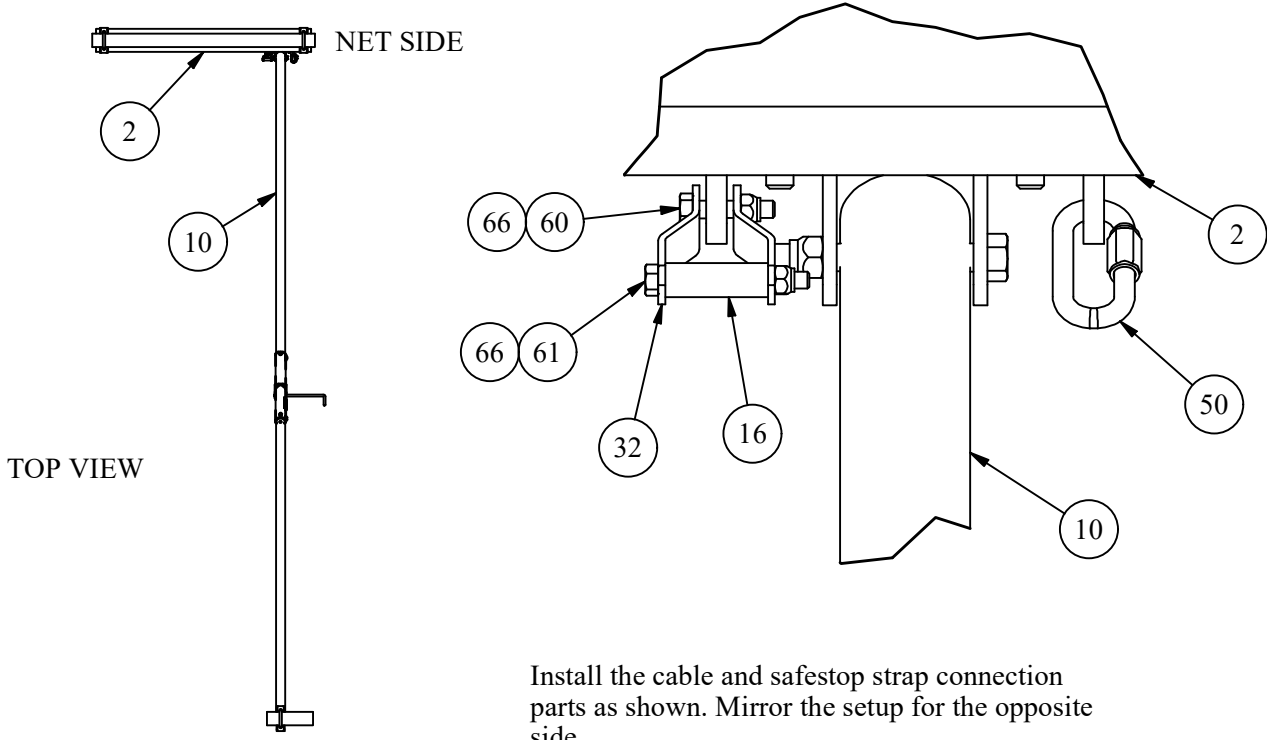


Install hinge assembly with breaker bar on net side of mast.

After the brace pipes are bolted to the mast and the clamp, slide the hinge assembly onto the free ends of the brace pipes. Plumb the mast and tighten the set screws on the hinge assembly.

FOLDING BRACE INSTALLATION

Ceiling Suspended Volleyball System

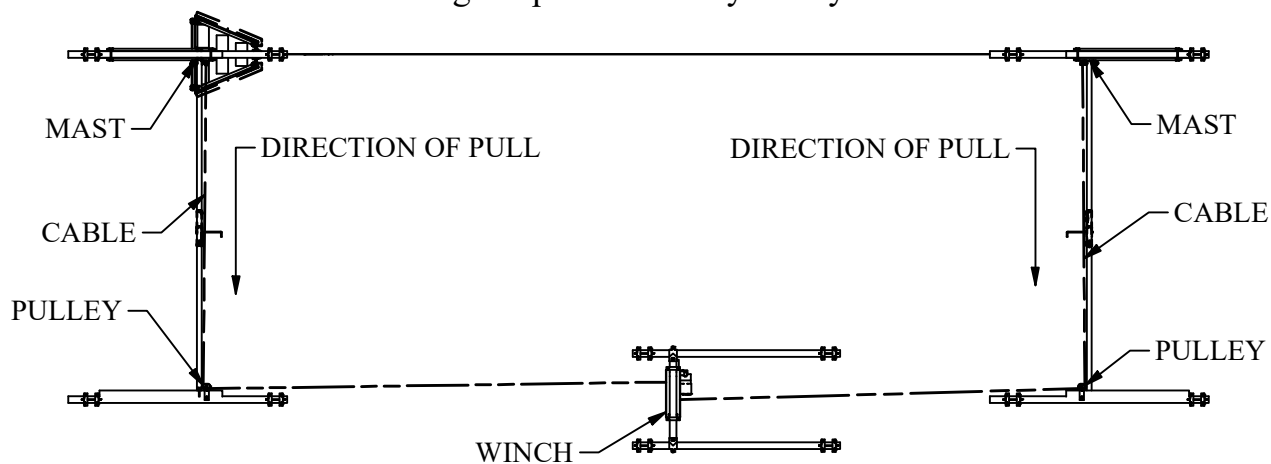


The cable (Item 26) attaches to the quick link (Item 50) using the cable thimble (Item 53) and cable clamps (Item 54).

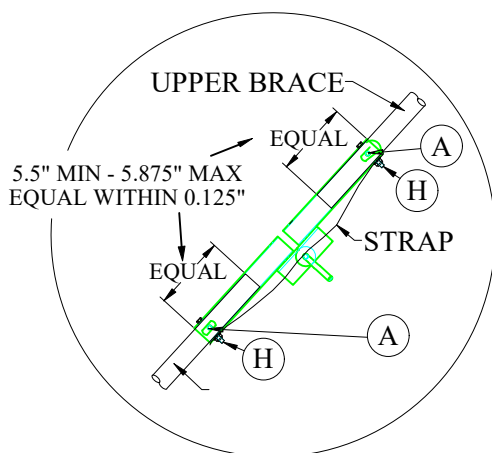
The safestop safety locking strap (Item 27) attaches to the safestop bracket spacer (Item 16). For installation of the safestop safety locking strap, refer to the installation prints.

CABLE AND SAFESTOP STRAP CONNECTION

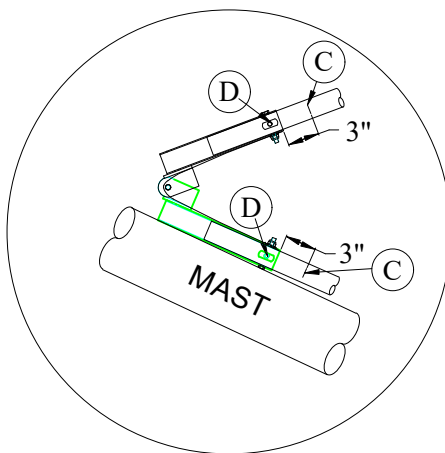
Ceiling Suspended Volleyball System



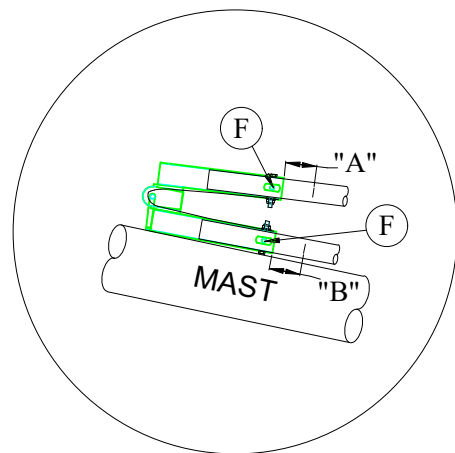
CABLE ROUTING DIAGRAM - PLAN VIEW



DETAIL 1



DETAIL 2



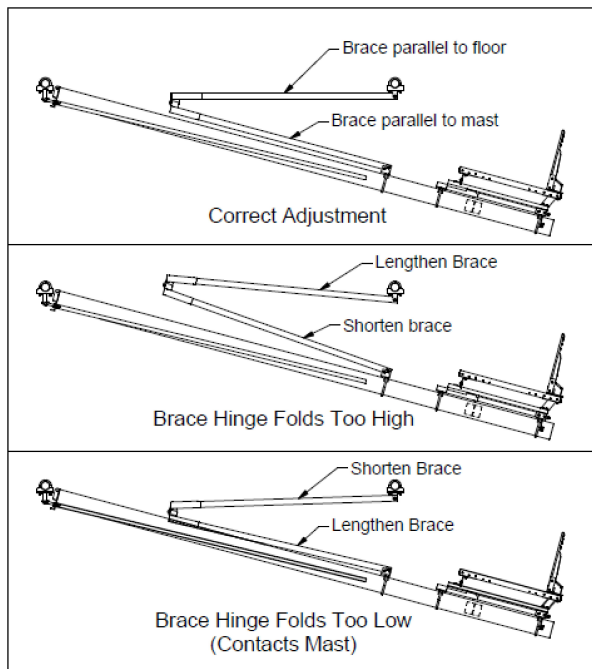
DETAIL 3

ADJUSTABLE BRACE HINGE INTALLATION INSTRUCTIONS.

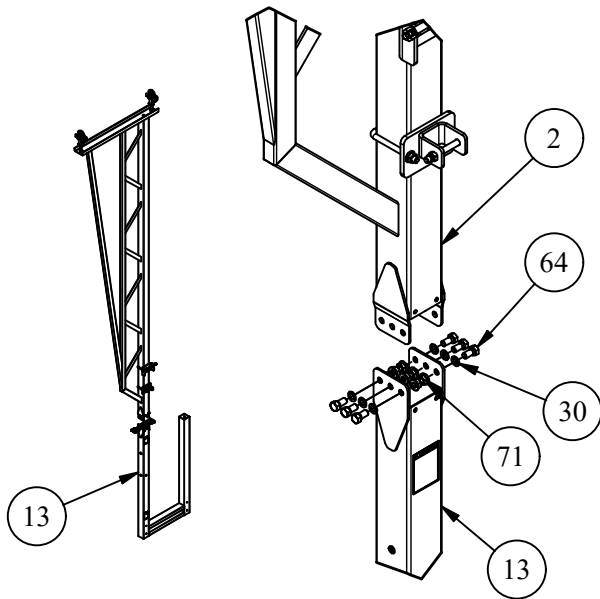
- A.) ASSEMBLE BRACE PER PRINT AND TIGHTEN SET SCREWS. (SEE DETAIL 1)
- B.) FOLLOW CABLE INSTALLATION INSTRUCTIONS ABOVE

DO NOT ATTACH CABLE TO HINGE.

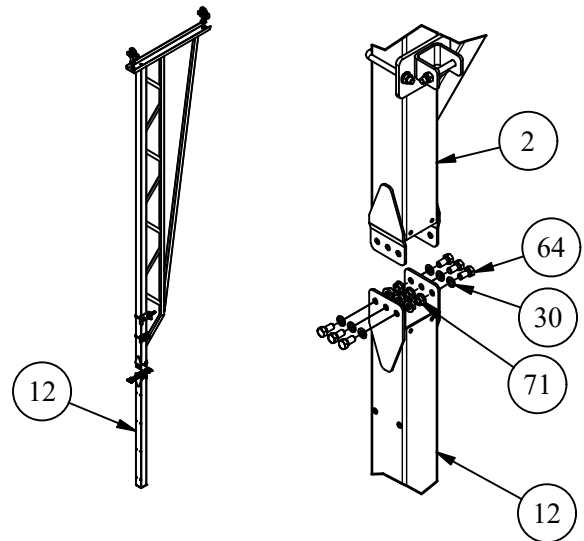
- C.) FOLD MAST UNTIL HINGE CONTACTS THE MAST AND STOP. MARK THE BRACE PIPES 3" ABOVE AND 3" BELOW THE HINGE. (SEE DETAIL 2)
- D.) LOOSEN SET SCREWS AND RAISE THE MAST TO THE MAXIMUM HEIGHT POSSIBLE.
- E.) ADJUST HINGE SO THAT THE "A" + "B" = 6" EXACTLY. (SEE DETAIL 3)
- F.) TIGHTEN SET SCREWS AND LOWER THE MAST
- G.) CYCLE MAST A FEW ADDITIONAL TIMES TO ENSURE PROPER FOLDING.
- H.) AS THE FINAL STEP, SECURE THE HINGE BY DRILLING THROUGH THE BRACE PIPES AND INSTALL THE SAFETY STRAP WITH THE PROVIDED HEX HEAD BOLTS AND NYLOCK NUTS. (SEE DETAIL 1)



Ceiling Suspended Volleyball System

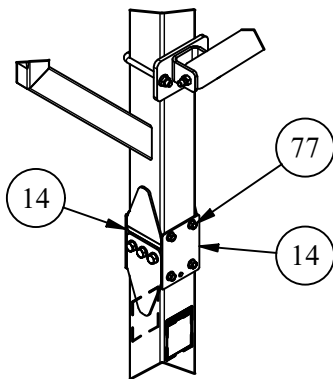


REF STAND POST

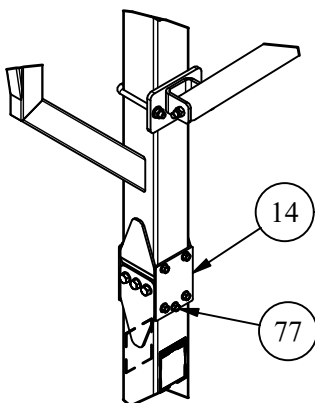


NET END POST

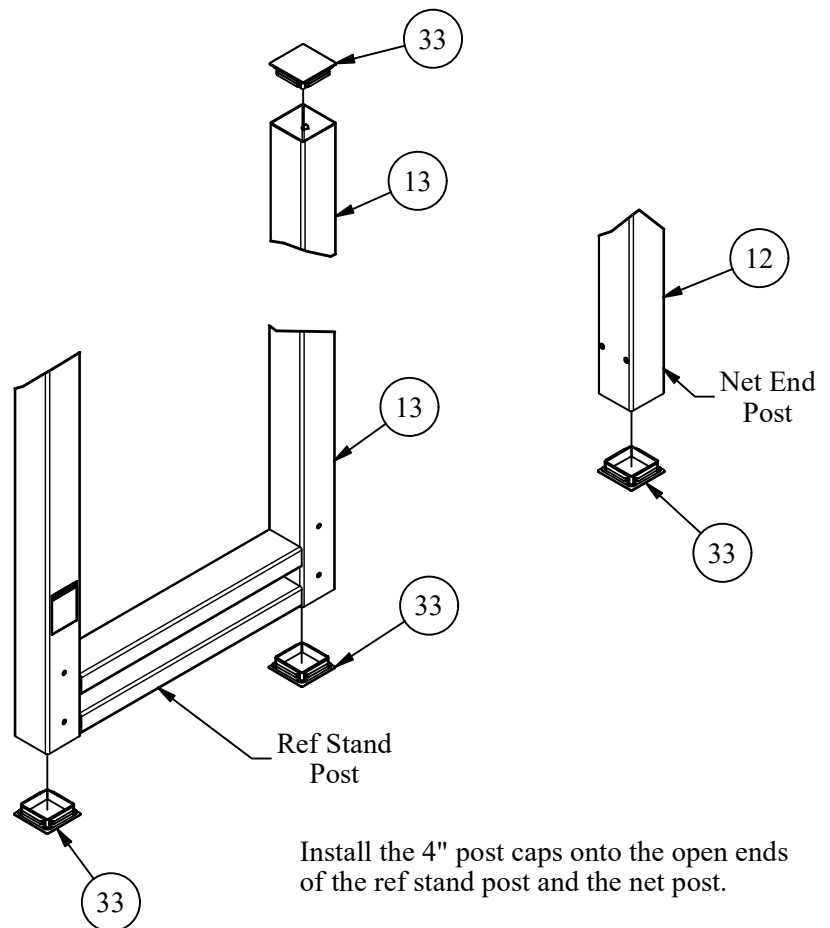
Install the ref stand post and net end post onto the bridge truss mast as shown above. Make sure both posts are plumb with the mast and all bolts are securely torqued.



Install the cover plates on both sides of the mast as shown above.



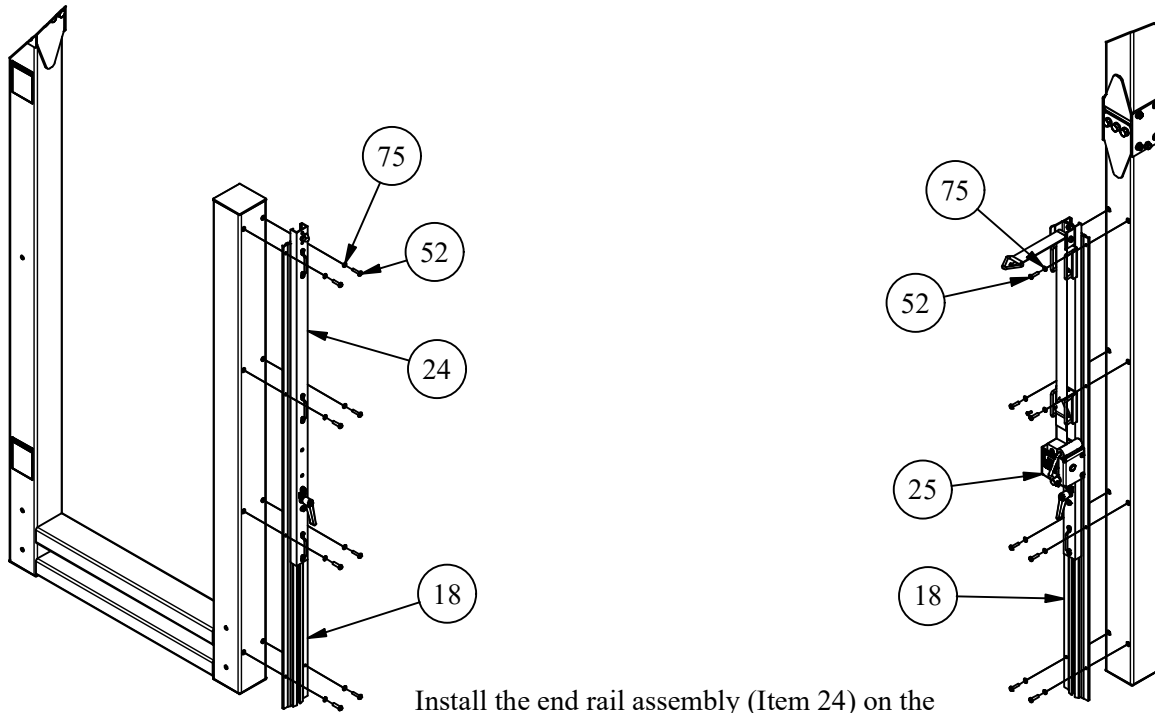
Drill 11/32" [8.7 mm] hole in the center of the cover plate hole. Secure the plate in place as shown above.



Install the 4" post caps onto the open ends of the ref stand post and the net post.

Ceiling Suspended Volleyball System

NOTE: See optional Electric Net Adjuster instructions for model 8101-ENA and 8101R-ENA starting on page 29.



Install the end rail assembly (Item 24) on the referee stand post and the winch rail assembly (Item 25) on the post opposite the referee stand for proper pad installation and fit.

8101R Referee Stand to Mast Assembly Details

See views on the following page

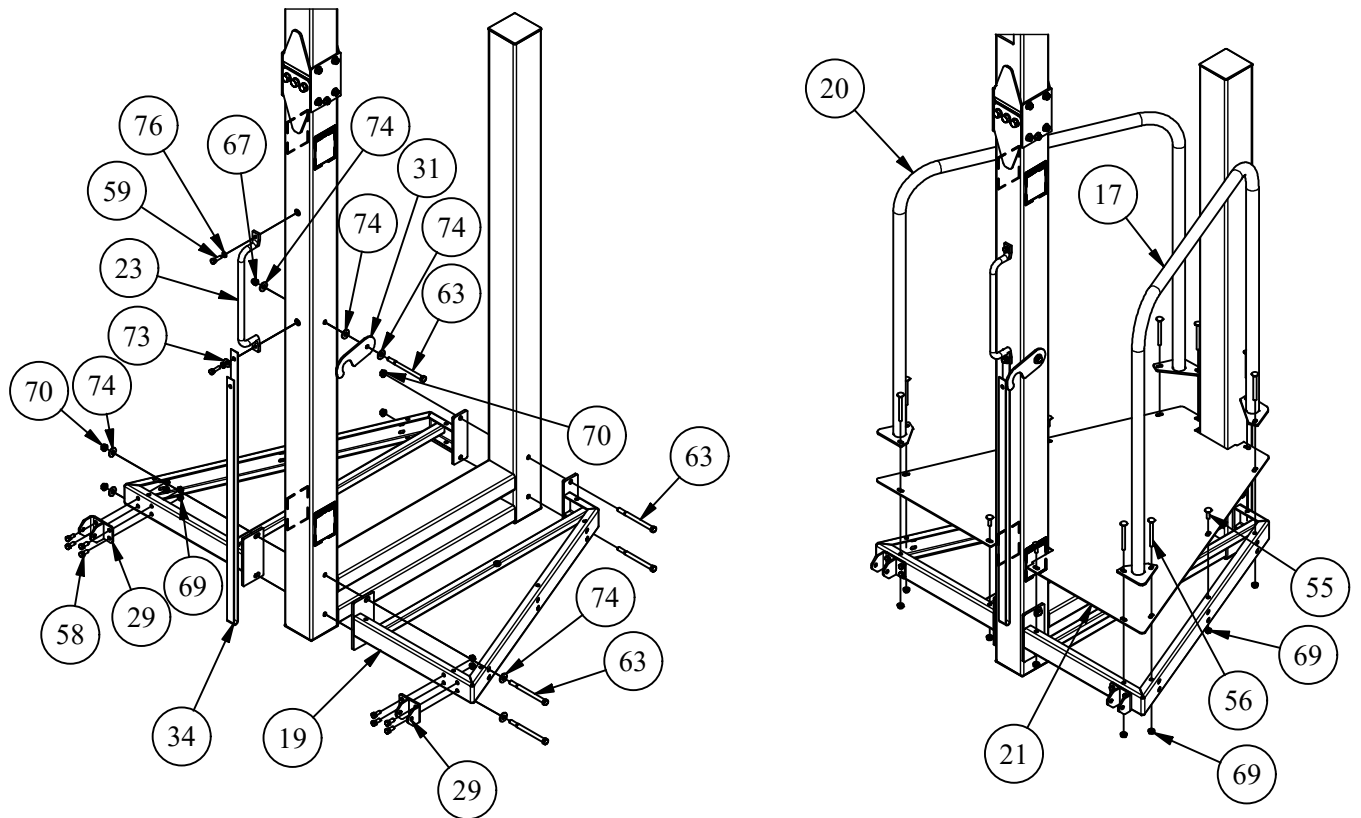
Install the two referee stand floor frames (Item 19) onto each side of the referee stand frame. Note that only the rear of the frames (slotted hole end) require flat washers under the bolt head and under the nuts.

Next install the ladder hinge brackets (Item 29) onto the rear of the referee stand frames using four (4) 5/16" x 3/4" hex bolts and 5/16" whizlock nuts per bracket.

Install the handle (Item 23) onto the back of the mast post using the 5/16" x 1" hex bolts and lockwashers. Note that the folding ladder pull strap is also attached with the lower handle bolt, lockwasher, and flat washer.

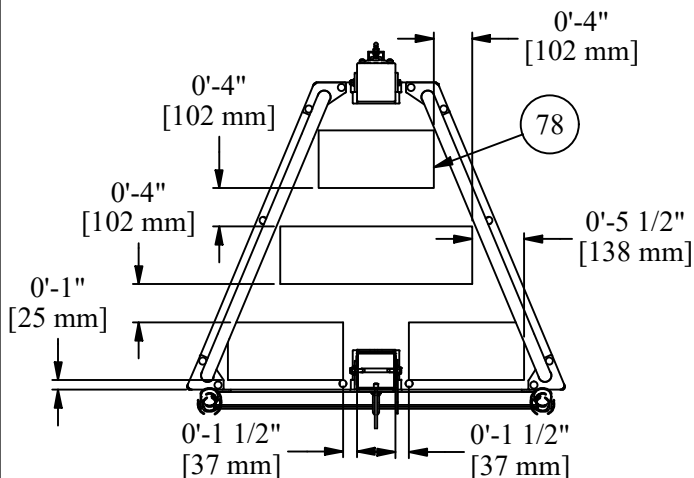
Install the ladder latch onto the side of the main post with a 3/8" x 5" hex bolt and 3/8" locknut. Place a 3/8" flat washer between the post and the latch and between the latch and the head of the bolt. A 3/8" flat washer is also required under the locknut on the opposite side of the post. DO NOT over tighten this nut. The latch plate should be free to rotate after tightening.

Ceiling Suspended Volleyball System



Install the floor plate (Item 21) and hand rails (Items 17 and 20). The 5/16" carriage bolts (Item 56) for the hand rail attachments are 3 1/4" long and go all the way through the frame. The 5/16" carriage bolts (Item 55) are 1" long and only go through the top flange of the frame.

Use the 5/16" whizlock nuts (Item 69) on all bolts and tighten securely.



Cut the anti-slip tape (Item 78) into 4 pieces. 3 pieces 12" long and 1 piece 20" long.

Place the pieces onto the top surface of the floor plate as shown in the diagram on the left.

Remove the backing strip from the tape and press the tape firmly onto the floor plate making sure there are no air bubbles or wrinkles

Ceiling Suspended Volleyball System

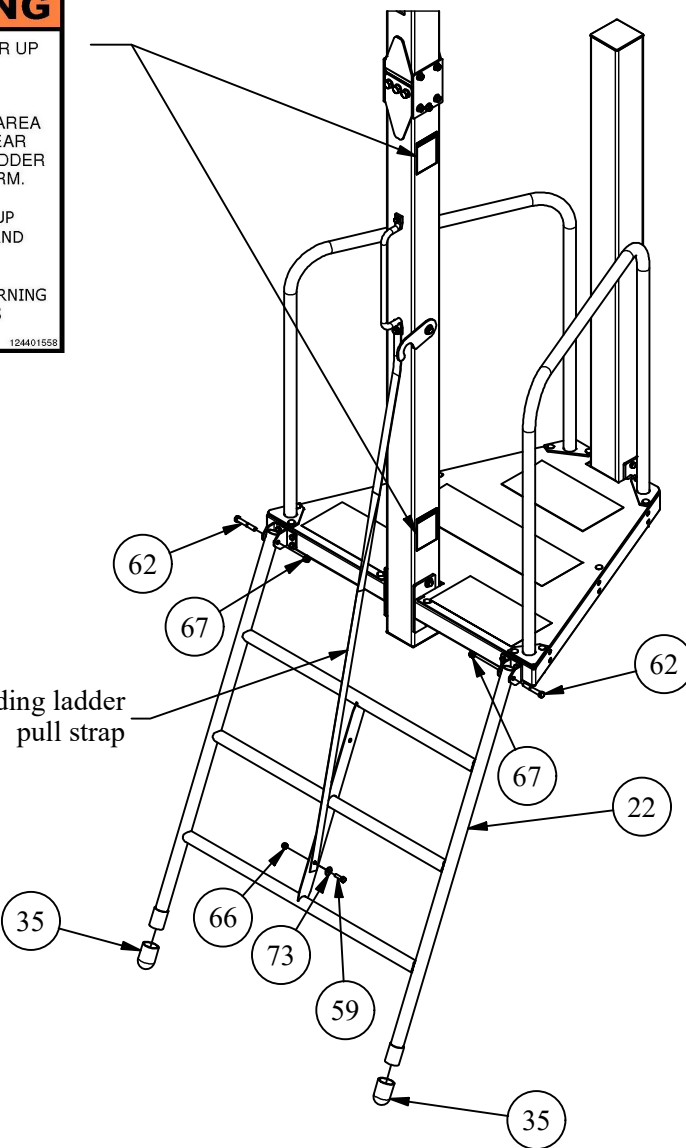
WARNING

-ALWAYS LATCH LADDER UP WHEN PLATFORM IS OCCUPIED.

-ALWAYS CHECK THAT AREA BELOW LADDER IS CLEAR BEFORE LOWERING LADDER TO DISMOUNT PLATFORM.

-ALWAYS LATCH LADDER UP BEFORE FOLDING MAST AND WHEN NOT IN USE.

-FAILURE TO FOLLOW WARNING COULD LEAD TO SERIOUS INJURY.

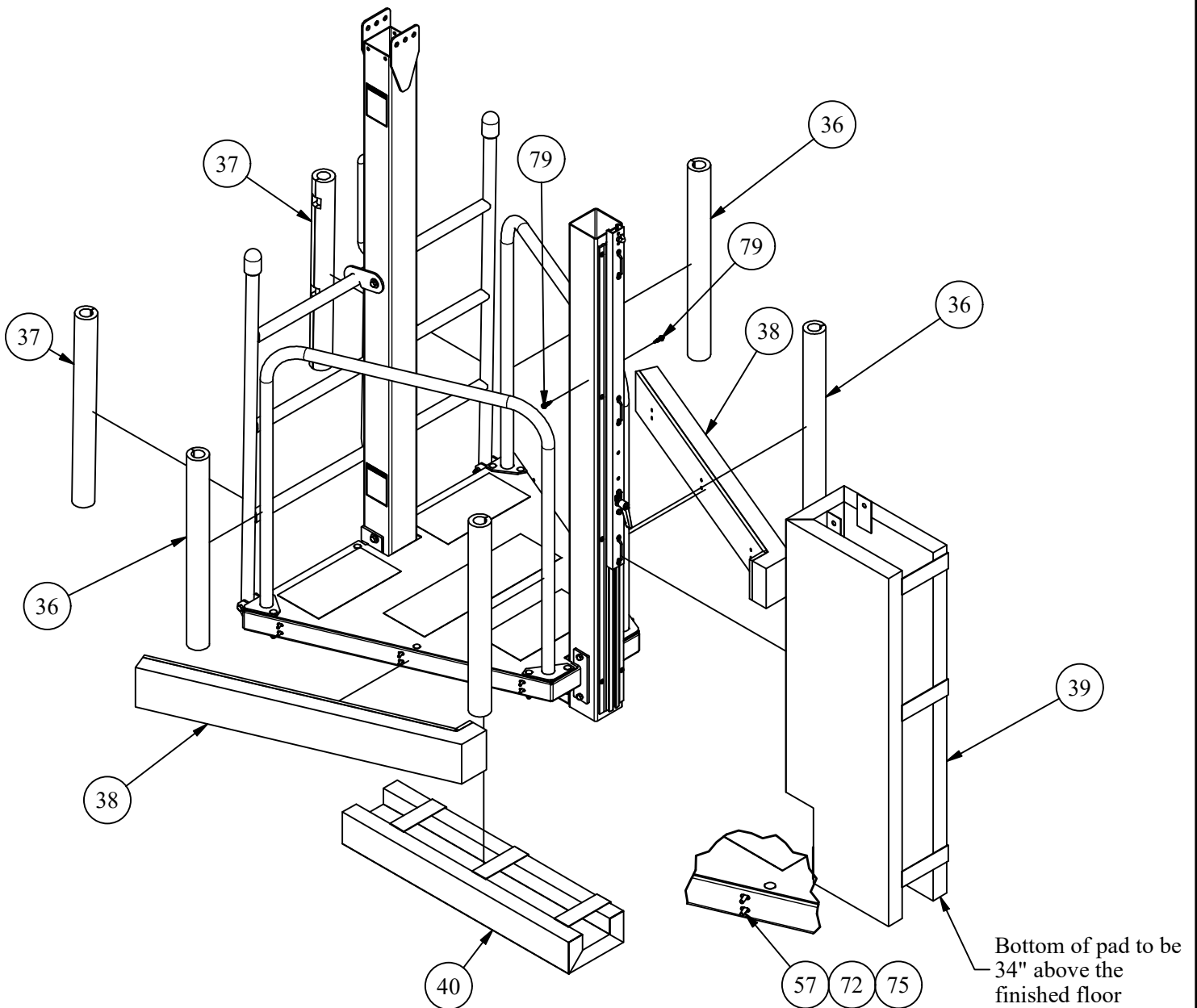


Install the folding ladder (Item 22) onto the hinge brackets using the 3/8" x 2-1/2" hex bolts and 3/8" locknuts. Do not torque these nuts. Tighten only until the nut is seated onto the hinge flange.

Attach the loose end of the ladder pull strap using the 5/16" x 1" hex bolt, 5/16" flat washer, and 5/16" lock nut. Torque this nut as indicated in the bolt torque chart.

Insert the rubber feet (Item 35) onto the lower ladder legs.

Ceiling Suspended Volleyball System



Install the ref frame pads (Item 38) to the frame rails using the 1/4" x 7/8" hex bolts (Item 57), 1/4" flat washer (Item 72) and 1/4" lockwasher (Item 75). A quantity of 6 are required for each pad.

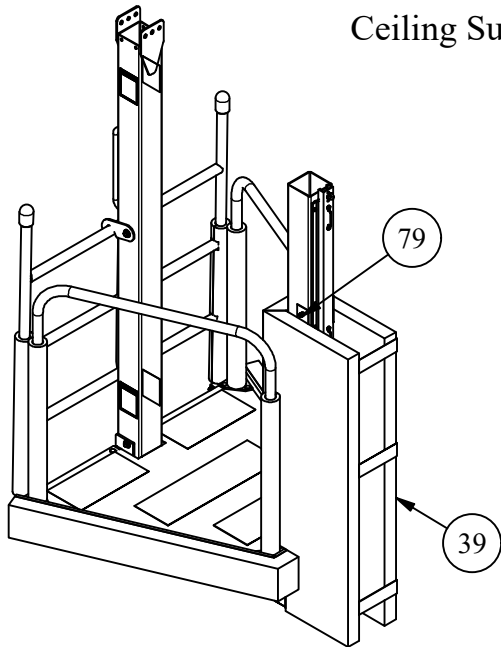
Install the hand rail pads (Item 36) to the hand rails.

Install the ladder rail pads (Item 37) to the vertical ladder tube.

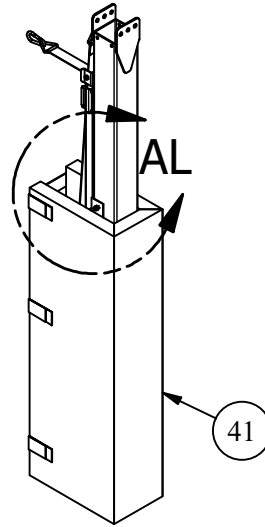
Install the main post pad (Item 39) to the post and secure with the 1/4" self drilling screws (Item 79). The bottom of the pad is to be 34" above the finished floor.

Install the crossover tube pad (Item 40) to the lower rectangular support tube of the referee stand frame and secure with the velcro straps.

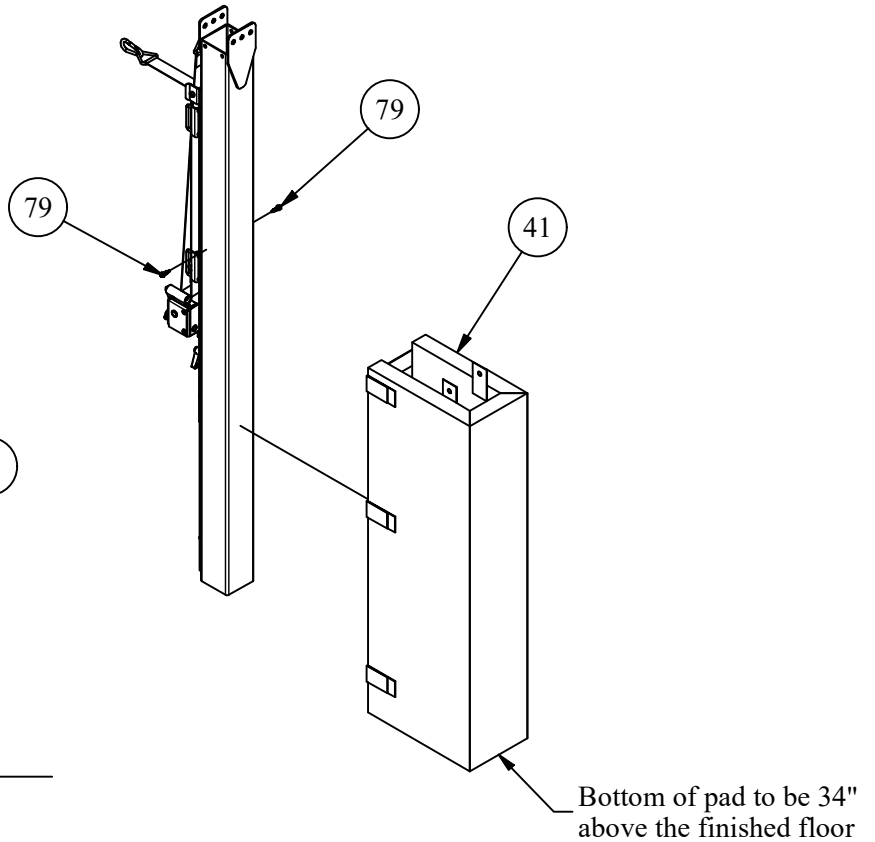
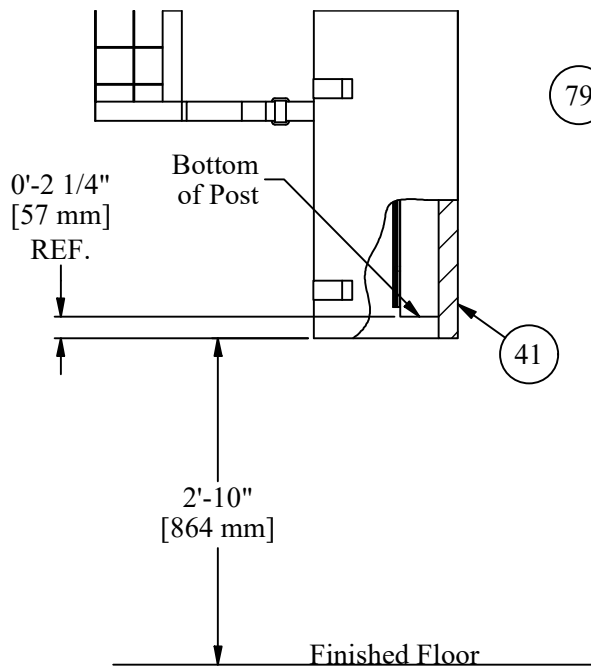
Ceiling Suspended Volleyball System



Referee Stand Pads Installed



Winch Post Pad Installed



Install the main post pad (Item 41) to the post and secure with the 1/4" self drilling screws (Item 79). Make sure the bottom of the pad is 2-14" below the bottom of the post to provide adequate player protection.

Ceiling Suspended Volleyball System

Net Installation Instructions

1. Unfold the net and lay it out between the two posts.
2. The height of the net is set by adjusting the height of the slide rails on the end post and winch post. Rotate the rail lock levers on the rails and set the net cable attachment points approximately 3/4" higher than the desired playing height (which is measured at the center of the court). Tighten the rail locks.
3. Attach one end of the tension cable to the hook at the top of the end post rail as shown. Next rotate the crank handle of the winch to extend the belt. Attach the other end of the cable to the belt of the winch post rail with a snap link. Turn the winch handle to tighten the belt.
4. Center the net so there is equal space between the ends of the net and the posts. Undo the Velcro net straps as they come shipped with the net. Wrap the straps through the footman's loops as shown in the illustration on the next page. Pull the straps tight and press the Velcro surfaces together. These straps are responsible for maintaining the net tension and may need to be re-tightened periodically. Expect stretch in the net. Install the buckle pads.
5. The height of the net will vary slightly with the tightness of the cable. If the net height needs to be adjusted, loosen net straps and loosen the cable to take pressure off of the side rails. Loosen the rail locks and move the rails to the desired height. Tighten the rail locks and re-tighten the net.

Refer to the illustrations on the following pages for proper net strap installation and position.

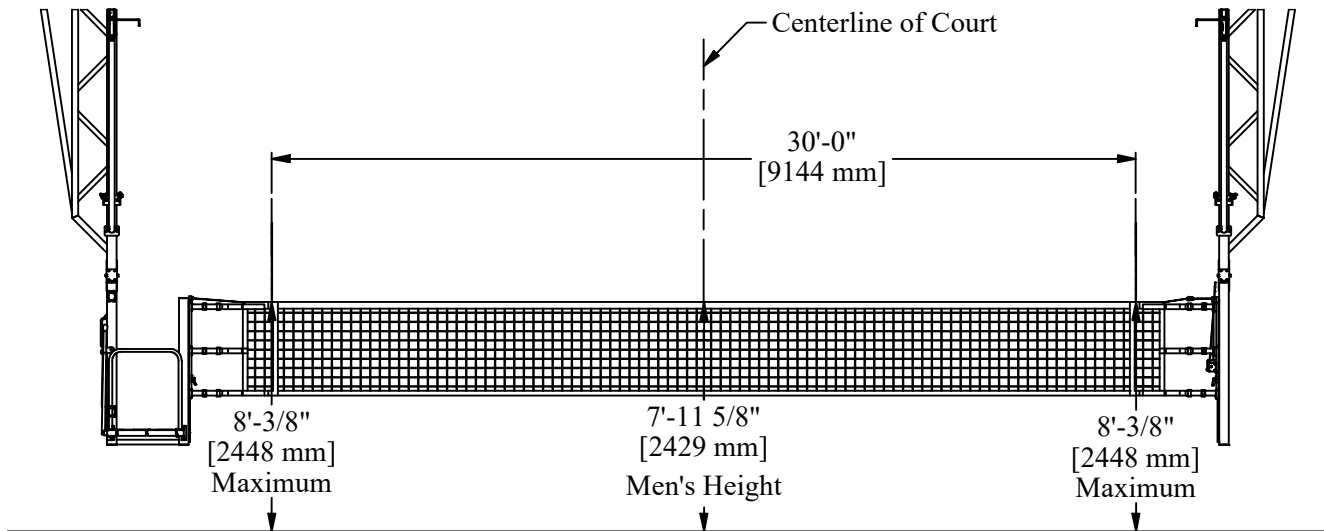
⚠ **WARNING**

DO NOT OVERTIGHTEN WINCH
Overtightening may result in damage to equipment and/or serious injury.

124651582

IMPORTANT:

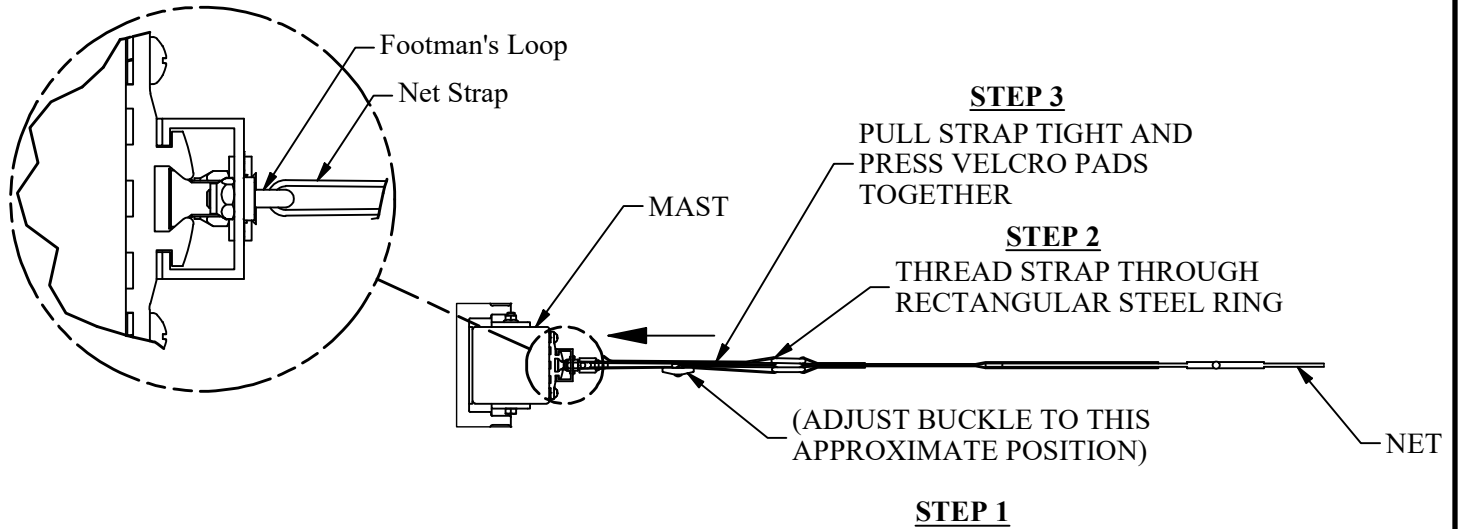
DO NOT OVERTIGHTEN THE NET CABLE.



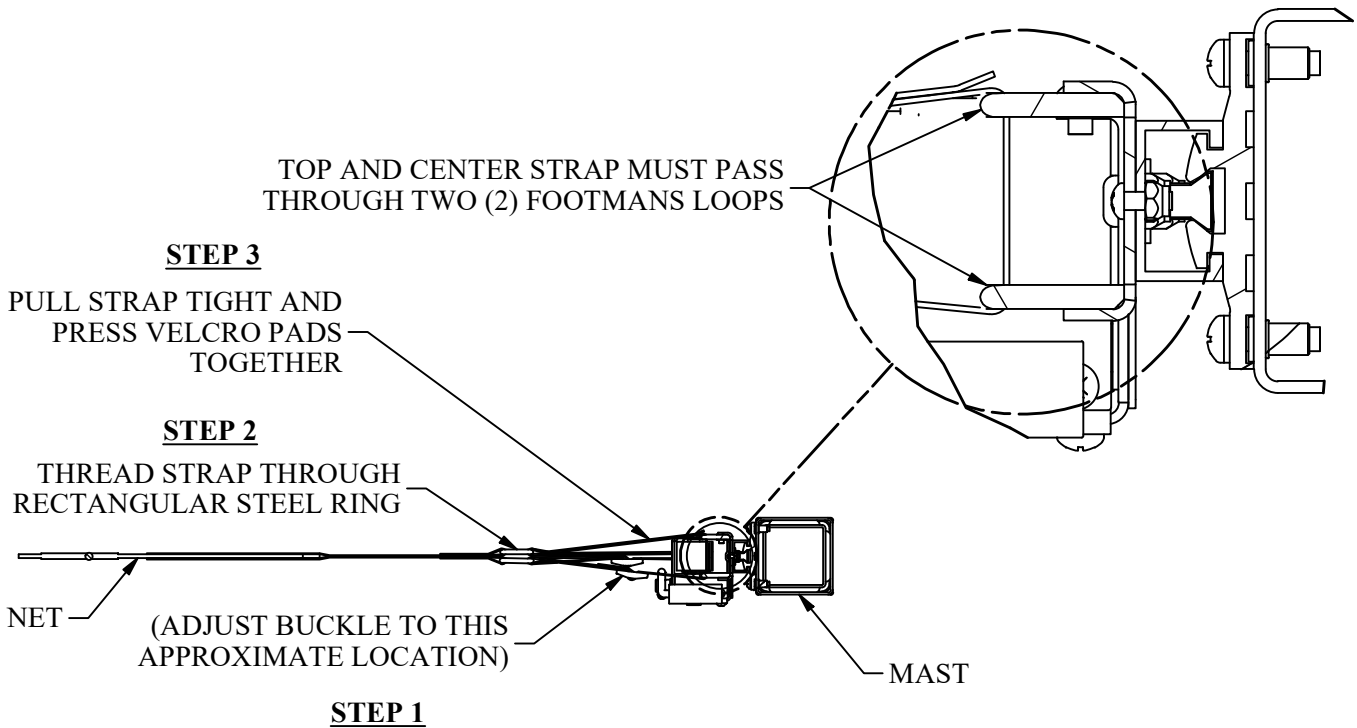
Net Height at Center Court

VB Type	US Dims	Metric Dims
Men's VB	95 5/8"	[2.429 m]
Women's VB	88 1/8"	[2.238 m]
Youth VB	84"	[2.134 m]
Girl's VB	78"	[1.981 m]

**Ceiling Suspended Volleyball System
TOP VIEWS OF NET STRAP PLACEMENT**



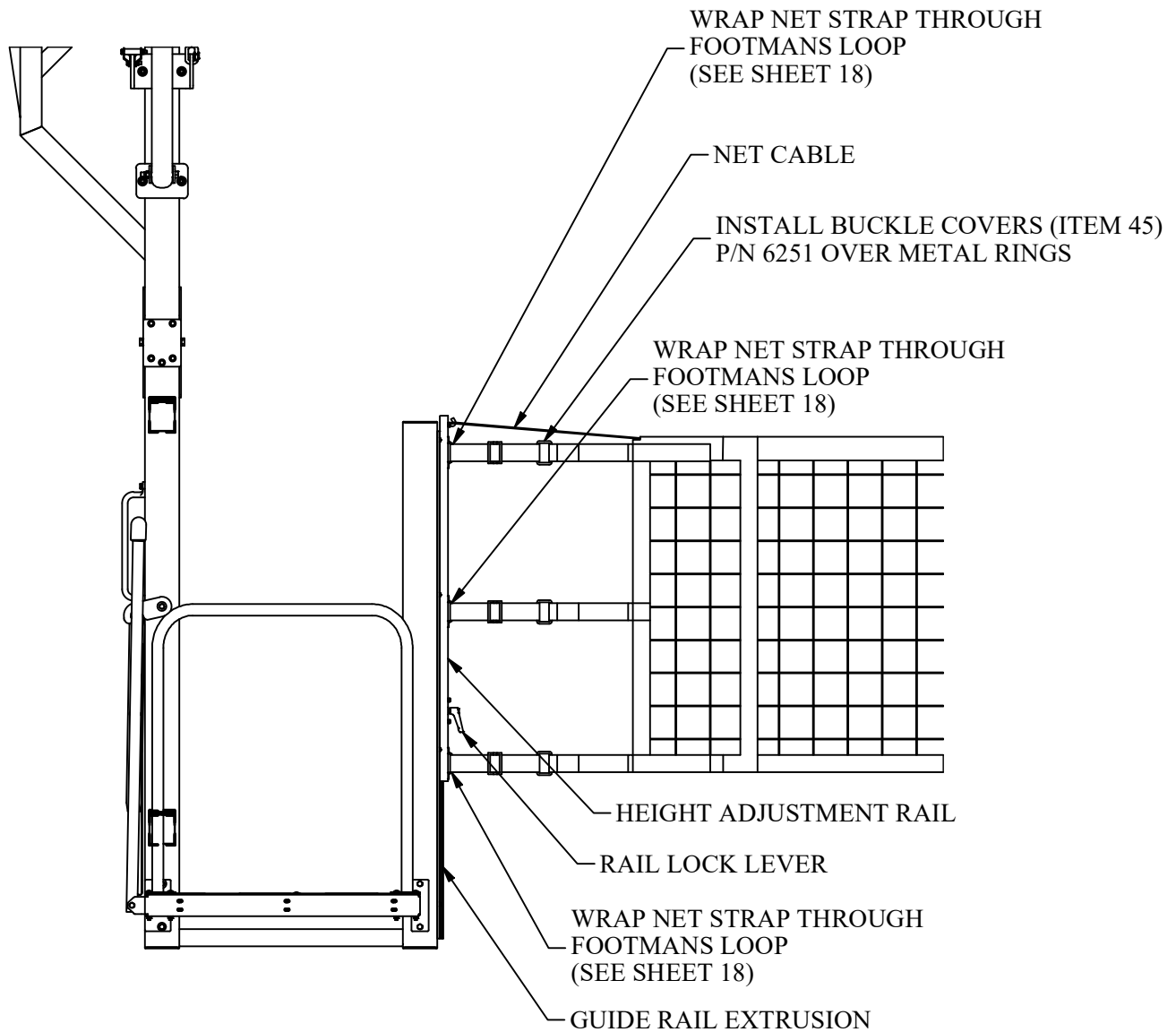
CONNECTION AT END POST (REFEREE STAND END) OF THE NET°



CONNECTION AT WINCH POST END OF THE NET

Ceiling Suspended Volleyball System

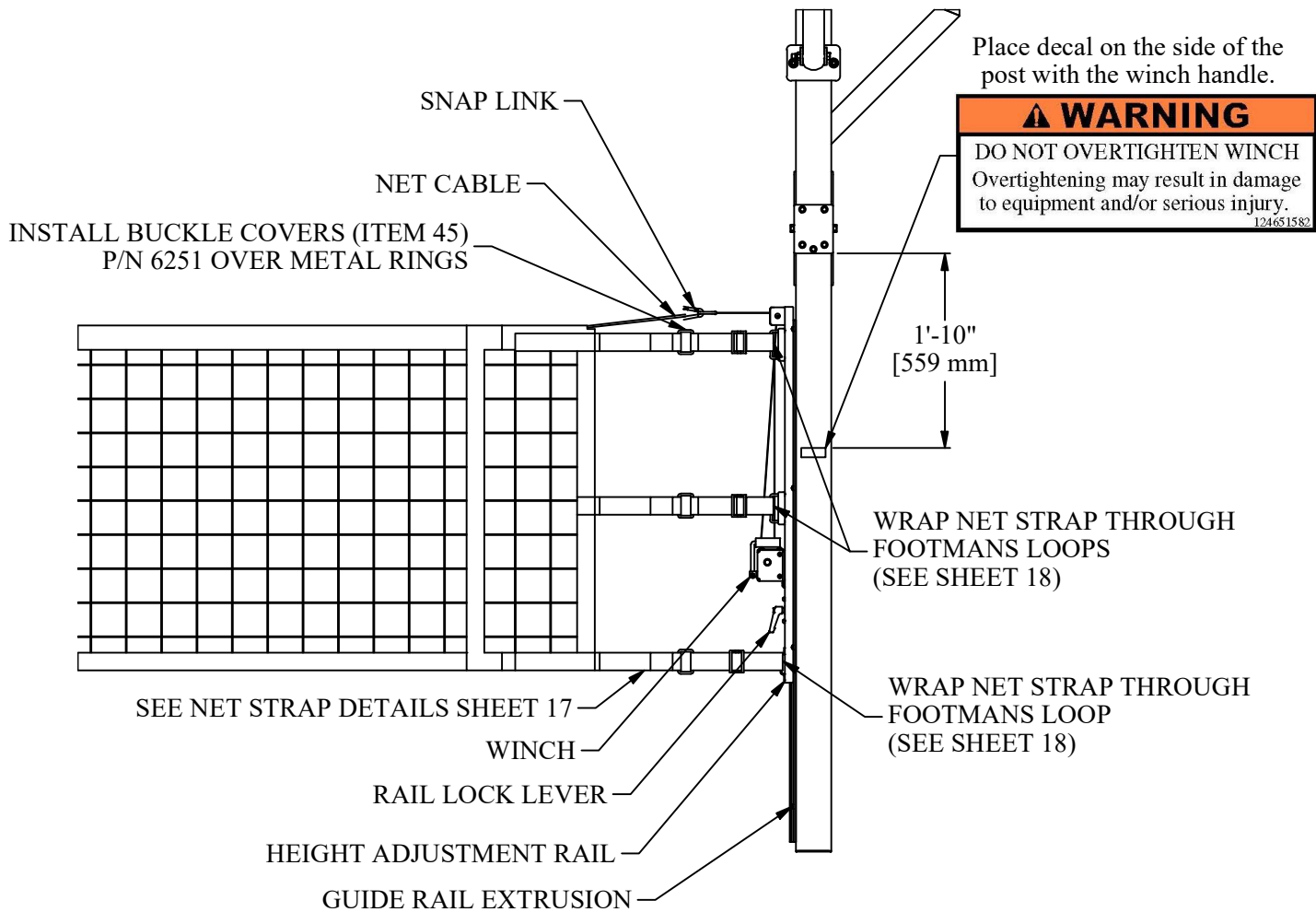
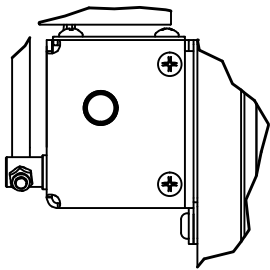
Net Installation - End Post Details



NET ATTACHMENT SAME WITH
OR WITHOUT REFEREE STAND
PADS NOT SHOWN FOR CLARITY

Ceiling Suspended Volleyball System

Net Installation - Winch Post Details



PADS NOT SHOWN FOR CLARITY

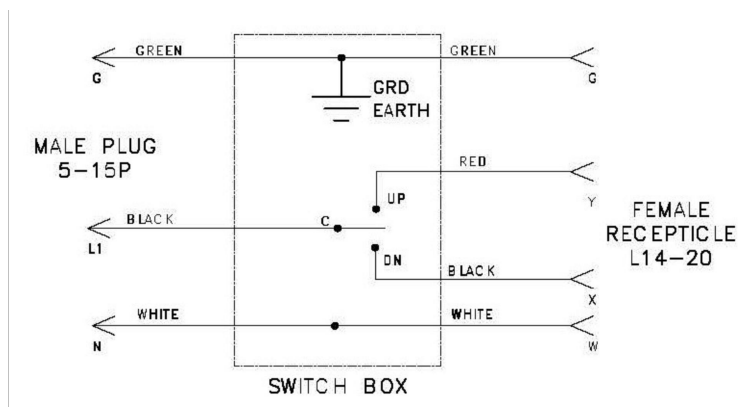
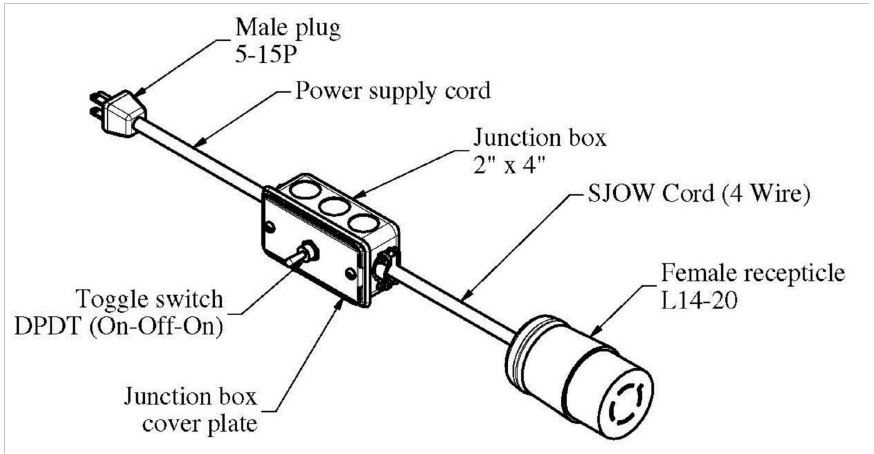
Ceiling Suspended Volleyball System

Electrical Wiring and 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.

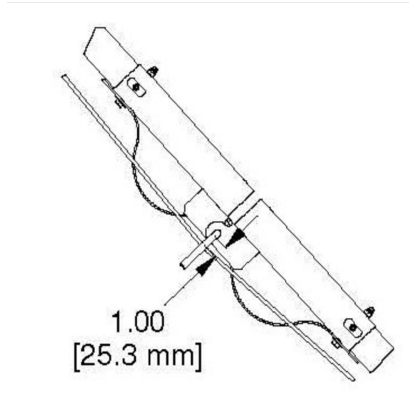
Before connecting the temporary power and attempting to set the limit switches, make sure there are no obstructions in the way of the masts or net when folding.

Make sure there are no personnel near or under the masts when folding.

Ceiling Suspended Volleyball System

Setting Limit Switches

1. With the volleyball system in the down position, the post should be plumb and the net should line up with the court lines.
2. When setting the hoist limit switches, make sure the folding brace is locked in in the full down position. Adjust the lower limit to allow for slack between the 1/4" cable and the breaker bar. **DO NOT** allow more than 1" [250mm] slack. Before making limit switch adjustment, be sure that the hoist is unplugged.



WARNING

DO NOT allow more than 1" [25 mm] slack between the 1/4" cable and the breaker bar when the unit is in the full down position and the hoist has reached the lower limit.

When the slack exceeds 1" [25 mm], the cable could jump over the breaker bar resulting in severe damage to the equipment and severe injury or death.

123951579

3. Make sure the hoist motor is **UNPLUGGED** from the test cord.
4. Loosen the retaining screw on the limit box cover and remove the cover.
5. 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.
6. Connect the power by plugging the motor into the test cord and raise the volleyball system to the up position. Check that the volleyball system is folding correctly and not binding the braces.

WARNING

The motor and electrical circuit is now **HOT**.

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

7. The volleyball system should be raised no higher than necessary for storage. Then disconnect the power plug.
8. 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.
9. Reconnect the power.
10. The volleyball system 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 masts of the volleyball system are parallel and perpendicular to the floor when fully down.
11. Replace the cover on the limit box and securely tighten the screw.
12. Determine whether to leave the volleyball system in the up or down position.
13. Disconnect the temporary wiring and leave these instructions with the electrician or general contractor.
14. **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

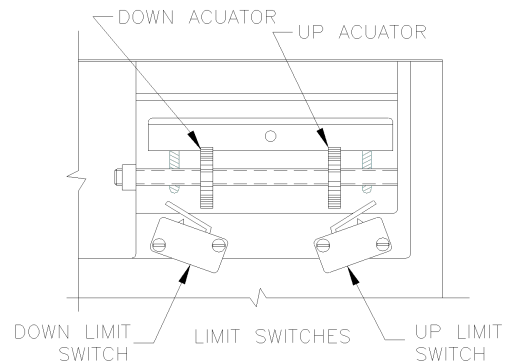
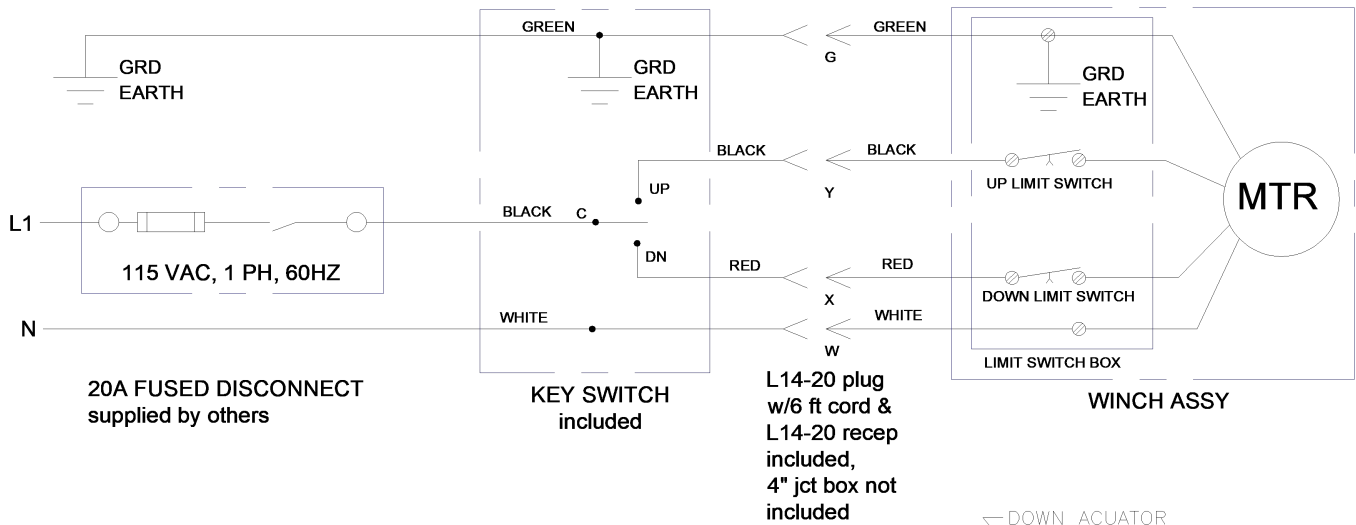
A qualified electrician should complete all permanent wiring.

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

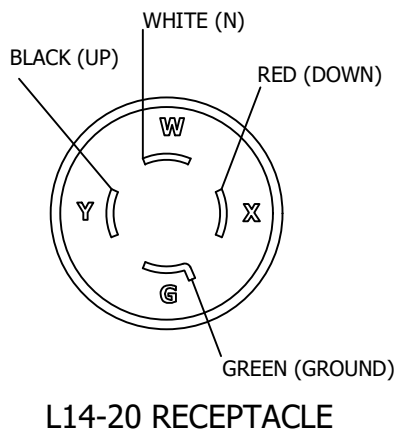
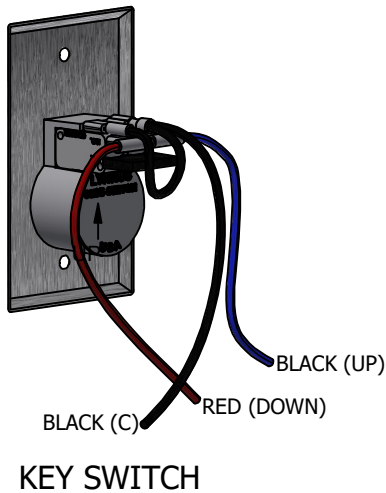
The following electrical schematics and information is for reference only.

Ceiling Suspended Volleyball System

3/4 HP 115VAC, 1PH, 60Hz, 20Amp Service



← WIRING SUPPLIED BY OTHERS →



ELECTRICAL REQUIREMENTS HOIST MODEL 8194.

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

MOTOR SPECIFICATION
-3/4HP 115V, 1PH, 60HZ, 9.5 FLA
INSTANT REVERSING, THERMAL O/L

MINIMUM WIRE SIZE
(copper wire, 3% max voltage drop)
0-90 ft.....12 ga.
90-140 ft.....10 ga.
140-240 ft.....8 ga.
240-380 ft.....6 ga.

Key switch should be located in full view of the Skymaster system, but NOT directly under the Skymaster system.

See other hoist specification sheet for wire size and wiring of other winch models.

Ceiling Suspended Volleyball System

Operating Instructions

▲ CAUTION

Only trained and authorized personnel should operate this equipment. Operation by untrained or unauthorized personnel may result in damage to the equipment and/or injury to anyone near the system.

Please read these instructions to familiarize yourself with the type of equipment you have purchased. Unauthorized or untrained users can damage even the safest equipment. We strongly recommend that only qualified and authorized personnel be designated as the operators of this equipment.

Authorized personnel is defined as an individual who has been trained for the proper operation of the unit and is sanctioned by the facility as being responsible for the operation of the equipment. The authorized person should be of sufficient age and experience to fully understand and comprehend operation of the equipment.

Even though great care has been taken to ensure the safety of these units, mechanical problems or failures can occur. It is VERY important that the authorized operator keep the moving overhead volleyball system in FULL VIEW AT ALL TIMES. Should the limit switches ever fail to stop the unit in the up or down position, the operator must be prepared to manually halt the unit by releasing the key switch, wireless remote button or keypad button to avoid damage to the facility structure. If a limit switch fails, contact the manufacturer or the responsible installation company. Do NOT continue to operate unit until limit switch problem has been corrected. If, at any time during operation, any component of the unit fails (such as cables, clamps, pulleys, fittings, attachment points or pipe) STOP THE OPERATION IMMEDIATELY. Contact the manufacturer or the responsible installation company.

The volleyball net should already be installed; however, if it is not installed, please refer to the section on net installation in the installation instructions portion of this manual.

Raising and Lowering the System:

To raise or lower your overhead volleyball system - make sure unit is in full view of authorized operator at all times and area directly below and around unit is free and clear of people and obstructions.

1. Key Switch Operation:

Note: The key switch should be located in full view of the Skymaster system, but not directly under the system.

Turn key in appropriate direction (right=up, left=down) and hold key in position until unit is completely raised or lowered based on preset limit switch stops. The motor will automatically stop when the limit switch engages, even if the key is still turned in the up or down position. The electric hoist provided by the manufacturer is equipped with an instant reverse feature. This feature allows the user to instantly reverse the direction of the unit with a simple change of key position. HOWEVER, never purposely or quickly reverse the operation without momentarily stopping in the "neutral" position, as this may cause gear damage, circuit overload or damage to the limit switches.

1. Keypad Operation:

Enter access code; select preprogrammed setups or individual unit to be operated. Push in and hold "up" or "down" button until the unit is in desired position. Repeat procedure for remaining units to be operated. Keypad will automatically shut off after 30 seconds of non-use.

Ceiling Suspended Volleyball System

Adjusting the net height:

The net height is set by raising or lowering the slide rails on the guide rails of the posts. To adjust the net height, rotate the rail lock lever and slide the rail up or down to the desired net height.

It may be necessary to remove some of the net tension in order to slide the rails. Loosen the Velcro net straps at each end of the net. Turn the winch handle to loosen the net cable.

Slide the rails to the desired position and lock the rail lock lever. Tighten the net cable until the center of the net is about $\frac{3}{4}$ " lower than the ends of the net. **DO NOT OVERTIGHTEN** the net cable.

Important Note: The net cable **DOES NOT** apply tension to the net. Only the Velcro net straps apply net tension.

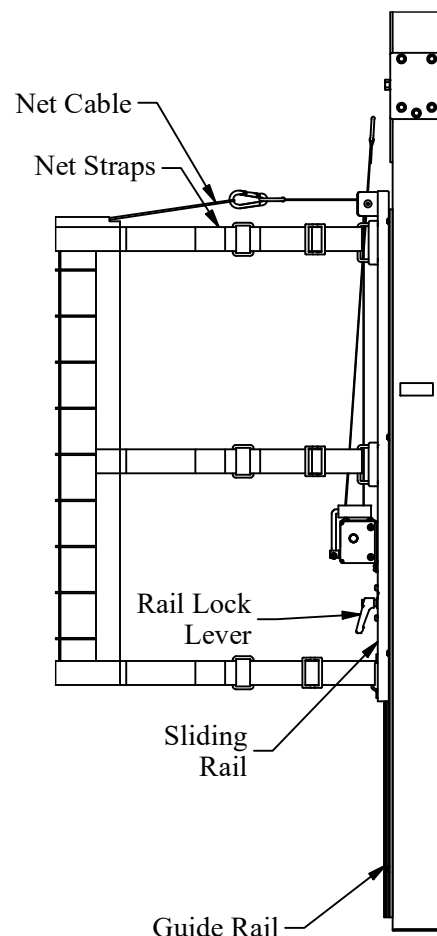
Make sure the net is centered between the end posts, and retighten the Velcro net straps.

Make sure all the pads are secure and are covering any exposed metal.

Storing the Overhead volleyball system:

When play is completed and the unit is to be stored, follow the procedures for raising the unit.

It is not necessary to remove any tension from the net when storing the unit.



DO NOT OVER-TIGHTEN THE NET CABLE.

NEVER jump, hang, swing from or pull on the overhead volleyball structure. This can cause structural damage and/or personal injury.

NEVER place foreign objects on or around the unit.

NEVER use the unit for anything other than its intended purpose.

Ceiling Suspended Volleyball System

MAINTENANCE INFORMATION – PLEASE RETAIN FOR FUTURE REFERENCE!!!

MAINTENANCE OVERVIEW

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

The manufacturer recommends an annual maintenance inspection of this equipment by an authorized and trained individual. Inspections should occur more frequently depending upon the usage of the equipment.

It is recommended to use the “Maintenance Checklist” on the following pages as a guide to assist with the inspection. Any item that is not satisfactory should be repaired or replaced immediately.

1. Inspect all bolted connections for proper tightness. Use the bolt torque chart at the right as a guideline for proper torques.

The bolts that secure hinged joints have nylon locking nuts and these should NOT be torqued to the value in the chart. These nuts should only be tightened until the nut just engages the hinge bracket. Do not overtighten the nut as this will cause binding and excessive wear on the joint.

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

2. Inspect all mast fittings for cracks, corrosion, and tightness.
3. Inspect hinge fittings and lubricate as required.
4. Check hoist cable for wear and fraying and pulleys for signs of wear. A noisy pulley should be replaced.
5. Inspect the hoist for proper operation and make sure limit switches are working and set correctly. Lower the unit and check the cable droop below the folding hinge breaker bar. If the droop is more than 1” [25 mm], adjust the lower limit switch.
6. Check the SafeStop for signs of wear. If a yellow or red flag is appearing at the bottom of the strap, SafeStop should be replaced.
7. Inspect pads, net cable, and net for wear.

▲WARNING

When servicing the electric hoist requires removal from the system, first lower the Skymaster system to the full down position. If the system cannot be lowered to the full down position, tie the ends of the masts to the overhead or building structure to prevent movement.

Failure to lower the system or secure the masts to the building structure could result in the system dropping when the motor is removed resulting in damage to the system and/or serious injury to anyone near or under the system.

Ceiling Suspended Volleyball System

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 the manufacturer and include it on any correspondence.

I have received the maintenance and warranty information provided by the manufacturer on the ceiling suspended backstop.

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

Ceiling Suspended Volleyball System

Maintenance Check Sheet

Refer to the Maintenance Overview section (page 26) for recommended frequency of inspections.

Date: _____

Unit: _____

Overhead Structure

-Overhead pipes: dents, stress spots, etc. OK Repair Replace

-Beam clamps OK Repair Replace

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

-Mast clamps for brace connections
(torqued properly) OK Repair Replace

-Mast clamps for pull up cable points
(torqued properly) OK Repair Replace

Elec. Net Adjuster (If Equipped)

-Lubrication OK Repair

Electric Hoist

-Cable wrap smooth and even OK Repair

-Limits set correctly and operate OK Repair

-Operates smoothly no abnormal noise OK Repair

Volleyball Net

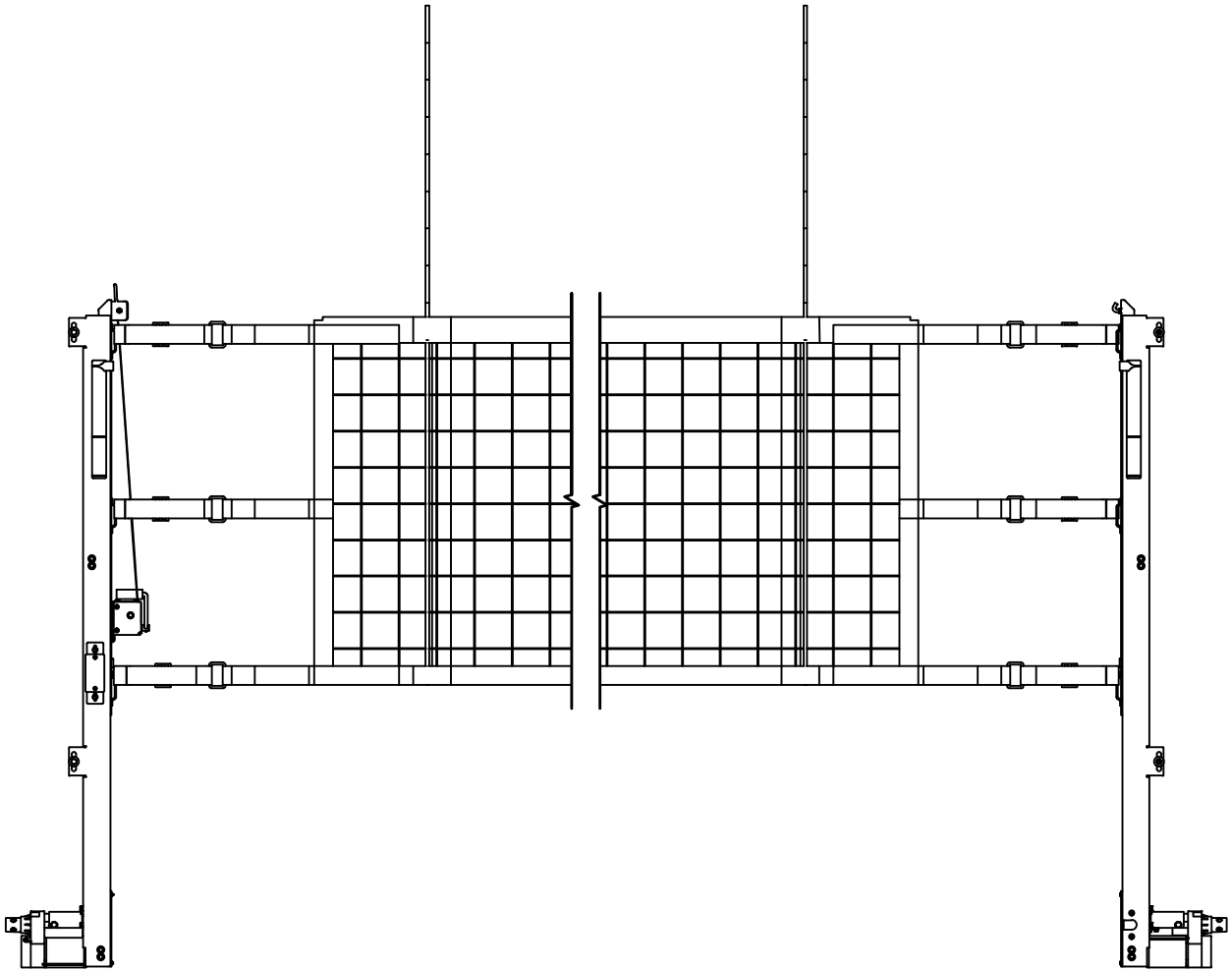
-Nets not frayed or torn OK Repair Replace

-Hardware tight OK Repair Replace

Pads

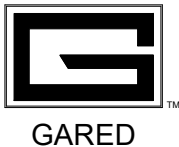
-Pads in good condition
Not torn, faded or loose OK Repair Replace

8100-ENA Skymaster Electric Net Height Adjuster System (optional equipment)



Please read, understand, and follow all instructions for assembling the net height adjuster on the Skymaster volleyball system.

Installation and Assembly Instructions, Operators Manual, and Maintenance Manual



Gared Holdings, LLC
9200 E. 146th St.
Noblesville, IN 46060

Model: 8101 and 8101R
Skymaster Volleyball System

FILE LOC. Q:\Inventor Files\Installation Instructions\Volleyball\Skymaster 8100

DATE 7/28/2022	SHT. NO. 29 OF 39	PART NO. 601751772	REV C
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8100-ENA Skymaster Electric Net Height Adjuster System

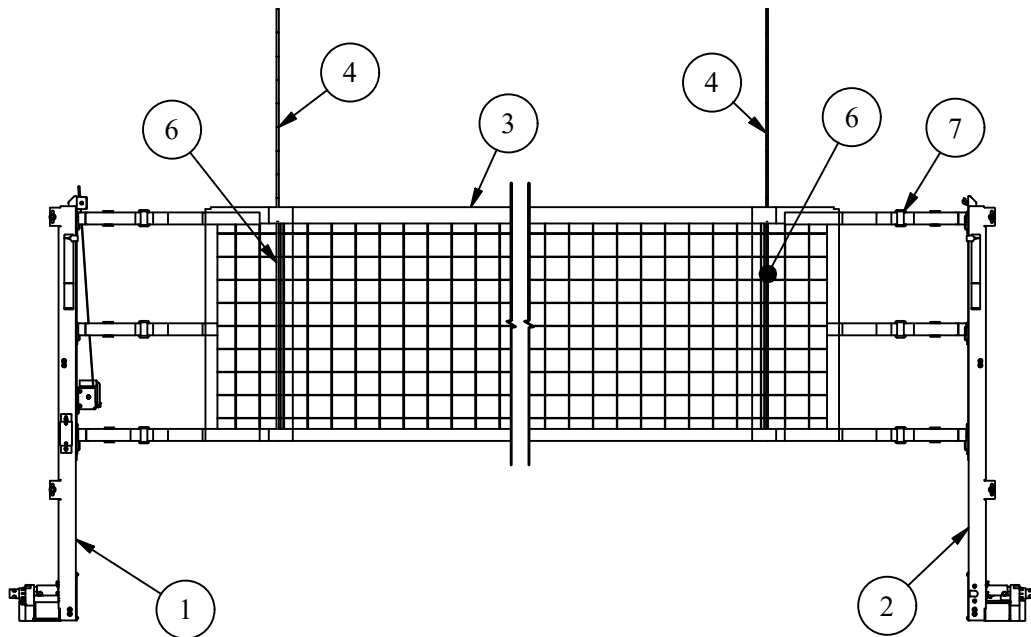
Tools Required:

- Electric Drill
- 13/32" Drill bits
- Center punch
- Hammer
- #1 Phillips screwdriver
- 1/4" Blade width flat screwdriver
- Tape measure
- 9/16" Wrench (2 required)

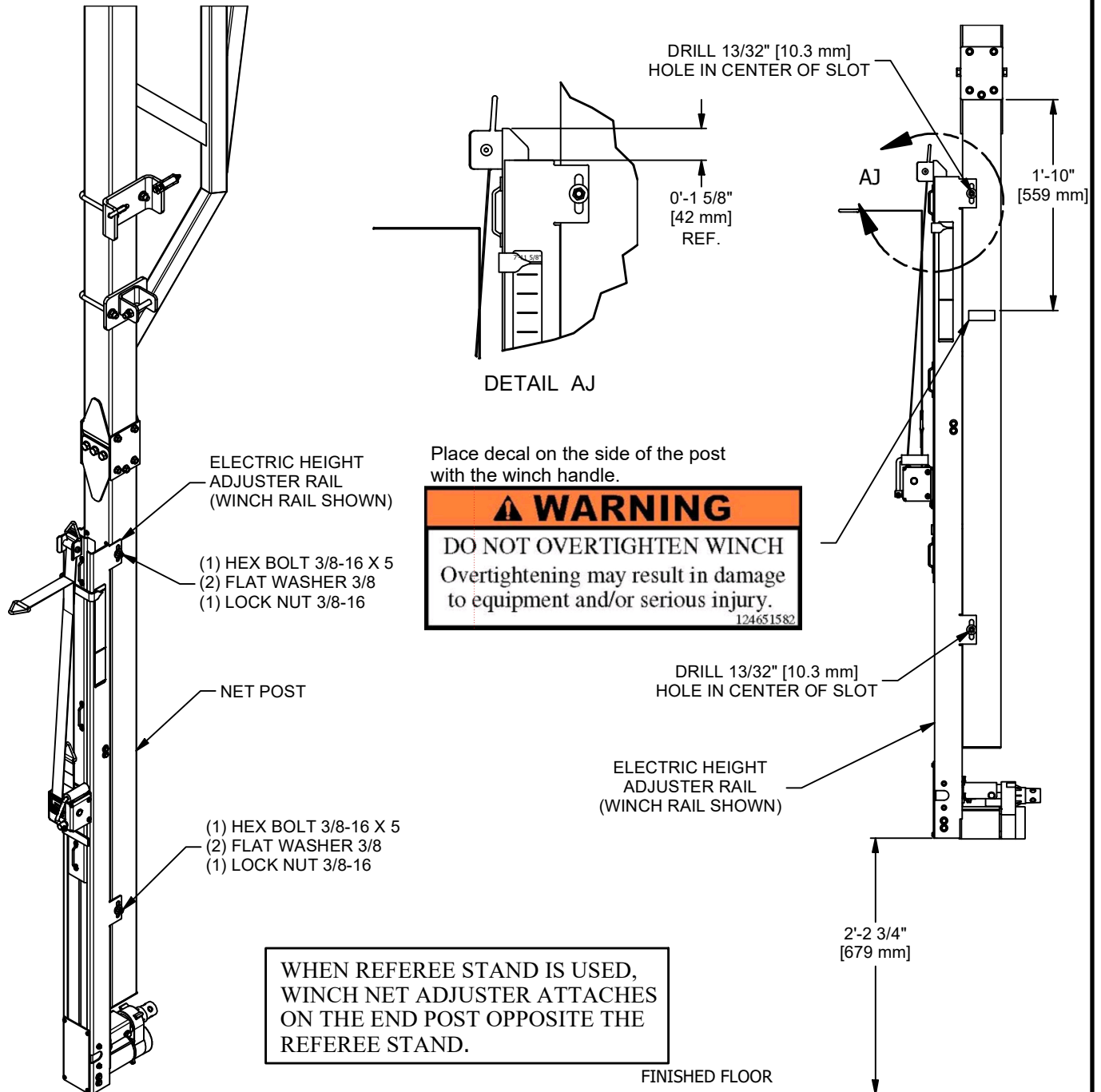
Before starting the installation, be sure to check for missing parts or damaged parts. the following parts list can be used as a reference.

PARTS LIST

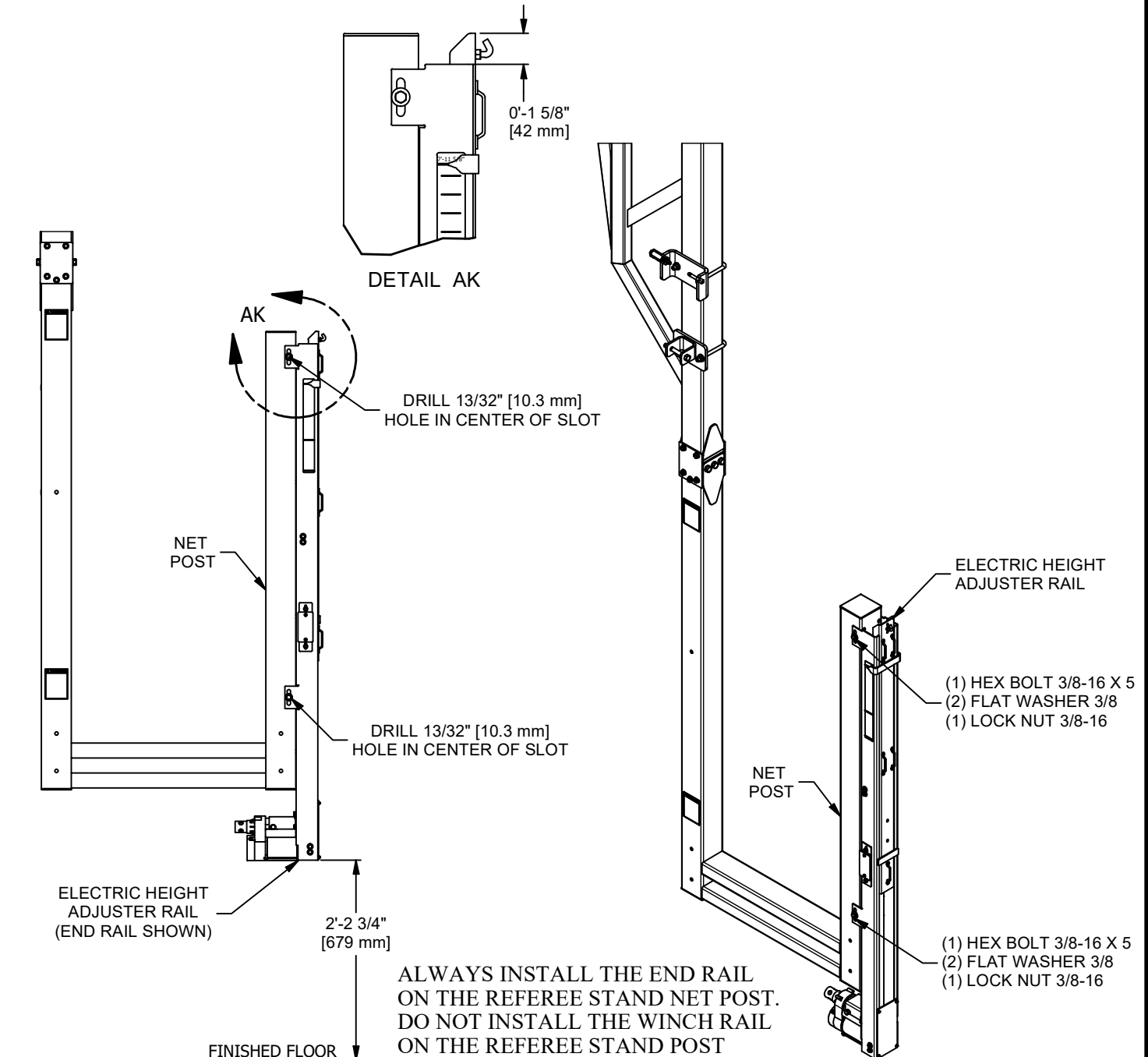
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	604401757	RAIL ASSY, WINCH 8100 ENA 115V 60HZ
2	1	604401752	RAIL ASSY, END 8100 ENA 115V 60HZ
3	1	601651165	VOLLEYBALL NET, 7000 SERIES
4	2	1028-22-00	NET ANTENNA
5	1	604401689	RELAY BOX, SKYMASTER ENA
6	2	7607-22-00	NET SIDELINE MARKER
7	1	6251	BUCKLE COVERS SET OF (6)



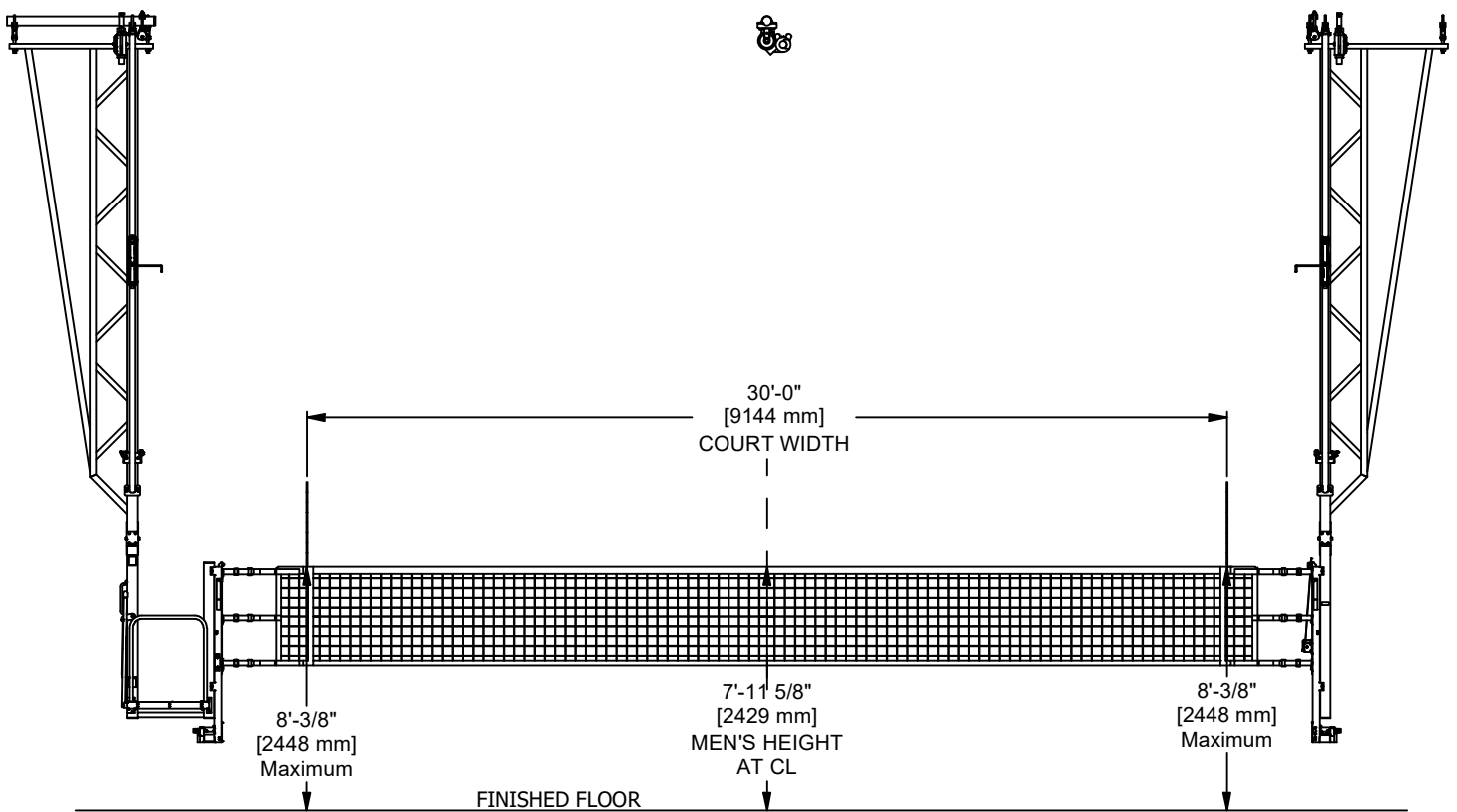
- Before assembling the winch rail assembly to the post, verify the extension of the winch rail above the rail channel. The rail is factory set and should be extended above the channel 1-5/8" [42 mm].
- Remove the two 3/8" x 5" hex bolts and 3/8" nylon lock nuts from the assembly and retain for later use.
- Slide the winch rail assembly onto the post and raise it to the dimension shown. Clamp the assembly to the post maintaining the dimension and mark the center of each slot (on both sides of the post with a center punch).
- Drill a 13/32" [10.3 mm] hole at each of the center punch marks through the post wall.
- Re-install the 3/8" x 5" hex bolts, flat washers, and lock nuts at the upper and lower locations. Tighten the bolts securely.
- Apply winch WARNING label, "DO NOT OVERTIGHTEN WINCH", on winch handle side of mast post as shown.



- Before assembling the end rail assembly to the post verify the extension of the end rail above the rail channel. The rail is factory set and should be extended above the channel 1-5/8" [42 mm].
- Remove the two 3/8" x 5" hex bolts and 3/8" nylon lock nuts from the assembly and retain for later use.
- Slide the end rail assembly onto the post and raise it to the dimension shown. Clamp the assembly to the post maintaining the dimension and mark the center of each slot (on both sides of the post with a center punch).
- Drill a 13/32" [10.3 mm] hole at each of the center punch marks through the post wall.
- Re-install the 3/8" x 5" hex bolts, flat washers, and lock nuts at the upper and lower locations. Tighten the bolts securely.

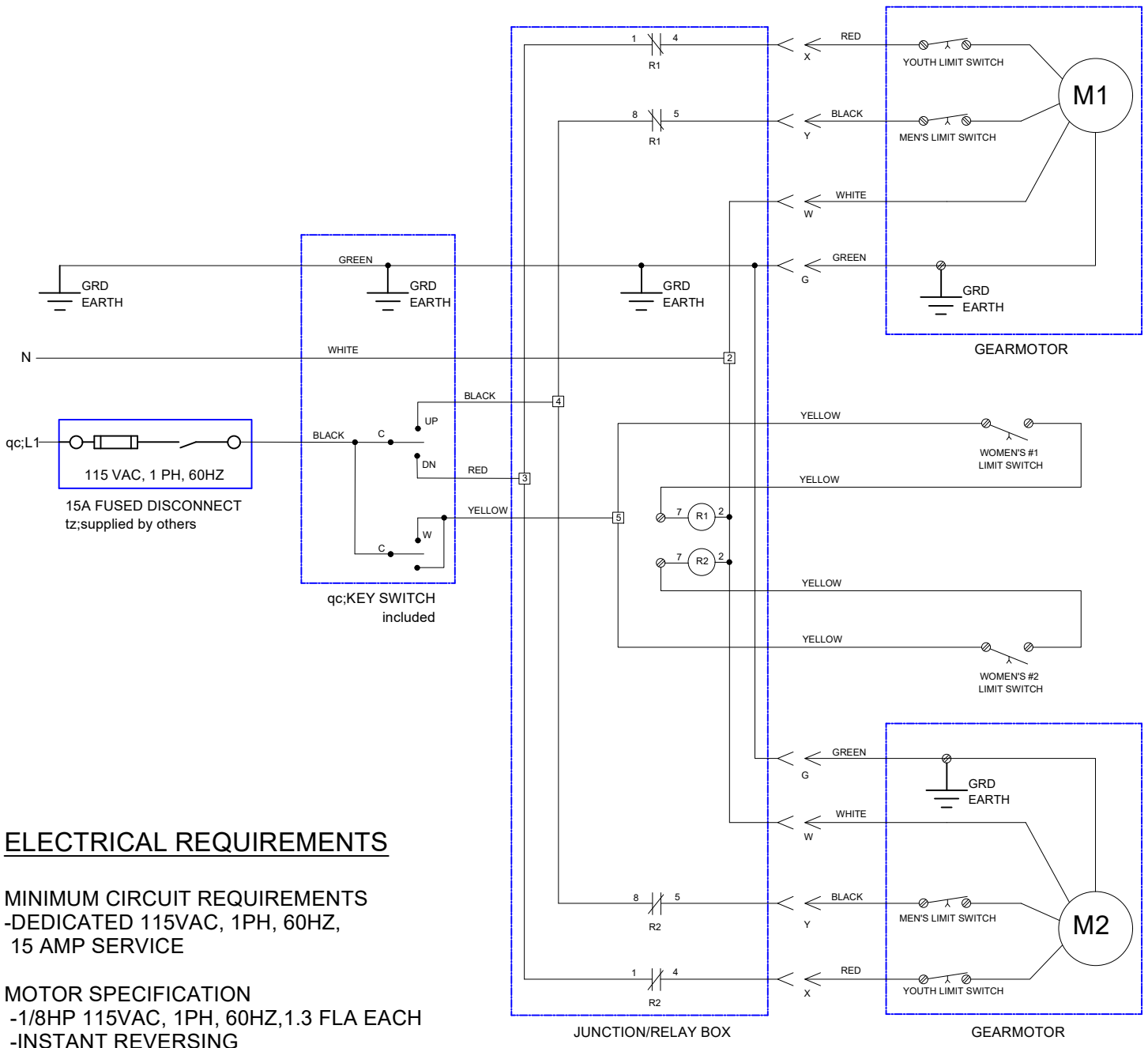


- Install and tension the net. Note: Proper net tension is achieved when the net sag is about 3/4" at the center of the net. See detailed net installation on Sheet 17.
- Once the net is tensioned, check the net height dimensions at the court lines and center of the net. The net height should be as shown in the diagram below.
- If the net height does not match the dimensions shown by less than 1/16", loosen the 3/8" bolts on the winch rail assembly and the end rail assembly and slide the rails up or down in the slots until the net height dimensions are achieved. Retighten the bolts on the winch rail and end rail assemblies..



Net Height at Center Court

VB Type	US Dims	Metric Dims
Men's VB	95 5/8"	[2.429 m]
Women's VB	88 1/8"	[2.238 m]
Youth VB	84"	[2.134 m]
Girl's VB	78"	[1.981 m]

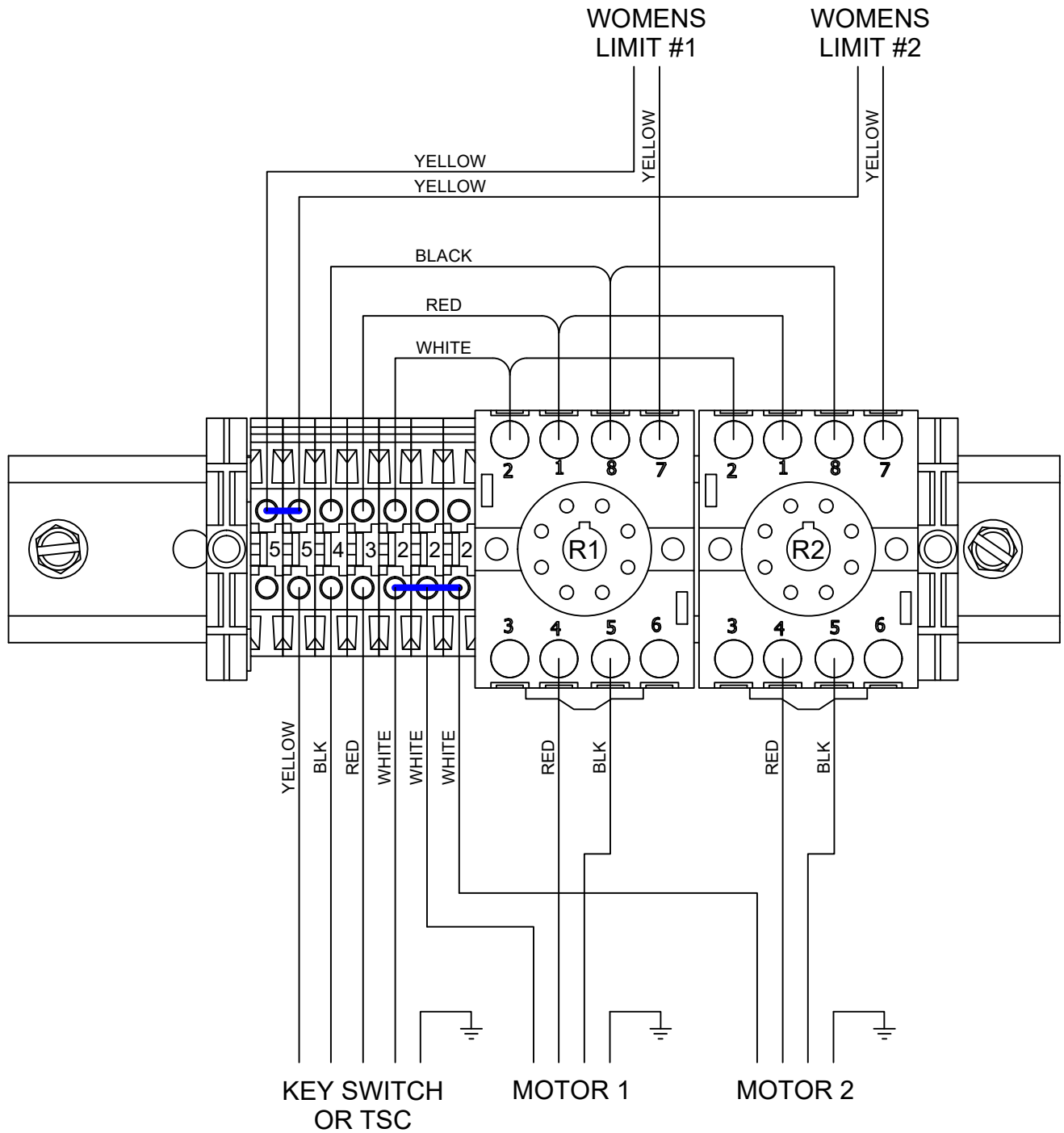


ELECTRICAL REQUIREMENTS

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

MOTOR SPECIFICATION
 -1/8HP 115VAC, 1PH, 60HZ, 1.3 FLA EACH
 -INSTANT REVERSING
 -AUTO RESET THERMAL O/L

MINIMUM WIRE SIZE
 (copper wire, 3% max voltage drop)
 0-350 ft.....12 ga.
 350-550 ft.....10 ga.



Skymaster® Volleyball System With Electric Net Height Adjuster

ELECTRICAL WIRE ROUTING DIAGRAM

Relay Box (P/N 604401689)

Locate the Relay Box in a convenient location.

Route wire bundle (To Motor #1) and wire bundle (To Womens Limit #1) through hole in channel and down through mast tube to floor.

Route wire bundle (To Motor #2) and wire bundle (To Womens Limit #2) through hole in channel and down through mast tube to floor.

Wire bundle (To Motor #1)

Wire bundle (To Motor #2)

AR

AR

Wire bundle (To Womens Limit #2)

AP

AP

Wire bundle (To Womens Limit #1)

Wire bundle (To TSC or Key Switch)

Route wire bundles from inside mast through 15/16" hole and across brace tube to junction box.

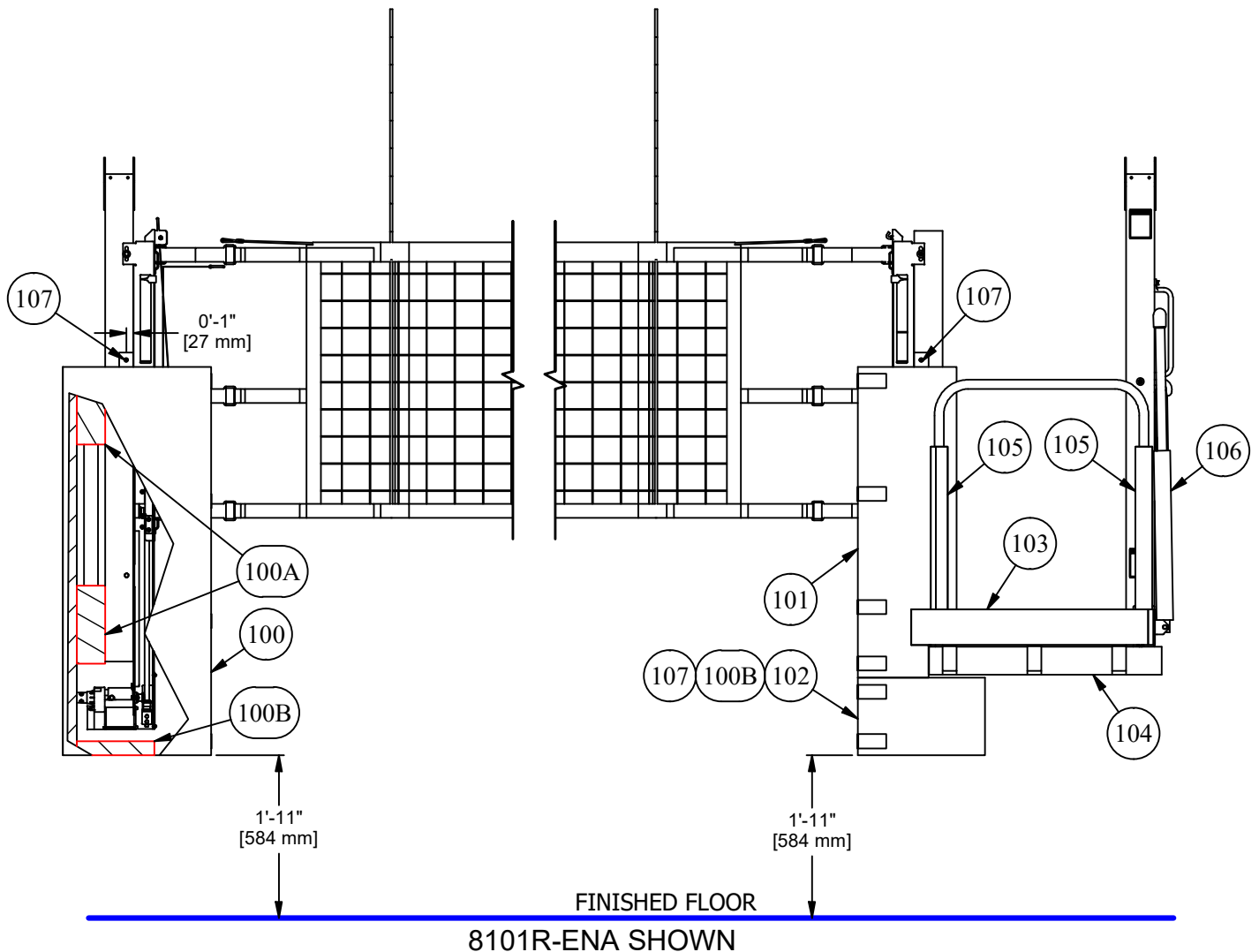
Route motor wire cable through 15/16" dia. hole at top of mast and out bottom of mast. Make wire connections to wire bundles from the mast and tuck the connected wires back up into the mast.

Make certain all wires are clear of any moving parts and secured to a stationary component.

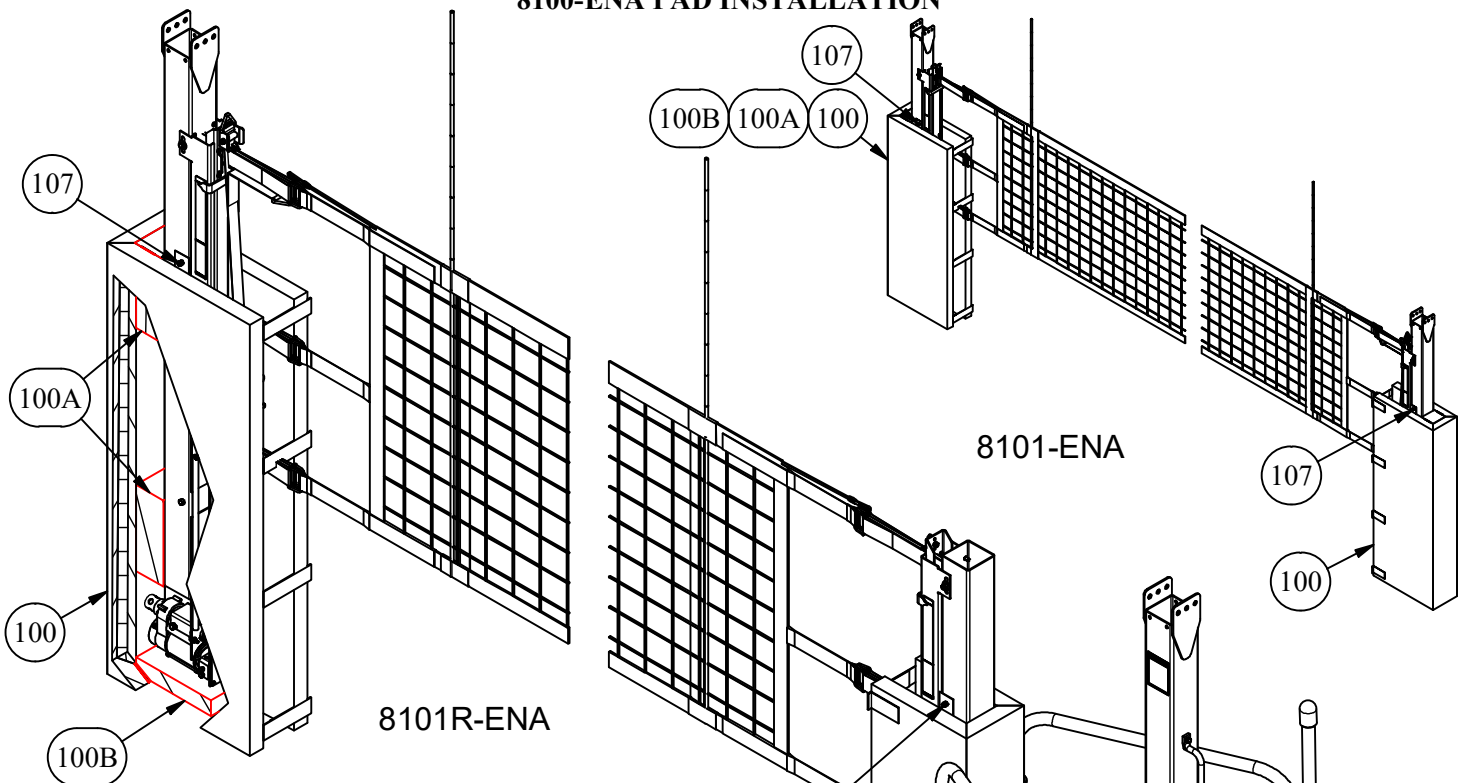
Once the connections are made outside the mast, loop excess lengths and tie together with wire ties. Secure the wire bundle inside the bottom of the post.

8100 ENA PAD INSTALLATION

PARTS LIST				
ITEM	PART NUMBER	DESCRIPTION	QTY	QTY
		MODEL	8101-ENA	8101R-ENA
		PAD KIT PN	604401763	604401764
100	884405433	PAD, UPRIGHT 8100 ENA WINCH	2	1
100A	884405439	PAD, 4" SPACER BLOCK 8101 ENA	4	2
100B	884405440	PAD, BOTTOM PANEL 8101 ENA	2	2
101	884405434	PAD, UPRIGHT 8100R ENA REF		1
102	884405435	PAD, MOTOR 8100R ENA REF		1
103	884403588	PAD, SKYMASTER REF STAND RH		2
104	884404081	PAD, 8100R REF CROSS TUBE		1
105	884404069	PAD, HAND RAIL SKYMASTER		4
106	884404078	PAD, FOLDING LADDER (3) RUNG		2
107	571-4-16	1/4" X 1" SELF DRILLING (TEK #3)	4	6



8100-ENA PAD INSTALLATION

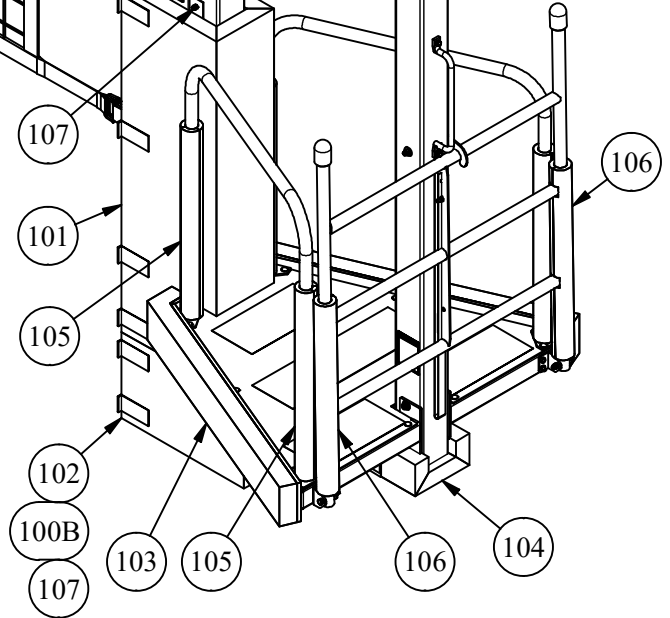


8101R-ENA

8101-ENA

8101R-ENA Pads

1. Install the ref frame pads (Item 103) to the frame rails using the 1/4" x 7/8" hex bolts (Item 57), 1/4" flat washer (Item 72), and 1/4" lock washer (Item 75). A quantity of 6 are required for each pad.
2. Install the hand rail pads (Item 105) to the hand rails.
3. Install the ladder rail pads (Item 106) to the vertical ladder tube.
4. Assemble the (2) Spacer Pads (Item 100A) inside the Winch Post Pad (Item 100) using the hook and loop sewn to the pads.
5. Assemble the Bottom Pad (Item 100B) inside of the Winch Post Pad (Item 100) using the hook and loop sewn to the pads.
6. Install the Winch Post Pad (Item 100) to the winch post and secure with the 1/4" self drilling screws (Item 107). The bottom of the pad is to be 23" above the finished floor and the screw should be 1" from inside of net post. See dimensions on previous page.
7. Assemble the Bottom Pad (Item 100B) inside of the Motor Pad (Item 102) using the hook and loop sewn to the pads.
8. Install the Motor Pad (Item 102) to the post and secure with the 1/4" self drilling screws (Item 107). The bottom of the pad is to be 23" above the finished floor and the screw should be 1" from inside of net post. See dimensions on previous page.
9. Install the main post Referee Pad (Item 101) to the ref post and secure with the 1/4" self drilling screws (Item 107).
10. Install the crossover tube pad (Item 104) to the lower rectangular support tube of the referee stand frame and secure with the hook and loop straps.



8101-ENA PADS

1. Assemble the (2) Spacer Pads (Item 100A) inside the Winch Post Pad, (Item 100) using the hook and loop sewn to the pads.
2. Assemble the Bottom Pad (Item 100B) inside of the Winch Post Pad (Item 100) using the hook and loop sewn to the pads.
3. Install the Winch Post Pad (Item 100) to the winch post and secure with the 1/4" self drilling screws (Item 107). The bottom of the pad is to be 23" above the finished floor and the screw should be 1" from inside of net post. See dimensions on previous page.
4. Repeat for opposite post

Skymaster® Volleyball System With Electric Net Height Adjuster

Operation

Overhead volleyball system should only be operated by authorized and trained personnel.

Caution:

Never stand under the device while it is being operated.

Always check that all personnel are clear of the area being operated.

Operator should always have full line of sight of device being operated.

Always lock controls, remove key, or log Off TSC when operation is completed.

Lifting and Lowering the Net Posts:

- Move the switch to the UP position to lift the volleyball system into the storage position.
- Move the switch to the DOWN position to lower the volleyball system to the playing position.

Changing the Net Height:

- Men's 7'-11 5/8" Women's switch set to OFF - Net height switch UP
- Women's 7'-4 1/8" Women's switch set to UP or DOWN - Net height switch UP or DOWN as required
- Youth 7'-0" Women's switch set to OFF - Net height switch DOWN

Note: Net height to be measured at the center of the court. The net side lines (antenna) should be approximately 3/4" greater than the center of the court.

Maintenance

1. General inspection of equipment should be performed to ensure no catastrophic failures have occurred during the course of use between yearly inspections.
2. It is recommended that yearly inspections be conducted to determine if any bolts or any other hardware has become worn or loosened.
3. During yearly inspections, all moving parts should be inspected while in operation. Key points to look for include rotation points where bushings contact metal, winches, pulleys, and quick links. The net strap should be looked at for any degradation or fraying. Also inspect the pads, net adjuster screw lubrication, net cables, and the net winch.
4. Any loose bolts or nuts should be tightened.
5. Check Sliding components and strap for wear.
6. Replacement parts and / or service to the equipment can be obtained from your local dealer or installer. To find your local dealer, visit us online or contact customer service department.