LIFTSAFE FS FACTORY SUPPLY

RackGuard Netting Systems

Installation Manual:

RackGuard Netting System

This Installation Manual is intended to meet the manufacturer's instructions requirements and should be used as part of an employee training program.

WARNINGS AND CONDITIONS

These instructions must be provided to the installer of this system. The installer must read and understand these instructions and follow.

Failure to follow these instructions or the details of the unique layout drawing provided may result in serious injury or death. If you have any questions about this system's use or care, please contact the manufacturer: 1-800-977-2005.

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⚠ WARNING IMPROPER USE OR INSTALLATION OF THIS EQUIPMENT MAY CAUSE INJURY OR DEATH

DO NOT lean on the netting.
DO NOT stand or climb on the netting.
DO NOT use netting as a tie-off point.
DO NOT use if any component is found defective or damaged.

DO read and follow this document (installation manual).

RackGuard Netting Systems are designed and are to be used only for their intended purpose. The use of these netting systems or their components for any other purpose **may cause injury or death**.

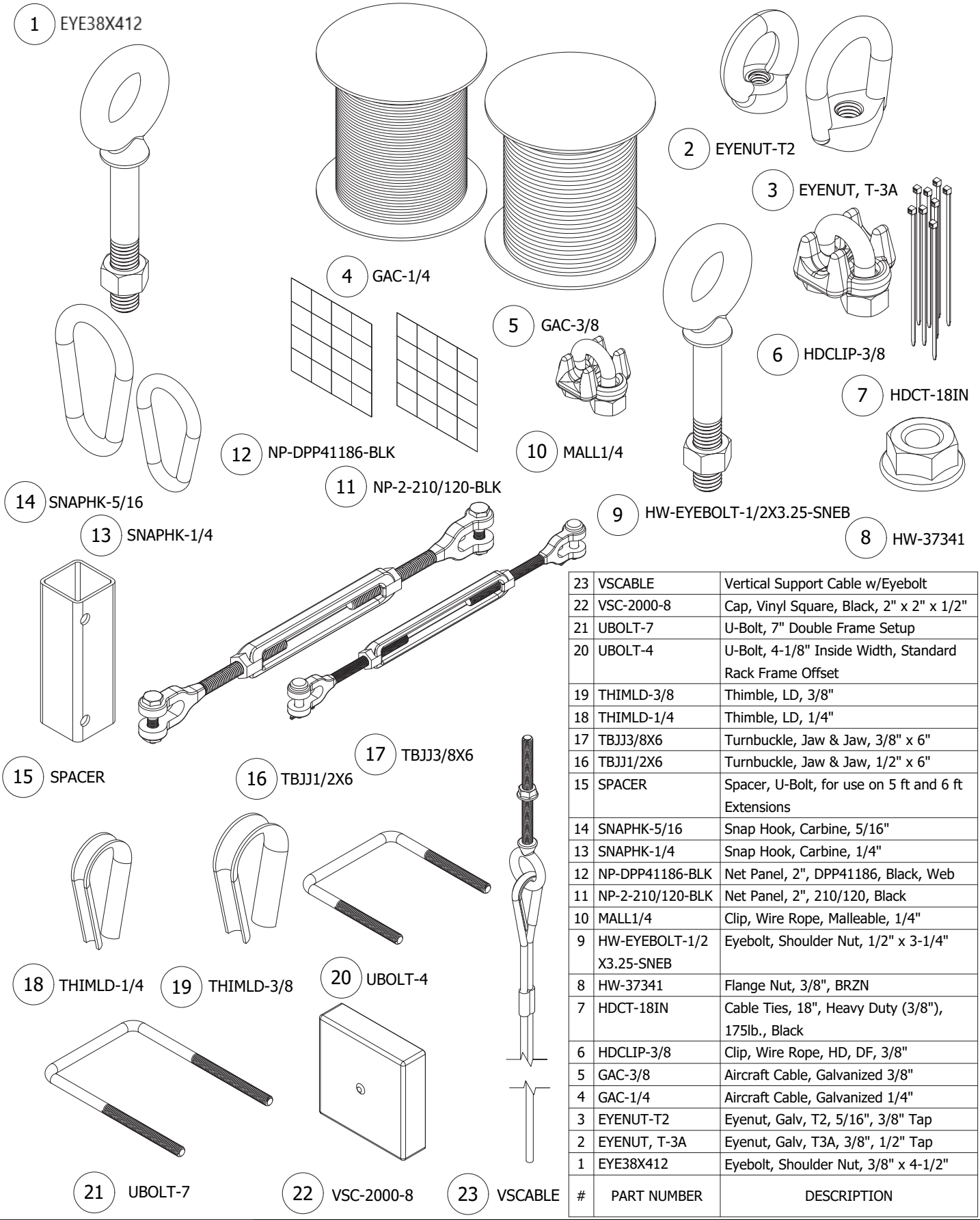
RackGuard Netting Systems by Liftsafe Fall Protection Inc. & Factory Supply Inc. are designed and engineered to prevent and contain falling product that is stored on various levels of industrial storage racking.

Liftsafe Fall Protection Inc. & Factory Supply Inc. does not accept any responsibility for systems that do not follow the enclosed instructions or those that do not use the hardware provided.

These instructions comprise a general installation procedure for the erection of a RackGuard Safety Net System. It is the position of Liftsafe Fall Protection Inc. & Factory Supply Inc. that these types of systems should be installed by a certified, trained installation team. In the event that the customer installs the system themselves, the entire system (nets, cables, etc.) must be inspected regularly by a supervisor to ensure that:

Snap hooks are in place and are positioned every 12” – 15” along cable and rope border.
Netting panels DO NOT exhibit any damage whatsoever.
Racking itself IS NOT damaged in any way.
Rigging components are tensioned properly and nothing has loosened off.

Figure 1 - Components

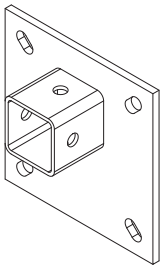


#	PART NUMBER	DESCRIPTION
23	VSCABLE	Vertical Support Cable w/Eyebolt
22	VSC-2000-8	Cap, Vinyl Square, Black, 2" x 2" x 1/2"
21	UBOLT-7	U-Bolt, 7" Double Frame Setup
20	UBOLT-4	U-Bolt, 4-1/8" Inside Width, Standard Rack Frame Offset
19	THIMLD-3/8	Thimble, LD, 3/8"
18	THIMLD-1/4	Thimble, LD, 1/4"
17	TBJJ3/8X6	Turnbuckle, Jaw & Jaw, 3/8" x 6"
16	TBJJ1/2X6	Turnbuckle, Jaw & Jaw, 1/2" x 6"
15	SPACER	Spacer, U-Bolt, for use on 5 ft and 6 ft Extensions
14	SNAPHK-5/16	Snap Hook, Carbine, 5/16"
13	SNAPHK-1/4	Snap Hook, Carbine, 1/4"
12	NP-DPP41186-BLK	Net Panel, 2", DPP41186, Black, Web
11	NP-2-210/120-BLK	Net Panel, 2", 210/120, Black
10	MALL1/4	Clip, Wire Rope, Malleable, 1/4"
9	HW-EYEBOLT-1/2 X3.25-SNEB	Eyebolt, Shoulder Nut, 1/2" x 3-1/4"
8	HW-37341	Flange Nut, 3/8", BRZN
7	HDCT-18IN	Cable Ties, 18", Heavy Duty (3/8"), 175lb., Black
6	HDCLIP-3/8	Clip, Wire Rope, HD, DF, 3/8"
5	GAC-3/8	Aircraft Cable, Galvanized 3/8"
4	GAC-1/4	Aircraft Cable, Galvanized 1/4"
3	EYENUT-T2	Eyenut, Galv, T2, 5/16", 3/8" Tap
2	EYENUT, T-3A	Eyenut, Galv, T3A, 3/8", 1/2" Tap
1	EYE38X412	Eyebolt, Shoulder Nut, 3/8" x 4-1/2"

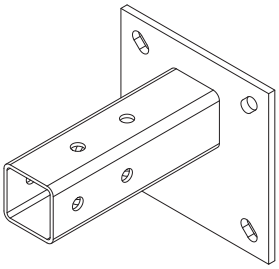
WARNING

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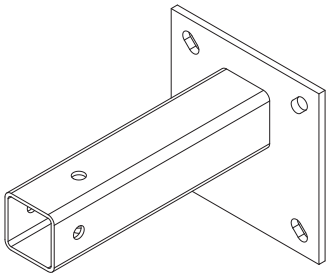
Figure 2 - Bracket Options



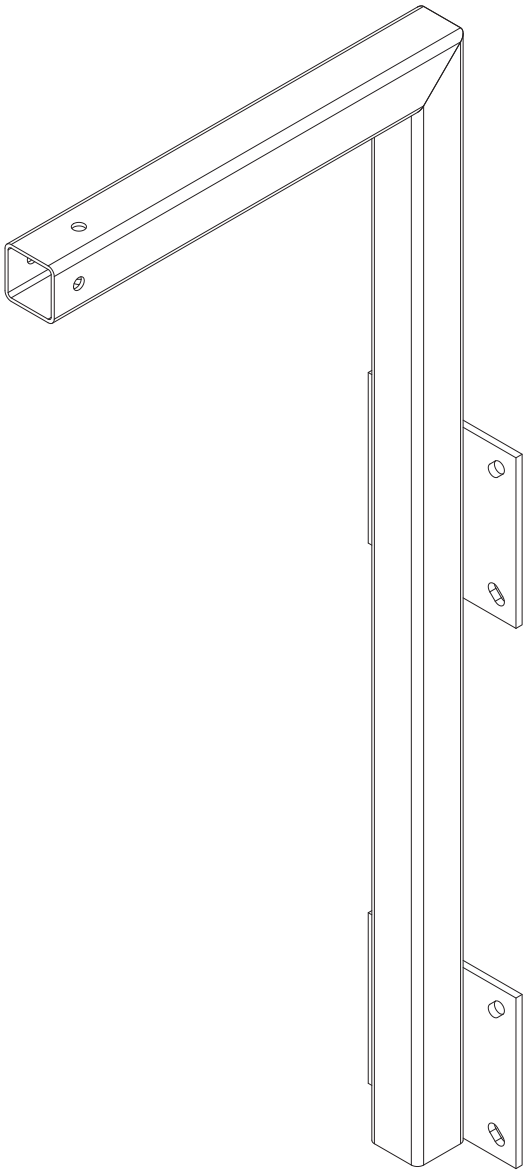
FLUSHMOUNT



4/6 OFFSET



CUSTOM OFFSET



Offset Brackets	Extension Brackets
• Standard Size: 4” or 6” offset • Flushmount Style: 1” offset • Custom Style: custom lengths available based on system requirements	• Extensions: range from 1’ up to 4’ • HD extensions: avail. for 5’ or 6’ • applications • No Extensions available over 6 ft in length • NOTE: extension length plus extended frame length above upper beam level must not exceed 6 ft

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Typical Layouts

Figure 3 - Middle Offset Bracket

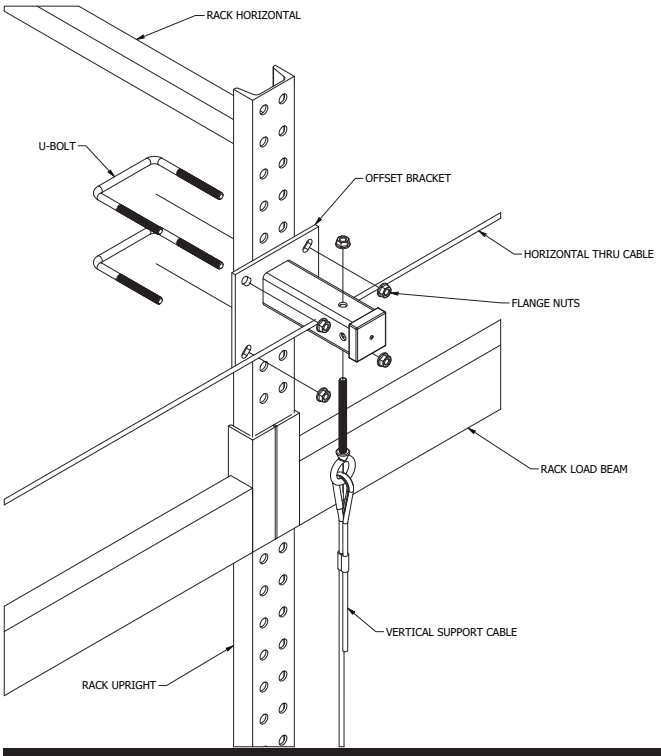


Figure 4 - Corner Offset Bracket

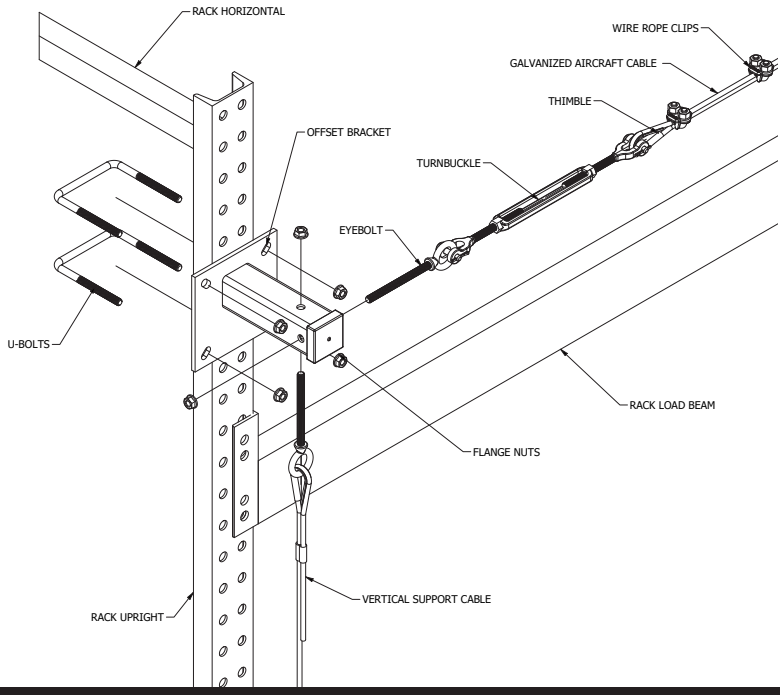


Figure 5 - Extension Bracket

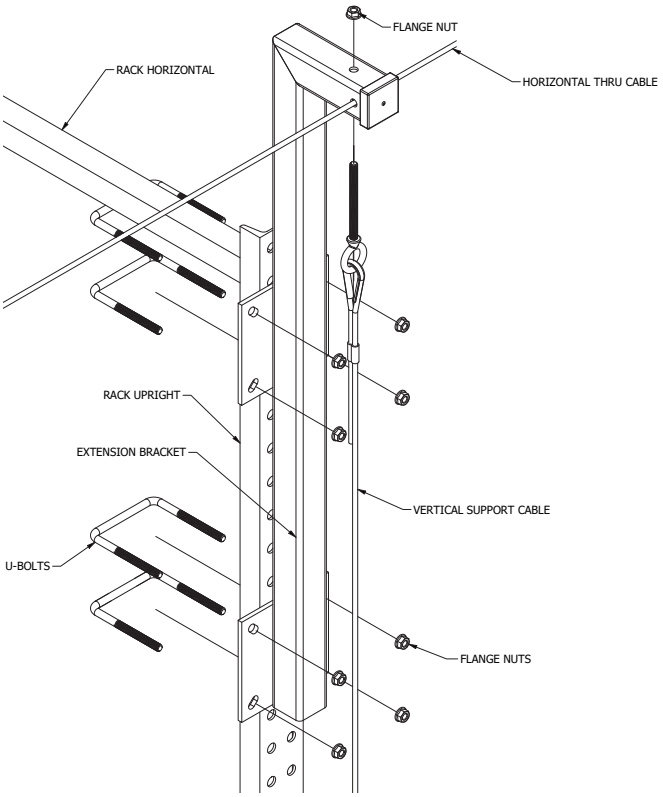
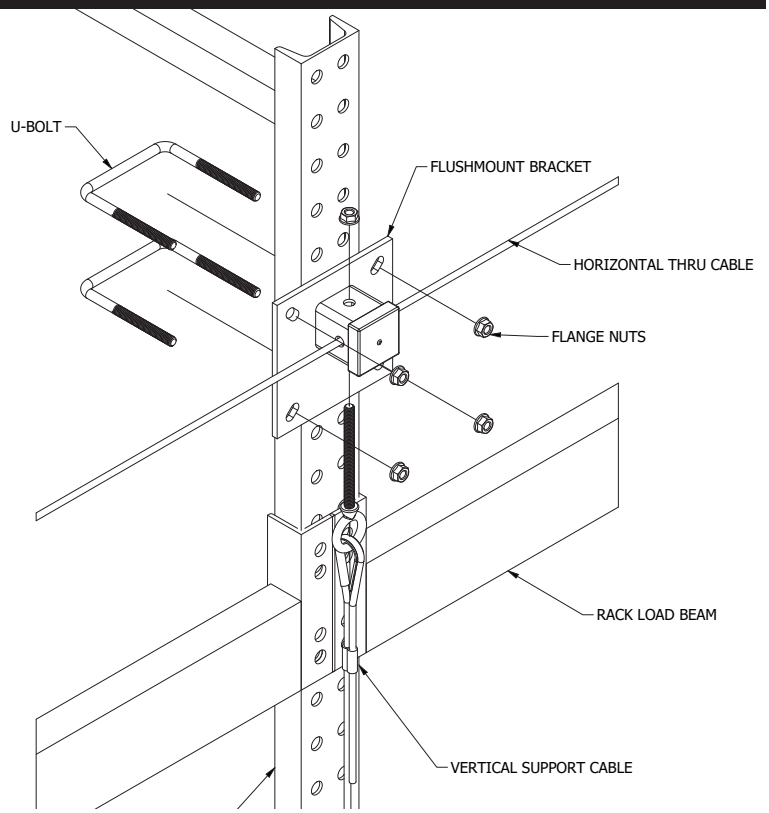


Figure 6 - Flush Mount Bracket



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Installation of Brackets

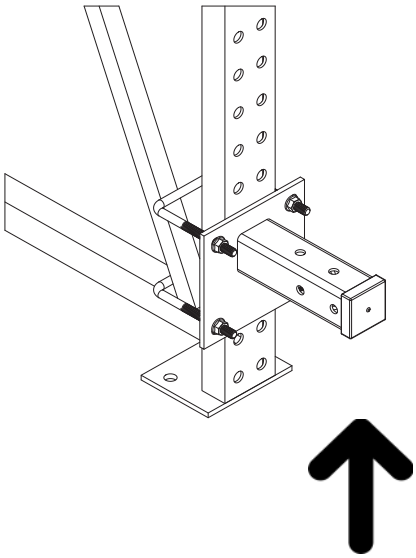


Figure 7
Standard Position - allows cable to run right under load beam.

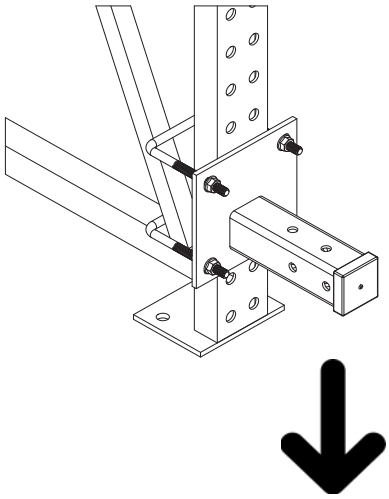


Figure 8
Inverted position - allows cable to get closer to floor level.

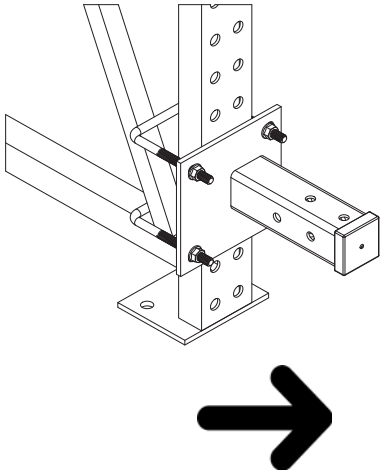


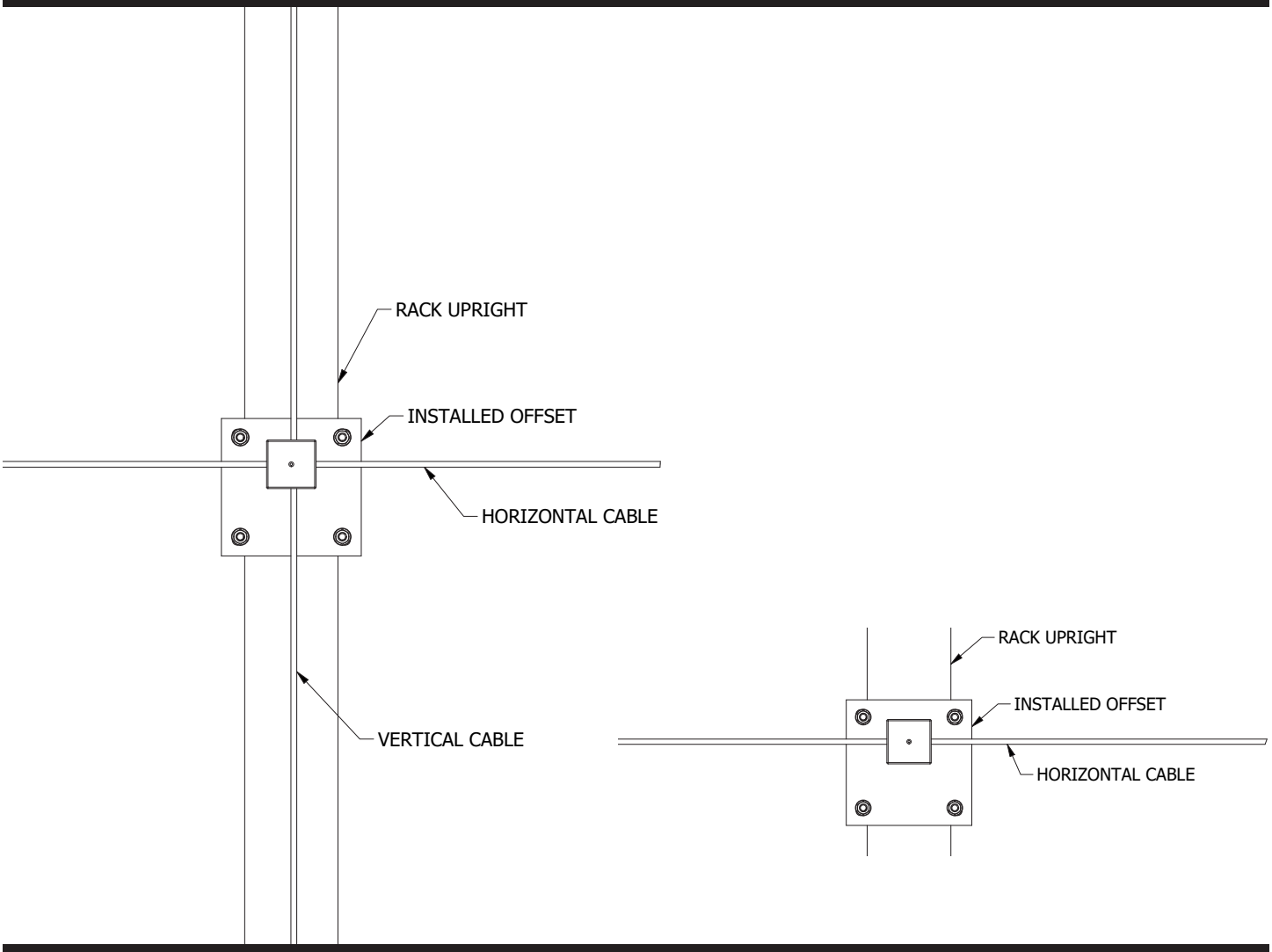
Figure 9
Sideways position - allows cable to clear obstructions on rack face.

Instructions

- Installation of a RackGuard Netting System begins with the installation of the offset brackets (and frame extensions, if the system requires them).
- The offsets should be installed at the top of the frames.
- The uppermost U-Bolt should be a minimum of 1” down from the top of the frame.
- Position offsets based on the layout of the system. Lower offsets can be adjusted up or down and the orientation of the offsets can be varied to achieve different results.
- Distance from upper to lower cables should be 4” greater than the netting panel height to allow for the length of the snap hooks.
- If any obstructions show up on the frames (i.e./ sprinkler pipes), you can turn the offset bracket to match the orientation shown in Figures 7, 8 & 9. This will bring the cable just off the face of the rack. Using orientations 7 and 8 will allow you to position the cable closer to the load beam depending on your preferred location or closer to the floor.
- Upper and lower (and if applicable, middle) offsets will be positioned on common frames. Starting at the end frame, then every 2nd frame until you reach the opposite end. Runs with odd number of bays will end up with a single bay at the end.

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Figure 10 - Installation of Cable



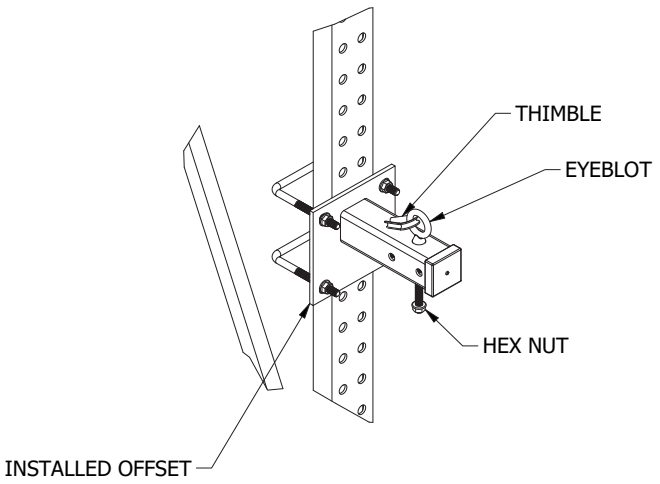
Instructions

- Once offsets are in place, run your horizontal cables through the holes in the intermediate offsets.
- See rigging setup for proper eyebolt and wire rope install on page 12 of install guide – wire rope clip installation section (see figure 16).
- Vertical cables come partially pre-assembled with an eyebolt already spliced onto one end of the cable.
- This end will attach to the upper offset and hang down for connection to the lower offset. If there is a middle cable in the setup, the vertical cable is run through one of the vertical holes in the intermediate bracket.

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Installation of Verticle Cable



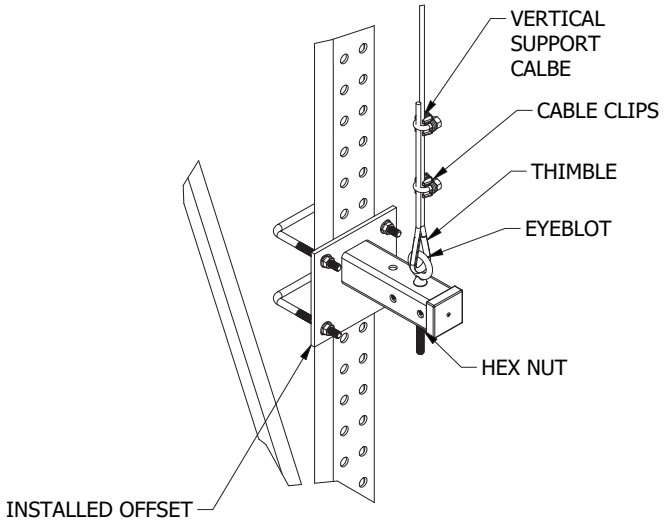


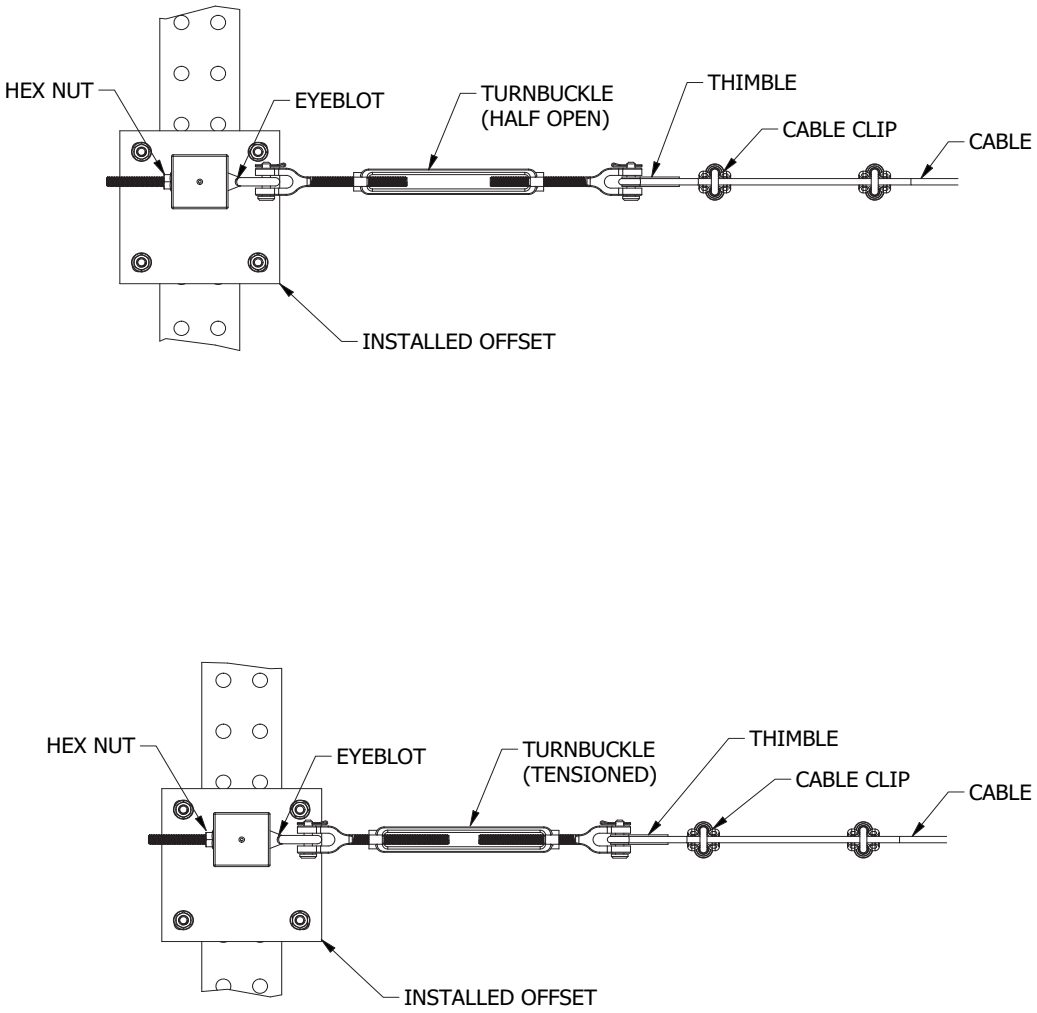
Figure 11 Prior to tensioning cable, position nut on end of eyebolt, allowing a couple of inches of take-up.	Figure 12 Sample showing position of eyebolt after tensioning of cable.

Instructions

- When preparing the vertical cables, install the eyebolt at the bottom with a nut just on the end with 3 or 4 threads showing - Figure 11. Form cable end through eyebolt with a thimble and wire rope clips.
- Take up the tension as much as possible by hand and tighten wire rope clips (see instructions for wire rope clip installation on page 12).
- Once tightened, you can then tighten the vertical cables by tightening the nut on the lower eyebolt.
- No turnbuckles are required on the vertical cables.
- IMPORTANT: Do not allow the eyebolt or the cable to turn while tightening the nut.

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Figure 13 - Installation of Horizontal Cable



Instructions

- The same process is used for the horizontal cables, with the exception that turnbuckles are used to take up the cable tension.
- Both eyebolt ends will be required to be made up on site with an eyebolt, thimble and two wire rope clips.
- NOTE: Ensure that the turnbuckle is opened up so that 1/2” of thread is showing on each side before pulling the cable tight by hand. Secure cable by tightening wire rope clips, and then take up the cable tension by turning the turnbuckle. Do not allow the cable or the eyebolt to spin while the turnbuckle is being tightened.
- NOTE: DO NOT over tighten the turnbuckle to the point where the offsets start to pull inwards – this can cause damage to the frames
- There MUST be a vertical cable at EVERY position where two (2) nets join up at a frame. Nets must not be joined together mid-bay or any other position where there is not a cable.

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Installation of U-Bolts

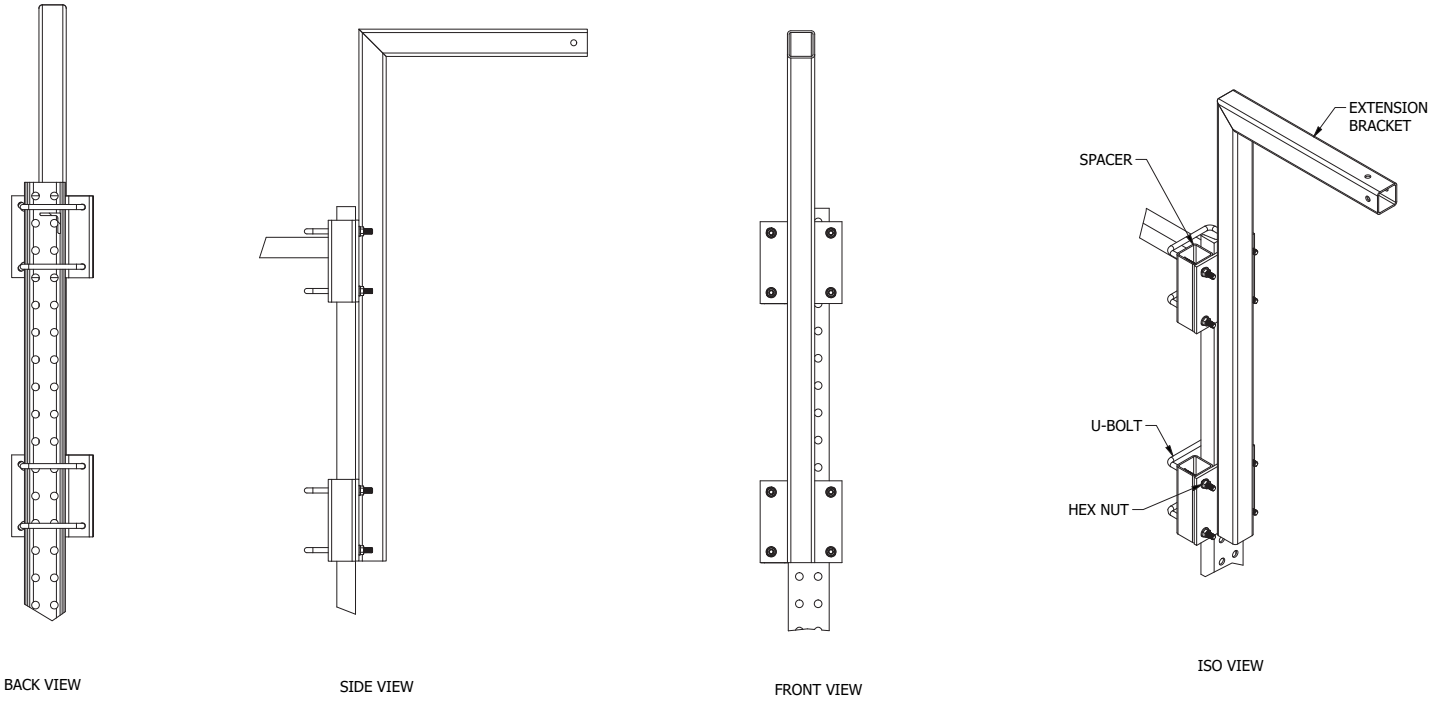


Figure 14
Spacer installed on offset bracket application on 3-1/4” roll-form rack. Shows the use of a spacer on an offset bracket.

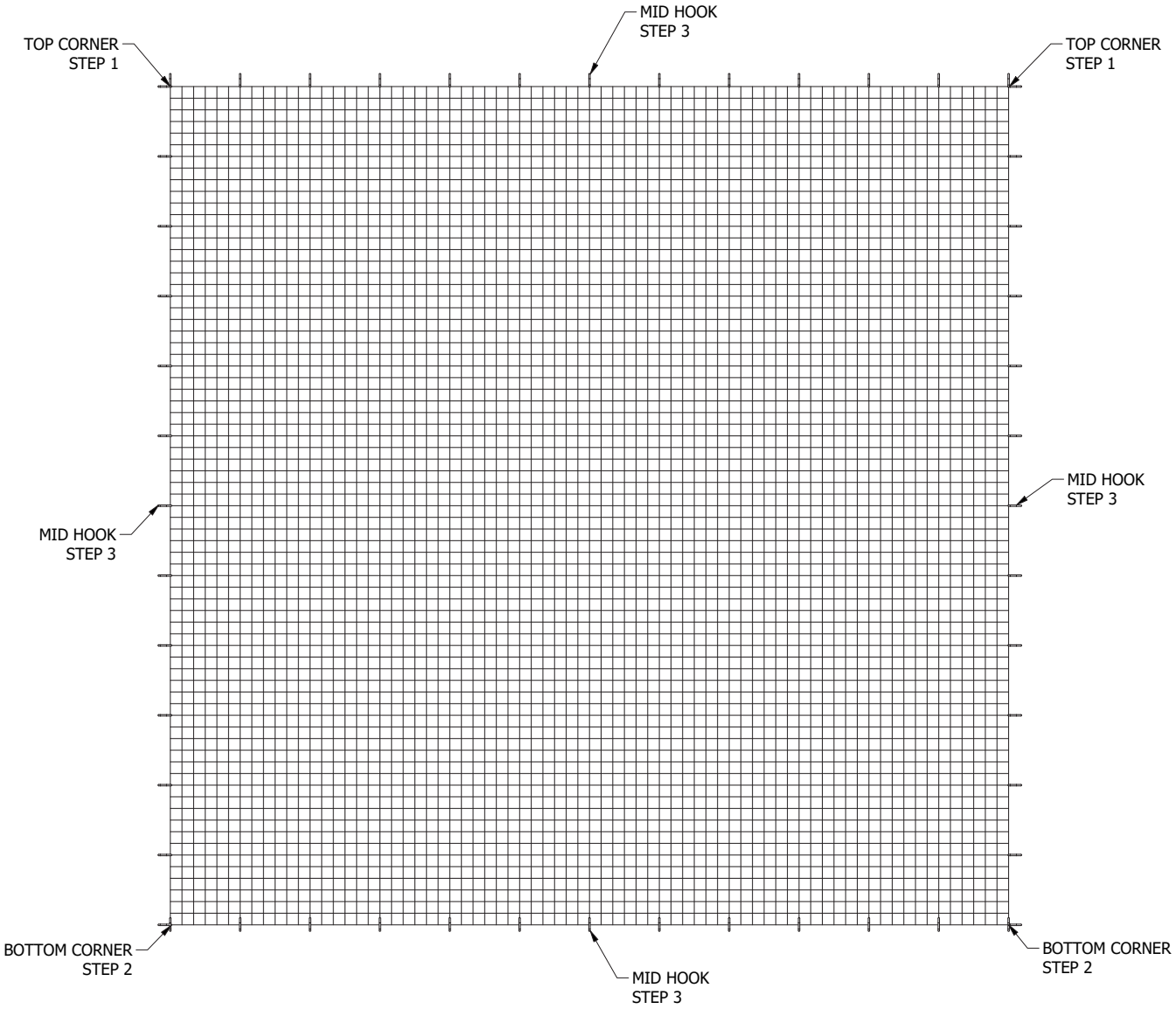
Instructions

- Spacers: Typical U-Bolts are 4-1/8” opening to allow for use on all types of frames.
- On 3” or 3-1/4” wide frames, there may be some play when using extensions. The higher the extension, the more it can “lean in” because of the excess space between the U-Bolt and the frame. Spacers are available to eliminate this “gap,” thereby reducing the chance of this occurring.
- Note: spacers are not typically required on shorter extensions or offsets.

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Figure 15 - Installation of Net Panels



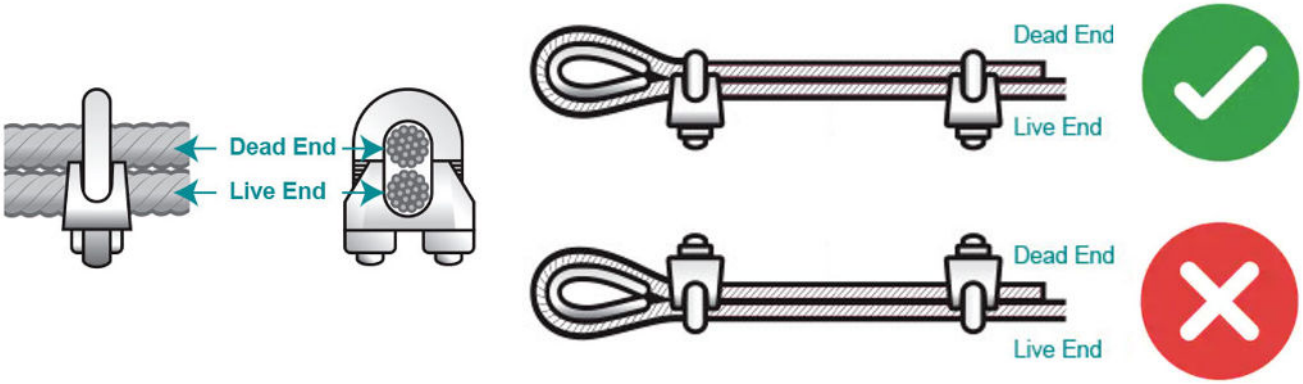
Instructions

- Starting at one end, begin to install individual panels.
- Attach a snap hook to each corner of the net panel and then hook the two top corners of the net panel in place.
- Attach the bottom two corners in place with snap hooks.
- Place snap hooks near the centre of all 4 sides of the net panel and secure to cable on all sides.
- Place snap hooks halfway between the centre snap hook and the corners and secure them to the cable.
- Continue to place snap hooks onto the net/cable by “halving the distance” until the net is properly secured with snap hooks every 12” around the perimeter border.
- Continue this process down the run for each net panel until all panels are in place.

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Figure 16 - Installation of Wire Rope Clips



Rope Size	Number of Clips	Torgue (ft-lbs)	Amount of Rope Turnback
1/4”	2	15	3-3/4”
3/8”	2	45	6-1/2”

Instructions

- Turn back the specified length of wire rope from the thimble (see above). Put first clip one saddle width from “dead end.” Position the U-Bolt portion of the clip over the dead end (cut end portion of rope). The saddle of the wire rope clip is to be against the live end (load carrying part of the rope).
- Tighten nuts to recommended torque as per the chart above.
- Put the second clip close to the thimble without binding it. Install nuts firmly but do not yet tighten to proper torque.
- Apply light tension to wire rope assembly and then tighten all nuts evenly to proper torque.
- Inspect wire rope clip nuts before and after install. In the event of a product falling into the net system, re-inspect the wire rope clips and re-torque as needed.
- When loads are applied, the wire rope stretches slightly, so the clips may need to be re-torqued.

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Fall Protection Warranty

Please refer to website for product warranty information.

fallsafetysolutions.com/terms-conditions/ **factorysupply.com/terms-conditions/**

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