

NOVA I

Installation Instructions

The NOVA I System features a powder-coated aluminum framework (offered in black, white or bronze color options) combined with horizontal stainless steel cable infill. The framework is made up of posts with top rail only. The cable infill consists of HandiSwage™ fittings and 1/8" cable.

The following guide will take you step-by-step through the process of installing your NOVA I System.



ATLANTIS

RAIL SYSTEMS

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TOOLS NEEDED

Here is a list of tools needed to install your NOVA I System. Most of the required tools are common. For the tools that are not common, Atlantis Rail offers a complete selection of specialized tools to successfully complete your installation.

- | | |
|---|------------------------|
| - Power Drill | - Gloves |
| - Vice Grips | - Safety Glasses |
| - Tape Measure | - Allen Wrenches |
| - Rubber Mallet | - Carpenter's Square |
| - Chalk Line | - Hack Saw |
| - Ratchet & Socket Set | - Level |
| - Silicone Caulk | - Drill Bit Set |
| - Miter Saw with a Non-Ferrous Carbide Tipped Blade | - Pencil |
| | - Open Wrench Set |
| | - Phillips Driver Bits |

Specialized tools offered by Atlantis Rail



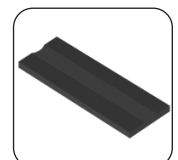
Hand Swage Tool
#E0113-H600



Cable Cutter
#C0989-00HD



Touch-up Paint
#A0906-P052-XX



Cable Grip Pad
#E0114-0000



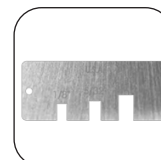
HandiSwage™
Cutting Disk - 2pk
#E0113-CD04-2



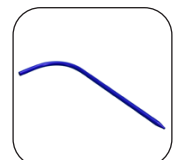
3/8" & 7/16"
Combination
Wrench Set
#C0731-TK01-2



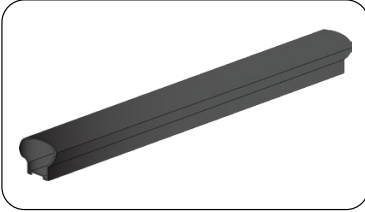
Grommet Install
Tool
#E0916-1000



After Swage
Gauge
#E0113-HG00



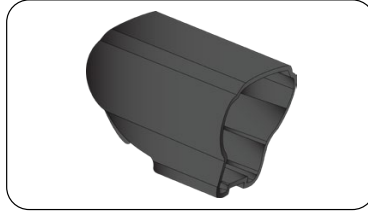
Curved Lacing
Needle - 2pk
#C0988-400C-2



A. Top Stair Rail



B. Top Stair Rail Bracket Base



C. Upper Stair Rail Bracket



D. Lower Stair Rail Bracket



E. Cable Stabilizer, Slotted



F. Stabilizer Connector, Angled



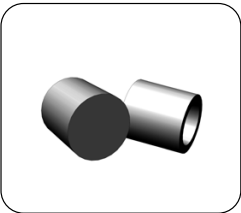
G. #10 Self-Drilling Screw



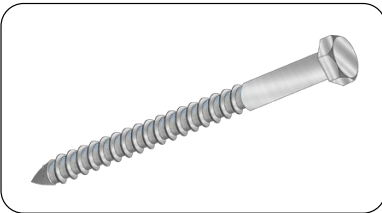
H. Support Block Base Kit



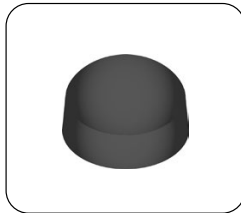
I. Set Screw



J. Set Screw Cover



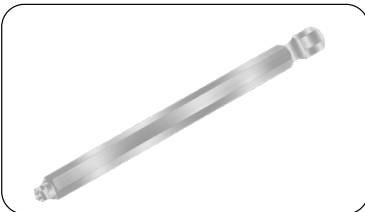
K. Lag Bolt



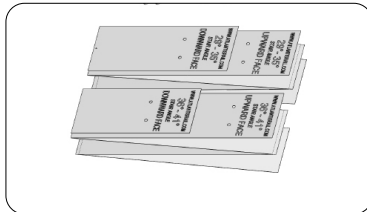
L. Plastic Cover Nut



M. Allen Key



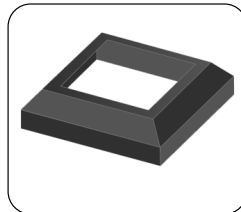
N. 3-1/2" Square Driver Bit



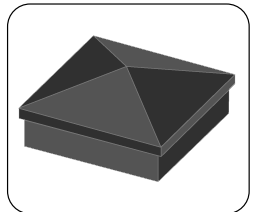
O. Drill Templates



P. Post Pad, Drilled



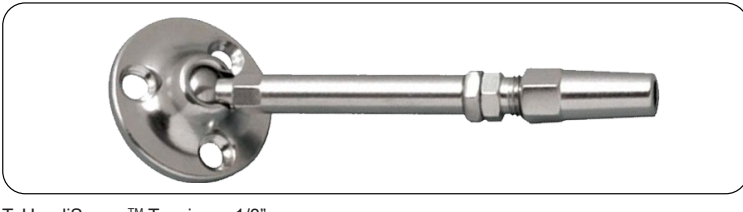
Q. Post Skirt



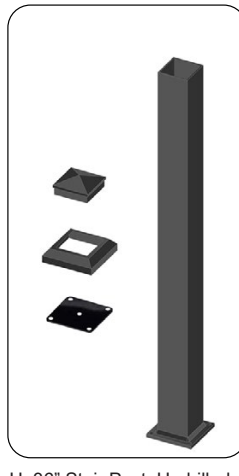
R. Post Cap



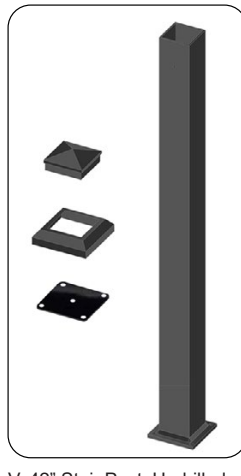
S. Single Mount Tensioner 1/8"



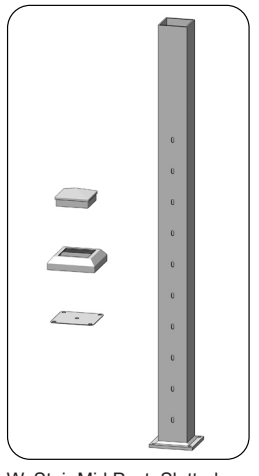
T. HandiSwage™ Tensioner 1/8"



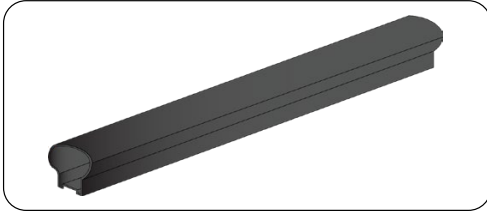
U. 36" Stair Post, Undrilled



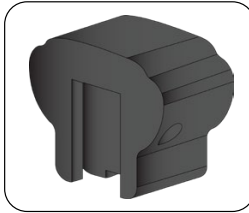
V. 42" Stair Post, Undrilled



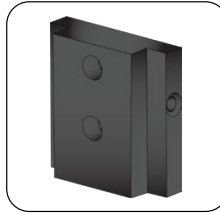
W. Stair Mid Post, Slotted



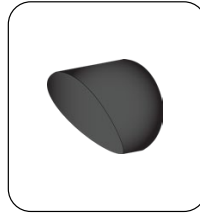
AA. Top Rail



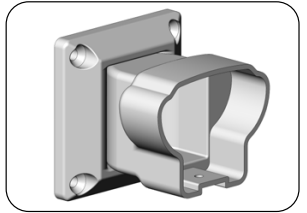
AB. Top Rail Bracket



AC. Bracket Key



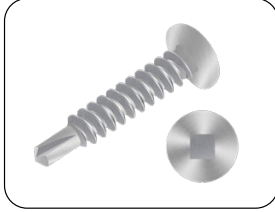
AD. Angled Screw Cover



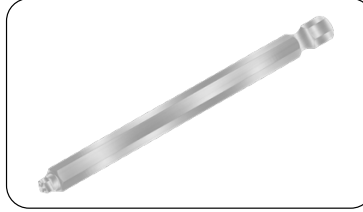
AE. Top Adjustable Rail Bracket



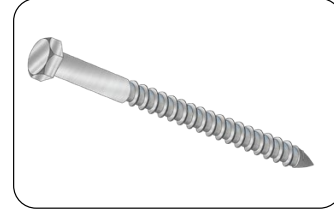
AF. Stabilizer Connector



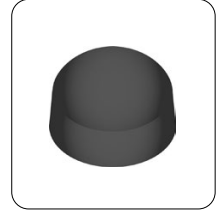
AG. #10 Self-Drilling Screw



AH. 3-1/2" Square Driver Bit



AI. Lag Bolt



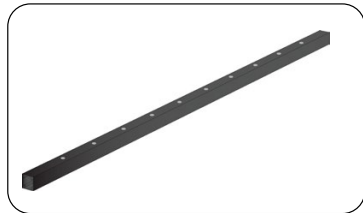
AJ. Plastic Cover Nut



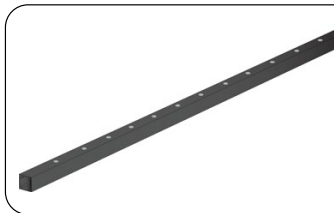
AK. Support Block Base Kit



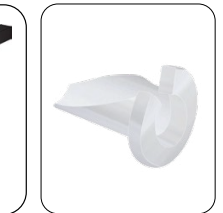
AL. Button Head Screw



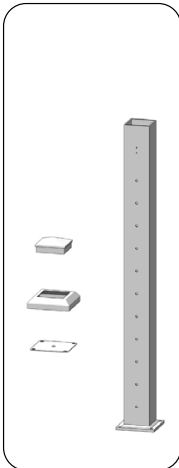
AM. Cable Stabilizer, Drilled (36" System)



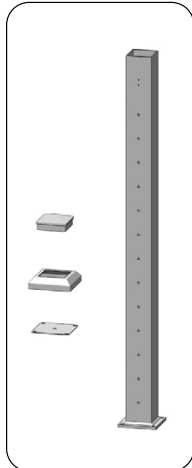
AN. Cable Stabilizer, Drilled (42" System)



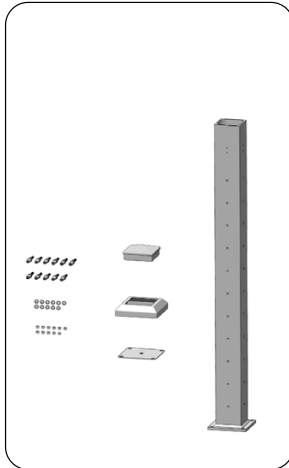
AO. Cable Grommet



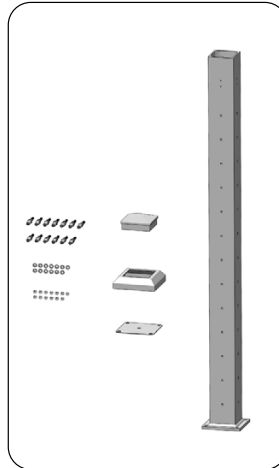
AP1. 36" Universal Post, Drilled



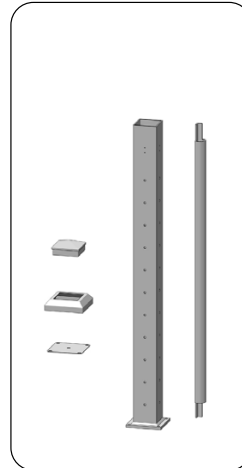
AP2. 42" Universal Post, Drilled



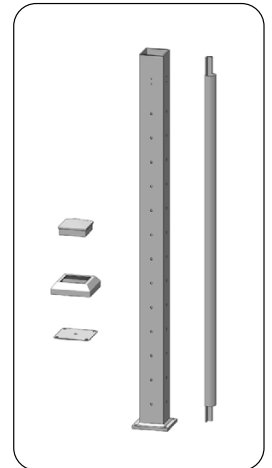
AQ1. 36" Corner Post, Drilled



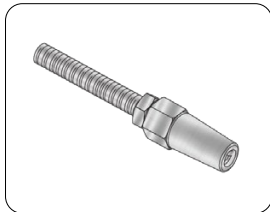
AQ2. 42" Corner Post, Drilled



AR1. 36" Corner Post w/ Insert



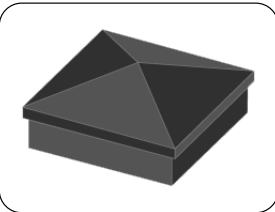
AR2. 42" Corner Post w/ Insert



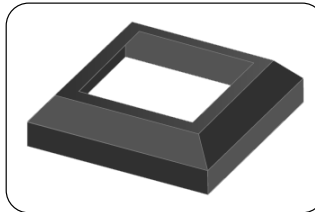
AS. NOVA 1/8" Stud



AT. Plastic Washer



AU. Post Cap



AV. Post Skirt



AW. Post Pad, Drilled

WARNINGS

STORE YOUR ORDER INDOORS TO KEEP DRY!

Some items in your order have been shrink wrapped with a protective poly film. Avoid exposing these items to harsh weather and moisture to avoid damaging powder coated surfaces. When you're ready to install product, remove the protective shrink wrap before or immediately after installation.

WARRANTY REQUIREMENTS:

Refer to the Rail Care Guide(s) for required cleaning and maintenance guidelines. Failure to follow the required cleaning and maintenance guidelines will void the warranty.

ALWAYS REFER TO YOUR LOCAL BUILDING CODE OFFICIALS PRIOR TO INSTALLING ANY ATLANTIS RAIL SYSTEM to ensure all code and safety requirements are met. Atlantis Rail Systems is not responsible for improper or non-recommended installations.

ATLANTIS RAIL SYSTEMS PROVIDES A VARIETY OF MOUNTING OPTIONS FOR POSTS AND RAILS USED IN OUR SYSTEMS. PRODUCTS OF THIS NATURE REQUIRE THAT MOUNTING SURFACES ARE CONSTRUCTED TO BE CONSIDERED STRUCTURAL PER BUILDING CODE DEFINITION FOR THE SURFACE MATERIAL USED. Structural integrity and building code compliance of mounting surfaces are the responsibility of the end user and/or installer. The use of any of our mounting methods are at the option and decision of the end user and/or installer and should be selected to match the structural material used to create the mounting surface.

NOVA I STAIR SYSTEMS ACCOMMODATE STAIR ANGLES BETWEEN 29 AND 41 DEGREES ONLY.

ALWAYS WEAR PERSONAL PROTECTION EQUIPMENT during the installation process. Safety Glasses and work gloves are highly recommended.

INSTALL TIPS

Follow the tips below to ensure a successful installation of your NOVA I System

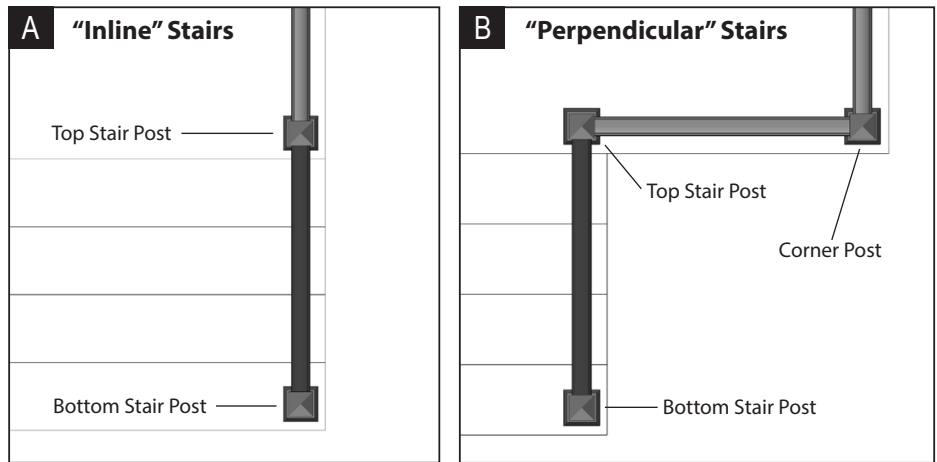
- **READ THE INSTRUCTIONS** completely before beginning the installation.
- **PLAN YOUR RAILING PROJECT.** Sketch your project with the actual measurements of your deck or balcony complete with post locations.
- **FIND A HELPER.** Installation is best accomplished with two (2) people.
- **CHECK CARTON(S)** to determine part count is complete.
- **ALWAYS WEAR PERSONAL PROTECTION EQUIPMENT;** safety glasses, work gloves, etc.
- **DO NOT OVER-TORQUE THE SCREWS.** Pre-drilling is recommended.
- **PROVIDED HARDWARE TO INSTALL THE NOVA I SYSTEM IS FOR USE WITH NOVA I ALUMINUM POSTS.** If installing to other surfaces, you must acquire the appropriate hardware as needed for proper installation.
- **TOUCH-UP ANY SCRATCHES.** After completing the installation of your NOVA I System, look for any scratches and/or damage to the powdercoating. These can easily be fixed using the our NOVA Touch-Up Paint.

Confirm the Contents of Packaging: Make sure to verify that the system components for your order are present.

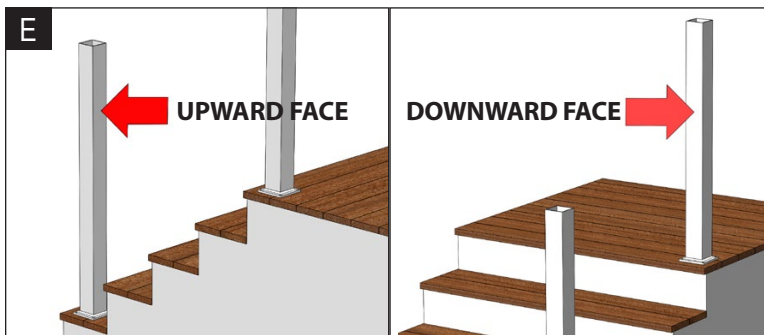
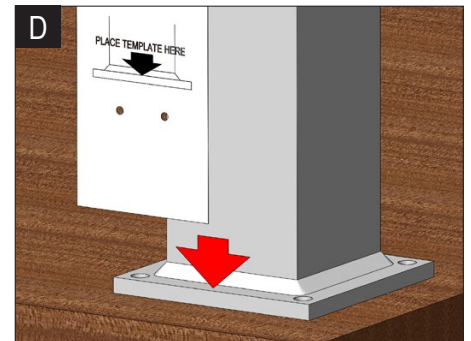
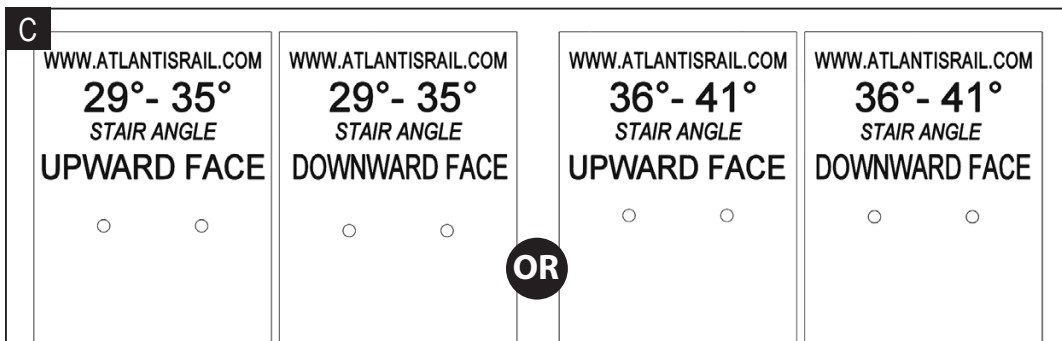
INSTALL THE STAIR POSTS

- 1. Gather the Posts and Position them in their General Locations per your Plan Layout.**
- 2. Considerations for Positioning the Top Stair Post(s):**

Whether the stair rail section is "inline" with the level section railing (See Figure A) or "perpendicular" (See Figure B), you will use an Undrilled Post at the top of the stairs to make the transition from level rail to stairs. This requires drilling the post to attach cable and hardware.



- 3. Mark & Pre-Drill Posts for Rail Brackets and Tensioners:** Based on the angle degree of your stairs, choose the appropriate paper "drilling template" (See Figure C). You can find the paper "drilling templates" within the Stair Rail Brackets Kit packaging. When using the templates, be sure to place the bottom of the template on top of the post flange (See Figure D). Mark the locations of the mounting holes onto the Upward face of the bottom stair post and the Downward face of the top stair post (See Figure E).

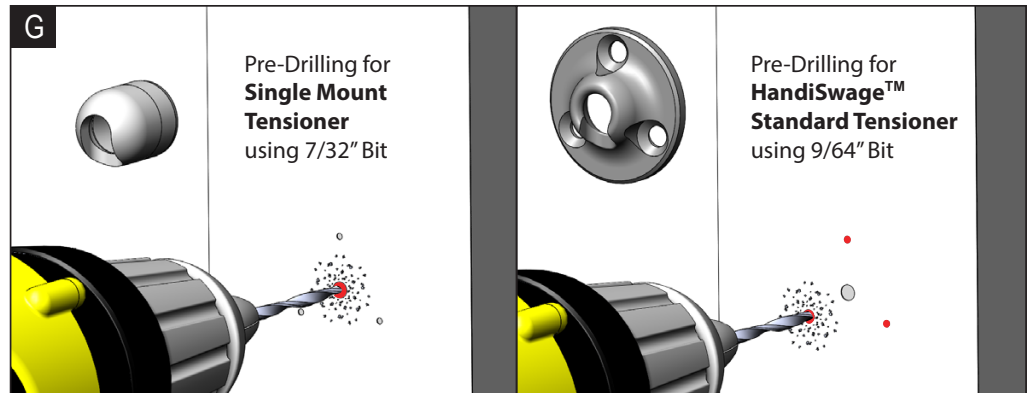
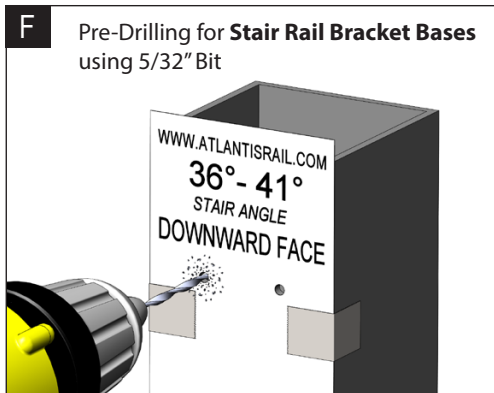


Pre-Drill the Posts.

For RAIL BRACKETS - use a $\frac{5}{32}$ " drill bit (See Figure F).

STAIR MID POSTS (Component W) come "slotted" for cable, but require the use of the paper "drilling template" for drilling the Stair Rail Bracket Base mounting holes.

For TENSIONERS - use a $\frac{7}{32}$ " drill bit for the **Single Mount Tensioner** or use a $\frac{9}{64}$ " drill bit for the **HandiSwage™ Standard Tensioner** (See Figure G).



4. Mount the Posts:

Keep in mind, it is critical that the mounting hardware penetrate into the structure in accordance with local building codes.

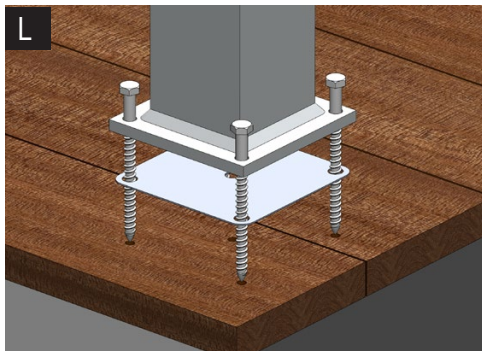
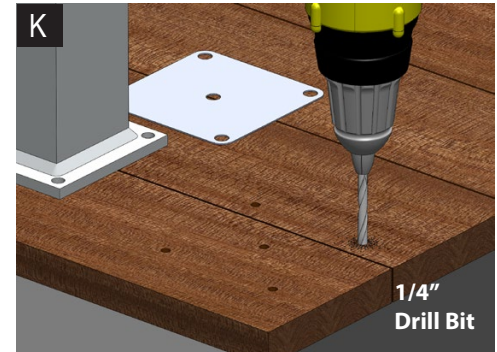
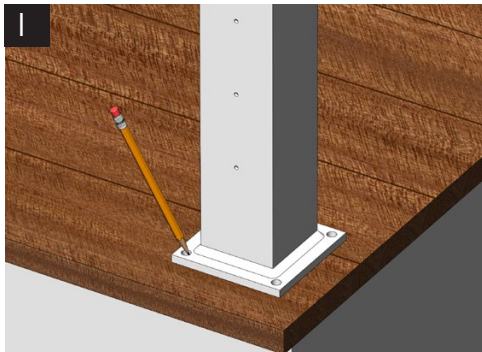
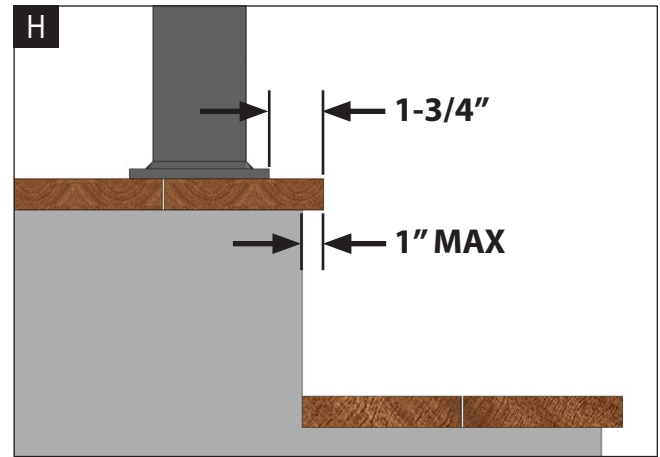
Position all stair posts (top, bottom and mid posts) making sure to follow our recommended placement measurements (See Figure H).

Mark the location of mounting holes and the center hole of the Post Pad (Component P). Pre-drill using a 1/4" drill bit (See Figures I, J & K).

Use the Lag Bolts (Component K) to anchor the Posts (See Figure L).

Make sure the Posts are installed plumb.

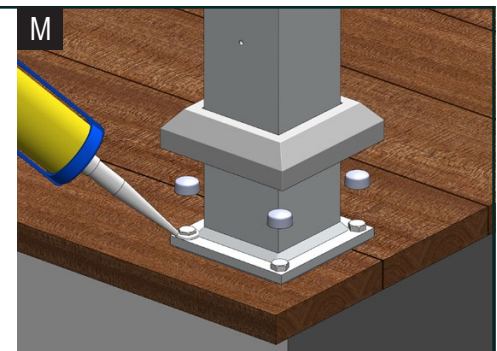
Use Post Shims if necessary.



5. Install the Plastic Cover Nuts and Post Skirts:

Use silicone caulk on the Lag Bolt heads before installing the Plastic Cover Nuts (Component L) (See Figure M).

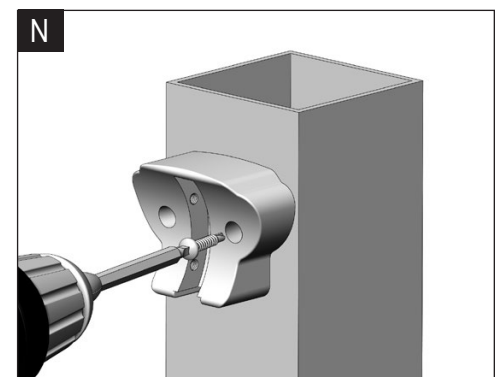
DON'T FORGET to install the Post Skirts (Component Q).



INSTALL THE RAIL BRACKET BASES

6. Install the Top Stair Rail Bracket Bases:

Using the #10 Self-Drilling Screws (Component G), install the Top Stair Rail Bracket Bases (Component B) onto the post. Make sure the slots on the Top Stair Rail Bracket Bases are facing down (See Figure N).

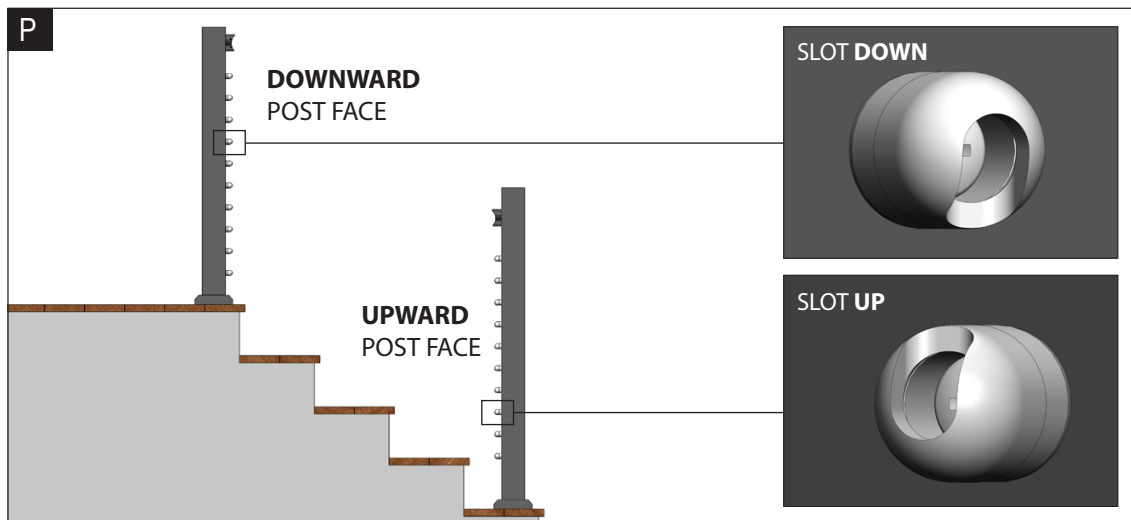
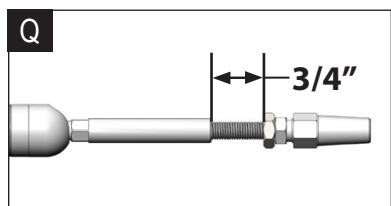
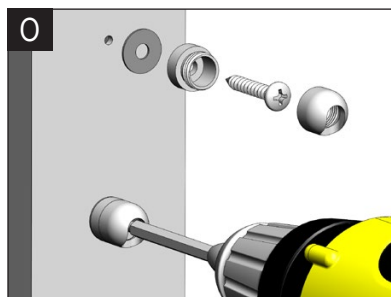
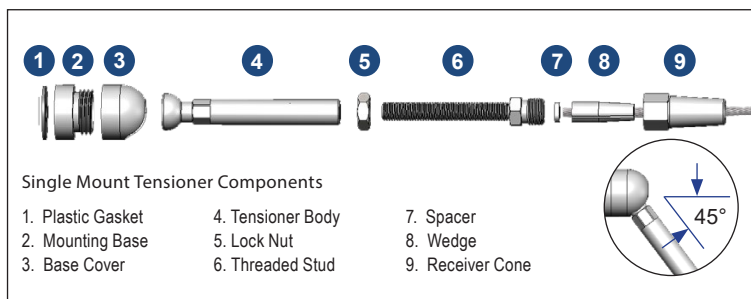


INSTALL THE TENSIONERS

7. The NOVA I Stair Railing utilizes either **Single Mount Tensioners** (Component S) **or** **HandiSwage™ Tensioners** (Component T). Refer to the steps below to install the tensioners you have chosen for your system.

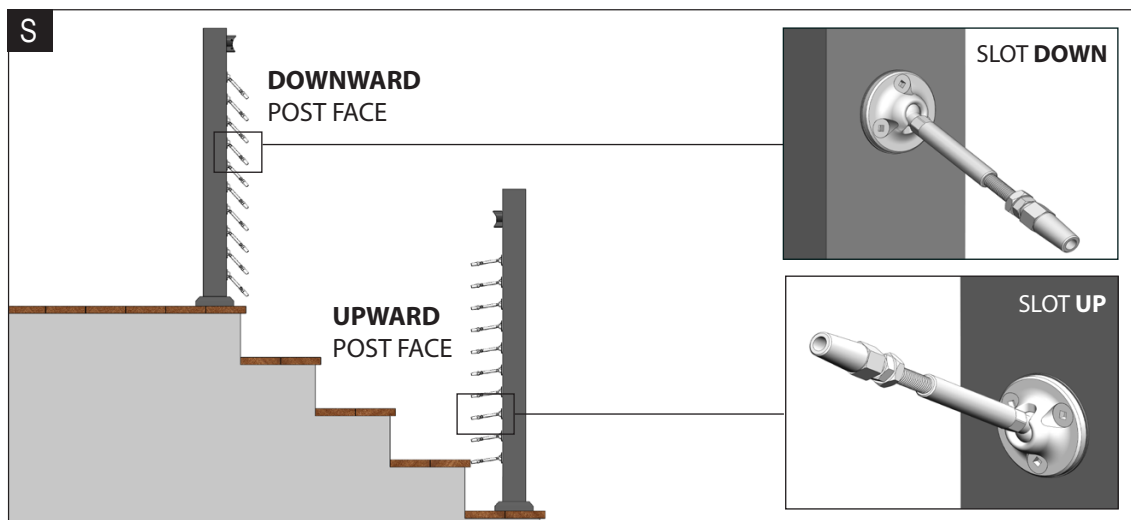
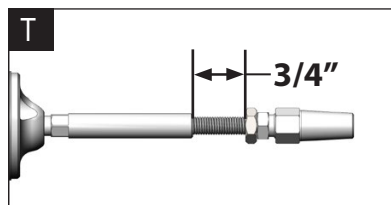
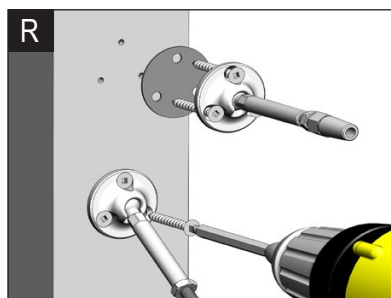
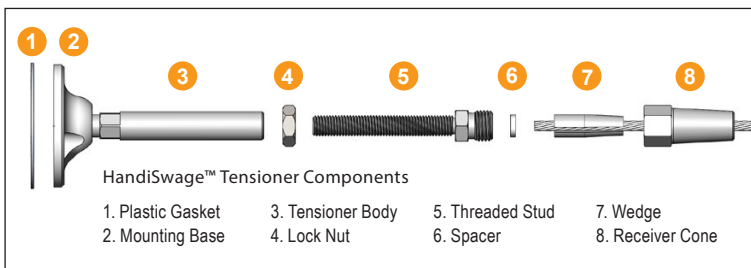
A. Installing Single Mount Tensioners:

Dissassemble the tensioners by removing the Threaded Stud and unscrewing the Base Cover. Reassemble the tensioner bases making sure to insert #14 screw before threading on the Base Cover. Install the tensioner bases to the posts using the Plastic Gasket in between the post and mounting base (See Figure O). **Be careful not to strip the screw head.** The slots on the tensioner base should aim down on the downward post face and aim up on the upward post face (See Figure P). Reassemble the tensioners leaving $\frac{3}{4}$ " of thread exposed (See Figure Q). **For cable runs over 20 feet, extend the threaded stud an additional $\frac{1}{4}$ " for each additional 10 feet.**



B. Installing HandiSwage™ Tensioners:

Install each tensioner to the posts using (3) #8 x 1-1/2" Screws, making sure to place the Plastic Gasket in between the post and tensioner Mounting Base (See Figure R). Be careful not to strip the screw heads. The tensioner assemblies will aim down on the downward post face and aim up on the upward post face (See Figure S). Adjust the Threaded Stud on each tensioner until $\frac{3}{4}$ " of thread is exposed (See Figure T). **For cable runs over 20 feet, extend the threaded stud an additional $\frac{1}{4}$ " for each additional 10 feet.**



INSTALL THE STAIR RAIL KIT

8. Measure and Cut the Rail:

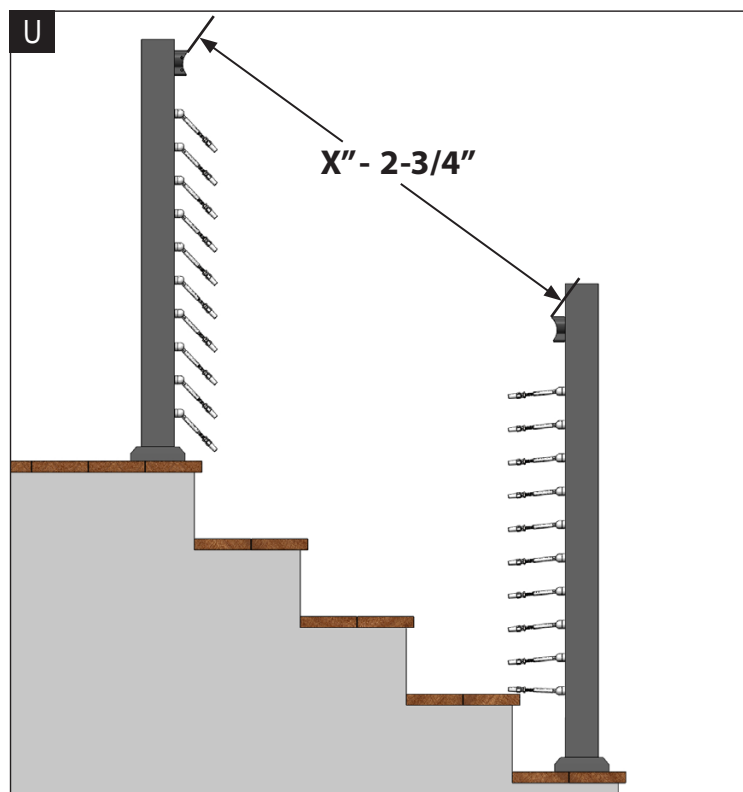
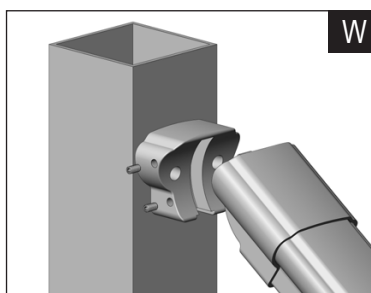
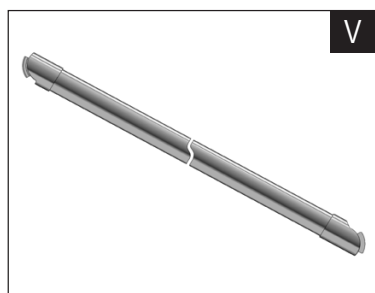
Measure from the top edge to top edge of the Stair Rail Bracket Bases (See Figure U).

For the Top Rail (Component A), subtract 2-3/4".

Mark the rail and cut using a miter saw with a non-ferrous carbide tipped blade.

9. Temporarily Install the Top Rail:

Slide the Rail brackets (Components C & D) over each end of the rail. Make sure the rail brackets are oriented correctly (See Figure V). Insert the rib on each bracket into the slot on the rail bracket bases. Install the Set Screws (Component I) into the side of each rail bracket base (See Figure W).

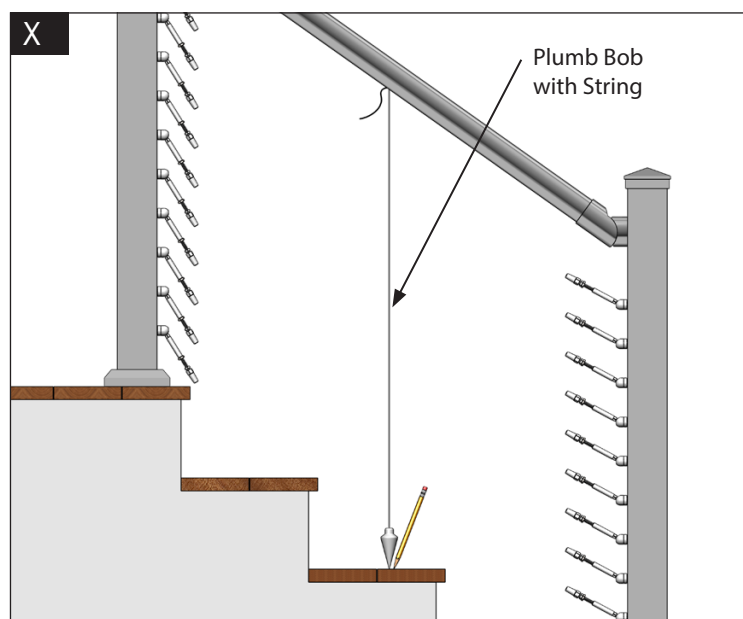


10. Mark the location of the Base Kit & Cable Stabilizer:

(If your Stair Rail Section is UNDER 4 FEET, you DO NOT need to install the Base Kit and Cable Stabilizer. Skip to STEP 16, if your Rail Section is UNDER 4 FEET)

If the rail section is longer than 4 feet, follow the instructions below for locating the position of cable stabilizer connectors.

Use a Plumb Bob at the center of the top rail to locate the desired position of the cable stabilizer. Mark the location on the underside of the top rail and the stair tread (See Figure X).

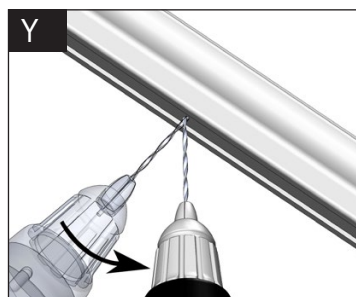


11. Pre-Drill and Install the Connectors onto the Rail:

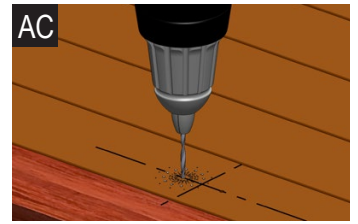
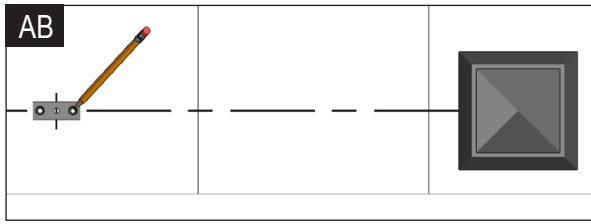
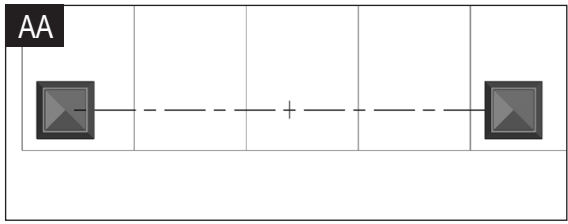
Using an 1/8" drill bit, drill straight while gradually working the drill bit to vertical to complete each hole on the underside of the top rails (See Figure Y).

REMOVE THE TOP RAILS.

Install the Angled Connector (Component F) using the supplied #8 screws (See Figure Z).

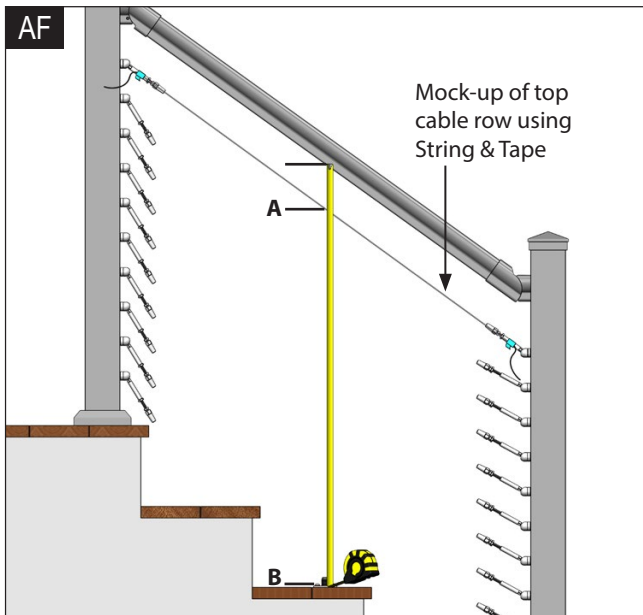
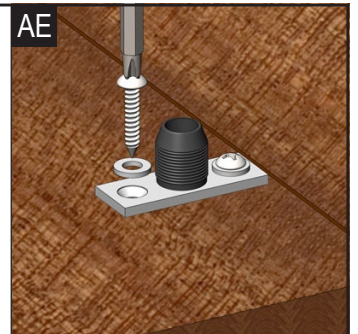
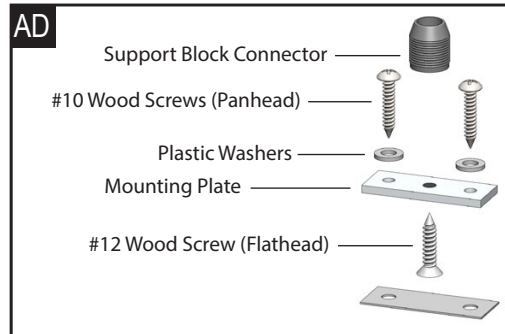


- 12. Mark & Drills Holes for Base Kit:** The marked location on the stair tread should be in line with the center of the stair posts (See Figure AA). Using the base kit Mounting Plate, mark the mounting hole locations (See Figure AB). Pre-drill the holes with an 1/8" drill bit (See Figure AC).



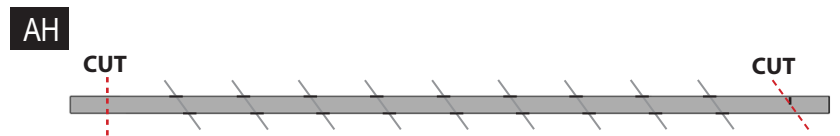
13. Assemble and Install the Support Block Base Kit:

Assemble the Support Block Base Kit (Component H) as shown (See Figure AD). Making sure the Plastic Gasket is between the Mounting Plate and the mounting surface, install the Support Block Base Kit using (2) #10 Wood Screws and Plastic Washers (See Figure AE).



14. Measure & Cut the Stabilizer:

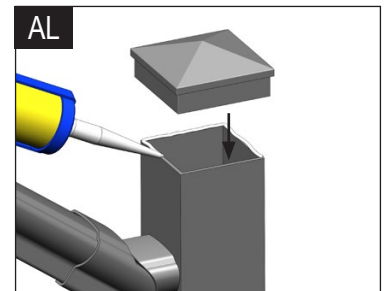
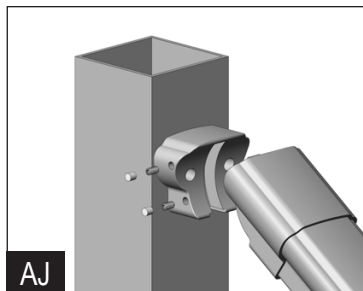
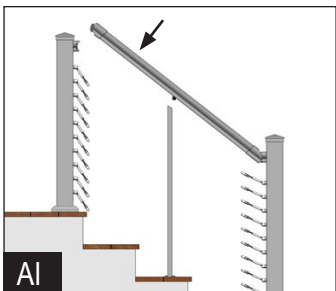
To assist in measuring the length of the cable stabilizer, tape a string in place to represent the top row of cable. Measure between the marked Top Rail and the top of the base kit Mounting Plate (See Figure AF). Record measurement "A" and "B". Transfer these measurements onto the Stabilizer (Component E) (See Figure AG). With the Stabilizer marked, set the saw to match the angle degree of your stairs to make the top cut. **Make sure the offset cable slots in the Stabilizer match the direction of your angled end cut** (See Figure AH).



- 15. Install the Stabilizer and Top Rail:** Install the Stabilizer onto the Support Block Base Kit making sure the slots in the Cable Stabilizer are aligned with the tensioners on the posts. Repeat **STEP 9** to install the Top Rail making sure to insert the connector on the underside of the top rail into the top of the stabilizer (See Figure AI). Tighten the Set Screws on the side of the rail brackets and install the Set Screw Covers (Component J) (See Figure AJ).

- 16. Predrill the underside of the Top Stair Rail Brackets with an 1/8" drill bit and install the #10 Self-Drilling Screws to secure the top rail to the rail brackets (See Figure AK).**

- 17. Install the Post Caps:** Apply a bead of silicone on the top edge of posts and set the Post Caps (Component R) firmly into place (See Figure AL).



RUN THE CABLE

18. Determine the Cable Lengths for Each Section:

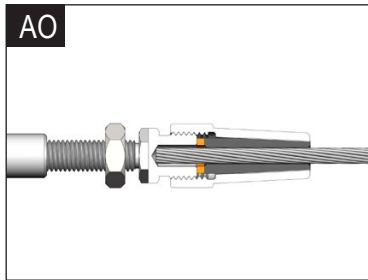
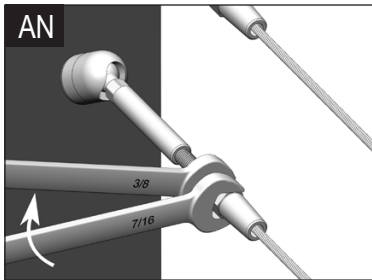
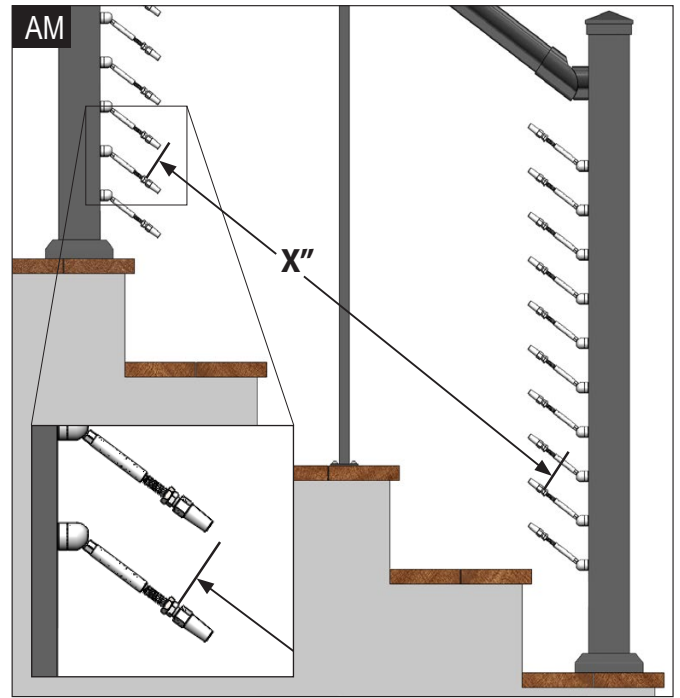
With the Threaded Stud on each tensioner extended $\frac{3}{4}$ " (For cable runs over 20 feet, extend the threaded stud an additional $\frac{1}{4}$ " for each additional 10 feet), measure the distance from "Receiver Cone to Receiver Cone" on opposing tensioners for each section (See Figure AM). This measurement is the "cut to" length for the cable in each section.

19. Cut and Install the Bottom Cable Run for Each Section:

WE RECOMMEND INSTALLING THE BOTTOM CABLE RUN FOR EACH SECTION BEFORE CUTTING ALL OF THE CABLES FOR YOUR ENTIRE PROJECT. Using the measurements from **STEP 18** for each cable run section, cut the cable for the "bottom run" in each cable run section.

Attach the cable end to the Tensioner at the bottom of the Top Stair Post. Insert the cable into the receiver cone while twisting the cable opposite the lay of the wire strands. Fully tighten the receiver cone using $\frac{7}{16}$ " and $\frac{3}{8}$ " open wrenches. The wedge inside will crimp down on the cable (See Figures AN & AO).

Run the cable through each Stabilizer and Mid Post toward the Bottom Stair Post of the cable run section. **REPEAT** the step above to attach the cable end to the Tensioner at the bottom of the Bottom Stair Post.



20. Cut and Install the Remaining Cable Runs for Each Section:

If you find that the cable length was **too short or too long** on the bottom cable run, determine the necessary adjustment needed to be made to the cable length. Cut a new length to the proper size and repeat the steps above to install it.

Now that the bottom cable runs are installed successfully, cut the additional cable lengths for each section and repeat the process in **STEP 19** above for installing the remaining cable runs.

TENSION THE CABLE

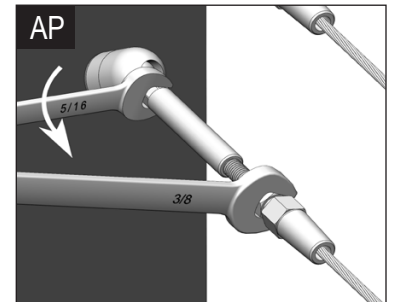
DO NOT TENSION CABLES UNLESS THE FRAMEWORK OF THE NOVA I SYSTEM IS COMPLETED. THE POSTS MUST BE INSTALLED SECURELY TO THE MOUNTING STRUCTURE AND THE TOP RAILS MUST BE SECURELY ATTACHED TO THE POSTS.

21. The Tensioning Method:

Hand tighten the tensioners **equally** on both sides of the cable run. Holding the tensioner stud in a fixed position with a $\frac{3}{8}$ " wrench, rotate the tensioner body with a $\frac{5}{16}$ " wrench to apply tension (See Figure AP).

22. Tension the Center Cable:

Beginning with the center run of cable, use the "tensioning method" until the cable is snug. **DO NOT over-tension!**



23. Tension the Remaining Cables:

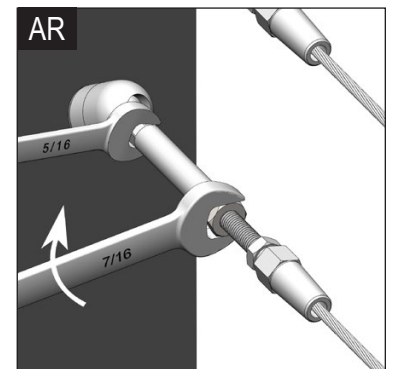
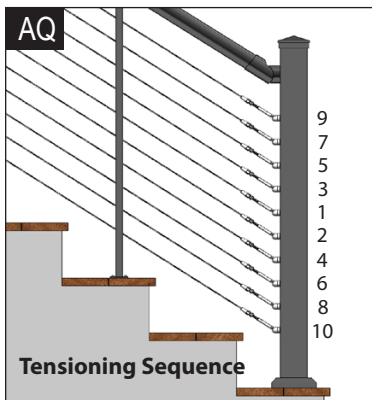
Repeat STEP 21 to tension the rest of the cables. **WORK AWAY FROM THE CENTER CABLE RUN** (See Figure AQ).

24. Make Final Adjustments to the Cable Tension:

Make sure all cables are tight and relatively equal in tension.

25. Tighten the Lock Nuts on the Tensioners:

With all of the cables tensioned properly, tighten the tensioner lock nuts. Use a $\frac{5}{16}$ " wrench to hold the tensioner body in a fixed position while tightening the lock nut using a $\frac{7}{16}$ " wrench (See Figure AR).



Confirm the Contents of Packaging: Make sure to verify that the system components for your order are present.

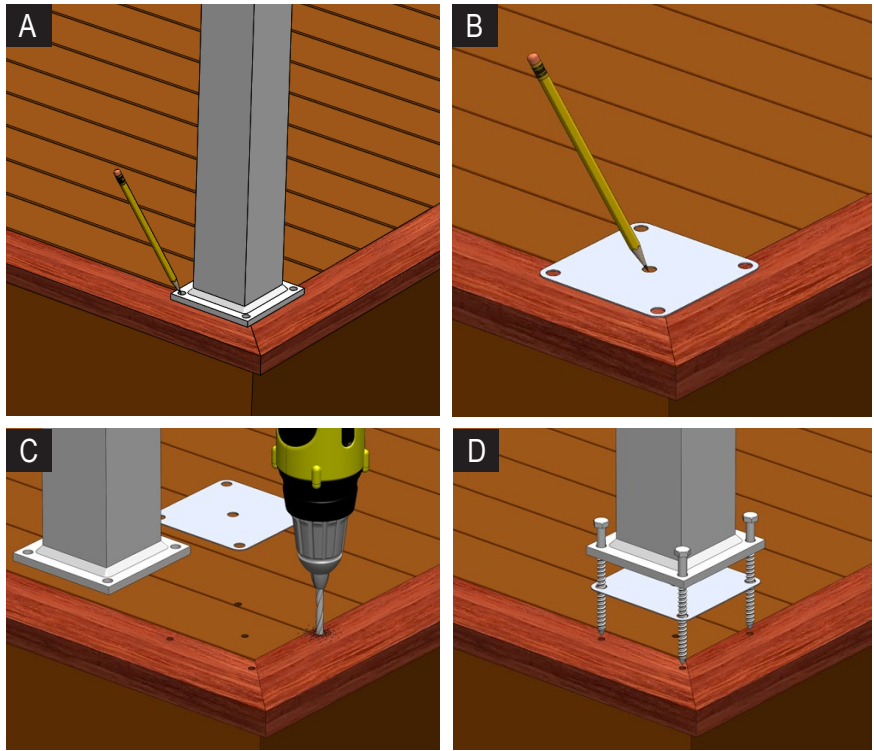
INSTALL THE POSTS

- 1. Gather the Posts and Position them in their General Locations per your Plan Layout.**

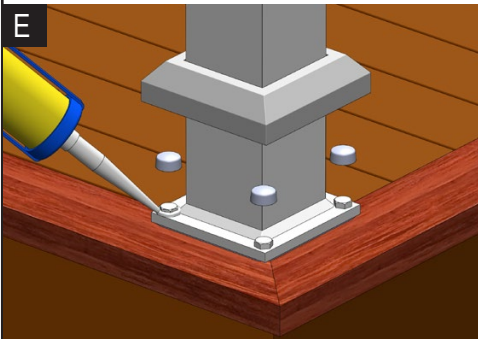
- 2. Mount the Posts:** Keep in mind it is critical that the mounting hardware penetrate into the structure in accordance with local building codes.

Position all Posts making sure the holes for cable and fittings are oriented correctly. Mark the location of mounting holes and the center hole of the Post Pad (Component AW). Pre-drill using a $\frac{1}{4}$ " drill bit (See Figures A, B & C). Use the Lag Bolts (Component AI) to anchor the Posts (See Figure D).

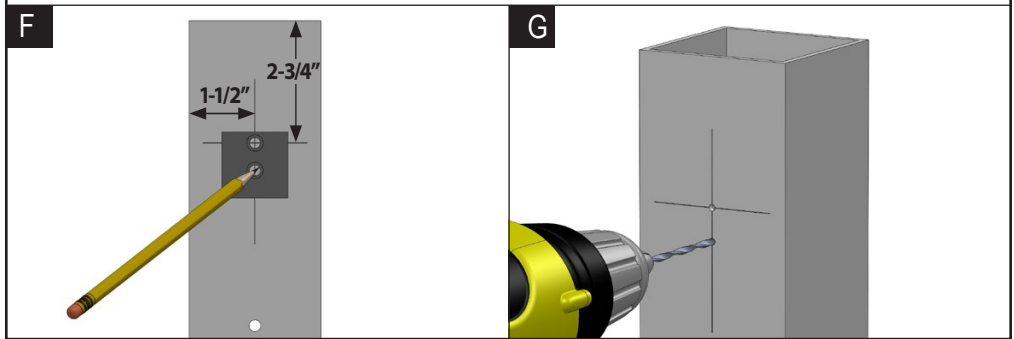
Make sure the Posts are installed plumb. Use Post Shims, if necessary.



- 3. Install the Plastic Cover Nuts and Post Skirts:** Use silicone caulk on the Lag Bolt heads before installing the Plastic Cover Nuts (Component AJ) (See Figure E). **DON'T FORGET** to install the Post Skirts (Component AV).



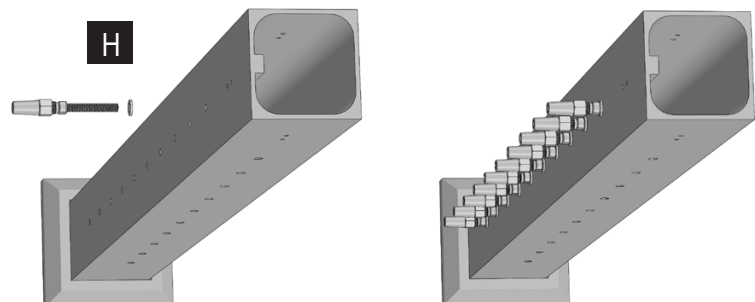
- 4. Pre-Drill the Mid Posts for Top Rail Brackets:** If a Universal Post (Component AP1 or AP2) is being used as a Mid Post versus an End Post, holes must be pre-drilled on one side for mounting the Top Rail Brackets (Component AB). You will notice that the post is already pre-drilled on one side. Measure and mark each post. Using the Bracket Key (Component AC), mark the bottom hole (See Figure F). Pre-drill holes using a $\frac{5}{32}$ " drill bit (See Figure G).



- 5. Install the NOVA Studs on the Corner Posts:**

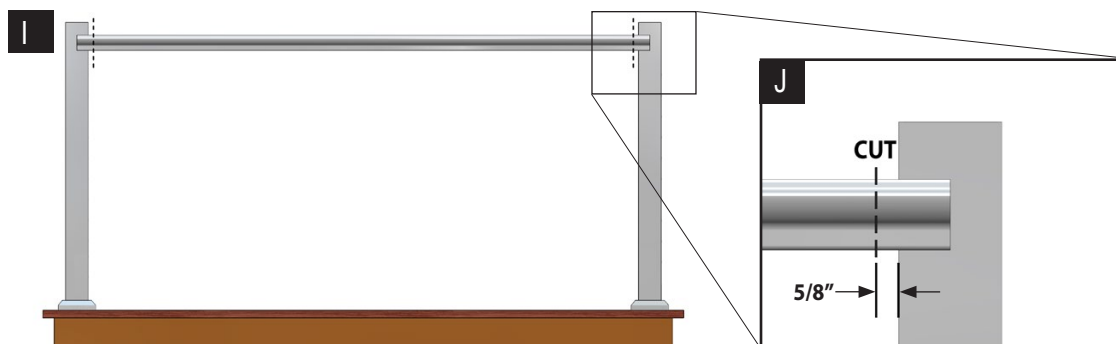
Locate the side of the Corner Post (Component AQ1 or AQ2) with the threaded post holes. Making sure to use the Plastic Washer (Component AT) in between the NOVA Stud and the Post, thread the NOVA Studs (Component AS) into the threaded holes in the Corner Post (See Figure H).

NOTE: If using A0905-CW Corner Posts (where cable passes through the post), **NO** cable hardware is required.



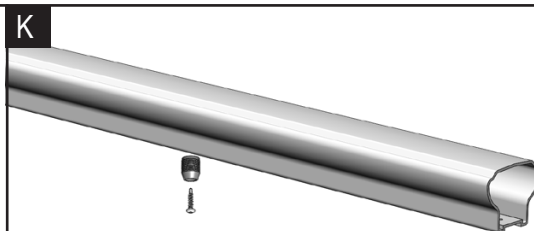
INSTALL THE TOP RAIL

- 6. Measure and Cut the Rails (if necessary):** To ensure the centering of the Cable Stabilizer (Component AM or AN), trim must always be taken from both ends of the Rails (See Figure I). To account for the Top Rail Brackets take an extra $\frac{5}{8}$ " off each end of the Top Rail (Component AA) (See Figure J). Mark the Rails and cut using a miter saw with a non-ferrous carbide tipped blade.



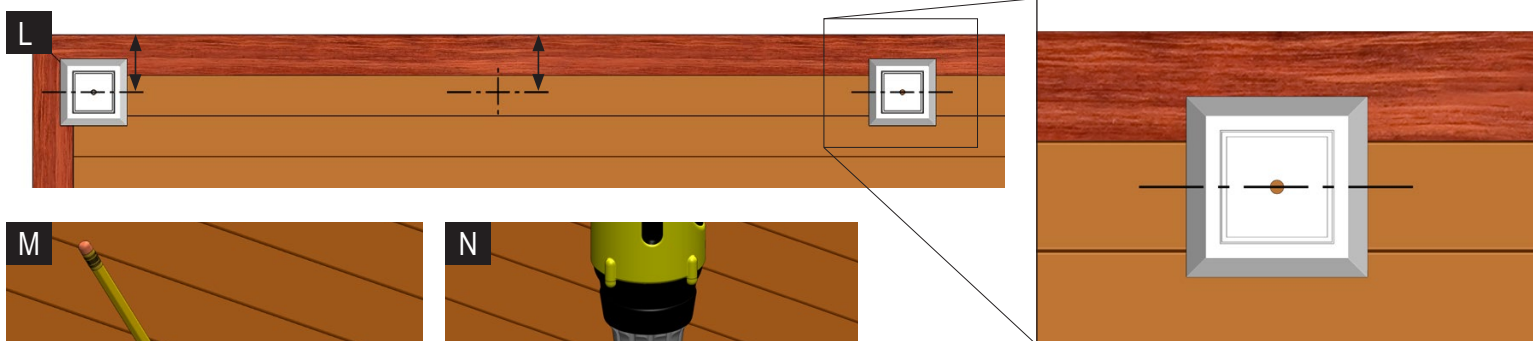
- 7. Install the Stabilizer and Support Block Connectors**
(If your Rail Section is UNDER 4 FEET, you DO NOT need to install the Support Block and Stabilizer. Skip to STEP 10)

Locate the pre-drilled holes in the middle of the underside of the Top Rail. Using the #8 self-drilling screws, the Square Driver Bit (Component AH) and a power drill, install the Stabilizer Connector (Component AF) on the Top Rail (See Figure K).



- 8. Mark and Pre-Drill for the Support Block Base Kit:**

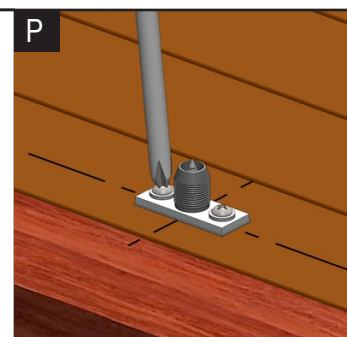
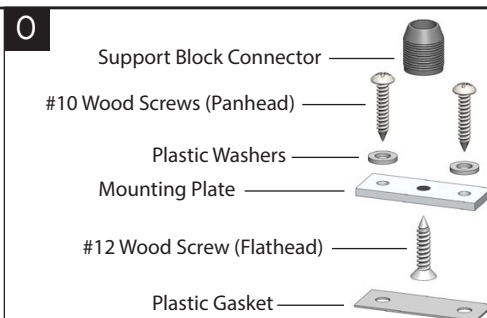
Measure and mark a center line on the deck to indicate the center between Posts. Measure from the edge of the deck to the center of the Posts and transfer this measurement onto the deck by marking a line that intersects the center line between Posts. This is where the location of the Support Block Base Kit (Component AK) is to be installed (See Figure L).



Using the rectangular Mounting Plate from the Support Block Base Kit, mark and pre-drill the holes with a $\frac{1}{8}$ " drill bit (See Figures M & N).

- 9. Assemble and Install the Support Block Base Kit:**

Assemble the Support Block Base Kit as shown (See Figure O). Making sure the Plastic Gasket is between the Mounting Plate and the mounting surface, install the Support Block Base Kit using (2) #10 Wood Screws and Plastic Washers (See Figure P).

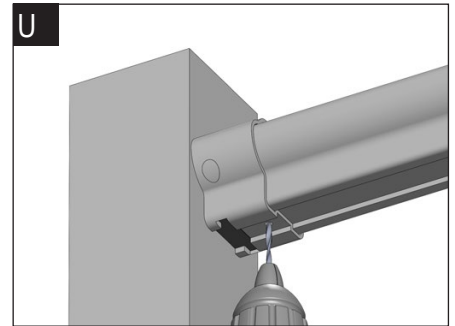
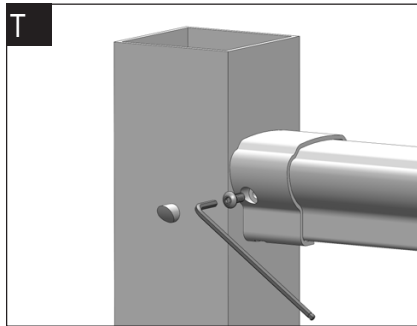
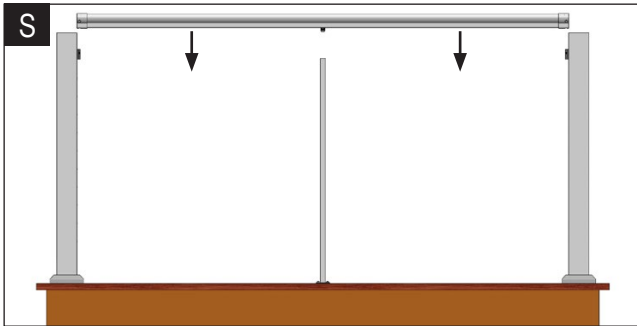
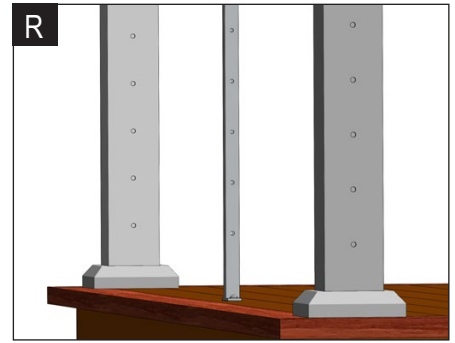
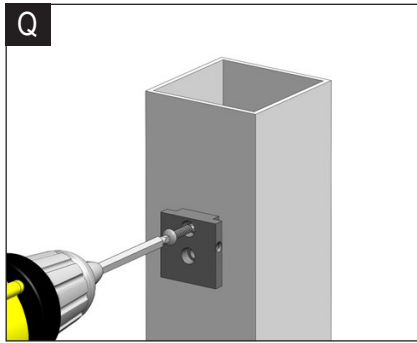


10. Install the Top Rail and Cable Stabilizer:

Install the Bracket Key with the counter bore holes facing out from the post using #10 Self-Drilling Screws (See Figure Q).

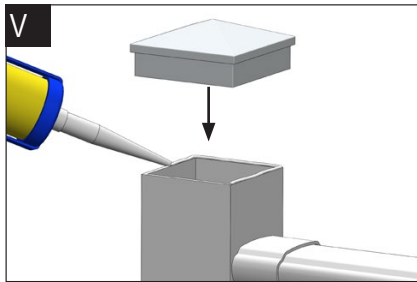
Insert the Cable Stabilizer over the Connector on the top of the Support Block Base Kit making sure the holes in the Cable Stabilizer are aligned with the holes on the posts (See Figure R). **For 36" railing systems**, use the Cable Stabilizer included in the rail section kit. **For 42" railing systems**, use the Cable Stabilizer (Component AN) that was supplied separately.

Slide the Top Rail with mounting brackets on each end over the installed Bracket Keys as you insert the Connector on the bottom of the Top Rail into the Cable Stabilizer (See Figure S). Install the supplied Button Head Screws (Component AL) into the holes on the sides of Top Rail Brackets using an 1/8" Allen wrench and install the Angled Screw Covers (Component AD) (See Figure T). Using a 5/32" drill bit, drill a hole through the bottom of the Top Bracket and Rail. Install the #10 Self-Drilling Screw (See Figure U).



11. Install the Post Caps:

Apply a bead of silicone on the top edge of Posts and set the Post Caps (Component AU) firmly into place (See Figure V).



INSTALLING ANGLED RAILING SECTIONS

To accommodate railing sections that are at an angle of 45 degrees or less to the straight sections on your level deck surface, use the Adjustable Rail Bracket Kit (A0905-0075).

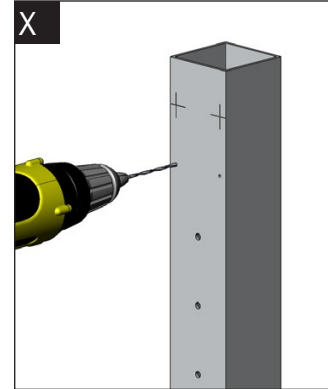
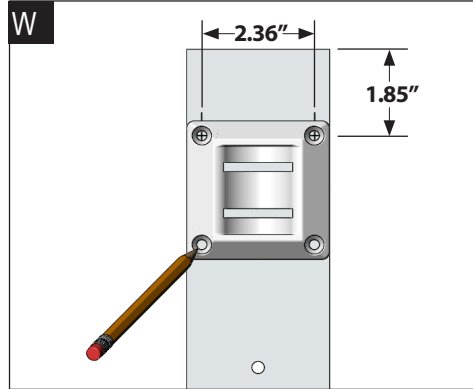
INSTALL THE POSTS

12. Before you drill the posts:

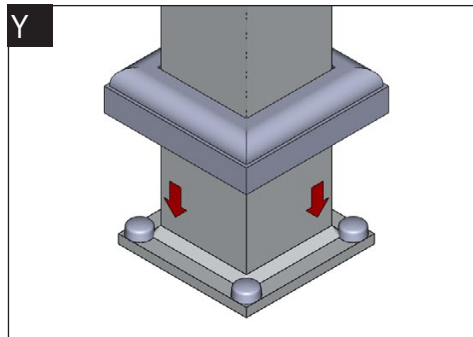
Make sure the pre-drilled holes for the cable are in-line with your straight rail section. Each post is pre-drilled on one side for the Straight Rail Bracket. Make sure that this side faces your straight rail section.

13. Mark and Pre-Drill the Posts for Adjustable Rail Brackets:

Mark Posts with a pencil (See Figure W). Using the Adj. Rail Bracket Bases, mark the bottom holes (See Figure W). Drill pilot holes with a 5/32" drill bit (See Figure X).



14. Mount the Posts following "LEVEL SECTIONS: Steps 2-4" on page 11. **DON'T FORGET** to install the Post Skirts after (See Figure Y).



INSTALL THE ANGLED RAILS

15. Determining the Rail Lengths:

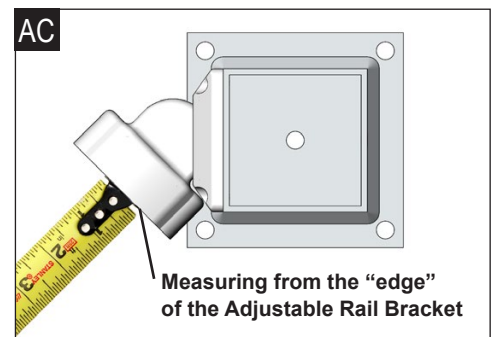
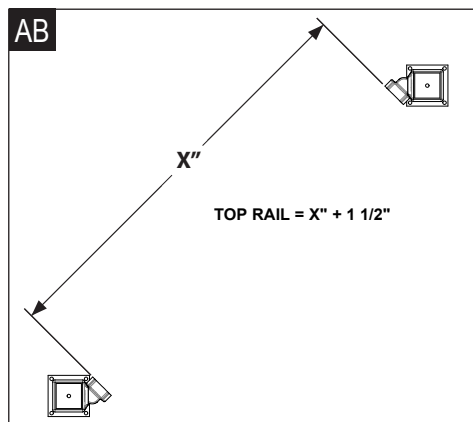
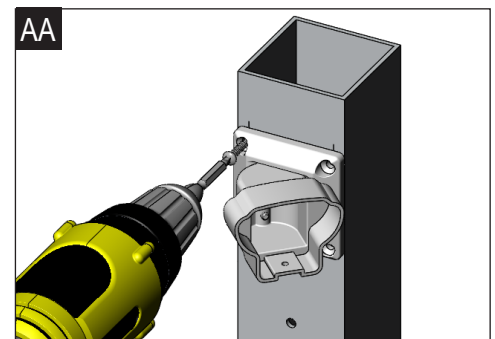
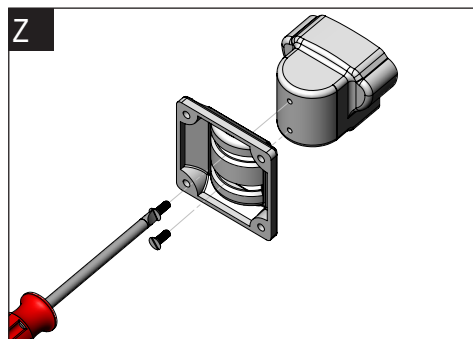
Match the angle of your adjustable rail bracket (Component AE) to the angle of your rail section and lock the rail bracket in place by tightening the machine screws on the back of the rail bracket base (See Figure Z).

Use #10 Self-Drilling Screws to "temporarily" mount the adjustable rail brackets to the posts (See Figure AA).

Measure the distance from "edge to edge" on opposing top rail brackets and opposing bottom rail brackets for each section. Use the formulas below to figure out the "cut to" lengths for each (See Figures AB & AC).

Top Rail

ADD 1-1/2" to your measurement



16. Cut the Rails to Length: To ensure the centering of the Cable Stabilizer (Component AM or AN) and the pre-drilled holes in the top rails, trim must always be taken equally from both ends of each rail. Using the measurements from **Step 15** (on page 14), mark the rails and cut using a miter saw with a non-ferrous carbide tipped blade.

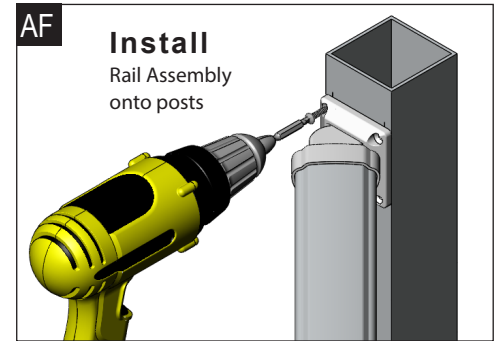
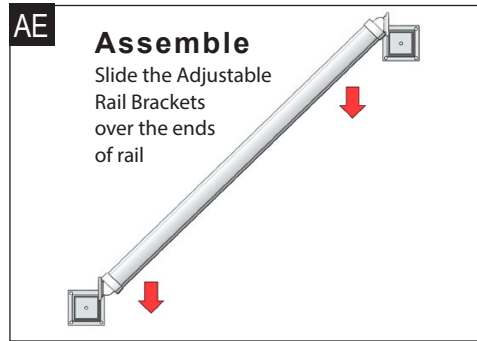
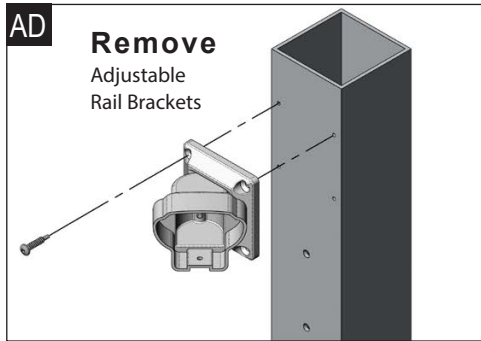
17. Install the Stabilizer Connectors and Support Block Base Kit following “**LEVEL SECTIONS: Steps 7-10**” on pages 12-13.
If your Rail Section is UNDER 4 FEET, you DO NOT need to install the Support Block and Stabilizer.

18. Install the Top Rail (and Cable Stabilizer, if necessary):

Insert the Cable Stabilizer over the Connector on the Support Block Base Kit making sure the holes in the Cable Stabilizer are aligned with the holes on the posts. **For 36” railing systems**, use the Cable Stabilizer included in the rail section kit. **For 42” railing systems**, use the Cable Stabilizer (Component AN) that was supplied separately.

With the adjustable top rail brackets set to the angle degree of the rail section, remove the brackets from the posts (*See Figure AD*).

Slide the adjustable Top Rail brackets over each end of the top rail (*See Figure AE*). Install the Top Rail, using #10 Self-Drilling Screws (Component AG) to once again secure the rail brackets to the posts (*See Figure AF*).



INSTALL THE CABLE FITTINGS

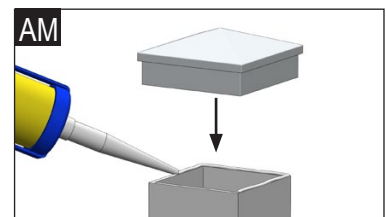
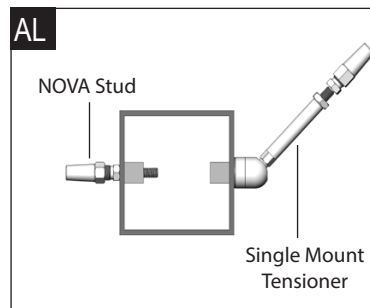
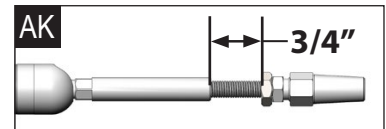
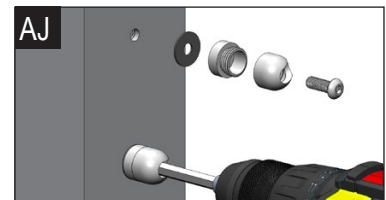
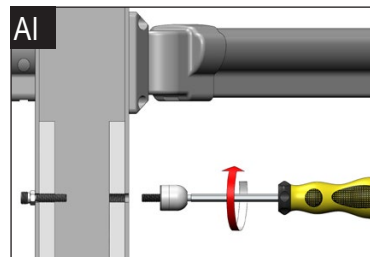
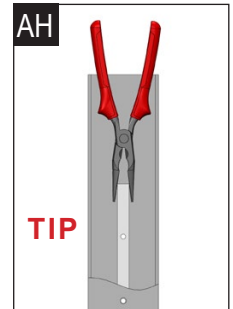
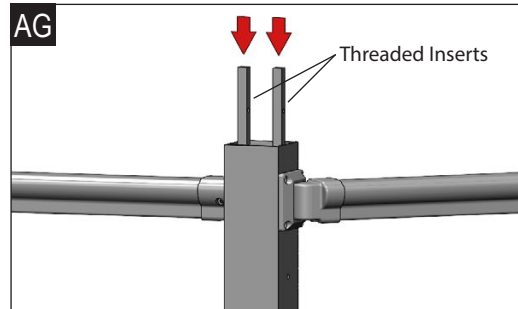
Each post requires (2) threaded inserts on the inside of the post to serve as a backing plate for attaching cable fittings (*Fig. AG*).

TIP: Use a long pair of needle-nose pliers to hold the threaded insert in place while threading the first few fasteners into it (*Fig. AH*).

19. On the “ANGLED” section post face, install the Single Mount Tensioners: Dissassemble the tensioners by removing the Threaded Stud and unscrewing the Base Cover. Reassemble the tensioner bases making sure to insert the 1/4”-28 UNF machine screw (P0906-0030) before threading on the Base Cover. Install the tensioner bases to the posts using the Plastic Gasket in between the post and mounting base (*See Figures AI & AJ*). The slot on the tensioner base should aim in the direction that the tensioner body will be angled. Reassemble the tensioners leaving 3/4” of thread exposed (*See Figure AK*). For cable runs over 20 feet, extend the threaded stud an additional 1/4” for each additional 10 feet.

20. On the “STRAIGHT” post face, install the Nova Studs: Install the NOVA Studs to the post by threading the studs into the insert on the inside off the post. Make sure to use the Plastic Gasket in between the post and base of the stud (*See Figure AL*).

21. Install the Post Caps: Apply a bead of silicone on the top edge of Posts and set the Post Caps (Component AU) firmly into place (*See Figure AM*).



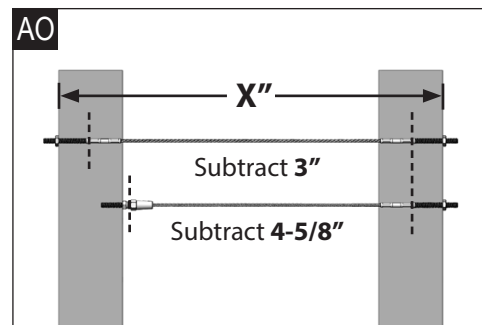
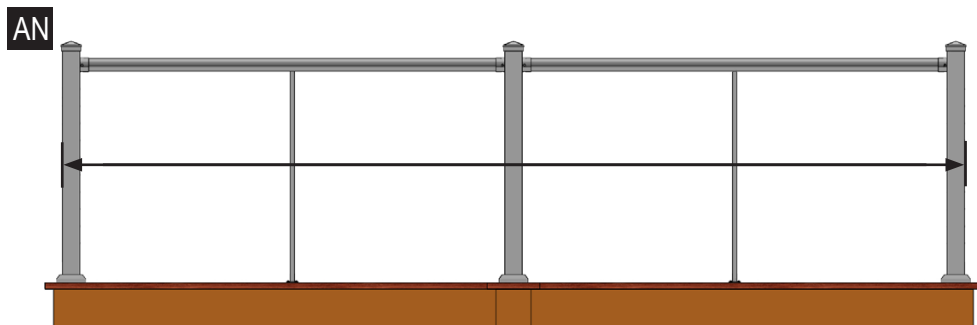
- 22. Determine the Cable Lengths for Each Section:** Measure from “outside to outside” of the outer posts for each cable run section (See Figure AN). Follow the steps below to find the “cut to” length for each cable run section.

HandiSwage Stud to HandiSwage Stud

For cable run sections where HandiSwage Studs will be used on both ends of cable runs, **subtract 3”** (See Figure AO).

NOVA Stud to HandiSwage Stud

For cable run sections where a Corner Post using NOVA Studs is present, **subtract 4-5/8”** (See Figure AO).



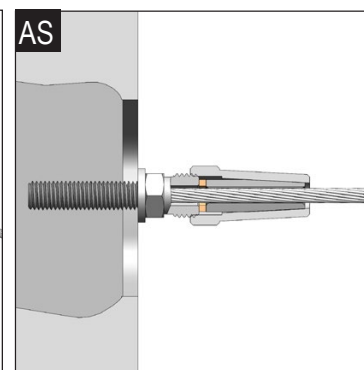
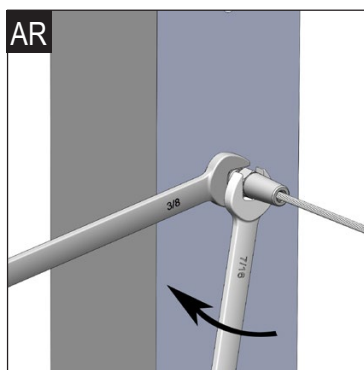
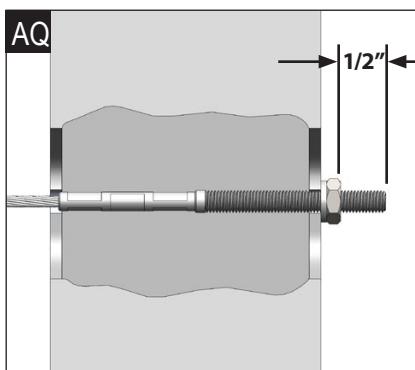
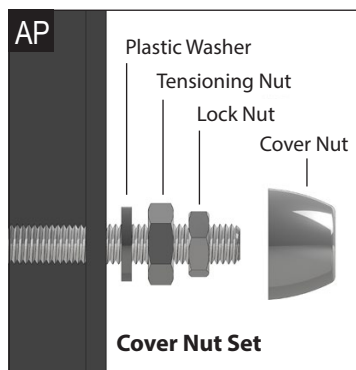
- 23. Cut and Install the Bottom Cable Run for Each Section:** WE RECOMMEND INSTALLING THE BOTTOM CABLE RUN FOR EACH SECTION BEFORE CUTTING ALL OF THE CABLES FOR YOUR ENTIRE PROJECT. Using the measurements from **STEP 22** for each cable run section, cut the cable for the “bottom run” in each cable run section.

For Straight cable run sections where HandiSwage Studs will be used on both ends of cable runs, crimp a HandiSwage Stud onto one end of the cable following the hand swage tool instructions. Insert the stud through the bottom post hole. Locate the Cover Nut Set and identify each component (See Figure AP). Install the Plastic Washer and hand tighten the Tensioning Nut onto the stud, leaving a 1/2” of thread exposed (See Figure AQ).

Run the cable through each Cable Stabilizer and Mid Post toward the opposite post of the cable run section. Crimp a HandiSwage Stud to the cable end. Insert the stud (threaded end first) through the post, install the Plastic Washer and hand tighten the Tensioning Nut onto the stud (See Figure AQ). This should leave about a 1/2” of thread exposed.

For sections using “A0905-C036 & -C042” Corner Posts (utilizes fixed / tensioning hardware), attach the cable end to the NOVA Stud at the bottom of the Corner Post. Insert the cable into the receiver cone while twisting the cable opposite the lay of the wire strands. Fully tighten the receiver cone using 7/16” and 3/8” open wrenches (See Figure AR). The wedge inside will crimp down on the cable (See Figure AS).

Run the cable through each Cable Stabilizer and Mid Post toward the opposite post of the cable run section. Following the hand swage tool instructions, crimp a HandiSwage Stud to the cable end and insert it through the post. Locate the Cover Nut Set and identify each component (See Figure AP). Install the Plastic Washer and hand tighten the Tensioning Nut onto the stud (See Figure AQ). This should leave about a 1/2” of thread exposed.



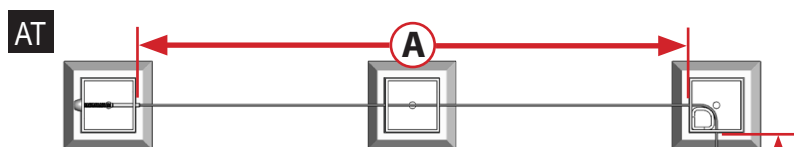
- 24. Cut and Install the Remaining Cable Runs for Each Section:** If you find that the cable length was **too short or too long** on the bottom cable run, determine the necessary adjustment needed to be made to the cable length. Cut a new length to the proper size and repeat the steps above to install it.

Now that the bottom cable runs are installed successfully, cut the additional cable lengths for each section and repeat the process in the steps above for installing the remaining cable runs.

- 25. For sections using “A0905-CW36 & -CW42” Corner Posts** (cables pass through), the total length of a cable run passing through the Corner Post MUST NOT EXCEED 50 FEET and the cable run MUST HAVE A TENSIONING STUD ON EACH END OF THE CABLE. (See Figure AT)

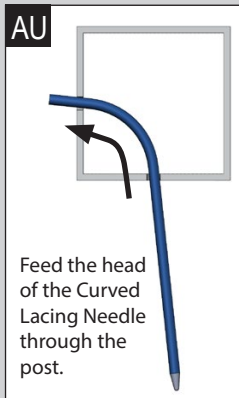
We recommend measuring and cutting ONE of the cable rows to an “approximate” length per the instructions. Follow **Steps A through E** to insure that the cable length is long enough. Once this is confirmed, you can cut all of the cable runs to this length.

- A. Determine the “approximate” length of the cable** by measuring from the Corner Post to the face of each End Post. ADD the two lengths together PLUS an extra 8” to find the “cut to” length for your cable. Refer to the formula and illustration (on right).

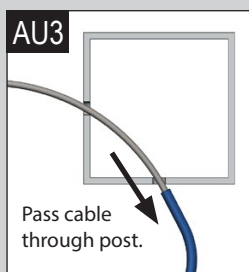
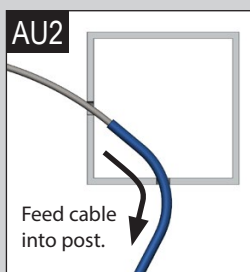
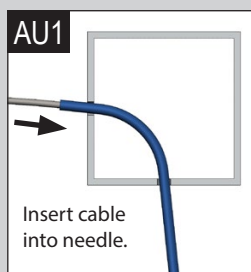


$$A \text{ Length} + B \text{ Length} + 8'' = \text{Approximate Cable Length}$$

- B. Start at one of the End Posts and pass the cable through the Mid Posts and Cable Stabilizers until you reach the Corner Post.** Remove Insert from the Corner Post (if present).



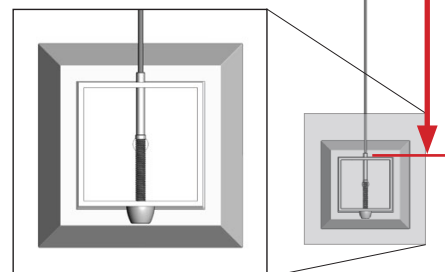
Using the Curved Lacing Needle (C0988-400C-2), pass the cable through the Corner Post by lacing the cable through one hole and out the other (See Figures AU, AU1, AU2 & AU3).



50 FT. MAXIMUM

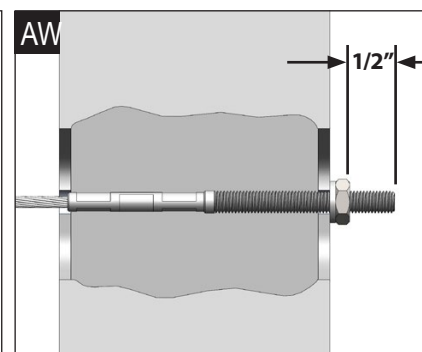
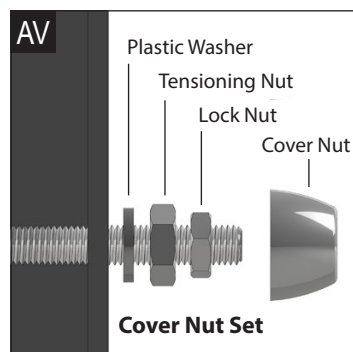
For total length (End Post to End Post) of cable run that passes through a Corner Post.

MUST HAVE tensioning device on each end of the cable run.



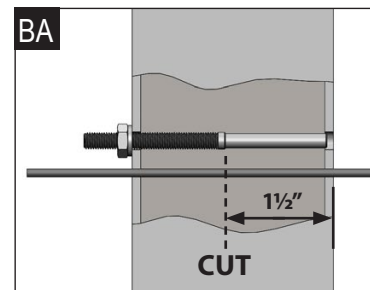
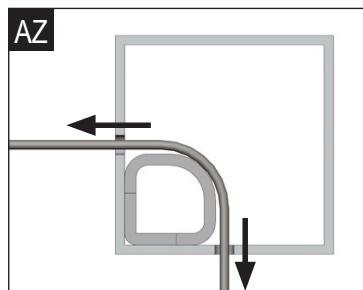
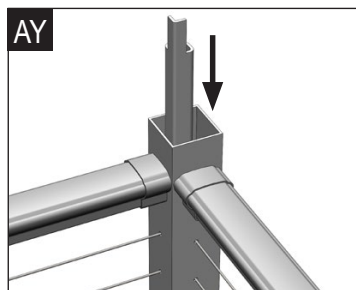
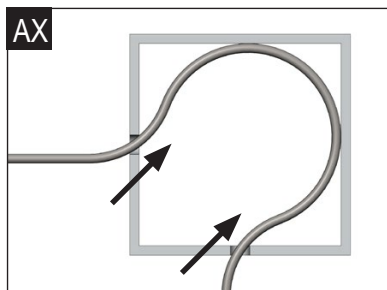
- C. Continue to pass the cable through the Mid Posts and Cable Stabilizers (if present) until you reach the opposite End Post.**

- D. Following the hand swage tool instructions, crimp the HandiSwage Studs onto the end of the cable.** Insert the stud through the End Post. Locate the Cover Nut Set and identify each component (See Figure AV). Install the Plastic Washer and hand tighten the Tensioning Nut onto the stud, leaving a 1/2" of thread exposed (See Figure AW).



- E. Install the Insert into the Corner Post by following these steps.** First, force the cable to bend into place inside the corner post so that it is out of the way (See Figure AX). Place the Insert into the post on the inside corner with the curved side of the insert facing the cable (See Figure AY). Pull the cable into place making sure that it follows the curve of the Insert (See Figure AZ). Pull the cable tight to the opposite End Post. The cable should extend beyond the End Post (See Figure BA).

- F. Mark and Cut the cable to the “exact” length using the measurement shown below (See Figure BA).** Crimp the HandiSwage Studs onto the cable ends following the hand swage tool instructions and insert them through the post. Locate the Cover Nut Sets and identify each component (See Figure AV). Install the Plastic Washers and hand tighten the Tensioning Nuts onto the studs (See Figure AW). This should leave about a 1/2" of thread exposed.



TENSION THE CABLE

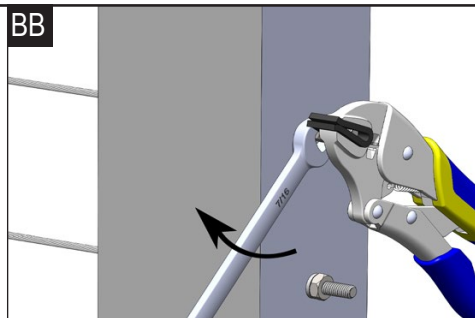
DO NOT TENSION CABLES UNLESS THE FRAMEWORK OF THE NOVA I SYSTEM IS COMPLETED. THE POSTS MUST BE INSTALLED SECURELY TO THE MOUNTING STRUCTURE AND THE TOP RAILS MUST BE SECURELY ATTACHED TO THE POSTS.

26. The Tensioning Method:

Using a Cable Grip Pad with vice grips, hold the stud or cable in a fixed position and turn the Tensioning Nut with a $\frac{7}{16}$ " wrench to apply tension (See Figure BB).

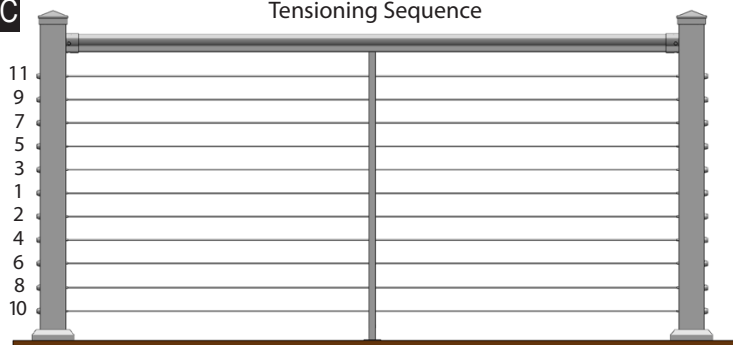
27. Tension the Center Cable:

Beginning with the center run of cable, use the "tensioning method" and tighten the nut until the cable is snug. **DO NOT over-tension!**



BC

Tensioning Sequence



28. Tension the Remaining Cables:

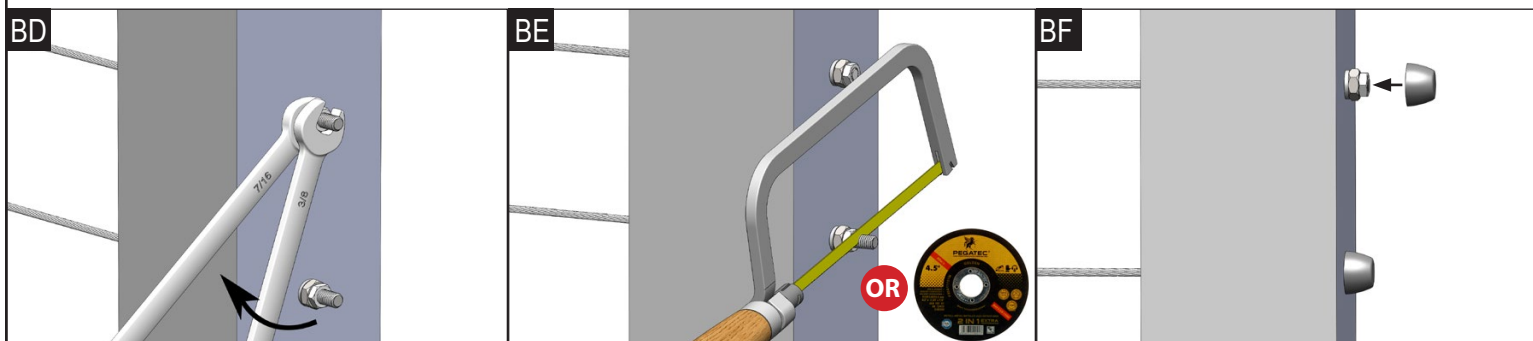
Tension the rest of the cables by tightening the nuts until the cable is snug. WORK AWAY FROM THE CENTER CABLE RUN (See Figure BC).

29. Make Final Adjustments to the Cable Tension:

Make sure all cables are tight and relatively equal in tension.

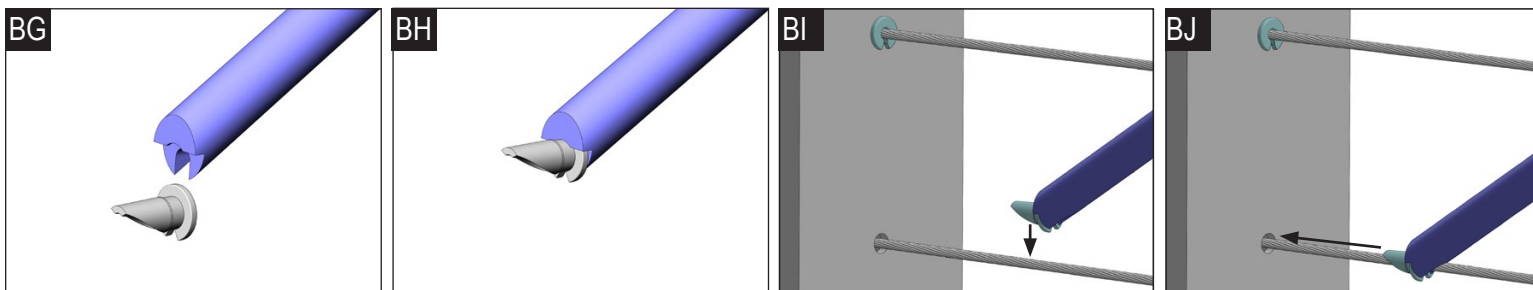
30. Install the Lock Nuts and Cover Nuts: With all of the cables tensioned properly, hand tighten the Lock Nuts onto the stud ends. With a $\frac{7}{16}$ " wrench holding the Tensioning Nut in place, tighten the Lock Nut using a $\frac{3}{8}$ " wrench (See Figure BD).

Using a hacksaw OR our Cutting Disk (E0113-CD04-2), cut the stud ends flush with the outer side of the Lock Nuts (See Figure BE). **BE CAREFUL NOT TO SCRATCH OR DAMAGE THE POST WHILE CUTTING THE STUDS.** Place the Cover Nut over the assembly until it is flush with the Post (See Figure BF).



31. Install the Cable Grommets:

Using the Grommet Install Tool (Part # E0916-1000), install the Cable Grommets (Component AO) wherever cable passes through the Posts and Cable Stabilizers (See Figure BG, BH, BI & BJ). There are 2 different size grommets. Make sure to use the longer ones (Part # C0916-0003-25) on Posts and the shorter ones (part # C0916-A003-25) on Cable Stabilizers.



NOVA I Post Kits, Cable Spacing & Heights

Part Number	Post Description	Cable Spacing	Actual Post Height	Rendered Rail Height	Height From Surface
A0905-0036-XX*	NOVA I Universal Post 36"	2.83"	38.00"	36"	38.00"
A0905-0042-XX*	NOVA I Universal Post 42"	2.86"	44.00"	42"	44.00"
A0905-C036-XX*	NOVA I Corner Post 36"	2.83"	38.00"	36"	38.00"
A0905-C042-XX*	NOVA I Corner Post 42"	2.86"	44.00"	42"	44.00"
A0905-CW36-XX*	NOVA I Corner Post 36" - Pass Thru	2.83"	38.00"	36"	38.00"
A0905-CW42-XX*	NOVA I Corner Post 42" - Pass Thru	2.86"	44.00"	42"	44.00"
A0906-U036-XX*	NOVA Stair Post, Undrilled 36"	N/A	38.00"	36"	38.00"
A0906-U042-XX*	NOVA Stair Post, Undrilled 42"	N/A	44.00"	42"	44.00"
A0905-SM42-XX*	NOVA I Stair Mid Post, Slotted 42"	3.25"	44.00"	42"	44.00"

NOVA I System Product Specifications

Part Number	Description	Use
Post Kits		
A0905-0036-XX*	NOVA I Universal Post 36"	36" surface mount straight post
A0905-0042-XX*	NOVA I Universal Post 42"	42" surface mount straight post
A0905-C036-XX*	NOVA I Corner Post 36"	36" surface mount corner post
A0905-C042-XX*	NOVA I Corner Post 42"	42" surface mount corner post
A0905-CW36-XX*	NOVA I Corner Post 36" - Pass Thru	36" surface mount corner post where cable passes through
A0905-CW42-XX*	NOVA I Corner Post 42" - Pass Thru	42" surface mount corner post where cable passes through
A0906-U036-XX*	NOVA Stair Post, Undrilled 36"	36" surface mount stair post
A0906-U042-XX*	NOVA Stair Post, Undrilled 42"	42" surface mount stair post
A0905-SM42-XX*	NOVA I Stair Mid Post, Slotted 42"	42" surface mount mid stair post
Rail & Bracket Kits		
A0905-0201-XX*	NOVA I 6' Straight Rail Section (Top Rail & Stabilizer)	6' straight top rail, includes cable stabilizer
A0905-S021-XX*	NOVA I 6' Stair Rail Section (Top Rail & Stabilizer)	6' stair top rail, includes cable stabilizer
A0905-HD01-XX*	NOVA I Straight Rail Section Hardware Kit (Top Brackets)	Mounts straight top rail to posts
A0905-HD21-XX*	NOVA I Stair Rail Section Hardware Kit (Top Brackets)	Mounts stair top rail to posts
A0905-0075-XX*	NOVA I Angled Rail Section Hardware Kit (Top Bracket - 1 side)	Mounts angled top rail to post on level sections
Cable Mounting Hardware		
C0731-H0703-2	HandiSwage™ Stud (2 pack)	Attaches to cable on level posts
C0731-H0703-10	HandiSwage™ Stud (10 pack)	Attaches to cable on level posts
C0748-0003-2	HandiSwage™ Tensioner (2 pack)	Attaches to cable on stair posts
C0748-SM03-2	Single Mount Tensioner (2 pack)	Attaches to cable on stair posts
Post Mounting Hardware		
A0908-HD10	NOVA Post Mounting Hardware Kit	Surface mount posts on wooden structures
Accessories		
C0916-B003	NOVA End/Corner Grommet (25 pack)	Used over 1/8" HandiSwage™ Studs on End/Corner Posts.
C0916-0003	NOVA Mid Grommet (25 pack)	Used over 1/8" Cable and inserted into Mid Posts.
C0916-A003	Universal Stabilizer Mid Grommet (25 pack)	Used over 1/8" Cable and inserted into Stabilizer
A0908-TB04-10	HandiSwage™ Tensioner Backing Disk (10 pack)	Place in between HandiSwage™ Tensioner Base and Post
C0906-XX02-10* & C0906-XX02-12*	Cover Nut Set (10 pack or 12 pack)	Used on the end of HandiSwage™ Studs to tension and provide a finished look
Tools		
A0906-P051-XX	Touch-Up Paint	Touch-up any scratches on powdercoat finish
C0731-TK01-2	HandiSwage™ Combination Wrench Set - 3/8" & 7/16" (2 pack)	Used to install the Cover Nut Sets
C0988-400C-2	Curved Lacing Needle (2 pack)	For lacing cable through A0906-CW Corner Posts
C0989-00HD	Cable Cutter	Cleanly cuts up to 5/32" diameter cable
E0113-CD04-2	HandiSwage™ Cutting Disks - 4-1/2" (2 pack)	Cuts the HandiSwage™ Studs flush with the lock nuts
E0113-H600	Hand Swage Tool	Crimps HandiSwage™ fittings onto cable
E0113-HG00	After Swage Gauge	Use to confirm that the "after swage" dimension is correct
E0114-0000	Cable Grip Pad (3 pack)	Use with vice grips during the cable tensioning process
E0916-1000	Grommet Install Tool	Makes installing cable grommets easy

* "XX" in the part number is the color designation. Replace with "BK" for black, "WH" for white or "BZ" for bronze.