



## NOVA System Installation Instructions

The NOVA System features powder-coated aluminum posts, handrails and foot rails and horizontal cable infill. The cable infill utilizes HandiSwage™ fittings with 1/8" cable. The NOVA System is offered in a standard black color option. The following guide will take you step-by-step through the process of installing your NOVA System. Along the way, we'll offer you tips and tricks to help you get your railing installed today and ready for tomorrow.



**DO NOT INSTALL WITHIN ONE (1) MILE OF SALT WATER. ATLANTIS RAIL SYSTEMS WILL NOT WARRANTY A NOVA SYSTEM IF INSTALLED WITHIN ONE (1) MILE OF SALT WATER.**



Warning



Note



Requirement



Hint

## ATLANTIS RAIL Contact Information:

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Plymouth, MA 02360

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(508) 732-9798

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## Tools

### Required & Recommended

|                                       |                       |                   |                                    |                                |                |                        |                             |
|---------------------------------------|-----------------------|-------------------|------------------------------------|--------------------------------|----------------|------------------------|-----------------------------|
|                                       |                       |                   |                                    |                                |                |                        |                             |
| Power Drill with Adjustable Clutch    | Vice Grips            | Hand Swage Tool   | Miter Saw with Metal Cutting Blade | Rubber Mallet                  | Cable Cutter   | #2 Phillips Driver Bit | 1/8", 1/4" & 3/8" Drill Bit |
|                                       |                       |                   |                                    |                                |                |                        |                             |
| 5/16", 3/8", 7/16" & 1/2" Open Wrench | 1/2" Socket & Ratchet | Level             | Tape Measure                       | Carpenter's Square             | Touch-up Paint | Chalk Line             | Silicone Caulk              |
|                                       |                       |                   |                                    |                                |                |                        |                             |
| Hacksaw                               | Cable Grip PAD        | After Swage Gauge | RailEasy™ Drilling Template        | Loctite® Threadlocker Blue 242 | Safety Glasses | Gloves                 |                             |

Atlantis Rail offers installation tools (C0988-0000) to aid in your installation process. Ask your Sales Representative for more information.



## Tips for a Successful Installation

- 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.
- Check carton(s) to determine part count is complete.
- Installation is best accomplished with two (2) people.
- Always wear personal protection equipment; safety glasses, work gloves, etc.
- Provided hardware to install the NOVA System is for us with NOVA aluminum posts. If installing to other surfaces, you must acquire the appropriate hardware as needed for proper installation.



*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.*



*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.*

## HandiSwage Components



C0731-H0703-2

HandiSwage Standard Stud 1/8" (1/4"-28 RH) - 2 Pack

## Additional Components



Acorn Nut Set



Deluxe Cover Nut Set



HandiSwage  
Cover Nut Set



30°, 34° & 38°  
Stair Spacer

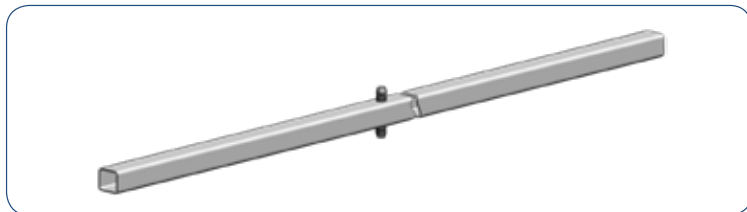


Cable Grommets

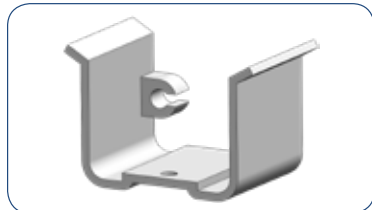
## Components for NOVA Level Section



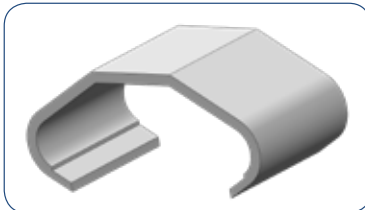
A. Top Rail



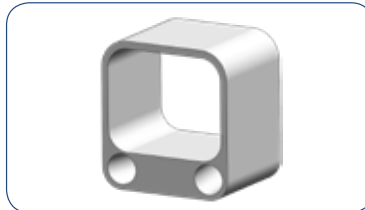
B. Bottom Rail



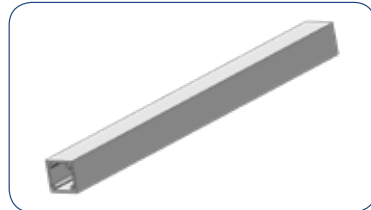
C. Saddle Bracket



D. Bracket Cover



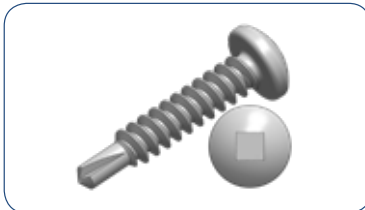
E. Bottom Bracket



F. 10" Support Block



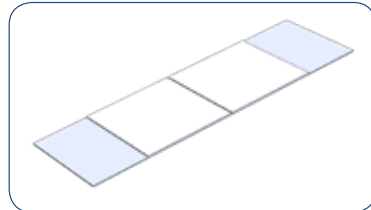
G. Stabilizer & Support Block Connector



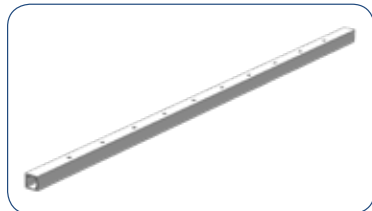
H. Self-Drilling Screw



I. 3-1/2" Square Driver Bit



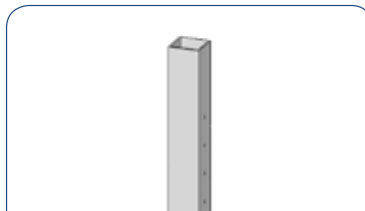
J. Adhesive Tab



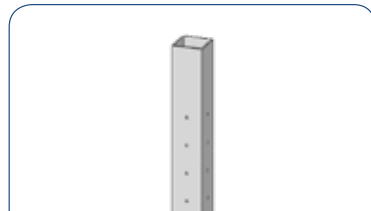
K. Cable Stabilizer, Drilled



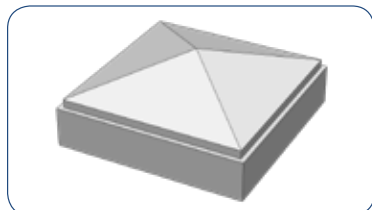
L. Support Block Base Kit



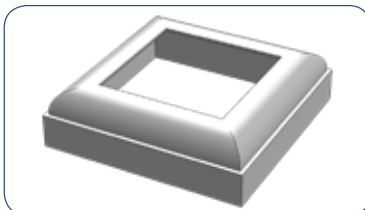
M. 36" Universal Post, Drilled



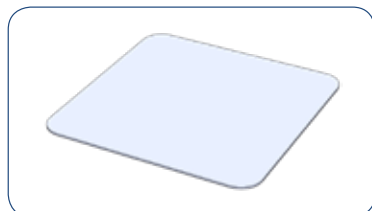
N. 36" Corner Post, Drilled



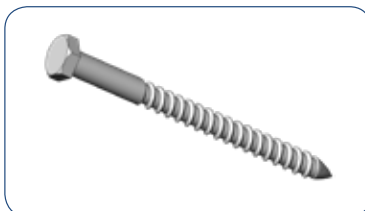
O. Post Cap



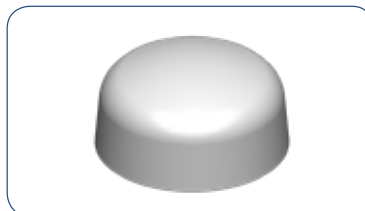
P. Post Skirt



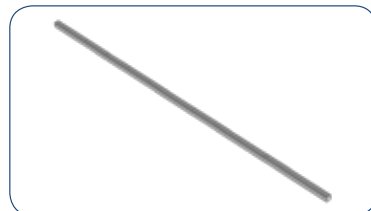
Q. ACQ Pad



R. Lag Bolt



S. Plastic Cover Nut



T. Corner Post Insert



U. RailEasy 1/8" Stud



V. Plastic Washer



W. Cable Grommet

## Level Post Installation

### Locate & Install Level Posts

Measure and locate the position of the post(s) based on the project layout.

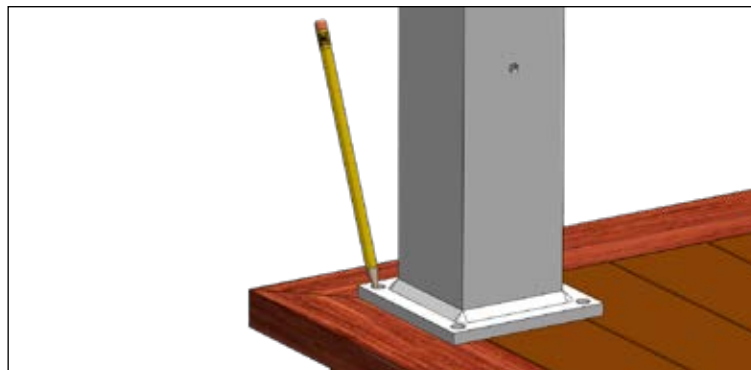
Install the post (Component M or N) by attaching the aluminum mounting flange to the mounting surface. Position the post so the fastener will go into the floor joist, and make sure the decking is firmly attached to the joist at the location of the post. If necessary, use wood blocking as reinforcement underneath the decking where the posts are located. Post mounting fasteners should be able to secure into the joist or reinforcement braces, not just the decking itself. When installing posts on top of a wood surface, lags must be into at least 3" of solid wood.



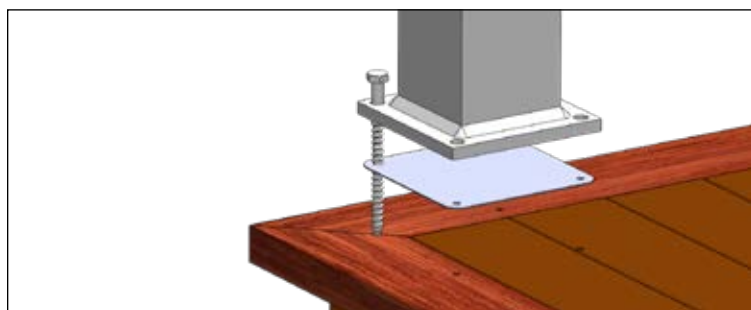
**WHEN INSTALLING THE NOVA SYSTEM ON TREATED WOOD SURFACES, INSTALL THE PROVIDED ACQ PAD (INCLUDED IN THE POST KIT) BETWEEN THE POST BASE AND THE TREATED SURFACE.**

Position the post on the mounting surface. Four (4) 3/8" diameter mounting holes are provided on the mounting flange. Mark the mounting flange hole locations and remove the post (See Figure A). Pre-drill the marked locations into the decking and reinforcement using a 1/4" drill bit. Pre-drill the ACQ pad (Component Q) if it is being used. Be careful with force to avoid cracking.

Remount the post assembly. Make sure the posts are positioned so the post holes are aligned properly to run cable. Place provided ACQ pad between the post and mounting surface (See Figure B). Insert the lag bolts (Component R) and secure the base to the mounting surface using a 1/2" socket and ratchet set. Avoid scuffing the posts with a drill gun or other tools. Make certain the posts are plumb. If the post requires adjustment, add stainless steel washers under the ACQ pad if it is being used, otherwise place washers directly under the base plate. Once the posts are installed, apply silicone to the top of the lag bolts and secure the plastic cover nuts (Component S) to prevent moisture from getting below the post through the lag bolt holes (See Figure C).



**Figure A.** When the final position is determined for the post, mark the hole locations of the four (4) 3/8" diameter mounting holes provided on the base and remove the post assembly.



**Figure B.** Place ACQ pad between the post and mounting surface.



**Figure C.** Apply silicone to the top of the lag bolts and secure the lag bolt caps to prevent moisture from penetrating the holes.

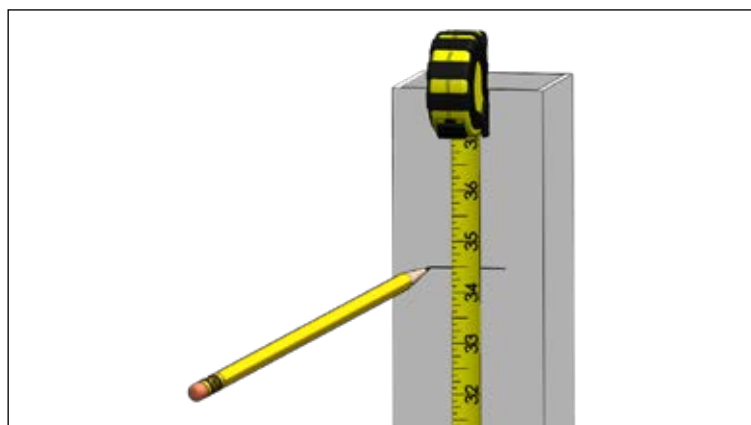
## Level Rail Installation

### Measure & Cut the Rails

Carefully measure the opening between posts or walls and calculate the length of rail that needs to be trimmed. Divide the necessary trim length in half, and take equal amounts from each side of the rail. To ensure the centering of the cable stabilizer spacing, trim must always be taken from both ends of the rail. Make all determinations before marking and cutting the rails. Mark the top rail (Component A) and cut using a miter saw with a metal cutting blade. For clearance purposes the top rail is precut 3/4" shorter than the bottom rail (Component B).

### Measure & Cut the Rails

Measure from mounting surface up 34-1/2" for a 36" rail height from the mounting surface and mark a level, horizontal line on the post or wall (See Figure D). Align the screw holes in the



**Figure D.** Measure up 34-1/2" for a 36" rail height from the mounting surface and mark a level, horizontal line.



the post or wall (See Figure D). Align the screw holes in the saddle bracket (Component C) on the horizontal line making certain the saddle bracket is centered on the post. Mark the screw hole locations (See Figure E).

From the horizontal saddle bracket reference line, measure down 32-5/8" and mark a level, horizontal line on the post or wall. Measure and mark a vertical center line that intersects with the horizontal line. On the horizontal line, starting at the intersection, measure out 3/8" on either side and make a vertical mark. These intersections are the screw hole marks for the bottom bracket (Component E; See Figure F).

Using a 1/8" drill bit, pre-drill the saddle bracket and bottom bracket holes.



**PRE-DRILLING THE HOLES ON THE POST IS RECOMMENDED.**

Slide the post skirt (Component P) to the bottom of the post to cover the mounting flange.

**Install the post skirt on the posts BEFORE installing the saddle brackets.**

To install the post cap (Component O), set post cap in place on top of the post and tap lightly with a rubber mallet to drive the post cap onto the post. Silicone or water based caulking may be used to secure the post cap and skirt.

Install the saddle brackets using the supplied self-drilling screws (Component H; See Figure G). Make sure the post skirt is installed before mounting the saddle brackets.



**DO NOT OVER DRIVE THE SELF-DRILLING SCREWS. THIS COULD CAUSE DAMAGE TO THE THREADS.**

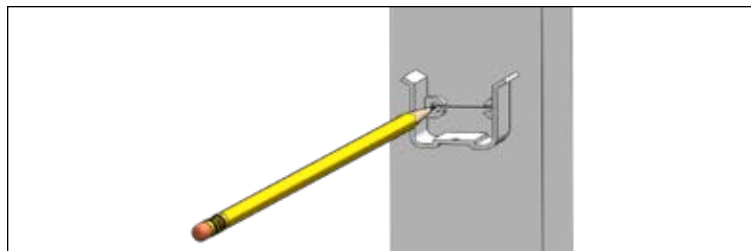
#### Install the Rails, Support Block & Cable Stabilizer

Slide the bottom brackets (Component E) with screw holes down and counter bore holes facing towards the center of the rail, over each end of the bottom rail (Component B; See Figure H). Install the bottom rail using the supplied self-drilling screws (Component H).

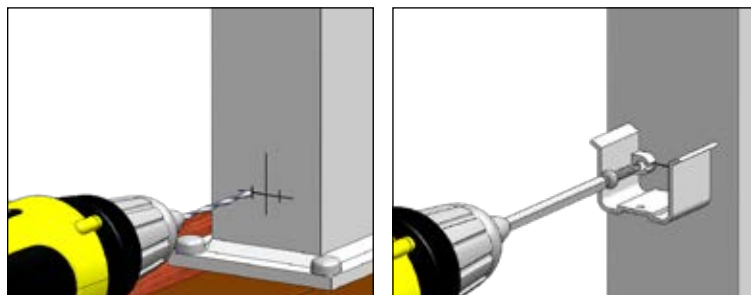
Measure the distance from the mounting surface to the underside of the bottom rail and subtract 1/4" (See Figure I). This measurement is the length to cut the support block (Component F). Cut the support block using a miter saw and a metal cutting blade.

Insert the support block onto the connector of the pre-assembled support block base kit (Component L). Unscrew the bottom brackets on the bottom rail and lift the rail up. Place the support block base kit assembly onto the pre-installed connector (Component G) on the underside of the bottom rail. Place the bottom rail back into position, but do not screw the bottom brackets into the post. Mark the mounting holes of the support block base kit (See Figure J) and remove the bottom rail assembly.

Pre-drill the holes with a 1/8" drill bit. Before installing the base kit, make sure the nylon gasket is between the mounting

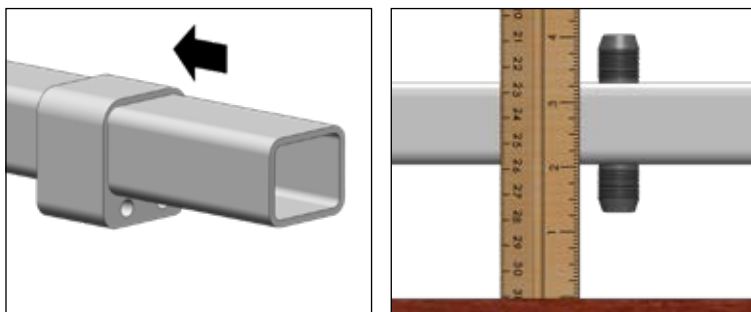


**Figure E.** Mark saddle bracket screw hole locations on the post.



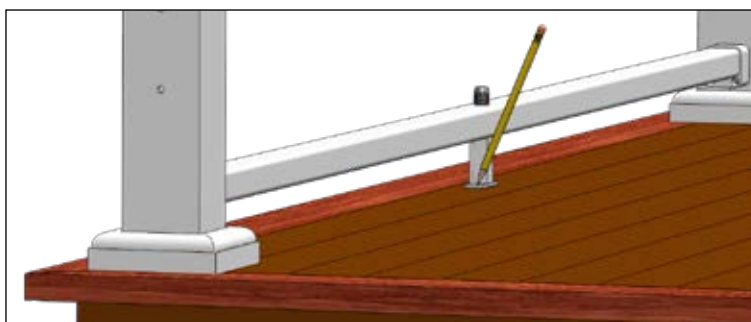
**Figure F. (Left)** On the horizontal line, starting at the intersection, measure out 3/8" on either side and make a vertical mark.

**Figure G. (Right)** Attach the saddle brackets with self-drilling screws.



**Figure H. (Left)** Slide the bottom brackets onto the bottom rail. The bottom bracket screw holes must point down and the counter bore holes must face toward the center of the rail.

**Figure I. (Right)** Measure the distance from the mounting surface to the underside of the bottom rail and subtract 1/4".



**Figure J.** Mark saddle bracket screw hole locations on the post.

plate and the mounting surface (See Figure K). Install two (2) #10 wood screws making sure to include the nylon washers (See Figure L). Insert the support block onto the base kit connector. Install the bottom rail making sure the connector on the underside of the bottom rail is inserted into the support block (See Figure M). Check for level.



**IF THE SUPPORT BLOCK ASSEMBLY IS DRIVING THE BOTTOM RAIL UP, REMOVE AND SHORTEN THE SUPPORT BLOCK AS NEEDED.**

Insert the cable stabilizer (Component K) over the connector on the top of the bottom rail. Make sure to align the stabilizer holes with the holes on the posts (See Figure N).

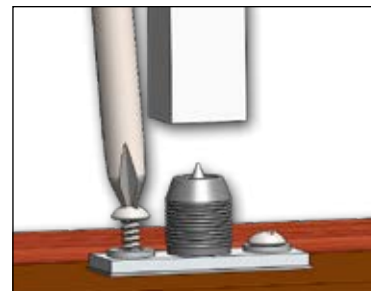
Slide the bracket covers (Component D) at least 3-4" inward over each end of the top rail (Component A; See Figure O). A small piece of tape may be needed to hold the bracket covers in place. Place the top rail onto the stabilizer and into the saddle brackets (Component C; See Figure P). Make sure the connector on the underside of the top rail is inserted into the stabilizer. Check for level.

Apply the adhesive tab (Component J) to the flat, top surface of the top rail, near the post. Slide the bracket cover to interlock with the flange on the saddle bracket (See Figure Q).

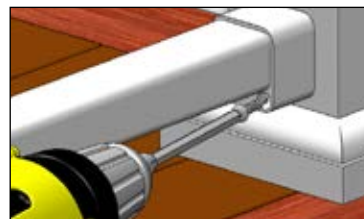
Screw the self-drilling screws into the top rail from the underside of each saddle bracket through the provided locating hole to securely fasten the rail (See Figure R).



**Figure K. (Left)** Secure the bottom bracket with self-drilling screws.



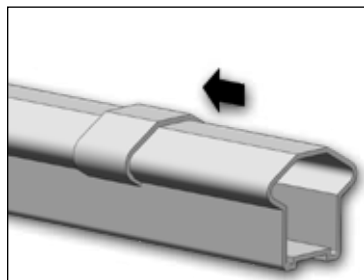
**Figure L. (Right)** Install the support block base kit using two (2) #10 wood screws.



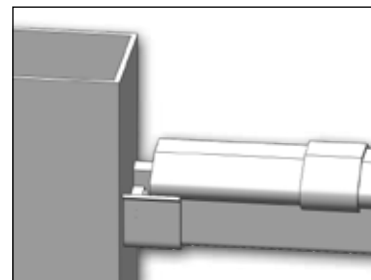
**Figure M. (Left)** Secure the bottom bracket with self-drilling screws.



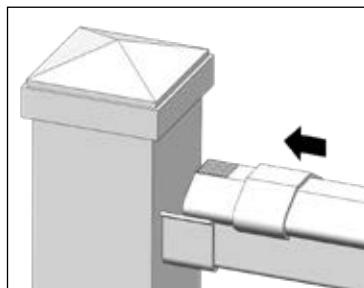
**Figure N. (Right)** Align the stabilizer holes with the holes on the posts.



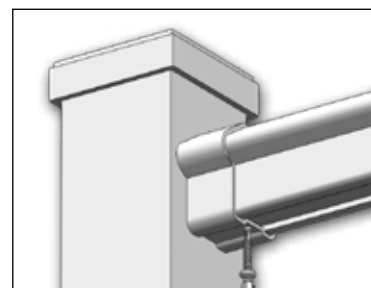
**Figure O. (Left)** Slide the bracket covers over each end of the top rail.



**Figure P. (Right)** Place the top rail into the saddle brackets and check for level.



**Figure Q. (Left)** Apply adhesive tab to flat top surface of the top rail and slide the bracket cover over



**Figure R. (Right)** Screw into the top rail from the underside of the saddle bracket to secure the rail.

## Cable Installation on Level Sections

### Running the Cable

Beginning at the top, attach the cable to the HandiSwage Stud (part number C0731-H0703-2) in accordance with the hand swaging tool instructions.

**Follow all warnings and wear proper safety equipment when working with cable to prevent injury.**

Place the plastic washer and nut on the end of the shank. Hand tighten until 1/2" of thread extends beyond the nut

(See Figure S). Set aside the cover for installation later (NOVA Cover Nut Set part number C0307-BKP02-10). On the other end of the cable run, place the plastic washer and nut on the end of another HandiSwage Stud. Leave the tensioning nut as much travel as possible. Put the stud against the opposite post and pull the cable tight by hand to the back of the stud. Mark and cut the cable at the notch before the threads (See Figure T). Swage the second fitting in accordance with the swaging tool instructions. Feed the cable through all intermediate stabilizers and posts.

Repeat the above steps until all the cables are run **BEFORE** applying tension.

### Tensioning the Cable

Before tensioning any of the cables, it is important to be sure that the frame for the NOVA System is completed. Make sure the posts are installed securely and in accordance with the recommended installation procedures in the previous steps. Install all top and bottom rails. The posts will deflect beyond allowable limits if you attempt to tension the cables on an incomplete railing system. Before tensioning with tools, hold the stud fittings firm and tighten the nuts by hand until all cables are snug.



**ATLANTIS RAIL REQUIRES USING LOCTITE THREADLOCKER BLUE 242 ON THE THREADS OF THE HANDISWAGE STUD. APPLY A DROP TO THE THREADS AS CLOSE TO WHERE THE NUT WILL BE TIGHTENING AGAINST THE WASHER AS POSSIBLE. USE A DAMP CLOTH TO CLEAN UP EXCESS RESIDUE IMMEDIATELY.**

When tensioning the cable, you must hold the stud or cable in a neutral position while turning the nut to apply tension. There are two (2) methods to accomplish this; both requiring a pair of vice grip pliers. Option one (1) is to hold the back of the swage stud with the vice grips which requires at least 1/4" space between the tensioning nut and the end of the stud (See Figure U). Option two (2) is to use a Cable Grip Pad (part number E0114-0000) to hold the cable just outside the post while you tension the stud using the tensioning nut (See Figure V).

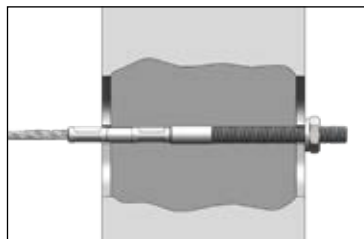


**USING METHOD TWO (2) REQUIRES A HANDISWAGE CABLE GRIP PAD. NEVER CLAMP PLIERS OR VICE GRIPS DIRECTLY ON THE CABLE.**

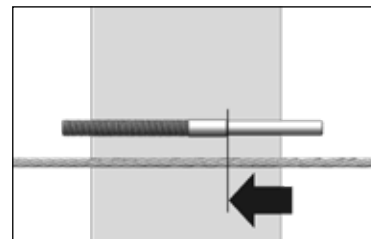
Set the vice grips with a 1/8" space total between the cable and the vice grip jaws. Place the pad on the cable and then apply the vice action to the pliers.

### Tension the Center Cable

Beginning with the center run of cable. Hold the hand swage stud firm using one (1) of the methods described above and tighten the tensioning nut with a 7/16" wrench. Tighten the nut three (3) or four (4) full rotations until the cable is snug. Don't worry if this cable moves a little, we will come back around to it later.



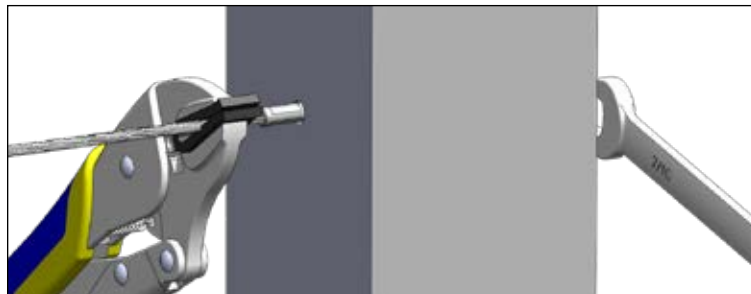
**Figure S. (Left)** Attach the first cable to the HandiSwage stud. Place the plastic washer and nut on the end of the shank.



**Figure T. (Right)** Pull the cable tight to the back of the swage fitting. Mark and cut the cable as shown. Swage the second fitting in accordance with the swaging tool instructions.



**Figure U.** Option one (1) is to hold the back of the stud with vice grips while tightening the nut.



**Figure V.** Option two (2) is to use a cable grip pad to hold the cable just outside the post while tightening the nut.

### Tension the Remaining Cables

Alternate tensioning the cables from the center, working above and below the center cable as if tightening the lug nuts on a tire (See Figure W). Again tension the nuts three (3) or four (4) full rotations or until the cable is snug. You will notice as you tension, the cables surrounding it will slacken. When this happens, stop tensioning and move onto the next cable.

### Make Final Adjustments

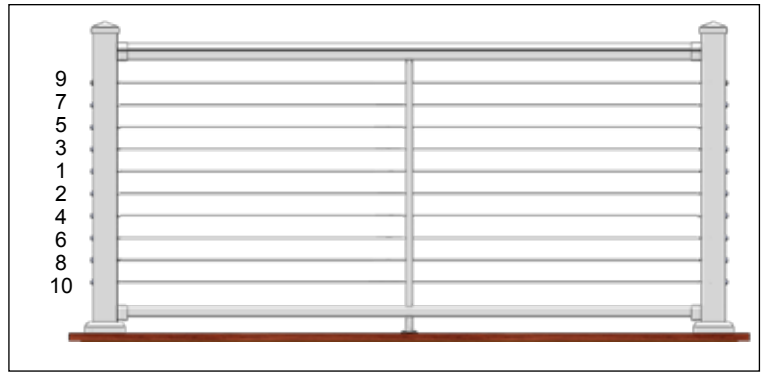
Go back to the center cable and retighten the cables until all are tight and relatively equal in tension. You may find that you need to do this three (3) or four (4) times getting down to even a quarter turn of the tensioning nut each time. Tension from both sides when necessary.

### Install the Cover Nuts

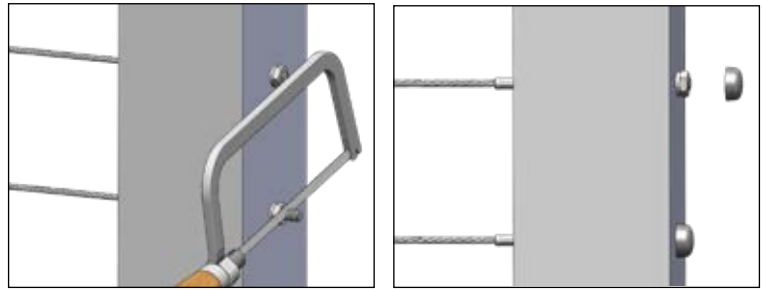
With the cables tensioned, it's time to install the cover nuts. Using a hacksaw, cut the remaining shank flush with the tensioning nut. Then place the cover nut over the assembly until it is flush with the post (See Figure X).



**ATLANTIS RAIL ADVISES AGAINST USING A GRINDER TO CUT THE HANDISWAGE STUDS ON AN INSTALL. A HACKSAW IS RECOMMENDED.**



**Figure W.** Begin with the center run of cable and alternate working above and below until all the cables are tight.



**Figure X.** Cut the remaining shank flush with the tensioning nut, then place the cover nut over the assembly.

## Cable Installation on Corner Sections

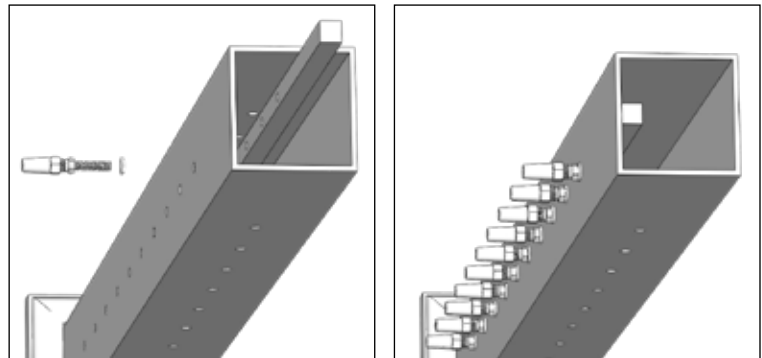
### Install the Corner Post Insert

Insert the corner post insert (Component T) inside the corner post (Component N). Line up the corner post insert holes with the pre-drilled holes of the corner post. Including the plastic washer (Component V, supplied), insert the RailEasy 1/8" Stud (Component U) into the corner post hole and thread it into the corner post insert (See Figure Y).



**THE HANDISWAGE STUD MUST HAVE A RAILEASY 1/8" STUD AT THE OPPOSITE END OF THE CABLE RUN IN ORDER TO TENSION THE CABLE.**

Attach the cable to the RailEasy 1/8" Stud per the prescribed method under the heading "Cable Installation on Stair Sections" instructions. Follow the instruction in the "Cable Installation on Level Sections" above to install the HandiSwage Studs.



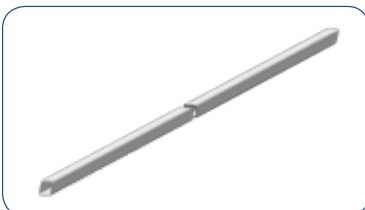
**Figure Y.** Insert the RailEasy 1/8" Stud into the corner post hole and thread it into the corner post insert.



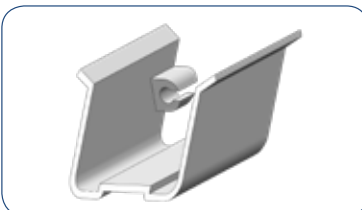
## Components for NOVA Stair Section



X. Upper Stair Rail



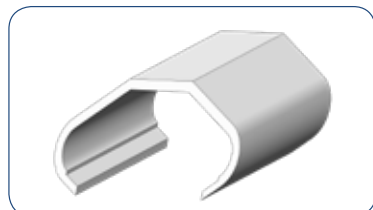
Y. Bottom Stair Rail



Z. Upper Saddle Bracket



AA. Lower Saddle Bracket



AB. Bracket Cover



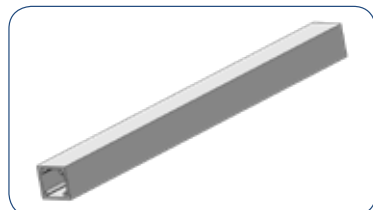
AC. Upper Bottom Bracket



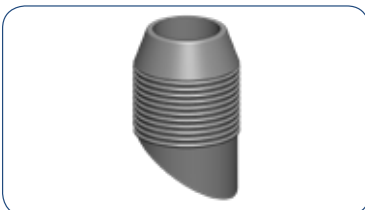
AD. Lower Bottom Bracket



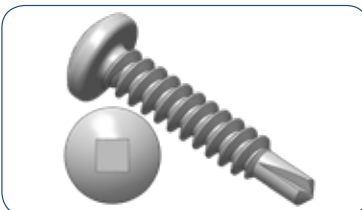
AE. Cable Stabilizer, Undrilled



AF. Support Block



AG. Stabilizer & Support Block Connector



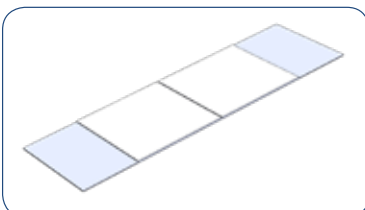
AH. Self-Drilling Screw



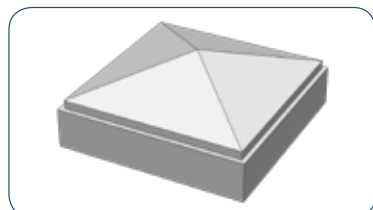
AI. Support Block Base Kit



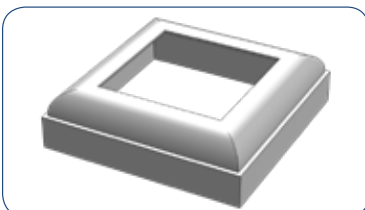
AJ. 3-1/2" Square Driver Bit



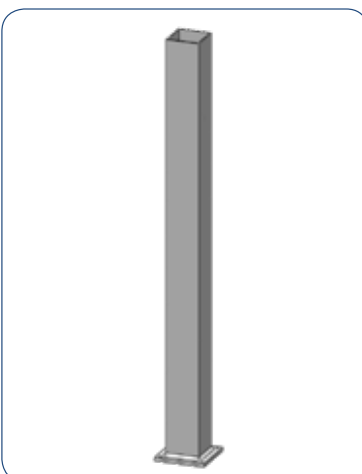
AK. Adhesive Tab



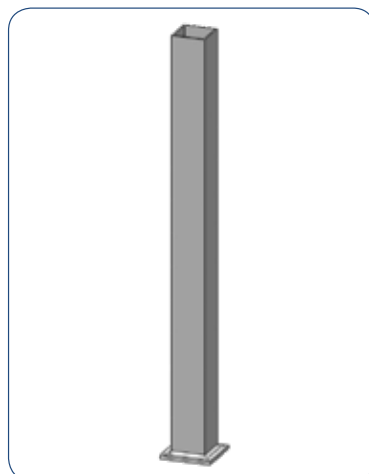
AN. Post Cap



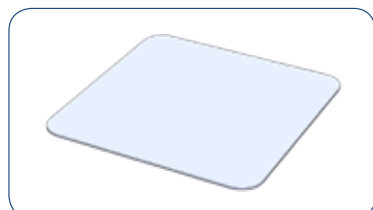
AO Post Skirt



AL. 36" Top/Mid Stair Post, Undrilled



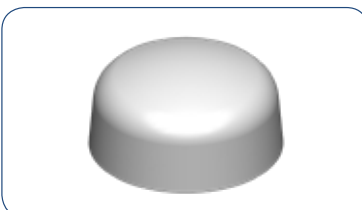
AM. 42" Bottom Stair Post, Undrilled



AP. ACQ Pad



AQ. Lag Bolt



AR. Plastic Cover Nut



**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.**



**STAIRS FOR THE NOVA SYSTEM ARE DESIGNED AT 36" REGARDLESS OF DECK RAIL HEIGHT, PER BUILDING CODE. STAIRS ARE EXPECTED TO HAVE LESS CABLE RUNS THAN STRAIGHT SECTIONS DUE TO THE GEOMETRY OF A STAIRWAY.**

## Cable Installation on Corner Sections

### Find the Location for the Upper & Lower Stair Posts

Begin by determining where the top and bottom stair posts (Components AL & AM) will be located. Mark the desired location of the post.



**TO ENSURE POST LOCATION IS COMPATIBLE WITH RAILING, PRIOR TO SECURING TO THE MOUNTING SURFACE, PLACE BOTH POSTS IN POSITION, AND LAY THE BOTTOM STAIR RAIL (COMPONENT Y) ALONG THE STAIR-NOSING FROM TOP TO BOTTOM ADJACENT TO BOTH POSTS (See Figure Z). ON THE RAIL SIDE OF THE POST, MEASURE UP FROM THE TOP OF THE RAIL AND ENSURE THERE IS A MINIMUM OF 34" FOR A 36" RAIL HEIGHT. THE POST LOCATION MAY HAVE TO BE ADJUSTED TO ENSURE MINIMUM IS OBTAINED. REPEAT THIS STEP FOR THE BOTTOM POST.**

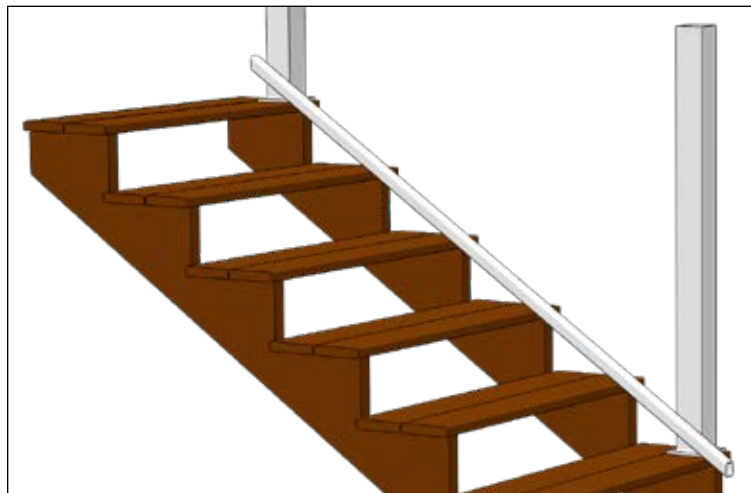
To achieve a 36" high railing, use a 44" post (Component AM) at the bottom of the stairs and a 38" post at the top of the top stairs (Component AL) and intermediate posts. For a wood mounting surface, position the post so the fasteners will go into the stair stringer or blocking. Make sure the decking is firmly attached to the stair stringer at the location of the posts. Use wood blocking as reinforcement underneath the decking where the posts are located. Fasteners which hold the base flange to the mounting surface should be able to secure into at least 3" of solid wood (stair stringers or reinforcement braces).



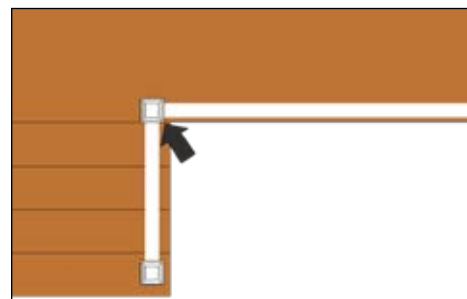
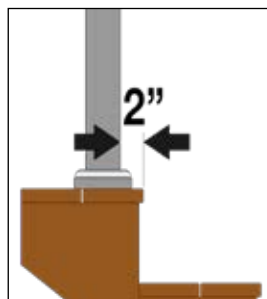
**WHEN INSTALLING THE NOVA SYSTEM ON TREATED WOOD SURFACES AND CONCRETE, INSTALL THE PROVIDED ACQ PAD (INCLUDED IN THE POST KIT) BETWEEN THE POST BASE AND THE TREATED SURFACE.**



**YOU MAY USE A LEVEL TERMINATION POST AS YOUR TOP STAIR POST IF THE POST IS LOCATED NO MORE THAN 2" FROM THE EDGE OF THE DECK AT THE STAIRWAY AND THE STAIRS ARE NOT TRANSITIONING STRAIGHT DOWN FROM A LEVEL SECTION (See Figure AA).**



**Figure Z.** To ensure post location is compatible with railing, prior to securing to the deck surface, place both posts in position, and lay the bottom rail along the stair-nosing from top to bottom adjacent to both posts.



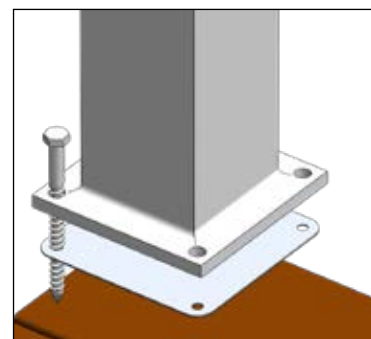
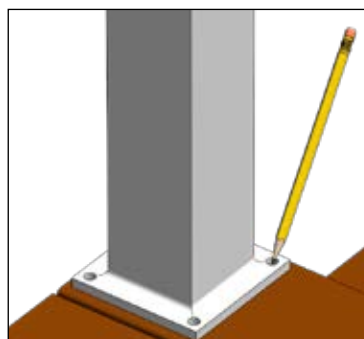
**Figure AA.** You may use a deck termination post as your top stair post if the post is located no more than 2" from the edge of the deck at the stairway and the stairs are not transitioning straight down from a level section.

## Stair Rail Installation

### Install Upper & Lower Stair Posts

When the final position is determined for the post, mark the hole locations of the four (4) 3/8" diameter mounting holes provided on the base and remove the post assembly (See Figure AB). Pre-drill the marked locations into the mounting surface and reinforcement using a 1/4" drill bit. Pre-drill the ACQ Pad (Component AP) if it is being used. Be careful with force to avoid cracking.

Remount the post assembly. If mounting the posts to pressure treated lumber or concrete, place the provided ACQ pad between the post and mounting surface (See Figure AC). Insert the lag bolts (Component AQ) and secure the base to the mounting surface using a 1/2" socket and ratchet set. Make certain the posts are plumb. If the post requires



**Figure AB. (Left)** Mark the hole locations of the four (4) 3/8" diameter mounting holes provided on the base and remove the post assembly.

**Figure AC. (Right)** Place the ACQ pad between the post and mounting surface.

adjustment, add stainless steel washers under the ACQ pad, if it is being used, otherwise place the washers directly under the base plate. Once the posts are installed, apply silicone to the top of the lag bolts and secure the plastic cover nuts (Component AR) to prevent moisture from getting below the post through the lag bolt holes. Do not install the post base skirts and caps until specified in instructions below.

#### Measure, Mark & Cut the Stair Rails

Lay the bottom stair rail (Component Y) on the stair nosing from top to bottom, adjacent to the posts and mark a line on the rail from the inside of each post (See Figure AD1). Also, make a reference mark on the bracket side of both posts at the point where the top of the rail meets the post (Figure AD2). This reference mark will be used to locate the saddle brackets in a later step.

Place the upper stair rail (Component X) next to the bottom stair rail, align and duplicate the marks from the bottom rail cut line onto the upper rail. Now mark the upper stair rail 5/8" shorter on each end. This is the cut line for the upper rail. Only the upper rail is cut 5/8" shorter on each end (See Figure AE).

Cut the rails along the marked lines using a miter saw with a metal cutting blade.

#### Install the Saddle Brackets & Bottom Rail

**Install the post skirt (Component AO) on the top and bottom stair posts BEFORE installing the saddle brackets.**

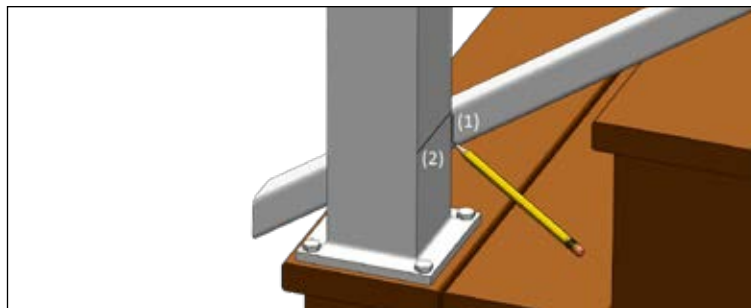
To install the post cap (Component AN), set the post cap in place on top of the post and tap lightly with a rubber mallet to drive the post cap onto the post. Silicone or water based caulking may be used to secure the post cap and skirt.

To install the saddle bracket (Components Z & AA) on both top and bottom stair posts (Components AL & AM), measure and mark a horizontal, level line up from the reference marks, previously completed above. Mark 32-3/4" for a 36" railing (See Figure AF).

From the horizontal saddle bracket reference line, measure down 33" and mark a level, horizontal line on the top and bottom stair posts.

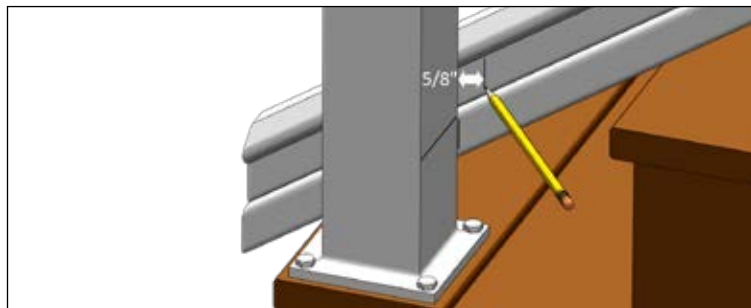
Align the screw holes in the upper and lower saddle brackets on the marked lines at the top of the posts. Make sure the brackets are centered on the posts. Mark the screw hole locations. Pre-drill the holes using a 1/8" drill bit. Attach the saddle brackets with 1" self-drilling screws (Component AH; See Figure AG).

Align the screw holes in the upper and lower bottom brackets (Components AC & AD) on the marked lines at the bottom of the posts. Make sure the brackets are centered on the posts. Mark the screw hole locations. Pre-drill the holes using a 1/8" drill bit. Slide the bottom brackets on the bottom stair rail (Component Y). The bottom bracket screw holes must point down and the counter bore holes must face toward the center of the rail (See Figure AH). Install the bottom stair rail with 1" self-drilling screws.

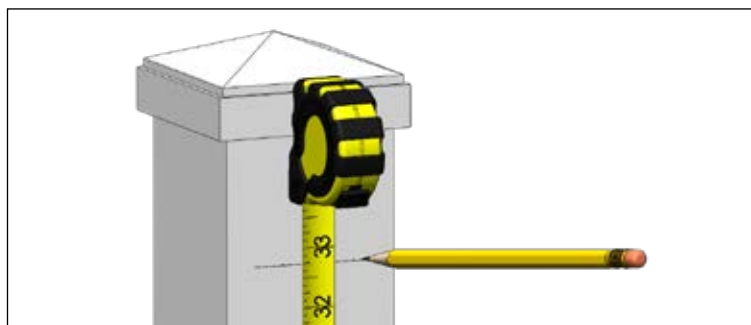


**Figure AD1.** Mark a line on the rail from the inside of each post.

**Figure AD2.** Make a reference mark on the bracket side of both posts at the point where the top of the rail meets the post.



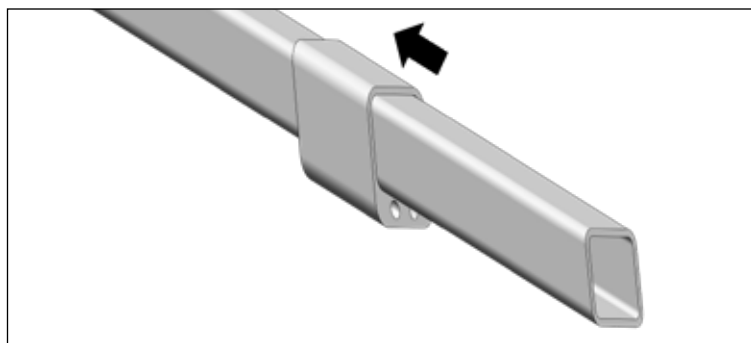
**Figure AE.** Mark a second line on the upper stair rail 5/8" shorter on each end.



**Figure AF.** Measure and mark a horizontal, level line up from the reference mark 32-3/4" for a 36" railing.



**Figure AG.** Mark the saddle bracket hole locations and attach with self-drilling screws.



**Figure AH.** Slide the bottom brackets on the bottom rail. The bottom bracket screw holes must point down and the counter bore holes must face toward the center of the rail.

### Measure & Cut Cable Stabilizer

Place the upper stair rail (Component X) in the saddle brackets (Components Z & AA). Find where to place the cable stabilizer (Component AE) by measuring the horizontal distance between the inside of the top and bottom stair posts (Components AL & AM) and divide that measurement by two (2). Do not measure on the angle of the stairs (See Figure AI).

Using a straight edge or level take the measurement found in the step above and mark the side of the upper and bottom stair rails. Transfer the markings using a square to the underside of the upper stair rail and the top and underside of the bottom stair rail.

Hold and center the stabilizer on the reference marks on the side of the rails and mark the angle on the stabilizer from the underside of the upper stair rail and the top of the bottom stair rail (See Figure AJ). These are the markings of where to cut the cable stabilizer.

Cut the stabilizer along the marked lines using a miter saw with a metal cutting blade.

### Install the Support Block Base Kit & Connectors

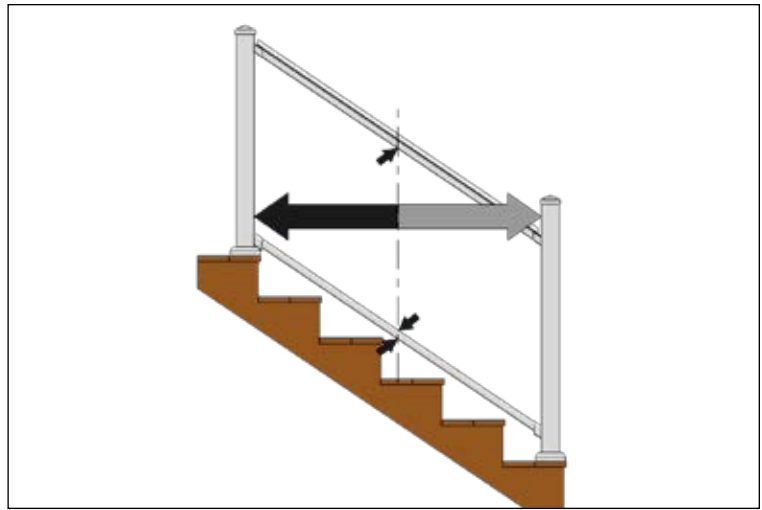
Insert the support block (Component AF) onto the connector of the pre-assembled support block base kit (Component AI). Place the assembly on the surface of the step and align it with the center reference mark on the bottom stair rail (Component Y). Transfer a line from the underside of the bottom stair rail onto the support block (See Figure AK).

Cut the support block along the marked line using a miter saw with a metal cutting blade.

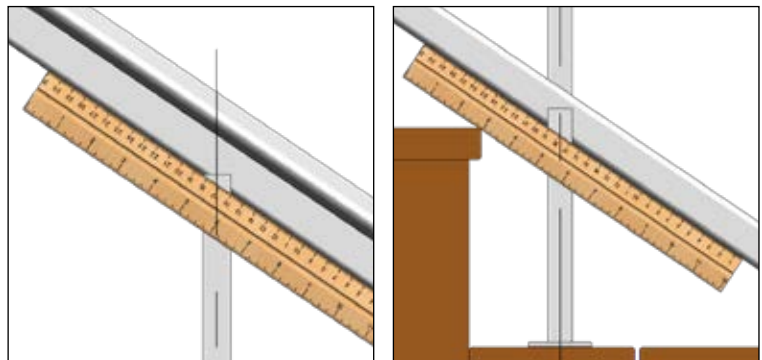
Remove the upper and bottom stair rails. Keep the upper and lower bottom brackets (Components AC & AD) on the bottom stair rail. Find and mark the center of the width of the underside of the upper stair rail (Component X) and the top and underside of the bottom stair rail. This mark should intersect with the cable stabilizer reference mark found in the step above. Pre-drill the intersections with a 1/8" drill bit. Mount the stabilizer and support block connectors (Component AG) with self-drilling screws (Component AH; See Figure AL).

Place the support block base kit assembly (including the support block) onto the connector on the underside of the bottom rail. Make sure the upper and lower bottom brackets are on the bottom stair rail. Place the self-drilling screws into the upper and lower bottom brackets and line them up with their respective holes on the stair posts. Do not install. Transfer marks onto the step where the support block base kit mounting plate is (See Figure AM).

Remove the bottom stair rail and pre-drill the base kit marks with a 1/8" drill bit. Before installing the base kit, make sure the nylon gasket is between the mounting plate and the step. Install two (2) #10 wood screws making sure to include the nylon washers (See Figure AN). Insert the support block onto the base kit connector. Install the bottom stair rail making sure the connector on the underside of the bottom rail is inserted into the support block.



**Figure AI.** Measure the horizontal distance between the inside of the top and bottom stair posts and divide that measurement by two (2).

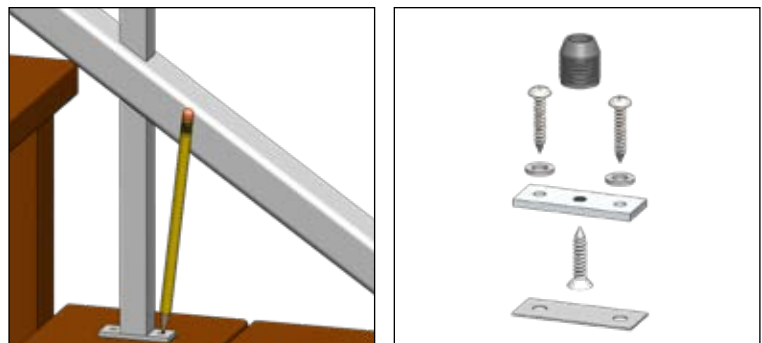


**Figure AJ. (Left)** Hold and center the stabilizer on the reference marks and mark the angle on the stabilizer.

**Figure AK. (Right)** Place assembly on the surface of the step and align it with the center reference mark on the bottom stair rail. Transfer a line on the support block.



**Figure AL.** Install the stabilizer and support block connectors using a 1" self-drilling screw.



**Figure AM. (Left)** Transfer marks onto the step where the support block base kit mounting plate is.

**Figure AN. (Right)** Make sure the nylon gasket is between the support block base plate and the mounting surface.



**IF THE SUPPORT BLOCK ASSEMBLY IS DRIVING THE BOTTOM STAIR RAIL UP, REMOVE AND SHORTEN THE SUPPORT BLOCK AS NEEDED.**



Insert the cable stabilizer (Component AE) over the connector on the top of the bottom stair rail.

Slide the bracket covers (Component AB) at least 3-4" inward over each end of the upper stair rail so the angle of the cover matches the angle of the top rail (See *Figure AO*). A small piece of tape may be needed to hold the bracket covers in place. Place the upper stair rail onto the stabilizer and into the saddle brackets (Components Z & AA). Make sure the connector on the underside of the upper stair rail is inserted into the stabilizer. Slide the bracket covers to interlock with the flange on the saddle brackets for a snug fit.

#### Measure & Mark the Stair Posts & Cable Stabilizer

Mark a vertical center line on the inside face of each stair post (Components AL & AM). To find where to place the first row of cable, measure from the underside of the upper stair rail (Component X) to the top side of the bottom stair rail (Component Y; See *Figure AP*). Take that measurement and subtract twenty four (24), then divide that measurement by two (2). Take that dimension and measure from the underside of the upper stair rail and transfer a mark to the post. Make sure it intersects with the center line.

Atlantis Rail offers a drilling template (C0988-1000) to aid in your installation process. Ask your Sales Representative for more information.



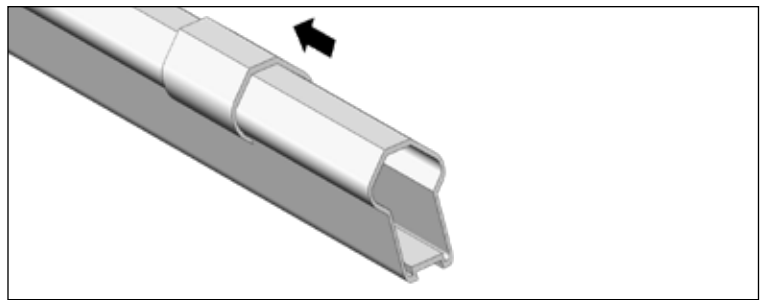
This is the spacing used on all pre-drilled NOVA posts. Start at the center mark made for the first row of cable. Place the RailEasy Drilling template against the post and align the center holes on the template with the center line on the post (See *Figure AQ*). Mark all drilling holes for the nine (9) HandiSwage Tensioners (part number C0748-0003-2). Repeat for each stair post.

To find the placement of the holes on the undrilled cable stabilizer (Component AE), first, find the center of the stabilizer face and draw a vertical line on the two (2) face sides. Take a string and tape one side to the top center hole mark on the top stair post (Component AL). Take the other side of the string and tape it to the top center hole mark of the bottom stair post (Component AM). Draw a line where the string crosses the stabilizer on the side of the stabilizer (See *Figure AR*). Using a square, transfer the horizontal line on both faces of the stabilizer. Make sure these horizontal lines intersect with the vertical center line. Using the center hole on the RailEasy Drilling Template, mark all nine (9) holes on both faces of the stabilizer.

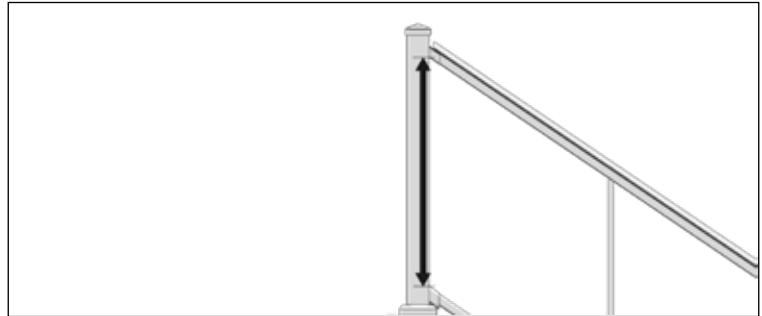
#### Drill the Stair Posts & Cable Stabilizer

Remove the rails and cable stabilizer to have clearance for drilling the posts.

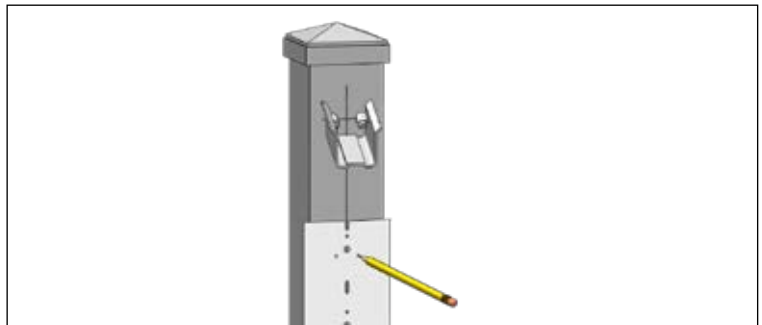
Pre-drill the holes on the top and bottom stair posts (Component AL & AM) using a 1/8" drill bit. Before installing the tensioners, place the NOVA Tensioner Backing Disk (part number A0908-TB04-10) between the tensioner base and post, making sure the hole patterns line up (See *Figure AS*). Fasten the tensioners using three (3) #8 x 1- 1/2" screws (supplied).



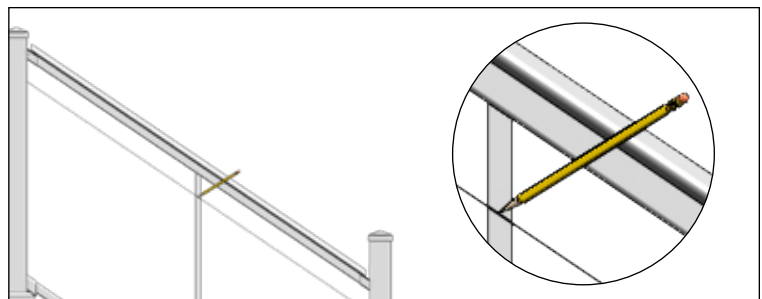
**Figure AO.** Slide the bracket covers over each end of the top stair rail.



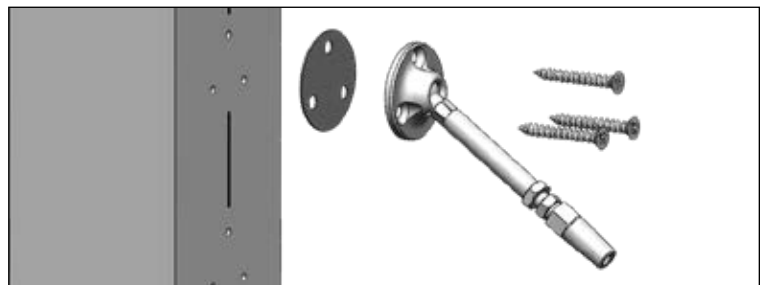
**Figure AP.** To find where to place the first row of cable, measure from the underside of the upper stair rail to the top side of the bottom stair rail.



**Figure AQ.** Starting at the center mark made for the first row of cable, use the RailEasy Drilling Template to mark all the drilling holes for the HandiSwage Tensioners.



**Figure AR.** Take a string and tape each end to the top center hole mark on the top and bottom stair posts. Draw a line where the string crosses the stabilizer.



**Figure AS.** Place the NOVA Tensioner Backing Disk between the HandiSwage Tensioner base and the post and make sure the hole patterns line up.



**FACE THE NOTCH ON THE TENSIONER BASE DOWNWARD ON THE UPPER STAIR POST AND UP ON THE LOWER STAIR POST TO ENSURE PROPER SWIVELING ACTION.**

Using a 3/8" drill bit, drill a hole at the intersection of each center hole mark on the cable stabilizer (Component AE). Drill from both sides. Do not drill angled holes. Once all the holes on both faces of the cable stabilizer are drilled out, affix a NOVA Stair Stabilizer Grommet (part number A0908-SG01-25) around each hole (See Figure AT).

#### Install the Rails

Slide the bracket covers (Component AB) at least 3-4" inward over each end of the upper stair rail (Component X) so the angle of the cover matches the angle of the top rail (See Figure AU).

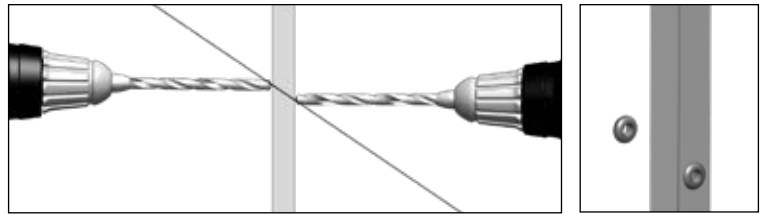
Slide the bottom brackets (Components AC & AD) with the counter bore holes facing down and toward the stabilizer, over each end of the bottom stair rail (Component Y; See Figure AV).



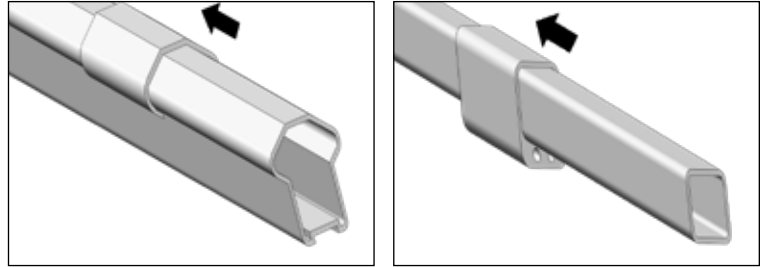
**A SMALL PIECE OF TAPE MAY BE REQUIRED TO HOLD THE BRACKETS IN PLACE.**

Re-attach the upper and bottom stair rails and cable stabilizer (Component AE) per prescribed instructions above.

Apply an adhesive tab (Component AK) to the flat, top surface of the upper stair rail, near the post. Slide the bracket covers to interlock with the flange on the saddle brackets (See Figure AW). Screw 1" self-drilling screws (Component AH) into the upper stair rail from the underside of the saddle brackets through the provided locating holes (See Figure AX).

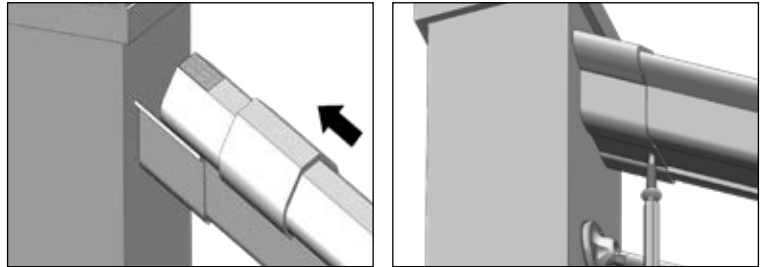


**Figure AT.** Using a 3/8" drill bit, drill all the holes on each face of the cable stabilizer and affix a NOVA Stair Stabilizer Grommet around each hole.



**Figure AU. (Left)** Slide bracket covers at least 3-4" inward over each end of the upper stair rail.

**Figure AV. (Right)** Slide the bottom brackets with the counter bore holes facing down and toward the stabilizer, over each end of the bottom rail.



**Figure AW. (Left)** Apply an adhesive tab to the flat, top surface of the upper stair rail and slide the bracket cover to interlock with the flange on the saddle bracket.

**Figure AX. (Right)** Screw 1" self-drilling screws into the upper stair rail from the underside of the saddle brackets through the provided holes.

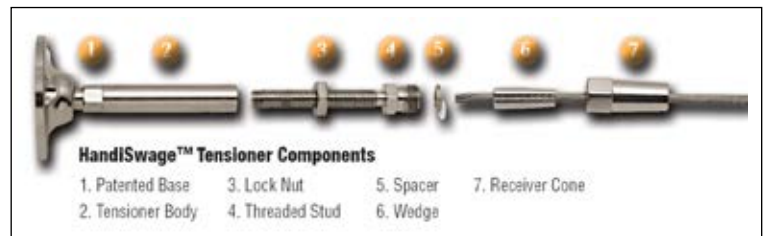
## Cable Installation on Stair Sections

#### Install the Cable

With the HandiSwage tensioners (See Figure AY) installed on the stairs, begin by extending the threaded stud outward a minimum of 3/4" for the first 20 feet plus 1/4" for each additional 10 feet. To insert the cable into the receiver cone, push and twist the cable opposite the lay of the wire strands. The cable should slide into the receiver cone approximately 3/16" past the bottom of the wedge. Fully tighten the receiver cone onto the threaded stud using 7/16" and 3/8" open wrenches. Upon doing this, the wedge will crimp down on the cable and hold it in place. With the cable installed in one (1) tensioner, pull the cable to the opposite tensioner. Pull the cable tight to the tensioner and cut it between the beginning of the threads and the fixed nut on the threaded stud. Using the first run as a guide, cut the remaining runs to the same length. This will ensure uniformity among the tensioners. Thread the cable through the cable stabilizer (Component AE) and install the cable into the opposite tensioner using the same process as before.

#### Tensioning the Cable

Begin with the center run of cable. Using a 3/8" open wrench, hold the threaded stud in place and rotate the tensioner body with a 5/16" open wrench. Tension each side equally until taut.



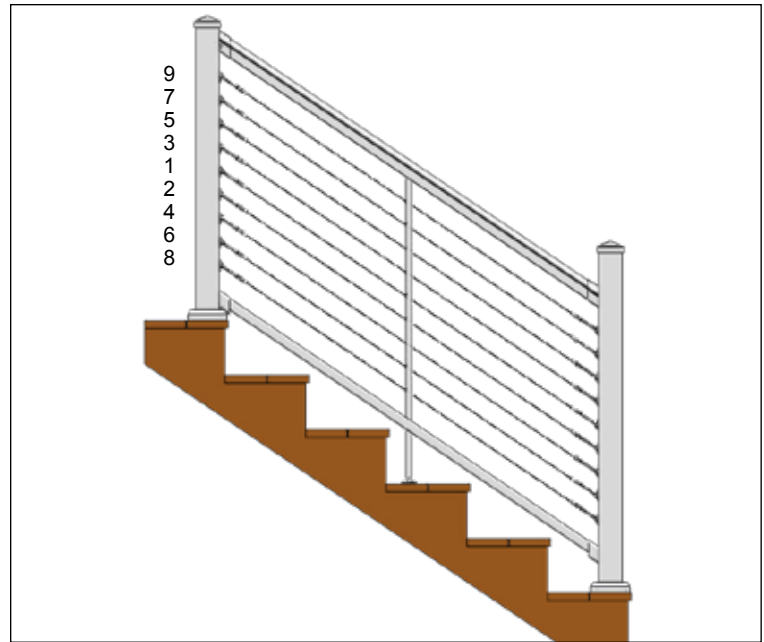
**Figure AY.** HandiSwage Tensioner components.



**DO NOT OVER-TENSION.**

Over-tensioning will cause posts to deform and deflect. When all cable runs are properly tensioned, tighten the lock nuts to maintain tension.

When tensioning, it is important to begin with the center run of cable and alternate working above and below the center, much like tightening the lug nuts on a tire (See *Figure AZ*). This will help to ensure that your posts don't deflect during tensioning. It will also help tension equally throughout. Continue tensioning all the cables in this same fashion until all cables are tight.



**Figure AZ.** Begin with the center run of cable and alternate working above and below until all the cables are tight.

## NOVA System Cable Mounting Hardware

### HandiSwage Stud - C0731-H0703-2

The HandiSwage Stud is the main tensioning component on the level NOVA sections (See *Figure BA*). Attach the cable to the hand swage stud in accordance with the hand swaging tool instructions. Affix a NOVA Cover Nut Set to allow for tensioning of the cable. Available in packs of two (2).



**Figure BA.** The HandiSwage Stud is used on NOVA level sections and features minimal hardware obstruction.

### HandiSwage Tensioner - C0748-0003-2

The HandiSwage Tensioner is used on the NOVA stair sections. It features a slotted base to allow for angles up to 45°. Affix the base to the NOVA stair posts with three (3) #8 x 1-1/2" screws. Attach the cable by inserting it into the receiver cone and tightening the cone onto the threaded stud. Upon doing this, the wedge will crimp down on the cable and hold it in place (See *Figure BB*). Available in packs of two (2).

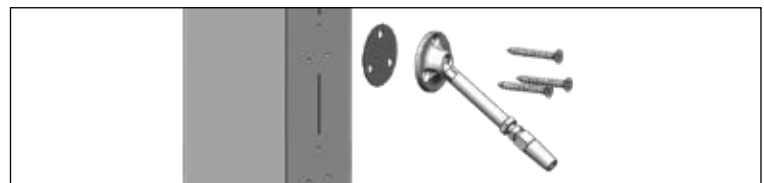


**Figure BB.** The HandiSwage Tensioner is used on NOVA stair sections and features a compression fitting and a slotted base for a quick and easy installation.

## NOVA System Accessories

### NOVA Tensioner Backing Disk - A0908-TB04-10

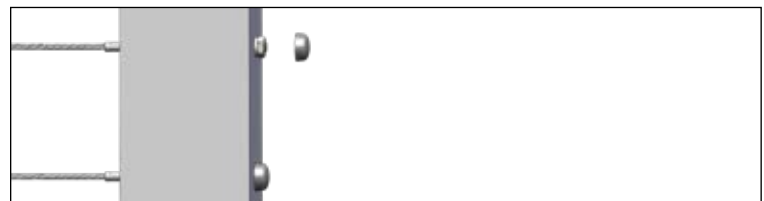
This backing disk is used in conjunction with the HandiSwage Tensioner. Place the NOVA Tensioner Backing Disk between the tensioner base and post (See *Figure BC*). Make sure the hole patterns line up and install the tensioner. Available in packs of ten (10).



**Figure BC.** Place the NOVA Tensioner Backing Disk between the HandiSwage Tensioner base and the post and make sure the hole patterns line up.

### NOVA Cover Nut Set - C0307-BKP02-10

The NOVA Cover Nut Set includes a plastic washer, stainless steel nut and plastic cover nut. It is used with the HandiSwage Stud for tensioning capabilities. Place the plastic washer and stainless nut onto the shank of the stud, tension, remove the excess thread and affix the plastic cover nut for a finished look (See *Figure BD*). Available in packs of ten (10).



**Figure BD.** Place the plastic washer and nut onto the shank of the HandiSwage Stud, tension, remove the excess thread and affix the plastic cover nut.

### NOVA End/Corner Grommet - C0916-B003

The end/corner grommet helps prevent movement and deflection of the cable, as well as, reduces dirt and moisture from getting inside the posts. These grommets are used on end and corner level posts (Components M & N). It fits over the HandiSwage Stud. Once the cable infill is installed, place the slotted side on the cable and push down until it “snaps” onto the cable (See Figure BE). Push the tapered end onto the stud and into the end or corner post hole until only the flange is showing (See Figure BF). Available in packs of twenty five (25).

### NOVA Mid Grommet - C0916-0003

The mid grommet helps prevent movement and deflection of the cable, as well as, reduces dirt and moisture from getting inside the posts. These grommets are used on the universal level posts (Component M) where the cable is passing through (not terminating with a HandiSwage Stud). Once the cable infill is installed, place the slotted side on the cable and push down until it “snaps” onto the cable (See Figure BG). Push the tapered end into the mid post hole until only the flange is showing (See Figure BH). Available in packs of twenty five (25).

### Universal Stabilizer Mid Grommet - C0916-A003

This grommet helps prevent movement and deflection of the cable, as well as, reduces dirt and moisture from getting inside the posts. These grommets are used on cable stabilizer (Component K) level sections. Once the cable infill is installed, place the slotted side on the cable and push down until it “snaps” onto the cable (See Figure BG). Push the tapered end into the cable stabilizer hole until only the flange is showing (See Figure BH). Available in packs of twenty five (25).

### NOVA Stair Stabilizer Grommet - A0908-SG01-25

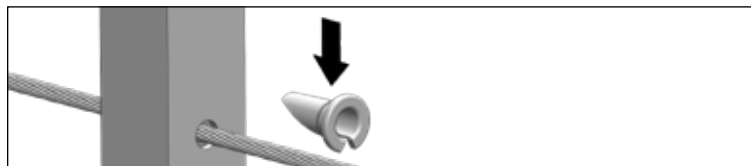
The stair stabilizer grommet helps prevent movement and deflection of the cable, as well as, reduces dirt and moisture from getting inside the posts. These grommets are used on stair stabilizers (Component AE). **This grommet must be put on BEFORE the cable is run through the stabilizer.** Affix the grommet around each hole in the stair stabilizer (See Figure BI). Available in packs of twenty five (25).



**Figure BE.** Place the slotted side on the cable and push down.



**Figure BF.** Push the tapered end onto the HandiSwage Stud and into the end or corner post hole.



**Figure BG.** Place the slotted side on the cable and push down.



**Figure BH.** Push the tapered end into the mid post or cable stabilizer hole.



**Figure BI.** Affix the NOVA Stair Stabilizer Grommet around each hole in the stair stabilizer.

## NOVA System Specifications

The NOVA System features powder-coated aluminum posts, top rails and bottom rails and horizontal cable infill. The cable infill utilizes HandiSwage fittings with 1/8” cable. The NOVA System is offered in a standard black color option. It is advised to observe that tension must be applied to fittings and cable. Posts should surface mounted securely enough to resist detachment and hold under tension.

### Straight Sections

The NOVA System is offered in a standard post height of 36” for straight sections.

### Stair Sections

Railing heights are offered in these dimensions due to nationwide building codes requiring 34” to 38” stair rail heights. 42” railings do not require 42” stair railings unless special circumstances exist.

### Between Post Lengths

The NOVA System is offered in 6’ rail sections utilizing a cable stabilizer.

### Railing Finish

The NOVA System is offered in a powder coated black finish.



## Cable Spacing

The cable is spaced on the posts at 2-3/4" (straight run) and 3" (stairs) on-center to comply with nationwide building codes.

## NOVA System Product Specifications

| Part Number                    | Description  | Use  |
|--------------------------------|--|--|
| <b>Post Kits</b>               |  |  |
| A0908-0036                     | NOVA Universal Post 36" Black                            | 36" surface mount straight post  |
| A0908-C036                     | NOVA Corner Post 36" Black                               | 36" surface mount corner post  |
| A0908-U036                     | NOVA Undrilled/Stair Post 36" Black ( Top & Mid Posts)   | 36" surface mount top & mid stair post   |
| A0908-U042                     | NOVA Undrilled/Stair Post 42" Black ( Bottom Post)       | 42" surface mount bottom stair post  |
| <b>Rail Kits</b>               |  |  |
| A0908-0201                     | NOVA 6' Straight Rail Section Black (Top & Bottom Rails) | 6' straight top & bottom rails   |
| A0908-S021                     | NOVA 6' Stair Rail Section Black (Top & Bottom Rails)    | 6' stair top & bottom rails  |
| <b>Cable Mounting Hardware</b> |  |  |
| 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   |
| <b>Post Mounting Hardware</b>  |  |  |
| A0908-HD10                     | NOVA Post Mounting Hardware Kit                          | Surface mount posts on wooden surfaces   |
| <b>Accessories</b>             |  |  |
| C0916-B003                     | NOVA End/Corner Grommet (25 pack)                        | Grommet that attaches to HandiSwage Studs on end and corner level posts                                    |
| C0916-0003                     | NOVA Mid Grommet (25 pack)                               | Grommet that attaches to cable and NOVA posts that have cable running through on level sections (mid post) |
| C0916-A003                     | Universal Stabilizer Mid Grommet (25 pack)               | Grommet that attaches to cable and cable stabilizers on level sections                                     |
| A0908-SG01-25                  | NOVA Stair Stabilizer Grommet (25 pack)                  | Grommet that attaches to cable and cable stabilizer on stair sections                                      |
| A0908-TB04-10                  | NOVA Tensioner Backing Disk (10 pack)                    | Place in between post and HandiSwage Tensioner base  |
| C0307-BKP02-10                 | NOVA Cover Nut Set Black (10 pack)                       | Use with HandiSwage Studs to tensioner and give a finished look  |