NOVA II System Installation Instructions

The NOVA II 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 II System is offered in black, white and bronze color options.

The following guide will take you step-by-step through the process of installing your NOVA II 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 II SYSTEM IF INSTALLED WITHIN ONE (1) MILE OF SALT WATER.**

**NOVA II STAIR SYSTEMS ACCOMMODATE STAIR ANGLES BETWEEN 29 AND 39 DEGREES ONLY.**

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Tools

**Required & Recommended**

- Power Drill with Adjustable Clutch
- Vice Grips
- Hand Swage Tool
- Miter Saw with a Non-Ferrous Carbide Tipped Blade
- Rubber Mallet
- Cable Cutter
- #2 Phillips Driver Bit
- 5/16", 3/8", 7/16" & 1/2" Open Wrench
- 1/8" & 3/32" Allen Wrenches
- 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

Warning:

DO NOT INSTALL WITHIN ONE (1) MILE OF SALT WATER. ATLANTIS RAIL SYSTEMS WILL NOT WARRANTY A NOVA II SYSTEM IF INSTALLED WITHIN ONE (1) MILE OF SALT WATER.
### 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.
- After cutting rails, cable stabilizers, or posts, paint exposed metal with rust resistant finish for maximum protection against elements.
- Installation is best accomplished with two (2) people.
- Always wear personal protection equipment; safety glasses, work gloves, etc.
- Use care not to over-torque the screws. Pre-drilling is recommended.
- Provided hardware to install the NOVA II System is for use with NOVA II aluminum posts. If installing to other surfaces, you must acquire the appropriate hardware as needed for proper installation.

**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

<table>
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<th>Description</th>
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<tr>
<td>C0731-H0703-2</td>
<td>HandiSwage Standard Stud 1/8&quot; (1/4&quot;-28 RH) - 2 Pack</td>
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<tr>
<td>C0731-H0703-10</td>
<td>HandiSwage Standard Stud 1/8&quot; (1/4&quot;-28 RH) - 10 Pack</td>
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### Additional Components

- NOVA II Cover Nut Sets
- 30°, 34° & 38° Stair Spacer
- Cable Grommets
- NOVA Post Mounting Hardware Kit
Components for NOVA II Level Section

A. Top Rail

B. Bottom Rail

C. Top Rail Bracket

D. Bracket Key

E. Screw Cover

F. Bottom Rail Bracket

G. Stabilizer & Support Block Connector

H. Self-Drilling Screw

I. Button Head Screw

J. Support Block

K. Cable Stabilizer, Drilled

L. Support Block Base Kit

M1. 36" Universal Post, Drilled

M2. 42" Universal Post, Drilled

N1. 36" Corner Post, Drilled

N2. 42" Corner Post, Drilled

O. 3-1/2" Square Driver Bit

P. Post Cap

Q. Post Skirt

R. Post Pad, Drilled

S. Lag Bolt

T. Plastic Cover Nut

U. RailEasy 1/8" Stud

V. Plastic Washer

W. Cable Grommet
Level Post Installation

Measure, Mark & Pre-drill the Posts

The following instructions are for level sections with a bottom rail. From the top of the post, measure down 36-3/16" for a 36" post (actual post size is 38") and mark a level, horizontal line on the post. Measure down 41-3/4" for a 42" post (actual post size is 44"). Measure 1-1/2" in from the side of the post and mark a vertical center line that intersects with the horizontal line. On the horizontal line, starting at the intersection, measure out 1/2" on either side and make a vertical mark (See Figure A). These intersections are the screw hole marks for the bottom rail bracket (Component F).

Using a 5/32" drill bit, pre-drill the bottom bracket holes.

Locate & Install Level Posts

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

Install the post (Component M1, M2, N1 & N2) 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 must 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 code compliant wood blocking.

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 B). Pre-drill the marked locations into the decking and reinforcement using a 1/4" drill bit. If the post pad (Component R) is being used, line it up with the pre-drilled holes. Mark the post pad center hole on the mounting surface, remove and pre-drill the marked location using a 1/4" drill bit. This will allow any water that builds up in the post to escape.

Remount the post assembly. Make sure the posts are positioned so the post holes are aligned properly to run cable and mount top rails (Component A). Place provided post pad, drilled (Component R) between the post and mounting surface (See Figure C). If using the NOVA post mounting hardware kit (A0908-HD10), insert the lag bolts (Component S) and secure the base to the mounting surface using a 1/2" socket and ratchet set. Avoid scuffing the posts with a power drill or other tools. Make certain the posts are plumb. If the post requires adjustment, add stainless steel washers under the post pad. Once the posts are installed, apply silicone to the top of the
lag bolts and secure the plastic cover nuts (Component T) to prevent moisture from getting below the post through the lag bolt holes (See Figure D).

Pre-Drill Mid Posts
If a post is being used as a mid-post versus an end or corner post, holes must be pre-drilled for mounting a top rail. From the top of the post, measure down 2-3/4" and mark a level, horizontal line on the post. Measure 1-1/2" in from the side of the post and mark a vertical center line that intersects with the horizontal line. Place the bracket key (Component D) top hole over the intersection mark. Make sure the bottom hole lines up with the vertical line. Mark the holes and pre-drill using a 5/32" drill bit (See Figure E).

Figure D. Apply silicone to the top of the lag bolts and secure the plastic cover nuts to prevent moisture from penetrating the holes.

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

Level Rail Installation

Measure & Cut the Rails

IF THE BETWEEN POST MEASUREMENT IS EXACTLY 6', PROCEED TO “INSTALL CONNECTORS” STEP.

Carefully measure the opening between posts 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, trim must always be taken from both ends of the rail. Make all determinations before marking and cutting the rails. To account for the top rail brackets (Component C) take an extra 5/8" off either end of the top rail (Component A). Mark the rails and cut using a miter saw with a non-ferrous carbide tipped blade.

Install Connectors
Locate the pre-drilled holes in the middle of the underside of the bottom rail (Component B). Using the #8 self-drilling screws (Component H), the square driver bit (Component O) and a power drill, install the stabilizer and support block connectors (Component G) on the top and bottom rails (See Figure F).

Figure F. Using the #8 self-drilling screws, install the stabilizer and support block connectors on the top and bottom rails.

TO AVOID STRIPPING THE SCREW, START DRIVING IT IN WITH A POWER DRILL, THEN FINISH WITH A SCREW DRIVER.

IF THE BETWEEN POST MEASUREMENT IS 4' OR UNDER, A CABLE STABILIZER IS NOT NEEDED, THEREFORE CONNECTORS DO NOT HAVE TO BE INSTALLED.
Install the Support Block

For a 36” post (actual post size is 38”), the support block (Component J) should be cut to 2”. For a 42” post (actual post size is 44”), the support block should be cut to 2-1/2”. Measure and mark the support block and cut using a miter saw with a non-ferrous carbide tipped blade.

IF THE BETWEEN POST MEASUREMENT IS 4’ OR UNDER, A CABLE STABILIZER IS NOT NEEDED, THEREFORE THE SUPPORT BLOCK AND SUPPORT BLOCK BASE KIT DO NOT HAVE TO BE INSTALLED.

To find the location of the support block base kit, measure the distance between the posts and divide by two (2). Make a level line at that measurement between the post. The line should be perpendicular to the direction the rails will be oriented. Now, take a straight edge, like a 2x4 post, and abut it to the side of each post. Where the line meets the straight edge, measure in 1-1/2” and make an intersecting line. This intersection is where the location of the support block base kit is to be installed (See Figure G).

The support block base kit (Component L) consists of one (1) connector, one (1) #12 flat head wood screw, one (1) rectangular nylon gasket, one (1) rectangular mounting plate, two (2) #10 pan head wood screws and two (2) nylon washers. Using the rectangular mounting plate, place the center hole over the intersection point. Make sure the mounting holes on either side of the center hole are lined up with the center line running parallel with the rail orientation (See Figure H). Pre-drill the holes with a 1/8” drill bit.

Assemble the support block base kit as shown in Figure I. Before installing the base kit, make sure the nylon gasket is between the mounting plate and the mounting surface (See Figure I). Install two (2) #10 wood screws making sure to include the nylon washers (See Figure J). Insert the pre-cut support block onto the base kit connector.

USE PLIERS TO HOLD THE CONNECTOR IN PLACE WHILE INSTALLING THE #12 FLAT HEAD WOOD SCREW THROUGH IT.

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

Install the post skirt on the posts BEFORE installing the bottom rail.

Install the Bottom Rail

Slide the bottom rail brackets (Component F) over each end of the bottom rail. The bottom rail bracket screw holes must point down and counter bore holes must face toward the center of the rail section (See Figure K). Install the bottom rail making sure the connector on the underside of the bottom rail is inserted into the support block. Use the supplied #10 self-drilling screws to install the rail. Check to make sure bottom rail is level.

IF THE SUPPORT BLOCK ASSEMBLY IS DRIVING THE BOTTOM RAIL UP, REMOVE AND SHORTEN THE SUPPORT BLOCK AS NEEDED.
Install the Top Rail & Cable Stabilizer

Locate the two (2) pre-drilled holes at the top of the post. Install the bracket keys (Component D) in these holes using the supplied #10 self-drilling screws. The bracket key counter bore holes must face towards the center of the rail (See Figure L).

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

Place the top rail brackets on each end of the top rail. Slide the top rail assembly over the pre-installed bracket keys and insert the connector on the bottom of the top rail into the cable stabilizer (See Figure N).

Locate the holes on each side of the top rail brackets. Install the supplied button head screws (Component I) into these holes using a 1/8” Allen wrench. Once the screws are tightened down, place the screw cover (Component E) over the holes on the ends of the top rail brackets.

Locate the holes on the underside of the top rail bracket. With a 5/32” drill bit, pre-drill the top post using the top rail bracket holes as a template. Install the supplied #10 self-drilling screws into the pre-drilled holes to secure the top rail (See Figure O).

**USE THE #10 COATED SELF-DRILLING SCREWS TO INSTALL INTO THE TOP RAIL BRACKET.**

Install the post cap (Component P) by adding a small bead of silicone around the inside lip of the cap. Place it firmly on top of the post.

Cable Installation on Level Sections

Running the Cable

Beginning at the top, attach the cable to the HandiSwage Stud (part number C0731-H0703-2, C0731-H0703-10) in accordance with the hand swaging tool instructions.

**FOLLOW ALL WARNINGS AND WEAR PROPER SAFETY EQUIPMENT WHEN WORKING WITH CABLE TO PREVENT INJURY.**

Using the NOVA II Cover Nut Set, place the plastic washer and nut on the end of the HandiSwage Stud threaded shank. Hand tighten until 1/2” of thread extends beyond the nut (See Figure P). Set aside the cover for installation later. 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 Q). 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.

**Figure L.** Install the bracket key using the supplied #10 self-drilling screws.

**Figure M.** (Left) Align the stabilizer holes with the holes on the posts.

**Figure N.** (Right) Slide the top rail assembly over the pre-installed bracket keys.

**Figure O.** Install the supplied #10 self-drilling screws into the pre-drilled holes to secure the top rail.

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

**Figure Q.** (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.
Tensioning the Cable
Before tensioning any of the cables, it is important to be sure that the frame for the NOVA II 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.

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 R). 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 S).

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. Do not over-tension! Don’t worry if this cable moves a little, we will come back around to it later.

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 T). 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 re-tighten 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 U).

Cable Installation on Corner Sections

Install the RailEasy 1/8” Stud

Locate the side of the corner post (Component Mb or Nb) with the threaded holes. 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 V).

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

With the RailEasy 1/8” Studs installed in the corner post, 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 (See Figures W and X). Fully tighten the receiver cone onto the threaded stud using a 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) RailEasy Stud, pull the cable to the opposite HandiSwage Stud. Follow the instruction in the “Cable Installation on Level Sections” to install the HandiSwage Studs.

Components for NOVA II Stair Section

X. Top Stair Rail
Y. Bottom Stair Rail
Z. Top Stair Rail Bracket Mount
AA. Upper Stair Rail Bracket
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<td>AB</td>
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<tr>
<td>AC</td>
<td>Bottom Stair Rail Bracket Mount</td>
</tr>
<tr>
<td>AD</td>
<td>Bottom Stair Rail Bracket</td>
</tr>
<tr>
<td>AE</td>
<td>Cable Stabilizer, Undrilled</td>
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<tr>
<td>AF</td>
<td>Support Block</td>
</tr>
<tr>
<td>AG</td>
<td>Stabilizer &amp; Support Block Connector</td>
</tr>
<tr>
<td>AH</td>
<td>Self-Drilling Screw</td>
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<tr>
<td>AI</td>
<td>Support Block Base Kit</td>
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<tr>
<td>AJ</td>
<td>3-1/2” Square Driver Bit</td>
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<tr>
<td>AK</td>
<td>Set Screw</td>
</tr>
<tr>
<td>AN</td>
<td>Post Cap</td>
</tr>
<tr>
<td>AO</td>
<td>Post Skirt</td>
</tr>
<tr>
<td>AL</td>
<td>36” Top/Mid Stair Post, Undrilled</td>
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<td>AM</td>
<td>42” Bottom Stair Post, Undrilled</td>
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<td>Lag Bolt</td>
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<td>Plastic Cover Nut</td>
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**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 II 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.**

**Nova II stair systems accommodate stair angles between 29 and 39 degrees only.**
Stair Post Installation

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 Y). 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 II SYSTEM ON TREATED WOOD SURFACES AND CONCRETE, INSTALL THE PROVIDED POST PAD, DRILLED (COMPONENT AP; 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 Z).

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 AA). Pre-drill the marked locations into the mounting surface and reinforcement using a 1/4” drill bit. If the post pad (Component AP) is being used, line it up with the pre-drilled holes. Mark the post pad center hole on the mounting surface, remove and pre-drill the marked location using a 1/4” drill bit. This will allow any water that builds up in the post to escape.

Remount the post assembly. If mounting the posts to pressure treated lumber or concrete, place the provided

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

Figure Z. 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.
post pad between the post and mounting surface (See Figure AB). If using the NOVA post mounting hardware kit (A0908-HD10), 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 adjustment, add stainless steel washers under the post pad. 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.

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

**Stair Rail Installation**

**Install the Bottom Stair Rail Bracket Mounts**

Lay the bottom stair rail (Component Y) on the stair nosing from top to bottom, adjacent to the posts. Draw a line on the underside of the bottom stair rail onto the side of the stair post (See Figure AC). Repeat this step for top, bottom and intermediate stair posts. Using a square, transfer the line onto the faces of the stair posts where the rails will be mounted. For the top and mid stair posts (Component AL), measure up 1” from the reference line and mark another horizontal, level line. For the bottom stair post (Component AM), measure up 2” from the reference line and mark a horizontal, level line.

Measure 1” in each side of the post and mark a vertical line that intersects with the horizontal line. There will be two (2) vertical lines intersection with the horizontal line. These intersections are the screw hole marks for the bottom stair rail bracket mounts (Component AC).

Using a 5/32” drill bit, pre-drill the bottom stair rail bracket mount holes (See Figure AD1). With the supplied #10 self-drilling screws (Component AH), install the bottom stair rail bracket mounts. Make sure the opening of the slot is facing up (See Figure AD2).

**Install the Top Stair Rail Bracket Mounts**

Clamp a long straight edge to the side of the top and bottom stair posts, parallel with the angle formed by the steps. Adjust the straight edge so if measured from the tip of the stair nosing, it would be 36” (See Figure AE).

Draw a chalk line on the top of the straight edge onto the side of the post. Repeat this step for top, bottom and intermediate stair posts. Using a square, transfer the line onto the faces of the stair posts where the rails will be mounted. On the top stair post, from that line, measure down 2” and draw a horizontal, level line. On the bottom stair post, from that line, measure down 1” and draw a horizontal, level line. Measure in 7/8” from each side and draw a vertical line that intersects with the horizontal line. Do this for top and bottom posts (See Figure AF1).

Using a 5/32” drill bit, pre-drill holes at the intersections. Line up the top stair rail bracket mount (Component Z) with the pre-drilled holes. Make sure the opening of the slot is facing down, towards the stairs (See Figure AF2). Using the supplied #10 self-drilling screws, carefully drive in the screws and firmly attach the bracket mounts.

**Figure AC.** Draw a line on the underside of the bottom stair rail onto the side of the stair post.

**Figure AD1.** (Left) Measure, mark and pre-drill holes using a 5/32” drill bit for the bottom stair rail bracket mounts.

**Figure AD2.** (Right) Install the bottom stair rail bracket mounts with the opening of the slot facing up.

**Figure AE.** Clamp a long straight edge to the side of the top and bottom stair posts, parallel with the angle formed by the steps and if measure from the tip of the stair nosing, it would be 36”.

**Figure AF1.** (Left) Measure, mark and pre-drill holes using a 5/32” drill bit for the top stair rail bracket mounts.

**Figure AF2.** (Right) Install the top stair rail bracket mounts with the opening of the slot facing down.
Measure, Mark & Cut the Stair Rails

Measure from the upper corner to upper corner of the pre-installed bottom stair rail bracket mounts (See Figure AG). Take that measurement and subtract 2-3/4" for the top stair rail and subtract 1-5/8" for the bottom stair rail. Cut the stair rails to the appropriate lengths using a miter saw with a metal cutting blade.

Install the Bottom Stair Rail

Slide the bottom stair rail brackets (Component AD) onto the ends of the bottom stair rail. Make sure that the brackets are positioned so that the larger face is facing upward so that the larger face is facing upward bracket that is on the rail end that will be attached to the top stair post and the smaller face is facing upward on the bracket that is on the rail end that will be attached to the bottom stair post.

Starting at the bottom stair post, take the bottom stair rail assembly and slide the “bump-out” or pivoting rib on the bottom stair rail bracket into the slot on the bottom stair rail bracket mount. Repeat on the top stair post. Once the bottom stair rail is positioned appropriately, locate the set screw holes on the side of the bottom stair rail bracket mounts. Loosely install the provided set screws (Component AK) using an 3/32" Allen wrench (See Figure AH).

Install the Top Stair Rail

Place the upper and lower stair rail brackets (Components AA & AB) on the ends of the top stair rail. Make sure the lower stair rail bracket is on the bottom stair post side and the upper stair rail bracket is on the top stair post side.

Starting at the top stair post, take the top stair rail assembly and slide the “bump-out” or pivoting rib on the upper stair rail bracket into the slot on the top stair rail bracket mount. Repeat on the bottom stair post. Once the top stair rail is positioned appropriately, locate the set screw holes on the side of the top stair rail bracket mounts. Loosely install the provided set screws using an 3/32" Allen wrench (See Figure AI).

Measure & Cut Cable Stabilizer

IF THE BETWEEN POST MEASUREMENT IS 5’ OR UNDER, A CABLE STABILIZER IS NOT NEEDED, THEREFORE THE CONNECTORS, SUPPORT BLOCK AND SUPPORT BLOCK BASE KIT DO NOT HAVE TO BE INSTALLED.

With the rails loosely installed, find where to place the cable stabilizer (Component AE) by measuring the horizontal distance between the inside of the top and bottom stair posts and divide that measurement by two (2). Do not measure on the angle of the stairs (See Figure AJ).

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

Figure AG. Measure from the upper corner to upper corner of the pre-installed bottom stair rail bracket mounts.

Figure AH. Slide the bottom stair rail brackets onto the ends of the bottom stair rail and loosely install using the supplied set screws.

Figure AI. Slide the upper and lower stair rail brackets onto the ends of the top stair rail and loosely install using the supplied set screws.

Figure AJ. Measure the horizontal distance between the inside of the top and bottom stair posts and divide that measurement by two (2).
IF THE SUPPORT BLOCK ASSEMBLY IS DRIVING THE BOTTOM STAIR RAIL UP, REMOVE AND SHORTEN THE SUPPORT BLOCK AS NEEDED.

Install the Support Block Base Kit & Connectors

The support block base kit (Component AI) consists of one (1) connector, one (1) #12 flat head wood screw, one (1) rectangular nylon gasket, one (1) rectangular mounting plate, two (2) #10 pan head wood screws and two (2) nylon washers. Assemble the support block base kit as shown in Figure AL.

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

Cut the support block along the marked line using a miter saw with a non-ferrous carbide tipped blade.

Remove the top and bottom stair rails. Do not remove the rail bracket mounts. Keep the bottom stair rail brackets on the bottom stair rail. Find and mark the center of the width of the underside of the top 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 #8 self-drilling screws (See Figure AM).

Place the support block base kit assembly (including the support block) onto the connector on the underside of the bottom rail. Make sure the bottom stair rail brackets are on the bottom stair rail. Starting at the bottom stair post, take the bottom stair rail assembly and slide the “bump-out” or pivoting rib on the bottom stair rail bracket into the slot on the bottom stair rail bracket mount. Repeat on the top stair post. Do not install. Transfer marks onto the step where the support block base kit mounting plate is (See Figure AN).

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 pan head wood screws making sure to include the nylon washers. 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.

Once the bottom stair rail is positioned appropriately, locate the set screw holes on the side of the bottom stair rail bracket mounts. Install the provided set screws using an 3/32” Allen wrench.

Insert the cable stabilizer over the connector on the top of the bottom stair rail.

Place the upper and lower stair rail brackets on the ends of the top stair rail. Make sure the lower stair rail bracket is on the bottom stair post side and the upper stair rail bracket is on the top stair post side. Place the top stair rail onto the stabilizer.
Starting at the bottom stair post, take the top stair rail assembly and slide the “bump-out” or pivoting rib on the lower stair rail bracket into the slot on the top stair rail bracket mount. Repeat on the top stair post. Make sure the connector on the underside of the top stair rail is inserted into the stabilizer.

Once the top stair rail is positioned appropriately, locate the set screw holes on the side of the top stair rail bracket mounts. Install the provided set screws using a 3/32” Allen wrench.

**IF THE STABILIZER IS DRIVING THE TOP STAIR RAIL UP, REMOVE AND SHORTEN AS NEEDED.**

Install the post cap (Component AO) by adding a small bead of silicone around the inside lip of the cap. Place it firmly on top of the post.

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

At the top stair post, measure the space between the top of the bottom stair rail bracket mount and the underside of the top stair rail bracket mount (See **Figure AP**). Subtract that measurement by twenty-four (24) and divide by two (2). Take this measurement and draw a horizontal, level line from the top of the bottom stair rail bracket mount. Find the center of the post by measuring in 1-1/2” from the side and draw a vertical center line. Make sure this line intersects with the horizontal line.

At the bottom stair post, measure the space between the top of the bottom stair rail bracket mount and the underside of the top stair rail bracket mount. Subtract that measurement by twenty-four (24) and divide by two (2). Take that measurement and subtract 3/4”. The lower set of tensioners will be 3/4” lower than the upper set of tensioners. Take this measurement and draw a horizontal, level line from the top of the bottom stair rail bracket mount. Find the center of the post by measuring in 1-1/2” from the side and draw a vertical center line. Make sure this line intersects with the horizontal line (See **Figure AQ**).

Atlantis Rail recommends using a RailEasy™ Drilling Template to space cable at 3” on-center. This is the spacing used on all pre-drilled NOVA II posts. Place the bottom center hole on the drilling template at the location where the 2 lines intersect on the post. Make sure the vertical center line lines up with the center holes on the drilling template (See **Figure AR**). Mark all drilling holes for the HandiSwage Tensioners (part number C0748-0003-2). Repeat for each stair post. Be sure to orient the tensioner holes on the drilling template in the appropriate direction of the tensioner either point up (for bottom stair posts) or down (for top stair posts).

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

To find the placement of the holes on the undrilled cable stabilizer, first, find the center of the stabilizer face and draw a vertical line on the two (2) face sides where cable will run.
Drill the Stair Posts & Cable Stabilizer

Pre-drill the holes on the top and bottom stair posts using a 9/64” 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 AT). Fasten the tensioners using three (3) #8 x 1-1/2” screws (supplied).

Figure AT. 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 TOP STAIR POST AND UP ON THE BOTTOM STAIR POST TO ENSURE PROPER SWIVELING ACTION (FIGURE AU).

Figure AU. Face the notch on the tensioner base down on the top stair post and up on the bottom stair post.

Using a 3/8” drill bit, drill a hole at the intersection of each center hole mark on the cable stabilizer. 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 AV). These grommets must be installed BEFORE installing the cable.

Figure AV. 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.

IF A STAIR POST IS BEING USED AS A MID POST, TREAT IT LIKE A STABILIZER KIT. MARK THE CABLE HOLES USING THE SAME TECHNIQUE. USING A 3/8” DRILL BIT, DRILL OUT THE CABLE HOLES ON BOTH FACES. DO NOT DRILL ANGLED HOLES. AFFIX A NOVA STAIR STABILIZER GROMMET AROUND EACH HOLE (FIGURE AW).

Figure AW. If a stair post is being used as a mid post, use a 3/8” drill bit to drill all the holes on each face and affix NOVA Stair Stabilizer Grommet around each hole.

Drill the Stair Posts & Cable Stabilizer

Pre-drill the holes on the top and bottom stair posts using a 9/64” 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 AT). Fasten the tensioners using three (3) #8 x 1-1/2” screws (supplied).

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Figure AV. 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.

IF A STAIR POST IS BEING USED AS A MID POST, TREAT IT LIKE A STABILIZER KIT. MARK THE CABLE HOLES USING THE SAME TECHNIQUE. USING A 3/8” DRILL BIT, DRILL OUT THE CABLE HOLES ON BOTH FACES. DO NOT DRILL ANGLED HOLES. AFFIX A NOVA STAIR STABILIZER GROMMET AROUND EACH HOLE (FIGURE AW).

Figure AW. If a stair post is being used as a mid post, use a 3/8” drill bit to drill all the holes on each face and affix NOVA Stair Stabilizer Grommet around each hole.
Cable Installation on Stair Sections

Install the Cable

With the HandiSwage Tensioners (See Figure AX) 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. 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 AY). This will help to ensure that your posts don’t deflect during tensioning. It will also help to tension equally throughout. Continue tensioning all the cables in this same fashion until all cables are tight.

NOVA II System Cable Mounting Hardware

HandiSwage Stud – C0731-H0703-2
The HandiSwage Stud is the main tensioning component on the level NOVA II sections (See Figure AZ). 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).

HandiSwage Tensioner – C0748-0003-2
The HandiSwage Tensioner is used on the NOVA II stair sections. It features a slotted base to allow for angles up to 45°. Affix the base to the NOVA II 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 BA). Available in packs of two (2).
NOVA II 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 BB). Make sure the hole patterns line up and install the tensioner. Available in packs of ten (10).

NOVA Cover Nut Sets
The NOVA Cover Nut Sets includes a plastic washer, stainless steel nut and plastic cover nut. They are 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 BC). Available in black, white and bronze colors and in packs of ten (10) or twelve (12).

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 BD). Push the tapered end onto the stud and into the end or corner post hole until only the flange is showing (See Figure BE). 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 BF). Push the tapered into the mid post hole until only the flange is showing (See Figure BG). 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 BF). Push the tapered into the mid post hole until only the flange is showing (See Figure BG). 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 BH). Available in packs of twenty five (25).
NOVA II System Specifications

The NOVA II 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 II System is offered in black, white and bronze color options. 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 II System is offered in a standard post height of 36” or 42” 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 II System is offered in 6’ rail sections utilizing a cable stabilizer.

Railing Finish
The NOVA II 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 II System Product Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Use</th>
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<tbody>
<tr>
<td><strong>Post Kits</strong></td>
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<tr>
<td>A0906-0036-XX*</td>
<td>NOVA II Universal Post 36” Black</td>
<td>36” surface mount straight post</td>
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<tr>
<td>A0906-0042-XX*</td>
<td>NOVA II Universal Post 42” Black</td>
<td>42” surface mount straight post</td>
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<td>NOVA II Corner Post 36”</td>
<td>36” surface mount corner post</td>
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<td>A0906-C042-XX*</td>
<td>NOVA II Corner Post 42”</td>
<td>42” surface mount corner post</td>
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<td>36” surface mount top &amp; mid stair post</td>
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<td>42” surface mount bottom stair post</td>
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<td><strong>Rail Kits</strong></td>
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<td><strong>Cable Mounting Hardware</strong></td>
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<td>C0731-H0703-2</td>
<td>HandiSwage Stud (2 pack)</td>
<td>Attaches to cable on level posts</td>
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<td>C0748-H0703-10</td>
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<td><strong>Post Mounting Hardware</strong></td>
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<td>A0908-HD10</td>
<td>NOVA Post Mounting Hardware Kit</td>
<td>Surface mount posts on wooden surfaces</td>
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<tr>
<td><strong>Accessories</strong></td>
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<td>C0916-B003</td>
<td>NOVA End/Corner Grommet (25 pack)</td>
<td>Grommet that attaches to HandiSwage Studs on end and corner level posts</td>
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<tr>
<td>C0916-0003</td>
<td>NOVA Mid Grommet (25 pack)</td>
<td>Grommet that attaches to cable and NOVA posts that have cable running through on level sections (mid post)</td>
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<td>Grommet that attaches to cable and cable stabilizers on level sections</td>
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<tr>
<td>A0908-SG01-25</td>
<td>NOVA Stair Stabilizer Grommet (25 pack)</td>
<td>Grommet that attaches to cable and cable stabilizer on stair sections</td>
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<td>A0908-TB04-10</td>
<td>NOVA Tensioner Backing Disk (10 pack)</td>
<td>Place in between post and HandiSwage Tensioner base</td>
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<tr>
<td>C0906-XX02-10* &amp; C0906-XX02-12*</td>
<td>NOVA Cover Nut Set (10 pack or 12 pack)</td>
<td>Use with HandiSwage™ Studs to tensioner and give a finished look</td>
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</table>

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