

Post Railing Systems - Infill

SWAGED CABLE INSTALLATION

AX00.050.221SX.B.SP	(Left handed cable terminal stud (SX)
AX00.050.220DX.B.SP	(Right handed cable terminal stud (DX)
AX00.050.231SX.B.SP	(Left handed threaded nut cap tensioner (SX)
AX00.050.230DX.B.SP	(Right handed threaded nut cap tensioner (DX)
AX00.050.233SX.B.SP	(Left handed Allen head cap tensioner (SX)
AX00.050.231DX.B.SP	(Right handed Allen head cap tensioner (DX)
AX10.060.245.B.SP	(Sloping washer for round posts)
AX20.060.245.B.SP	(Sloping washer for square posts)
AX00.050.235.B.SP	(Middle tensioning body)
AX00.040.215.B.M	(1x19 strand - 4mm cable(316 grade) 328' spool



TOOLS REQUIRED

- String or chalk line
- 5.3 mm drill bit
- #2 Philips bit
- Magnetic bit holder
- 1/8" Cobalt bit
- Tape Measure
- Cordless or electric drill
- Cable Cutter
- Stainless Steel cutting saw (Cold Cut Saw, Bench top Portable Bandsaw, Chop Saw with Stainless Steel Cutting Blade)

For more detailed information on tools please visit:
www.axiarailing.com/recommended-tools

STEPS REQUIRED

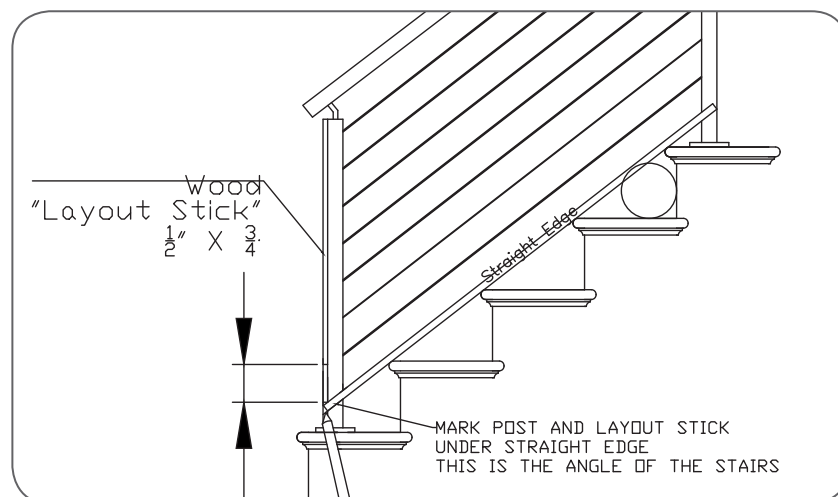
1. Using a $\frac{1}{2}$ x $\frac{3}{4}$ or other piece of scrap trim cut to length of newel posts for "Layout Stick"

2. Clamp trim to end of bottom newel post.

3. Using long straight edge, level, trim etc. Place on nosing of stairs and mark across side of newel post the angle alongside of newel.

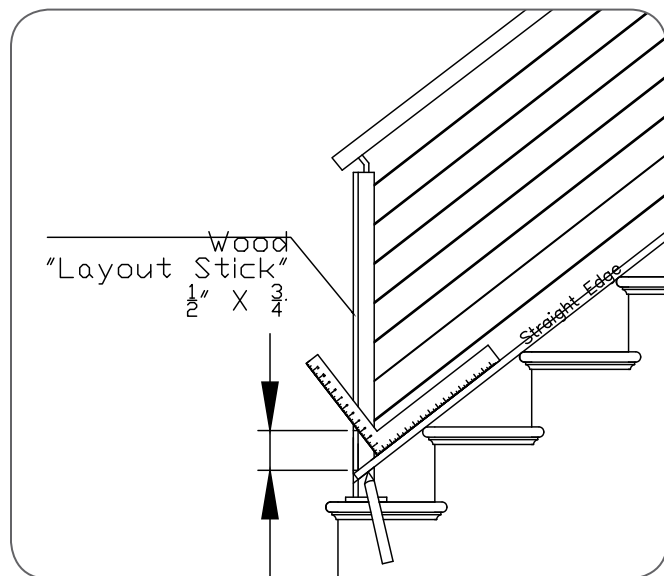
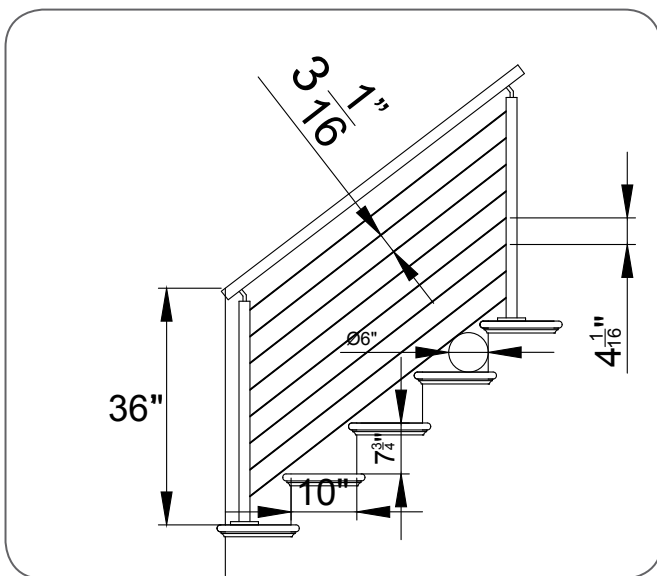
4. Place "Layout Stick" bottom on the line at the face of the newel post the "layout stick" is on.

5. Measure and mark with tape measure spacing for cable holes measuring up the stick. Remember that spacing should be measured perpendicular to rail or long straight edge and not vertically up the newel post.



Once you have one space measured perpendicular you can measure the vertical space on the “Layout Stick” and repeat the span. Note: this measurement varies depending on the angle of your staircase so if your rise and run are different on separate section of stairs then you will need to repeat these steps to find the spacing measurement. Note: The bottom cable on an open tread staircase should not be more than 1/2” of an inch above the nosing of the treads in order to meet the 6” sphere code in the triangle section created by the tread and riser at the side of the stairs.

- a. We recommend 3 1/4” spacing between cable to allow for stretching of cable and still pass the 4” sphere code during inspection. 3 1/16” spacing or 3 3/16” center to center measured perpendicular to handrailing. For example; with a 10” run and 7 3/4” rise the spacing for 36” railing is 3 1/16” or 3 3/16” center to center. Vertically that measures 4 1/16” vertically up the post.



6. Once “Layout Stick” is marked with all locations of cable. Start with an 1/8” Cobalt drill bit and drill wood “Layout Stick” on marks on work bench (not on newel post) once all 1/8” Holes are drilled in “Layout stick” place back on newel post and clamp to post. Be sure to line up bottom angle mark to bottom of layout stick when moving to backside of post.

Drill 1/8” holes in holes on “Layout Stick” into metal newel post. Use 3 or 4 drops of cutting fluid on drill bit as you are drilling holes. Keep drill bit level and parallel with railing while drilling holes. Once all holes are drilled on “Layout Stick” Move to backside of Newel post. Line up angle mark on the side of the post with the bottom of the “Layout Stick” and clamp to newel post. Drill holes in newel post on Layout stick with 1/8” Cobalt drill bit using 3 or 4 drops of cutting fluid on each hole.

7. Once all holes are drilled with 1/8” drill bit re-drill holes with 5/16” Cobalt drill bit (crimp style fittings) on stairs using 1/8” pilot hole as a guide and drill 5/16” hole on each side straight in. Once holes are drilled straight, push 5/16” bit through newel and locate hole on the opposite side of newel post and put point through the hole and drill on the angle of the staircase. Be sure to drill from both directions to clean out and burrs left from drilling. Use cutting fluid on drill bit while drilling to prevent burning and burring. Tip: Be careful that drill chuck does not mar the surface of the stainless newel post while drilling holes.

8. Cable cutting - To measure for the correct cable lengths measure between the newel posts and rough-cut cable pieces needed for each section. Eight rows for stairs with 36" high rail and 11 rows for balcony @ 42" high rail. Once cable is rough cut for each section, crimp the LH (SX) cable terminal stud on one end of each cable.



Cable cutter
HFC18.CUTTER



Hydraulic Crimper
AX00.060.400

9. Once all cables have cable terminal stud on one end, install terminal stud into bottom hole of newel post on the left hand side of section of handrail. Install LH nut cap tensioner or Allen head cap tensioner on end of terminal on outside of newel post. Tighten threads only 2 to 3 full turns.

10. Install RH (DX) Terminal stud into hole on opposite end of railing section and install nut cap tensioner or allen head cap tensioner on end of terminal on the outside of the newel post.

If on stairs, use the sloping washer along with the nut cap tensioner. Tighten on 2 to 3 turns. Note: Be consistent with the amount of turns you use for all fittings to keep fitting ends lined up when all cable is installed and tightened.

11. Pull cable from crimped fitting end and pull towards uncrimped fitting and lay beside cable terminal fitting and hold, mark the length to fitting and add 1-1/8" and cut the cable to length.

12. Crimp fitting on cut cable end and install into newel post hole and tighten on the end nut cap tensioner or Allen head tensioner until cable is hand tight and taught.

DO NOT TIGHTEN CABLE MORE THAN HAND TIGHT AT THIS TIME. Repeat this process moving up each section until all cable are installed hand tight and taught.

13. After all sections of cable are installed and hand tight be sure that all glue on handrail supports is fully cured (24 to 48 hours) before tightening cable. Tip: In Cold weather conditions Anaerobic adhesive cure time is longer. To speed up the curing, use a heat gun to warm up the post rail support.

14. Be sure all handrail screws on saddles to handrail are tight before tightening cable.



15. Once all screws and glue are dry you can proceed to tighten cables.

Note: it is better to wait at least 24 hours (overnight) with cable hand tight (taught) to relax the cable before tightening. This will help reduce call backs for cable sagging after installation.

16. To tighten cable start with the middle row of cable and tighten using socket or Allen wrench on nut cap or Allen head tensioner on each end of cable. Check tension on each cable as you are tightening with cable tension gauge. Apply 225lbs of tension on each cable. Do not over tighten (see fig.)

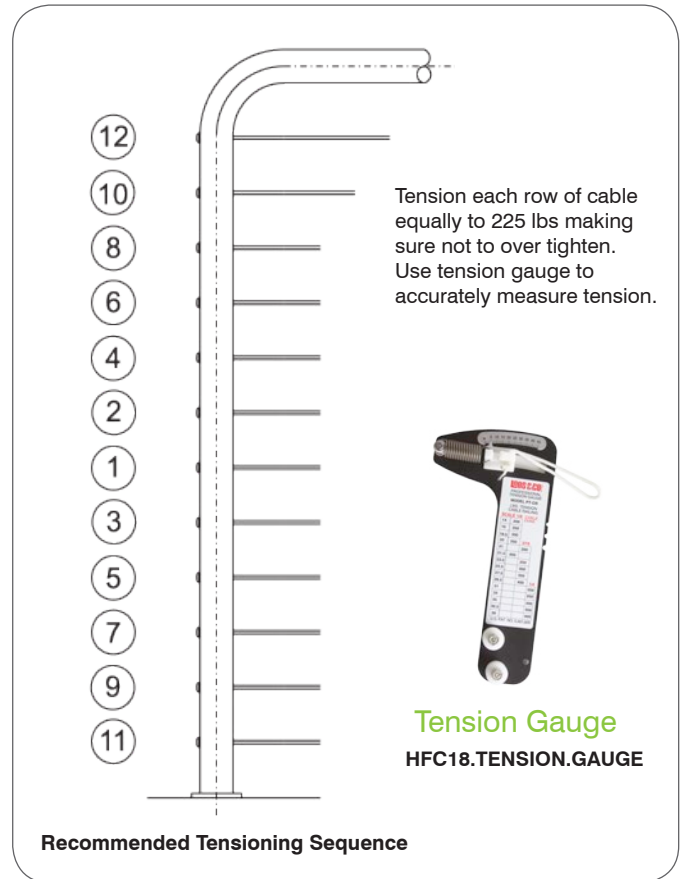
17. Tighten row above middle then row below middle and keep alternating as you are tightening cables. Note: Be sure to check tension with tension gauge on each cable as you are going and do not over tighten cable.

18. Once each section is complete recheck tension on each cable and tighten as needed, starting in the middle row and working out again.

19. Tighten all sections except one and leave taught. It is ideal to now teach your homeowner or customer how to tighten cable and clean cable periodically. Using same methods as originally installed.

This will prevent future call backs for loose cable and inform your client that tightening, and cleaning of the cable and cleaning stainless posts and rail is a maintenance item and manufacturer recommendations should be followed to avoid issues.

20. Leave all degreaser, cleaner and passivator for stainless rail and cable to be cleaned and protected (if exterior) periodically typically once a month or so. Depending on location, weather, pollution etc.



Step 1

Degreaser

AX00.080.515



Step 2

Cleaner/Polish

AX00.080.510



Step 3 (required for exterior)

Polish/Passivator

AX00.080.517