

Installation Instructions for Angled Cable Runs using a Combination of Ultra-tec® Tensioning and Non-Tensioning Surface Mount Components Installed into a 4x4 Wood End Post

Ultra-tec® fittings are designed to be used for securing infill in a railing frame for pedestrian use with 1/8" 1x19 construction stainless steel (preferably Type 316 S/S) Left Hand Lay Strand ONLY.

NO OTHER APPLICATIONS OR CABLE CONSTRUCTIONS ARE RECOMMENDED, SUPPORTED, OR WARRANTED BY THE CABLE CONNECTION FOR ULTRA-TEC® PRODUCTS.



Non-Tensioner:
PL-LAG-CL-TE4-1 (for \varnothing 1/8" cable) or
PL-LAG-CL-TE6-1 (for \varnothing 3/16" cable)

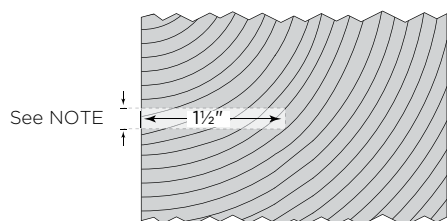


Tensioner:
PL-SFC-WP-4-1 (for \varnothing 1/8" cable) or
PL-SFC-WP-6-1 (for \varnothing 3/16" cable)

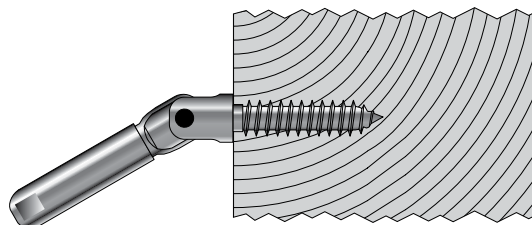
1. Mark the face of the post with a marking pen at each location where a piece of hardware will be installed or where a cable will pass through.
2. For all "intermediate" posts (posts that will have no hardware attached but will have cable passing through), drill a through hole at the mark that is 0.156" (5/32") diameter.

INSTALLING THE NON-TENSIONER

3. Drill hole for lag thread (at the mark made in step one) into wood post at least 1-1/2" deep.
NOTE: Use recommended hole size for type of wood being used according to chart on the back page of these instructions.



4. Place lag thread into the drilled hole and drive lag thread into wood post using the articulating portion of the fitting as a lever to rotate the lag end of fitting. Stop turning when shoulder on fitting between lag thread and clevis makes contact with the wood post face. You may continue to rotate fitting up to 1/4 turn to properly orient the fitting. If the wood is too hard to rotate 1/4 turn clockwise, it may be backed off 1/4 turn to achieve proper orientation.



5. Repeat steps 3 and 4 for all remaining hardware locations on that post face. When finished, proceed to instructions for installing the tensioner.



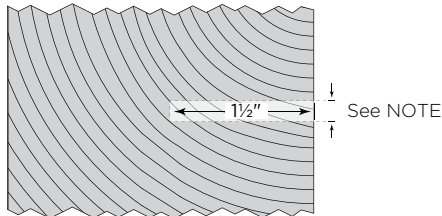
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Ultra-tec®
CABLE RAILING INFILL

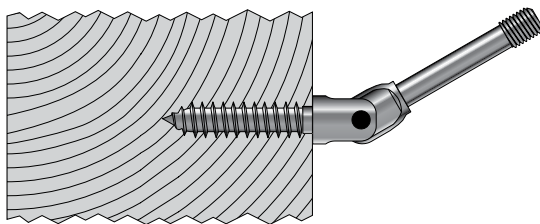
INSTALLING THE TENSIONER

6. Drill hole for lag thread (at the mark made in step one) into wood post material at least 1-1/2" deep.
NOTE: Use recommended hole size for type of wood being used according to chart on the back page of these instructions.



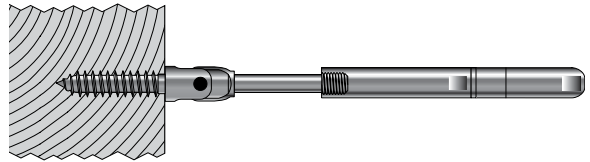
7. Place lag thread into drilled hole and drive lag thread into wood post using the articulating portion of the fitting as a lever to rotate the lag end of fitting.
NOTE: Female threaded rotating portion of fitting referred to in Step 9 MUST NOT BE attached for this step.

Stop turning when shoulder on fitting between lag thread and clevis makes contact with wood post face. You may continue to rotate fitting up to 1/4 turn to properly orient the fitting. If the wood is too hard to rotate 1/4 turn clockwise, it may be backed off 1/4 turn to achieve proper orientation.



8. Repeat steps 6 and 7 for all remaining hardware locations on that post face.

9. Assemble female threaded rotating portion of fitting onto male thread only so far as to cover male thread and no more.



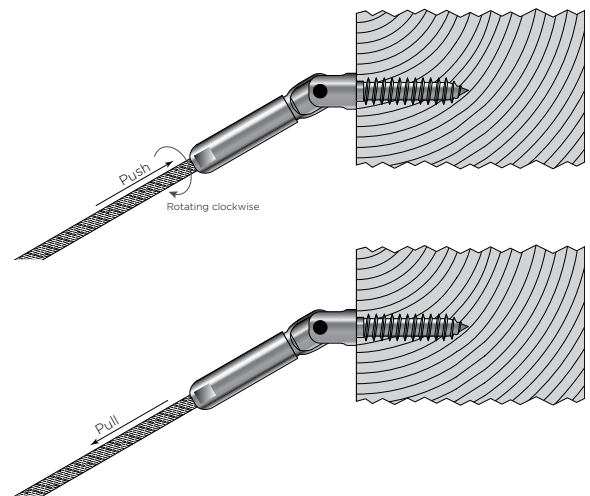
GENERAL GUIDELINES FOR INSTALLING CABLE

All cable cut ends must be "clean" and burr free. We recommend using a Felco type cutter that encircles the cable as it cuts it. When inserting a cut end of cable into a Push-Lock® type fitting it is important to rotate the cable and/or fitting in a direction that is "with the lay" of the strand.

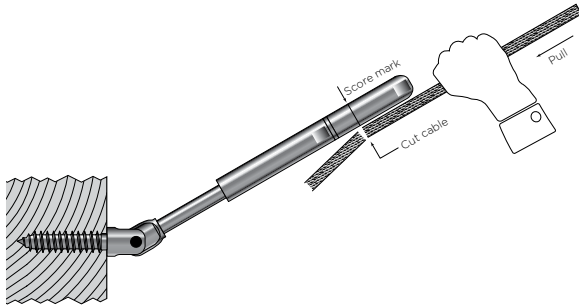
For L/H lay strand you would rotate the cable clockwise, or rotate the fitting clockwise. This will help to prevent the cable from fraying or "unlaying" while it is inserted into the fitting. Insert cut cables into Push-Lock® fittings approximately 1.062" until you feel it rest against a hard stop and then pull against the fitting to secure the wedges in the fitting.

10. Begin by inserting the cut end of the cable into the non-tensioning end fitting as described above.

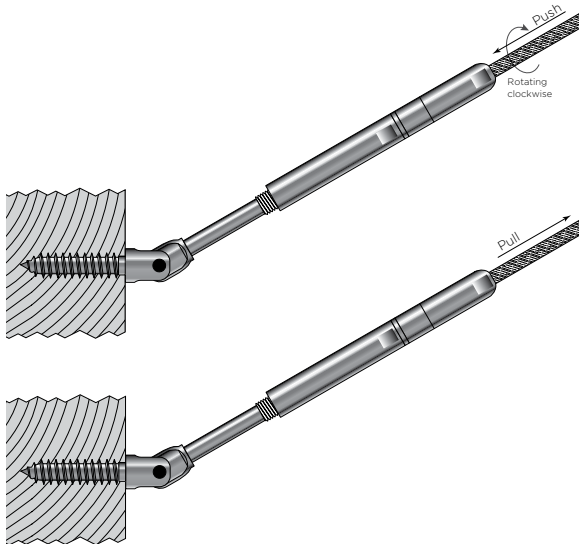
FULL INSERTION OF THE CABLE IS CRITICAL TO FITTING PERFORMANCE UNDER TENSION.



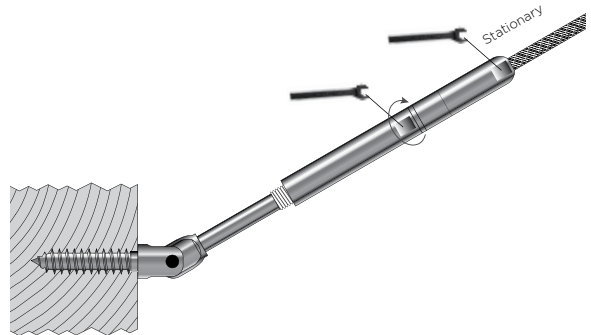
11. Feed bare end of cable through intermediate posts towards tensioning fitting on opposite end of frame, mark cable at score mark on body of the tensioning fitting. Cut cable at this mark.



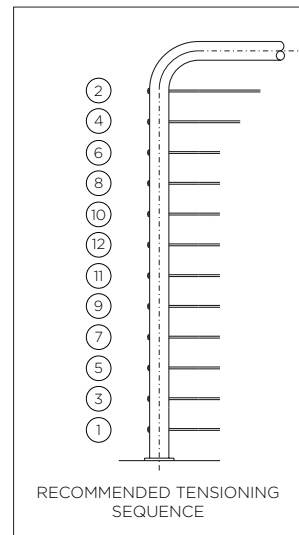
12. Loosen tensioning fitting so that approximately 5 or 6 threads are showing and insert cable into fitting as described in preface of this section.
FULL INSERTION OF THE CABLE IS CRITICAL TO FITTING PERFORMANCE UNDER TENSION.



13. Tension cable by holding Push-Lock® body at 3/8" wrench flat nearest cable (do not let this section rotate while cable is inserted) and rotating female threaded section of fitting with a 3/8" open-end wrench onto threads.



14. Tension all cables to desired amount. It is best to start tensioning at the top and bottom cables of your panel and work in an alternating pattern towards the center of the panel (see illustration below). You may have to make two passes at this because your frame may flex as the cables are initially tensioned thus allowing the previously tensioned cables to lose tension.



HOLE SIZE RECOMMENDATIONS FOR ULTRA-TEC® LAG FITTINGS

Our recommendations are based on testing performed at The Cable Connection to achieve a balance between the greatest tensile holding strength and practical methods of installing the lag fitting.

Properties of wood can vary dramatically within the type of wood being discussed. Some wood contains imperfections or properties that would render that piece of wood “unsuitable” for use as a railing frame and may not be capable of holding the forces of tension generated by the application of tensioned cables. With those things in mind, definitive results cannot be achieved without testing of a specific piece of wood material and those results would only apply to that piece of material. The recommendations given below therefore are based on results achieved on specific pieces of wood and may not be appropriate for the wood you have used.

The Cable Connection has performed tensile testing of its installed lag-threaded hardware in a selection of wood types that are commercially available at most building materials retailers. The hole sizes listed below for the corresponding wood types are our best recommendations based on those tests.

Part Number 5/16" lag thread

PL-SFC-WP-4-1

PL-SFC-WP-6-1 & PL-LAG-CL-TE4-1

PL-LAG-CL-TE6-1

Common Redwood

7/32" or .219"

Common Douglas Fir

15/64" or .234"

Red Oak & Maple

9/32" or .281"

Other types of wood (especially harder woods) may require using a larger pilot hole drilled to one of the recommended sizes above and installing and removing a hex head lag bolt (use lag bolt size according to above chart for hardware being installed) using an impact drill or a ratchet. This will serve as a form of pre-tapping the hole in harder woods for the easier installation of the lag threaded cable hardware.



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