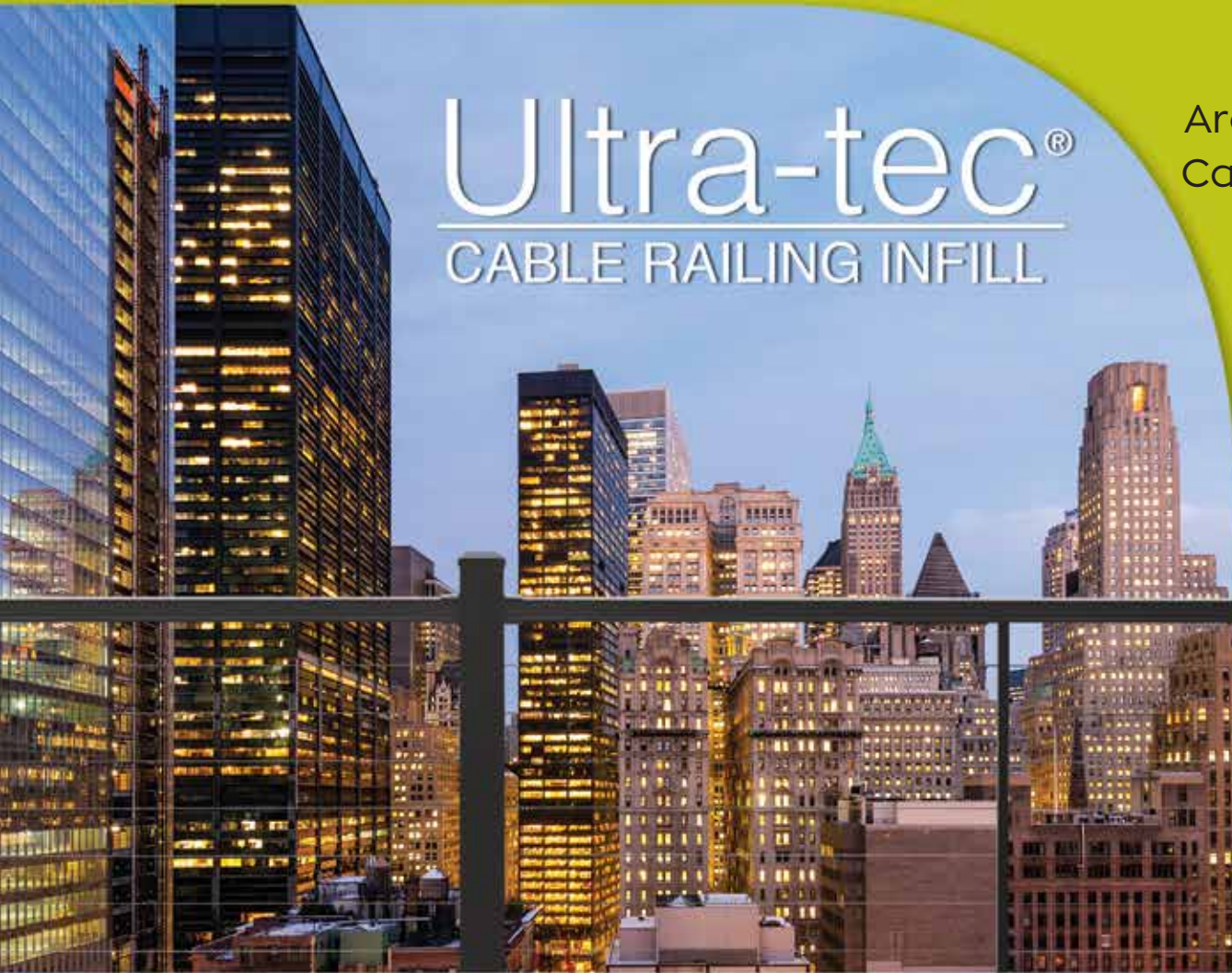


# Ultra-tec®

## CABLE RAILING INFILL

Architectural  
Cable Railing  
Products

November 1, 2017



ISO Certified  
U.S.A.  
Manufacturer

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# ULTRA-TEC® CABLE RAILING PRODUCTS

Better choices when designing a cable railing you and your clients will be proud of.

## Cable Type and Size

There are many types of cable, but when it comes to cable railing, we always recommend using 1x19 Type 316 stainless steel L/H lay strand (or cable) for railing infill because of its strength, for its diameter, its resistance to corrosion, its compatibility with our Type 316 stainless steel hardware, its commercial availability, and its affordability. The only remaining issue is what diameter to use. Typically, if it is in a private residence, either 1/8" or 3/16" is fine to use, although 3/16" will afford you some additional resistance to damage from abuse. For this reason we recommend 3/16" as a

minimum for a commercial or public installation. With very large-scale projects, sometimes 1/4" is also recommended, 5/16" and 3/8" cable (and fittings) are also available, if robust is the look you want.

Important note: 1x19 L/H lay cable is the only strand configuration that will work with swageless fittings. Most "store-bought" cable is either 7x7 or 7x19 strand. Neither are recommended for cable railing because of their elevated levels of stretch and lower breaking strengths in comparison to 1x19 construction.

## Options for How to Receive Your Cable and Fittings

Depending on the requirements of your project, there are several different ways to approach it. Below, we list the options available, and to illustrate how each differs, show you what you receive in each case. To use a single example for all options, we will illustrate what you would receive if you need a 10-foot run for wood end posts, using through-the-post Invisiware®

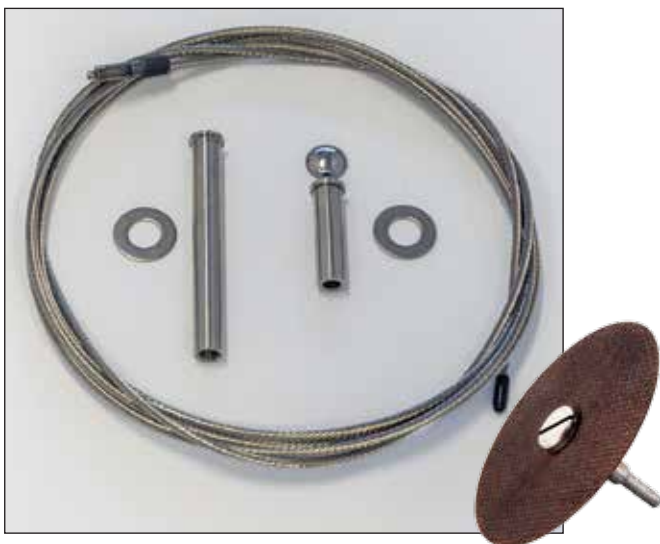
fittings. (While we are only showing what you will need for one cable run, most railings will require 10-12 sets of cable for any given run.)

We're here to assist you in determining what will work best for you. Please contact us for help!

### 1. Cut-to-Length Cables with One Factory-Swaged Fitting, One Swageless Fitting

You give us approximate field measurements for each cable run. We factory swage the tensioner to one end. A swageless non-tensioning fitting is included for you to install on the other end. The cable is delivered 3" longer than needed for each run to be trimmed to exact length onsite. For Pull-Lock® swageless fittings, we recommend using a cut-off wheel to cut the cable as closely as possible to where it exits the fitting.

This approach means you do not have to supply exact field measurements from post to post. It also means the holes drilled through the intermediate posts can be just slightly larger than the cable diameter for a nice tight fit around the cable. It also helps to reduce cable deflection.



### 2. Cut-to-Length Cables with Both Ends Factory-Swaged

You give us exact field measurements for each cable run. We cut and swage both ends of the cable to final installation length and ship them to you for installation.

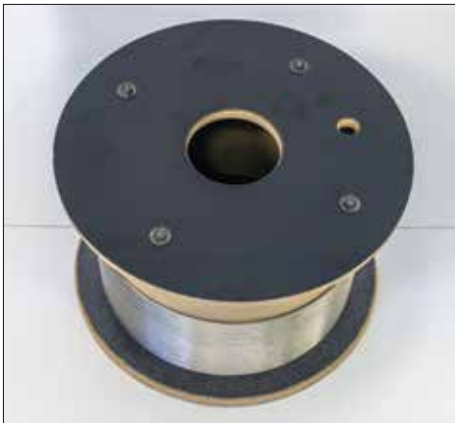
This approach allows you to use our less expensive swage-on fittings, but you don't have to do any swaging yourself. You will have to drill intermediate holes slightly larger than the smallest fitting swaged to the cable. This approach requires the least labor on your end.



### 3. Cable on a Spool, Swage-On Fittings, Swager Rental Kit

We provide you with spooled bulk cable and swage-on fittings separately, along with a swager rental kit. You then do all cutting and swaging of cables on your end.

This approach means we are only providing you with the components and the means to put them together. You can use our less expensive swage-on fittings on both ends of the cable, and you can drill the holes through your intermediate posts just slightly larger than the cable diameter for a nice tight fit around the cable. It also helps to reduce cable deflection.



### 4. Cut-to-Length Cables with One Factory-Swaged Fitting, One Fitting to Be Swaged in the Field

You give us exact field measurements for each cable run. We cut the cable to final installation length and factory swage one end to the cable. We ship you the pre-cut cable and the fitting for the other end and you swage it on in the field (either with one of our rental swagers or yours, if you own one). No further trimming necessary.

Or, you give us a longer measurement than you actually need. We cut the cable longer than needed for each run and factory swage one end to the cable. We ship you the pre-cut cable and the fitting for the other end and you trim to final length and swage the other fitting on in the field.

This approach means you can drill the holes through your intermediate posts just slightly larger than the cable diameter for a nice tight fit around the cable. It also helps to reduce cable deflection.



### 5. Cable on a Spool, Swageless Fittings

We provide you with spooled bulk cable and swageless fittings separately. You then do all cutting of cable and attaching of swageless fittings on site. We recommend Felco®-type cable cutters (the best way to cut cable) for Push-Lock® swageless fittings, and a cut-off wheel (best way to cut cable close to a fitting) for Pull-Lock® swageless fittings.

This approach allows you to assemble all your cables without any swaging whatsoever. The swageless fittings on either end of the cable are more expensive than swage-on fittings, but definitely make installation convenient. You can also drill the holes through your intermediate posts just slightly larger than the cable diameter for a nice tight fit around the cable, which helps reduce cable deflection, too.



### 6. Cable Railing Kit

These kits are available through your local building supply store or a variety of online options. They come in through-the-post and face-mounted options, from 5' to 60' in length, and in 1/8" or 3/16" cable sizes. The tensioner is factory-swaged and the other end fitting is swageless for each run. For this example, when using Pull-Lock® swageless fittings, we recommend trimming the cable to final length with a cut-off wheel. For kits with Push-Lock® swageless fittings, we recommend Felco®-type cable cutters.

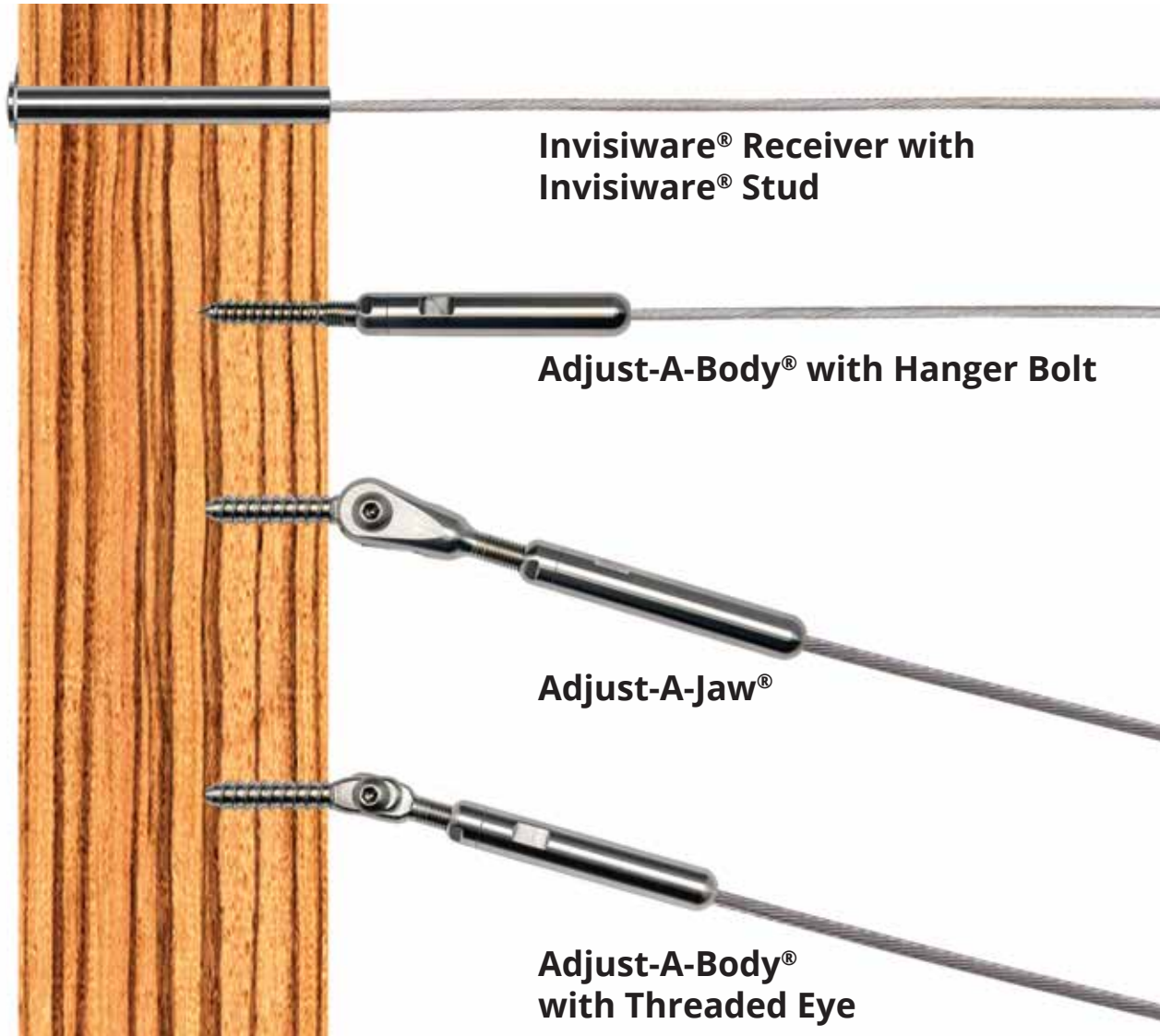
You can drill the holes through your intermediate posts just slightly larger than the cable diameter for a nice tight fit around the cable, which helps reduce cable deflection as well.

See our *Cable Railing Kit Application Guide* for available kits.



## HARDWARE FOR WOOD POSTS AND WOOD POSTS WITH SLEEVES

# SWAGED TENSIONING FITTINGS



**SWAGING REQUIRED:** These fittings must be attached with swaging equipment capable of developing proper force based on the fittings' mass. Special equipment is required.



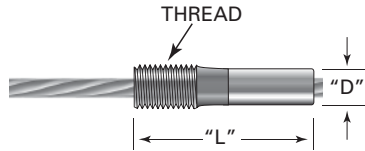
**TENSIONING DEVICE:** A fitting with this symbol is a tensioning fitting. Each individual cable must have at least one tensioning fitting in order to be properly installed and tensioned.

## Invisiware® Stud



Photo of stud before swaging.

This part is swaged onto the end of the cable and used with the Invisiware® Receiver. The threaded surface is coated with a baked-on molybdenum-based dry film lubricant, to prevent the threads from galling when tensioned.



### TYPE 316 STAINLESS STEEL — MOLY COATED

CABLE DIA.	PART NO.	"L"	THREAD	"D" DIAMETER AFTER SWAGED
1/8"	S-4	1.180"	5/16-24	.250"
3/16"	S-6	1.140"	5/16-24	.250"

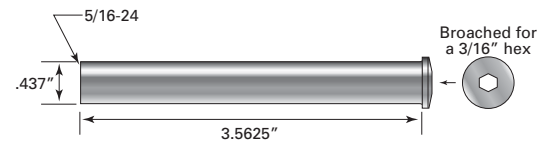
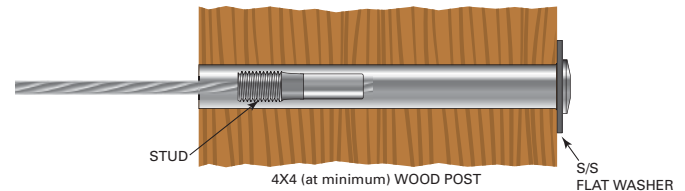
## Invisiware® Receiver with Invisiware® Stud



The Invisiware® Receiver with Invisiware® Stud combination is a concealed, swaged, tensioning, through-the-post-mounted fitting that is suitable for level or pitched runs, and is available for wood applications for 1/8" and 3/16" diameter 1x19 stainless steel cable.

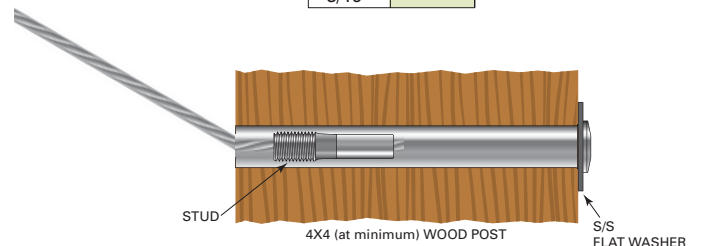
The Invisiware® Receiver with stud can be used with any other fitting on the opposite end of the run. This fitting is placed and concealed within a pre-drilled hole in the wood end post (a minimum of 3" of clearance must exist on the back side of the post to allow installation of the Receiver). We recommend placing a stainless steel flat washer between the fitting shoulder and the mating surface of the wood post (washer sold separately, see bottom of page). The stud is swaged onto one end of the cable and is inserted and threaded into the Receiver installed in the end post. Tension is created by rotating the Receiver (with a hex wrench inserted into its broached end) and drawing the stud into the Receiver.

This fitting can also be used in pitched applications using the same horizontally drilled method for 4x4 wood posts. The same method works for larger posts by installing a post protector tube on the cable exit-to-pitch side of your wood end post (post protector tube sold separately, see below). This fitting is commonly paired with a Pull-Lock® on the opposite end of the run. The Receiver/Pull-Lock® combination is a mainstay of our popular 1/8" and 3/16" kit offerings.



### TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.
1/8"	R-6-62
3/16"	



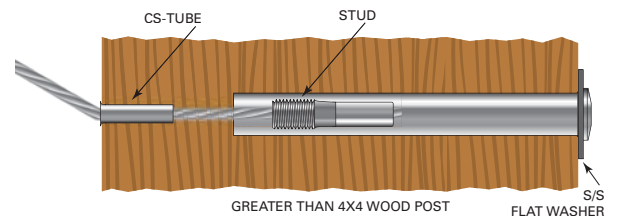
## Stainless Steel Post Protector Tube



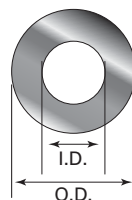
To keep the cable from biting in the wood, the post protector tube is inserted into a wood post where the cable enters/exits the post at an angle.

### TYPE 316 STAINLESS STEEL

CABLE DIA.	TUBE LENGTH	PART NO.
1/8", 3/16"	3/4"	CS-TUBE



## 7/16SAE Stainless Steel Washer



### TYPE 316 STAINLESS STEEL

PART NO.	WASHER O.D.	WASHER I.D.	USED WITH HARDWARE FOR CABLE DIAMETERS
7/16SAE	59/64"	31/64"	1/8" and 3/16"

## Adjust-A-Body® with Hanger Bolt

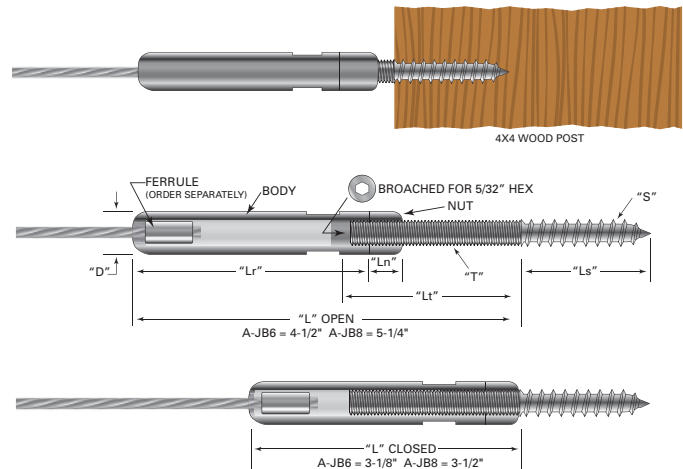


The Adjust-A-Body® with Hanger Bolt is a swaged, tensioning, face-of-the-post-mounted fitting that is recommended for level runs only. This fitting is available for 1/8", 3/16", and 1/4" diameter 1x19 stainless steel cable.

The Adjust-A-Body® with Hanger Bolt can be used with any fitting on the opposite end of the run. The lag thread of the hanger bolt portion of the fitting is driven into a pre-drilled hole in the wood end post. The cable is retained within the body portion of the fitting by a ferrule swaged onto the end of the cable. The lock nut is installed all the way onto the hanger bolt first, followed by the body, which is secured onto the hanger bolt, creating tension on the cable. Once sufficient tension is achieved, the lock nut is secured against the end of the body to prevent the fitting from loosening.

We do not recommend this fitting being installed in pitched applications because it would require drilling all of the holes in the end post at an angle. While this is possible with special fixtures, if it is not done correctly the end result would be visually unacceptable.

Use of this fitting requires an appropriately sized **ferrule** that is swaged onto the cable, which must be purchased separately (see information at bottom of page).



TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	USE WITH FERRULE NO.	"S"	"T" THREAD	"Ls"	"Lt"	"Ln"	"Lr"	"D" DIA.	MINIMUM TIMBER SIZE
1/8"	A-JB6	F-4	5/16"	5/16-24 LH	1.50"	2.00"	.375"	2.75"	.490"	4 x 4
3/16"	A-JB6	F-6	5/16"	5/16-24 LH	1.50"	2.00"	.375"	2.75"	.490"	
1/4"	A-JB8	F-8	7/16"	7/16-20 LH	2.00"	2.50"	.500"	3.00"	.617"	

## Adjust-A-Body® with Extended Length Hanger Bolt

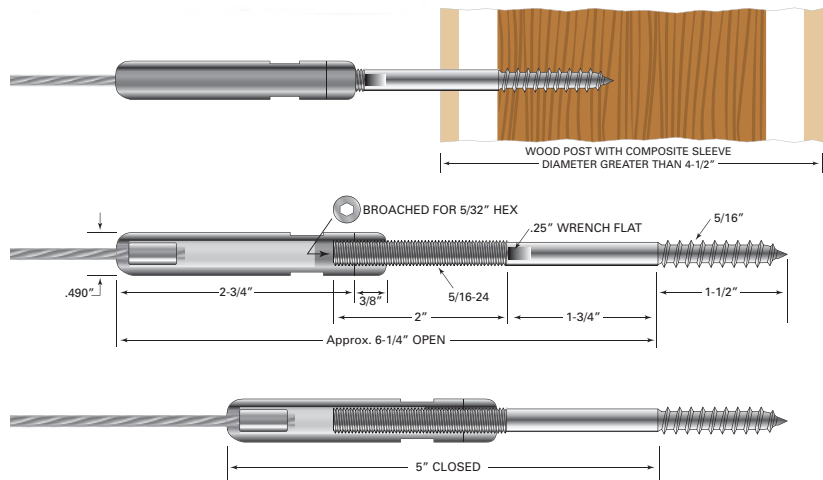


This fitting is identical to the Adjust-a-Body® with Hanger Bolt shown above except it is used for sleeved posts with an outside diameter of greater than 4-1/2". The extended length hanger bolt is 3" long, designed to reach past sleeves and drywall to find the wood post or frame underneath.

Use of this fitting requires an appropriately sized **ferrule** that is swaged onto the cable, which must be purchased separately (see information below).

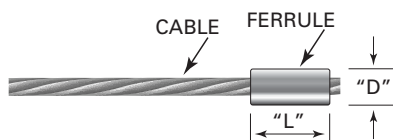
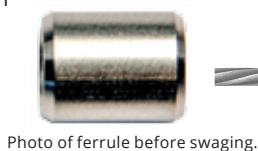
TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	USE WITH FERRULE NO.
1/8"	A-JB6-L	F-4
3/16"		F-6



## Ferrule

The ferrule is used to retain an Adjust-A-Jaw®, Adjust-A-Body® or a Fixed Jaw onto cable.



TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	AFTER SWAGED "D" DIA.	"L" LENGTH
1/8"	F-4	.250"	.61"
3/16"	F-6	.250"	.56"
1/4"	F-8	.375"	.70"
5/16"	F-10	.500"	.73"
3/8"	F-12	.500"	.71"



## Adjust-A-Jaw® and Lag Eye/Extended Length Lag Eye



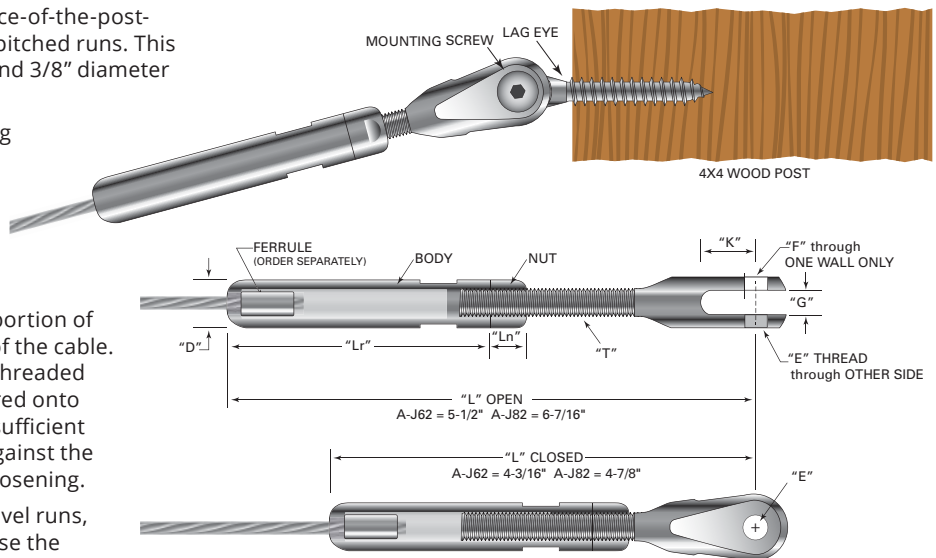
The Adjust-A-Jaw® is a swaged, tensioning, face-of-the-post-mounted fitting that can be used on level or pitched runs. This fitting is available for 1/8", 3/16", 1/4", 5/16", and 3/8" diameter 1x19 stainless steel cable.

The Adjust-A-Jaw® can be used with any fitting on the opposite end of the run. This fitting attaches to the wood end post by installing a Lag Eye into a pre-drilled hole in the end post and attaching the threaded jaw portion of the fitting to the **lag eye** with a button head **screw** (see information at bottom of page). The cable is retained within the body portion of the fitting by a ferrule swaged onto the end of the cable. The lock nut is installed all the way onto the threaded jaw first, followed by the body, which is secured onto the jaw, creating tension on the cable. Once sufficient tension is achieved, the lock nut is secured against the end of the body to prevent the fitting from loosening.

While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the threaded jaw portion of the fitting pivots at the lag eye. The post hole for the lag eye is drilled level, making installation easy.

Use of this fitting requires an appropriately sized **ferrule** that is swaged onto the cable, which must be purchased separately (see information on page 8).

For sleeved posts with an outside diameter of greater than 4-1/2", use the extended length lag eye. The extended length lag is 3" long, designed to reach past sleeves and drywall to find the wood post or frame underneath. Extended lag eye and screw sold separately (see information below).



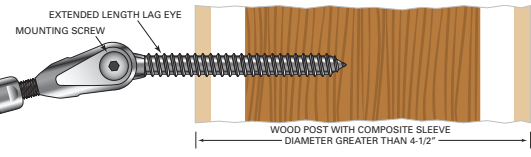
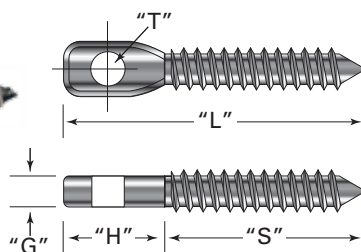
TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	USE WITH FERRULE NO.	USE WITH SCREW NO.	USE WITH LAG EYE NO.	"D" DIA.	"E" THREAD	"F" DIA.	"G"	"K"	"Ln"	"Lr"	"T" THREAD
1/8"	A-J62	F-4	SC-6	LE-6	.490"	1/4-28	.260"	.260"	.56"	.375"	2.75"	5/16-24 LH
3/16"	A-J62	F-6	SC-6	LE-6	.490"	1/4-28	.260"	.260"	.56"	.375"	2.75"	5/16-24 LH
1/4"	A-J82	F-8	SC-8	LE-8	.617"	3/8-24	.390"	.313"	.75"	.500"	3.00"	7/16-20 LH
5/16"	A-J122	F-10	SC-8	LE-8	.744"	3/8-24	.390"	.348"	.87"	.620"	4.50"	9/16-18
3/8"	A-J122	F-12	SC-8	LE-8	.744"	3/8-24	.390"	.348"	.87"	.620"	4.50"	9/16-18

## Lag Eye and Extended Length Lag Eye



A convenient, easy-to-install means for attaching an Adjust-A-Body® with Threaded Eye, Adjust-A-Jaw®, Fixed Jaw, or Push-Lock® with Threaded Eye to a wood post.



TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	"G"	"H"	"T"	"S"	"L"	MIN. NOMINAL TIMBER SIZE
1/8"	LE-6	.232"	.735"	.256"	1.50"	2.23"	4x4
3/16"							
1/4"							
5/16"	LE-8	.290"	1.20"	.393"	2.00"	3.55"	4x4
3/8"							

Extended Length Lag Eyes with 3-inch Thread

TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	"G"	"H"	"T"	"S"	"L"	MIN. NOMINAL TIMBER SIZE
1/8"	LE-6L	.232"	.780"	.256"	3.00"	3.94"	4x4
3/16"							

## Mounting Screw

Stainless steel socket-head screws for mounting an Adjust-A-Body® with Threaded Eye, Adjust-A-Jaw®, Fixed Jaw, or Push-Lock® with Threaded Eye.



TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	THREAD
1/8", 3/16"	SC-6	1/4-28
1/4", 5/16", 3/8"	SC-8	3/8-24

## Adjust-A-Body® with Threaded Eye and Lag Eye

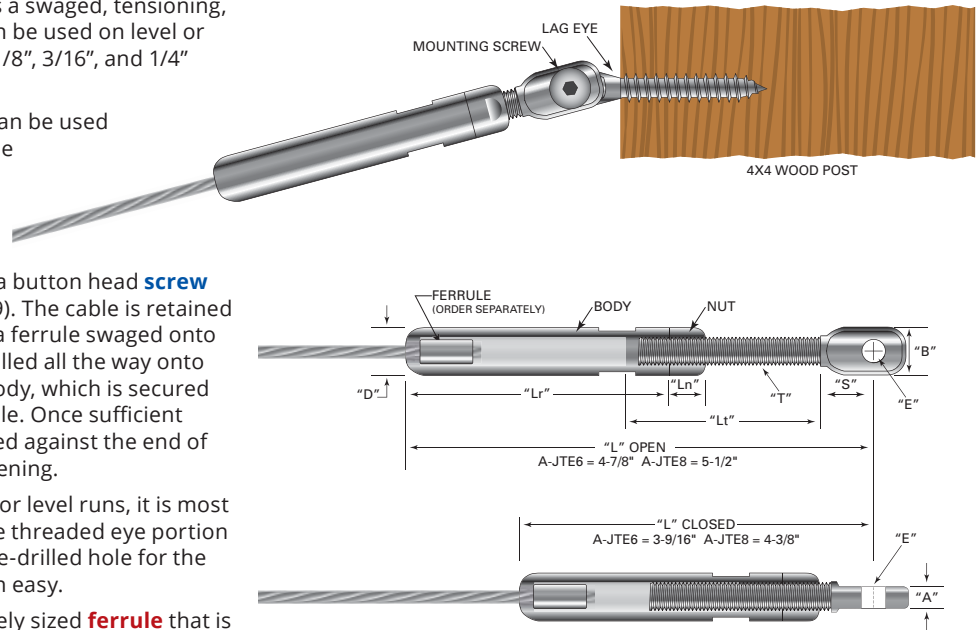


The Adjust-A-Body® with Threaded Eye is a swaged, tensioning, face-of-the-post-mounted fitting that can be used on level or pitched runs. This fitting is available for 1/8", 3/16", and 1/4" diameter 1x19 stainless steel cable.

The Adjust-A-Body® with Threaded Eye can be used with any fitting on the opposite end of the run. This fitting attaches to the wood end post by installing a Lag Eye into a pre-drilled hole in the end post and attaching the threaded eye portion of the fitting to the **lag eye** with a button head **screw** (lag eye and screw information on page 9). The cable is retained within the body portion of the fitting by a ferrule swaged onto the end of the cable. The lock nut is installed all the way onto the threaded eye first, followed by the body, which is secured onto the eye, creating tension on the cable. Once sufficient tension is achieved, the lock nut is secured against the end of the body to prevent the fitting from loosening.

While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the threaded eye portion of the fitting pivots at the lag eye. The pre-drilled hole for the lag eye is drilled level, making installation easy.

Use of this fitting requires an appropriately sized **ferrule** that is swaged onto the cable, which must also be purchased separately (see ferrule information on page 8).



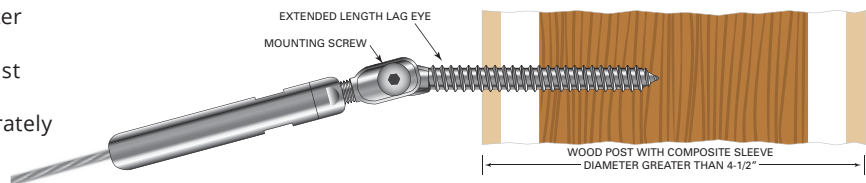
TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	USE WITH FERRULE NO.	USE WITH SCREW NO.	USE WITH LAG EYE NO.	"E" THREAD	"A"	"B"	"S"	"T" THREAD	"Lt"	"Ln"	"Lr"	"D" DIA.
1/8"	A-JTE6	F-4	SC-6	LE-6	1/4-28	.233"/.229"	.500"	.44"	5/16-24 LH	2.00"	.375"	2.75"	.490"
3/16"	A-JTE6	F-6	SC-6	LE-6	1/4-28	.233"/.229"	.500"	.44"	5/16-24 LH	2.00"	.375"	2.75"	.490"
1/4"	A-JTE8	F-8	SC-8	LE-8	3/8-24	.295"/.285"	.844"	.874"	7/16-20 LH	2.50"	.500"	3.00"	.617"

## Adjust-A-Body® with Threaded Eye and Extended Length Lag Eye



For sleeved posts with an outside diameter of greater than 4-1/2", use the extended length lag eye. The extended length lag is 3" long, designed to reach past sleeves and drywall to find the wood post or frame underneath. Extended lag eye and screw sold separately (see information on page 9).

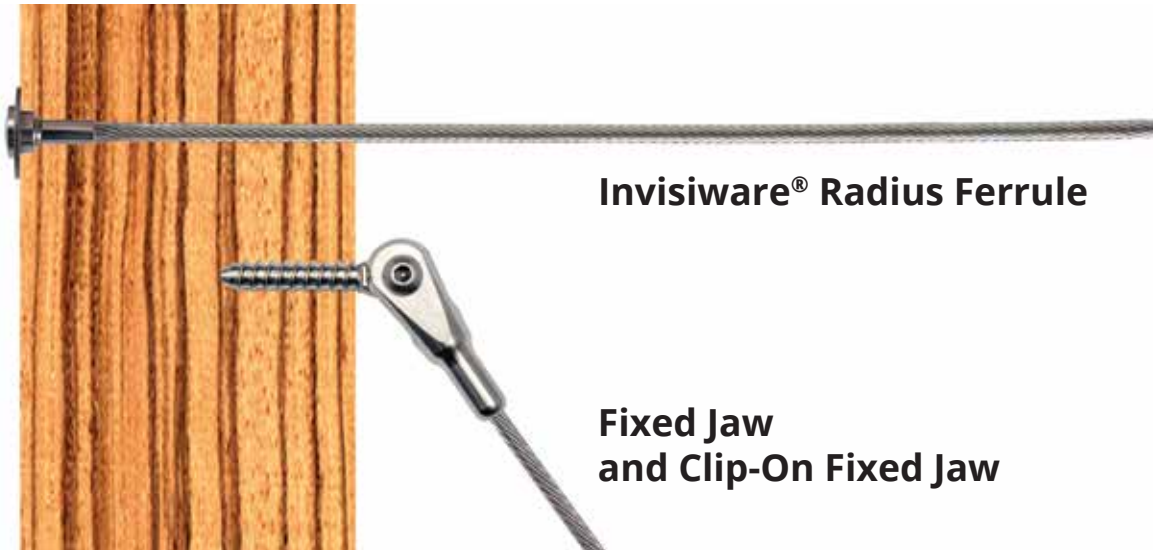


TYPE 316 STAINLESS STEEL

CABLE DIA.	USE WITH SCREW NO.	USE WITH EXTENDED LENGTH LAG EYE
1/8", 3/16"	SC-6	LE-6L

## HARDWARE FOR WOOD POSTS

# SWAGED NON-TENSIONING FITTINGS



**Invisiware® Radius Ferrule**

**Fixed Jaw  
and Clip-On Fixed Jaw**

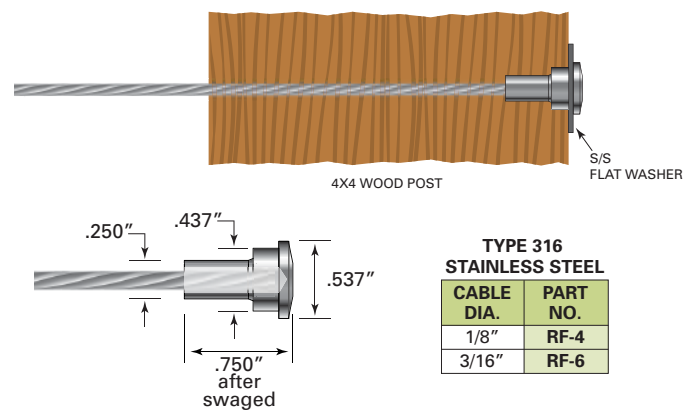
## Invisiware® Radius Ferrule



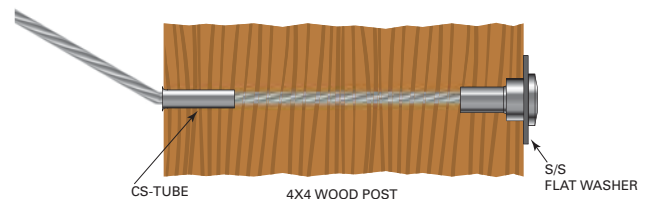
The Invisiware® Radius Ferrule is a concealed, swaged, non-tensioning, through-the-post-mounted fitting that is suitable for pitched or level runs. This fitting is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Invisiware® Radius Ferrule must be used with a tensioning fitting on the opposite end of the run. It is the least expensive through-the-post fitting that we offer. This fitting has a head shaped to appear like the Invisiware® Receiver from the outside of the post (like the Receiver, the Radius Ferrule is concealed within the post). For these two reasons it is recommended to use the Invisiware® Radius Ferrule on one end of your cable run and an Invisiware® Receiver with stud on the opposite end whenever practical to do so. The only reason not to consider this fitting as your non-tensioning end would be if you preferred to use a swageless solution.

This fitting installs into a hole drilled through the face of the post (to accommodate the cable at minimum) and a hole through the back side of the post to accommodate the fitting. It also requires that you have at least 2" of clearance on the back side of your end post so you have enough workspace to feed the rest of the cable through the post prior to pulling the Radius Ferrule into its final position. (The cable would likely be attached to the Radius Ferrule prior to installing it through the back side of the post). We recommend using a stainless steel flat washer between the shoulder of the fitting and the mating surface of the wood post (washer sold separately, see page 7).



You can use this fitting on a pitched application by installing a post protector tube into the face of the post where the cable exits at an angle. The post protector tube protects the face of the post from abrasion and furrowing as the cable is tensioned. The post protector tube is sold separately (see page 7).



## Fixed Jaw with Lag Eye



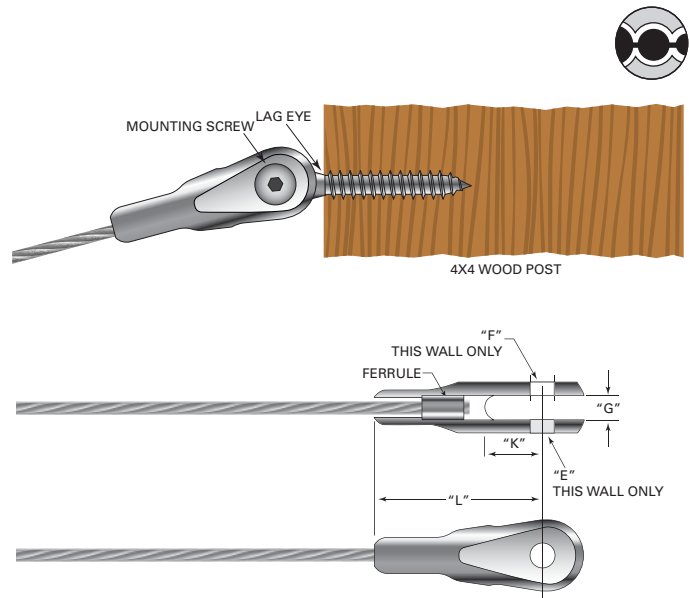
The Fixed Jaw is an exposed, swaged, non-tensioning, face-of-the-post-mounted fitting that is suitable for use on level or pitched runs and is available for 1/8", 3/16", 1/4", 5/16", and 3/8" diameter 1x19 stainless steel cable.

The Fixed Jaw must be used with a tensioning fitting on the opposite end of the run. This fitting attaches to the wood end post by installing a Lag Eye into a pre-drilled hole in the end post and attaching the Fixed Jaw to the **lag eye** with a button head **screw** (lag eye and screw information on page 9). The cable is retained within the Fixed Jaw by a ferrule swaged onto the end of the cable.

While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the Fixed Jaw pivots at the lag eye. The pre-drilled hole for the lag eye is drilled level, making installation easy.

Use of this fitting requires an appropriately sized **ferrule** that is swaged onto the cable, which must also be purchased separately (see ferrule information on page 8).

This fitting was designed to be compatible in appearance to the Adjust-A-Jaw® tensioning fitting.



TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	USE WITH FERRULE NO.	USE WITH SCREW NO.	USE WITH LAG EYE NO.	"E" THREAD	"F" DIA.	"G"	"K"	"L"
1/8"	F-J62	F-4	SC-6	LE-6	1/4-28	.260"	.260"	.56"	1.75"
3/16"	F-J62	F-6	SC-6	LE-6	1/4-28	.260"	.260"	.56"	1.75"
1/4"	F-J82	F-8	SC-8	LE-8	3/8-24	.390"	.313"	.75"	2.12"
5/16"	F-J122	F-10	SC-8	LE-8	3/8-24	.390"	.348"	.87"	2.25"
3/8"	F-J122	F-12	SC-8	LE-8	3/8-24	.390"	.348"	.87"	2.25"

## Clip-On Fixed Jaw with Lag Eye

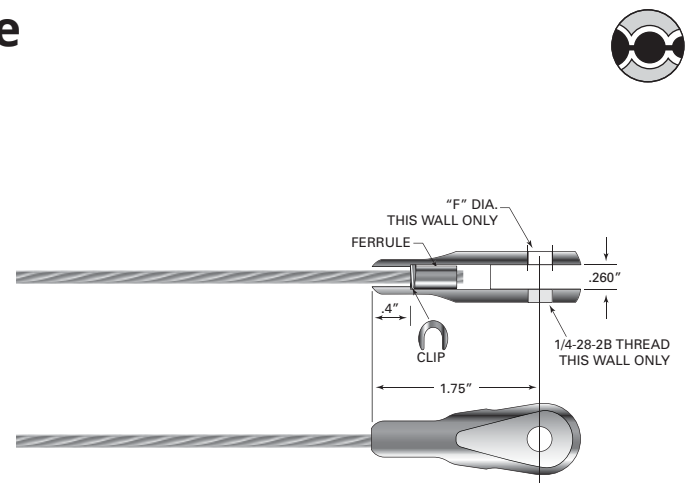


The Clip-On Fixed Jaw is externally a duplicate of the Fixed Jaw and is only available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Clip-On Fixed Jaw was created for applications that called for factory swaged fittings on both ends of the cable, without requiring over-sized holes through the intermediate posts (so an entire Fixed Jaw could pass through). This fitting accomplishes that with a .250" diameter ferrule that is pre-swaged to the cable. Once the cable with just a ferrule swaged to it is run through the intermediate posts to the end post to which it will attach, the jaw is slipped onto the cable over the ferrule and the clip installed at the ferrule. The jaw then slides back against the clip, which prevents the fitting from coming off the cable.

This fitting attaches to the wood end post by installing a Lag Eye into a pre-drilled hole in the end post and attaching the Clip-On Fixed Jaw to the **lag eye** with a button head **screw**. Lag eye and screw sold separately (see lag eye and screw information on page 9).

Use of this fitting requires an appropriately sized **ferrule** that is swaged onto the cable, which must also be purchased separately (see ferrule information on page 8).



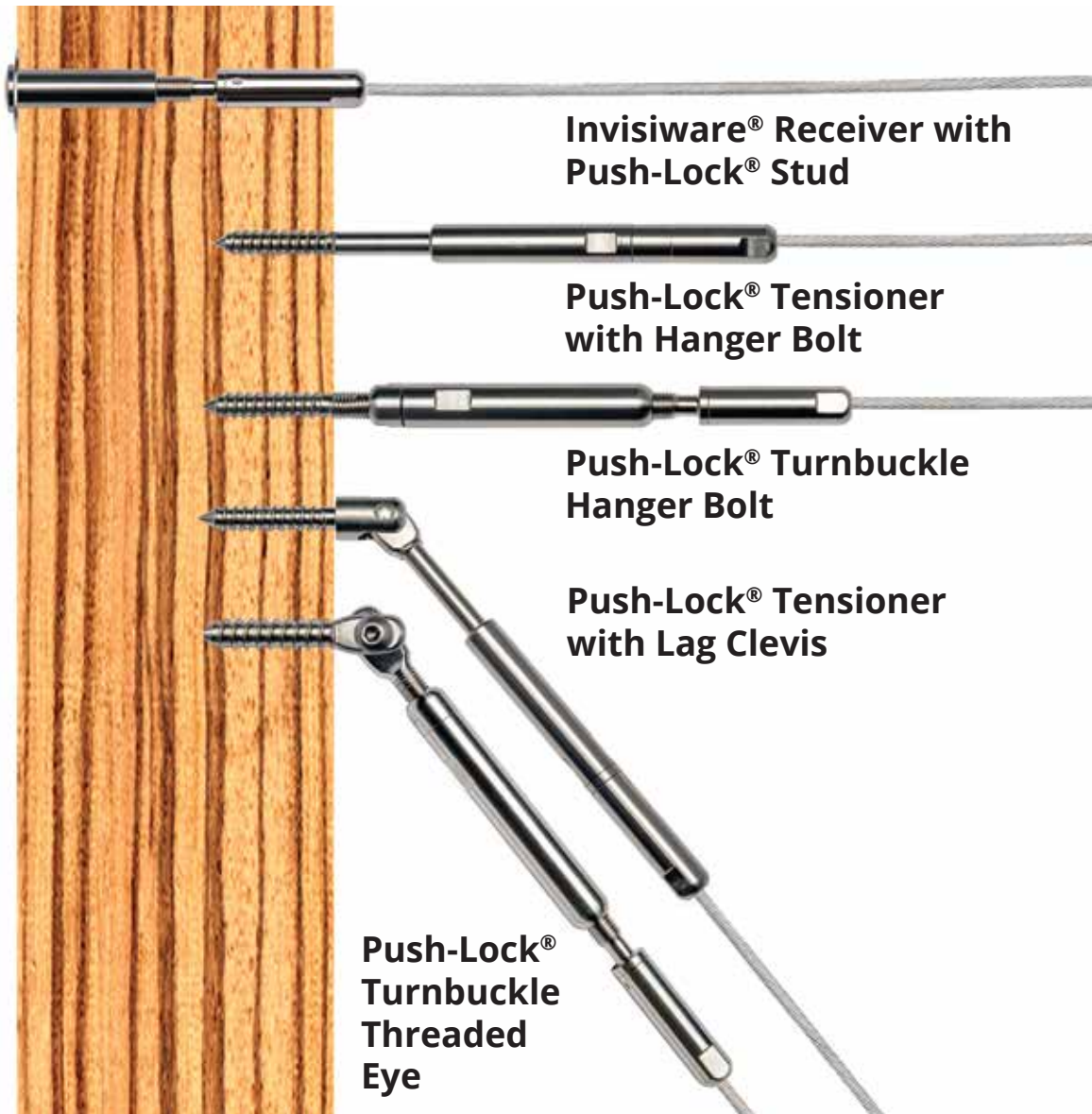
TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	USE WITH FERRULE NO.	USE WITH SCREW NO.	USE WITH LAG EYE NO.	"F" DIA.	"G"	"K"	"L"
1/8"	F-JC2-4	F-4	SC-6	LE-6	.260"	.260"	.56"	1.75"
3/16"	F-JC2-6	F-6	SC-6	LE-6	.260"	.260"	.56"	1.75"

Reference Fixed Jaw schematic above for call-outs.

## HARDWARE FOR WOOD POSTS

# SWAGELESS TENSIONING FITTINGS



**SWAGELESS FITTING:** These fittings attach manually with no special tools required. The cable attaches to the fitting via our Push-Lock® locking wedge system. Push- and Pull-Lock® fittings are made entirely of stainless steel components, most of them Type 316.



**TENSIONING DEVICE:** A fitting with this symbol is a tensioning fitting. Each individual cable must have at least one tensioning fitting in order to be properly installed and tensioned.

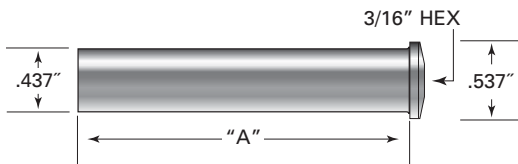
## Invisiware® Receiver with Push-Lock® Stud



The Invisiware® Receiver with Push-Lock® Stud combination is an exposed, swageless, tensioning, through-the-post-mounted fitting that is suitable for level runs only, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

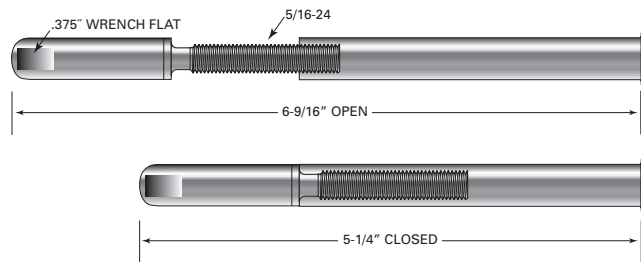
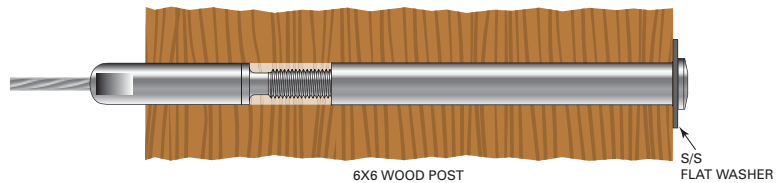
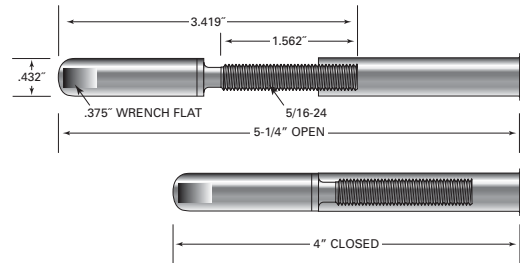
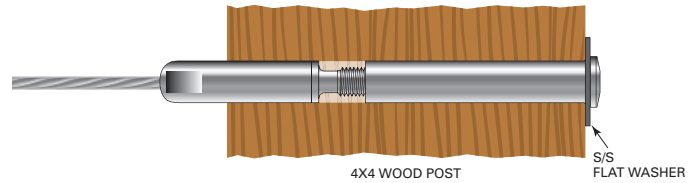
The Invisiware® Receiver with Push-Lock® Stud can be used with any fitting on the opposite end of the run. This fitting requires that a minimum of 2-1/2" of clearance exists on the back side of the end post to install the Receiver into the post. We recommend using a stainless steel flat washer between the fitting shoulder and the mating surface of your wood post (washer sold separately, see page 7). The cable attaches to the Push-Lock® Stud fitting via our Push-Lock® locking wedge system which requires no special tools. This fitting was created for applications requiring substantial take-up and a preference for a swageless tensioning fitting.

We do not recommend this fitting being installed in pitched applications because it would require drilling all of the holes in the end post at an angle. While this is possible with special fixtures, if it is not done correctly the end result would be visually unacceptable.



TYPE 316 STAINLESS STEEL

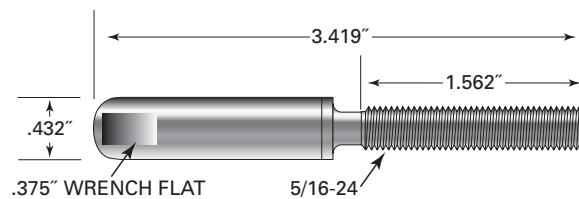
POST SIZE	USE WITH RECEIVER NO.	"A" LENGTH
4"x4"	R-6-42	2.30"
4"x6" or 6"x6"	R-6-62	3.56"



## Push-Lock® Stud



The Push-Lock® Stud attaches manually with no special tools required. The cable attaches to the fitting via our Push-Lock® locking wedge system. Push- and Pull-Lock® fittings are made entirely of stainless steel components, most of them Type 316.



CABLE DIA.	PART NO.
1/8"	PLST-4
3/16"	PLST-6

## Push-Lock® Tensioner with Hanger Bolt

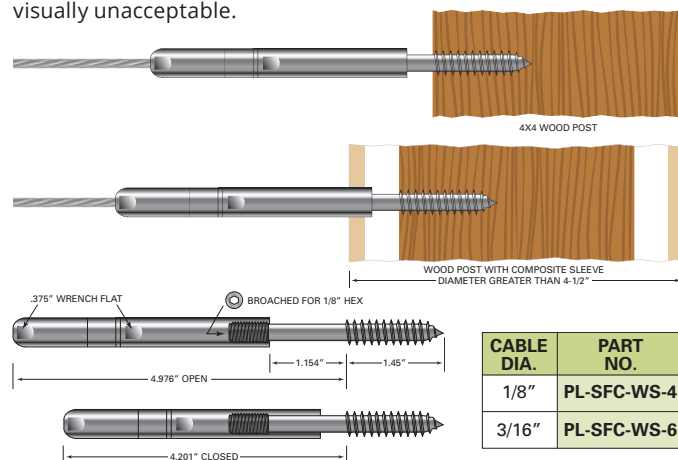


New for 2016 – the Push-Lock® Tensioner with Hanger Bolt is an exposed, swageless, tensioning, face-of-the-post-mounted fitting that is suitable for level runs only, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable. It is a more compact design than our swaged Adjust-A-Body® fittings.

The Push-Lock® Tensioner with Hanger Bolt can be used with any fitting on the opposite end of the run. This fitting consists of two separate pieces: the hanger bolt and Push-Lock® tensioning body. The hanger bolt is driven into a pre-drilled hole in face of the wood end post. The cable attaches to the body via our Push-Lock® locking wedge system which requires no special tools. The machine thread of the hanger bolt threads into the body, connecting the two pieces. Tension is created by securing the post-side segment of the body onto the machine threads while preventing the cable-side segment of the body from turning. The Push-Lock® Tensioner with Hanger Bolt can be used with sleeved posts as well.

We do not recommend this fitting being installed in pitched applications because it would require drilling all of the holes in

the end post at an angle. While this is possible with special fixtures, if it is not done correctly the end result would be visually unacceptable.



## Push-Lock® Turnbuckle Hanger Bolt Push-Lock® Turnbuckle Extended Length Hanger Bolt

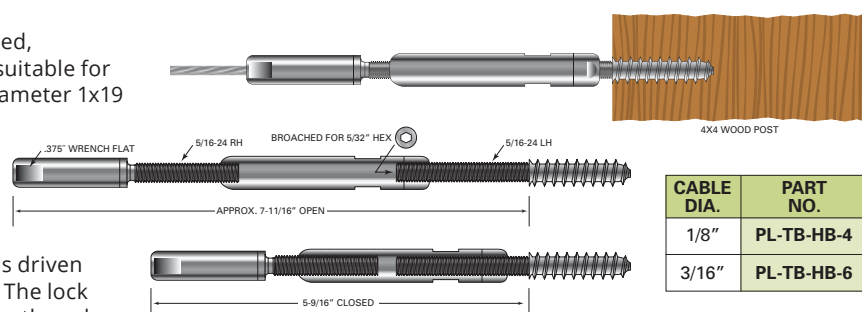


The Push-Lock® Turnbuckle Hanger Bolt is an exposed, swageless, tensioning, face-mounted fitting that is suitable for level runs only, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

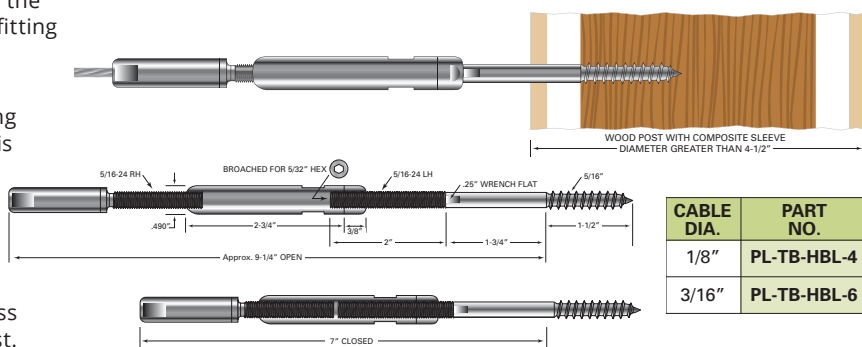
The Push-Lock® Turnbuckle Hanger Bolt can be used with any fitting on the opposite end of the run. This fitting consists of four separate pieces: the hanger bolt, the body, the lock nut, and the Push-Lock® Stud. The lag thread of the hanger bolt is driven into a pre-drilled hole in the face of wood end post. The lock nut is installed all the way onto the exposed machine thread of the hanger bolt first, followed by the body. The Push-Lock® Stud threads into the body, and the cable attaches to the stud fitting via our Push-Lock® locking wedge system which requires no special tools. Tension is created by using the body as a turnbuckle. Once sufficient tension is achieved, the lock nut is secured against the body to prevent the fitting from loosening.

We do not recommend this fitting being installed in pitched applications because it would require drilling all of the holes in the end post at an angle. While this is possible with special fixtures, if it is not done correctly the end result would be visually unacceptable.

The most likely application for this fitting would be when substantial take-up is required, AND there is a preference for a swageless fitting, AND there is less than 2-1/2" of space available in back of the end post.



For sleeved posts with an outside diameter of greater than 4-1/2", use the Push-Lock® Turnbuckle with Extended Length Hanger Bolt. The extended length hanger bolt is designed to reach past sleeves and drywall to find the wood post or frame underneath.

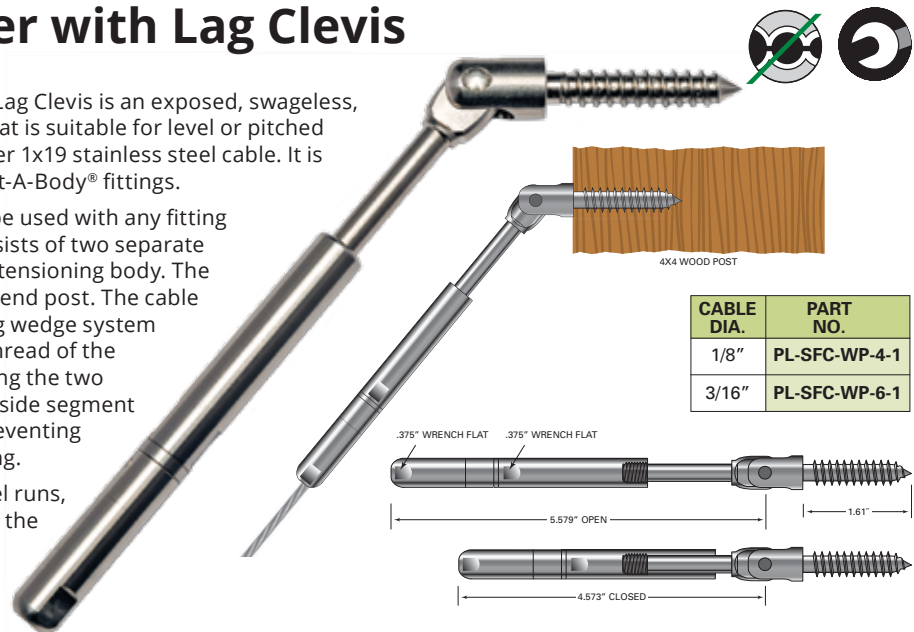


## Push-Lock® Tensioner with Lag Clevis

New for 2016 – the Push-Lock® Tensioner with Lag Clevis is an exposed, swageless, tensioning, face-of-the-post-mounted fitting that is suitable for level or pitched runs, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable. It is a more compact design than our swaged Adjust-A-Body® fittings.

The Push-Lock® Tensioner with Lag Clevis can be used with any fitting on the opposite end of the run. This fitting consists of two separate pieces: the articulating lag and the Push-Lock® tensioning body. The lag is driven into a pre-drilled hole in the wood end post. The cable attaches to the body via our Push-Lock® locking wedge system which requires no special tools. The machine thread of the articulating lag threads into the body, connecting the two pieces. Tension is created by securing the post-side segment of the body onto the machine threads while preventing the cable-side segment of the body from turning.

While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the threaded eye portion of the fitting pivots at the lag. The pre-drilled hole for the lag is drilled level, making installation easy.



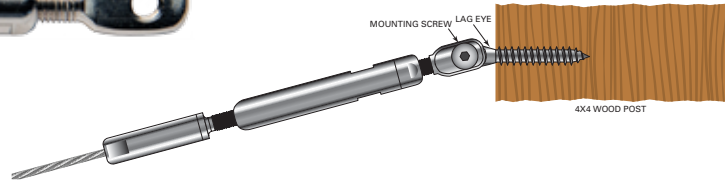
CABLE DIA.	PART NO.
1/8"	PL-SFC-WP-4-1
3/16"	PL-SFC-WP-6-1

## Push-Lock® Turnbuckle Threaded Eye and Lag Eye



The Push-Lock® Turnbuckle Threaded Eye is an exposed, swageless, tensioning, face-of-the-post-mounted fitting that is suitable for level or pitched runs, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

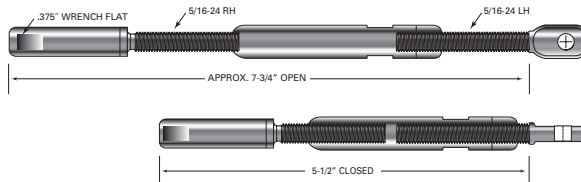
The Push-Lock® Turnbuckle Threaded Eye can be used with any fitting on the opposite end of the run. This fitting consists of four separate pieces: the threaded eye, the body, the lock nut, and the Push-Lock® Stud. This fitting attaches to the wood end post by installing a Lag Eye into a pre-drilled hole in the end post and attaching the threaded eye portion of the fitting to the **lag eye** with a button head **screw** (see lag eye and screw information on page 9). The lock nut is installed all the way onto the exposed machine thread of the threaded eye first, followed by the body. The Push-Lock® Stud threads into the body, and the cable attaches to the stud fitting via our Push-Lock® locking wedge system which requires no special tools. Tension is created by using the body as a turnbuckle.



Once sufficient tension is achieved, the lock nut is secured against the body to prevent the fitting from loosening.

While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the threaded eye portion of the fitting pivots at the lag eye. The post hole for the lag eye is drilled level, making installation easy.

The most likely application for this fitting would be when substantial take-up is required on a pitched application, AND there is a preference for a swageless fitting, AND there is less than 2-1/2" of space available in back of the end post.

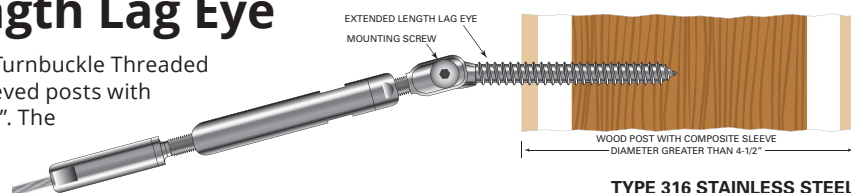


CABLE DIA.	PART NO.	USE WITH SCREW NO.	USE WITH LAG EYE NO.
1/8"	PL-TB-TE-4	SC-6	LE-6
3/16"	PL-TB-TE-6	SC-6	LE-6

## Push-Lock® Turnbuckle Threaded Eye and Extended Length Lag Eye

This fitting is identical to the Push-Lock® Turnbuckle Threaded Eye shown above except it is used for sleeved posts with an outside diameter of greater than 4-1/2". The extended length lag is 3" long, designed to reach past sleeves and drywall to find the wood post or frame underneath.

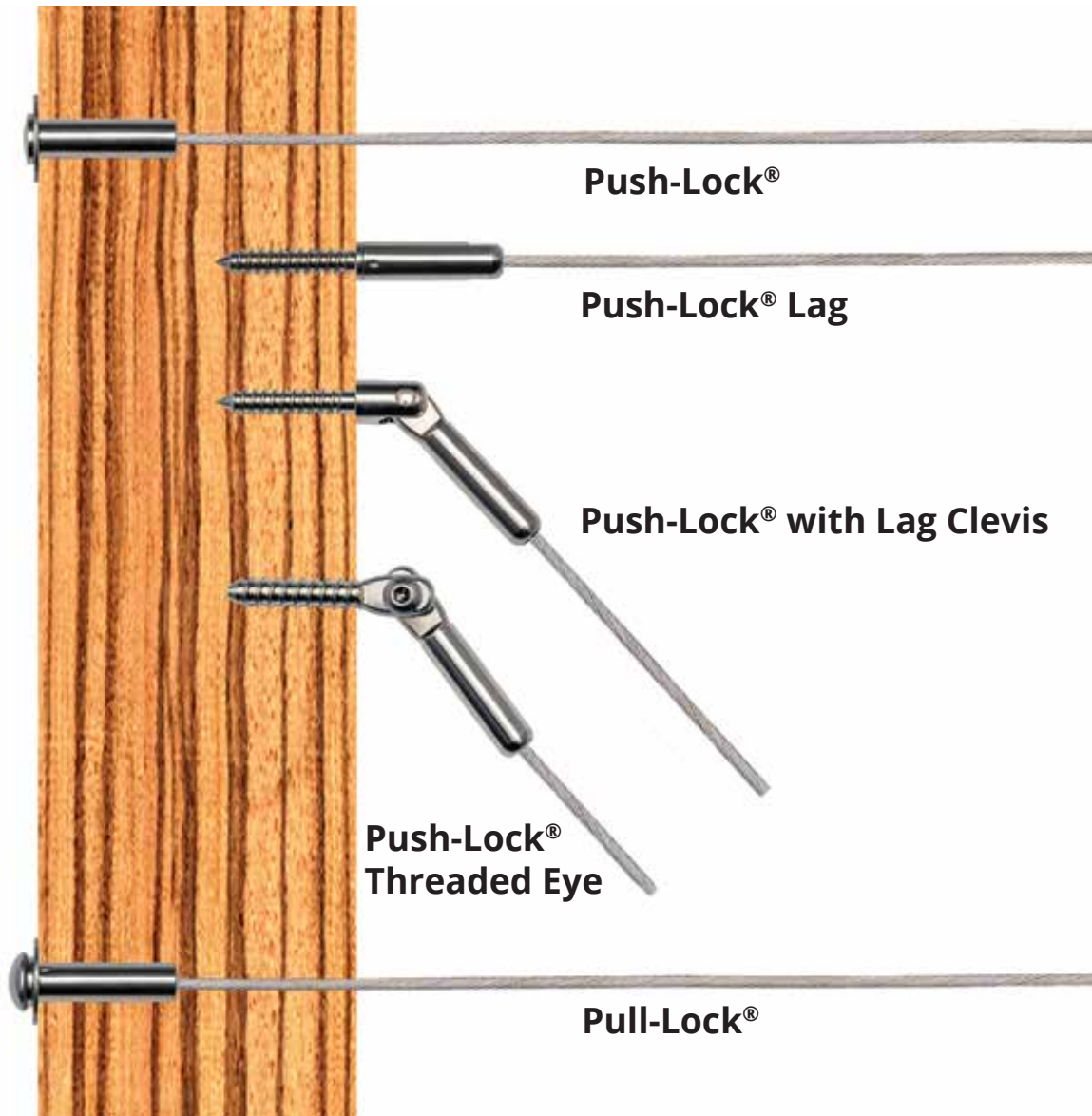
**Lag eye** and **screw** sold separately, see information on page 9.



TYPE 316 STAINLESS STEEL			
CABLE DIA.	USE WITH SCREW NO.	USE WITH EXTENDED LENGTH LAG EYE	
1/8", 3/16"	SC-6	LE-6L	

## HARDWARE FOR WOOD POSTS

# SWAGELESS NON-TENSIONING FITTINGS



**SWAGELESS FITTING:** These fittings attach manually with no special tools required. The cable attaches to the fitting via our Push-Lock® locking wedge system. Push- and Pull-Lock® fittings are made entirely of stainless steel components, most of them Type 316.

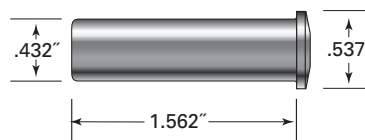
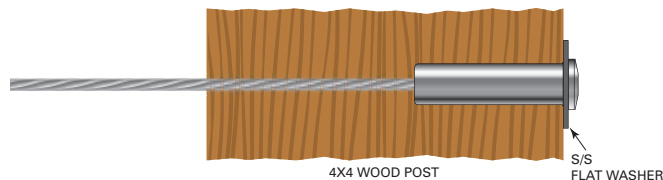
## Push-Lock®



The Push-Lock® is a concealed, swageless, non-tensioning, through-the-post-mounted fitting that is suitable for use on level runs only, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Push-Lock® must be used with a tensioning fitting on the opposite end of the run. This fitting is installed into a pre-drilled hole in the end post. Using the Push-Lock® fitting on level runs requires that a minimum of 1-1/2" of clearance exists on the back side of the end post (to install the fitting through the back side of the post). It is also recommended that a stainless steel flat washer be installed between the shoulder of the fitting and the mating surface of the wood post (washer sold separately, see page 7). The cable attaches to the fitting via our Push-Lock® locking wedge system which requires no special tools.

This fitting is made to look similar to the Invisiware® Receiver from the exterior of the post, so it is recommended to use a Receiver with stud on the opposite end whenever practical to maintain a consistent look.



CABLE DIA.	PART NO.
1/8"	PL-4-12
3/16"	PL-6-12

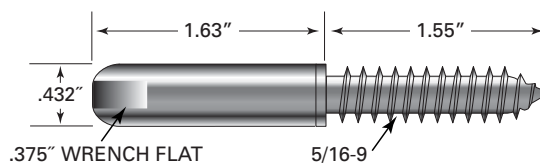
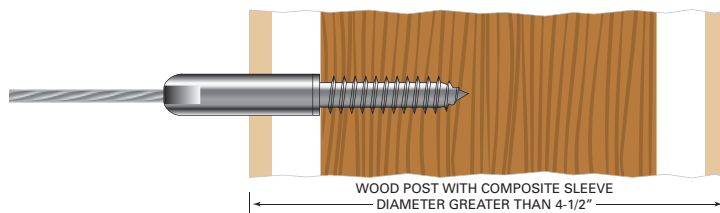
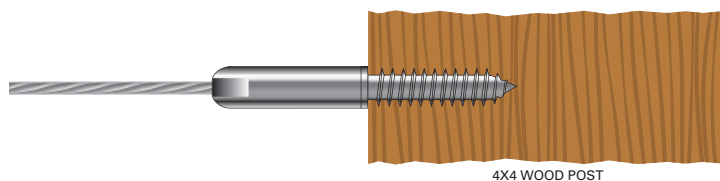
## Push-Lock® Lag



New for 2016 – the Push-Lock® Lag fitting is an exposed, swageless, non-tensioning, face-of-the-post-mounted fitting that is suitable for use on level runs only, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Push-Lock® Lag must be used with a tensioning fitting on the opposite end of the run. This fitting is installed into a pre-drilled hole in the wood end post by rotating the fitting (with a wrench placed onto wrench flats machined into the fitting) to drive the lag thread into the hole until the fitting shoulders on the post face. Because the wrench flat is at the back of the fitting, it can be used with sleeved posts as well. The cable attaches to the fitting via our Push-Lock® locking wedge system which requires no special tools.

The most likely application for this fitting would be when substantial take-up is required, AND there is a preference for a swageless fitting, AND there is less than 2-1/2" of space available in back of the end post.



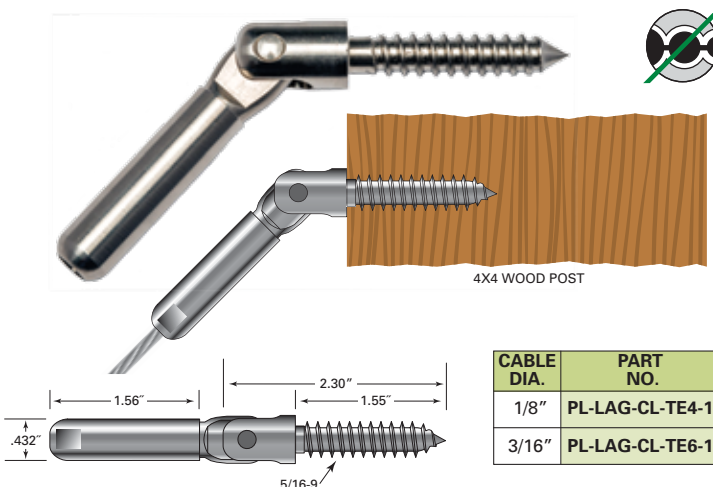
CABLE DIA.	PART NO.
1/8"	PL-LAG-4
3/16"	PL-LAG-6

## Push-Lock® with Lag Clevis

New for 2016 – the Push-Lock® with Lag Clevis is an exposed, swageless, non-tensioning, face-of-the-post-mounted fitting that is suitable for level or pitched runs, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Push-Lock® with Lag Clevis can be used with any tensioning fitting on the opposite end of the run. This fitting is installed into a pre-drilled hole in the wood end post. Drive the lag thread into the hole until the fitting shoulders on the post face. The cable attaches to the body via our Push-Lock® locking wedge system which requires no special tools.

While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the body of the fitting pivots at the clevis. The pre-drilled hole for the lag eye is drilled level, making installation easy.



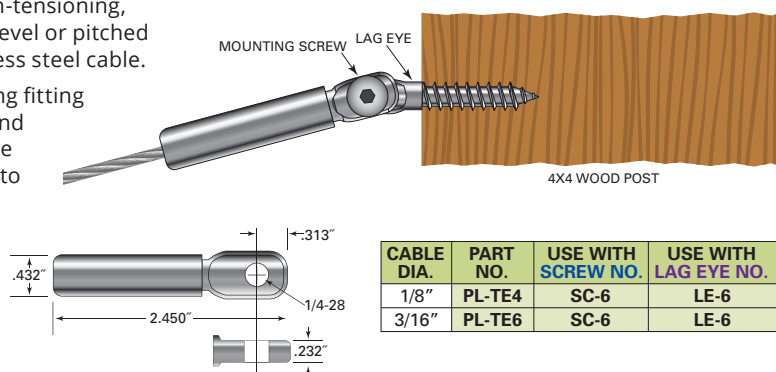
## Push-Lock® Threaded Eye and Lag Eye



The Push-Lock® Threaded Eye is an exposed, swageless, non-tensioning, face-of-the-post-mounted fitting that is suitable for use on level or pitched runs and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Push-Lock® Threaded Eye must be used with a tensioning fitting on the opposite end of the run. This fitting attaches to the end post by installing a Lag Eye into a pre-drilled and tapped hole in the end post and attaching the Push-Lock® Threaded Eye to the threaded lag eye with a button head screw. The cable attaches to the fitting via our Push-Lock® locking wedge system which requires no special tools. Screw and lag eye are sold separately, see information on page 9.

While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the threaded eye portion of the fitting pivots at the lag eye.



## Pull-Lock®

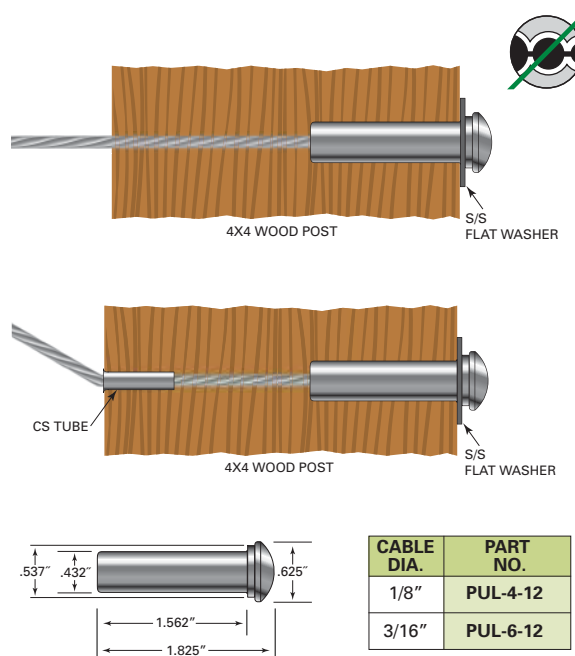


The Pull-Lock® is a concealed, swageless, non-tensioning, through-the-post-mounted fitting that is suitable for use on level or pitched runs, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Pull-Lock® must be used with a tensioning fitting on the opposite end of the run. This fitting is installed into a pre-drilled hole in the end post. Using the Pull-Lock® fitting on level or pitched runs requires that a minimum of 1-1/2" of clearance exists on the back side of the end post (to install the fitting and pull the cable through). It is also recommended that a stainless steel flat washer be installed between the shoulder of the fitting and the mating surface of the wood post (washer sold separately, see page 7). The cable attaches to the fitting via our Push-Lock® locking wedge system which requires no special tools.

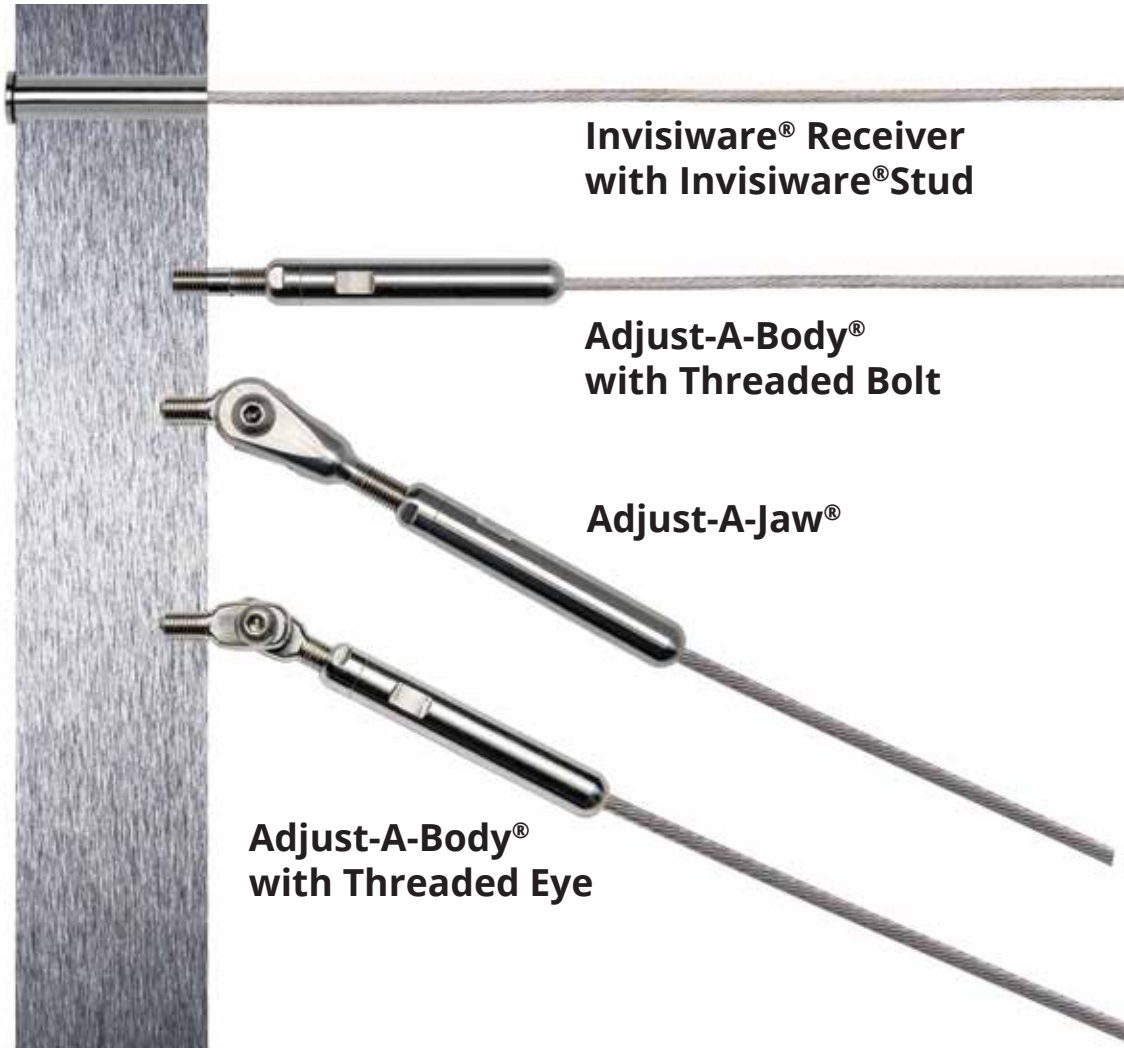
You can use this fitting on a pitched application, using the same horizontally drilled method for 4x4 wood posts, by installing a post protector tube into the face of the post where the cable exits at an angle (the post protector tube protects the face of the post from abrasion and furrowing as the cable is tensioned). The post protector tube is sold separately, see page 7.

This fitting is very much like the Push-Lock®, except the cable passes through the Pull-Lock®, meaning you can just cut the excess cable where it exits the fitting – no need to measure the cable before cutting. For that reason, it is the more popular of the two.



## HARDWARE FOR METAL POSTS

# SWAGED TENSIONING FITTINGS



**SWAGING REQUIRED:** These fittings must be attached with swaging equipment capable of developing proper force based on the fittings' mass. Special equipment is required.



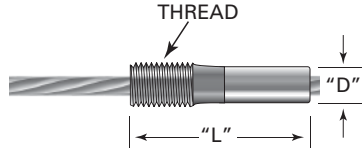
**TENSIONING DEVICE:** A fitting with this symbol is a tensioning fitting. Each individual cable must have at least one tensioning fitting in order to be properly installed and tensioned.

## Invisiware® Stud



Photo of stud before swaging.

This part is swaged onto the end of the cable and used with the Invisiware® Receiver. The threaded surface is coated with a baked-on molybdenum-based dry film lubricant, to prevent the threads from galling when tensioned.



TYPE 316 STAINLESS STEEL — MOLY COATED

CABLE DIA.	PART NO.	THREAD	"L"	"D" DIAMETER AFTER SWAGING
1/8"	S-4	5/16-24	1.180"	.250"
3/16"	S-6	5/16-24	1.140"	.250"
1/4"	S-8	7/16-20	1.380"	.375"
5/16"	S-10	9/16-18	1.330"	.500"
3/8"	S-12	9/16-18	1.310"	.500"

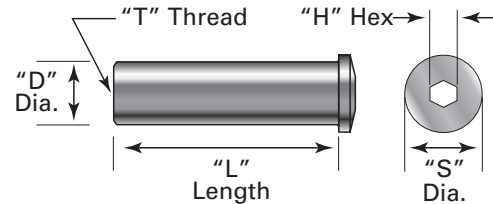
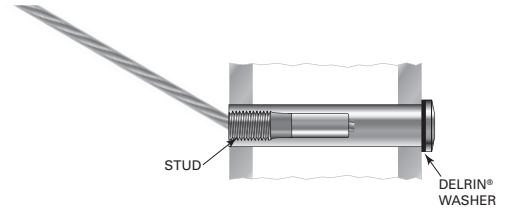
## Invisiware® Receiver with Invisiware® Stud



The Invisiware® Receiver with Invisiware® Stud combination is a concealed, swaged, tensioning, through-the-post-mounted fitting that is suitable for level runs. Receivers and studs are available for 1/8", 3/16", 1/4", 5/16", and 3/8" diameter 1x19 stainless steel cable; 1/8" and 3/16" sizes are also suitable for pitched applications.

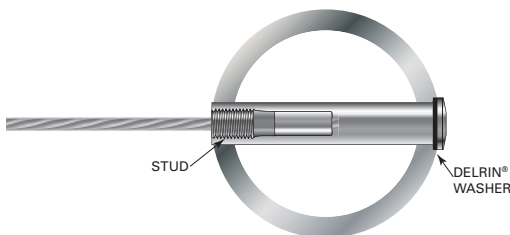
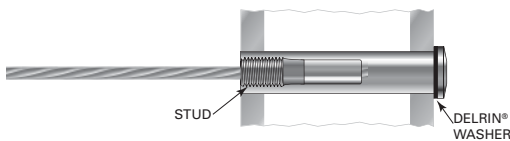
The Invisiware® Receiver with Invisiware® Stud can be used with any other fitting on the opposite end of the run. This fitting is placed and concealed within a pre-drilled hole in the metal end post. The Receiver is furnished with a Delrin® washer that is installed between the shoulder of the fitting and the end post to protect the surface of the finish of the end post as tension is applied. The stud is swaged onto one end of the cable and is inserted and threaded into the Receiver installed in the end post. Tension is created by rotating the Receiver (with a hex wrench inserted into its broached end) and drawing the Stud into the Receiver.

This fitting in 1/8" and 3/16" cable sizes can also be used in pitched applications using the same method (including a horizontally drilled hole) described previously. This fitting is commonly paired with a Pull-Lock® on the opposite end of the run. The Receiver/Pull-Lock® terminal combination is available in our 1/8" and 3/16" kit offerings.



INVISIWARE® RECEIVER DIMENSIONS

Cable Diameter	1/8" cable	3/16" cable	1/4" cable	5/16" cable	3/8" cable
Part Number	R-6-XX	R-6-XX	R-8-XX	R-12-XX	R-12-XX
"D" Diameter	.437"	.437"	.531"	.687"	.687"
"T" Thread	5/16-24	5/16-24	7/16-20	9/16-18	9/16-18
"H" Hex	3/16"	3/16"	7/32"	5/16"	5/16"
"S" Diameter	.537"	.537"	.646"	.865"	.865"
"L" Length	See "FRAMING OPTIONS" Table				



FRAMING OPTIONS FOR INVISIWARE® RECEIVER

Cable Diameter	1/8" cable	3/16" cable	1/4" cable	5/16" cable	3/8" cable	"L" Length
FRAME OPTIONS	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	
1-1/2" Tube* or 1-1/4" Pipe	R-6-12	R-6-12	NA	NA	NA	1.56"
1-1/2" Pipe	R-6-22	R-6-22	R-8-22	NA	NA	1.81"
2"x2" Tube*	R-6-32	R-6-32	R-8-32	R-12-32	R-12-32	2.03"
2" Pipe	R-6-42	R-6-42	R-8-42	R-12-42	R-12-42	2.30"
2-3/8" Tube*	R-6-72	R-6-72	NA	NA	NA	2.405"
2-1/2" Tube*	R-6-82	R-6-82	NA	NA	NA	2.53"
3" Tube*	R-6-52	R-6-52	R-8-52	R-12-52	R-12-52	3.03"
3-1/2" Tube*	R-6-62	R-6-62	NA	NA	NA	3.5625"

\*Round or Square Tube

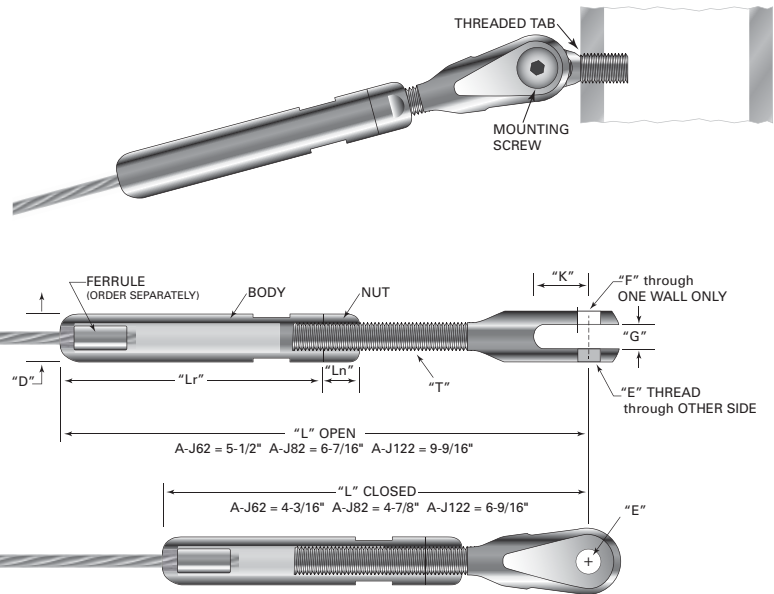
## Adjust-A-Jaw® and Threaded Tab



The Adjust-A-Jaw® is an exposed, swaged, tensioning, face-of-the-post-mounted fitting that can be used on level or pitched runs. This fitting is available for 1/8", 3/16", 1/4", 5/16", and 3/8" diameter 1x19 stainless steel cable.

The Adjust-A-Jaw® can be used with any fitting on the opposite end of the run. This fitting attaches to the end post by installing a Threaded Tab into a pre-drilled and tapped hole in the end post and attaching the threaded jaw portion of the fitting to the threaded **tab** (see bottom of page) with a button head **screw** (see information on page 9). The cable is retained within the body portion of the fitting by a ferrule swaged onto the end of the cable. The lock nut is installed all the way onto the threaded jaw first, followed by the body, which is secured onto the jaw, creating tension on the cable. Once sufficient tension is achieved, the lock nut is secured against the end of the body to secure the fitting from loosening.

While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the threaded jaw portion of the fitting pivots at the tab. Use of this fitting requires an appropriately sized **ferrule** that is swaged onto the cable. Ferrule sold separately (see ferrule information on page 8).

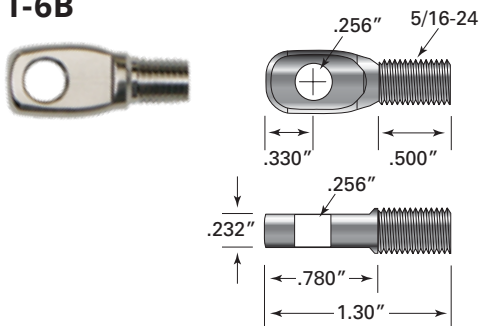


TYPE 316 STAINLESS STEEL

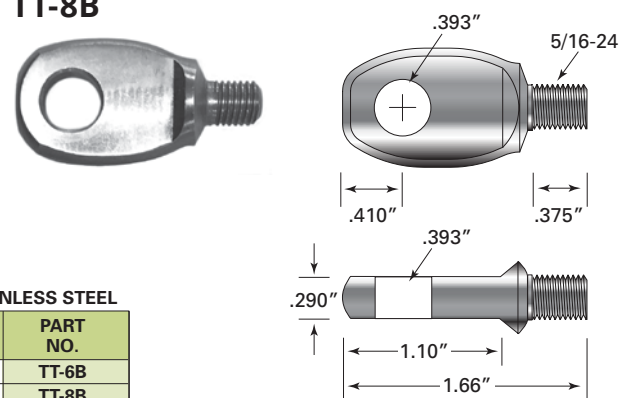
CABLE DIA.	PART NO.	USE WITH FERRULE NO.	USE WITH SCREW NO.	USE WITH TAB NO.	"D" DIA.	"E" THREAD	"F" DIA.	"G"	"K"	"Ln"	"Lr"	"T" THREAD
1/8"	A-J62	F-4	SC-6	TT-6B	.490"	1/4-28	.260"	.260"	.56"	.375"	2.75"	5/16-24 LH
3/16"	A-J62	F-6	SC-6	TT-6B	.490"	1/4-28	.260"	.260"	.56"	.375"	2.75"	5/16-24 LH
1/4"	A-J82	F-8	SC-8	TT-8B	.617"	3/8-24	.390"	.313"	.75"	.500"	3.00"	7/16-20 LH
5/16"	A-J122	F-10	SC-8	TT-8B	.744"	3/8-24	.390"	.348"	.87"	.620"	4.50"	9/16-18
3/8"	A-J122	F-12	SC-8	TT-8B	.744"	3/8-24	.390"	.348"	.87"	.620"	4.50"	9/16-18

## Invisiware® Threaded Tab

### TT-6B



### TT-8B



TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.
1/8", 3/16"	TT-6B
1/4", 5/16", 3/8"	TT-8B

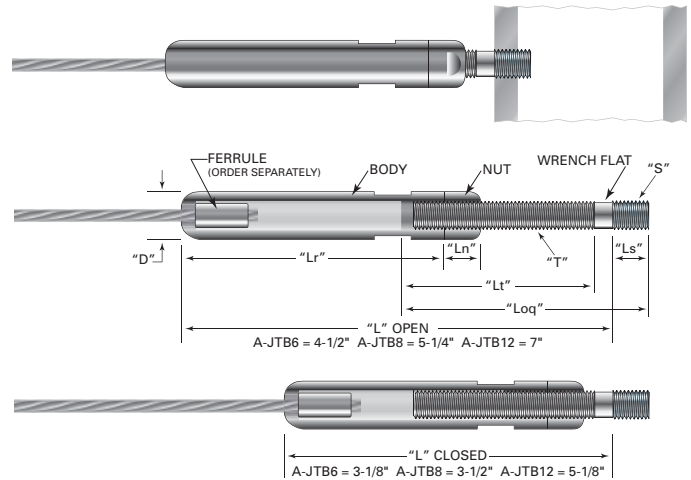
## Adjust-A-Body® with Threaded Bolt



The Adjust-A-Body® with Threaded Bolt is an exposed, swaged, tensioning, face-of-the-post-mounted fitting that is recommended for level runs only. This fitting is available for 1/8", 3/16", 1/4", 5/16", and 3/8" diameter 1x19 stainless steel cable.

The Adjust-A-Body® with Threaded Bolt can be used with any fitting on the opposite end of the run. The short thread of the threaded bolt portion of the fitting is secured into a pre-drilled and tapped hole in the end post. The cable is retained within the body portion of the fitting by a ferrule swaged onto the end of the cable. The lock nut is installed all the way onto the threaded bolt first, followed by the body, which is secured onto the threaded bolt, creating tension on the cable. Once sufficient tension is achieved, the lock nut is secured against the end of the body to secure the fitting from loosening.

Use of this fitting requires an appropriately sized **ferrule** that is swaged onto the cable, which must be purchased separately (see ferrule information on page 8).



TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	USE WITH FERRULE NO.	"S"	"T" THREAD	"Ls"	"Lt"	"Loq"	"Ln"	"Lr"	"D"
1/8"	A-JTB6	F-4	5/16-24	5/16-24 L.H.	.375"	2.00"	2.625"	.375"	2.75"	.490"
3/16"		F-6	5/16-24	7/16-20 L.H.	.375"	2.50"	3.125"	.500"	3.00"	.617"
1/4"	A-JTB8	F-8	5/16-24	7/16-20 L.H.	.375"	2.50"	3.125"	.500"	3.00"	.617"
5/16"	A-JTB12	F-10	1/2-20	9/16-18	.62"	3.00"	4.00"	.62"	4.50"	.744"
3/8"		F-12	1/2-20	9/16-18	.62"	3.00"	4.00"	.62"	4.50"	.744"

## Adjust-A-Body® with Threaded Eye and Threaded Tab

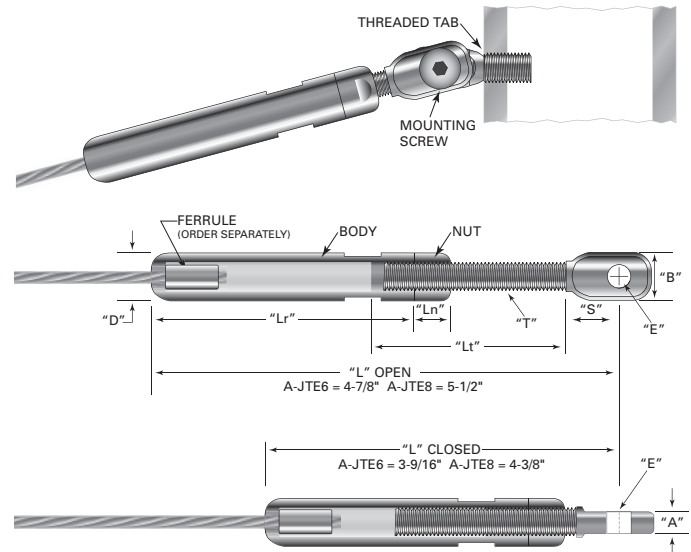


The Adjust-A-Body® with Threaded Eye fitting is an exposed, swaged, tensioning, face-of-the-post-mounted fitting that can be used on level or pitched runs. This fitting is available for 1/8", 3/16", and 1/4" diameter 1x19 stainless steel cable.

The Adjust-A-Body® with Threaded Eye can be used with any fitting on the opposite end of the run. This fitting attaches to the end post by installing a Threaded Tab into a pre-drilled and tapped hole in the end post and attaching the threaded eye portion of the fitting to the threaded **tab** (see information on page 22) with a button head **screw** (see screw information on page 9). The cable is retained within the body portion of the fitting by a ferrule swaged onto the end of the cable. The lock nut is installed all the way onto the threaded eye first, followed by the body, which is secured onto the eye, creating tension on the cable. Once sufficient tension is achieved, the lock nut is secured against the end of the body to secure the fitting from loosening.

While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the threaded eye portion of the fitting pivots at the tab.

Use of this fitting requires that an appropriately sized **ferrule** is swaged onto the cable. Ferrule sold separately (see ferrule information on page 8).

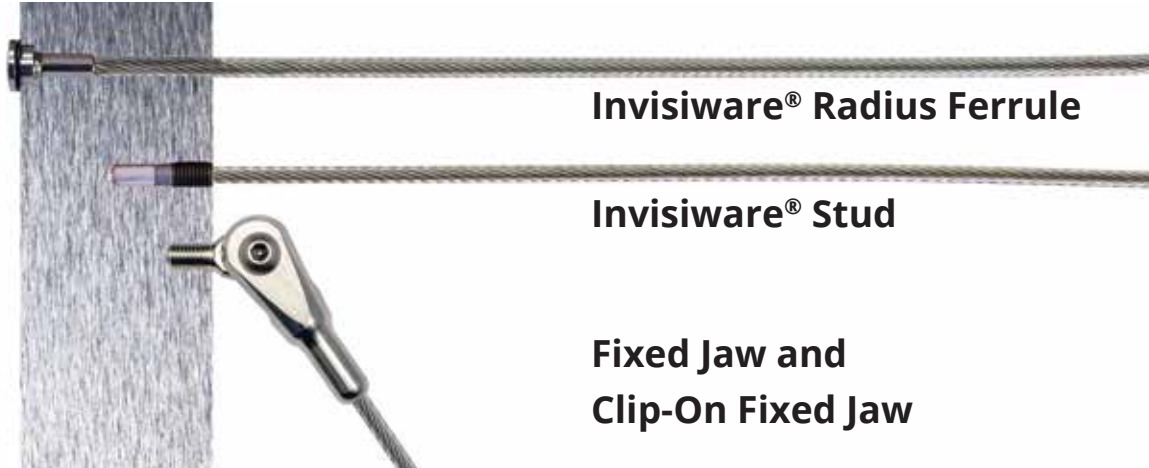


TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	USE WITH FERRULE NO.	USE WITH SCREW NO.	USE WITH TAB NO.	"E" THREAD	"A"	"B"	"S"	"T" THREAD	"Lt"	"Ln"	"Lr"	"D" DIA.
1/8"	A-JTE6	F-4	SC-6	TT-6B	1/4-28	.233"/.229"	.500"	.44"	5/16-24 LH	2.00"	.375"	2.75"	.490"
3/16"	A-JTE6	F-6	SC-6	TT-6B	1/4-28	.233"/.229"	.500"	.44"	5/16-24 LH	2.00"	.375"	2.75"	.490"
1/4"	A-JTE8	F-8	SC-8	TT-8B	3/8-24	.295"/.285"	.874"	.68"	7/16-20 LH	2.50"	.500"	3.00"	.617"

## HARDWARE FOR METAL POSTS

# SWAGED NON-TENSIONING FITTINGS



## Invisiware® Radius Ferrule

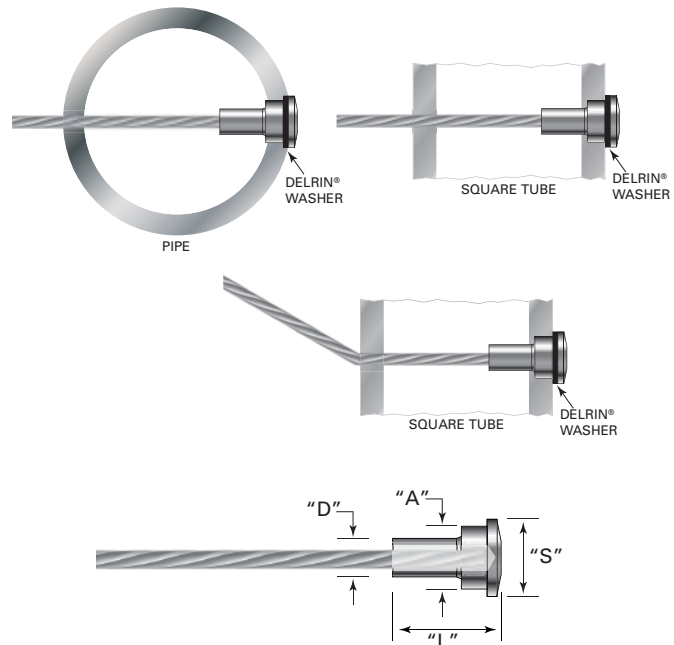


The Invisiware® Radius Ferrule is a concealed, swaged, non-tensioning, through-the-post-mounted fitting that is suitable for pitched or level runs. This fitting is available for 1/8", 3/16", 1/4", 5/16", and 3/8" diameter 1x19 stainless steel cable.

The Invisiware® Radius Ferrule must be used with a tensioning fitting on the opposite end of the run. It is the least expensive through-the-post fitting that we offer. This fitting has a head shaped to appear like the Invisiware® Receiver from the outside of the post (like the Invisiware® Receiver, the Invisiware® Radius Ferrule is concealed within the post). For these two reasons it is recommended to use the Invisiware® Radius Ferrule on one end of your cable run and an Invisiware® Receiver and Stud on the opposite end whenever practical to do so. The only reason not to consider this fitting as your non-tensioning end would be if you preferred to use a non-swaged solution.

This fitting installs into a hole drilled through the face of the post (to accommodate the cable at minimum) and a hole through the back side of the post to accommodate the fitting (see our *Hardware Mounting / Hole Boring Guide*). It also requires that you have at least 2" of clearance on the back side of your end post (the cable would likely be attached to the Radius Ferrule prior to installing it through the back side of the post). This fitting is furnished with a Delrin® washer that is installed between the shoulder of the fitting and the end post to protect the surface of the finish of the end post as tension is applied.

Using this fitting on pitched applications for 1/8" and 3/16" cable sizes simply requires kinking the cable where it exits the face of the post after initial tensioning. A kink is achieved by placing a piece of wood onto the cable where it exits the face of the post and striking it lightly with a hammer to create the kink.



TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	"D" DIA. AFTER SWAGED	"L" LENGTH AFTER SWAGED	"S" HEAD DIA.	"A" SHOULDER DIA.
1/8"	RF-4	.250"	.750"	.537"	.437"
3/16"	RF-6	.250"	.750"	.537"	.437"
1/4"	RF-8	.375"	1.000"	.646"	.531"
5/16"	RF-10	.500"	1.000"	.865"	.687"
3/8"	RF-12	.500"	1.000"	.865"	.687"

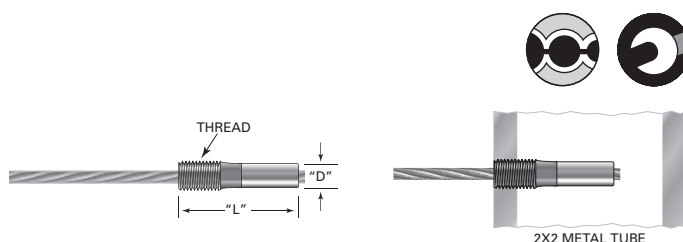
## Invisiware® Stud



Photo of stud before swaging.

The Invisiware® Stud is a concealed, swaged, non-tensioning, inside-the-post-mounting fitting that is suitable for use on level or pitched runs and is available for 1/8", 3/16", 1/4", 5/16", and 3/8" diameter 1x19 stainless steel cable.

The Invisiware® Stud can be used as a non-tensioning end in level or pitched applications. It is swaged onto one end of the cable and threaded into a drilled and tapped hole in the face of the post (1/4" wall thickness minimum). This fitting would typically be paired with an Invisiware® Receiver and Stud tensioning fitting on the opposite end. This method of using an Invisiware® Stud as a non-tensioning end is restricted to interior applications.



TYPE 316 STAINLESS STEEL — MOLY COATED

CABLE DIA.	PART NO.	THREAD	"L"	"D" DIAMETER AFTER SWAGING
1/8"	S-4	5/16-24	1.180"	.250"
3/16"	S-6	5/16-24	1.140"	.250"
1/4"	S-8	7/16-20	1.380"	.375"
5/16"	S-10	9/16-18	1.330"	.500"
3/8"	S-12	9/16-18	1.310"	.500"

## Fixed Jaw and Threaded Tab

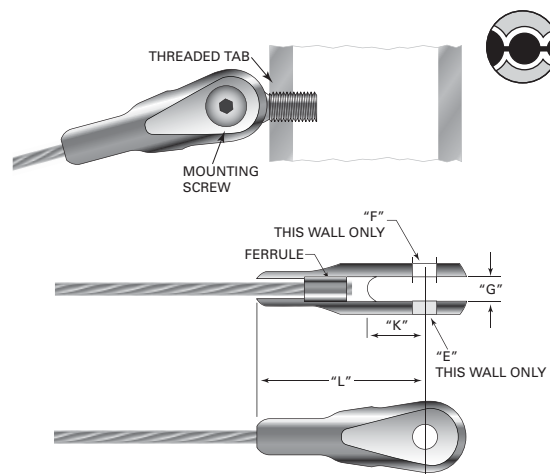


The Fixed Jaw is an exposed, swaged, non-tensioning, face-of-the-post-mounted fitting that is suitable for use on level or pitched runs and is available for 1/8", 3/16", 1/4", 5/16", and 3/8" diameter 1x19 stainless steel cable.

The Fixed Jaw can be used with any tensioning fitting on the opposite end of the run. This fitting attaches to the metal end post by installing a Threaded Tab into a pre-drilled and tapped hole in the end post and attaching the Fixed Jaw to the threaded **tab** with a button head **screw**. The cable is retained within the Fixed Jaw fitting by a ferrule swaged onto the end of the cable. Screw and threaded tab are sold separately (screw and threaded tab information on pages 9 and 22).

While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the Fixed Jaw pivots at the tab. Use of this fitting requires an appropriately sized **ferrule** that is swaged onto the cable, which must also be purchased separately (ferrule information on page 8).

This fitting was designed to be compatible in appearance to the Adjust-A-Jaw® tensioning fitting.



TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	USE WITH FERRULE NO.	USE WITH SCREW NO.	USE WITH TAB NO.	"E" THREAD	"F" DIA.	"G"	"K"	"L"
1/8"	F-J62	F-4	SC-6	TT-6B	1/4-28	.260"	.260"	.56"	1.75"
3/16"	F-J62	F-6	SC-6	TT-6B	1/4-28	.260"	.260"	.56"	1.75"
1/4"	F-J82	F-8	SC-8	TT-8B	3/8-24	.390"	.313"	.75"	2.12"
5/16"	F-J122	F-10	SC-8	TT-8B	3/8-24	.390"	.348"	.87"	2.25"
3/8"	F-J122	F-12	SC-8	TT-8B	3/8-24	.390"	.348"	.87"	2.25"

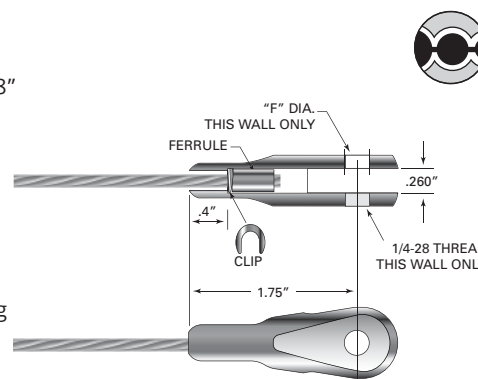
## Clip-On Fixed Jaw and Threaded Tab

The Clip-On Fixed Jaw is externally a duplicate of the Fixed Jaw and is only available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Clip-On Fixed Jaw was created for applications that called for factory swaged fittings on both ends of the cables, without requiring over-sized holes through the intermediate posts (so an entire Fixed Jaw could pass through). This fitting accomplishes that with a maximum diameter of a .250" diameter ferrule that is pre-swaged to the cable. Once the cable with only a ferrule swaged to it is run through the intermediate posts to the end post to which it will attach, the jaw is slipped onto the cable over the ferrule and the clip installed at the ferrule. The jaw then slides back against the clip, which prevents the fitting from coming off the cable.

This fitting attaches to the metal end post by installing a Threaded Tab into a pre-drilled and tapped hole in the end post and attaching the Clip-On Fixed Jaw to the threaded **tab** with a button head **screw** (screw and threaded tab information on pages 9 and 22).

Use of this fitting requires an appropriately sized **ferrule** that is swaged onto the cable, which must also be purchased separately (ferrule information on page 8).



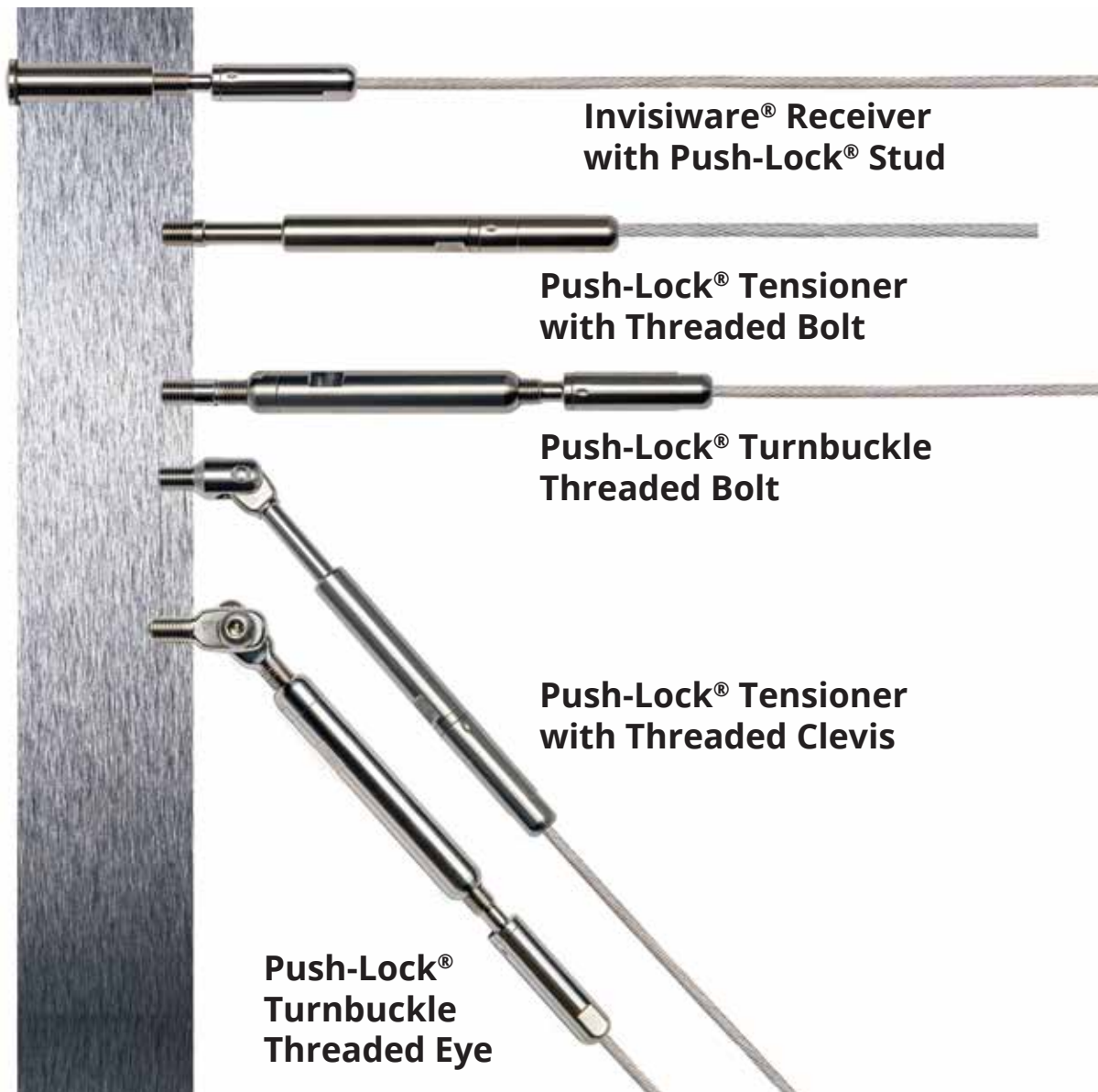
TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	USE WITH FERRULE NO.	USE WITH SCREW NO.	USE WITH TAB NO.	"F" DIA.	"G"	"K"	"L"
1/8"	F-JC2-4	F-4	SC-6	TT-6B	.260"	.260"	.56"	1.75"
3/16"	F-JC2-6	F-6	SC-6	TT-6B	.260"	.260"	.56"	1.75"

Reference Fixed Jaw schematic above for call-outs.

## HARDWARE FOR METAL POSTS

# SWAGELESS TENSIONING FITTINGS



**Invisiware® Receiver  
with Push-Lock® Stud**

**Push-Lock® Tensioner  
with Threaded Bolt**

**Push-Lock® Turnbuckle  
Threaded Bolt**

**Push-Lock® Tensioner  
with Threaded Clevis**

**Push-Lock®  
Turnbuckle  
Threaded Eye**



**SWAGELESS FITTING:** These fittings attach manually with no special tools required. The cable attaches to the fitting via our Push-Lock® locking wedge system. Push- and Pull-Lock® fittings are made entirely of stainless steel components, most of them Type 316.



**TENSIONING DEVICE:** A fitting with this symbol is a tensioning fitting. Each individual cable must have at least one tensioning fitting in order to be properly installed and tensioned.

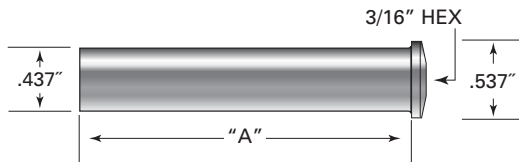
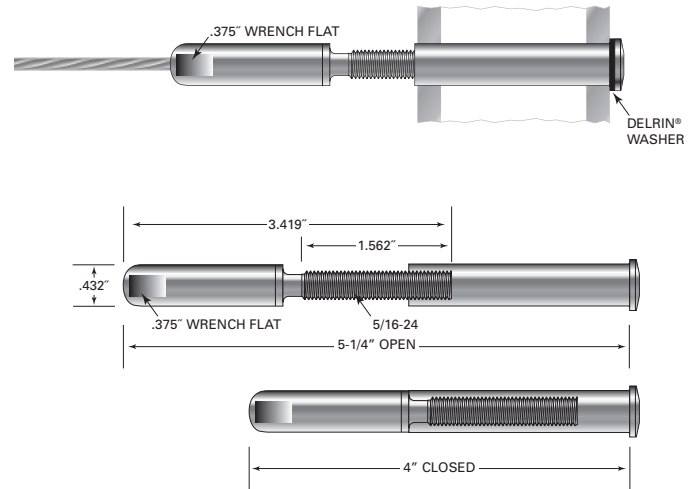
## Invisiware® Receiver with Push-Lock® Stud



The Invisiware® Receiver with Push-Lock® Stud combination is an exposed, swageless, tensioning, through-the-post-mounted fitting that is suitable for level runs only, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Invisiware® Receiver with Push-Lock® Stud can be used with any fitting on the opposite end of the run. This fitting requires that a minimum of 2-1/2" of clearance exists on the back side of the end post to install the Receiver into the post. The Receiver is furnished with a Delrin® washer that is installed between the shoulder of the fitting and the end post to protect the surface of the finish of the end post as tension is applied. The cable attaches to the Push-Lock® Stud fitting via our Push-Lock® locking wedge system which requires no special tools. This fitting was created for applications requiring substantial take-up and a preference for a swageless tensioning fitting.

We do not recommend this fitting being installed in pitched applications because it would require drilling all of the holes in the end post at an angle. While this is possible with special fixtures, if it is not done correctly the end result would be visually unacceptable.



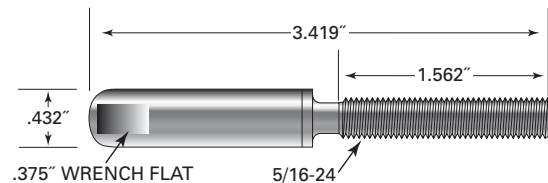
TYPE 316 STAINLESS STEEL

CABLE DIA.	USE WITH SWAGELESS STUD NO.	A = LENGTH OF RECEIVER BODY				
		2.30"	2.40"	2.53"	3.03"	3.56"
1/8"	PLST-4	R-6-42	R-6-72	R-6-82	R-6-52	R-6-62
3/16"	PLST-6					

## Push-Lock® Stud



The Push-Lock® Stud attaches manually with no special tools required. The cable attaches to the fitting via our Push-Lock® locking wedge system. Push- and Pull-Lock® fittings are made entirely of stainless steel components, most of them Type 316.

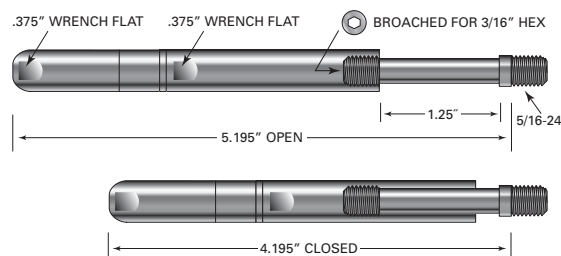
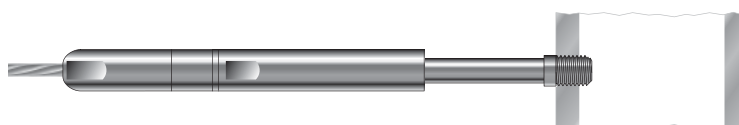


## Push-Lock® Tensioner with Threaded Bolt



New for 2016 – the Push-Lock® Tensioner with Threaded Bolt is an exposed, swageless, tensioning, face-of-the-post-mounted fitting that is suitable for use on level runs only, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Push-Lock® Tensioner with Threaded Bolt can be used with any fitting on the opposite end of the run. This fitting consists of two separate pieces: the threaded bolt and Push-Lock® tensioning body. The threaded bolt is installed into a pre-drilled and tapped hole in the end post. The cable attaches to the fitting via our Push-Lock® locking wedge system which requires no special tools. The body threads onto the other end of the bolt, connecting the two pieces. Tension is created by securing the post-side segment of the body onto the machine threads while preventing the cable-side segment of the body from turning.



CABLE DIA.	PART NO.
1/8"	PL-SFC-MS-4
3/16"	PL-SFC-MS-6

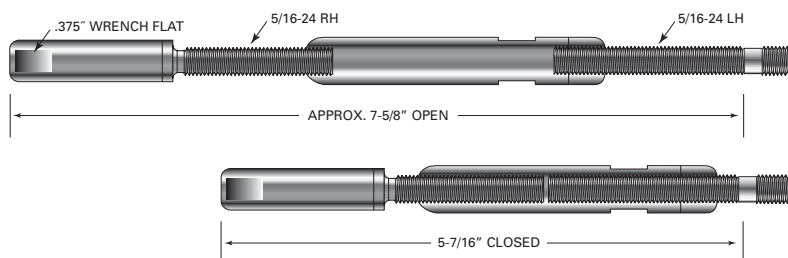
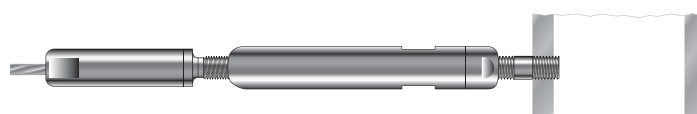
## Push-Lock® Turnbuckle Threaded Bolt



The Push-Lock® Turnbuckle Threaded Bolt is an exposed, swageless, tensioning, face-of-the-post-mounted fitting that is suitable for level runs only, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Push-Lock® Turnbuckle Threaded Bolt can be used with any fitting on the opposite end of the run. This fitting consists of four separate pieces: the threaded bolt, the body, the lock nut, and the Push-Lock® Stud. The short thread of the threaded bolt is secured into a pre-drilled and tapped hole in the face of the end post. The lock nut is installed all the way onto the exposed machine thread of the threaded bolt first, followed by the body. The Push-Lock® Stud threads into the body, and the cable attaches to the stud fitting via our Push-Lock® locking wedge system which requires no special tools. Tension is created by using the body as a turnbuckle. Once sufficient tension is achieved, the lock nut is secured against the body to prevent the fitting from loosening.

The most likely application for this fitting would be when substantial take-up is required AND there is a preference for a swageless fitting, AND there is less than 2-1/2" of space available in back of the end post.

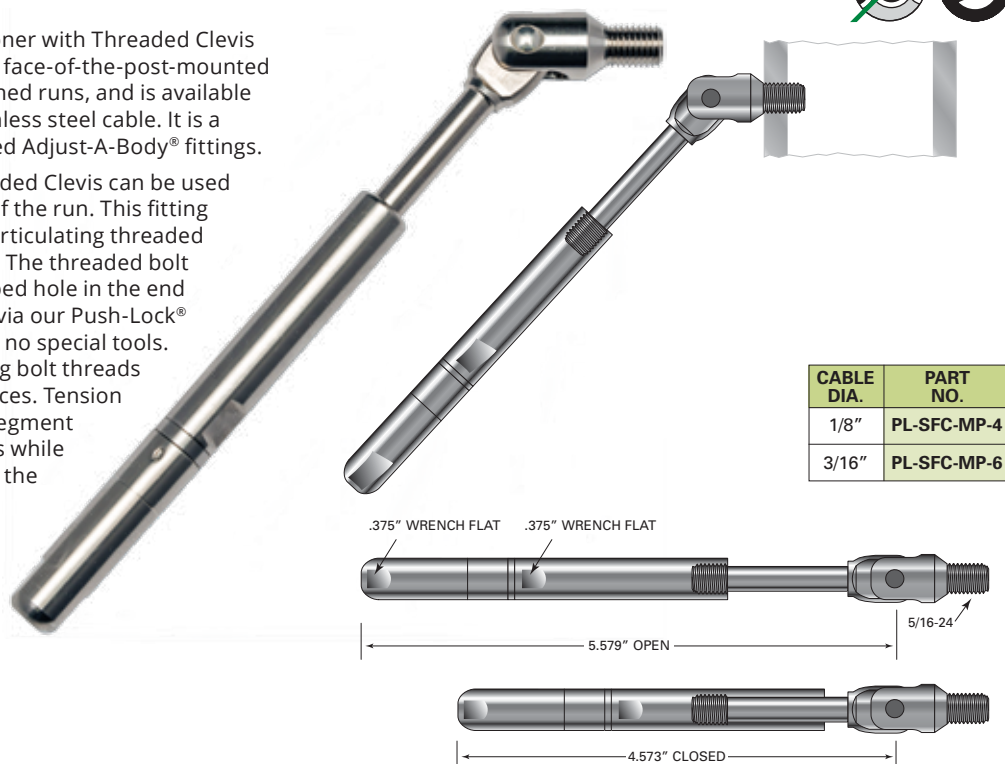


CABLE DIA.	PART NO.
1/8"	PL-TB-TB-4
3/16"	PL-TB-TB-6

## Push-Lock® Tensioner with Threaded Clevis

New for 2016 – the Push-Lock® Tensioner with Threaded Clevis is an exposed, swageless, tensioning, face-of-the-post-mounted fitting that is suitable for level or pitched runs, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable. It is a more compact design than our swaged Adjust-A-Body® fittings.

The Push-Lock® Tensioner with Threaded Clevis can be used with any fitting on the opposite end of the run. This fitting consists of two separate pieces: the articulating threaded bolt and Push-Lock® tensioning body. The threaded bolt is installed into a pre-drilled and tapped hole in the end post. The cable attaches to the body via our Push-Lock® locking wedge system which requires no special tools. The machine thread of the articulating bolt threads into the body, connecting the two pieces. Tension is created by securing the post-side segment of the body onto the machine threads while preventing the cable-side segment of the body from turning.

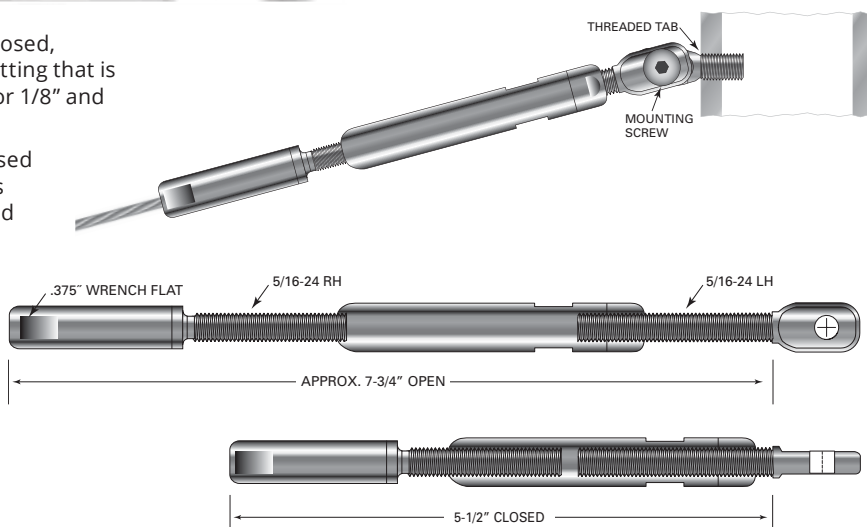


## Push-Lock® Turnbuckle Threaded Eye and Threaded Tab

The Push-Lock® Turnbuckle Threaded Eye is an exposed, swageless, tensioning, face-of-the-post-mounted fitting that is suitable for level or pitched runs, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Push-Lock® Turnbuckle Threaded Eye can be used with any fitting on the opposite end of the run. This fitting consists of four separate pieces: the threaded eye, the body, the lock nut, and the Push-Lock® Stud. This fitting attaches to the metal end post by installing a Threaded Tab into a pre-drilled and tapped hole in the end post and attaching the threaded eye portion of the fitting to the **tab** with a button head **screw** (screw and threaded tab are sold separately, see information on pages 9 and 22). The lock nut is installed all the way onto the threaded eye first, followed by the body. The Push-Lock® Stud threads into the body, and the cable attaches to the stud fitting via our Push-Lock® locking wedge system which requires no special tools. Tension is created by using the body as a turnbuckle. Once sufficient tension is achieved, the lock nut is secured against the body to prevent the fitting from loosening.

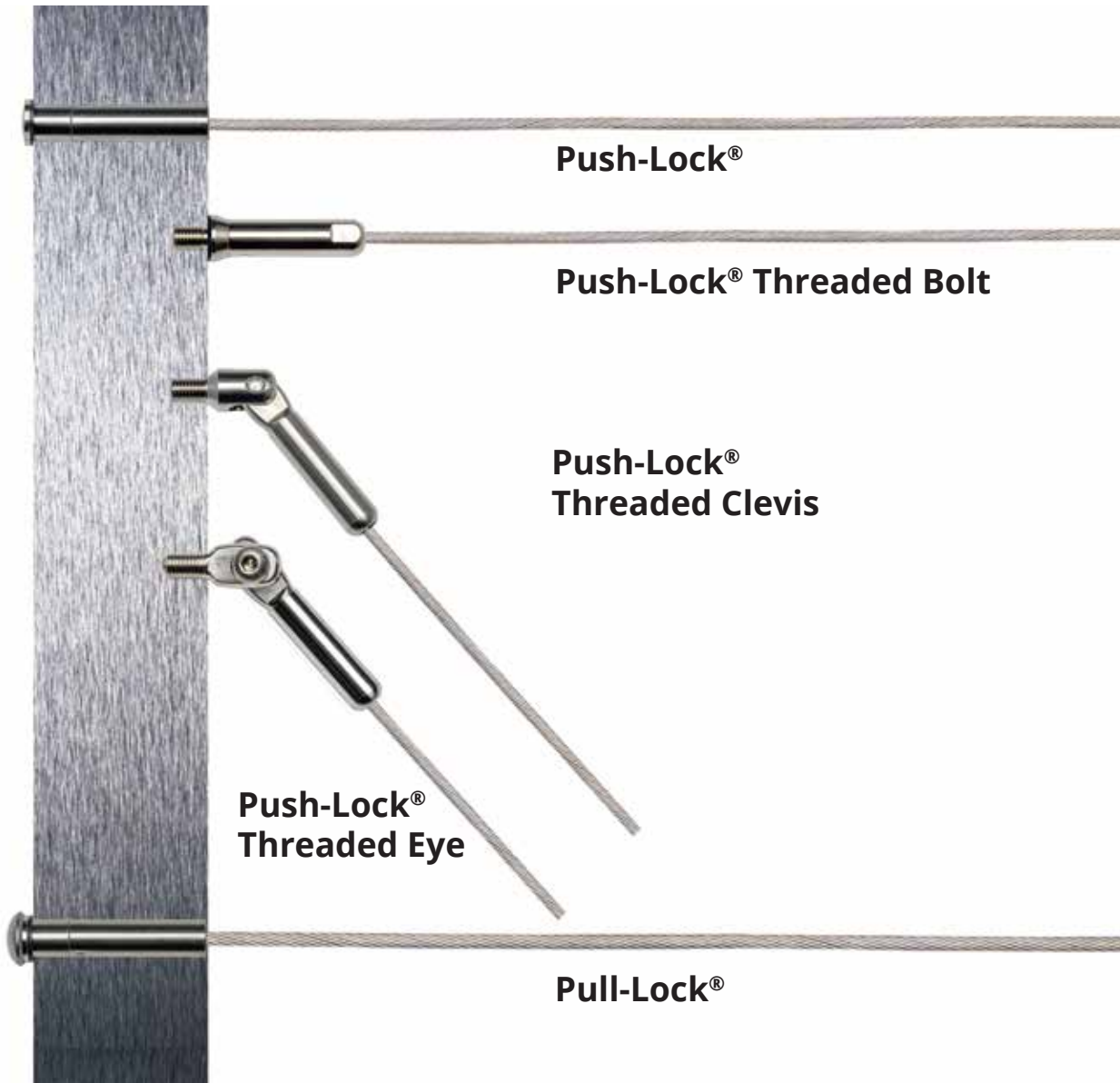
While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the threaded eye portion of the fitting pivots at the threaded tab.



CABLE DIA.	PART NO.	USE WITH SCREW NO.	USE WITH TAB NO.
1/8"	PL-TB-TE-4	SC-6	TT-6B
3/16"	PL-TB-TE-6	SC-6	TT-6B

## HARDWARE FOR METAL POSTS

# SWAGELESS NON-TENSIONING FITTINGS



**SWAGELESS FITTING:** These fittings attach manually with no special tools required. The cable attaches to the fitting via our Push-Lock® locking wedge system. Push- and Pull-Lock® fittings are made entirely of stainless steel components, most of them Type 316.

## Push-Lock®



The Push-Lock® is a concealed, swageless, non-tensioning, through-the-post-mounted fitting that is suitable for use on level runs only, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Push-Lock® fitting must be used with a tensioning fitting on the opposite end of the run. This fitting is installed into a pre-drilled hole in the end post. Using the Push-Lock® fitting requires enough clearance on the back side of the end post (to install the fitting through the back side of the post) and that amount of clearance depends on the length of the Push-Lock® fitting chosen. This fitting is furnished with a Delrin® washer that is installed between the shoulder of the fitting and the end post to protect the surface of the finish of the end post as tension is applied. It is recommended that you choose a length of Push-Lock® that is the same as the cross section dimension of the end post. The cable attaches to the fitting via our Push-Lock® locking wedge system which requires no special tools.

This fitting is made to look similar to the Invisiware® Receiver from the exterior of the post, so it is recommended to use a Receiver with stud on the opposite end whenever practical to maintain a consistent look.

### FLAT SIDED FRAME "F"



ANGLE\*



SQUARE  
TUBE



FLAT BAR\*



RECTANGULAR  
TUBE

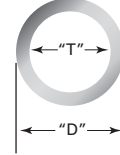
\* Push-Locks® cannot be used with angle shapes or flat bar in pitch applications unless the post hole is drilled at the angle of the stair rake and a beveled washer is used.

### ROUND TUBE FRAME "R"



"DIA"

### PIPE FRAME "P"



"T" = Theor. I.D. (Pipe Size)  
"D" = Outside diameter

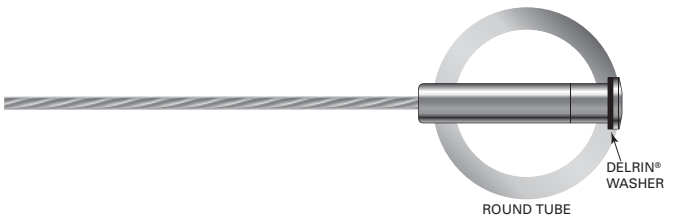
SIZE	"T"	"D"
1-1/4"	1.25"	1.66"
1-1/2"	1.50"	1.91"
2"	2.00"	2.375"



SQUARE TUBE  
DELIN®  
WASHER



SQUARE TUBE  
DELIN®  
WASHER



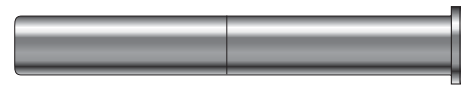
ROUND TUBE  
DELIN®  
WASHER



PL-4-12/PL-6-12



PL-4-2.030/PL-6-2.030



PL-4-3.030/PL-6-3.030

### METAL FRAMING OPTIONS FOR PUSH-LOCK® FITTINGS

FRAME "F"	FRAME "R"	FRAME "P"	1/8" cable PART NO.	3/16" cable PART NO.	"L" LENGTH
1-1/2"	1-1/2"	1-1/4"	PL-4-12	PL-6-12	1.562"
2"	2"	1-1/2"†	PL-4-2.030	PL-6-2.030	2.030"
3"	3"	N/A	PL-4-3.030	PL-6-3.030	3.030"

† Will protrude from cable side of post +/- .125".

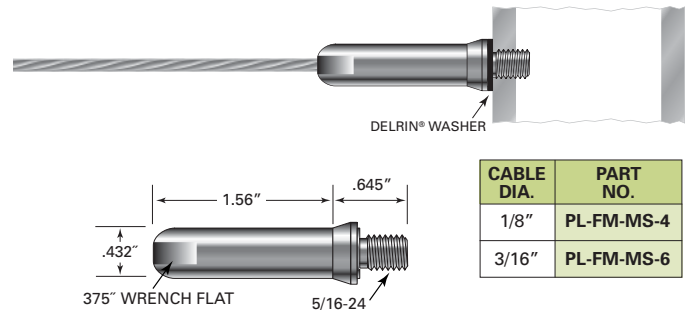
## Push-Lock® Threaded Bolt



New for 2016 – the Push-Lock® Threaded Bolt fitting is an exposed, swageless, non-tensioning, face-of-the-post-mounted fitting that is suitable for use on level runs only, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Push-Lock® Threaded Bolt must be used with a tensioning fitting on the opposite end of the run. This fitting is installed into a pre-drilled and tapped hole. This fitting is furnished with a Delrin® washer that is installed between the shoulder of the fitting and the end post to protect the surface of the finish of the end post as the fitting is installed. The cable attaches to the fitting via our Push-Lock® locking wedge system which requires no special tools.

This fitting is usually chosen one, because you want to use a swageless fitting AND you don't have access to the back side of the end post; and two, because you want to use a swageless fitting AND you want symmetry with a face mounted tensioner on the opposite end of the run.

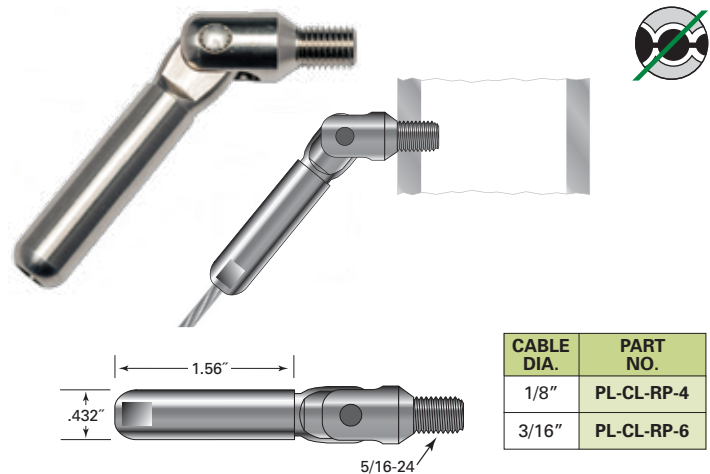


## Push-Lock® Threaded Clevis

New for 2016 – the Push-Lock® Threaded Clevis is an exposed, swageless, face-of-the-post-mounted fitting that is suitable for level or pitched runs, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable. It is a more compact design than our Push-Lock® Threaded Eye.

The Push-Lock® Threaded Clevis can be used with any tensioning fitting on the opposite end of the run. This fitting is installed into a pre-drilled and tapped hole in the end post. The cable attaches to the body via our Push-Lock® locking wedge system which requires no special tools.

While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the body of the fitting pivots at the clevis.



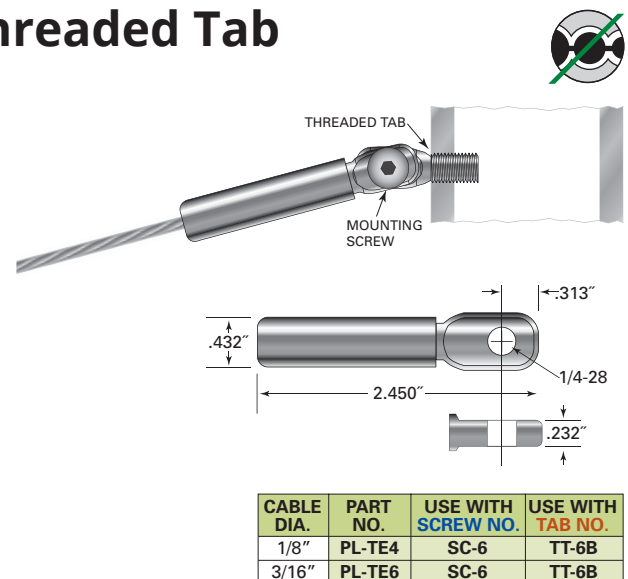
## Push-Lock® Threaded Eye and Threaded Tab



The Push-Lock® Threaded Eye is an exposed, swageless, non-tensioning, face-of-the-post-mounted fitting that is suitable for use on level or pitched runs and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Push-Lock® Threaded Eye must be used with a tensioning fitting on the opposite end of the run. This fitting attaches to the end post by installing a Threaded Tab into a pre-drilled and tapped hole in the end post and attaching the Push-Lock® Threaded Eye to the threaded tab with a button head screw. The cable attaches to the fitting via our Push-Lock® locking wedge system which requires no special tools. Screw and threaded tab are sold separately, see information on pages 9 and 22.

While this fitting can be used on pitched or level runs, it is most appropriate for pitched runs because the threaded eye portion of the fitting pivots at the threaded tab.



## Pull-Lock®

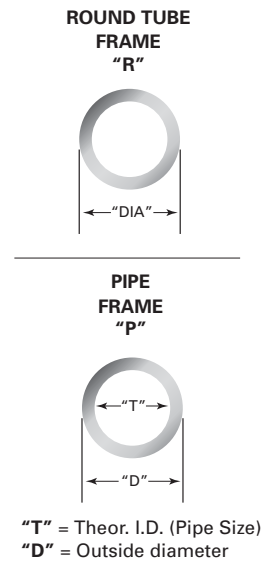
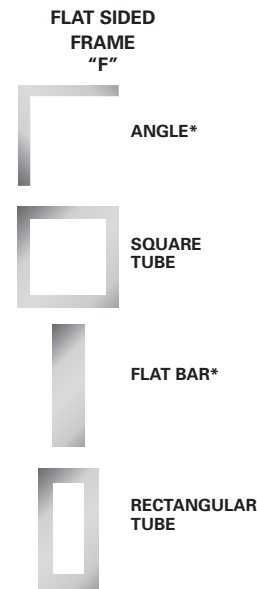
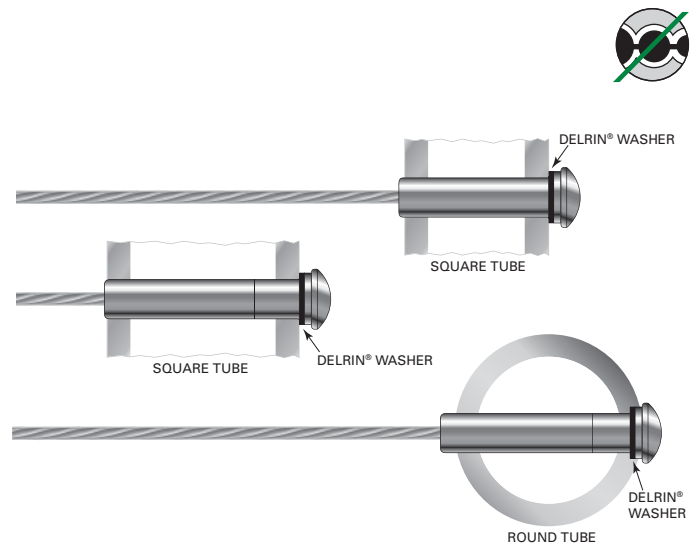
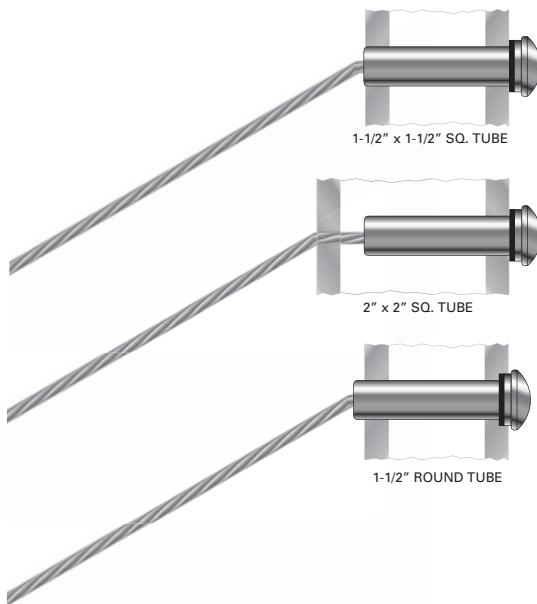


The Pull-Lock® is a concealed, swageless, non-tensioning, through-the-post-mounted fitting that is suitable for use on level or pitched runs, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Pull-Lock® must be used with a tensioning fitting on the opposite end of the run. This fitting is installed into a pre-drilled hole in the end post. Using the Pull-Lock® fitting on level or pitched runs requires enough clearance on the back side of the end post to install the fitting through the back side of the post. That amount of clearance depends on the length of Pull-Lock® chosen. This fitting is furnished with a Delrin® washer that is installed between the shoulder of the fitting and the end post to protect the surface of the finish of the end post as tension is applied. The cable attaches to the fitting via our Push-Lock® locking wedge system which requires no special tools.

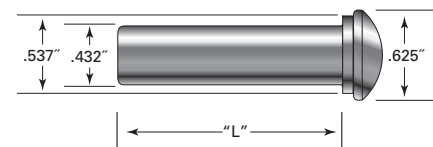
This fitting is very much like the Push-Lock®, except the cable passes through the Pull-Lock®, meaning you can just cut the excess cable where it exits the fitting – no need to measure the cable before cutting. This feature eliminates the need for taking accurate cable length measurements (as is required when using a Push-Lock® fitting). For that reason, it is the more popular of the two.

The Pull-Lock® can be used on a pitched run in a hole drilled horizontally through the end post. The cable will exit the fitting at an angle. To properly use this fitting on a pitch, it is recommended that you choose a Pull-Lock® that is the same length as the cross section of your end post.



\* Pull-Lock® fittings cannot be used with angle shapes or flat bar in pitch applications unless the post hole is drilled at the angle of the stair rake and a beveled washer is used.

SIZE	"T"	"D"
1-1/4"	1.25"	1.66"
1-1/2"	1.50"	1.91"
2"	2.00"	2.375"



METAL FRAMING OPTIONS FOR PULL-LOCK® FITTINGS

FRAME "F"	FRAME "R"	FRAME "P"	1/8" cable PART NO.	3/16" cable PART NO.	"L" LENGTH
1-1/2"	1-1/2"	1-1/4"	PUL-4-12	PUL-6-12	1.562"
N/A	N/A	1-1/2"	PUL-4-1.810	PUL-6-1.810	1.810"
2"	2"	N/A	PUL-4-2.030	PUL-6-2.030	2.030"
N/A	N/A	2"	PUL-4-2.300	PUL-6-2.300	2.300"
2-3/8"	2-3/8"	N/A	PUL-4-2.375	PUL-6-2.375	2.375"
3"	3"	N/A	PUL-4-3.030	PUL-6-3.030	3.030"
2-1/2"	2-1/2"	2-1/2"	PUL-4-2.530	PUL-6-2.530	2.530"
3-1/2"	3-1/2"	3"	PUL-4-3.030	PUL-6-3.030	3.030"

**HARDWARE FOR CONCRETE POSTS**

**SWAGED TENSIONING FITTING**

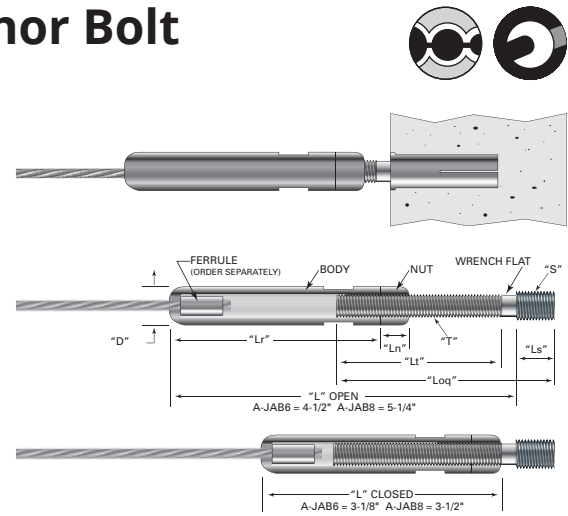
**Adjust-A-Body® with Concrete Anchor Bolt**



The Adjust-A-Body® with Concrete Anchor Bolt is an exposed, swaged, tensioning, face-of-the-surface-mounted fitting that is recommended for level runs terminating at a concrete surface only. This fitting is available for 1/8", 3/16", and 1/4" diameter 1x19 stainless steel cable.

The Adjust-A-Body® with Concrete Anchor Bolt can be used with any fitting on the opposite end of the run. A concrete anchor is driven into a pre-drilled hole in the concrete surface. The short thread of the anchor bolt portion of the fitting is threaded into the concrete anchor. The cable is retained within the body portion of the fitting by a ferrule swaged onto the end of the cable. The lock nut is installed all the way onto the exposed machine thread of the anchor bolt, followed by the body, which is secured onto the anchor bolt until effectively creating tension on the cable. Once sufficient tension is achieved, the lock nut is secured against the end of the body to prevent the fitting from loosening.

Use of this fitting requires that an appropriately sized **ferrule** is swaged onto the cable. Ferrule sold separately, see information on page 8. The Red Head® Concrete Anchor is available for purchase at many building supply retailers and distributors throughout the country.



TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	USE WITH FERRULE NO.	"S"	"T" THREAD	"Ls"	"Lt"	"Loq"	"Ln"	"Lr"	"D"	USE WITH "RED HEAD" BRAND CONCRETE ANCHOR	CARBON STEEL	STAINLESS
1/8"	A-JAB6	F-4	3/8-16	5/16-24 L.H.	.500"	2.313"	3.188"	.375"	2.75"	.490"	RM-38	SRM-38	
3/16"	A-JAB6	F-6											
1/4"	A-JAB8	F-8	1/2-13	7/16-20 L.H.	1.125"	2.500"	3.938"	.500"	3.00"	.617"	RM-12	SRM-12	

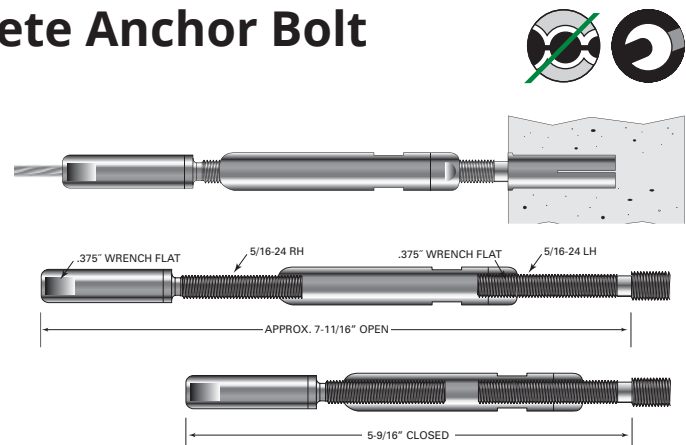
**SWAGELESS TENSIONING FITTING**

**Push-Lock® Turnbuckle Concrete Anchor Bolt**



The Push-Lock® Turnbuckle with Anchor Bolt is an exposed, swageless, tensioning, face-of-the-surface-mounted fitting that is suitable for level runs terminating at a concrete surface only. This fitting is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Push-Lock® Turnbuckle with Anchor Bolt can be used with any fitting on the opposite end of the run. This fitting consists of five separate pieces, the concrete anchor, the anchor bolt, the body, the lock nut, and the Push-Lock® Stud. The concrete anchor (which is ordered separately from a building supply retailer) is driven into a pre-drilled hole in the concrete surface. The short thread of the anchor bolt portion of the fitting is threaded into the Concrete Anchor. The lock nut is installed all the way onto the exposed machine thread of the anchor bolt first, followed by the body. The Push-Lock® Stud threads into the body, and the cable attaches to the stud fitting via our Push-Lock® locking wedge system which requires no special

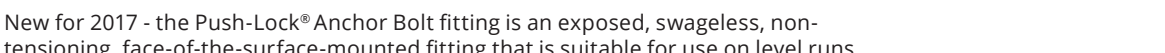


tools. Tension is created by using the body as a turnbuckle. Once sufficient tension is achieved, the lock nut is secured against the body to prevent the fitting from loosening.

CABLE DIA.	PART NO.
1/8"	PL-TB-AB-4
3/16"	PL-TB-AB-6

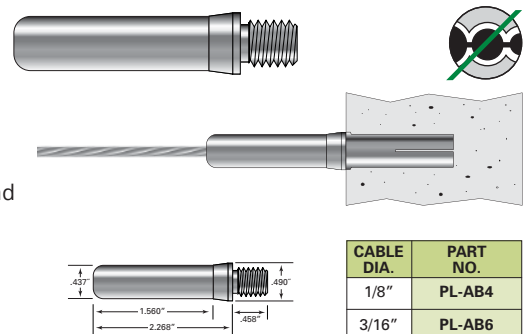
**SWAGELESS NON-TENSIONING FITTING**

**Push-Lock® Concrete Anchor Bolt**



New for 2017 - the Push-Lock® Anchor Bolt fitting is an exposed, swageless, non-tensioning, face-of-the-surface-mounted fitting that is suitable for use on level runs only, and is available for 1/8" and 3/16" diameter 1x19 stainless steel cable.

The Push-Lock® Anchor Bolt must be used with a tensioning fitting on the opposite end of the run. A concrete anchor is driven into a pre-drilled hole in the concrete surface. The anchor bolt portion of the fitting is threaded into the concrete anchor. The cable attaches to the fitting via our Push-Lock® locking wedge system which requires no special tools. The Red Head® Concrete Anchor is available for purchase at many building supply retailers and distributors throughout the country.



CABLE DIA.	PART NO.
1/8"	PL-AB4
3/16"	PL-AB6

## EQUIPMENT, ACCESSORIES, RAILING COMPONENTS

### Swager Rentals

If you want to cut and swage cables yourself in the field, we rent swager kits that come complete with the swager head, hydraulic pump, cable cutters, cable gripping pliers, and other tools to help ensure you have what you need to successfully complete your cable installation. The 650 kit comes with an electric pump; the 610 comes with a pump that requires a compressor. For the 610, you need to supply an air compressor to power the pump and the swager. Requirements are minimum 5.8 CFM at 90 psi and a minimum 20 gallon tank. Air pressure should be regulated to a minimum of 120 psi, not to exceed 140 psi.

Each of the components in the rental kits is also available for sale separately.

#### 650 Swager Rental Kit for 1/8", 3/16", 1/4", 5/16", and 3/8" cable



#### 610 Swager Rental Kit for 1/8" and 3/16" cable only



### Cable Cutter

For burr-free cutting of cable.

For light-duty use to cut 1/8" cable, order **C-7**

To cut cable 1/4" diameter and under, order **C-9** (pictured)

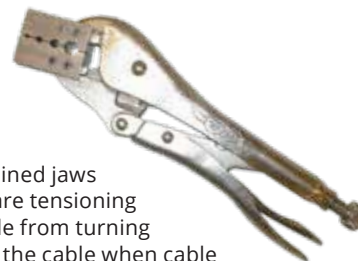
To cut cable up to 3/8" diameter, order **C-12**



### Cable Gripping Pliers

Locking pliers with machined jaws to grip the cable as you are tensioning the cable. Keeps the cable from turning and prevents damage to the cable when cable is being tensioned.

Order **PLIERS**



### Cable Release

Releases cable from Push-Lock® and Pull-Lock® type fittings before cables are tensioned. For 1/8" cable only. Order **PL-KEY**



### Radius Ferrule Gauge

Use this gauge to confirm that the Radius Ferrule has been properly swaged. The fitting is properly swaged if it fits into the appropriate slot.

Order **RF-GAUGE**



### Grommet Installation Tool Set

Needed to properly install grommets. Place grommet on tool, align grommet over hole, and tap lightly with a hammer (hammer not provided with rental tools).

Order **GROMMET TOOL SET**



## Model 650 Swager

For swaging 1/8" through 3/8" diameter Ultra-tec® cable fittings. Use with Air Over or Electric Hydraulic Pump.

Order **650 SWAGER**



## Shipping Container/ Tool Box

With compartments for cable cutting and installation tools and either air over or electric pump. Mounted to 4x4 risers for safer, easier loading/off-loading.

Order **650 TOOL BOX**



## Model 610 Swager

Hand held. For swaging 1/8" and 3/16" diameter Ultra-tec® cable fittings. Use with Air Over or Electric Hydraulic Pump.

Order **610 SWAGER**



## Shipping Container/ Tool Box

With compartments for cable cutting and installation tools and air over pump.

Order **610 TOOL BOX**



## Air Over Hydraulic Pump

Air driven. Powers Model 610 or 650 Swager. Requires an air compressor capable of delivering at least 5.8 c.f.m. at 90 p.s.i. and a minimum 20-gallon tank. Minimum 1/4" I.D. air hose with a 1/4" male pipe thread required (not included).

Order **HYD PUMP-AIR**



## Electric Hydraulic 120V Pump

Increases swaging speed versus the Air Over Hydraulic Pump. No compressor needed.

Order **HYD PUMP-ELECTRIC**



## Cable Tension Gauge

Check the tension on your cables with these easy-to-use gauges.

For cable diameter of 1/8", 3/16" and 1/4", order **PT-CR**

For cable diameter of 1/4" through 3/8", order **PT-3**



## Pre-Tensioner

A Pre-Tensioner can be used when installing longer runs of cable. It allows you to tension the cable through the last intermediate post, making it easy to connect to the last (end) post. When renting installation tools, Pre-Tensioners must be requested.

Order  
**PT 250**



## Pre-Tensioner Locking Pliers

Special Pre-Tensioner Locking Pliers are used with the Pre-Tensioner. Each cable diameter requires individual pliers which must be ordered separately.

For 1/8" cable, order **VGJ-PT4C**  
For 3/16" cable, order **VGJ-PT6C**  
For 1/4" cable, order **VGJ-PT8C**  
For 5/16" cable, order **VGJ-PT10C**  
For 3/8" cable, order **VGJ-PT12C**

## Cable Brace Connectors

Plastic plugs with screws for attaching to wood or aluminum frame and wood deck. Available in bags of 20.

Order **BRACE CONNECTOR**



## Cable Brace Connectors for Stairs

Plastic plugs with beveled bottoms for attaching to wood or aluminum frame on a stair rake. Available in bags of 20.

Order  
**BRACE CONNECTOR-STAIR**



## Stainless Steel Cable Brace Floor Plates

For mounting cable braces to top or bottom rail or deck. 2-1/4" x 1-1/4" x 1/4"  
Type 316 Stainless Steel

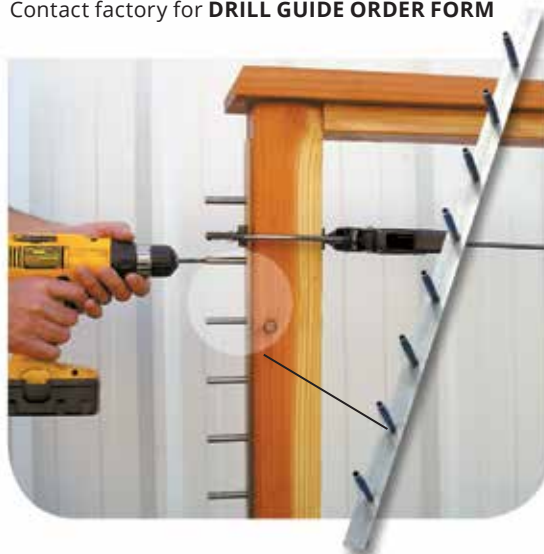
Order **FLP-CBS**



## Drill Guide

Drill straight holes through your wood posts with a steel drill guide. Use the drill guide to drill your pilot holes. Subsequent drilling will follow pilot holes. Clamp the guide to post and drill. It is best to drill one side, then the other. When ordering, allow space for clamps. A 6"-long drill bit is included that can also be used to drill your cable through-holes.

Contact factory for **DRILL GUIDE ORDER FORM**



## Stainless Steel Spacers

Used to support thin-walled double end post design or allow for Receiver extension in a stair system.



TYPE 316 STAINLESS STEEL

CABLE DIA.	PART NO.	LENGTH	OUTSIDE DIA.	WALL THICKNESS
1/8", 3/16"	SPC-R6-.500	.500"	5/8"	.083"
1/8", 3/16"	SPC-R6	.970"	5/8"	.083"
1/4"	SPC-R8	.970"	3/4"	.095"

## Beveled Washers (for flat-sided frames only)

Made of stainless steel for use with Invisiware® Receivers, Push-Lock® tensioners and Pull-Lock® fittings on stairways or slopes where you need to drill your end post holes at an angle.



TYPE 316 STAINLESS STEEL FOR -6 AND -8 BWS

CABLE DIA.	STAIR/SLOPE PITCH	PART NO.
1/8", 3/16"	30° - 33°	BW32-6
	34° - 36°	BW35-6
	37° - 39°	BW38-6
1/4"	30° - 33°	BW32-8
	34° - 36°	BW35-8
	37° - 39°	BW38-8
5/16", 3/8"	30° - 33°	BW32-12
	34° - 36°	BW35-12
	37° - 39°	BW38-12

## Stainless Steel Cable Brace

1/4" x 1" in 2 lengths, for 36" and 42" high rails. Holes pre-drilled at 3-1/8" on center, 10 holes in short length, 12 holes in long. For use between structural posts to keep cables code compliant on level runs. Weld to metal frames; use cable brace floor plates for attaching to wood. Type 316 Stainless Steel

Order **CB-34.5-SS-10** or **CB-40.5-SS-12**

## Stainless Steel Cable Brace for Stairs

1/4" x 1" in 2 lengths, for 36" and 42" high rails. Slots pre-drilled at 3-1/8" on center, 10 slots in short length, 12 holes in long. For use between structural posts to keep cables code-compliant on stair runs. Weld to metal frames; use cable brace floor plates for attaching to wood. Must be field-chamfered to match stair angle. Type 316 Stainless Steel

Order **CBS-34.5-SS-10** or **CBS-40.5-SS-12**



## Anodized Aluminum Cable Brace

3/4" x 3/4" tube, 42" long for cutting down to any size rail height. Holes pre-drilled at 3-1/8" on center, 13 holes total. For use between structural posts to keep cables code compliant on level runs. Use cable brace plugs to attach to top and bottom rail or deck.

Order **CB-42-AN-AL-13**

## Black Aluminum Cable Brace

Order **CB-42-BL-AL-13**

## Anodized Aluminum Cable Brace for Stairs

3/4" x 3/4" tube, 42" long for cutting down to any size rail height. Comes undrilled so slots can be field-drilled to match cable array.

Order **CB-42-AN-AL**

## Black Aluminum Cable Brace for Stairs

Order **CB-42-BL-AL**



## Cable Grommets

Cable grommets are offered for popular cable diameters of 1/8", 3/16" and 1/4". They help prevent rust in exterior applications or elsewhere where moisture is a factor, by providing a barrier between the cable and the painted or powder-coated surface through which the cable is drawn when being installed. They help prevent noise in interior applications by dampening vibration in the cables. Ultra-tec® cable grommets are installed (after the paint or powder coating is applied) into holes in intermediate posts, cable braces and, in the case of the Invisiware® Radius Ferrule, Push-Lock®, and Pull-Lock® fittings into the end post holes through which the cable exits. They are offered in black UV resistant Delrin®.

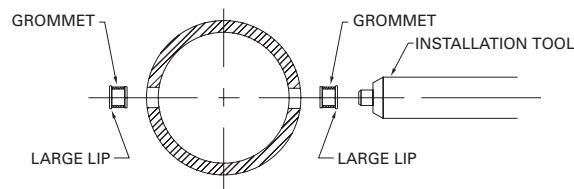


Order cable grommets by diameter of cable and post through which the cable will be drawn.

Delrin® is a registered trademark of E.I. DuPont de Nemours & Co.

CABLE DIA.	INTERMEDIATE POST MATERIAL (Not slotted for stairway)				INTERMEDIATE POST MATERIAL SLOTTED FOR STAIRWAY PITCH UP TO 37°		
	Schedule 40 1-1/4" 1-1/2" 2" PIPE	SQ. OR RECT. TUBE WITH .120" WALL	1/4" CABLE BRACE or SQ. OR RECT. TUBE WITH .250" WALL	1/2" FLAT BAR	Schedule 40 1-1/4" 1-1/2" 2" PIPE	SQ. OR RECT. TUBE WITH .120" WALL	1/4" CABLE BRACE or SQ. OR RECT. TUBE WITH .250" WALL
1/8" & 3/16"	G-C6-1	G-C6-2	G-C6-4	G-C6-500	GI-C6-1	GI-C6-2	GI-C6-4
1/4"	G-C8-1	G-C8-2	G-C8-4	NA	GI-C8-1	GI-C8-2	GI-C8-4

Cable grommets are available in lots of 100 each.



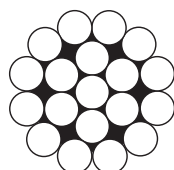
CABLE DIA.	END POST MATERIAL USING RADIUS FERRULE, PUSH-LOCK® or PULL-LOCK® FITTINGS	
	Schedule 80 1-1/4"*, 1-1/2" or 2" PIPE	SQ. OR RECT. TUBE with .250" WALL*
1/8" & 3/16"	G-C6-3	G-C6-4
1/4"	G-C8-3	G-C8-4

\*Cable grommets not required for Push- or Pull-Lock® applications where fitting extends through both walls of post frame.

## Cable

**Sizes offered.** Five sizes of cable are offered for the Ultra-tec® Cable Railing System: 1/8", 3/16", 1/4", 5/16", and 3/8".

**Cable construction.** We recommend only 1x19 construction, type 316 stainless steel cable for cable railing applications. 1x19 strand cable is engineered to hold static loads without stretching, and it is relatively stiff. Other cable constructions are not recommended because of their elevated levels of stretch and lower breaking strengths in comparison to 1x19 construction.



1 x 19  
Non-Flexible

MINIMUM BREAKING STRENGTH (in lbs.)  
FOR 1x19 STRAND TYPE 316 STAINLESS STEEL CABLE

Cable Diameter	1/8"	3/16"	1/4"	5/16"	3/8"
Breaking Strength	1,780	4,000	6,900	10,600	14,800

## Isolation Bushing

When placed over the fitting before inserting into the post, this bushing is used to prevent bimetallic corrosion.

Order **B-687-562-437**



## Cut-off Tool

Used to cut cable flush with the end of Pull-Lock® fittings, and to cut excess threads off stud-type tensioners. Includes mandrel and two cut-off wheels.

Order **CUT-OFF KIT**



## Stainless Steel Cleaner and Protectant

Dissolves minor corrosion, then leaves a protective coating that lasts for months. Includes an 8-oz. spray-on rust and stain remover and a 4-oz. bottle of protectant.

Order **E-Z CLEAN**





Photo courtesy of American Structures and Design

**Ultra-tec®**  
**CABLE RAILING INFILL**



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