

# ARCHITECTURAL HARDWARE

Cable Railings and Fittings



*C. Sherman Johnson Co., Inc.*  
**Johnson**  
Architectural Hardware



[CSJOHNSON.COM](http://CSJOHNSON.COM)



## Over 65 years of proven performance in the demanding marine environment.

C. Sherman Johnson Company Incorporated has been designing, developing, and manufacturing stainless steel hardware since 1958. For over 65 years, Johnson Marine has been the marine industry's #1 leader in life line fittings. Those same quality products are used to create cable railing systems for a variety of projects in residential, commercial, retail, theme parks, medical, industrial, and military applications. You will notice from the following fabricator supplied photos, that Johnson Architectural works closely with local fabricators around the country. This allows us to provide a level of service and custom design to the end user that is unmatched by other cookie cutter railing systems. If you want a quality Made In USA cable railing, look no further than Johnson Architectural. Let our catalog walk you through the steps to a beautiful functional cable railing system and design one for yourself today.



Channel 10 WPLG TV Studios - Pembroke Park, FL

Cable Fabricator: Sailing Services Inc. - Miami, FL

Rail Fabricator: Grundman Fabricators - Davie, FL



Cover Photo Top: Hard Rock Stadium - Miami Gardens, FL

Cable Fabricator: Sailing Services, Inc. - Miami, FL

Rail Fabricator: Biscayne Iron Works & Security Inc. - Miami, FL

Cover Photo Bottom: Private Residence - Cedar Rapids, IA

Cable & Rail Fabricators: K&K Welding - Solon, IA

Fusion Fabrication & Design - Tiffin, IA

Photos not to be reproduced without the expressed written consent of C. Sherman Johnson Co., Inc.

Got photos of your cable rail installation? Let us feature you in our next catalog! Email your hi-res photos to [info@csjohnson.com](mailto:info@csjohnson.com). Be sure to include the location, rigger/contractor and a short description.





**Private Dock - Connecticut**

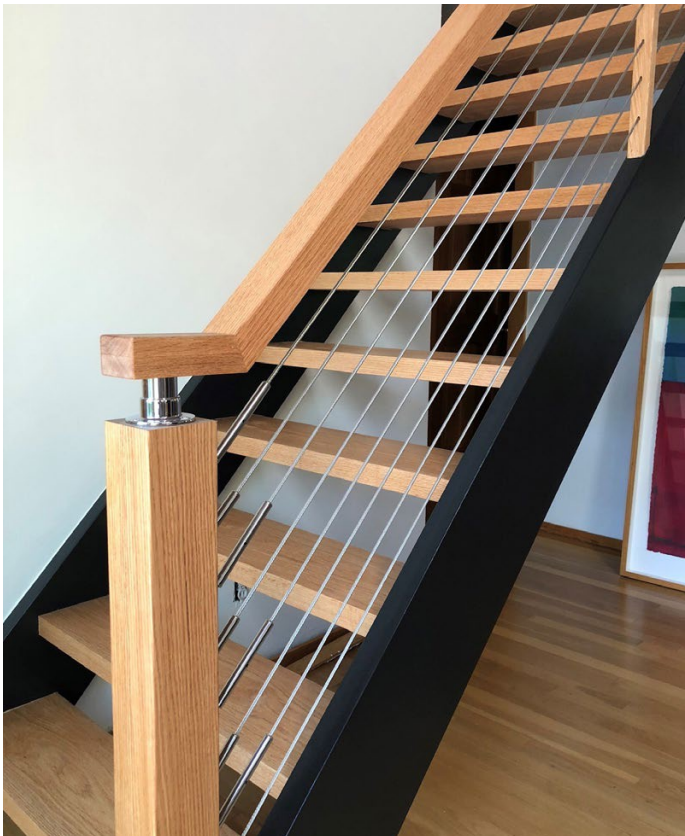
Cable & Dock Fabricator: Connecticut River Dock & Dredge Inc. - Essex, CT



**Private Residence - St. Paul, MN**

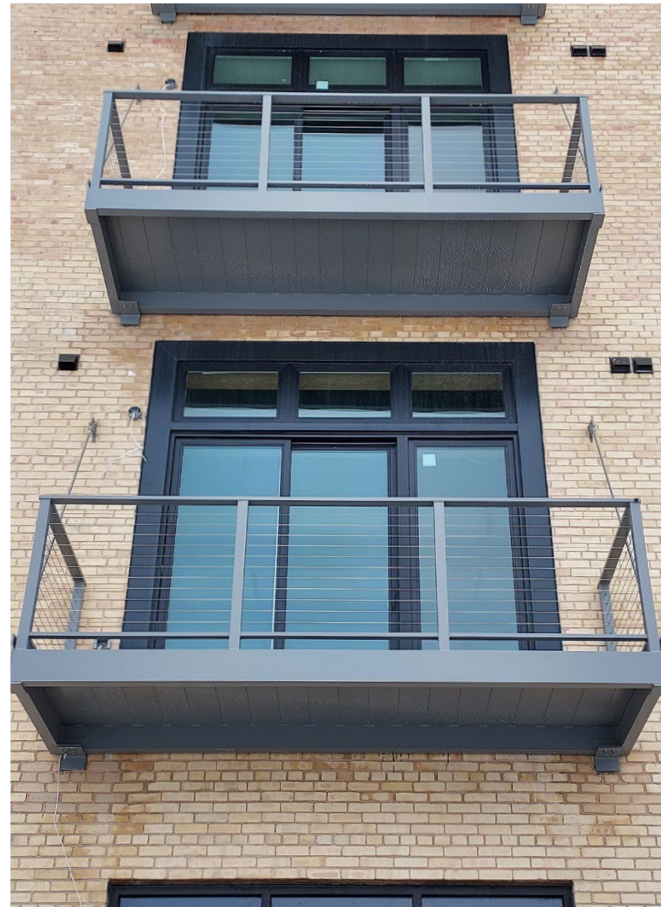
Cable & Rail Fabricator: Bauer Metal - St. Paul, MN

Photography: Alyssa Lee Photography - Minneapolis, MN



**Private Residence - Long Island, NY**

Cable & Rail Fabricator: East End Stairs & Railings - Riverhead, NY



**Menasha Banta Development - Menasha, WI**

Cable Fabricator: Midwest Iron - Milwaukee, WI

General Contractor: CR Structures Group, Inc.

Architect: Gries Architectural Group, Inc.





## Custom Fabricator Photos



**Boathouse - Salisbury, CT**

Cable & Rail Fabricator: Continental Iron Works LLC - East Hampton, CT  
General Contractor: Riga Construction - Canaan, CT



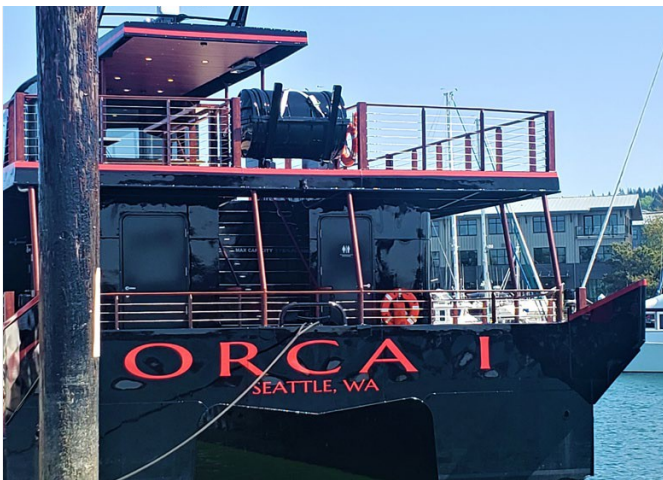
**Private Gate - Sedona, AZ**

Cable & Fabrication: Scott Dow, Falcon Designs LLC - Phoenix, AZ  
Architect: Swaback PLLC - Scottsdale, AZ



**Private Residence - Des Moines, IA**

Cable & Rail Fabricator: Factor Fabrication, Inc. - Des Moines, IA  
Builder: Kruse Development LLC - Des Moines, IA  
Photo: Boonie



**Orca 1 - Seattle, WA**

Cable Fabricator: Northwest Rigging - Anacortes, WA  
Builder: All American Marine - Bellingham, WA  
Photos: Dylan Myers





## Getting Started is Easy!

Specifying the cable railing is not rocket science but you need to think about a few concepts to get exactly what you want. Let's start with:

- Will my framework be made of wood or metal?
- What size cable do I want?
- How do I want the cable fittings to attach: machine swage, hand crimp, or mechanical?

It's ok if you can't answer these questions right now. Please familiarize your self with the next few pages and see what makes the most sense for you and your design.

### Need Help?

If you need help, contact us at:

1-800-874-7455

## How the Cable Attaches

### Machine Swage (pronounced swāj)

Fittings are attached to the cable by means of a cold forming press. The completed fitting has a smooth uniform appearance and can develop full cable strength. Swaging services can be performed by professional riggers and sling manufacturers.

Machine Swage Terminal



### Hand Crimp

Hand Crimp is available in 1/8" & 3/16" cable only. Fittings are attached to the cable using a simple hand tool (allows field installation). The completed fitting will provide approximately 65-70% of the 7x7 cable strength. We can provide the necessary tool.

Hand Crimp Terminal



### Rapid Rail Mechanical Fitting

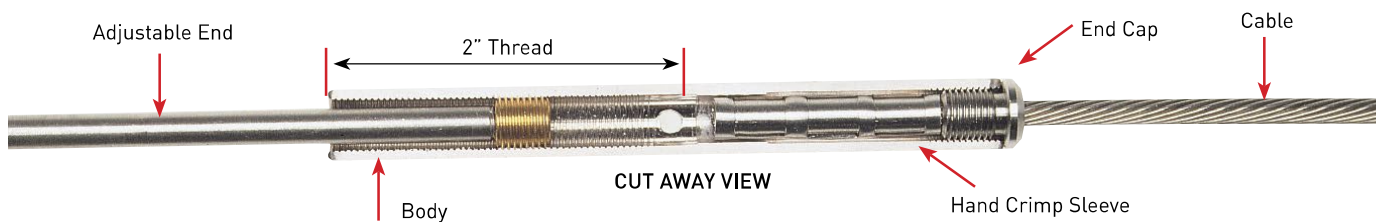
Fittings are available for 3/16" cable. These fittings attach to the cable with simple hand tools. They are not load-rated fittings but work great for cable railings.

Rapid Rail Mechanical Fitting



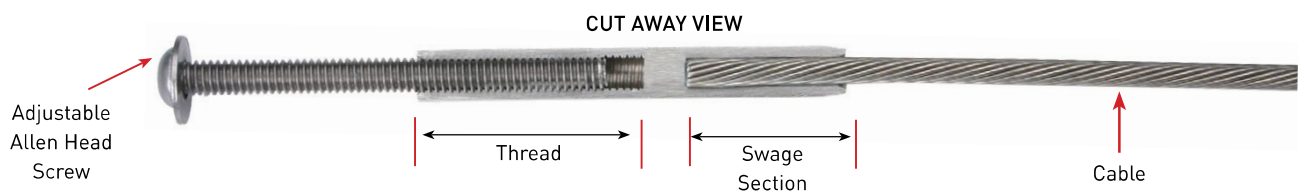
### Smooth Line Turnbuckle

Smooth Lines have no exposed threads and the cable is fastened internally by a sleeve on the back side of the cap.



### Terminator Turnbuckle - Cable Attachment

The Terminator uses coarse thread for use with the supplied screw or with a coarse screw of your choice.

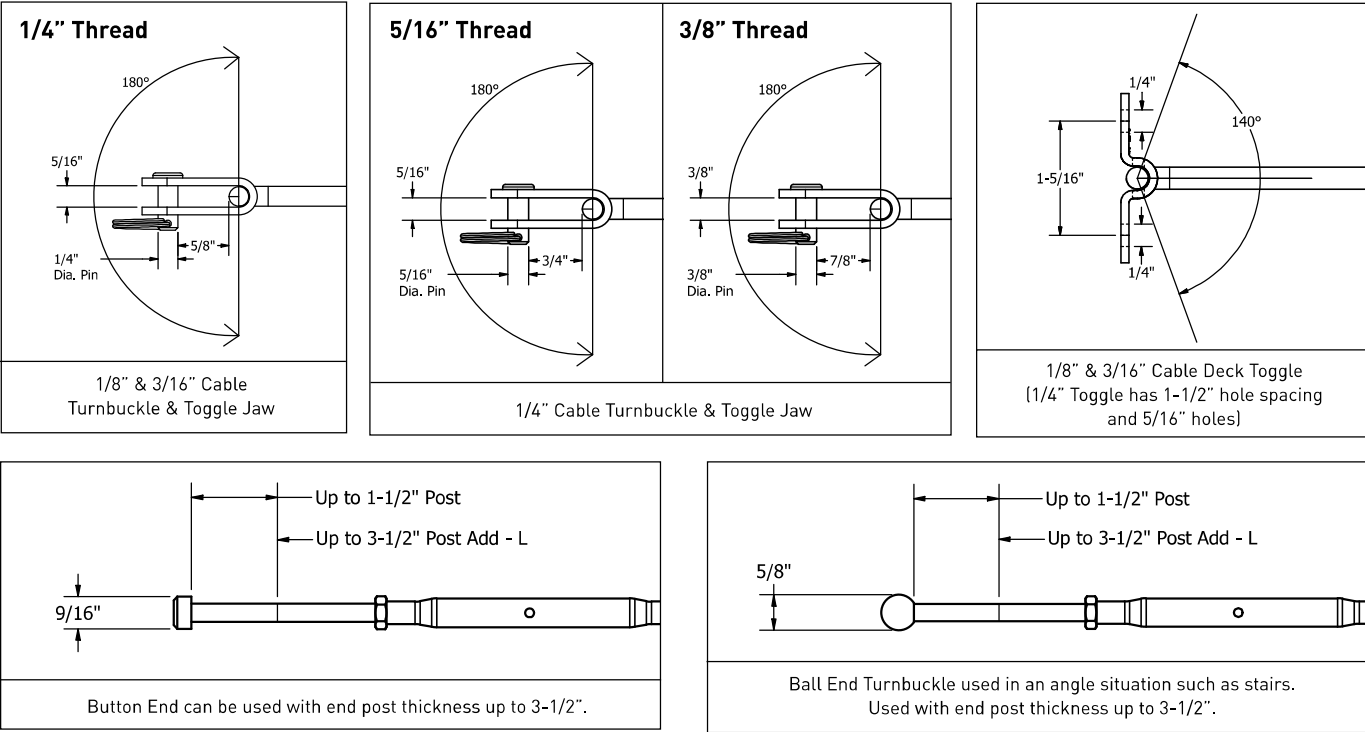




# Cable Set Up

- Space cable at 3 inches on center to meet a 4 inch code or 1 inch closer than the code requires.
- End posts need to be strong enough to support the number of cable assemblies used and tensioned to 350 lbs. per cable assembly.
- Intermediate posts need to be placed every 4 feet.
- Cable lengths need to be kept under 50 feet in length for conventional turnbuckles and up to 25 feet for Smooth Line and Terminator fittings.

## End Attachment Specifications:



## Cable

### Cable Selection

Generally 1/8", 3/16", or 1/4", 1x19 stainless steel cable is chosen for most railing applications. 1/8" can be used for residential applications. 3/16" cable is the most popular size for general applications. 1/4" cable is for high traffic applications.

### Description of Wire Construction:

- 1 x 19 - Semi-rigid...used for straight runs
- 7 x 7 - Semi-flexible...used for short runs and decorative corners
- 7 x 19 - Flexible...used for decorative purposes only

### Stainless Steel Wire Rope Breaking Strength (lbs.)

DIAMETER	1X19	7X7	7X19
1/8"	2,100	1,700	1,760
3/16"	4,700	3,700	3,760
1/4"	8,200	6,100	6,400
3/8"	17,500	12,600	12,000

## Cable Assemblies

A complete cable assembly must have the following elements: 1) A turnbuckle or an adjustable threaded terminal to tension the cable, 2) An attachment point at each end, with an end fitting, that will support the tension of the cable. Unless you have these two elements, you do not have a proper cable assembly. There are many different ways to make a cable assembly. Aesthetics are very important so we provide a

variety of fittings that do the same thing but have a different appearance. You can design your rail and mix & match to come up with just the look you want. Johnson Architectural does not make cable assemblies, but we can set you up with a cable fabricator in your area to provide for your needs. For Hand Crimp fittings, wire and the proper tool to make your own cable assemblies, call Johnson.

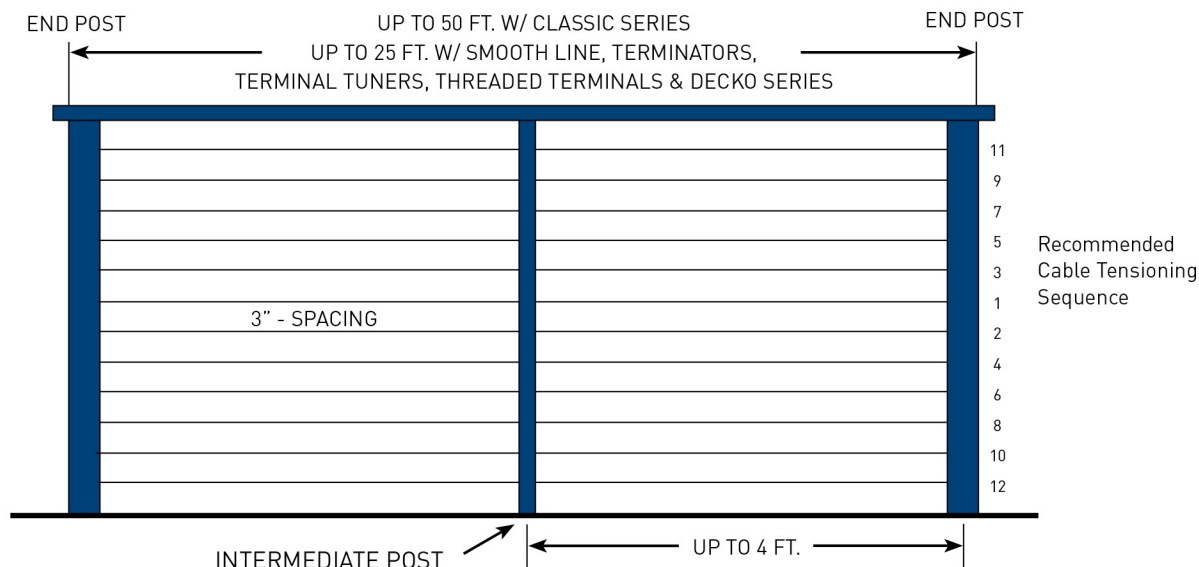




## Basic Framework

### Suggested Railing Framework

The following is only a guide line. Please check your local building code for use of cable rails.



### Framework

End posts and corners need to be made from the following minimums:

- **Round Pipe** 1-1/2" ID Schedule 80
- **Square Tube** 2" x 2" x 1/4" Wall
- **Angle Iron** 2" x 2" x 1/2"
- **Flat Bar** 2" x 1" (widest dimension should be inline with cable tension)
- **Wood Post** 6" x 6"

#### Please Note:

Johnson Architectural Hardware does not make framework. Framework needs to be made by a steel fabricator.

### Technical Support - Call 1.800.874.7455

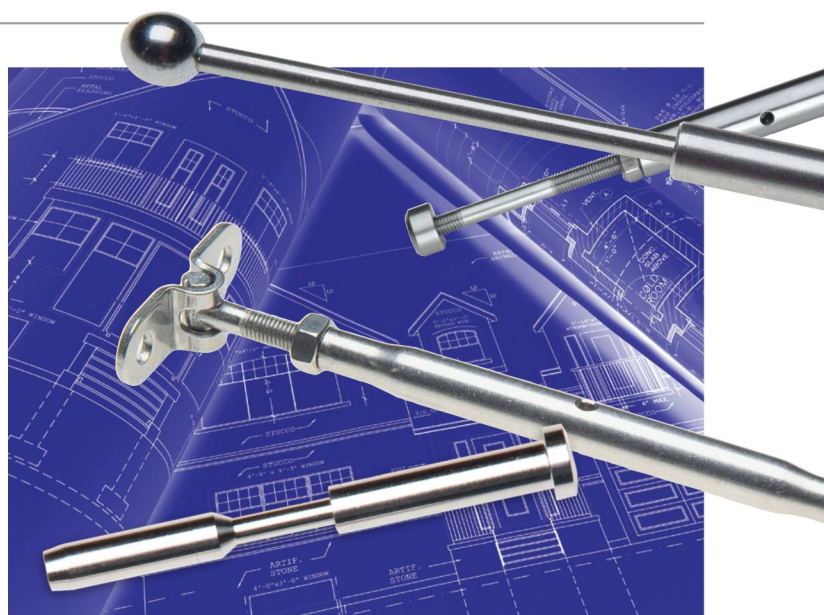
OK, you want cable railings, but you do not have time to read the catalog.

Please call us toll-free at 1.800.874.7455. Johnson Architectural will talk you through the process and make sure you get the help you need.

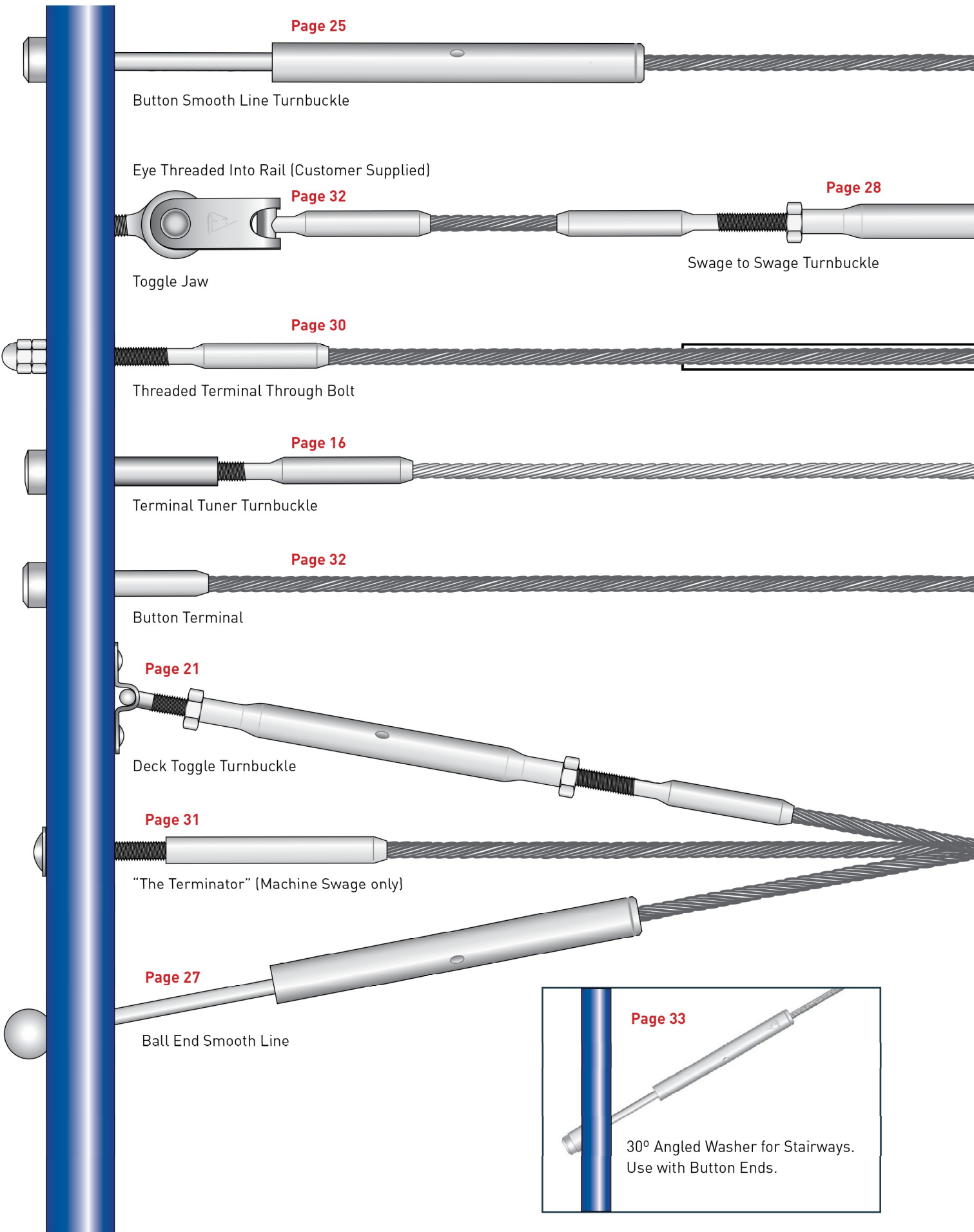
If you are a contractor or steel fabricator, call us to walk you through the HAND CRIMP cable process. If you are a licensed contractor or steel fabricator, Johnson Architectural can sell you HAND CRIMP hardware direct.

MACHINE SWAGE fittings are only sold to authorized riggers with Mil-Spec swage equipment. If you need machine swage CABLE ASSEMBLIES, please call us for the name and number of a rigger near you.

**Good luck with your cable project.**







Page 25

Button Smooth Line Turnbuckle

Eye Threaded Into Rail (Customer Supplied)

Page 32

Toggle Jaw

Page 28

Swage to Swage Turnbuckle

Page 30

Threaded Terminal Through Bolt

Page 16

Terminal Tuner Turnbuckle

Page 32

Button Terminal

Page 21

Deck Toggle Turnbuckle

Page 31

"The Terminator" (Machine Swage only)

Page 27

Ball End Smooth Line

Page 33

30° Angled Washer for Stairways.  
Use with Button Ends.



For more information please turn to page....

Page 32

Smooth Line Button Terminal

Page 32

Welded Tab  
(Customer Supplied)

Page 30

PVC Coated Cable or Clear Coated

Threaded Into Rail  
(Wall thickness must be properly sized)

Page 16

Page 23

Button & Swage Turnbuckle

Page 32

Ball End Terminal

Page 31

Page 32

Deck Toggle

### IMPORTANT INFORMATION

- End posts need to be able to support 350 lbs. per the number of cables.
- Space cables at 3 inches on center to meet 4 inch sphere test.
- Minimum hole size to pass stud through stanchion:
  - 1/8" & 3/16" Cable - 3/8" hole
  - 1/4" Cable - 1/2" hole
- Maximum Stanchion Span: 4 feet
- Maximum Run for Terminator, Decko & Smooth Line: 25 feet
- Maximum Run for Classic Turnbuckle: 50 feet
- Use fittings at each end with an adjustable threaded stud or turnbuckle.
- The cable runs shown are only a small sample of what is available.



## FAQs

Cable has become an excellent railing material because of Johnson Architectural Hardware. When the natural beauty surrounding a home or building is too precious to block with an ordinary railing, Johnson's cable railings are the answer. Johnson Architectural Hardware cable railings create an unblocked view and satisfies code. Cable will take any path you make for it, but there are some rules to follow in order to satisfy code for railings.

**The following are answers to frequently asked questions:**

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**Q: What is a Turnbuckle?**

A turnbuckle is a metal coupling device consisting of right and left hand threaded members screwed into an internally threaded body which when rotated expands or contracts.



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**Q: What is a Machine Swage Fitting?**

A machine swage fitting is attached to the cable by a swage machine which cold forms the fitting directly to the cable. A swage fitting should not be confused with Hand Crimp fittings or other hand tool applied fittings. A specialized swaging machine is the only way to attach swage fittings to cable. Swage fittings can not be Hand Crimped, welded, glued, hammered or attached to a cable by any other means other than a swage machine.



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**Q: What is a Hand Crimp Fitting?**

Hand Crimp fittings were first designed and manufactured by C. Sherman Johnson Co., Inc. in 1969. Hand Crimp fittings are attached to the cable with a Johnsonmade Hand Crimp Tool model #53-210 or #53-215. The only other tool that can be used is the National Telephone Supply Co. #64-CGMP. Hand Crimp fittings should not be confused with Nicopress fittings. Nicopress fittings have sleeves that are made from soft copper alloy and compress very easily. All Johnson Hand Crimp fittings are made from stainless steel and can not be swaged, welded, glued, pressed in a vise or with vise grips, or attached to the cable by any means other than the Johnson tool #53-210, #53-215 or NTS Co. #64-CGMP.



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**Q: What is a Mechanical Fitting?**

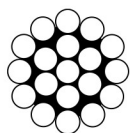
A mechanical fitting is attached to the cable by the fitting compressing the cable with a cone/wedge inside the fitting and/or the cable. Mechanical fittings are assembled to the cable with simple hand tools. Mechanical fittings are larger in diameter than Swage and Hand Crimp fittings and can be reused with a new cone, but carry a larger price tag.



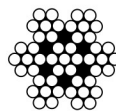


**Q: What type of cable do I use?**

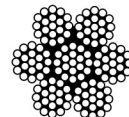
Generally 1x19 cable should be used for all railing applications. 1x19 cable is stiff and low stretch, perfect for railings with runs up to 50 feet. 7x7 cable is more flexible with more stretch and can be used for railings with very short runs. 7x19 is very flexible and should never be used for cable rails.



1x19



7x7



7x19

**Q: What size cable do I use?**

3/16" cable is the most popular size and good for most railing applications. In high traffic applications such as airports, stadiums or amusement parks, 1/4" cable is highly recommended. For residential applications where view and unobtrusiveness are paramount, 1/8" cable works well.

**Q: Do I need a turnbuckle in my cable assembly?**

Yes. Cable works great for railing but only if you have the ability to tighten it with a turnbuckle or with a through-bolted threaded terminal. Even if you had some way of pre-tensioning the cable and attaching it without a turnbuckle or threaded terminal, the cable would eventually stretch through people leaning against it, children climbing, the building settling, etc... You want the ability to go back six months later and tighten up the cable.

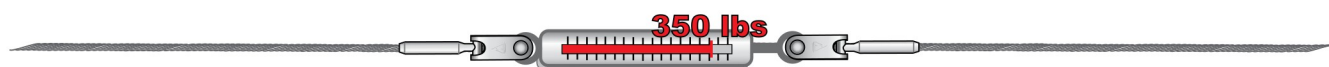


**Q: Does Johnson make cable assemblies?**

No. Johnson manufactures the fittings but does not make complete cable assemblies. Our 60 year history enables Johnson to provide you with a cable fabricator near you from across the country. Please call us for the information you need.

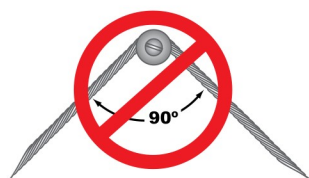
**Q: How much tension do I need?**

Johnson Architectural Hardware recommends 350 lbs. of tension on each cable assembly for a cable railing. 350 lbs. of tension is based on following the guidelines in our Basic Framework section for railing framework (please see page 7). If one follows Johnson's guidelines, Johnson knows through in-field experience and through the Modulus of Elasticity formula that code will be satisfied.



**Q: Can I take 90° corners?**

No. A true 90° corner will tweak the cable no matter what construction of cable is used. The physics of the cable does not allow the tension to be equally transmitted from one side of a corner to the other side. Tension has to be maintained throughout the entire length of the cable run to meet code. Tension in a cable is not like electricity in a wire. An end fitting should be used to make the corner transition and keep the cable tension in a straight line.



**Q: What end attachments do I use?**

End attachments are the designer's personal choice. There are many ways to accomplish the same thing with different fittings. End posts and aesthetics are the most important factors in determining end attachments. See page 32 for end fittings.



**Q: What are the after swage dimensions?**

The table below shows the After Swage Dimensions for machine swage fittings.

TERMINAL WIRE SIZE	THREAD DIAMETER	BEFORE SWAGE DIMENSION	AFTER SWAGE DIMENSION
1/8"	10-32, 1/4"	.250	.219
5/32"	1/4", 5/16"	.297	.250
3/16"	1/4", 5/16", 3/8"	.359	.313
7/32"	5/16"	.427	.375
1/4"*	5/16"	.427	.375
1/4"	3/8"	.494	.438
5/16"	1/2", 5/8"	.635	.563
3/8"	5/8"	.703	.625

NOTE: Smooth Line and Blind Thread Terminal Tuners cannot be swaged with the WireTeknik machine.  
\* Swages with 7/32" die.

**Q: Can I make my framework out of aluminum?**

Generally, aluminum is too soft for cable railings. Aluminum and stainless can react and cause electrolysis. If properly insulated and structurally equivalent to the framework described on page 7, an aluminum framework can be used.

**Q: What grade of stainless steel does Johnson use?**

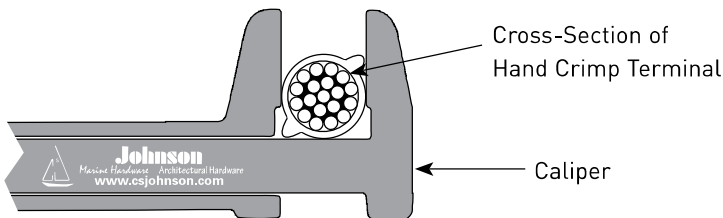
For all major components, Johnson uses Type 316 stainless steel. Type 316 is lowcarbon "18-8" chromium-nickel stainless steel modified by the addition of molybdenum, which greatly increases its corrosion resistance.

**Q: Why is Johnson so strict with cable spacing, tension and framework?**

Johnson is strict with our specifications because we want you to meet code. Cable railing is not a new business to Johnson. Johnson has been manufacturing cable fittings since 1958. Other so-called "cable experts" may tell you that you can get away with certain things, but Johnson has the experience and wants you to meet code the first time. If you follow what we prescribe in this catalog, you can be confident you will meet code.

**Q: What are the after crimp dimensions for the Johnson 53-215 tool?**

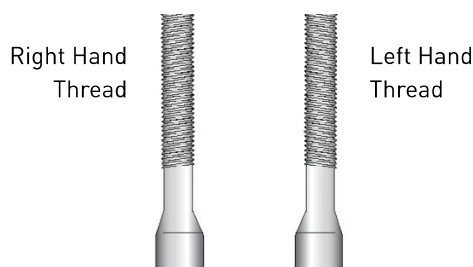
1/8" cable = .185; 3/16" cable = .265 (+.000 -.003)





**Q: How can I tell right hand thread from left hand thread?**

Threads slope up to right when the stud is held vertically for right hand thread or slope up to the left for left hand thread.



**Q: Does Johnson offer fittings in steel or galvanized?**

No.

**Q: What is the minimum hole size to pass a stud through an intermediate post?**

1/8" and 3/16" cable - 3/8" hole  
1/4" cable - 1/2" hole

**Q: How long can I run a single piece of cable?**

For architectural railing purposes, cable needs to be tensioned mechanically. The most common way to do this is with a turnbuckle. Generally a conventional turnbuckle like the Johnson Classic Series can tension the cable up to 50' in a straight run and meet code. Johnson's smaller fittings can meet code with runs up to 25' with an adjustable fitting at both ends.

**Q: How often can I clean stainless steel?**

Stainless steel needs to be cleaned for aesthetic considerations and to preserve corrosion resistance. Stainless steel is protected from corrosion by a thin layer of chromium oxide. Oxygen from the atmosphere combines with the chromium in the stainless steel to form this passive chromium oxide film that protects from further corrosion. Any contamination of the surface by dirt, or other material, hinders this passivation process and traps corrosive agents, reducing corrosion protection. Thus, some form of routine cleaning is necessary to preserve the appearance and integrity of the surface.

Stainless steel is easily cleaned by many different methods. Stainless steel actually thrives with frequent cleaning. Unlike some other materials, it is impossible to "wear out" stainless steel by excessive cleaning. The effect of surface/pattern roughness, grain/pattern orientation, and designs that allow for maximum rain cleaning (exterior applications) should be considered.

Stainless steel cleaning information provided by:  
Specialty Steel Industry of North America  
3050 K Street, N.W.  
Washington, DC 20007





Arnolds Park Amusement Park - Arnolds Park, IA  
Cable & Rail Fabricator: Alger Companies - Milford, IA



Private Residence - North Wildwood, NJ  
Cable & Rail Fabricator: Dennisville Fence - Dennisville, NJ



Got photos of your cable rail installation? Let us feature you in our next catalog!  
Email your hi-res photos to [info@csjohnson.com](mailto:info@csjohnson.com). Be sure to include the location,  
rigger/contractor and a short description.





## Choosing a Turnbuckle

Johnson Architectural makes many fittings to choose from. At this point in the catalog you should have decided:

- Do I want Machine Swage or Hand Crimp fittings?
- What cable size and type do I want?
- Will my railing framework be wood or metal?

If you are not sure how to answer the questions above, please return to the first part of this catalog and familiarize yourself with the concepts so you have a plan.

Once you answer these questions, you are ready to choose your fittings.

### Body Styles



"Terminal Tuner"



"Classic"



"Classic Shortie"



"Decko"



"Smoothline"



"Threaded"

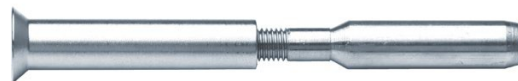


"Terminator"

### End Attachment Styles



"Button"



"Bevel"



"Ball"



"Jaw Toggle"



"Deck Toggle"



"Threaded"



"Terminator"



## “Terminal Tuner” Turnbuckles

Not for lifting, hanging or other high load applications.  
See Marine Catalog for Rigging Hardware.



The Redbury South Beach - Miami, FL  
Rail Fabricator: Climatrol Quality Aluminum  
Cable Supplier: Sailing Services, Inc. - Miami, FL

The Terminal Tuners Series of turnbuckles is now available in three different styles: Button, Ball and Bevel in full or blind thread. These simple but sophisticated fittings lend themselves to metal railings with cable span lengths up to 25' if used at both ends. Button Terminal Tuners can be used on wood railings with proper washers. Ball Terminal Tuners work great at angles such as stairs. The Bevel Terminal Tuner is designed to sit flush in a 82° counter sunk hole. Three styles tuned into your needs.

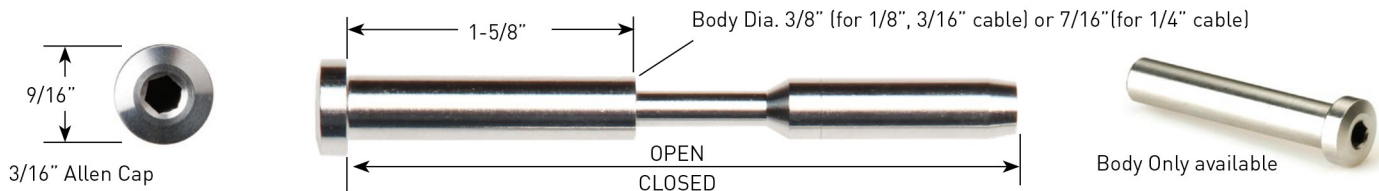


Blind Thread



Full Thread

### “Button” Terminal Tuner Turnbuckle

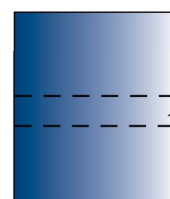


The Button Terminal Tuner Turnbuckle is a simple way to terminate cable with conventional threaded terminals. Installation and adjustment are a breeze with Terminal Tuners. Available complete with a threaded terminal or body only.

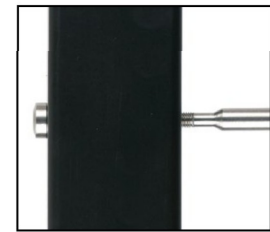
*Best if used  
with itself...*



#### Button Terminal Tuner Attachment



End Post



#### Complete Cable Assembly (Example)



#### Hand Crimp (TT Designates Blind Thread Version)

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-703-4TT	1/8"	1/4"-28 R.H.	4-7/8"	3-3/8"
27-703-6TT	3/16"	1/4"-28 R.H.	5-3/8"	3-7/8"
26-703-4	1/8"	1/4"-28 R.H.	4-7/8"	3-3/8"
27-703-6	3/16"	1/4"-28 R.H.	5-3/8"	3-7/8"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.  
NOTE: Blind Thread Terminal Tuners cannot be swaged with the WireTeknik machine.

#### Machine Swage (TT Designates Blind Thread Version)

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
35-703-4TT	1/8"	1/4"-28 R.H.	4-1/4"	2-7/8"
35-703-6TT	3/16"	1/4"-28 R.H.	4-5/8"	3-3/8"
35-705-8TT*	1/4"	5/16"-24 R.H.	4-7/8"	3-5/8"
35-703-4	1/8"	1/4"-28 R.H.	4-1/4"	2-7/8"
35-703-6	3/16"	1/4"-28 R.H.	4-5/8"	3-3/8"
35-705-8*	1/4"	5/16"-24 R.H.	4-7/8"	3-5/8"
35-705-8TT*	1/4"	5/16"-24 R.H.	4-7/8"	3-5/8"
35-703	Body Only	1/4"-28 R.H.	---	---
35-705	Body Only	5/16"-24 R.H.	---	---

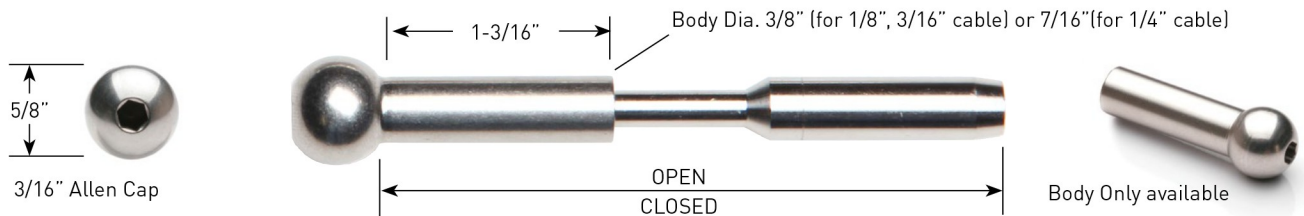
\*swage with 7/32" die

NOTE: Terminals for body only found on pages 14 and 19 in Marine Catalog.





## "Ball" Terminal Tuner Turnbuckle



The Ball Terminal Tuner Turnbuckle is a simple fitting that will take the angle of a stair railing. The mounting holes must be drilled at the true angle or with a slot.

*Best if used  
with itself...*



### Machine Swage (TT Designates Blind Thread Version)

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
35-803-4TT	1/8"	1/4"-28 R.H.	4-1/4"	2-7/8"
35-803-6TT	3/16"	1/4"-28 R.H.	4-5/8"	3-3/8"
35-805-8TT*	1/4"	5/16"-24 R.H.	4-7/8"	3-5/8"
35-803-4	1/8"	1/4"-28 R.H.	4-1/4"	2-7/8"
35-803-6	3/16"	1/4"-28 R.H.	4-5/8"	3-3/8"
35-805-8*	1/4"	5/16"-24 R.H.	4-7/8"	3-5/8"
35-805-8TT*	1/4"	5/16"-24 R.H.	4-7/8"	3-5/8"
35-803	Body Only	1/4"-28 R.H.	----	----
35-805	Body Only	5/16"-24 R.H.	----	----

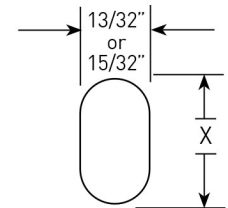
\*swage with 7/32" die

NOTE: Terminals for body only found on pages 14 and 19 in Marine Catalog.

### Ball Terminal Tuner Attachment



Drill mounting holes at true angles or with slots.



SLOT LENGTH			
PLATE THICKNESS	1/4"	3/8"	1/2"
X	1/2"	19/32"	11/16"

### Hand Crimp (TT Designates Blind Thread Version)

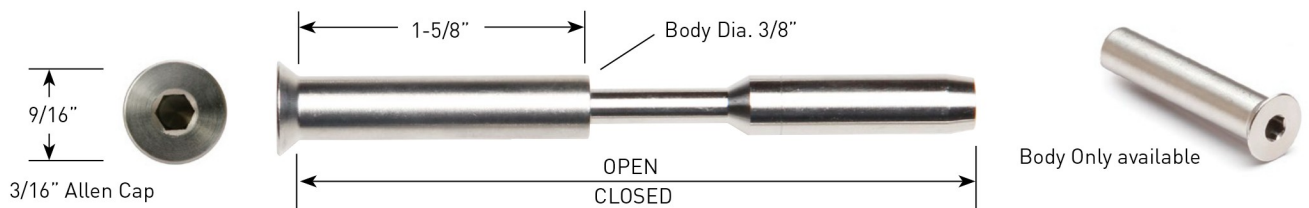
CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-803-4TT	1/8"	1/4"-28 R.H.	4-7/8"	3-3/8"
27-803-6TT	3/16"	1/4"-28 R.H.	5-3/8"	3-7/8"
26-803-4	1/8"	1/4"-28 R.H.	4-7/8"	3-3/8"
27-803-6	3/16"	1/4"-28 R.H.	5-3/8"	3-7/8"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

### Complete Cable Assembly (Example)



## "Bevel" Terminal Tuner Turnbuckle

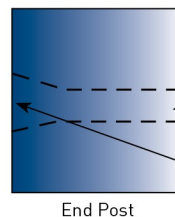


The Bevel Terminal Tuner Turnbuckle is a great way to terminate cable in a flush fitting. A 82° counter sink makes the bevel sit flush for a clean simple look. To be used for straight runs only.

*Best if used  
with itself...*



### Terminal Tuner Attachment



End Post



Sits Flush

### Complete Cable Assembly (Example)



### Machine Swage (TT Designates Blind Thread Version)

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
35-713-4TT	1/8"	1/4"-28 R.H.	4-1/4"	2-7/8"
35-713-6TT	3/16"	1/4"-28 R.H.	4-5/8"	3-3/8"
35-713-4	1/8"	1/4"-28 R.H.	4-1/4"	2-7/8"
35-713-6	3/16"	1/4"-28 R.H.	4-5/8"	3-3/8"
35-713	Body Only	1/4"-28 R.H.	---	---

NOTE: Terminals for body only found on pages 14 and 19 in Marine Catalog.

### Hand Crimp (TT Designates Blind Thread Version)

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-713-4TT	1/8"	1/4"-28 R.H.	4-7/8"	3-3/8"
27-713-6TT	3/16"	1/4"-28 R.H.	5-3/8"	3-7/8"
26-713-4	1/8"	1/4"-28 R.H.	4-7/8"	3-3/8"
27-713-6	3/16"	1/4"-28 R.H.	5-3/8"	3-7/8"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.



## Jaw Turnbuckle System

Not for lifting, hanging or other high load applications.  
See Marine Catalog for Rigging Hardware.



Light Rail Station

Cable Fabricator: NW Cable Assemblies, Snohomish, WA

The Jaw Turnbuckle System offers four different turnbuckle styles to meet your needs when nothing but a jaw will do. A jaw with clevis pin can attach to an eye, tab, or in a channel. The clevis pin allows the cable assembly to be used in straight runs and at angles in staircases. The Classic Jaw Turnbuckle has "Yacht" looks and quality. If you like the Classic but want it in a smaller length, we offer the Shortie Jaw Turnbuckle. If you want a Mid-Century look, the Deco Jaw Turnbuckle fills the niche. For the ultimate in elegance and simplicity, the Jaw Smooth Line Turnbuckle is the choice for those who want the best. The Jaw Smooth Line has no exposed thread and terminates the cable internally. Please select from these four Jaw Turnbuckle System choices.

### Classic Jaw Turnbuckle



The Classic Jaw and Swage Turnbuckle is an excellent choice for a wide variety of applications. A clevis pin in the jaw attaches to eyes, tabs or in a channel. Can be used in straight run or at an angle. Larger sizes available, please see page 35 in Marine Catalog.

Best if used with  
Toggle Jaw



(see pg. 32)

### Complete Cable Assembly (Example)



### Machine Swage

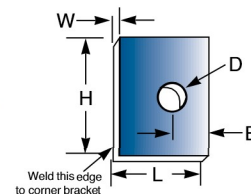
CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314	1/8"	1/4"	11-1/4"	8-1/4"
19-316	3/16"	1/4"	11-1/4"	8-1/4"
19-318-7*	1/4"	5/16"	12-3/4"	9"
19-308	1/4"	3/8"	14-1/4"	10"

\*swage with 7/32" die

### Jaw Attachment Tab



Can also use Security Bolt  
(see pg. 33)



For Pin	D (Hole Dia.)	E (Dist. from Edge)	L (Length)	H (Min. Height)	W (Stock Width)
1/4"	9/32"	5/16"	3/4"	1"	1/4"
5/16"	11/32"	3/8"	1-1/4"	1-1/2"	5/16"
3/8"	25/64"	1/2"	1-1/4"	1-1/2"	3/8"

### Hand Crimp

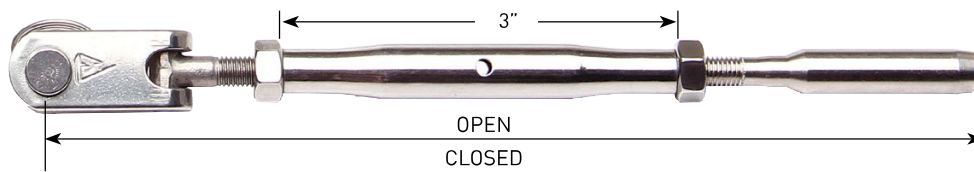
CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412	1/8"	1/4"	11-5/8"	8-3/4"
27-412	3/16"	1/4"	11-5/8"	8-3/4"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.





## “Shortie” Jaw Turnbuckle



The “Shortie” Jaw and Swage Turnbuckle is an excellent choice for a wide variety of applications. A clevis pin in the jaw attaches to eyes, tabs or in a channel. Can be used in straight run or at an angle.

Best if used with  
Toggle Jaw

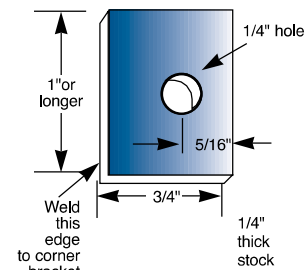


(see pg. 32)

### Jaw Attachment Tab



Can also use Security Bolt  
(see pg. 33)



## Complete Cable Assembly (Example)



### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314S	1/8"	1/4"	8-1/4"	6-1/4"
19-316S	3/16"	1/4"	8-1/2"	6-1/2"

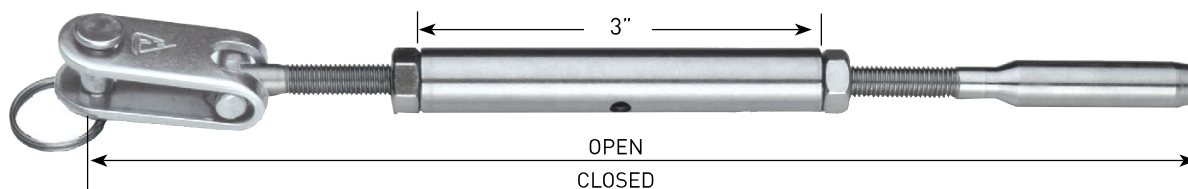
NOTE: Not available for 1/4" cable.

### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412S	1/8"	1/4"	8-3/4"	6-3/4"
27-412S	3/16"	1/4"	9"	7"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

## Decko Jaw Turnbuckle



The Decko Jaw and Swage Turnbuckle is an excellent choice for a wide variety of applications. A clevis pin in the jaw attaches to eyes, tabs or in a channel. Can be used in straight runs or at an angle.

Best if used with  
Toggle Jaw

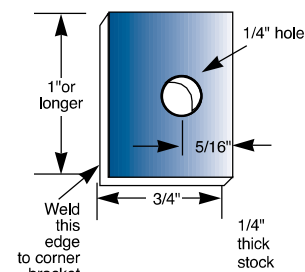


(see pg. 32)

### Jaw Attachment Tab



Can also use Security Bolt  
(see pg. 33)



## Complete Cable Assembly (Example)



### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-DE	1/8"	1/4"	8-1/4"	6-1/4"
19-316-DE	3/16"	1/4"	8-1/2"	6-1/2"

NOTE: Not available for 1/4" cable.

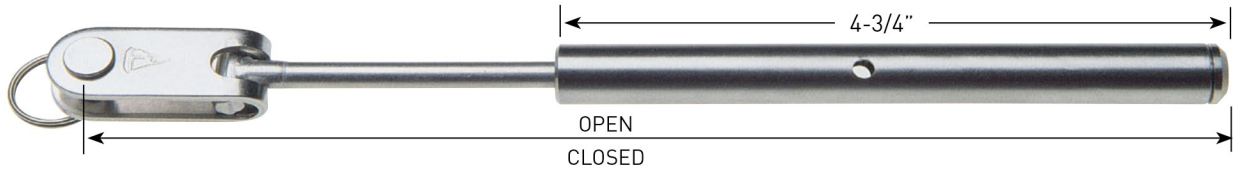
### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-DE	1/8"	1/4"	8-3/4"	6-3/4"
27-412-DE	3/16"	1/4"	9"	7"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.



Jaw Smooth Line Turnbuckle



The Smooth Line Turnbuckles are state-of-the-art fittings. The cable is terminated internally. One does not see a swage terminal (or threads) as on a conventional turnbuckle. The Jaw Smooth Line Turnbuckle adapts itself to a wide variety of projects. The jaw will easily attach to eyes, tabs or in a channel.

Best if used with  
Smooth Line Toggle Jaw



(see pg. 32)

Complete Cable Assembly (Example)

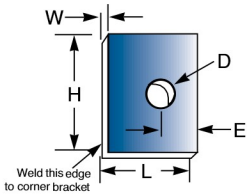


Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
60-700	1/8"	1/4"	8"	6-5/16"
60-702	3/16"	1/4"	8"	6-5/16"
60-704*	1/4"	5/16"	9"	7"

\*swage with 7/32" die.  
Does not work with Wiretechnik Swaging Machines.

Jaw Attachment Tab



Can also use Security Bolt  
(see pg. 33)

For Pin	D (Hole Dia.)	E (Dist. from Edge)	L (Length)	H (Min. Height)	W (Stock Width)
1/4"	9/32"	5/16"	3/4"	1"	1/4"
5/16"	11/32"	3/8"	1-1/4"	1-1/2"	5/16"

Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-715	1/8"	1/4"	8"	6-5/16"
27-715	3/16"	1/4"	8"	6-5/16"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

Deck Toggle Turnbuckle System



Private Residence  
Cable Fabricator: OCD Rigging - Chester, CT

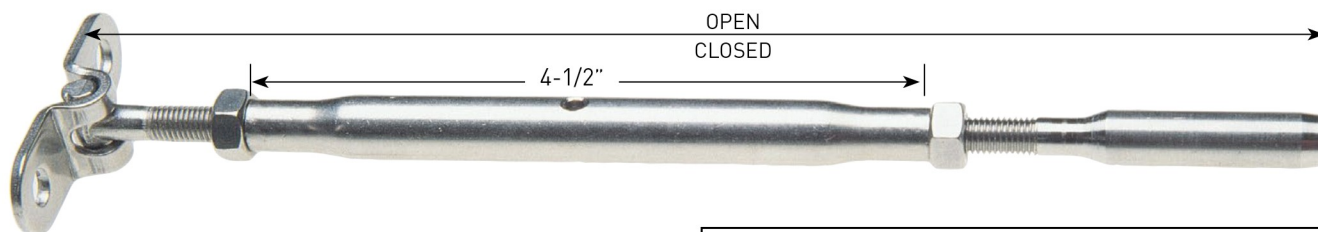
Not for lifting, hanging or other high load applications.  
See Marine Catalog for Rigging Hardware.

The Deck Toggle Turnbuckle System is available in four different styles. The Deck Toggle mounts to a flat surface such as end posts and walls. Because the Deck Toggle swivels, it works well in strait runs and with angles in staircases. Either through bolted or lagged in place, the Deck Toggle makes it easy to run cable rails anywhere. Please choose from the Classic Deck Toggle Turnbuckle with its "Yachty" good looks or if you want something smaller, the Shortie Deck Toggle Turnbuckle is available. The Decko Deck Toggle Turnbuckle has a Mid-Century vibe that may add to your décor. The Deck Toggle Smooth Line Turnbuckle is the choice for those who want the best. For the ultimate in elegance and simplicity, the Deck Toggle Smooth Line has no exposed thread and terminates the cable internally. Please select from these four Deck Toggle Turnbuckle System choices.





## Classic Deck Toggle Turnbuckle

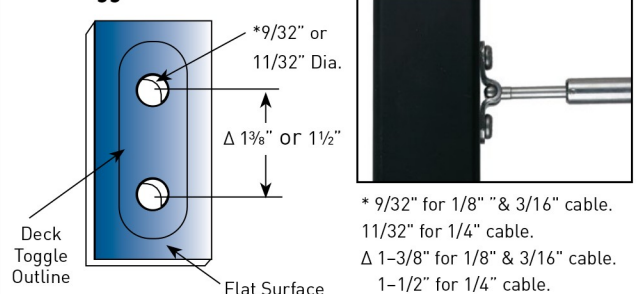


Our Classic Deck Toggle and Swage Turnbuckle can be mounted to any flat surface and is held in place by two tabs suitable for through bolting. The best feature of the deck toggle is it can articulate 140 degrees.

*Best if used with  
Deck Terminal*



### Deck Toggle Attachment



### Complete Cable Assembly (Example)



### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-1T	1/8"	1/4"	10-3/4"	7-3/4"
19-316-1T	3/16"	1/4"	11-1/4"	8-1/4"
19-318-1T*	1/4"	5/16"	12"	9"

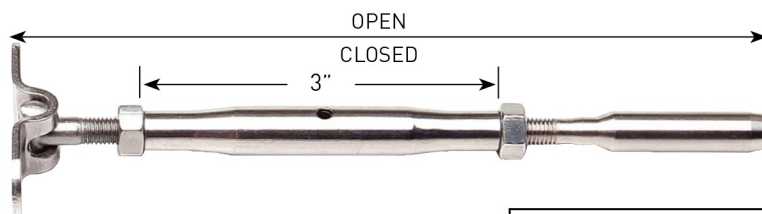
\*swage with 7/32" die

### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-1T	1/8"	1/4"	11-1/2"	8-1/2"
27-412-1T	3/16"	1/4"	11-1/2"	8-1/2"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

## "Shortie" Deck Toggle Turnbuckle

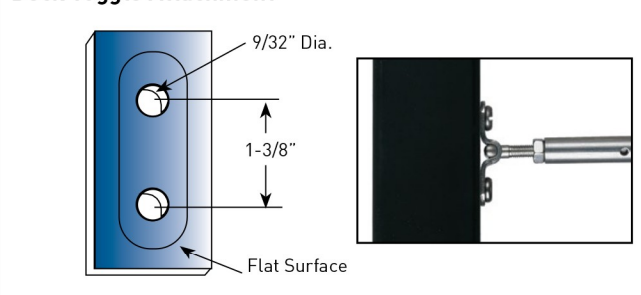


Our "Shortie" Deck Toggle and Swage Turnbuckle can be mounted to any flat surface and is held in place by two tabs suitable for through bolting. The best feature of the deck toggle is it can articulate 140 degrees.

*Best if used with  
Deck Terminal*



### Deck Toggle Attachment



### Complete Cable Assembly (Example)



### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-1TS	1/8"	1/4"	7-1/2"	5-1/2"
19-316-1TS	3/16"	1/4"	7-3/4"	5-3/4"

NOTE: Not available for 1/4" cable.

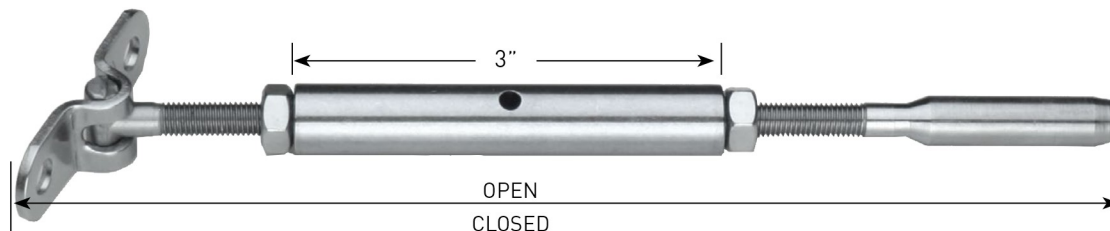
### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-1TS	1/8"	1/4"	8-1/4"	6-1/4"
27-412-1TS	3/16"	1/4"	8-1/2"	6-1/2"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.



## Decko Deck Toggle Turnbuckle



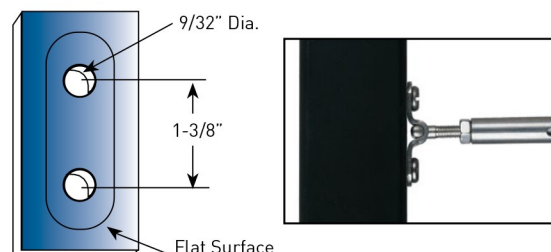
Our Decko Deck Toggle and Swage Turnbuckle can be mounted to any flat surface and is held in place by two tabs suitable for through bolting. The best feature of the deck toggle is it can articulate 140 degrees.

*Best if used with  
Deck Terminal*



(see pg. 32)

### Deck Toggle Attachment



### Complete Cable Assembly (Example)



#### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-1T-DE	1/8"	1/4"	7-1/2"	5-1/2"
19-316-1T-DE	3/16"	1/4"	7-3/4"	5-3/4"

NOTE: Not available for 1/4" cable.

#### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-1T-DE	1/8"	1/4"	8-1/4"	6-1/4"
27-412-1T-DE	3/16"	1/4"	8-1/2"	6-1/2"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

## Deck Toggle Smooth Line Turnbuckle



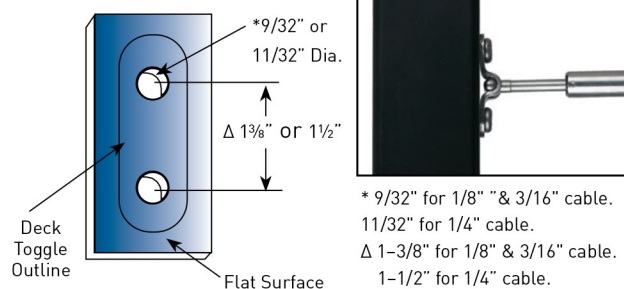
The Deck Toggle Smooth Line Turnbuckle will mount to any flat surface. It can be through bolted by its two tabs and also has the ability to toggle 140 degrees.

*Best if used with Smooth  
Line Deck Terminal*



(see pg. 32)

### Deck Toggle Attachment



### Complete Cable Assembly (Example)



#### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
60-700-1	1/8"	1/4"	8"	6-5/16"
60-702-1	3/16"	1/4"	8"	6-5/16"
60-704-1*	1/4"	5/16"	8"	6"

\*swage with 7/32" die. Does not work with Wiretechnik Swaging Machines.

#### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-715-1	1/8"	1/4"	8"	6-5/16"
27-715-1	3/16"	1/4"	8"	6-5/16"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.





## Button Turnbuckle System



### Private Home

Cable Fabricator: Nature's View Railing - Waterford, CT

Four different Button style Turnbuckle Systems are available. The Button unscrews from its shaft allowing it to through-bolt through an end post. Please choose from the Classic Button Turnbuckle with its ocean marine roots or its smaller cousin the Shortie Button Turnbuckle. The Decko Button Turnbuckle offers a MCM look. For the ultimate in elegance and simplicity, the Button Smooth Line Turnbuckle is the choice for those who want the best. The Button Smooth Line has no exposed thread and terminates the cable internally. Please select from these four Button System choices.

### Classic Button Turnbuckle

Not for lifting, hanging or other high load applications.  
See Marine Catalog for Rigging Hardware.



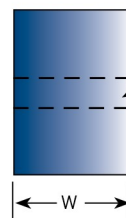
The Classic Button and Swage Turnbuckle has a clean simple look with no jaw. It must be used on a straight run and attached in a through hole with the button on the backside of the baluster.

Best if used with  
Button Terminal



(see pg. 32)

#### Button Attachment



9/32" hole  
or  
11/32" hole  
for 1/4" wire



End Post thickness can be up to 1 1/2" or add-L for 3 1/2" (Same Price)

### Complete Cable Assembly (Example)



#### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-10F	1/8"	1/4"	11-1/2"	8-1/4"
19-316-10F	3/16"	1/4"	11-1/2"	8-1/4"
19-308-7F*	1/4"	5/16"	14-1/4"	10-1/2"

\*Swage with 7/32" die. 1/4" does not come as shown with interrupted thread. All-thread standard.

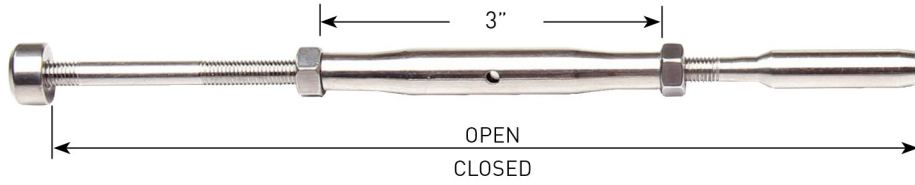
#### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-10F	1/8"	1/4"	11-11/16"	8-1/8"
27-412-10F	3/16"	1/4"	12"	8-1/2"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.



### “Shortie” Button Turnbuckle

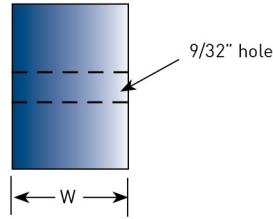


The “Shortie” Button and Swage Turnbuckle has a clean simple look with no jaw. It must be used on a straight run and attached in a through hole with the button on the backside of the baluster.

*Best if used with  
Button Terminal*



#### Button Attachment



End Post thickness can be up to 1½" or add-L for 3½" (Same Price)

#### Complete Cable Assembly (Example)



#### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-10FS	1/8"	1/4"	9-1/4"	7-1/4"
19-316-10FS	3/16"	1/4"	9-1/2"	7-1/2"

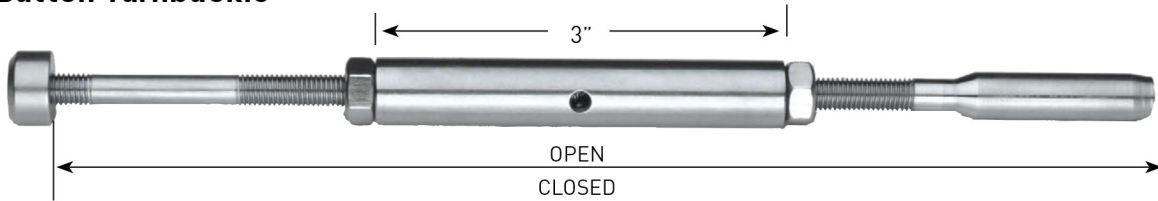
NOTE: Not available for 1/4" cable.

#### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-10FS	1/8"	1/4"	9-3/4"	7-3/4"
27-412-10FS	3/16"	1/4"	10"	8"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

### Decko Button Turnbuckle

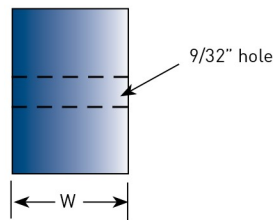


The Decko Button and Swage Turnbuckle has a clean simple look with no jaw. It must be used on a straight run and attached in a through hole with the button on the backside of the baluster.

*Best if used with  
Button Terminal*



#### Button Attachment



End Post thickness can be up to 1½" or add-L for 3½" (Same Price)

#### Complete Cable Assembly (Example)



#### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-10F-DE	1/8"	1/4"	9-1/4"	7-1/4"
19-316-10F-DE	3/16"	1/4"	9-1/2"	7-1/2"

NOTE: Not available for 1/4" cable.

#### Hand Crimp

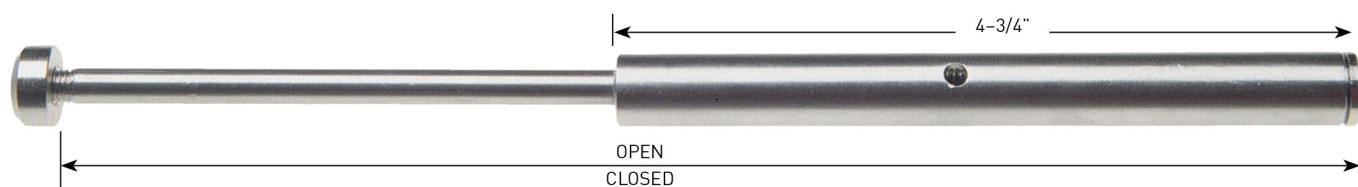
CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-10F-DE	1/8"	1/4"	9-3/4"	7-3/4"
27-412-10F-DE	3/16"	1/4"	10"	8"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.



## Button Smooth Line Turnbuckle

Not for lifting, hanging or other high load applications.  
See Marine Catalog for Rigging Hardware.



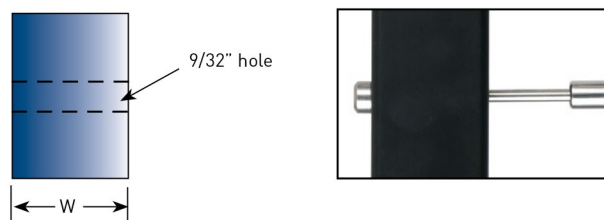
The Button Smooth Line Turnbuckle has the cleanest, simplest look of all the Smooth Lines. The button retains the fitting in a through hole in the baluster. The fitting is used in straight line runs.

*Best if used with Smooth Line Button Terminal*



(see pg. 32)

### Button Attachment



End Post thickness can be up to 1 1/2" or add-L for 3 1/2" (Same Price)

### Complete Cable Assembly (Example)



### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
60-710-LF	1/8"	1/4"	9-9/16"	7-13/16"
60-712-LF	3/16"	1/4"	9-9/16"	7-13/16"
60-714-LF*	1/4"	5/16"	10"	8"

\*swage with 7/32" die. Does not work with Wireteknik Swaging Machines.

### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-725-LF	1/8"	1/4"	9-9/16"	7-13/16"
27-725-LF	3/16"	1/4"	9-9/16"	7-13/16"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

## Ball Turnbuckle System

The Ball Turnbuckle System is available in four different styles. The Ball unscrews from its shaft and through bolts through the end post. The Ball Turnbuckle and the Button Turnbuckle are the same except for the Ball or Button on the end. Choose from the Classic Ball Turnbuckle with its marine heritage or if you need it smaller, the Shortie Ball Turnbuckle is available. The Decko Ball Turnbuckle has a vintage look. For the ultimate in elegance and simplicity, the Ball Smooth Line Turnbuckle is the choice for those who want the best. The Ball Smooth Line has no exposed thread and terminates the cable internally. Please select from these four Ball Turnbuckle System choices.

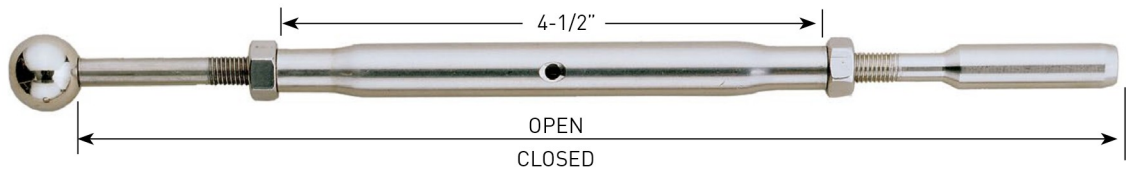


Private Residence - North Wildwood, NJ

Cable & Rail Fabricator: Dennisville Fence - Dennisville, NJ



### Classic Ball End Turnbuckle



The Classic Ball End and Swage Turnbuckle is made to accept the angles of stairways. The Ball End allows the turnbuckle to integrate itself to your desired angle. The ball allows this turnbuckle to gimbal in its mount.

Note: 5/32" cable size available

Best if used with  
Ball End Terminal



(see pg. 32)

#### Complete Cable Assembly (Example)



#### Machine Swage

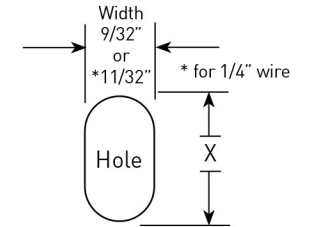
CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-10B	1/8"	1/4"	11-1/4"	8-1/4"
19-316-10B	3/16"	1/4"	11-1/4"	8-1/4"
19-308-7B*	1/4"	5/16"	14-1/8"	10-1/4"

\*Swage with 7/32" die. 1/4" does not come as shown with interrupted thread. All-thread standard.

#### Ball End Attachment



Drill mounting holes at true angles or with slots.



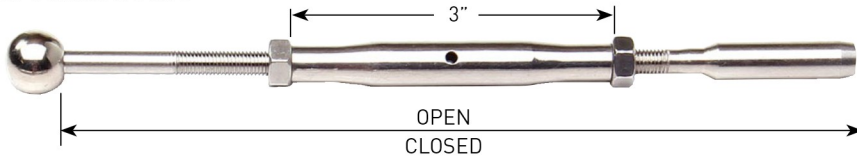
SLOT LENGTH			
PLATE THICKNESS	1/4"	3/8"	1/2"
X	1/2"	19/32"	11/16"

#### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-10B	1/8"	1/4"	11-11/16"	8-1/8"
27-412-10B	3/16"	1/4"	12"	8-1/2"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

### "Shortie" Ball End Turnbuckle



The "Shortie" Ball End and Swage Turnbuckle is made to accept the angles of stairways. The Ball End allows the turnbuckle to integrate itself to your desired angle. The ball allows this turnbuckle to gimbal in its mount.

Note: 5/32" cable size available

Best if used with  
Ball End Terminal



(see pg. 32)

#### Complete Cable Assembly (Example)



#### Machine Swage

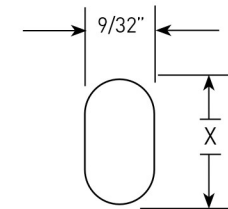
CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-10BS	1/8"	1/4"	9"	7"
19-316-10BS	3/16"	1/4"	9-1/4"	7-1/4"

NOTE: Not available for 1/4" cable.

#### Ball End Attachment



Drill mounting holes at true angles or with slots.



SLOT LENGTH			
PLATE THICKNESS	1/4"	3/8"	1/2"
X	1/2"	19/32"	11/16"

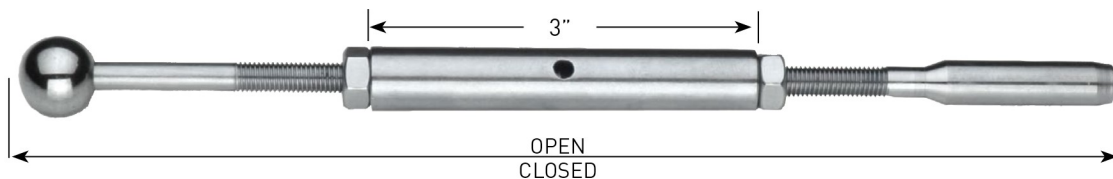
#### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-10BS	1/8"	1/4"	9-1/2"	7-1/2"
27-412-10BS	3/16"	1/4"	9-3/4"	7-3/4"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.



## Decko Ball End Turnbuckle



The Decko Ball End and Swage Turnbuckle is made to accept the angles of stairways. The Ball End allows the turnbuckle to integrate itself to your desired angle. The ball allows this turnbuckle to gimbal in its mount.

Best if used with  
Ball End Terminal



(see pg. 32)

### Complete Cable Assembly (Example)



#### Machine Swage

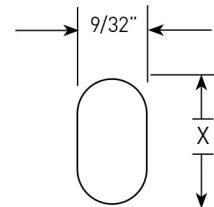
CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-10B-DE	1/8"	1/4"	9"	7"
19-316-10B-DE	3/16"	1/4"	9-1/4"	7-1/4"

NOTE: Not available for 1/4" cable.

#### Ball End Attachment



Drill mounting holes at true angles or with slots.



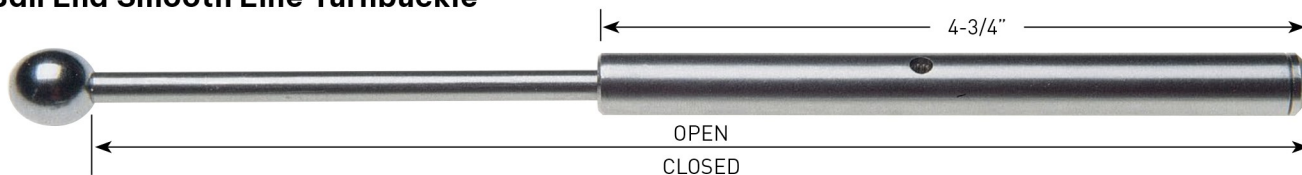
SLOT LENGTH			
PLATE THICKNESS	1/4"	3/8"	1/2"
X	1/2"	19/32"	11/16"

#### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-10B-DE	1/8"	1/4"	9-1/2"	7-1/2"
27-412-10B-DE	3/16"	1/4"	9-3/4"	7-3/4"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

## Ball End Smooth Line Turnbuckle



The Ball End Smooth Line Turnbuckle gimbals in its own mount, making it the turnbuckle of choice on stairways or anywhere a cable installation at a divergent angle is needed.

Best if used with Smooth  
Line Ball Terminal



(see pg. 32)

### Complete Cable Assembly (Example)

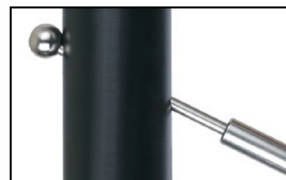


#### Machine Swage

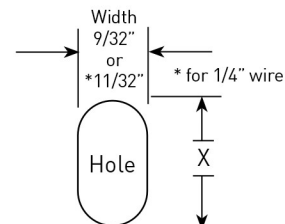
CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
60-710-LB	1/8"	1/4"	9-9/16"	7-13/16"
60-712-LB	3/16"	1/4"	9-9/16"	7-13/16"
60-714-LB*	1/4"	5/16"	10"	8"

\*Swage with 7/32" die. Does not work with Wiretechnik Swaging Machines.

#### Ball End Attachment



Drill mounting holes at true angles or with slots.



SLOT LENGTH			
PLATE THICKNESS	1/4"	3/8"	1/2"
X	1/2"	19/32"	11/16"

#### Hand Crimp

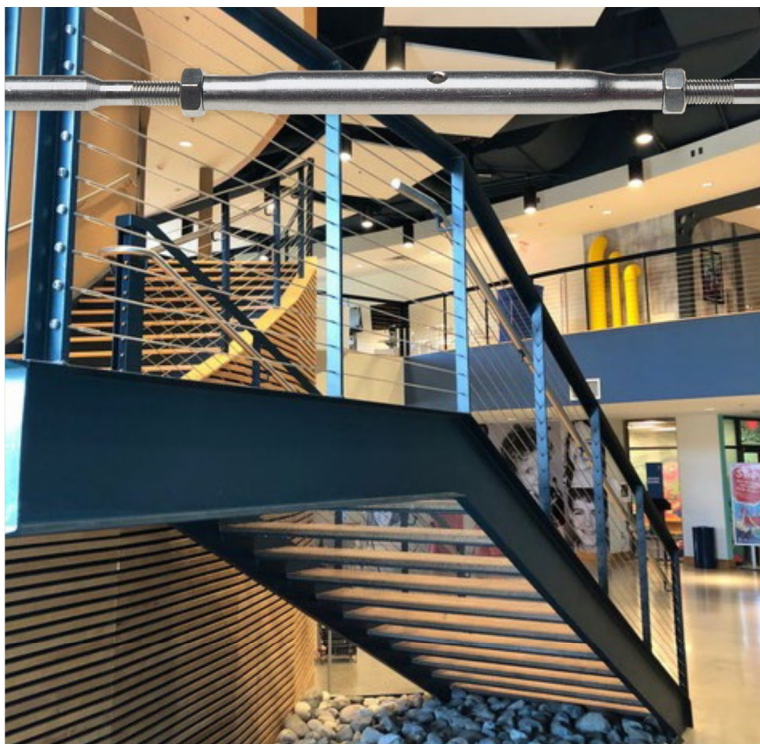
CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-725-LB	1/8"	1/4"	9-9/16"	7-13/16"
27-725-LB	3/16"	1/4"	9-9/16"	7-13/16"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.



## In-Line Turnbuckle System

Not for lifting, hanging or other high load applications.  
See Marine Catalog for Rigging Hardware.

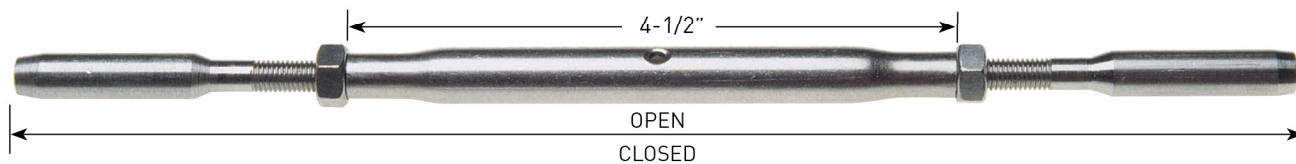


The In-Line Turnbuckle System is available in three styles and puts the turnbuckle in the middle of the cable assembly. Three cable fittings are required because the turnbuckle is in the middle of the cable and each end needs a termination fitting. The In-Line Turnbuckle can be helpful in providing extra adjustment in a longer cable assembly and offers a unique look. Please select from the Classic, Shortie, or Decko In-Line Turnbuckle System.

Bay Area Church - Annapolis, MD

Cable & Rail Fabricator: Maryland Iron Inc. - Glen Burnie, MD

### Classic Swage to Swage Turnbuckle



Appearing in the middle of the cable, the Classic Swage to Swage Turnbuckle needs a fitting at each end to make a complete assembly. You need to use three fittings per cable run, but it makes for a distinctive look.

Can be used with  
any end fitting.



(see pg. 32)

#### Swage to Swage

Swage to swage appears in the middle of the cable run.



### Complete Cable Assembly (Example)



#### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-3	1/8"	1/4"	11-3/4"	8-3/4"
19-316-6	3/16"	1/4"	11-3/4"	8-3/4"
19-308-27*	1/4"	5/16"	13-1/4"	9-3/4"
19-308-2	1/4"	3/8"	14-7/8"	10-5/8"

\* Swage with 7/32" die.

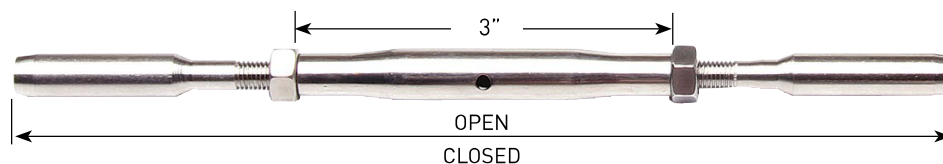
#### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-3	1/8"	1/4"	12-1/2"	9-1/2"
27-412-6	3/16"	1/4"	12-1/2"	9-1/2"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.



## “Shortie” Swage to Swage Turnbuckle



Appearing in the middle of the cable, the “Shortie” Swage to Swage Turnbuckle needs a fitting at each end to make a complete assembly. You need to use three fittings per cable run, but it makes for a distinctive look.

*Can be used with  
any end fitting.*



(see pg. 32)

### Swage to Swage

Swage to swage appears in the middle of the cable run.



### Complete Cable Assembly (Example)



#### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-3S	1/8"	1/4"	8-1/4"	6-1/4"
19-316-6S	3/16"	1/4"	9"	7"

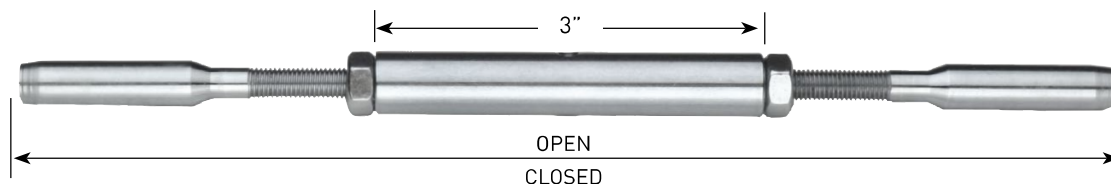
NOTE: Not available for 1/4" cable.

#### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-3S	1/8"	1/4"	9"	7"
27-412-6S	3/16"	1/4"	10"	8"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

## Decko Swage to Swage Turnbuckle



Appearing in the middle of the cable, the Decko Swage to Swage Turnbuckle needs a fitting at each end to make a complete assembly. You need to use three fittings per cable run, but it makes for a distinctive look.

*Best if used with  
Toggle Jaw*



(see pg. 32)

### Swage to Swage

Swage to swage appears in the middle of the cable run.



### Complete Cable Assembly (Example)



#### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
19-314-3DE	1/8"	1/4"	8-1/4"	6-1/4"
19-316-6DE	3/16"	1/4"	9"	7"

NOTE: Not available for 1/4" cable.

#### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED
26-412-3DE	1/8"	1/4"	9"	7"
27-412-6DE	3/16"	1/4"	10"	8"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.





# Threaded Terminal System

Not for lifting, hanging or other high load applications.  
See Marine Catalog for Rigging Hardware.



Private Home  
Cable Fabricator: San Diego Cable Railings, San Diego, CA

The Threaded Terminal System is the simplest way to make cable assemblies. A Threaded Terminal is used at both ends and is through bolted through the end post with a nut and washer or an acorn nut. The Threaded Terminal can be used for cable assemblies up to 50 feet long. The Smooth Line Threaded Terminal can be used for cable assemblies up to 25 feet long and terminates the cable internally. Please select from these two Threaded Turnbuckle System choices.

## Threaded Terminal



The simplest way to make a cable assembly is with a threaded terminal at each end. Clean and simple, this style can span up to 50 ft. in a straight run. Larger sizes available. Please see page 50 in the Marine Catalog.

Best if used with Threaded Terminal



### Threaded Terminal Attachment

End Post thickness can be up to 3-1/2"

## Complete Cable Assembly (Example)



### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	LENGTH
30-603-1	1/8"	1/4-28 x 2-1/2"	3-3/4"
30-603-1L	1/8"	1/4-28 x 2-1/2"	7-9/16"
30-608-1	3/16"	1/4-28 x 2-1/2"	4-1/4"
30-615-1*	1/4"	5/16-24 x 2-3/4"	4-3/4"
30-613-1	1/4"	3/8-24 x 3"	5-1/4"
25-316-L	3/16"	1/4-28 x 2-1/2"	7-9/16"

\*swage with 7/32" die. Additional Machine Swage terminals are shown on page 16 of the Marine Catalog.

### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	LENGTH
31-603-1	1/8"	1/4-28 x 2-1/2"	4-7/16"
31-607-1	3/16"	1/4-28 x 2-1/2"	4-13/16"
27-415-L	3/16"	1/4-28 x 2-1/2"	8-3/8"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34. Additional Hand Crimp terminals are shown on page 27 of the Marine Catalog.



LONG VERSION - #25-316-L



## Smooth Line Threaded Terminal

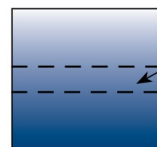


The Smooth Line Stud Terminal provides for smooth hidden cable attachment to threaded terminals. Simple and clean, these fittings really lend themselves to Hand Crimp installations.

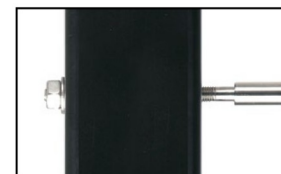
*Best if used  
with itself.*



### Stud Terminal Attachment



9/32" hole,  
1/4" thread  
11/32" hole,  
5/16" thread



End Post thickness can  
be up to 3-1/2"

### Complete Cable Assembly (Example)



### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	LENGTH
25-500	1/8"	1/4" x 28 x 2-1/2"	6-1/4"
25-500-L	1/8"	1/4" x 28 x 2-1/2"	8-5/8"
25-502	3/16"	1/4" x 28 x 2-1/2"	6-1/4"
25-502-L	3/16"	1/4" x 28 x 2-1/2"	8-5/8"
25-504-3*	1/4"	5/16" x 24 x 3"	5-3/4"
25-504-6*	1/4"	5/16" x 24 x 6"	8-1/2"

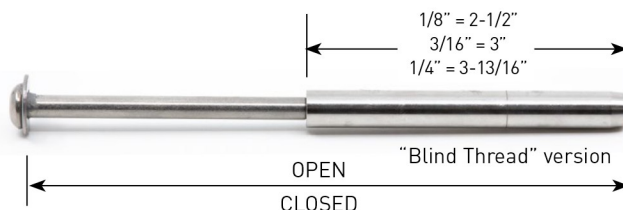
\*swage with 7/32" die. Does not work with Wiretechnik Swaging Machines.

### Hand Crimp

CAT. NO.	WIRE SIZE	THREAD SIZE	LENGTH
26-500	1/8"	1/4" x 28 x 2-1/2"	6-1/4"
26-500-L	1/8"	1/4" x 28 x 2-1/2"	8-5/8"
27-500	3/16"	1/4" x 28 x 2-1/2"	6-1/4"
27-500-L	3/16"	1/4" x 28 x 2-1/2"	8-5/8"

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

## "The Terminator" Turnbuckle



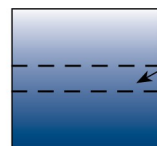
So simple but so effective, the Terminator Turnbuckle is an easy choice for railings or glass shelves. 3/16" Terminators work great for railings. 1/8" Terminators work great with Johnson's Glass Shelf Fittings. Machine swage only.

*Best if used  
with itself.*



1/8" does not work with Wiretechnik  
Swaging Machines.

### "The Terminator" Attachment



5/32" hole  
for 1/8" Terminator  
9/32" hole  
for 3/16" Terminator



End Post thickness can be up to:  
2-1/2" for 1/8" Terminator 4"  
for 3/16" Terminator

### Complete Cable Assembly (Example)



### Machine Swage

CAT. NO.	WIRE SIZE	THREAD SIZE	OPEN	CLOSED	DESCRIPTION
80-101	1/8"	10-24	3-3/4"	2-5/8"	Complete
80-103	3/16"	1/4x20	5-9/16"	4-3/8"	Complete
80-107*	1/4"	5/16"x18	7-1/4"	5-1/4"	Complete
80-54	1/8"	10-24	---	---	Body Only
80-56	3/16"	1/4x20	---	---	Body Only
80-66*	1/4"	5/16"x18	---	---	Body Only
80-105	3/16"	1/4x20	6-1/2"	5-1/2"	Blind Thread

\*swage with 7/32" die  
NOTE: "Body Only" comes with no screw.

Available in Machine Swage only.

Adjustable Allen  
Head Screw



Available with Deck Toggle

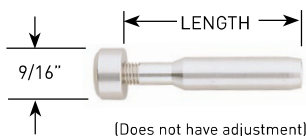


Part #80-101-1 for 1/8"  
Deck Toggle Terminator

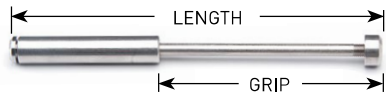


## BUTTON TERMINALS

### Classic Button Terminal



### Smooth Line Button Terminal



### Machine Swage

CAT. NO.	WIRE SIZE	LENGTH	THREAD
25-304-5F	1/8"	1-3/4"	1/4" X 28
25-306-5F	3/16"	2-1/8"	1/4" X 28
25-308-7-5F*	1/4"	2-1/2"	5/16" X 24

\*swage with 7/32" die

### Machine Swage

CAT. NO.	WIRE SIZE	LENGTH	GRIP	THREAD
25-610-F	1/8"	6-1/4"	3-1/2"	1/4 X 28
25-612-F	3/16"	6-1/4"	3-1/2"	1/4 X 28
25-614-LF*	1/4"	8"	5-1/2"	5/16 X 24**

\*swage with 7/32" die

### Hand Crimp

CAT. NO.	WIRE SIZE	LENGTH	THREAD
26-405-5F	1/8"	2-3/8"	1/4" X 28
27-405-5F	3/16"	2-3/4"	1/4" X 28

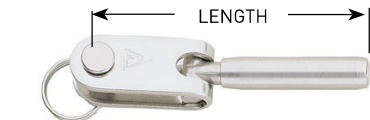
Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

### Hand Crimp

CAT. NO.	WIRE SIZE	LENGTH	GRIP	THREAD
26-610-F	1/8"	6-1/4"	3-1/2"	1/4 X 28
27-612-F	3/16"	8-1/4"	3-1/2"	1/4 X 28

## TOGGLE JAWS

### Classic Toggle Jaw



### Smooth Line Toggle Jaw



### Machine Swage

CAT. NO.	WIRE SIZE	LENGTH	PIN SIZE
25-314	1/8"	2-1/8"	1/4"
25-316	3/16"	2-1/8"	1/4"
25-318-7*	1/4"	3-1/4"	5/16"
25-308	1/4"	3-3/4"	3/8"

\*swage with 7/32" die

### Machine Swage

CAT. NO.	WIRE SIZE	LENGTH	PIN SIZE
25-600	1/8"	3-7/8"	1/4"
25-602	3/16"	3-7/8"	1/4"
25-604*	1/4"	4-1/2"	5/16"

\*swage with 7/32" die

### Hand Crimp

CAT. NO.	WIRE SIZE	LENGTH	PIN SIZE
26-415	1/8"	3-3/16"	1/4"
27-415	3/16"	3-5/8"	1/4"

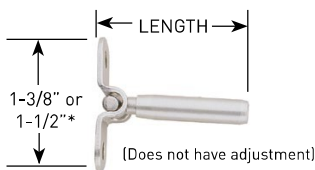
Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

### Hand Crimp

CAT. NO.	WIRE SIZE	LENGTH	PIN SIZE
26-600	1/8"	3-7/8"	1/4"
27-600	3/16"	3-7/8"	1/4"

## DECK TERMINALS

### Classic Deck Terminal



### Smooth Line Deck Terminal



1-3/8" for 1/8" & 3/16" cable. 1-1/2" for 1/4" cable.

### Machine Swage

CAT. NO.	WIRE SIZE	LENGTH	HOLE SIZE
25-314-1T	1/8"	2-1/8"	1/4"
25-316-1T	3/16"	2-1/8"	1/4"
25-318-1T*	1/4"	3-1/4"	5/16"

\*swage with 7/32" die

### Machine Swage

CAT. NO.	WIRE SIZE	LENGTH	HOLE SIZE
25-600-1	1/8"	3-1/4"	1/4"
25-602-1	3/16"	3-1/4"	1/4"
25-604-1*	1/4"	3-5/8"	5/16"

\*swage with 7/32" die

### Hand Crimp

CAT. NO.	WIRE SIZE	LENGTH	HOLE SIZE
26-415-1T	1/8"	2-3/4"	1/4"
27-415-1T	3/16"	3"	1/4"

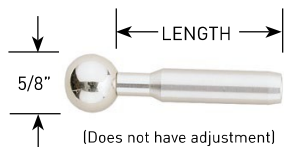
Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

### Hand Crimp

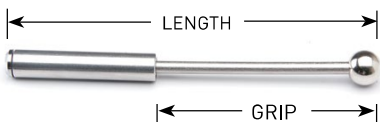
CAT. NO.	WIRE SIZE	LENGTH	HOLE SIZE
26-600-1	1/8"	3-1/4"	1/4"
27-600-1	3/16"	3-1/4"	1/4"

## BALL TERMINALS

### Classic Ball Terminal



### Smooth Line Ball Terminal



### Machine Swage

CAT. NO.	WIRE SIZE	LENGTH	THREAD
25-304-5B	1/8"	1-11/16"	1/4" X 28
25-306-5B	3/16"	2-1/8"	1/4" X 28
25-308-7-5B*	1/4"	2-1/2"	5/16" X 24

\*swage with 7/32" die

### Machine Swage

CAT. NO.	WIRE SIZE	LENGTH	GRIP	THREAD
25-610-B	1/8"	6-1/8"	3-1/2"	1/4 X 28
25-612-B	3/16"	6-1/8"	3-1/2"	1/4 X 28
25-614-LB*	1/4"	8"	5-1/2"	5/16 X 24**

\*swage with 7/32" die

### Hand Crimp

CAT. NO.	WIRE SIZE	LENGTH	THREAD
26-405-5B	1/8"	2-3/8"	1/4" X 28
27-405-5B	3/16"	2-3/4"	1/4" X 28

Johnson Hand Crimp Tool must be used to attach fittings to cable. See page 34.

### Hand Crimp

CAT. NO.	WIRE SIZE	LENGTH	GRIP	THREAD
26-610-B	1/8"	6-1/8"	3-1/2"	1/4 X 28
27-612-B	3/16"	8-1/8"	3-1/2"	1/4 X 28





## Nuts & End Caps

ALL TYPE 316 STAINLESS

### Acorn Nuts



CAT. NO.	THREAD
35-600	1/4"-28
35-599	5/16"-24

### Stainless Nuts



CAT. NO.	THREAD
35-605FS	5/16"-24
35-607FS	3/8"-24
35-603	1/4"-28 x 9/16"

### Washer Cap Nut



CAT. NO.	THREAD
35-603WN	1/4"-28
35-605WN	5/16"-24

### Washers



CAT. NO.	DESCRIPTION
60-601-SO	1/4" Conv.
60-603-SO	5/16" Conv.
60-102	1/4" Washer
60-103	5/16" Washer
60-104	3/8" Washer

**Note:** Conv. Washer fits in the counterbore of standoffs to center smaller sizes.

### Solid Buttons (supplied with turnbuckles)



CAT. NO.	THREAD
60-602-D	1/4"-28 x 9/16"
60-603-D	5/16"x 9-/16"

### Open Button Ends



CAT. NO.	THREAD
60-602	1/4"-28 x 9/16"
60-603	5/16"-24 x 9/16"

### Ball Ends (supplied with turnbuckles)



CAT. NO.	THREAD
60-614-B	1/4"-28 x 5/8"
60-615-B	5/16"-24 x 5/8"

## 1/4" Security Bolt



CAT. NO.	DESCRIPTION
PB-4-16	1/4" x 1/2"

## Protector Sleeve



CAT. NO.	DESCRIPTION
SSPS-4-6	For 1/8" & 3/16" cable For wood compression fit drill 1/4" hole. Will not accept cable end fittings.

## Conversion Sleeves



CAT. NO.	DESCRIPTION
36-610	1/8" to 3/16" Machine Swage
36-611	1/8" to 3/16" Hand Crimp

## Nylon Bushings/ Grommets



CAT. NO.	DESCRIPTION
BPG-2003	Drill size: 1/4", For 1/8 Cable
BPG-2020	Drill size: 3/8", For 3/16" Cable

Installed bushings/grommets will only accommodate cable. Swage and Hand Crimp ends will not pass through. Cable must be installed in bushing/grommet before cable ends are attached to cable. (Bushings/grommets can be cut and used like a clamshell on installed cable if desired.)

## Angle Standoffs



FOR USE WITH THESE PRODUCTS	30 DEGREE STANDOFF ON A FLAT SURFACE	30 DEGREE STANDOFF ON A PIPE	35 DEGREE STANDOFF ON A FLAT SURFACE	90 DEGREE STANDOFF ON A PIPE
1/4-28 Thread Terminals	60-604*	60-605*	60-604-35*	60-616*
5/16-24 Thread Terminals	60-604**	60-605**	60-604-35**	60-616**
3/8-24 Thread Terminals	60-644	N/A	N/A	N/A
Terminal Tuners	60-614	60-615	60-614-35	60-616
1/8" Quick Connects	60-644	N/A	N/A	N/A
3/16" & 1/4" Quick Connects	F60-644-916	N/A	N/A	N/A
1/4-28 Thread w/ Washer Nuts	N/A	N/A	F60-644-35	N/A
All Button Ends	60-604	60-605	60-604-35	N/A
<b>Terminators</b>				
3/16"	60-604	60-605	60-604-35	60-616
1/4"	60-604 w/o washer	60-605 w/o washer	60-605-35 w/o washer	60-616 w/o washer

\* Use with 60-601-SO Conversion Washer

\*\* Use with 60-603-SO Conversion Washer

More replacement parts can be found on pages 15-18 and 25-27 of the Marine Catalog.



Professional Tension Gauge for 1x19 Cable Railing

Johnson's new Professional Tension Gauge for 1x19 Cable Railing is designed to measure the cable tension of 1/8", 3/16" and 1/4" 1x19 cable. This gauge takes the guess work out of cable railing setup. Made from anodized aluminum, the gauge is easy to use and compact. A must for the toolbox of anyone installing cable rails.

CAT. NO # 53-300

Cable Range:  
1/8", 3/16" & 1/4"

Dimensions:  
11" x 5-1/2"

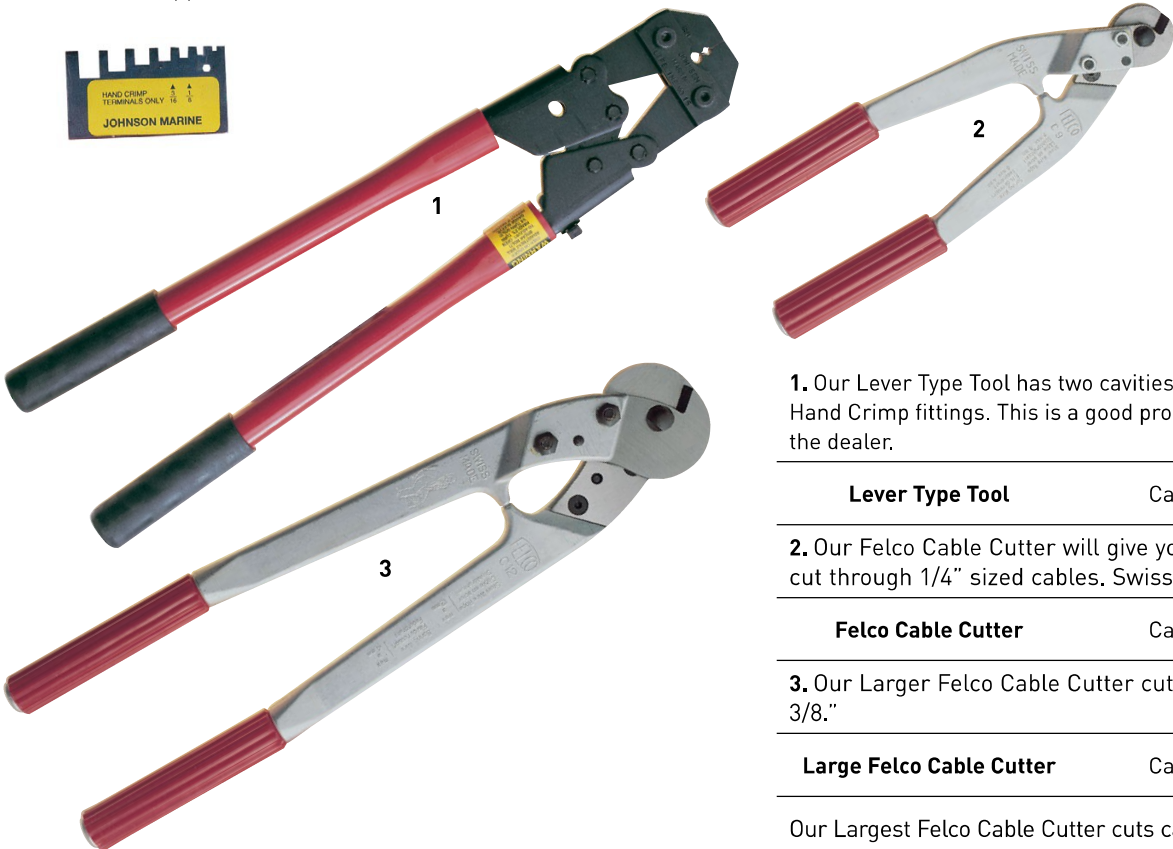
Tension Range:  
200 lbs - 400 lbs

Made in USA



Hand Crimping Tools & Cutters

Hand Crimp fittings are attached to the cable with a Johnson-made Hand Crimp Tool model #53-210 (not shown) or #53-215. Hand Crimp fittings should not be confused with Nicopress fittings. Nicopress fittings have sleeves that are made from soft copper alloy and compress very easily. Other crimping tools will not compress Johnson stainless steel fittings properly. Only use a Johnson approved tool.



1. Our Lever Type Tool has two cavities for 1/8" and 3/16" Hand Crimp fittings. This is a good production tool for the dealer.

**Lever Type Tool** Cat. No. 53-215

2. Our Felco Cable Cutter will give you a clean, crisp cut through 1/4" sized cables. Swiss made.

**Felco Cable Cutter** Cat. No. 53-220

3. Our Larger Felco Cable Cutter cuts cable through 3/8."

**Large Felco Cable Cutter** Cat. No. 53-222

Our Largest Felco Cable Cutter cuts cable through 5/8".

**Largest Felco Cable Cutter** Cat. No. 53-224 (not shown)



## Swaging Machines



### Portable Hydraulic Press Swager - by Johnson

Our popular hydraulic press swager features a user friendly, spring loaded die set for easy re-load and die alignment. The included die set will swage 1/8" and 3/16" terminals. All that is required is 100 psi of compressed air which is coupled to an air over hydraulic foot switch. An electric over hydraulic pump can also be used as an option. Not rated or certified for mil-spec applications such as aircraft control cables or marine standing rigging, perfect for architectural cable rail terminals and marine life line terminals.

**Swaging Range:**  
1/8" & 3/16"

**Dimensions:**  
L 7"  
W 5-1/2"  
H 13"

**Shipping Weight:**  
50 lbs

**Made in USA**



### Locoloc® Bench Swager - Type II

A sophisticated swaging machine which is bench mounted for easy operation. This swaging machine will accomplished the swaging of AN or MS type fittings on all galvanized and stainless steel cable up to and including 3/8" diameter. Available in hand crank manual or powered versions.

#### M2 Manual / M2-P Power

**Swaging Range:**  
1/16" & 3/8"

**Dimensions:**  
L 12"  
W 9"  
H 12"

**Shipping Weight:**  
175 lbs (manual)  
275 lbs (power)

**Made in USA**  
**Makes Mil-Spec Swages**

**Power  
Operated  
#M2-P**



**Manual  
Operated  
#M2**

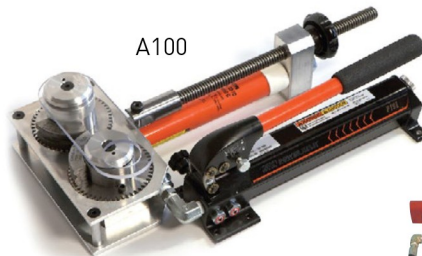


### WireTeknik™ Roller Swagers

**Made in Sweden - Makes Mil Spec Swages**

**NOTE:** Cannot swage Smooth Line Turnbuckles, Blind Thread Terminal Tuners and 1/8" Terminator Turnbuckles. Adapter needed for deck toggles. All Wiretechnik swaging machines and accessories/ replacement parts are available through Johnson.

A100



A200 shown with standard pulling devices and hand pump. (Johnson fittings not included).

#### A100

**Swaging Range:**  
1/16" & 3/16"

**Dimensions:**  
L 19-3/4"  
W 11-3/4"  
H 4"

**Shipping Weight:**  
50 lbs

#### A200

**Swaging Range:**  
1/16" & 5/16"

**Dimensions:**  
L 17"  
W 11"  
H 4-3/4"

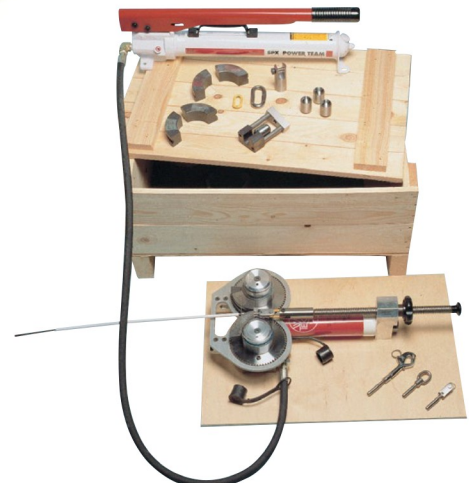
**Shipping Weight:**  
100 lbs

#### A270

**Swaging Range:**  
3/32" & 1/2"

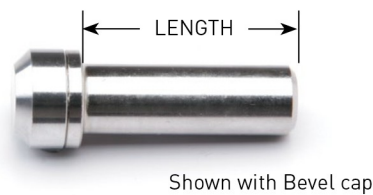
**Dimensions:**  
L 37"  
W 15-3/8"  
H 6-9/32"

**Shipping Weight:**  
150 lbs





QuickConnect-SS™ Fittings



Part # JQFRT  
Releases installed  
QuickConnect fittings.



QuickConnect-SS™ fittings with special one-way jaws automatically grab and lock on to the cable without any tools. Simply slide them on, pull the cable tight, trim the excess and finish with an end cap.

Best if used with  
Washer Cap Nut and  
Threaded Terminal.



**Quick Connect Attachment**

13/32" hole  
for 1/8" QC

9/16" hole  
for 3/16" and  
1/4" QC

End Post

Complete Cable Assembly (Example)



QuickConnect Fittings  
Require No  
Attachment Tools!

CAT. NO.	WIRE SIZE	LENGTH	DIAMETER
FQC 18	1/8"	1-1/4"	9/64"
FQC 316	3/16"	1-7/8"	17/32"
FQC 14	1/4"	1-7/8"	17/32"

[This end requires  
Machine Swage or  
Hand Crimp fitting].

Washer Cap Nut

The Washer Cap Nut allows the installation of a Cap on a conventional threaded terminal mirroring the Cap on a QuickConnect fitting. The Caps are available in stainless steel and plastic in a variety of colors. Please see below for cap options.



CAT. NO.	THREAD SIZE
35-603WN	1/4" X 28
35-605WN	5/16" X 24



Stainless Steel & Colored Caps (Polyethylene)

Stainless Steel and Colored Caps snap on to QuickConnect fittings and Washer Cap Nuts with no tools. They provide a clean finished look. Stainless Steel Caps are offered in Crown, Bevel and Dome styles. Colored Caps come in Dome style in Black, White, Gray, Brown, Silver, Taupe, Bronze, Green and Cream Polyethylene.

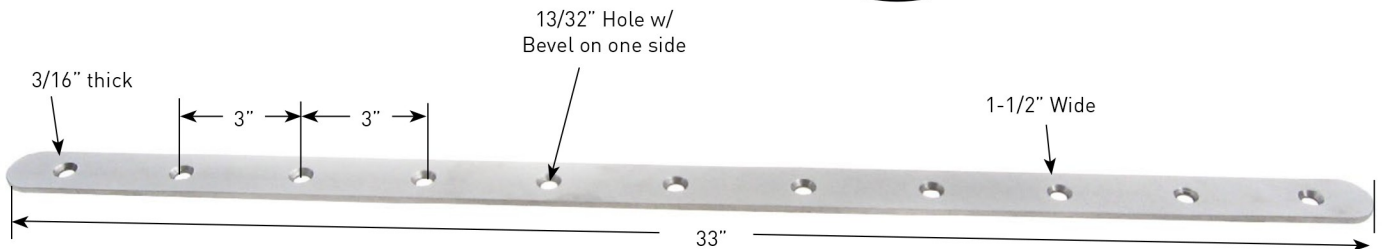
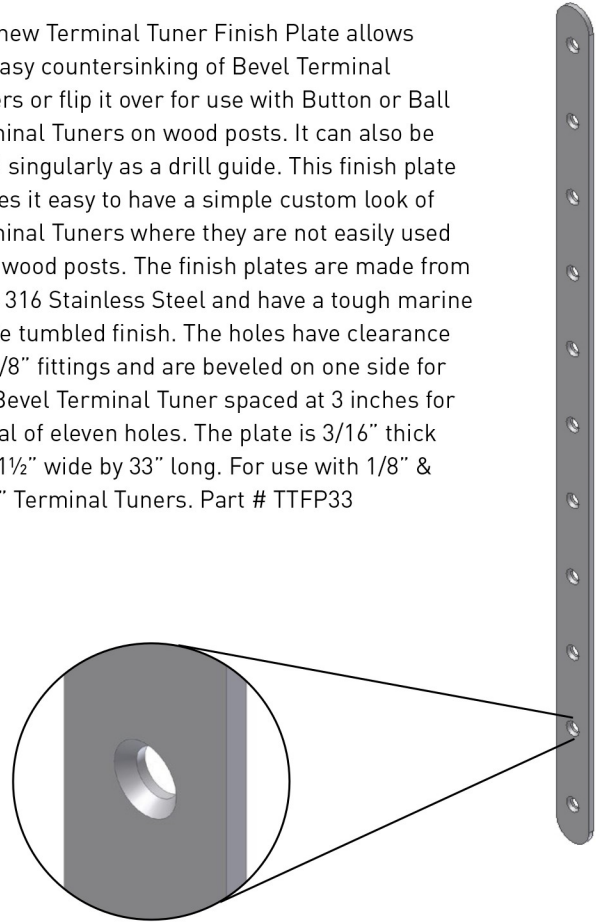
CAT. NO.	STYLE	MATERIAL
SSDC	Dome	Stainless Steel
SSCC	Crown	Stainless Steel
SSCHC	Bevel	Stainless Steel
QCPC (color)	Dome	Plastic



## Terminal Tuner Finish Plate / Drill Guide



The new Terminal Tuner Finish Plate allows for easy countersinking of Bevel Terminal Tuners or flip it over for use with Button or Ball Terminal Tuners on wood posts. It can also be used singularly as a drill guide. This finish plate makes it easy to have a simple custom look of Terminal Tuners where they are not easily used with wood posts. The finish plates are made from Type 316 Stainless Steel and have a tough marine grade tumbled finish. The holes have clearance for 3/8" fittings and are beveled on one side for the Bevel Terminal Tuner spaced at 3 inches for a total of eleven holes. The plate is 3/16" thick and 1 1/2" wide by 33" long. For use with 1/8" & 3/16" Terminal Tuners. Part # TTFP33



Countersunk for Beveled Terminal Tuners



Use reverse side for Button Terminal Tuners

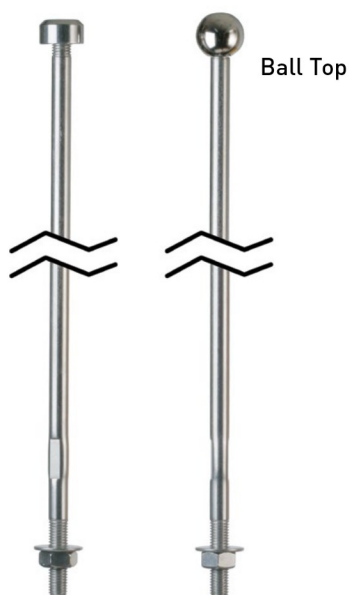
## Vertical Rods

Johnson's 1/4" stainless steel vertical rods are an excellent choice for vertical railings. The 1/4" rods need to be placed every three inches to satisfy code requirements. Held in place at the top with Johnson's Button End Cap, the rod is tensioned at the bottom with 1/4" x 28 thread. A wrench flat is provided at the bottom to rotate the rod tight. The rods can be threaded directly into the railing or held with a conventional nut and washer. A steel fabricator must provide a framework and cap rail for the rods. Additional sizes are available, please call for more information.



Halona Blow Hole - Oahu, HI

Cable Fabricator: Art Nelson Sailmakers, Honolulu



Ball Top



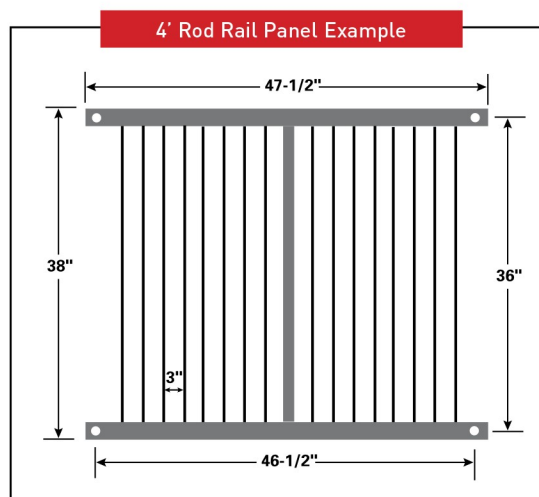
## Framework Requirements

End posts and corners need to be made from the following minimums:

- Round Pipe 1-1/2" ID Schedule 80
- Square Tube 2" X 2" X 1/4" Wall
- Angle Iron 2" X 2" X 1/2"
- Flat Bar 2" X 1"

Top and bottom horizontal channels to support rods need to be made from:

- 1" x 1" x 1/8" Channel and supported every 4 feet by the end posts listed above.
- 3/4" OD x 1/4" Pipe center post needs to be placed every 2 feet.



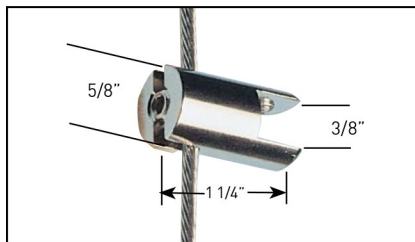
Please Note: Johnson Architectural Hardware does not make framework. Framework needs to be made by a steel fabricator





## Glass Shelf Fittings

The Glass Shelf Fitting works on 1/8" wire and 3/8" thick glass. The Glass Shelf Fittings make it easy to make glass shelves with cable and glass for a unique look. Johnson does not sell glass.



CAT. NO.	WIRE SIZE	GLASS SIZE
62-100	1/8"	3/8"



Glass Shelf Fitting used on Bar Shelf.



Glass Shelf Fitting with 1/8" Deck Toggle Terminator.

## CableTrellis™ Cross Clamp

The CableTrellis™ Cross Clamps for 1/8" cable are available in Stainless Steel and Hard Anodized Aluminum. The CableTrellis Cross Clamps allows 90° intersections to be made with cable suitable for garden trellises or decorative cable assemblies. Choose Stainless Steel or Colored Caps to accentuate your design.

CAT. NO.	WIRE SIZE	MATERIAL
62-500	1/8"	Stainless Steel

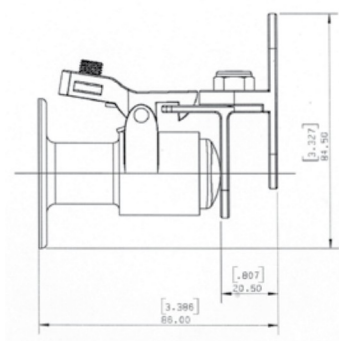


Stainless Steel Cross Clamps for 1/8" wire.



## "Smart Catch" Stainless Spring-Loaded Door Latch

This unique Door Latch is a design that not only serves as a door stop, but holds the door in place against a wall. The unique foot lever releases the spring-loaded bumper and swings the door free. Two styles are available — straight or pivot, for non-parallel closing doors.



CAT. NO.	DESCRIPTION
48-800	"Smart Catch" Door Latch - Straight
48-801	"Smart Catch" Door Latch - Pivot



## Manufacturing Materials

### Type 302 & 304 Stainless Steel (also known as 18-8):

Used in some nuts, bolt and clevis pins. This material offers good corrosion resistance and high strength.

**Type 316/316L Stainless Steel:** Used on all swage terminals, toggle stampings, turnbuckle bodies and other components. This material offers better corrosion resistance with a slight trade-off in strength.

**Aluminum Silicon Bronze (cda 642):** Used in forged turnbuckle bodies and some machined turnbuckle jaw studs. Same physical properties as 300 series stainless steel. Excellent corrosion resistance.

**6061 T-6 Aluminum:** High strength alloy commonly used in the aerospace/marine industry, anodized for excellent corrosion resistance.

## Cleaning of Stainless Steel

Stainless steel needs to be cleaned for aesthetic considerations and to preserve corrosion resistance. Stainless steel is protected from corrosion by a thin layer of chromium oxide. Oxygen from the atmosphere combines with the chromium in the stainless steel to form this passive chromium oxide film that protects from further corrosion. Any contamination of the surface by dirt, or other material, hinders this passivation process and traps corrosive agents, reducing corrosion protection. Thus, some form of routine cleaning is necessary to preserve the appearance and integrity of the surface.

Stainless steel is easily cleaned by many different methods. Stainless steel actually thrives with frequent cleaning, and, unlike some other materials, it is impossible to "wear out" stainless steel by excessive cleaning. The effect of surface/pattern roughness, grain/pattern orientation, and designs that allow for maximum rain cleaning (exterior applications) should be considered.

### Stainless steel cleaning information provided by:

Specialty Steel Industry of North America  
3050 K Street, N.W.  
Washington, DC 20007



National Ornamental &  
Miscellaneous Metals Association



Innovation...  
Our Tradition

## Glossary of Terms

**Turnbuckle:** A device for tensioning cable or rod. Usually refers to the entire unit including the body, both right and left ends, nuts and pins.

**Turnbuckle Body:** Center portion only.

**Stud:** Threaded rod that connects between the body and toggle end.

**Terminal:** Fitting for termination of cable, can be machine swage or hand crimp.

**Clevis Pin:** Removable pin for securing a toggle jaw or fork to an end post or rail.

**Toggle Jaw:** Articulating jaw terminal for attachment to cable. Toggled 180 degrees.

**Turnbuckle Jaw:** Threaded on one end for attachment to turnbuckle body with a clevis pin on the other end.

**Link Plate:** Flat plate with two or more holes used for extending the length of an assembly.

**Ring Pin:** Circular pin used in place of a cotter pin for securing a clevis pin.

## Before & After Swage Dimensions

For swage fittings: Choose a drill bit size to allow clearance hole for after swage dimension]

TERMINAL WIRE SIZE	THREAD DIAMETER	BEFORE SWAGE DIMENSION	AFTER SWAGE DIMENSION
1/8"	10-32, 1/4"	.250	.219
5/32"	1/4", 5/16"	.297	.250
3/16"	1/4", 5/16", 3/8"	.359	.313
7/32"	3/8"	.427	.375
*1/4"	5/16" (-7)	.427	.375
1/4"	3/8"	.494	.438
5/16"	1/2", 5/8"	.635	.563
3/8"	5/8"	.703	.625
7/16"	3/4"	.781	.688
1/2"	3/4"	.844	.750

\* swage with 7/32" die.

**C. Sherman Johnson Co., Inc.** sells to recognized wholesale accounts only, which includes: Distributors, Riggers and OEM's. We are proud of our customer relationships within this extensive distribution network. For the boat or home owner, we are happy to refer you to a reliable source for cable assemblies or hardware. And to our customers: Johnson does not fabricate cable assemblies, we are in business to work with you, not against you!

<b>TERMS</b>	First time orders are C.O.D. or credit card only. (This applies even if you have applied for Open Account status). Orders over \$1000 require a bank check or money order. Open account status will be extended to marine/architectural related businesses engaged in wholesale/service activities with pre-approved credit. Credit can be obtained with a completed credit application and approval by our credit department. Unless otherwise specified, terms are 2% 10, Net 30. Accounts 30 days past due will be placed on credit hold, with no goods being shipped until account becomes current. Failure to pay within terms will change terms to C.O.D. All international accounts must be paid in U.S. funds. A finance charge of 1½% per month will be charged on all past due accounts. Overdue accounts sent to collections will incur collection fees that are the sole responsibility of that account. The minimum charge for returned checks is \$20.00.
<b>FREIGHT</b>	All shipments are F.O.B. East Haddam, CT., unless otherwise arranged with Johnson. We generally use FedEx for air shipments and UPS for ground shipping. We have excellent commercial rates with both carriers. Freight is prepaid and added to your invoice with no "hidden or extra" fees added.
<b>RETURNS</b>	Returned goods are not accepted without prior authorization. Collect shipments will be refused, all returns must be pre-paid. Returned goods with the exception of those claimed defective must be received by Johnson in re-saleable condition. Credits for returns are subject to a 20% restocking fee.
<b>SHORTAGE OR ERROR</b>	Claims for shortage or error in shipment must be made within ten (10) days from receipt of goods.
<b>MINIMUM ORDERS</b>	Our minimum order is \$20.00 Net; smaller orders will be invoiced at \$20.00.
<b>PRICING</b>	Current catalog pricing will be available at <a href="http://www.csjohnson.com">www.csjohnson.com</a> in PDF format. Call for trade price list. Catalog prices are effective from Jan. 1 to Dec. 31 of that year. Prices are subject to change or surcharges will apply due to market conditions without notice.
<b>WARRANTY</b>	C. Sherman Johnson Co., Inc. products are guaranteed to be free from defects in material and workmanship and if properly applied, are suitable for the purpose intended. However, we can accept no responsibility if our products are misapplied or are used in applications where their safe working loads are exceeded.
<b>SHIPPING</b>	Most orders are shipped within 48 hours. Orders placed after 2pm Eastern Time will not be processed until the next business day.

