

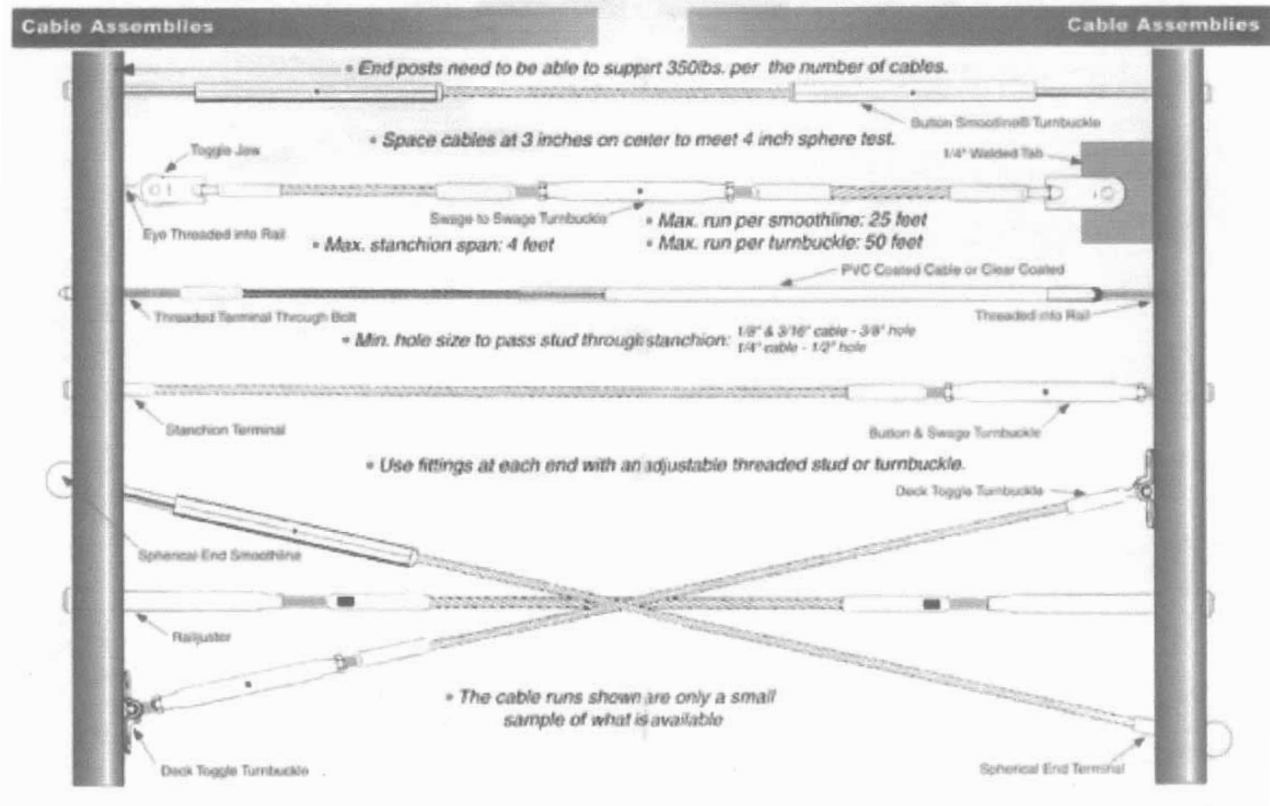
# Ornamental Metals

# Alternate Arrangements for Cable Terminations

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



## Including Suggested Spans and Other Specification



# STAINLESS STEEL CABLE SYSTEMS

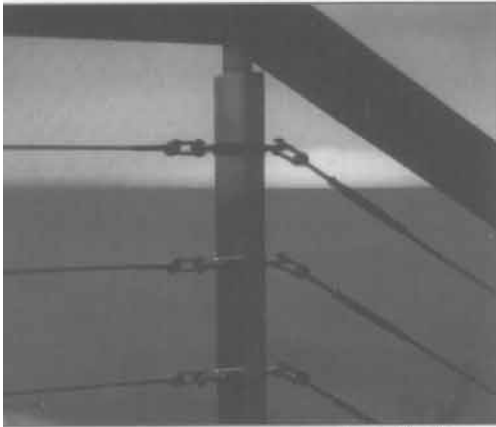


Photo: David Pywell Contracting

**Attachment:** Features fork style ends for attachment with screws and lock nuts (supplied) for a variety of post styles including: tee-stock, angle iron, flat bar welded to post, loops attached to post, eyebolts (shown below), etc. The toggling feature allows for angled takeoff.

**Examples of applications:** cable rails, hanging signs or shelving, even structural applications such as canopy supports, collar tie cables, or fabric structures.

**Other Information:** Attachment size corresponds to width of clevis, ex. 1/4" pin=1/4" opening. Toggles come supplied with clevis pin and ring pins, or screws and lock nuts. Toggle jaws may also be combined with any other system. Fixed fork hardware is used for cable sizes 1/2" through 1". Fixed fork clevis hardware is also available for smaller sizes as a special order (316 grade stainless steel).



Toggle Jaw Turnbuckle					common specs			Toggle Jaw	
	Thread (b)	Body L (d)	Open L (e)	Closed L (e)	Screw Size (l)	Jaw Width (g)	Wire Size (c)	Catalog #	
swage	10-32	3-1/2"	7-5/8"	5-1/4"	3/16"	1/4"	1/8"	5TJ3	
	1/4-28	4-1/4"	9"	6-5/8"	1/4"	1/4"	1/8"	6TJ3	
	1/4-28	4-1/4"	9-1/8"	6-5/8"	1/4"	1/4"	5/32"	6TJ4	
	1/4-28	4-1/4"	9-3/8"	6-5/8"	1/4"	1/4"	3/16"	6TJ5	
	5/16-24	4-3/4"	10-1/4"	7-1/2"	8TT5JS	5/16"	5/16"	3/16"	8TJ5
	5/16-24	4-3/4"	10-1/2"	7-5/8"	8TT6JS	5/16"	5/16"	1/4"	8TJ6
crimp	3/8-24	5-1/4"	11-3/8"	8-1/4"	10TT6JS	3/8"	3/8"	1/4"	10TJ6
	1/4-28	4-1/4"	9"	6-5/8"	6TT3JSC	1/4"	1/4"	1/8"	6TJ3C
1/4-28	4-1/4"	9-3/8"	6-5/8"	6TT5JSC	1/4"	1/4"	3/16"	6TJ5C	



**Eye Bolts (with nuts)**

Shank L (v)	Thread L (w)	Thread Size (u)	Catalog #
1"	7/8"	1/4-20	EB6S
1-7/8"	1-3/4"	1/4-20	EB6M
3"	2-3/4"	1/4-20	EB6L
1-7/8"	1-3/4"	5/16-18	EB8S
4-1/2"	3"	5/16-18	EB8M
2-1/2"	2-3/8"	3/8-16	EB10S
4-1/4"	3"	3/8-16	EB10M



**Eye Lags**

Shank L (x)	Thread L (y)	Thread Size (z)	Catalog #
2-3/4"	1-3/4"	1/4"	LEB6
2-3/4"	1-3/4"	5/16"	LEB8
2-3/4"	1-3/4"	3/8"	LEB10



Additional sizes available.

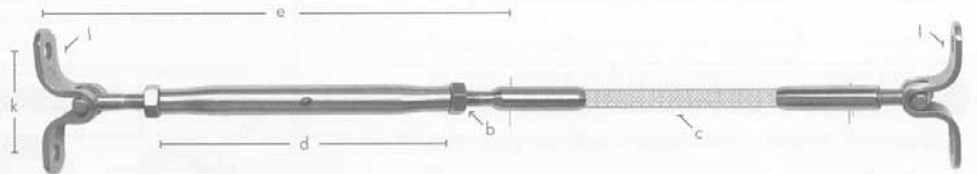
**Attachment:** is by two screw holes in the deck toggle base. Deck toggles are excellent for attaching to wood posts or blocking (requires minimum 3" wood blocking). Please note that the cable strength is based on the attachment screws and the attachment material.

**Examples of Applications:** Our Deck Toggle System is used for cables that need to be face mounted or where an angled takeoff is required. These toggles can be used with any post configuration and are excellent for angled cable runs as our deck toggle fittings articulate more than 90 degrees.

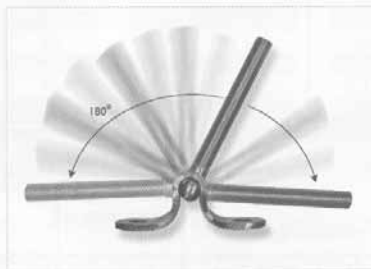
**Other Information:** Deck toggles can be attached to either side of a common post by through bolting or if wall thickness of post is thick enough you can drill and tap posts to accept machine screws. Components can be mixed and matched with other systems for versatility. 316 grade stainless steel for superior corrosion resistance.



Photo: William Coligori Architecture



Deck Toggle Turnbuckle					common specs			Deck Toggle Jaw	
	Thread (b)	Body L (d)	Open L (e)	Closed L (e)	Screw Size (l)	Hole Spacing (k)	Wire Size (c)	Catalog #	
swage	1/4-28	4-1/4"	9"	6"	6TT3DT	1/4"	1-1/2"	1/8"	6TJ3DT
	1/4-28	4-1/4"	9-1/4"	6-1/4"	6TT4DT	1/4"	1-1/2"	5/32"	6TJ4DT
	1/4-28	4-1/4"	9-1/4"	6-1/4"	6TT5DT	1/4"	1-1/2"	3/16"	6TJ5DT
	5/16-24	4-3/4"	9-3/4"	6-3/4"	8TT5DT	5/16"	1-3/4"	3/16"	8TJ5DT
	5/16-24	4-3/4"	9-3/4"	6-3/4"	8TT6DT	5/16"	1-3/4"	1/4"	8TJ6DT
	3/8-24	5-1/4"	10-3/4"	7-3/4"	10TT6DT	3/8"	2"	1/4"	10TJ6DT
crimp	1/4-28	4-1/4"	9"	6"	6TT3DTC	1/4"	1-1/2"	1/8"	6TJ3DTC
	1/4-28	4-1/4"	9-1/8"	6-1/4"	6TT5DTC	1/4"	1-1/2"	3/16"	6TJ5DTC



lag screws are available for attaching to wooden posts.

**Lag Screws**

Screw Size	Catalog #
1/4" x 1-1/2"	SL6S
1/4" x 2-1/2"	SL6L
5/16" x 1-1/2"	SL8S
5/16" x 2-1/2"	SL8L
3/8" x 1-1/2"	SL10S
3/8" x 2-1/2"	SL10L



Also available is our Lag Hardware System, designed for direct attachment into wood surfaces. Solid wood blocking is required and their strength depends on the material. Since these cables are only as strong as the lag holding power, they are only recommended for light duty use and not for commercial use.



Photo: Continental Bridge

**Attachment:** Our Termination Stud System is very simple to setup and install. Simply drill holes in your verticals for the cable to pass through. The termination cap pulls against the last vertical to tension. Countersunk type termination studs use standard 82 degree countersink for a flush fit.

**Examples of Applications:** This system is very good for retrofitting existing rails to meet current codes. Termination Studs are a very cost effective and clean method of installing and tensioning cable assemblies because they can be used with any type or style of post. The termination shaft on the turnbuckle is available in different lengths to pass through various post sizes.

**Other Information:** Our standard termination stud turnbuckle can be used for up to a 2" OD post on a level or angle run. Rods are also available for 6" and 12" posts.

Termination Stud Turnbuckle					common specs		Termination Stud	
	Thread (b)	Body L (d)	Open L (e)	Closed L (e)	Catalog #	Cap Size (a)	Wire Size (c)	Catalog #
swage	1/4-28	4-1/4"	10-1/4"	7-1/8"	6TT3TS	9/16"	1/8"	TS3
	1/4-28	4-1/4"	10-1/2"	7-1/2"	6TT4TS	9/16"	5/32"	TS4
	1/4-28	4-1/4"	10-1/2"	7-1/2"	6TT5TS	9/16"	3/16"	TS5
	5/16-24	4-3/4"	10-3/4"	8"	8TT5TS	9/16"	3/16"	TS5
	5/16-24	4-3/4"	10-3/4"	8-1/8"	8TT6TS	9/16"	1/4"	TS6
crimp	1/4-28	4-1/4"	10-1/4"	7-1/8"	6TT3TSC	9/16"	1/8"	TS3C
	1/4-28	4-1/4"	10-1/2"	7-1/2"	6TT5TSC	9/16"	3/16"	TS5C

Countersunk Termination Stud Turnbuckle					common specs		Countersunk Termination Stud	
	Thread (b)	Body L (d)	Open L (e)	Closed L (e)	Catalog #	Cap Size (a)	Wire Size (c)	Catalog #
swage	1/4-28	4-1/4"	11"	8"	6TT3CTS	9/16"	1/8"	CTS3
	1/4-28	4-1/4"	11-1/8"	8-1/8"	6TT4CTS	9/16"	5/32"	CTS4
	1/4-28	4-1/4"	11-1/4"	8-1/4"	6TT5CTS	9/16"	3/16"	CTS5
crimp	1/4-28	4-1/4"	11-1/4"	8-1/4"	6TT3CTSC	9/16"	1/8"	CTS3C
	1/4-28	4-1/4"	11-1/4"	8-1/4"	6TT5CTSC	9/16"	3/16"	CTS5C





Photo: CMI Marine Products

Swage studs can be used on cable ends to provide adjustment and tension cables without the use of turnbuckles for a no hardware look. Cable runs up to 30 feet can be fabricated. Tensioned with hex nuts and washers, finished off with cap nuts.

custom lengths and threads available in quantity, just call!  
additional sizes from 1/16" to 5/8" in stock



**Machine Swage Studs (316 grade SS)**

Wire Size (c)	Thread Size (b)	Thread L (p)	Catalog #
1/8"	10-32 RH	3/8"	5S3RS
		1-1/2"	5S3RM
	1/4-28 RH	7/16"	6S3RS
		1-1/2"	6S3RM
		2-1/4"	6S3RL
5/32"	1/4-28 RH	3-1/2"	6S3RX
		7/16"	6S4RS
		1-1/2"	6S4RM
		2-1/4"	6S4RL
		3-1/2"	6S4RX
3/16"	1/4-28 RH	7/16"	6S5RS
		1-1/2"	6S5RM
		2-1/4"	6S5RL
		3-1/2"	6S5RX
		5/16-24 RH	7/16"
1/4"	5/16-24 RH	1-1/2"	8S5RM
		2-3/8"	8S5RL
		7/16"	8S6RS
		1-1/2"	8S6RM
		2-3/8"	8S6RL
3/8"	3/8-24 RH	7/16"	10S6RS
		1-1/2"	10S6RM
		2-3/4"	10S6RL
		10S6RX	



**Handy Crimp Studs (316 grade SS)**

Wire Size (c)	Thread Size (b)	Thread L (p)	Catalog #	
1/8"	1/4-28 RH	7/16"	6S3CRS	
		1-1/2"	6S3CRM	
		2-1/4"	6S3CRL	
3/16"	1/4-28 RH	7/16"	6S5CRS	
		1-1/2"	6S5CRM	
		2-1/4"	6S5CRL	
		5/16-24	7/16"	8S5CRS
		1-1/2"	8S5CRM	
2-3/8"	8S5CRL			

indicates standard thread lengths used in turnbuckles

**Additional Stainless Steel Hardware**

Thread	Hex Nuts	Lock Nuts	Cap Nuts	Ball Ends	Dome Nuts
1/4-28	RH 14LNR	14LNF	14CAP	BALL6	DN6
	LH 14LNL	-	-	-	-
5/16-24	RH 516LNR	516LNF	516CAP	BALL8	-
	LH 516LNL	-	-	-	-
3/8-24	RH 38LNR	38LNF	38CAP	-	-
	LH 38LNL	-	-	-	-
1/2-20	RH 12LNR	-	-	-	-
	LH 12LNL	-	-	-	-
5/8-18	RH 58LNR	-	-	-	-
	LH 58LNL	-	-	-	-
3/4-16	RH 34LNR	-	-	-	-
	LH 34LNL	-	-	-	-

**Beveled Washers 30 angle**

use with Thread

1/4	BW5
5/16	BW6

**Stainless Steel Washers**

Thread	Washers	Fender Washers	Lock Washers
1/4	14WAS	14FWAS	14WASL
5/16	516WAS	516FWAS	516WASL
3/8	38WAS	38FWAS	38WASL
1/2	12WAS	12FWAS	12WASL
5/8	58WAS	-	-
3/4	34WAS	-	-

Please note: additional hardware available.  
Sizes from #10 to 3/4" in stock.

hex nuts both coarse and fine threads, nylock nuts, washers, fender washers, lock washers and many others available for prompt shipment.



Cable Design now offers a line of stainless steel trellis cable fittings to complement our complete line of turnbuckles, cable fittings and cable assemblies for railing infills, structural supports, fabric structures, canopies, fixture hanging, seismic bracing, exercise equipment, and anywhere a high quality stainless steel cable is required.

Posts are used to terminate cables at corner or end conditions. Through hole in base allows mounting bolt (not included) to attaché to wall with concrete shield, through bolts, etc. Single hole for one cable termination, 2 holes for corner conditions.

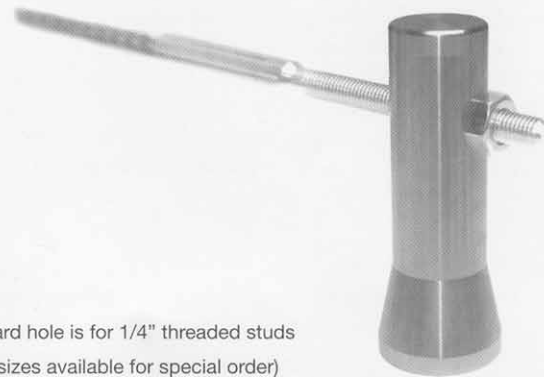
Mounting base available but not show, provides large diameter base for stability and to offset post from wall. Catalog Number LPB62-4.



**Cross clamps**

are used to clamp 2 cables at 90 degrees.  
Hex key cap.

Wire Size	Catalog #
1/8"	CC3
5/32" - 3/16"	CC5
7/32" - 1/4"	CC6



**Posts**

Standard hole is for 1/4" threaded studs  
(other sizes available for special order)

Size	Through Holes	Catalog #
3"	1	LP63-2
	2	LP63-4
4"	1	LP64-2
	2	LP64-4

**Tie-Bar Systems**

Stainless Steel Architectural Tie-Bar Fittings and Assemblies - Addressing, lightweight, sturdy, economic structures, Bar Tension members can be configured with Architectural Forks, Compact Tensioners and Bar Couplers to required lengths. Call to discuss your application today!

**Back Mounting Ball and Socket System**

Designed to be a simple and discrete anchorage in Flat Bar, plate, L-section or Tubular Section. Great for angled take offs!

**Surface Mounting Ball and Socket System**

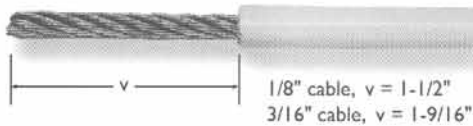
Simple installation makes this system ideal for use in stairways or decking. Also, this system has the ability to easily clip the wire in and out; perfect for temporary displays and hanging applications.



# Handy Crimp / Swaging

## HANDY CRIMP INSTRUCTIONS

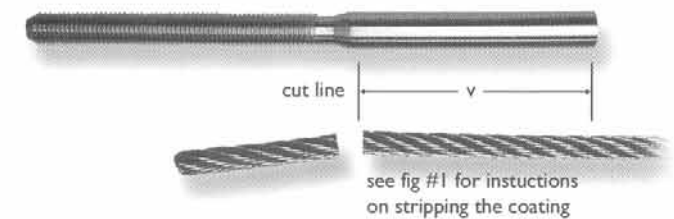
**Fig #1** use a sharp knife to strip vinyl cover if required



**Fig #2** place 3 crimps 1/8" from end of fitting and 1/8" apart, rotate 180 degrees for each crimp to ensure straightness of fitting



**Fig #3** attach the second fitting making sure to pull the cable tight before measuring the cut



**Supplied Gauge**

**Micrometer or Caliper:**  
measure to  
.185 for 1/8" wire or  
.265 for 3/16" wire

Adjust all turnbuckles, etc.!!! Make sure all pins, rings, and locknuts are securely fastened!!!

**Step #1**, make sure you have the proper equipment and all parts required!!

**Step #2**, if you are using vinyl coated cable it will be necessary to strip back the coating fig#1

**Step #3**, insert stripped cable into Handy Crimp fitting and crimp 3 times as shown in fig#2

**Step #4**, attach completed first fitting at point of beginning and run cable to other end making sure to adjust all turnbuckles, etc. to 2/3rds open position.

**Step #5**, attach loose Handy Crimp fitting to end position and pull cable tightly along side to measure for cut as shown in fig#3

**Step #6**, repeat steps #2 & 3 for end fitting

**Step #7**, be sure to check all crimps with micrometer or gauge supplied!!!

"c" die used for 1/8" cable  
"g" die used for 3/16" cable



**Nicopress Tool**

available to buy or rent

Our Handy Crimp Hardware and our Nicopress hand tool shown on this page are for use in low load applications (railing infill etc.) only. These fittings when properly installed, develop approximately 70% of 7x7 cable strength. We do not recommend using these fittings in structural or commercial applications where they will be subjected to abuse. Please refer to our swage type hardware and professional swaging for these applications. Please note that the crimping of this hardware is also quite labor intensive and leaves three distinct crimps unlike our machine swage which is smooth. Two cable sizes are offered, 1/8" & 3/16". 316 grade stainless steel.

## SWAGING / CABLE EQUIPMENT



### Cable Cutters

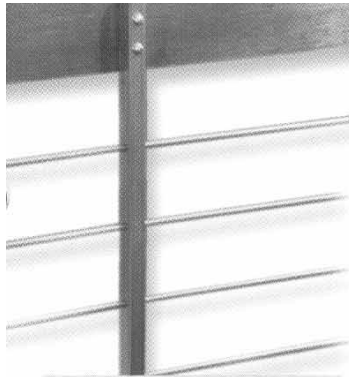
Cuts wire size up to:	Catalog #
1/8"	CUTC7
3/16"	CUTC9
1/4"	CUTC12
3/8"	CUTC16

### Swaging

Swaging must be done with the proper equipment and by an experienced rigger. We recommend hydraulic roll type swaging. There are several machines available from hand swagers to fully powered. All swaging done by us is done on a German made, fully powered hydraulic machine, which produces guaranteed professional swaging. We also lease and sell top quality swagers from hand machines to fully powered ones.

Available to buy or rent are **Top Reff 2000** brand machine swagers as well as **Nicopress Tools** and **Wire Technik** hand swagers and crimpers. Call for details





Project: Residence, Darien, CT  
Fabricator: Renee Graham

Specification depends on a number of factors including but not limited to design, loads, style, etc.. Our Lifeline turnbuckles are suitable for all but the highest load applications. For high load applications we would recommend our Rigging turnbuckles to meet or exceed wire strengths. You will need to determine wire size, turnbuckle style, means of termination, etc.. The following charts will assist you in selection.

#### Cable Breaking Strengths (lbs)

Wire Size	7x7	7x19	1x19
3/32"	920	1000	1200
1/8"	1700	1760	2100
5/32"	2400	2400	3300
3/16"	3700	3700	4700
7/32"	4800	5000	6300
1/4"	6100	6400	8200
9/32"	7600	7800	10300
5/16"	9100	9000	12500
3/8"	12600	12000	17500



flexible



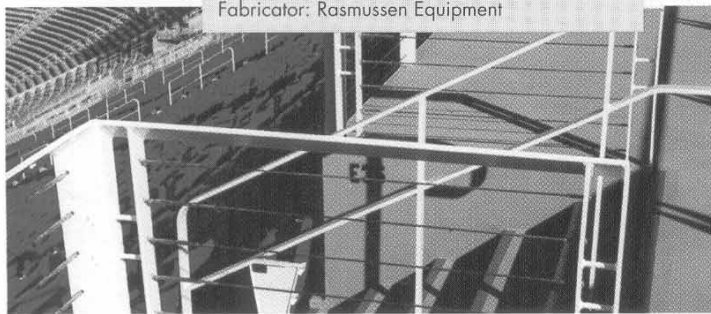
very flexible



stiff

#### Tensioning & Termination

Cables must be terminated and tensioned properly. Turnbuckles are the most common means of adjustment being used in the middle or at the end of the cable run. The end of the cable is more economical (less hardware). Cables may be terminated with threaded swage studs on one or both ends giving you a simple and cost effective means of termination and adjustment. We do recommend using a turnbuckle whenever possible. One turnbuckle is all that is required for cable runs up to 40-50 feet, however multiple turnbuckles can be used to develop a particular look and balance.



Project: University of Utah / Rice Eccles Stadium  
Fabricator: Rasmussen Equipment

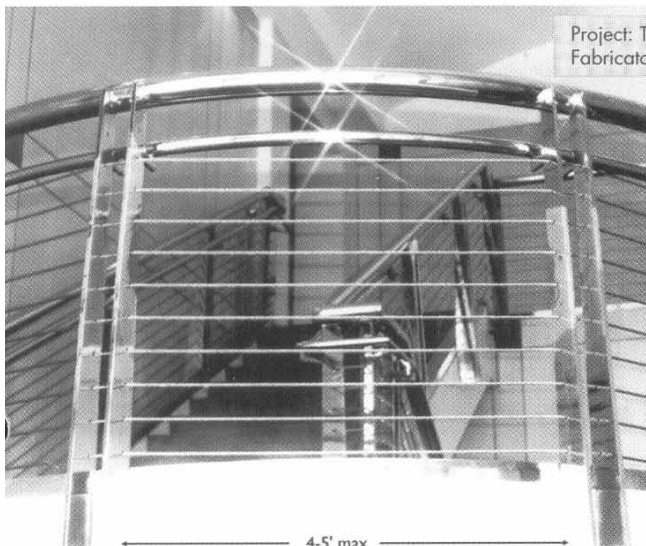
All of Cable Design Rigging Turnbuckles are Designed to Exceed the Breaking Strength of 1 x 19 Stainless Steel Wire Rope in their corresponding wire size. However, a safe working load of 40% of these amounts should not be exceeded!

Cable selection is based on job type, design, loads, looks, etc.. Generally 3/16" 7x7 is chosen for most railing applications. It is flexible, easy to work with, and is available uncoated or coated in hard PVC, in clear or colors.

Clear of white is the most standard color and stocked for quick ship. For high load applications, structural supports, etc. Please see the above chart for appropriate sizes and strengths.

#### Rail Posts

Rail posts must be designed to handle the cable tensioning. Cables need to be tensioned to 125-150 lbs. per cable. Please be sure that your end (termination) posts can handle this load. **Vertical post spacing should be kept to a minimum, usually 4-5' max. Horizontal spacing must be kept to 3-1/2" max (3-1/4" preferred).**



Project: Twin Oaks Corporate Parks  
Fabricator: Midco Sling

#### APPLICABLE PROJECTS

##### Commercial / Institutional

Shopping centers - balconies, mezzanines, displays, trellis systems, parking barricades, etc..  
Museums - displays, lighting, walkways, etc..  
Stadiums - Sports arenas, structural supports, railings, walkways, barricades, etc..  
Amusement parks - canopies, tenting, walkways, barricades, traffic control, etc..  
Hospitals - Health care - Rehabilitation - exercise equipment, railings, walkways, swimming pools, food service, etc..

##### Industrial

Structural supports, safety partitions, fixture holding, mezzanines, walkways, parking barriers, food service, etc..

##### Residential

Awnings, canopies, walkways, railings, swimming areas, structural supports, balconies, parking areas, etc..

**CC** CODES, CERTIFICATION**Meets Structural Loading Requirements**

All products meet or exceed Structural requirements for their manufactured purpose.

**UA** USES, APPLICATIONS**Installations**

Our products keep some distinguished company, some of which include: the Houston Astrodome, the Basketball Hall of Fame, the Nautilus Submarine Exhibit, the San Diego Zoo, and even a bridge for Paul Newman. This past year we have made cables for numerous installations including, hospitals, corporate offices, banks, government facilities, and even the Hoover Dam. These installations have included guardrails, ramps, garden trellises, barricades, swimming pool enclosures, canopies, & more.

**TS** TECHNICAL SUPPORT**Technical Assistance  
Custom Fabrication  
Design Assistance**

We are more than happy to provide technical design assistance. Simply Call, Fax, or Write to discuss your plans. Let our 20 years of experience assist you in your project. We will be happy to help in any way we can; before, during, and after installation. Prompt responses are guaranteed!

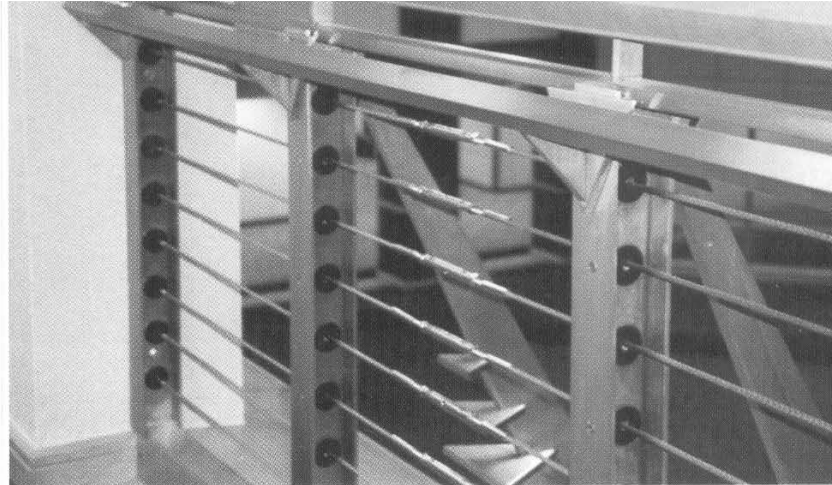
**CC** CODES, CERTIFICATION**Weather / Chemical Resistance**

Because of the high quality of materials and workmanship used in our products, along with our 20 years of experience in highly corrosive marine environment, our products are able to stand up to the most demanding applications. All hardware is of the highest quality stainless steel.

**MF** MATERIALS, FINISHES**Stainless Steel Data**

We use only the finest materials available. All Stainless Steel is type 316 for superior corrosion resistance unless otherwise noted or requested. Certification and test reports are available upon request.

Cable	see sizes and construction with breaking loads to follow Size: 3/16" Dia. 7x7 Material: Stainless Steel 302/304 grade Breaking Strength: 3700 lbs. Finish: mill finish
Turnbuckles	turnbuckles are sized by the wire size. Style is mostly for looks Style: closed barrel "TT" type Jaw and Swage Material: Stainless Steel 316 grade Finish: Satin tumbled finish Breaking Strength: 3700 lbs.
Termination Fittings	termination sizes again are by wire size and type of attachment Style: Swage toggle Jaw Material: Stainless Steel 316 grade Finish: Satin Tumbled finish Breaking Strength: 3700 lbs.



**table of swage specifications (rigging)**


Wire Size	Metric Equivalent	Hole Depth	Hole Size	O.D. Before Swage (in)	O.D. Before Swage (mm)	O.D. After Swage (in)	O.D. After Swage (mm)
1/16"	1.5mm	7/8"	.078	.218 - .213	5.53 - 5.41	.190 - .185	4.82 - 4.70
3/32"	2.5mm	1-1/4"	.109	.218 - .213	5.53 - 5.41	.190 - .185	4.82 - 4.70
1/8"	3mm	1-1/2"	.141	.250 - .245	6.35 - 6.22	.219 - .214	5.56 - 5.44
5/32"	4mm	1-3/4"	.172	.297 - .292	7.54 - 7.42	.250 - .245	6.35 - 6.23
3/16"	5mm	2"	.203	.359 - .354	9.12 - 9.00	.313 - .308	7.95 - 7.83
7/32"	5.5mm	2-1/4"	.234	.427 - .422	10.84 - 10.72	.375 - .368	9.50 - 9.35
1/4"	6mm	2-1/2"	.265	.494 - .489	12.54 - 12.42	.438 - .431	11.12 - 10.95
9/32"	7mm	2-3/4"	.297	.563 - .558	14.30 - 14.18	.500 - .492	12.70 - 12.50
5/16"	8mm	3"	.328	.635 - .630	16.13 - 16.01	.563 - .554	14.30 - 14.07
3/8"	9-10mm	3-1/2"	.390	.703 - .698	17.85 - 17.73	.625 - .618	15.90 - 15.70
7/16"	11mm	4-1/2"	.453	.781 - .773	19.83 - 19.63	.688 - .680	17.47 - 17.27
1/2"	12mm	5"	.531	.844 - .839	21.44 - 21.32	.750 - .741	19.05 - 18.82
9/16"	14mm	5-1/2"	.593	.984 - .979	25.00 - 24.88	.875 - .866	22.23 - 22.00
5/8"	16mm	6-1/4"	.656	1.109 - 1.104	28.17 - 28.05	1.000 - .990	25.40 - 25.15
3/4"	19mm	7-1/2"	.781	1.359 - 1.354	34.52 - 34.40	1.250 - 1.238	31.75 - 31.44

Note: 1/4" Lifeline Fittings use 7/32" Dies & Specs.


All rigging turnbuckles are designed to exceed the breaking strength of 1 x 19 stainless steel wire rope in their corresponding wire size. However a safe working load of 40% of these amounts should not be exceeded!

**wire breaking strength (lbs)**


Wire Size	7x7	7x19	1x19
1/16"	480	480	500
3/32"	920	1000	1200
1/8"	1700	1760	2100
5/32"	2400	2400	3300
3/16"	3700	3700	4700
7/32"	4800	5000	6300
1/4"	6100	6400	8200
9/32"	7600	7800	10300
5/16"	9100	9000	12500
3/8"	1260	12000	17500



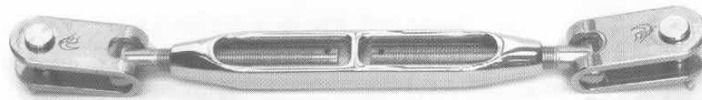
flexible



very flexible



stiff



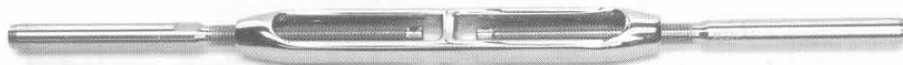
**Jaw to Jaw** (forged bronze TFB series)

Wire Size	Jaw Width	Pin Size	Thread	Open L	Closed L	Part #
3/32" - 5/32"	1/4"	1/4"	1/4-28	10-1/2"	7-1/2"	14TFBJ
5/32" - 3/16"	5/16"	5/16"	5/16-24	11-1/4"	8"	516TFBJ
3/16" - 1/4"	3/8"	3/8"	3/8-24	13"	9"	38TFBJ
1/4" - 5/16"	1/2"	1/2"	1/2-20	15"	11"	12TFBJ
5/16" - 3/8"	5/8"	5/8"	5/8-18	18-1/2"	13-1/2"	58TFBJ
7/16" - 1/2"	3/4"	3/4"	3/4-16	26"	20"	34TFBJ



**Jaw to Swage** (forged bronze TFB series)

Wire Size	Jaw Width	Pin Size	Thread	Open L	Closed L	Part #
3/32"	1/4"	1/4"	1/4-28	9-7/8"	6-3/4"	14TFBS332
1/8"	1/4"	1/4"	1/4-28	9-7/8"	6-3/4"	14TFBS18
5/32"	1/4"	1/4"	1/4-28	9-7/8"	6-3/4"	14TFBS532
5/32"	5/16"	5/16"	5/16-24	10-1/2"	7-1/2"	516TFBS532
3/16"	5/16"	5/16"	5/16-24	10-1/2"	7-1/2"	516TFBS316
3/16"	3/8"	3/8"	3/8-24	11-5/8"	7-7/8"	38TFBS316
7/32"	3/8"	3/8"	3/8-24	11-7/8"	8-1/4"	38TFBS732
1/4"	3/8"	3/8"	3/8-24	12-1/2"	8-3/4"	38TFBS14
1/4"	1/2"	1/2"	1/2-20	14-1/4"	10"	12TFBS14
9/32"	1/2"	1/2"	1/2-20	14-1/4"	10"	12TFBS932
5/16"	1/2"	1/2"	1/2-20	14-3/4"	10"	12TFBS516
5/16"	5/8"	5/8"	5/8-18	16-1/4"	12"	58TFBS516
3/8"	5/8"	5/8"	5/8-18	16-3/8"	12-1/8"	58TFBS38
7/16"	3/4"	3/4"	3/4-16	22-1/4"	16-1/4"	34TFBS716
1/2"	3/4"	3/4"	3/4-16	22-1/4"	16-1/4"	34TFBS12



**Swage to Swage** (forged bronze TFB series)

Wire Size	Thread	Open L	Closed L	Part #
3/32"	1/4-28	9"	5-3/4"	14TFBS332SS
1/8"	1/4-28	9"	5-3/4"	14TFBS18SS
5/32"	1/4-28	9"	5-3/4"	14TFBS532SS
5/32"	5/16-24	10"	6-1/2"	516TFBS532SS
3/16"	5/16-24	10"	6-1/2"	516TFBS316SS
3/16"	3/8-24	10-1/2"	6-1/2"	38TFBS316SS
7/32"	3/8-24	10-5/8"	6-5/8"	38TFBS732SS
1/4"	3/8-24	10-3/4"	6-3/4"	38TFBS14SS
1/4"	1/2-20	12-1/2"	8-1/2"	12TFBS14SS
9/32"	1/2-20	12-5/8"	8-5/8"	12TFBS932SS
5/16"	1/2-20	12-1/2"	8-1/4"	12TFBS516SS
5/16"	5/8-18	14-1/8"	9-1/2"	58TFBS516SS
3/8"	5/8-18	14-3/8"	9-5/8"	58TFBS38SS
7/16"	3/4-16	18-1/2"	12-1/2"	34TFBS716SS
1/2"	3/4-16	18-1/2"	12-1/2"	34TFBS12SS

### Forged Bronze TFB Series

Forged bronze body with stainless steel ends. Here is an excellent combination of stainless and bronze, keeping the qualities of strength and corrosion resistance while adding an excellent non-galling feature. Bodies standard in highly polished chrome or plain bronze (**unchromed, simply add B to the end of the part number**) for the traditional look. all end fittings are 316 stainless steel.



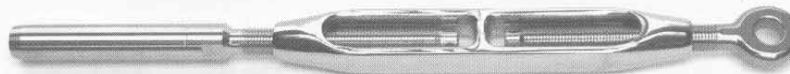
Left Hand Jaw and Body Only (forged bronze TFB series)

Wire Size	Jaw Width	Pin Size	Thread	Open L	Closed L	Part #
3/32" - 5/32"	1/4"	1/4"	1/4-28	7-1/2"	6"	14FBJ
5/32" - 3/16"	5/16"	5/16"	5/16-24	8"	6-1/2"	516FBJ
3/16" - 1/4"	3/8"	3/8"	3/8-24	9"	7-1/4"	38FBJ
1/4" - 5/16"	1/2"	1/2"	1/2-20	11"	9"	12FBJ
5/16" - 3/8"	5/8"	5/8"	5/8-18	13"	10-3/4"	58FBJ
7/16" - 1/2"	3/4"	3/4"	3/4-16	18"	12"	34FBJ



Eye to Eye (forged bronze TFB series)

Wire Size	Pin Size	Thread	Open L	Closed L	Part #
3/32" - 5/32"	1/4"	1/4-28	9-1/2"	7"	14TFBEE
5/32" - 3/16"	5/16"	5/16-24	11"	8"	516TFBEE
3/16" - 1/4"	3/8"	3/8-24	12"	8"	38TFBEE
1/4" - 5/16"	1/2"	1/2-20	14"	10"	12TFBEE
5/16" - 3/8"	5/8"	5/8-18	17-1/2"	12-1/2"	58TFBEE
7/16" - 1/2"	3/4"	3/4-16	19-1/2"	13-1/2"	34TFBEE



Eye to Swage (forged bronze TFB series)

Wire Size	Eye Size	Thread	Open L	Closed L	Part #
3/32"	1/4"	1/4-28	9-5/8"	6-5/8"	14TFBS332E
1/8"	1/4"	1/4-28	9-5/8"	6-5/8"	14TFBS18E
5/32"	1/4"	1/4-28	9-5/8"	6-5/8"	14TFBS532E
5/32"	5/16"	5/16-24	10-3/4"	7-1/2"	516TFBS532E
3/16"	5/16"	5/16-24	10-3/4"	7-1/2"	516TFBS316E
3/16"	3/8"	3/8-24	11-1/4"	7-1/2"	38TFBS316E
7/32"	3/8"	3/8-24	11-3/8"	7-5/8"	38TFBS732E
1/4"	3/8"	3/8-24	11-3/8"	7-5/8"	38TFBS14E
1/4"	1/2"	1/2-20	14"	10"	12TFBS14E
9/32"	1/2"	1/2-20	14-1/4"	10-1/8"	12TFBS932E
5/16"	1/2"	1/2-20	14-3/8"	10-1/4"	12TFBS516E
5/16"	5/8"	5/8-18	15-3/4"	11-1/2"	58TFBS516E
3/8"	5/8"	5/8-18	17-7/8"	11-5/8"	58TFBS38E
7/16"	3/4"	3/4-16	19"	13"	34TFBS716E
1/2"	3/4"	3/4-16	19"	13"	34TFBS12E

### Closed Tubular Turnbuckles (TT Series)

These tubular 316 grade stainless steel turnbuckles feature forged t-bolt toggle jaws and closed body design with check nut locking. Rigging swage studs include wrench flat and Swageline.

Larger sizes available for special order



#### Jaw to Jaw (tubular turnbuckle TT series)

Wire Size	Jaw Width	Pin Size	Thread	Open L	Closed L	Part #
1/16" - 1/8"	1/4"	3/16"	10-32	9-1/2"	6-1/2"	10TTJ
3/32" - 5/32"	1/4"	1/4"	1/4-28	10-1/2"	7-1/2"	14TTJ
5/32" - 3/16"	5/16"	5/16"	5/16-24	11-1/4"	8"	516TTJ
3/16" - 1/4"	3/8"	3/8"	3/8-24	13"	9"	38TTJ
1/4" - 5/16"	1/2"	1/2"	1/2-20	15"	11"	12TTJ
5/16" - 3/8"	5/8"	5/8"	5/8-18	19-1/2"	14-1/2"	58TTJ



#### Jaw to Swage (tubular turnbuckle TT series)

Wire Size	Pin Size	Thread	Open L	Closed L	Jaw Width	Part #
1/16"	3/16"	10-32	8-3/4"	6-1/2"	1/4"	10TTS116
3/32"	3/16"	10-32	8-3/4"	6-1/2"	1/4"	10TTS332
3/32"	1/4"	1/4-28	9-7/8"	6-3/4"	1/4"	14TTS332
1/8"	3/16"	10-32	8-3/4"	6-1/2"	1/4"	10TTS18
1/8"	1/4"	1/4-28	9-7/8"	6-3/4"	1/4"	14TTS18
5/32"	1/4"	1/4-28	9-7/8"	6-3/4"	1/4"	14TTS532
5/32"	5/16"	5/16-24	10-1/2"	7-1/2"	5/16"	516TTS532
3/16"	5/16"	5/16-24	10-1/2"	7-1/2"	5/16"	516TTS316
3/16"	3/8"	3/8-24	11-5/8"	7-7/8"	3/8"	38TTS316
7/32"	3/8"	3/8-24	11-7/8"	8-1/4"	3/8"	38TTS732
1/4"	3/8"	3/8-24	12-1/2"	8-3/4"	3/8"	38TTS14
1/4"	1/2"	1/2-20	14-1/4"	10"	1/2"	12TTS14
9/32"	1/2"	1/2-20	14-1/4"	10"	1/2"	12TTS932
5/16"	1/2"	1/2-20	14-3/4"	10"	1/2"	12TTS516



#### Swage to Swage (tubular turnbuckle TT series)

Wire Size	Thread	Open L	Closed L	Part #
3/32"	10-32	7-1/2"	5"	10TTS332SS
3/32"	1/4-28	9"	5-3/4"	14TTS332SS
1/8"	10-32	7-1/2"	5"	10TTS18SS
1/8"	1/4-28	9"	5-3/4"	14TTS18SS
5/32"	1/4-28	9"	5-3/4"	14TTS532SS
5/32"	5/16-24	10"	6-1/2"	516TTS532SS
3/16"	5/16-24	10"	6-1/2"	516TTS316SS
3/16"	3/8-24	10-1/2"	6-1/2"	38TTS316SS
7/32"	3/8-24	10-5/8"	6-5/8"	38TTS732SS
1/4"	3/8-24	10-3/4"	6-3/4"	38TTS14SS
1/4"	1/2-20	12-1/2"	8-1/2"	12TTS14SS
9/32"	1/2-20	12-5/8"	8-5/8"	12TTS932SS
5/16"	1/2-20	12-3/4"	8-3/4"	12TTS516SS



**Left Hand Jaw and Body Only** (tubular turnbuckle TT series)

Wire Size	Jaw Width	Pin Size	Thread	Open L	Closed L	Part #
1/16" - 1/8"	1/4"	3/16"	10-32	7"	5"	10TTJT
3/32" - 5/32"	1/4"	1/4"	1/4-28	7-1/2"	6"	14TTJT
5/32" - 3/16"	5/16"	5/16"	5/16-24	8"	6-1/2"	516TTJT
3/16" - 1/4"	3/8"	3/8"	3/8-24	9"	7-1/4"	38TTJT
1/4" - 5/16"	1/2"	1/2"	1/2-20	11"	9"	12TTJT
5/16" - 3/8"	5/8"	5/8"	5/8-18	13"	10-3/4"	58TTJT



**Eye to Eye** (tubular turnbuckle TT series)

Wire Size	Pin Size	Thread	Open L	Closed L	Part #
3/32" - 5/32"	1/4"	1/4-28	9-1/2"	7"	14TTEE
5/32" - 3/16"	5/16"	5/16-24	11"	8"	516TTEE
3/16" - 1/4"	3/8"	3/8-24	12"	8"	38TTEE
1/4" - 5/16"	1/2"	1/2-20	14"	10-1/2"	12TTEE
5/16" - 3/8"	5/8"	5/8-18	16"	11"	58TTEE



**Eye to Swage** (Tubular Turnbuckle TT series)

Wire Size	Eye Size	Thread	Open L	Closed L	Part #
1/16"	3/16"	10-32	7-3/4"	5-1/2"	10TTS116E
3/32"	3/16"	10-32	7-3/4"	5-1/2"	10TTS332E
1/8"	3/16"	10-32	7-3/4"	5-1/2"	10TTS18E
3/32"	1/4"	1/4-28	9-5/8"	6-5/8"	14TTS332E
1/8"	1/4"	1/4-28	9-5/8"	6-5/8"	14TTS18E
5/32"	1/4"	1/4-28	9-5/8"	6-5/8"	14TTS532E
5/32"	5/16"	5/16-24	10-3/4"	7-1/2"	516TTS532E
3/16"	5/16"	5/16-24	10-3/4"	7-1/2"	516TTS316E
3/16"	3/8"	3/8-24	11-1/4"	7-1/2"	38TTS316E
7/32"	3/8"	3/8-24	11-3/8"	7-5/8"	38TTS732E
1/4"	3/8"	3/8-24	11-3/8"	7-5/8"	38TTS14E
1/4"	1/2"	1/2-20	14"	10"	12TTS14E
9/32"	1/2"	1/2-20	14-1/4"	10-1/8"	12TTS932E
5/16"	1/2"	1/2-20	14-3/8"	10-1/4"	12TTS516E

**Rigging Turnbuckle End Fittings**

Our end fittings are made of the highest quality 316 grade stainless steel.

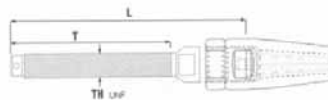
The latest development for compression fittings results in a termination at least as strong as the rated breaking load of the wire rope. The unique star shaped Crown Ring positions and holds the wire strands in place, eliminating the requirement for awkward wire end bending. The shallow angled cone establishes direct mechanical grip on the core and all the outer strands. Stainless steel grade 316L is used on all parts with the exception of the Crown Ring which is manufactured from Aluminum Bronze. No sealant or packing is required.

- Available for 1 x 19, 7 Strand, and Compact Strand Wires.
- Special Star Shaped Crown Ring holds wire strands in place, eliminating awkward "wire end bending".
- Crown Ring prevents wire strands from being trapped in cone slots.
- Works equally well with Right or Left hand lay wire.
- Shallow angle on cone establishes more direct mechanical contact over a greater area providing a tighter grip.
- Can be dismantled for maintenance and re-used without the need for new parts (providing that no overloading has occurred).
- No sealant or packing required.
- Slim design.

#### Compression Stud

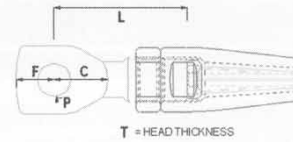
Wire Size	TH	L	T	Part #
1/8"	1/4"	2.480	1.850	14CTS18
5/32"	1/4"	2.677	1.850	14CTS532
5/32"	5/16"	2.913	2.125	516CTS592
3/16"	5/16"	3.149	2.125	516CTS316
3/16"	3/8"	3.543	2.675	38CTS316
7/32"	3/8"	3.543	2.675	38CTS732
7/32"	7/16"	3.740	2.950	716CTS732
1/4"	3/8"	3.740	2.675	38CTS14
1/4"	7/16"	4.133	2.950	716CTS14
1/4"	1/2"	4.606	3.540	12CTS14
9/32"	1/2"	4.842	3.540	12CTS932
5/16"	1/2"	5.078	3.540	12CTS516
5/16"	5/8"	5.511	3.940	58CTS516
3/8"	5/8"	5.787	3.940	58CTS38
3/8"	3/4"	6.220	4.720	34CTS38
7/16"	3/4"	6.220	4.720	34CTS716
1/2"	3/4"	7.283	4.720	34CTS12
9/16"	7/8"	8.110	5.510	78CTS916
5/8"	1"	9.291	6.300	1CTS58

Compression studs will fit perfectly to the jaw and body turnbuckles shown on pages 14 and 16.. Right hand stud is standard.



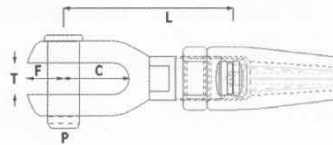
### Compression Eye

Wire Size	P	C	L	T	Part #
1/8"	1/4"	0.354	0.866	0.236	14CTE18
5/32"	5/16"	0.472	1.102	0.276	516CTE532
3/16"	3/8"	0.630	1.417	0.315	38CTE316
7/32"	3/8"	0.630	1.417	0.315	38CTE732
7/32"	7/16"	0.750	1.770	0.374	716CTE732
1/4"	7/16"	0.748	1.811	0.374	716CTE14
1/4"	1/2"	0.787	1.930	0.433	12CTE14
9/32"	1/2"	0.787	1.969	0.433	12CTE932
5/16"	1/2"	0.787	2.047	0.433	12CTE516
5/16"	9/16"	0.906	2.204	0.512	916CTE516
5/16"	5/8"	0.906	2.244	0.590	58CTE516
3/8"	5/8"	1.102	2.323	0.590	58CTE38
7/16"	3/4"	1.339	2.560	0.710	34CTE716
1/2"	3/4"	1.339	3.110	0.710	34CTE12
9/16"	7/8"	1.417	3.386	0.866	78CTE916
5/8"	1"	1.614	3.700	0.945	1CTE58



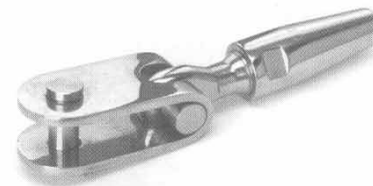
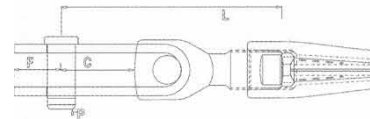
### Compression Fork

Wire Size	P	C	L	T	Part #
1/8"	1/4"	0.512	1.181	0.236	14CTF18
5/32"	5/16"	0.630	1.575	0.276	516CTF532
3/16"	3/8"	0.750	1.850	0.315	38CTF316
7/32"	3/8"	0.750	1.850	0.315	38CTF732
1/4"	7/16"	0.866	2.165	0.374	716CTF14
9/32"	1/2"	1.000	2.480	0.433	12CTF932
5/16"	1/2"	1.000	2.638	0.433	12CTF516
5/16"	9/16"	1.100	2.835	0.512	916CTF516
5/16"	5/8"	1.260	3.189	0.590	58CTF516
3/8"	5/8"	1.260	3.307	0.590	58CTF38
7/16"	3/4"	1.496	3.425	0.710	34CTF716
1/2"	3/4"	1.496	4.331	0.710	34CTF12
9/16"	7/8"	1.772	4.724	0.866	78CTF916
5/8"	1"	1.970	5.275	0.945	1CTF58



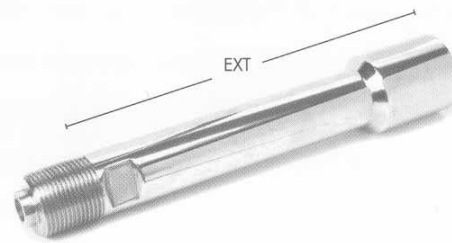
### Compression Toggles

Wire Size	P	C	F	T	L	Part #
1/8"	1/4"	0.669	0.315	0.315	1.764	14CTT18
5/32"	5/16"	0.866	0.472	0.394	2.264	516CTT532
3/16"	3/8"	0.984	0.512	0.433	2.768	38CTT316
7/32"	3/8"	0.984	0.512	0.433	2.768	38CTT732
1/4"	7/16"	1.181	0.669	0.551	3.142	716CTT14
1/4"	1/2"	1.181	0.669	0.551	3.142	12CTT14
9/32"	1/2"	1.378	0.748	0.63	3.547	12CTT932
5/16"	1/2"	1.772	0.984	0.63	3.657	12CTT516
5/16"	9/16"	1.772	0.984	0.748	4.39	916CTT516
5/16"	5/8"	1.772	0.984	0.748	4.567	58CTT516
3/8"	5/8"	1.772	0.984	0.748	4.681	58CTT38
7/16"	3/4"	2.165	0.984	0.866	5.669	34CTT716
1/2"	3/4"	2.165	0.984	0.866	6.205	34CTT12
9/16"	7/8"	2.362	1.181	0.945	6.862	78CTT916
5/8"	1"	2.755	1.181	1.102	7.673	1CTT58



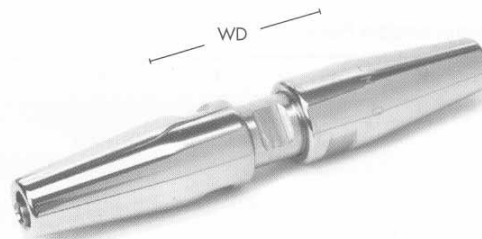
### Compression Extenders

Wire Size	EXT	OD	Part #
1/8"	1.772	0.433	CTX18
5/32"	2.362	0.512	CTX532
3/16"	2.953	0.63	CTX316
7/32"	2.953	0.63	CTX732
1/4"	3.543	0.748	CTX14
9/32"	4.139	0.866	CTX932
5/16"	4.724	1.024	CTX516
3/8"	5.9	1.181	CTX38
7/16"	5.9	1.181	CTX716
1/2"	7.086	1.181	CTX12
9/16"	8.268	1.772	CTX916
5/8"	9.45	1.85	CTX58



### Compression Splice Link

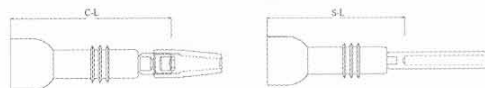
Wire Size	WD	OD	Part #
1/8"	1.023	0.433	CTL18
5/32"	1.063	0.512	CTL532
3/16"	1.299	0.63	CTL316
7/32"	1.299	0.63	CTL732
1/4"	1.378	0.748	CTL14
9/32"	1.693	0.866	CTL932
5/16"	2.165	1.024	CTL516
3/8"	2.441	1.181	CTL38
7/16"	2.441	1.181	CTL716
1/2"	2.835	1.496	CTL12
9/16"	3.346	1.772	CTL916
5/8"	3.819	1.85	CTL58



### Failsafe Insulator

Wire Size	Compression End			Swage End	
	CL	Part #	List Price	SL	Part #
7/32"	3.898	CTICC732	197.19	3.975	CTISS732
1/4"	4.055	CTICC14	213.82	3.975	CTISS14
9/32"	4.920	CTICC932	245.47	4.725	CTISS932
5/16"	5.158	CTICC516	278.32	5.512	CTISS516
3/8"	5.750	CTICC38	338.15	5.590	CTISS38
1/2"	6.102	CTICC12	594.42	6.614	CTISS12

Introducing the only **failsafe** wire rigging insulator available on the market today. Utilizing the same features that have made the Hi-Mod Mechanical fittings popular, this insulator has an internal ball-socket in the main body that threads onto the connecting stud. The nut is insulated from the stainless steel body by a Tufnol™ socket, preventing electrical transference to the insulator body or opposite terminal. Should, for any reason, the Tufnol™ be compromised, the nut will bottom out against the stainless housing. While the backstay will loosen, the insulating studs will remain attached to the insulator body-allowing the rig to be re-tensioned until a repair can be made.



**IBEX Innovation Award Winner**



**MS Aircraft Eyes and Forks (300 Series Stainless Steel)**

MS Aircraft Eyes				MS Aircraft Forks			
Wire Size	Pin Size	MS #	Part #	Jaw Width	MS #	Part #	
1/16"	3/16"	20668-2	RE2	0.100	20667-2	RF2	
3/32"	3/16"	20668-3	RE3	0.110	20667-3	RF3	
1/8"	3/16"	20668-4	RE4	0.195	20667-4	RF4	
5/32"	1/4"	20668-5	RE5	0.200	20667-5	RF5	
3/16"	5/16"	20668-6	RE6	0.260	20667-6	RF6	
7/32"	5/16"	20668-7	RE7	0.300	20667-7	RF7	
1/4"	3/8"	20668-8	RE8	0.315	20667-8	RF8	
9/32"	7/16"	20668-9	RE9	0.325	20667-9	RF9	
5/16"	7/16"	20668-10	RE10	0.350	20667-10	RF10	
3/8"	1/2"	20668-12	RE12	0.380	20667-12	RF12	



**Marine Eyes**

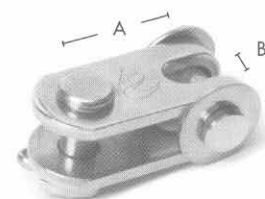
Marine Eye			Marine Eye Toggle	
Wire Size	Pin Size	Part #	Jaw Width	Part #
1/16"	1/4"	ME2	-	-
3/32"	1/4"	ME3	-	-
1/8"	1/4"	ME4	1/4"	14RT18
5/32"	5/16"	ME5	5/16"	516RT532
3/16"	3/8"	ME6	3/8"	38RT316
7/32"	7/16"	ME7	-	-
1/4"	1/2"	ME8	1/2"	12RT14
9/32"	1/2"	ME9	1/2"	12RT932
5/16"	1/2"	ME10A	1/2"	12RT516
5/16"	5/8"	ME10	5/8"	58RT516
3/8"	5/8"	ME12	5/8"	58RT38
7/16"	3/4"	ME14	-	-
1/2"	7/8"	ME16	-	-
5/8"	1"	ME18	-	-

ME2, ME3 304 grade stainless steel  
 ME10-18 are fully machined  
 316 grade stainless steel



**Double Jaw Toggle**

Pin Size	Jaw Width	"A"	"B"	Part #	List Price
1/4"	1/4"	7/32"	7/32"	14DJT	8.74
5/16"	5/16"	9/32"	9/32"	516DJT	12.60
3/8"	3/8"	3/8"	3/8"	38DJT	17.24
1/2"	1/2"	17/32"	17/32"	12DJT	35.70
5/8"	5/8"	5/8"	5/8"	58DJT	64.12



### Swage Forks

Wire Size	Pin Size	Hole Depth	Length	Part #
1/8"	1/4"	1.535	2.756	SF03
5/32"	5/16"	1.772	3.268	SF04
3/16"	3/8"	2.047	3.819	SF05
1/4"	7/16"	2.520	4.449	SF07
9/32"	1/2"	2.756	5.039	SF08
5/16"	1/2"	3.150	5.443	SF09
5/16"	5/8"	3.150	5.673	SF09A
3/8"	5/8"	3.937	6.854	SF10
1/2"	3/4"	5.197	8.898	SF12



### Rigging Toggle Jaws (c-nut style)

Wire Size	Pin Size	Jaw Width	Part #
3/32"	1/4"	5/16"	14TJRT332
1/8"	1/4"	5/16"	14TJRT18
5/32"	1/4"	5/16"	14TJRT532
5/32"	5/16"	5/16"	516TJRT532
3/16"	5/16"	5/16"	516TJRT316
3/16"	3/8"	7/16"	38TJRT316
7/32"	3/8"	7/16"	38TJRT732
1/4"	3/8"	7/16"	38TJRT14
1/4"	1/2"	5/8"	12TJRT14
9/32"	1/2"	5/8"	12TJRT932
5/16"	1/2"	5/8"	12TJRT516
5/16"	5/8"	5/8"	58TJRT516
3/8"	5/8"	5/8"	58TJRT38

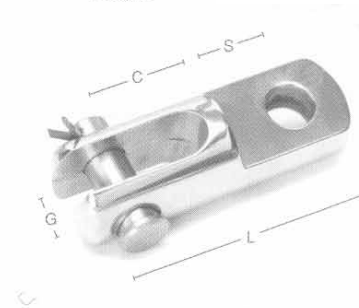
A masthead termination fitting featuring full toggle action. Includes clevis pin and cotter pin.



### Eye-Jaw Toggles

Pin Size	G	L	S	C	Part #
1/4"	1/4"	1.654	0.394	0.512	TOG03
5/16"	5/16"	2.087	0.512	0.630	TOG04
3/8"	3/8"	2.520	0.630	0.748	TOG05
7/16"	7/16"	2.835	0.709	0.866	TOG06
1/2"	1/2"	3.425	0.827	0.984	TOG07
9/16"	9/16"	5.748	1.378	1.772	TOG08
5/8"	5/8"	4.173	1.024	1.260	TOG10
3/4"	3/4"	4.921	1.181	1.496	TOG12

Highly polished 316 grade stainless steel machined from a solid bar



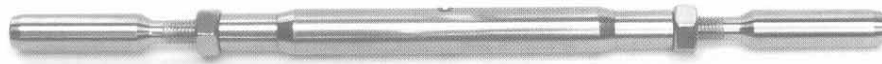


**Jaw to Swage (tubular turnbuckle TT series)**

Wire Size	Pin Size	Jaw Width	Thread	Open L	Closed L	Part #
1/8"	3/16"	1/4"	10-32	7-5/8"	5-1/4"	10TTLL18
1/8"	1/4"	1/4"	1/4-28	9"	6-5/8"	14TTLL18
5/32"	1/4"	1/4"	1/4-28	9-1/8"	6-5/8"	14TTLL532
3/16"	1/4"	1/4"	1/4-28	9-3/8"	6-5/8"	14TTLL316
3/16"	5/16"	5/16"	5/16-24	10-1/4"	7-1/2"	516TTLL316
1/4"	5/16"	5/16"	5/16-24	10-1/2"	7-5/8"	516TTLL14
1/4"	3/8"	7/16"	3/8-24	11-3/8"	8-1/4"	38TTLL14

**With Handy Crimp Stud**

1/8"	1/4"	1/4"	1/4-28	9"	6-5/8"	14TTCLL18
3/16"	1/4"	1/4"	1/4-28	9-3/8"	6-5/8"	14TTCLL316
3/16"	5/16"	5/16"	5/16-24	10-1/4"	7-1/2"	516TTCLL316



**Swage to Swage (tubular turnbuckle TT series)**

Wire Size	Thread	Body L	Open L	Closed L	Part #
1/8"	10-32	3-1/2"	6-1/2"	4-1/2"	10TTLL18SS
1/8"	1/4-28	4-1/4"	8"	5"	14TTLL18SS
5/32"	1/4-28	4-1/4"	8-1/4"	5-1/2"	14TTLL532SS
3/16"	1/4-28	4-1/4"	8-1/4"	5-1/2"	14TTLL316SS
3/16"	5/16-24	4-3/4"	8-3/4"	6"	516TTLL316SS
1/4"	5/16-24	4-3/4"	9-1/2"	6-1/4"	516TTLL14SS
1/4"	3/8-24	5-1/4"	9-1/2"	6-1/2"	38TTLL14SS

**With Handy Crimp Stud**

1/8"	1/4-28	4-1/4"	8"	5"	14TTCLL18SS
3/16"	1/4-28	4-1/4"	8-1/4"	5-1/2"	14TTCLL316SS
3/16"	5/16-24	4-3/4"	8-3/4"	6"	516TTCLL316SS



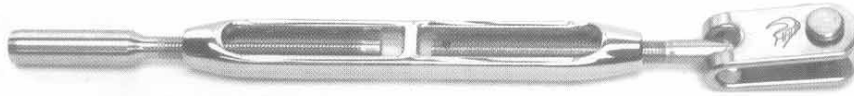
**Eye to Swage (tubular turnbuckle TT series)**

Wire Size	Eye I.D.	Thread	Body L	Open L	Closed L	Part #
1/8"	9/16"	1/4-28	4-1/4"	9"	6"	14TTLL18E
5/32"	9/16"	1/4-28	4-1/4"	9-1/4"	6-1/4"	14TTLL532E
3/16"	9/16"	1/4-28	4-1/4"	9-1/4"	6-1/4"	14TTLL316E
3/16"	9/16"	5/16-24	4-3/4"	9-3/4"	6-3/4"	516TTLL316E
1/4"	9/16"	5/16-24	4-3/4"	9-3/4"	6-3/4"	516TTLL14E
1/4"	9/16"	3/8-24	5"	10"	7"	38TTLL14E

**With Handy Crimp Stud**

1/8"	9/16"	1/4-28	4-1/4"	9"	6"	14TTCLL18E
3/16"	9/16"	1/4-28	4-1/4"	9-1/4"	6-1/4"	14TTCLL316E
3/16"	9/16"	5/16-24	4-3/4"	9-3/4"	6-3/4"	516TTCLL316E

IMPORTANT NOTE: All 1/4" Lifeline Fittings use 7/32" Dies

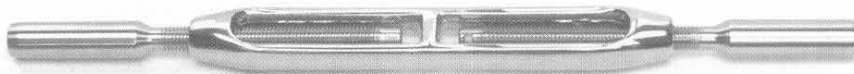


**Jaw to Swage** (forged bronze TFB series)

Wire Size	Pin Size	Jaw Width	Thread	Open L	Closed L	Part #
1/8"	1/4"	1/4"	1/4-28	9"	6-5/8"	14TFBLL18
5/32"	1/4"	1/4"	1/4-28	9-1/8"	6-5/8"	14TFBLL532
3/16"	1/4"	1/4"	1/4-28	9-3/8"	6-5/8"	14TFBLL316
3/16"	5/16"	5/16"	5/16-24	10-1/4"	7-1/2"	516TFBLL316
1/4"	5/16"	5/16"	5/16-24	10-1/2"	7-5/8"	516TFBLL14
1/4"	3/8"	7/16"	3/8-24	11-3/8"	8-1/4"	38TFBLL14

**With Handy Crimp Stud**

1/8"	1/4"	1/4"	1/4-28	9"	6-5/8"	14TFBCLL18
3/16"	1/4"	1/4"	1/4-28	9-3/8"	6-5/8"	14TFBCLL316
3/16"	5/16"	5/16"	5/16-24	10-1/4"	7-1/2"	516TFBCLL316

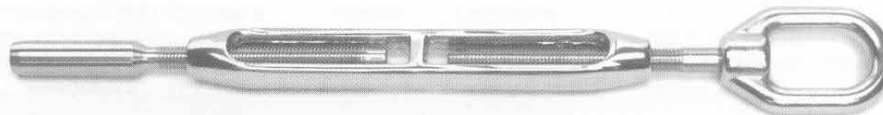


**Swage to Swage** (forged bronze TFB series)

Wire Size	Thread	Open L	Closed L	Part #
1/8"	1/4-28	8"	5"	14TFBLL18SS
5/32"	1/4-28	8-1/4"	5-1/2"	14TFBLL532SS
3/16"	1/4-28	8-1/4"	5-1/2"	14TFBLL316SS
3/16"	5/16-24	8-3/4"	6"	516TFBLL316SS
1/4"	5/16-24	9-1/2"	6-1/4"	516TFBLL14SS
1/4"	3/8-24	9-1/2"	6-1/2"	38TFBLL14SS

**With Handy Crimp Stud**

1/8"	1/4-28	8"	5"	14TFBCLL18SS
3/16"	1/4-28	8-1/4"	5-1/2"	14TFBCLL316SS
3/16"	5/16-24	8-3/4"	6"	516TFBCLL316SS



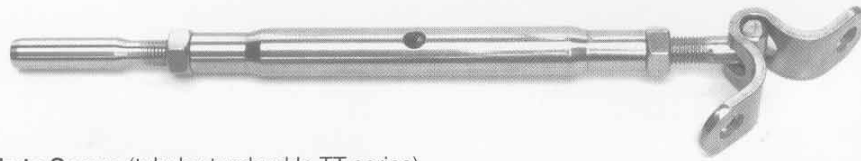
**Eye to Swage** (forged bronze TFB series)

Wire Size	Eye I.D.	Thread	Open L	Closed L	Part #
1/8"	9/16"	1/4-28	9"	6"	14TFBLL18E
5/32"	9/16"	1/4-28	9-1/4"	6-1/4"	14TFBLL532E
3/16"	9/16"	1/4-28	9-1/4"	6-1/4"	14TFBLL316E
3/16"	9/16"	5/16-24	9-3/4"	6-3/4"	516TFBLL316E
1/4"	9/16"	5/16-24	9-3/4"	6-3/4"	516TFBLL14E
1/4"	9/16"	3/8-24	10"	7"	38TFBLL14E

**With Handy Crimp Stud**

1/8"	9/16"	1/4-28	9"	6"	14TFBCLL18E
3/16"	9/16"	1/4-28	9-1/4"	6-1/4"	14TFBCLL316E
3/16"	9/16"	5/16-24	9-3/4"	6-3/4"	516TFBCLL316E

1/4" thread hayn lifeline turnbuckles are available with a short, 2 1/4" body. add "-2" to the part number

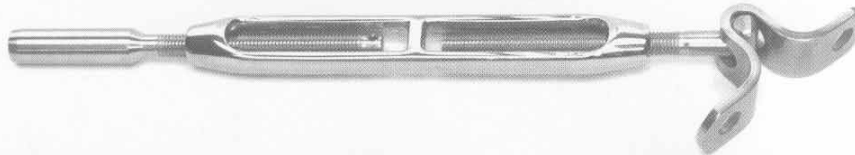


**Deck Toggle to Swage (tubular turnbuckle TT series)**

Wire Size	Screw Size	Hole Space	Thread	Open L	Closed L	Part #
1/8"	1/4"	1-1/2"	1/4-28	9"	6"	14TTLL18DT
5/32"	1/4"	1-1/2"	1/4-28	9-1/4"	6-1/4"	14TTLL532DT
3/16"	1/4"	1-1/2"	1/4-28	9-1/4"	6-1/4"	14TTLL316DT
3/16"	5/16"	1-3/4"	5/16-24	9-3/4"	6-3/4"	516TTLL316DT
1/4"	5/16"	1-3/4"	5/16-24	9-3/4"	6-3/4"	516TTLL14DT
1/4"	3/8"	2"	3/8-24	12"	8"	38TTLL14DT

**With Handy Crimp Stud**

1/8"	1/4"	1-1/2"	1/4-28	9"	6"	14TTCLL18DT
3/16"	1/4"	1-1/2"	1/4-28	9-1/4"	6-1/4"	14TTCLL316DT
3/16"	5/16"	1-3/4"	5/16-24	9-3/4"	6-3/4"	516TTCLL316DT



**Deck Toggle to Swage (Forged Bronze TFB series)**

Wire Size	Screw Size	Hole Space	Thread	Open L	Closed L	Part #
1/8"	1/4"	1-1/2"	1/4-28	9"	6"	14TFBLL18DT
5/32"	1/4"	1-1/2"	1/4-28	9-1/4"	6-1/4"	14TFBLL532DT
3/16"	1/4"	1-1/2"	1/4-28	9-1/4"	6-1/4"	14TFBLL316DT
3/16"	5/16"	1-3/4"	5/16-24	9-3/4"	6-3/4"	516TFBLL316DT
1/4"	5/16"	1-3/4"	5/16-24	9-3/4"	6-3/4"	516TFBLL14DT
1/4"	3/8"	2"	3/8-24	12"	8"	38TFBLL14DT

**With Handy Crimp Stud**

1/8"	1/4"	1-1/2"	1/4-28	9"	6"	14TFBCLL18DT
3/16"	1/4"	1-1/2"	1/4-28	9-1/4"	6-1/4"	14TFBCLL316DT
3/16"	5/16"	1-3/4"	5/16-24	9-3/4"	6-3/4"	516TFBCLL316DT

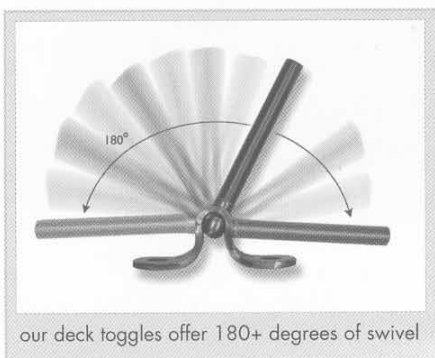


**Deck Toggle Jaw**

Wire Size	Screw Size	Hole Space	Part #
1/8"	1/4"	1-1/2"	14TJLL18DT
5/32"	1/4"	1-1/2"	14TJLL532DT
3/16"	1/4"	1-1/2"	14TJLL316DT
1/4"	5/16"	1-3/4"	516TJLL14DT
1/4"	3/8"	2"	38TJLL14DT

**With Handy Crimp Stud**

1/8"	1/4"	1-1/2"	14TJCLL18DT
3/16"	1/4"	1-1/2"	14TJCLL316DT



**IMPORTANT NOTE:** All 1/4" Lifeline Fittings use 7/32" Dies

**Pad Eye**

Screw Size 1/4"  
Hole Centers 1-1/2" x 2-5/8"

Part # PE1



**Stanchion Eye**

For 1" Rail Size

With 1 Loop  
Part # 14SER

With 2 Loops  
Part # 14SER2



**Pulpit Anchor**

Hole Size 1/2"  
Rail Size 1"

Part # 14PA



**Jib Furling Lead Eye**

For 7/8" to 1-3/8" Rail Size

With Plastic Loop  
Part # LE1

With Stainless Loop  
Part # LE2



**Hold Collars (for coated cable)**

Wire Size 1/8"-7/32"  
Hole Size 1/4"  
Part # HC18

Wire Size 3/16"-5/16"  
Hole Size 5/16"  
Part # HC316



**Conversion Sleeve**

Converts from 3/16" to 1/8"

Machine Swage  
Length 1-1/8"  
Part # CSLL

Handy Crimp  
Length 1-3/4"  
Part # CSLLC



**Termination Studs**

Wire Size	Head Dia.	Part #
1/8"	1/2"	TSSL18
5/32"	9/16"	TSSL532
3/16"	9/16"	TSSL316
1/4"	9/16"	TSSL14

**Handy Crimp**

1/8"	1/2"	TSCLL18
3/16"	9/16"	TSCLL316

Machined from a solid bar



IMPORTANT NOTE: All 1/4" Lifeline Fittings use 7/32" Dies

**Lifeline Toggle Jaws**

Forged T-Bolt				Welded C-Nut
Wire Size	Pin Size	Jaw Width	Part #	Part #
1/8"	3/16"	1/4"	-	10TJLL18C
1/8"	1/4"	1/4"	14TJLL18	14TJLL18C
5/32"	1/4"	1/4"	14TJLL532	14TJLL532C
3/16"	1/4"	1/4"	14TJLL316	14TJLL316C
3/16"	5/16"	5/16"	516TJLL316	516TJLL316C
1/4"	5/16"	5/16"	516TJLL14	516TJLL14C
1/4"	3/8"	3/8"	38TJLL14	38TJLL14C

**With Handy Crimp Stud**

1/8"	1/4"	1/4"	14TJCLL18	14TJCLL18C
3/16"	1/4"	1/4"	14TJCLL316	14TJCLL316C

Non-adjustable for lifeline termination.  
Offered in a forged T-bolt or welded C-nut



**Lifeline Gate Eyes (Threaded Type)**

Single Eye				Interlocking Eyes
Wire Size	Eye Size	Thread	Part #	Part #
1/8"	9/16"	1/4-28 LH	14ELLS18	14ELLI18
5/32"	9/16"	5/16-24 LH	516ELLS532	516ELLI532
3/16"	9/16"	5/16-24 LH	516ELLS316	516ELLI316
1/4"	9/16"	3/8-24 LH	38ELLS14	38ELLI14

**With Handy Crimp Stud**

1/8"	9/16"	1/4-28 LH	14ECLLS18	14ECLLI18
3/16"	9/16"	5/16-24 LH	516ECLLS316	516ECLLI316

Loop with screw in swage studs  
New design, electro-polished,  
investment cast



**Lifeline Gate Eyes (Swivel Type)**

Single Eye			Interlocking Eyes
Wire Size	Eye Size	Part #	Part #
1/8"	9/16"	SWELLS18	SWELLI18
5/32"	9/16"	SWELLS532	SWELLI532
3/16"	9/16"	SWELLS316	SWELLI316
1/4"	9/16"	SWELLS14	SWELLI14

**With Handy Crimp Stud**

1/8"	9/16"	SWECLLS18	SWECLLI18
3/16"	9/16"	SWECLLS316	SWECLLI316

Loop with swiveling swage studs  
New design, electro-polished  
investment cast



● **Lifeline Studs (machine swage)**

				<b>Right Hand</b>	<b>Left Hand</b>
	<b>Wire Size</b>	<b>Thread Size</b>	<b>Thread L</b>	<b>Part #</b>	<b>Part #</b>
Turnbuckles pages 14, 15, 16	1/8"	10-32	1-3/4"	10LL18RH	10LL18LH
	1/8"	1/4-28	2-1/4"	14LL18RH	14LL18LH
	5/32"	1/4-28	2-1/4"	14LL532RH	14LL532LH
	5/32"	5/16-24	2-3/8"	516LL532RH	516LL532LH
	3/16"	1/4-28	2-1/4"	14LL316RH	14LL316LH
	3/16"	5/16-24	2-3/8"	516LL316RH	516LL316LH
	1/4"	5/16-24	2-3/8"	516LL14RH	516LL14LH
	1/4"	3/8-24	2-3/4"	38LL14RH	38LL14LH
Pelican Hooks page 17	1/8"	1/4-28	1-1/2"	14LLP18RH	14LLP18LH
	5/32"	1/4-28	1-1/2"	14LLP532RH	14LLP532LH
	3/16"	1/4-28	1-1/2"	14LLP316RH	14LLP316LH
	3/16"	5/16-24	2-3/8"	516LL316RH	516LL316LH
Eyes pages 14, 15	1/8"	1/4-28	7/16"	see misc	14LLE18LH
	5/32"	5/16-24	7/16"	516LLE532RH	516LLE532LH
	3/16"	5/16-24	7/16"	516LLE316RH	516LLE316LH
	1/4"	5/16-24	7/16"	516LLE14RH	516LLE14LH
	1/4"	3/8-24	7/16"	38LLE14RH	38LLE14LH
Lifeline Adjusters page 17	1/8"	1/4-28	3-1/4"	14ASLL18RH	-
	5/32"	1/4-28	3-1/4"	14ASLL532RH	-
	3/16"	1/4-28	3-1/4"	14ASLL316RH	-
Misc	1/8"	1/4-28	7/16"	14LLE18RH	14LLE18LH
	5/32"	5/16-24	1-1/2"	516LLP532RH	516LLP532LH
	3/16"	5/16-24	1-1/2"	516LLP316RH	516LLP316LH
	1/4"	5/16-24	1-1/2"	516LLP14RH	516LLP14LH
	1/4"	3/8-24	1-1/2"	38LLP14RH	38LLP14LH
Metric Studs	1/8"	6MM	3/16"	6MLL18RH	6MLL18LH
	5/32"	6MM	1/4"	6MLL532RH	6MLL532LH
	3/16"	6MM	5/16"	6MLL316RH	6MLL316LH
	5/32"	8mm	3/8"	8MLL532RH	8MLL532LH
	3/16"	8mm	1/2"	8MLL316RH	8MLL316LH
	1/4"	8mm	5/8"	8MLL14RH	8MLL14LH

IMPORTANT NOTE:

1/4" Lifeline Fittings use 7/32" Dies

● **Lifeline Studs (handy crimp)**

				<b>Right Hand</b>	<b>Left Hand</b>
	<b>Wire Size</b>	<b>Thread Size</b>	<b>Thread L</b>	<b>Part #</b>	<b>Part #</b>
Turnbuckles pages 12, 13, 14	1/8"	1/4-28	2-1/4"	14CLL18RH	14CLL18LH
	3/16"	1/4-28	2-1/4"	14CLL316RH	14CLL316LH
	3/16"	5/16-24	2-3/8"	516CLL316RH	516CLL316LH
Pelican Hooks page 15	1/8"	1/4-28	1-1/2"	14CLLP18RH	14CLLP18LH
	3/16"	1/4-28	1-1/2"	14CLLP316RH	14CLLP316LH
Eyes pages 12, 13	1/8"	1/4-28	7/16"	see misc	14CLLE18LH
	3/16"	5/16-24	7/16"	516CLLE316RH	516CLLE316LH
Lifeline Adjusters page 15	1/8"	1/4-28	2-1/4"	14CLL18RH	see turnbuckles
	3/16"	1/4-28	2-1/4"	14CLL316RH	see turnbuckles
	3/16"	1/4-28	3-1/4"	14ASCLL316RH	-
Misc	1/8"	1/4-28	7/16"	14CLLE18RH	14CLLE18LH
	3/16"	5/16-24	1-1/2"	516CLLP316RH	516CLLP316LH

● Rigging Studs (machine swage)

	Wire Size	Thread Size	Thread L	Right Hand Part #	Left Hand Part #
Turnbuckles pages 4, 5, 6, 7	1/16"	10-32	1-3/4"	10SE116RH	10SE116LH
	3/32"	10-32	1-3/4"	10SE332RH	10SE332LH
	3/32"	1/4-28	2-1/4"	14SE332RH	14SE332LH
	1/8"	1/4-28	2-1/4"	14SE18RH	14SE18LH
	5/32"	1/4-28	2-1/4"	14SE532RH	14SE532LH
	5/32"	5/16-24	2-1/2"	516SE532RH	516SE532LH
	3/16"	5/16-24	2-1/2"	516SE316RH	516SE316LH
	3/16"	3/8-24	2-7/8"	38SE316RH	38SE316LH
	7/32"	3/8-24	2-7/8"	38SE732RH	38SE732LH
	1/4"	3/8-24	2-7/8"	38SE14RH	38SE14LH
	1/4"	7/16-20	3-1/4"	716SE14RH	716SE14LH
	1/4"	1/2-20	3-1/4"	12SE14RH	12SE14LH
	9/32"	1/2-20	3-1/4"	12SE932RH	12SE932LH
	5/16"	1/2-20	3-1/4"	12SE516RH	12SE516LH
	5/16"	5/8-18	4"	58SE516RH	58SE516LH
	3/8"	9/16-18	4"	916SE38RH	916SE38LH
	3/8"	5/8-18	4"	58SE38RH	58SE38LH
	7/16"	3/4-16	5"	34SE716RH	-
1/2"	3/4-16	5"	34SE12RH	-	
1/2"	7/8-14	6"	78SE12RH	-	
Rigging Adjusters page 11	1/16"	10-32	3"	10ASE116RH	-
	3/32"	10-32	3"	10ASE332RH	-
	1/8"	10-32	3"	10ASE18RH	-
	1/8"	1/4-28	3-1/2"	14ASE18RH	-
	5/32"	1/4-28	3-1/2"	14ASE532RH	-
Extended Turnbuckle Studs	5/32"	1/4-28	2-1/4"	14SE5326RH	-
	5/32"	5/16-24	2-1/2"	516SE5327RH	-
	3/16"	5/16-24	2-1/2"	516SE3167RH	-
	3/16"	3/8-24	2-7/8"	38SE3167RH	-
	7/32"	3/8-24	2-7/8"	38SE7328RH	-
	1/4"	3/8-24	2-7/8"	38SE148RH	-
	1/4"	1/2-20	3-1/4"	12SE1412RH	-
	9/32"	1/2-20	3-1/4"	12SE93212RH	-
	5/16"	1/2-20	3-1/4"	12SE51612RH	-
	5/16"	5/8-18	4"	58SE51612RH	-
3/8"	5/8-18	4"	58SE3812RH	-	

We have redesigned the wrench flats on our rigging studs to accommodate any wrench width by making them open-ended. Rigging studs also feature a new swageline to help you or your rigger easily find the hole depth.



### Threaded T-Bolt Toggle Jaws

Thread Size	Thread L	Pin Size	Jaw Width	Right Hand	Left Hand
				Part #	Part #
10-32*	1-3/4"	3/16"	1/4"	10TJRH	10TJLH
1/4-28	2-1/4"	1/4"	1/4"	14TJRH	14TJLH
5/16-24	2-3/8"	5/16"	5/16"	5/16TJRH	5/16TJLH
3/8-24	2-3/4"	3/8"	7/16"	38TJRH	38TJLH
1/2-20	3-1/2"	1/2"	1/2"	12TJRH	12TJLH
5/8-18	4"	5/8"	5/8"	58TJRH	58TJLH
3/4-16	5-1/8"	3/4"	3/4"	34TJRH	34TJLH

Used in any of our turnbuckles (please specify opened or closed body turnbuckles). Completed toggle jaws come supplied with pins and rings.

\*10-32 Thread size uses welded C-Nut Style



### Forged T-Bolts

Thread Size	Thread L	Right Hand	Left Hand
		Part #	Part #
1/4-28	2-1/4"	14TRH	14TLH
5/16-24	2-3/8"	5/16TRH	5/16TLH
3/8-24	2-3/4"	38TRH	38TLH
1/2-20	3-1/2"	12TRH	12TLH
5/8-18	4"	58TRH	58TLH
3/4-16	5-1/8"	34TRH	34TLH

Superior quality forged from 316 stainless steel



### Stampings

Toggle Stampings			Eye Toggle Stampings
Pin Size	Jaw Width	Part #	Part #
1/4"	1/4"	14ST	14EST
5/16"	5/16"	516ST	516EST
3/8"	3/8"	38ST	38EST
1/2"	1/2"	12ST	12EST
5/8"	5/8"	58ST	58EST
3/4"	3/4"	34ST	



**Eye Rods - Rigging** (electro-forged 316 stainless steel)

Hole Size	Thread	Thread L	Right Hand	Left Hand
			Part #	Part #
1/4"	1/4-28	2-1/4"	14ERRH	14ERLH
3/8"	5/16-24	2-3/8"	516ERRH	516ERLH
3/8"	3/8-24	2-3/4"	38ERRH	38ERLH
1/2"	1/2-20	3-1/4"	12ERRH	12ERLH
5/8"	5/8-18	3-15/16"	58ERRH	58ERLH
3/4"	3/4-16	4-11/16"	34ERRH	34ERLH

**Electro-Forging** engenders no kinks or interruption of grain flow, thus providing a stronger, high integrity product.



**Eye Rods - Lifeline** (left-hand thread)

Eye Size	Thread	Thread L	Part #
1/4"	1/4-28	2-1/4"	14LLERLH
3/8"	5/16-24	2-1/4"	516LLERLH
3/8"	3/8-24	2-1/4"	38LLERLH

New Design features investment cast, electro-polished eye



**Turnbuckle Bodies**

Thread Size	Body L	Chromed Bronze		Forged Bronze		Tubular Stainless	
		Part #	Part #	Part #	Part #		
10-32	2-1/4"	-	-	-	10TB2		
10-32	3-1/2"	-	-	-	10TB		
1/4-28	2-3/4"	-	-	-	14TB2		
1/4-28	4-1/2"	14FB	14FBB	14TB	14TB		
5/16-24	5"	516FB	516FBB	516TB	516TB		
3/8-24	5-1/2"	38FB	38FBB	38TB	38TB		
1/2-20	6-1/2"	12FB	12FBB	12TB	12TB		
5/8-18	8-1/4"	58FB	58FBB	58TB	58TB		
3/4-16	9-3/4"	34FB	34FBB	34TB	34TB		



### Hex Nuts for Turnbuckles

Thread Size	Right Hand	Left Hand
	Part #	Part #
10-32	10LNR	10LNL
1/4-28	14LNR	14LNL
5/16-24	516LNR	516LNL
3/8-24	38LNR	38LNL
1/2-20	12LNR	12LNL
5/8-18	58LNR	58LNL



metric hex nuts  
also available

### Clevis Pins

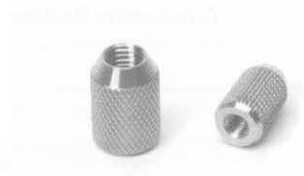
Size Dia.	Grip Length	Part #
3/16"	9/32"	SB1
3/16"	13/32"	SB2 (10CP)
3/16"	9/16"	SB3
3/16"	3/4"	SB4
3/16"	15/16"	SB5
1/4"	1/2"	SB6 (14CP)
1/4"	9/16"	SB7
1/4"	3/4"	SB8
5/16"	9/16"	BB1 (516CP)
5/16"	11/16"	BB2
3/8"	11/16"	38CP
3/8"	13/16"	BB3
7/16"	29/32"	BB4
1/2"	7/8"	12CP
1/2"	1"	BB5
5/8"	1-1/8"	58CP
5/8"	1-1/4"	BB6
3/4"	1-5/16"	34CP
3/4"	1-9/16"	BB7
7/8"	1-13/16"	BB8



larger sizes available  
more sizes available

### Adjuster Nuts

Thread Size	Right Hand	Left Hand
	Part #	Part #
10-32	10SAN	-
1/4-28	14SAN	14ALLARN



### Cotter Pins (304 Stainless Steel)

Size Dia.	Grip Length	Part #
1/16"	1/2"	11612C
1/16"	1-1/2"	116112C
3/32"	3/4"	33234C
3/32"	1-1/4"	332114C
1/8"	1"	181C
1/8"	2-1/2"	18212C
1/8"	3"	183C
5/32"	1-1/4"	532114C
3/16"	1-1/2"	316112C



### Circular Ring Pins

Ring Size	Pin Size	Part #
3/4"	3/16"-5/16"	CR1
5/8"	3/16"-5/16"	CR2
7/16"	3/16"	CR3
7/8"	5/16"-3/8"	CR4



### Rigging Pins

Dia:	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"
Grip L	Part #	Part #	Part #	Part #	Part #	Part #	Part #
3/4"	RP1434	-	-	-	-	-	-
7/8"	RP1478	-	-	-	-	-	-
1"	RP141	RP5161	RP381	RP7161	-	-	-
1-1/8"	RP14118	-	-	-	-	-	-
1-1/4"	-	RP516114	RP38114	RP716114	RP12114	-	-
1-1/2"	-	RP516112	RP38112	RP716112	RP12112	-	-
1-3/4"	-	-	RP38134	RP716134	RP12134	-	-
2"	RP142	RP5162	RP382	RP7162	RP122	RP582	RP342
2-1/4"	RP14214	-	-	-	RP12214	-	-
2-1/2"	RP14212	-	RP38212	RP716212	RP12212	RP58212	RP34212
3-1/2"	-	RP516312	RP38312	RP716312	RP12312	RP58312	-
6-1/2"	-	-	-	-	RP12612	RP58612	-

Rigging pins take the place of clevis pins where odd sizes are required.  
Custom sizes available in quantity.



### Pelican Hook Bodies (investment cast)

Thread Size	Body L	Right Hand	Left Hand
		Part #	Part #
1/4-28	3"	FPHB3RH	FPHB3
5/16-24	4"	FPHBRH	FPHBLH

This positive locking pelican hook is investment cast from 316 stainless steel.

Available in 2 sizes. 3" model not for tensioning



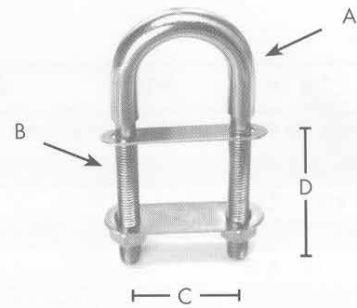
### Lifeline Gate Eyes (without Studs)

Thread Size	Eye I.D.	Single Eye	Interlocking Eyes
		Part #	Part #
1/4-28	9/16"	14ELLS	14ELLI
5/16-24	9/16"	516ELLS	516ELLI
3/8-24	9/16"	38ELLS	38ELLI

New design, electro-polished  
Investment cast



Unique tube-over design eliminates the stress points found in most U-Bolts. Manufactured from 316 grade stainless, these U-Bolts achieve high working loads and are highly fatigue-resistant.



### U-Bolts

Dia. 'A'		Dia. 'B'		Dia. 'C'		Dia. 'D'		Breaking Load	Part #
1/4"	7mm	3/16"	5mm	1-3/8"	33mm	1-7/8"	45mm	2,000 lbs.	DM150000
5/16"	8mm	1/4"	6mm	1-1/2"	39mm	2-1/4"	57mm	3,200 lbs.	DM150001
3/8"	10mm	5/16"	8mm	1-1/2"	39mm	2-1/2"	63mm	4,600 lbs.	DM150002
3/8"	10mm	5/16"	8mm	1-7/8"	45mm	2-1/2"	63mm	4,600 lbs.	DM150003
1/2"	12mm	3/8"	10mm	2"	50mm	3"	76mm	8,000 lbs.	DM150004
9/16"	14mm	1/2"	12mm	2-5/8"	60mm	3-1/2"	89mm	12,500 lbs.	DM150005

### Copper Oval Sleeves (Zinc Coated)

Wire Size	Part #
1/16"	SLC116
3/32"	SLC332
1/8"	SLC18
5/32"	SLC532
3/16"	SLC316
7/32"	SLC732
1/4"	SLC14
5/16"	SLC516
3/8"	SLC38



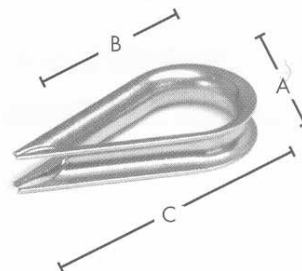
### Wire Rope Clip (Forged SS)

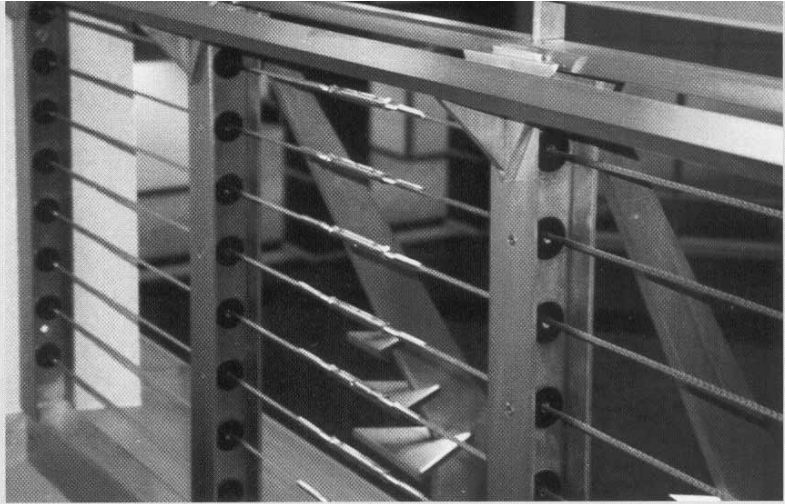
Wire Size	# Required	Part #
1/8"	2	WRC2
5/32" - 3/16"	2	WRC4
7/32" - 1/4"	2	WRC6
9/32" - 5/16"	2	WRC8
3/8"	2	WRC10
1/2"	3	WRC12
9/16"	3	WRC14
5/8"	3	WRC16



### Thimbles (Standard Duty)

Wire Size	A	B	C	Part #
3/32"	0.276	0.472	0.827	TH332
1/8"	0.354	0.551	0.906	TH18
5/32"	0.433	0.630	1.063	TH532
3/16"	0.571	0.827	1.220	TH316
7/32"	0.630	1.024	1.535	TH732
1/4"	0.728	1.142	1.654	TH14
5/16"	0.827	1.378	1.969	TH516
3/8"	1.024	1.654	2.323	TH38
1/2"	1.220	1.890	2.756	TH12





# High End Cable and Cable Terminations

Diameter Inch (mm)	Type 316 Stainless Steel Breaking Strength lbf (kN)		Galvanized Steel Breaking Strength lbf (kN)	
				30,000 (133.3)
			48,000 (213.3)	
			68,000 (302.2)	
7/8 (22.2)	64,000 (284.4)		92,000 (408.9)	
1 (25.4)	89,300 (396.9)		122,000 (542.2)	
1 1/8 (28.6)	115,700 (514.2)		156,000 (693.3)	
1 1/4 (31.8)	138,500 (615.6)		192,000 (853.3)	
1 3/8 (34.9)			232,000 (1,031)	
1 1/2 (38.1)			276,000 (1,227)	
1 5/8 (41.3)			324,000 (1,440)	
1 3/4 (44.5)			376,000 (1,671)	
1 7/8 (47.6)			432,000 (1,920)	
2 (50.8)			490,000 (2,178)	
2 1/4 (57.2)			620,000 (2,756)	
2 1/2 (63.5)			752,000 (3,342)	
2 3/4 (69.9)			904,000 (4,018)	
3 (76.2)			1,076,000 (4,782)	
3 1/2 (88.9)			1,448,000 (6,436)	
4 (101.6)			1,850,000 (8,222)	

Figures in tables are for structural strand



Cable Design Inc. provides cable assemblies using either stainless steel or galvanized steel cable. For static tension members, structural strand is typically used, rather than wire rope. For stainless steel, type 316 material is generally specified, however, type 304 cable is available on special order.



Cable terminations are usually designed to be swaged onto the cable-end, so that the fitting is fixed to the cable by cold-reducing the swage shank onto the cable. The stainless steel of the fitting actually cold-flows into the interstices of the cable, forming a termination that is as strong as the cable itself. Fixed eye and jaw fittings for cable are available; call for details.

Cable Design, Inc.'s B310 cable turnbuckle (B315 for galvanized strand) has a compact, thread-free appearance. Adjustment is performed by rotating the adjusting sleeve; the swage stud and adjusting sleeve telescope into the jaw end of the turnbuckle. Call us for standard cable turnbuckles specifications. Custom sizes are also available.

We also have a full line of custom cable clamps.

TECHNICAL SPECIFICATIONS

Cable Design, Inc.'s high strength rod is used in applications where high strength-to-weight ratios are required, allowing rods of minimum diameter to be used. This is the material used to hold up the masts of America's Cup yachts, where low wind resistance and minimum weight are critically important.

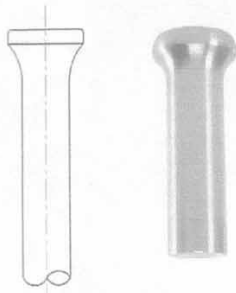
Tensile strength of this material ranges from 190,000 psi (1,310 MPa) in sizes over 3/4" (19mm) to 200,000 psi (1,380 MPa) in the smaller sizes. Even at these very high tensile strengths, this material is very ductile, permitting cold heading of the rod ends. It is also one of the most highly corrosion resistant of all stainless steels in a salt water environment— even more so than type 316 material.

## High Strength Stainless Steel Rod

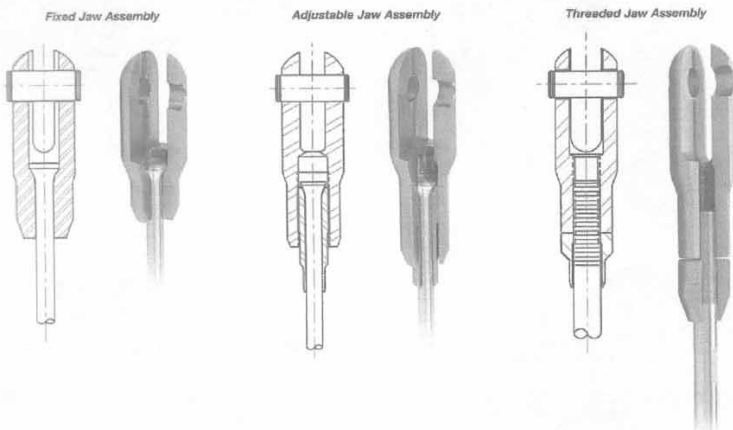
Part Number	Diameter		Breaking Strength		Yield Strength	
	inch	(mm)	lbf	(kN)	lbf	(kN)
A03-0172	0.172	(4.4)	4,700	(20.9)	3,760	(16.7)
A03-0198	0.198	(5.0)	6,300	(28.0)	5,040	(22.4)
A03-0225	0.225	(5.7)	8,200	(36.5)	6,540	(29.1)
A03-0250	0.250	(6.4)	10,300	(45.8)	8,240	(36.7)
A03-0281	0.281	(7.1)	12,500	(55.6)	10,000	(44.5)
A03-0330	0.330	(8.4)	17,500	(77.8)	14,000	(62.3)
A03-0375	0.375	(9.5)	22,500	(100.1)	18,000	(80.1)
A03-0437	0.437	(11.1)	30,000	(133.4)	24,000	(106.8)
A03-0500	0.500	(12.7)	36,000	(160.1)	28,800	(128.1)
A03-0562	0.562	(14.3)	46,000	(204.6)	36,800	(163.7)
A03-0660	0.660	(16.8)	59,000	(262.4)	47,200	(210.0)
A03-0705	0.705	(17.9)	76,000	(338.1)	60,800	(270.5)
A03-0768	0.768	(19.5)	90,000	(400.3)	72,000	(320.3)
A03-0875	0.875	(22.2)	117,000	(520.4)	93,600	(416.4)
A03-1000	1.000	(25.4)	150,000	(667.2)	120,000	(533.8)
A03-1066	1.066	(27.1)	170,000	(756.2)	136,000	(605.0)
A03-1125	1.125	(28.6)	190,000	(845.2)	152,000	(676.1)
A03-1191	1.191	(30.3)	217,000	(965.3)	173,600	(772.2)
A03-1313	1.313	(33.4)	260,000	(1,156.0)	208,000	(925.2)
A03-1500	1.500	(38.1)	320,000	(1,423.0)	256,000	(1,138.0)

Young's modulus = 28,500 ksi (196.5 GPa)

Strengths shown are for full rod diameter, assuming headed termination.



## Jaw Assemblies for Stainless Steel Rod



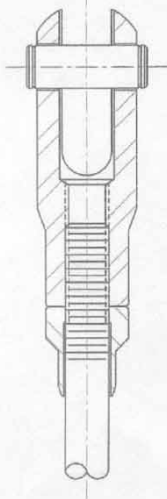
Jaw assemblies are typically made of type 304 stainless steel with a brushed finish. Other materials and finishes are available. Contact us for standard rod fitting specifications. Custom sizes are also readily available.

## Carbon Steel Rod

In some applications, carbon steel tie rods, and fittings will be the most effective solution. Cable Design, Inc. offers two standard grades of threaded carbon steel rods. The U.S. standard is Grade 50 bars with cut threads. Cable Design, Inc. also offers European standard Grade 460 bars with roll-formed threads.

Higher strength alloy steel rods are available on special order.

Standard finish for bars and fittings is bare, ready for paint. Galvanizing is available on special order.



Cable Design, Inc.'s standard adjustable jaw fittings for carbon steel rod are designed to provide length adjustment, while the special conical lock-nut is designed to cover the threads. The finished assembly is very clean looking with no exposed threads. All fittings are designed to be stronger than the rods to which they are attached. Contact us for complete rod fitting specifications.

### U.S. Standard, Grade 50, Threaded Bars

Part Number	Bar Diameter Inch (mm)	Breaking Strength		Yield Strength	
		lbf	(kN)	lbf	(kN)
A35-0750	0.75 (19.1)	24,200	(107)	18,500	(83)
A35-0875	0.88 (22.2)	33,100	(147)	25,400	(113)
A35-1000	1.00 (25.4)	43,000	(191)	33,100	(147)
A35-1125	1.13 (28.6)	51,300	(228)	39,500	(175)
A35-1250	1.25 (31.8)	64,800	(288)	49,900	(222)
A35-1375	1.38 (34.9)	80,100	(356)	61,600	(274)
A35-1500	1.50 (38.1)	96,800	(431)	74,500	(331)
A35-1750	1.75 (44.5)	135,300	(601)	104,100	(462)
A35-2000	2.00 (50.8)	180,000	(800)	138,500	(615)
A35-2250	2.25 (57.2)	231,200	(1,027)	177,800	(790)
A35-2500	2.50 (63.5)	288,700	(1,283)	222,100	(987)
A35-2750	2.75 (69.9)	352,600	(1,567)	271,200	(1,205)
A35-3000	3.00 (76.2)	422,900	(1,879)	325,300	(1,445)

Young's modulus = 30,000 ksi (206.8 GPa)

Material yield strength: 50 ksi (344 MPa)

Material ultimate strength: 66 ksi (460 MPa)

Strengths shown are in threaded portion of rods



M. DUCHNOWSKI

### European Standard, Grade 460, Threaded Bars

Part Number	Bar Diameter Inch (mm)	Breaking Strength		Yield Strength	
		lbf	(kN)	lbf	(kN)
A30-20	0.709 (18)	33,200	(147.8)	25,100	(111.5)
A30-24	0.866 (22)	47,900	(212.8)	36,100	(160.5)
A30-30	1.102 (28)	76,200	(338.7)	57,500	(255.4)
A30-36	1.300 (33)	111,000	(493.7)	83,700	(372.3)
A30-42	1.535 (39)	152,500	(677.9)	115,000	(511.2)
A30-48	1.752 (44.5)	200,500	(891.1)	151,200	(672.0)
A30-56	2.047 (52)	276,500	(1228.7)	208,500	(926.5)
A30-64	2.323 (59)	364,500	(1620.3)	275,000	(1221.8)

Young's modulus = 30,000 ksi (206.8 GPa)

Material yield strength: 66 ksi (460 MPa)

Material ultimate strength: 88 ksi (610 MPa)

Strengths shown are in threaded portion of rods

## Medium Strength Stainless Steel Rod

### Medium Strength Type 304 Stainless Steel Rod

Part Number	Diameter inch (mm)	Breaking Strength lbf (kN)	Yield Strength lbf (kN)
A22-0072	0.072 (1.8)	570 (2.5)	450 (2.0)
A22-0082	0.082 (2.1)	740 (3.3)	580 (2.6)
A22-0093	0.093 (2.4)	950 (4.2)	750 (3.3)
A22-0125	0.125 (3.2)	1,720 (7.6)	1,350 (6.0)
A22-0188	0.188 (4.8)	3,880 (17.2)	3,000 (13.3)
A22-0225	0.225 (5.7)	5,560 (24.7)	4,400 (19.6)
A22-0250	0.250 (6.4)	6,870 (30.5)	5,400 (24.0)
A22-0330	0.330 (8.4)	11,900 (52.9)	9,400 (41.8)
A22-0375	0.375 (9.5)	15,400 (68.4)	12,100 (53.8)
A22-0437	0.437 (11.1)	20,000 (88.9)	16,500 (73.3)
A22-0500	0.500 (12.7)	27,500 (122.2)	21,600 (96.0)
A22-0625	0.625 (16.0)	42,000 (186.6)	33,000 (147.0)

Young's modulus = 28,500 ksi (196.5 GPa)

Strengths shown are for full rod diameter, assuming headed termination.

### Medium Strength, Heat Treated Stainless Steel Rod

Part Number	Diameter inch (mm)	Breaking Strength lbf (kN)	Yield Strength lbf (kN)
A25-0750	0.750 (19.1)	50,000 (222)	39,000 (173)
A25-0875	0.875 (22.2)	68,500 (304)	53,500 (238)
A25-1000	1.000 (25.4)	89,500 (398)	69,500 (309)
A25-1125	1.125 (28.6)	106,500 (473)	83,000 (369)
A25-1250	1.250 (31.8)	135,000 (600)	105,000 (467)
A25-1375	1.375 (34.9)	166,500 (740)	129,500 (576)
A25-1500	1.500 (38.1)	201,000 (893)	156,500 (696)
A25-1750	1.750 (44.5)	281,000 (1249)	218,500 (971)

Young's modulus = 28,500 ksi (196.5 GPa)

Strengths shown are in the reduced area of the threaded ends of the rods.



In most architectural applications, Cable Design, Inc.'s medium strength rods are the most cost-effective solution. These materials have yield strengths about three times that of normal annealed stainless steel, or A36 structural steel. This means a smaller diameter for a given strength. For instance, a 1/2" (12.7 mm) diameter annealed rod can be replaced by a 5/16" (8 mm) medium strength rod.

Two types of material are used for medium strength rod. In diameters less than 5/8" (16 mm) the material is cold drawn type 304 stainless steel. (Type 316 is available for the most corrosive atmospheres.) These rods can be either cold headed or threaded.

For diameters greater than 5/8" (16 mm), a heat-treated stainless steel is used. These bars are typically threaded for fitting attachment because it is not economical to head these large heat-treated bars.

## Railing In-fill and Fittings

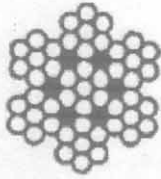
Cable Design, Inc.'s railing components are used with 3/16" and 1/4" diameter medium strength rod. This rod is often used in place of cable and is far superior to annealed stainless steel which is subject to kinking.

Fittings are designed to conceal the rod threads for a clean appearance. Standard finish is type 304 stainless steel with a brushed finish.

Contact us for complete railing fitting applications, specifications, and finishes.

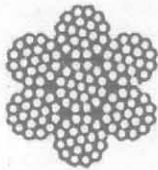


**GALVANIZED AND STAINLESS  
AIRCRAFT CABLE  
NOT FOR AIRCRAFT USE**



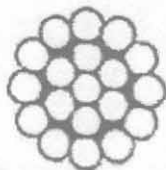
7X7

Diameter	Approx. Weight Per 1000 Ft (lbs)	Galvanized Minimum Breaking Strength (lbs)	Stainless Minimum Breaking Strength (lbs)
3/64"	4.2	270	270
1/16"	7.5	480	480
3/32"	16	920	920
1/8"	28	1,700	1,700
5/32"	43	2,600	2,400
3/16"	62	3,700	3,700
1/4"	106	6,100	6,100
5/16"	167	9,200	9,000
3/8"	236	13,100	12,000



7X19

Diameter	Approx. Weight Per 1000 Ft (lbs)	Galvanized Minimum Breaking Strength (lbs)	Stainless Minimum Breaking Strength (lbs)
3/32"	17.4	1,000	920
1/8"	29	2,000	1,760
5/32"	45	2,800	2,400
3/16"	65	4,200	3,700
7/32"	86	5,600	5,000
1/4"	110	7,000	6,400
5/16"	173	9,800	9,000
3/8"	243	14,400	12,000

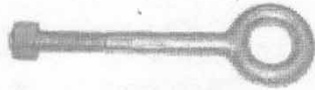


1X19

Diameter	Approx. Weight Per 1000 Ft (lbs)	Galvanized Minimum Breaking Strength (lbs)	Stainless Minimum Breaking Strength (lbs)
3/64"	5.5	375	375
1/16"	8.5	500	500
3/32"	20	1,200	1,200
1/8"	35	2,100	2,100
5/32"	55	3,300	3,300
3/16"	77	4,700	4,700
7/32"	102	6,300	6,300
1/4"	135	8,200	8,200
9/32"	170	10,300	10,300
5/16"	210	12,500	12,500
3/8"	300	17,500	17,500
7/16"	410	22,500	22,500
1/2"	521	30,000	30,000
9/16"	670	36,200	36,200
5/8"	855	47,000	47,000

Where applicable, manufactured in accordance with Federal Specification RR-W-410D.

**EYE BOLTS**  
**FORGED EYE BOLTS**



**REGULAR NUT**  
**HOT DIPPED GALVANIZED, FORGED STEEL**

**HAMMERLOCKS**  
**HAMMERLOCKS**

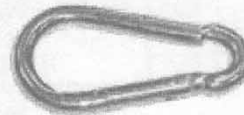


Shank Diameter & Length	Length of Thread	Eye Diameter		Working Load Limit (lbs)	Approx. Weight Per Piece (lbs)
		I.D.	O.D.		
1/4"X2"	1-1/2"	1/2"	1"	500	0.08
1/4"X4"	2-1/2"	1/2"	1"	500	0.12
5/16"X 2-1/4"	1-1/2"	5/8"	1-1/4"	800	0.13
5/16"X 4-1/4"	2-1/2"	5/8"	1-1/4"	800	0.25
3/8"X 2-1/2"	1-1/2"	3/4"	1-1/2"	1,200	0.23
3/8"X 4-1/2"	2-1/2"	3/4"	1-1/2"	1,200	0.30
3/8"X 6"	2-1/2"	3/4"	1-1/2"	1,200	0.35
1/2"X 3-1/4"	1-1/2"	1"	2"	2,200	0.50
1/2"X 6"	3"	1"	2"	2,200	0.66
1/2"X 8"	3"	1"	2"	2,200	0.82
1/2"X10"	3"	1"	2"	2,200	0.88
1/2"X12"	3"	1"	2"	2,200	1.14
1/2"X15"	4"	1"	2"	2,200	1.17
5/8"X 4"	2"	1-1/4"	2-1/2"	3,500	1.03
5/8"X 6"	3"	1-1/4"	2-1/2"	3,500	1.18
5/8"X 8"	3"	1-1/4"	2-1/2"	3,500	1.35
5/8"X10"	3"	1-1/4"	2-1/2"	3,500	1.54
5/8"X12"	4"	1-1/4"	2-1/2"	3,500	1.67
5/8"X15"	5"	1-1/4"	2-1/2"	3,500	2.01
3/4"X 4-1/2"	2"	1-1/2"	3"	5,200	1.69
3/4"X 6"	3"	1-1/2"	3"	5,200	1.85
3/4"X 8"	3"	1-1/2"	3"	5,200	2.08
3/4"X10"	3"	1-1/2"	3"	5,200	2.35
3/4"X12"	4"	1-1/2"	3"	5,200	2.58
3/4"X15"	5"	1-1/2"	3"	5,200	2.98
7/8"X 5"	2-1/2"	1-3/4"	3-1/2"	7,200	2.7
7/8"X 8"	4"	1-3/4"	3-1/2"	7,200	3.08
7/8"X12"	4"	1-3/4"	3-1/2"	7,200	4
1"X 6"	3"	2"	4"	10,000	4.21
1"X 9"	4"	2"	4"	10,000	4.69
1"X12"	4"	2"	4"	10,000	5.4
1"X18"	7"	2"	4"	10,000	6.5
1-1/4"X12"	4"	2-1/2"	5"	15,200	9
1-1/4"X 20"	6"	2-1/2"	5"	15,200	12.1

Size (in)	Inside Length (in)	Inside Width (in)	Working Load Limit (lbs)	Approx. Weight Per Piece (lbs)
1/4"	2.05	0.82	3,250	0.25
5/16"	2.42	0.95	4,500	0.5
3/8"	2.72	1.08	6,600	0.6
1/2"	3.33	1.4	11,250	1.25
5/8"	3.92	1.67	16,500	2.3
3/4"	4.84	1.87	23,000	4
7/8"	5.82	2.12	28,750	5.75

**HOOKS**

**SNAP HOOK (SPRING HOOK)**



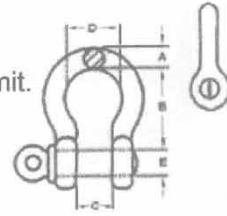
**GALVANIZED**

Wire Diameter	Working Load Limit (lbs)	Approx. Weight Per Piece (lbs)
3/16"	220	0.02
1/4"	260	0.06
9/32"	400	0.10
5/16"	500	0.15
11/32"	550	0.20
3/8"	770	0.32
7/16"	930	0.42
1/2"	990	0.60

## GALVANIZED SCREW PIN ANCHOR SHACKLES

Load Rated Shackles per the following:

- Marked with Size and Working Load Limit in Tons.
- Average Breaking Strength is 6 Times Working Load Limit.
- Forged Heat Treated with Alloy Pins.
- Federal Specifications RR-C-271D.



### LOAD RATED

Nominal Shackles Size (A)	Working Load Limit (lbs)	DIMENSIONS in Inches				Approx. Weight Per Piece (lbs)
		Inside Length (B)	Inside Width		Pin Diameter (E)	
			At Pin (C)	At Bow (D)		
3/16"	667	7/8"	3/8"	9/16"	1/4"	0.05
1/4"	1,000	1-1/8"	15/32"	3/4"	5/16"	0.12
5/16"	1,500	1-1/4"	17/32"	13/16"	3/8"	0.18
3/8"	2,000	1-7/16"	21/32"	15/16"	7/16"	0.30
7/16"	3,000	1-11/16"	23/32"	1-1/16"	1/2"	0.49
1/2"	4,000	1-7/8"	13/16"	1-3/16"	5/8"	0.74
5/8"	6,500	2-13/32"	1-1/16"	1-1/2"	3/4"	1.44
3/4"	9,500	2-27/32"	1-1/4"	1-3/4"	7/8"	2.16
7/8"	13,000	3-5/16"	1-7/16"	2"	1"	3.37
1"	17,000	3-3/4"	1-11/16"	2-5/16"	1-1/8"	5.3
1-1/8"	19,000	4-1/4"	1-13/16"	2-5/8"	1-1/4"	7
1-1/4"	24,000	4-11/16"	2-1/32"	2-7/8"	1-3/8"	9.6
1-3/8"	27,000	5-1/4"	2-1/4"	3-1/4"	1-1/2"	12.6
1-1/2"	34,000	5-3/4"	2-3/8"	3-3/8"	1-5/8"	17.3
1-3/4"	50,000	7"	2-7/8"	4-1/2"	2"	27.8
2"	70,000	7-3/4"	3-1/4"	5-1/4"	2-1/4"	41.1



### COMMERCIAL GRADE

Nominal Shackles Size (A)	Working Load Limit (lbs)	DIMENSIONS in Inches		Approx. Weight Per Piece (lbs)
		Inside Length (B)	Pin Diameter (E)	
3/16"	500			7/8"
1/4"	667	1-1/8"	5/16"	0.12
5/16"	1,000	1-7/32"	3/8"	0.19
3/8"	1,500	1-7/16"	7/16"	0.31
7/16"	2,000	1-11/16"	1/2"	0.38
1/2"	3,000	1-7/8"	5/8"	0.63
5/8"	4,500	2-3/8"	3/4"	1.38
3/4"	6,500	2-13/16"	7/8"	2.25
7/8"	8,500	3-5/16"	1"	3.38
1"	11,000	3-3/4"	1-1/8"	5.32



# SLEEVES

## SWAGING SLEEVES

### ALUMINUM - PLAIN COPPER - ZINC PLATED COPPER

To Fit Cable Diameter	Aluminum		Plain Or Plated*	Copper
	Ovals	Stops	Copper Ovals	Stops
Approximate Weight Per 100 Pieces (lbs)				
1/32"	0.016	—	0.048	0.075
3/64"	0.05	—	0.174	0.129
1/16"	0.1	0.06	0.29	0.193
5/64"	0.16	—	0.35	—
3/32"	0.32	0.23	0.6	0.781
1/8"	0.66	0.21	1.62	0.702
5/32"	0.8	0.37	2.28	1.18
3/16"	1.52	0.35	5.2	1.06
7/32"	1.42	0.63	4.55	2.18
1/4"	2.52	2.1	7.85	6.18
5/16"	4.35	—	11.86	5.3
3/8"	5.82	—	15.8	4.58
7/16"	11.7	—	—	—
1/2"	19	—	39.56	—

\*Plated with Zinc, Nickel, or Tin

### STOP BUTTONS



### OVAL SLEEVES



## WIRE ROPE THIMBLES



### GALVANIZED HEAVY DUTY THIMBLES

Size	Approx. Weight Per Piece (lbs)
1/4"	0.08
5/16"	0.14
3/8"	0.25
7/16"	0.36
1/2"	0.51
9/16"	0.51
5/8"	0.75
3/4"	1.47
7/8"	1.85
1"	3
1-1/8" - 1-1/4"	4
1-1/4" - 1-3/8"	8.11
1-3/8" - 1-1/2"	12.95

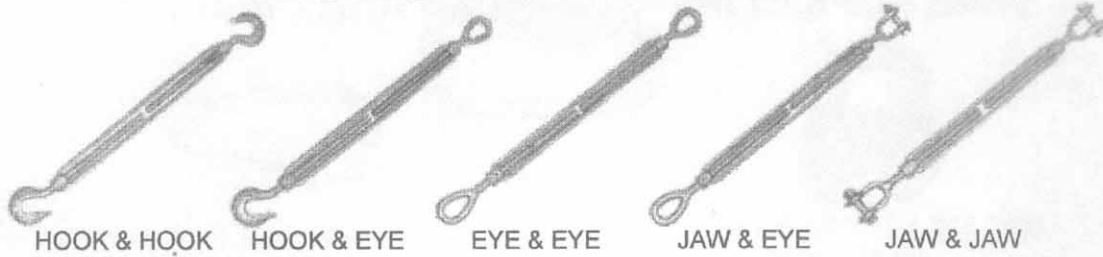


### GALVANIZED STANDARD THIMBLES

Size	Approx. Weight Per Piece (lbs)
1/8"	0.03
3/16"	0.03
1/4"	0.03
5/16"	0.04
3/8"	0.07
1/2"	0.14
5/8"	0.34
3/4"	0.51
7/8"	0.9

## TURNBUCKLES

### DROP FORGED, HOT DIPPED GALVANIZED TURNBUCKLES FEDERAL SPECIFICATION FF-T-791B



Size	Overall Length (Average) Ends Closed	Approximate Weight Per Piece (lbs)			Working Load Limit (lbs)	
		Eye/Eye Hook/Hook Hook/Eye	Jaw/Eye	Jaw/Jaw	Hook/Hook Hook/Eye	Eye/Eye Jaw/Eye Jaw/Jaw
1/4"X 4"	8-1/4"	0.3	0.32	0.36	300	500
5/16"X 4-1/2"	9-9/16"	0.47	0.47	0.52	500	700
3/8"X 6"	11-7/8"	0.75	0.76	0.81	700	1,040
1/2"X 6"	13-5/16"	1.6	1.53	1.5	1040	1,800
1/2"X 9"	16-5/16"	1.83	1.71	1.74	1040	1,800
1/2"X 12"	19-5/16"	2.08	2.06	2.4	1040	1,800
5/8"X 6"	15-1/2"	2.75	2.35	2.72	1600	2,700
5/8"X 9"	18-1/2"	3.13	3.06	3.24	1600	2,700
5/8"X 12"	21-1/2"	3.5	3.78	3.74	1600	2,700
3/4"X 6"	17"	3.89	4	4.11	2000	4,000
3/4"X 9"	20"	4.61	4.75	5.1	2000	4,000
3/4"X 12"	23"	5.43	5.36	6.15	2000	4,000
3/4"X 18"	29"	7.25	7	7	2000	4,000
7/8"X 12"	25-1/4"	8.1	8	8.17	2400	5,800
7/8"X 18"	31"	9.95	9.75	9.96	2400	5,800
1"X 6"	20-5/8"	9.33	8.92	8.5	2900	7,600
1"X 12"	26-5/8"	11.5	11.2	12	2900	7,600
1"X 18"	32-5/8"	14	13.3	14	2900	7,600
1"X 24"	38-5/8"	17.25	17	17	2900	7,600
1-1/4"X 12"	30"	19	20	21.5	4600	12,000
1-1/4"X 18"	36"	23	24.18	24.25	4600	12,000
1-1/4"X 24"	42"	27	28.5	28	4600	12,000
1-1/2"X 12"	32-1/4"	27.5	28.99	30.5	7200	17,000
1-1/2"X 18"	38-1/4"	31	35	36.75	7200	17,000
1-1/2"X 24"	44-1/4"	37.5	39.18	40.67	7200	17,000
1-3/4"X 18"	43"	52.5	53.75	54	—	23,000
1-3/4"X 24"	49"	58	60.68	63.36	—	23,000
2"X 24"	55"	85.25	89	94.25	—	30,000