



Manufacturers of **High Quality** Structural Rigging Hardware for Marine, and Architectural **Applications**.



[www.s3i.co.uk](http://www.s3i.co.uk)

# 316 Stainless Steel Compression Terminals

## Simple Assembly - Advanced Design



A new unique design of compression terminal is the latest development for compression fittings and results in a termination at least as strong as the rated breaking load of the cable. The unique **Crown Ring** positions and holds the outer strands of the wire, eliminating the requirement for awkward bending.



The shallow angled cone establishes direct mechanical grip on the core and all outer strands. Stainless Steel Marine Grade 316 is used for all of the components, therefore no sealant or packing is required.

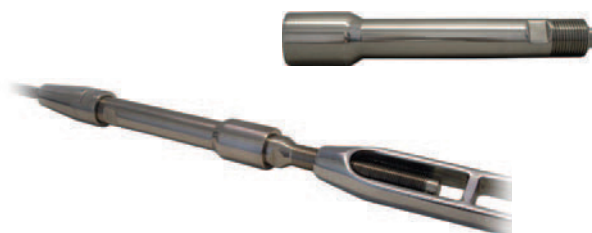
Available in Metric wire sizes from 3mm to 26mm and Imperial wire sizes from 1/8" to 1". Larger sizes available on request.

Designed for 1 x 19 strand wire. Cones and Crown Thrust Rings are also available for other wire constructions - 7 x 19 and Dyform.

All male threads are coated with a special lubricant containing small particles of teflon which help to prevent seizure or galling.

## Compression Terminal Repair Kits

Compression Terminal Extenders are used to repair broken swages without the need to replace the whole wire. Extenders are available for all wire sizes. In-line links allow wires to be joined together, these are also available in all wire sizes. Refer to our web site or catalogue for further details on these parts.



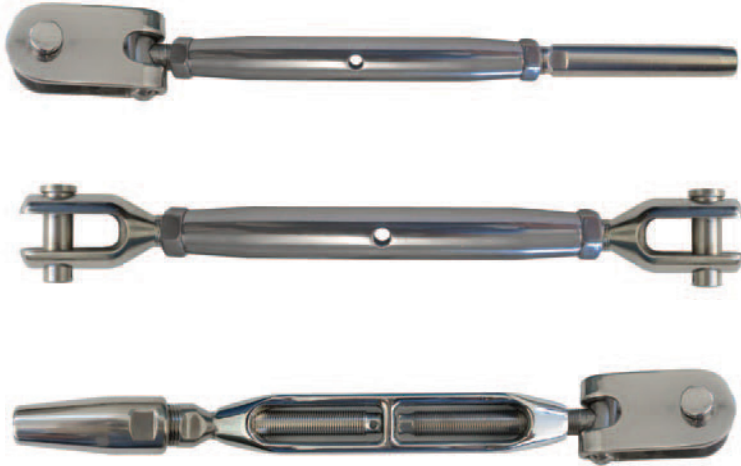
Compression Terminal Extender



Compression In-line Link

All parts of the assembly are re-usable. This product can be bought as an assembled item or as separate component parts.

# Stainless Steel Closed and Open Style Rigging Screws Large Sizes (5/8"+) with Aluminium Bronze Thread Inserts



Available in metric wire sizes from 3mm to 26mm and Imperial wire sizes from 1/8" to 1" diameter.

Larger wire diameters available on request.

Multiple combinations of terminations :- Fork, Swage Stud, Swageless Stud Solid Toggle, Strap Toggle & Eye.

Very high quality with excellent high polish finish.

All manufactured from Stainless Steel Grade 316.

Totally free from structural welds which may reduce the strength and integrity of the end product.

Most bodies benefit from Aluminum Bronze insert threads and stainless steel bodies.

All rigging screws are available with various end fittings.



Swageless Stud



Strap Toggle



Shackle Toggle



Swage Stud



Eye Stud



Solid Fork

# 316 Stainless Steel Swaged Wire Terminals



Swage Fork

Available in metric wire sizes from 3mm to 26mm and Imperial wire sizes from 1/8" to 1" diameter.

Larger wire diameters available on request.



Swage Toggle

Suitable for use with all types of roller or rotary hammer swaging machines and hydraulic presses.

Very high quality with excellent high polish finish.

All manufactured from stainless steel grade 316 (EN10088 1.4401/4).

Totally free from structural welds which may reduce the strength and integrity of the finished product.



Swage Forged Eye



Swage Machined Eye



Swage Shackle Toggle



Swage Stud

# High Quality Turnbuckle Bodies in Stainless Steel and Chrome Plated Aluminium Bronze.



Type MB - Marine Body  
Open body design manufactured from Aluminium Bronze and Chrome plated. Available in sizes from 1/4" UNF to 5/8" UNF.



Type CB - Closed Body  
Closed body design manufactured from 316 quality stainless steel. Manufactured from solid bar. Sizes 5/8" and above are fitted with aluminium bronze mechanically fixed inserts.



Type OB - Open Body  
Open body design all exposed surfaces are from 316 stainless. Gall free Aluminium Bronze thread inserts are mechanically fixed in place. A reinforced centre section aids adjustment. Available in sizes from 7/16" UNF to 1 3/8" UNF.

Available in thread sizes from 1/4" UNF to 1 3/8" UNF.  
Metric sizes and large size threads also manufactured to order.

## Stainless Steel Threaded Terminals



Fork Stud

Available in metric wire sizes from 3mm to 26mm and Imperial wire sizes from 1/8" to 1" diameter.



Swage Stud

Larger wire diameters available on request.

Available in both closed & open body style.



Eye Stud

Forged components manufactured using electrical upset forging providing stronger products resulting from beneficial grain flow.



Shackle Toggle Stud

Totally free from structural welds which may reduce the strength and integrity of the finished product.



Strap Toggle Stud



# SBS-450 Tie Bar System

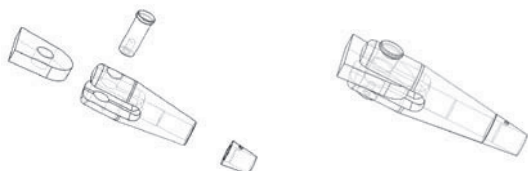
The SBS-450 Tiebar System is made from high tensile materials resulting in extra strength and has a tapered lock nut design feature that hides bar threads thus providing a clean cosmetic appearance.



The standard tie bar system consists of a bar with a left hand and right hand threaded SBS-450 fork at each end. Once installed the bar can be rotated to expand or contract the fork's pin centres. Special spanner flats can be added to the tie bars to help with rotation.



The forks are locked into position by tightening the tapered locking nuts using a 'C' pin spanner. The special tapered locking nuts also hide excessive bar threads. The forks benefit from 'Double Headed' clevis pins which are fastened into position using a standard 'Allen' key



SBS-450 forks and pins are manufactured from Duplex grade stainless steel.

This offers high resistance to corrosion and superior mechanical properties over marine grade 316(EN10088 1.4401)

Designed in accordance with BS5950-1:2000 and EN 1993-1-8:2005

The SBS-450 tie rod itself is manufactured from high quality stainless steel grade 316 with rolled threads to BS3643. Available in thread sizes M10 to M39



All components are UK produced using the latest CNC technology and are finished to a N4 standard (240 grit satin). Bar lengths are available up to 6 metres. Lengths exceeding 6 metres can be catered for by using a bar coupler.

# Stainless Steel Cable Tendons

The introduction of rigging components from marine applications into the construction industry has realised the benefits of cable tendon systems in architectural applications. S3i are able to offer a complete range of cable tendon systems. We are a specialist solution centre offering expert technical backup and service.

**System C1.** Adjustment in forks by rotating the cable and locking both ends.



**System C2.** Adjustment at the centre of the cable.



**System C3.** Adjustment by Rigging Screw at one end of the cable utilising swaged terminals.



**System C4.** Adjustment by Rigging Screw at one end of the cable utilising swagless terminals.



**System C5.** Adjustment by Compact tensioner at one end of the cable. Compact Tensioners are shorter than Rigging Screws.



Available in wire sizes from 3mm to 26mm diameter as standard.

Larger diameters manufactured to customer requirements.

Very high quality polish and finish.

Manufactured from Stainless Steel 316.

Aluminium Bronze threads on thread sizes 5/8" unf and above. All smaller threads coated in special teflon lubricant to prevent thread galling or seizure.

All components available in high yield materials such as Duplex or 17/4PH (specify at time of order).



## 316 Stainless Steel Marine Shackles



Available in all the patterns above from pin size 4mm to 19mm.

3 Pin styles available :- Standard Screw Pin, Retained Shake Proof Pin and Socket Head Pin.

Manufactured using electrical upset forging techniques providing a stronger shackle with beneficial grain structure.



Standard Pin



Shake Proof Pin



Socket Head Pin

## Stainless Steel 17/4 PH Lifting Shackles



Available from SWL 1 tonne to 18 tonne.

Pin sizes ranging from 10mm to 38mm.

3 Pin styles available :- Standard Collar Pin, Extended Collar Pin with Split Pin & Socket Head Pin.

All provided with SWL test certification and Test Identification.

All shackles are CE marked along with Batch ID and SWL limit.

Manufactured using electrical upset forging techniques providing a stronger shackle with beneficial grain structure.



# 316 Stainless Steel Halyard Cleats, Lacing Eyes and Boat Rings

High quality marine boat fittings with very high polish and excellent finish.

All manufactured from stainless steel grade 316.



## Halyard Cleats

Available in 5 sizes

55mm, 75mm, 90mm, 120mm and 150mm wide.



## Lacing Eyes

Available in 3 sizes

Hole diameters 4mm, 6mm and 8mm.



## Boat Rings

Available in 2 sizes

5/16" UNF Thread with Shackle Width of 18mm.

3/8" UNF Thread with Shackle Width of 24mm.

## Specialist Shackles in 316 and 17/4PH for Original Equipment Manufacturers.

Our manufacturing flexibility allows us to provide special shackles manufactured to customer specification.

This is particularly common with many of our [OEM customers](#) for whom we manufacture many different designs of shackles for use on [blocks](#), [traveller systems](#) and [slides](#). We can manufacture in both 316 and high tensile 17/4PH stainless steel. Full material traceability and mill certification is also available.



# Fail Safe Wire Rigging Insulators

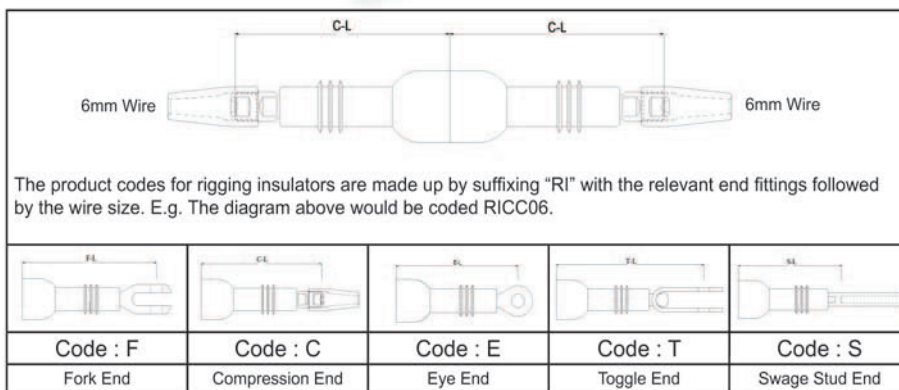
It is the only fail safe rigging insulator for wire available on the market today. Utilising the same features that have made our compression fittings so popular, this insulator has an internal ball-socket in the main body that threads onto the connecting stud. The nut is insulated from the stainless 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. Our insulator meets or exceeds current electrical standards for marine backstay insulators. Available with swageless terminals, swage terminals, eye, fork and toggle ends to suit any application.

## Metric Wire - 6mm to 12mm Larger sizes up to 26mm wire manufactured to order.

The insulator diagrams detailed below are showing only half sections of a complete assembly. This allows the end-user to select the terminations they require. For example, if you want an insulator with a compression stud at one end and a fork at the other end then the code would be RICF followed by the wire size.



The insulator exceeds the rated breaking load of the cable, even Dyform, whilst at the same time providing the necessary electrical properties to enable your backstay to be used as an aerial.



WIRE SIZE	PIN SIZE	HOLE SIZE	C-L	E-L	S-L	F-L	T-L
6mm	11mm	11.3mm	103mm	107mm	101mm	121mm	134mm
7mm	12mm	13mm	125mm	129mm	120mm	142mm	155mm
8mm	14mm	14.5mm	131mm	151mm	140mm	164mm	198mm
10mm	16mm	16.2mm	146mm	154mm	142mm	176mm	198mm
12mm	19mm	19.2mm	155mm	180mm	168mm	207mm	248mm

# Stainless Steel Clevis Pins, Nuts, Split Pins and Rings



Available from 6mm to 35mm (1/4" to 1 3/8") pin diameter.  
 Manufactured from stainless steel grade 316.  
 Double headed version also available (see architectural specification sheets).  
 Special designs to customer drawings manufactured to order.



Available from 1/4" to 1 3/8" UNF and Metric sizes from M6 to M35 in both RH and LH.  
 Manufactured from stainless steel.  
 Designed as locking nut for rigging screws etc. Full nuts also available on request.



Available from 1/4" to 1 3/8" UNF and Metric sizes from M6 to M35 in both RH and LH.  
 Manufactured from stainless steel.  
 Designed as locking nut for rigging screws etc. Full nuts also available on request.



Full set of split pins and rings to suit our clevis pins.  
 9 different sizes of pin and 2 sizes of ring available.  
 Manufactured from stainless steel.

## Stainless Steel Fork/Eye Toggles

Available from 6mm to 35mm pin hole diameter.  
 Designed to fit all forks and eyes within our range.  
 Manufactured from solid bar stainless steel grade 316.  
 Inclusive of clevis pins and split pins.  
 Special designs to customer drawings manufactured to order.



### Other Toggle Styles Available

Shackle Toggle



Strap Toggle



Solid Bar Toggle





Stainless Steel Solutions aim to provide the highest quality products along with exceptional service to the marine, structural and architectural market place.

Most of the products in our catalogue are available from stock and can also be purchased online. Other products, such as tie bars, are manufactured in-house to order.

We offer an in-house rigging assembly service for cables, and can use our mobile swaging machine on site.

We also offer to custom manufacture unusual and bespoke stainless requirements.

What ever your stainless requirement, we look forward to being of service to you.



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