

## Section B12 T-ball Rigging & Tangs

### B12.1 T-Ball Rigging

T-ball rigging is a system for joining rigging wire to the mast. It involves a stainless steel T-ball fitting swaged to the end of the wire, and simply hooked into the appropriately-sized hole in the mast which is reinforced by a stainless steel Backing Plate fixed inside the mast. In some applications, a T-ball Rigging Screw may be used eg. one end of diamonds and jumpers.

In situations where the rigging wire may be slack at times, such as running backstays and checkstays, a Strap (Part No. 507-503) may be used to cover the top end and keep the T-ball in place.

#### Variations

Allyacht Spars Australia uses the three types of T-ball rigging shown below.

#### OS Rigging

OS fittings (from BSI in Denmark - [www.bsi-dk.dk](http://www.bsi-dk.dk) ) have the advantage of being very easy to fit. Those Part Nos. ending with HL are for High Load situations.

WIRE (mm)	T-BALL PART NO.	BACKING PLATE PART NO.
2.5	260025	012.OSTB04
3	260003	012.OSTB04
4	260004	012.OSTB04
5	260005	012.OSTB05
6	260006	012.OSTB06
7	260007	012.OSTB07
8	260008	012.OSTB08
		012.OSTB08.HL
10	260010	012.OSTB10.HL



012.OSTB07



012.OSTB10HL

#### Gibb / Swageturn

The Gibb-style fittings have been the most commonly-used system in Australia for some time. If a T-ball Rigging Screw is required in the system, this system is used throughout.



Swageturn T-balls



Swageturn Backing Plates

WIRE (mm)	T-BALL PART NO.	BACKING PLATE PART NO.	RIGGING SCREW			
			PART NO.	THREAD/PIN DIA. (mm)	(in)	
2.5	TSW03-2.5MM	012.GTB03	NA			
3	TSW04-3MM	012.GTB03	NA			
4	TSW05-4MM	012.GTB04	012.TRS-M0404	6.4	1/4	
			012.TRS-M0405	7.9	5/16	
5	TSW06-5MM	012.GTB05	NA			
6	TSW08-6MM	012.GTB07	012.TRS-M0608	12.7	1/2	
7	TSW09-7MM	012.GTB07	012.TRS-M0708	12.7	1/2	
8	TSW10-8MM	012.GTB10	012.TRS-M0808	12.7	1/2	
			012.TRS-M0810	15.9	5/8	
10	TSW12-10MM	012.GTB10	012.TRS-M1010	15.9	5/8	

#### Gibb Hi Load

These fittings are usually used for Compak wire more than 5mm in diameter.

WIRE (mm)	T-BALL PART NO.	BACKING PLATE PART NO.
6	G841-06	012.HTB06
7	G841-07	012.HTB07
8	G841-08	012.HTB08
10	G841-10	012.HTB10
12	G841-12	012.HTB12



Gibb Hi Load Backing Plate

### B12.2 External Tangs - Single And Double Pin

External tangs are designed to accept all standard marine eyes used for stainless steel wire or rod rigging. They are made from 304 grade stainless steel and the size varies in proportion to the size of Clevis pin for which they are designed, ranging from 10mm to 25.4mm. Tangs are fitted with a bolt and compression tube, which passes through the mast section to fix one tang on each side of the mast, and secured with a nut and split pin. For pin size of 3/4" and above, High Load Tangs are used, reinforced with an extra bolt and compression tube fitted above the original, and connected to the original by a strap on either side.

**Variations** External Tangs are available as either single (with one Clevis pin) or double (with two Clevis pins), and are supplied in three forms:

- Individual Tang** One tang with one Clevis Pin (single) or two Clevis Pins (double) - WITHOUT bolt, nuts and compression tube
- Tang Set** Pair of tangs complete with Clevis Pins, bolt, nuts and compression tube
- High Load Tang Set** Comprises a Tang Set reinforced with an extra bolt, compression tube, and pair of straps - recommended for pin sizes of 3/4" and above

**Ordering** When ordering External Tangs, please specify the following:

1. The Part Number
2. Whether Single or Double tangs are required
3. Which form required (Individual Tang, Tang Set, or High Load Tang Set)
4. For Tang Set or High Load Tang Set, specify maximum dimension through extrusion and Doubler Plates if fitted (all tang bolts made to order only)
5. Clevis Pin diameter, or stay wire diameter.
6. Angle of deflection (from mast) of tang.



DESCRIPTION	CLEVIS PIN Dia.		INDIVIDUAL TANG	TANG SET	HIGH LOAD TANG SET
	(mm)	(in)	PART NO.	PART NO.	PART NO.
Single	9.5	3/8	012.103	012.113	NA
Single	12.7	1/2	012.104	012.114	NA
Single	15.9	5/8	012.105	012.115	NA
Single	19.0	3/4	012.106	012.116	012.116HL
Single	22.2	7/8	012.107	012.117	012.117HL
Single	25.4	1	012.108	012.118	012.118HL
Double	9.5	3/8	012.203	012.213	NA
Double	12.7	1/2	012.204	012.214	NA
Double	15.9	5/8	012.205	012.215	NA
Double	19.0	3/4	012.206	012.216	012.216HL
Double	22.2	7/8	012.207	012.217	012.217HL

### B12.3 Doubler Plates

Updates for this section: 19/08/05; 01/02/06

These are used to provide extra bearing material for fitting of tangs. Doubler plates are supplied as a pair. Note that tang bolts need to be extended to fit tangs that are used in these areas.

	Doubler plate (with tang)	PART NO.	TO SUIT TANGS WITH PIN SIZE	
			(mm)	(in)
		012.293	9.5	3/8
		012.294	12.7	1/2
		012.295	15.9	5/8
		012.296	19.0	3/4
012.297	22.2	7/8		

### B12.4 Cap Shroud Attachments – Rotating Masts

Allyacht Spars Australia produces a fitting specifically designed to attach the Cap Shrouds to a rotating mast utilizing a low-stretch high-strength rope strop.

PART NO.	THROUGH BOLT SIZE	
	(mm)	(in)
012.113R	9.5	3/8
012.114R	12.7	1/2
012.115R	15.9	5/8
012.116R	19.0	3/4


## B12.5 Backstay And Forestay Bridle Plates

Backstay Bridle Plates are designed to enable a backstay to be split by providing a connector plate to which the stays are attached by toggles or forks. They are equally effective for either backstays or forestay bridles on catamarans. Bridle Plates are manufactured from stainless steel plate and are supplied with holes drilled to standard rigging hole diameters according to the minimum in the following table, unless requested otherwise.

	PART NO.	BRIDLE PLATE THICKNESS (mm)	PIN SIZE min.		PIN SIZE max.	
			(mm)	(in)	(mm)	(in)
	012.604	6	9.5	3/8	12.7	1/2
	012.805	8	12.7	1/2	15.9	5/8
	012.810	10	15.9	5/8	19.0	3/4

## B12.6 Clevis Pins

Clevis Pins are supplied to suit the Allyacht Spars Australia range of External Tangs. Each Clevis Pin includes a split pin.

	LENGTH (mm)	DIAMETER		PART NO.	SUIT TANG PART NO.
		(mm)	(in)		
	19	9.5	3/8	RF271	012.103
	22	12.7	1/2	RF276	012.104
	25	15.9	5/8	RF537	012.105
	32	19.0	3/4	RF3666	012.106
	38	22.2	7/8	012.107.1	012.107
	38	25.4	1	012.108.1	012.108