

○ Marine Brochure
2008/2009



Great Circle Rigging: Marine Brochure 2008/2009 ○

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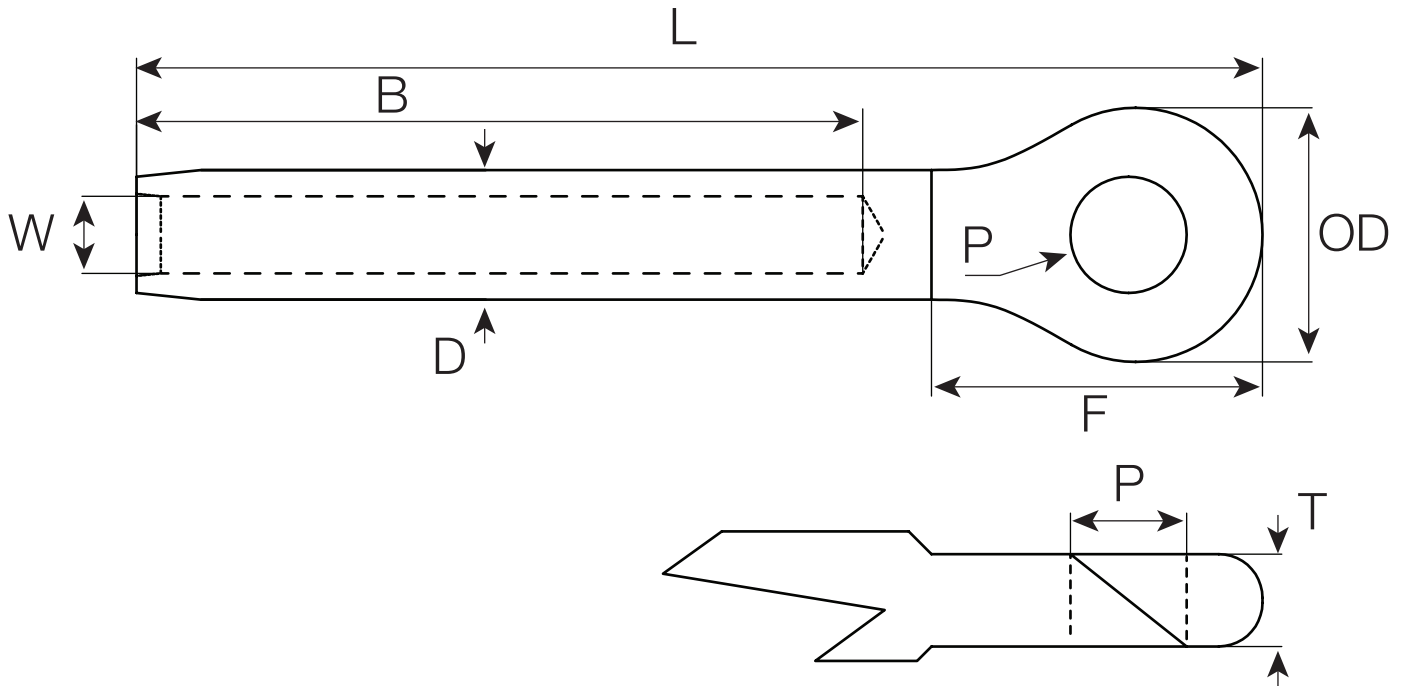


Swaged Eye

Swaged eyes are often found on older masts featuring external tangs. They can also be found at the lower end of rigging where a fork and fork rigging screw is used.

When using a swaged eye, it is essential that the new eye matches the existing pin correctly.

If your pin diameter or eye thickness differs from the dimensions given below please contact us for more advice.



Swaged Eye

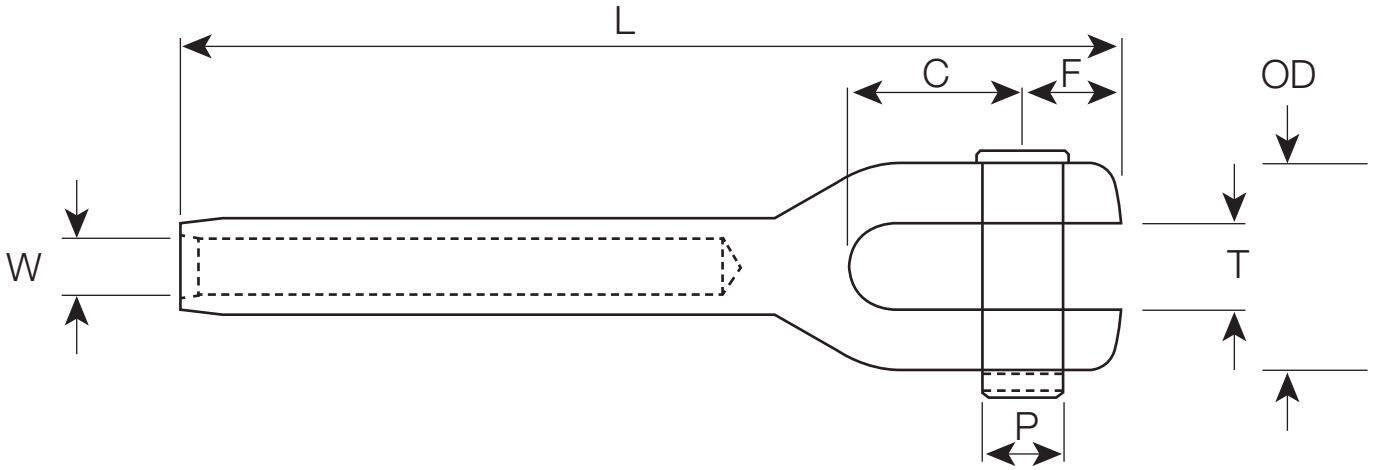
Wire size		3	4	5	6	7	8	10	12	14	16
Overall length	L	60	72	84	102	113	128	155	197	232	262
Eye diameter	OD	14.3	18	21	25	28	32	34	42	48	58
Pin diameter	P	6.3	8	9.5	11	12.7	14.5	16	19	22.2	25.4
Eye length	F	18	23	27	32	36	40	45	53	62	70
Eye thickness	T	6	7	8	9.5	11	14	15	18	22	24
Weight (g)		12	24	36	82	120	170	234	442	708	1,005

all dimensions in mm



Swaged Fork

Often found as a method of securing guardrail wires to pulpit. Other uses include attaching rigging to a single tang on a mast, to a backstay adjuster, triangular plate on a split backstay system or a transom tang on an adjustable backstay system.



Swaged Fork

Wire size		3	4	5	6	7	8	10	12	14	16	19	22	26
Fork length	L	70	83	97	113	128	144	174	221	258	294	341	390	450
Jaw gap	T	6.3	8	10	11	12.7	12.7	16	19	22.2	25.4	28.6	32	35
Clevis pin diameter	P	6	8	9.5	11	12	12	16	19	22	25.4	28	32	35
Projection	F	7	9	11	12	15	15	18	23	26	30.6	33	39	43.5
Jaw depth	C	13	16	19	22	25	25	32	38	45	50	58	64	70
Outer Diameter	OD	6.3	7.5	9.1	12.5	14.3	16	18	21.4	25	28.2	34.5	40.3	45.9
Weight (g)		20	36	64	142	172	196	376	1,097	1,105	1,683	2,580	3,611	5,019

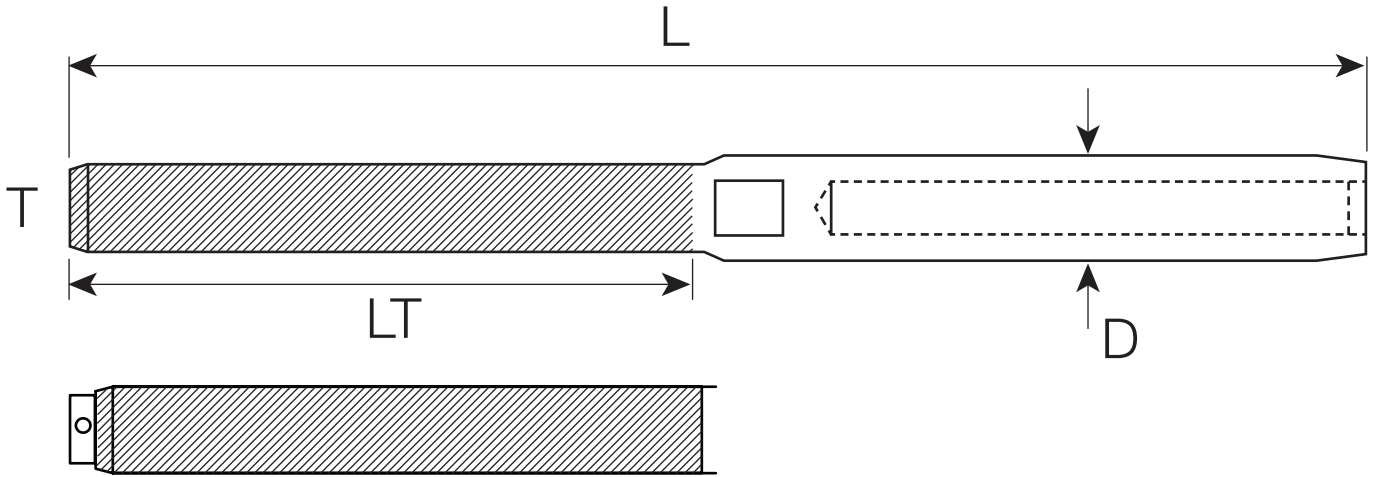
all dimensions in mm



Swaged Stud

If your existing rigging screws are to be used, we can manufacture rigging with a swaged stud to suit. You must specify whether you require UNF or metric thread, whether you require left hand or right hand thread and if your existing rigging screw is open or closed bodied.

If you are in any doubt please contact us for advice.



Swaged Stud with UNF thread

Wire size		3	4	5	6	7	8	10	12	14	16	19	22	26
Overall length	L	97	113	135	154	177	190	223	277	325	369	425	482	557
Thread length	LT	47	54	68	75	90	90	100	120	140	160	180	200	220
Thread	TH	1/4"	5/16"	3/8"	7/16"	1/2"	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"
Outer diameter	D	6.3	7.5	9.1	12.5	14.3	16	18	21.4	25	28.2	34.5	40.3	45.9
Weight (g)		24	36	60	108	162	196	306	550	874	1,275	2,050	3,200	4,000

all dimensions in mm

Swaged Stud with metric thread

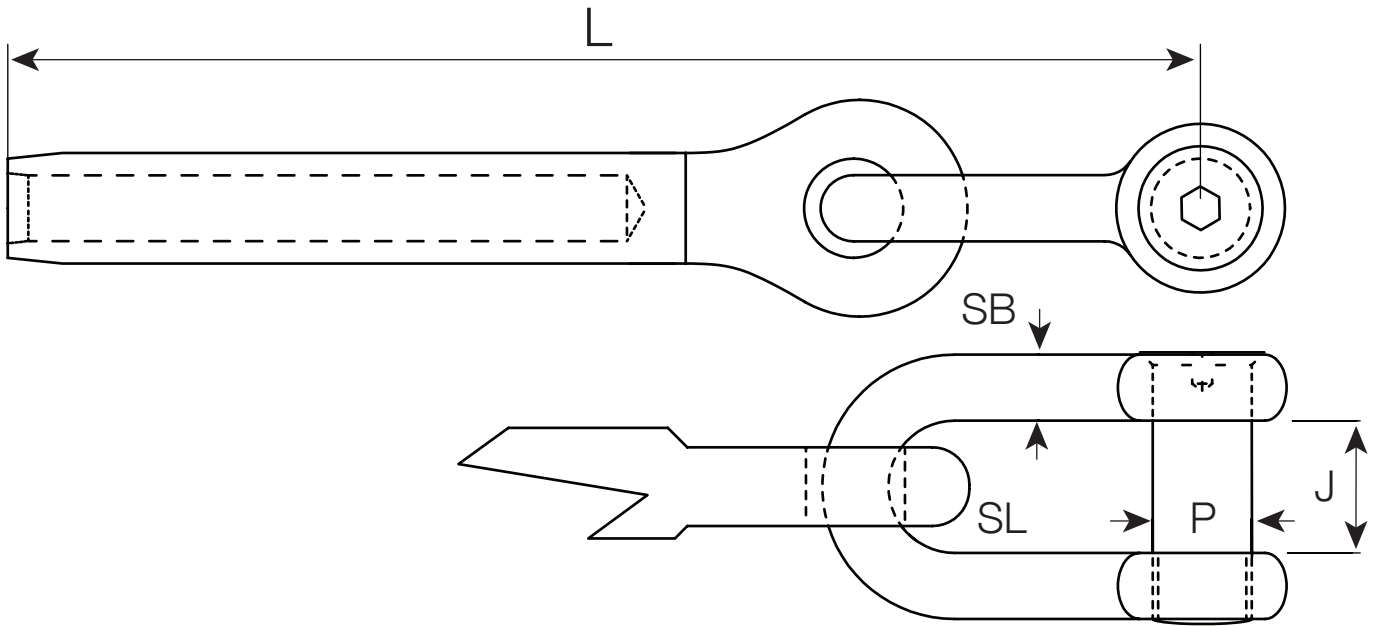
Wire size		3	4	5	6	7	8	10	12	14	16	19	22	26
Overall length	L	97	113	122	154	177	190	223	277	325	371	425	482	557
Thread length	L T	47	54	68	75	90	90	100	120	140	160	180	200	220
Thread	TH	M6	M8	M8	M10	M12	M12	M16	M20	M22	M27	M30	M36	M42
Outer diameter	D	6.3	7.5	9.1	12.5	14.3	16	18	21.4	25	28.2	34.5	40.3	45.9
Weight (g)		24	36	54	108	162	196	306	550	874	1275	2050	3200	4000

all dimensions in mm



Shackle Toggle

Shackle toggles are often used if extra articulation is required or when connecting a wire to a pulley (e.g. running backstays).



Shackle Toggle

Wire size		3	4	5	6	7	8	10	12	14	16
Overall length	L	82	101	118	141	158	179	216	263	309	351
Pin diameter	P	6	8	9.5	11	12	14.3	16	19	22.2	25.4
Jaw width	J	14	20	22	25	27	29	29	32	38	45
Shackle diameter	SB	5	6	8	9.5	11	12.7	14.3	16	19	22
Shackle depth	SL	14	16	22	27	32	36	42	45	63	63
Weight (g)		25	48	89	179	273	407	684	1,027	1,508	2,525
all dimensions in mm											



○ Swaged 'T' & Stemball

Due to the number of different manufacturers of 'T' and stemball terminals, we do not list the different options.

If your requirement relates to rigging for a new spar, please advise the make. For replacement rigging, the best option is to send us your existing rigging however we can work from a digital photo(s) and accurate dimensions.

Please note we can still quote without seeing your existing rigging.

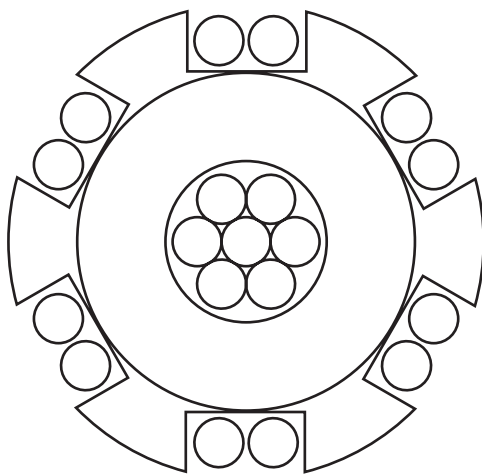


Swageless (Self Assembly) Fittings

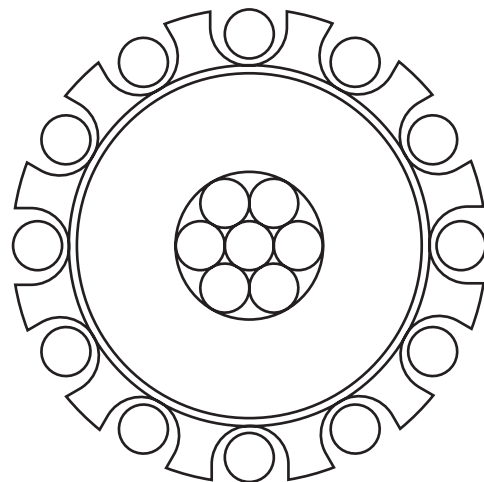
Probably the easiest swageless fitting to assemble, the termination is at least as strong as the rated breaking load of the wire rope. The unique star shaped Crown Ring positions and holds the wire strands in place, eliminating the requirement for awkward wire end bending.

The Crown Ring is separated from the wire cone and is therefore not slotted, this prevents the outer strands from being trapped in the cone slots. The Crown Ring also accommodates left and right hand lay wire ropes. The shallow cone angle establishes more mechanical advantage providing a tighter grip. The terminal can be completely dismantled for maintenance then re-used. All component parts are re-useable providing that no overloading has occurred. The diagrams below demonstrate the different crown rings required for different wire sizes.

Wire layout for less than 5mm



Wire layout for 5mm and larger



Stainless steel grade EN10088 1.4404 (316) is used on all parts with the exception of the Crown Ring which is manufactured from Aluminium Bronze.

When ordering self assembly fittings, please specify the wire construction, i.e. 1X19, 7X19 or Dyform

Please note, we do not recommend using sealant on these self assembly fittings.

Further details available on request.

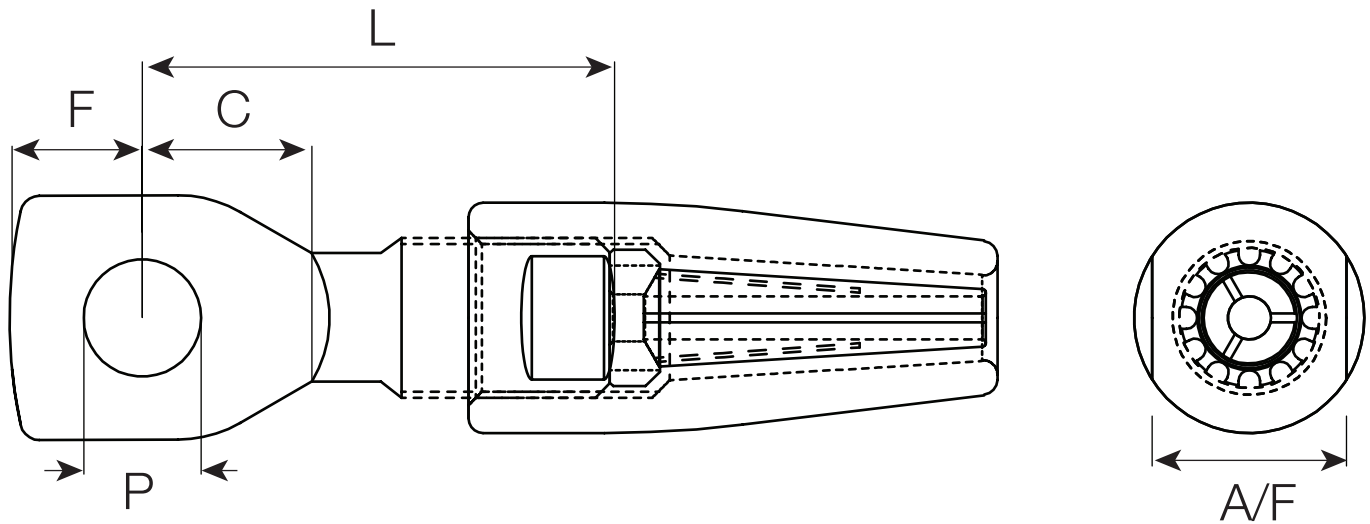
If you are using your existing Sta-Lok or Norseman swageless fittings we can supply replacement cones and formers as required as well as complete assemblies.

Self Assembly Eye

These eyes are often found on older masts featuring external tangs. They can also be found at the lower end of rigging where a fork and fork rigging screw is used.

When using an eye, it is essential that the new eye matches the existing pin correctly. Please also check the thickness of the eye to ensure it will fit in your existing fitting.

If your pin diameter or eye thickness differs from the dimensions given below please contact us for more advice.



Self Assembly Eye

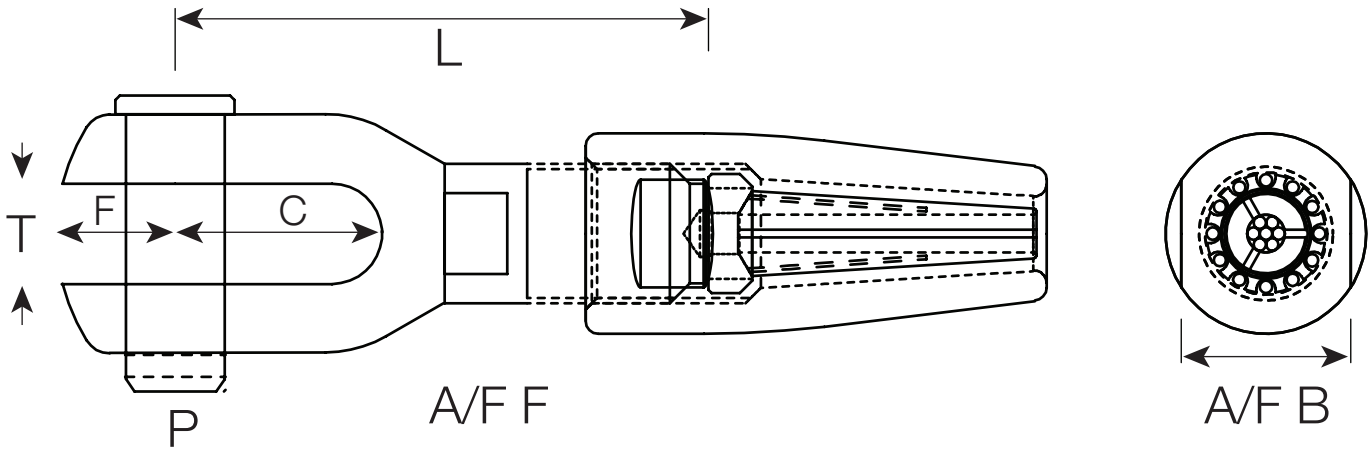
Wire size		3	4	5	6	7	8	10	12	14	16	19	22	26
Eye length	L	22	28	32	38	45	52	59	79	86	94	98	108	144
Pin diameter	P	6.3	8	9.5	11	12.7	14.3	16	19	22.2	25.4	28.6	32	35
Eye protrusion	F	7	9	11	13	13	16	19	22	26	29	32	36	42
Eye depth	C	9	12	16	19	20	23	28	34	36	41	44	50	55
Eye thickness	T	6	7	8	9.5	11	13	15	18	22	24	28	32	34
Spanner flat	A/F	9.5	11	14	19	20	22	26	32	36	40	44	52	64
Weight (g)		21	39	65	126	165	355	462	912	1,344	1,867	2,227	3,440	5,575

all dimensions in mm



Self Assembly Fork

Often found as a method of securing guardrail wires to pulpit. Other uses include attaching rigging to a single tang on a mast, to a backstay adjuster, triangular plate on a split backstay system or a transom tang on an adjustable backstay system.



Self Assembly Forks

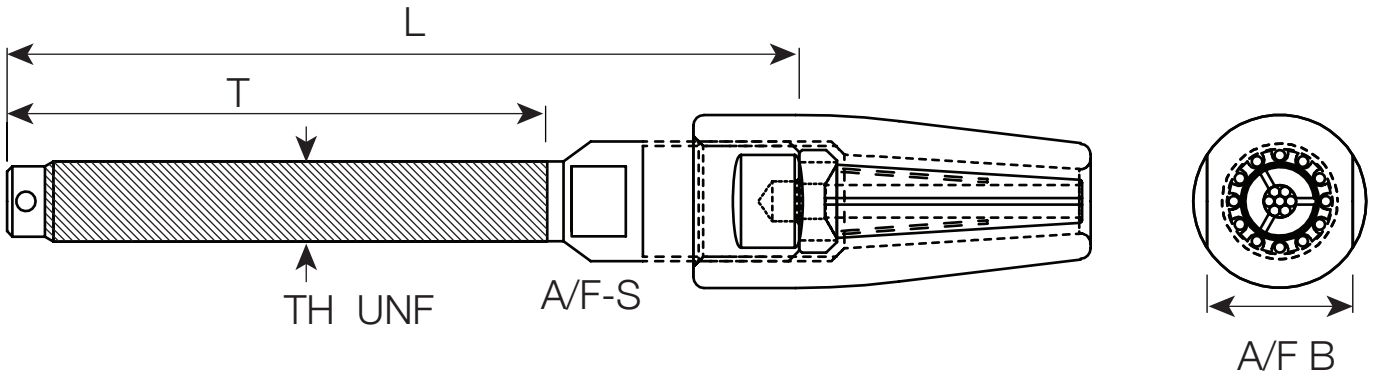
Wire size		3	4	5	6	7	8	10	12	14	16	19	22	26
Fork length	L	30	40	47	50	58	63	78	93	106	126	133	146	167
Jaw gap	T	6.3	8	10	11	12.7	12.7	16	19	22.2	25.4	28.6	32	35
Clevis pin diameter	P	6	8	9.5	11	12	12	16	19	22	25.4	28	32	35
Projection	F	7	9	11	12	15	15	18	23	26	30.5	33	39	43.5
Jaw depth	C	13	16	19	22	25	25	32	38	45	50	58	64	70
Spanner flat fork	A/F F	6	8	9	11	14	16	17	22	24	28	32	36	44
Spanner flat base	A/F B	9.5	11	14	19	20	22	26	32	36	40	44	52	64
Weight (g)		29	60	103	159	239	323	542	918	1,464	2,125	2,616	3,890	6,393

all dimensions in mm



Self Assembly Stud

Self assembly studs can be supplied loose for fitting to your existing rigging screw. They are available with either UNF or metric threads.



Self Assembly Stud with UNF thread

Wire size		3	4	5	6	7	8	10	12	14	16	19	22	26
Overall length	L	67	76	89	99	119	125	140	169	195	227	245	270	311
Thread length	T	47	54	68	75	90	90	100	120	140	160	180	200	220
Thread	TH	1/4"	5/16"	3/8"	7/16"	1/2"	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"
Spanner flat stud	A/F-S	6	8	9	11	14	16	17	22	24	28	32	36	44
Spanner flat base	A/F-B	9.5	11	14	17	20	22	26	32	36	40	44	52	64
Weight (g)		24	42	75	130	199	297	458	892	1,379	1,970	2,699	4,240	6,675
all dimensions in mm														

Self Assembly Stud with metric thread

Wire size		3	4	4	5	5	6	6	7	8	8	10
Overall length	L	63	68	74	80	90	95	117	123	129	134	158
Thread length	T	47	47	54	54	68	68	90	90	90	100	120
Thread	TH	M6	M6	M8	M8	M10	M10	M12	M12	M12	M16	M20
Spanner flat stud	A/F-S	6	8	8	9	9	11	11	14	16	16	19
Spanner flat base	A/F-B	9.5	11	11	14	14	17	17	20	22	22	26
Weight (g)		24	35	42	65	75	110	145	199	297	340	800
all dimensions in mm												

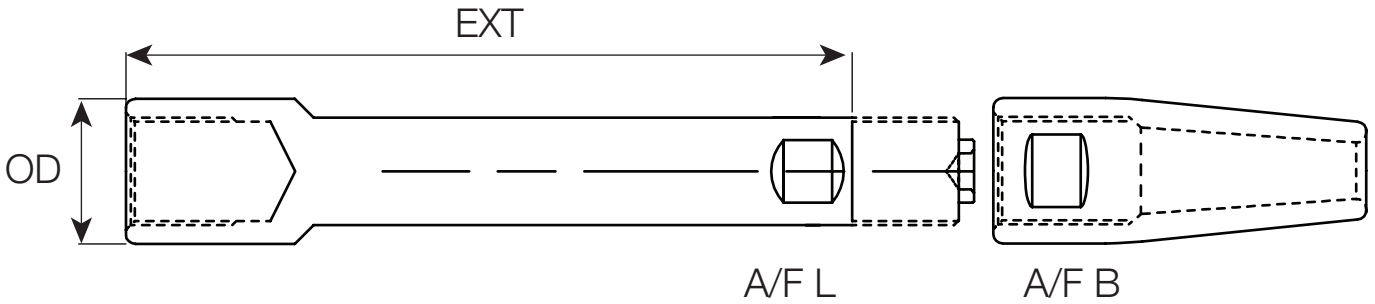


Self Assembly Terminal Extender

The self assembly Terminal Extender is a “one-fits-all” component which will allow a damaged swage terminal to be replaced quickly and easily by a self assembly fitting. If necessary, more than one extender can be joined together to give additional length.

Please note, the extender is only a temporary fix and damaged wires should be replaced as soon as possible.

The self assembly terminal extender must be used in conjunction with a compression eye, stud, fork or toggle.



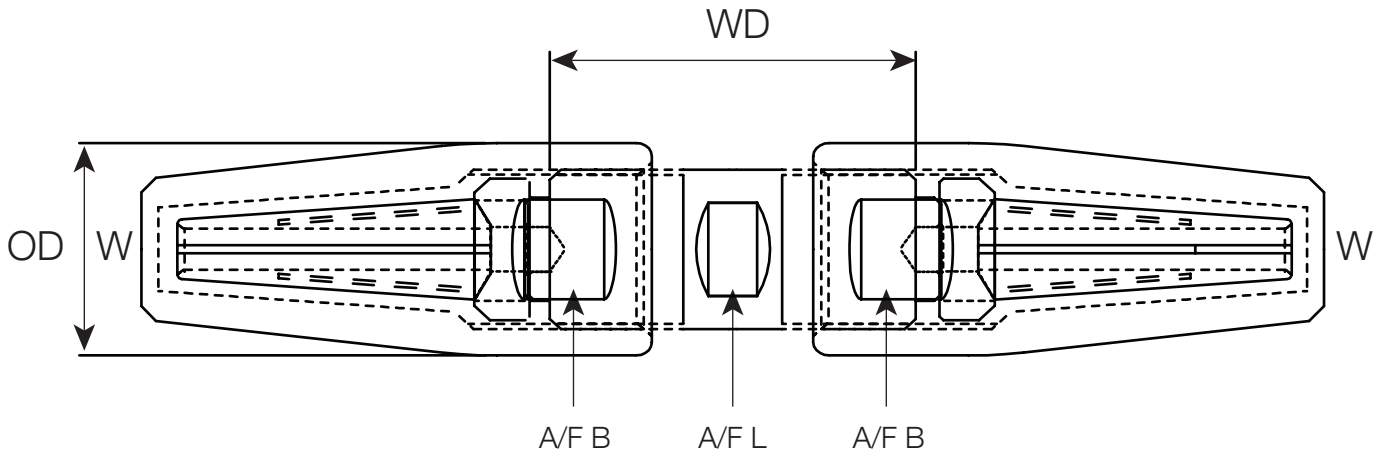
Self Assembly Extender

Wire size		3	4	5	6	7	8	10	12	14	16	19	22	26
Extender length	EXT	45	60	75	90	105	120	150	180	210	240	285	330	390
Spanner flat extender	A/F-L	6	8	9	11	13	16	17	22	24	28	32	34	44
Spanner flat base	A/F-B	9.5	11	14	17	20	22	26	32	36	40	44	52	64
Overall diameter	OD	11	13	16	19	22	26	30	39	44	48	51	57	77
Weight (g)		24	39	100	131	207	311	536	1,023	1,637	2,136	2,807	4,098	8,591
all dimensions in mm														



Self Assembly In-line Joiner

This system allows a damaged wire to be quickly and easily repaired using the special in-line link with 2 compression terminals.



Self assembly in-line joiner

Wire size		3	4	5	6	7	8	10	12	14	16	19	22	26
Link length	WD	26	27	33	35	43	55	62	72	75	79	79	111	131
Spanner flat link	A/F-L	6	8	9	11	13	16	17	22	24	28	32	34	44
Spanner flat base	A/F-B	9.5	11	14	17	20	22	26	32	36	40	44	52	64
Overall diameter	OD	11	13	16	19	22	26	30	38	45	47	51	58	77
Weight (g)		10	14	24	43	63	115	180	350	518	671	811	1,268	2,519

all dimensions in mm



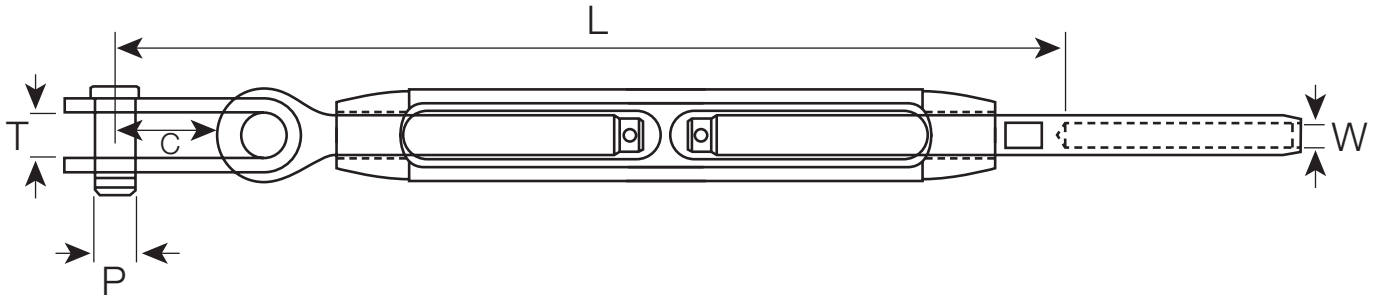


Open Body Toggled Turnbuckle

These turnbuckles have a chromed aluminium bronze body to help prevent thread seizure. The design makes for easy tensioning. The turnbuckle is locked by passing split pins through the holes in the end of the studs after tensioning is complete.

The toggle gives greatly improved articulation compared to a fixed fork.

This turnbuckle is available with a swaged or self-assembly stud.



Open Body Toggled Turnbuckle

Wire size		3	4	5	6	7	8	10	12	14	16
Length	L	200	230	250	275	315	320	380	475	560	645
Adjustment +/-		35	40	45	50	50	50	65	85	100	120
Jaw width	T	7.7	9	10.3	14	14.2	14.2	17.5	22	24	28
Clevis pin diameter	P	6	8	9.5	11	12	12	16	19	22	25.4
Jaw depth	C	16	16.5	20.4	28	30.3	30.3	39.4	55	60	70
Thread (UNF)	TH	1/4"	5/16"	3/8"	7/16"	1/2"	1/2"	5/8"	3/4"	7/8"	1"
Weight (g)		104	184	288	494	716	750	1,353	2,146	3,778	4,964

all dimensions in mm

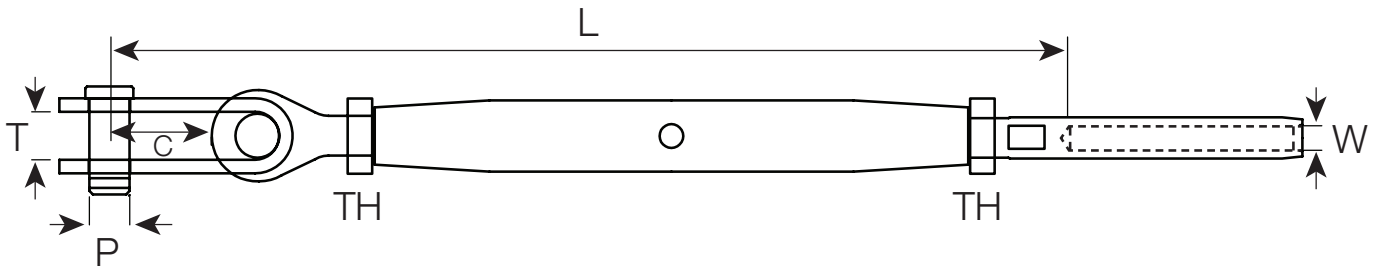


○ Closed Body Toggled Rigging Screw

These rigging screws have a 316 stainless body. Bodies on sizes 5/8" and above are manufactured with aluminium bronze thread inserts to help prevent thread seizure. The rigging screw is locked using lock nuts after tensioning is complete.

The toggle gives greatly improved articulation compared to a fixed fork. However if you specifically require a fixed fork rigging screw we can supply.

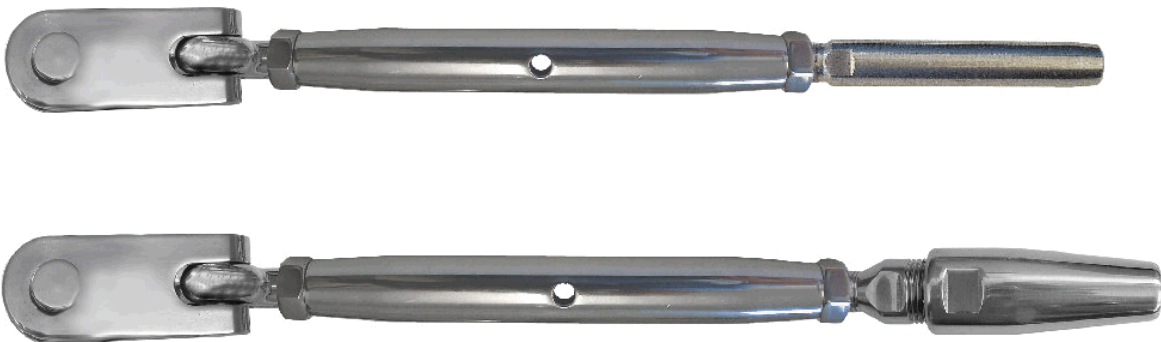
This rigging screw is available with a swaged or self-assembly stud.



Closed Body Toggled Rigging Screw

Wire size		3	4	5	6	7	8	10	12	14	16	19	22	26
Length	L	180	205	253	280	330	335	425	500	560	660	745	785	925
Adjustment +/-		35	37	50	55	66	66	78	85	98	120	135	120	160
Jaw width	T	7.7	9	10.3	14	14.2	14.2	17.5	22	24	28	32	36	38
Clevis pin diameter	P	6	8	9.5	11	12	12	16	19	22	25.4	28	32	35
Jaw depth	C	16	16.5	20.4	28	30.3	30.3	39.4	55	60	70	80	85	105
Thread (UNF)	TH	1/4"	5/16"	3/8"	7/16"	1/2"	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"
Weight (g)		76	140	250	430	626	660	1,389	2,278	3,803	5,162	6,098	9,039	16,058

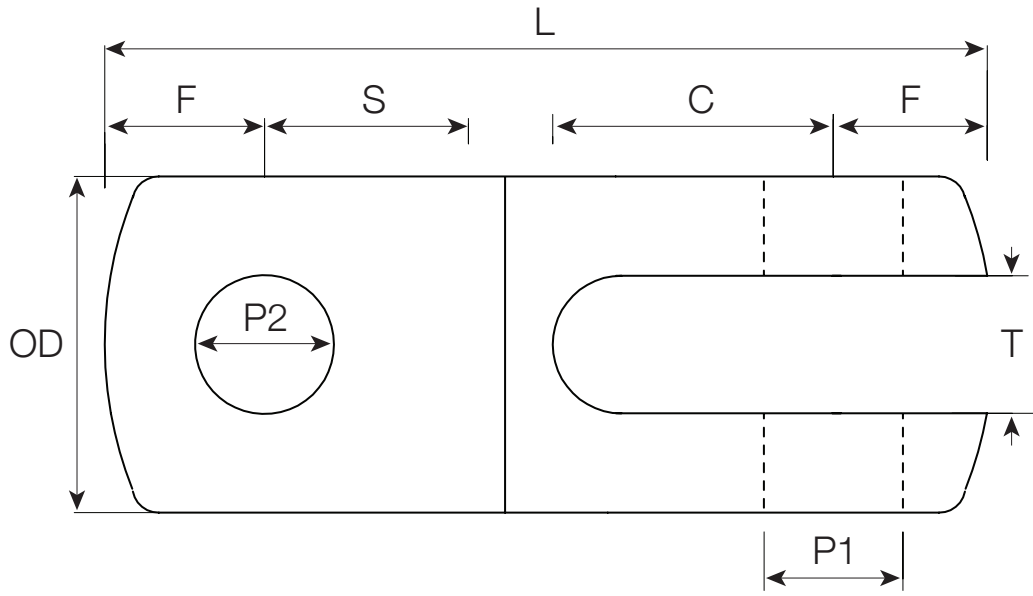
all dimensions in mm





Eye/Fork Toggle

Eye/fork toggles give additional articulation in your rigging (when a fixed fork rigging screw has been used) and can provide extra length. It is standard practice to install a toggle at both the top and the bottom of a forestay whenever roller reefing is fitted.



Eye/fork toggle

Wire size		3	4	5	6	7	8	10	12	14	16	19	22	26
Overall length	L	42	53	64	72	87	95	106	125	146	162	184	207	227
Outside diameter	OD	14.3	18.0	22.2	25.4	28.6	34.9	38.1	47.6	54.0	63.5	69.9	76.2	82.5
Fork pin	P1	6.0	8.0	9.5	11.0	12.0	14.0	16.0	19.0	22.0	25.4	28.0	32.0	35.0
Eye diameter	P2	6.3	8.0	9.5	11.1	12.7	14.3	16.0	19.1	22.2	25.4	28.6	32.0	35.0
Jaw width	T	6.3	8.0	9.5	11.1	12.7	14.3	16.0	19.1	22.2	25.4	28.6	32.0	35.0
Jaw depth	C	13	16	19	22	25	28	32	38	45	50	58	64	70
Jaw protrusion	F	7	9	11	12	15	17	18	23	26	31	33	39	44
Eye depth	S	10	13	15	17	21	22	24	30	36	39	47	50	54
Weight (g)		22	44	84	100	180	292	424	724	825	1,790	2,415	3,229	5,624

all dimensions in mm

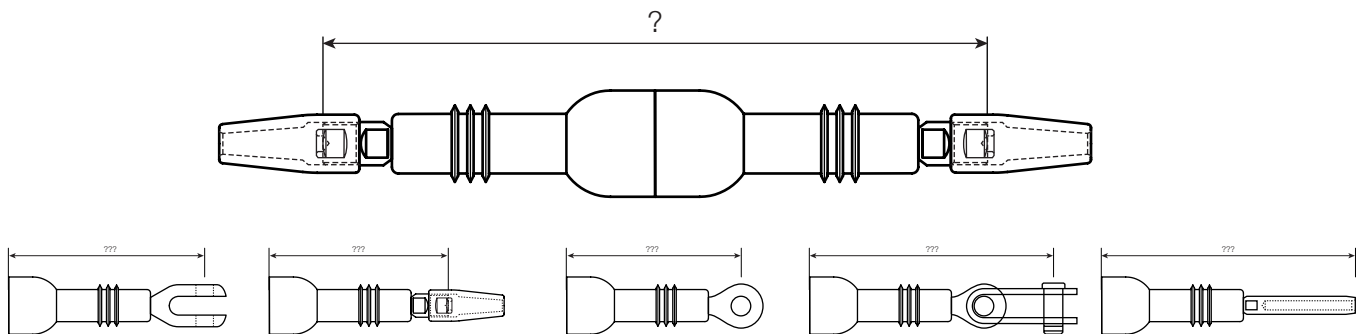


Backstay

A fail safe rigging insulator 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 the Tufnol™, for any reason, 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. The 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 16mm. 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.



WIRE SIZE	PIN SIZE	HOLE SIZE	C-L	E-L	S-L	F-L	T-L
5mm	11mm	11.3mm	106mm	107mm	101mm	121mm	147mm
6mm	11mm	11.3mm	110mm	107mm	101mm	121mm	147mm
7mm	12mm	13.0mm	131mm	129mm	120mm	142mm	169mm
8mm	14mm	14.5mm	153mm	151mm	140mm	164mm	212mm
10mm	16mm	16.2mm	159mm	155mm	142mm	176mm	212mm
12mm	19mm	19.2mm	192mm	180mm	168mm	207mm	258mm
14mm	22mm	22.7mm	222mm	207mm	196mm	238mm	297mm
16mm	25mm	25.8mm	258mm	237mm	226mm	271mm	337mm



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