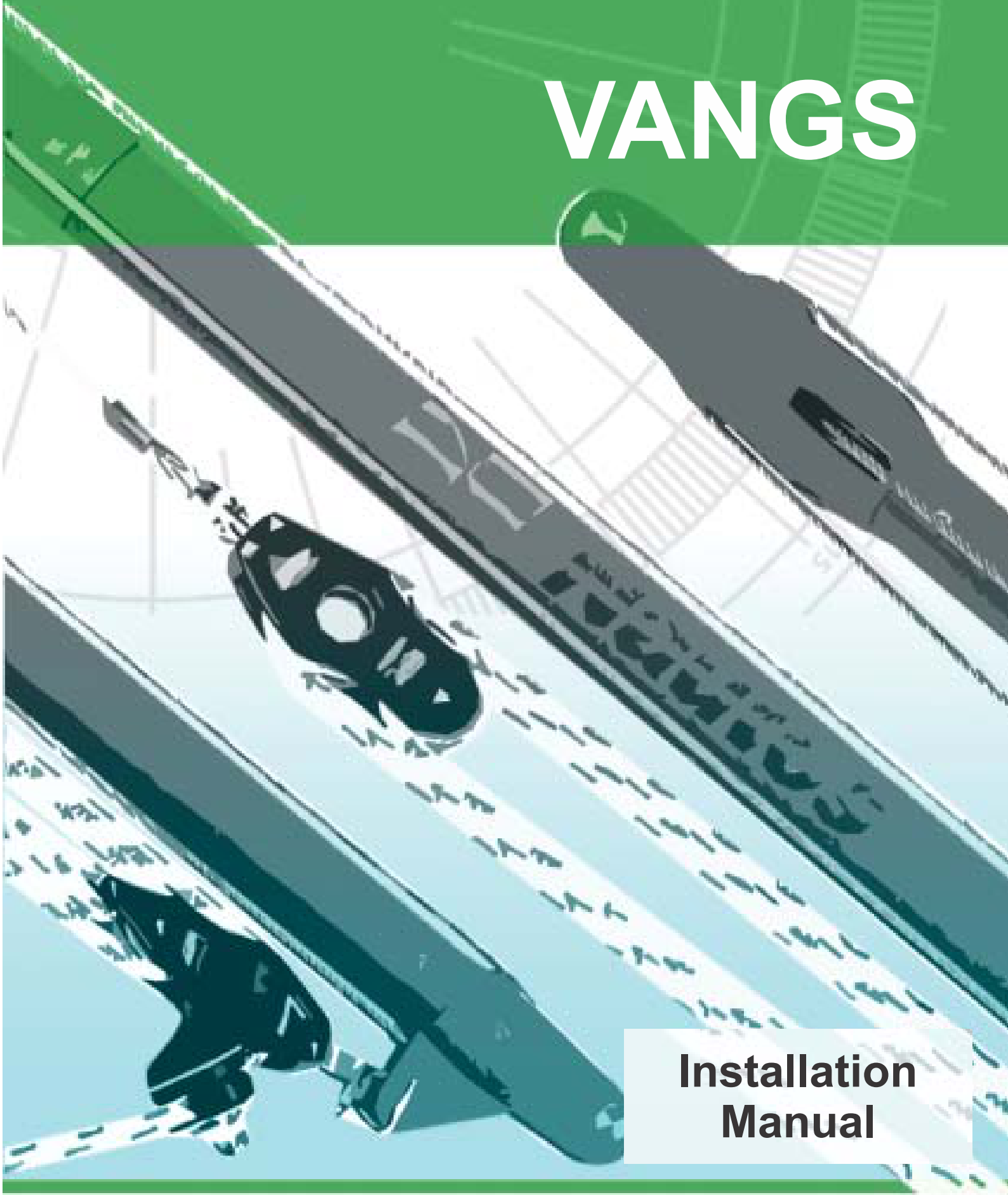


VANGS

An illustration showing a boat's transom being hoisted by a davit system. The transom is dark grey with a white cabin area. It is suspended by a chain and pulley system. The background is a light blue sky with white clouds. The top of the image has a green header.

**Installation
Manual**

NautosTM

Vangs

The “Telescopic Vang” is a compact, mechanical system which replaces the classic vang, and topping lift features. The telescopic Vang body already possesses an internal reduction between 3: and 5:1 depending on the model. In conjunction with an external tackle, it provides more power, with a relation up to 40:1, making it an economical and viable alternative to hydraulic system. The stainless steel spring allows for the boom to be positioned at the ideal height substituting the topping lift. This facilitates the reefing maneuvers, eliminating the need for an additional operation. The hardware for mounting the vang on the boom and mast, as well the external tackles, are sold separately.

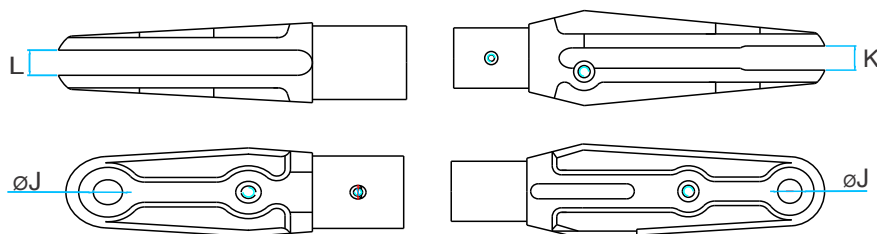
Dimensions table

Vangs

Part N°	# vang	Boat lenght ft	Sail area m ²	Internal ratio	Open leght* mm	Closed lenght* mm
91329	0 inox	32'	25	2:1	1360	1160
91342	0	32'	25	2:1	1360	1160
91330	1	37'	35	3:1	1860	1560
91334	2	44'	45	4:1	2125	1825
91338	3	55'	60	5:1	2500	2300

* Attention: Dimension with the spring free.

Part N°	Fixing course H - I mm	Spring course mm	Pins ø J mm	Mast fit space L mm	Boom fit space k mm	Weight kgf	SWL kgf
91329	200	140	10	6,5	10,5	3,8	150
91342	200	140	10	16	8	2,4	150
91330	300	150	13	16	16	6,0	300
91334	300	150	16	16	16	7,0	450
91338	350	180	16	20	20	12,0	450



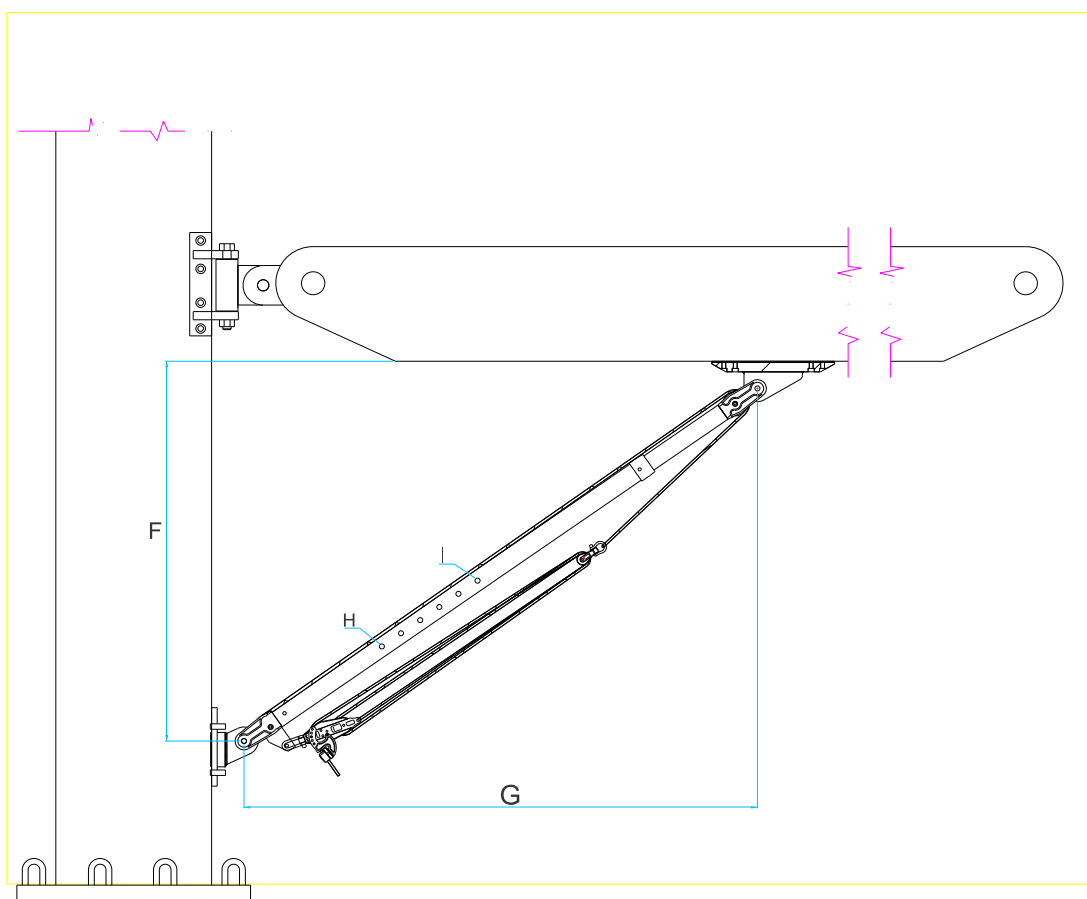
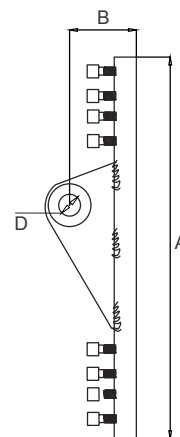
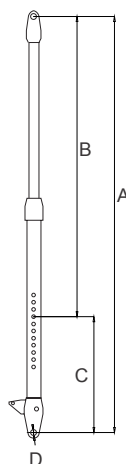
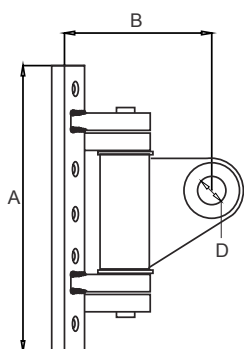
Assembly view

Mast Fittings

Part N°	# vang	Dim A mm	Dim B mm	Ø D mm	Fixing size mm
91312	0 inox	116	45	10	M6 X 20
91343	0	137	48	10	M6 X 20
91332	1	138	49	13	M6 X 20
91336	2	148	55	16	M6 X 20
91340	3	173	60	16	M6 X 20

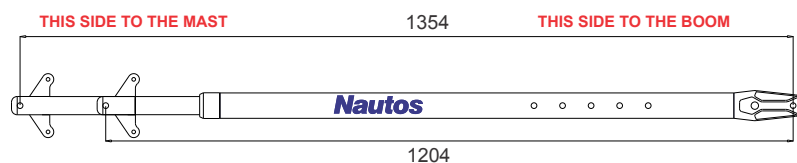
Boom Fittings

Part N°	# vang	Dim A mm	Dim B mm	Ø D mm	Fixing size mm
91311	0 inox	150	31	10	M6 X 15
91344	0	160	48	10	M6 X 15
91333	1	210	45	13	M6 X 15
91337	2	250	46	16	M6 X 15
91341	3	320	54	16	M6 X 15

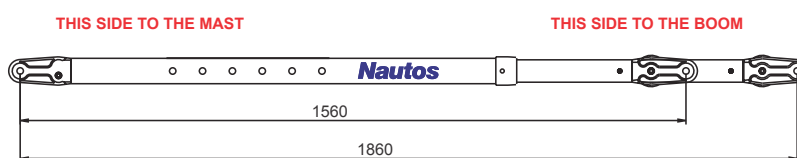


Dimensions

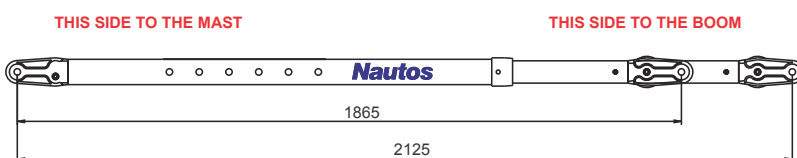
#0		
F mm	G mim.mm	G max. mm
1000	570	910
900	720	1010
800	830	1090
700	910	1150



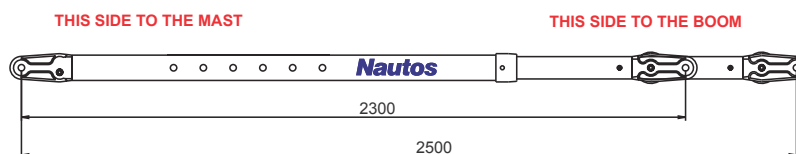
#1		
F mm	G mim.mm	G max. mm
1000	1190	1565
900	1270	1630
800	1340	1680
700	1390	1720



#2		
F mm	G mim.mm	G max. mm
1000	1530	1875
900	1590	1930
800	1640	1970
700	1685	2010



#3		
F mm	G mim.mm	G max. mm
1000	2080	2295
900	2120	2330
800	2150	2370
700	2190	2400



Rigid Vang Installation Instructions

1) To begin with, there are two possible choices to fix the fittings on mast and boom:

- a) rivets, must be stainless steel or Monel, 1/4 or 6mm.
- b) screws, must be stainless steel, 1/4, Hallen head is recommended.

2) Tools for screws:

- a) hand drill with 5mm or 5/32 drill.
- b) tap for 1/4 SAE.
- c) aluminum drill/ tap fluid.
- d) hammer.
- e) pointer.
- f) silicone sealant (non acid type).
- g) tape.

3) Tools for rivets:

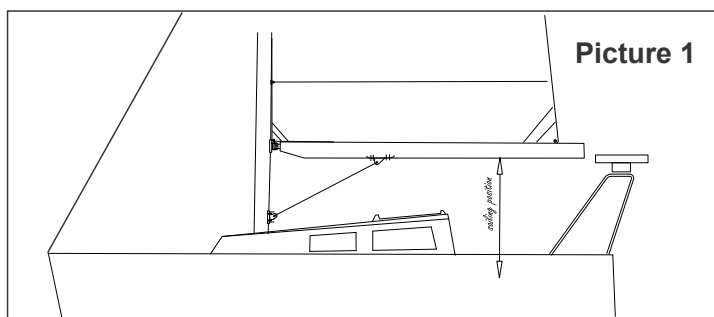
- a) hand drill with 6.3mm or 1/4 drill.
- b) hammer.
- d) pointer.
- e) silicone sealant (non acid type).
- f) tape.

Warning

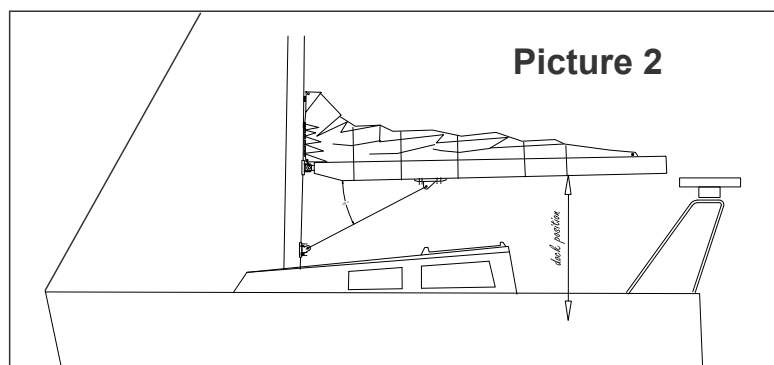
The drilling operation involves some particular risks. Be sure that you have the basic skills. Protect your eyes with adequate glasses, take caution with electric cords near the water, and do not touch the drill when in action.

4) Positioning

- a) Adjust, using the boom topping lift the boom in the position that you usually sail (Picture 1). If you are not sure, it's better you take a sail to determine it. Measure it from the lower boom face to a surface, say the cockpit bottom. Note it.



- b) Readjust the boom to the level you want when **not** sailing (Picture 2). Measure it and note it.



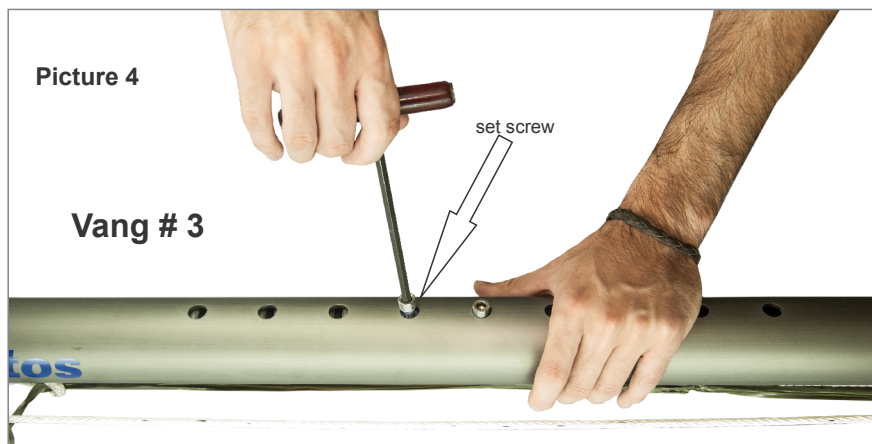
5) Pre adjusting the vang length.

- a) Set the boom level to sailing level using the topping lift.
- b) The final vang length it's a combination of the possibilities on the boat and adjusting possibilities on the setting screws. The vang must be set in a length that makes *at least* 59° degrees with the mast (Picture with the instructions, page 8).
- c) The most secure setting to start with, if possible, is indicated by tape.



Picture 3

- d) To adjust of the vang length, loose and remove the Hallen screw in the larger tube. Adjust the length. Reinstall the setting screws. Do not use the far end setting holes in the tube, once you may need to readjust after.

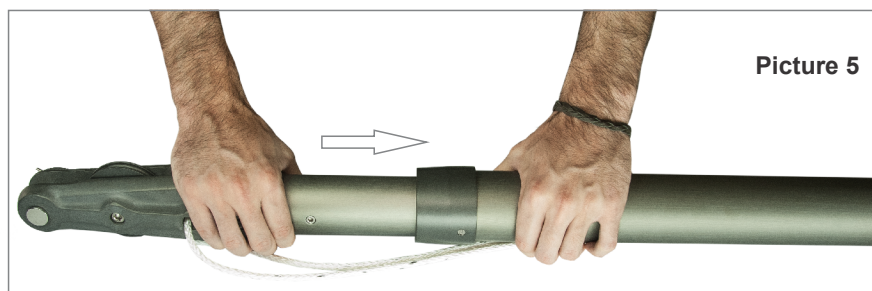


Picture 4

Vang # 3

set screw

Vang # 0; Vang # 1 and Vang # 2: set 01 / Vang # 3: set screw 02.



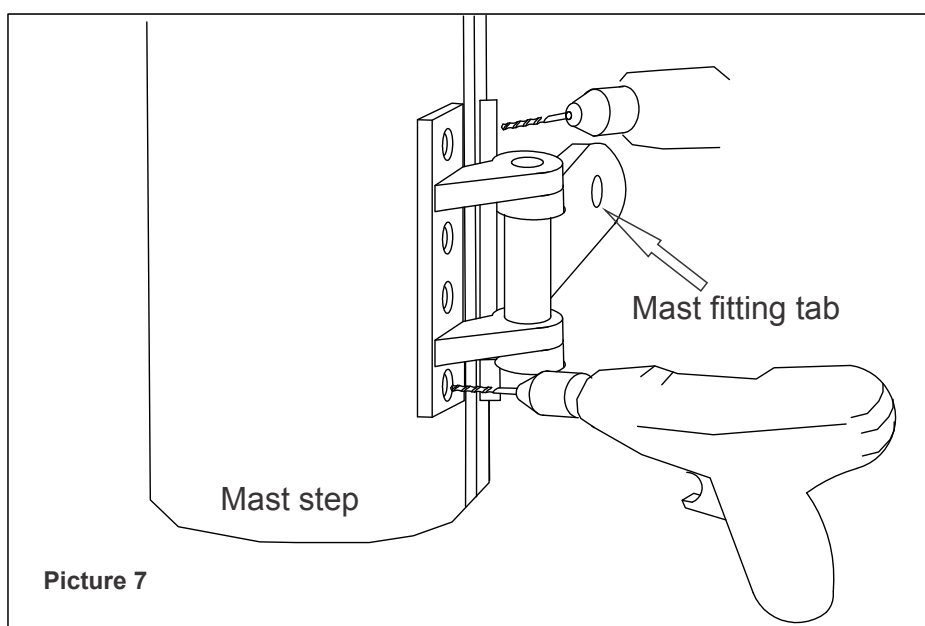
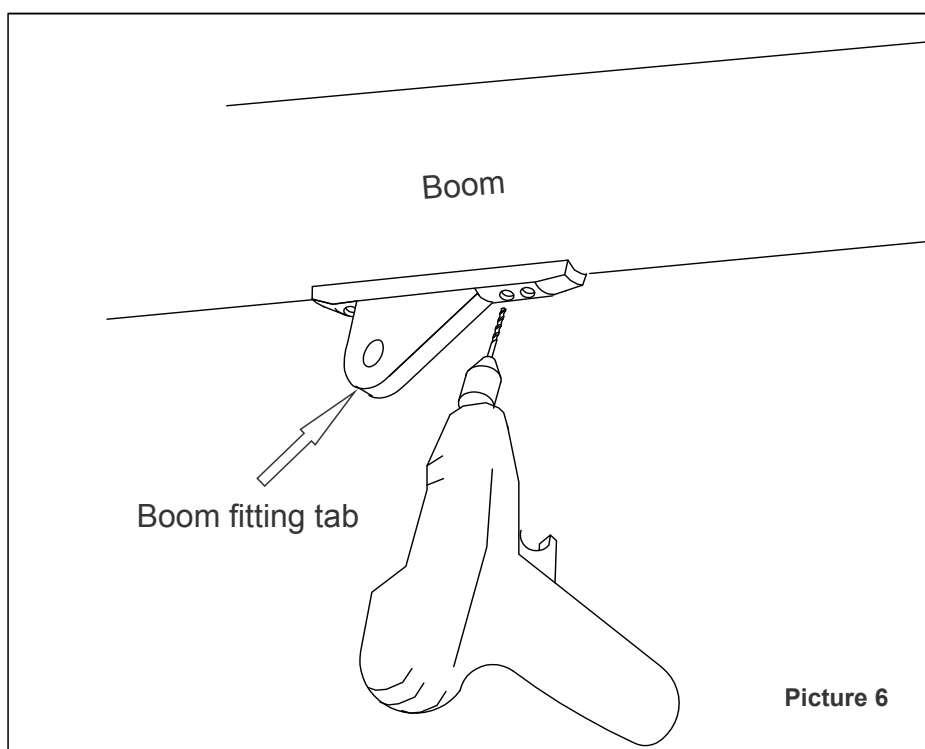
Picture 5

- e) Pull the rope charging the spring with maximum tension. Cleat it.
- f) Test visually, putting the vang near to the correct place. The mast fitting must go as low as possible, and the boom fitting as far as practical.
- g) If everything seems correct, make a mockup assemble. Use tape to keep the parts in place. Spent some time in this operation, make sure that the settings you are using are the best for your sailing performance and safety.

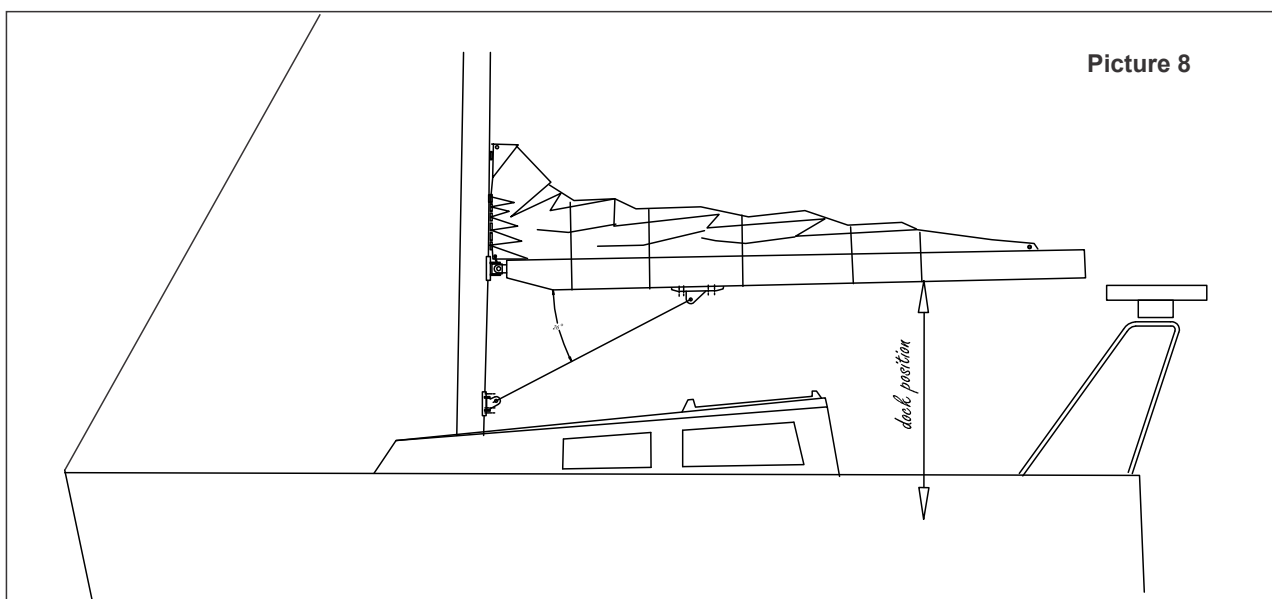
Warning

The drilling operation involves some particular risks. Be sure that you have the basic skills. Protect your eyes with adequate glasses, take caution with electric cords near the water, and do not touch the drill when in action.

a) After positioning all parts, and being sure that it's all set, Make sure that the boom and mast fitting tab's are aligned, the big pin hole pointing to the mast step, drill the hole as in the foto 6 and 7.



- b) If you decide to use rivets, use the $\frac{1}{4}$ drill. If you choose the taping procedure, start now. Use the 5/32 drill. And plenty of drilling fluid.
- c) Before fixing the first screw or rivet, smear the back of the fitting and screws or rivets with the silicone sealant.
- d) Be sure the mast fitting it's also positioned. Fix it in two places.
- e) Assemble everything again. Lose the topping lift. The perfect functioning is achieved when, with the topping lift loose, the boom maintains the same height when not sailing, even with the weight of the furled sail.



- f) If the boom falls under the expected trim, remove the Hallen screws and extend the vang one step or move the boom fitting one hole toward's the mast.
- g) Now you must pull in the rope and check **if the boom comes to sailing level without compressing the spring completely** and remains some spare space to vang more in hard sailing. Check again.
- h) ATTENTION: In the event of the vang being completely closed and the main sheet is pulled even further, the vang will suffer stress beyond it's presure limit, resulting in structural failure.
- i) Drill all holes in the mast and boom. Finish the assemble.
- j) In doubt, ask.

Boom base

Mast line

Vang line

31°

59°

Picture 3

Template

Print and cut it



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