

Owner's Information Pack



COMPOSITE SPARS & RIGGING | COMPONENTS | GLOBAL SERVICE

GC 32 | Owners Information Pack | V.4



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INTRODUCTION:

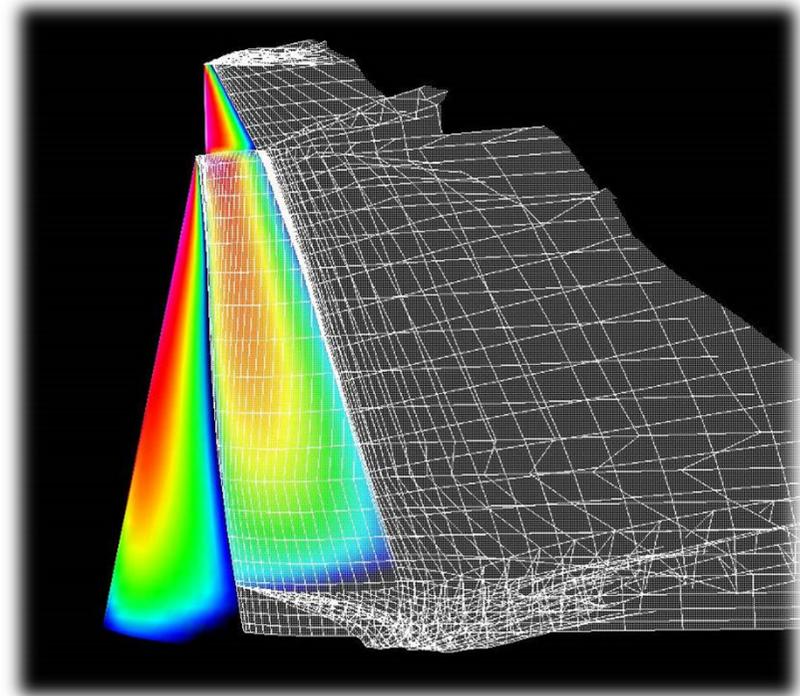
CONGRATULATIONS ON BECOMING THE OWNER OF A GC32!!

Southern Spars is proud to be the supplier of the spar package for the GC 32. The female moulded mast is made from 100% high modulus carbon and is laminated with nano resin for added strength. All fittings are either manufactured in-house or sourced from international suppliers.

Strict quality control systems are used to ensure consistency of: bend, weight and CG. 'Bend' is determined by the tube stiffness, spreader angle and spreader stiffness, while weight and CG are controlled through strict quality control of materials.

In addition, the mast has been engineered in such a way that we were able to incorporate our unique regatta splice which facilitates ease of transport whilst still ensuring that the mast conforms to the strict measurement requirements of the client.

Your mast is marked with a unique identity number - please make reference to this number for any future correspondence. It is engraved just above the mast heel as well as on the head & the spreaders.



For more information about Southern Spars, visit the website @ www.southernspars.com

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Southern Spars™

CARE:

WASHDOWN

Ensure the spar is washed down regularly and all salt has been removed. This will help prevent corrosion of parts.

The mast should be thoroughly washed down once a month to keep it in top condition.

PAINT SCRATCHES

As part of your maintenance program, it is advisable to touch up any paint scratches.

An Awlgrip finish in flat black G2002 has been applied.

Please visit the website: www.awlgrip.com to locate your nearest supplier.

TRAVEL

When shipping your mast, or travelling by road, it is important to package it well.

Ensure that rigging is removed to prevent the shrouds from wearing or banging against the mast. It is recommended a full inspection is performed when re-rigging the mast.

RIG INSPECTIONS:

REGULAR BASIS

Please check that all of the join fasteners are securely in place.

MONTHLY INSPECTIONS

Check to see that all sheaves are free turning and well lubricated

Check for wear on stays and spreaders

Check fasteners at mast join for signs of wear & tear

Inspect your jacking system & service if required.

BI-ANNUAL INSPECTION & RE-RIGGING INSPECTION

Check all fittings for wear

Check mast tubes and all composite parts for any damage caused during sailing

NOTES:

Any replacement mast fittings should be seated using a product like Duralac between the fitting and the mast to prevent galvanic corrosion.

Turnbuckles should be lubricated using nickel paste.

Remember to tape any clevis pins or sharp edges to prevent tearing of the spinnaker.

SAIL MAKERS NOTES:

Rig Dimensions	
I=	14710mm
J=	3540mm
P=	16000mm
E=	4480mm
Spreader Sweep	19 deg

Please note the above figures are for reference purposes only, for detailed sail making information, please contact our offices.



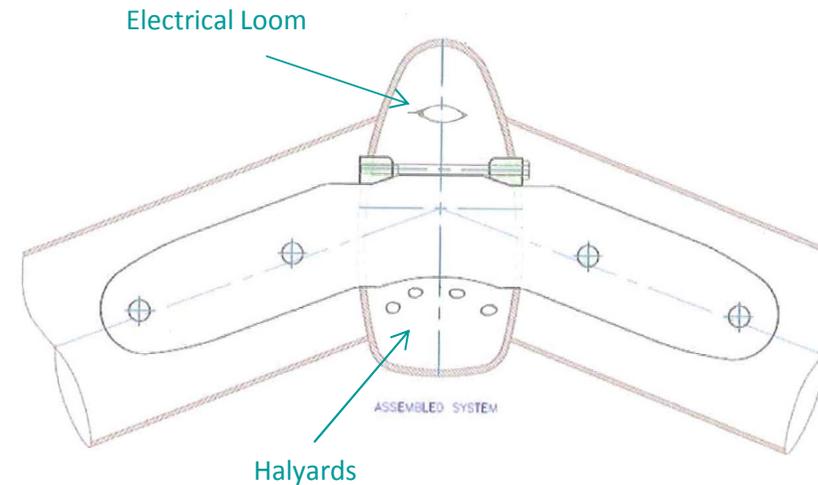
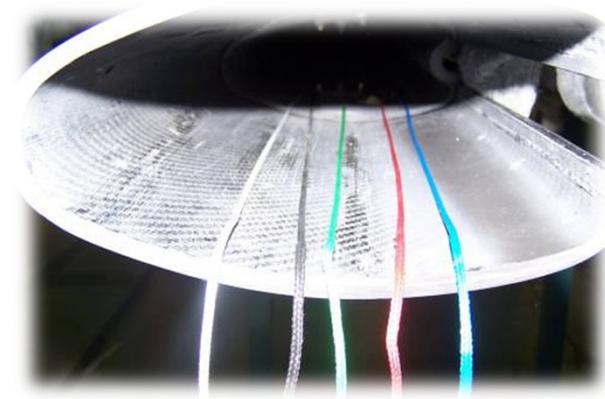
ASSEMBLY NOTES:

JOINING THE MAST:

Your mast has been engineered to incorporate a join in order to facilitate the transportation of the mast in two pieces.

To assemble the mast, please follow the below guidelines:

1. Wipe down both join surfaces with a dry cloth to remove any particles of dust, dirt or greasy residue. Apply a generous amount of *dry lubricant* such as Sailkote McLube to both join surfaces.
2. Connect the colour-coded messenger lines inside the mast - ensuring that they are not tangled and that they run aft of the spreader bar (applicable if your spreader bar is already in place.)
3. If you have electrics, uncoil the Dacron electrical conduit (found in the top section) and securely connect it to the messenger line that runs from the electrical exit in the lower end of the bottom section to the top of the bottom section. Tension the messenger line until the Dacron conduit has been run through the bottom section. Remember to tie off the messenger line on the saddle provided for future ease. (** NB. The electrical conduit is always run forward of the spreader bars)
4. With at least 3 people on hand, line up both sections of the mast on stands of equal height, making sure that the mainsail track is facing upwards.



ASSEMBLY NOTES cont.

5. Whilst one or two people hold the top section stationary, a third person should sight up the bottom section to ensure straightness. Once the two sections are correctly aligned, offer up the bottom section to the top section and gently but firmly push the first portion of the join together. Remember to ensure that mainsail tracks on both sections are properly aligned.
6. Move back a meter from the join, grip the bottom section securely in both hands and push the two sections firmly together until the join is complete. **Warning: Use of excessive force, clamping or hammering the mast in any way might cause damage to the mast. If the join is tight - separate the two sections & establish the cause of the binding.**
7. Insert the join fasteners. Each fasteners thread should be coated *Duralac* before insertion. A Ph2 Phillips head screwdriver will be required.
8. Tighten the fasteners one at a time, moving from the forward face of the mast towards the aft face. The longer fasteners are used on the forward face whilst the shorter ones are used for the sides of the join. Please exercise caution not to over-tighten the fasteners thus stripping the stainless steel inserts inside the mast.



**** The fasteners are an essential element to the structural integrity of the mast. DO NOT step the rig or attempt sailing if any of the fasteners are missing or have damaged threads. Check the heads for sign of wear & tear or corrosion & replace if necessary.**

Applying Duralac to your fasteners acts as both a barrier paste as well as a non permanent thread locker, helping to ensure that your fasteners remain in position. Duralac should be applied to all new fasteners & to all fasteners once per season thereafter.

SPLITTING THE MAST FOR TRANSPORT:

1. Prepare the mast by removing the standing rigging, spreaders, spreader bars & halyards. (remember to replace the halyards with the messenger lines provided)
2. Place the mast on stands of equal height, ensuring that the top section is supported in at least 2 places and held securely in place.
3. Remove all of the join fasteners using a screwdriver. Place them in a container to avoid losing them.
4. Whilst two people keep the top section static, one person can insert their fingers into the spreader bar slot and pull on the bottom section. Ensure that the bottom section is able to slide freely on its support.
5. If the mast becomes stuck half way, pour some fresh water onto the join to lubricate it, push the two pieces together again & then try pulling them apart.
6. Once your mast is split, make sure that all of the messenger lines are tied off securely and that the mast is washed out & inspected for any signs of wear or damage.



DRESSING YOUR MAST:

The following pages contain notes on dressing your mast, attaching your spreaders and drawings of your rig.

It is recommended that your mast be supported on padded stands, with the mainsail track facing downwards whilst you dress your mast.

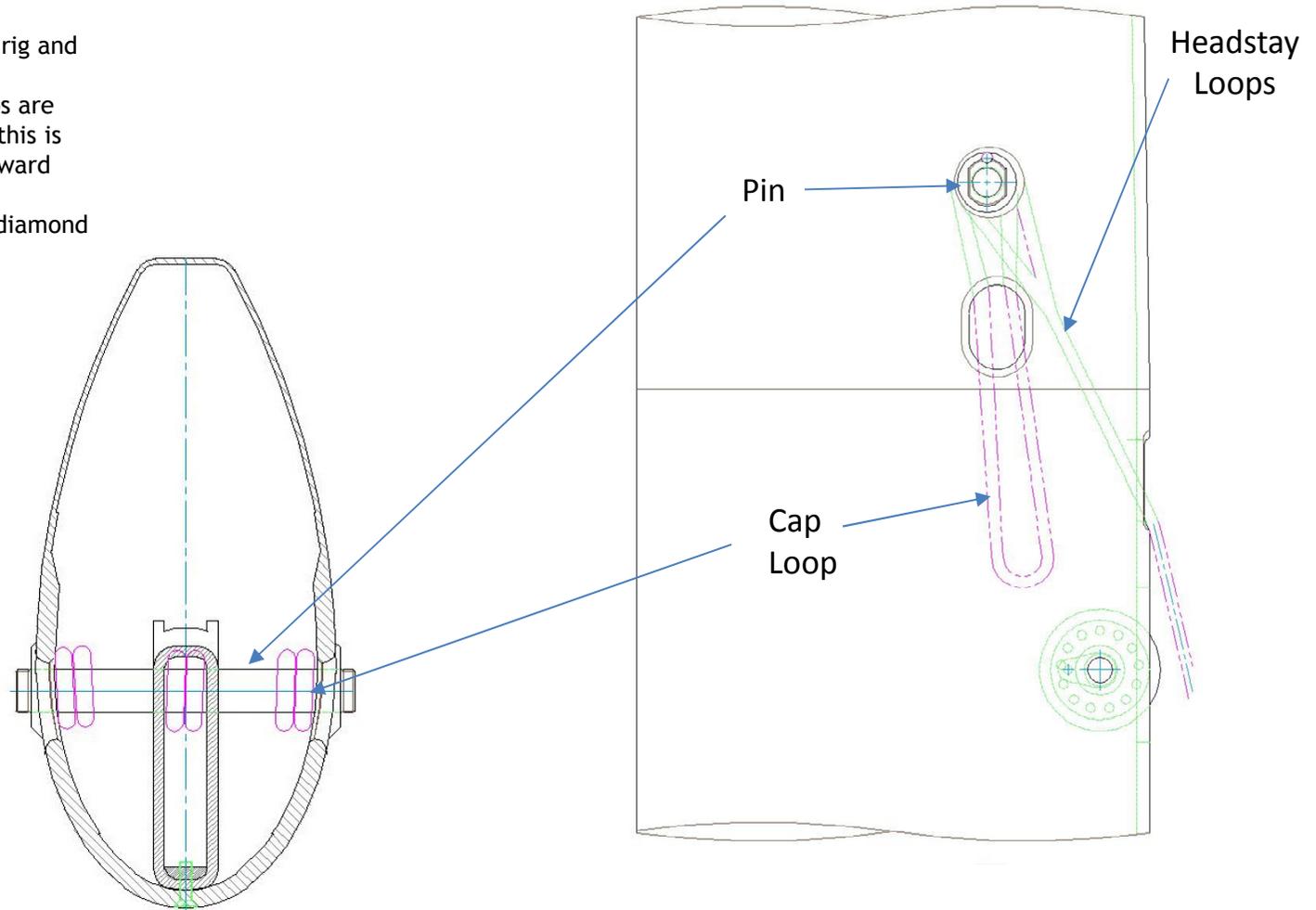


If you do not have experience in stepping masts such as this one, please contact us to discuss stepping & sea trialling with one of our highly skilled riggers.

Alternatively, we can recommend trusted rigging companies that we have worked with in your area.

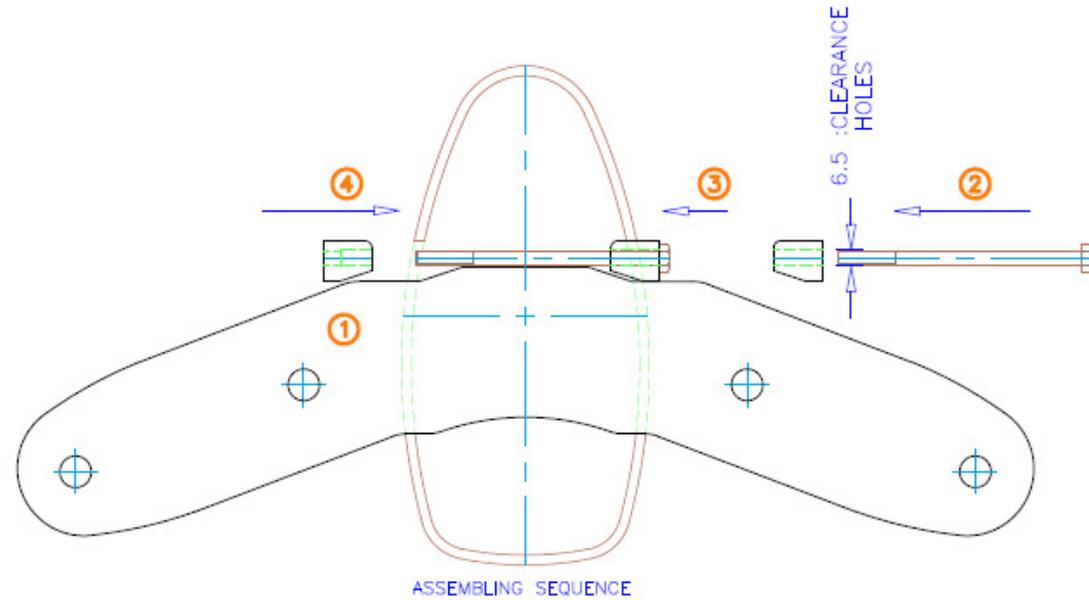
FORESTAY, CAPS AND DIAMONDS FITMENT:

- 1) Basket the loops through the end fitting of the stay
- 2) Push the top end up into the rig and insert the pin.
- 3) Make sure all legs of the loops are over the pin. A way of doing this is pulling the loop back and forward over the pin
- 4) Same instruction applies for diamond pins



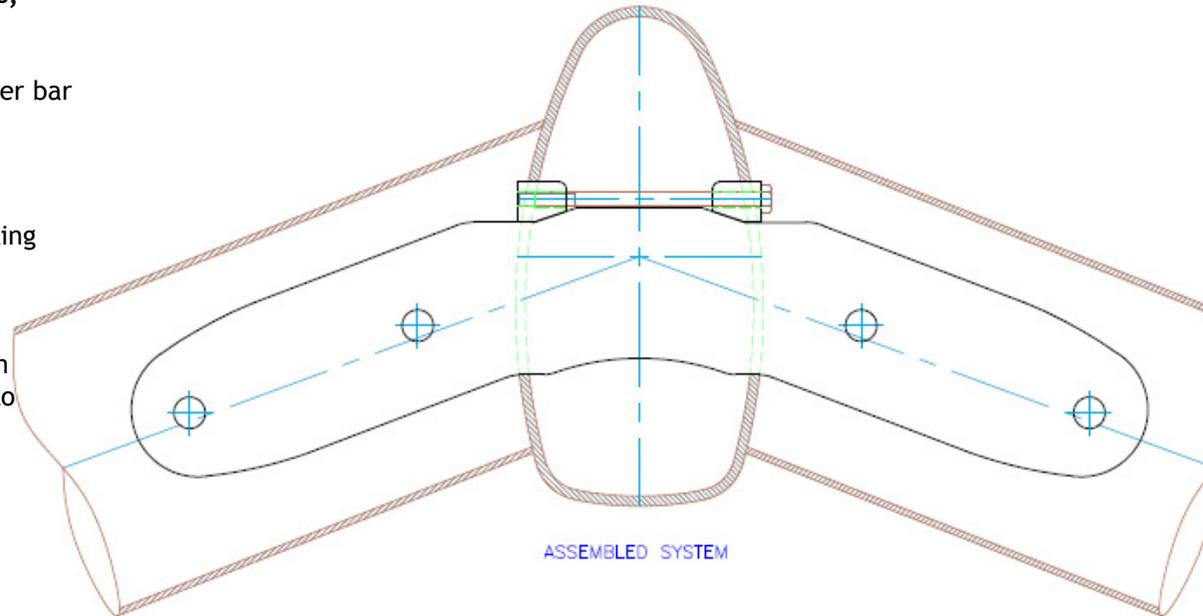
FITTING THE SPREADER BARS:

1. Slide the spreader bar (ref # 1) through the lower spreader slot in the mast
2. Insert the supplied M6 bolt through the locking wedge with the clearance hole (ref # 2)
3. Insert the assembly in front of the bar (ref # 3) and then insert the second locking wedge (tapped for M6 Bolt) in from the other side (ref # 4)
4. Tighten the wedges to remove any play in the spreader bar - **take care not to over-tighten**
5. **The wedges are designed to perform optimally with between 7mm-0mm's protruding beyond the mast wall. If you exceed these limits, please contact our offices.**
6. Repeat the process for the second spreader bar



REMOVING THE SPREADER BARS:

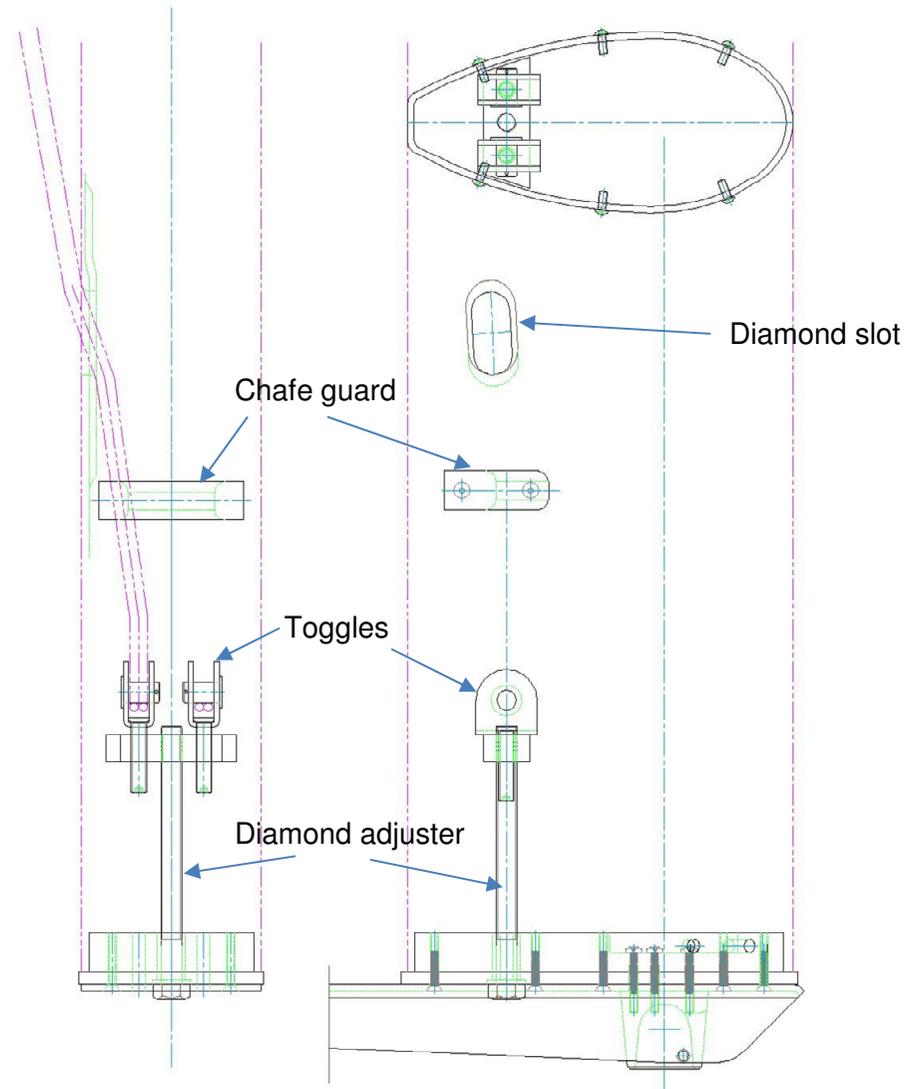
1. Unscrew the M6 bolt and remove the locking mechanism from in front of the spreader bars.
2. Make sure to place the locking mechanism in your toolkit when not in use so as not to lose any of the parts.
3. Remove the spreader bars from the mast.



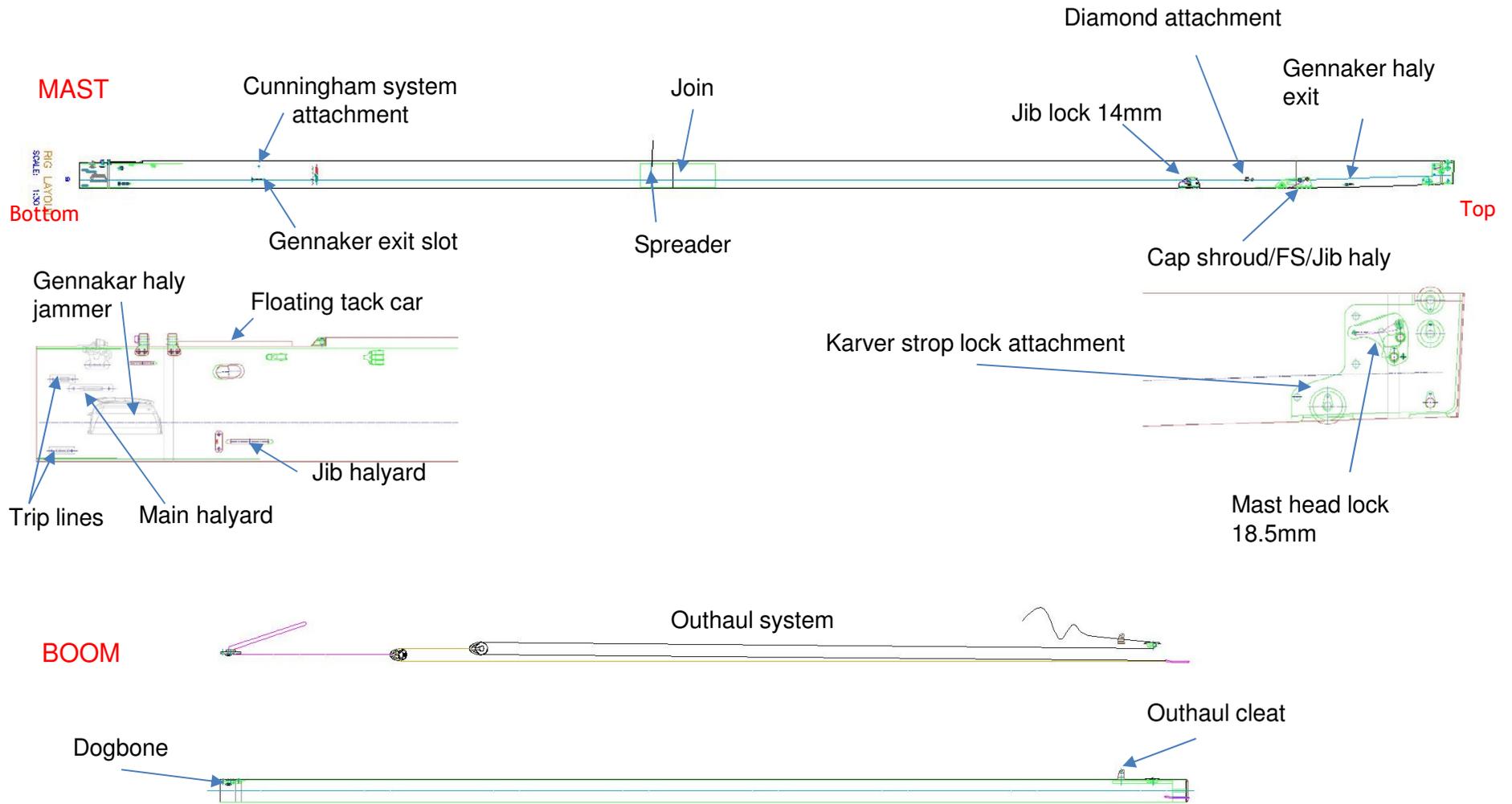
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LOWER DIAMOND ATTACHMENT AND ADJUSTER:

- 1) Remove the heel off the mast by removing the 5 screws.
- 2) Attach the loops to the toggles
- 3) Reinsert the heel and push the loop out the diamond slot. Make sure the loops run over the nylon chafe guard.
- 4) Make sure the dogbone is on the outside of the rig.
- 5) Attach the loops through the end fittings of the diamonds and over the dogbones.
- 6) Tension up the diamonds.
- 7) Any side to side adjustment can be done by inserting an extended Allen key into the heel. Make sure this is done without any load on the diamonds.

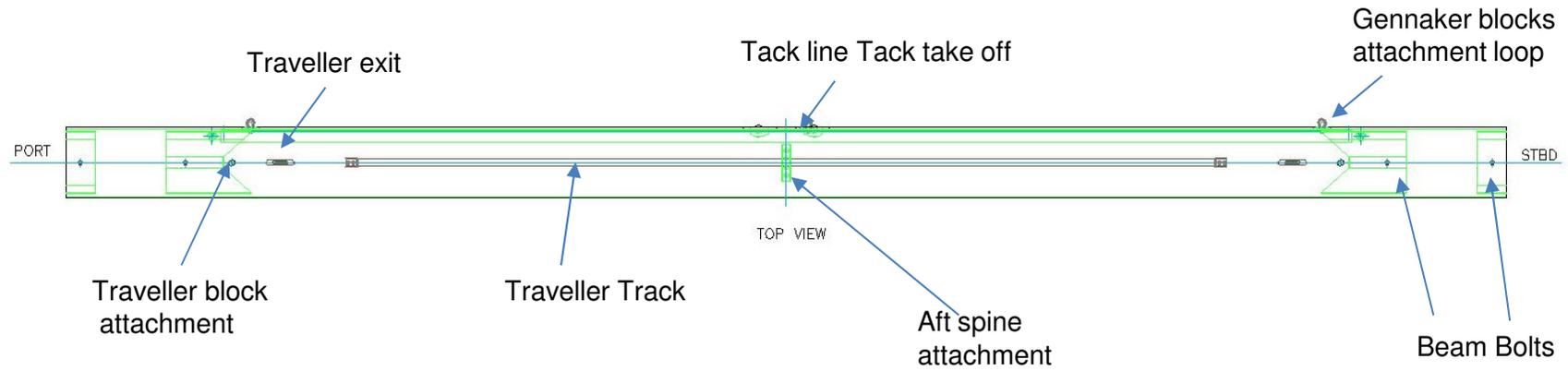


NOTES ON YOUR RIG

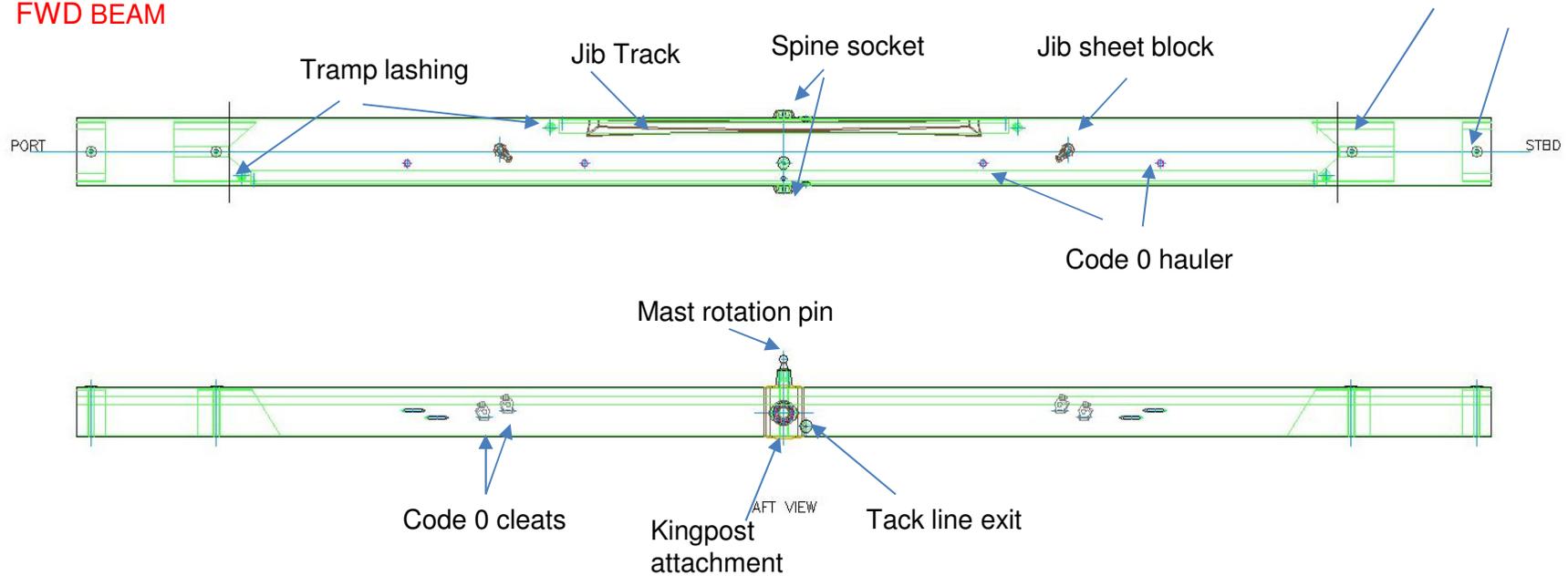


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AFT BEAM

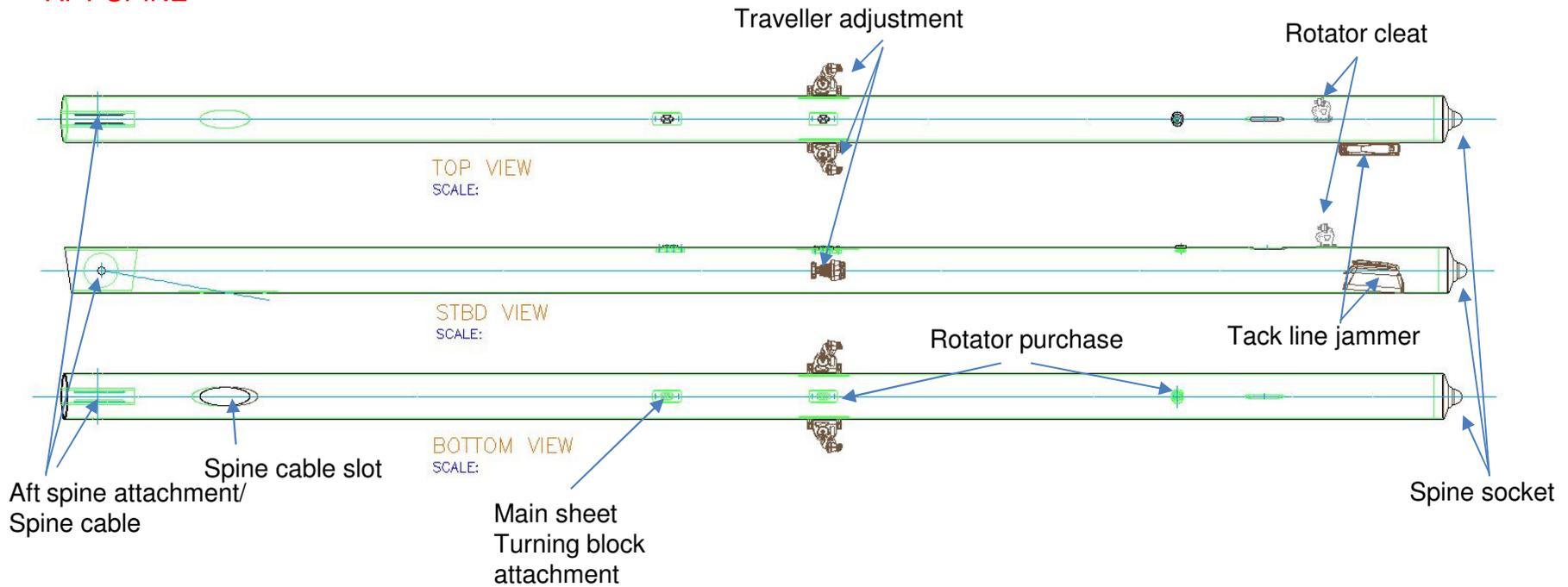


FWD BEAM

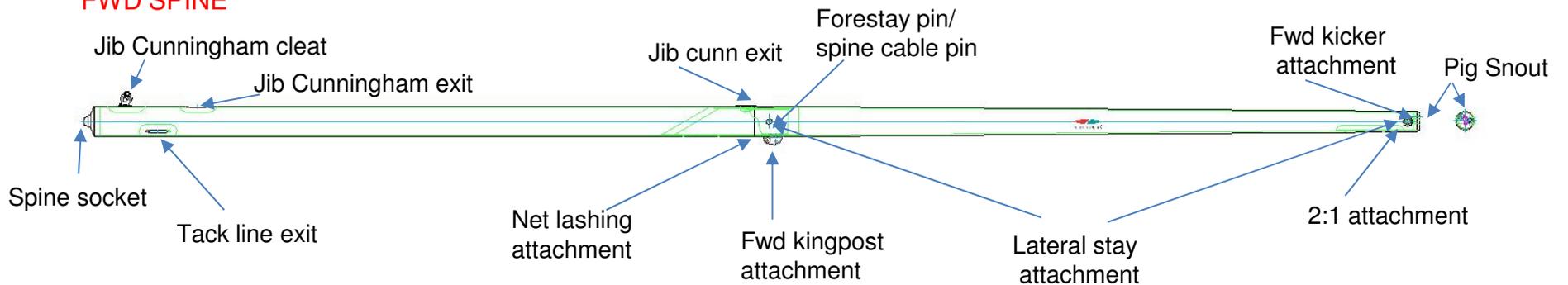


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AFT SPINE



FWD SPINE



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NOTES ON YOUR RIG

- The FWD Spine must be level.
- The King Post must be screwed all the way in.
- The compression tubes inside the beams are not designed to tow the boat. Please use soft tow lines around the beams.

GC 32 LOOPS DESCRIPTION:

DESCRIPTION	QUANTITY	LENGTH	SPEC	ORIENTATION	SWL KG
UPPER CAPS	2	800	4mm 4 lap	BAS	5897
UPPER DIAMONDS	2	800	4mm 4 lap	BAS	5897
UPPER FORESTAY	1	800	4mm 4 lap	BAS	5897
LOWER DIAMOND	2	1400	4mm 3 lap	BAS	4423
BOWSPRIT SPINE KICKER	1	500	4mm 5 lap	VERT	4095
SPINE WHISKERS FORESTAY	2	600	3mm 3 lap	BAS	1565
SPINE WHISKERS CODE 0	2	400	3mm 3 lap	BAS	1565
TRAVELLER CAR	1	130	3mm 3 lap	VERT	869
MAINSHEET BLOCK	1	160	3mm 4 lap	BAS	2086
FORESTAY BOTTOM W DB	1	150	4mm 4 lap	VERT	3276
FORESTAY BOTTOM	1	650	4mm 4 lap	VERT	5897

SEA TRIALING

Sea trialing should be completed as for any new rig and rigging package, the rigging should be gradually loaded up starting first with just the mainsail, then if the rigging and mast are performing correctly move onto jibs, and finally the off-wind sails. Once seated there will not be any further noticeable seating or creep in the rigging. The rig tune should be monitored as changes in tune can indicate the need for more detailed inspection.

INSPECTION SCHEDULE

- Top to bottom visual inspection after each day of racing
- Top to bottom visual inspection after long ocean passages
- Full service with rig un-stepped yearly
- Non destructive testing of metal components such as turnbuckle screws and hangers at 40,000 mile intervals



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GC 32 LOAD SUMMARY:



		Working Loadcase Load (kg)	
MAIN HALYARD - Full	@1:1	2 283	FM+J
MAIN CLEW - Full	@1:1	1 577	FM+J
MAINSHEET	@1:1	1 364	FM+J
MAIN TACK	@1:1	430	FM+J
JIB HALYARD	@1:1	537	FM+J
JIB SHEET	@1:1	390	FM+J
JIB TACK	@1:1	220	FM+J
GENNAKER HALYARD (option 2:1)	@2:1	486	FM+Genn
GENNAKER SHEET	@1:1	320	FM+Genn
GENNAKER TACK	@1:1	865	FM+Genn

SAIL AREAS

MAINSAIL - Full		55m ²
MAINSAIL - 1 Reef	P=14.50m	50m ²
Jib		23m ²
MH CODE 0		80m ²

CREW WEIGHT

The crew weight cannot exceed Kg 437,5. It is allowed to have one guest crew member on selected class association events. The guest however must stay in the class designed areas.

GC32 DOCKTUNE GUIDE & SAILMAKER MAST BENDS:

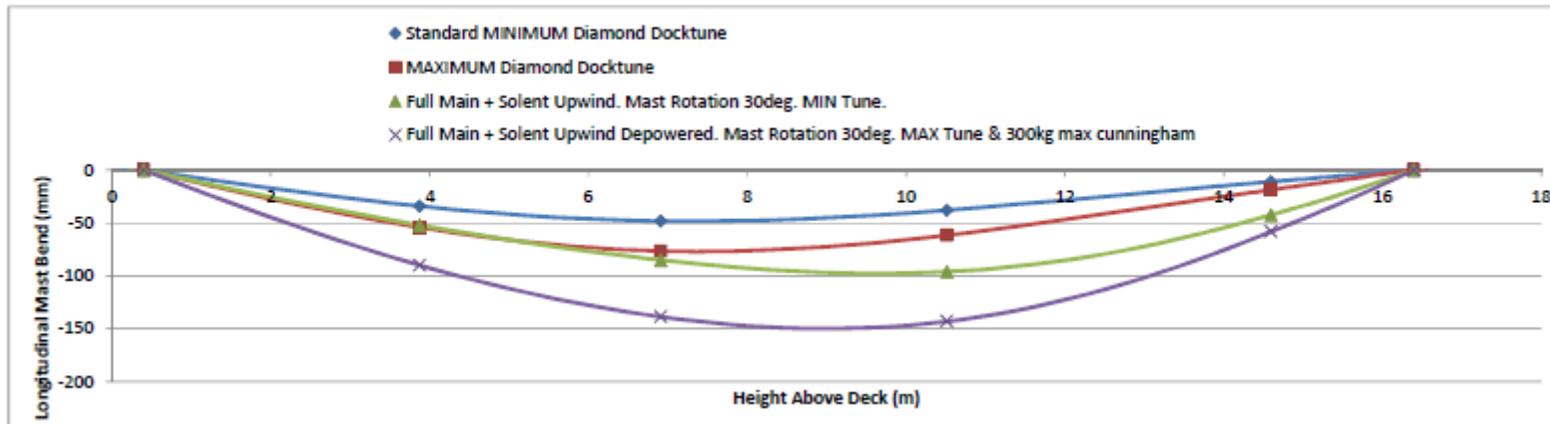
Longitudinal Mast Bend (mm)

	Height Above Deck (m)	Standard MINIMUM Diamond Docktune	MAXIMUM Diamond Docktune	Full Main + Solent Upwind. Mast Rotation 30deg. MIN Tune.	Full Main + Solent Upwind Depowered. Mast Rotation 30deg. MAX Tune & 300kg max cunningham
BAS	0.396	0	0	0	0
	3.874	-34	-54	-52	-90
Spreader	6.914	-48	-77	-85	-139
	10.516	-38	-62	-96	-143
Headstay	14.596	-11	-19	-42	-58
P Band	16.396	0	0	0	0

NOTES:

Adjust diamond tension using ring spanner or socket on tensioning nut at base of mast. Measure offset from stringline between P band and top of boom. Use 10mm packer at luff track for fair transition to bolt rope track. Ensure docktune bend is between MINIMUM (standard tune) and MAXIMUM (heavy air tune). **DO NOT exceed maximum diamond tune**

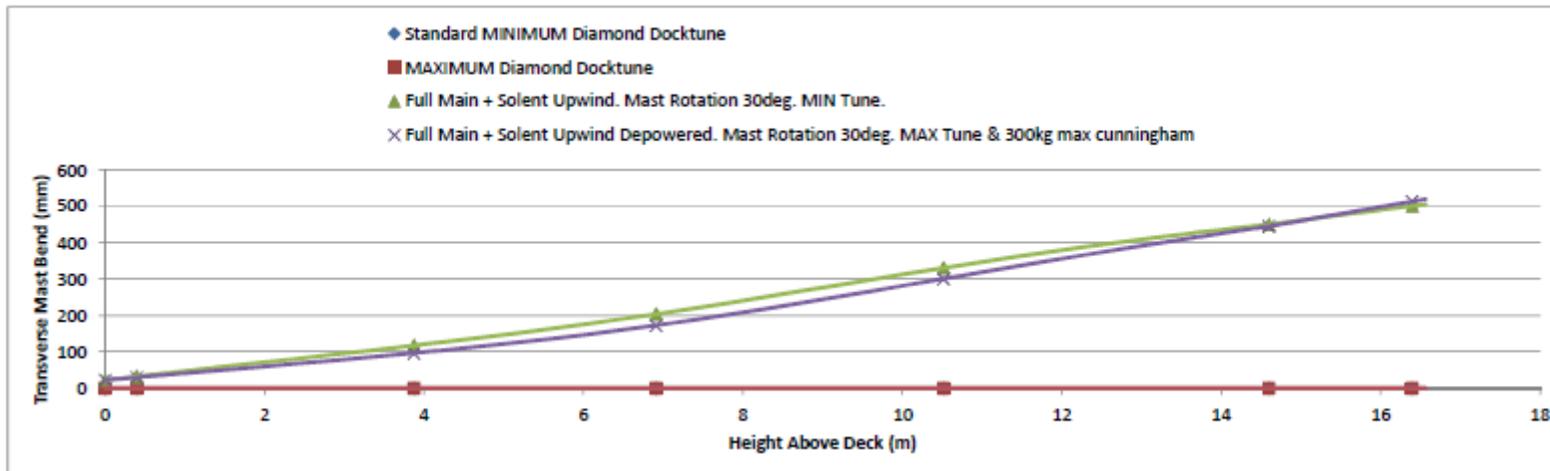
Project: GC32
 Job#: 2512-GC32
 Revision: B
 Date: 9/11/2015
 Designer: BJB



Transverse Mast Bend (mm)

	Height Above Deck (m)	Standard MINIMUM Diamond Docktune	MAXIMUM Diamond Docktune	Full Main + Solent Upwind. Mast Rotation 30deg. MIN Tune.	Full Main + Solent Upwind Depowered. Mast Rotation 30deg. MAX Tune & 300kg max cunningham
Ball (*)	0.000	0	0	22	22
BAS	0.396	0	0	32	30
P1 mid	3.874	0	0	117	96
Spreader	6.914	0	0	204	173
P2 mid	10.516	0	0	331	301
Headstay	14.596	0	0	451	446
P Band	16.396	0	0	502	514

*Note: Transverse offset is taken at section centroid position, therefore 'ball' position can have offset when mast is rotated.



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SERVICE:

WARRANTY

Southern Spars will remedy faulty workmanship provided that any claim by the Customer for remedy of workmanship was notified to Southern Spars in writing within 12 months of the delivery date of the mast.

Southern Spars will, if requested to do so, use reasonable endeavors to assign to the Customer the benefit of guarantees and warranties given to Southern Spars by third party suppliers or manufacturers.

The warranties above do not extend to and Southern Spars shall not in any event be liable for any failure or damage arising from fair wear and tear.

Any claim shall be made directly to the Dealer from whom the rig was purchased.

Warranty claims must be made on the correct form before any work is undertaken on the part concerned. Warranty Request Forms can be obtained from your Dealer.

SPARES

If you require any spare parts ,please contact GC32 Int. Class Association at: sales@thegreatcup.com

ABOUT SOUTHERN SPARS

Southern Spars has established its place as a world leader in the design, construction, installation and servicing of carbon fibre masts, booms, composite components and rigging. Its rigs power a wide range of yachts, from one-design class yachts to grand prix racing yachts, cruising yachts and super yachts.

Innovation, quality and an insatiable desire to produce what the customer requires runs through the company's culture. These qualities have contributed to producing product for numerous race victories, including the Volvo Ocean Race, Vendee Globe, America's Cup, Sydney-Hobart, plus supplying rigs to some of the hottest one-design classes like the Olympic 49er, Elliott 6m, Melges 20, 24 & 32 & the Farr 30 & 40. The same design expertise, manufacturing methods, materials and components utilised on these racing rigs are applied to every rig built by Southern.

Southern Spars also operates a rig service network and is manufacturing composite rigging. The specialist rig service business Rig Pro, has service centres worldwide. The Composite Rigging division, manufactures custom lightweight rigging products, including EC6+ carbon rigging, Aramid rigging and the Luff Rope.

Southern Spars has centres in the USA, Europe, South Africa, Sri Lanka and headquarters in Auckland, New Zealand. It is supported by the North Marine Group and shares the resources of that group of companies.

For more information visit www.southernspars.com