OWNER'S MANUAL

DRAGONFLY

28 Swing Wing

Introduction

We are delighted to welcome you to the family of Dragonfly sailors with our warmest congratulations on your new DRAGONFLY 28.

This manual is meant to help you enjoy sailing and understand the comfort and safety of your new boat. The manual describes the boat, the equipment and includes maintenance guidance. Before you and your crew take off to sea, we strongly recommend you read the manual carefully to avoid any mistakes and/or damages. Make yourself at home on board your dragonfly before going sailing.

We keep improving our boats as we want you to benefit from new technology and breakthroughs, new equipment, materials and, of course, our experience. Therefore, the characteristics and information hereby provided are not binding and can be changed without prior notice or updated obligation.

Dragonfly is built with more than 55 years of experience in multihulls, and we feel today that we here at Quorning Boats are delivering a consistent product of high quality and design. Quorning Boats endeavours to deliver a perfect product. If minor problems should occur, we kindly ask you to contact your dealer.

Please keep your DRAGONFLY 28 in respectable condition as well at sea as ashore.

We wish you, your family and crew all the best and lots of fun with your DRAGONFLY 28.

QUORNING BOATS

Jens & Peter Quorning
Dragonfly Trimarans

Denmark

Registration form

Type of boat: Dragonfly 28 Swing Wing (trimaran trailing sailboat)

CE-certification: Category B / C

Date of delivery: _____

Name of boat: _____

Homeport: _____

Owner's name and address

Name: _____

Address: _____

City: _____

Country: _____

Registration No

Hull No: _____

Hull ID-No: _____

Engine serial No: _____

***YOUR DEALER*:**

QUORNING BOATS ApS
Skærbækvej 101, DK-7000 Fredericia, Tel. + 45 75 56 26 26, info@dragonfly.dk

Document and receipt for DF 28

Hull No:_____. Hull ID-No:_____.

Owner's name and address

Name: _____

Address: _____

City: _____

Country: _____

The owner of this craft hereby certifies that I have accepted delivery and read the information in the Owner's Manual delivered with the boat – before using the boat.

Date: _____. *Signature*:_____.

Hull No:_____. Hull ID-No:_____.

Owner's name and address

Name: _____

Address: _____

City: _____

Country: _____

The owner of this craft hereby certifies that I have accepted delivery and read the information in the Owner's Manual delivered with the boat – before using the boat.

Date: _____. *Signature*:_____.

Before use of the craft, please return this slip to:
QUORNING BOATS ApS, Skærbækvej 101, DK-7000 Fredericia.
If not, Quorning Boats ApS cannot be held responsible of any kind of damage or injury.

General specifications – DF 28 Touring

Length overall centre hull	8.70	m
Length waterline centre hull	8.60	m
Length folded	9.99	m
Length sailing	9.00	m
Beam sailing	6.50	m
Beam folded	2.54	m
Draft	0.40	m
Draft, incl. centreboard	1.70	m
Weight of standard boat, incl. sails and engine	2100	kg
Payload max, incl. crew	725	kg
Water tank	90	l
Holding tank (optional)	60	l
Engine, outboard	10 – 15	HP
Max engine HP	15	HP
Mast section total, excl. antennas	12.10	m
Mast height over water level	13.75	m
Mainsail	35	m²
Jib furling	19	m²
Code 0 furling	35	m²
Asymmetric spinnaker	65	m²
Bowsprit length	1.60	m
Trailer weight 3T aluminium	700	kg
Max total trailer weight	3,000	kg
Trailer weight 3T steel	850	kg
Max total trailer weight steel	3,000	kg
Trailer weight 3,5T steel	950	kg
Max total trailer weight steel	3,500	kg
Trailer weights are excl. PVC tubes and extra tires		

CE-Design category	B
Max No of persons in category B	5

CE-Design category	C
Max No of persons in category C	7

General specifications

DRAGONFLY 28 PERFORMANCE

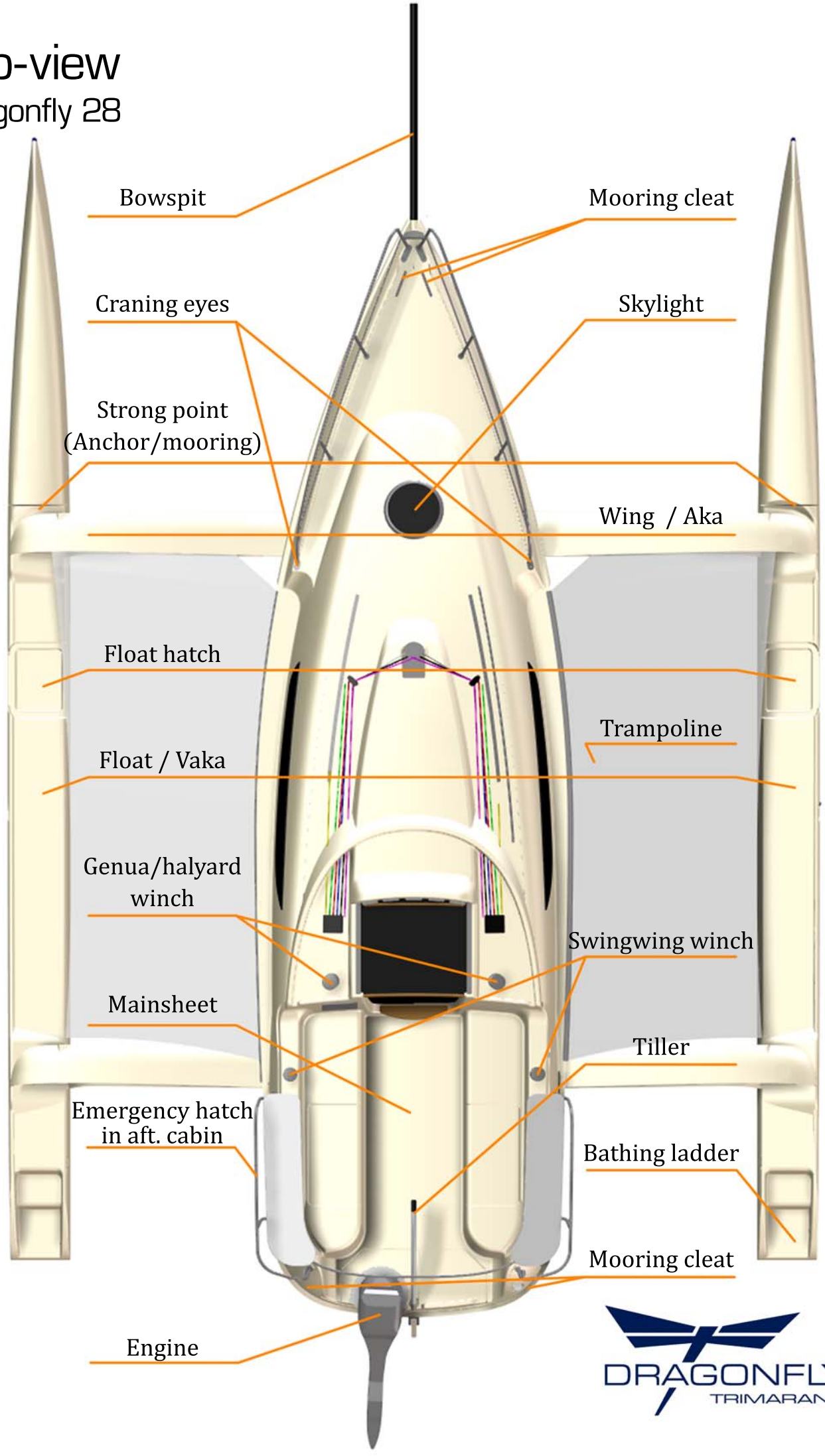
Length overall centre hull	8.70 m
Length waterline centre hull	8.60 m
Length folded	10.30 m
Length sailing	9.30 m
Beam sailing	6.50 m
Beam folded	2.54 m
Draft	0.40 m
Draft, incl. centreboard	1.70 m
Weight of standard boat, incl. sails and engine	2,180 kg
Payload max, incl. crew	750 kg
Water tank	90 l
Holding tank (optional)	60 l
Engine, outboard	10 – 15 HP
Max engine HP	15 HP
Mast section total, excl. antennas	13.60 m
Mast height over water level	15.25 m
Mainsail	43 m²
Jib furling	21.5 m²
Code 0 furling	45 m²
Asymmetric spinnaker	83 m²
Bowsprit length	1.90 m
Trailer weight 3T aluminium	650 kg
Max total trailer weight aluminium	3,000 kg
Trailer weight 3.5T steel	900 kg
Max total trailer weight steel	3,500 Kg
Trailer weights are excl. PVC-tubes and extra tires	

CE-Design category	B
Max No of persons in category B	5

CE-Design category	C
Max No of persons in category C	7

Top-view

Dragonfly 28



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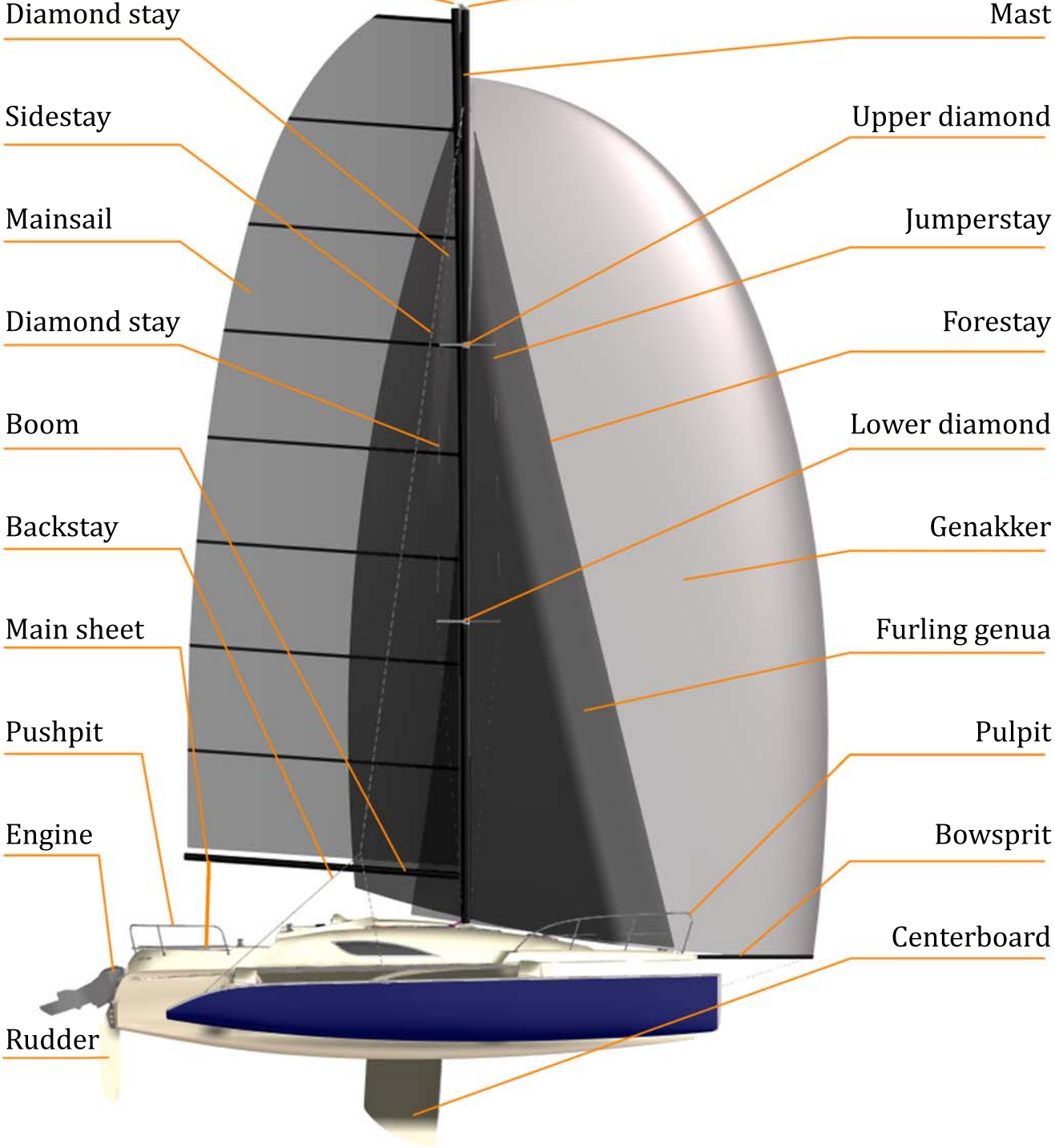
DRAGONFLY
TRIMARANS

Side-view

Dragonfly 28



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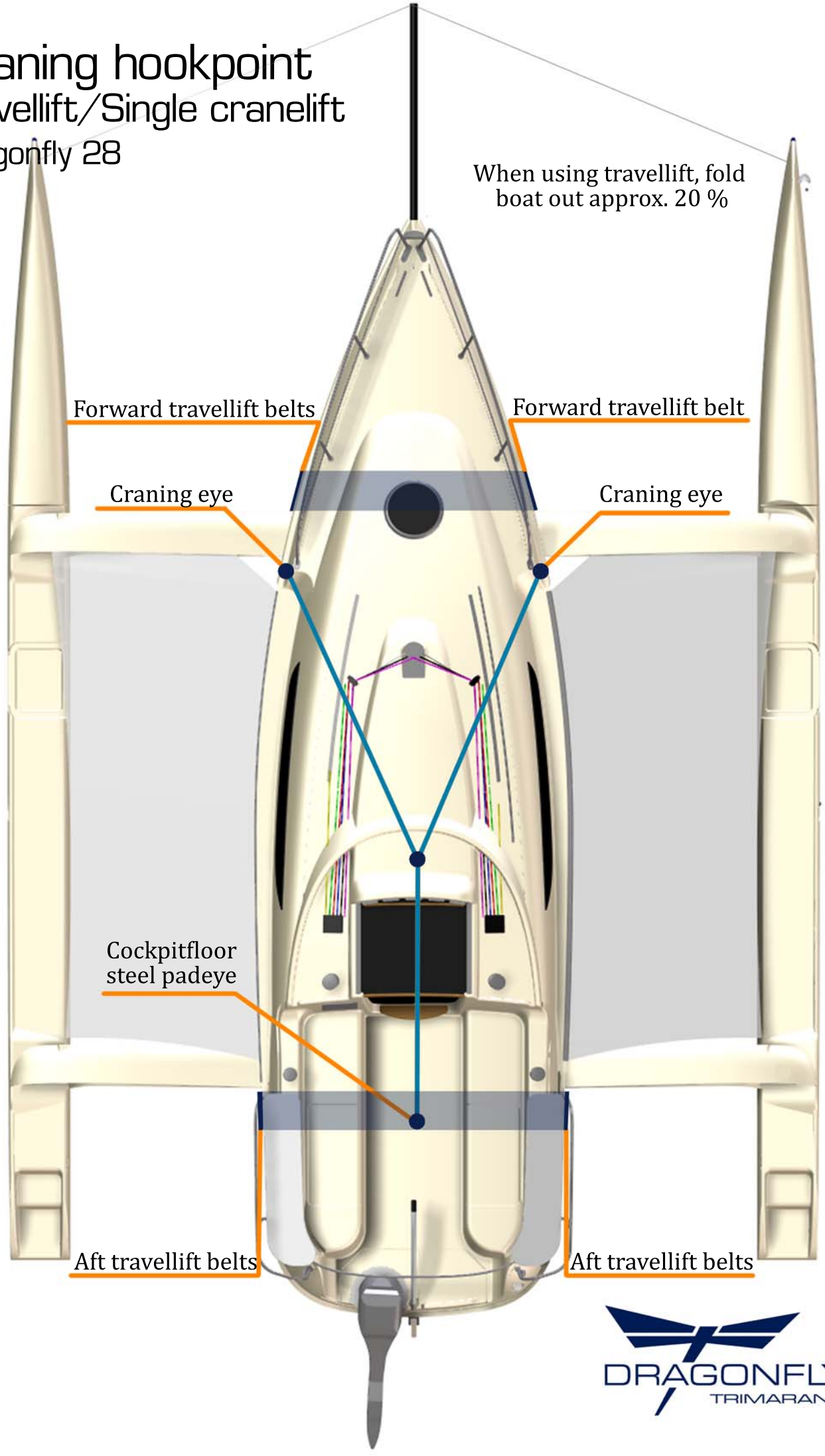
DRAGONFLY TRIMARANS

Craning hookpoint

Travellift/Single cranelift

Dragonfly 28



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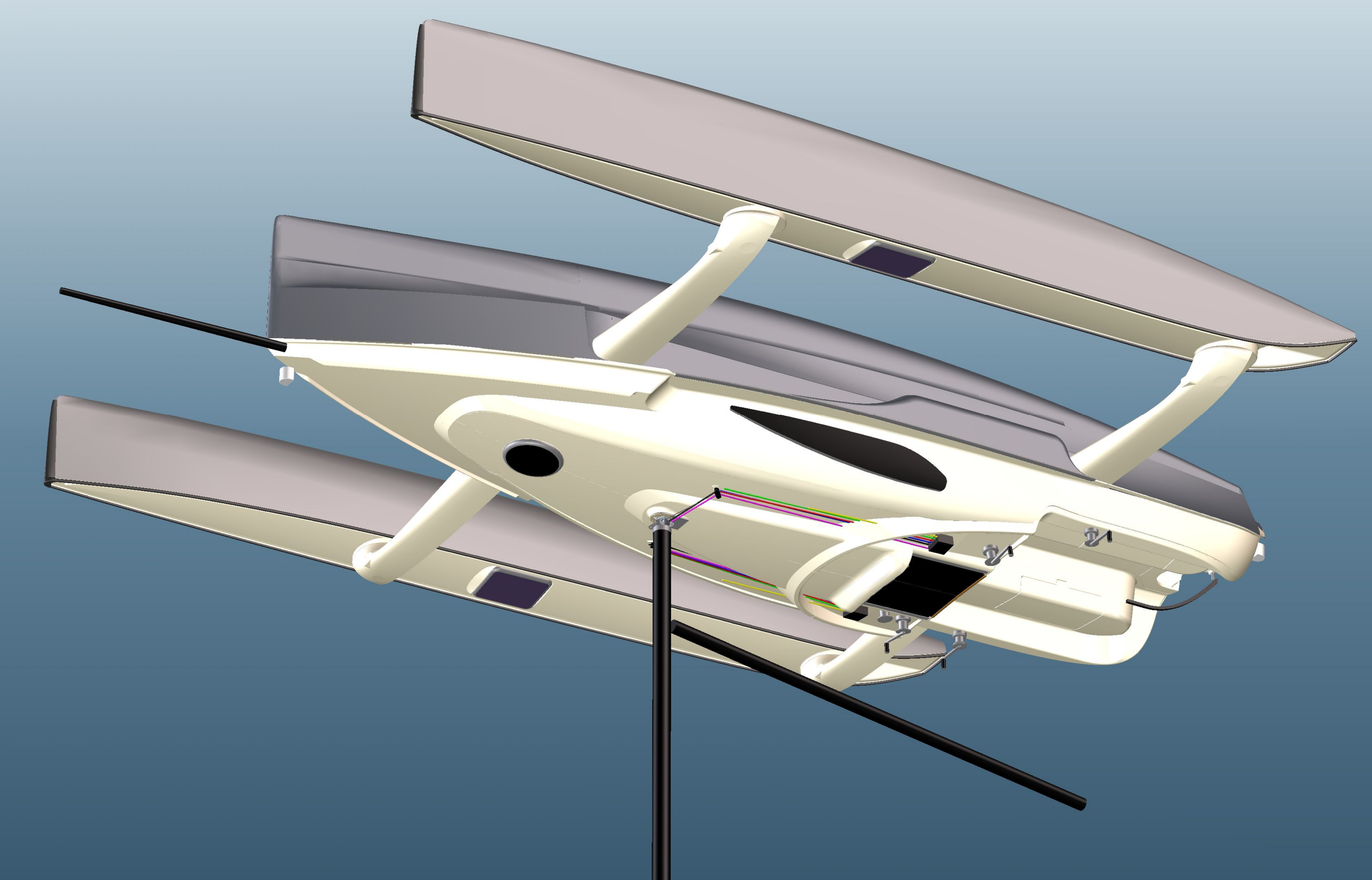
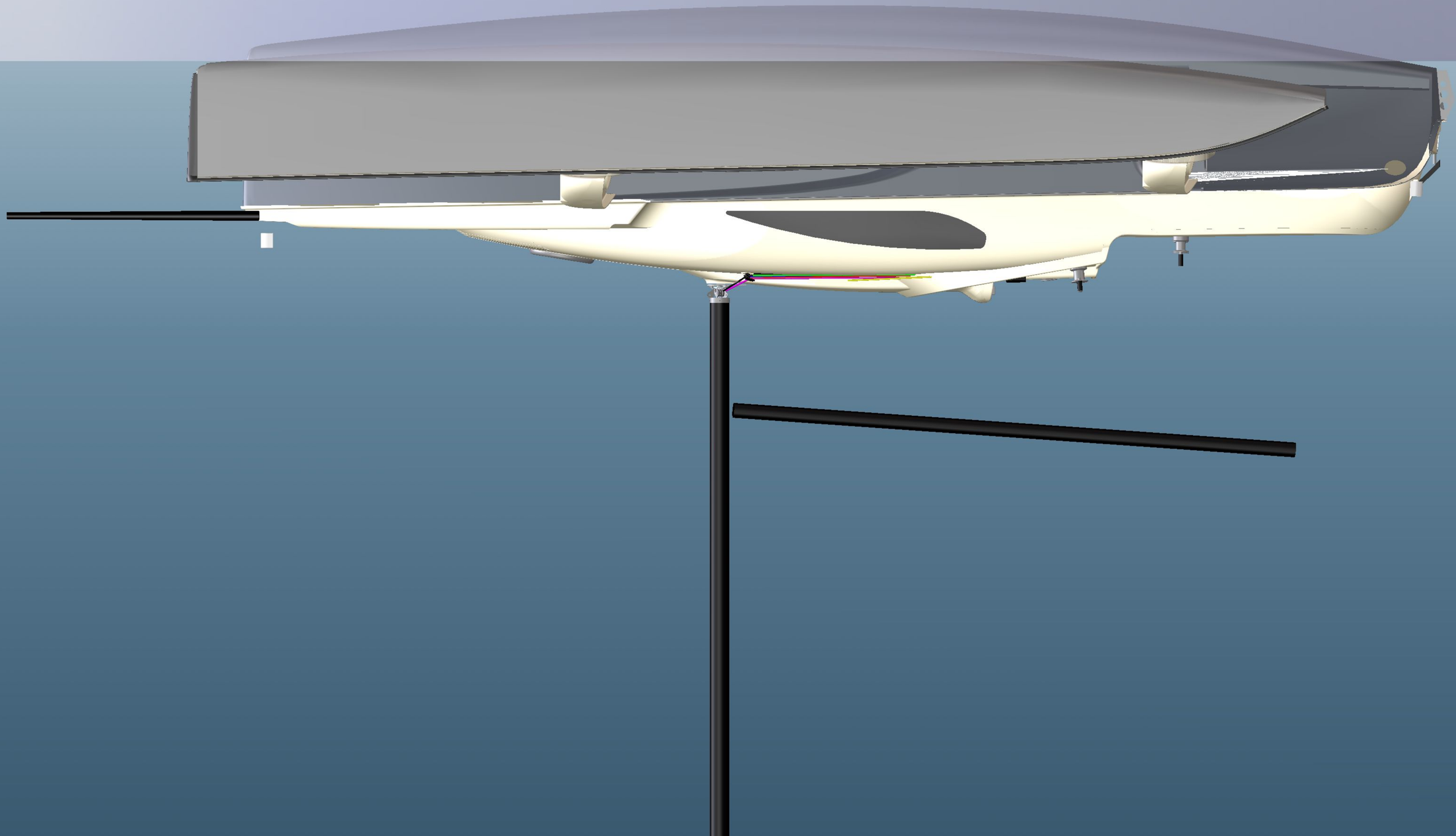
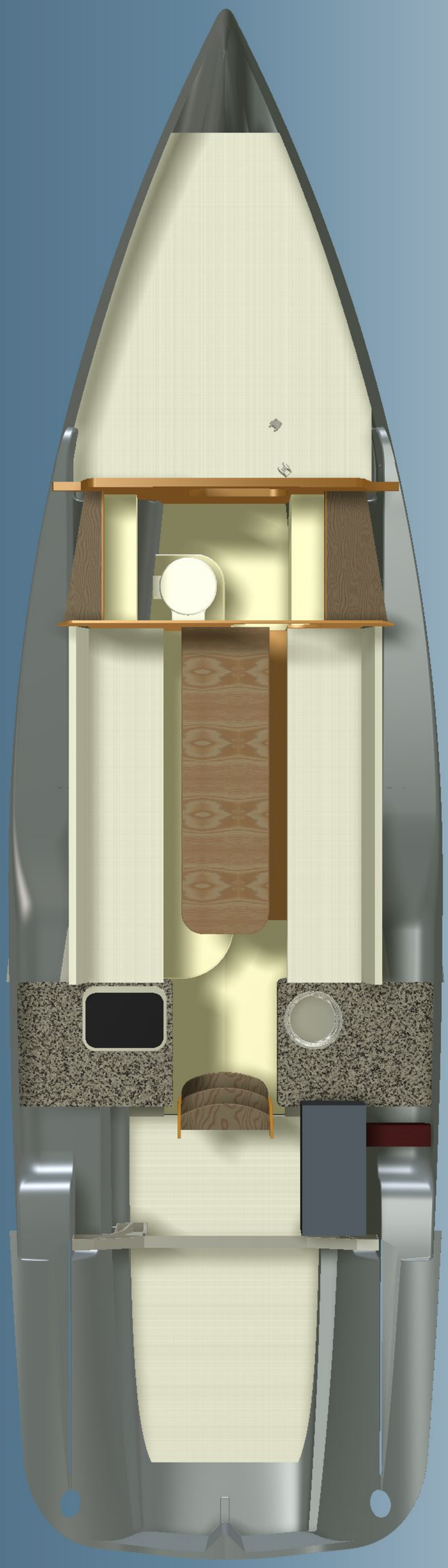
DRAGONFLY TRIMARANS







Information before you go sailing

CHECKLIST

- ✓ Check the weather forecast.
- ✓ Check water tank level.
- ✓ Check fuel tank level.
- ✓ Check that the power on your batteries is adequate for the trip you are planning.
- ✓ Check engine oil on the engine.
- ✓ When starting up the engine, check and make sure that cooling water is coming out. If not, stop the engine and service it.
- ✓ Check that you have enough propane for cooking (only for longer trips).
- ✓ Check that all equipment is stowed correctly and has been safely secured.
- ✓ Check that waterstays and rigging are intact.
- ✓ Check that ALL hatches are closed – especially the float hatches and the emergency hatch in the aft cabin.
- ✓ Check that there are life jackets for the entire crew onboard.

If the boat is new, please note that electronics are not calibrated when the boat leaves the yard.

BEWARE OF THE FOLLOWING

- Always make sure that there are lifejackets and/or life preservers onboard for the whole crew – and use them!

- We strongly recommend using lifebelts as a minimum outside the cockpit when sailing or even motoring at night.

- High tension/voltage cables. Mast height above sea level is approx. 15.5 meters/50 feet – with no antennas. Also, when trailering or moving the boat with mast up on the trailer.

- For long offshore crossings we recommend carrying a life raft in case of fire.

- For long-distance offshore sailing we recommend a watertight bag with a bit of food, handheld VHF, knife, and necessary flares in the smaller emergency locker under the starboard side cabin window, that is also accessible from outside in case of capsize.

- In case of capsize, stay calmly inside the boat. DO NOT try to dive out, as the risk of getting strangled in ropes hanging down in the water is too risky. You have easy access out through the emergency escape hatch in the aft cabin.

- We recommend storing cutting devices (knife) inside and outside, easily accessible in case og emergency.

- For long distance sailing, make sure to have up-to-date flares and other safety devices, like EPIRB etc.

- For offshore sailing, store flares, knife, flashlight, EPIRP, handheld VHF, a bit of water, in the emergency compartment behind starboard couch in main cabin.

- Please be aware that the trampolines can be slippery when wet, and/or in cold conditions. Further, the trampolines are extra slippery when not pulled tight enough.

- Never walk or be on the leeward trampoline, and/or on the leeward float

when sailing upwind and beam reach in +8 knots true windspeed.

- We recommend staying on the main hull in strong wind conditions.

- When sailing long-distance, make sure that all on board are aware of the above-mentioned procedures.

If this is your first multihull we highly recommend before "taking command" of the boat, to get some training in controlling the boat while sailing as well as powering (manoeuvring) to ensure your safety and comfort. Your dealer will give you this basic information. We strongly advise when receiving the boat, to get to know the boat well first under easy and calm conditions, especially also manoeuvring the boat under power, try this out in open water first using a fender or similar floating device and manoeuvre the boat around this floating object, get to know how the boat turns, stops and how it manoeuvres in reverse etc. This is a very important exercise. This boat is not more difficult to handle than a conventional yacht and many times easier, due to the link between the engine and the rudder, but it still behaves differently than conventional yachts, so get to know how it manoeuvres.

IMPORTANT - When the boat is folded, the boat and propeller are lifted approx. 8-9 cm higher, and the propeller has therefore less effect. Test this out well under controlled conditions, so you really get comfortable with this. The 10 Hp outboard engine can only motor against the wind up to max. 22-24 knots of true wind on flat water and against waves only up to max. 20 knots of true wind. The 15 Hp outboard engine can only motor against the wind up to max. 30 knots of true wind on flat water and against waves only up to max. 25 knots of true wind. If you need to motor against strong wind, we recommend assisting with a bit of headsail as this will provide you with more power.

We do not recommend sailing the boat in more than 5 Beaufort or 20 knots of true wind, before you know the boat very well.

BEFORE TAKING THE BOAT OUT

- ✓ Check that all float hatches and the emergency hatch are safely closed!
- ✓ Regularly check that all float compartments are dry.
- ✓ Make sure you have enough fuel for the engine.
- ✓ Always check the weather forecast before you go sailing
- ✓ Never motor with sails up in harbour/marina areas.
- ✓ Always stow sails safely down before entering the harbour/marina.
- ✓ Pull down the centreboard for better manoeuvring. Without the centreboard down the boat cannot make a sharp turn and will drift much quicker.

CLASSIFICATION

The DRAGONFLY 28 is classified according to the CE-standards in category **B** = max. 5 persons and in category **C** = max. 7 persons.

For CE-certification category **B** you can sail offshore with max. **5** persons onboard, in windspeed up to max. 8 Beaufort (40 knots/20 m sec. of true wind) and in waves up to max. 4 m significant wave height.

For CE-certification category **C** you can sail offshore with max. **7** persons onboard, in windspeed up to max. 6 Beaufort (30 knots/15 m sec. of true wind) and in waves up to max. 2 m significant wave height.

The craft is classified for the CE by notified organization (body) IMCI No 0609 under the design module AA – internal factory control and external control of buoyancy, stability and flotation.

The boat is unsinkable.

IMPORTANT NOTICE

- Sails must be set according to our wind/sail diagram – please see part 6 of this manual.

- If the boat is sailed harder with more sail than recommended in our sail area diagram, Quorning Boats or your dealer cannot be held responsible for any problems or defects on the boat, nor claims to recover or repair the boat e.g., after a capsize.

- This boat is a smaller type of multihull vessel, that can and have a potential to capsize if not handled and sailed correctly, therefore we recommend getting familiar with the boat in controlled conditions and if sailing in stronger winds, always be ready to let the sheets go by always holding the sheets in your hands in stronger wind conditions.

- If the boat is stored on land with the mast up, the boat needs to be secured well to the trailer and the mast needs to be supported sideways away from the boat to prevent strong winds to capsize both boat and trailer!

- If driving/handling the boat ashore on the trailer with the mast up, always secure the boat well and tight to the trailer, turn/rotate the mast full sideways for min windage to prevent the hole setup to flip over. Never move the boat on the trailer with the mast up in stronger winds than 15 knots of true wind speed.

- Always be aware of high voltage power cables in the air and similar when moving the boat on land with mast up.

MANOEUVRING- AND MOORING RECOMMENDATION

IMPORTANT SAFETY NOTICE

- Wear your life jacket!
- In heavy weather conditions, always wear the safety harness on deck.
- Make sure to have functional life jackets for the entire crew.
- When sailing in windy conditions, stay on the main hull only.
- Always have minimum 4 mooring lines in adequate dimensions (min. 12 mm x 12 m), which are suitable for the environment onboard.
- Always manoeuvre the boat with the engine in harbour areas – no sails up.
- Handle the boat consistently with the current and wind.
- Protect the boat with suitably sized fenders.
- Always keep the ropes unfold and home.
- Handle the boat at slow speed – in harbour 2-4 knots.
- It can be difficult to stop the boat downwind, especially when the boat is folded, where the propeller is closer to the water surface.

For your own safety - never try to stop the boat with your foot, hands, or a boat hook.

WHEN MOORED IN THE MARINA

- Protect the ropes from chafing with plastic sleeves.
- Make allowance for potential tide.

- Make sure to use spring lines before you leave the boat alongside a dock.

PRECAUTION:

- Be well acquainted with the boat before going sailing in more than 5 Beaufort (20 knots – 10 m/sec).

- Learn to handle the boat well under power to make safe harbour manoeuvring – note that sometimes it can be difficult to stop the boat in reverse downwind, when folded.

- Be aware that the boat may capsize in folded condition by winds exceeding 9 Beaufort (40 knots – 20 m/sec). In that case secure sideways the stability with one halyard to each side, or fold minimum leeside float out or even better both sides halfway out.

- We do NOT recommend leaving the boat folded on a swinging mooring or at anchor.

- Never let the boat dry out in folded position, as the ground may be out of level.

- The boat is unsinkable. If anything should happen, always stay with the boat.

- In case of capsized position, the boat will stay afloat approx. by the middle of the couches back cushion, if the floats are intact.

- Never access the leeward float or trampoline when sailing in more wind than 10 knots true wind.

SAILING BY AUTOPILOT

IMPORTANT

Depending on wind and wave conditions, using autopilot in winds exceeding 10 m/sec (20 knots) true wind is difficult and not recommendable.

Autopilot can be used in stronger winds, but only when reefed even more conservatively than we recommend in the sail to wind diagram.

Quorning Boats cannot be held responsible for any damage or problem caused by sailing using autopilot, as this at times can be unreliable.

When using autopilot, keep a good look out, as this boat moves faster than other conventional yachts – not all other yachts are familiar with how fast these boats can move.

Make sure that your autopilot has been calibrated before use.

The autopilot has not been calibrated by Quorning Boats, nor by the shop where you bought it.

Always sail more conservatively and with less active sails when using the autopilot.

We do NOT recommend sailing with spinnaker and autopilot at the same time, unless you go deep downwind.

Always check, that you have enough power on the batteries when using the autopilot.

IMPORTANT INFORMATION ON THE RIGGING

- Always check the rigging, halyards, reefing lines, waterstays, rudder downhaul and Swing-Wing system before taking the boat out to sea.

- Shorten the main halyard and reefing lines approx. 25 cm. if needed every 6 months or minimum once a year. After some years, you can turn them around or replace the lines.

- For the Touring and Sport version, we recommend changing the water stays after max. 10 years and/or by max. 15,000 nm of sailing – use only same products and quality when changing. The water stays are made in 10 mm dyeform cable ss quality.

- For the Performance version, we recommend changing the waterstays after max. 7 years and/or by max. 10,000 nm of sailing – use only same products and quality when changing. The water stays are made in 10 mm dyeform

cable ss quality.

- Side stays and forestay must be changed after max. 10 years and not later than max. 15,000 nm of sailing.

- Standing rigging on the mast (diamond stays) must be changed after max. 15 years.

- Never use shackles or similar on the boatsman chair, when hoisting people up the mast.

- **Never** climb the rigging when the boat is in folded position!!!!

- Tension on the diamond stays rigging, please see the rig diagram.

- Never change the tension on the diamond stays without checking tension with a tension meter according to rig tension diagram, changing the rig tension can cause the mast to fail and break.

- Never drill holes in the carbon mast section without asking your dealer or Quorning Boats beforehand.

- Never wrap the mast in any plastic, as this can cause the paint to bubble up. If wrapping is needed, use only breathable textile materials.

- If rigging and diamonds are taken apart for the winter, mark all parts and the exact position of the turnbuckles to get the exact same tension again.

- By releasing tension on the diamond cables, this will affect the stiffness/safety of the mast and can cause the mast to collapse, so don´t the tension.

IMPORTANT

when stepping the mast – check and be careful that the forestay and the side stays cables does not get bent, if these get bent – you need to change the bent stays immediately

Operating the Swing-Wing system

IMPORTANT

Max tension on the backstays is ONLY what one person can pull by hand.

When sailing in strong wind and wave conditions the leeward backstay will get slack – only pull this slack by hand in leeward side – never use the winch to leeward, as this can put too much tension on the rigging and cause rigging failure.

The Swing-Wing system must not be operated in winds exceeding 8 m/s or 16 knots by true wind speed in open areas and max. wave height of 0.2 m.

The boat will stay stable folded in a marina slip, as long as waves are max. 0.2 m and wind speeds from the side do not exceed 20 m/s or 40 knots of true wind speed. If higher winds are expected, either make sure the boat faces into the wind or downwind or secure the mast sideways with halyard to both sides on the dock, these can be set slack to make room for some tide – or even better fold the leeward side out if possible or in best case fold both sides out. In worst case scenario (by heavy storm and/or hurricane warnings), take the mast down or move the boat to a place, where it can stay folded out or take the boat out of the water, take the mast down and secure the boat well on dry land.

- **Never** keep the boat folded on mooring or at anchor.
- **Never** let the boat dry out in folded position.
- **Never** hoist any person up into the rigging when folded.
- **Never** set sails when folded.
- **Never** operate the Swing-Wing system with hoisted sails.
- **Always** stow the sails safely BEFORE you start operating the Swing-Wing system.
- **Always** point the boat into the wind when operating the Swing-Wing system, and, or even better point downwind in strong winds.

Only use the Swing-Wing system in harbours and wave protected areas. Operating the Swing-Wing system elsewhere is at owner's own risk.

STEP-BY-STEP FOLDING PROCEDURE

FOLD IN PROCEDURE

1. Release and unhook by hand the safety cable snap shackle on the outside aft/rear wing by the float – always stand on the float while doing this.

2. Prepare the endless Swing-Wing line by the double block on the cockpit coaming (the outer line is for folding out and the inner line is for folding in) - check that these lines are not twisted or jammed.

3. Release the backstay line slowly - only one side (hold the backstay line tight in your hand when releasing, as you may burn your hands due to the at sometimes high tension).

4. Slack other lines like preventer line, spinnaker sheets, etc.

5. Open the double jammer in the cockpit hand locker on one side first, both handles at the same time (release the tension on the jammer before opening, by pulling the fold out line slightly) - the Swing-Wing system is now open.

6. Pull the fold in line it by hand if possible and use the winch on the cockpit coaming with a winch handle for the rest.

7. Fold the float in, while making sure that the fold out line runs easily through without being twisted or jammed, as the Swing-Wing line is endless – on newer boats we have made a black marking on the folding line to inform approx. when the operation is completed.

8. Lock the double jammer again to secure the Swing Wing lines and float in position.

9. Repeat step 2 – 9 on the other side.

10. Adjust the backstay on both sides by setting it hand tight.

Notice: The trampolines automatically take care of themselves. If the boat stays folded in the water – only pull the float in so the "inside" of the float hull side is approx. aligned with the main hull (trampoline track). This is to have enough stability.

FOLD OUT PROCEDURE

To fold out the boat, the procedure is the same, just reverse:

1. Make sure that no lines are jammed between the wing and the hulls.

2. Prepare the endless Swing-Wing line by the double block on the cockpit coaming (the outer line is for folding out and the inner line is for folding in) - check that these lines are not twisted or jammed.

3. Open the double jammer on one side first (release the tension on the jammer before opening, by pulling the fold in line slightly) – the float opens part way out due to the buoyancy forcing the float out.

4. Pull the float out while making sure that other lines are not jammed between the wings and the main hull. Normally you can pull most by hand and at the end use the winch to tighten the trampoline well.

5. Lock the double jammer again.

6. Pull the slack on the backstay by hand before folding the other side out.

7. Attach and lock the Wichard safety line on the aft/rear wing by the float. If forgotten, the boat can collapse while sailing, if the Swing-Wing system for some reason get open by the crew by a mistake or fails.

8. Repeat step 2 – 7 on the other side.

No persons are allowed on the trampolines, wings or floats while operating the Swing-Wing system!

In case the boat does not fold or unfold easily, do not force it with power on the winch – some line has probably been twisted or jammed, so please check the system.

Make sure there is no sand or dirt on the sliding wing areas on the floats. If you e.g., just launched or berthed, you should rinse with a bucket of water over each saddle to clean the surfaces. Should the system after some time start squeaking, then use Teflon type spray or similar on the sliding surfaces.

Notice: The boat is more instable when folded. Do not make sharp turns when motoring in folded position, as the boat will heel more over to one side. When motoring in folded position, avoid sideway waves. Only motor in protected areas and beware of power boats that can make bigger waves than 20 cm high. In protected areas, motor around in max. 24 knots – 12 m/sec. of true wind.

If you have enough space do not fold all the way in – leave the float out for approx. 20 cm (8") or a bit more on both sides, as this will make the boat a lot more stable – or only fold one side in if needed.

Notice: Regularly check that the Swing-Wing cables and lines are ok. Normally, the Swing-Wing lines and cables should be replaced after 3 to 5 years – depending on the use of the boat.

When folding in for trailering, pull up the trampolines so these gets less dirty on the road.

When folding out on dry land, you should **never** use the folding system only, as the floats are missing their buoyancy. Instead, you must push the floats approx. halfway out by hand, before you winch the remaining out with the Swing-Wing system.

When folding in on dry land, it is **very important** to hold the "fold-out" line in your hand to control that the floats do not fold in against the main hull by itself. This can damage the boat, and people around the boat can be injured.

If you end up with other boats alongside your outer float, this must be folded fully in – you can then have up to 3 other boats on your long side.

When folded in, always use the cleats on the main hull and only fasten spring lines on the floats if necessary (it is only the fold in line that holds the float into the main hull).

Swingwing-system

Dragonfly 28

End of line

End tied to block

Wing stop cable

Prevents folding out too far

Safety cable

Prevents folding in while sailing

Swingwing line

Fold in - 8 mm Dynema - 23 m long, endless

Swingwing lines

Fold out - 8 mm Dynema, same as fold in

Rope clutches

Dubble rope clutch

End of line

Line tied to hull

Snap shackle

Locks safety cable

DRAGONFLY TRIMARANS

2017

Launch and assembly information

STEPPING THE MAST

Quorning Boats ONLY recommend stepping the mast by yourself when using blocks, lines and special supports, that are optional equipment supplied by Quorning Boats. If a crane is available, we recommend using this. The mast can be stepped on the boat, but is at owner's responsibility, even when using this handbook as a guideline to raise and lower the mast.

On our website WWW.DRAGONFLY.DK there is a full video of how to step the mast and other launch info like how to mount sails etc.

FORESTAY AND SIDE STAYS ETC.

Forestay and side stays are mounted in the same stainless fitting on the mast, where the three upper diamond stays, each with an 8 mm Quicklink, is installed. Over these you find 3 open holes where you install the forestay in the center eye and the two side stays, one on each available fitting – this 8 mm Quicklink on the side stays must be secured and tightened with a "key" No 14 and preferably with some Loctite.

SETTING THE GENOA

Before hoisting the genoa, make sure to roll some furling line on the furling drum. Turn the head foil clockwise until you have about one meter (approx. three feet) line left in the cockpit. In this way you can furl the genoa at once when it is hoisted. The luff is mounted by the shackle over the furling drum. Tension is adjusted with the genoa halyard from the cockpit. Make sure the battens are mounted in the leach of the sail.

MOUNTING THE MAINSAIL

The mainsail is placed either on the mainsail boom between the lazy-jacks and or just on the trampoline. Start from the top of the sail. Make sure the boat is facing into the wind. Mount the top of the mainsail to the upper top double batten car on the mast. Then hoist the mainsail to the next batten car, fit the next batten car etc. Please note that on the top first sail batten, the link to the batten car is mounted with the nut facing DOWN – and on all the others the nut is facing UP.

Note: Remember to fit the two reefing lines in the mainsail sail.

IMPORTANT

The reefing line in the back end of the boom comes out from a sheave and through the block in the mainsail leach (backend) and is now tied with a bolden knot around the mainsail boom, in FRONT of the mainsail webbing, so the reefing line does not slide back out. It is also easier to fit the mainsail cover when the sail is up or before the mainsail is installed.

When taking the mainsail off again **never** take any of the batten cars off, as all the balls will fall out.

CUNNINGHAM

For Cunningham on the Sport and Performance version, you can use the green reef II line as Cunningham by pulling the reef II line through the webbing eye in the mainsail, then you see about 30 cm up the luff and pull the now double reef line through this webbing eye and fix the reefing line into the clam cleat on the port lower side on the mast. Fix this part of the reefing line that goes back to the halyard stopper in the cockpit.

Only use chock cord type sail ties to roll up the mainsail when reefed.

LAUNCHING FROM TRAILER

This launch process can be seen on the Dragonfly 28 page on our website WWW.DRAGONFLY.DK

IMPORTANT

Be aware of high-tension wires etc. when towing the boat around. Especially with the mast in an upright position – neither Quorning Boats, nor your dealer can be held responsible for this.

Only use a slip or ramp with solid ground. The boat can only be launched when folded in.

If the slip or ramp has less than 8 degrees heeling, the boat will not roll off by itself and will need extra manpower to get off the trailer.

Remover the back lightbar on the trailer.

Before launching the boat, make sure that everything is completely in order, for example:

- ✓ That the motor is mounted and ready to start.
- ✓ That the rudder and centreboard are fixed in the upper position.
- ✓ Doublecheck that the depth and speed transducer is mounted, so water does not get into the boat.
- ✓ Have mooring lines etc. ready.
- ✓ Be careful of wind and current from the side.
- ✓ Have the fenders ready.

You can now drive the boat down the slip, but only so the rubber on the tires is in the water – not further!

Do not launch with too much side wind and waves!

The same procedure in reverse order goes for taking the boat out of the water.

Never launch or drive down a ramp with green wet slippery seagrass, this may cause the trailer and the car to slide into the water!

IMPORTANT:

It is **extremely important** that the boat goes straight in and out on the trailer – in the centre!!!!

Check when launching or pulling the boat out on the trailer, that the back folding ramp on the trailer is free to pivot – it is **very important**.

LAUNCHING WITH A CRANE

If you are unable to launch from the trailer, a travel lift or a crane with lifting straps can be used carefully by putting these around the main hull – only from side to side, just in front of the forward wings and behind the aft wings to lift the boat. You can only do this when the float is folded a bit out or even more – **NEVER** use lifting straps around all 3 hulls.

As an option, Quorning Boats can supply a 3-point lifting system.

The balance point is approx. by the garage (the front part of the companionway), where the instruments are placed.

SAILING TIPS

MANOEUVRING IN HARBOUR

If the water is deep enough, always sail or motor with the swing keel/centreboard down for better manoeuvring. The boat manoeuvres well in folded- and unfolded position. By turning the rudder and motor full over at the same time, the Dragonfly 28 is almost able to turn round its own axis. This fact is important to know in a difficult situation. Remember that the boat is light and by wind it drifts easier than a conventional yacht.

In full marinas, you can use the shallow draft to the dock where nobody else can go. If you find room in a normal small berth, always enter with the bow first into the dock, as the floats are 1 meter longer aft than the main hull, when the boat is folded.

When motoring, only have the rudder fully down or fully up – if the rudder is halfway up, it can/will touch the propeller and get damaged.

MAST STEPPING/HOISTING PROCEDURE

- Be aware of power lines and similar when stepping the mast and while moving the boat – both on water and on wheels.
- Stepping the mast is at the owner's responsibility and risk.
- When stepping the mast, make sure that no persons are present in the direction, where the mast can fall – neither on the ground nor on the boat.

- Never climb the mast, when the boat is folded in – neither on water nor on land. Only climb the mast when the boat is folded out on the water. Or, on land, when the boat is folded out and supported sideways.

- Only use the mast-stepping equipment supplied by Quorning Boats.

- Stepping the Dragonfly 28 mast – Touring or Sport version – using Dragonfly 28 mast raising kit- system (optional equipment).

THE FOLLOWING EQUIPMENT NEEDS TO BE PRESENT

- ✓ Handbook with guidelines whereas how to step the mast.
- ✓ Stainless mast base mast pivot fitting.
- ✓ Mast support in cockpit with roller on top.
- ✓ Starboard side deck stainless mast support tube with the two rings on top.
- ✓ One pole Ø 50 mm (mast-support).
- ✓ One pole Ø 40 mm (boom-support).
- ✓ Two single blocks (working load 700 kgs).
- ✓ One up-/downhaul line (8 mm 25 m).

MAST STEPPING PROCEDURE

Please follow this procedure step by step. You can also see the mast stepping process on our website WWW.DRAGONFLY.DK under DF 28 videos, where you will also see other tricks and tips for launching and setting sails.

Do **NOT** step the mast using this system - in winds exceeding 16 knots true wind. However, stepping the mast up to 20 knots true wind is possible, IF only the boat is turned up into the wind or down off the wind, so there is not sideway wind pressure.

You can step the mast while the boat is on the trailer. Or, as an alternative, step the mast when the boat is launched. This is recommended, as it is easier to reach the mast in both ends – especially if you can arrange the mast to reach the beach

aft of the boat or a dock. BUT you need calm sea to do this and NO waves at all.

If you step the mast when the boat is in the water, we strongly recommend to ONLY open the SB side float – port side float MUST be folded in, to prevent the mast from falling forward when stepping the mast, as the port side stay is facing more backwards now when folded in. You can also step the mast in the water with both hulls folded in – is also fine.

The mast is now on top of the boat, and the boat is either on the trailer or in the water.

We recommend only two persons to step the mast to avoid misunderstandings. One person can do this mast stepping job alone, but it takes a bit longer time – two is therefore recommended. 3 is maximum and more people are NOT to be recommended.

1. Install the separate stainless mast base pivot fitting and secure this with the 8 mm bolt and nut. Leave it in an upright position. Make sure that all halyards are slack at the mast base.

2. Roll the mast about 1.5 – 2 meter forward for better access to the top of the mast and fit the Windex and/or wind transducer or VHF antenna etc. on the top of the mast

3. Pull the main halyard, genoa/jib, and spinnaker halyards down. On the Sport/Performance version also pull the Code-O halyard down.

4. Install the two side stays, just above the side diamond stays in the spare hole. Secure the Quick-Link that you install the side stay with – we recommend using Loctite and tighten it hard using a tool, key No 14. Again, tighten this Quick Link hard.

5. When stepping the mast you MUST also install an extra 8 mm Quicklink on both starboard and port float side stay fittings and side stay Toggles (on the fork terminal that is normally installed on the float side stay fitting) - This is to make sure you can get the forestay installed easy as the side stays are very tight, especially when the boat is new and the floats are folded in (after one season of sailing the side stay will stretch a bit and get a bit longer).

6. After the mast is set and all is well and fully installed, then REMEMBER at some

stage to fold the floats out, first one side and remove this extra 8mm Quicklink and thereafter the other one – this is also informed later in the manual.

7. Fit the forestay on the front of the mast just above where the forward diamond stay is attached. Make sure to secure this with either Loctite or tighten it hard using a tool, key No 14. Again, tighten this Quick Link hard.

8. Pull down ALL the halyards somewhere around the lower part of the mast.

9. Now you can roll the mast backwards aft of the boat on the special mast support with the orange roller on top. This is possible to do by one person, but it is best done with one more, who can make sure that nothing jams and who can also hold the forestay while rolling the mast aft – be careful that mast support back in the cockpit stays stable and does not tilt over.

10. Roll the mast back slowly and again it works out best if another person is holding the forestay in the moving process.

11. When the mast foot on the mast aligns with the mast base on the deck, you can push the mast down by sitting on top of the mast and push the mast into the mast base pivot fitting and secure it with the one locking pin. When installed correctly, there is a piece of stainless coming out and sticking up over the mast section with an eye for the mainsail boom later. Now the mast is fixed in position, and you can step off the mast.

12. Install the side-deck stainless support pole on the starboard side cabin walking deck (optional equipment), where you screw the support pole into the side deck fitting, so the support pole is vertical (not into the 45° angled water fill fitting). The two top stainless O-rings must point fore and aft – on boats build in 2017 and thereafter there is a locking system to prevent this stainless tube to turn.

13. Take the big and longer Ø 50 mm aluminium mast support pole and click it into the stainless hole/eye on the lower spreader on the starboard side and thereafter into the aft/back ring of the two stainless rings on stainless support pole on the deck. Now the mast is supported sideways. Double check now that the end fittings on the aluminium pole are fully locked.

14. Take the mainsail boom and fit the forward gooseneck end on the mainsail boom to the mast pivot fitting end that is sticking up from the mast base on the mast. Just secure the boom with the bolt on the mainsail boom. Just rest the other end of the boom on the pulpit.

15. Mast-raising block and pulley system! Secure the single line block with a snap shackle in the stainless eye on the underside of the boom (just in front of the mainsheet webbing).

16. Fit the other mast raising block where the line is installed with a knot, install this snap shackle block at the stainless-steel lead by the forward starboard pulpit foot by the deck level.

17. Lead the line (25 m of 8 mm line) over the coach roof through one of the available halyard stoppers and to the starboard side deck winch (through the cutout under the sprayhood trim).

18. Take the spinnaker halyard and fit/install this at the bigger shackle at the end of the mainsail boom – NOT at the very end of the mainsail boom but at the shackle where the mainsail outhaul line is secured to.

19. Install the smaller aluminium boom support pole onto the forward eye of the stainless side support pole on the deck and then lift the mainsail boom and move it a bit to port side. This sideway aluminium support pole will now fit into the stainless folding eye on the side of the mainsail boom. Double check that the end fittings are locked.

20. Lift the mainsail boom to an upright position and secure the boom fore and aft with the spinnaker halyard, and please fasten and secure the spinnaker halyard on the mast e.g. boom fitting with a safe and secure knot, and then pull the forward pulling line by the starboard coach top winch.

21. Please adjust the boom so it points about 10° backwards or approx. 1,5' (50 cm) at the top of the boom to allow the spinnaker halyard to stretch, so the mainsail boom will clear the pulpit when the mast is up.

    IF THE BOAT IS FULLY OPEN AND FOLDET OUT, secure the mast backwards by

fastening the main halyard e.g. to the back/aft mooring cleat and make sure that the main halyard is completely fully installed at the mast base and back to the jammer/clutch on the starboard side cabin top.

22. With the main halyard, you can now hold the mast backwards when the mast is set at the almost final position to prevent the mast from falling forward as the side stays are VERY slack when both floats are fully open – if you forget this, the mast **will** fall forward – therefore we always normally only step the mast with either both floats folded in or only with one float folded in.

23. Before setting the mast, make sure to tie up electrical cables to the mast, so they do not get damaged between the mast and the mas base when stepping the mast.

24. The must-raising system is now all set up and ready. Please check again that all procedures have been followed so far correctly.

25. Make sure that no person is present in the direction where the mast can fall, in case this happens.

26. We recommend that one person holds the forestay on the port side of the boat, so it does not get damaged or will scratch the boat.

27. Start pulling up the mast gently and slowly on the starboard side cabin top winch using a winch handle. Just take your time – no stress – ALLWAYS check that the side stays aft do not kink or jam e.g. on the backend of the floats– this often happens.

28. When you start to pull up the mast, you need some strength/power (not a problem), but you will realize that the higher up the mast comes, the much less force you need to lift the mast, so again take your time, and do it slowly – especially slow when the mast is almost upright.

29. When the mast is almost up, check carefully that the side stays have no kinks on the deck of the float and further up on the side stays where the side stays have a Quicklink to assembly the lower and the longer upper part of the side stay.

30. Look up on the mast that the side stays look normal where these are fixed to the mast – these Quicklink can jam or twist here and result that the mast does not get all the way up, if the forestay is much too short, check this.

31. Check that the mast base on the mast is in correct position and fully down in correct position when the mast is up, before fixing/mounting the forestay, if the mast is not fully resting down and touch the mast base on the deck in the centre, just twist the mast from side to side by holding on to the side diamond stays – and twist from side to side and normally the mast will "fall" down to its correct position.

32. When the mast is fully up, just pull enough in the mast raising line and fix this line in the halyard stopper /jammer on the cabin top, so you now can get the forestay bolt fixed in position and secured. Make sure to install the old fashion Cleves pin here with the 2-leg locking pin and these pins must both be twisted for safety and taped well.

33. And now – it is time for a beer!!

34. To finish the process, remove the aluminium mast support in the cockpit.

35. Remove the big spinnaker pole that support the mast, if this is a bit tight, then just pull a bit by hand in one of the sidestays to take off the tension on the spinnaker pole – and now it´s easy to clip off.

36. Remove the smaller pole on the mainsail boom, so now you can leave the spinnaker halyard on the mainsail boom and now just swing the mainsail boom around and back in the normal boom "position" and fix the mainsail boom to the mast at the Gooseneck mast boom fitting.

37. Before you go sailing it is VERY IMPOORTANT to unfold the floats, one at a time.

38. Then take the spinnaker or Code-O halyard and fix this to the aft Wing (Aka) and just tighten this halyard easy by hand only, so you can undo the side stay away from the float side stay fitting and remove the 8mm Quicklink that we asked you to install during the mast stepping process. The same goes for the other side - this Quicklink is no longer necessary and MUST be removed before you go sailing.

39. Make sure to install the Backstay line and block system before you motor and/or sail away from the dock. This is very IMPORTANT.

We strongly recommend you and the people who help you step the mast, to put your phones completely away, so you have full focus on this process. We have seen people forget things in the process due to mobile disturbance.

Thank you.

Sail and trim tips

SAIL DIAGRAM – RECOMMENDED SAILS TO WIND SPEED

DIAGRAM OF SAIL AREA TO TRUE WIND SPEED:

m/sec.	Knots	Beaufort	Upwind and beam reach
0-7	0-15	0-4	Full main + full genoa
8-9	15-18	5	Full main + full genoa
9-11	18-22	5+	Main 1 reef + genoa 1 reef
11-12	22-24	6	Main 1 reef + genoa 2 reefs
13-16	25-32	7	Main 2 reefs + genoa 2 reefs
17-20	32-40+	8-9+	Main 3 reefs + genoa almost completely furled

m/sec.	Knots	Beaufort	Downwind below 120° TWA
0-7	0-15	0-4	Full main + full genoa or spinnaker
8-10	15-20	5	Full main + full genoa or spinnaker
10-12	20-24	6	Main 1 reef + full genoa
13-16	25-32	7	Main 2 reefs + genoa 1 reef
16-20	32-40	8-9	Main 2 reefs (or no main) + genoa 3 reefs (or less)
20+	40+	10+	No main + almost fully furled genoa

For an inexperienced crew we do not recommend sailing in more wind than max 16 knots or 4 Beaufort. For people with normal sailing experience, we only recommend sailing in max 6 Beaufort (24 knots). For experienced sailors, we recommend sailing in max 8 Beaufort (35 knots). For sailing in more than 8 Beaufort (35 knots true), this takes really good experience and expertise.

Please note that third reef in mainsail is optional – Standard mainsail has only 2 reefs!

We must strongly advise to respect this sail/wind diagram for safe handling and sailing. Of course, the boat can be handled in more wind by experienced sailors, but this is at the owner's own risk.

IMPORTANT: Beware that by sailing from 8 m/sec (16 knots) true windspeed and up, attention to sailing is really required. If pushing the boat hard or sailing in areas with gusting wind, the sheets must always be held in hand for quick release. Especially, beam reach and downwind sailing requires full attention. At beam reach or deeper downwind sailing, if a critical situation appears, always bear off the wind very quickly, this is a very efficient way to depower the boat quickly and safe – but bear off the wind QUICKLY.

IMPORTANT: If this Sail-Wind diagram is not respected, Quorning Boats ApS and our dealers cannot be held responsible for the boat, crew and/or gear. Beware that the boat can capsize if not handled correctly.

SAILING AND TRIMMING

IMPORTANT: It is of great importance to keep your sheets and halyards tidy when sailing because all lines come to the cockpit. This is an important safety factor and improves the joy of sailing.

MAST TRIMMING

The mast is always set in one trim position from the yard, but generally the mast may bend approx. 5 to max 7 cm over the full length. When holding a line to the aft end of the mast ends, the distance to the mast should be approx. 5 to max 7 cm = 2 or 3".

TRIMMING THE GENOA

The luff tension is to be adjusted by the jib halyard. In light winds of course only a little tension to avoid wrinkles along the luff. In more wind the luff needs more tension, but only to keep the luff tight, more is not necessary.

Under normal conditions the genoa car on the cabin roof should be placed near the aft end of the track, if the genoa ”closes” in the aft leach, move the genoa car aft, and if the genoa "opens" further up in the aft leach, move the genoa car forward. You can adjust the genoa car manually; the genoa sheet goes through the halyard stopper on the cabin top marked GENOA. The halyard stopper here is normally always left open, and ONLY closed, if the winch is needed for another purpose. In case you need to put a reef in the genoa, you must move the genoa car forward for right trim. For "reef 1" the genoa car is pulled approx. to the center of the track before the halyard lead blocks, and, for "reef 2" it is pulled almost all the way forward – but check out the trim on the sail. You only use the barber haul system on beam reach or downwind. While tacking upwind, make sure to pull the genoa in tight, so the genoa leach is close the lower spreader.

REEFING THE MAINSAIL

First set the lazy-jack system (topping lift) on the boom. If not, the mainsail boom will fall.

Sail an upwind course only by genoa and ease off the main sheet completely, the main halyard is loosened and then you pull reef 1 line on port side, which is marked on the halyard stopper. This line will then automatically reef the luff first and next

the leach automatically, as you keep pulling the reef 1 line. Same procedure applies to reef 2 and then reverse when reefing out. After each reef, the sail ought to be "packed" with chock cords for less wind resistance, not needed but it looks nicer.

It is recommended to mark on the mainsail halyard where "reef 1" and where "reef 2" must be locked by the halyard stopper.

When reefing the mainsail, the mainsail halyard should be released so when the reefing process is done, the reefing blocks by the luff are approx. 15 cm = 6" above the boom.

Check that the reefing block at the luff is not chafing the sail. Normally, it does not, but sometimes you must go up and "arrange" the sail at the luff.

For long distance sailing, we recommend preparing a reefing line from the third optional reef down to the second reef, so you can control the third reef easier by hand. When using the third reef, the conditions are of course not the easiest. Third reef position is not standard. Avoid reefing downwind, as the mainsail can be blown past and behind the side stays and break the battens. Of course, if there is no other way out, you can do it.

MAIN SAIL

The mainsail needs much more trimming than on a monohull, especially on the main sheet as the boat has many speed potentials within a few wind forces. This calls for concentrated trimming if you want maximum speed and fun with your boat. Generally, the leach seen from the boom end to the mast top must be almost straight: the roach must under no circumstances “fall out” or twist, unless the boat is overpowered. Trimming the main in a breeze takes great effort.

The Dragonfly 28 has no kicker and no traveller, instead there is a “preventer or boom wang” available, one on each side. This is normally not used for upwind sailing, **but** as soon as you bear off the wind it is always recommended to use the preventer system to better control the top of the sail – very important for speed.

The preventer also helps preventing that the mainsail battens are chafing too hard on the leeward side stay.

When jibing in stronger winds – **always** remember to remove the leeward preventer first before jibing.

When jibing in stronger winds, **always** pull in the slack in the main sheet quickly to prevent damaging the mainsail and battens on the side stays.

TACKING

When tacking with the boat, it sometimes helps to ease off the main sheet a little (especially in strong winds and waves). If you stall the boat after a tack, it also helps to ease the main sail until the boat builds up speed again. If the boat starts to go backwards after a tack, then immediately turn the tiller reverse to lee, this helps the bow to bear off the wind and get wind into the sails again. Do not turn the rudder to normal again until the boat starts moving forward again.

MAIN SAIL FOOT

- is trimmed normally. Light wind when tacking, light curve. Downwind, big curve. Medium air tacking, flat bottom. And downwind, large curve. Hard wind tacking, flat bottom, and downwind also flat bottom. But – honestly, we normally never trim the foot – main sheet and preventer is however very important. Only – normal keep a curve of 5-6 cm on the foot.

MAIN SAIL LUFF TENSION

In light wind, you set the main luff only to avoid "wrinkles" in the sail, which has the effect that you easier can help the main when tacking so that the battens are turned right for the new tack. Luff tension also gives more curve and a deeper shape in the mainsail.

In medium air the main halyard is only tightened so much that the wrinkles in the sail are gone and the luff straight.

In heavy wind the main halyard is tightened hard to flatten the sail at the same time you pull hard in the main sheet.

If, for example, you are anchoring or beaching for a short time with the mainsail up, then loosen the luff tension in the sail to quieten the boat.

GENNAKER SAILING

Sailing with the gennaker is a "third" dimension of sailing which a lot of people dread caused by bad experiences. On a trimaran gennaker sailing is fun and a comfortable adventure. A trimaran is not heeling from one side to the other

(rolling), and the gennaker pole is non-existent. With a little practice, you can handle the gennaker alone - but always handle it with respect!! If you respect the gennaker and use it with reason, it is great – also when cruising.

If the gennaker has been damp or wet from sailing, it should be dried before packing. Or, if it is not too wet, leave it in the cabin spread out to dry.

ALWAYS *make sure you have enough leeway and space on your leeward side – so you have enough space to bear away if stronger wind is coming and giving you enough space to bear away to get the gennaker down again – a simple but very important rule that must be respected.*

Therefore, also be careful if you just try to get around a mark or a land "corner" or even another boat – make sure you have space to bear off the wind.

SETTING THE GENNAKER

The bowsprit must be folded out in position and secured. You can best set the gennaker from the lee trampoline netting behind the mainsail. Mount sheets, the halyard and the tack line. Make sure that the lines run correctly, that the gennaker halyard for example is not twisted around the forestay or the diamond spreader. The sheet runs just around the forestay and on the inside of the side stays.

Hoist the gennaker all the way up in the spinnaker sock – set and secure the sheet in leeward side of the winches. The best is to use the genoa winch on the cabin top, pull the tack line almost tight, then pull up the spinnaker sock with the endless line, make sure you are sailing downwind. Then the spinnaker sock is up, you can now tie the sock line, that you have pulled up, on the mast or on the cabin top. Then pull out the rest of the tack line, so the tack of the gennaker is pulled tight to the bowsprit. Now you can luff up a bit closer to the wind, and the gennaker will fill up.

CAUTION: If you feel any resistance hoisting it or sheeting it, stop pulling immediately. It does not take much to rip it apart if it is stuck! When the gennaker is full, roll or furl up the genoa. It is very important that your gennaker fills up with wind before furling the genoa or you will find yourself rolling it into the genoa. It never pays sailing with both genoa and gennaker.

Then roll up the furling genoa, but not before the gennaker is fully set.

VERY IMPORTANT: If a wind gust comes, then bear off the wind quickly, then you quickly depower the boat. In stronger winds always have the gennaker sheet in your hand.

JIBING WITH GENNAKER

Jibing is **VERY** easy if you do it this way.

Bear off on a downwind course without jibing the mainsail and just take your time. Make sure the spinnaker sheets can run easy with no kinks. Then pull over to gennaker quickly – make sure the gennaker sheet that you just released, is fully free to go all the way. Pull the gennaker to windward and when the gennaker is now 2 to 3 meters to windward past the forestay and keep pulling as you then also jibe the mainsail over. **NEVER** jibe the mainsail before the gennaker. Look up and check the gennaker is not caught on the upper spreader – this can happen, and it will come off, if the sheet is not tight.

TAKING DOWN THE GENNAKER

NEVER sail with gennaker without the mainsail!!!!!

Taking down the spinnaker is always easy – even in stronger winds if you follow this process. Bear off to a downwind course and secure the mainsail with the preventer, now pull the active spinnaker sheet in tight so the spinnaker clew is close to the mainsail boom – this is very important.

Now slack and release the tack line completely off. The spinnaker will now fly back behind the mainsail like a flag, and the vacuum behind the mainsail will “hold” the spinnaker behind the mainsail, even also in stronger winds, the spinnaker will find the wind "shadow" behind the mainsail. Now you can easily pull down the spinnaker sock. Make sure to stow away the spinnaker and all lines, before you furl out the genoa again and before you change up into a higher course closer to the wind.

CODE-0

The Code-0 furling system (tack) must NOT be installed at the end of the bowsprit using the tack line!!! This will cause the bowsprit to break.

The Code-0 must only be installed on the steel eye on the upper side of the bowsprit on the same stainless fitting that supports the bowsprit sideways and down to the bow.

This means you must install the Code-0 sail and furler, before you fold out the bowsprit.

You can use this sail upwind, but with a lower tacking angle of 55 degrees, and when tacking you must furl at least half or 2/3 of the sail and then furl it out again on the new course.

Always go downwind when furling the sail in. Always make sure to fix the furling line for the endless furling system as the sail will furl out again by itself, just put the furling line just one time around the forward mooring cleat or even easier just put it one time around the forward stainless lifting eye by the backend of the pulpit- that's all it takes normally to lock the sail.

For better furling, always try to furl the sail in the same direction – the special torsion line in the luff gets stiffer and better this way.

NEVER use the Code-0 upwind in more than max 8 knots of true wind.

ANCHORING

ALWAYS CHECK THE WEATHER FORECAST, WIND AND TIDE CONDITIOINS.

Use chain (8 mm diameter) max. 7 to 10 m combined with anchor line 14 mm or 12-14 mm rope with internal lead up front by the anchor of minimum 10 meters and thereafter flexible anchor line.

Total length of anchor line should be minimum 5-7 times the depth – more is better!

PRECAUTION: Before anchoring check the depth of water, current and nature of the seabed and stones.

By beaching or drying out the boat beware of rocks and stones. Only beach the boat on sand only.

When anchoring, secure the anchor line to the mooring cleats or even better make a bridle, which you can fasten on the stainless U-bolt on the front of each forward wing. Using a bridle prevents the boat from fishtailing.

ALWAYS anchor in protected areas!!

Note that multihulls have more windage than conventional yachts. By anchoring off the stern the engine should be stopped.

For DF 28 we use minimum 10 kg steel anchor – best type is like Delta, Rocna, Ultramarine or also like Spade A-80 aluminium or FX16 Fortress anchor for sand and mud. Many other types can be used as well, but make sure that you have the right anchor gear for your local purpose.

Store the anchor and secure well when sailing – if not, the anchor in heavy sea can puncture a hole in the hull.

Centreboard and rudder kick-up system

SWING KEEL – KICK UP SYSTEM

The centreboard has been constructed in such a way that even the slightest touch of ground makes it kick up automatically via the release cleat on the cabin top. To remount the release cleat, just push down the clam cleat hard again.

When you are sailing, check now and then that the centreboard is down, could have popped up by itself!

The automatic quick release cleat can be fine adjusted on the Allan-screw at the aft end – if it maybe releases too soon or too late.

Up- and downhaul line you can adjust from the cockpit cabin top. Just like you can trim a dinghy on the centreboard, you can also profitably do that on the Dragonfly.

Generally, we always recommend placing the centreboard all the way down upwind. On a reach halfway down and sailing downwind all up.

Do remember though, lowering the centreboard again before going upwind again. Under sail pressure you cannot possibly adjust the centreboard – you will have to either luff into the wind or bear off to dead downwind to adjust the centreboard. Downwind you will seldom find adjusting problems.

IMPORTANT

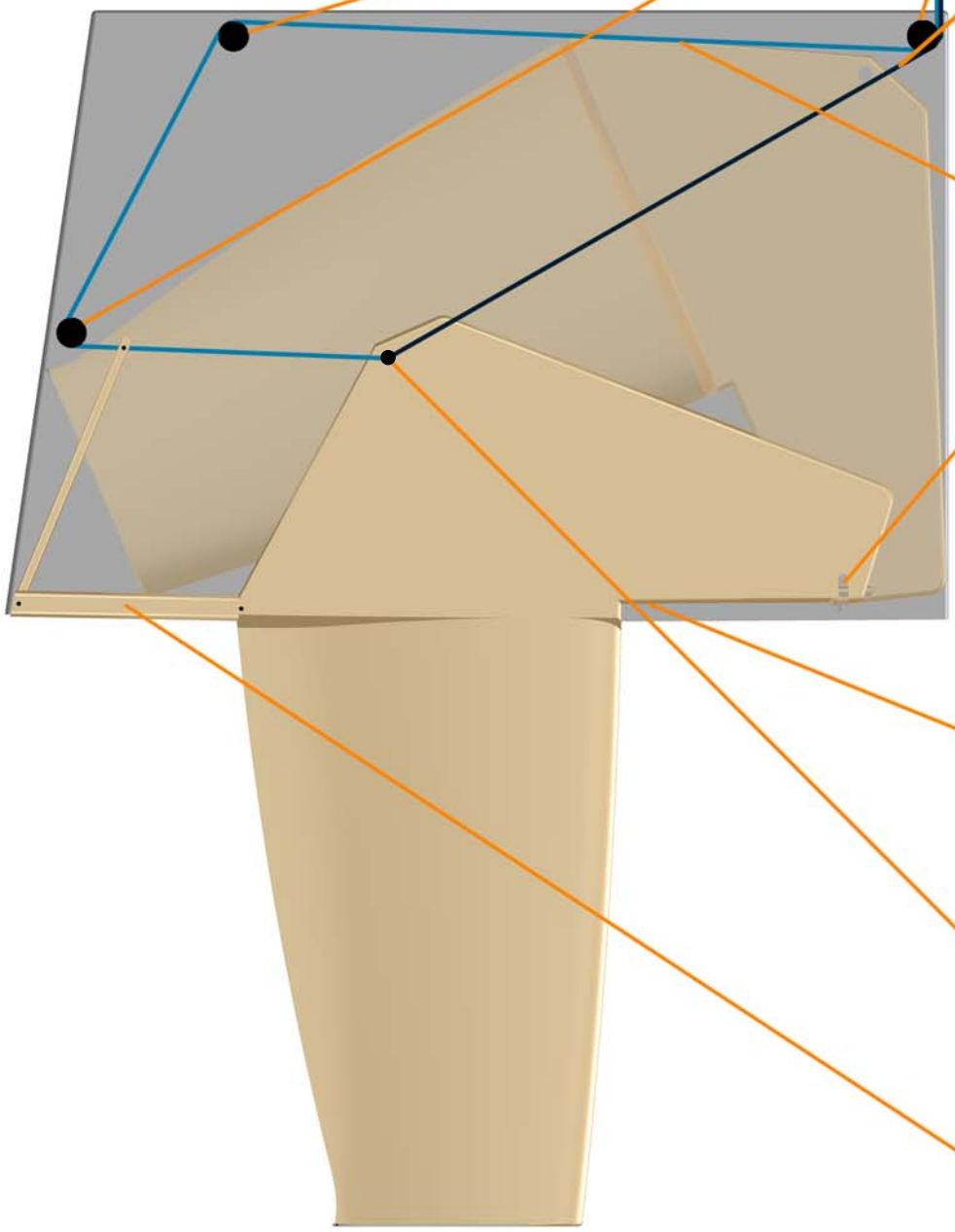
Till and including Dragonfly 28 hull no. 156, the starboard side lifting centreboard line has a knot adjusted from the yard, which is the stop knot – preventing the board from coming too far down. This knot must not be moved and/or changed.

If the centreboard comes too far down, the centreboard can break up the centreboard box and damage the boat seriously – and the boat will get flooded.

Of course, if you know that you are going to a beach, we highly recommend releasing the centreboard downhaul line beforehand, because when hitting the ground in slow speed, the automatic cleat will not release as quickly, and this will put extra unnecessary strain on this system.

Centerboard-system

Dragonfly 28



Mast support

Lines going to deck through mast support

Pulleys

3 x turning blocks

Board up line

8 mm dynema - 7,5 meter long

Board down line

8 mm dynema - 8,5 meter long

Pivot point

Locked around the pivot point by a locking bolt. 120 mm Allen screw, size 10 socket. Can be re-moved from underneath when board is up

Endstop

Board rest against hull while down

Attachment point

Both lines is attached to this hole with a knot

Closing mechanism

Closing the space behind the centerboard while down

2017

DRAGONFLY TRIMARANS

RUDDER SYSTEM

The rudder also has a kick-up system, so by hitting the ground the rudder will automatically kick up.

IMPORTANT

Be sure that the rudder is always fully down in position, otherwise the rudder gets hard weather helm and hard to steer.

Do regularly check the downhaul line for kinks or damage. If you can see any sign of damage on the 5 mm Dyneema line, this must be replaced immediately. The rudder is not designed to be used while sailing in no other position than fully down, otherwise the rudder system will bend and be loose or even break off.

To pull up the rudder, release the downhaul line, lift the tiller a bit and pull the lifting line on top of the tiller. Also regularly check the bolt where the rudder is bolted to the rudder head (key No 19).

Always make sure that the downhaul line is always ready to release with no kinks or knots on the line and that the line always is led into the aft locker.

When beaching the Dragonfly, just release the downhaul line both on centreboard and rudder, so it goes up easier and makes less damage.

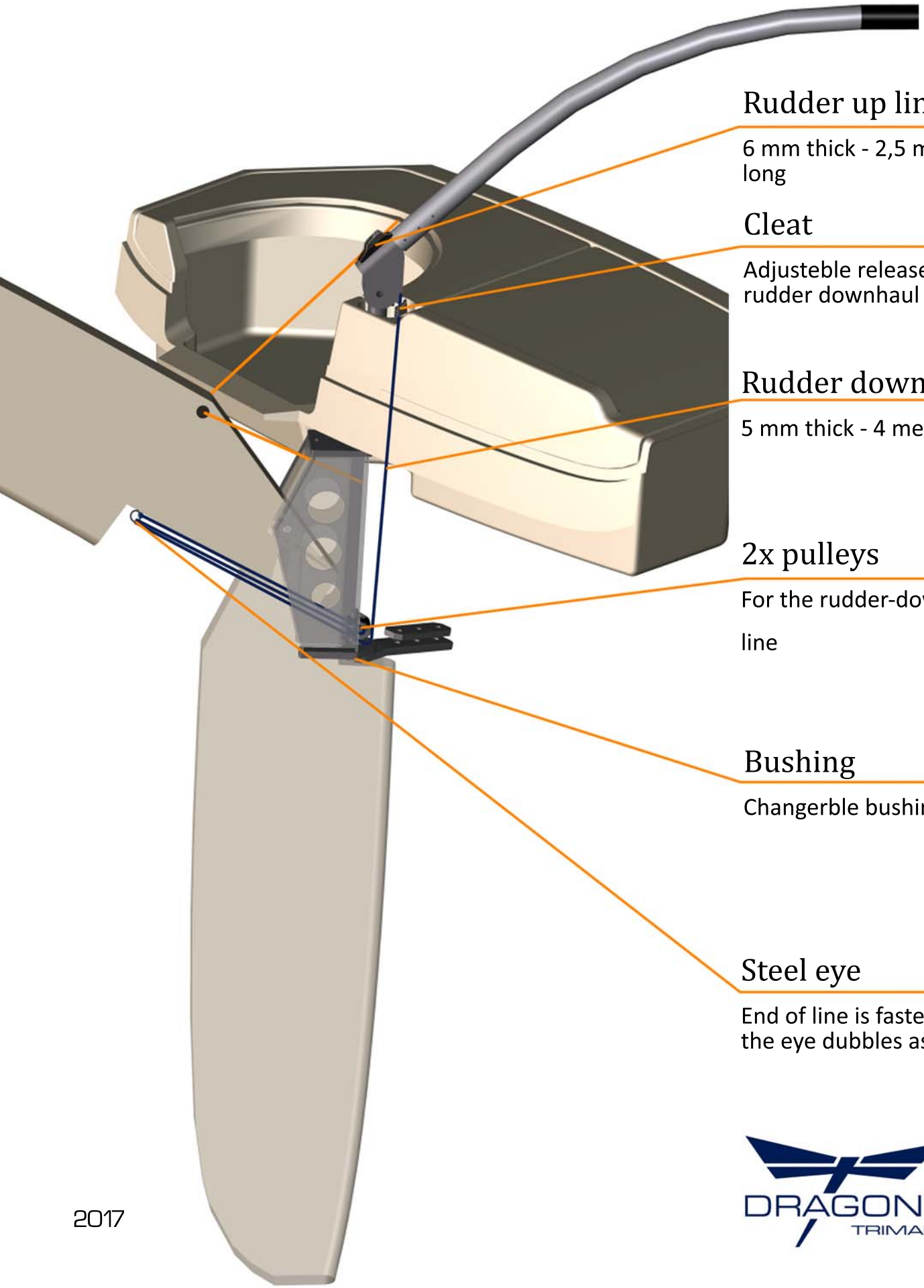
The automatic quick release cleat can be adjusted lighter and/or harder, if needed.

If the outboard motor is active – the rudder can ONLY have 2 positions – either fully down or fully out of the water, if the rudder is halfway down – the propeller can touch the rudder blade when turning the rudder and engine to port.

You can easily manoeuvre the boat under engine with no rudder down as the engine turns with the tiller when connected – just like a powerboat!

Rudder-system

Dragonfly 28



Rudder up line

6 mm thick - 2,5 meter long

Cleat

Adjusteble release rudder downhaul cleat

Rudder down line

5 mm thick - 4 meter long

2x pulleys

For the rudder-down-line

Bushing

Changerble bushing

Steel eye

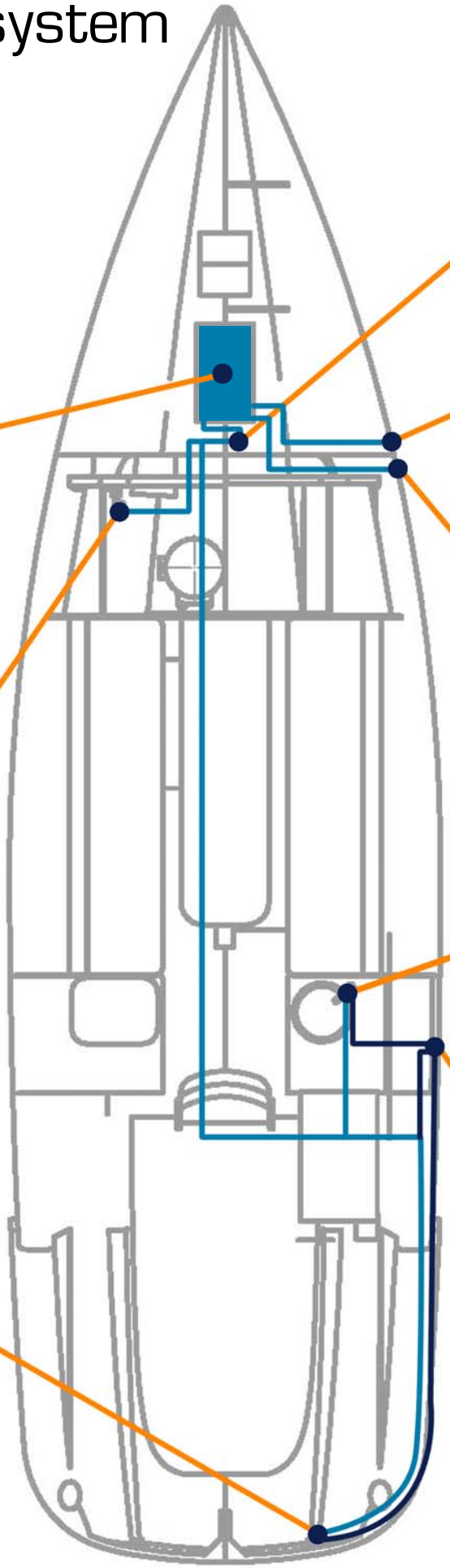
End of line is fastent here and the eye dubbles as pulley

2017

DRAGONFLY TRIMARANS

Freshwater-system

Dragonfly 28



Pump

12 V electric freshwater-pump

Air vent

Air vent to equalize pressure in water tank

Filling

Deck fill-hole for freshwater

Water tank

90 L freshwater tank

Toilet faucet

Fresh cold water to the faucet at the toilet

Galley faucet

Fresh cold water in the galley

Warmwater

Optional warmwater circuit with 6L heater, 12/110/220 V. Supplyes galley and deck shower

Cockpit shower

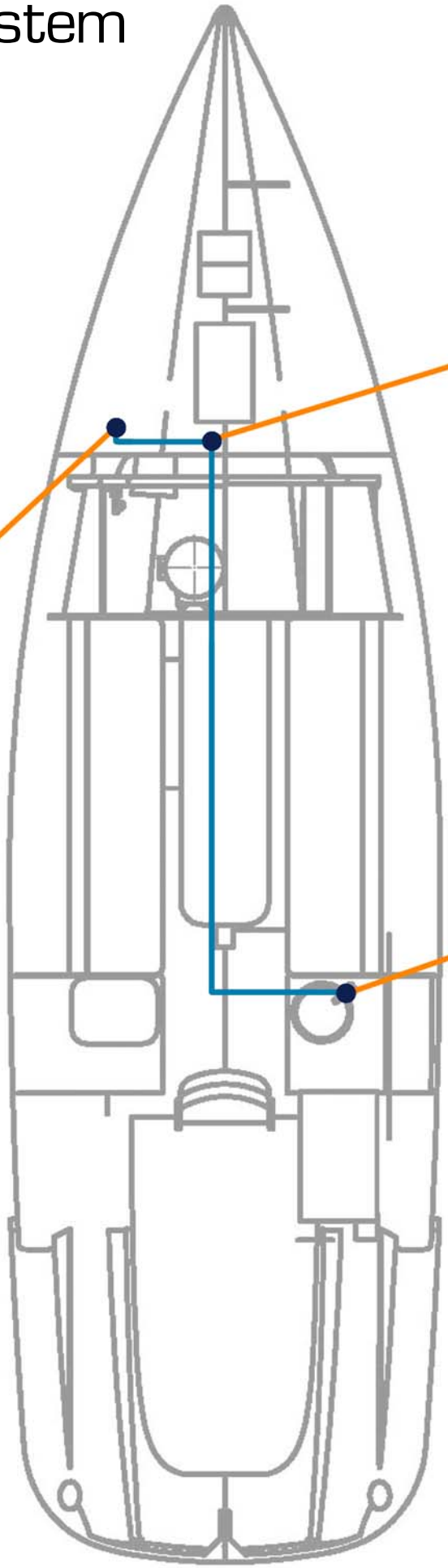
Optional

2017

DRAGONFLY TRIMARANS

Saltwater-system Optional

Dragonfly 28



Pump

12 V electric saltwater-pump

Intake

Saltwater intake, 1/2” seacork

Galley faucet

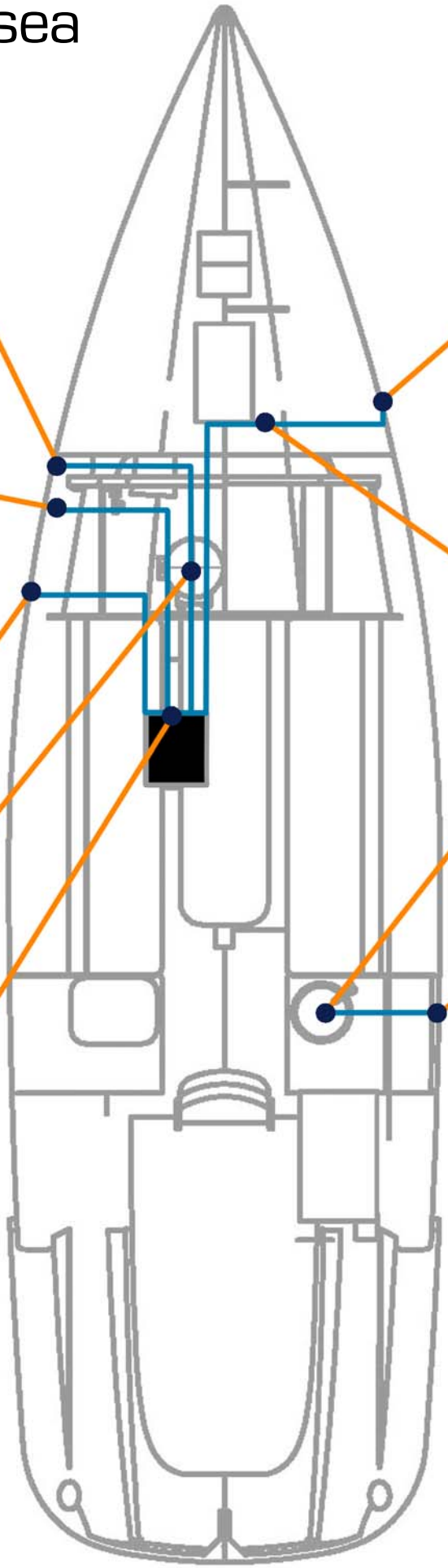
Outlet of saltwater in the galley

2017

DRAGONFLY TRIMARANS

Holdingtank/sea coarks

Dragonfly 28



Saltwater in

Saltwater intake for toilet and opt. salt-water faucet in galley, 1/2” seacork

Deck outlet

Deck fitting for emptying holding tank in port

Air vent

Air vent for the holding tank

Toilet

Manual toilet

Holding tank

60 L holding tank, blackwater only

Outlet holdingtank

Black water from the holdingtank via the manual pump to sea, 1 1/4” seacork

Manual pump

Manual blackwater pump, 1 1/4”

Galley sink

Galley sink drain

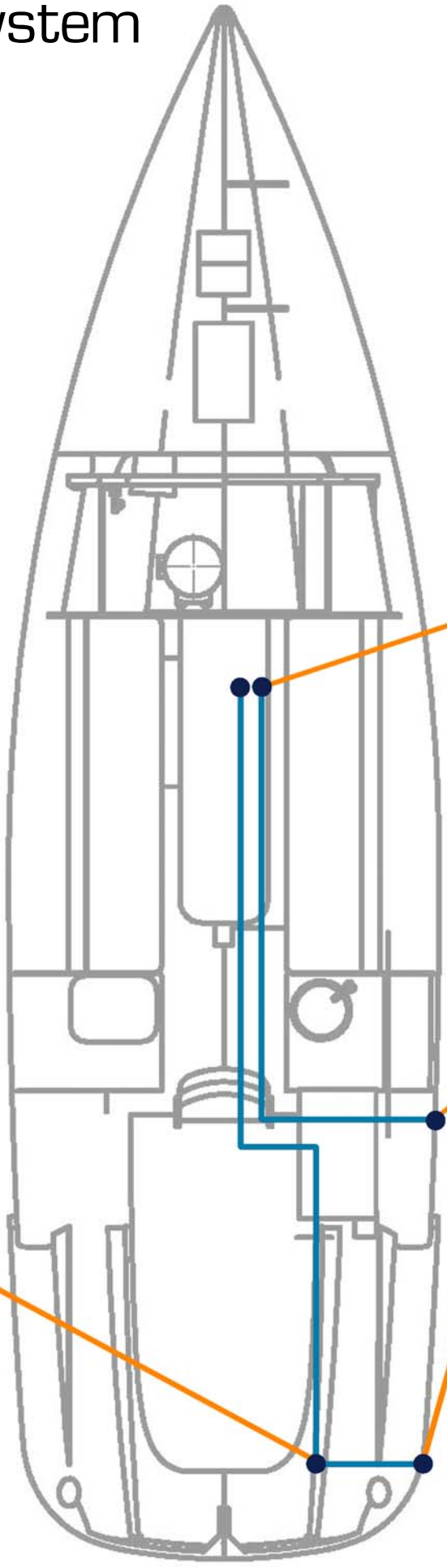
Drain from galley sink, above waterline

2017

DRAGONFLY TRIMARANS

Bilgepump p-system

Dragonfly 28



Pump

12 V electric bilgepump,
access in SB cabin floor

Outlet

Outlet of water from the
electric bilgepump,
above waterline

Manual bilgepump

Bilgepump accessible
from steering position

Outlet

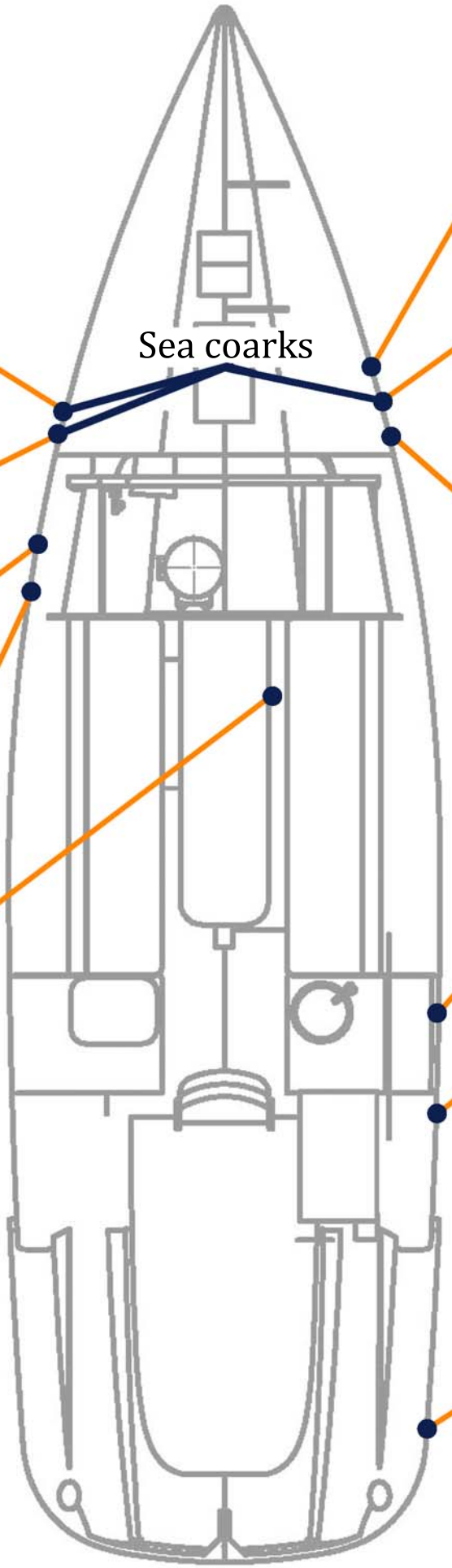
Outlet of water from the
manual bilgepump,
above waterline

2017

DRAGONFLY TRIMARANS

Hull-fittings

Dragonfly 28



Opt. Watermaker

Drain from the optional watermaker

Outlet holdingtank

Black water from the holdingtank via the manual pump to sea, 1 1/4”

Air vent

Air vent for the water tank, above waterline

Intake toilet

1/2”

Sea coarks

Saltwater intake

Toilet drain sink

Above waterline

Air vent

Air vent for the holding tank

Transducer

Speed/depth transducer, in bilge main cabin

Drain galley sink

Above waterline

Drain electric bilge

Above waterline

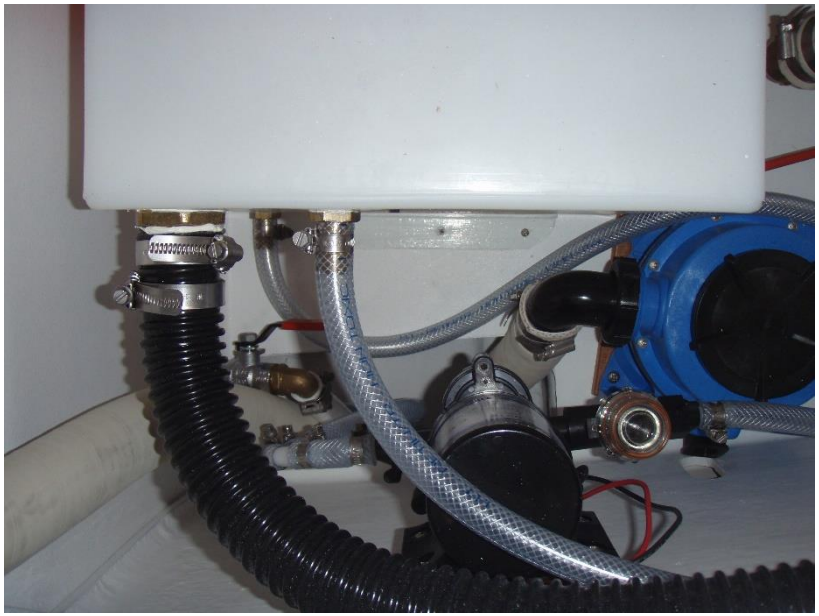
Drain manual bilge

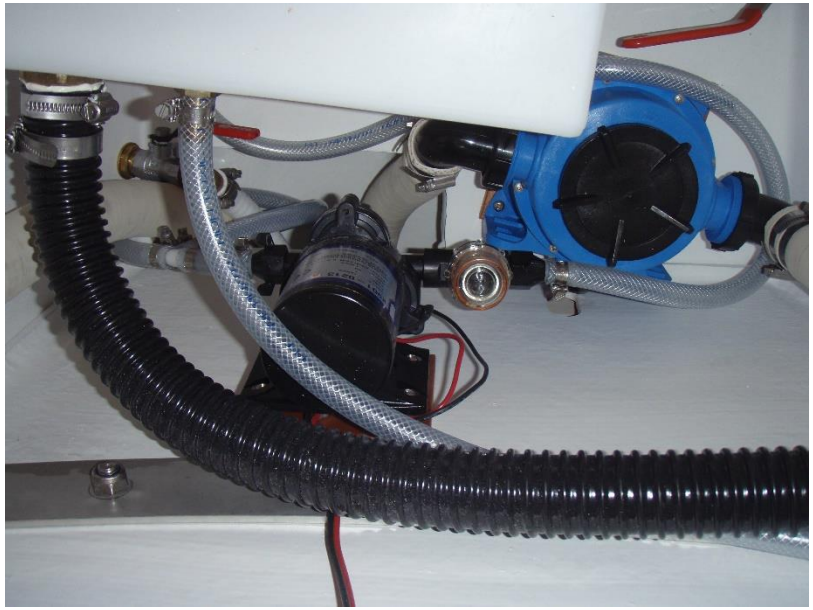
Above waterline

2017

DRAGONFLY TRIMARANS

Dragonfly 28 Water system





Dragonfly 28 Holding tank

Gas-system (propane)

The Dragonfly 28 can be equipped with a double gas burner stove and a 3 Kgs steel EU norm gas cylinder placed in a closed box in the cockpit. *Some boats are built with other stove and oven types which are not reflected in the following information.*

The removable gally top must be removed and must stay open while cooking to get direct flames, but also to protect the wooden interior. NEVER have this galley top plate closed while the propane oven is active.

For safety reasons please make sure to **close the valve** on top of the gas bottle when you are done using the gas stove at the galley and or you can close the gas valve at the galley.

When replacing a gas cylinder, make sure to **connect the hose system correctly** to avoid leakage and check you get the correct gas fluid replacement.

The gas system is leak tested by the yard and a gas leak test sheet is supplied with the boat on delivery. The gas system must be checked every 5 years by a professional. In the drawer below the stove, you will find a gas leak tester with a battery life of 10 years.

Beware that some countries and local areas have restrictions that require a specific local professional inspection of the gas installation.

It is always the owner´s/skippers' responsibility to follow the local restrictions as required gas inspection and to have this done before the active approval expire. The gas system is by Quorning Boats built and installed according to EU and CE regulations.

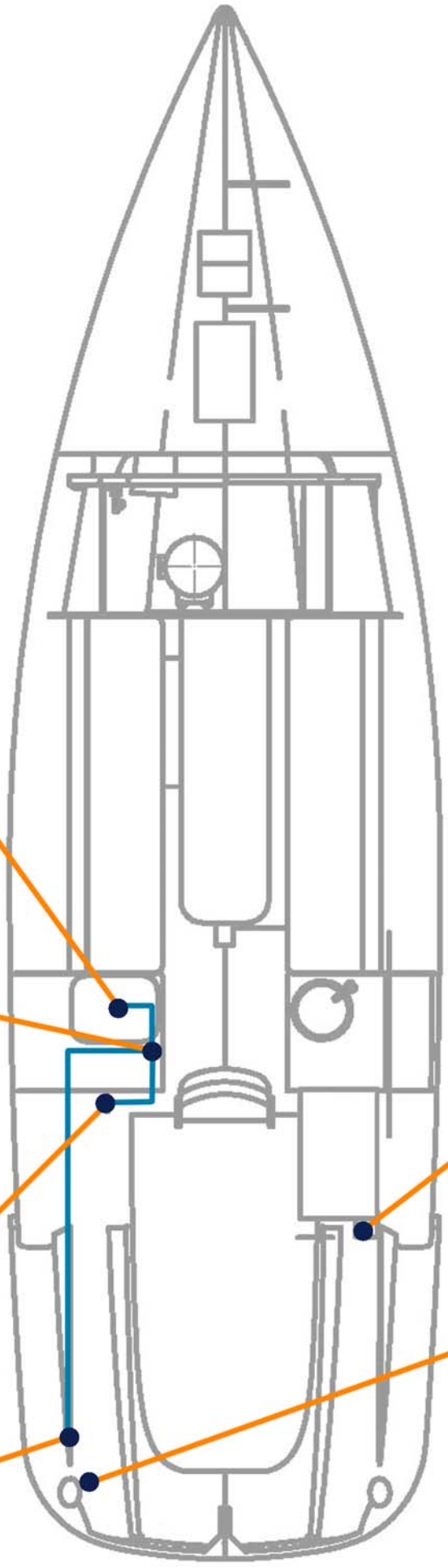
If you need to bring extra gas cylinders on board for longer sailing trips, make sure to store them carefully so they cannot move around and never inside the cabins in the centre hull.

Please read the owner's manual of the gas stove carefully.

ALWAYS stay near the gas oven/stove when using this.

Gas-system

Dragonfly 28



Gas stove

Two burner gas stove

Gas valve

Under gasstove

Gas heater

Optional

Gas tank

3 kg EU camping gas in port cockpit locker

Fire extinguisher

2 kg capacity in SB cock-pit locket

Locker vent

Gasvent for gasbottle (gasdrain)

2017

DRAGONFLY TRIMARANS

***VERY IMPORTANT**: Never use the gas stove or -oven with closed cabin doors and hatches and make sure to have airflow and ventilation in the main cabin when using the gas systems.*

Maintenance and product information

Engine type: _____

Engine No: _____

Gelcoat hull colour: _____

Gelcoat deck colour: _____

Gelcoat non-skid colour: _____

Stripe work colour: _____

House bank batteries: _____

Engine battery: _____

Epoxy barrier under water: _____

Antifouling brand & colour: _____

Mast colour No: _____

INFORMATION ABOUT PRODUCTS USED FOR DRAGONFLY

Woodwork:

The Elm woodwork in the cabins is varnished with two-part satin varnish. To varnish again, sand with grit 240 or finer sandpaper. You can use either one or two component varnish with satin finish. Two-part varnish is best.

As regards to the standard lighter colour woodwork, all interior panels are made of High-pressure laminate panels glued to high quality Marine grade plywood panels. These laminate panels are extremely robust and take no maintenance besides normal cleaning. These panels we call “Ash” as we use real Ash wood for all the wooden trim inside the boat and this wooden trim is also varnished with a two-part varnish and please read above our recommendation how to varnish this.

ELETRONICS:

By delivery of a new boat from Quorning Boats, the yard does not calibrate electronic equipment in detail, only standard setup calibration.

It is always the responsibility of the skipper/owner to ensure that all the electronics are fully functional after first delivery and calibrated and reliable.

BATTERIES:

When replacing the onboard batteries, **ALWAYS** replace them with the same type, brand, and size of batteries. The electronic system on your boat is set up and designed especially for the type of batteries installed specifically on this boat.

Please see the overall diagram for position of batteries aft – midship and forward.

For Lithium batteries change – ***always*** contact a professional, as this technology changes quickly over a short time and new calibration software might be needed.

Never install fluid batteries.

SPRAYHOOD, COCKPIT TENT AND BIMINI

Please take note that the sprayhood and cockpit tent is **ONLY** designed to be used under normal conditions and is **NOT** designed as a cover or protection for winter storage nor protecting the boat during windy and stormy conditions and by heavy snow or rainfall conditions.

THRU-HULL FITTINGS AND SEA VALVES

- The sea valves are closed when the handle is across the sea valve.
- An annual visual inspection of all sea valves on the boat should be performed to ensure they appear normal. There should always be two clamps on the hoses attached to sea valves below the waterline.
- An annual manual physical test should be performed to ensure all sea valves are functional and can be closed by hand without the use of tools.
- It is recommended that sea valves are always closed on the boat and only opened when in use.
- It is recommended to replace thru-hull fittings and sea valves when the boat is 15 years old.

MAINTENANCE

Dragonfly 28 Touring, Sport, and Performance

To inform and illustrate recommended service, maintenance, and refitting on an older Dragonfly, we have drawn this general information sheet. Rough elements, like strong winds and wave conditions, strong saltwater and UV do have some impact on the boat after a long sailing life.

We strongly recommend servicing and changing vital parts on your boat according to our recommendations. This information overrules any other former information you may have, as the following is based on updated knowledge.

EXCHANGE INTERVALS OF STRUCTURAL PARTS

Dragonfly 28 Touring and Sport (built since 2009)

- Waterstays – every maximum 7 years or 15.000 NM.
- Side stays and forestay – every maximum 10 years or 15.000 NM.
- Beam stop cable to forward, outside beam under trampoline – every maximum 10 years.
- Diamond spreader stays on the mast – every maximum 15 years.
- Structural Dyneema line in backstay – every maximum 7 years. *(Only the Sport version)*
- Safety cables – every maximum 15 years. Regular visual control is strongly recommended.

Dragonfly 28 Performance (built since 2016)

- Waterstays – every maximum 7 years or 10.000 NM.
- Side stays and forestay cable – every 10 years (max), or by max 15,000 NM.

- Beam stop cable to forward, outside beam under trampoline – every 10 years.
- Diamond spreader stays on the mast – every 15 years.
- Structural Dyneema line in backstay – every maximum 7 years.
- Safety cables – every maximum 15 years. Regular visual control is strongly recommended.

The above list of exchange intervals is the recommendations from the Dragonfly Yard, and it is not an extension of the 2-year warranty given from when the boat was new.

From January 2024 we engrave all terminals on structural wiring such as waterstays, side stays and diamond cables, to make it easier for you as a customer to follow the above recommended exchange intervals.

RIGGING

Visual check of all cables is still required when changing the rigging. When trailering the boat, we strongly recommend focusing on side stay cables, as these easily bend when stepping the mast. Bended side stay cables near the terminal may cause the side stay cable to break.

On all Dragonfly's, please regularly check the forestay cable in the top by the terminal. When furling, the spinnaker halyard may block the forestay, which can cause failure of the forestay.

GENERAL INFORMATION

NEVER drill holes in the carbon mast section without asking your local dealer or Quorning Boats beforehand.

NEVER wrap the mast in any kind of plastic, as this will cause the paint to bubble. If wrapping is needed, use breathable textile. Best to leave it open.

TRAMPOLINES

On all Dragonfly's, we recommend re-stitching (sewing) along the seams of the

trampolines every 6-7 years (in climates with strong UV, every 5 years). Normally, our clients change their trampolines after 10-12 years' use.

FLOAT DECK TEFLON PAD RINGS

The white 5 mm Teflon pad rings on the float deck need to be changed every 13-15 years – this is neither critical nor structural. For easy change of these pads/rings, you just bolt off the floats from the wings.

QUICK-LINKS

Over the years, Quorning Boats has used the riggings links, so-called Quick-Links, in the Dragonfly production. When replacing these, it is of the utmost importance to purchase links of same high quality or similar products carrying same strength (working load). Many products look the same, but do not carry the same strength.

The above picture shows a Quick link from Peguet that is used on all Dragonfly's.

PAINTING

Caution for all painted surfaces on the boat and mast

Painted surfaces may not be covered with Plastic or other non-breathable materials, as water and condensation cannot be lead away from the painted surfaces, and these are not able to dry.

When water is stuck between the Paint and a non-breathable or non-ventilated material, blisters can occur between the paint and the gelcoat or the carbon sections of the mast.

Due to these circumstances, the permanent use of Ex. Matt-Fenders cannot be recommended, as water and Condensation can also get stuck between these and the hull, and lead to blisters in the Paint.

Quorning Boats cannot be held responsible for Blisters in the paint due to covering the painted surfaces with non-breathable materials.

ORDERING PARTS

Original parts can be ordered at Quorning Boats at aftersales@dragonfly.dk

Common spare parts can be shipped within two weeks, whereas special parts and/or custom-made parts usually are served within 6-8 weeks.

IMPORTANT - Parts ordered at Quorning Boats Denmark, will be produced in originally designed materials. Should you choose to order from other suppliers, please check that the same kind of materials are used – especially on the waterstays and other rigging parts, where stronger Dyeform cables are needed.

TO STORE THE BOAT ON LAND

The best possible storage on land is to order from our yard a road trailer, steel cradle and/or a steel trolley, where the boat can rest on the four special reinforced positions under the waterstay hull fittings on the centre hull. Only store the boat in folded position on the special Dragonfly road trailer or trolley, folded out puts too much load on the front car hook, as the point of gravity moves forward.

Quorning Boats also offer the design of the steel cradles and/or Trolley for free, so you can have these made locally.

If storage on land is not possible with the designed road trailer, steel cradles/Trolley, we recommend resting the centre hull on wooden blocks or pallets on the centreboard casing. Only support the boat in the centreline of the centre hull.

IMPORTANT: Make sure the main load is on the centreboard casing.

Thereafter, backup with wooden blocks or pallets forward and aft on the centre hull.

For sideway stability – ONLY SUPPORT the floats with wooden block or pallets, best under the forward beam and or 80 cm (2,5´ feet) behind the forward deck hatch as here is also a bulkhead (just forward of the sidestay position) – use also carpet or similar, to protect the hulls and antifouling.

IMPORTANT NOTICE:

We do not recommend storing the boat folded on land with the mast up. If the mast must stay up – the boat must be folded out.

The hulls are very fragile, and it is very important that you and/or your boatyard follow our recommendations and guidelines on how to store the boat on land.

Be careful not to store the boat on land, where high tide or seasonal flooding can reach the boat.

Never store or transport the Dragonfly 28 on monohull cradles, this will never work as this is not designed for folding trimarans.

BY ANY DAMAGE TO THE BOAT

Contact your dealer or the yard for instructions. If not, you could endanger your safety and/or lose your warranty.

GELCOAT REPAIRS

IMPORTANT – Successful repairs require dry weather and a temperature between +15° to 25° C.

- The ratio of hardener is min 2% and max 3%.
- The Gel setting time is approx. half an hour.
- Never work in direct sun when applying gelcoat.

HOW TO MAKE GELCOAT REPAIRS

1. First sand the actual repair with grit 80.
2. Then sand the area around it with grit 180-240.
3. Apply gelcoat with 2 or 3 layers.
4. When completely dry sand it down with 120-240, thereafter with 500 – 800 – 1,200.
5. Polish with rubber compound and finally wax the whole area.
6. Use lots of ventilation, gloves, glasses and dust masks.
7. Keep children away.

WARNING

- The catalyst is a dangerous product and should not be left within children's reach.
- Avoid contact with skin and mucosa. Protect your eyes.
- In case of contact, wash with soap water and rinse liberally, in the worst case contact a doctor.

Clean all tools with acetone, never leave larger quantity mixed with hardener alone, as this can start to burn. Poor into other steel cans or best into a bucket with water.

GENERAL SERVICING

- Clean blocks and sheets well in freshwater regularly.
- Lubricate blocks and Easylocks every 2-3 months.
- Clean all tracks frequently where travellers are functioning. Also, the mast track.
- Minimum once a year clean and grease the winches and check the springs.
- Keep the sails covered when not in use, to protect them from the sun.
- Keep the sails dry and rinse regularly with freshwater. If sails get damaged immediate repair is required.
- Let a sail maker check the sails once a year.
- When sailing on saltwater, we strongly recommend rinsing the boat with freshwater after each sailing trip. This will over time make sure that blocks and lines work better, and it will help avoiding rust building up on the stainless.
- All stainless used throughout the boat is the very high-quality A4 or 316, but this does not 100 % prevent very light rust stains from building up on the

surface. This light rust is cosmetic only and does not weaken fittings or bolts. Rinsing the boat after each sail will help avoid this problem. Especially by boats in warm and salty water we strongly recommend rinsing the boat.

SPRING CLEANING

EXTERIOR

Wash and wax the boat. (Do not wax the non-skid areas). Interior: Clean the boat everywhere.

ANTIFOULING

Main hull. First wash the bottom of the boat with freshwater, if necessary, high-pressure washing. Let it dry out and apply antifouling with a lacquer roll. You need approx. 3 litres.

The centreboard has enough antifouling for the first three max four seasons; you will then have to lift the boat with a crane or place the boat on some car tires and turn it from side to side to antifoul the centreboard.

It is recommended that all blocks, wheels and Easylocks are greased with Teflon spray, especially the Easylocks – this should preferably be repeated a few times through the season.

Mast, boom and head foil must be washed and waxed to keep the sails clean. If you do not immediately succeed in cleaning the aluminium, you can use polish cream.

Happy sailing!!

CLEANING UP FOR THE WINTER

You are recommended to wash the boat completely clean, wax and polish all surfaces except the non-skid.

Make sure to take off the sails, sprayhood and cockpit tent. Wash and rinse out dirt and salt. Everything must be completely dry, before stowed away for the winter and kept in a dry place.

Cushions: For cleaning cushions, you can remove the cover by unfastening the zip on the back of the cushion. For washing or dry-cleaning, check which material your cushions are made of.

Various steel wires can be washed in warm soap and water, rinsed clean, dried and afterwards wiped with an oilcloth.

All ropes and blocks should be washed in warm soap and water, rinsed and dried.

RIGGING AND BOOM

Make sure all lines and halyards are intact. Should a halyard have a failure at the end, turn it over. Every year all halyards and reefing lines should be shortened approx. 25 cm.

The water tank must be emptied and cleaned – is located under the front bunk.

THE OUTBOARD ENGINE

Please contact your local dealer, but have it serviced and run the engine in fresh water to get all the salt out of it.

The marine battery is removed from the boat and discharged, then you recharge the battery and store it like the cushions and sails in a nice dry place. A good thing for the battery is, during the winter, to partly "drain" the battery and charge it again, e.g. 2 or 3 times during the winter.

Dry out the hulls completely to avoid frost damage in all bilges/compartments.

Make sure that the ventilation is good before storing the boat for the winter. The best thing to do is to store the boat indoors for the winter period. If you use a canvas cover, make sure it does not touch the boat as it may scratch it.

Never cover the mast with plastic – this will create blisters between the carbon mast and the paint. Quorning Boats cannot be held responsible towards blisters on the mast.

Always check that ALL bilges in ALL compartments in ALL hulls are dry.

Any damage and/or lacks on the boat, sails or instrumentation should be fixed in the autumn; everybody can give the best service at that time of the year.

IMPORTANT MAINTENANCE INFORMATION ON THE RIGGING

- Always check the rigging, halyards, reefing lines, water stays and rudder down haul line, as well as the cable operating the Swing-Wing system in the

aft wing.

- Minimum once a year shorten all halyards, reefing lines, and Swing-Wing lines by approx. 25 cm. After some years turn them around or replace the lines.

- Water stays, Touring and Sport version: max. 10 years use and/or max. 15,000 NM.

- Water stays, Performance version: max. 7 years use and/or max. 10,000 NM.

- Side stays and forestay should be changed at the latest after 10 years or by max 15,000 NM.

- Diamond stays on the mast should be changed at the latest after 15 years or by max 20,000 NM.

- We recommend changing the Beam-stop-cable under the Trampoline from the centre hull to forward outside Beam every max. 10 years.

- Never use shackles or similar on the boatman chair.

- Never climb the rigging when the boat is in folded position.

- Tension on the rigging, please see the rig diagram.

- Never change the tension on the diamonds without checking tension with a tension meter according to rig tension diagram, changing the rig tension causes the mast to break.

- Never drill holes in the carbon mast section without asking your local dealer or Quorning Boats beforehand.

- Never wrap the mast in any plastic, as this can cause the paint to bubble. If wrapping is needed, use breathable textile.

- Wash the mast track with soap and water before stepping the mast

IT IS ALWAYS

THE OWNER'S AND/OR THE SKIPPER'S RESPONSIBILITY

TO CHECK THE CONDITION OF THE BOAT AND GEAR

AT ALL TIMES, TO ENSURE THE SAFETY OF THE BOAT AND CREW.

If you respect what is informed here in this Owner´s Manual, you will enjoy and understand the boat even more.

We wish you some great and fantastic sailing and cruising with your DRAGONFLY 28.

Quorning Boats ApS

DRAGONFLY TRIMARANS DENMARK

Rope diagram

Dragonfly 28 Swing Wing Touring version

Text	Material	No of lines	Diameter	Length in metres
Main sheet	Polyester	1	8	26
Genoa sheet	Polyester	1	10	20
Spinnaker sheet, asymmetric	Polyester	1	8	40
Barber haul	Polyester	2	8	18
Genoa furling line	Spectra	1	8	13,5
Swing Wing line "endless"	Spectra	2	8	23
Backstay line to cockpit	Polyester	2	8	16
Backstay line float/side stay	Dyneema	1	8	4,2
Centreboard up	Polyester	1	8	7,5
Centreboard down	Polyester	1	8	8,5
Rudder up	Polyester	1	6	2,5
Rudder down	Polyester	1	6	4
Main halyard	Spectra	1	8	41
Jib halyard	Spectra	1	8	24
Spinnaker halyard	Spectra	1	8	30
Code 0 halyard	Spectra	1	8	30
Reef I	Spectra	1	8	19
Reef II	Spectra	1	8	29
Lazy Jack	Polyester	1	6	12
Mooring lines	Polyester	4	12 / 14	12
Tack line for bowsprit	Spectra	1	8	15,5
Preventer for mainsail	Polyester	2	8	14

Spectra /Dyneema is same type of material

Rope diagram

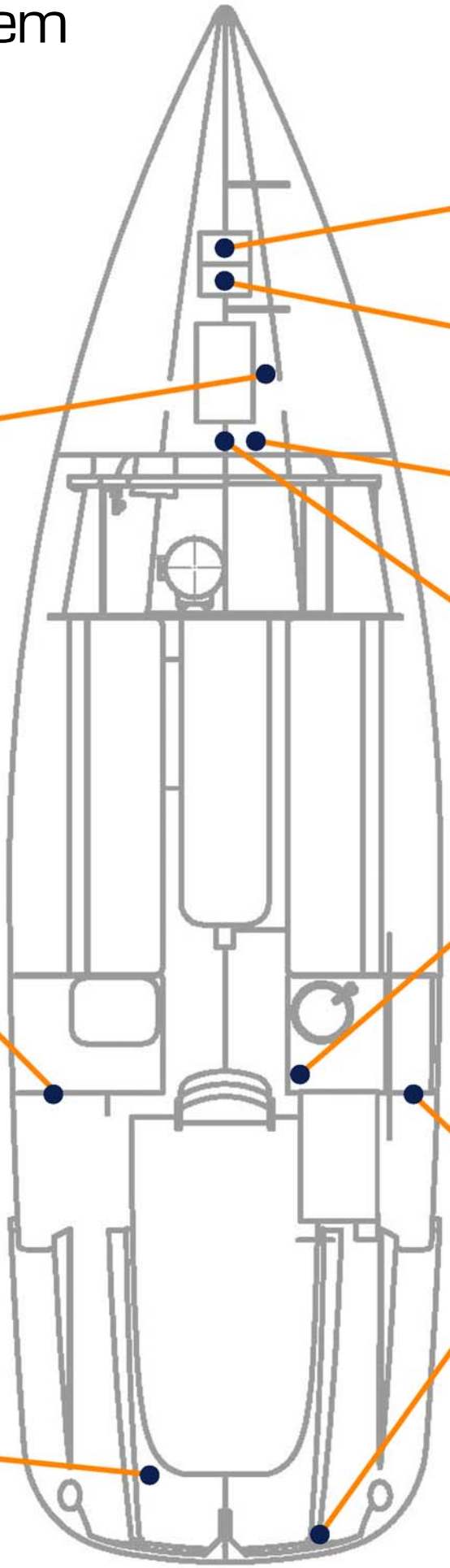
Dragonfly 28 Swing Wing Performance version

Text	Material	No of lines	Diameter	Length in metres
Main sheet	Polyester	1	8	32
Genoa sheet	Polyester	1	10	20
Code 0 sheet	Spectra	1	8	40
Spinnaker sheet, asymmetric	Polyester	1	8	40
Barber haul	Polyester	2	8	18
Genoa furling line	Spectra	1	8	13,5
Swing Wing line "endless"	Spectra	2	8	23
Backstay	Polyester	2	8	16
Centreboard up	Polyester	1	8	7,5
Centreboard down	Polyester	1	8	8,5
Rudder up	Polyester	1	6	2,5
Rudder down	Polyester	1	6	4
Main halyard	Spectra	1	8	46
Jib halyard	Spectra	1	8	28
Spinnaker halyard	Spectra	1	8	33
Code 0 halyard	Spectra	1	8	33
Reef I	Spectra	1	8	21
Reef II	Spectra	1	8	31
Lazy Jack	Polyester	1	6	12
Mooring lines	Polyester	4	12 / 14	12
Tack line for bowsprit	Spectra	1	8	15,5
Preventer for mainsail	Polyester	2	8	14

Spectra /Dyneema is same type of material

Electric-system

Dragonfly 28



Standard battery

Varta 70 AMPS

Secondary battery

Optional extra battery

Watermaker

Optional

Saltwater pump

12 V electric pump
(Optional)

Freshwater pump

12 V electric pump

HFI relay

110/220 V

12 V board

Main switch board

Socket

110/220 V

Shorepower

Shorepower-system
(110/220 V) is optional

Engine

12 V engine start
and charger

2017

DRAGONFLY TRIMARANS

Owner's list

FIRST OWNER:

Name: _____.

Address: _____.

City: _____.

Country: _____.

Date of purchase: _____.

SECOND OWNER:

Name: _____.

Address: _____.

City: _____.

Country: _____.

Date of purchase: _____.

THIRD OWNER:

Name: _____.

Address: _____.

City: _____.

Country: _____.

Date of purchase: _____.

**Keep this manual in a safe place onboard and hand it over to the new owner, if you sell the boat!!*

Warranty

RAYMARINE AND ELECTRONICS:

If Raymarine or possible other electronics has been mounted on your boat, Quorning Boats has registered the serial numbers according to your hull number for warranty.

HOW TO PROCEED WITH WARRANTY CLAIMS ON ELECTRONICS:

You must contact your local Raymarine or whatever brand of electronics is used directly, referring to your instrument registration.

RAYMARINE:

Please contact your national agent or Raymarine distributor. They will be able to inform the nearest Raymarine Service.

Please take note that only basic and standard calibration has been made on your electronic system from the yard.

GPS is not delivered with detailed electronic charts from the yard.

VICTRON:

The Victron system has been locked in 'User' mode by Quorning Boats ApS to prevent accidental and unwanted changes to the configuration.

The Victron system can be unlocked to 'Installer' mode. Installer has additional privileges and once changed from default requires a password.

The password to unlock 'User' mode can be requested by contacting Quorning Boats ApS directly.

Disclaimer *– If the Victron system is unlocked, Quorning Boats ApS disclaims any responsibility in connection with setup, configuration and functionality.*

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TOURING

SPORT

PERFORMANCE