OWNER'S MANUAL
DRAGONFLY 920 Swing Wing

Please note that this is the text version only
– all drawings and diagrams are not displayed

If this is your first boat or even multihull we highly recommend before ”taking command” 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 calm conditions, especially also manoeuvring the boat under power, try this out in ”open” water first using a fender or similar and manoeuvre the boat around this floating object, get to learn 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, but it behaves differently.

IMPORTANT:
Always before taking the boat out: Pull down the centre board for better manoeuvring without the centre board the boat can not make a sharp turn and will drift much quicker.

CLASSIFICATION:
The DRAGONFLY 920 is classified according to the CE-standards in category B.

DRAGONFLY 920 is designed also for offshore trips, during which the wind may max rise to 8 on the Beaufort scale = 32 knots = 16 m/sec. true wind and the waves may rise to max 4 m significant height. The craft is classified for the CE by notified organisation IMCI No 0609. Sails must be set according to our wind/sail diagram. Please see page 6.2.

SAILING:

DANGER
Wear your life-jacket
In heavy weather wear the safety harness

MANOEUVRING AND MOORING – RECOMMENDATIONS/MAINTENANCE:
A sufficient number of mooring ropes, of adequate dimensions and suitable for the environment should be on board.

- Always manoeuvre the boat with the engine in harbour areas
- Handle the boat consistent 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

DANGER
Never try to stop the boat with your foot, your hand or a boat-hook.

When taut:
- Protect the ropes from chafing with plastic sleeves
- Make allowance for the tide, as the case may be
- Always follow the recommended sail area to wind diagram for safe sailing and handling

PRECAUTION:
Be aware that the boat can capsize if not handles correctly and sailing instructions are followed.

Be well aquatinted with the boat before taking it out in more than 6 Beaufort (25 knots – 12 m/sec).

Learn to handle the boat well under power to make safe harbour manoeuvring.

Be aware that the boat can 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.

Never keep or power the boat in folded condition where wave height exceed max 8 inches or 20 cm, otherwise the boat may capsize.

The boat is at all times unsinkable. If anything should happen, always stay with the boat.

In capsized position the boat will stay afloat approx where hull and deck are assembled.

Keep your flares, handheld VHF and a knife in the cockpit safetybox and when making longer passages some drinking water as well.

By each wing base underside you will find a stainless eye for lifelines.

For longer offshore passages, life raft is recommended.

SAILING BY AUTOPILOT:
IMPORTANT – Depending on wind and wave conditions, using Autopilot is winds exceeding 10 m/sec (20 knots) true wind is very difficult and not recommendable. Autopilot can be used in stronger winds, but only when reefed even more conservatively than the sail to wind diagram. Quorning Boats cannot be held responsible for any damages or problems caused by sailing using Autopilot, as this at times can be unreliable.

IMPORTANT INFORMATION ON THE RIGGING:
Always check the rigging, halyards, reefing lines, water stays, rudder downhaul and swing wing system before taking the boat out.

Every 6 months or min once a year shorten all halyards, reefing lines and swing wing lines by min 25 cm. After some years turn them around or replace the lines.

Standing and running rigging and water stays we recommend changing every 5 years using the same quality of products, or at max. 10,000 NM.

Never use shackles or similar on the boatsman chair.

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

Tension on the rigging, please see 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 cause 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.

OPERATING THE SWING WING SYSTEM:
IMPORTANT – The Swing Wing system must only be used in protected harbour areas. Any use elsewhere at owner's own risk.

ALWAYS use the Swing Wing system WITHOUT SAILS. The sails must NEVER be hoisted when the floats are folded in.

ALWAYS stow the sails safely BEFORE you start operating the Swing Wing system.

ALWAYS point the boat into the wind or downwind (even better) when operating the Swing Wing system.

Example of operating the Swing Wing system: The boat is folded out and must now be folded in.

- Prepare the endless swing wing line by the double block on the cockpit coaming. Release the back stays slowly on BOTH sides. Hold the backstays line around the winch, as you may burn your hands due to the high tension.

- No persons are allowed on the trampolines, the wings or the floats while operating the Swing Wing system. Also slack of spinnaker sheets and barberhaul lines.

- Remove the stopping bolt in the aluminium locking tube at the cockpit coaming aft before releasing the double easylock for the Swing Wing system inside the hand locker in the cockpit.

- REMEMBER only to use the lines coming up from the double block in the coaming for the Swing Wing system. The outer line is for the outhaul and the inner for the inhaul (downhaul). Check that these lines are not twisted or jamed, before winching.

- The system is now open and you use the inhaul via the selftailing winch on the coaming. As the line is endless make sure ALWAYS that the outhaul line runs easily free to avoid "kinks". The float is now ready to be pulled in, and when the float is folded in you can put the pin in the locking tube, and the float is now in position. You must lock the double easylock again to secure the swing-wing lines and float in position. Then you can adjust the backstay by setting it handtight after having folded BOTH sides.

- To fold out the boat the procedure is the same, just reverse, but make sure that the various lines are NOT jammed between the wings and the hull and beware of children. If the float does not come out then just give a push on the float or wing to get past the ”dead angle”.

- In case the boat does not fold or unfold easily do not use power on the winch, most probably some other line has been jammed.

- When the floats are folded out you have some line left over. Pull the lines for the in- and outhaul down by pulling between the double block and the easylock in the coaming again.

- Make sure there is no sand or dirt on the sliding wing areas on the floats. If you for example just launched or berthed you should rinse with a bucket of water over each saddle to clean the surfaces for sand.

- Should the system after some time start squeaking, oil the sheavebox where the wire goes into the wing with teflon spray or similar, and the sliding surfaces on the floats should be waxed or greased.

NB – check regularly that the swing-wing cable in the aft wing is OK.

ASSEMBLING OF THE DRAGONFLY 920 SWING WING:
On the original trolley min. 2 people are required – 3 are perfect.

WINGS:
First of all, mount the wings in respective places with the big pinbolts. The pinbolts must be mounted, and the screw secured in blue lock tite. Fold the wings out by holding the forward wings with a line forward to the front cleat on the centre hull. The aft wings are held out in position by their aluminium tubes aft.

FLOATS:
Pull out the two wooden float support poles on the trolley about 2 m. You can now roll the float around on the support poles. Slide the float a little back so the swing wing bolt on the float is lining up with the wing fitting. Either lift up the float by hand (3-4 people) - or if only two-handed, you can use the spanners around each wing and float one forward and one aft. When mounting the float to the wing – first place a brass washer and a nut on each bolt. Then tighten the nut at each wing by the big "key" No 30 just so that the floats lie against the under side of the wing, not tight, then a lock nut on top – tighten hard! You must regularly look after and make sure that these are **always** tightened correctly. Blue lock tite can also be used on the top "lock nut" for better locking.

WATERSTAYS:
There are two long stays for the forward wings and two short ones for the aft wings. The thread part of the waterstay you turn into the big stainless steel fitting in the end of the wing where the ama is mounted. Then you adjust the waterstay so that when a person pushes down on the float you can put the pinbolt through the fork terminal by the centre hull, just so that the waterstay is well hand-tight, it must not feel "loose". The waterstays must be checked regularly to make sure they have the correct tension and are free from failures. Make sure that the threads are clean and have no sand grains.

IMPORTANT: Waterstays must be changed every 5 years or by max. 10,000 NM.

For much easier mounting use oil or grease in the thread. For easier adjusting of the water stays you can fold the wings about 30 cm (1') aft and fit the water stays at this position and they will fit hand tight.

NETTING:
The trampoline netting's are marked for either BB (port) or SB (starboard) mounting on the under side forward. Pull them into the netting tracks from aft along side the cabin sides and the front wings. The wire in the netting is fastened at the front wing by the quick link to stainless eye on "the wing fitting" – and at the aft wing/main hull connection by the stainless triangle fitting is mounted to the fork terminal in the netting. The swing wing cable by the end of the aft beam is mounted to the stainless block in the aft corner of the netting. Make sure the cable in the netting goes between the wheel and the pinbolt in the block. At the forward beam/hull assembly there is a snapshackle in the trampoline that has to be secured to the eye bolt. Check regularly that this outhaul cable is not damaged, as this effect the safety of the boat as well as the lines for the swing wing system.

STEPPING THE MAST:
QUORNING BOATS ApS only recommends to step the mast when using block, lines and special wire supports on the floats that are optional equipment. If a crane is available we recommend using this. The mast can be stepped on the boat, but at owners responsibility using this handbook as a guideline to raise and lower the mast. While hoisting or lowering the mast no persons are allowed in front from the centre of the boat in a range of min. 15 metres. Raise of lowering the mast in winds exceeding 15 knots of wind is prohibited.

"Open" the front part of the pulpit, where the step/running light is fitted. This allows the mast to come further down, so you can work on the mast easier. To protect skylight and optional solar panel on foredeck, cover these with carpet, cardboard or similar.

Move (lift) the mast forward. You need one person on the deck and one or two persons with a ladder on the ground. You then secure the mast foot into the mast base on the deck and secure the mast with the pinbolt in the front of the mast base that then works as the pivot pin to step the mast. The mast then rest with the forward jumper stay on the foredeck. Remember to mount the windex and if necessary antennas. Then pull the main halyard, spinnaker and genoa halyard "down" from the mast and pull reefing lines and halyards through various leading blocks back to the halyard stoppers on the cabin roof. The easylocks are marked how the various lines have to go. The reefing lines have to be pulled through the mast with a lead line (runner).

FORESTAY AND SIDESTAYS:
Forestay and sidestays are mounted in the same fitting on the mast as the three upper diamond stays each with an 8 mm quicklink that has to be secured with a “key” No 14.

SIDEWAY SUPPORT OF THE MAST:
To support the mast sideways there is as option a set of cable device, two sets (one for each side) of double cable with an “eye” between the cables. The “long” cable is mounted in the top shroud fitting which is the fitting mounted on the outer side of the float through the deck behind the hatch (not the eye for pulling in the float).

The “short” cable is mounted in the quickline where the netting is mounted to the wing fitting. Now you can mount the “short” cable on the sidestay to the eye in the mast support cables and the mast is now supported sideways during the whole operation.

Tie the barberhaul to the outer padeye on top of the aft wing. Then through the block in the boom for the main sheet. Pull it through the one fixed mounted double wheel in the cockpit aft, and lead it to the SB winch on the cabin roof. Same goes for the opposite side also to SB winch. Finally mount the main halyard with its block and shackle in the traveller on the boom. The spinnaker halyard is mounted on the forward cleat. If there is no double block mounted for this job, two single blocks tired around the traveller do the same job.

One person lifts up the boom and **both** “barberhaul” lines are pulled **at the same time** over the SB halyard winch on the cabin roof. The boom is now set up and ready to lift the mast. Barberhaul and main halyard are adjusted in a way that the boom points a little forward so that when starting hoisting the mast the boom is still pointing a little forward and is in the centre of the boat sideways. Before setting the mast check once again that everything is in order and placed properly.

Make sure that **only** one or max. two persons hoist the mast. One person hoists the mast via the winch with the two barberhaul lines – and one person who **only** controls the spinnaker halyard to prevent the mast from falling backwards. Hold the spi-halyard tight to avoid the mast from falling backwards with a jerk before it is raised, and again when the mast is to be laid down, pull the mast forward in the beginning with the spi-halyard until it is over balance centre, and can be lowered quietly and easy with the barberhaul lines via the boom.

Then start hoisting the mast slowly – take your time – take it easy. Keep an eye on all the lines – that they are not hanging or jamming on to something! When the mast is hoisted about 80%, the forestay profile is mounted to the forestay fitting. Again holding back easily on the spinnaker halyard so that the mast is raised quietly.

IMPORTANT: When the mast is all the way up, **secure both** barberhaul lines (that you hoisted the mast with) over the winch so the mast does not fall down.

When the mast is in place you mount the **spinnaker halyard** in the eye where the barberhaul line is fastened on the outer aft wing. The spinnaker halyard is tightened gently to enable dismounting the top shroud from the mast support cables and mount the long wirestrap in the top shroud fitting on the **outer** rail of the float behind the float hatch. The same goes for the other side and now the backstays are placed in the remaining short wire strap respectively in the padeye **aft** of the aft wing inside the float.

Clear up all halyard and lines. Mount the main sheet etc.

IMPORTANT: When lowering the mast, first mount both barberhaul lines via the mainsail boom, the double block in cockpit to winch so the mast does not tilt forward **before** mounting the sidestays to the support cables on the floats. The procedure is reverse as described when lowering the mast.

For trailing demount the sidestay/backstays – this is the easiest and simplest way.

If you own a genoa protection (foresail cover) you can leave the genoa on the forestay during transport and in winter (when the sail is dry).

SETTING THE GENOA:
Before hoisting the genoa make sure to roll some line on the drum. Turn the headfoil clockwise until you have one metre (approx. three feet) line left in the cockpit. This way you are able to furl the genoa at once when it is hoisted. The luff is mounted by the shackle over the furling drum. Tension is adjusted via the halyard.

MOUNTING THE MAINSAIL:
The sail is placed on the boom between the lazy-jacks and start from the top of the sail. Hold the boat up into the wind. Mount the headboard (the top of the sail) into the top double Frederiksen batten car on the mast. Then hoist the sail to the next batten and fit the next stainless bolt into the batten car with the nut on top and etc.

Remember to fit the two reefing lines in the sail.

By taking the mainsail off again **never** take off the Frederiksen batten cars, all the balls will fall out.

IMPORTANT: The reefing line in the back end of the boom comes out from a sheave and through the block in the sail and is tied with a bolen knot on the **other** side of the boom in the folding wichard eye.

LAUCHING FROM TRAILER:
IMPORTANT: Beware of high tension wires etc.

Only a slip with solid ground can be used. We recommend launching the boat in its full width if your mast is set, if possible.

Before launching the boat make sure that everything is completely in order, that for example the motor is mounted and ready to start up and that the rudder and centre board are fixed in upper position, the knotmeter is mounted, have mooring lines ready etc. Be careful of wind and current from the side.

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

LAUCHING WITH A CRANE:
Use only original lifting cables. If you are unable to launch from the trailer, lifting straps can be used carefully by putting these around the centre hull only from side to side just in front of and behind the wings to lift the boat. You can make use of this technique with the wings in- or outfolded.

The balance point is approx. above the centre of the cabin entrance.

When you place the front lifting straps make sure you avoid the log. Push the strap aft.

SAILING TIPS:
MANOEUVRING IN HARBOUR. If the water is deep enough always sail or motor with the swing keel DOWN for better manoeuvring. The boat manoeuvres well in folded and unfolded position. By turning rudder and motor full over at the time Dragonfly 920 is actually able to turn round its own axis. This fact is important to know in a difficult situation. Remember the boat is light and by wind it drifts easier than conventional yachts.

In full marinas you can use the low draft to moor where nobody else can go. If you find room in a normal small berth always enter with the bow first as the floats are 1 metre longer aft than the mainhull when the boat is folded.

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 + genoa 1 reef
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 3 reefs
17-20	32-40+	8-9+	Main 3 reefs + genoa almost completely furled

(Standard main sail has only 2 reefs)

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

For an inexperienced crew we do not recommend sailing in more wind than max 20 knots or 5 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 high experience.

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

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

IMPORTANT – If this diagram is not respected Quorning Boats ApS and dealers can not be held responsible for boat, crew or gear. Beware that the boat can capsize if not handled correctly.

SAILING AND TRIMMING:
IMPORTANT – It is of great importance to keep you sheets and halyard 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 in trim from the yard, but generally the mast may bend approx. 8-10 cm over the aft edge in full length. When holding a line to the aft end of the mast ends, the distance to the mast should be approx. 8-10 cm = 3-4" at the diamonds position.

TRIMMING THE GENOA:
The luff tension is to be adjusted by the jib halyard. In light winds of course only 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 in the aft end of the track, if the genoa ”closes” in the aft leach, move the genoa car aft, and if the genoa ”opens” in the aft leach, pull the genoa car forward. You can adjust the genoa car from the cockpit via the outhaul on the easylock, and also the genoa sheet goes through the easylock on the outside, marked GENOA I. The easylock is normally left open, and only used if the winch is needed for another purpose. in case you need to put a reef in the genoa you must pull the genoa car forward for right trim. For reef 1 the genoa wagon is pulled approx. to the centre of the rack, and for reef 2 it is pulled almost all the way forward. You only use the barberhaul beam reach or downwind.

REEFING THE MAIN SAIL:

REEFING THE MAIN SAIL – First set the lazyjack (topping lift). In order to reef the main you loosen the main sail halyard and it is recommended to mark on the halyard partly where ”reef 1 ” and partly where reef 2 has to be locked on the easylock. The halyard is loosened and the reef line is pulled hard so that the reefing blocks by the luff are approx. 20 cm = 8" above the boom.

Sail upwind by the genoa and ease off the main sheet, the main halyard is loosened till the mark reef 1 and then you pull the line reef 1 which is marked on the easylock. This line will then automatically reef the luff first and then the leach. Same procedure applies to reef 2 and the reverse when reefing out. After each reef the sail ought to be ”packed” with chockcords for less wind resistance.

Check that the reefing block at the luff is not chafing the sail. Normally, it does not, but some times you have to go up and "arrange" the sail at the luff.

On the Dragonfly 920 Extreme, there is a third reef, which can only be used "manually" but tying this down with a separate line.

For long distance sailing, we recommend to prepare a reefing line from the third reef down to reef II, so you can control easier the third reef by hand. When using the third reef, the conditions are of course not the easiest.

Avoid reefing downwind, as the mainsail can be blown past the sidestays and also brake the battens. Of course, if there is no other way out, you can do it.

MAIN SAIL:
The main needs much trimming, especially on the main sheet as the boat has many speed potentials within few wind forces, this calls for concentrated trimming if you want maximum speed in your boat. Generally the leach seen from the boom end to the mast top must be almost straight, no matter what wind force: the roach must absolutely not ”fall out” or twist unless the boat is pressed too hard. Trimming the main in a breeze takes great effort.

TACKING:
When tacking the boat it sometimes helps to ease 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. If the boat starts to go backwards after a tack, then immediately turn the rudder blade to windward, this helps the bow to bear off 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 as usual. 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.

MAIN SAIL LUFF TENSION:
In light wind you set the main halyard to avoid ”wrinkles” in the sail, which has the effect that you have to help the main when tacking so that the battens are turned right for the new tack.

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 main sail set, then loosen the main halyard to release the tension in the sail to quieten the boat.

MAIN SHEET CAR:
Mulithulls have a rule that goes: the main sheet car must NEVER pass the centreline of the boat to windward. Not even in light air. If the wind is increasing when tacking and you find the main has too much power try sheeting the traveller, approx. 10-15 cm = 4-6" to leeward instead for slackening the main sheet and therefore hollowing the main. Doing this the boat can take more wind without reefing. Eventually you can also ease off the sheet.

USING THE BACKSTAY:
The combined top shroud backstay has been developed because of the swing wing system to enable easy and quick trimming of the top shrouds.

When sailing ALWAYS set the backstays in both sides to obtain the right tension on the top shrouds. In light wind you can set them directly by hand and fasten them in their Easylocks.

In more wind set the backstays on the selftailing winch with the handle. In heavy wind you set the backstays on the selftailing winch as hard as you directly can, turning the winch handle with only one hand.

Downwind, we strongly recommend using a boomvang or preventer for better control of the roach on the main.

SPINNAKER SAILING:
Sailing with the spinnaker is a third dimension in sailing which a lot of people dread caused by bad experiences. On a trimaran spinnaker sailing is fun and a comfortable adventure. A trimaran is not heeling over from one side to the other (rolling), and the spinnaker pole is nonexistant. With a little practice you can actually handle the spinnaker alone, but always handle it with respect!!! If you respect the spinnaker and use it with reason it is great – also when cruising.

BARBERHAUL:
If you spinnaker equipment is delivered from the yard you mount the barberhaul as follows: First you lead the barberhaul through the block in the bow of the float, further back to the outer side of the front wing, through the small black plastic fitting with the steel eye, further on up to the double block, which is placed in front of the genoa-lead block. The barberhaul goes through the other wheel in the double block and from here to the ”bottom ratchet block” which is placed at the end in front of the aft wing on the float. Make sure you put the barberhaul right through the ratchet block form this pint it is lead to the cockpit in a camcleat on top of the cockpit coaming. Now you have mounted a barberhaul system serving both spinnaker and genoa.

SPINNAKER SHEET:
Is lead from the cockpit to the top ”ratchet block” above the barberhaul and directly outside the top shroud to the small block at the end of the barberhaul on the float bow through this block to the eye in the pulpit.

SPINNAKER:
After sailing with the spinnaker pack it every time, i.e. pack it systematically, so that you end up with the head and the two clews at the top of the bag, ready for use. If the spinnaker 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.

SETTING THE SPINNAKER:
You can set the spinnaker either from the lee trampoline netting or from the bow pulpit in front of the forestay. Tie the spinnaker bag to the boat and mount sheets and the halyard. Make sure the lines run correctly (see sketch), that the spinnaker halyard for example is not twisted round the forestay or the diamond spreader.

When the sheets are mounted, pack it all into the spinnaker bag so it does not fall out. Set the wind ward barberhaul and slacken the barberhaul on the leeward side. Alter your course to full downwind (watch out for the boom) and hoist the spinnaker quickly to prevent it from falling into the water. It is a good thing if another person starts pulling the leeward sheet when the spinnaker is halfway up and when ¾ up pull the wind ward and your spinnaker is per set.

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 spinnaker is full, roll in the genoa. It is very important that your spinnaker fills first or you will find yourself rolling it into the genoa. It never pays sailing with both genoa and spinnaker.

USING THE BARBERHAUL:
Leeward side must always be slack. The wind ward barberhaul must always full tightened on beam reach, and sailing downwind the wind ward barberhaul can be set, approx. 1 metre from the amabow.

JIBING WITH SPINNAKER:
Bear off to downwind course and set both barberhauls in broad reach position. (Loosen the backstay clipped to the main sheet as kickenstrap and remount the backstay on the top shroud). Now everything is ready and you slowly jibe to your new course and at the same time jibe the main under control to the other side. All this while the spinnaker still pulls, if it is very windy pull the main sheet tight when jibing and slack again afterwards. This way you avoid the so-called ”bang”-jibing that can smash everything. The new leeward barberhaul is loosened again and the job is done.

TAKING DOWN THE SPINNAKER:
NEVER sail with spinnaker without main sail!!!

If the wind increases it is more difficult to take down the spinnaker. Practice can eliminate this problem. Prepare the spinnaker halyard and sheets so that the can ”run” out without any problems. Bear off to a dead run, slacken wind ward sheet or tackline completely off and from the leeward trampoline netting you can collect the foot of the spinnaker close behind the main, like a folded curtain to take out the wind. This way you can control the spinnaker, easily and elegantly, now you can ease off the halyard and pull the spinnaker down. Do not ease off faster than it is pulled down and the spinnaker will not fly out and ”draw air”.

May we recommend using a sleeve for safer and easier handling.

ANCHORING:
The anchor bracket on SB forward wing base is designed for max. CQR 12 kgs or Delta 10 kgs, of which the Delta is to be recommended.

Use chain (8 – 10 mm diameter) or 14 mm rope with internal lead up front by the anchor of min 5 metres and thereafter 14 mm flexible anchor line.

Total length of anchor line should be min 5 times the depth.

PRECAUTION - Before anchoring check the depth of water, current, power and nature of the sea bed.

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

When anchoring secure the anchor line to the cleats or make a bridle which you can fasten on the stainless padeye on the front of each forward wing. Using a bridle prevents the boat from fishtailing.

ALWAYS anchor in protected waters!!

Note that multihulls have more windage than conventional yachts.

By anchoring of the stern the engine should be stopped.

SWING KEEL – KICK UP SYSTEM:
The centre board 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 port side cabin top. To remount the release cleat just push down the clamcleat hard again.

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 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 when tacking. On a reach half way down and sailing downwind all up.

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

IMPORTANT – The 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 <u>not</u> be moved and/or changed.

RUDDER SYSTEM:
The rudder also has a ”kick-up” system, so by hitting the ground the rudder will always kick up.

IMPORTANT – Be sure that the rudder is always fully down in position, otherwise the rudder gets hard weather helm.

Do regularly check the downhaul cable for kinks or damage. 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 and lift the wooden 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 lead into the aft locker via the hole above the release cleat.

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

In harbours, we recommend lifting up the rudder to keep it 100% clean from fouling problems, as this is sensitive in order to avoid cavitations in high speeds. When lifted up, make sure to tie/fasten the tiller, so it does not slam back and forth.

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

INFORMATION ABOUT PRODUCTS USED FOR DRAGONFLY:

Hull colour:	Gelcoat RAL No 9010 (off white)
Interior colour:	Gelcoat RAL 1013 (beige) Foam 15 mm, typ Divinycell, Airex or Klegecell, 75 kgs
Streamers:	3M SC100 (individual)
Antiosmosis coating:	International Gelschield 200 Epoxy
Antifouling:	International Micron Extra For recoating all 3 hulls you need 2 x 0.75 litres - apply with shorthaired roller
Mast:	Mast paint is RAL 9010. A two-part paint from the automobile industry
Batteries:	VARTA, 2 x 60/80 No

The woodwork in the cabin is varnished with two part satin varnish. To varnish again sand with grit 180 or finer sandpaper. You can use either one or two component varnish with satin finish.

Dragonfly is built of hand-laid, reinforced fibreglass and polyester combined with 15 mm PVC sandwich foam core with closed cells, which do not absorb water.

For eventual repairs use ONLY products on polyester basis. Epoxy can be used in an emergency, but cannot be cosmetically improved later with gelcoat as you can with the polyester products.

Electronic equipment is not calibrated by the yard.

BY ANY DAMAGE TO THE BOAT:
Contact your dealer or the yard for instructions. If not, you could endanger your safety and/or loose your warranty.

GELCOAT REPAIRS:
IMPORTANT – Successful repairs require dry weather and a temperature between 15° – 25° C.

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

How to make gelcoat repairs:
- First sand the actual repair with grit 80
- Then sand the area around it with grit 180-240
- Apply gelcoat by 2 or 3 layers
- When completely dry sand it down with 120-240, thereafter with 500 – 800 – 1,200
- After that polish with rubber compound and finally wax the whole area
- Use lots of ventilation, gloves, glasses and dust mask
- Keep children away

WARNING
- The catalyst is a dangerous product and should not be left within children's reach.
- Avoid contact with skins and mucosa
- In case of contact, wash with soapy water and rinse liberally

Clean all tools with acetone.

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
- Min once a year clean and grease the winches and check the springs
- Keep the sails covered at all times when not in use to protect from the sun
- Keep the sails dry and rinse regularly with freshwater. If sails get damaged immediate repair is required
- Let a sailmaker check the sails once a year

SPRING CLEANING:

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

2. Antifouling:
   First wash the bottom of the boat with freshwater, if necessary or high-pressure washing, Let it dry out and apply antifouling with a lacquer roll. You will need approx. 2 x 0.75 litres.

   The centre board has enough antifouling for the first two max three seasons, you will then have lift the boat with a crane or place the boat on some car tyres and turn it from side to side to antifoul the centre board.

3. 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.

4. 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:

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

2. 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.

3. Cushions:
For cleaning of cushions you can remove the cover by unfastening the zip on the back of the cushion. The material is pure wool and IS NOT machine washable. The material must be dry cleaned.

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

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

6. 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.

7. The water tank must be emptied and cleaned by unscrewing the acryllid under the front bunk.

8. The outboard engine:
Please contact your local dealer.

9. The marine battery is removed from the boat and discharged, then you recharge the battery and store it like the cushions and the sails in a nice dry place. A good thing for the battery is, during the winter to ”drain” the battery and charge it again two times during the winter.

10. Dry out the hulls completely to avoid frost damage.

11. Make sure that 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 might scratch it.

12. 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.

Any damages and lacks on 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 cable, as well as the cable operating the swing wing system in the aft wing.

Minimum once a year shorten all halyards, rerefing lines and swing wing lines by approx 25 cm. After some years turn them around or replace the lines.

Water stays we recommend changing every 5 years using the same quality of products, or at max. 10,000 NM.

Side stays should be changed latest after 10 years or by max 15,000 NM.

Diamond stays on the mast shoud be changed latest after 10 years or by max 20,000 NM.

We recommend changing the 6 mm swing wing cable in the aft wing every 3 years.

Never use shackles or similar on the boatsman chair.

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

Tension on the rigging, please see 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 cause 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.