

topaz  
**Magno**



# Topaz MAGNO

## Rigging Instructions

## Upgrade Instructions



[www.toppersailboats.com](http://www.toppersailboats.com)

**Principal Dimensions Dimensions Principales Hauptabmessungen Dimensioni Principali Dimensiones Principales****Declaration of conformity**

This craft has been designed and constructed in accordance with the Essential Safety Requirements of the Recreational Craft Directive: (94/25/EC) for Design Category C.

**Déclaration de conformité**

Cette embarcation a été conçue et construite conformément aux obligations Essentielles de Sécurité de la Directive des Bateaux de Plaisance: (94/25/CE) pour la Catégorie de conception C.

**Konformitätserklärung**

Dieses Boot wurde in Übereinstimmung mit den grundlegenden Sicherheitsforderungen der Sportboote Richtlinie: (94/25/EC) für Konstruktionsklasse C entwickelt und konstruiert.

**Dichiarazione di Conformità**

Questo scafo è stato disegnato e costruito in accor da con i Requisiti essenziali di Sicurezza del recreational craft Directive: (94/25/EC) per il Disegno della Categoria C

**Declaración de Conformidad**

El presente barco se ha diseñado de acuerdo con la Directiva (94/25/EC) titulada Requisitos de Seguridad Esenciales para Barcos de Uso Recreativo para la Categoría de Diseño C.

Issued on behalf of Topper International Ltd. CE0609

*Martin Fry*

Martin Fry, Managing Director

**ENG****Principal Dimensions**

Boat	Design Type	Length Category	Max load of hull	Max no. of persons	Unladen weight
			ML	CL	Lh
Monohull Sailing Dinghy	C	3.94m	225kg	3	110kg

**FRA****Dimensions Principales**

	Catégorie	Longueue de la coque	Charge maximum	Nombre de personnes max	Poids à vide
			ML	CL	Lh
Monohull Sailing Dinghy	C	3.94m	225kg	3	110kg

**DEU****Hauptabmessungen**

	Kategorie	Rumpflänge	Höchstlast	Besatzung Maximale	Leersgewicht
			ML	CL	Lh
Monohull Sailing Dinghy	C	3.94m	225kg	3	110kg

**ITA****Dimensioni Principali**

	Categoria	scafo	maximo	di persone	scarico
			ML	CL	Lh
Monohull Sailing Dinghy	C	3.94m	225kg	3	110kg

**ESP****Dimensiones Principales**

	Categoria	Eslora	máxima	de personas	sin carga
			ML	CL	Lh
Monohull Sailing Dinghy	C	3.94m	225kg	3	110kg

## raising the mast

- Position the boat head to wind away from any overhead power lines or other obstructions.

Lay the mast along the centre line of the boat.

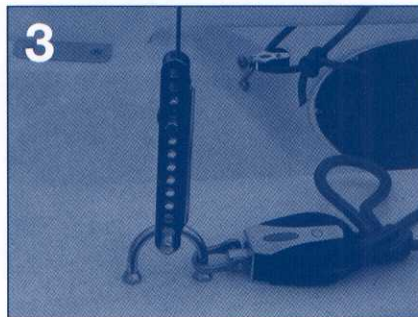
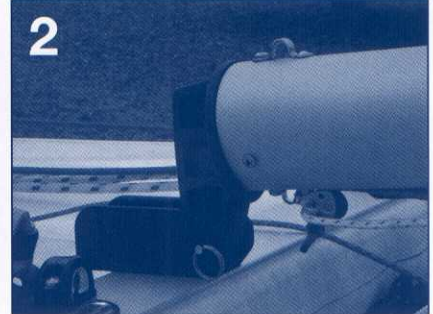
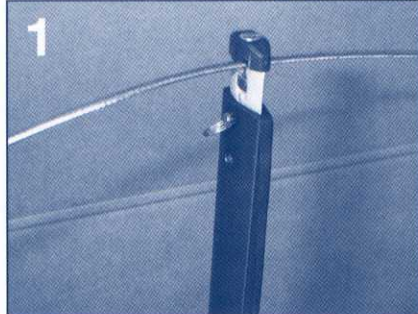
**(1)** Attach the shrouds to the spreader bar end fitting in the 2.5 hole.

You may now pull the rig up using the forestay. You may require someone to lift the top of the mast.

**(2)** Fix the base of the mast to the plate on the cross beam with the bolt from the plate.

**(3)** Attach the shroud adjusters to the shroud eye each side - approximately the 7th hole down (this should be set for you). Subsequently, you can use the captive pin at the base of the plate.

Having pulled the mast upright secure the forestay to the P shaped cleat on the bow plate.



## attaching the boom and gnav

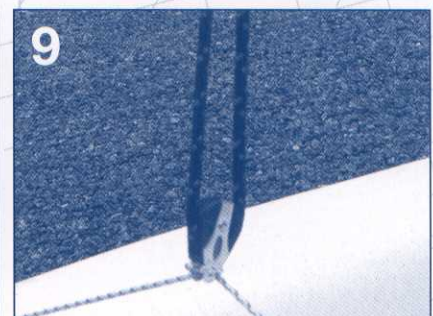
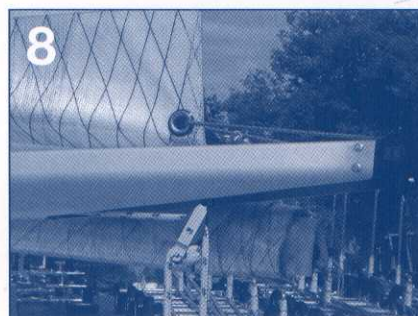
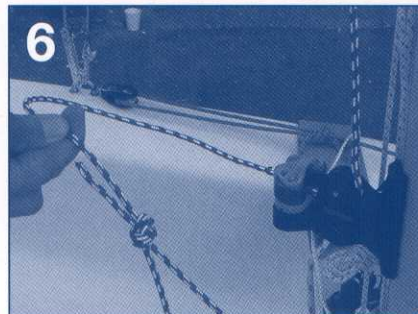
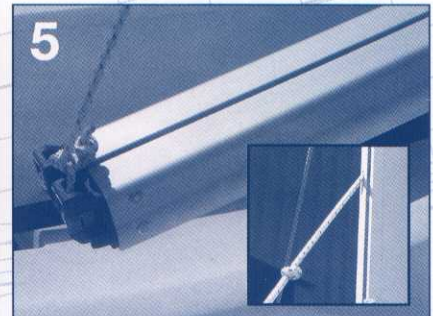
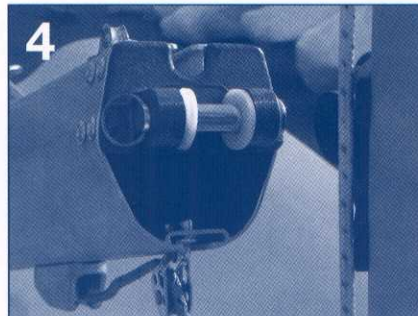
Attach the boom to the mast with the pin in the lower fitting **(4)**. Remember to put the pin in from the top and replace the split ring to stop the pin coming out.

Fix the gnav strut to the carriage on the top of the boom.

Next attach the strut to the upper fitting on the mast **(5)**. You may want to have someone lift the end of the boom or suspend it on the main halyard.

Having fixed the boom and gnav to the mast you can thread the gnav control line **(6)**. This comes out the underside of the boom at the front. Feed round the pulley and through the cleat near the base of the mast.

Finally you can thread the mainsheet. Starting from the centre cleat round the ratchet (remember to check it clicks when the rope is pulled in), **(7)** through the block in the centre of the boom and then into the boom through the cut out on the underside. When the rope emerges through the end, **(8)** feed it round the pulley and down to the **(9)** pulley attached to the back of the boat. Having fed the rope through this pulley (from the back of the block forward) attach to the becket (bar on the block) of the rear block. You can either use a bowline or a figure of 8 knot.



## raising the jib

- Unroll the jib. Ensure that the roller furler at the bow is wound up. Release the line from the cleat (on the underside of the crossbeam) and make sure there are enough turns on the furler to take up all the slack.

- **(10)** Fix the sheets to the clew of the sail using the shackle attached to the two blocks (centre hole of the plate is a good starting point).

- **(11)** Connect the hard eye of the luff wire at the tack of the sail (front corner by the sailmakers label) to the furler on the bow.

**(12)** Attach the hard eye at the head (top) of the sail to the bottom end of the top swivel and tape the split rings (without impeding the action of the furler).

Ensure the double-purchase block has correct orientation so neither the rope nor the jib is twisted.

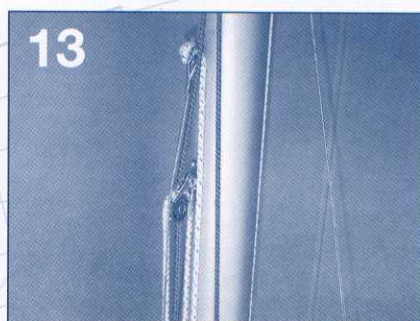
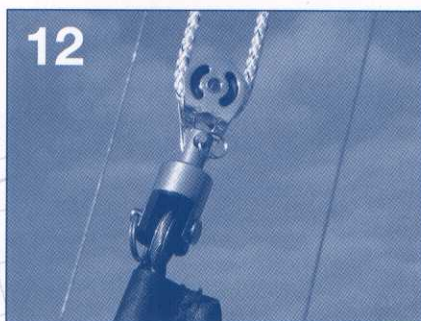
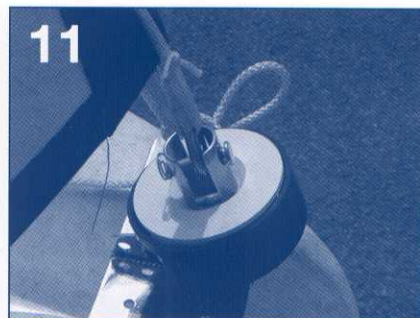
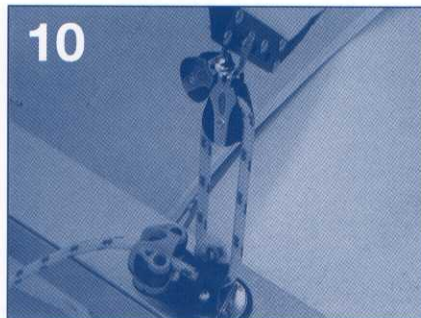
- **(13)** Make sure the boat is still head to wind and hoist the jib. Look up to check that the two part rope purchase above the top furler is not twisted. If it does twist while you hoist, you will probably have to drop the jib and try again. Try releasing the tack from the bow and (gently) pulling the halyard right up so it is block to block at the top. This may untwist it. If you are still unsuccessful, drop the jib, untwist the rope and ensure that the jib itself is still not twisted. Put a short length of tape (2in/5cm max) around both parts of the top swivel to prevent it spinning. Do not tape this too hard since you will want it to fly off when you furl the jib.

- When you have hoisted the jib successfully with no twists in the rope, you can cleat the rope off in to the cleat on the side of the mast. Tension the jib by pulling hard on the rope. A good guide to the amount of tension required is that the leeward shroud should not go slack when sailing to windward.

- Tie the tack cringle of the jib to the thimble at the foot of the luff wire using the line provided. Use just enough tension to just take out any creases up the luff. Do not pull this too tight - it is better to have a few horizontal creases when sailing upwind than to have a hard vertical bar running up the luff. Knot it with a couple of half-hitches and tape it up.

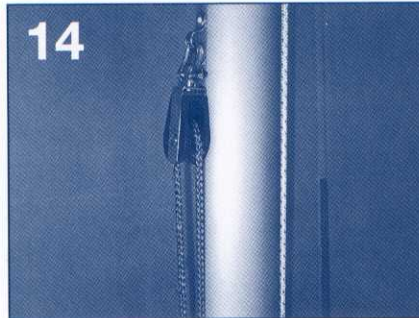
- Now untie the forestay and tie it back to the p-clip at the base of the mast.

- Now you can furl the jib. Make sure the sheets are completely free and pull gently on the furler line. It is important to make the furl as loose as possible and to ensure there are no creases in the material when you do this - otherwise you can damage the sail. Do not leave the jib furled for too long - especially in bright sunlight - and never leave it up overnight.



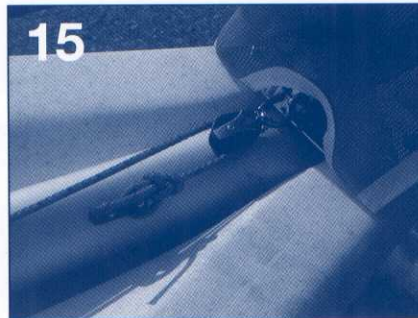
## rigging the gennaker kit

**(14)** The gennaker halyard is entirely external. One end ties straight on to the head of the sail while the tail passes through the spreader and down the side of the mast. Thread the tail down through the block on the bottom front of the beam, then forward, around the free block (attached to the line that pulls the pole out), then back to the cleat on the port side of the mast. Lead the end down through the block at the front of the centreboard case then through the eyelet at the back of the sock. Feed it up the sock to the mouth of the chute. Tie it off so you do not lose it!

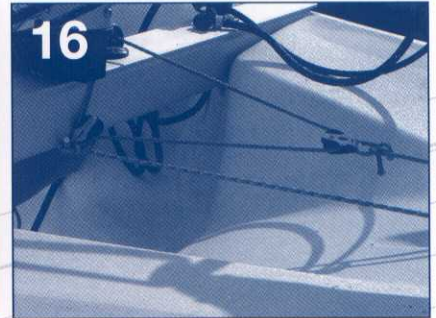


## bowsprit - gennaker pole

**(15)** The tack line emerges from the forward end of the bowsprit. Tie a figure-of-eight knot about 6in / 15cm from the end of this line and an overhand knot right at the end.



**(16)** Pull the pole right out: the easiest way to do this is to tie off the top end of the gennaker halyard and pull on the other end. This should launch the pole by pulling the double block back down the boat. Ensure that the pole is right out. The lines should be pre-set to the correct position - i.e. the pole goes right out; when it is out the figure-of-eight knot in the tack line is pulled right to the end of the pole; when fully retracted the pole still sticks out about 2in / 5cm. This last point is important because if the pole comes right back into the boat it may catch on the hole in the bow when you hoist! If you need to adjust any of these remember that they are all interdependent. So moving one will affect the others. For instance, moving the knot which attaches the aft end of the tack line to the deck-eye on the floor of the boat in front of the mast will affect how far the pole can go out and the distance from the tack of the sail to the pole end. Bear in mind also the fact that the rope may stretch initially, so you may need to adjust the knot after the first time you sail.



## rigging the gennaker sail

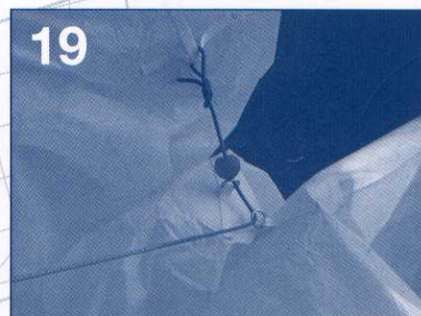
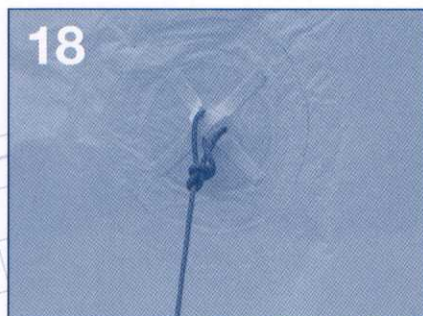
Tape over all protruding fittings and fixings around the bow (including the clevis pin and split ring under the roller furler fitting). The gennaker is a big sail and if it can catch on anything it will!

Pass the overhand knot at the end of the tack line (at the outer end of the pole) through the eye at the tack of the sail (marked "T") and tie a half-hitch, using the overhand knot as a stopper. Ensure that the sail is not twisted:

follow the luff to the head of the gennaker (marked "H"). **(17)** Attach it to the top end of the halyard using a bowline. Pull the gennaker up the mast slightly to give yourself some slack in the downhaul. Attach the sheets to the clew (marked "C") with bowlines or the neatest way to do this is to find the centre of the gennaker sheet and push a small loop of it through the clew cringle. Pass both the tails through this loop and pull tight. If you tie the ends together with a fisherman's knot the crew will always be able to reach the gennaker sheet. **(18/19)** This hitch is small and will therefore slip around the jib luff easily when gybing. Remember to thread the sheets through ratchet blocks in the correct direction.

Now you have all three corners of the gennaker tied on and you can attach the downhaul. This can be tricky - and embarrassing if you get it wrong - especially if you do not notice until the first hoist or even the first gybe! A good way to remember how to connect it is to make sure that the downhaul is always behind the tack line and in front of BOTH sheets. To collapse the gennaker neatly into a short sock when dropping, the Magno utilises a three-patch system: an eye near the foot, one in the middle and a webbing loop near the head.

**(20)** Find the webbing loop on the top patch (it is usually on the starboard side): the downhaul will come up from the other side of the sail. Untie the downhaul from where it is tied off at the chute mouth. Pull some downhaul line out of the chute (this may hoist the head slightly). Remember to bring the downhaul out behind the tack and in front of both sheets. Pass the end through the eye in the bottom patch, then through the middle patch, tie the end of the downhaul to the webbing eye on the top patch using a bowline. **(21)** You should now be able to pull the gennaker down into the chute, ensuring that it does not snag around the pole-end or under the bow.



## raising the mainsail

### battens

The sail is supplied with all 4 battens inserted. Ensure that the forward ends are properly bedded into the end-fittings. Use just enough tension to remove all the creases.

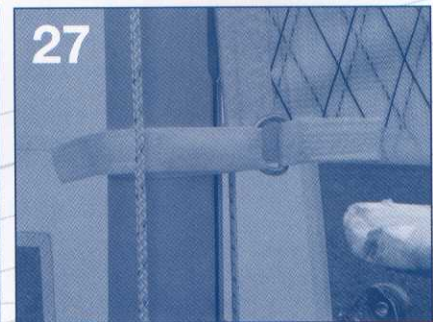
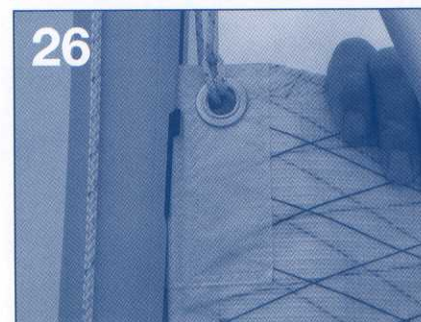
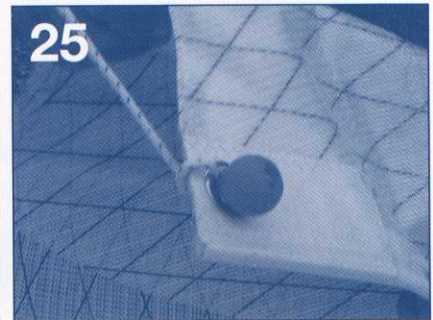
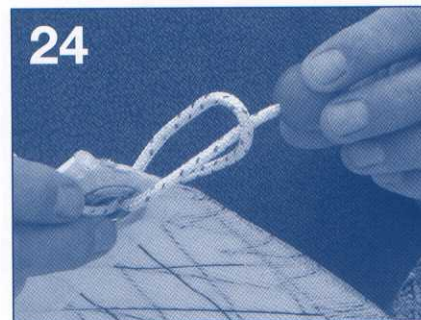
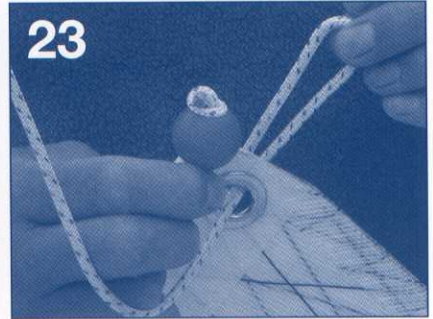
### raising the mainsail

**(22/27)** A good knot for tying the halyard to the head of the mainsail is a simple half-hitch with a stopper. This takes up less halyard than a bowline and fits snug to the headboard, allowing you to pull the sail right to the top of the mast (the luff bolt rope will stretch a little when you do this). Check that the boat is still head to wind and hoist the sail, ensuring that the luff is engaged in the feeder at the bottom of the track. It is easy to hoist the sail by pulling the halyard straight from its exit from the mast. When you have pulled the sail right up, place the halyard in its clamcleat on the mast and "sweat it" to get the sail right to the top of the mast. (Hold halyard just above cleat and pull away from mast at 90 degrees. Recleat. Repeat until sail is hoisted fully.)

Check the wear on the halyard regularly, particularly where it goes over the masthead sheave. You can prevent excessive wear by moving the knot at the head every so often by adding additional overhand knots further and further down the halyard. When you have done this a few times you will have to trim the excess knotted line to save windage!

**(28/29)** Having raised the sail, insert the slug at the back of the sail into the track on the boom. Take the control line from the sheave in the boom-end fitting, through the eye in the sail and back through the pulley in the boom-end. Then via the notch in the fitting underside. Tie a figure-of-eight knot at least an inch from the end of the line. **(30)** When sailing upwind you will nearly always have the outhaul pulled quite tight but you may wish to loosen it for the downwind legs. You can pre-set the "off" position by tying a large knot (or use a ball) about an inch from the cleat when the foot is pulled tight. This means you simply have to uncleat at the windward mark and it will be in about the right place for downwind sailing. Remember to pull it back on before rounding the leeward mark!

**(31)** To reef the main sail. Roll the sail from the bottom as tightly as possible. Then connect the zips to complete the reef.



## maintenance

### mainsheet

Tie a figure of eight knot in the mainsheet at a point which will prevent the boom hitting the shrouds.

### rudder

Never launch without checking that the retaining clip has clicked into place beneath the upper transom fitting.

The Magno is designed to require very little maintenance, but there are some simple ways to keep your boat in first-class condition.

### sails

After sailing, roll the mainsail loosely. Never fold Mylar sailcloth.

Never let the sails flap unduly.

Furl the jib as soon as you hoist it (even in light airs). Try to get into the habit of furling it while launching and recovering the boat, between races and when you capsize in windy conditions!

The mainsail is protected to some extent by the full-length battens which stop it flapping but you should never leave it hoisted for extended periods on the shore.

Be as gentle as you can with the asymmetric. Drops have to be fast but if the crew can pull smoothly the sail will last longer. You should also keep an eye on the halyard cleat: really strong (or unobservant) crews have been known to pull the patches out of cleated kites... Avoid trawls - the helmsman can help if necessary by taking the sheet on the drop. Bearing away a little also makes the pull easier.

Always rinse the sails after sailing in salt water.

Remove the gennaker from the boat after sailing - mice have a taste for gennakers left in boats! If you must leave it in the chute overnight make sure that the corners are flat (i.e. not folded or crushed). Always dry the gennaker flat (not flapping in the wind!) before folding it.

### foils

Repair any nicks or deep scratches on the rudder with gelcoat filler. Even the slightest damage to the shape or surface of the foils will affect their performance. If your boat vibrates or hums it is usually due to minor damage to the foils.

Make sure that the rudder blade remains tight in the stock when down. Any play between the blade and stock, or between the stock and the hull, will cause steering problems.

### hull and fittings

You can repair small dents by gently warming the hull with a hot air blower (take care NOT to melt the hull); for more substantial repairs refer to Topper International.

Check the attachments of all fittings regularly. This is particularly important for fittings screwed on to fixings set in the hull. Keep all blocks, cleats and ropes clean. Always rinse them out if they have been exposed to salt water.

Always remove the drain plug and empty any water in the buoyancy tank after sailing. When not using the Magno leave the plug out to allow air to circulate and to prevent excess pressure build-up in fluctuating temperatures.

### ropes

Replace any ropes showing signs of wear immediately. Too many championships have been lost by failing to replace a damaged rope when it was first noticed!



## tuning and sailing tips

### upwind

For a medium wind (crew sitting out hard, but able to sheet the mainsail to the centreline) you should be able to use maximum power. Use very little or no cunningham. The outhaul should be set so that there is about a 3in (7-8cm) gap between mainsail foot and boom at the point of maximum chord. Try to keep the boom on the centreline, provided that the boat remains flat.

The jib can be eased about 1-2in (5-10cm) from maximum tightness for optimum performance. As the wind increases, reduce the power in the mainsail by pulling down on the cunningham progressively until the boat feels comfortable and balanced again. If you have tell tales on the leech, use enough gnav to keep them flying.

For very windy conditions flatten the main by tightening the outhaul, tensioning the cunningham further (with a fully-battened sail this has the effect of flattening the sail without pulling the fullness forward and can therefore be used much more than with a conventional mainsail). Sit out hard and sail free.

In light airs, use little or no gnav to allow the leech to open.

### tacking

Be aware that with a fully-battened sail the power comes on very fast after the tack. Do not over steer with the rudder as you will find yourself on a reach. Do not sheet in hard immediately, with either main or jib, until the boat has picked up speed after the tack. Whenever the boat slows down it pays to ease sheets, bear off a couple of degrees and then point up again once the boat has regained speed.

In light winds, when about to tack, make sure that there is some gnav tension, as this will help the battens to flick across. Ease the sheet a few inches before tacking. A sharp pull when you reach the new tack will also help the battens across.

### downwind

With an asymmetric spinnaker, large distances can be gained (and lost!) very quickly. It is essential to keep the boat travelling at the optimum speed and direction towards the next mark. This direction will vary according to the wind strength. In light airs, at displacement speeds, where sailing higher will not result in a great increase in speed, it pays to sail low towards the mark. In marginal planing conditions, sailing higher will allow the boat to plane and the consequent increase in speed help to offset the extra distance travelled. The boat can be sailed progressively lower as the wind strength increases.

Just when to sail high or low and at what precise angles will come only with experience, so keep practising. The crew can have a better idea of the correct angle to sail by feeling the power in the spinnaker sheet. Allow the crew to call the pressure. Sail as low as possible, keeping the pressure on, unless there are overriding tactical considerations.

### gybing

An asymmetric spinnaker is far easier to gybe than a conventional spinnaker and takes no longer than tacking. Ideally you should always gybe when the boat is travelling at maximum speed as there is less pressure on the sails. It therefore pays to gybe 'reach-to-run'.

If you try to slow down and gybe 'run-to-run' the spinnaker pulls the top of the mast forward, making the boat unstable and less controllable. The additional air pressure will make the mainsail harder to pull across. So be positive and gybe smoothly and at speed.

In strong winds you will probably have borne off so that, although the apparent wind still shows a broad reach, you are in fact running directly before the true wind. If you then try to gybe through your normal angle you will gybe on to a reach and be over-powered! So in strong conditions remember to gybe through a smaller angle.

As with tacking, apply some gnav tension when gybing in light airs to help the battens flick across.



### towing

When towing your Magno ensure that it is securely strapped down with a strap over the middle and the bow strapped down to the road base. The launching trolley will lock into the road base at the axle with the front being held on with a lock pin on to the post.

Ensure the mast and all other equipment is securely fixed to the boat before towing.

The road trailer should be secured to the towing vehicle with the wire safety loop as well as the ball hitch and be fitted with a rear lighting board to conform with local regulations.

### boat tips

- Do not step mast near any overhead cables.
- Tape all rigging pins and spreader ends, inboard and outboard.
- Put a figure of eight knot in the main-sheet so that the boom cannot hit the shrouds.
- Tighten all shackles, screws and bolts regularly.
- Ensure the rudder retaining device is in position.
- Ensure rudder is fully down when sailing.
- Never fold Mylar sails.
- Tape all fittings in and around the spinnaker chute and don't leave any sharp edges.
- Never allow the jib to flap.
- Roll mainsail gently after use and leave battens in place.
- Ensure battens are located correctly in batten pockets.