



QUANTUMSAILS™

Quantum Sails Guide to Cruising Asymmetrical Spinnakers

What makes an asymmetrical spinnaker different from a standard spinnaker?

First, geometry; an asymmetrical has a distinct luff and leech. The tack is always the tack, and both sheets are tied onto the same corner (the clew), just like a genoa.

Second, the cross-sectional shaping is usually not uniform and semi-circular, as it would be with a spinnaker, but asymmetric. The position of maximum camber (draft), is likely to be forward of 50%. An asymmetrical typically has a rounder entry (luff) and flatter exit (leech). In general, they are much better reaching sails than conventional symmetrical spinnakers, though they can be designed for sailing at broad angles.

At what wind angles can an asymmetrical be used?

This is a function of design, materials, construction; and of breeze velocity. The flatter and more genoa-like (asymmetrical in shape) the sail is, the closer to the wind it can be carried. More symmetrical (spinnaker-like) shapes are used in larger, fuller sails, to optimize them for broad reaching and running. The trick is to strike the right balance for the intended usage, or to have several asymmetricals with different purposes.

Quantum makes three basic designs for cruising, the A0 (small, nearly a genoa, optimized for close reaching), A2 (full sized for excellent broad reaching and running), and A3 (a versatile all-purpose design). The lighter the air, the closer to the wind you will be able to sail, regardless of the design.

Angles as close as 50° apparent are not uncommon in less than 9-10 knots of wind. The problem for most asymmetricals, particularly on conventional displacement mono-hulls, comes in 10-14 knots of breeze when trying to sail at broader angles, (more than 135° o apparent). At these angles and velocities, the sail has trouble being blanketed by the mainsail. It is at these broad angles that the extra size, depth, and luff projection of the A2 comes into its own. A bowsprit can also help by allowing the sail to fly further away from the boat.

What equipment do I need?

- Spinnaker halyard that is above the forestay
- Tack line led through a block mounted forward of the headstay, and aft to convenient cleat
- Two sheets (approx. twice the length of the boat), led aft to blocks just forward of the stern pulpit.
- A spinnaker sock or furling system for easier handling.

How are they set?

- Set on a broad reach, where the sail will be blanketed by the mainsail.
- Secure bag near the middle of the foredeck.
- Attach both sheets to the clew, leading the lazy sheet around in front of the headstay.
- Attach downhaul. If there is a bowsprit, lead the downhaul over the sheets (inside jibes), if no bowsprit, lead downhaul under sheets (outside jibes).



- Attach halyard, making sure halyard is outside and in front of the headstay.
- Pre-pull the downhaul so that the tack will be 3-4' off the deck.
- Leave the sheet well eased, but pre-pull the clew back to the shrouds.
- Hoist rapidly.
- When the sail is fully hoisted, trim the sheet.
- A spinnaker sock may be used to keep the sail from filling while you hoist. If using a sock, secure the sock control lines to the mast after hoisting.

How are they trimmed?

Ease the sheet out until the sail luffs (curls) along the leading edge. Trim in just enough to stop luffing. A periodic curl is good; this indicates the sail is just on the edge of luff. As with all sails, over-trimming is the most common problem. When in doubt, let it out.

For reaching, tighten the downhaul and lower the tack to pulpit height to minimize luff sag. This will pull the camber (draft) forward and open the leech. The tighter the downhaul, the more genoa-like the shape will be. Though it is a function of breeze velocity and the design range of the sail, in lighter winds you can use most asymmetricals as close as 50 degrees apparent wind angle.

For running and broad reaching, ease the downhaul, allowing the tack to float up 4-6' off the deck. This will allow the sail to lift up, and the luff to rotate out to weather, away from the blanketing effect of the mainsail. It will also create a more spinnaker-like (symmetrical) shape.

If using a spinnaker pole to control the tack, set the pole just above the pulpit for close reaching. Gradually bring the pole aft, keeping it perpendicular to the apparent wind angle (just as with a symmetrical sail), and raising it gradually to keep the tack approximately level with the clew.

Another useful technique at broader angles is to "twing," or move the sheet lead forward. This keeps the clew from rising up and dumping off the leech, making the sail more symmetrical and powerful.

How deep (broad) an angle you can sail is largely a function of breeze velocity. The lighter the air, the higher the angle (closer to the wind) you will need to sail to keep the asymmetrical full and pulling. To find the optimum angle for a given breeze velocity, start with sail full and pulling and bear off slowly till the clew begins to droop and the sheet begins to lose pressure, then head back up till the sail is solid and fully pressurized. This magic edge changes with velocity. You will be able to sail lower angles in the puffs, but will have to head up in the lulls.



What about changing tacks?

Asymmetrical spinnakers are jibed, not tacked. Start with sail fully loaded. Bear off slowly, easing the sheet as smooth and fast as you can without collapsing the sail. The trick is to use the sheet pressure to get the sail out in front of the boat. If the sail is not eased out before the boat gets downwind, it will collapse and fall into the headstay. As the boat passes through dead downwind, release the old sheet completely and take up on the new sheet. The sail is jibed outside and in front of the headstay when the tack is set on the stem.

If you have a long enough bowsprit, you can jibe inside the tack downhaul. No matter which system you use, turn from a broad reach to a broad reach slowly but smoothly. Do not stop in the middle of the turn, or you will encourage the sail to get wrapped around the headstay. Watch the sail and slow the turn slightly as the sail gets the clew gets to the headstay and is pulled around. The lighter the air, the higher the reaching angle you will need to sail, both at the outset, and as you exit the jibe. In very light air, you may have to physically help the sail around the headstay.

How do you take them down?

Bear off to a broad reach, (20-30 degrees up from a dead-run is best). Grab the sheet just in front of the main boom. Release the downhaul completely and gather the sail behind the mainsail. Ease the halyard as fast as the sail can be gathered. Stuff the sail down the foredeck hatch as you gather. Putting the sail in the bag later is easier than trying to do it on deck if there is much breeze.

A spinnaker sock can be pulled down over the sail first to keep the sail from blowing out of control during the gather. Release the sheet, and pull the sock down, then gather as described above.