TRIM GUIDE

CODE ZERO/AWA

Code zero and AWA reaching sails fill in the angular gaps between upwind headsails and spinnakers. This guide outlines the basics of reaching sail trim. For more detailed information, contact a Quantum Sails Consultant.

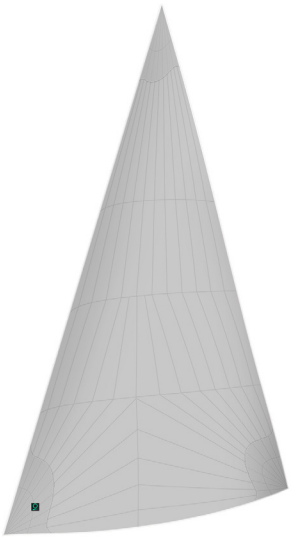
QUANTUM SAILS®
TO THE NEXT CHALLENGE.

WHAT MAKES A SAIL A CODE ZERO OR AWA SAIL?

The term "code zero" was first coined in the 1998-99 Whitbread Round the World race to describe an asymmetric spinnaker that was capable of reaching at very close — almost upwind— angles. These racing sails were limited for many years by rules which specified a minimum girth (70-75% of the foot length). Cruising sailors had no such restrictions, and today's racing rules have finally opened up to allow a wider range of dimensions. What are defined as "code" sails today actually cover a wide range of specialty reaching sails. Size and shape can vary significantly and ultimately determine optimum angles. AWA, or apparent wind angle sails, refers to our line of reaching sails that allow you to build your inventory around target apparent wind angles — after all, this is how we actually sail! At Quantum, we find it more accurate to define the sail based on the apparent wind angle range the sail operates best in.

AT WHAT ANGLES CAN CODES/AWAS BE CARRIED?

The smaller, flatter and more genoa-like the sail is, the closer apparent wind angle you can sail. Conversely, larger and deeper sails provide better performance at wider angles. When evaluating the sail shape and capabilities, the sheeting angle must also be considered. For example, on a typical cruising multihull where the sheet has to come outboard of the upper shrouds, reaching at very close apparent wind angles is not possible unless you can find a way to sheet inside the shrouds, which would sheet the sail close enough to the centerline for tighter angles. The easiest way to determine optimum apparent wind angle range is to look at the mid-girth of your AWA sail.



AWA 40

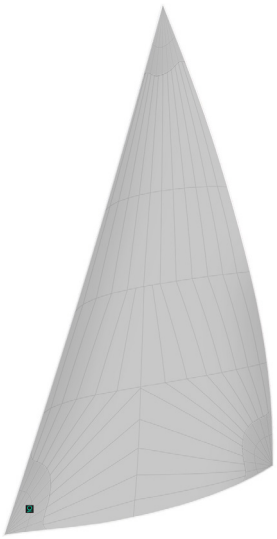
The Close Reaching Co-pilot. The AWA 40 might look like just a big, powered up genoa, but don't let it fool you. Its lighter weight construction and fuller shape gives it the horsepower to step in when your working headsail can't take the close and beam reaching angles.

AWA: 40-100

MID-GIRTH: 50-60%

APPLICATION: Light air upwind and close reaching

MATERIAL: Composites



AWA 60

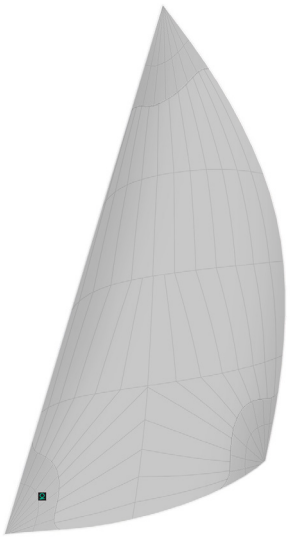
The Master of the Middle. The AWA 60 hits the reaching angle sweet spots and is often the missing arrow in a cruiser's quiver. This is the perfect sail for more modern boat designs with small working headsails that just want to go up wind.

AWA: 60-120

MID-GIRTH: 60-70%

APPLICATION: Close and mid-range reaching

MATERIAL: Composites



AWA 80

The Jack of All Trades. The AWA 80 rocks it in the reaching angles, but has enough depth to hold its own in the broader angles as well. A good sail for cruisers who sail in a lot of shifty downwind breeze and don't want to keep swapping sails.

AWA: 80-130

MID-GIRTH: 70-80%

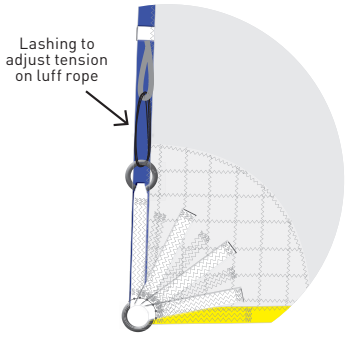
APPLICATION: From just forward of the beam to downwind angles

MATERIAL: Composites, heavy nylon, polyester spinnaker cloth

SETTING/UNFURLING

For cruising sailors, we recommend hoisting your Code Zero or AWA sail at the dock/mooring in light conditions.

Racing sailors and cruisers on the move typically hoist the furled sail from the weather side of the boat, and then guide the system around the headstay and into position. To deploy an AWA sail, tension the luff as tight as possible with either the halyard or a 2:1 tack line. Unfurl by pulling on the sheet. Make sure the lazy sheet is free to run.



2:1 TACK LINE

On the furling drum, the continuous line will need tension on both sides. This will keep the drum from twisting out of alignment. It can be done manually or with a system that takes the furling line aft and keeps tension on both sides with shock cord, or using a block arrangement. As always, it is easier to deploy an AWA sail on a broad reach, where the loads are minimized.

TENSIONING SYSTEM FOR CONTINUOUS FURLING

DOUSING/FURLING

To furl the sail, tension the luff from its sailing position to its furling position, pulling the luff rope as tight as possible. Bear off to unload the sail, then ease the sheet so that the sail luffs. Then, begin to pull on the furling line. Remember to keep tension on both parts of the continuous furling line so as to ensure continuous operation and a smooth furl. Adding a little sheet tension after the bulk of the sail begins to furl and the load is reduced will produce a tighter furl. If you are able to pull down on the sheet as the sail is furled that will also help produce a better roll, particularly on larger AWA 60 and 80 sails.

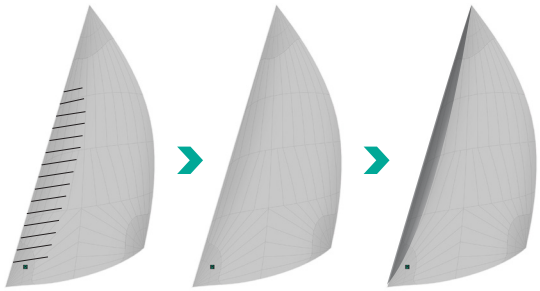
For storage, if the sail has a UV cover it can be left up in moderate conditions for short periods of time, and only while you're onboard. We do not recommend leaving these sails up if the boat is unattended, during rough conditions, or when sailing upwind for long periods of time.

TRIM

Specialty reaching sails have trimming principles similar to conventional asymmetrical sails designed for VMG running angles, but there are a few notable differences. Most important is how the use of a furling system impacts your setup and trim. The use of torsional cables in the luff of the sail versus structured luff or "cableless" XC construction also needs to be accounted for.

LUFF TENSION

There are two components to luff tension on an AWA sail; cloth tension and torsional rope tension. To set cloth tension, hoist the sail (preferably in light conditions), untie the tack lashing, and get maximum tension of the torsional rope using halyard or tack line. With rope tight, tension the luff fabric by pulling down and tightening the tack lashing until any horizontal wrinkles perpendicular to the luff are removed. More tension may be required in windier conditions to remove the wrinkles. If you put on too much luff tension, the sail will develop a "knuckled" entry along the luff. Shoot for a tension in the middle. No horizontal wrinkles and no knuckling in the luff.



NOT ENOUGH ***PROPER LUFF TENSION*** ***TOO MUCH***

If the sail has a structured luff, tension can be adjusted to change the shape of the sail. Easing the halyard or tack line will flatten the entry and allow the luff to project forward which will open up the back of the sail. Ease too far and the sail will become unstable.

SHEET TENSION

As with all reaching sails, ease the sheet until the luff begins to curl and then trim back on just enough to stabilize the leading edge. "When in doubt, let it out" still applies. If you feel your sheet is too tight, but your luff is unstable, try easing luff tension slightly.

AWA reaching sails will generate quite high sheet loads at tighter wind angles, so you will not be able to easily play the sheet in and out like you do when sailing deeper downwind with an asymmetrical headsail. The helmsperson needs to keep an eye on the luff as they would with a headsail, watching the curl to keep the boat at the right angle in recognition that the sheet trimmer is limited in how fast they can react.

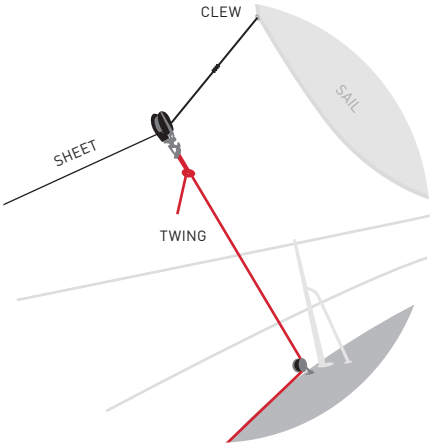
If you are going to use the AWA reaching sail on tighter wind angles, plan your maneuvers to be able to trim the sheet from a primary winch. Try to avoid the cockpit winch you'd normally use for downwind asymmetricals — the cockpit winches may not be designed for the increased loads of codes/AWA sails.

ADJUSTING LEADS

AWA sails are commonly led aft to a spinnaker lead, and adjusted with a "twing." They are normally a "low clew" sail and the twing is used to open and close the leech allowing for better control of the sail. (A 'twing' is a line led from the clew of the sail, over the primary sheet to a block on the rail far enough forward to pull down, but is aft of the clew when the sail is sheeted in all the way).

The twing can be a single line with a block led to a winch, or a purchase system with a block that goes over the sheet. Pulling down on the twing moves the lead forward, rounding the foot and tightening the leech. For the tightest possible trim, adjust the sail like a headsail with the foot round just touching the shrouds and upper leech just off the spreaders.

With the twing too far up (or eased), the foot will be flat and the top of the sail will be too open. With the twing too far down (or trimmed), the foot will be too round and the top of the sail will be closed off. As the sail is eased for broader angles, the lead should be pulled down.



TWING LINE SETUP

MAINSAIL TRIM & DRIVING TIPS

Remember to follow the AWA sail trim with your mainsail. The sails overlap, so there is the risk of "suffocating" your AWA sail with your mainsail. On tighter wind angles, this means you need to sheet the mainsail quite close to the centerline to have room between the two sails. Keep the mainsail well twisted (minimal vang). On high-performance boats, a common trim technique when planing is to have lots of twist but keep the end of the boom aimed at the leeward quarter. If you feel the boat is overpowered, start with easing the twing instead of the mainsail, otherwise the luff of your AWA sail will be unstable. When the AWA sail leech starts to open, you can allow the mainsail to twist and depower the boat.

In tighter angles, the boat can build a lot of speed even in light winds and will start heeling too much and get overpowered. In this case, bare away five degrees and open the leeches of your sails. This will restore the balance of the boat and keep the overall performance high.

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