IDEAL 18 TUNING GUIDE

PHOTO BY CHRIS HOWELL

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QUANTUM SAILS™
TO THE NEXT CHALLENGE.

THE IDEAL 18 KEELBOAT WAS DESIGNED BY BRUCE KIRBY AS A STRICT ONE-DESIGN, ACCESSIBLE TO SAILORS OF ALL AGES, WEIGHTS, SKILL LEVELS, AND COMPETITIVE BACKGROUNDS. THE EMPHASIS IS ON STRATEGY, TACTICAL SKILLS, AND BOATHANDLING, RATHER THAN TUNING, HULL FAIRING, OR SPECIAL RIGGING.

It is a ¾ fractional sloop rig, with swept spreaders and no permanent or running backstays. No hiking straps are provided or allowed; in fact, sailors are required to keep their legs inside the boat. Because of the no-hiking rule and the heavy keel, a larger range of crew weights is competitive than in most one-designs. In 5-15 knots, any weight combination is competitive.

The keel and rudder are identical from boat to boat, with no fairing allowed. The mast step and partner locations are fixed and the headstay length is fixed as well.

IDEAL 18

HULL

The Class Rules allow no fairing of the Hull or the foils. This endeavors to keep every boat identical in performance and to avoid the pitfall of many classes where you have to spend money sending your hull to a speed shop in order to be competitive.

If you are competing in One Design Fleet racing, we recommend drysailing the boat if possible. This keeps the boat at minimum weight and will allow you to keep the bottom clean. If you are wetsailing, you should have bottom paint applied to the bottom and foils. Keep a large sponge with your boat to sweep the water line free of algae and other "slime". A mossy surface is definitely not fast. During the season, periodically have the boat hauled and power washed to remove growth. If you are trailering to a regatta, you can wetsand the bottom and foils very lightly to remove bumps, blisters and dirt only. No drilling, fairing, or reshaping is legal.

Check the seam around the gunwhale edge of the boat for cracks or separation. This is the connection between the cockpit and the hull. You may apply silicone caulk to any cracks or separation. In the offseason, you can have the boat reconditioned by the Ideal 18 North American Dealer, Shumway Marine. This includes hull, foils, hardware, and lines. Shumway is an approved Quantum Sails dealer and can include our OEM sails in the package as well.

RIG

The 3/4 fractional sloop rig has NO permanent or running backstays; instead, rig stability is generated by 15 degree swept spreaders and a large cross-section mast. Rig tuning is controlled by the upper and lower shroud tensions. With swept spreaders, more upper shroud tension will induce mast bend, pulling the top of the spar aft and moving the center forward. The lower shrouds keep the mast in column side to side and help limit mast bend to prevent overbending or inverting the mainsail.

We prefer to keep the upper and lower shrouds fairly loose up to 15 knots. Upper tension ranges from about 180 lbs. up to 250 lbs.; lowers are hand-tight until 12 knots; thereafter, usually about 75% of upper tension.

RUNNING RIGGING

The Ideal 18 is rigged for the easiest hoisting and dowsing of the sails. You can get on the boat and be sailing in about 15 minutes. The mainsail has Nylon slugs on the luff so it is easy to single hand, as you do not need a second person to feed a luff boltrope into the mast groove. The jib is roller furled so unwinding and furling it is a snap. There is a jib sheet on either side of the pit, so it can be adjusted from the rail at any time. All the halyards lead to very convenient positions. Most of the forward sail controls are on the aft face of the foredeck.

The boat is equipped for spinnaker use downwind. It comes standard with Twings, Topping Lift, Foreguy (Pole Downhaul), and Sheets/Guys. The spinnaker hoists from a port side launch bag and the spinnaker pole is stored along the boom for easy reach and stowing.

SAILS

- ***MAINSAIL*** – The main is a 2 + 2 batten setup: 2 full length upper battens and 2 shorter lower battens. Full battens support the sail across it, preventing flogging and increasing the life of the sail. Most One Design boats do not allow full battens and so their mainsail leech breaks down much faster. There is one mandatory class reef for safety and heavy air cruising. The leech telltales help identify airflow past the leech of the sail. There is a standard vision window in the main for safety. The nylon luff slugs that slide in the mast may be stacked up above the mast gate for flaking the mainsail, or they may be dropped out of the groove for rolling the main (preferred). The cunningham is the tack ring or "floating tack". This eliminates the need for a separate cunningham patch and ring, saving weight and added cost. The foot is a loose foot and has an outhaul slug that slides in the boom groove.

- ***JIB*** – The jib is self-tacking and roller-furling. When sailing to windward, the jib has a sheeting angle of about eight degrees. It has an adjustable clewboard to change the trimming lead angle and a luff adjustment line that acts as a jib cunningham. The forestay wire itself in non-adjustable.

- ***SPINNAKER*** – The chute is small for an 18-foot boat. It is remarkably easy to handle for almost any size forward crewmember. The spinnaker is stored in a mesh launch bag on the port side of the cockpit. The Quantum Triradial Maxi-Runner design is now our standard spinnaker for the boat. It has bigger shoulders, a larger foot roach and is designed to perform best in windward-leeward sailing. The big shoulders make it more forgiving because you can carry more shoulder curl without it collapsing.

UPWIND SAILING

In light winds, 5-7 degrees of heel is best, and as flat as possible above eight knots, unless the sea is quite choppy. The two bodies should be close together upwind, weight centered six or eight inches in front of the barney post. When the breeze builds, move from the seat to the rail and back a foot or so. This keeps the bow up and the waterline long. Although the boat can have an 80 degree tacking angle, it is usually better to foot some and let the boat run. This is especially true when the waves build up.

Because the main is large, bearing off requires mainsheet ease above 12 knots. Aggressive ease and trim is fast in puffy conditions. Above 15 knots, it is faster to luff the main some and keep the boat driving than it is to feather up; partly because the boat sails at high tacking angles in the first place, and partly because this will keep the boat flatter.

MAIN TRIM

THIS IS THE MOST IMPORTANT SAIL IN ALL CONDITIONS. THE SMALL FORETRIANGLE OF THE JIB KEEPS THE JIB SMALL AND ITS TRIMMING IS LESS CRITICAL THAN THE MAIN. AN OVER-VANGED OR OVER-TRIMMED MAINSAIL WILL SHOW FREQUENT OR COMPLETE STALLING IN THE UPPER LEECH TELLTALES AND WILL SLOW YOUR PERFORMANCE GREATLY. THERE IS NO MAIN TRAVELER; A FIXED, NON-ADJUSTABLE BRIDLE IS LOCATED ABOVE THE TILLER. MOST MAINSAIL SHAPE CONTROL IS FACILITATED WITH THE SHEET AND THE VANG.

MAIN SHEET

There is a fine range of about 2-3 inches where the boat really takes off in pointing angle and speed. Too little sheet and the boat will be relatively fast, but will not point. Too much sheet tension for the wind strength, and the boat stalls, pointing well for a short time but then quickly slowing down. It pays to get out in the 8-12 knot wind range and get a feel for the main trim range. We like to find the range and put a large black mark there with a permanent marker. This makes it easy to look down anytime and know where you are for trim without having to re-feel the range again. This pays most at the leeward mark when you are trimming in yards of sheet. The Tuning Chart lists the mainsheet tension as the distance between the blocks at the end of the boom. The more mainsheet you pull on, the more the rig pulls back and the tighter the forestay will get. The sheet controls the amount of mainsail leech twist. In light air we trim the sheet until the top batten is parallel to the boom. This gives you enough leech to point without stalling the airflow. In more wind you can sheet harder, closing the leech and reducing twist without stalling the airflow (telltales).

BOOM VANG

The vang hauls down on the boom, controlling the mainsail leech twist and pulling the entire rig aft, consequently controlling the forestay tension as well. A hard vang will bend the rig aft, tighten the forestay and open the slot between the main and jib. Keep the vang fairly loose in light air for more twist and more forestay sag. This keeps the top battens of the main from stalling too much and the jib full and powered up. In 8 knots or more, both crew can sit on the deck and the vang may be pulled harder to bend the mast and open the slot. Above 15 knots, pull the vang as hard as possible and be prepared to use the mainsheet aggressively. In heavy conditions, luff into the wind, trim the mainsheet on hard, then trim the Vang on hard, then release the mainsheet. This "vang-sheeting" technique allows you to dump the mainsheet in puffs without easing the forestay not powering up the jib. It keeps the slot open and the jib flat.

OUTHAUL

The main likes a tight outhaul most of the time upwind. Easing it slightly downwind can help fill it out, but do not forget to put it back on before the leeward mark. It can be difficult to get it back on when going upwind.

CUNNINGHAM

The cunningham is a floating tack type like the J/24. Trim it just enough to remove the speed (horizontal) wrinkles in the luff of the main. In light air leave slight wrinkles and in heavy air, trim it hard to help pull the draft forward and flatten the sail. Older sails require more cunningham to get the draft forward to where it is most effective.

SHROUDS

The rig is quite sensitive to rig tension, so sticking close to this Tuning Guide is highly recommended. Too much upper shroud tension and not enough lowers will over bend the rig, over-flattening the mainsail, giving it too much twist to point upwind. While too much lowers will stand the rig up too much not letting it bend enough to depower and point.

JIB TRIM

THE JIB IS TALL AND NARROW. IT HAS A CLEWBOARD WITH MULTIPLE HOLES TO ADJUST THE LEAD ANGLE. JIB HALYARD TENSION AND LENGTH ARE NON-ADJUSTABLE, HOWEVER THERE IS AN ADJUSTABLE TACK LINE THAT ACTS AS A JIB CUNNINGHAM ALLOWING DRAFT FORE AND AFT CONTROL. TYPICAL JIB TRIM IS ONE-HALF INCH TO FOUR INCHES FROM THE CLEWBOARD TO THE TRAVELER BLOCK.

CLEWBOARD

The holes in the clewboard allow lead angle adjustment, much like moving the car forward and aft on a big boat genoa track. We recommend the second hole for 0-3 knots, 3rd hole from 4-8, 4th hole for 8-18, 5th hole for 18+ knots. Lowering the jib sheet hole pulls the foot more and the leech less, adding twist allowing the upper jib to spill wind in heavy air to help keep the boat flatter.

LUFF (TACK) LINE

Tension this to move the draft forward in heavy air, but do not forget to ease it in light and medium breeze to power up the jib. As your jib ages, it will require more luff tension to get the draft forward.

JIB SHEET

Proper sheet tension can really improve your performance. We like to ease it 1-1½ inches through tacking to power it up and then trim it back on when the boat gets up to speed again on the new tack. Over trimming the jib will stall the airflow and the boat speed, and under trimming will not let you point. One trick to make it easier to trim in heavy air is to jump the sheet at the shackle about 6-8 inches. This allows better purchase, but will not let the jib furl fully. Basically you have the sheet line and shackle led to your preferred hole, then the 6 inch tail of the sheet is tied to the bottom hole. When the day is over, release the shackle and the jib will furl up all the way.

FORESTAY

With no backstay or runners, the only ways to tension the headstay is with aggressive shroud tension or with the boom vang. Vang Sheeting in heavy air is a dinghy technique that works very well in the Ideal 18. By maximum tensioning the boom vang, the rig is pulled back, tightening the forestay and opening up the slot. This is very important in big breeze. With no traveler, the only way to depower is to ease the mainsheet. Without vang mainsheet tension controls the forestay, but when you ease it, the forestay goes soft, powering up the jib - not what you want in heavy air. Big vang tension keeps the forestay tight and the slot open even with the mainsheet eased.

PRO TIP

- In very heavy air, a combination of aggressive mainsheet trim and feathering will keep the boat on its feet. Even though the Ideal 18 is a keelboat and has an open transom, it is still possible to swamp the cockpit by taking a wave over the bow or by over healing in a puff. Once you take on water, it is very difficult to keep the boat flat as the water counteracts your hiking weight. Make sure your scuppers are always open in heavy air. Move your crew weight back in the boat to keep the bow up and the water flowing out the back of the boat. When water gets in the bow it amplifies the boats bow down tendency of the boat in heavy air.

- The best way to avoid swamping is to get the boat set up properly for the conditions. Even if you are set up a little light on the shrouds and the breeze builds, get extra Vang tension to compensate. Luff up and maximum trim the mainsheet hard so the crew can max trim the vang. In some extreme puffs, the jib may need to be eased by the crew (from the rail) to help reduce heel and to release pressure off the bow.

DOWNWIND SAILING

Downwind sailing is very much like it is in other small keelboats and dinghies. The pole should be square (90 Degrees) to the apparent wind at the Windex; in moderate wind and flat seas, Ideal 18's may be sailed almost dead downwind with the pole "oversquared." Sailing higher downwind angles is usually only effective in light air. The Quantum Maxi-Runner spinnaker design will let you sail lower with speed. Keep the spinnaker in front of the boat and out from behind the main. If the sail repeatedly collapses despite good wind, try squaring the pole back more and easing the sheet. Ideal 18's surf well, but only plane in more than 15 knots of wind. In heavy breeze if the boat is rocking and rolling too much, ease the pole forward and trim the leeward twing to gain more control. Also move crew weight aft to keep the bow out of the water.

SET

On hoists, the crew moves the pole from the boom to the mast, clipping the guy into the outboard end of the pole. Raise the topping lift to the proper height for the wind strength - lower for lighter winds and reaching, higher for medium and heavy air. Hoist the spinnaker halyard while the skipper trims the guy back. After the chute is up and the guy is back, then the skipper trims the sheet to fill the spinnaker. We like to trade off the control lines (sheet and guy) to the crew once underway downwind, so the skipper can concentrate on driving and his position with other boats. This lets the crew concentrate on the spinnaker. We talk a lot downwind about angle, boatspeed, and tension on the sheet. If we have plenty of speed and sheet tension, we will bear off slightly to work down. If we are slow and there is little sheet tension, then we head up slightly to get more of each.

GYBE

During gybes, the crew stays in the cockpit. Many teams prefer to gybe the main first, then the pole. First the crew hands the sheet and the guy to the skipper. The skipper steers the boat with their knees trimming both the sheet and guy through the gybe. Next, as the skipper heads the boat down, crossing the stern through the wind, the crew pulls on the vang system (not the line but the whole purchase system) to help the boom across to the new leeward side. Then, the crew stands up and trips the pole from both ends, and gets the new guy locked into the pole jaw and then the new mast end onto the mast ring. The crew then releases the old weather twing line and trims the new weather twing. Finally, the crew retrieves the sheet and guy from the skipper.

HOWEVER AFTER MANY HOURS OF PRACTICE AND RACING, WE PREFER TO THE FOLLOWING GYBING TECHNIQUE:

1. Release the guy twing 8-12 inches up and pre trim the sheet side twing half way down. This will help the skipper keep the chute flying through the gybe.
2. Trip the pole so that only the outboard end releases the guy line. Keep the pole on the mast ring.
3. Duck down, leaning hard to windward to help roll the boat through the gybe.
4. Reach over and pull on the whole vang system to pull the boom across to the other side of the boat. Be careful not to get pinned between the boom and the shrouds.
5. Duck around the vang, stand up and reach up to the mast ring.
6. Release the pole from the mast with the trip line and get the new guy line into the pole jaw.
7. Push the pole out and forward until the new inboard end can be made to the mast ring. The skipper may have to ease the new guy slightly to help the crew get the pole back onto the mast.
8. Finally, retrieve the sheet and the guy from the skipper.

This method will take some practice, because the skipper is free flying the chute longer. The best way to practice this is to leave the pole off the chute and just practice gybing without the pole, back and forth.

TAKE DOWN

Dousing is essentially the opposite of hoisting. We like to have the skipper free fly the chute if possible for the last few downwind boat lengths, so the crew can stow the pole on the boom and unfurl the jib. Make sure that the halyard will run free when uncleated. The crew grabs the spinnaker sheet forward of the shrouds and releases the spinnaker halyard, pulling the spinnaker down between the shrouds and the mast and into the port side launch bag. Finally, fine trim the jib and get back into upwind mode.

IDEAL 18 TRIM CHART

SAIL CONTROL/ TECHNIQUE	0-4 KNOTS	5-10 KNOTS	11-16 KNOTS	17+ KNOTS
MAINSHEET TENSION				
FLAT WATER	8 – 10"	6 – 8"	5"	6 – 10"
CHOPPY WATER	8 – 12"	8 – 10"	7"	6 – 10"
OUTHAUL				
FLAT WATER	½" eased	tight	tight	very tight
CHOPPY WATER	1" eased	½" eased	tight	very tight
CUNNINGHAM (cloth tension at slugs)	soft	soft	slight wrinkles	flat (no wrinkles)
BOOM VANG	5–10° twist (very light)	5° of twist (light to med.)	tight (med to hard)	very tight (hard)
JIBSHEET (clew shackle to turning block)	2 – 3"	1 – 2"	¾ – 1 ½"	½ – 1"
JIB CLEW (GOLD CLEWBOARD)	2nd hole down	3rd hole	3rd hole	4th hole
(BLUE CLEWBOARD)	3rd hole down	4th hole	5th hole	6th hole
UPPER SHROUDS TENSION	180 lbs	180 lbs	200-220lbs	250 lbs
LOWER SHROUD TENSION	just hand tight	hand tight + ½ turn	160-180 lbs	220 lbs
HEEL ANGLE	5 – 7°	5°	flat unless steep chop then 2-5°	flat as possible
SKIPPER POSITION (relative to barney post)				
UPWIND	1' in front on seat	athwartship; on seat	athwartship; on gunwale	1' aft; over gunwale
DOWNWIND	athwartship	athwartship	1' aft	2' aft
CREW POSITION (relative to shrouds)				
UPWIND	Just aft; center or leeward	3" aft; center or on seat	6" aft; seat to gunwale	1' aft; over gunwale
DOWNWIND	3" aft	6" aft	1' aft	3' aft

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