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J/80 Tuning Guide

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How to win in a J/80 was written to help you get the most performance out of your J/80. North Sails has been sailing J/80's since they were first introduced. Our commitment to the class and to its sailors sets us apart from any other company in the sailing industry. Welcome to the North Sails Program, the relationship we are about to build is of utmost importance to us. We look forward to working with you.

The measurements and the settings included in this guide are one that we have found to be the fastest the J/80. Since crew, wind and sailing conditions vary, you may find slightly different settings are better for fitting.

BOAT PREPARATION

There are certain areas of your J/80 that you should go over whether used or out of the box new to insure the boat is race ready. Many of these tips are no different then what you should do to prepare any boat for one-design racing.

Hull

A clean, fair underbody is essential for fast racing finishes. Be sure that the bottom is smooth and free of any bumps or hollows.

If your boat is not dry-sailed, a very hard bottom paint is recommended for racing. There are several racing bottom paints available that have good anti-fouling properties. Occasionally, go over the bottom with 600 grit wet sand paper to maintain the smoothest finish. Contact your local boat yard, ship chandlery, or North Sails loft to find out about the latest paints.

Keel and Rudder

Wet sand both to a smooth, fair finish.

Deck Hardware

Consider adding a windward sheeting traveler car to the traveler.

TUNING THE RIG

Prior to stepping the Mast:

Headstay Length

This length is measured from the center of the pins at the hounds and the stem fitting and should equal 32' 10.5". The standard headstay is often too short, so in order to achieve this measurement it may be necessary to add toggles to the bottom of the headstay under the roller furling fitting.

Backstay Length

By lengthening your headstay, your backstay may become too long. Have your local rigger shorten your backstay wire that runs from above the backstay bridle to the mast crane so it measures 28' 6 3/4". Each backstay leg should measure 8' 9 3/8".

After Stepping the Mast

Mast Butt Placement

The base of the mast should be positioned 8.5 to 9" forward of the main bulkhead. Measure from the back surface of the mast to the leading surface of the bulkhead. The placement is correct when the headstay is taught and the mast is touching the aft edge of the mast collar at the deck level. Once the mast butt is in position tighten it down to secure it.

Mast Blocks

These secure the mast in the partners (collar) at the deck level and should be carved to match the curve of the mast in the front and the back. The side of the mast should be secured with rubber inserts cut from the original mast shim. The purpose of this is simply to wedge the mast in and keep it from moving side to side.

Tuning the Rig

- Step One: With slack lowers and intermediates, tighten the upper shrouds hand tight so that they are both snug while keeping the mainsail track straight. Cleat the main halyard so the shackle touches the rail at the chainplates using a light pull. Measure the same spot on the other side of the boat. If the mast is in column, the shackle will touch in the same place. If not, adjust the uppers until it touches in the same place.
- Step two: Now that the mast is in column pull on the backstay as hard as you can. This should bend the rig and loosen the upper shrouds. Now tighten the uppers again so the new slack is taken out. Be sure to tighten the same amount of turns on either side. Now you may loosen the backstay. The result will be approximately 780lbs of tension or 32 on the Loos

Tension Gauge.

- Step Three: Again sighting up the mainsail track to keep the rig straight, tighten the lower shrouds, with equal turns on either side, to 22 on the Loos Tension Gauge. Given this tension the result should be 1.5" of prebend. Now tighten the intermediate shrouds with equal turns on either side to get a tension of 18 on the Loos Tension Gauge. Check the rig for overall straightness both at the dock and again while sailing by sighting up the mainsail track. Adjust the shrouds appropriately to get the mast straight.

On the water

Changing Breezes

Tuning is now complete for eight to 15 knots. When sailing in less breeze, then you should take off about three full turns on the lowers and upper shrouds. This will give you a softer headstay, and give you the optimum sail shape for light air. See the Tuning Matrix below for detailed shroud tension instructions.

J80 Tuning Matrix

Wind Speed	0-5	5-8	8-14	15-20	20+
Uppers	-3 Turns	-2 Turns	Base setting 780lbs	+2 Turns	+3 Turns
Lowers	Hand tight	-3 Turns	600 lbs	+3 Turns	+4 Turns
Interm.	Bearly hand tight	Handtight	400		
Main Sheet	5° twist if possible	5° twist	5° twist	10° twist	15° twist
Jib sheet					
Traveler	75% to weather	50% weather	Middle	50% Down	50-100% Down
Jib Lead					
Jib Halyard	Wrinkle in luff	Wrinkle in luff	Just bearly wrinkles	No wrinkles	No wrinkles
Main Halyard outhaul	Wrinkles off 2"	Wrinkles off 1"	Wrinkles 1/2 from band	No wrinkles at band	No wrinkles at band
Backstay	None	None	25% on	50% on	Max

SAIL TRIM

Upwind

Mainsail Trim

Without getting overly detailed, because everybody sails to their own style, the following are basic tips for trimming the J/80 main. "Twist is fast". By this we mean that it is necessary to open up the top of the leech and maintain flow over the top of the sail. A good rule of thumb is to trim until the top leech telltale is just stalling and then ease out two to three inches of sheet so that the telltale is flowing again. This is unlike many other one designs that like to have the top batten parallel to the boom in most conditions. In light air the traveler should be pulled very far to weather.

As the breeze builds we need to maintain a balanced helm. Begin by pulling on the backstay to flatten the top of the main. Drop the traveler down in increments of 6" of every 3 knots over 10 knots. As you drop the traveler, you need to pull more mainsheet on to tighten the leech and maintain pointing ability. In big breeze, the top of the main is twisted well off and the bottom 1/3 of the main is doing most of the work.

Jib Sheet

Three things control the jib shape: sheet tension, car placement, and halyard control. The sheet tension has the most obvious effect, so we'll talk about that first. The sheet controls the leech twist and how far the sail is pulled in. If you look at the overall sail as it relates to the sheet it does two things. Picture the boat on a close hauled course and the jib luffing, as you pull in the sheet, first the angle of the sail changes, then as the last few inches are tensioned the leech gets tighter. In short, it pulls it in and then down.

It is important to try to match the leech profile of the jib to the profile of the lee side of the main. Try to envision how the sails would look from a motorboat trailing behind you.

Jib Car

The car placement controls how flat or round the jib is in the lower section of the sail and the amount of leech tension. The farther aft the car is on the track the flatter the bottom third of the sail gets and the less leech tension you can get. Conversely, the farther forward the car the more round the foot and the tighter the leech gets. When the lead is at its maximum aft desired position the foot of the jib will crease as the middle batten comes parallel with the centerline of the boat. In short, rounder shape delivers more power, a flatter shape delivers more speed.

Flat Water = Flat sail. Bumpy Water = full / rounder sail.

Finally lets address halyard tension. It very subtly changes the draft characteristics of the sail. As one pulls the halyard tighter the draft of the jib moves forward and as one eases halyard the draft moves aft again. In lighter air the halyard tension should be loose enough so that there is a hint of wrinkling in the luff of the sail. As the breeze builds the halyard must be pulled on harder to eliminate those wrinkles, but not so much that you over stretch the material!

Crew Position

When sailing upwind in most conditions, the skipper should be straddling the traveler bar. In lighter breeze, move in front of the traveler. The crew should hike out in between the two aft stanchions. In light air, the forward crew should move forward, even with the cabin top.

Downwind

Mainsail

Be sure to power up the sail when sailing downwind. Ease off the cunningham, outhaul, and backstay. Adjust the vang so the top batten is parallel to the boom or just slightly open. Be sure not to hook the battens to windward with a lot of vang tension.

Spinnaker Setup

When setting up the spinnaker gear, be sure that the tack line goes over the lazy sheet (the sheet going to the opposite side of the boat). This ensures that the spinnaker will gybe to the inside, between the headstay and the luff of the spinnaker as opposed to around the outside of the luff of the spinnaker and in front of the boat.

Spinnaker Trim

Like all spinnakers, the spinnaker sheet should be eased until the luff carries a slight curl. The real trick to flying the sail and having the best downwind performance is to maintain constant dialogue between the skipper and trimmer to keep pressure in the sail without sailing too high and losing sight of VMG (velocity made good to the mark). As a general rule the boat sails downwind at 135 degrees to the true wind, jibing through 90 degrees. As the breeze builds, it is possible to sail deeper angles while maintaining good speed. One trick to get down the course fast in strong breeze is to sail nearly dead downwind with the tackline eased out 12 to 18 inches. Heal the boat to windward and ease the sheet out. This rotates the chute out from behind the main's windshadow, exposing maximum sail area to clear air.

Experiment with this a bit and you will quickly get the "Feel!" for how low you can go without stalling the chute behind the main.

Wing and Wing

At some time there are tactical advantages to pulling the wing and wing trick out of the bag. In breezes of over thirteen to fifteen knots it is possible to bear off to dead downwind heel the boat to windward and flip the main to the other side.

The trick to making this work is heeling the boat to windward and keeping it from rocking and rolling. As soon as the spinnaker starts to look unstable and might collapse, quickly flip the main back over and head up onto a normal jibing angle. When things settle down, flip back to the wing on wing, and get going downwind again. The time to use this is if you are looking to make the leeward mark and can gain by not throwing in two jibes.

One important note:

This mode is less stable than sailing jibing angles and so can only be used when the boat is not rocking and rolling around. Get the crew to move their weight around to keep the boat from rolling to keep the boat from rolling to leeward and the time spent on the wing can be longer. It will definitely get some wows back at the yacht club bar.

Spinnaker maneuvers

The J/80 can be handled well around the entire course with a crew of 4. We will detail the maneuvers for all four people: helmsman, middle / aft (M/F), middle / forward (M/F), and forward (FWD) crew members.

Setting

1. M/F presets the pole, pulls the spinnaker out of the companionway, makes sure halyard is in front of spreaders.
2. M/A pre-feeds tack line and hands tail to helmsman for rounding.
3. FWD crew hoists halyard at the helmsman's command.
 - M/F feeds out spinnaker
 - M/A furls jib quickly.
 - Helmsman pulls the tackline final distance.

Getting the jib furled is key to a successful quick set. This allows the spinnaker to have clear air almost immediately. The helmsman must remember not to ease the mainsheet too much as to trap the spinnaker behind the boom and against the spreaders.

Jibing the Spinnaker

The gybing maneuver of the Asymmetrical spinnaker is very different than most people are used to. North Sails has developed a " small-boat " technique that makes turning the J/80 a bit easier and results in a successful gybe without a wrap in the sail.

First and foremost, get a trimmer who is excitable and aggressive and wants to pull harder than a horse during each jibe. This helps to get the sail around the forestay in a hurry. The speed of the trimmer is very important!!

- Step One: Get every body ready and make sure that the old spinnaker sheet is free to run. Pull all slack out of the tack line.
- Step Two: The skipper or another crewmember takes the old sheet. As the boat is Slowly turned dead downwind, the sheet is eased to maintain proper trim. We have the skipper ease the sheet because they have a better feel for how the boat is turning through the gybe. Once the clew is near the headstay, the trimmer pulls on the new sheet and the forward /middle crew overhauls the new sheet directly from the clew of the sail (on the windward side of the boat). It helps to have a mark on the spinnaker sheet at the point where the clew is forward of the headstay.

- Step Three: Once the sail clears the headstay and begins to fill on the new jibe the Skipper and the forward person work together to pull the boom across onto the new jibe. The skipper turns the boat up onto the new course. The trimmer eases the sheet out to its proper trim for the new course.

Quite often this is an ease of up to six feet of line. Anticipate the boat loading up on the new jibe. Have the crew ready to move to windward to flatten the boat to accelerate out of the jibe.

Spinnaker Takedowns

Takedowns with Asymmetrical Spinnaker are often the trickiest maneuvers. We always takedown on the port side on a normal Windward / leeward or triangle race course unless a gybe-set is guaranteed. There are three basic types that should handle any approach to the leeward mark; windward drop, leeward drop, and the "Mexican".

Windward

As you approach the leeward mark, make sure the halyard is ready to run and unfurl the jib. Make your approach to the mark a little high so you can bear off downwind to relieve some of the pressure on the spinnaker. When ready, the middle / forward crew hauls the spinnaker around the headstay with the lazy sheet. Once you have the sail in hand, the forward crew eases the tack line to gather the foot of the sail. Be sure to keep the foot taught and on the deck so the sail stays out of the water. The halyard should be blown as soon as the foot is out of danger. You don't want to go shrimping! Retract the pole, clean up and have a great rounding.

Leeward

As you approach the mark, be sure the halyard and the tackline are free to run.

Option A. Tack Blow-Away

Have the forward / middle crew grab the spinnaker sheet. When they are ready, blow the tack line and begin to gather the sail. Release the halyard when the foot is nearly all gathered and the sail is under control. Retract the pole, clean up and have a great rounding.

Option B. Floater Drop

Overtrim the sail so the foot is stretched tight. Have the forward / middle crew grab the spinnaker sheet. When they are ready, blow the halyard. Quickly gather the sail along leech with the foot tight. DO NOT release the pole until the sail is under control in the boat. Ease the pole and the tackline to complete the takedown. Clean up the cockpit and have a great rounding.

The Mexican

From America's Cup fame comes the Mexican, a simultaneous gybe / douse. As you approach the leeward mark on starboard tack, you need to jibe to round to port. Be sure the halyard is free to run and the jibe unfurled. Just before the jibe, overtrim the spinnaker to tighten the foot. Have the middle / forward crew grab the spinnaker sheet close to the clew of the chute. As the helmsman jibes the boat the crew should begin pulling in the sail, making sure the foot gets on the deck and not in the water. Proceed with the takedown just like a windward takedown.

As in all maneuvers practice makes perfect. Best of luck with your J/80. The best way to get up to speed is to go out and work through some tacks, jibes, sets, and takedowns. Have fun with one of the best sport boats around!

Good Sailing!!

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