

SOLUTIONS FOR TODAY'S SAILORS

Farr 280



NORTH SAILS





Farr 280 Tuning Guide



We hope you enjoy your Farr 280 Tuning Guide. North class representatives and personnel have invested a lot of time to make this guide as helpful as possible for you. Tuning and trim advice offered here have been proven over time with top results in the class.

North has become the world leader in sailmaking through an ongoing commitment to making sails faster, lighter and longer lasting. We are equally committed to working as a team with our customers.

As always, if you have any questions or comments we would love to hear from you. Please contact your CSD class representative.

Sincerely,
Ken Read, President North Sails Group

Contents

Tools Needed	3
Setting Up the Mast	3
Tuning Guide	6
Advanced CSD Sail Analysis	7
Worldwide Sail Care	11

Updates

North Sails is constantly refining tuning techniques and rig settings as we and our customers gain experience in individual classes. This information is shared among North staff worldwide.

While this Tuning Guide provides a giant step toward achieving competitive speed in your class, be sure to contact your North representative:

Chris Larson at chris.larson@northsails.com

about the latest Farr 280 tuning developments.

Photos on cover and above © Paul Todd/OUTSIDEIMAGES courtesy of Farr International.





The Farr 280 is a relatively light boat which makes it very receptive to positive trimming.

It is imperative to have the sail trim spot on but also the fore and aft weight trim correct and whichever team does this the best will be rewarded with the best boat speed.

Up to 7 kts the Farr 280 is always looking for more power so keep the sails powered up, focus on building speed efficiently out of transitions (tacks, jibes, ducks and mark roundings) and don't over trim or you can easily kill the speed.

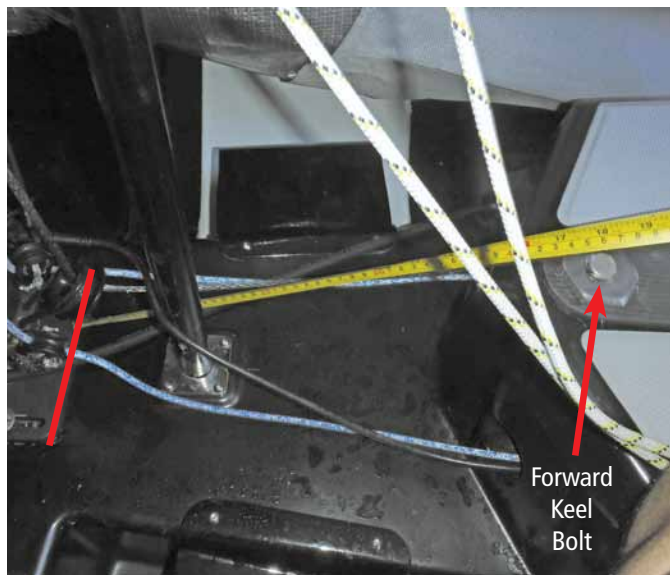
Tools Needed

Take your rig tune seriously. Keep whoever adjusts the rig the same from the beginning to the end and you will be far more accurate all season long. It is one item on our list we can get right before we leave the dock.

Equipment Requirements

- Loos Gauge PT-2 (headstay, V1 and D1 shrouds)
- Loos Gauge PT-1 (D2 shrouds)
- 30 m (100') tape measure (forestay pin-to-pin)
- 5 m (16') steel tape measure (mast heel)
- Rig spanners (adjustments)

Setting Up the Mast



Step 1 Set the mast plate in the correct location. Before the mast is stepped, place the aft face of the mast step 455 mm (17.91") forward of the forward keel bolt center line. Shown here, from the red line at left, measure up to the forward keel bolt.



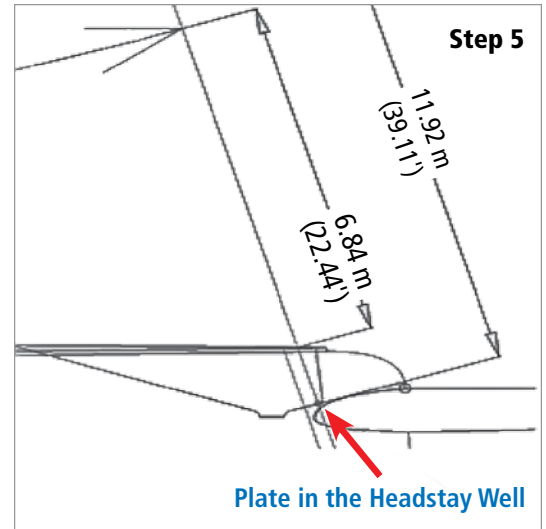
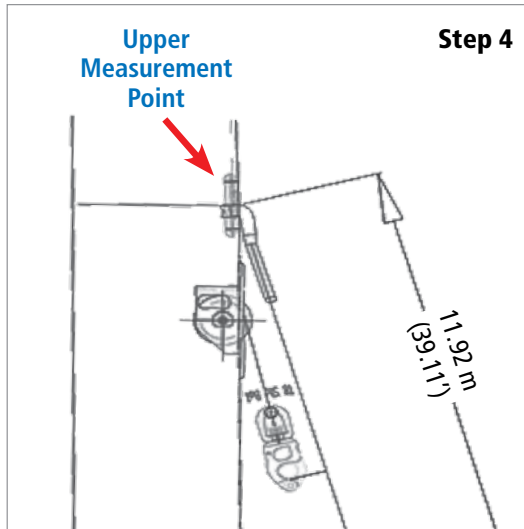
Step 2 Step the mast and attach the headstay strop to the lower headstay fitting (shown above).

Step 3 Attach the cap shrouds only just past hand tight.



Farr 280 Tuning Guide

Step 4 Measure down from the upper measurement point, see drawing at right, and make a mark on the headstay 11.92 m (39.11') from the top point.



Step 5 Pump up the mast on the hydraulic jack so that it just lifts off the collar. Then pump the headstay down (shorter) so that your headstay mark of

11.92 m (39.11') becomes just even with the plate in the headstay well. See drawing at far right.

Step 6 Measure back from the headstay to the same location on both sides of the boat even with the partners. Make a mark on the partners halfway between these 2 points. This locates the centerline of the mast on the boat's centerline.



Using the supplied chocks center the mast on the centerline of the shrouds. This may entail sanding the supplied plates to fit the partner hole (shown in the photo at right). Once centered, screw the plates to the chocks through the sidewall of the partners so that none of these fall out while sailing. Eventually the mast should be held in place with "Spartite."

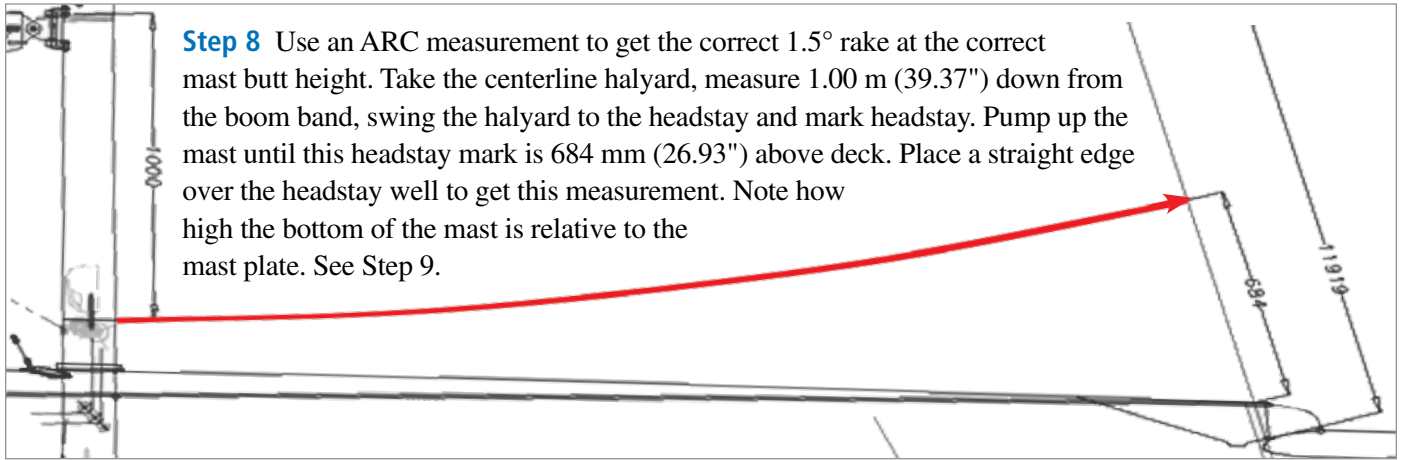
Step 7 Using the centerline halyard measure down to the mark from Step 6 on both sides of the boat aft of the headstay. Adjust the cap shrouds so that this number is the same on both sides. Now your "hounds" are centered.

NOTE: It is *extremely important* that there is no "load" on the shrouds when you adjust the nuts, shown at right. If there is too much load you may either strip or cross thread the rod. To adjust the nuts you must "drop" the mast, adjust, then pump back up.





Farr 280 Tuning Guide



Step 8 Use an ARC measurement to get the correct 1.5° rake at the correct mast butt height. Take the centerline halyard, measure 1.00 m (39.37") down from the boom band, swing the halyard to the headstay and mark headstay. Pump up the mast until this headstay mark is 684 mm (26.93") above deck. Place a straight edge over the headstay well to get this measurement. Note how high the bottom of the mast is relative to the mast plate. See Step 9.

Step 9 Obtaining the correct cap (vertical) shroud tension. With the mast pumped up so that the headstay ARC measures 684 mm (26.93"), note the mast butt height. In the case here it is 78 mm (3.07"). With the headstay at 1.5° rake and the mast raised 78 mm (3.07"), You want the jack pressure to read 1925 psi or 133 bar on the cockpit dial with just the headstay and cap shrouds attached. You will need to raise and lower the rig a few times to make the necessary adjustments to the cap shrouds.



Step 10 Repeat Step 9 when attaching the D1s with the caps (verticals) and headstay. Use the PT-2 Loos Gauge to get 28 units on the gauge for the D1s.

Step 11 Repeat the Step 10 while attaching the D2s, D1s, caps and headstay. Use the PT-1 Loos Gauge to get 26 units for the D2s.

Step 12 With all standing rigging attached, check the finished tune with the Loos Gauges. You should have the Loos Gauge units listed below for the BASE settings. The mast butt height will be relative to your boat. Hull #1 was 78 mm (3.07").

We set BASE settings for this boat at maximum load. From this point the tuning relates to lowering the mast butt height combined with lengthening the headstay to soften the rig loads as the wind speeds diminish.

BASE Settings for 18+ kts TWS		
Rake	1.5°	
Mast Butt Height	78 mm (3.07") in our example	
Headstay	39	PT-2 Loos Gauge
Caps	43	PT-2 Loos Gauge
D1s	28	PT-2 Loos Gauge
D2s	26	PT-1 Loos Gauge

For lighter winds we recommend a combination of dropping the mast down and lengthening the headstay. This promotes sailing with a softer rig laterally while sailing with more rake.





Tuning Guide

Below is a matrix of tuning and notes. No diagonal or vertical shroud adjustments should be required with this rig. Primary adjustment is with the headstay and mast butt ram. Headstay and mast jack pressures can be referenced using the hydraulic pressure gauges on the control panel.

TWS	Rake*	Butt F/A	Butt Down*	Vang
6 kts	2.5°	15	-10 mm (-0.39")	0
8 kts	2.3°	15	-8 mm (-0.31")	0
10 kts	2.1°	15	-5 mm (-0.20")	0
12 kts	1.9°	15	-4 mm (-0.16")	0
14 kts	1.7°	15	-3 mm (-0.12")	0
16 kts	1.6°	15	-1 mm (-0.04")	Little
18 kts	1.5°	15	0	Hard
20 kts	1.5°	15	0	Very hard
22 kts	1.5°	15	0	Very hard
24 kts	1.5°	15	0	Very hard

* Feel free to modify the Rake and Butt Down numbers when sailing in either very smooth or choppy waters. These numbers are a reference in ideal conditions.

1° of rake change = 53 mm (2.09") change to the headstay length. With the mast set at 1.5°, use a batten set down into the bottom of the headstay well to mark the batten at the centerline of the headstay pin shown in the photo below. Tighten and ease the headstay in 26 mm (1.02") increments and mark the batten from 1.25° to 3° of rake. Use this batten for a quick reference when tuning.



Use the centerline of the headstay pin to measure rake while sailing the boat. The red line shows the centerline of the pin.

Three different marks that help when sailing are:

1. On the under side of the spreaders make a mark to reference the headsail leech when sailing:
 Lower Spreader: 635 mm (25.00") from mast centerline
 Upper Spreader: 476 mm (18.74") from mast centerline
2. Mark the headstay to be visible from the cockpit/rail. The red marks below note 1.5° (upper) and 3° (lower) of rake when parallel to the deck height.



3. Mark the maximum down position on the aft face of the mast (shown below with white electrical tape. But this should be marked in a more permanent manner.



But this should be marked in a more permanent manner.



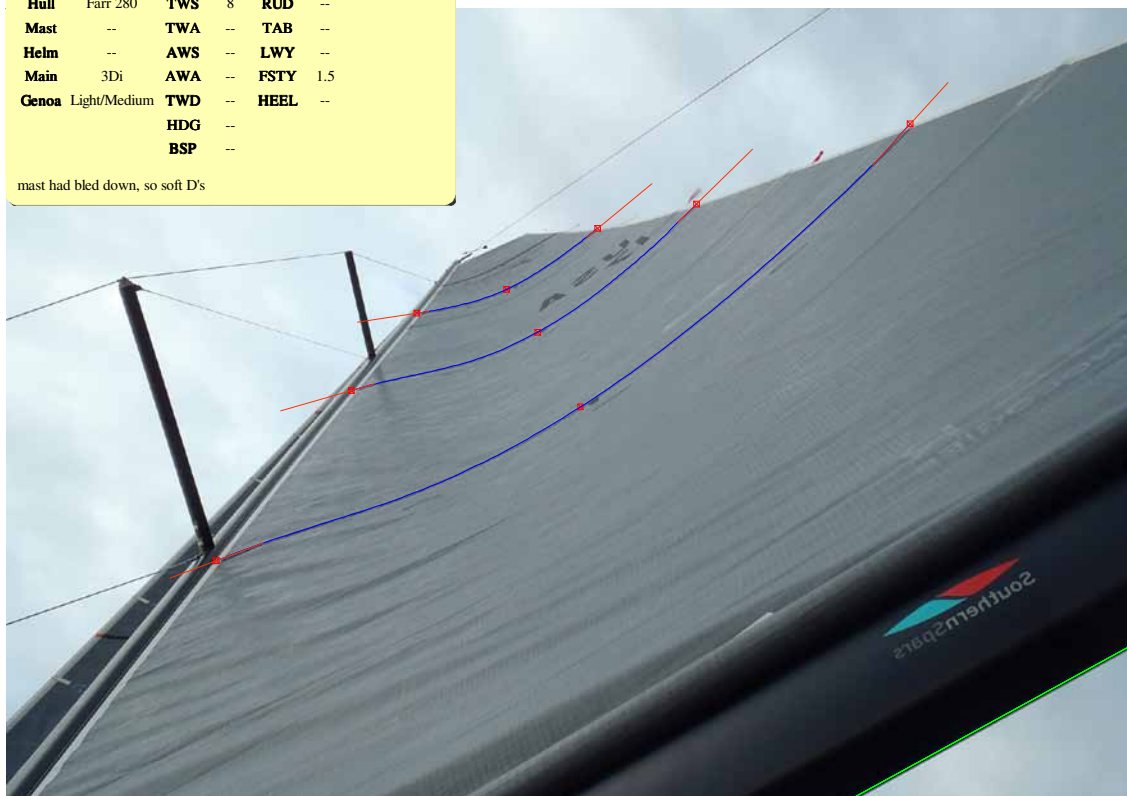
Advanced CSD Sail Analysis

CSD 3Di Mainsail

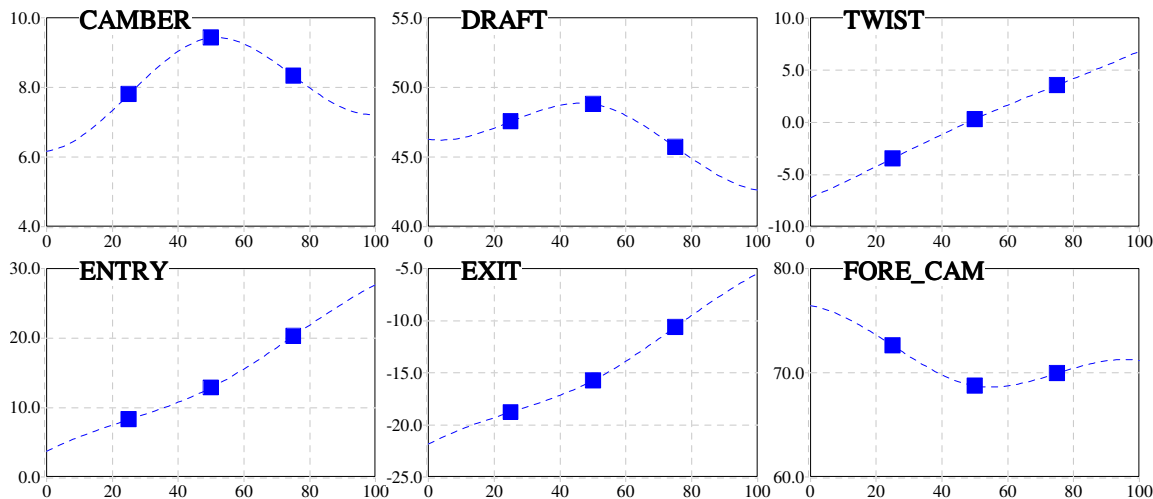
< Comments > 2014/04/08 18:43:20

Hull	Farr 280	TWS	8	RUD	--
Mast	--	TWA	--	TAB	--
Helm	--	AWA	--	LWY	--
Main	3Di	AWA	--	FSTY	1.5
Genoa	Light/Medium	TWD	--	HEEL	--
		HDG	--		
		BSP	--		

mast had bled down, so soft D's



Ver.5.610, Copyright (North Sails Japan)



SailType: MAIN	Height	CAMBER	DRAFT	TWIST	ENTRY	EXIT	Blue ... Actual FORE_CAM	BACK_CAM
	25.0	7.8	47.6	-3.5	8.3	-18.8	72.6	70.3
	50.0	9.4	48.8	0.3	12.9	-15.7	68.8	69.8
	75.0	8.3	45.7	3.6	20.3	-10.6	69.9	69.5





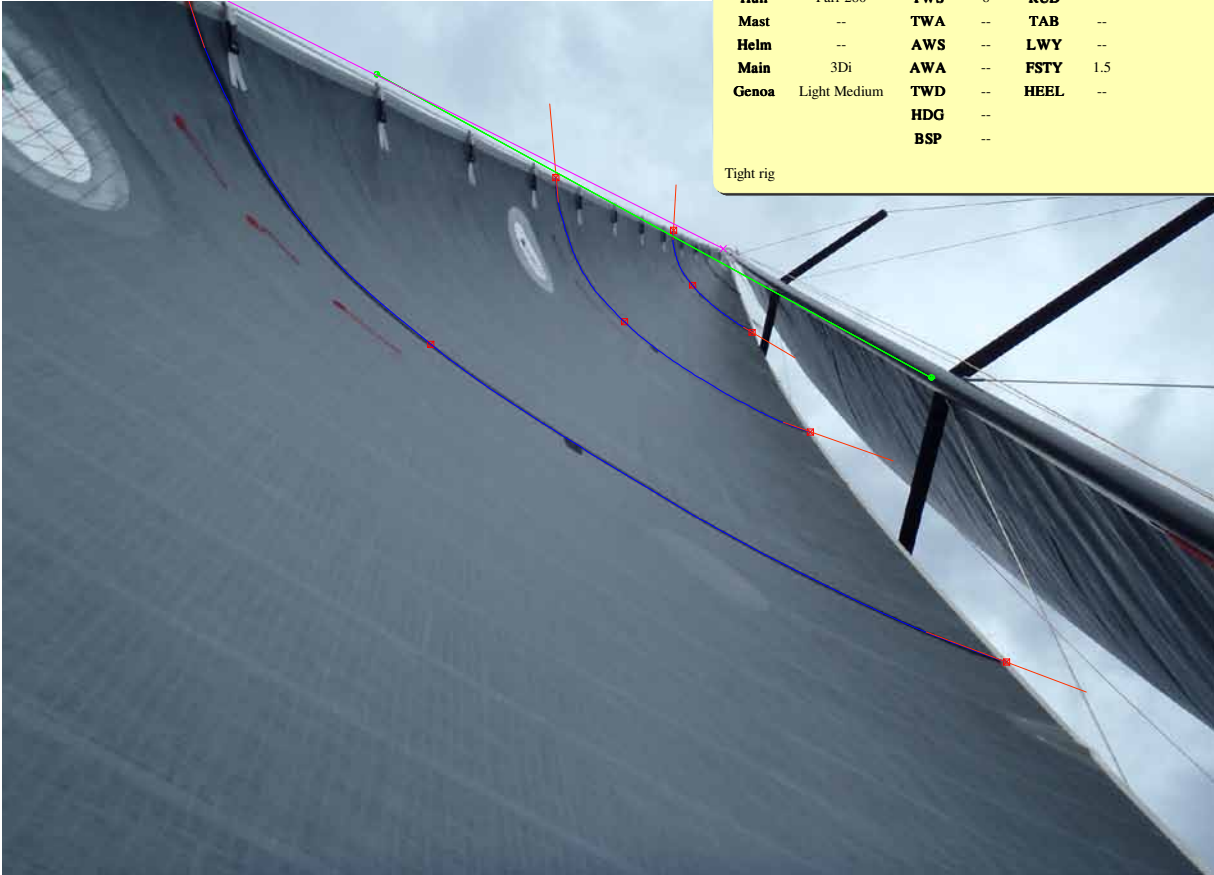
Farr 280 Tuning Guide

CSD 3Di Light/Medium

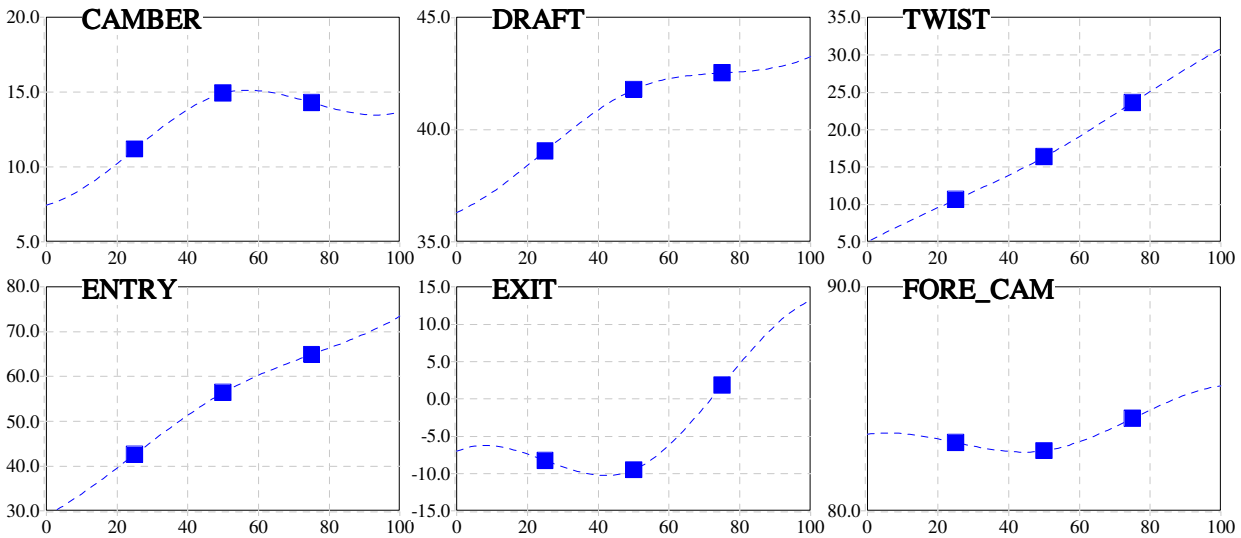
< Comments > 2014/04/08 17:56:10

Hull	Farr 280	TWS	8	RUD	--
Mast	--	TWA	--	TAB	--
Helm	--	AWS	--	LWY	--
Main	3Di	AWA	--	FSTY	1.5
Genoa	Light Medium	TWD	--	HEEL	--
		HDG	--		
		BSP	--		

Tight rig



Ver.5.610, Copyright (North Sails Japan)



SailType; HEAD	Height	CAMBER	DRAFT	TWIST	ENTRY	EXIT	Blue ... Actual	FORE_CAM	BACK_CAM
	25.0	11.2	39.0	10.6	42.6	-8.3	83.1	69.5	
	50.0	14.9	41.8	16.3	56.3	-9.5	82.7	69.3	
	75.0	14.3	42.5	23.6	64.9	1.8	84.1	68.8	





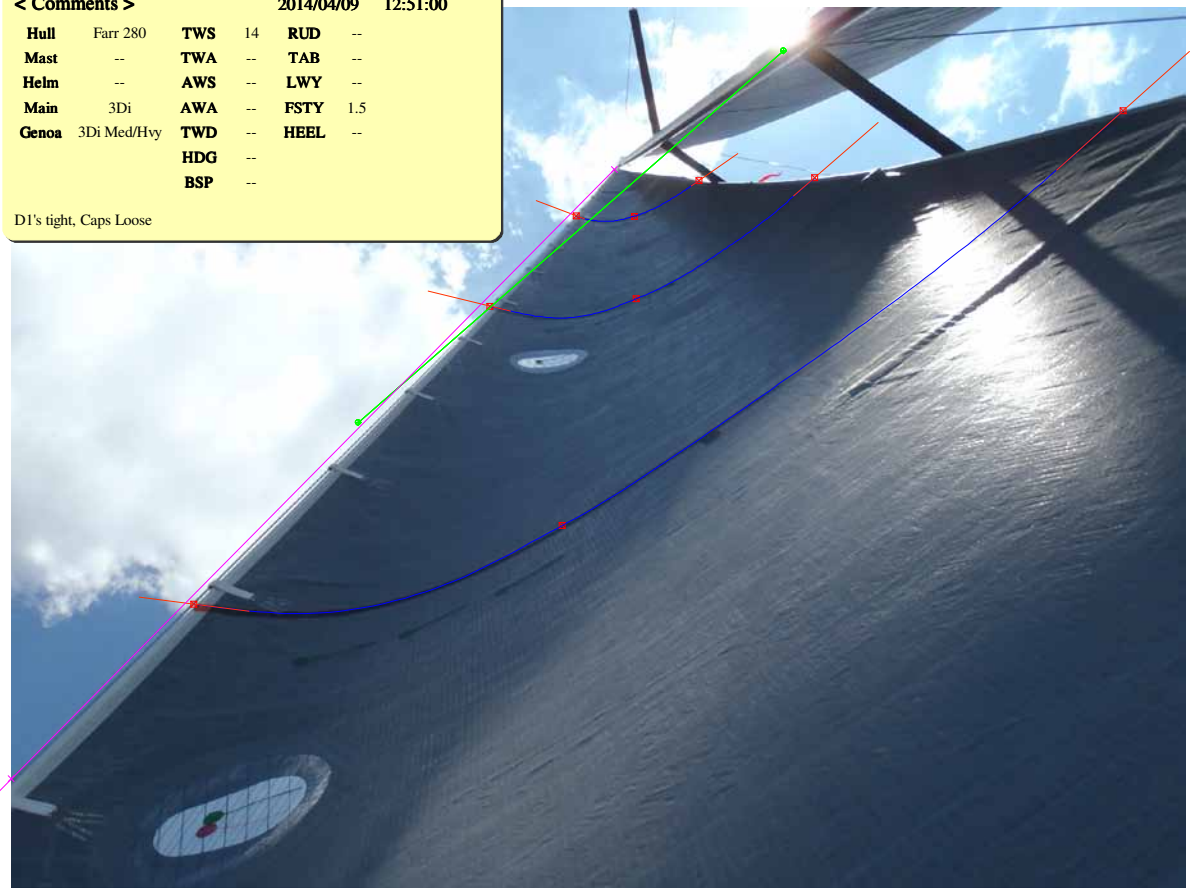
Farr 280 Tuning Guide

CSD 3Di Medium/Heavy

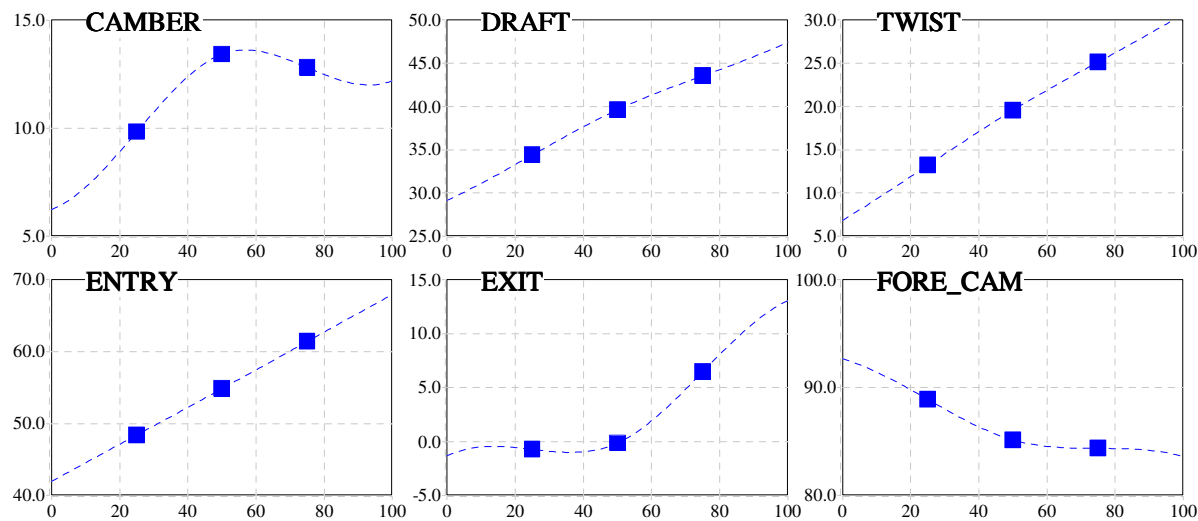
< Comments > 2014/04/09 12:51:00

Hull	Farr 280	TWS	14	RUD	--
Mast	--	TWA	--	TAB	--
Helm	--	AWS	--	LWY	--
Main	3Di	AWA	--	FSTY	1.5
Genoa	3Di Med/Hvy	TWD	--	HEEL	--
		HDG	--		
		BSP	--		

D1's tight, Caps Loose



Ver.5.610, Copyright (North Sails Japan)



SailType; HEAD	Height	CAMBER	DRAFT	TWIST	ENTRY	EXIT	Blue ... Actual	FORE_CAM	BACK_CAM
	25.0	9.8	34.4	13.2	48.4	-0.7	88.9	66.7	
	50.0	13.4	39.6	19.6	54.8	-0.1	85.1	68.9	
	75.0	12.8	43.5	25.1	61.4	6.4	84.4	68.8	





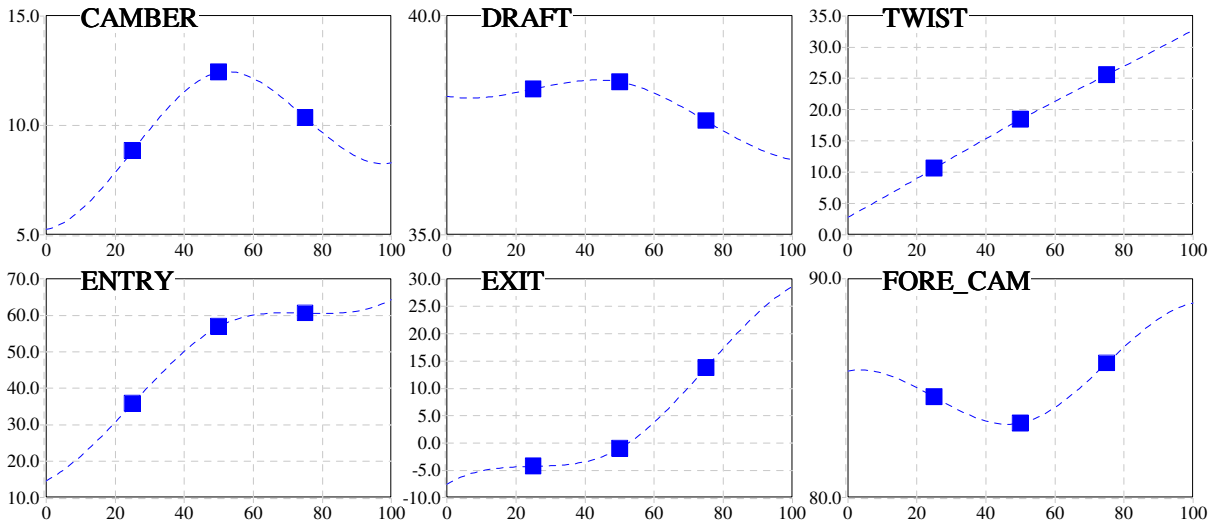
Farr 280 Tuning Guide

CSD 3Di J4



< Comments >		2014/04/09 14:55:36	
Hull	Farr 280	TWS	14 RUD --
Mast	--	TWA	-- TAB --
Helm	--	AWS	-- LWY --
Main	3Di	AWA	-- FSTY 1.5
Genoa	3Di J4	TWD	-- HEEL --
		HDG	--
		BSP	--

Ver.5.610, Copyright (North Sails Japan)



SailType; HEAD	Height	CAMBER	DRAFT	TWIST	ENTRY	EXIT	Blue ... Actual	FORE_CAM	BACK_CAM
	25.0	8.8	38.3	10.6	35.7	-4.3		84.6	69.9
	50.0	12.4	38.5	18.4	56.8	-1.0		83.4	70.7
	75.0	10.3	37.6	25.6	60.6	13.8		86.1	65.3



Worldwide Sail Care

At North Sails, we view each sail purchase as the beginning of a long and rewarding relationship. We base this expectation on a strong service commitment that includes preventive maintenance, sound advice, education and expert repairs. Your nearby North loft offers a wide range of services including...

- Annual checkover
- Winter storage
- Retrofitting
- Educational resources
- Sail washing
- Sail tune-up
- Seminars

North Sails is a network of more than 100 lofts in 34 countries around the world. Each offers knowledgeable, friendly, personal sales and service. Our size and worldwide reach also means North has the world's most expansive sailmaking database. It would be hard to find a sailboat for which we cannot make a fast, durable and long lasting sail.



NORTH SAILS

www.northsails.com



Visit the North Sails Class Sail Development website at:

<http://na.northsails.com/CSD.aspx>

Farr 280 Class website: www.farr280.com