

America's No. 1 Mast Manufacturer

U.S. SPARS, INC.

Gainesville, Florida



03084105 Manual furling mast

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CONGRATULATIONS!

YOU NOW OWN THE MOST WIDELY USED MAINSAIL FURLING SYSTEM IN THE WORLD.

THE Z SPAR MAINSAIL FURLER IS USED ON NEARLY ALL THE WORDS TOP PRODUCTION BOATS; IT HAS PROVEN ITS SELF TO BE THE SYSTEM YOU NEED WHEN QUALITY AND SERVICES ARE AN ISSUE.

ZSPAR HAVE BEEN MAKING SPARS FOR 30 YEARS, OUR PRODUCTION FACILITY AROUND THE WORLD USE THE VERY LATEST TECHNIQUES IN SPAR PRODUCTION. WHICH ALLOW US TO PRODUCE OVER 6000 MASTS A YEAR.

IF YOU HAVE ANY SET UP OR OPERATIONAL QUESTION ABOUT ANY PART OF YOUR Z SPAR RIG YOU CAN CONTACT OUR TECHNICAL DEPARTMENT WHICH WILL BE ABLE TO GUIDE YOU THROUGH ANY ASPECT OF OUR RIGS.

WE CARRY A VAST ARRAY OF SPARE PARTS FOR ALL Z SPAR PRODUCTS, SO YOU CAN COME DIRECTLY TO THE MANUFACTURER IF YOU REQUIRE ANY P ARTS. NO MIDDLE MAN TO PAY, JUST A VERY GOOD PRICE AND SERVICE. THAT'S THE US SPARS WAY.

ALL THAT'S LEFT NOW IS TO SET SAIL AND ENJOY PEACE OF MIND SAILING WITH Z SPAR ON BOARD!

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Z Spar Furling Mast

Installing The Outhaul Rope:

This rope attaches to the front of the boom traveler, it leads around the clew block in the mainsail, underneath the pulley on top of the boom traveler, around the sheave in the boom outhaul end casting, through the halyard exit under the boom (or over the sheave in the front end of the boom) through a pulley behind the kicker and forward to a swivel pulley at the base of the mast. This leads aft in the same way as the furling rope.

Installing The Furling Rope:

Inside the drum underneath the gooseneck it is possible to see the coils of rope wound on the furling drum. Make sure the rope is fully wound on the drum then unwind three turns. Lead the rope from this slot around the pulley situated under the boom just in front of the kicker/boom vang fitting, then through the swivel pulley attached to the mast base and back to a self-tailing winch on the coach roof via the halyard organizer.

Installing The Mainsail:

Open and remove all four inspection covers. At the top set of openings you will see the sail entry slot cut in the furling internal foil extrusion. Feed the head of the sail through the mast slot and into the sail entry slot in the foil. Lower the mail halyard down to allow the shackle on the halyard swivel to be attached to the strap sewn into the head of the sail using an allen key.

Continue to feed the sail into the slot whilst the main halyard is being hoisted. Do not attempt this with the wind astern. (This task is best attempted in little or no wind). Once the sail is hoisted to a point where the tack web loop is almost level with the large tack shackle stop. You now have to back the remaining luff

down the foil from the sail entry until you can connect it to the tack shackle. It is important to have the full length of the luff in the foil form shackle to shackle with no cut away below the sail entry. Connect the bottom web of the sail to the base of the furling extrusion with the shackle provided, by gaining access through the lower inspection holes. Please note that this tack shackle also connects the furling extrusion to the furling drum. Refit inspection covers. Complete the installation by applying moderate tension to the main halyard.

Furling the Sail:

Hoist the boom topping lift or ease the kicker so that the leach has little or no tension.

Maintaining a slight tension on the outhaul, furl the sail with the wind ahead. (A slight pressure from the wind will prevent creases in the sail). Insure that the furling drum has two or three turns of rope left on it when the sail is fully furled. The sail will only furl as far as the reinforcement patch.

Changing the Furling Rope:

Open the lower inspection covers and remove the tack shackle. This will disconnect the furling drum from the furling foil. Remove the machine screws holding the furling mechanism to the mast. These are located two at the top of the drum and two at the bottom of the drum. On some models there will be two additional screws or rivets on the side of the mast to be removed. Using a large screwdriver, lever the furling drum away from the mast at the bottom end. The furling rope is retained by a simple knot inside the furling screw push the rope towards the drum and the knot will appear at the bottom of the furling screw. Undo the knot remove rope and replace. We recommend a 10mm braid on our larger gears (Beneteau 381 to 461) and an 8mm on our smaller gears (Beneteau 331) this braid must be of a good quality that will not flatten. This operation is made easier with the sail removed.

Maintenance:

Z spar furling masts require minimum maintenance.

The boom traveler should be flushed with detergent and fresh water regularly.

The furling rope should be replaced every four years or as required. Clean and flush top and bottom of furling mechanism regularly and spray with WD 40 or Harken lube (the ball bearings in the furling mechanism and halyard swivel are all stainless steel so need minimum maintenance).

Remove mainsail every year for inspection and every 3-4 years it is recommended that you let your local sailmaker inspect and service the sail.

Trouble Shooting:

When unfurling the sail if there is resistance for the boom traveler to move, the most likely course will be excessive mainsheet or vang/kicker tension. Check also for friction with in the halyard organizers or at the mast base blocks, if these do not move freely it will cause slowing of the gear.

If the sail is not new there may be localized hardening of the head reinforcement, or fraying at the leach, which can cause friction. It is worth having the sail checked every year to avoid such problems.

When unfurling the sail if there are creases originating at the luff, and if these cannot be removed by increasing the main halyard tension, the most likely cause is that the sail maker has made the luff too long, (too much halyard tension will also cause friction at the halyard swivel).

Alternatively, the sail may have been furled with too much kicker tension.

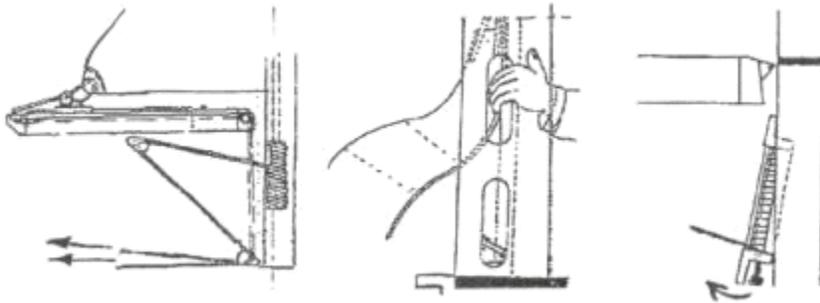
With any furling mast it is important that pre bend be kept to a minimum, although a small amount of bend can help stabilize the middle of the mast the straighter a furling mast is the better it will work, please refer to our tuning guide for help with mast set up.

If you are having ongoing problems with furling it is a good idea to remove the sail and then try turning the furling system to establish if your problem stems from the furling system or the sail. If you find the system works well without the sail it is advisable to have a sailmaker check the sail. We recommend Neil Pryde Sails Int, 203-874-6984 as a very reliable sailmaker who has a good knowledge and experience with our system.

If you find the system is not turning as free as it should then removing the drum is advisable, with the drum removed you can clean and inspect it for damage. If you have time you can send the drum to our facility in

Florida where we can service the system and replace any necessary parts. The base cost for this service is approximately \$130.00 plus return shipping.

It is necessary to change to furling inhaul line regularly; this line can harden and flatten after just a season or two. If this line is not inspected and replaced when required it can jump the grooves in the drum and damage the back plate. We recommend the use of a good quality line with high abrasion resistance, your system will come fitted with metric line but if you have to use imperial line then replace 8mm with 5/16" and 10mm with 3/8".



SAILMAKERS INFORMATIONS

Section	Z 105	Z 125	Z 145	Z 170	Z 190	Z 230	Z 265	Z 290	Z 301	Z 351	Z 401	Z 501	Z 531	Z 601	Z 701	Z 901	Z 1001	Z 1400
Sail slide			AO 16	AO 16	AO 16	AO 16	AO 14		AO14	AO 14		HA 89 ou AO14				HA 91	HA 91	HA 91
Sail track	8 mm	8 mm ou HA 89	8 mm	10 mm		10 mm	10 mm	10 mm										

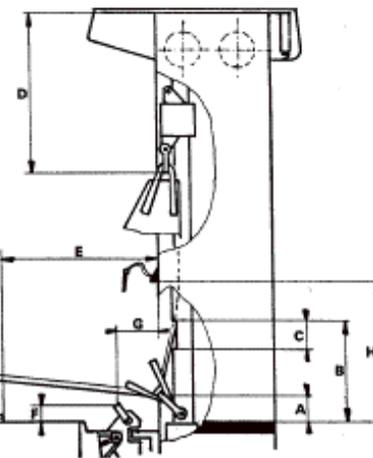
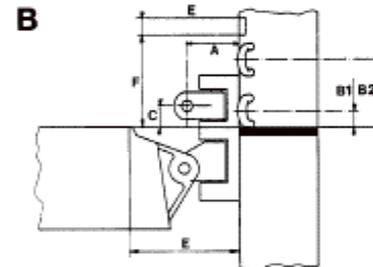
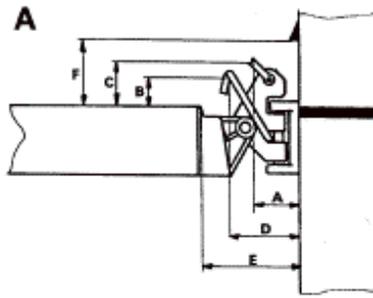
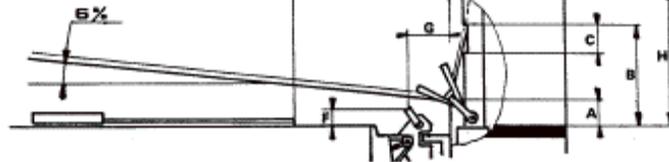
Boom	A	B	C	D	E	F	Track	Slide
Z 120 dinghy	56	5	15	15	50	250	8 mm	
Z 120 cruiser	40	40	20	60	130	250	8 mm	
Z 160	40	40	20	60	140	280	8 mm	A 032
Z 204	50	60	5	70	170	280	8 mm	A 032
Z 360	60	35	25	100	200	280	8 mm	B 102
Z 480	60	35	25	100	200	280	12 mm	B 013
Z 690 A	45	40	15	110	240	280	10 mm	B 012
Z 690 B	56		26	-	240	150		-
Z 950	56		26	-	240	150		-

Furling mast	A	B	C	D	E	F	G	H	Sail track	Sail slide for trysail
Z 230 E	60	150	100	350	800	20	40	-	6 fini	-
Z 300 E	60	500	100	400	800	20	40	100	6 fini	HA 89
Z 400 E	60	500	100	400	800	35	60	100	6 fini	HA 89
Z 500 E	60	500	100	400	800	35	60	100	6 fini	HA 89
Z 600 E	60	500	100	400	1 000	35	60	100	6 fini	HA 91
Z 700 E	60	500	100	450	1 000	35	60	100	6 fini	HA 91
Z 800 E	60	500	100	450	1 000	35	60	100	6 fini	HA 91
Z 900 E	60	500	100	450	1 200	35	60	100	6 fini	HA 91
Z 1100 E	60	500	100	450	1 500	35	60	100	6 fini	HA 91
Z 1400 E	60	500	100	450	1 500	35	60	100	6 fini	HA 91

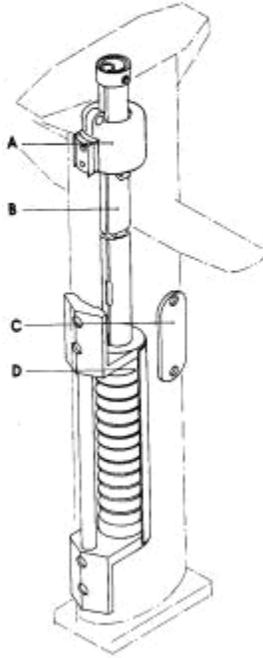
RECOMMANDATIONS FOR FURLING MAST

Don't use battens on main sail.

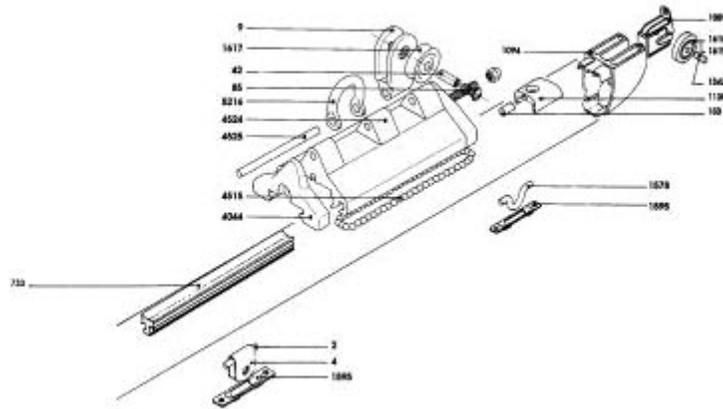
Don't forget the 6 % slope on the main sail foot.



MAST FURLING MECHANISM



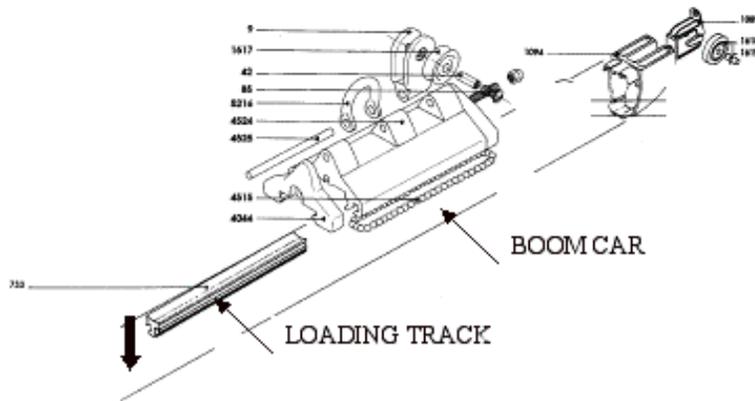
Section	Z 230 E	Z 300 E	Z 400 E	Z 500 E	Z 600 E	Z 700 E	Z 800 E	Z 900 E	Z 1100 E	Z 1400 E	Z 77	Z 110
Furling extrusion	Z 55	Z 55	Z 55	Z 55	Z 55							
Halyard swivel	3503	3504	3164	3164	3165	3165	3165	3166	3159	3505	3167	3165
Furling mechanism	3623	3624									3217	3214
Furling mechanism with screw		3626	3626	3626	3625	3625	3625	3627 VL 3622 VC	3627	3627	3623	3138
Mechanism maintenance cap	3247	3247	3247	3247	3247	3247	3247	3247	3245	3245		
Clew shackle	3208	3208	3208	3208	3208	3208	3208	3208	3208	3208	3208	3208
Halyard swivel shackle	3168	3168	3168	3168	3168	3168	3168	3168	1562	1562	3168	3168



Boom car loading system

Congratulations on receiving your new model U.S. Spars TORLON ball bearing boom car. The car has come on its own loading track, this loading track is similar to the boom track on your boom, but unlike your boom track the loading track has no T piece for fixing to the boom section. You will notice a piece of tape at each end of the loading track, this is to prevent the car from sliding off the track and you looking everywhere for the bearings, as there are not captive bearings. When you are ready to install the car first remove the end cap at the FORWARD end of your boom track, then remove the old boom car. You can then carefully remove the tape from the end of the track closest to the sheave on the boom car. Place the track on top of your boom with the loading track in contact with the forward end of the boom track, you can then simply and very carefully slide the car from the loading track to your boom track.

If you have any difficulty with the installation of your new boom car please do not hesitate to call our technical department who will be more than happy to talk you through any part of the process.





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Our People Make The Difference