

**CATALINA
36
FURLING MAST
HAND BOOK**



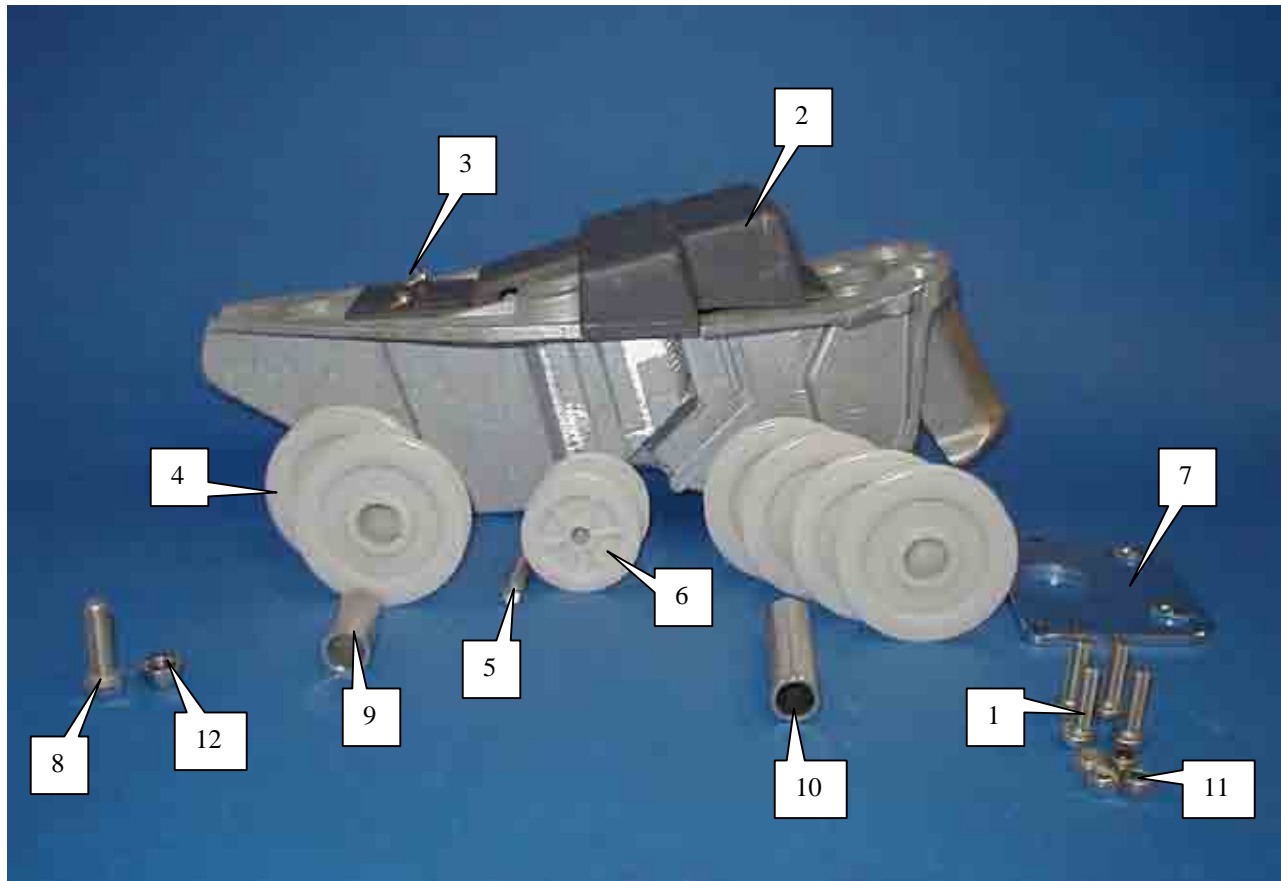
MADE BY
CHARLESTON SPAR

3901 PINE GROVE CIRCLE
CHARLOTTE, NC 28206
(704) 597-1502
FAX (704) 597-0961
WWW.CHARLESTONSPAR.COM

MAST FURLING SECTION F560-E



NUM	DESCRIPTION	PART NUMBER	QUANTITY
1	PVC 1" TO TOP 10' LONG	27902253003	5
2	PVC ¾" TO MIDDLE 10'	27902293003	2



OCII WELD IN MASTHEAD

NUM	DESCRIPTION	PART NUMBER	QUANTITY
1	8 X 30 SCREW	28600708030	4
2	OCII MASTHEAD COVER	30002090513	1
3	6 X 12 SCREW	28600706012	2
4	ACETAL SHEAVE 85 X 15	48530851515	6
5	S/S PIN 10 X 64	40020610064	1
6	ACETAL SHEAVE 60 X 14	48530601415	2
7	SPINNAKER CRANE	30016221004	1
8	10 X 30 S/S BOLT	28600210030	1
9	REAR PIN 21.3 X 46	40020721046	1
10	FRONT PIN 21.3 X 81.5	40020721081	1
11	8 MM LOCK NUT	28600508000	4
12	10 MM SS LOCK NUT	28600510000	1





LARGE FAIR LEAD
43205508124
2 PER MAST
(29004164125 MONEL RIVET 6.4X12.5)



34001171262
18 MM EXIT COVER
6 PER MAST
(29002248110 S/S RIVET 4.8X11)



40722D10326
6" CLEAT BLACK ANO
(1/4 X 1 3/4 S/S FLAT HEAD SCREW)



31001000084
8MM SPARCRAFT
BACKING SHELL
2 PER MAST



**ANCHOR LIGHT
HELLA 62171
43003031211**



**COMBO LIGHT
HELLA 62248
43009031211**



Model 2492
Ideal as navigation lamp on small boats.
Low power consumption. Seawater-proof, anti-magnetic.

Product description.....	Shock-proof, sturdy plastic housing and lamp housing UV-resistant
Minimum visible range.....	2nm, for vessels <20m
Bulb.....	Pre-fitted spherical incandescent bulb 12 V / 10 W, socket: BA 15s
Installation.....	6.3 mm flat-plug connectors, 2 flat female connectors 6.3 mm included
Cable entry.....	Through base plate
Protective system.....	According to IP 54 (DIN 40050)
Mounting.....	Direct attachment, 2 mounting screws 5/32"



Model 8505
Deck floodlight with special housing combined with masthead lamp **62242**. Application for boats with lengths <12 m. The light distribution has been adapted to the special requirements on smaller sail boats using the FF reflector. The flexible mounting lugs allow simple and quick mounting on any mast profile. With halogen cool-beam reflector lamp (12V/20W) for deck illumination, with cover to protect bulb against damp and dirt. All metal parts stainless steel. Bulb easy to replace through opening in cover (with less guard).

Product description.....	Shock-proof and sturdy plastic
Bulb.....	Festoon bulb 12 V / 10 W and insert 12 V / 20 W included
Installation.....	Navigation lamp 2 flat-plug connectors 6.3 mm, deck lamp pre-wired, connection cable 110 mm
Protective system.....	According to IPX 4 (DIN 40050)
Max. output.....	Deck lamp 12 V / 20 W

<input type="checkbox"/> Navigation and anchor lamp
<input type="checkbox"/> 62171 / 62171B
<input type="checkbox"/> 62371 / 62371B

Mast-head/deck combination
<input type="checkbox"/> 62248 / 62248B
<input type="checkbox"/> 62348 / 62348B

Spare parts

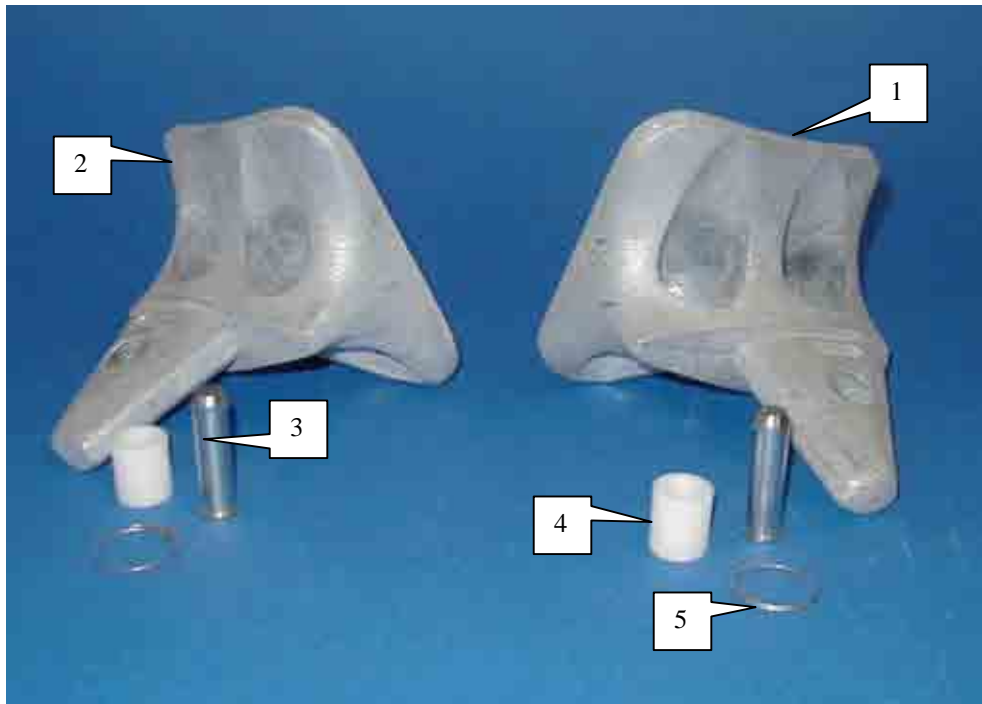


- 1 Lamp housing clear 63100
- 2 Seal 63243
- 3 Bulb 12 V 78235

Spare parts

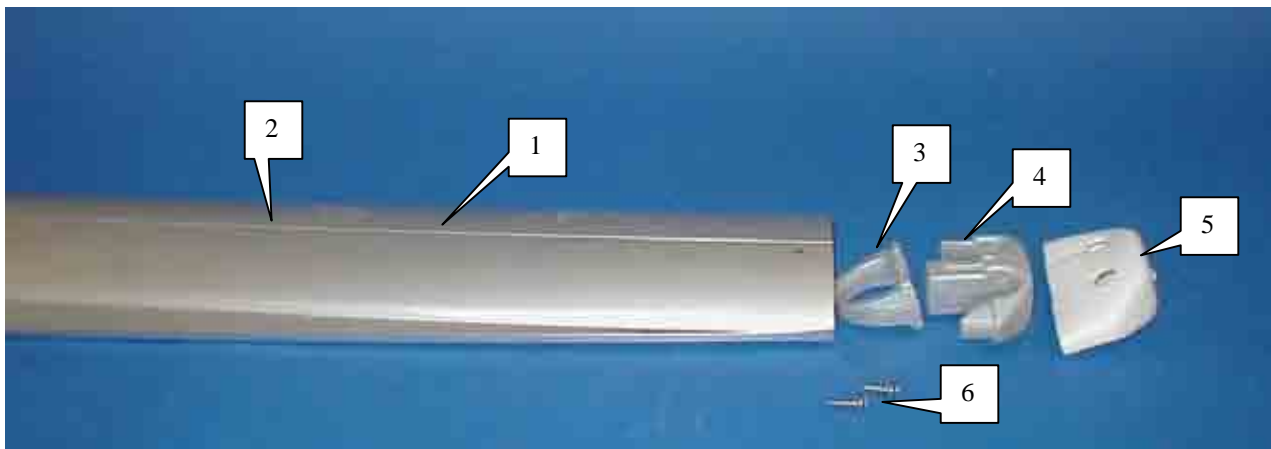


- 1 Lamp housing 63166
- 2 Festoon bulb 12v 10w 78300
- 3 Bulb 12V 78206



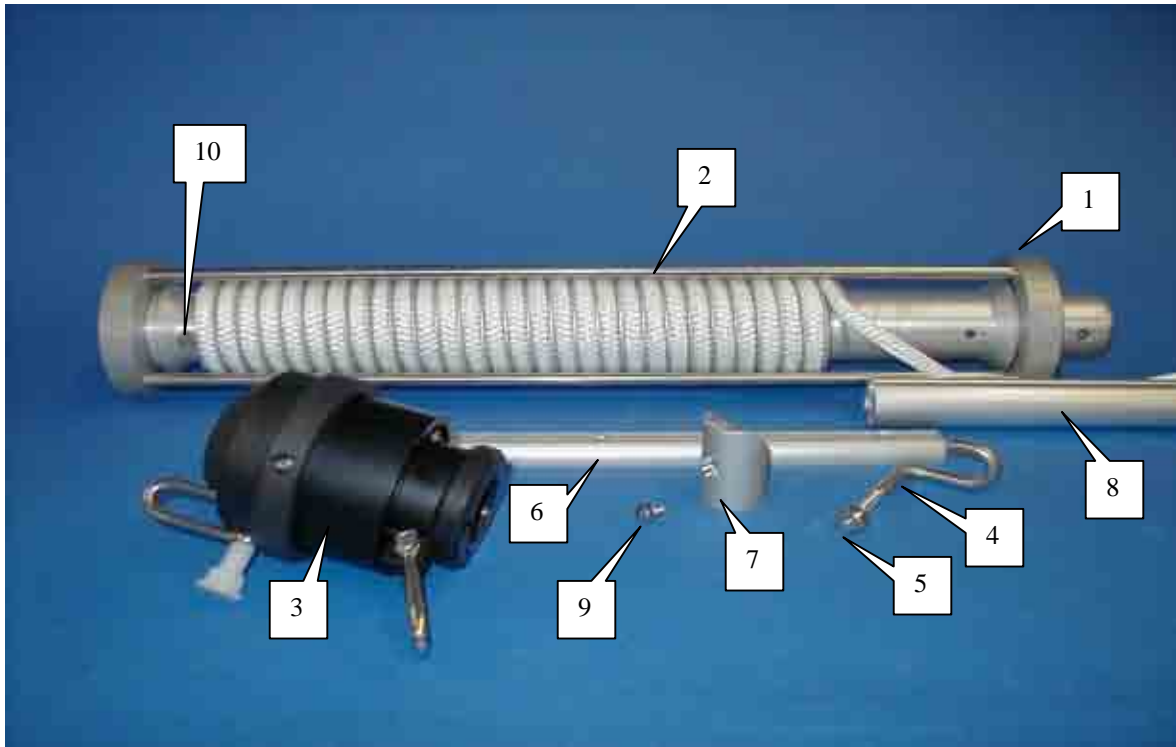
BF4 WELD ON SPREADER BASE

NUM	DESCRIPTION	PART NUMBER	QUANTITY
1	BF4 SPREADER BASE STARBOARD SIDE	32000400201	1
2	BF4 SPREADER BASE PORT SIDE	32000400101	1
3	BF4 SPREADER PIN 12 X 37.5	40020212037	2
4	BF4 SPREADER BUSHING DELRIN	40503020023	2
5	S/S SPLIT RING	28809000020	2



BF4 SPREADER SECTION

NUM	DESCRIPTION	PART NUMBER	QUANTITY
1	BF4 SPREADER PORT 1070 mm LONG 0° SWEEP	NONE	1
2	BF4 SPREADER STARBOARD 1070 mm LONG 0° SWEEP	NONE	1
3	BF4 SPREADER INSERT	32604040103	2
4	BF4 SPREADER TIP	32604030103	2
5	BF4 PLASTIC PROTECTOR	32604050102	2
6	SCREW	28606408009	4

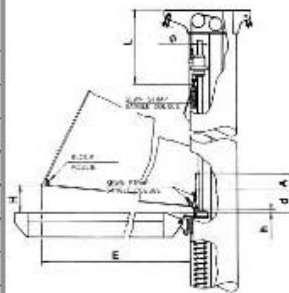


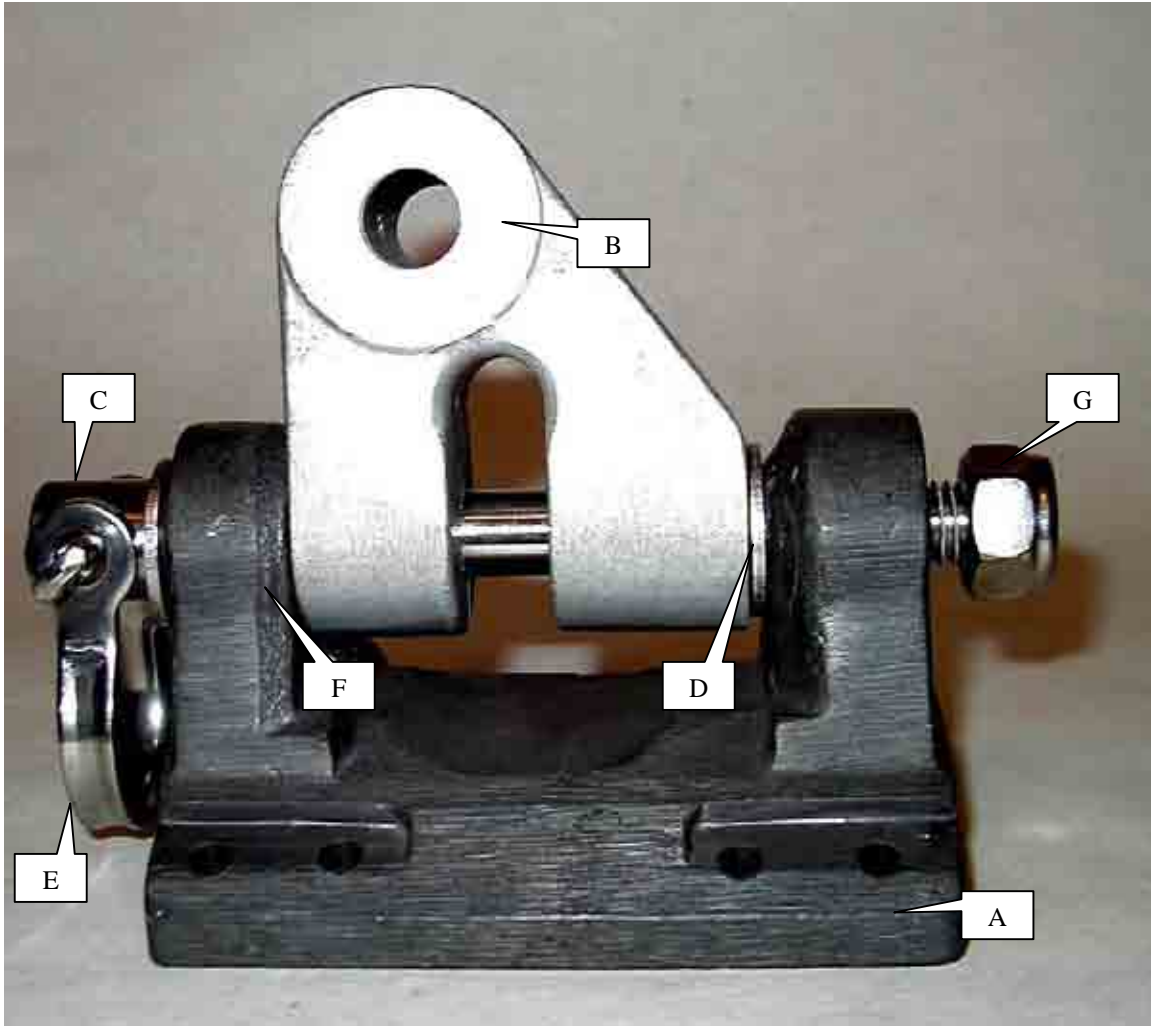
F560-E FURLING SCREW

NUM	DESCRIPTION	PART NUMBER	QUANTITY
1	F560-E FURLING SCREW	42201705603	1
2	POLYESTER DOUBLE BRAID 3/8 X 59'	43550100001	1
3	F560-E HOIST CAR	42203340955	1
4	S/S J HOOK	40021508050	1
5	NUT 8 MM	28600508000	1
6	SPLICE FOR D34 FOIL (F560-E)	42206343703	1
7	F560-E FEEDER GATE	42225940032	1
8	D34 FOIL SECTION 15 METERS	42205341903	1
9	6 X 12 FLAT HEAD ALLEN SCREW	28601106012	1
10	M8 X 30 ALLEN SCREW	28600608030	1
11	1/4-20 X 3/4 FLAT HEAD SCREW		4
12	MONEL RIVET 6.4 X 17.5 (FOIL TO SPLICE)	29004164180	2

► SAILMAKERS INFORMATION

Sections	L	h	H	Ø tube intérieur Ø furling	Ratigue Ball rope	d	A	Couliasseux Voile de cap Sliders - Storm sail
	mm	mm	mm	mm	mm	mm	mm	
I 265 E	350	40	(6%xE)+h	Ø 33	Ø 6,5 fini / finish	20	130	800 - 400 - N° 30
I 365 E	350	40	(6%xE)+h	Ø 33	Ø 6,5 fini / finish	20	130	800 - 400 - N° 30
F 560 E	450	70	(6%xE)+h	Ø 33	Ø 7 fini / finish	70	200	800 - 400 - N° 30
F 760 E	480	90	(7%xE)+h	Ø 33	Ø 7 fini / finish	90	250	800 - 400 - N° 30
F 980 E	500	90	(7%xE)+h	Ø 33	Ø 7 fini / finish	90	250	800 - 400 - N° 30
F 1410 E	500	90	(7%xE)+h	Ø 33	Ø 7 fini / finish	90	250	800 - 400 - N° 30
F 1980 E	550	50	(7%xE)+h	Ø 45	Ø 7 fini / finish	115	250	CGV 23 - HA 91
F 2600 E	550	50	(7%xE)+h	Ø 45	Ø 6 fini / finish	115	250	CGV 23 - HA 91





NG II / OCH AUTO REEF F220-F550
GOOSENECK BRACKET
12mm TOGGLE
3451177OC27

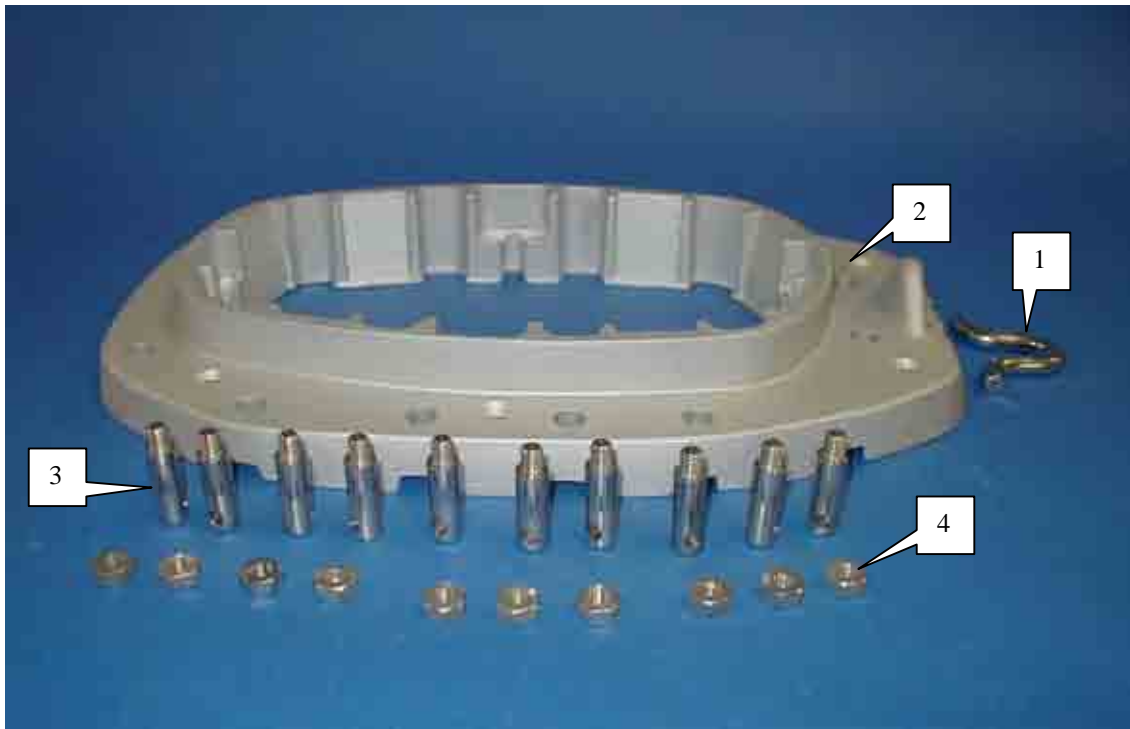
NUM	DESCRIPTION	PART NUMBER	QUANTITY
A	NGII GOSENECK BRACKET	34515543083	1
B	TOGGLE 12mm HOLE	34531792183	1
C	S/S THREADED PIN 14 X 138	40022014138	1
D	S/S WASHER 14 mm	28601014000	2
E	BOW SHACKLE	46001151008	1
F	S/S BUSHING (NOT SEEN)	40502022014	1
G	S/S LOCK NUT 14 mm	28600514000	1
H	S/S POP RIVET 6.4 X 25	29003164250	8

ITEM E NOT REQUIRED ON FURLING MAST



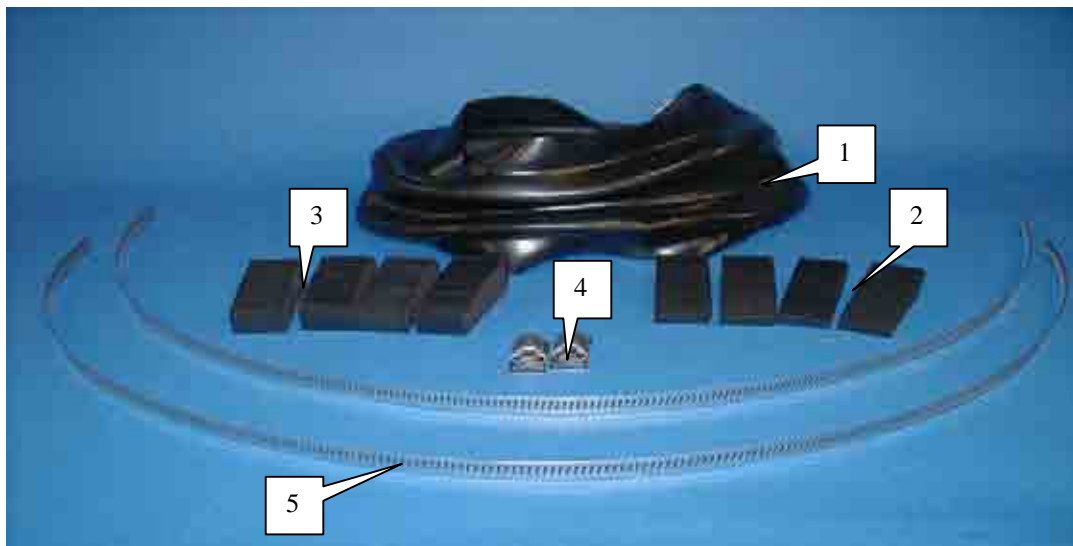
NGI / OCI WIDE VANG BRACKET I265-365
35211811205
181120

NUM	DESCRIPTION	PART NUMBER	QUANTITY
A	NGI WIDE VANG BRACKET	34515544203	1
B	VANG TOGGLE	35235572314	1
C	NGI CLEVIS PIN 12 X 85	40020212085	1
D	S/S WASHER 12mm	28601012000	1
E	S/S SPLIT RING	28809000020	1
F	S/S RIVET 6.4 X 25	29003164250	6



MAST COLLAR

NUM	DESCRIPTION	PART NUMBER	QUANTITY
1	S/S BAIL NGII	47505558124	1
2	F740-760E MAST COLLAR	36061207403	1
3	S/S THREADED PIN 12 X 42	40020412042	10
4	8 MM NUT	28606508000	10



NUM	DESCRIPTION	PART NUMBER	QUANTITY
1	WATER PROOF RUBBER BOOT	36073191028	1
2	RUBBER WEDGE SMALL	36070151176	4
3	RUBBER WEDGE LARGE	36070151182	4
4	14 mm CLAMP	36071200000	2
5	14 mm S/S HOSE CLAMP 910 mm LONG	36071225010	2



DECK TIE DOWN
31009010082



STEP F-460-580-560-E
36032204603




**WATER PROOF PLUG
AT DECK LEVEL**

BOOM SECTION F220



► **BOOM**

PROFILE	DIMENSIONS mm	I'X cm 4	I'YY cm 4	WEIGHT Kg / ml	THCKNESS mm	BOLT ROPE mm
F 220 	98 x 130	143	340	3,72	2,4	∅ 8 / ∅ 12

PLEASE NOTE THAT THE LUFF TRACK ON SOME F220 BOOM SECTIONS MAY REQUIRE °10-°12 MM BOLT ROPE . PLEASE VERIFY WITH YOUR SAILMAKER FOR CORRECT INFORMATION THAT THEY REQUIRE.



F220 INBOARD BOOM END

NUM	DESCRIPTION	PART NUMBER	QUANTITY
1	F220 INBOARD BOOM END	37010002203	1
2	FLAT WASHER NYLON D12/ 2.5 mm THICK	28602312025	2
3	COTTER PIN S/S 3.2 X 63 mm	28803032630	1
4	S/S CLEVIS PIN 12 X 62 mm	40020312062	1
5	ACETAL SHEAVE 50 X 14	48530501415	2
6	ALUM RIVET LARGE 4.8 X 14 X 14	29001248140	4
7	S/S HOLLOW PIN 10 X 90 FOR SHEAVES	40020710090	1
8	S/S HOLLOW PIN 10 X 82 FOR JAMMERS	40020710082	1
9	MONEL RIVET 6.4 X 12.5	29004164125	4



SPARCRAFT SINGLE BLOCK
97414



F220 OUTBOARD BOOM END

NUM	DESCRIPTION	PART NUMBER	QUANTITY
1	F220 OUT BOARD BOOM END	37030002203	1
2	ACETAL SHEAVE 50 X 14	48530501415	2
3	S/S STRAIGHT PIN 10 X 81	40020110081	1
4	MONEL RIVET 6.4 X 12.5	29004164125	4



BOOM VANG LUG
 35243202734
 (29002248140 S/S RIVET 4.8X14)
REMOVED 1-20-03

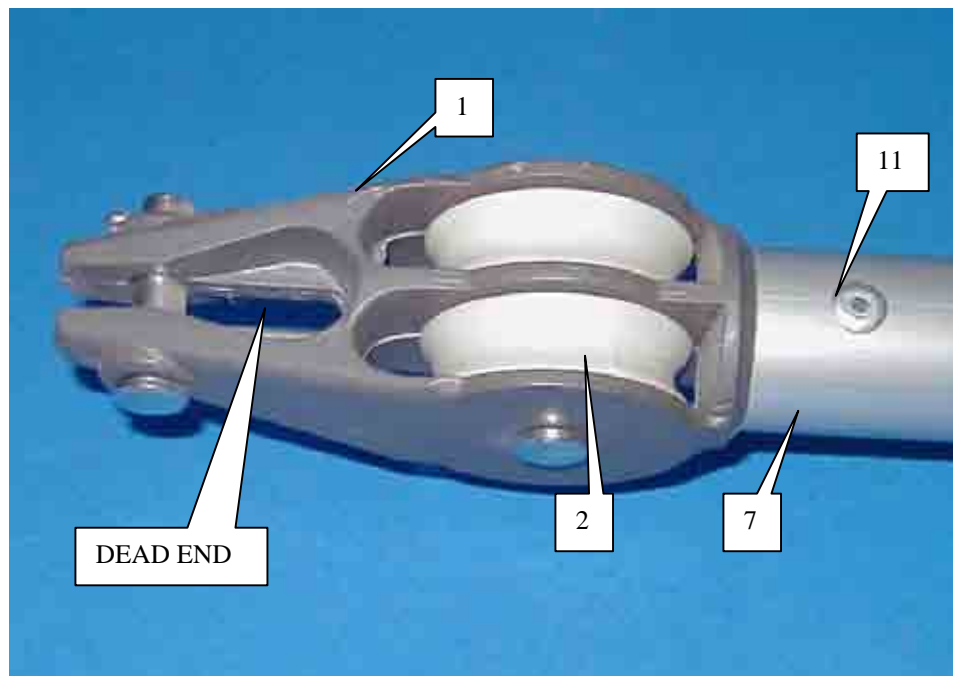


BOOM BAIL AND RETAINING PLATE
 3 PER
 47501318173
 (29002248140 S/S RIVET 4.8X14)



REMOVED 9-17-04
SMALL SIZE LONG VANG COMPLETE
37560010305

NUM	DESCRIPTION	PART NUMBER	QUANTITY
1	SMALL SIZE LOW VANG FITTING	37520010103	1
2	SHEAVE 50 X 14	48530601415	4
3	SMALL SIZE TOP VANG FITTING	37510010103	1
4	S/S CLEVIS PIN 10 X 31.5	40020310031	2
5	S/S CLEVIS PIN 10 X 45	40020310045	2
6	D45 LG 1330 ALUM VANG TUBE	37550451330	1
7	D33.6 LG 1330 ALU VANG TUBE	37550341330	1
8	D40LG 1330 PVC VANG TUBE	37550401330	1
9	VANG SPRING D30 LG1100	29213001100	1
10	8 mm GREEN ROPE 14 M LONG	43530080014	1
11	RIVET 4.8 X 11	29002248110	4



CATALINA 36 HANDBOOK

Thank you for the purchase of your new mast and boom from Charleston Spar-Sparcraft. This handbook is to familiarize you with cleaning, maintenance and servicing of your spars. You will find the pictures of the components with part numbers that are located in the service section particularly helpful.

I. Maintenance.

Regular maintenance will ensure that your spars remain trouble free and safe. At the beginning of the season, all moving parts, (sheaves, gooseneck toggles, vang's etc. should be cleaned and lubricated. Check also for signs of stress cracks if the vessel has been in extremely heavy weather or has taken a knock down.

Regularly wash the spars and fittings preferably with hot soapy water to remove salt and grime. Make sure that all sharp edges are fully taped for protection. At the end of the season, thoroughly wash and lubricate the fittings to ensure that they do not corrode during the winter. Secure all rigging away from the surface of the spars as there could be corrosion between the dissimilar metals or chafe caused by the wind.

Standing Rigging: Check Headstay and Backstay pin holes for elongation.

Check swaged terminals for signs of rust which leads to cracks.

Check wire for broken strands. This usually occurs first at bottom terminal.

Mast and boom cleaning procedure. Occasionally your anodized spar may need cleaning. The following is a restoration procedure.

1. Materials: There can be substitutions but a sample piece is advised to assure that the spar surface is not scratched.
2. "Mirlon" surface finishing pads, 6" x 9", grade VF, (www.mirka.com).
3. Dial Corporation's "Soft Scrub with Bleach", (www.softscrub.com).
4. Dial Corporation's Boraxo TMT, Borax Powdered Hand Soap.
5. "Corrosion Block" by (www.learchemical.com).

Procedure:

1. Rinse surface of spar to remove obvious abrasives, (sand and grit).
2. Wet surface of finishing pad. Apply mixture of Boraxo powder and Soft Scrub to create a loose paste.
3. With firm pressure in a linear direction, (along section), scrub surface. Concentrate on areas of discoloration with additional paste application.
4. Rinse with fresh water and repeat as needed to improve appearance.
5. Dry.
6. Using a dry lint free rag, to complete surface, apply "Corrosion Block".
7. Wipe with dry towel.

II. Furling Masts: NOTE – Tune mast with no pre-bend. Please use a wooden wedge in the cavity opening at the lifting strap when stepping to avoid damage.

1. Hand operated Sparcraft furling masts use furling systems equipped with endless screws. This system is the only one allowing for a safe guidance of the furling

- control while avoiding over furling and the only one which may be operated by a single person.
2. The diameter of the endless screw has been optimized in order to reduce furling stress under load. They are made of anodized aluminum and fitted on stainless steel roller bearings.
 3. The furling rod is free-floating within the cavity with no interior tensioning cable. This type of design does not increase mast compression.
 4. The furling rod is larger than the furling cavity opening and therefore can in no way pull out.
 5. The headboard swivel has a top and bottom shackle. It is best to put the main halyard eye splice direct to the top shackle. The lower shackle receives the mainsail. The swivel is the guide for the furling rod in the upper section. It can be removed for maintenance.
 6. The furling line is rolled onto the endless screw at the factory. It is held in by a socket-head cap screw at the base of the unit.
 7. Sail installation:
 - a. Mast and boom in place, attach the head of the sail to the lower swivel shackle. Hoist the mainsail slowly and carefully assuring the bolt rope is guided into the furling rod. Fix the tack before full hoist. Adjust the halyard tension for a slight fold in the sail along the furling rod.
 - b. The outhaul line comes from the sheave in the aft boom end, thru the block in the outhaul car, thru the clew in the mainsail and attached to the shackle in the front of the outhaul car.
 8. Setting the Mainsail: Note – With a solid strut, the leach is adjusted simultaneously with the foot.
 - a. Hold the boom in place by the topping lift or rigged vang. The solid strut will be pre-adjusted.
 - b. Pull the outhaul line until the sail is all the way out. Cleat off the line and go sailing. This will load the screw.
 - c. Setting the main in medium to heavy air. Head into the wind as necessary. Control the furling line to assure steady deployment. Using a winch as a brake in heavy air may be necessary.
 9. Furling and Reefing the Mainsail:
 - a. The aft end of the boom should be up slightly to allow for even layers of the sail on the furling rod.
 - b. Ease the mainsheet.
 - c. Pull on the furling line while keeping tension on the outhaul line to ensure a tight wrap of the sail. Stop where desired for reefing.
 - d. Secure both lines.
 10. Furling Mast Maintenance:
 - a. The maintenance of a furling mast is the same as the standard mast. Some of the mechanical parts require yearly verification. Remove the mainsail once a year for inspection. Check the halyard swivel for proper integrity. Check the screw mechanism for ease of rotation. Listen and feel while rotating for roughness or binding. Flush screw and bearings with fresh water. If you have a question, please call Charleston Spar at 704-597-1502
 11. Furling Control Line Replacement:
 - a. Remove the sail.

- b. Unroll the line from the screw.
- c. Loosen the locking screw.
- d. Remove old line and install the new one to the previous depth.
- e. Tighten the locking screw.
- f. Load the endless screw to a point where the line is horizontal leading to the block on the boom.
- g. Reinstall the mainsail.

III. Go Sailing, Have Fun and Enjoy Your CATALINA 36.

Sincerely, Charleston Spar



SPARCRAFT MAST WARRANTY BY CHARLESTON SPAR INC.

I. WARRANTY, TERMS AND CONDITIONS –

Ocean & Performance Series& Sparcraft One Design Masts, Booms, and Mast Products.

CHARLESTON SPAR for SPARCRAFT MASTS warrants its products in normal usage to be free of defects in materials and workmanship for a period of one year from date of invoice to the original purchaser, subject to the conditions, limitations and exceptions listed below. Any part, which proves to be defective in normal usage during the warranty period, will be repaired or replaced by Charleston Spar.

A. CONDITIONS AND LIMITATIONS:

1. CHARLESTON SPAR for SPARCRAFT MAST LIABILITY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE GOODS OR PARTS DEFECTIVE IN MATERIALS OR WORKMANSHIP. Please note that CHARLESTON SPAR for SPARCRAFT MASTS usually does not supply standing or running rigging with mast orders; consequently, defects in rigging not supplied or manufactured by CHARLESTON SPAR are not covered by this warranty.

2. CHARLESTON SPAR for SPARCRAFT MASTS shall not be liable in any way for:

- a. Failures due to use of products in applications for which they are not intended, or on a boat other than intended.
- b. Failure due to considerable difference in displacement or stability from original design basis, or for more extreme use conditions from original design basis.
- c. Failures due to improper handling or storage after delivery, or for damages during commissioning or installation by others, or due to improper installation or tuning.
- d. Abnormal use or accident, including but not limited to accidental jibes, running aground or in ungrounding operations, or due to lightning strikes.
- e. Loss of boat use; dockage or boatyard storage; or for crew/passenger expenses or reimbursement.
- f. Ultra violet degradation, chafe, corrosion, or wear and tear.
- g. Breakage, damage, or failure while racing, unless CHARLESTON SPAR has expressly authorized limited racing coverage by separate written agreement.

3. Requests for warranty claims shall be in writing and should include sketch, pictures or detailed description of defective part or reason for claim. Fax or letter is acceptable to initiate claim and to establish age of product. FINAL CLAIM TO BE ON CHARLESTON SPAR AUTHORIZED FORM. CHARLESTON SPAR may request that part(s) be returned to the FACTORY. Return Authorization required for large objects. For SPARCRAFT MASTS not directly purchased through CHARLESTON SPAR, initial requests for parts or repair should be through your dealer/boat manufacturer. Installation labor associated with any warranty claim shall be according to CHARLESTON SPAR repair policies.

B. EXCEPTIONS:

1. This warranty is limited to six (6) months for any product that is being rented or leased (chartered), or which is installed on any vessel that is being rented, leased, or charter, with the exception of items in IBII.
2. Electrical or hydraulic motors or controls; hydraulic or pneumatic cylinders, valves or seals; and electrical equipment shall carry a one year warranty unless the part's manufacturer carries a longer warranty.
3. CHARLESTON SPAR for SPARCRAFT MASTS shall not be liable for consequential damages to yachts, equipment or other property or persons due to any failure of CHARLESTON SPAR for SPARCRAFT MAST equipment. Some countries and states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation exclusion may not apply to you.

II. This warranty gives you specific legal rights, and you may also have other legal rights, which vary from state to state. Some states or countries do not allow limitations on how long an implied warranty lasts, so the above may not apply to you.

III. Due to ongoing design development and materials/parts procurement, CHARLESTON SPAR reserves the right to alter design and specifications without prior notice. Such changes shall not be taken as retroactive for any existing mast or parts.

IV. Pre-commissioning inspection, installation and tuning of your CHARLESTON SPAR MAST should be performed by an experienced rigger or sailor under his sole responsibility. Adequate time should be allowed between mast inspection and mast stepping. Any discrepancies or missing parts not listed, as backordered should be faxed in to Charleston Spar's attention "Pre-installation Inspection". Due to trucking schedules, masts are sometimes sent

incomplete. Missing and/or backordered parts are sent by regular UPS service. Overnight delivery of parts is available for a surcharge.

V. The plastic packaging that masts are wrapped in is for protection during shipping. Condensation can occur and be trapped inside the packaging and possibly cause corrosion. Please do not leave masts stored for long periods in plastic wrap.

VI. Safety precautions should be taken when working on or up a mast. A second halyard or a safety line should be used when going aloft. Halyards, sheaves, bearings, external blocks, bails, lugs, shrouds and spreaders should be checked periodically **AND REPLACED IF SHOWING SIGNS OF WEAR, CHAFE, OR AGE**. Be aware of the dangers of masts coming into contact with power lines, particularly areas of boatyard/marinas.

VII. Masts and mast products are designed to be used in a sometimes harsh marine environment. It is common sense and prudent seamanship to inspect masts regularly and to practice good care and regular maintenance. Your CHARLESTON SPAR / SPARCRAFT MAST has most likely been either electrostaticly powder coat painted or anodized to produce a long lasting attractive finish. While these finishes are possibly the best available on the market, the sun and salt can eventually take a toll. Periodic cleaning, rinsing and lubricating can extend your use. Replacement sheaves and other mast parts are available for purchase through Customer Service after your warranty period has expired. CHARLESTON SPAR looks forward to servicing you.