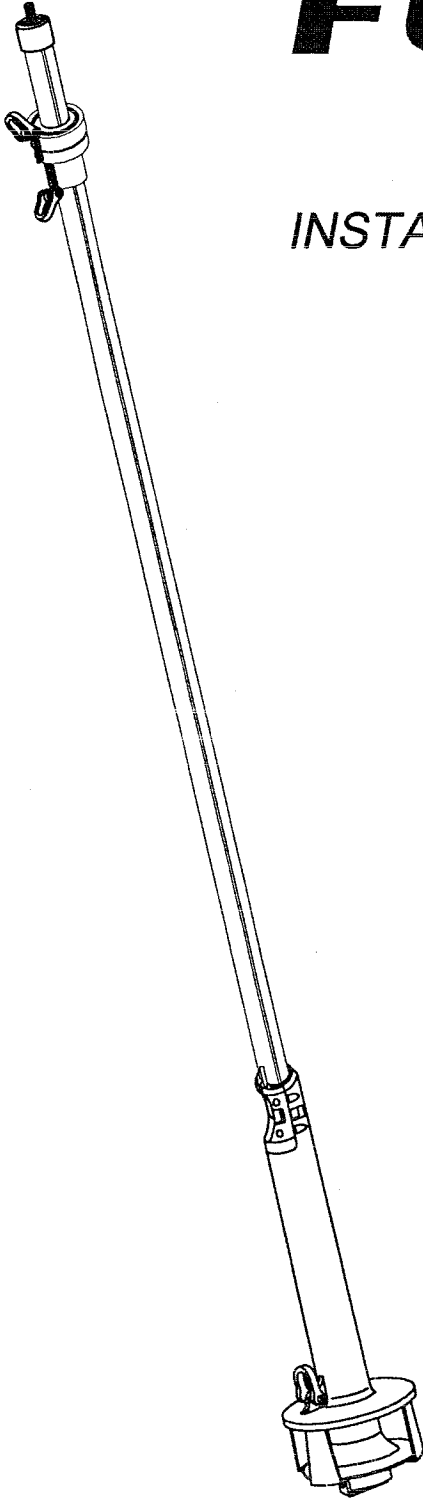


SCHAEFER FURLERS



INSTALLATION INSTRUCTIONS

SYSTEM CF-500



⇒ DO NOT INSTALL ←
IN COLD WEATHER

SCHAEFER
LEGENDARY STRENGTH

Schaefer Marine Inc, 158 Duchaine Blvd, New Bedford, Ma. 02745-1293, phone 508-995-9511 Fax 508-995-4882
<http://www.schaefermarine.com> e-mail: sales@schaefermarine.com

CF-500-INST (JULY '06)

SYSTEM REQUIREMENTS:

1. The maximum headstay size is 3/16" [5mm] wire.
2. The maximum headstay length is: CF-500=31'-1" [9.5meters]
3. A toggle is required at the lower end of the turnbuckle for attaching the drum unit.
4. A toggle is recommended at the upper end of the headstay to allow proper articulation.
5. Normal installation does not require modifying the headstay, unless toggles have to be added.

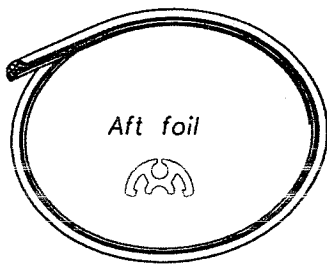
SAILMAKERS INSTRUCTIONS:

1. The required luff tape size is #5 (4mm) (STANDARD & GOOD QUALITY)-CAN NOT BE "HEAVY" #5. The luff diameter must not exceed .160 (4.0mm) diameter. Larger luff tapes will not fit.
2. Webbing, instead of a grommet, is recommended at the tack and head to avoid bulky furling.
3. A foam luff pad can be installed for reefing deep draft sails.
4. A sunshade is recommended on the leech and foot if the sail will be exposed to the sun for an extended period of time.
5. See page 7 for dimensions.

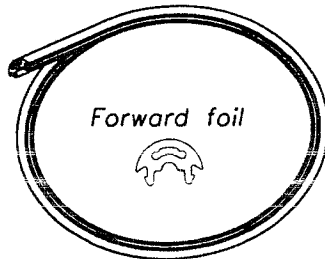
TOOLS REQUIRED:

1. Large pliers or channel locks
2. Phillips head screwdriver
3. Crescent wrench
4. 50ft. tape measure
5. Hacksaw









STANDARD COMPONENTS (in box)

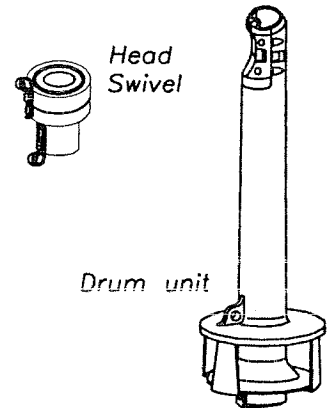


Aft foil



Forward foil

-  Halyard restrainer
-  Top cap
-  Top cap screws (3)
(1 extra)
-  Shackles (3)
-  7/32" pin dia
-  5/32" allen key
-  Cardboard tube
-  Turnbuckle retaining clip



Head Swivel

Drum unit

PRE-INSTALLATION NOTES:

This system can be assembled ashore with the headstay off the boat or with the boat at a dock. Dock assembly will require removing the lower end of the headstay briefly to install the swivel and drum unit. DO NOT INSTALL IN TEMPERATURES BELOW 60°F (15°C). Supplied halyard restrainer must be installed.

CAUTION

- * The installation of the furler may require going aloft in a bosun's chair to remove the headstay prior to assembly and to reattach the headstay after assembly. If you are uneasy about going aloft in a bosun's chair or with any aspect of the furler assembly procedure, please seek the assistance of a professional yacht rigger.
- * Do not treat going aloft lightly. Always use a safety line or second halyard to back up the halyard being used.
- * Use a heavy duty bosun's chair in good condition which provides good support and security. Large deep tool pockets are helpful.
- * Never attach a snapshackle directly to the bosun's chair. Bypass the snapshackle and use a "D" shackle or tie the halyard to the chair.
- * Never allow anyone to stand under the person working aloft. Any tools or fittings dropped from above could cause severe personal injury.
- * If removing the headstay from the boat, first make sure the mast is properly supported. Do not use a snapshackle on the halyard to support the mast. Tie the halyard to a substantial deck fitting. Secure a line to the top of the headstay in order to prevent it from dropping to the deck when the masthead pin is released.

* Do not allow the headstay to contact electrical cables or high tension lines. The headstay wires are conductive. Injury or death could result from shocks induced by contact with power lines.

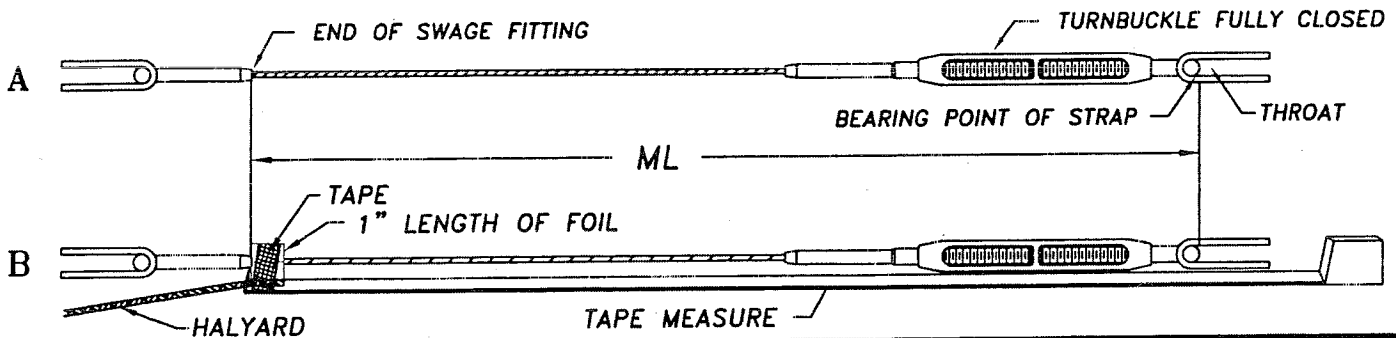


FURLER ASSEMBLY:

1. MEASURE HEADSTAY LENGTH

A. Measure the headstay length from the end of the swage fitting to the throat of the toggle on the turnbuckle as shown below. Be sure the turnbuckle is closed, otherwise the upper end of the foil could interfere with the upper swage fitting if the turnbuckle is used in the closed position.

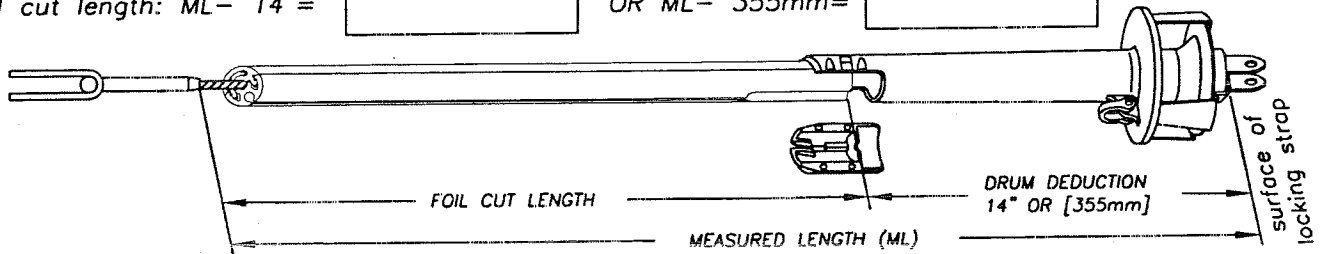
B. To measure the headstay on the boat cut a 1" piece of each foil half and snap them over the headstay. Hook and tape the end of the tape measure and halyard to the top of this piece. Hoist the tape with the halyard until the foil hits the swage fitting. With the turnbuckle fully closed, take the measurement as shown below.



2. CALCULATE FOIL LENGTH

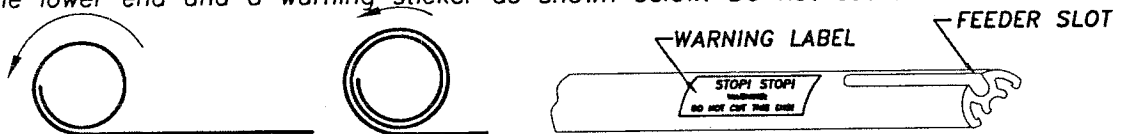
A. Foil cut length: $ML - 14" =$

OR $ML - 355mm =$



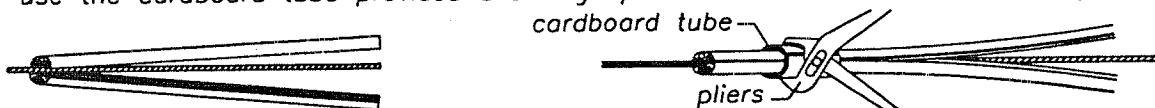
3. UNWIND FOILS AND CUT TO LENGTH (warm weather installation only)

CAUTION A. The foils are coiled and caution must be used when uncoiling to prevent a whip lashing effect. Lay the end of the coil with the straight of the outer most coil on the floor or dock. Unwind or roll out the coils. Hold the coil tightly to prevent it from springing out. The foils may be twisted or curved from being coiled. Straighten foils by gently bending in opposite direction. Severe bending may result in foil damage. Lay foils flat, mark and cut the "foil cut length". The aft foil has the feeder slot in the lower end and a warning sticker as shown below. Do not cut this end off!



4. SNAP FOILS ONTO HEADSTAY:

A. Bring the upper end of the aft foil (end without feeder slot) and the forward foil to the headstay wire. Align the ends of each half and snap together by hand for 36". If assembly is difficult, use the cardboard tube provided and large pliers. Make sure foils are securely snapped together.



B. Install the top cap by sliding the slot over the headstay wire and onto the assembled foils.

C. Align the two screw holes in the cap with the two holes in the forward foil. Install the two self tapping screws.

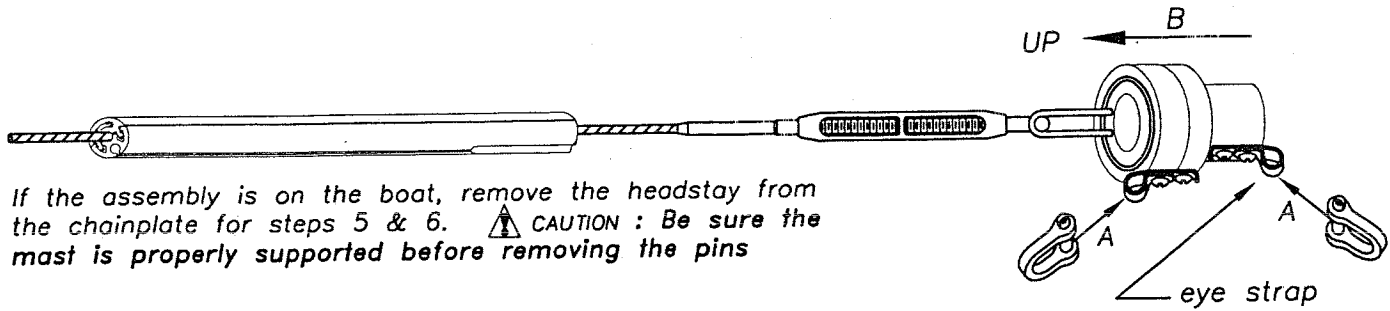


D. Finish snapping the foils together. The ends of the foils should be within 1/4" of each other. If the assembly is on the boat, slide the foils up as they are snapped together. Do not attempt to un-snap extrusions or damage may result.

5. INSTALL THE UPPER SWIVEL

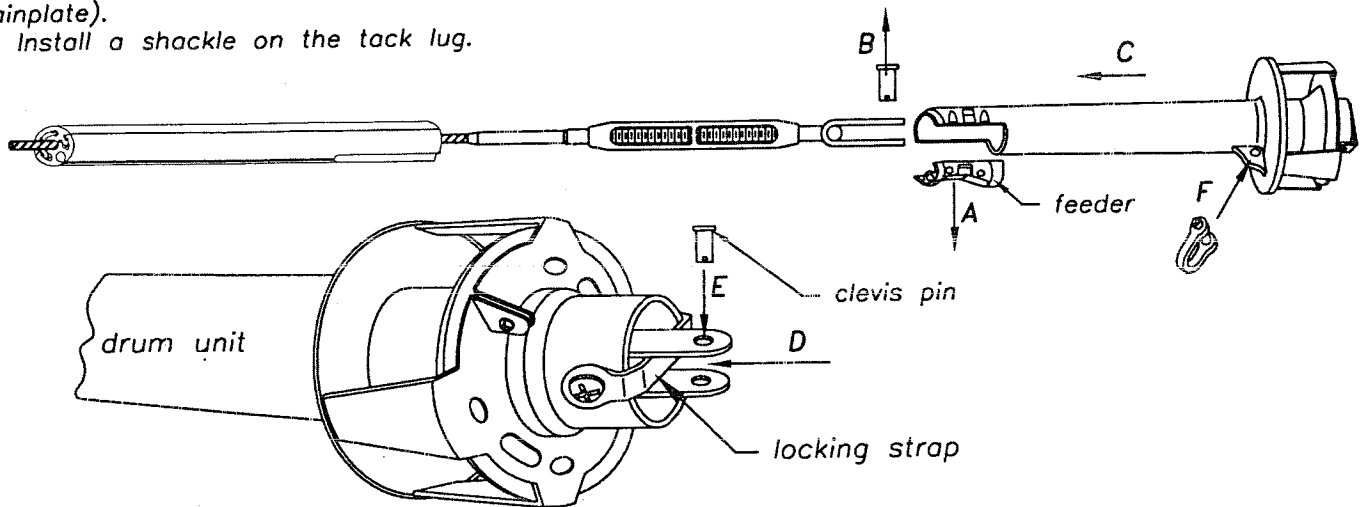
- Attach a shackle to each eye strap.
- Slide the swivel over the turnbuckle and up onto the foil. Be sure the larger part is up.

If the assembly is on the boat, remove the headstay from the chainplate for steps 5 & 6. **CAUTION:** Be sure the mast is properly supported before removing the pins

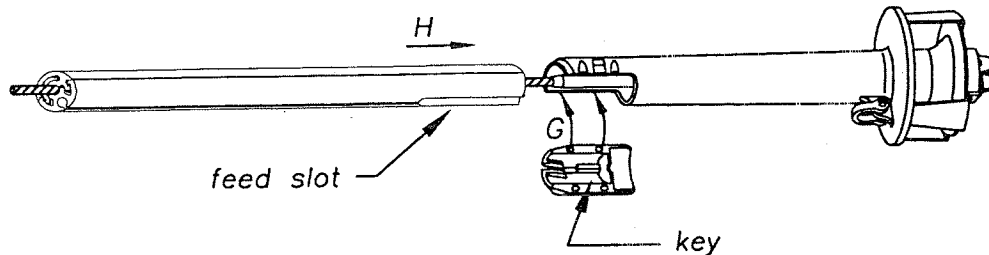


6. INSTALL THE DRUM UNIT

- Loosen the four screws in the feeder and remove the feeder from the drum. Note: the screws are captive in the drum unit (an allen wrench is provided for this purpose)
- Remove the clevis pin from the turnbuckle.
- Slide the drum unit up over the turnbuckle and onto the foil.
- The locking strap on the bottom of the drum should slide into the jaw of the turnbuckle.
- Reinstall the clevis pin. (for installation with headstay on the boat reattach turnbuckle to the chainplate).
- Install a shackle on the tack lug.



- Reinstall the feeder onto the drum unit and do not tighten the screws. Note the rectangular key inside the feeder. This must fit into the feed slot in the bottom of the aft foil.
- Slide the foil down into the feeder and top of drum. Line up the feed slot with the key in the feeder. Be sure the foils slide completely down into the feeder. Tighten the four allen head screws that attach the feeder to the top of the drum unit.



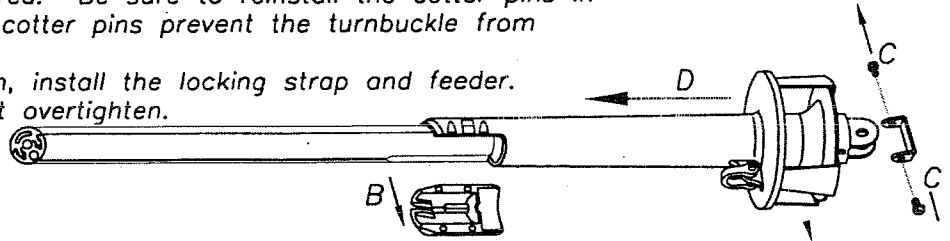
7. ASSEMBLY ON THE HEADSTAY IS NOW COMPLETE.

- Check the system for free rotation on the headstay.
- Clean the foil with a mild cleaner such as windex and a light abrasive pad such as scotchbrite before installing the headstay on the boat.
- Slide the swivel up and down the entire length of the foil. It should slide freely up and down. If the swivel does not slide freely, check the snap fit along the length of the foils for a section that may not be completely snapped together.

FURLER ADJUSTMENTS ON BOAT:

1. TURNBUCKLE ADJUSTMENT

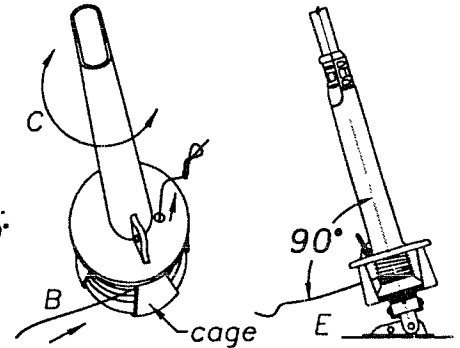
- Remove sail (if installed).
- Loosen the four screws in the feeder and remove the feeder.
Tension feeder screws evenly and do not overtighten.
- Remove the two screws in the turnbuckle locking strap.
- Slide the drum unit up to expose the turnbuckle.
- Adjust the turnbuckle as required. Be sure to reinstall the cotter pins in the turnbuckle. **⚠ CAUTION:** The cotter pins prevent the turnbuckle from accidentally uncrewing.
- Slide the drum unit back down, install the locking strap and feeder.
Tension screws evenly and do not overtighten.



2. INSTALLING THE FURLING LINE

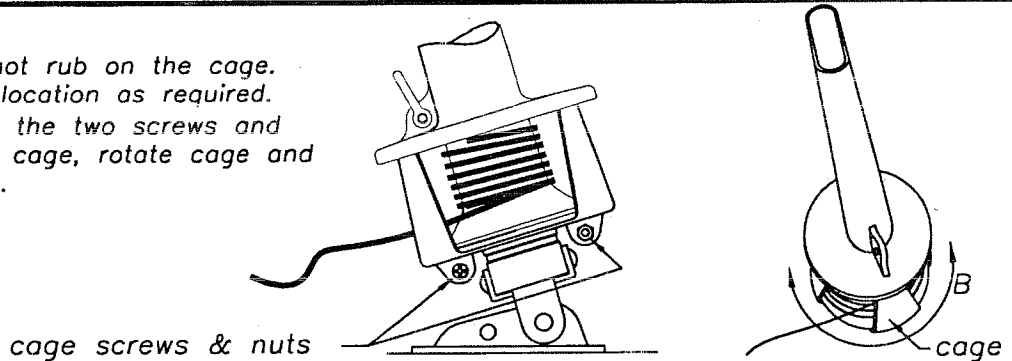
- The recommended furling line size is 1/4" or 7mm braid.
- Feed the end of the line into the cage, up through the hole in the upper drum plate and tie a figure eight knot.
- Spin the furler to wrap about 12 ft. of line on the drum.
- If the sail has a sunshade, check the rotation of the rope on the drum to allow the sunshade to face out when the sail is furled.
- Adjust the location of the pulpit block to lead the furling line 90° to the headstay when the line is in the middle of the drum.

⚠ CAUTION: The line must be lead properly to avoid damage or malfunction.



3. ADJUSTING THE CAGE

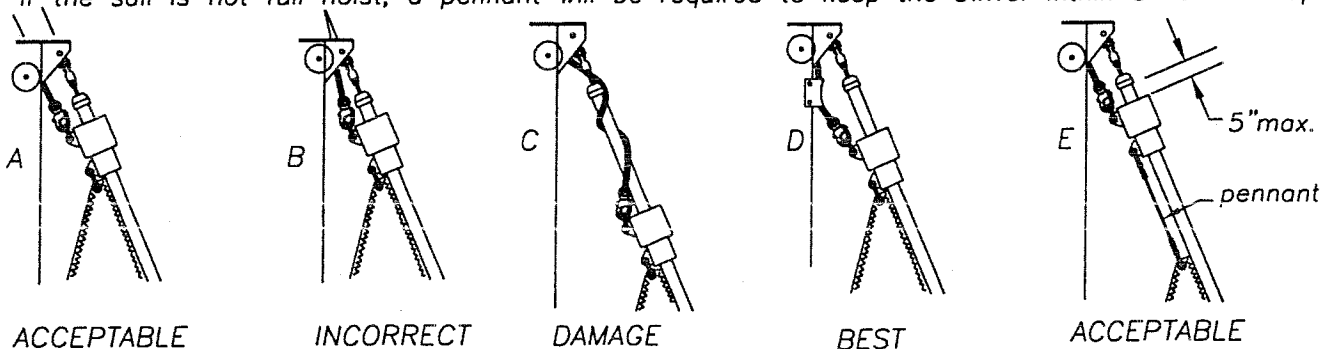
- The furling line should not rub on the cage. Rotate the cage to adjust location as required.
- Loosen (do not remove) the two screws and nuts on the bottom of the cage, rotate cage and re-tighten screws and nuts.



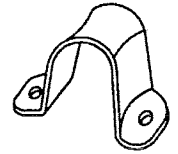
4. INSTALLING THE SAIL

Attach the tack of the sail to the shackle on the drum.
Feed the head of the sail through the feeder and attach to the lower shackle on the swivel.
Attach the halyard to the upper shackle on the swivel and hoist sail.

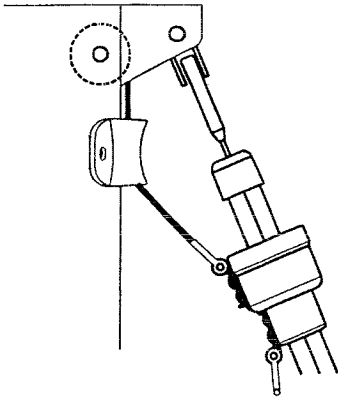
- Check the halyard lead at the masthead. It should be parallel to the headstay or angled away 10°.
- An improper halyard lead angled toward the headstay can result in a halyard wrap.
⚠ CAUTION: Halyard wraps can damage the furler or cause headstay failure.
- Halyard wraps, due to improper lead to the masthead, can lock a furling system.
⚠ CAUTION: Potential loss of mast
- The halyard lead can be corrected by using a halyard restrainer (part no. 78-74).
- If the sail is not full hoist, a pennant will be required to keep the swivel within 5" of the top cap.



REQUIRED HALYARD RESTRAINING BRACKET (78-74)



SUPPLIED



Application information:

The halyard restrainer prevents the halyard from wrapping around the headstay foil and damaging the headstay or causing failure.

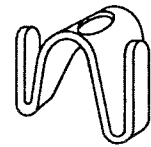
Installation procedure

1. Install supplied restrainer below jib halyard sheave.
2. Halyard lead should be parallel to headstay or angled away slightly.
3. Be sure to place the halyard under restrainer before installing.
4. See instruction manual page 4, section 4.

TURNBUCKLE RETAINING CLIP (68-336)

Application information:

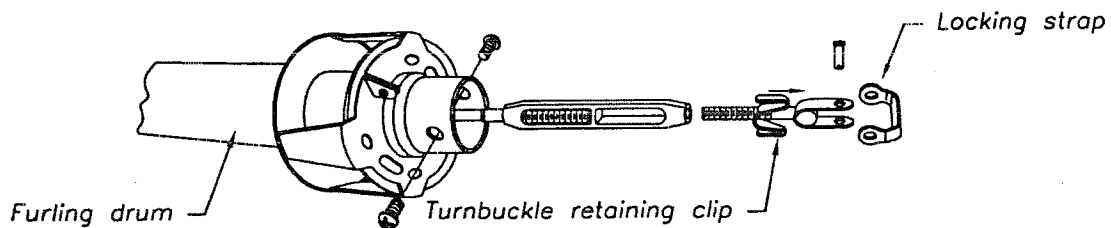
1. For use on trailerable boats being launched and holed regularly.
2. Turnbuckle retaining clip prevents turnbuckle toggle from sliding up inside furling drum when stepping mast.



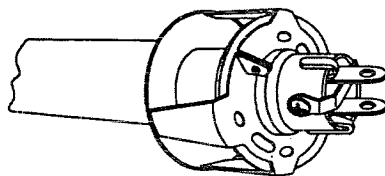
SUPPLIED

Installation of clip onto turnbuckle

1. With headstay disconnected from bow chainplate, remove (2) screws holding "locking strap" to drum unit.
2. Remove sail feeder and slide drum unit up to expose turnbuckle.
3. Remove cotter pin from turnbuckle stud and unscrew it from body.
4. Slide "retaining clip" over turnbuckle stud as shown until it rests on toggle.



5. Screw stud back into turnbuckle and reinstall cotter pin.
6. Slide furling drum down until it seats itself on "retaining clip". Align fastener holes and reinstall "locking strap" with thread locker and attach sail feeder.
7. Furler torque tube may now be used as a means of guiding the turnbuckle jaw into place to reattach to bow chainplate when stepping mast.



HINT:

When stepping mast, headstay may be connected to bow chainplate and rig can be tensioned through use of the backstay turnbuckle.

OPERATING INSTRUCTIONS:

1. FURLING THE SAIL

A. Release the jib sheet and pull on the furling line. Keep slight tension on the sheet for a neat and tight furl.

B. It is recommended to ease the jib halyard before furling to relieve the sail of undue loads while furled.

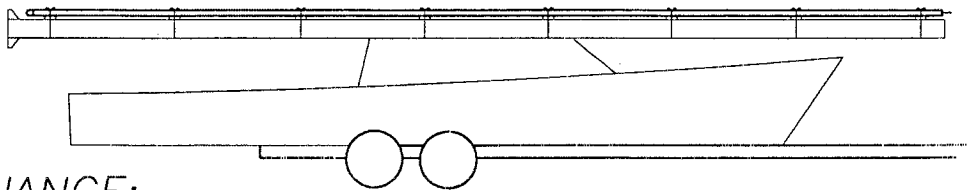
C. If the sail does not furl, do not force anything. Investigate the cause of the problem by checking for halyard wrap or entangled line in the drum.

2. UNFURLING THE SAIL

A. Release the furling line and pull the jib sheet. Keep slight tension on the furling line while deploying the jib.

TRAILERING:

Remove the swivel and drum unit and store below in a secure place. Tie the foil to the mast at regular intervals to avoid drooping the foil. Check the connection at the masthead for binding and remove headstay if any binding exists.



MAINTENANCE:

1. FOIL:

Clean the foil with soap and water or use a fine scotch brite pad M# 7445. Avoid using chemicals such as acetone and thinner. Do not expose or store the foil in temperatures above 130° F.

DO NOT UNSNAP FOILS! THEY WILL BE PERMANENTLY DAMAGED!

2. DRUM AND SWIVEL:

Flush the bearing races with soap and water periodically. Avoid using grease and oily lubricants as they attract dirt and other foreign matter that can damage the bearings. Dry lubricants are all right, but should not be necessary. Remove the drum and swivel during storage to avoid unnecessary exposure to the elements.

WARRANTY:

Schaefer Marine Inc. warrants its standard catalog products to be free from factory defects in material and workmanship for a period of five (5) years from the date of purchase, unless otherwise stated in this catalog or any other Schaefer Marine catalog.

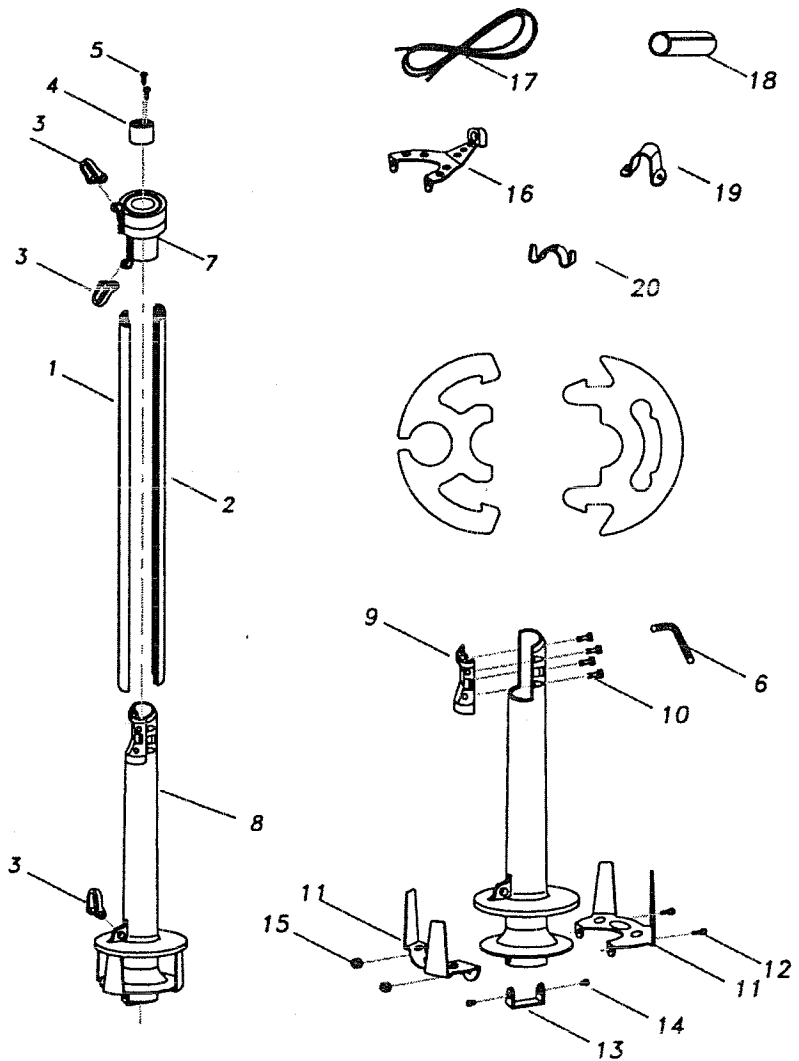
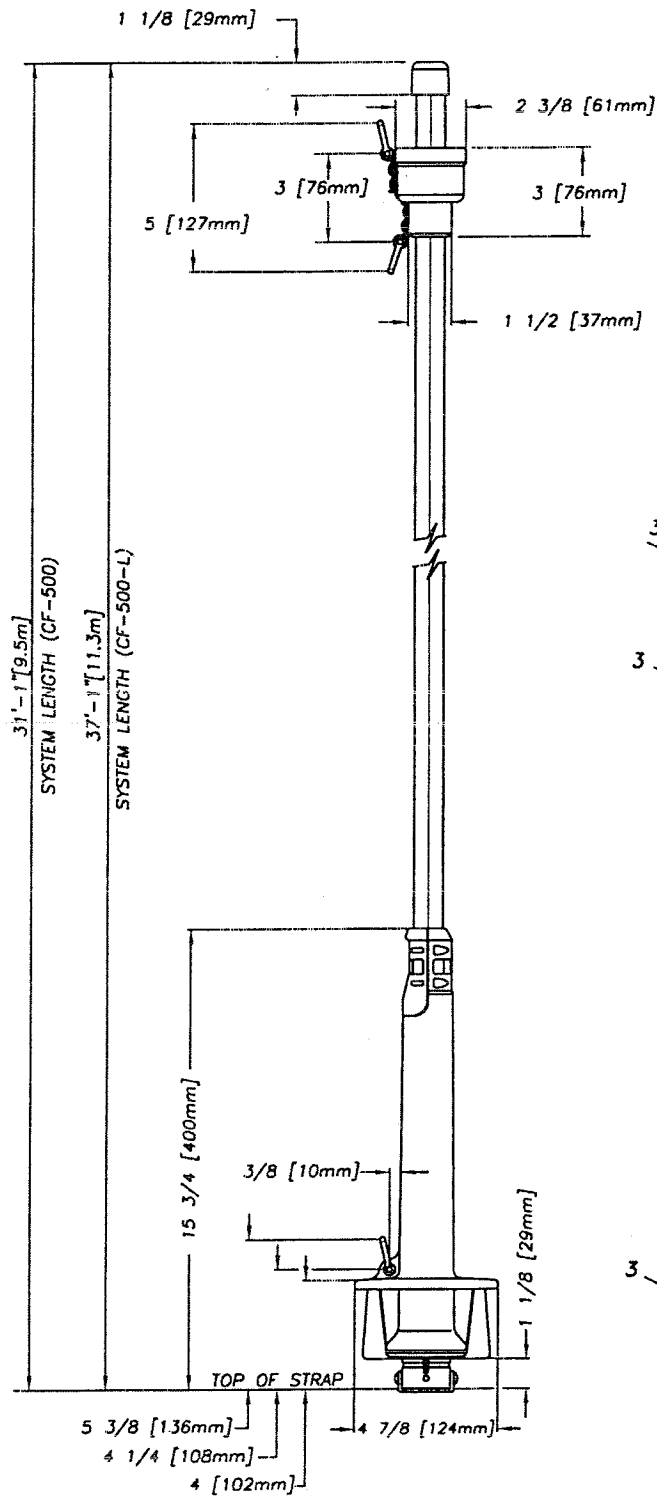
At any time within five years of the demonstrated date of purchase, Schaefer Marine, Inc. will remedy any factory defect in material or workmanship (at no charge to the original purchaser) if the product is returned to Schaefer Marine, Inc. The buyer shall be responsible for shipping and insurance charges, if any, on the products returned for repair under the terms of this warranty. Schaefer Marine, Inc. will pay shipping for products returned to the buyer. Return of defective products must be accompanied by a letter giving name, address, proof of purchase, type of boat, and description of malfunction of the gear.

This warranty extends only to defects in material or workmanship of products in normal use. It does not extend to damage caused by accident or abuse, or to any consequential or incidental losses or damages arising from the products or their use. There are no other warranties, including that of merchantability, expressed or implied, other than those set forth herein which extend beyond the period of this warranty.

This warranty is in lieu of all other implied, express and statutory guarantees, and in no event shall Schaefer Marine, Inc. be liable for special, incidental or consequential damages.

Some states do not allow limitations on how long an implied warranty lasts, nor the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

SYSTEM DIMENSIONS



CF-500 PARTS LIST

ITEM	DESCRIPTION	PART NO.	QTY.
1	AFT HEADSTAY FOIL SECTION (30')	14-066-01	1
2	FWD HEADSTAY FOIL SECTION (30')	14-066-02	1
3	7/32 BOW SHACKLE	93-01	3
4	TOP CAP	32-026	1
5	#6 X 3/4 LG PAN HD SELF TAP SCREW	22-382	2
6	5/32 ALLEN KEY	22-314	1
7	UPPER SWIVEL ASSEMBLY	53-082-A	1
8	LOWER DRUM TUBE ASSEMBLY (INCLUDES THE FOLLOWING:)	53-085-A	1
9	SAIL FEEDER/CLAMP	45-237	1
10	10-32 X 7/16 LG CAPTIVE CAP SCREW	24-055	4
11	DRUM CAGE HALF	53-086	2
12	10-24 X 1/2 LG PAN HD SCREW	22-372	2
13	LOCKING STRAP	53-088	1
14	1/4-20 X 5/16 LG PAN HD SCREW	22-384	2
15	10-24 ESNA LOCKING NUT	20-043	2
16	FAIRLEAD BRACKET (OPTIONAL)	CF-500-22	1
17	FURLING LINE (OPTIONAL)	CF-500-11	1
18	CARDBOARD TUBE (FOIL ASSY AID)	47-020	1
19	HALYARD RESTRAINER	78-74	1
20	TURNBUCKLE RETAINING CLIP	68-336	1

CF-500

JULY '06

Troubleshooting the Snapfurl CF-500 System

Since a number of technical issues have to come together to successfully install a CF-500 system, please read this troubleshooting guide prior to installation.

Problem:

The sail does not feed into the foils

Solution:

A #5 luff tape needs to be installed on the front of the jib or genoa. It is best to specify to the sailmaker "best quality," "Standard #5" (not heavy #5 luff tape). There are different levels of quality luff tape, so please be specific.

Problem:

There is no room to install Schaefer supplied halyard restrainer.

Solution:

The halyard restrainer must be installed per the instructions and our warranty. Please check the luff length of the sail, as it is mandatory that the restrainer is installed properly. The luff length of the sail may be too long.

Problem:

The upper swivel does not turn.

Solution:

The sail luff length may be too long. Check that the halyard restrainer is installed properly per our instructions. The boat's mast needs to be tuned.

Problem:

Swivel slow to turn.

Solution:

Excessive halyard tension. Headstay must be tightened to insure proper mast tuning. Jib halyard should not be tighter than headstay.

Problem:

Line bunches up on the drum.

Solution:

Review installation instructions, furling line should lead into the drum at 90 degrees. A lead arm bracket (CF500-22) is available from your nearest dealer or Schaefer. Check line size, type. A softer line type lays on the drum better than a hard laid line.

Problem:

Sail is messy to furl.

Solution:

It is always best to dip down (fall off the wind) to reef or furl. Basically, you are unloading the boat. Please drag the furling line (friction) as you pull the sail out.

Problem:

Too much line on the drum – snags.

Solution:

When the sail is furled, there should be only 3 – 4 wraps on the drum. Line size too large or stiff.

Problem:

Foil will not fit on headstay.

Solution:

Measure headstay diameter of wire, see manual. Headstay may be metric or oversized.

Problem:

Top cap of furler extrusion came off the extrusions.

Solution:

- Insure you have not cut the extrusion “too long”
- Some headstay wire should be showing aloft
- Check mast tuning. Is mast too loose? Check shrouds and headstay tension. Tune mast.

Problem:

Upper swivel slow to turn.

Solution:

- Check the installation of the halyard restrainer
- Upper swivel upside down
- Sail has too many laminates of sailcloth at the head of the sail and adding friction to the furling reefing process. Top of sail too stiff
- Check mast tuning
- Sail head has too large a grommet on Stainless fitting. A webbing is best for tack and head of sail