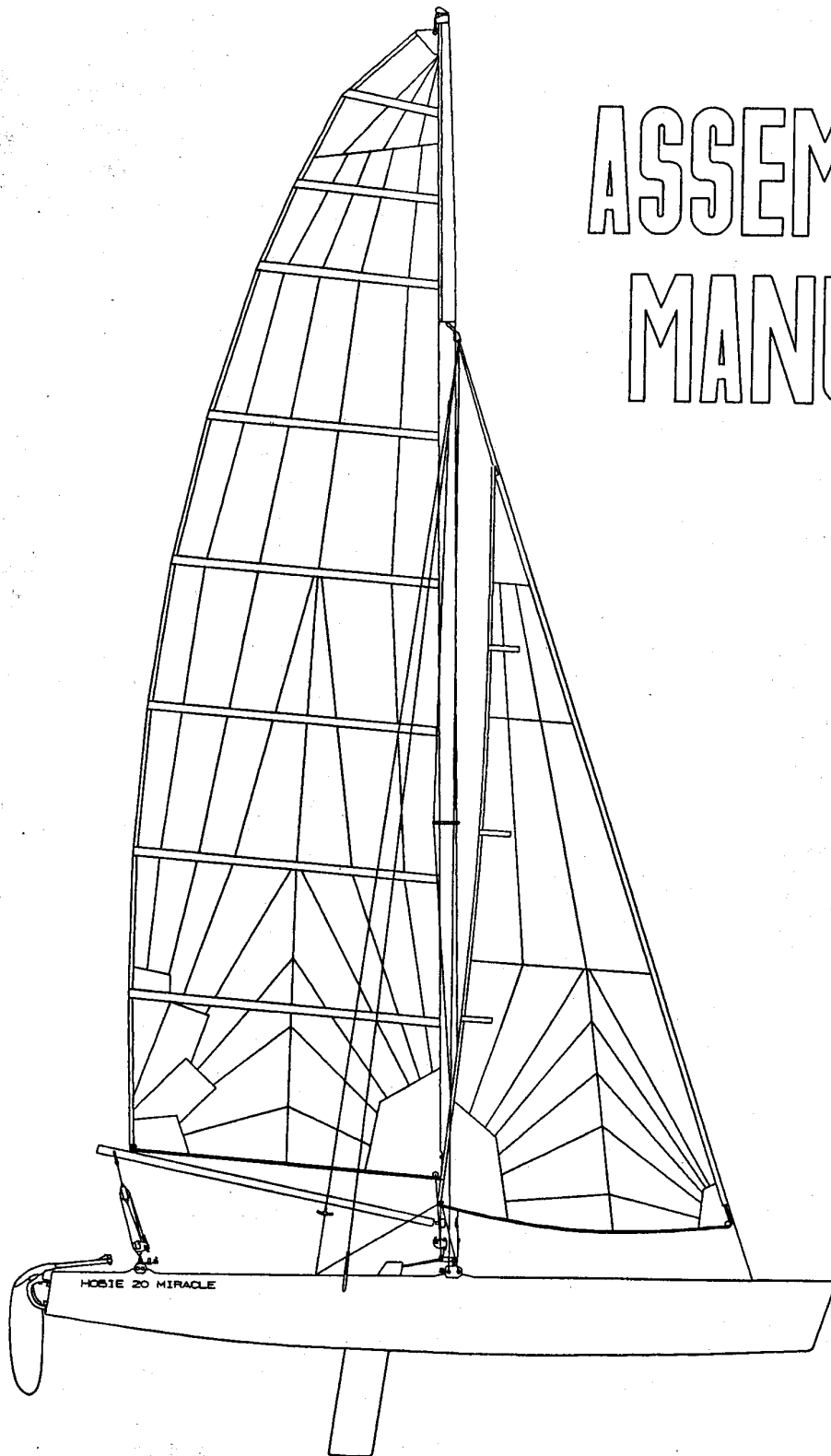


HOBIE 20 MIRACLE

ASSEMBLY MANUAL



UPDATED 11/1/2000

LINE AND WIRE IDENTIFICATION CHART

RIG KIT LINES - MIRACLE 20

| DESCRIPTION | LENGTH | MATERIAL | QUANTITY |
|------------------------------------|--------|--------------------------|----------|
| TRAMPOLINE LACE LINE | 15' | 3/16" YB WHT. | 1 EACH |
| JIB HALYARD LINE | 23' | #2 1/2 COVE | 1 EACH |
| JIB HALYARD TENSIONER LINE | 3' | 3/16" YB WHT. | 1 EACH |
| BARBER HAULER TENSION ASSY. | 4' | 1/4" SHOCK CORD | 1 EACH |
| JIB SHEET ADJUSTMENT LINE | 4' | 3/16" YB WHT. | 2 EACH |
| JIB CLEW ATTACHMENT LINE | 4' | 1/4" YB WHT. | 1 EACH |
| JIB SHEET LINE | 36' | 5/16" YALE LITE - YELLOW | 1 EACH |
| DOWNHAUL LINE, MAIN | 32' | 1/4" LIME YB | 1 EACH |
| MAIN SHEET LINE | 38' | 3/8" YALE LITE - RED | 1 EACH |
| MAST ROTATION INDUCER LINE | 5' | 3/16" YB WHT. | 2 EACH |
| MAST ROTATION PREVENTER LINE | 20' | 3/16" YB WHT. | 1 EACH |
| AFT TRAPEZE SHOCK CORD ASSY. | 7' | 1/4" SHOCK CORD | 1 EACH |
| TRAPEZE ADJUSTMENT LINE | 3' 6" | 1/4" YB WHT. | 4 EACH |
| HIKING STRAP LINE | 3' | 3/16 YB WHT. | 2 EACH |
| DAGGERBOARD HANDLE | 2' | 5/8" SB | 2 EACH |
| BARBER HAULER LINE | 18' | 1/4" SB RED | 1 EACH |
| AFT TRAPEZE TANGLE PREVENT | 3' | 3/16" YB WHT. | 2 EACH |
| JIB DOWN HAUL | 12' | 3/16 YB BRAID | 1 EACH |
| RIGHTING LINE | 15' | 1/2 BLU/WHITE | 1 EACH |
| LINE, JIB BLOCK ADJUSTER | 17'6" | 3/16 SPECTRON | 1 EACH |
| ROTATION INDUCER | 69" | 3/8 SHOCK CORD | 2 EACH |
| HIKING STRAP CENTER LACE | 2' | 3/16 YB WHT | 1 EACH |
| LINE, ROTATION PREVENTER | 2' | 3/16 YB WHT | 1 EACH |
| SHOCK CORD, JIB BLOCKS ALIGNMENT | 4' | 1/8 SHOCK CORD | 1 EACH |
| SHOCK CORD, JIB SHEET TANGLE PRVNR | 4' | 1/4 SHOCK CORD | 1 EACH |

RIGGING

| DESCRIPTION | LENGTH | HOW TO MEASURE | QUANTITY |
|----------------------------|-------------|------------------------|----------|
| SHROUD ASSY. | 23' 5 1/4" | EYE TO THIMBLE | 2 EACH |
| BRIDLE ASSY. | 44 1/8" | FORK TO FORK | 2 EACH |
| FORESTAY ASSY. | 22' 10 1/2" | END OF STUD TO THIMBLE | 1 EACH |
| JIB HALYARD WIRE ASSY. | 22' 3" | THIMBLE TO THIMBLE | 1 EACH |
| TRAPEZE WIRE ASSY. | 21' 11 5/8" | THIMBLE TO THIMBLE | 4 EACH |
| BARBER HAULER LINE SPECTRA | 17' 6" | SHACKLE TO SHACKLE | 1 EACH |
| DIAMOND WIRE ASSY. | 20' 1 3/4" | FORK TO THIMBLE | 1 EACH |

PAGE 1

PAGE UPDATED 11/1/00

NOTE - READ ALL INSTRUCTIONS PRIOR TO ASSEMBLY.

I. FRAMING YOUR BOAT.

- 1.1 USING THE CARDBOARD CRADLES FROM THE SHIPPING BOX, PLACE HULLS PARALLEL TO ONE ANOTHER SO THAT PHANTOM LINES 1 AND 2 ARE OF EQUAL DISTANCE. WIDTH APART = 8'6". (FIGURE 1.1)
- 1.2 INSTALL THE PIVOTING EXIT BLOCKS W/WELDED SHACKLES TO THE YOKES ON FRONT BAR. (FIGURE 1.2)
- 1.3 INSTALL FRONT CROSSBAR AS SHOWN. (FIGURE 1.2)

-CAUTION- IF BOLTS FEEL LIKE YOUR FORCING THEM TO THREAD, BACK THEM OUT AND CHASE TAPPED HOLES WITH A 3/8" -16 TAP. FORCING THREADING WILL DAMAGE THE BOLT AND TAPPED HOLE THREADS.

NOTE - TIGHTEN BOLTS DOWN, THIS WILL PROVIDE STABILITY FOR DRILLING MOUNT HOLES IN THE HULLS FOR THE REAR CROSSBAR.

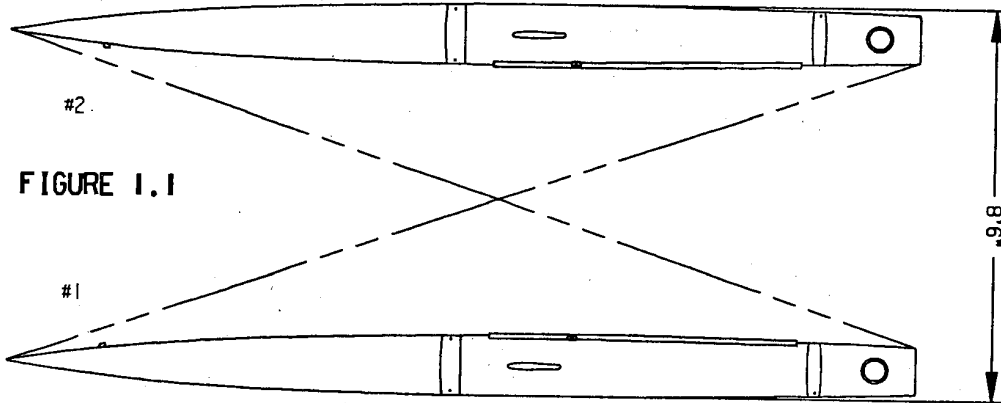
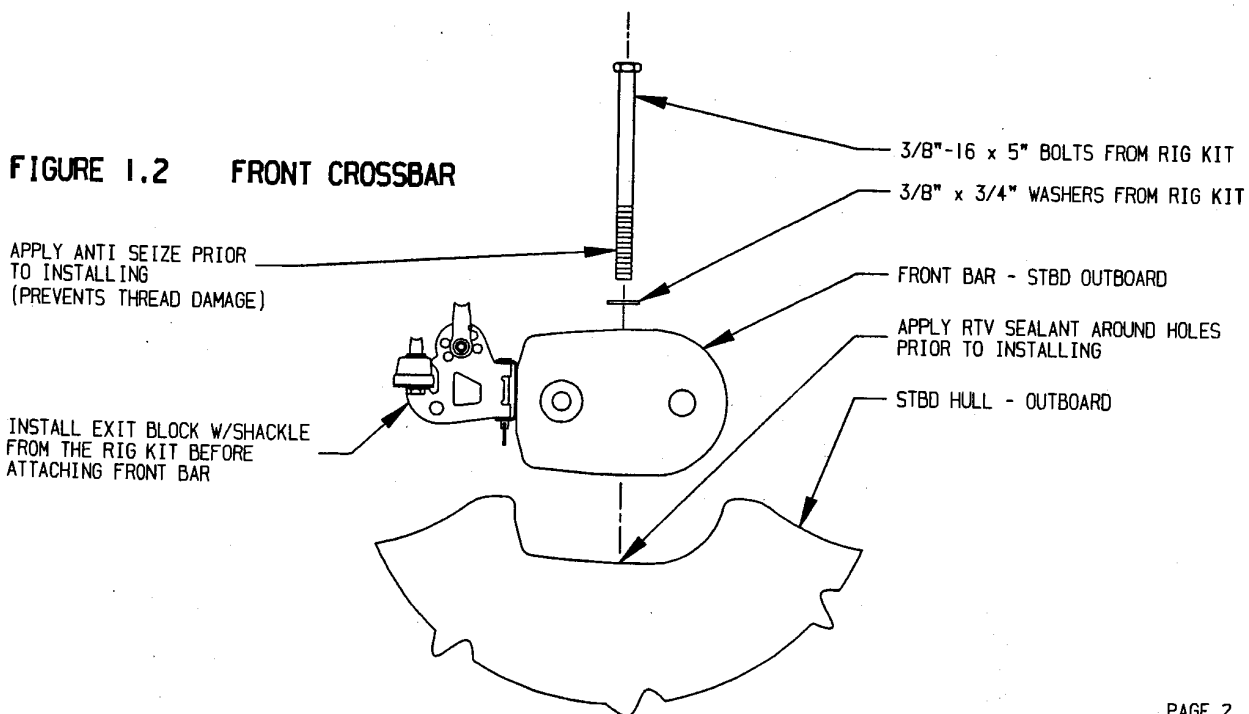


FIGURE 1.1

FIGURE 1.2 FRONT CROSSBAR



1.4 INSTALL REAR CROSSBAR AS SHOWN. (FIGURE 1.4)

-CAUTION- REFER TO STEP 1.3

1.5 TIGHTEN ALL ATTACHMENT BOLTS AFTER FRAMING IS COMPLETE.

1.6 INSTALL THE TRAMPOLINE AS SHOWN. (FIGURE 1.6)

REAR CROSSBAR

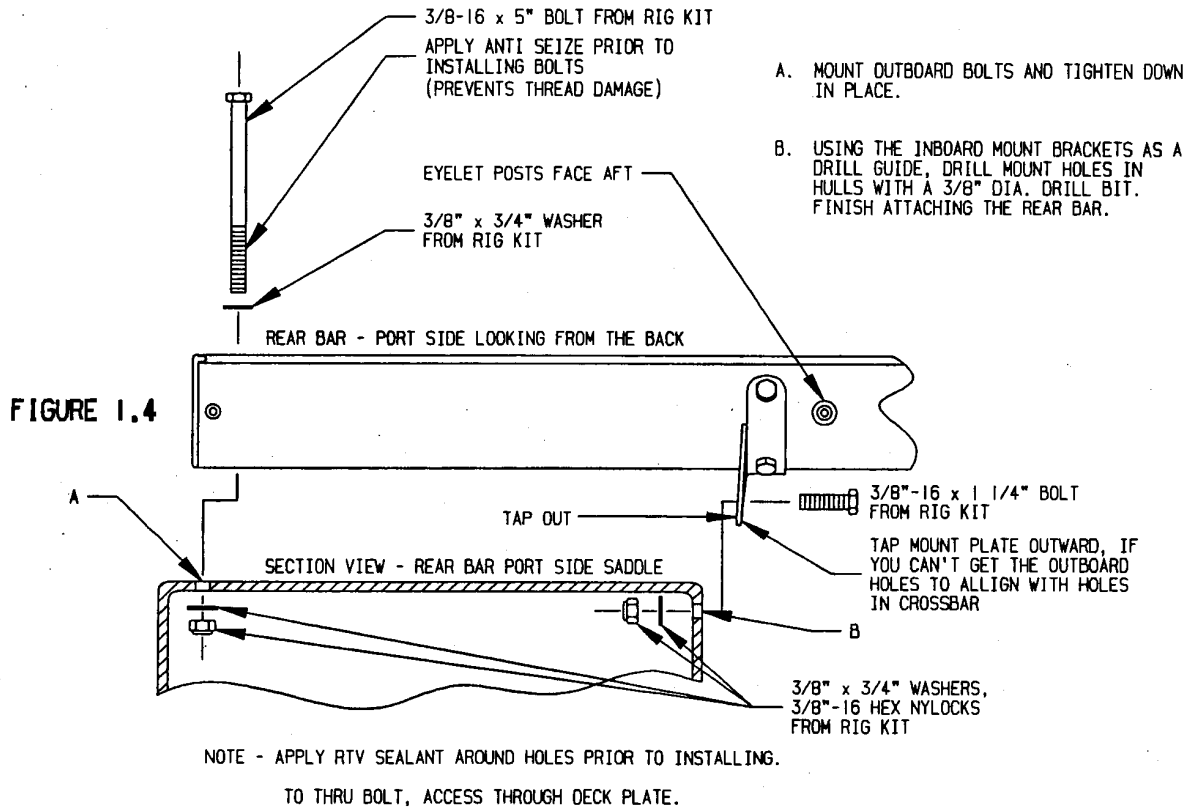
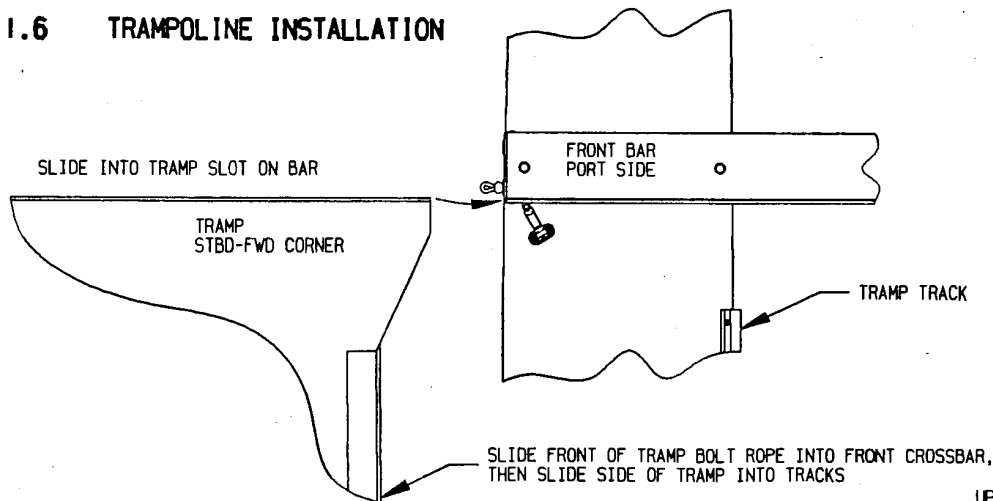


FIGURE 1.6 TRAMPOLINE INSTALLATION



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2. LACING YOUR TRAMPOLINE.

2.1 PLACE TRAMP LACE BAR IN TRAMP AS SHOWN. (FIGURE 2.1)

2.2 FOLLOW LACING DIAGRAM. (FIGURE 2.1 AND 2.2)

NOTE - TIGHTEN TRAMP TO INDIVIDUAL PREFERENCE. (DO NOT USE ANY TRAMP TIGHTENING DEVICE. MAY CAUSE PREMATURE DAMAGE TO THE TRAMP.)

FIGURE 2.1

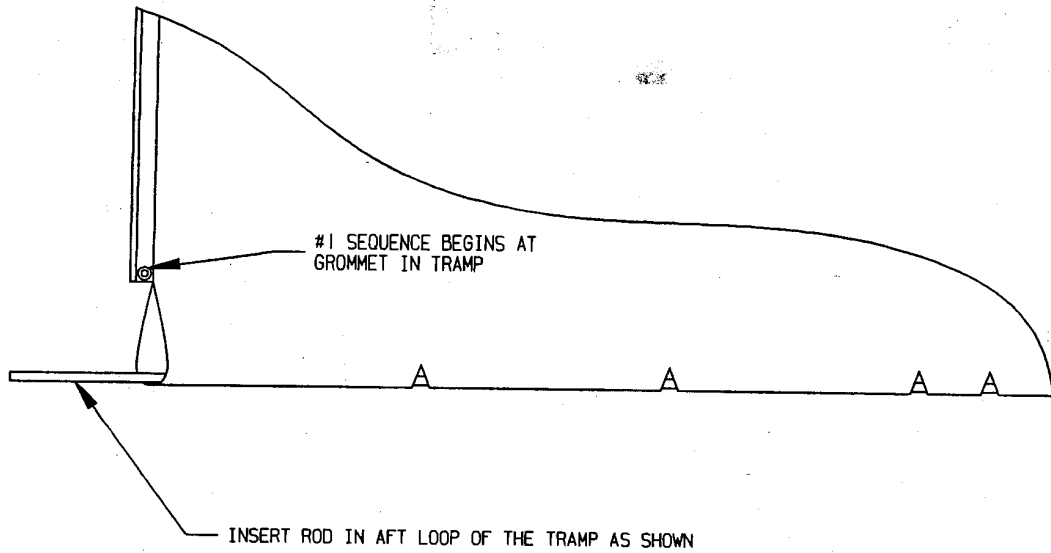
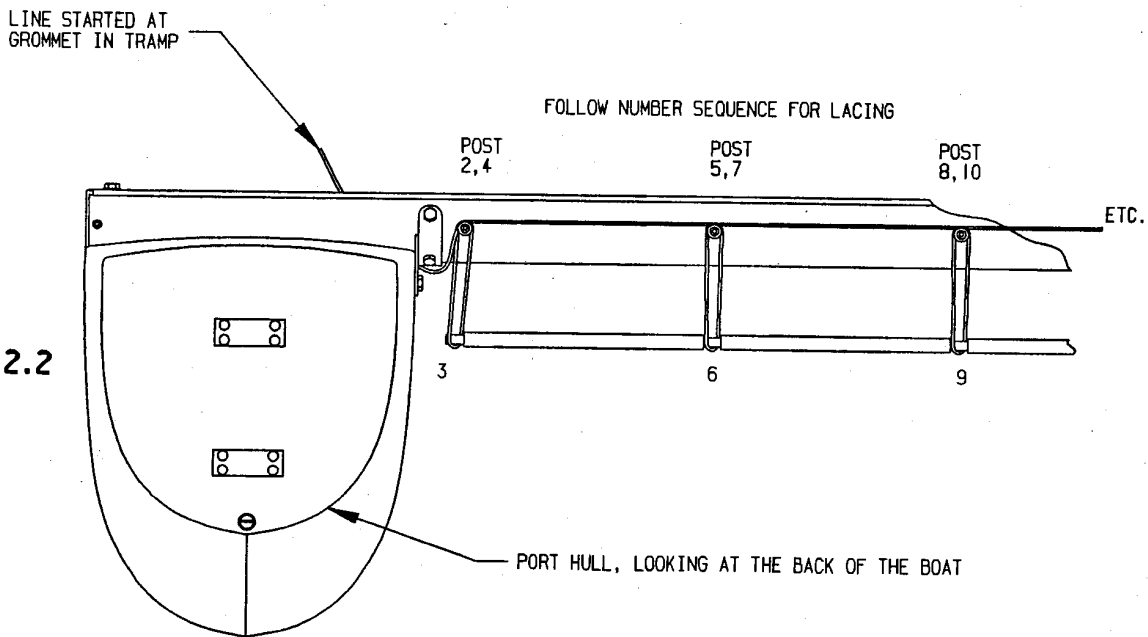


FIGURE 2.2

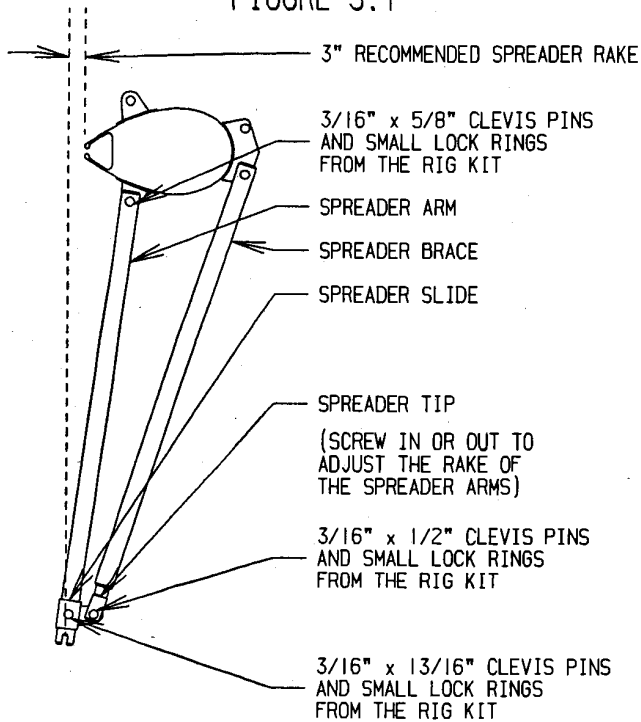


3. PREP MAST FOR STEPPING.

-CAUTION- A MAST THAT IS COUNTER-ROTATED FOLLOWING A TACK OR GYBE CAN BE PERMANENTLY BENT BY WIND FORCES IN THE UPPER AREAS OF THE SAIL. THEREFORE, MAST FAILURES CARRY NO WARRANTY. TAKE EXTRA CARE TO ASSURE THE MAST IS ROTATED TO THE NEW TACK OR GYBE BEFORE SHEETING THE MAIN AND JIB ON THE NEW COURSE.

- 3.1 INSTALL SPREADERS AS SHOWN. (FIGURE 3.1)
- 3.2 INSTALL THE DIAMOND WIRE AS SHOWN. (FIGURE 3.2)
- REFER TO (FIGURE 3.3) FOR PRE-BEND SETTING
- 3.3 INSTALL EXIT BLOCKS AS SHOWN. (FIGURE 3.2)

FIGURE 3.1



MAST SIDE VIEW

FIGURE 3.3

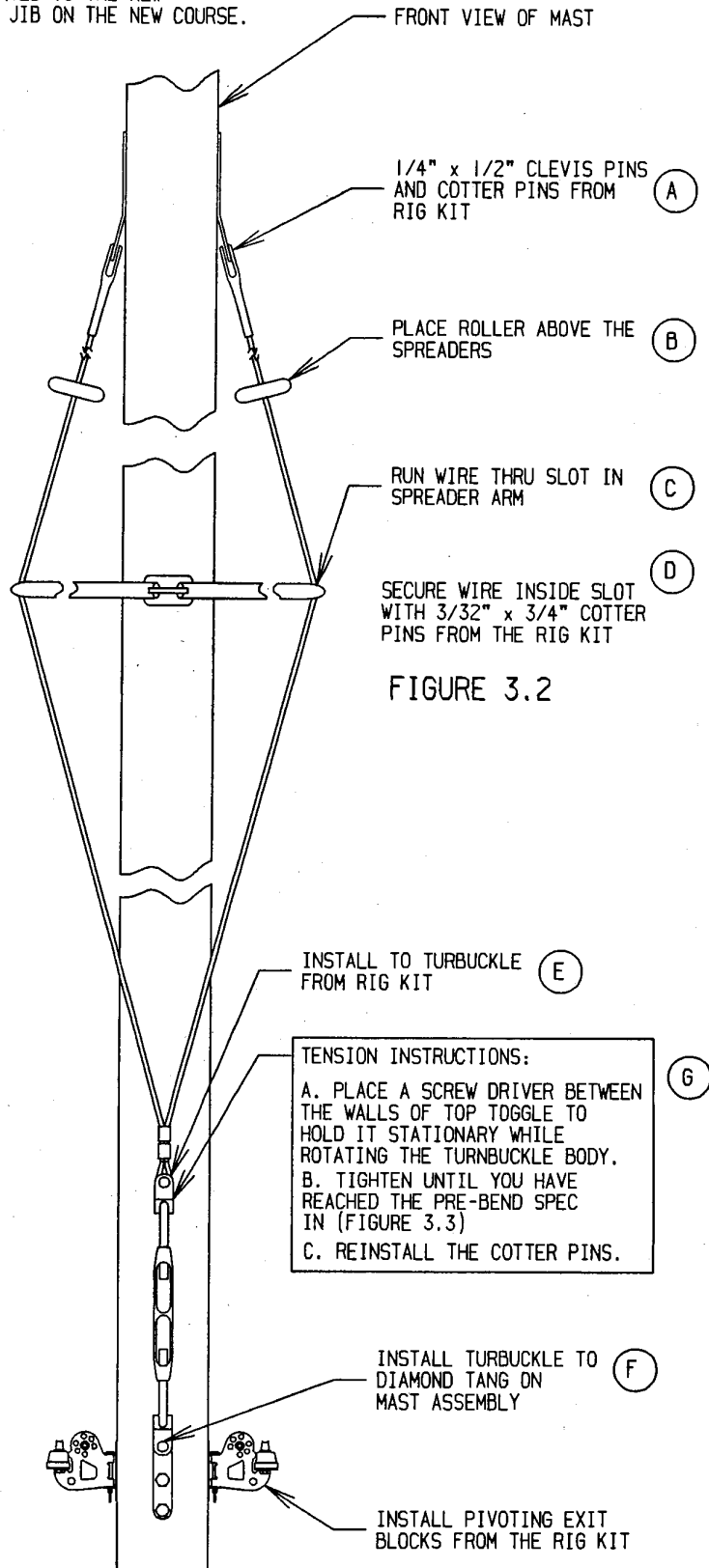
(DO NOT INCLUDE COMPTIP IN THIS SETTING)

1" RECOMMENDED PRE-BEND

A READING OF APPROX. 520 LBS. ON A WIRE TENSION GAGE WILL BE INDICATED IF SET TO RECOMMENDED RAKE AND PRE-BEND



FRONT VIEW OF MAST



- 3.4 INSTALL THE HEADSTAY AND SHROUDS AS SHOWN. (FIGURE 3.4)
- 3.5 INSTALL THE TRAPEZE WIRES AS SHOWN. (FIGURE 3.5)
- 3.6 RIG THE JIB HALYARD AS SHOWN. (FIGURE 3.6)

FIGURE 3.4
MAST FRONT VIEW

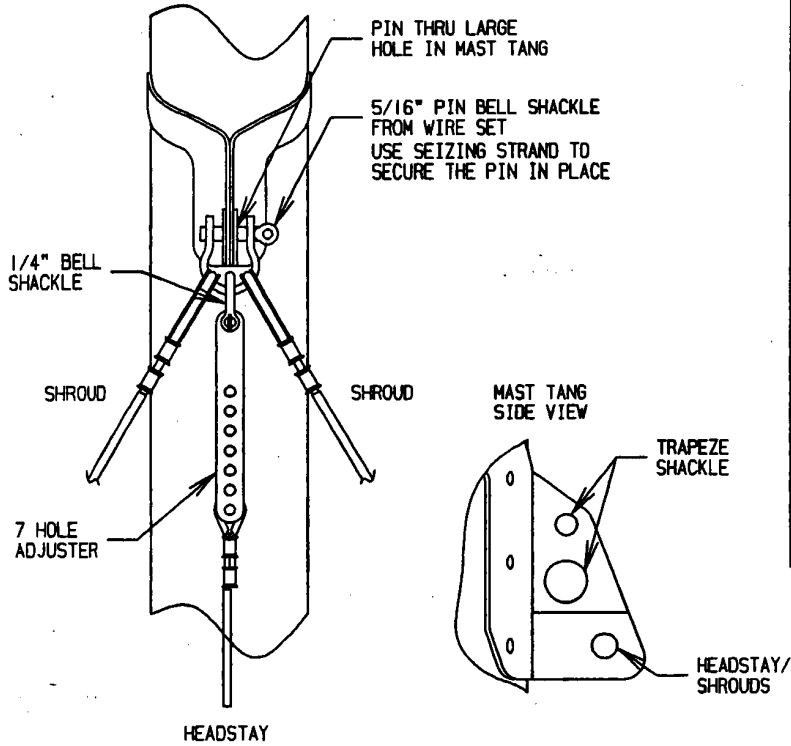


FIGURE 3.5
MAST SIDE VIEW

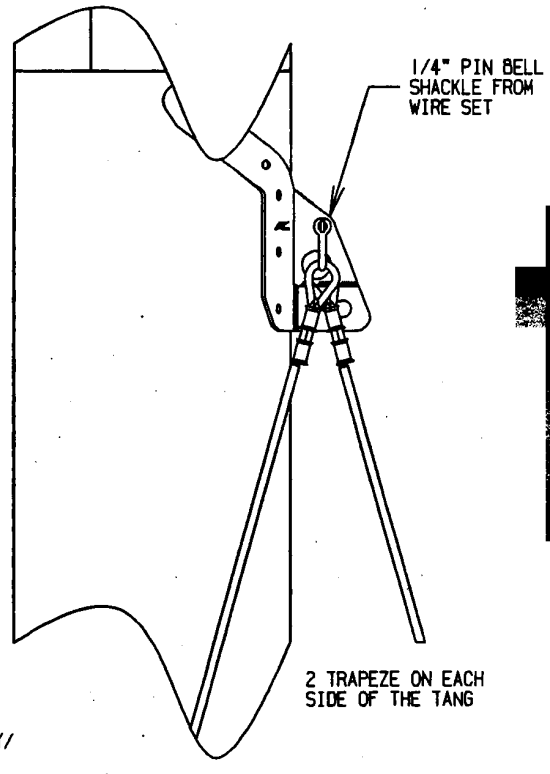
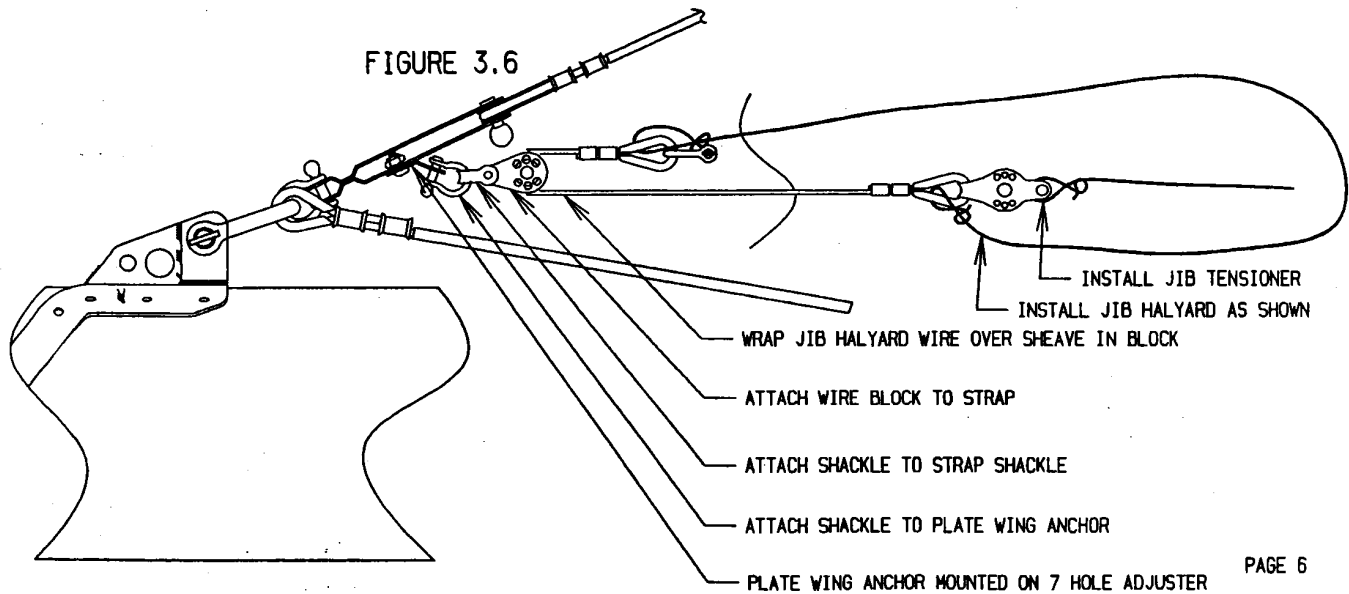


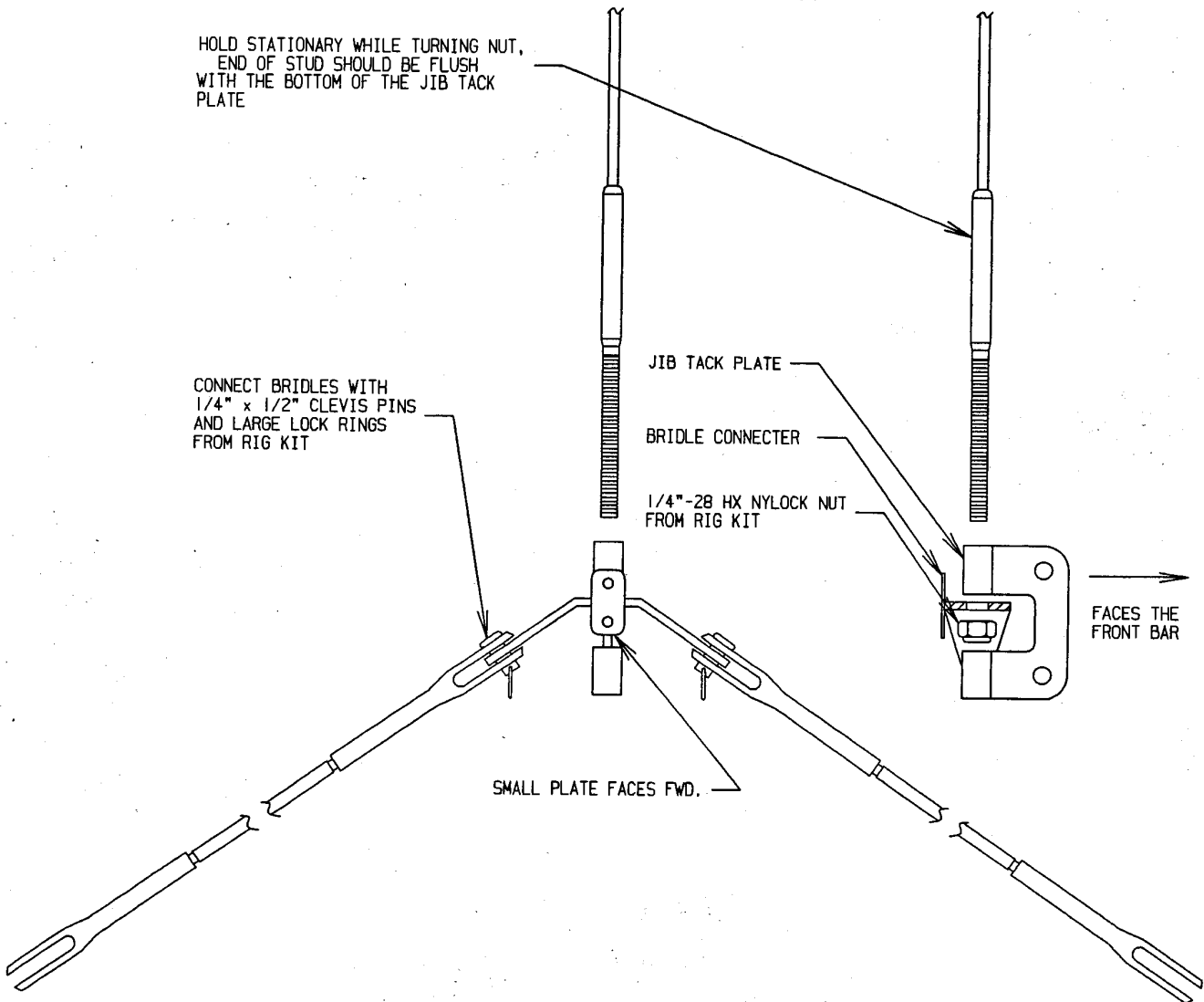
FIGURE 3.6



3.7 ATTACH BRIDLES TO HEADSTAY AS SHOWN. (FIGURE 3.7)

017
4

FIGURE 3.7



- 3.8 CONNECT THE MAST TO THE FRONT CROSSBAR AS SHOWN. (FIGURE 3.8)
- 3.9 INSTALL THE SHROUDS TO THE HULLS AS SHOWN. (FIGURE 3.9)
- 3.10 INSTALL MICRO BLOCKS TO STAY ADJUSTERS AS SHOWN. (FIGURE 3.9)

NOTE - PROPERLY SUPPORT MAST ONCE ATTACHED TO CROSSBAR
 SECURE MAST TO CROSSBAR WITH
 MAST STEP PIN AND 2 LARGE
 LOCK RINGS FROM MAST BASE

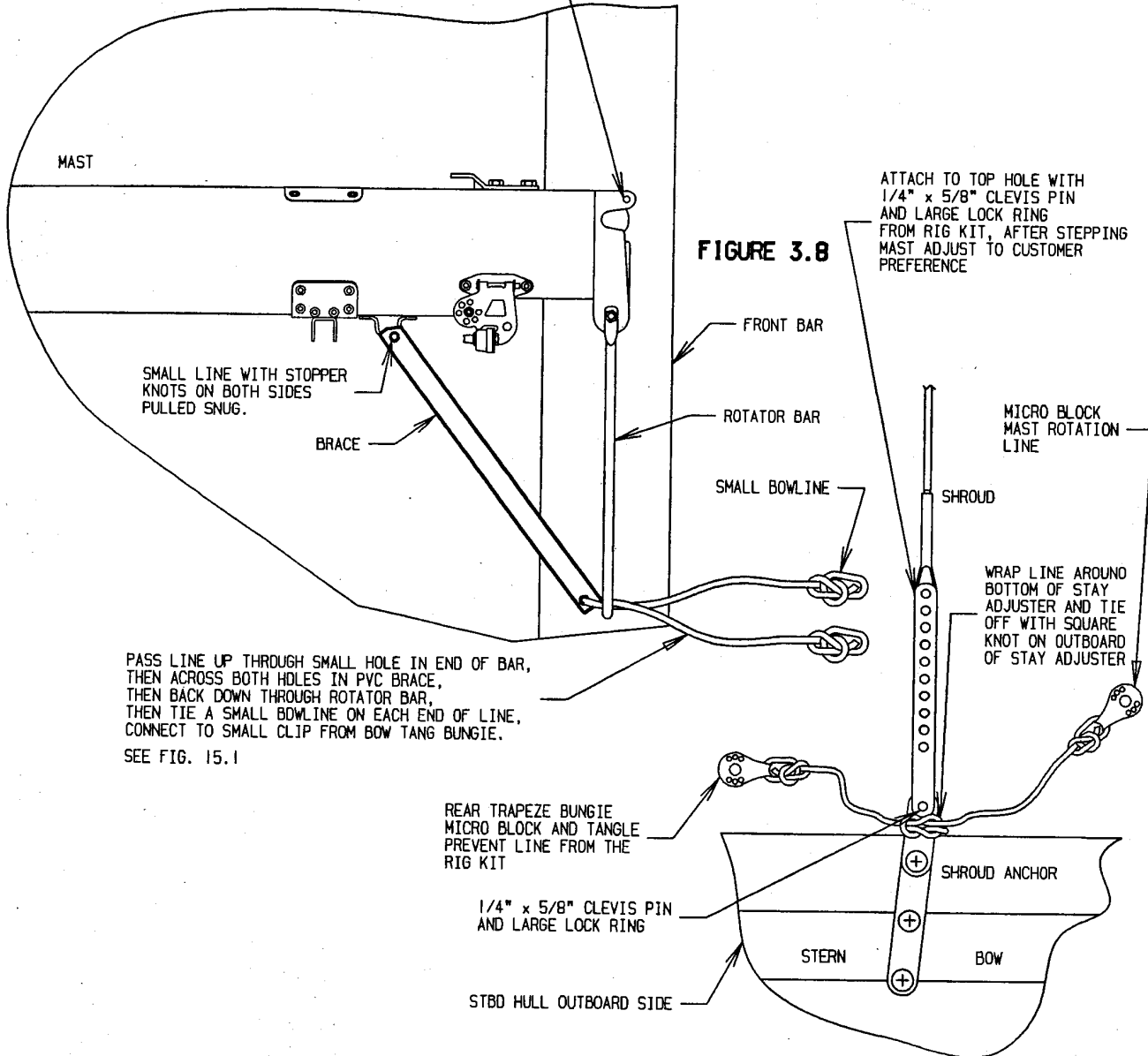


FIGURE 3.8

ATTACH TO TOP HOLE WITH
 1/4" x 5/8" CLEVIS PIN
 AND LARGE LOCK RING
 FROM RIG KIT, AFTER STEPPING
 MAST ADJUST TO CUSTOMER
 PREFERENCE

WRAP LINE AROUND
 BOTTOM OF STAY
 ADJUSTER AND TIE
 OFF WITH SQUARE
 KNOT ON OUTBOARD
 OF STAY ADJUSTER

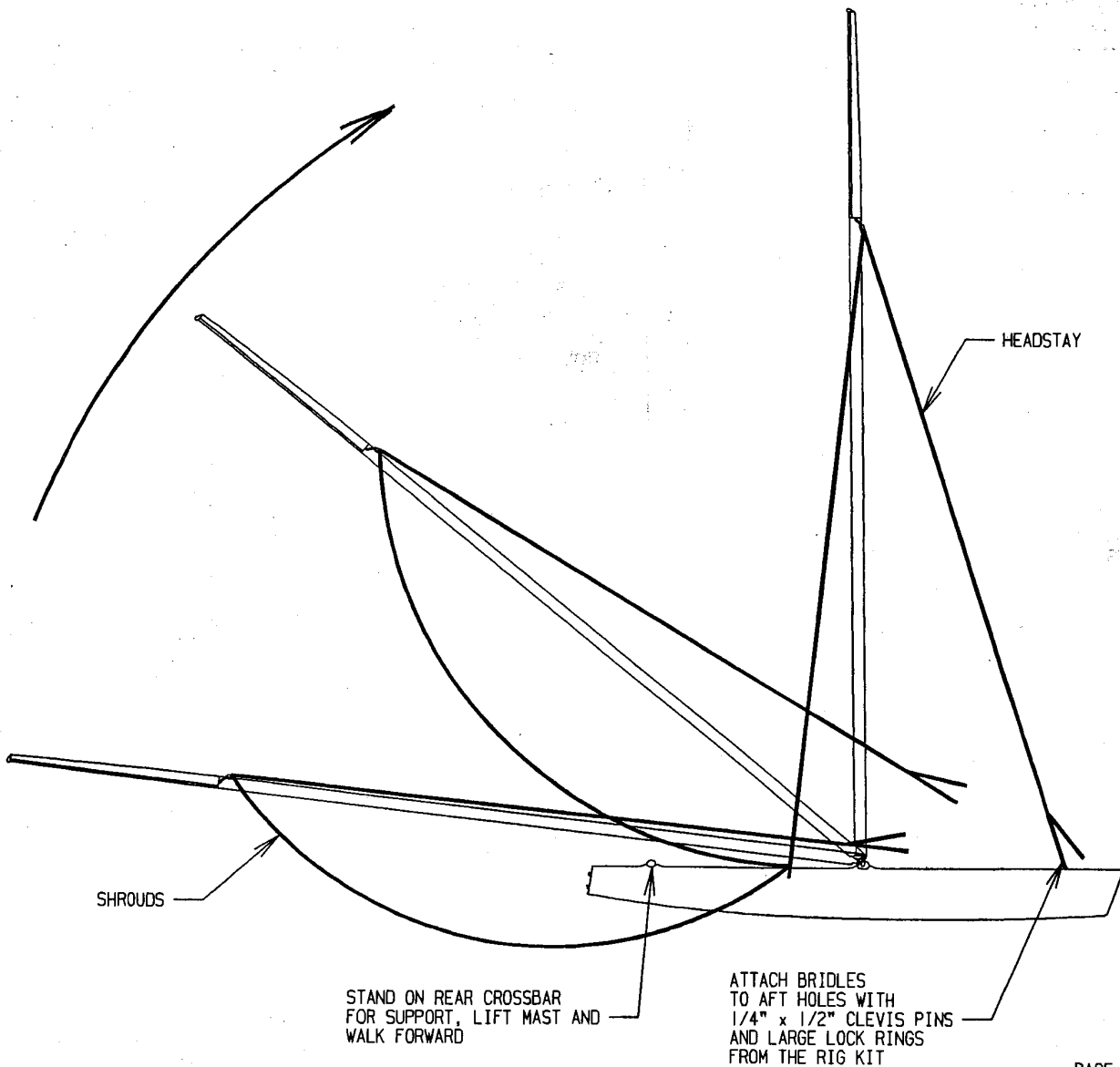
FIGURE 3.9

4. STEPPING THE MAST

- 4.1 BEFORE STEPPING THE MAST, CHECK FOR OVERHEAD POWER LINES, IF ANY ARE NEAR, RELOCATE THE BOAT BEFORE STEPPING THE MAST.
- 4.2 SECURE MAIN HALYARD BY TYING THE 2 ENDS TOGETHER. THIS WILL PREVENT THE MAST RAISING RING FROM GOING TO THE TOP OF THE MAST IN THE STEPPING PROCESS.
- 4.3 MAKE SURE THE SHROUDS ARE ATTACHED AND CLEAR FROM GETTING TANGLED IN THE STEPPING PROCESS.
- 4.4 USING THE REAR CROSSBAR FOR SUPPORT, SLOWLY RAISE THE MAST TO CHEST LEVEL, THEN WALK IT FORWARD UNTIL ALL SLACK IS OUT OF THE SHROUDS. (FIGURE 4.4)
- 4.5 HOLD IN POSITION AND ATTACH THE BRIDLES TO THE AFT HOLES IN THE BRIDLE ANCHOR PLATES LOCATED AT THE BOWS. (FIGURE 4.4)
- 4.6 TIGHTEN RIG TO CUSTOMER PREFERENCE.

FIGURE 4.4

"DANGER - WATCH FOR POWER LINES"



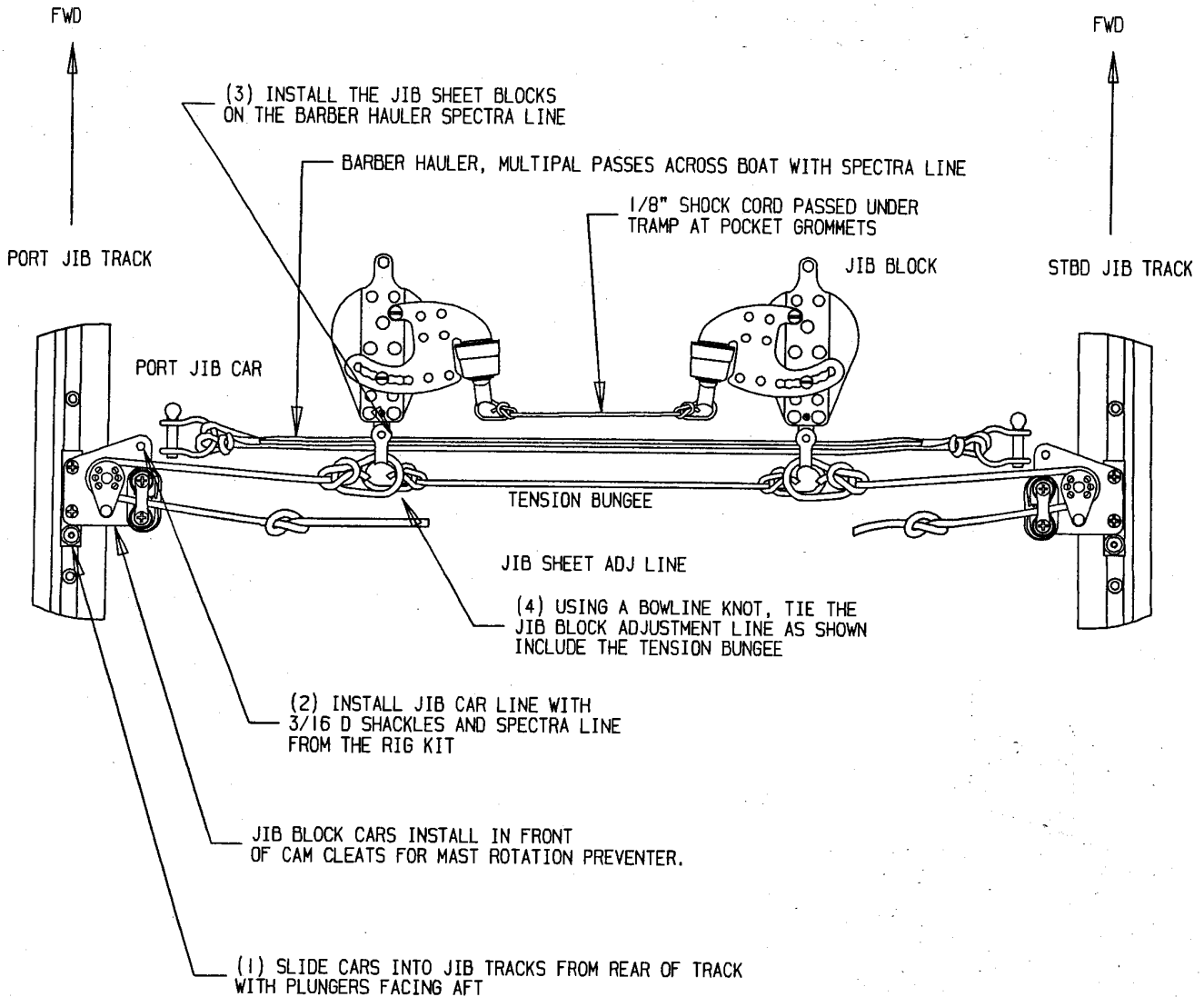
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UPDATED 11/13/92

5. RIG THE 4-WAY JIB SHEET ADJUSTMENT SYSTEM.

5.1 FOLLOW SEQUENCE IN (FIGURE 5.1).

FIGURE 5.1

NOTE: BARBER HAULER LINE AND BUNGIES RUN INSIDE TRAMP POCKET.



5.2 ATTACH AND RAISE THE JIB. (FIGURE 5.2)

5.3 ATTACH JIB TO JIB TACK PLATE. (FIGURE 5.3)

FIGURE 5.2

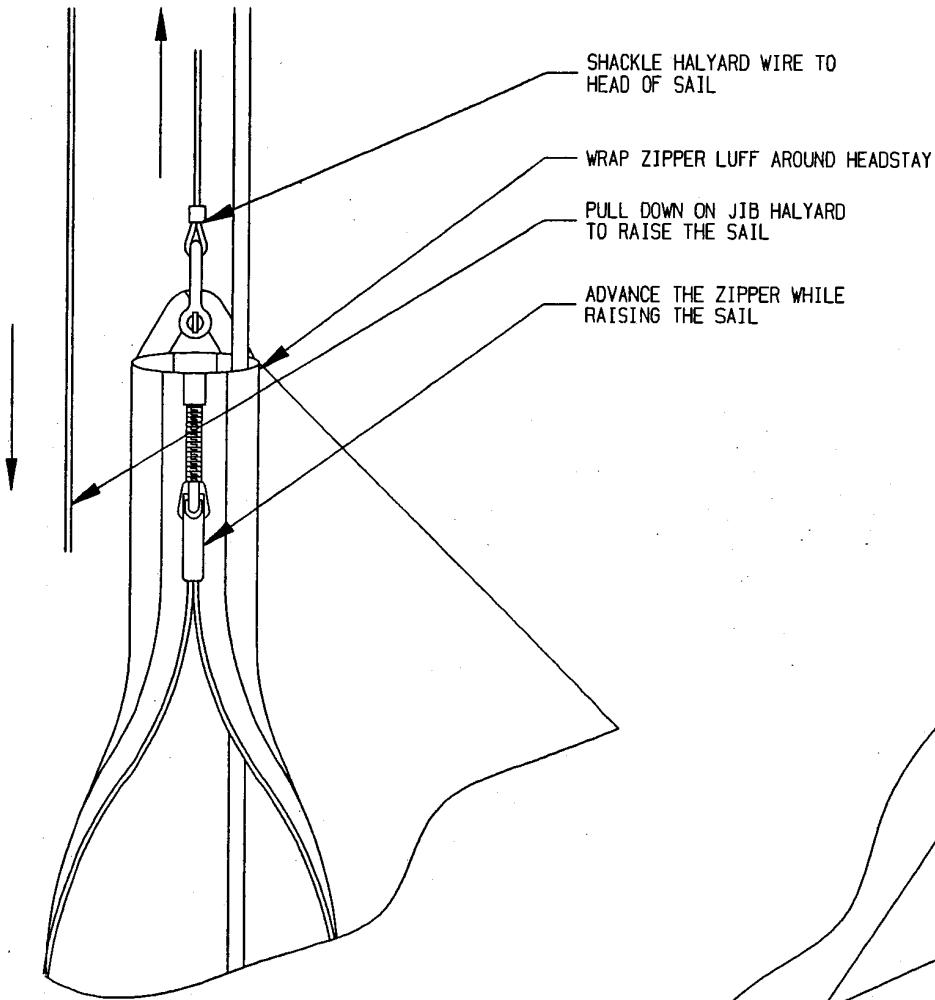
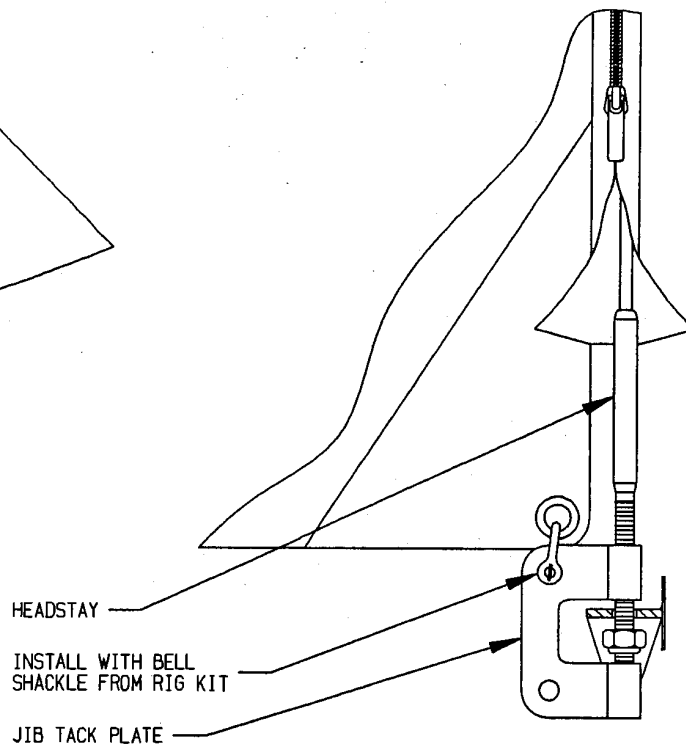
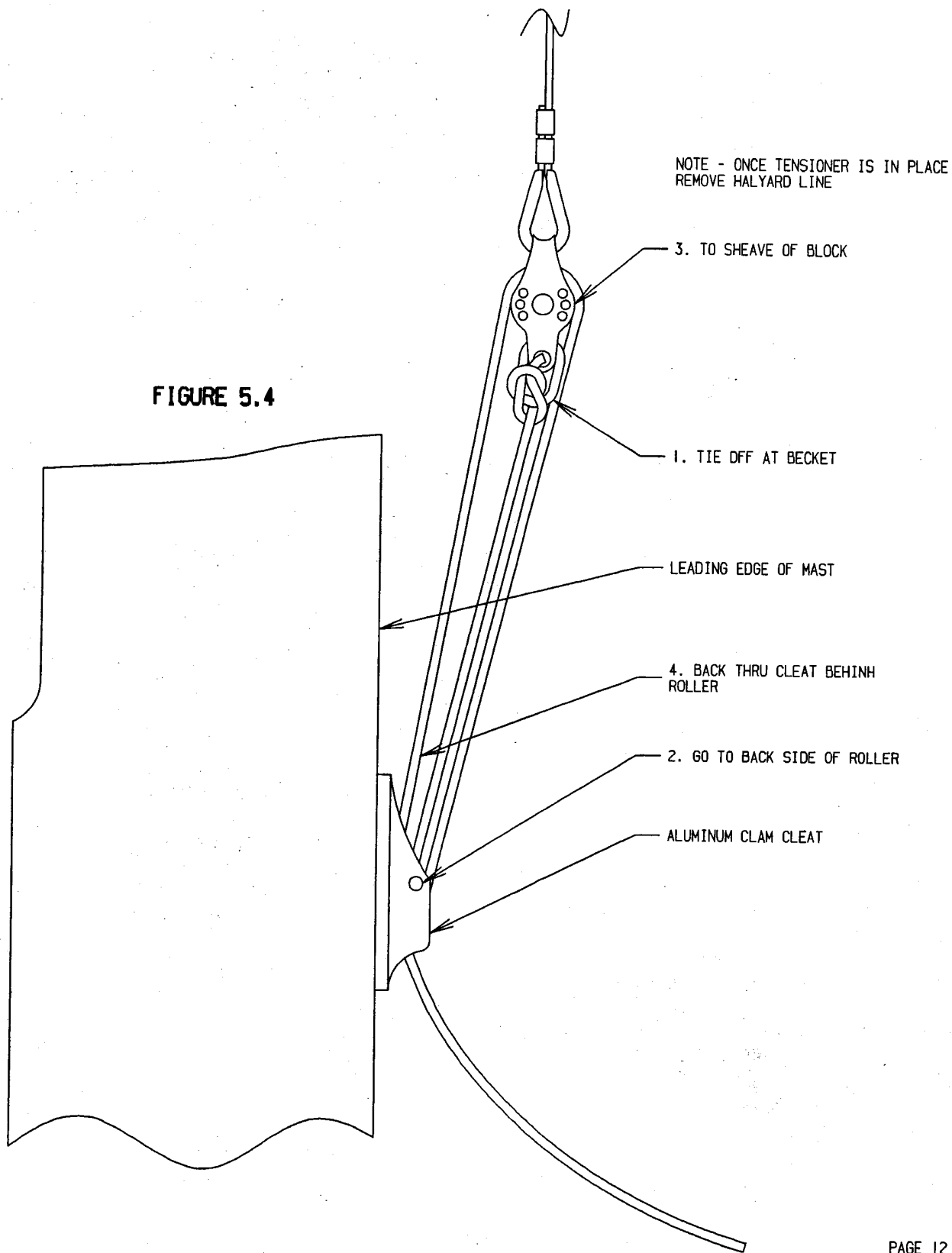


FIGURE 5.3



5.4 RIG THE JIB HALYARD TENSIONER. (FIGURE 5.4)



5.5 RIG THE BARBER HAULER LINE (FIGURE 5.5).

5.6 RIG THE JIB SHEET LINE, FOLLOW SEQUENCE (FIGURE 5.6).

- (1) TIE BULLET BLOCKS FROM RIG KIT TO JIB CLEW WITH JIB CLEW ATTACHMENT LINE.
- (2) TIE ONE END OF JIB SHEET LINE TO THE BECKET ON THE JIB SHEET BLOCK.
- (3) RUN JIB SHEET THRU BARBER HAULER BLOCK.
- (4) RUN THRU JIB CLEW BLOCK.
- (5) BACK THRU OTHER BARBER HAULER BLOCK.
- (6) THRU BOTH SHEAVES IN JIB SHEET BLOCKS.
- (7) REPEAT STEP 3,4 AND 5.
- (8) TIE OFF ON OTHER JIB SHEET BLOCK BECKET.

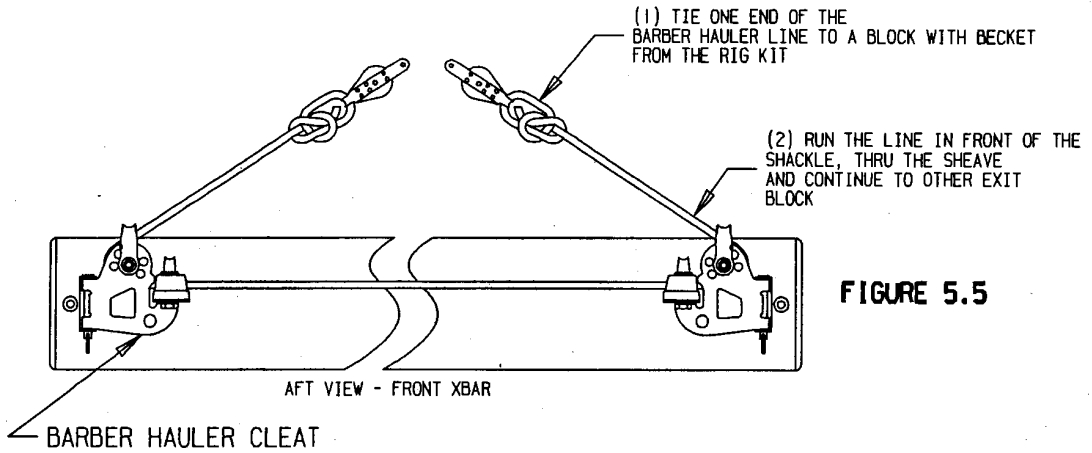
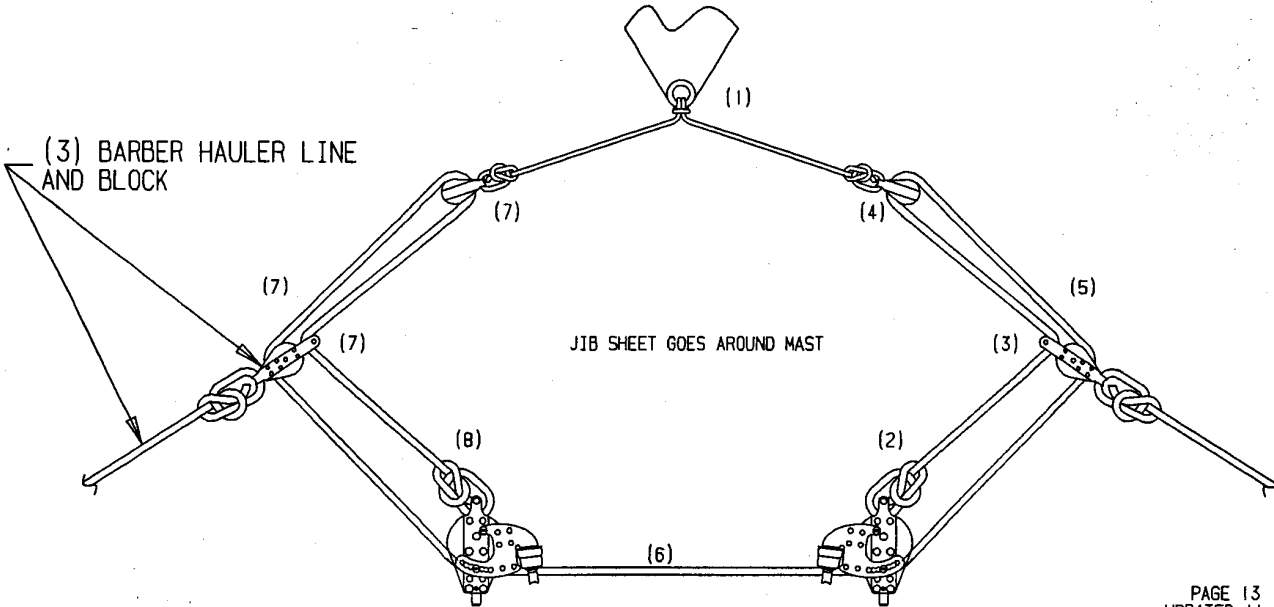


FIGURE 5.5

FIGURE 5.6



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6. MAIN SAIL PREP AND HOISTING.

- 6.1 LAY MAIN SAIL FLAT AND INSERT THE BATTENS IN POCKETS. (FIGURE 6.1)
- 6.2 USING BATTEN TIES SUPPLIED WITH SAIL, TIE BATTENS IN PLACE. USE (FIGURE 6.2) AS GUIDE FOR TYING.

FIGURE 6.2

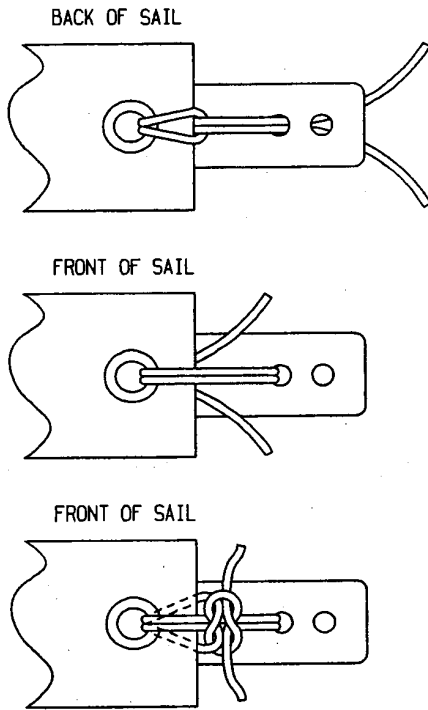
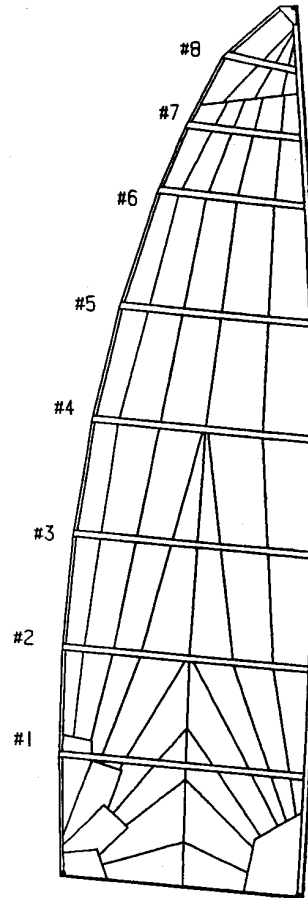


FIGURE 6.1



| BATTEN NO. | FIGURE 6.1 | BATTEN LENGTH |
|------------|------------|---------------|
| #1 | | 96" |
| #2 | | 97" |
| #3 | | 93 1/2" |
| #4 | | 87" |
| #5 | | 76" |
| #6 | | 60" |
| #7 | | 47" |
| #8 | | 31" |

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6.3 CONNECT MAIN HALYARD RING TO HEADBOARD AND HOIST THE SAIL. (FIGURE 6.3)

6.4 LOCK SAIL INTO POSITION. (FIGURE 6.4)

FIGURE 6.3

3. GUIDE SAIL LUFF INTO MAST TRACK WHILE PULLING ON THE OTHER END OF THE MAIN HALYARD

1. SHACKLE HALYARD TO HEADBOARD

2. MAKE SURE KNOT IS ON THE FRONT SIDE OF THE HALYARD RING

-NOTE- MAKE SURE INTERNAL PORTION OF HALYARD IS OUTSIDE THE SAIL FEEDER WHEN RAISING THE SAIL

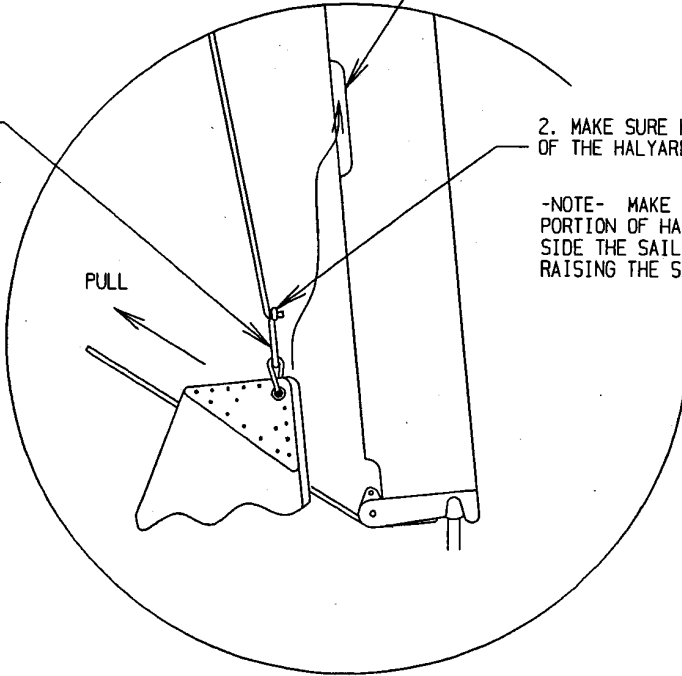
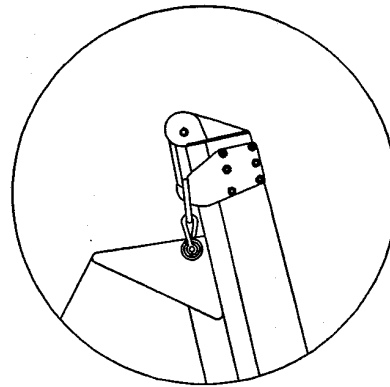
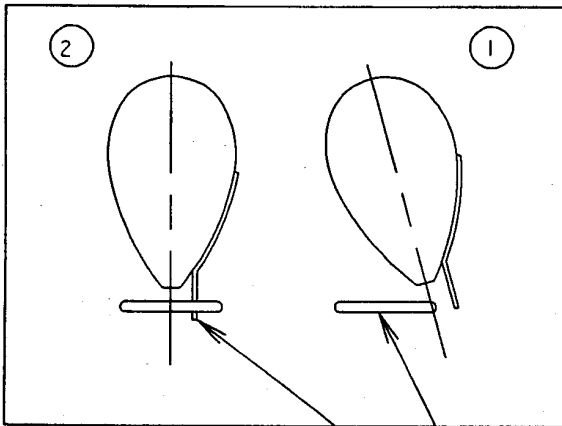


FIGURE 6.4



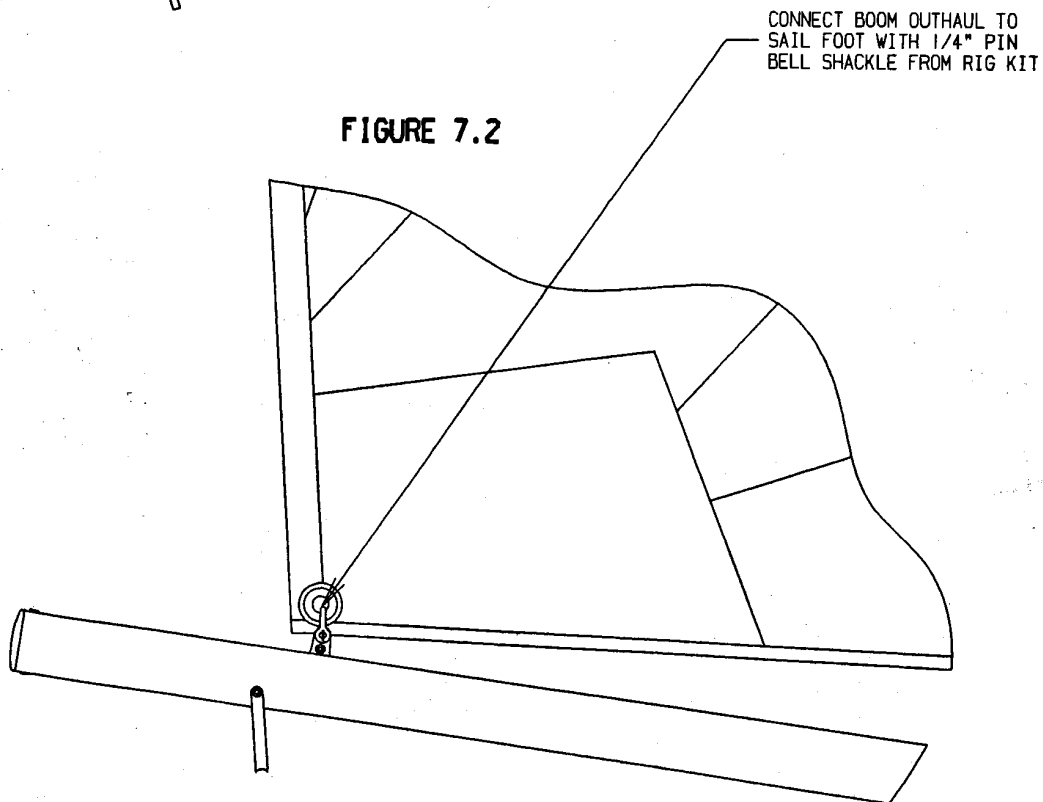
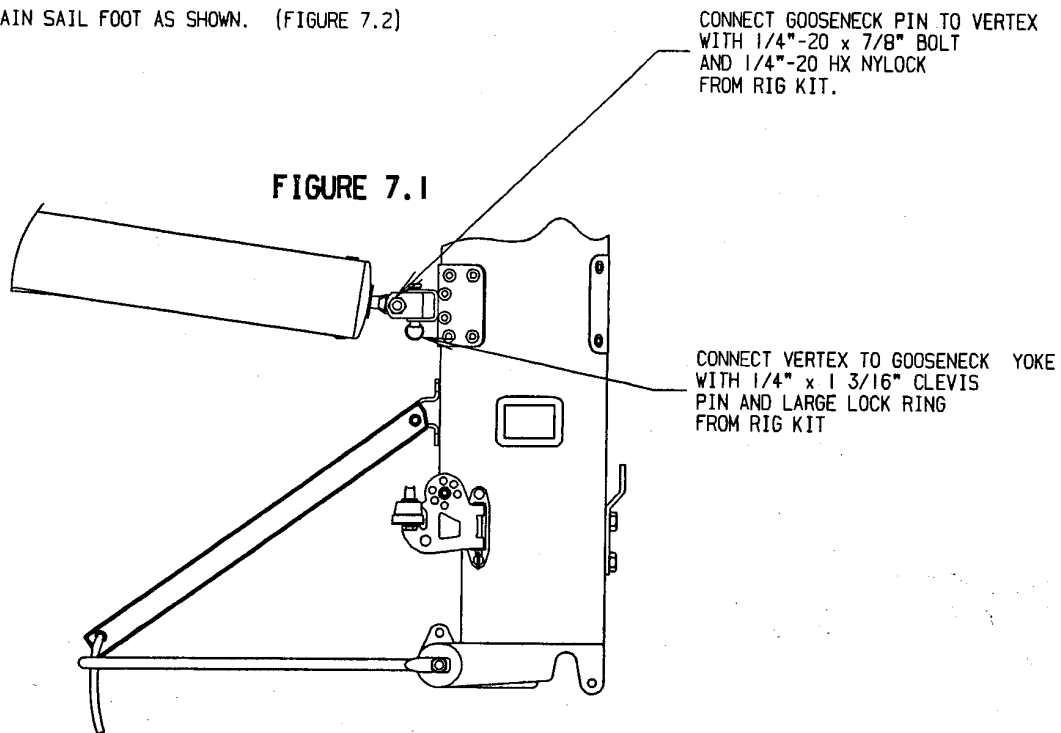
SAIL IN LOCKED POSITION

RAISE TOP HALF OF RING ABOVE THE LOCK
ROTATE THE MAST UNTIL LOCK IS DIRECTLY UNDER THE RING, THEN PULL DOWN TO SECURE THE SAIL

7. INSTALL THE BOOM.

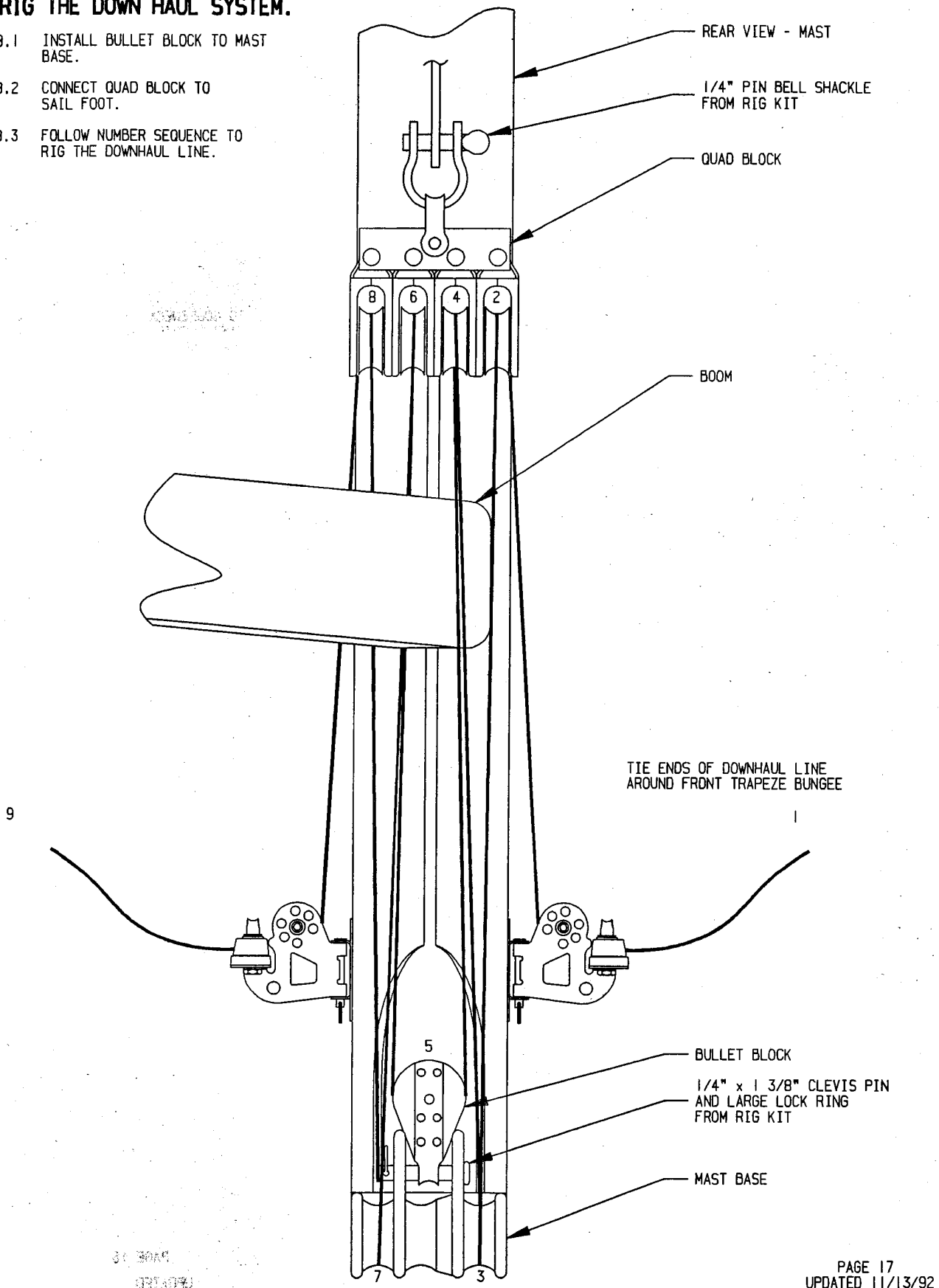
7.1 CONNECT TO GOOSENECK YOKE AS SHOWN. (FIGURE 7.1)

7.2 CONNECT TO MAIN SAIL FOOT AS SHOWN. (FIGURE 7.2)



8. RIG THE DOWN HAUL SYSTEM.

- 8.1 INSTALL BULLET BLOCK TO MAST BASE.
- 8.2 CONNECT QUAD BLOCK TO SAIL FOOT.
- 8.3 FOLLOW NUMBER SEQUENCE TO RIG THE DOWNHAUL LINE.



9. RIG THE MAIN SHEET SYSTEM.

FIGURE 9.1 FOLLOW SEQUENCE.

9.1 LACE THE MAIN SHEET SYSTEM. (FIGURE 9.1)

9.2 CONNECT TO TRAVELER CAR AND BOOM. (FIGURE 9.2)

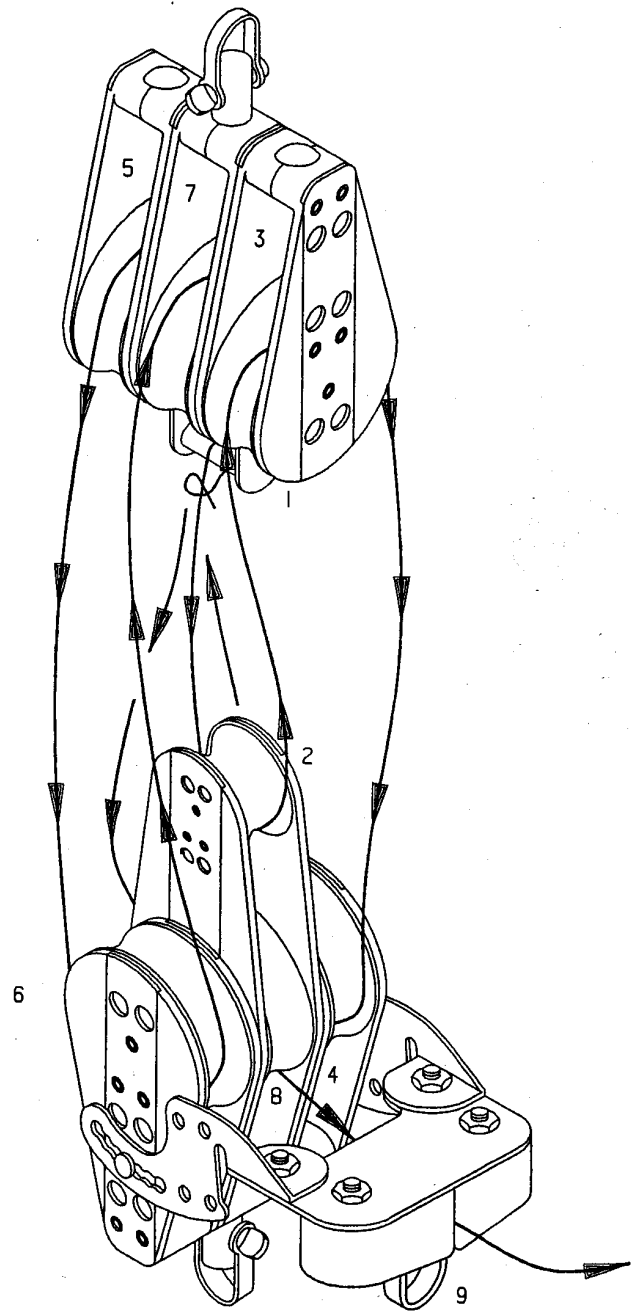
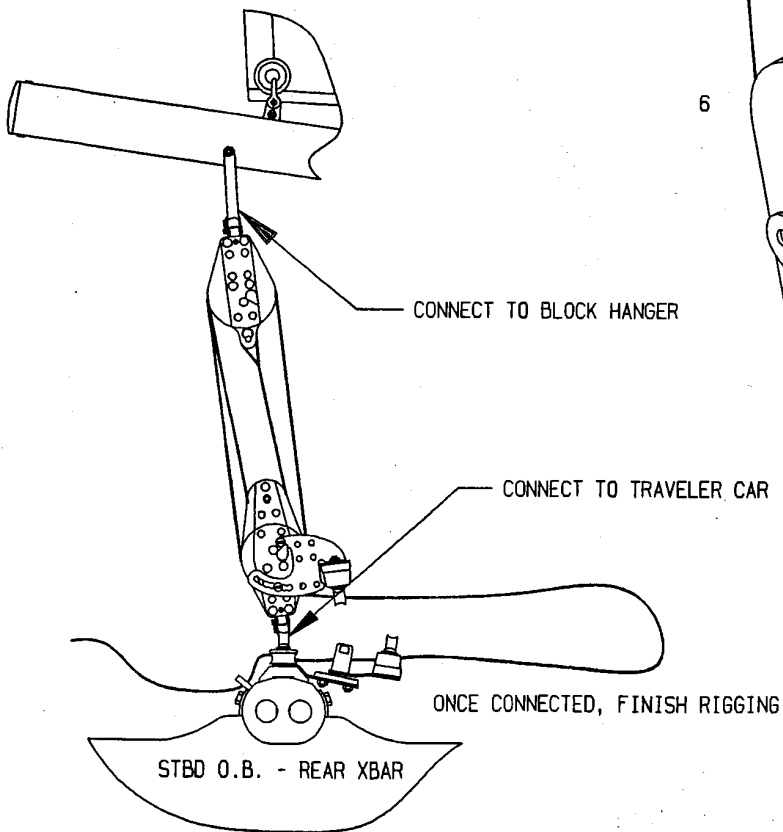
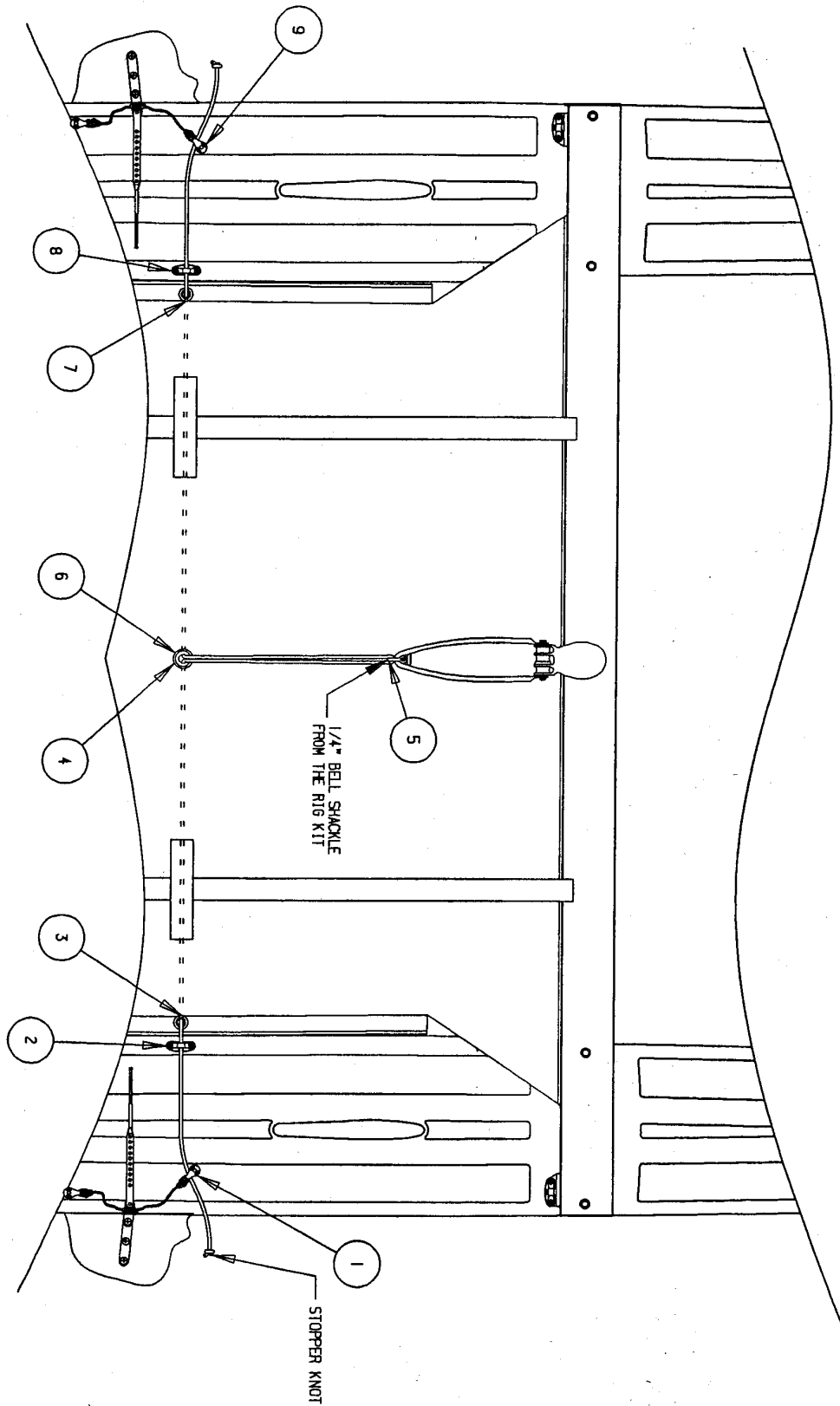


FIGURE 9.2



10. RIGGING THE NEGATIVE MAST ROTATION SYSTEM

FIGURE 10.2 FOLLOW NUMERIC SEQUENCE



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II. INSTALL RUDDERS AND TILLER XBAR.

SEE FIGURE 11.1

WHEN CONNECTING THE TILLER CROSSBAR TO THE RUDDERS, ADJUSTMENT ARM OF TILLER CROSSBAR SHOULD BE CONNECTED TO THE PORT SIDE RUDDER. APPLY A LUBRICANT TO THE POSTS BEFORE ASSEMBLY TO INSURE EASY REMOVAL AFTER USE.

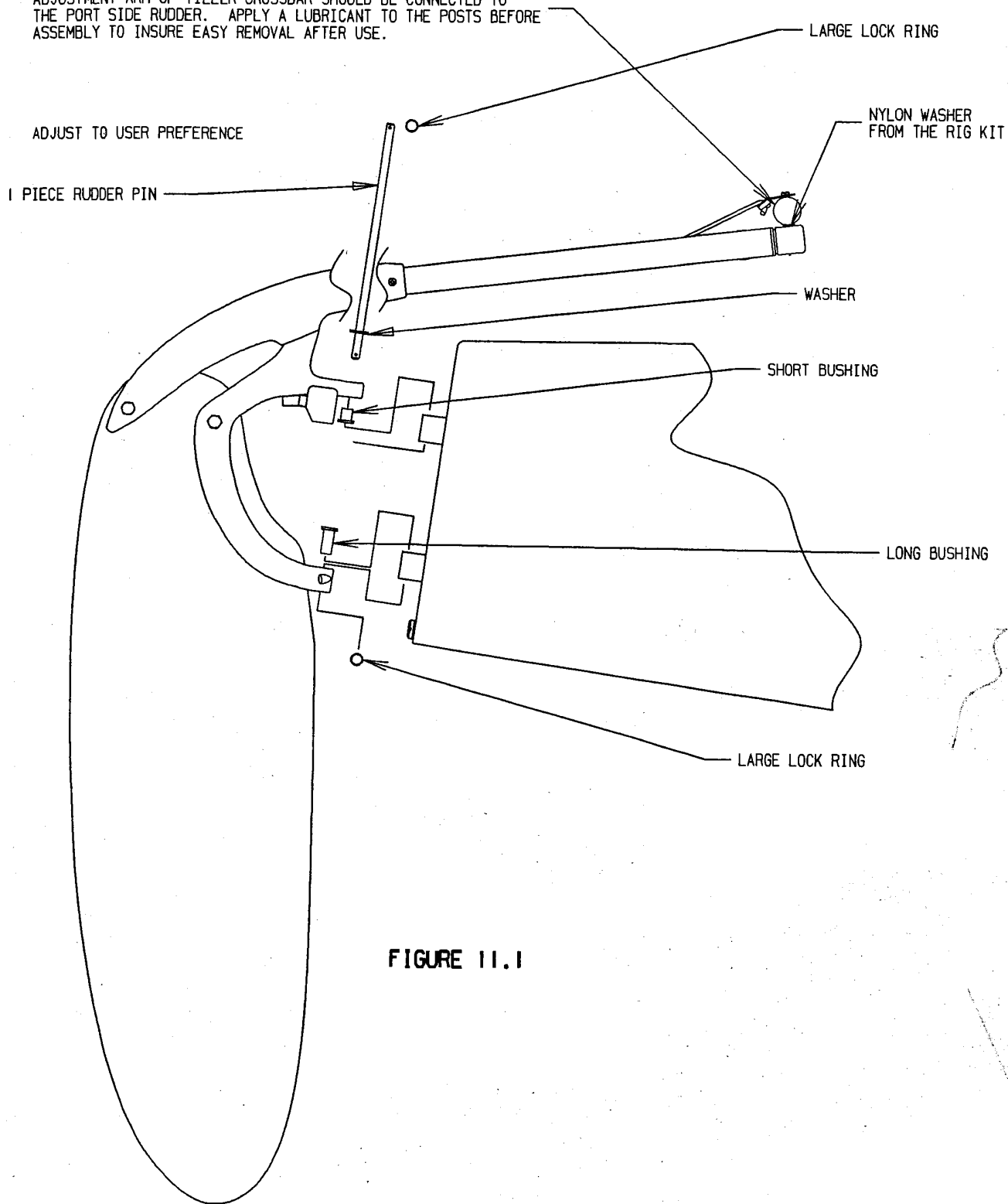


FIGURE 11.1

12. RIG THE TRAPEZE. (FIGURE 12.1)

13. ATTACH HIKING STRAPS TO AFT CROSSBAR PADEYES.

14. TIE ROPE HANDLES ON AND INSERT THE DAGGERBOARDS. (FIGURE 14.1)

ASSEMBLY IS COMPLETE. MAKE PORT AND STARBOARD THE SAME.

FIGURE 12.1

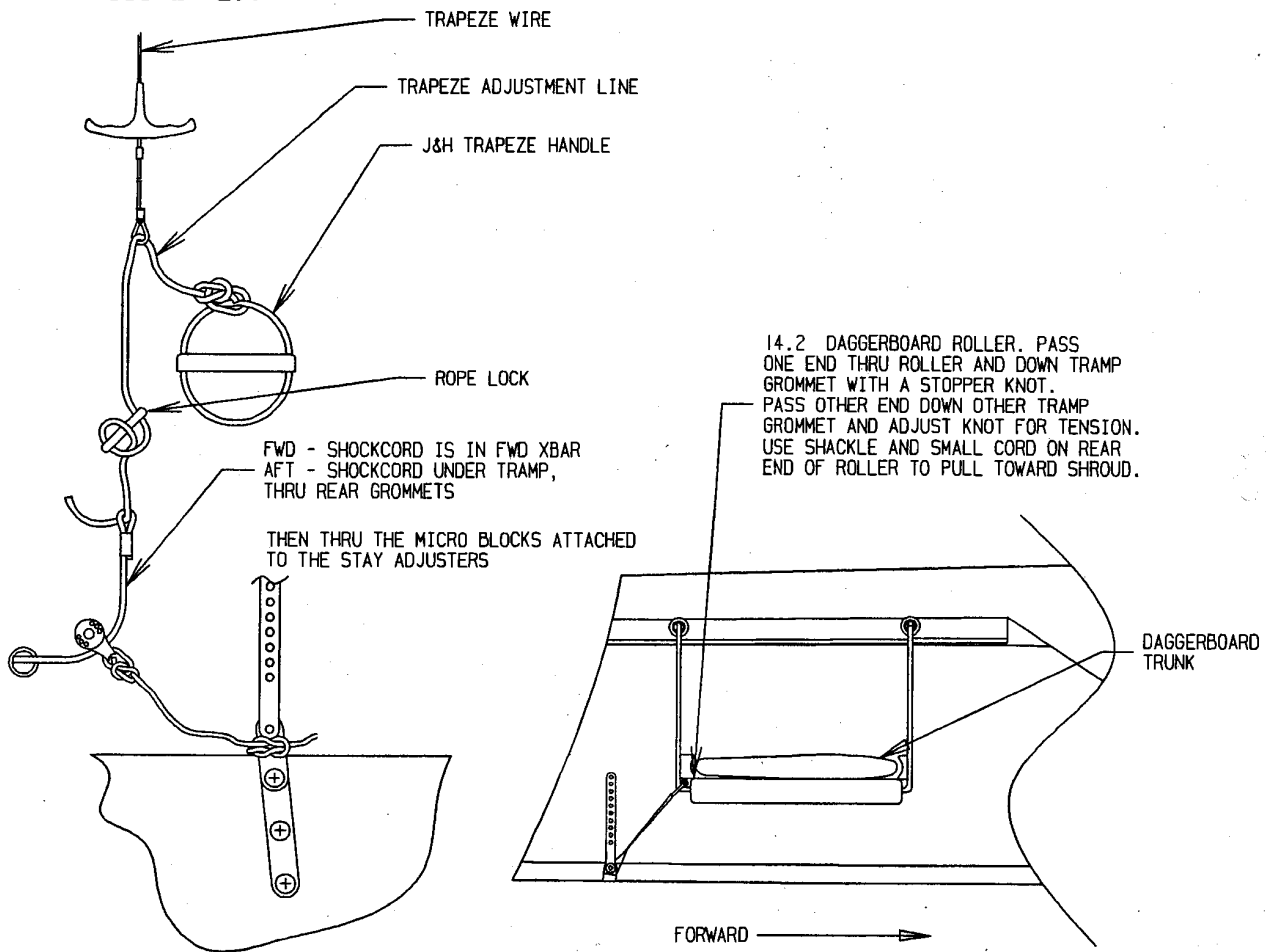
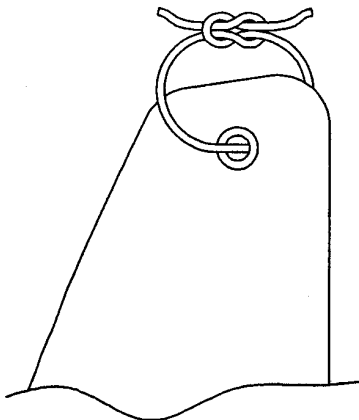


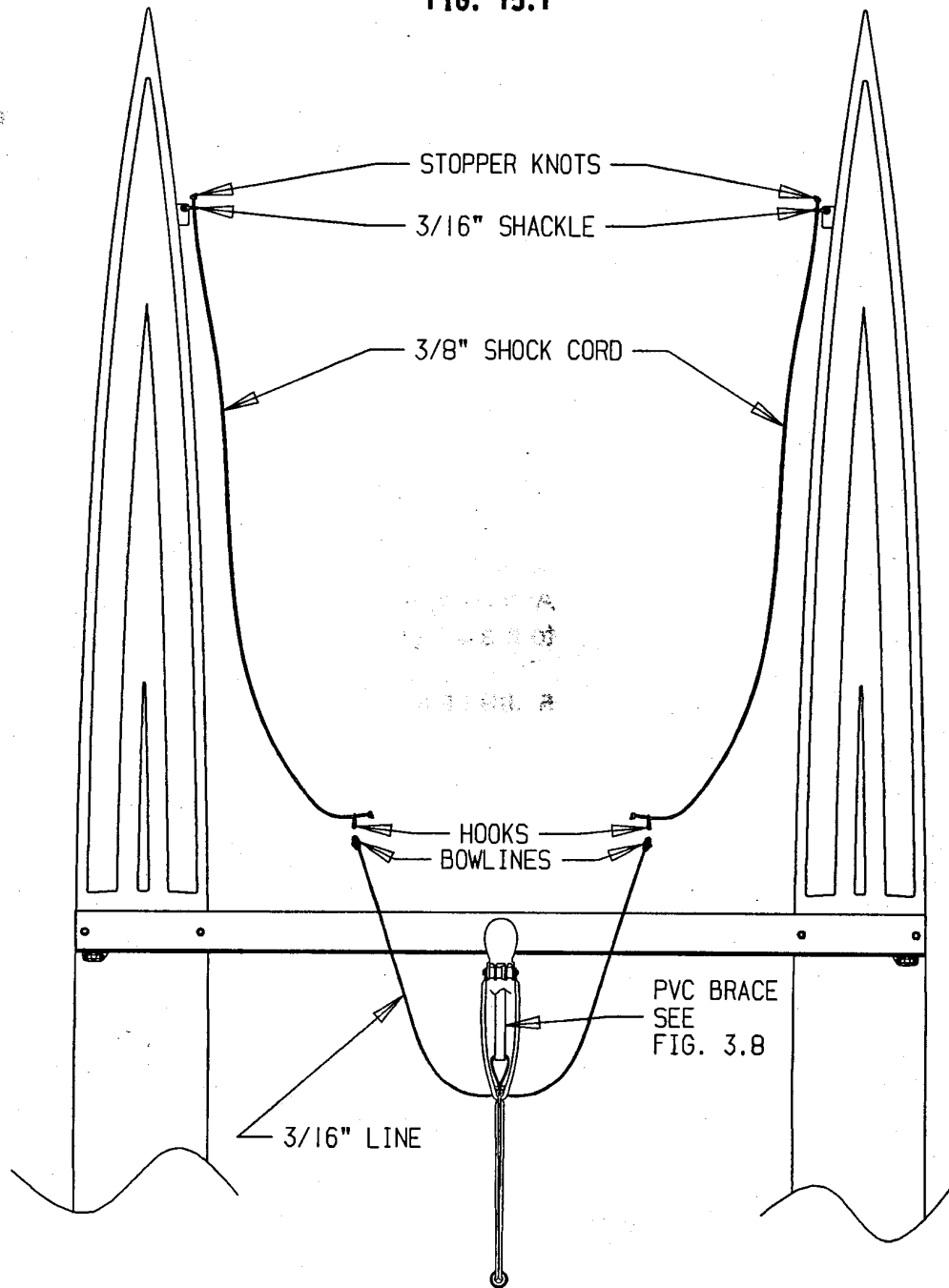
FIGURE 14.1



PORT INBOARD SIDE

H2O POSITIVE MAST ROTATION

FIG. 15.1



FASTEN THE 3/16" SHACKLES TO THE BOW TANGS WITH 3/8" SHOCK CORD. PASS THE 3/16" LINE THRU PVC TUBING AND CENTER. PUT BOTH ENDS OF LINE DOWN ROTATOR BAR AND TIE SMALL BOWLINE KNOTS. CONNECT THE HOOKS FROM BOW TANGS TO BOWLINES.

Hobie Cat 20 Tuning Guide

by Bob Curry

Spreader Sweep: 1" to 2 1/2"

Diamond Tension: 600 to 950 (max power to max de-power)

Mast Rake: 7" to 10" behind the rear beam. The variance in this measurement is for the actual combined crew weight, not for wind conditions. Some heavier crews may be at 5" and most light crews should be near 10". The only way to find out what really works for your team is to tune with another 20 with one boat making one adjustment per three minute speed test. Max rake for winds 25+.

Rig Tension: Tight enough to just allow the mast to rotate downwind.

Battens: Stuff in bottom (45-50% draft). Flexible in top four. Tension to remove wrinkles and tension a little more where the sail panels overlap the Comptip section.

Jib Leads: Set the fore-aft setting where the jib breaks evenly. Set the in-out adjustment at the hiking strap for light air to all the way out for heavy air.

Downhaul: considerations.

Up/down depending on crew weight, wind speed, height and boat speed.

Main traveler: Centered until the wind reaches 20+, then eased until boat is flat going upwind. It can be played but this is dictated again by crew weight. Downwind seems to be a personal thing and I prefer to bring it in 3" from the hull shear with the main twisted off. The boat seems to react better to the puffs this way.

Mast Rotation: Rotate to the shroud in light-medium air. Rotate to the outside of the rear beam but no more than the inside hull shear in heavy air. Rotating back too far will allow the sail to invert when max downhaul is applied.

Crew Weight reference: Light; 285-305. Medium; 305-330.

Heavy; 330+ Wind Strength reference: Light; 1-10. Medium; 10-20. Heavy; 20 + WILDTHING: Traveler down 18".

Barberhauler on half way. Tweak jib using sheet. Boards down halfway. Downhaul eased. Mast rotated parallel to front beam. Windward rudder up if you prefer. It's only as WILD as you make it!

This guide was made using the Medium crew weight parameter.

Sailing the Hobie 20 in Light/Moderate Winds

Definition: Light wind: 0-8mph. Moderate: 9-17mph.

1. MAST RAKE - Start out at 5" from the rear beam increasing to 7" for moderate.

2. DIAMOND TENSION - Begin with a Loos setting of 40 (360 lbs). For moderate wind set the diamonds at 45 (600 lbs). At the higher end of moderate, set the diamond tension at 47 (800 lbs).

3. DOWNHAUL - Once the boat begins to fly a hull, it's better to use the trapeze(s) before you begin to yank on this control. The initial setting is to have a few wrinkles on the bottom of the sail.

4. MAST ROTATION - Rotate to the shroud initially. At the higher end of moderate, rotate to the aft end of the centerboard trunk

5. JIB LEADS - Since all jibs are not alike, set the fore/aft for an even jib break Set the in/out to half way between the hiking strap and the inside hull shear.

6. MAIN TRAVELER - Keep it centered.

7. FINAL THOUGHTS - Just like in a breeze, keep this boat moving! Be very careful on not over sheeting the main and jib. If you have to over sheet, make sure it is the main.

Sailing the HOBIE 20 in a Breeze

First, let's define the word breeze. For the 20 it is 18mph+. Second, the crew weight I will use for the tuning is 325 lbs. This weight is a proven winner and from a lot of 20 drivers' comments really works best for all wind conditions. Now, let's toddle off to the really good stuff.

1. MAST RAKE - Start by marking off in 1" increments from behind the rear beam 5 through 10 inches. We will want to set the rake at 7" behind the rear beam for starters. This still allows the sail plan to generate lots of lift in the lulls. This is a great setting because it doesn't hurt in puffs near 25mph. If the sustained wind was in the mid 20 range, then we would want

to begin our mast rake at 10" behind the rear beam. If the sustained winds are upper 20's with gusts in the 30's, rake all the way back. Remember to set your rig tension to your racing setting before you check your mast rake.

2. DIAMOND TENSION AND SPREADER SWEEP - Wind the spreaders up to the max number on the Loos Gauge (48). this allows the mast to pre-bend about 3-4 inches. Your sweep should be 2 to 2 1/2 inches.

The mainsail has slot of luff curve already built into it, about 10" at the spreaders and 7" at the middle of the comtip. The only way to begin flattening the sail is to maximize the pre-bend.

3. DOWNHAUL - You will have already figured out that more is better here. Going beyond the black band is a common practice. Max downhaul is needed in the puffs and an ease of about 1" is needed in the lulls to keep the boat on it's feet.

4. MAST ROTATION - Rotate to the outside of the rear beam upwind.

5. JIB LEADS - Fore/Aft Setting: 2-3" behind your setting for an even jib break. - In/Out Setting: All the way out!

6. MAIN TRAVELER - Pretty basic here. Keep it centered until the boat gets too wild. Only ease it until the boat settles somewhat. The 20 would rather sail heated up than too settled.

7. FINAL THOUGHTS - Keep this thing moving! Let the boards take you upwind, not sawing the mainsheet and pinching. When sailing at the recent Trade Winds Regatta in Plantation Key, we couldn't help but be amazed on every upwind leg the differences between the pointers and the footers. The footers were GONE while everyone else pinched. Because of the way the boat was set up, we did not have to saw the mainsheet or the jib sheet. We basically cleated everything off and played the downhaul. Instead of being tired at the end of each race, we couldn't wait for the next one to begin. The boat tuning allowed us to stay in the game physically as well as mentally. This is a very challenging boat to sail.

Sailing the Hobie 20 Downwind in Light Air

1. MAIN TRAVELER - Techniques really vary at this point. I still prefer to have my settings at the hiking strap and the sail twisted off. However, I have seen boats with the traveler at the inboard hull sheer and the sail sheeted tight. Both seem to work successfully. I still feel the twisty look is a bit faster when the puffs hit.

2. DOWNHAUL - Slight wrinkles is the fast ticket. In very light conditions, add some downhaul to twist the leach.

3. OUTHAUL - Ease half way.

4. BARBERHAUL - When using the stock rings, pull them all the way out, and sheet the sail accordingly.

5. CREW POSITION - The skipper should be at the front beam and the crew should be just forward of the front beam. You must keep the transoms clear!

6. MAST ROTATION - Try for 110 degrees or as much as you can get.

7. JIB LUFF - A few wrinkles is the fast setting.

Doing the WILDTHING on the Hobie 20

A. How to fly a hull downwind!

1. CREW POSITION - The crew should be on the leeward side of the boat just behind the shroud. The skipper will be in the center of the trampoline between the shroud and the rear beam. Both positions will move back as the wind comes up and/or the waves are steep enough to allow the leeward bow to submerge. It is very important to keep the leeward bow from submerging!

2. BOARD PLACEMENT - Keep the leeward board all the way down. This helps the boat to heel in the puffs, allowing the skipper to bear off for speed. The trick is to fly a hull and use the energy (apparent wind) to bear away. If half-board or normal downwind board settings were used, the boat would slide sideways taking with it the precious hull-flying energy needed for maintaining the wildthing. The one thing the crew needs to do, before jibing, is to put the leeward board back to the normal downwind position. Once jibed, the new leeward board goes full down.

3. BARBERHAULER AND MAIN TRAVELER - Set the barber at your halfway point. The main traveler will be set no lower than the hiking strap and no higher than the 12" setting on the traveler setting tape supplied with the boat. The idea is to promote twist in both sails which equates to added power. A flat sail will not do the "wildthing" effectively.

4. DOWNHAUL AND OUTHAUL - Maximum ease on both controls.

5. STEERING - It is real easy to sail too low doing the "wildthing". The ideal way to stay hooked up is to try very hard on maintaining the weather hull just kissing the water. Every time the hull comes out of the water, you are effectively decreasing wetted surface by approximately 40%, and the normal speed increase is around 2-4mph depending on the wind strength. The angle will be higher some 3-5 degrees but the increase in speed more than offsets the distance lost.

6. FINAL THOUGHTS - This is a great technique to use when

you are behind and want to get back into the race! Here is an example: At the 1995 Mid-Winters East, on the last day of racing during the last race, while rounding "A" mark in first place, we hit the mark. Pulling out of the pack to do our penalty turn, we lost 10 boats! The winds were up around 12 with an occasional gust to 15. We initiated the "wildthing" and by the time all the boats converged at "C" mark, we were back into first place! As you can see, this technique is a very powerful tool to have in your bag of tricks.

Sailing the Hobie 20 in a Breeze - Downwind

-- The initial settings are the same as in the first section.

1. Barberhaulers:

- Make sure these are all the way out! When it is windy, the slot has to remain open. Don't over sheet the jib as this kills the slot and tries to submerge the leeward hull. The hull needs to stay out of waves in order to not crash into them, effectively acting as a brake!

2. Crew Position:

- It's very important that you try to remain a little forward and not on the back of the bus. The boat must stay in trim and not drag the transoms. The place to be is just behind the shrouds.

3. Mast Rotation:

- Again, it's real important to rotate as far as you can. The more rotation, the lower course you can steer.

4. Downhaul:

- Ease it up about 1". This will still allow the prebend in the mast to flatten the sail. Squeeze more on in the puffs and ease it in the lulls (same way upwind isn't it?).

5. Main Traveler:

- This is by far the most important adjustment downwind on this boat. Placing it correctly can gain you lots of boat lengths both in speed and height. My testing has revealed that the fastest setting is two car lengths down from the hiking strap. This allows the mainsheet to be twisted (power) and also keeps the slot way open. It allows the boat to sail a wider groove than if the traveler was further down and the mainsheet tighter. It is definitely faster in a straight line and if you work the apparent wind just right is lower on the course. To sum it up, this setting is lower and faster.

6. Final Thoughts

- It seems I say this every time at this point; keep this thing moving! ! Only in the big puffs and the apparent wind velocity headers do you want to really take it deep. Don't be too greedy when going low as the sails will stall out and it will take you about 5 boat lengths to get it going again. If you stall out 5 times on a downwind leg, that's 25 boat lengths closer the competition is going to be or passed you.

HOBIE 20 TUNING SHEET

MAST RAKE: _____ SPREADERS: _____ DIAMOND TENSION: _____

RIG TENSION: _____ DOWNHAUL: _____ JIB LEADS: _____ Fore/Aft: _____

MAIN TRAVELER: _____ MAST ROTATION: _____ JIB LUFF TENSION: _____

CREW WEIGHT: _____

REMARKS: _____