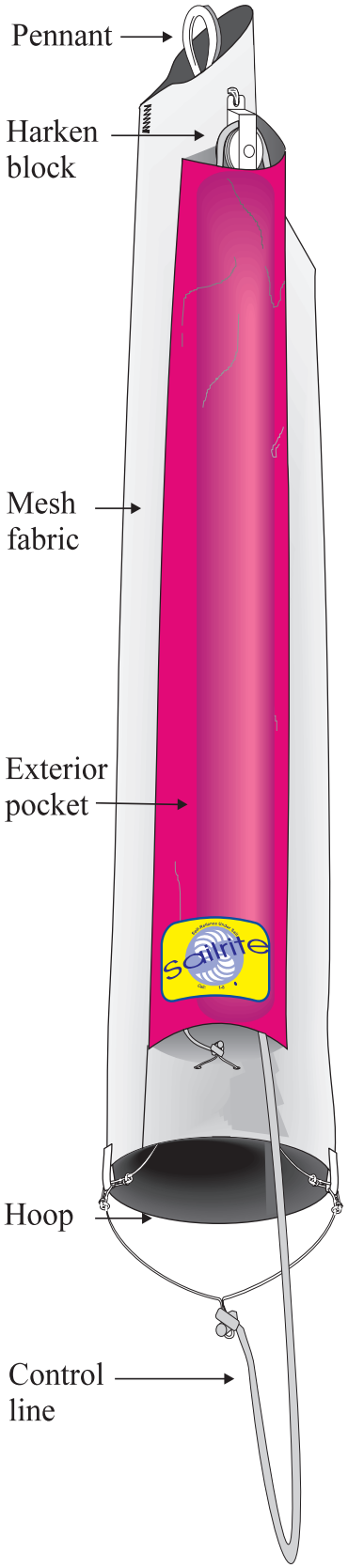
Self-Reliance Under Sail



Spinnaker Socks

Spinnaker socks have become a popular item. They tame spinnaker setting and dousing, making sailing much easier and more fun. They are widely used by both cruising and racing sailors.

Spinnaker socks are really very simple devices. A tapered sleeve or “sock” is constructed from polyester mesh. This fabric is perfect for the application because is strong, bunches tightly, is light weight, and breathes. A stainless steel ring or "hoop" is inserted at the bottom of the sock and a pennant with a block is secured to the top. A rope harness is attached to the hoop and a continuous line is secured to the harness. The continuous line is run through a pocket on the outside of the sock to the block at the top of the sock and then back through the sleeve where it exits and reattaches to the hoop harness. This line is used to raise or lower the sock.

In this design the hoop gives the sock its shape—holding the sock open when raising or lowering. The exterior pocket made from nylon contains the continuous line keeping it out of contact with the sail and the block at the top of the sock makes the line run smoothly.

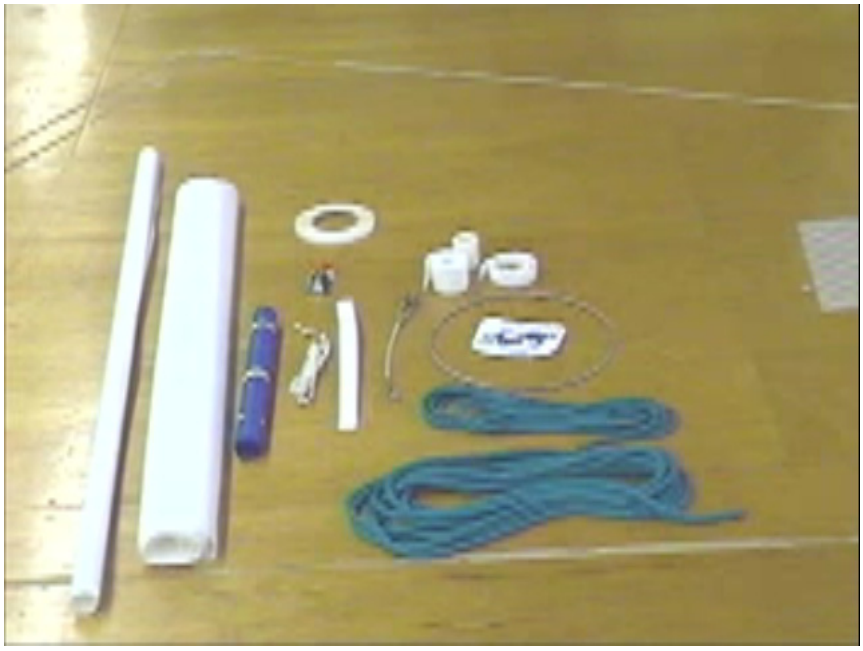
You now have a pretty good idea of how this spinnaker sock works. What follows details the construction of the sock. Read through the directions carefully before you begin construction.

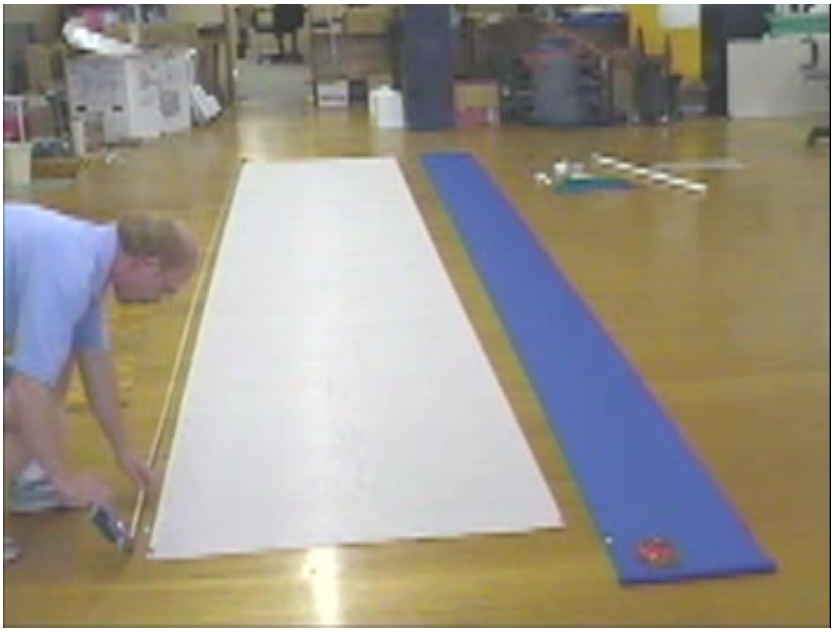
Construction Procedures

I. As we discussed above, polyester mesh is best for the body of the sock. The body should be as long as the leech measurement of a cruising spinnaker and 4 to 6 feet shorter than either stay of a general purpose poled spinnaker. Not running the lower hoop all the way down to the bottom lets the sail spread out at the foot and allows you to preset the pole. In all cases it is best if the sock is slightly shorter than the shortest stay edge of the spinnaker. This prevents the sock's lower hoop from getting caught on the foot or clews of the spinnaker.

A. Check your packing list to determine the length of the nylon and mesh fabric included. Cut the fabric down to the appropriate length for the sail with which it will be used. If that sail is a cruising spinnaker, then the fabric length should be the length of the leech stay minus 12-inches. This deduction allows for a cap that will be sewn to the top of the spinnaker sock. For a standard running spinnaker subtract between 5 to 7 feet from either stay length to get the appropriate fabric length. Again we are taking into account the cap piece that will be added to the top of the sock. Cut both the nylon and mesh to the same length using a hotknife or sharp scissors

B: The sock will narrow toward the top so a wedge must be cut

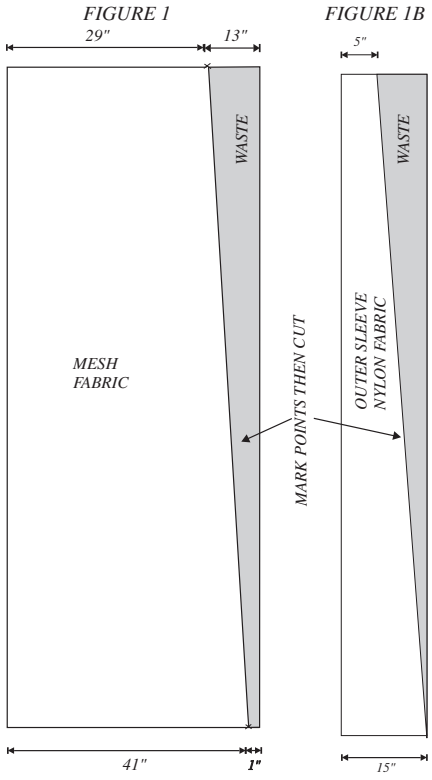


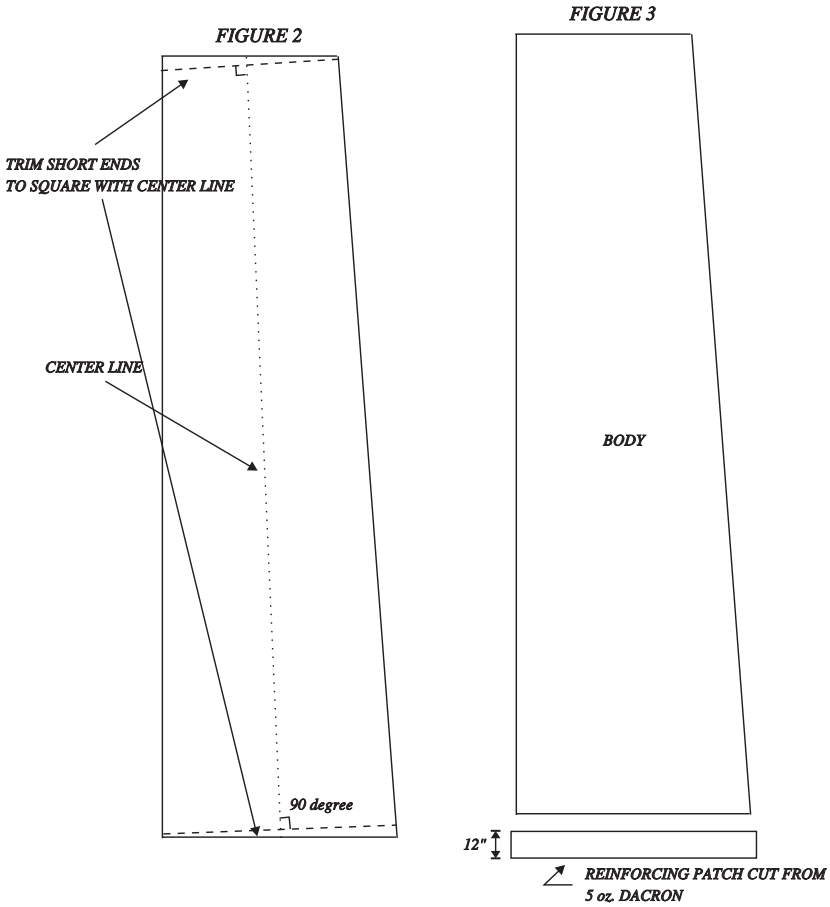


out of each blank of fabric. Along the width of the mesh fabric measure over 41-inches at one end and 29-inches at the other. Mark these points on the fabric and then connect them with a straight edge (Figure 1). You may want to use a string coated with chalk stretched from point to point to make a chalk line on the fabric. Or just use the string stretched from point to point and mark with pen or pencil using a yard stick. Cut along this line with a sharp pair of scissors. The narrow sliver removed is waste. (NOTE: If the mesh fabric supplied is wider than 41-inches, the waste pieces will be larger.) Next cut the outer pocket material made from nylon. Start at 15-inches in one corner and 5-inches at the other. Mark the points then connect them with a straight edge and cut (Figure 1B).

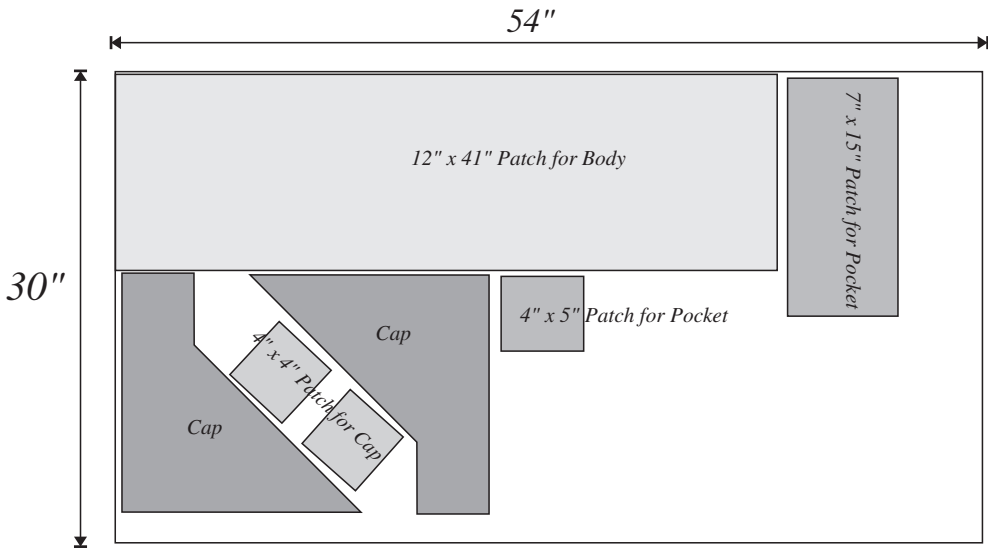
C: Both ends of the mesh body should be trimmed to square them with their center line (Figure 2).

D: Sew a reinforcing patch to the bottom end of the mesh body piece (the wide end). Use the 5 oz. Fleetboat Dacron© included with your kit. It is soft and durable. Cut a piece from the Fleetboat wide enough to cover the width of the end and about 12-inches tall (Figure 3). Use double sided adhesive basting tape (seamstick) to hold the patch in place and then sew this piece down to the body fabric. Use either a zigzag or straight stitch and simply sew around the perimeter of the patch piece about 1/4-inch





Fleetboat Dacron Pattern Cuts



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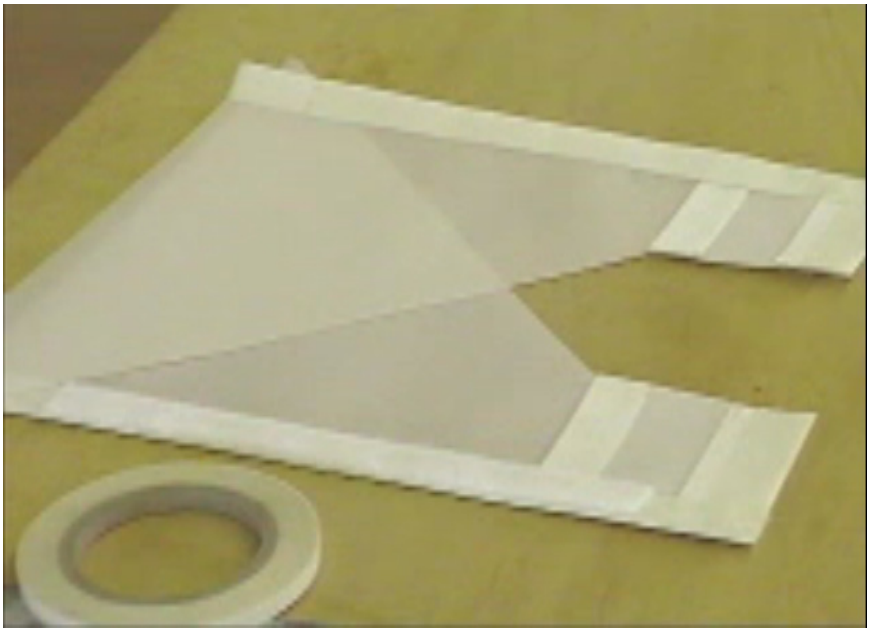


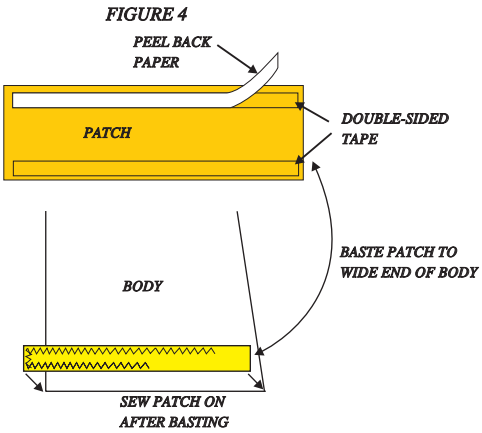
inside its edges (Figure 4). It is also a good idea to hotknife the 41-inch bottom edge of the mesh body. This keeps the fabric from unraveling.

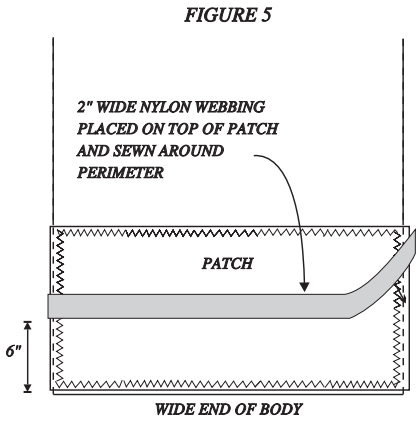
E: Six inches up from the bottom end sew 2-inch nylon webbing across the mesh body (Figure 5). The webbing should be sewn on top of the Fleetboat material. Again stitch type does not matter. Simply sew around the perimeter of the webbing. For now put the mesh body piece aside.

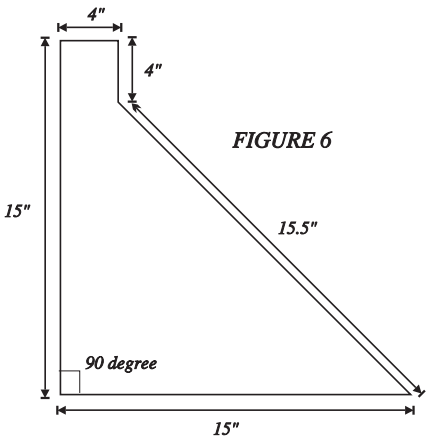
F: The cap piece should be sewn at this stage. It is made of two Fleetboat Dacron pieces. Both pieces are the same size. (See Figure 6 for the dimensions of these parts.) Cut these two cap pieces out with a pair of scissors. Refer to: "*Fleetboat Dacron Pattern Cuts*" p. 4.

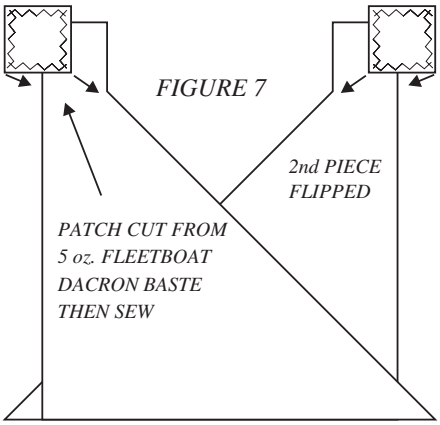
G: Reinforce the top section of each cap piece with 4-inch by 4-inch Fleetboat Dacron patches (refer to: "*Fleetboat Dacron Pattern Cuts*" p. 4 and Figure 7). Baste and sew them in place. Be sure to flip one cap piece as shown in Figure 7 prior to securing its patch.

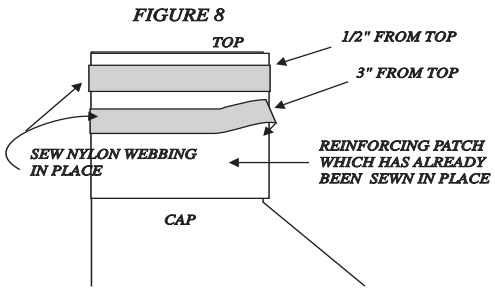
Two pieces of 1-inch nylon webbing should be sewn to each cap piece. The first piece should be placed 1/2-inch below the top of the cap and the second 3-inch below the top (see Figure 8). These measurements are taken at the upper edge of the webbing pieces. Sew the webbing in place stitching around its perimeter with either a straight or zigzag stitch. The webbing and reinforcing patches should be on the same side.











H: Your kit includes 2-inch Dacron sail tape to be used as an edge reinforcement. Fold the tape in half lengthwise and crease it well (Figure 9). Now cut two 4-inch and two 15-inch pieces. The 4-inch pieces should be sewn to the top edge of each cap. Open them up so that the fold down the center of the tape is right next to the top edge of the cap. Fold the tape over this edge and use the basting tape to hold it in place while sewing. Place your stitches along the inner edge of the tape (Figure 10).

Now turn your attention to the 15-inch straight edges of both cap pieces. These edges should also be reinforced. Sew the 2-inch Dacron sail tape to these edges using the same techniques as used for the top tape. Run the this tape over the end of the 4-inch tape (Figure 11).

I: 1-inch wide marine velcro strips 11-inches long should be sewn along the 15-inch straight edges of the cap pieces. Use the hook side of the webbing on one cap piece and the loop side on the other. The velcro strips should stop 2-inches short of both the top and bottom edges of both cap pieces. Sew the velcro on the webbing sides of the cap pieces using a straight stitch around the edges (Figure 12).

J: Now sew the two cap pieces together to form one piece. To do so lay the parts directly on top of one another with the webbing/velcro sides out. Using a straight stitch sew the pieces together along the 15.5-inch edge including the 4-inch

FIGURE 9

FIGURE 10

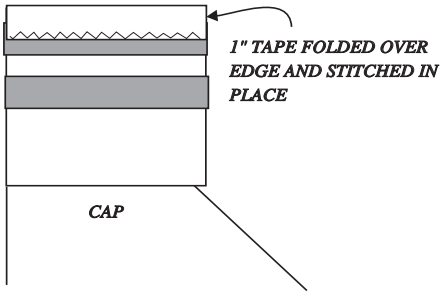


FIGURE 11

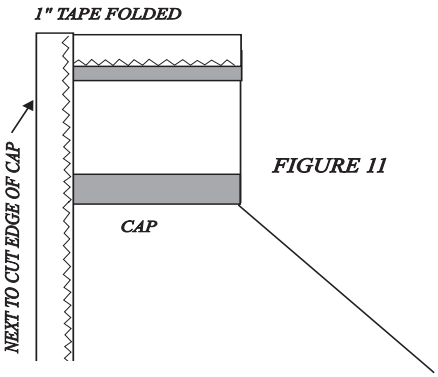


FIGURE 12

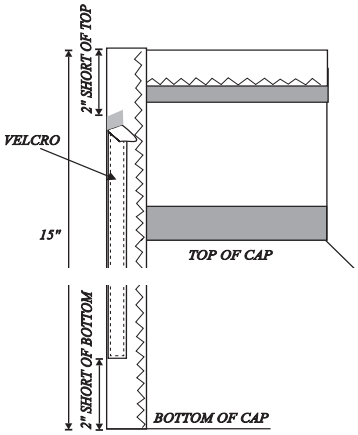
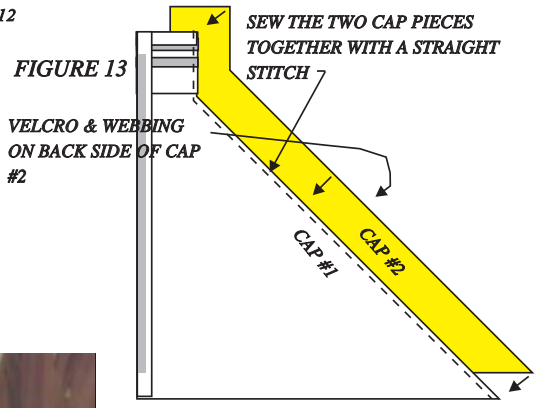


FIGURE 13



Side of cap with velcro/webbing should be facing up.

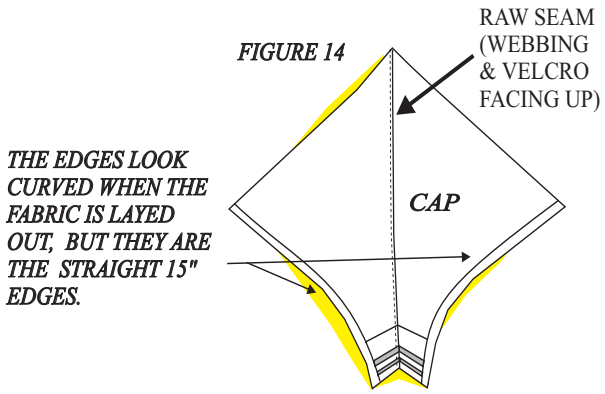
edge adjacent to it (Figure 13). The stitch should be about 3/8 inch inside the raw edges of the fabric. It will be helpful to baste prior to sewing.

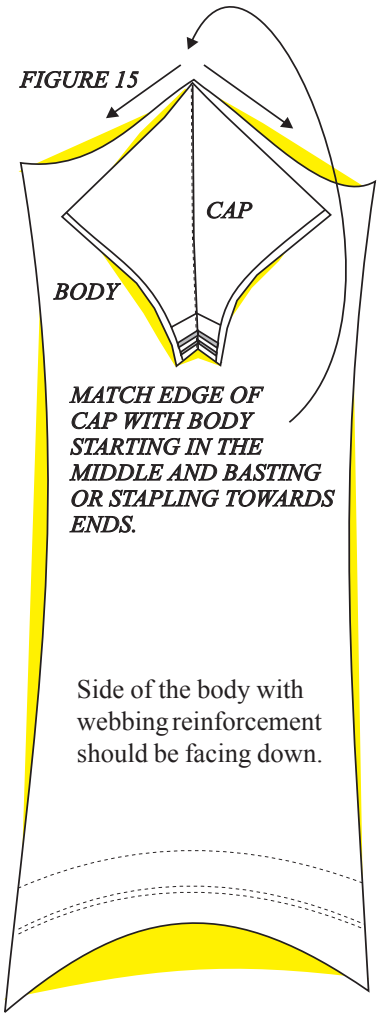
K: At this point we want to connect the cap piece to the body of the sock. Open the cap piece by grabbing the two 15-inch edges and pulling them apart (Figure 14). This will give you a lower edge of approximately 29-inches.

Lay the cap on top of the body piece so that the 29-inch edge of the cap is flush with the top edge of the body's 29-inch edge (Figure 15). The velcro/webbing on the cap side and the webbing/ reinforcement on the body side should be facing out (body towards floor, cap facing up). Baste the two pieces together. Work from the middle out. Now sew them together with a straight stitch 3/8-inch inside the edge making sure to reverse the machine at the beginning and end of the pass. Note that the cap will end beyond the sides of the body piece. Now flip the cap piece up and top stitch the seam allowance if desired.

L: Now turn to the nylon outer pocket that was cut in step B (Figure1B) and reinforce its ends with Fleetboat Dacron patches. Baste each patch in place, stitch 1/4-inch inside their perimeters and then add Dacron edge reinforcement to the ends of each patch as was done to the cap pieces in Step H. (Patch sizes are show in Figure 16 and on page 4).

At the top left hand corner of the nylon pocket use a hotknife to seal the top 14-inches of the





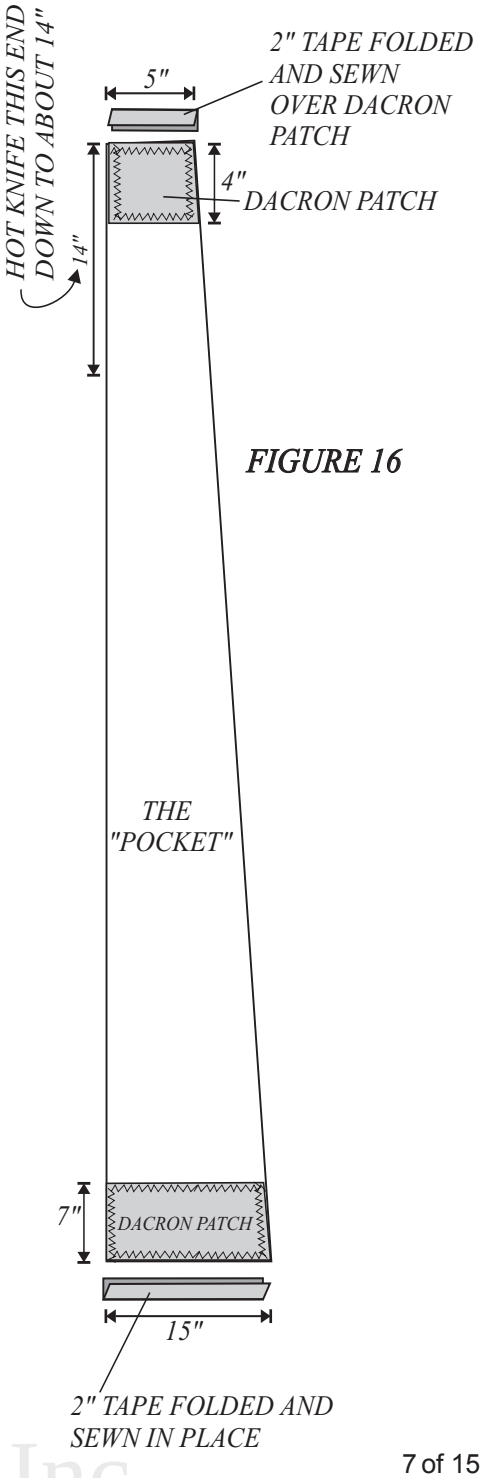


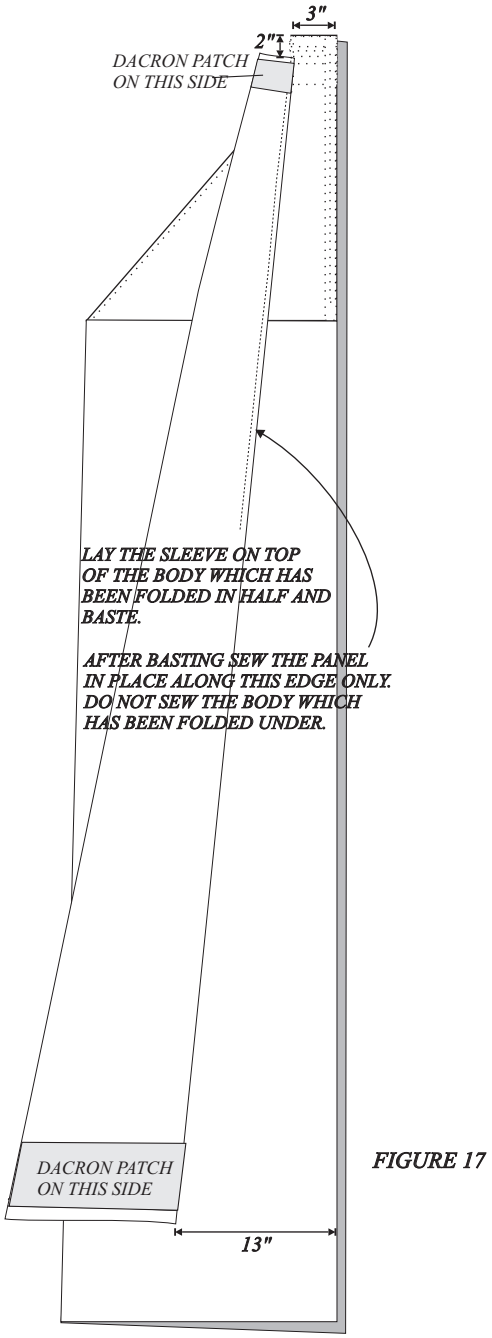
FIGURE 16

fabric. (Figure 16).

M: Attach the nylon pocket to the mesh body piece. Fold the body piece in half so that the reinforcing patches, webbing and velcro are inside (remember that the cap is now considered to be part of the body). The pocket is not quite as long as the body piece. It should be placed so that its top edge is 2-inches below the top of the body cap and 3-inches in from the long straight edge of the body piece. (Be sure that the Dacron patches on the pocket are facing up, the pocket will be folded under in the next step.) Position the bottom of the pocket 13-inches in from the body's long straight edge. Mark these two positions for accuracy and use a chalk line for straightness or mark with pen or pencil (Figure 17).

Baste the pocket in place along this line (the mesh material may not lie perfectly flat but the puckers will not be noticed when the sock is finished). Now unfold the mesh body piece and sew the pocket in place with a long straight stitch using a 3/8-inch seam allowance. Be sure to reverse the machine at the beginning and end to lock the stitches in place.

N: Now stitch the other side of the pocket to the mesh body. Fold the pocket material over to the long straight edge of the body so that the raw seam is hidden (Figure 18). Match the unsewn long edge of the pocket to the long straight edge of the body piece (Figure 18). Baste and sew these edges together (the mesh material may not lie perfectly flat but the puckers will not be no-



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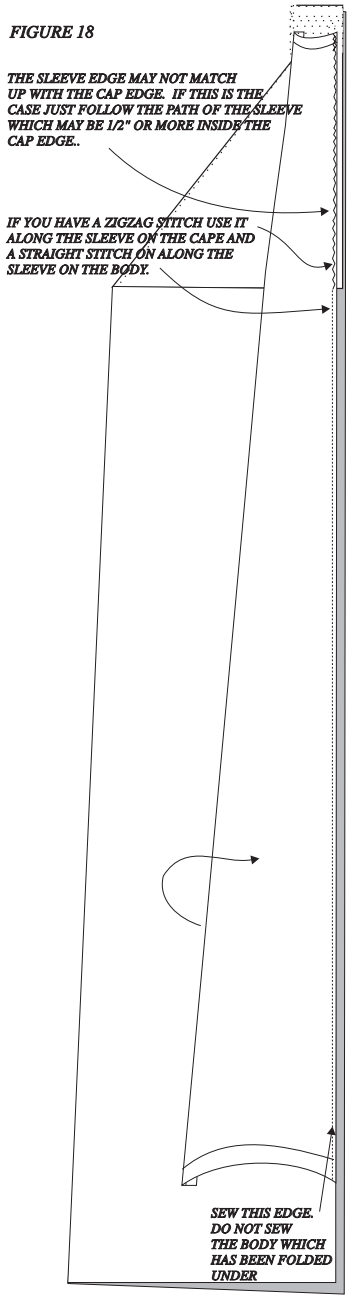


ticed when the sock is finished). Also stitch the top edge of the pocket. If the pocket and cap edges do not match up, do not worry. Just follow the path of the pocket which will lay approximately 1/2-inch inside the cap edge. Again, before sewing, unfold the body piece so that it is flat. Place a straight stitch 1/4-inch inside the edge. (You may want to use a zigzag stitch on the portion of the pocket which lies on the cap since it will be a raw seam.) Notice that the pocket will be loose, i.e., it will not lay flat on the body piece.

O: Now fold the body piece in half across its length inside out (reinforcing patches, webbing, & velcro will show). Make the long straight edges flush, baste and sew them together using a straight stitch with a 3/8-inch seam allowance (again any small puckers in the mesh will not be noticed when the sock is finished). Start sewing 2-inches up from the intersection of the cap and the body and sew all the way to the bottom (Figure 19). Note that the cap is a bit wider than the mesh body. Start sewing right on the edge and within an inch or two gradually widen the gap to the 3/8-inch seam allowance required (Figure 20). It is important to make this seam as strong as possible so reverse the machine several times at the beginning and end of the stitching process.

P: Next, install the stainless steel hoop at the bottom end of the sock. To do so, place the sock down flat and draw a line 2 1/2-inches up from the sock's

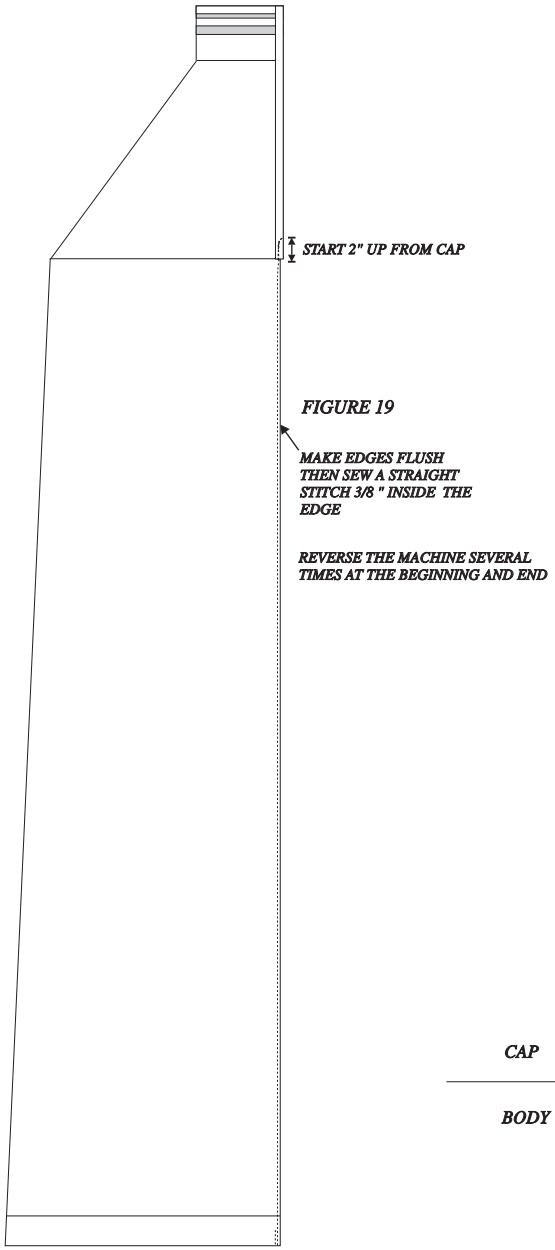


FIGURE 19

FIGURE 20

FIGURE 21

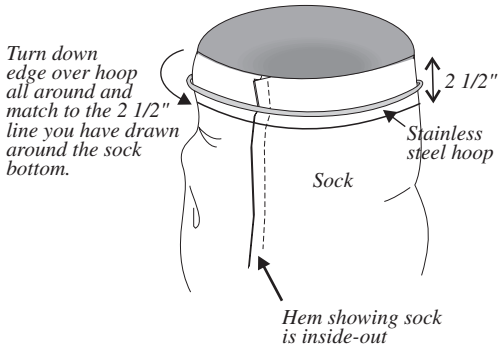
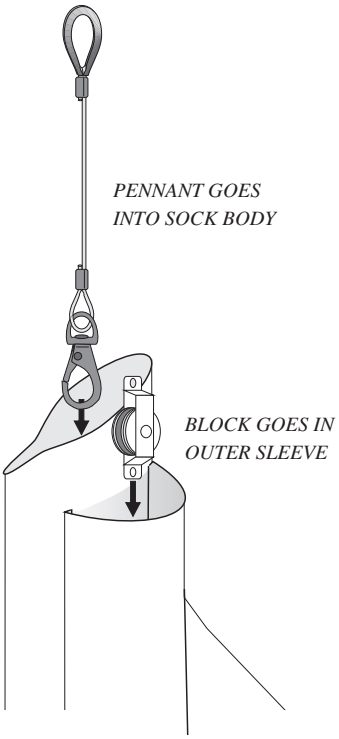


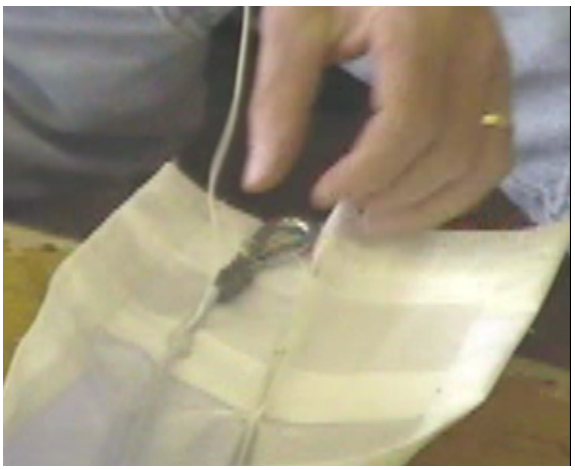
FIGURE 22



bottom (the sock is still wrong side out). Draw this line all the way around. Slide the hoop over the body piece and turn down the material to this 2 1/2-inch line. Sew this hem down over the hoop (Figure 21). Sewing will be easier if you work inside the circle with the hoop up vertically over the head of the machine. This way the hoop can be rolled as you sew, creating a straight, flat surface. Go slowly to avoid puckering the cloth and be careful to sew accurate straight stitches. The extra time spent will be rewarding.

Q: Turn the sock right side out. It is easiest if you pull the top through the bottom.

R: All that is left is to attach the hardware and the running lines. Let's start with the top of the sock. Your kit includes a wire pennant with a thimble at one end and a swivel at the other (Figure 22). The thimble end is the top. This assembly is put into the body of the sock at the top. It is then attached to a block placed in the outer sleeve (Figure 22). The two (block and pennant) are laced together with the body sock wall sandwiched in-between. Note the purpose of the webbing bands sewn in place earlier is to give some substance to the area the lacing line will penetrate when the pennant and block are whipped together. The two parts are whipped together at the two holes in the block's ends. Notice that the block does have a top and a bottom. The top is the end with the largest gap between the pulley and the outer



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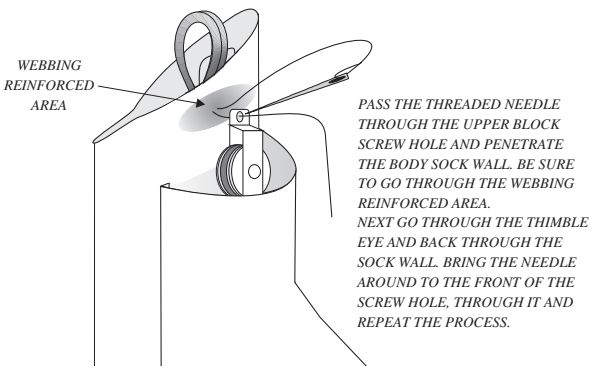

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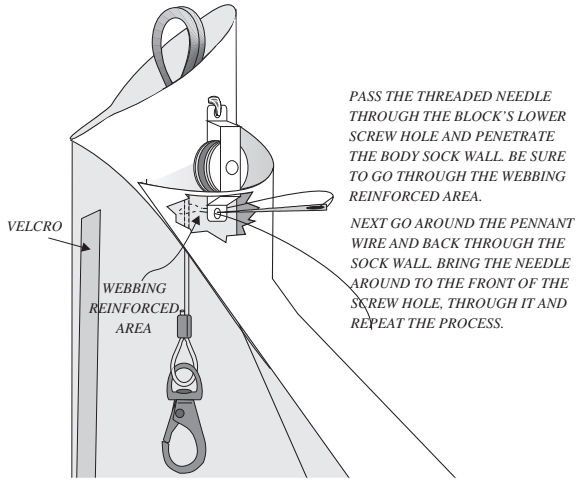


casing. Lace the parts together using a hand needle and a doubled five-ply waxed Dacron twine (Figure 23). Pass the threaded needle through the hole in the top of the block casing, through the webbing band sewn to the sock body wall, through the eye of the thimble and back to the block top hole (Figure 23). Tie a knot and then repeat the process at least twenty times. To tie the lacing off pass the threaded needle under earlier made loops of the thread. Do this several times.

Now lace the bottom of the block to the wire pennant. Simply go around the wire of the pennant body and through the bottom hole in the block . Again you'll be going through a webbing band which reinforces the material. Pull the loops as tight as possible and tie the assembly off as done above (Figure 24). It is helpful to open the velcro edge of the sock to get to the pennant wire.

S: With the pennant in place we can now sew the top of the cap shut just above the velcro opening. Sew down the length of the sock from the top a distance of about 1-inch. Use either a zigzag or straight stitch and sew over the area several times (Figure 25).

T: Lay the sock out so that the outer sleeve is up and centered on the body piece (Figure 26). In this position we can clearly define the right and the left sides of the lower hoop. At each of these two points sew a loop of 1-inch webbing that starts on the outside of the sock body and

FIGURE 25

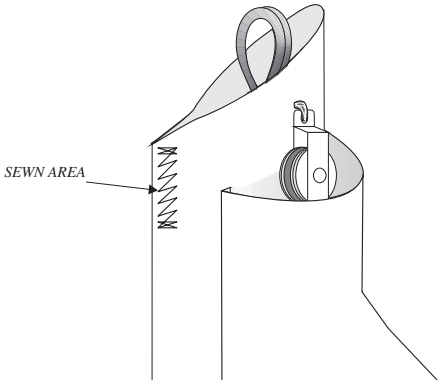
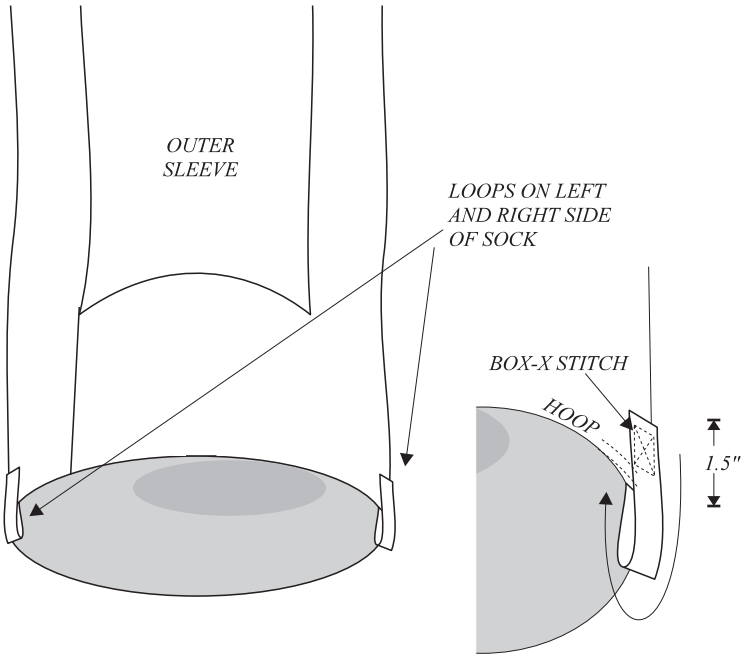


FIGURE 26



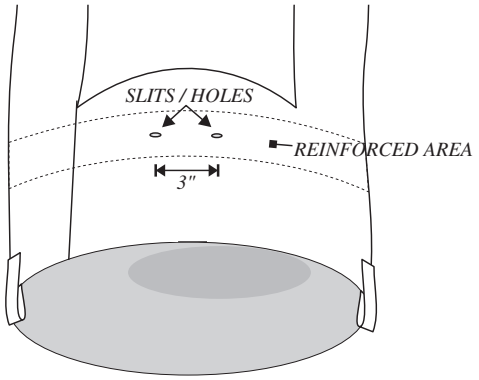
wraps around to the inside (Figure 26). The sock edge will be sandwiched in-between the webbing. Make each loop 4-inches long (unfolded) and sew them in place starting 1 1/2-inch above the sock's mouth. Be sure to trap the hoop below the bottom of the sock and the sewn area. Use a Box-X-Stitch to sew the webbing down as shown in Figure 26.

U: Use a hotknife or a soldering gun to melt two small holes or slits through the sock's body wall just below the opening of the outer sleeve. These holes need to be large enough for passage of the 5/32-inch braided line included in your kit. Melt the holes through the webbing band which acts as a reinforcement. The holes should be about 3-inches apart centered in the webbing (Figure 27).

V: Now prepare the lower uphaul harness. This two legged harness will be constructed of 5/32-inch braided line. Pass the two free legs of a 33-inch length of line through the two holes made in the body wall previously. Tie the line from the left side hole to the webbing loop sewn to the left side of the hoop. Tie the right side line end to the right side hoop loop (Figure 28). Use a bowline knot and leave the line relatively slack. That is, don't tie it so tightly that the hoop is drawn up to the holes in the body wall.

Next use a 36-inch length of 5/32-inch line to create another harness for the downhaul line on the mouth of the sock. Tie one end of the line to one mouth

FIGURE 27



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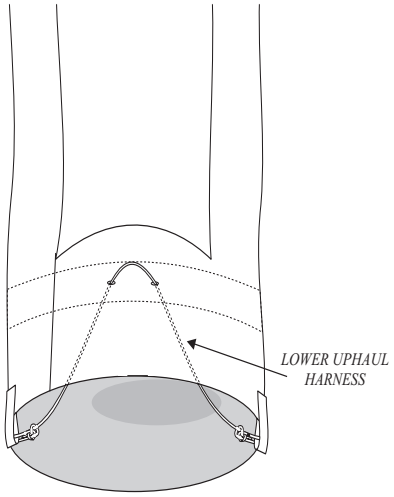

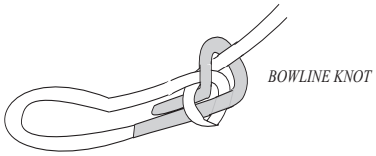

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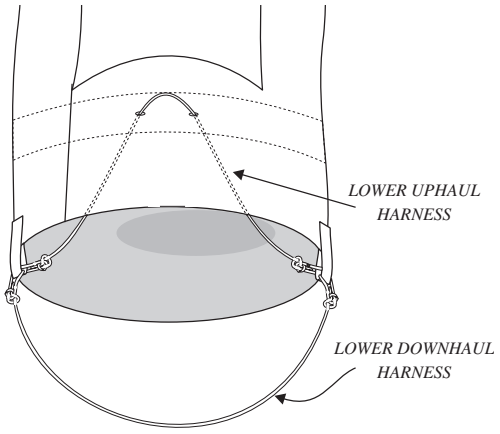


webbing loop and the other end to the opposite mouth loop (Figure 29).

W: All that is left is to attach the uphaul and downhaul lines. The uphaul line is 1/4-inch braided Dacron. Make it the same overall length of the sock. Now attach this line to the loop of 5/32-inch line that goes between the two melted holes below the opening of the outer sleeve. Use a sheet bend to secure the two lines together. This bend holds well when lines with different diameters are used. To form the bend create a loop with the 5/32-inch line. This is not a twisted loop. Just pinch the line together to create a loop with an opening large enough for your thumb (Figure 30). **Pass the end of the 1/4-inch line over the top of the pinched area of the 5/32-inch line (don't go through the hole).** Wrap this line around the back of the pinched area, over top itself and then through the thumb sized loop hole in the 5/32-inch line (Figure 31). Pull tight and the bend is complete. Use a hotknife to cut off the tail of the bend leaving about 1/2-inch.

Snake the free end of the line up through the outer sleeve and then through the block. Once through the block, connect the 3/8-inch line to the 1/4-inch line. This connection should be made by using your prewaxed twine which is doubled and a hand needle. Penetrate the ropes in the center about 1/2-inch from each end, repeat this process 6 or more times in each rope (leave a tail which can be tucked

FIGURE 30

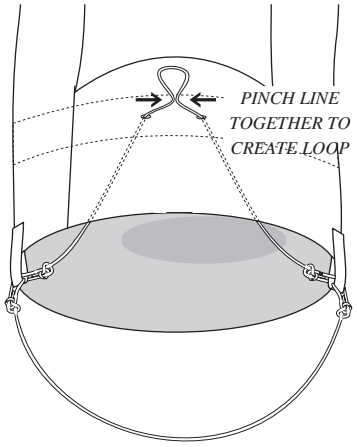
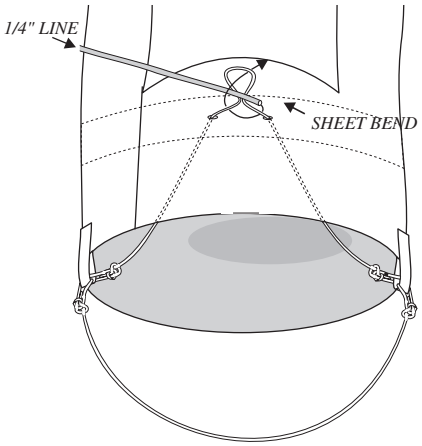


FIGURE 31



under several layers of twine). Then wrap the penetrated area with the doubled, prewaxed twine several times until it is completely covered. Penetrate the rope when the wrapping is completed to secure it. (Figure 32).

Snake the 3/8-inch line down through the outer sleeve and out the bottom. The length of this line is not too important as long as it is at least as long as the sock plus about 10-feet. Attach the free end of this downhaul line to the harness that comes off of the mouth of the sock (Figure 32). Use a sheet bend to secure the two. Tie the bend at the center of the harness line.

X: Place the Sailrite Kits Logo on the lower end of the sleeve see Figure 32a. You now have a completed spinnaker sock. The last thing to do is to get ready to go sailing. Pull the spinnaker from its head corner into the sock and secure the head of the sail to the swivel snap of the pennant (Figure 33). Finally the halyard is attached to the pennant thimble and the whole assembly is raised to the masthead with the sail inside the sock. Cleat the lines off and you're ready to go!

Y: If you build the sock as detailed above you will work the sock from the foredeck. Depending upon the weather conditions, your weight and your ability to pull downward controlling the sock from the foredeck may prove to be difficult.

If you prefer it is possible to lead the control lines aft to the

FIGURE 32

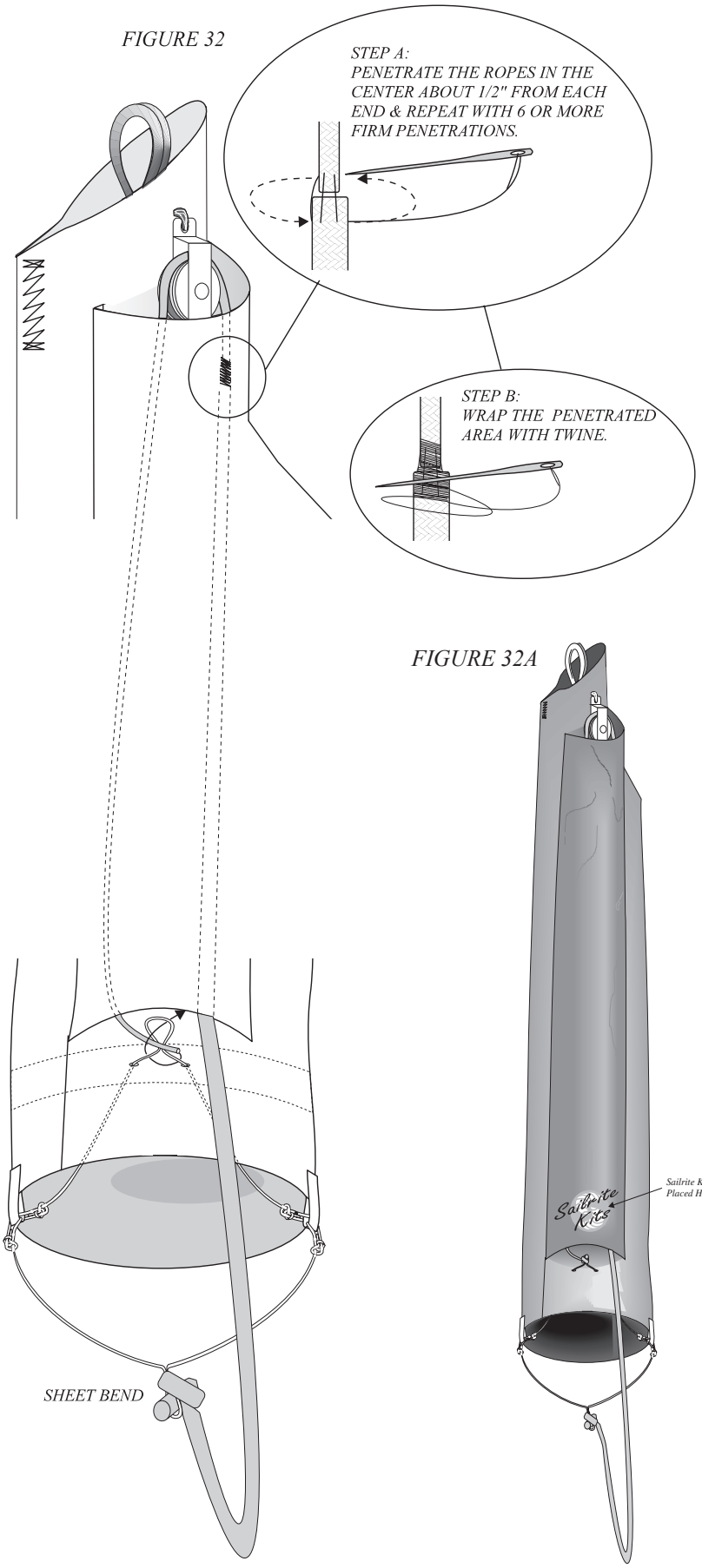


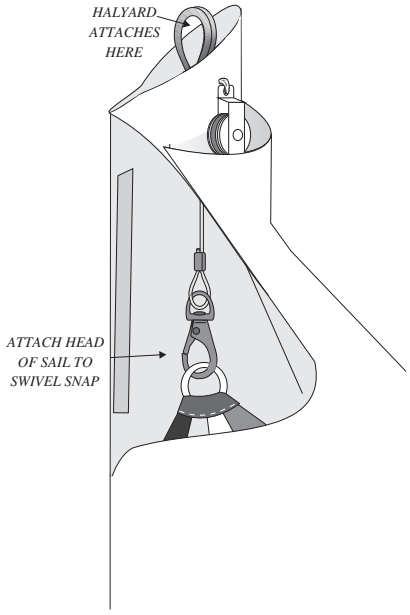
FIGURE 32A

cockpit. To do so you will need a fiddle block, a longer uphaul line, a new downhaul line, some fairleads and two cleats to secure the lines at the cockpit.

Attach the fiddle block to the bow pulpit and use the fairleads to run the lines aft. Attach the new downhaul line to the bottom (downhaul) harness and lead it through the bottom sheave of the fiddle block and aft. Use a sheet bend to attach a new longer uphaul line to the 1/4-inch line that comes off the block at the top pennant. The line will come down through the outer sleeve as before but, now, go through the upper sheave of the fiddle block and then aft.

Once again you're ready to set the sail and should have more control for two reasons. The uphaul/downhaul pull on the sock is now closer to directly below the mouth of the sock. And more purchase is possible from the cockpit.

FIGURE 33



Sailrite

Self-Reliance Under Sail

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