

## Using a Home Machine for Sail & Canvas Work

There are three ways to improve your current machine's performance: increase its power, improve stitch quality and consistency, and finally, make it more usable.

### INCREASING POWER

**STOP BALANCE WHEEL SLIPPAGE:** Increasing power does not necessarily require a new motor. Much of the penetration capability of a sewing machine is tied to the inertia that is created by the rotation of the balance wheel. That inertia is wasted if there is any slippage of the wheel on its shaft. To prevent slippage, remove the single screw in the rim of the clutch knob that is in the center of the balance wheel. This screw is intended to prevent the clutch knob from coming off when it is loose (while winding bobbins). Unfortunately, the screw can also limit the extent to which the knob can be tightened. If the knob can be tightened after removing the screw, the three pronged washer under the knob should be rotated 180° (remove the knob, pull the washer off, rotate 180° and put everything together again -- note that the two inward facing prongs should be bent away from the machine toward the base of the clutch knob).

**INCREASE BALANCE WHEEL INERTIA:** Just tightening the clutch knob may provide all the extra power needed, but if more is required try increasing the weight of the balance wheel by wrapping it with the adhesive backed lead wheel weight material (designed for use with magnesium wheels) that is available at most automotive supply stores. The more layers added, the heavier the wheel will become and the greater the inertia it will afford needle penetration.

### IMPROVING STITCH QUALITY AND CONSISTENCY

Bettering stitch quality and consistency usually means increasing upper thread tension and improving the ability of the machine to feed fabric accurately (cutting down on the need for user assistance in the feeding process).

**INCREASING UPPER TENSION:** Let's consider thread tension first. When sewing thick and tough fabric a good deal of upper thread tension is necessary in order to pull the knot up tight against the bottom of the seam and into the cloth. Moving to a larger needle is one way to improve this matter since that needle creates a larger hole into which the knot can be pulled. But this should not be carried to an extreme since larger needles require more penetration power and also since larger holes in canvas can lead to seam leakage. So it is a good idea to increase upper tension if possible.

Many home machines have a limiter in the upper tension knob that prevents more than a single turn of adjustment. If this is so, figure out how to overcome it. In some machines, the knob can simply be pulled off leaving a small nut that does not have the limiter. Indeed, there may be a small tab in the knob that can be removed with side cutter pliers -- when the knob is pushed back in place it will turn without limit. This increased range may give all the tension needed. If not, disassemble the upper tension and place washers under the "beehive" spring to compress it more so that it exerts more friction on the thread running between the tension disks. Of course, it is also possible to replace the beehive spring with a larger one if a local hardware store can be found with a good selection of springs.

**IMPROVING FEEDING ACCURACY:** When sewing large sections of heavy fabric it is sometimes difficult to keep the spacing of the needle penetrations equal. In zigzag the stitches can look like an accordion. This is not functionally significant but it does look less than professional. There are a couple of ways to improve the ability of any machine to feed fabric accurately.

**INCREASE PRESSURE DOWN ON THE FABRIC:** The "presser foot" on the machine is a sled that holds the fabric down. The actual feeding is done by a dog on the bottom of the fabric. The first way to improve feeding consistency is to push down harder on the dog. There is often an adjustment at the top of the machine to increase spring pressure downward on the presser foot. If this is at the maximum it can often be increased by taking the mechanism apart and either replacing the spring with a heavier one or inserting a sleeve of copper tubing to act as a spacer to compress the current spring harder. Note that too much spring pressure will keep the feed dog from rising above the throat plate and thus not improve matters at all so don't get carried away with the pressure you use.

**RAISE THE HEIGHT OF THE DOG:** Normally the feed dog should rise above the throat plate about 3/32-inch or so. If it is low, feeding will be impaired and, in some cases (with soft or spongy fabrics), feeding can be improved by raising the dog above this normal height. It is a simple matter to raise the dog. Its up and down movement is driven by the front most shaft under the machine. There will be a clamp on this shaft with a lever that does the actual movement. Loosen the screw that locks the clamp on its shaft and twist the lever so it raises the dog higher. Turn the machine over by hand to make sure that the dog is not so high that it hits the underside of the throat plate.

## MAKING THE MACHINE MORE USABLE (SEWING "SMART")

There are some usability tips that make sewing sails and covers much easier.

**SEW ON THE FLOOR IF POSSIBLE:** If you can put your machine on the floor this gives the effect of a huge table. It is not easy on the knees, but it will make the work go faster and easier. We like to keep our left knee on the floor. The right knee is against the chest and the right foot can be used to control the speed of the machine. Thus, two hands are available to control the cloth and help it through the machine.

**SEW PARALLEL SEAMS:** Avoid sewing "around" things like windows or batten pockets or patches or numbers and insignia (which, by the way, are not generally sewn at all any more -- adhesives have improved to the point where it is not necessary to sew them in place). Whenever there is sewing to be done plan to do it in parallel passes. Roll the sail up on the closest edge and sew along the roll. Then roll some more and sew the next parallel edge. Begin and end each stitch with reverse stitches so they do not ravel. This helps even with very short seams like those found at the diamonds in reef points.

**USE THE "STAGER SEW" TECHNIQUE:** When it is necessary to stuff a lot of cloth through the arm of the machine, do it separately from sewing. That is, stuff the sail in three or four inches then sew that three or four inches. Stop sewing and stuff another few inches then sew again. Cloth is, after all, flexible -- take advantage of it!

These are some simple things that can be done to make sewing sails and canvas easier.



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