

MAINTENANCE AND TIPS FOR THE COBRA CLASS 3, 4, & KING COBRA, PRO 2000, ARTISAN TORO 3000, 3200, 4000, COWBOY 3500, 4500, TECHSEW 5100, SEW PRO 441, KINGMAX, MASTER LOCK, JUKI 441 AND OTHER 441 STYLE MACHINES

Thread

- 1) Make sure that the thread you are using is not dry, old, or damaged by the elements. Keep thread in a plastic bag to help protect it. Make sure that the thread does not untwist, if so, then the bonding agents have evaporated or weren't very good to begin with.

Threading

- 2) Make sure that your machine is threaded correctly. Breaking thread, skipping, fraying the thread, and tension problems will occur if your machine is threaded incorrectly.

Take up lever

- 3) The take up lever has 2 functions: to give the thread enough slack so the hook can carry the thread around the bobbin case, and, after the hook releases the thread, allows the thread to pull up into the leather.

Check spring

- 4) The check spring maintains tension on the thread as the take up lever returns to the top position.

Needles

- 5) The needle must be installed correctly. Make sure that the long groove is on the left, and the scarf is on the right.
Needles are tempered, so after usage, they lose their temper and become weak. A weak needle will bend or break easier after losing its temper. When the needle breaks, it could cause damage to the presser foot, needle plate, feed dog, or shuttle hook, so make sure that you change your needle every 12 hours of actual sewing.
Also, make sure that you use the correct size needle for the thread and thickness of leather that you are using. If you are using too big of a needle, then at times, the thread will travel up and down inside the hole that the needle punched resembling a tension

problem. It is all relative. The heavier the leather, the heavier the needle and thread. The lighter the leather, the lighter the needle and thread.

Tensions

- 6) The thickness of the leather that you are sewing will dictate the amount of tension that you will need. You should loosen the tensions for lighter leather.

Your tensions work in conjunction with each other, so you should loosen or tighten both tensions when adjusting them. You should never loosen or tighten more than 1 full turn at a time.

If you run into a problem with your tension and you are not sure which way to turn or you just can't seem to get your tension back where they were, then it is time to re-calibrate them. This is a simple task.

To re-calibrate your tensions, remove both knurled tension nuts completely, then put them both back on the machine until they just come in contact with the tension spring and stop. Sew a test piece. You will probably find that the stitch is loose, but this is what we want. You are now able to adjust your tension by tightening them both 1 turn at a time until the stitch pulls up.

You may also experience bobbin tension problems. If you have tightened the bobbin tension as far as you can, and still there is not enough tension (the bobbin thread is visible on top of the leather), you may have to clean out under the bobbin case spring. After hundreds of yards of thread pass under the bobbin case spring, microscopic fibers of thread, along with leather dust and other debris, start to collect under the bobbin case spring causing the spring to spread and give false tension.

If this is the case, then you will have to remove the spring, clean out the debris, and may have to bend the spring to put more pressure on the thread which will give you more tension and allow you to be able to adjust your bobbin tension as well. You may have to purchase a new bobbin case spring if re-shaping your existing spring does not work.

Shuttle Hook

- 7) It is very important that your shuttle hook is in excellent condition. If your hook has burrs, or scratches, then you must buff them off to make your hook smooth again so the thread will pass over the hook with ease. If your thread is fraying, then a burr is most likely the problem. The thread will pass over the burr and then get caught, causing a couple of the strands to break. You should run your finger nail over the top, sides, under, and at the point of the hook when feeling for burrs.

The shuttle hook travels in the race assembly. You should clean out the race assembly frequently. The race assembly must be clean, smooth, and oiled to assure the best sewing results.

Needle Deflector

- 8) The needle deflector is located in the shuttle hook area. It actually deflects the needle to protect the point of the hook. The needle will brush against the deflector moving the needle slightly to the left of the point of the hook. It also keeps the needle straight, assuring that the loop made by the thread is consistent.

Presser Feet Timing

- 9) Both Presser Feet should rise to the same height as they alternate walking. The procedure to assure that your presser feet are walking correctly is to turn the hand wheel towards you until the point of the needle is even with the plate or feed dog. At this time both presser feet should be down. The needle, and both presser feet should meet at the plate or feed dog at the same time. If this is not the case, then loosen the adjusting screw and make the adjustment. The adjusting screw is located on the far right side on the back of the machine. It is an Allen Head screw.

Presser Feet Height

- 10) The presser feet height is determined by what you are sewing. For the most part, the height is set at medium to high. This will allow most applications to feed (whether thick or thin) without getting caught on the feet and impeding the motion of the feed system. If you are manufacturing one item, like belts, where the thickness is constant, then you would set the height to accommodate the belts thickness. This adjustment is in the back of the machine, and is sometimes referred to as the "banana slide" adjustment.

Hook Timing

- 11) To set the timing for the hook, first remove the needle plate and in some cases, the feed dog. This will allow you maximum vision. Set the stitch length to zero. Put a new needle in the machine. Raise the presser feet to the up position. Turn the hand wheel towards you until the needle is in the lowest position. Continue to turn the hand wheel until the needle comes up $\frac{3}{16}$ ", this measurement is critical. At this time, the point of the hook should be even with the needle and approximately $\frac{1}{8}$ " above the eye of the needle, and in the scarf of the needle as well.

To adjust the shuttle hook, remove the round cover plate on the front of the machine located in the lower right hand side. After removing the cover plate, look inside the

machine and you will find the black Allen Head bolt that holds the hook driving shaft. You may have to turn the hand wheel to get a better view of this bolt.

Loosen the bolt and you will be able to physically turn the shuttle hook while it is in the machine. Turn the shuttle hook to the correct setting, 1/8" above the eye and then tighten the bolt.

This may take more than one try.

Tip: A quick way to check if your machine is out of time is to lower the needle. Just above the screw that holds the needle in place, is a hole that you can look into and see the top of the needle. Loosen the screw, then drop the needle until it covers half of the hole and try sewing. If the machine sews properly, then you will have to advance the shuttle hook about 1/32". If it still does not work, the lower the needle again, until the top of the needle is even with the bottom of the hole, and then try again. If this corrects the problem then you will have to advance the shuttle hook about 1/16".

If your machine still does not sew properly, then retime your machine based on the instructions above.

These adjustments may vary depending on the machine. These instructions offered in this tutorial may not be absolute, because there are other factors that could come into play, but are a good starting point.

Thank you, Steve

For more info, please call:

Leather Machine Co., Inc.

1-866-962-9880