

AN-6000-00 TORTOISE DISASSEMBLY

The TORTOISE is lubricated at the time of assembly with a small amount of LaBelle 102 heavy gear oil, or equiv. This is a sticky oil that is totally synthetic. To my knowledge, it has no tendency to dry out or gum up over time.

There are 5 screws holding the case halves together with one of them in the center under the label. You will need to feel for this center screw and punch through the label with your #1 Phillips screwdriver. Remove all 5 screws and the datecode sticker across the seam. Save the sticker. With the machine unscrewed and sitting on the bench with the label side up, carefully wiggle the top half off and set it aside. Check to make sure none of the gears is stuck in the top half.

CHECKING FOR WEAR: Once you have the case separated, inspect the stem gear (the one going through the circuit board) small end axle pocket in the case halves for wear. Any signs of green particles or elongation of the axle pocket is not good. I would not recommend putting that TORTOISE in service. We can sell you new cases.

If that wear area looks good, remove the arm with the finger contacts on it. Inspect the circuit board for wear where the contacts were riding. As long as there is still copper and it is not worn through, that should be fine. The plating wears off quickly but the copper lasts a long time. Inspect the heat staking of the contacts to the arm. There should be two button rivets on each finger contact (with 4 end "spoons"), they should look fully formed and the contact should not be loose or move on the arm if you flex the ends of the contacts.

CHECKING FOR NOISINESS: If your TORTOISE is making a clicking noise, remove each of the 3 spur cluster gears and examine all their teeth under magnification. You are looking for a tiny piece of debris wedged in the teeth. Be sure to check the small pinion gear on the motor as well. When you find the culprit, use the tip of an Exacto #11 blade to dislodge it.

After checking all the above, reassemble by placing all components into the case bottom (the side where the screw holes DO NOT go all the way through). Apply a TINY drop of 102 to each small spur gear axle - 6 in total. Apply a small drop of 102 to each of the stem gear axles. Using a small brush or Q-tip, place a thin smear of 102 across the circuit board contact area. A single swipe is all that is necessary. Then use the brush to place a film of 102 across the top of the 3 cluster gears' large gears. You want to fill 4 or 5 teeth with lube. Now reinsert the arm making sure that you feel some tension on the contacts as you slide it in against the circuit board. If they are not touching securely, remove the arm and bend the contacts out a bit. Do this carefully. You only want enough tension to ensure good contact. Anything more will cause excess wear and noise. Inserting the arm will cause the remaining gears to try and move. Do this carefully and only push the arm into the case bottom a little bit. Then, slip the case top on - it should push fully down to the seam without much resistance - reinsert the 5 screws and then test the operation. Should be good for many more years.