



Electronics for Model Railroads

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**AN-6000-6**

### **"LOCKED" TORTOISE™ SWITCH MACHINES**

The **TORTOISE™** Slow Motion Switch Machine utilizes a very low current draw motor which has a relatively large diameter armature. For some reason, a very small percentage of TORTOISES arrive at their final destination with the armature locked. Our best guess is that a hard diagonal blow during the shipping process knocks the armature slightly askew in its bearing supports. The symptoms of this problem will be a TORTOISE that will not run at all, or runs *very* slowly at 12 volts. If you attempt to carefully move the arm by hand, you will not be able to move it without "jumping" teeth on the internal gears. **PLEASE DO NOT ATTEMPT TO MOVE THE ARM IF IT DOESN'T MOVE EASILY WITH MODEST PRESSURE!**

The "cure" is quite simple. Hold the TORTOISE so that the label faces up. Now... smack the opposite side onto a hard surface such as a table top. **DON'T OVERDO THIS!** You don't want to hit it hard enough to crack the case. However, the TORTOISE is quite hardy, and a good solid hit will not likely do any damage. What it will likely do is to jar the motor armature back into alignment. Test moving the arm again. If it moves freely now, than go ahead and install the machine. We have never heard of a case where an "unlocked" machine later locked up again.

If the beating you gave the little guy doesn't whip him into proper operation, it may be possible that a fleck of plastic or dirt has become lodged in the gears. This form of lockup will require that you return the unit to us for warranty repair. The same applies for older machines that have been operating, but which have suddenly stopped and appear locked.