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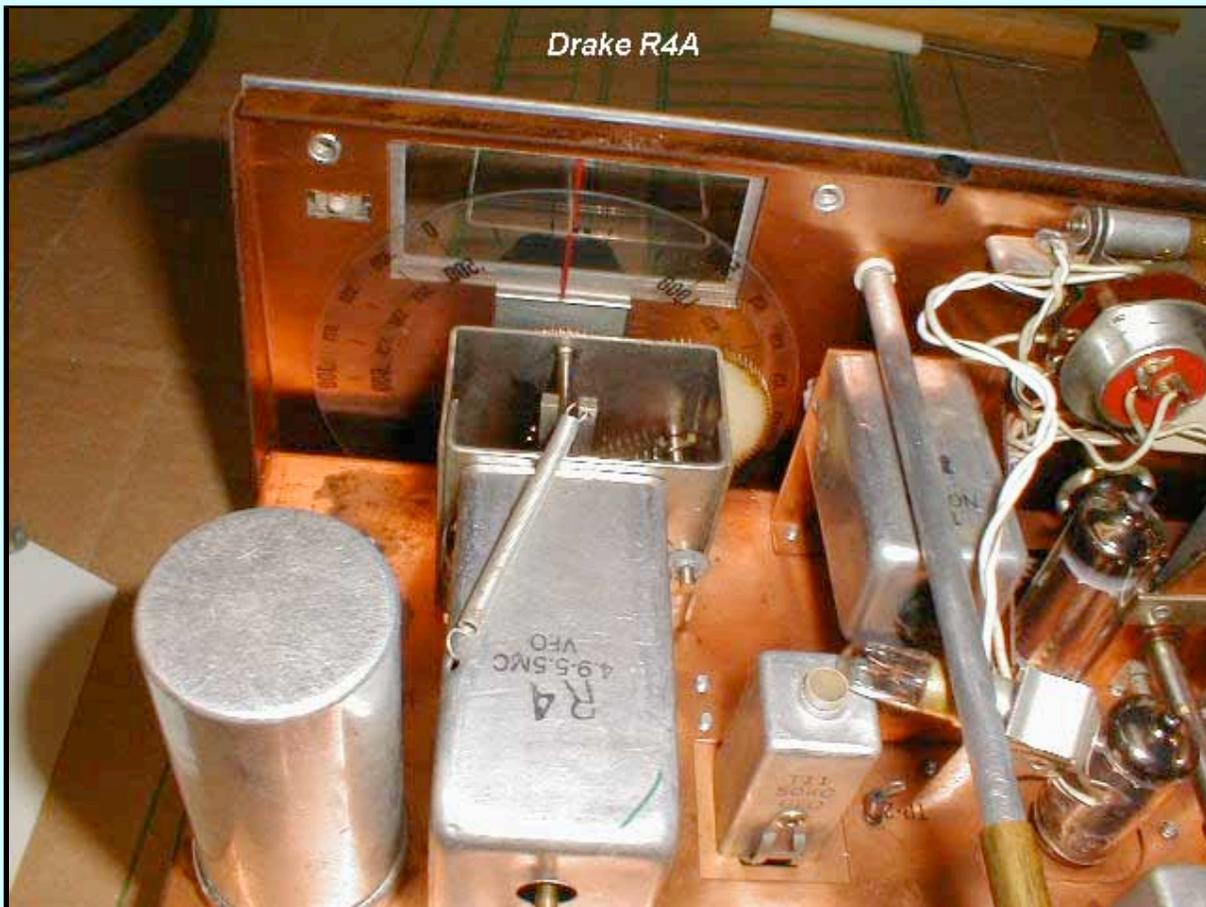
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## Drake PTO GROUNDING

Factory Mod for the Drake 4-Line

by: [Donnie Garrett / WA9TGT](#)

The following information is provided to assist you in improving the mechanical / electrical ground continuity of the PTO's yoke assembly found on all the Drake 4-Line series. This mod was later incorporated in the TR-7 series. Pictures are provided to help assist in the installation of the ground strap which is used to help ensure a good electrical ground.



### Step #1

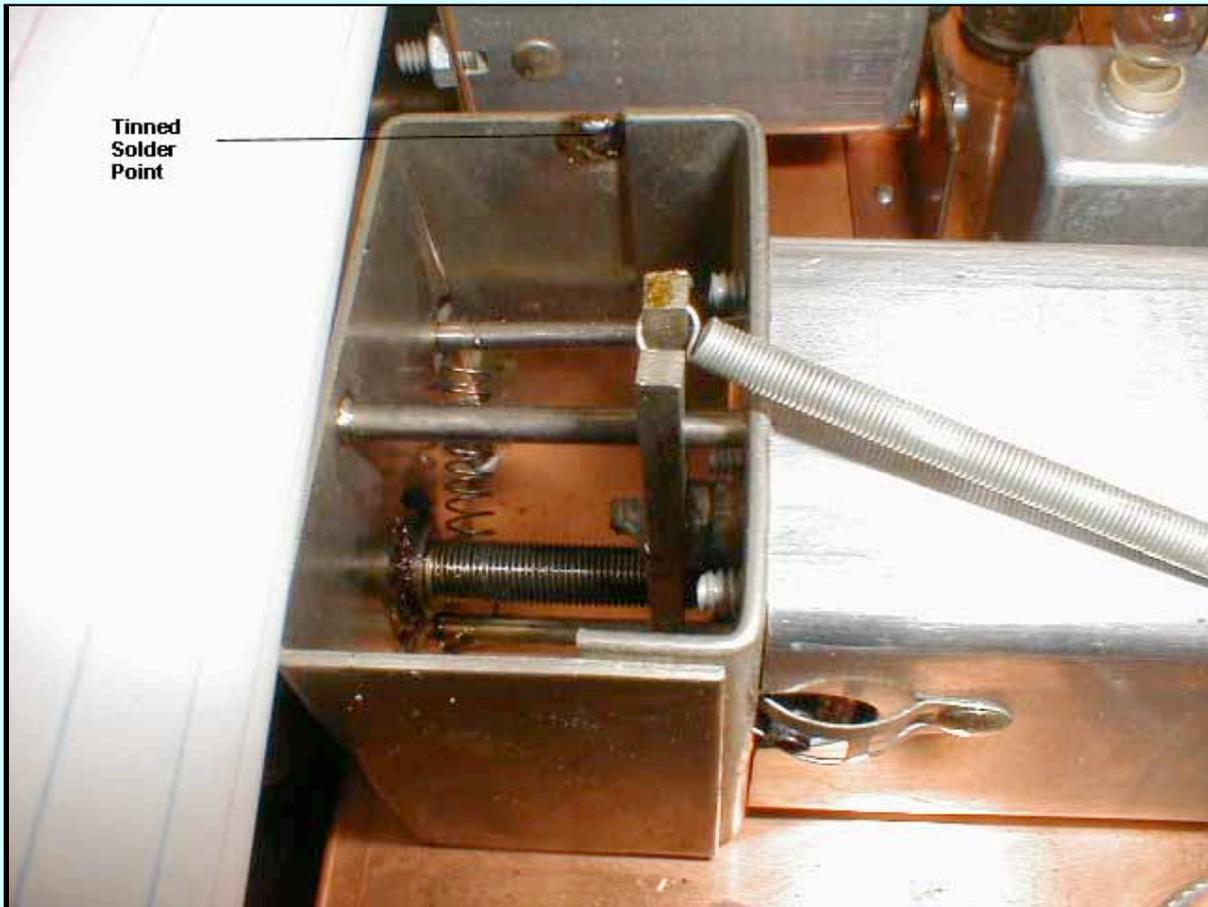
Remove the top cabinet cover, dial lamp and shroud assembly.

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**Step #2**

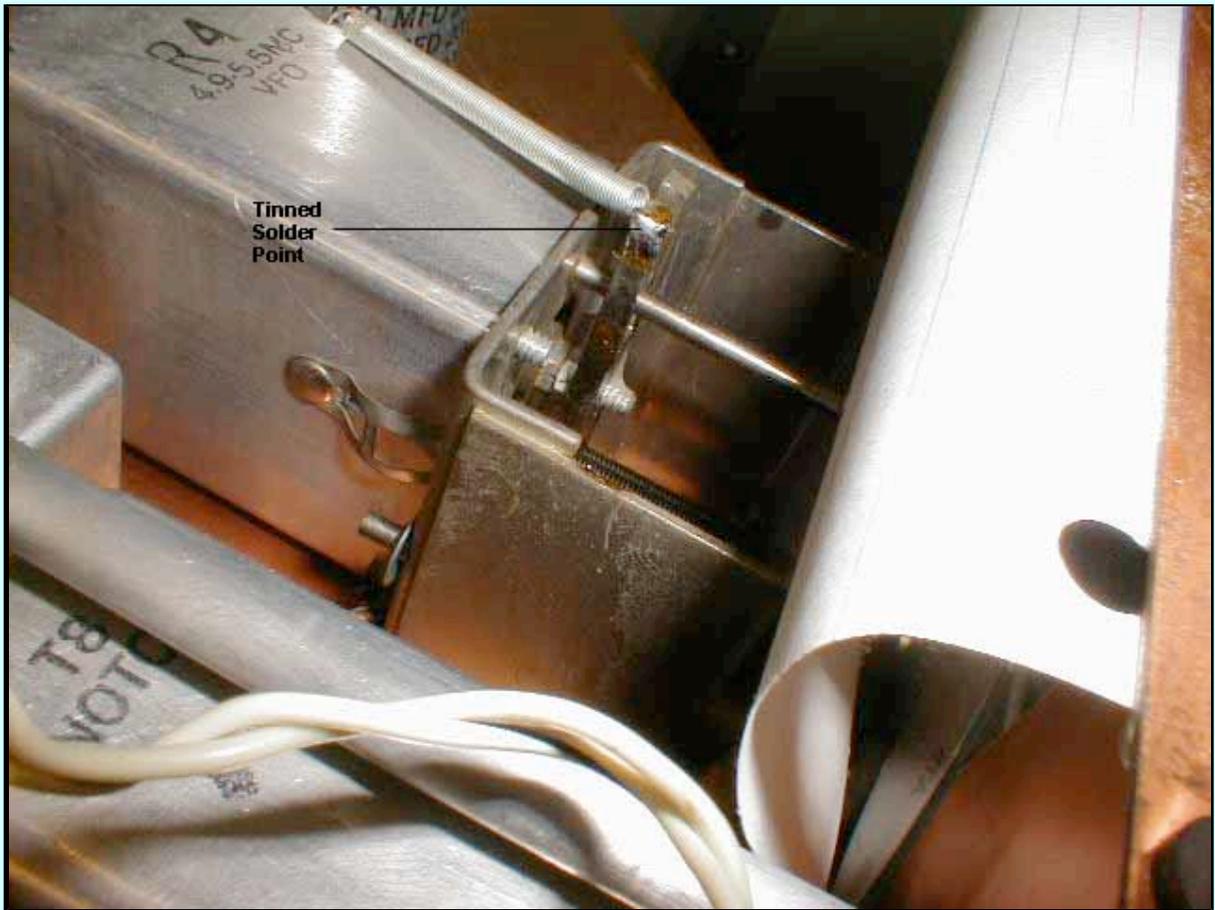
Temporarily insert a index card behind the main tuning dial disk assembly to protect it from soldering damage.

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**Step #3**

Take a sharp pointed object and scratch a small spot the PTO housing. This will help the solder stick at the solder point while tinning. I use a 140 watt soldering gun to heat and tin this solder point on the PTO housing.

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#### **Step #4**

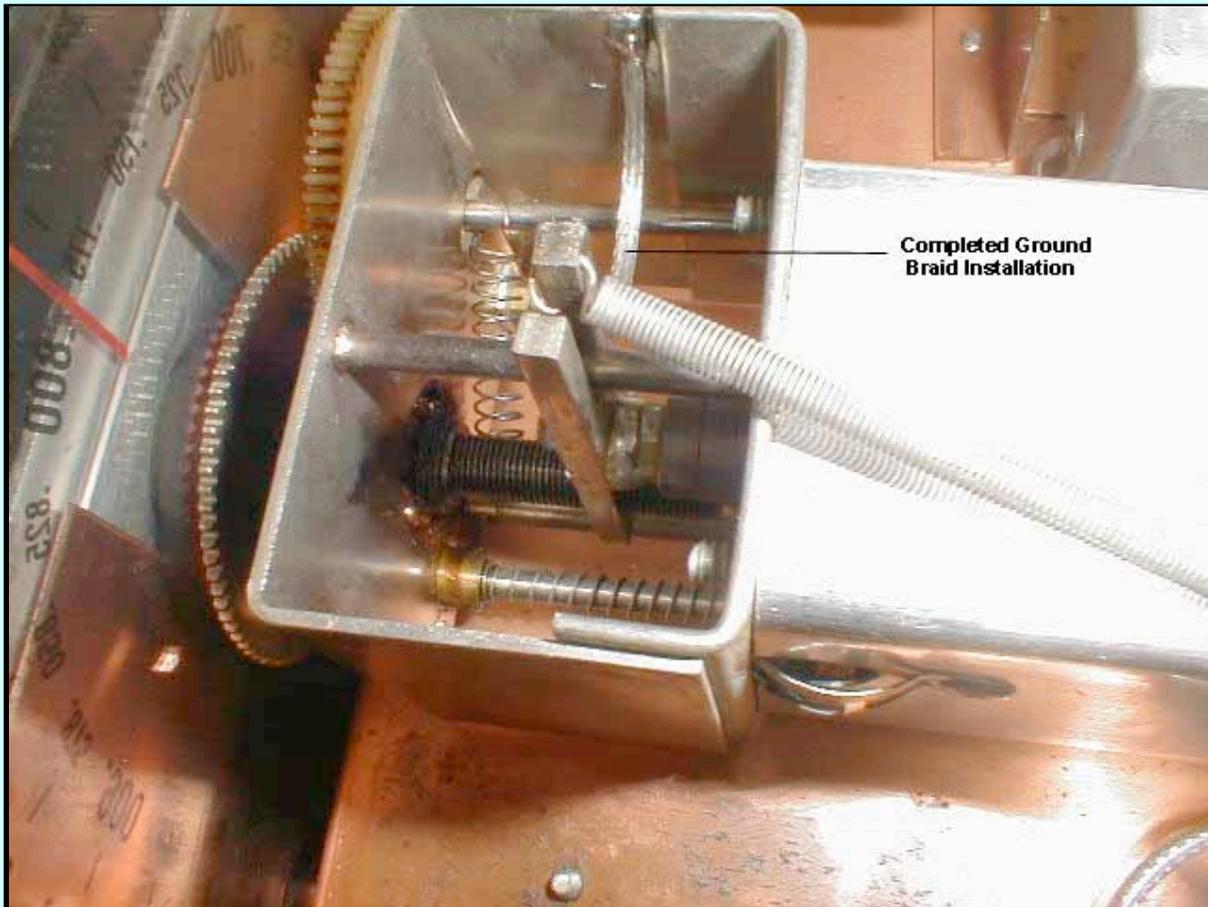
Again take a sharp pointed object and scratch a small spot on the top side of the PTO yoke. This will help the solder stick at the solder point while tinning. Once again I use a 140 watt soldering gun to heat up and tin this solder point on the PTO Yoke.

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**Step #5**

Pre-cut a 2" length of 1/16" ground braid wire. Next pre-tin a 1/4" length of each end of the ground braid. Form the ground braid into a U shape. Insert the preformed U shape braid as shown. Using a 40 watt soldering pencil, solder each end of the ground braid to the 2 pre-tinned solder points.

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### **Step #6**

Clean off any excess rosin flux from solder points, remove protective index card and inspect for neatness and good solder connections. Clean PTO worm screw with a Q-tip and lighter fluid. Wet the Q-tip with lighter fluid and hold it against the PTO's worm screw while turning the main tuning dial through its entire range. You may need to do this 2-3 times to clean off all the old dirty lubricant. When done place one drop of light oil on the worm screw threads. Also put one drop of oil on the rear bearing pivot point. Check the tuning dial for excessive end play. If necessary snug the rear bearing tension just enough to remove any slack. Reassemble the tuning dial shroud, lamp filters, and pilot lamp assembly. Reinstall the cabinet cover. The PTO grounding job is now complete, enjoy!

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