

## Reconditioning the Veeder Root Counter Mechanism

by Nolan Lee

Note: The following article was posted by Nolan Lee on the R-390 list on 1998-May-18. Nolan's technical writing style is unique and can be best described as the language of 'Redneck Engineering'. Translations are available for those who are techno-colloquially challenged.

"rippin' apart the counter..."

The hammer I used for this was a 2oz one. This is one case where a "bigger hammer" ain't good bubba. Put that 4lb maul DOWN!.....NOW! Also, your counter may be a different part/casting number and assembled differently. It's also been 20 years since I took mine apart.

My memory might be faulty and your milage may vary.....I accept no responsibility. I don't think they were made to be taken apart, but I liked the challenge. I used a small punch to remove the small counter shaft. At least that's what I called it. It was the one with the little "10X" multiplier cogs on it. It was pressed in from one side and then the casting was peened over the end of the shaft.

Oh, as you slide the shaft out, all of the little cogs will fall off. Watch where they come from. Some of them were different. I then bored a couple of holes to intersect the bottom of the two rivets that held the cover to the body. This was the little cover plate that covered the gaps between the digits when viewing the counter from the front. I then drove them out with a small punch.

The cover is real soft and will bend/kink/distort real easy. While I had mine off, I stripped it and repainted it and baked it in the oven. Finally, the primary digit counter wheels of both the MC and KC segments are pinned to each of the drive shafts (the shafts that have the bevel driven gears attached).

These pins were driven out. It's been a hell of a long time and I don't remember for sure but I'm pretty sure that those pins were tapered and had to be driven out from ONLY one direction. You'd want to inspect them VERY carefully and see if they ARE tapered before driving them out. If they are tapered and you attempt to drive them out from the wrong direction, you will probably bend the shafts and total out the counter assembly. After pulling the two shafts, the entire assembly should "fall apart", either in your hands or into the shag carpet. Oh, watch where the little thrust washer/spacers fall from.

They'll need to go back in the same spots. Don't ask, I don't remember..... I cleaned everything while I had it apart and actually waxed the counter wheels with automotive paste wax. I then reassembled it using an ultra- fine powdered graphite as a lubricant. Keep the graphite off of the digits or it can stain them.

Suspecting that this could happen is the reason that I waxed all of the counter wheels BEFORE adding the graphite. 20 years ago, the paint on my counter wheels had more than enough adhesion to survive the waxing. I don't know about yours..... Best of luck and may the force be with you.

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Send Comments to the FAQ-Meister: (r390a-faq@mindspring.com)

Version: 1 - - Last revision: 1999-Jun-13  
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Date: Tue, 27 Mar 2001 10:47:02 -0500  
From: "Gary Franklin" <franklin@net-link.net>  
Subject: [R-390] Excessive Main Tuning Drag - Collins 51S-1

I have made a couple of posts about excessive main tuning drag when my 51S-1 has been turned off for sometime in my cold basement radio room. So much drag you can barely change frequency! After a warm-up period tuning drag decreased greatly - big improvement in performance! My first thought was old stiff lubricant in the PTO. I seem to recall an article or thread on the subject some time ago. Theorizing that after warm up the lubricant became less viscous. Well through a process of elimination I have discovered the culprit to be the COUNTER. When I disengage the counter drive gear on a cold radio the tuning is as smooth as silk! Throw a little heat on the counter with a hair dryer and she smooths right out. The first drive disk turns the kc count one digit every 100 kc. The disks and drive shaft do not appear to be lubricated. Perhaps some of you on the R-390 list have had a similar problem with your R-390 counters? Has anyone solved this problem before? Any ideas?

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Date: Tue, 27 Mar 2001 11:03:18 -0500  
From: "Paul Bigelow" <pbigelow@us.ibm.com>  
Subject: RE: [R-390] Silence the counter thread...

Try Fargo Enterprises -- a camera repair supplier.

>Where do you find this?  
> Use Nye Oil damping grease on the counters.

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Date: Thu, 27 Sep 2001 08:39:20 -0500  
From: Gary Lee <tiresias@prodigy.net>  
Subject: [R-390] counter questions on r-390a

I am currently doing an experiment with attaching braille numbers to a counter for a 390a. I have a junk counter bought from fairr radio. But now I have some questions.

1. is it mounted with the plate with the screw holes horizontal or vertical?
2. there is what looks like a metal shield on the front wi little fingers sticking up. where do you see the numbers in relation to these fingers?
3. Is this shield really necessary?
4. I notice two wheels on the left end, I presume megahertz. Then 4 wheels. Is the last one numberd 0-9 for tenths of a mhz just like the others? This should get me started. If I can get braille on this thing, I will make up another set of labels and give this one to fair to use as a model for the 390 I plan to purchase.

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Date: Thu, 27 Sep 2001 09:48:45 -0500  
From: mikea <mikea@mikea.ath.cx>  
Subject: Re: [R-390] counter questions on r-390a

> 1. is it mounted with the plate with the screw holes horizontal or vertical?

The counter as a whole is mounted horizontally. I haven't taken one apart, and so don't know about the plate w/screw holes.

- > 2. there is what looks like a metal shield on the front wi little fingers
- > sticking up. where do you see the numbers in relation to these fingers?
- >
- > 3. Is this shield really necessary?
- >
- > 4. I notice two wheels on the left end, I presume megahertz. Then 4
- > wheels. Is the last one numberd 0-9 for tenths of a mhz just like the others?

The first two are MHz, yes. The next one is used to indicate below-the-beginning of a band (red "-" on ---my R-390A), in-band (solid black), or above-the-end of a band (red "+").

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Date: Thu, 27 Sep 2001 09:59:56 -0500  
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>  
Subject: RE: [R-390] counter questions on r-390a

1. The screw holes are horizontal (perpendicular to the front panel).
2. The shields cover the "gear" fingers and provide a marker on the right-hand side for a witness line.
3. The shield is primarily for cosmetics, although the witness line is pretty much needed for sighted people if you want to get right on a kc position.
4. The wheel third from the left is only a +/- indicator. The last wheel on the right is marked in 1 kc increments with 5 smaller divisions between each major marking yielding 200 cycle resolution.

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Date: Fri, 15 Sep 2006 18:58:08 EDT  
From: ToddRoberts2001@aol.com  
Subject: Re: [R-390] RE: Spinner knob for R-390

Have you tried oiling the odometer counter wheels and assembly? I use a pinpoint oiler and get in-between all the wheels and shaft and index wheels. Also make sure the right-angle drive gears are oiled. It almost sounds like your odometer counter is dry and rattles or squalls when it is turned fast. Try lubricating it. It won't hurt the plastic wheels if you get oil on them, just lightly wipe off the excess. On several sets that I have taken apart, cleaned and put back together and thoroughly oiled the counters they are quiet as a mouse when turned fast. I use Mobil-One Synthetic 30W.

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Date: Sun, 4 Mar 2007 15:48:45 -0800 (PST)  
From: "Tom M." <courir26@yahoo.com>  
Subject: [R-390] Veeder-Root Patent

<http://www.freepatentsonline.com/4054986.html>

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