

KENWOOD

2016 Dayton Hamvention Kenwood Forum



Kenwood Forum Committee

Mark Gilger – WB0IQK
Jan Servaites – N8CBX
Dick Housden - W0NTA
Jeff Covelli – WA8SAJ

- Agenda:

- VFO Delayed Power On Modification
- TS-900 & TS-511 restoration
- Band Switch Repair
- TS-530 & TS-830 Sloppy Band Switch
- TS-530s/TS-830s Molex Connectors
- TS-830 CW Filter Option
- Final Unit Cathode/Screen grid protection
- TS-830 Low Audio
- RF Board Cracked RF Board Sprockets
- VFO Stability
- TS-820S Digital Display
- Hybrid restoration Techniques
- Help with Parts, Documentation & Service
- Questions and Answers

- What was the first ham band transceiver that Kenwood produced and when was it introduced?

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Kenwood Trivia

- The Allied Radio Model A-2517 was the first ham band transceiver that Kenwood produced and was introduced in September 1970?



Kenwood Trivia

- Of all the transceiver models Kenwood produced, what model was the best seller and when was it introduced?

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Kenwood Trivia

- The TS_520 transceiver was the best seller and was introduced in 1973?

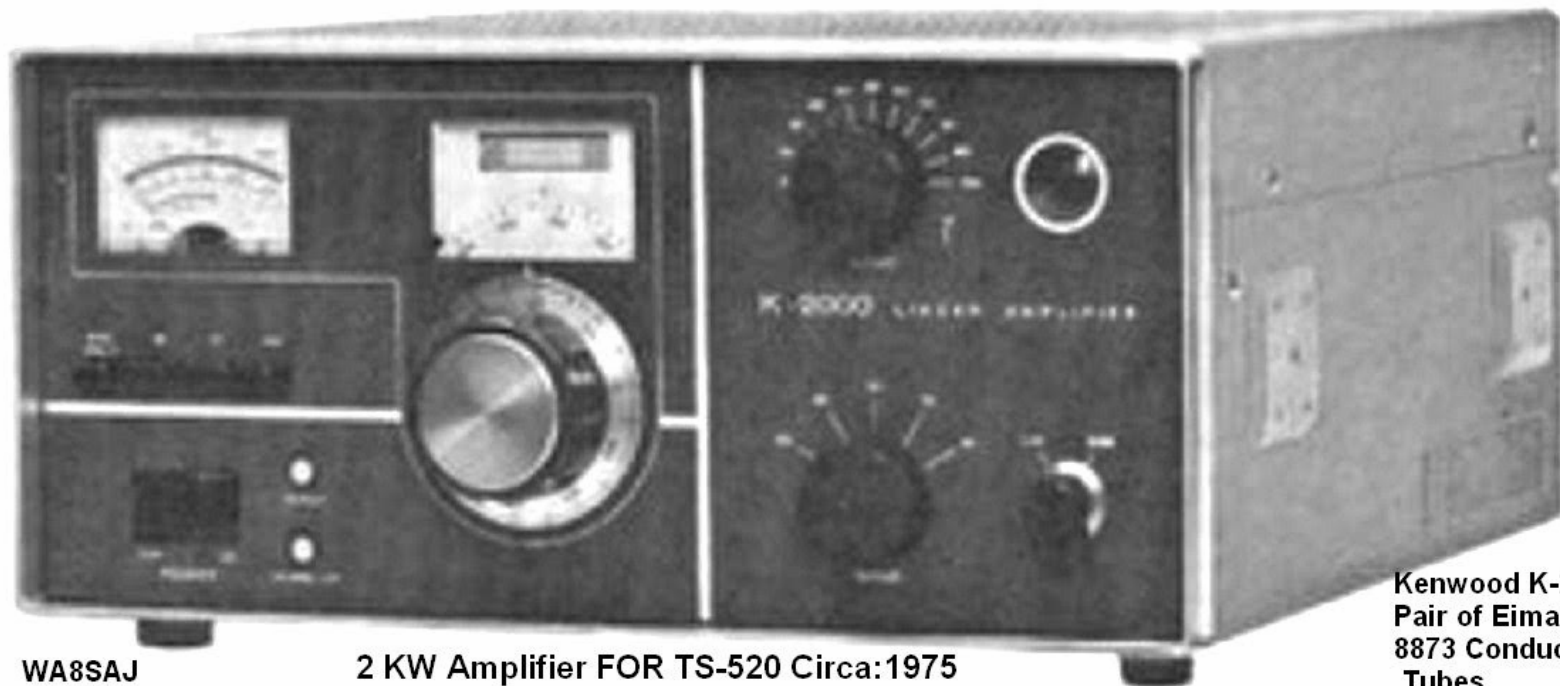


- What amplifier was specifically designed for the TS-520 and T-599A and in what year was it introduced?

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Kenwood Trivia

- The K-2000 linear amplifier was built to match the TS-520 and T-599A radio's and was introduced in 1975 QST, Henry Radio advertisement.



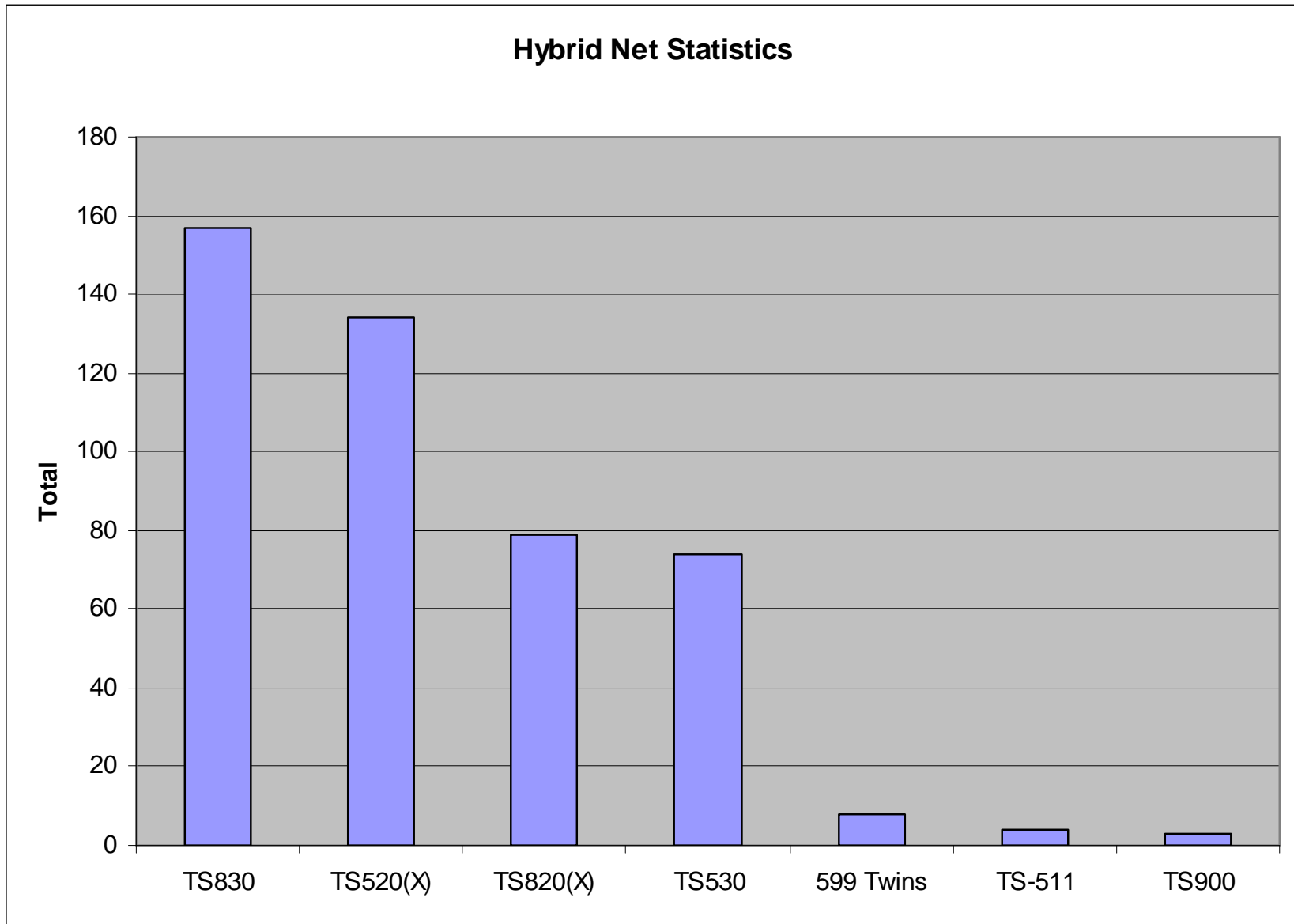
WA8SAJ

2 KW Amplifier FOR TS-520 Circa:1975

Kenwood K-2000
Pair of Eimac
8873 Conduction
Tubes

- Kenwood Hybrid Legacy Radio Nets
 - Saturday, 7.235 mhz @ 3:30 pm Eastern
 - Sunday, 14.316 mhz @ 18:00 z
 - Yahoo Kenwood Group
- Hybrid Net Web Site:
 - www.wb4hfn.com
- Yahoo Kenwood Group
 - https://groups.yahoo.com/neo/groups/TS-520_820_530_830/info

Hybrid Net Check-in Radio Statistics

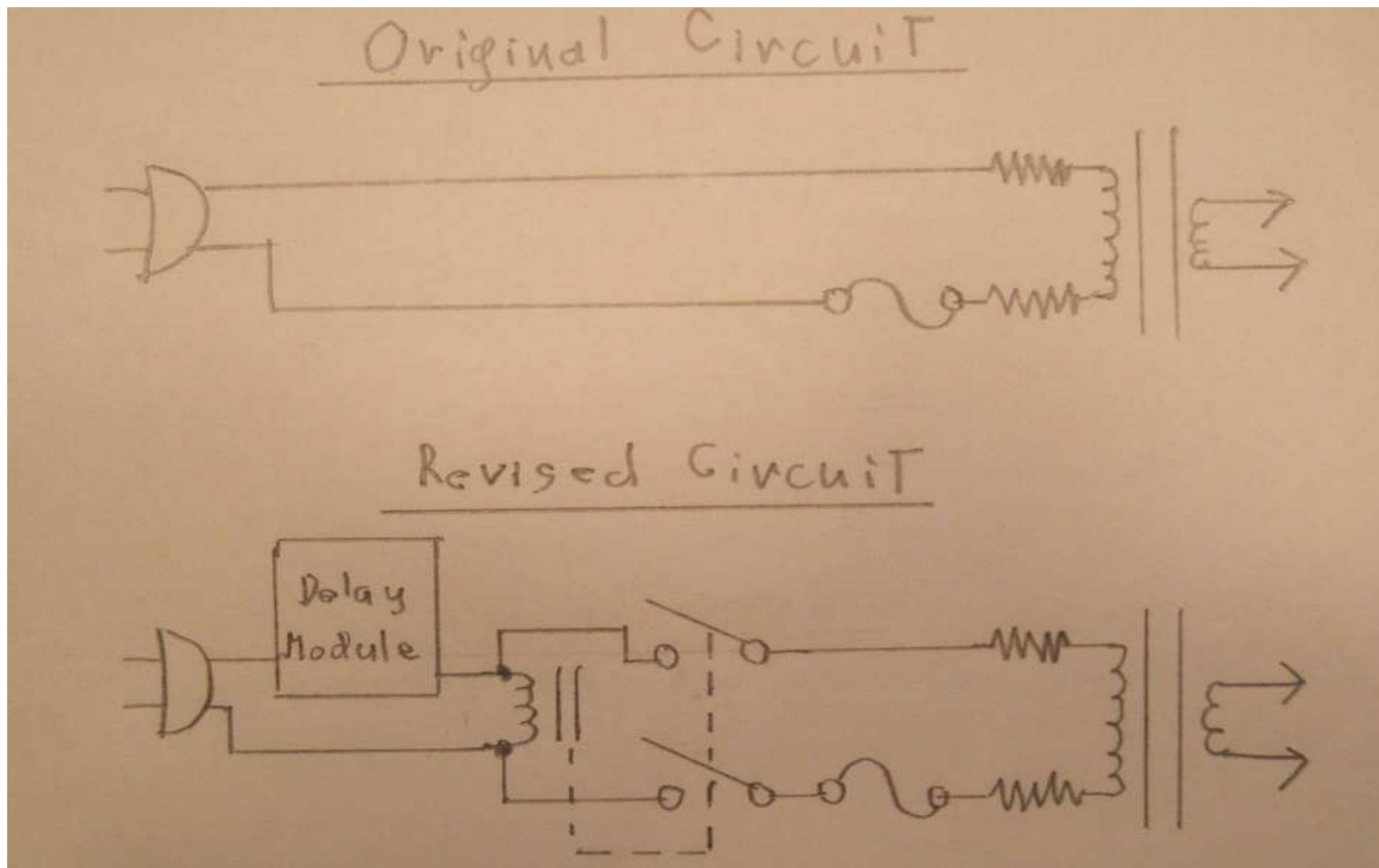


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VFO-230 Delay Power On Modification

By: K9SQG



Full write up: WB4HFN.COM

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Delay Power On Timer
ICM Controls and is an ICM102 p/n HMPSOOC2X600.



Full write up: WB4HFN.COM

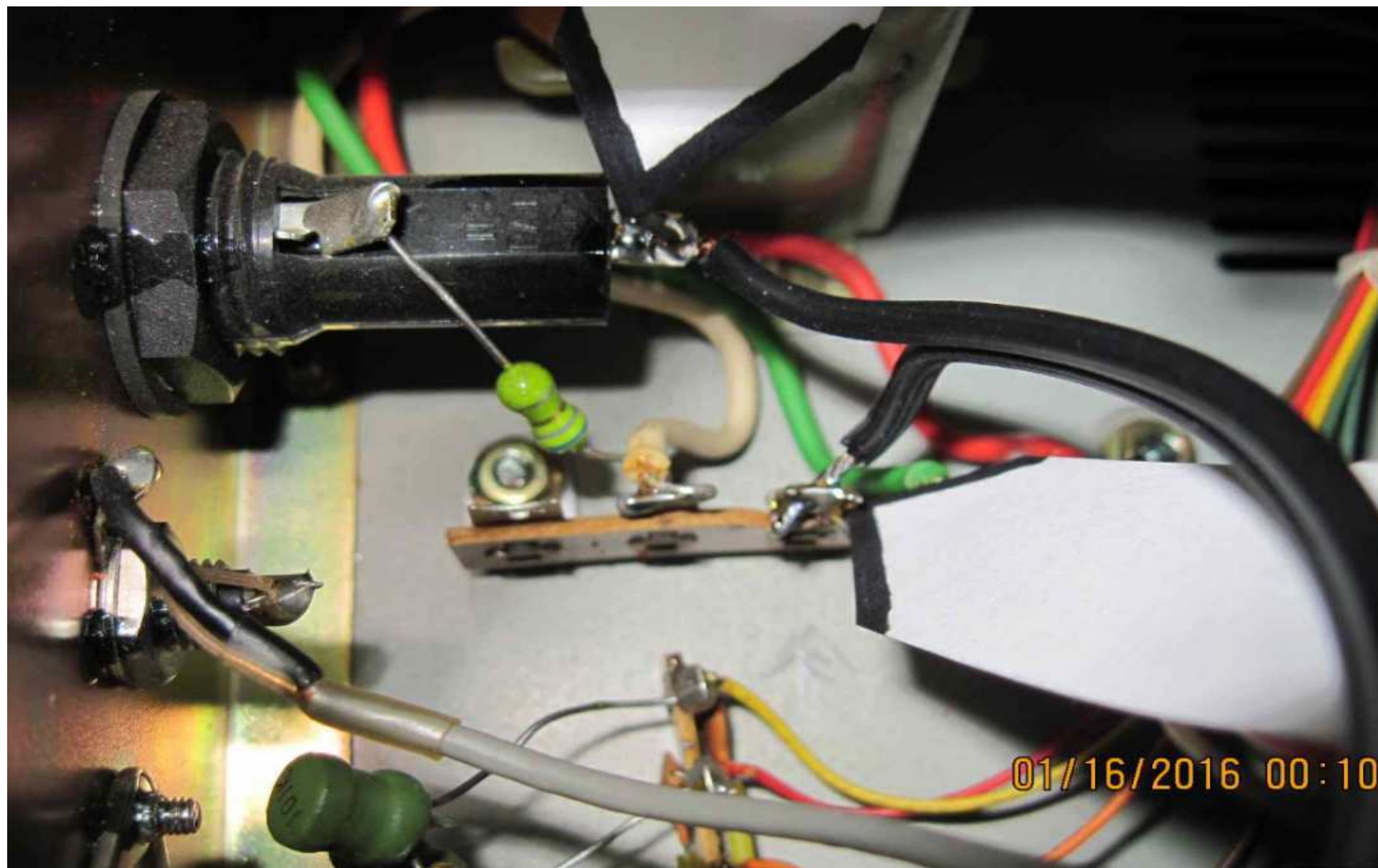
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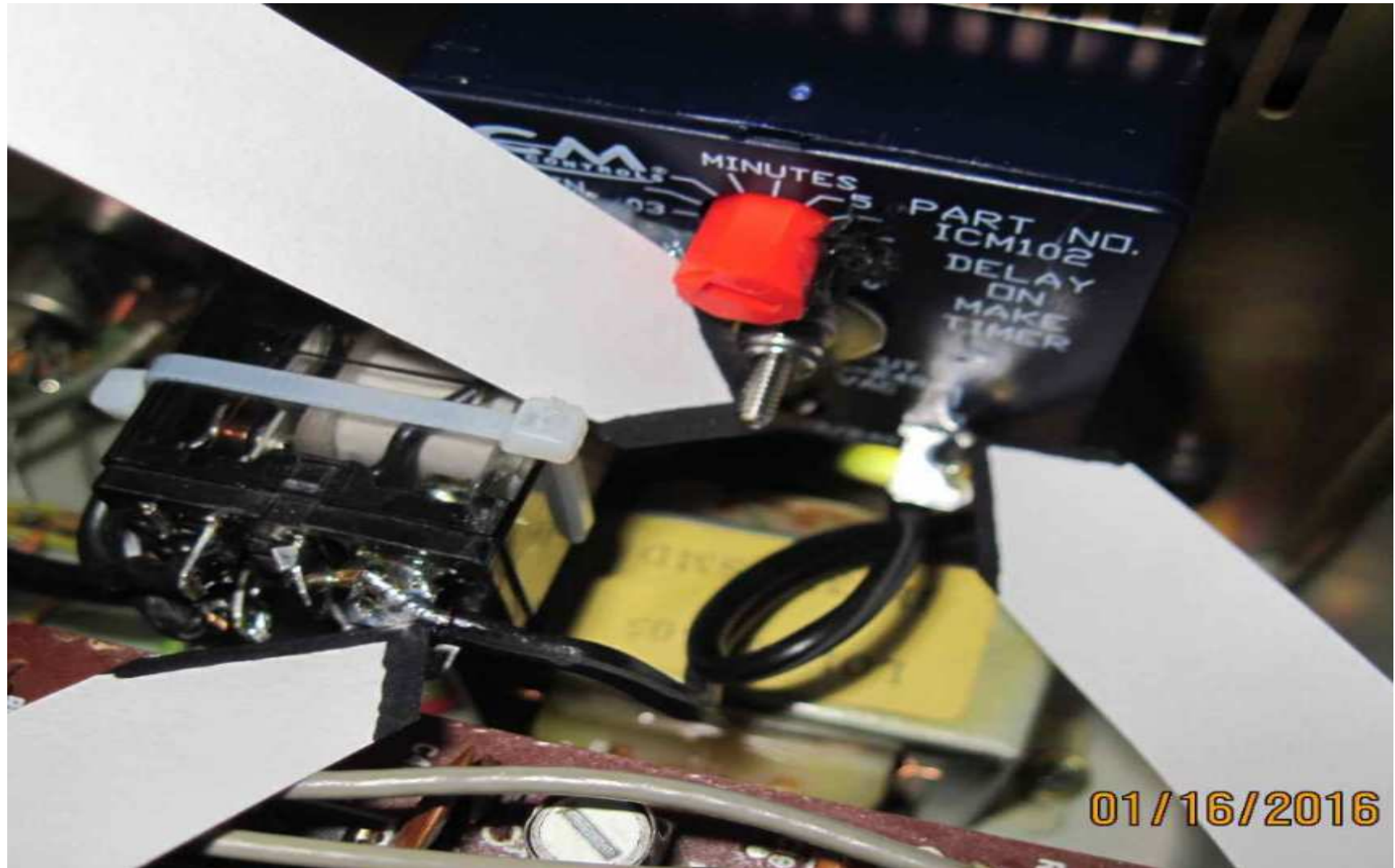
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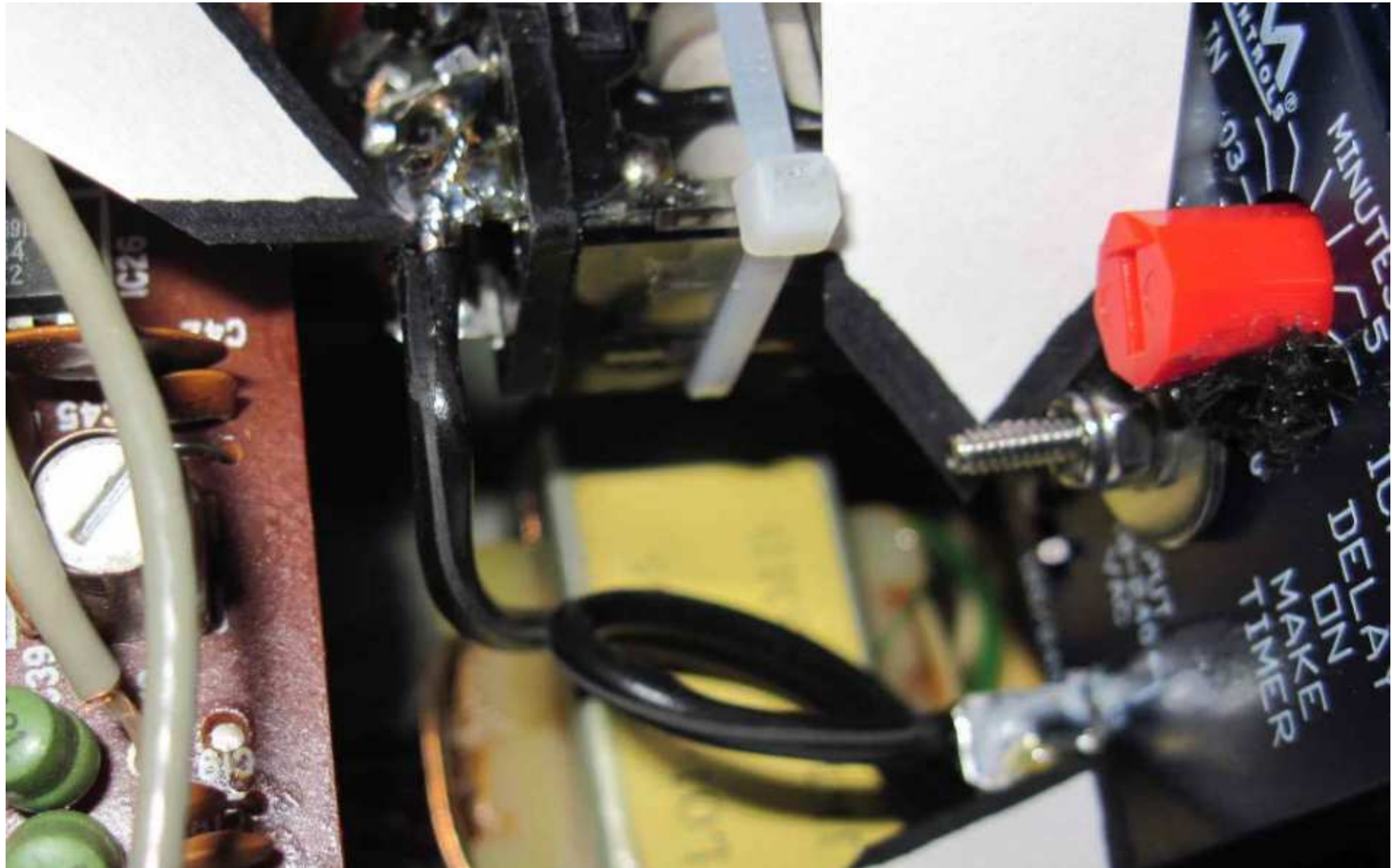


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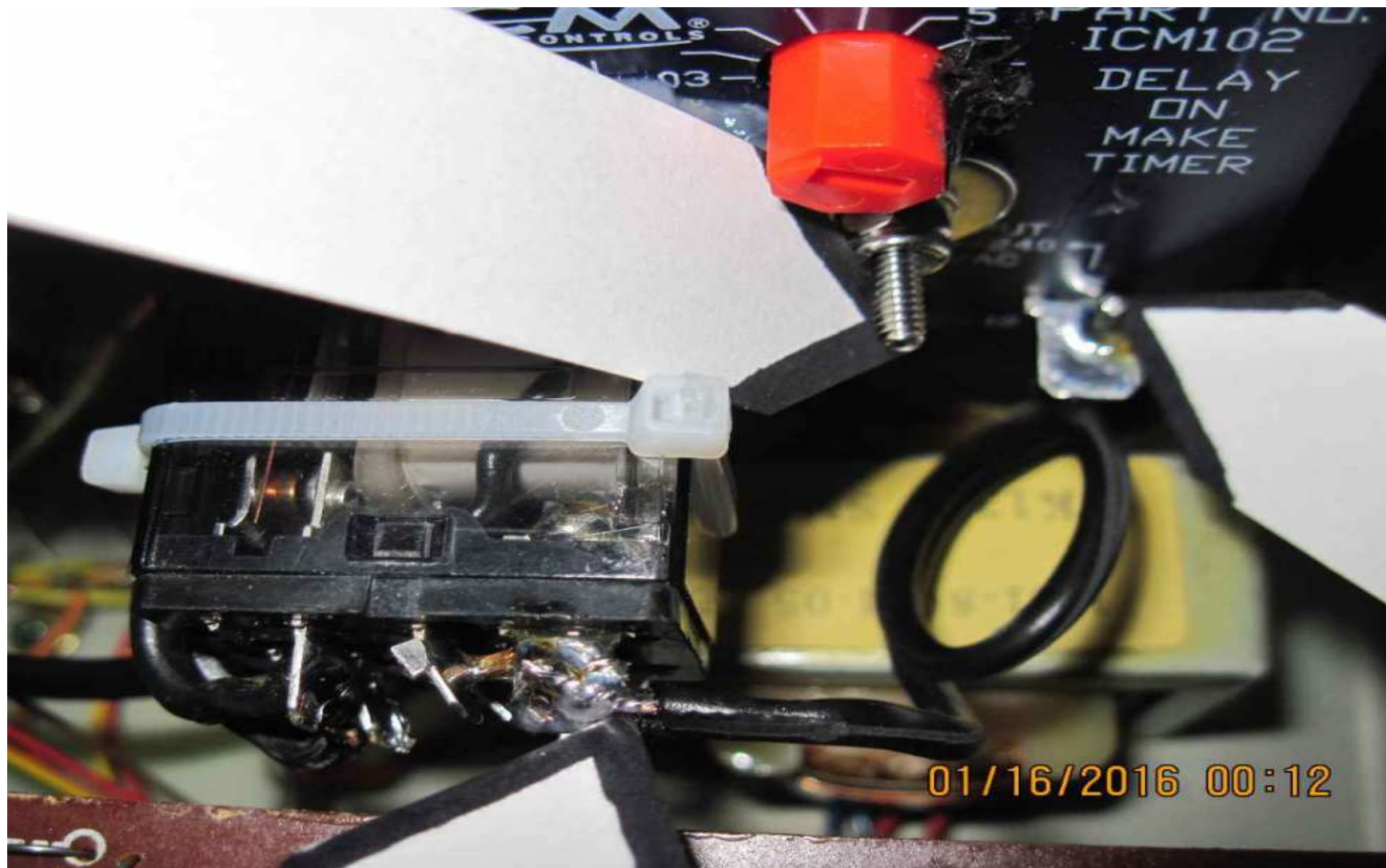


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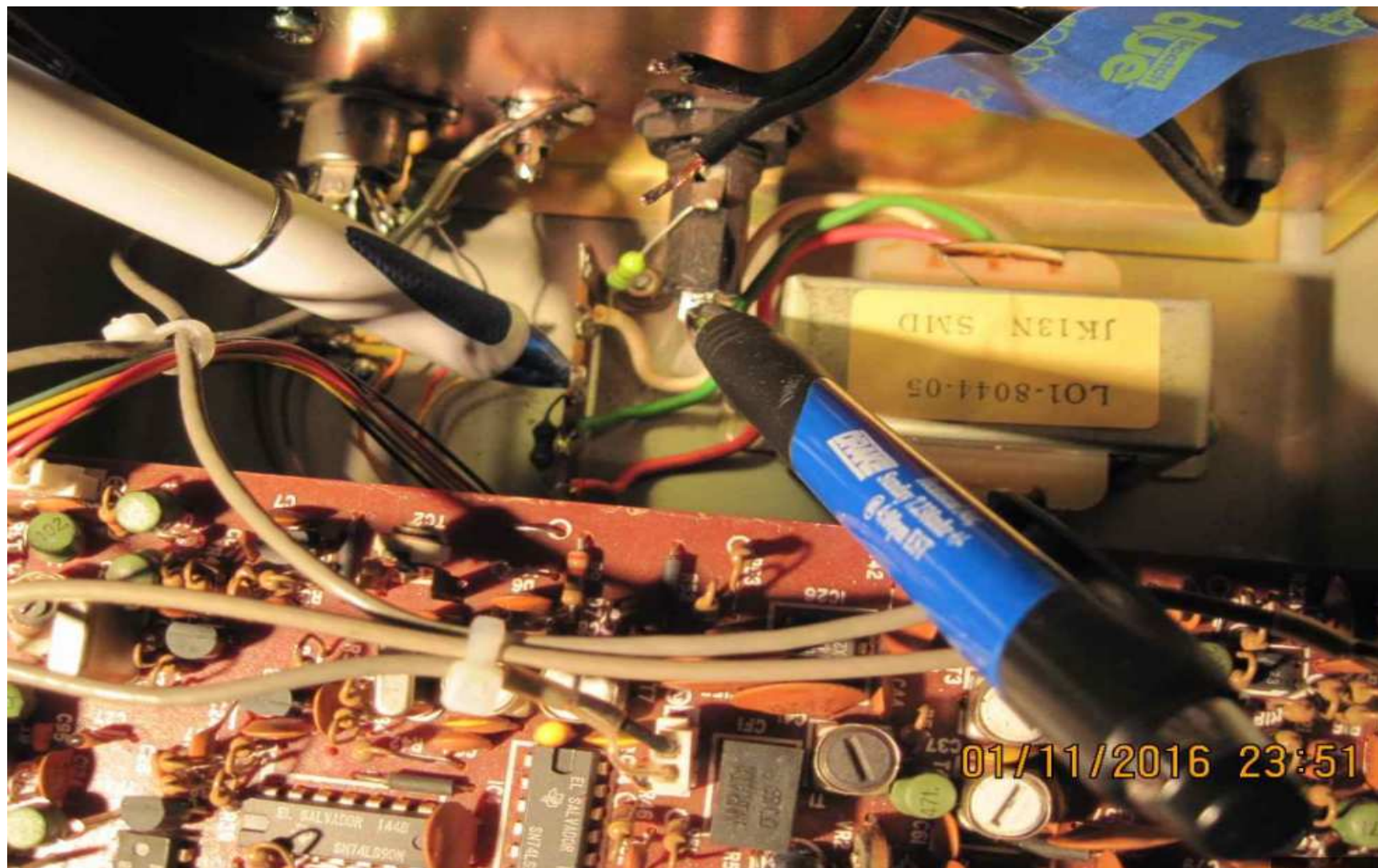
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TS-900 Refurbishment by: N8CBX

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Restoring the Kenwood TS-900 Radio
Presenter - Mr Jan Servaites (N8CBX)

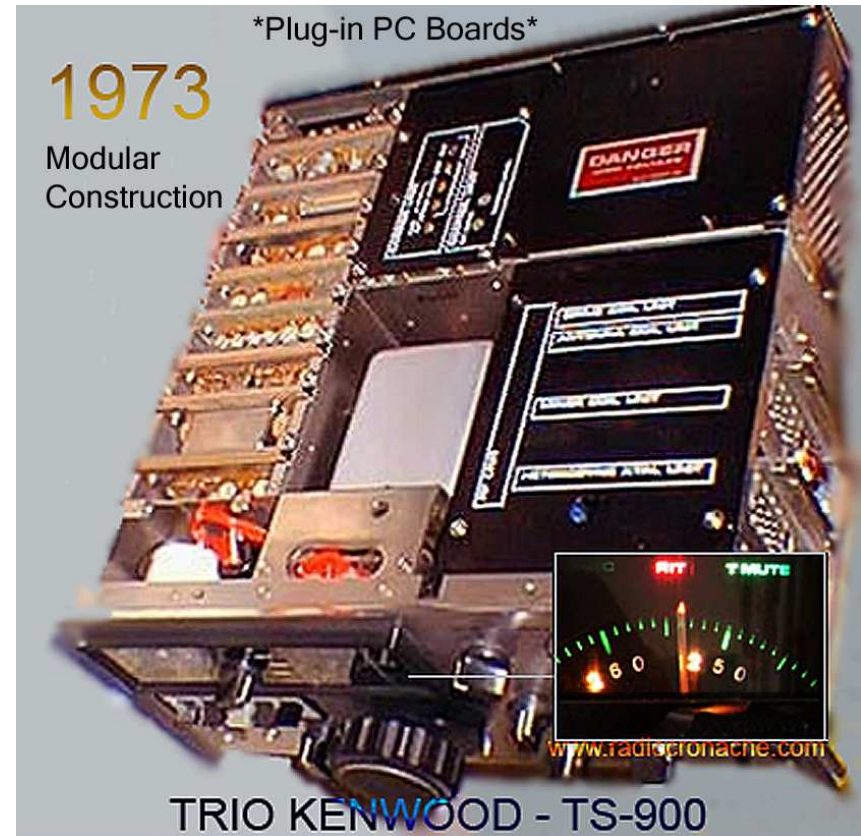


Kenwood TS-900

4/28/16
N8CBX

Hamvention Forums 2016
Session: Kenwood Hybrid Radio Legacy
Room 3, 1:15pm – 2:15pm
Saturday, May 14 2016

KENWOOD “1st Gen” of the 900 Series; Followed by 930/940/950/990



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PS-900

PS-900 is AC power supply for TS-900

1. Cut-core transformers are used to reduce weight and make the supply compact.
2. Toroidal line filters are used to eliminate TVI.
3. Speaker is included.

PS-900 SPECIFICATIONS

Power Requirements	120/240 VAC, 50/60 Hz
Transmit	410 watts
Receive	40 watts (with heater-off)
Impedance	8 ohms
Max. input power	2 watts
Diameter	12 cm
Dimensions	150 wide x 140 high x 320 deep (mm) (excluding protruding parts)
Weight	7.5 kg

VFO-900

VFO-900 is remote VFO for TS-900

1. VFO-900 has the same level of stability as TS-900 VFO.
2. Dial mechanism is the same as TS-900.
3. Five fixed channels are available. (Crystals not supplied.)
4. A beat calibrator is equipped for zero-in.
5. Error lamp indicates alarm when the operation is not correct.

Examples; 1. Attempt to transmit in calibrate state.
2. Disconnected cable.
3. TS-900 VFO switch (Rear panel) not set for remote VFO operation.

6. Three beat volumes are switchable.
7. AC power supply is included.
8. DC (13.8V) operation is available.
9. Indicators (VFO, RIT, FIX CH) are available.

VFO-900 SPECIFICATIONS

Frequency Range	5.0 to 5.5 MHz
Output Voltage	0.8 volts (with 500 ohms termination resistor)
Stability	100 Hz per 15 minutes after warm-up
Semiconductor Complement	2 FET's, 15 transistors, 18 diodes
Power Requirements	100/117/220/240 VAC, 50/60 Hz or 13.8 VDC, 5 watts
Dimensions	200 wide x 140 high x 225 deep (mm) (excluding protruding parts)
Weight	5 kg

DS-900

DS-900 is DC power supply for TS-900

220 VAC (100W) receptacle is equipped, allowing use of soldering iron or other device in the car. (Power from this receptacle cannot be used for inductive (motor) load. Load can not be connected to this receptacle during normal TS-900 operation.)

DS-900 SPECIFICATIONS

Power Requirements	Transmit: 13.8 V, 30A Receive: 13.8 V, 2 A (with heater-off)
Grounding	Negative
Dimensions	140 wide x 97 high x 210 deep (mm) (excluding protruding parts)
Weight	4 kg

Specifications and design are subject to change without notice.

Three Tubes: 6LQ6 (2); 6GK6 (1)

IF freq: 3.395 MHz

Bands: 80M – 140Watts

40M - 140W

20M – 135W

15M – 120W

10M – 90W

Modes: LSB, USB, CW, RTTY

PS-900: Power Supply/Speaker

VFO-900: External VFO (split-ops)

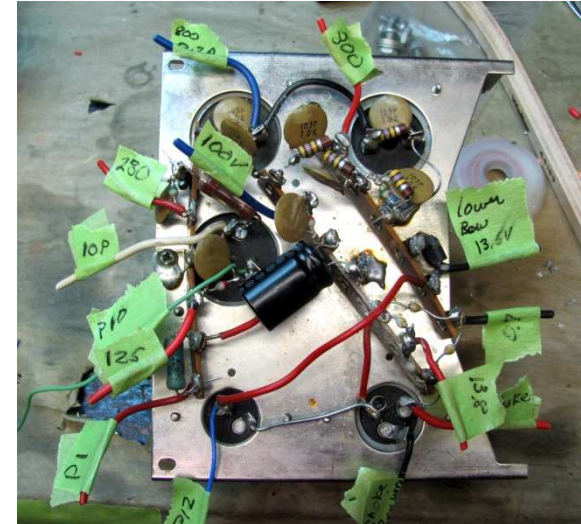
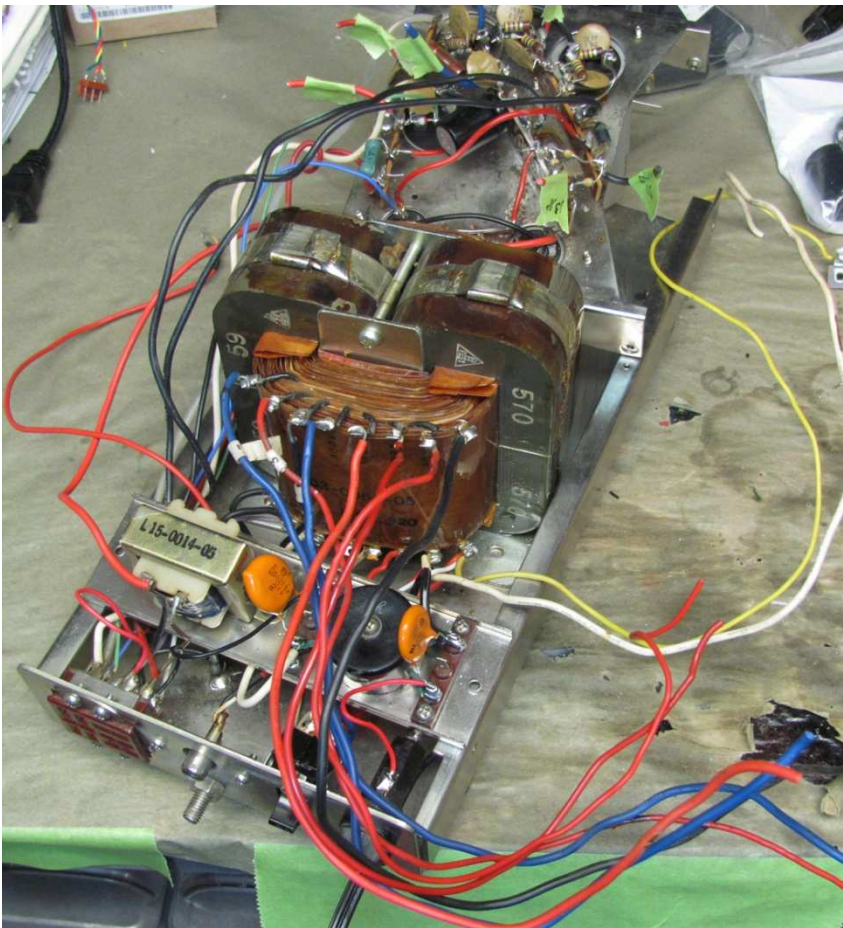
DS-900: 13.8 VDC Operation

(For in-the-field use)

KENWOOD Rebuilding the PS-900 Power Supply (117vac)

Topics:

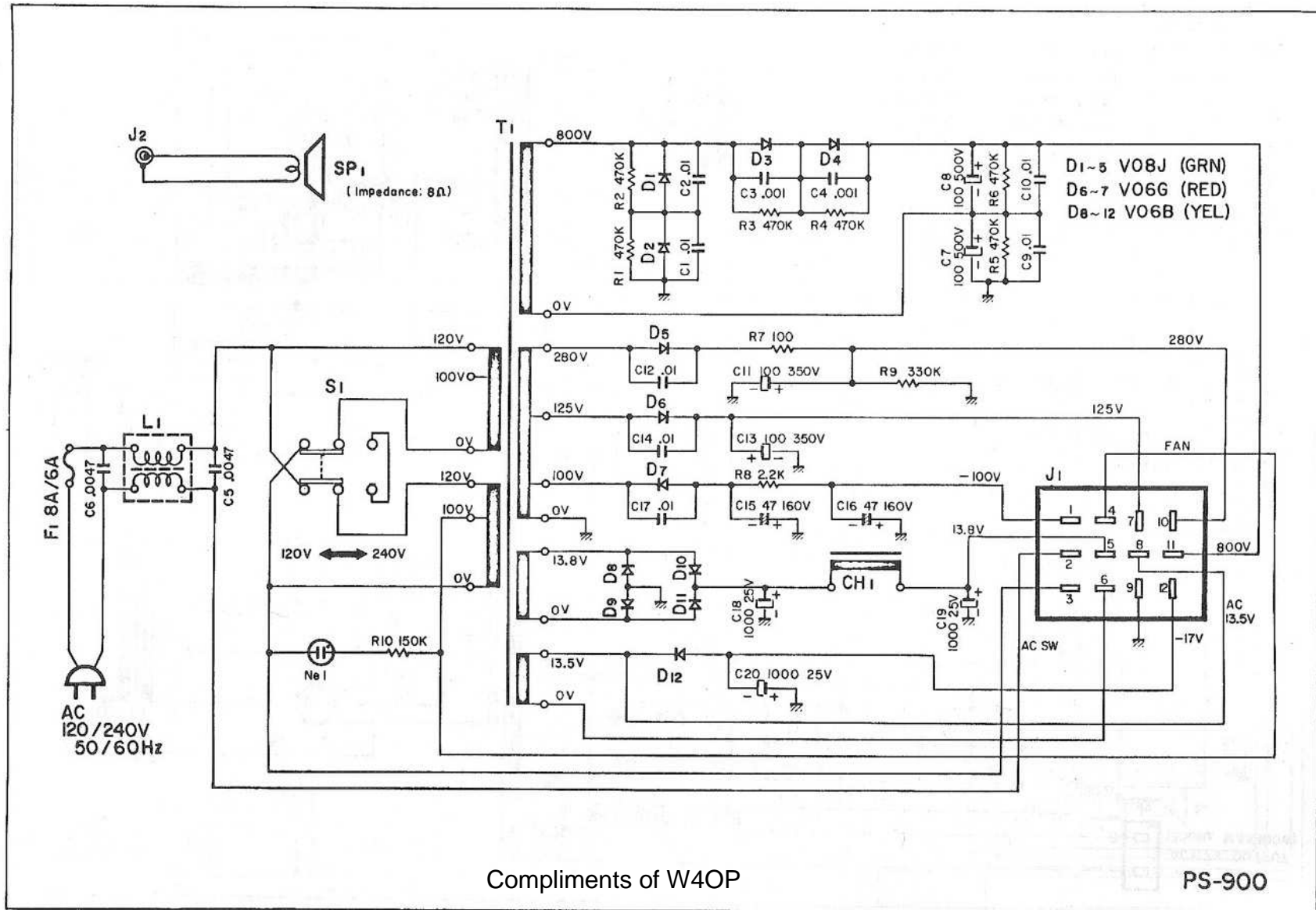
- **Replace capacitors/diodes/resistors**
- **Replace all wiring; Wire type PTFE – E20awg**
- **Replace speaker**



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PS-900 Schematic

PS-900 SCHEMATIC DIAGRAM



Compliments of W4OP

PS-900



PS-900 Replacement Parts

Capacitors:

500V, 100uf (2ea)	Replaced with, 500v 150uf (2ea); 35mm (Mouser)
25V, 1000uf + 1000uf (1ea)	Replaced with, 25V 1000uf (2ea); 12mm (MCM 31-7110, \$.14)
25V, 1000uf (1ea)	Replaced with, 50v 1000uf (1ea); 23mm (MCM 31-11465, \$1.08)
350V, 100uf + 100uf (1ea)	Replaced with, 500v 100uf/100uf (1ea); 35mm, C-EC100X2-500, Antique Electronic Supply, (\$10.50)
160v, 47uf, axial, (2ea)	Replaced with same value
1kv, 0.0047 ceramic (2ea)	Replaced with AC line rated, class X1, 400v (Mouser)

Speaker:

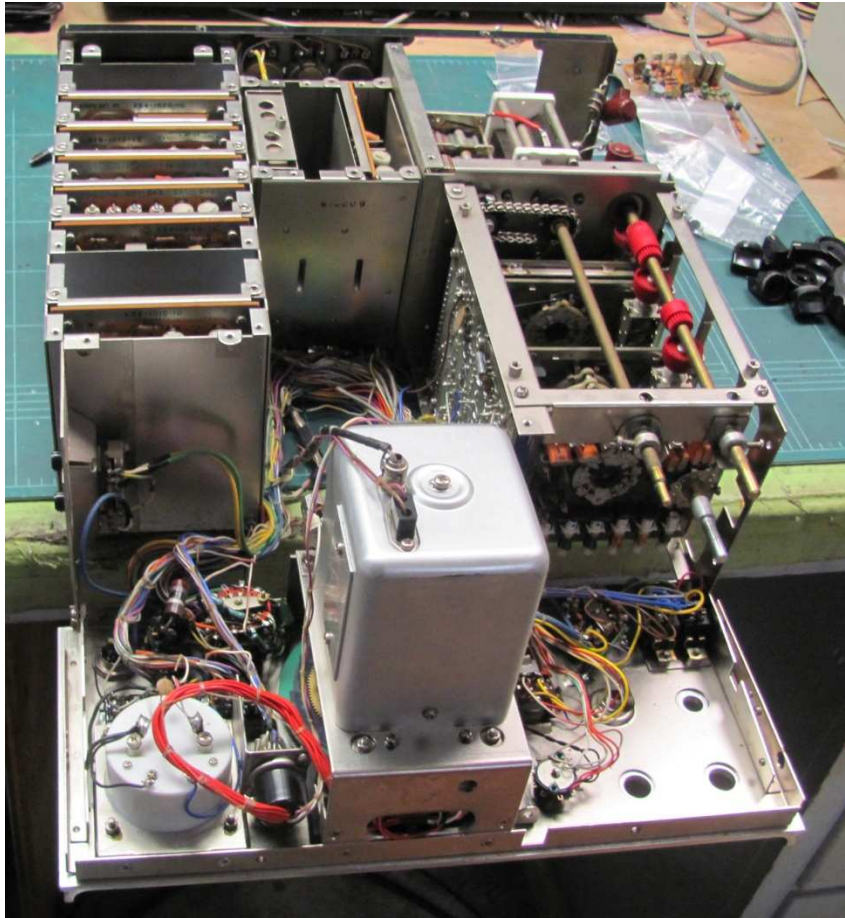
4.5 Inch, 10W, 8 Ohm, (MCM 55-4602, \$2.69)

Resistors & Diodes & Wire

Multiple sources

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TS-900 Radio



Front cover removed

The whole front panel assembly is hinged for maintenance

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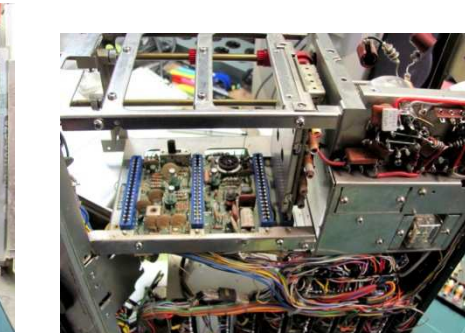
TS-900 Radio



1st RF card
Oscillator Coils



2nd RF card
Mixer Coils

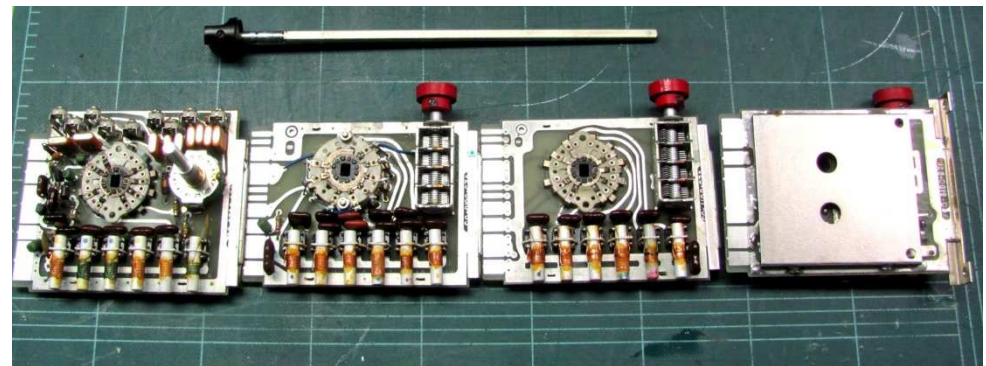


3rd RF card
Antenna Coils



4th RF card
Drive Coils & Backplane

These cards removed, de-fluxed with solvent, and inspected. Then re-lubed with “DeoxIt”

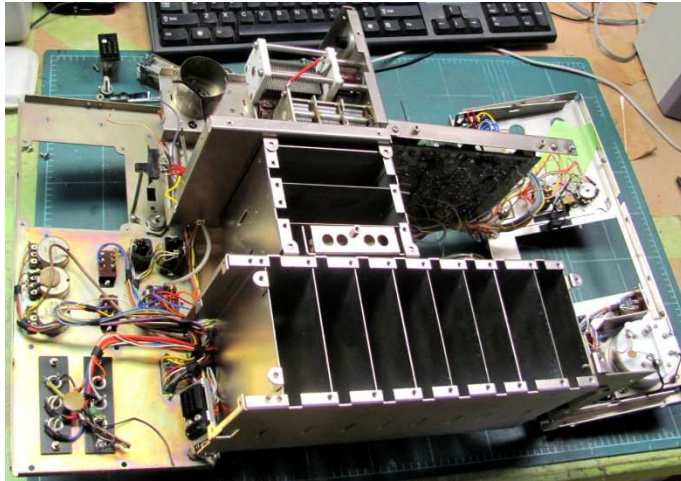


The four boards ready to re-install

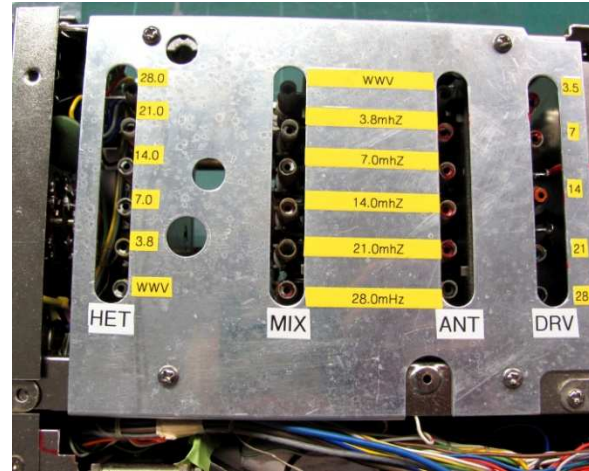
The driver board had many problems: Broken slug, another missing; Opened RF choke

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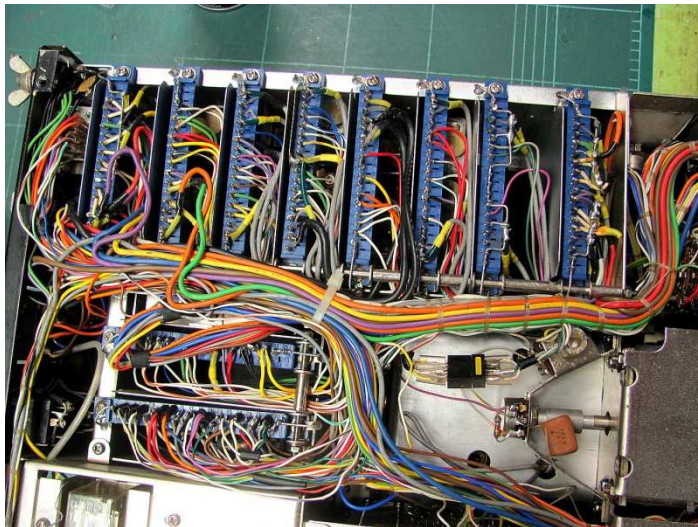
TS-900 Radio



Chassis was cleaned & inspected



To avoid confusion during re-alignment, RF coil packs are labeled.



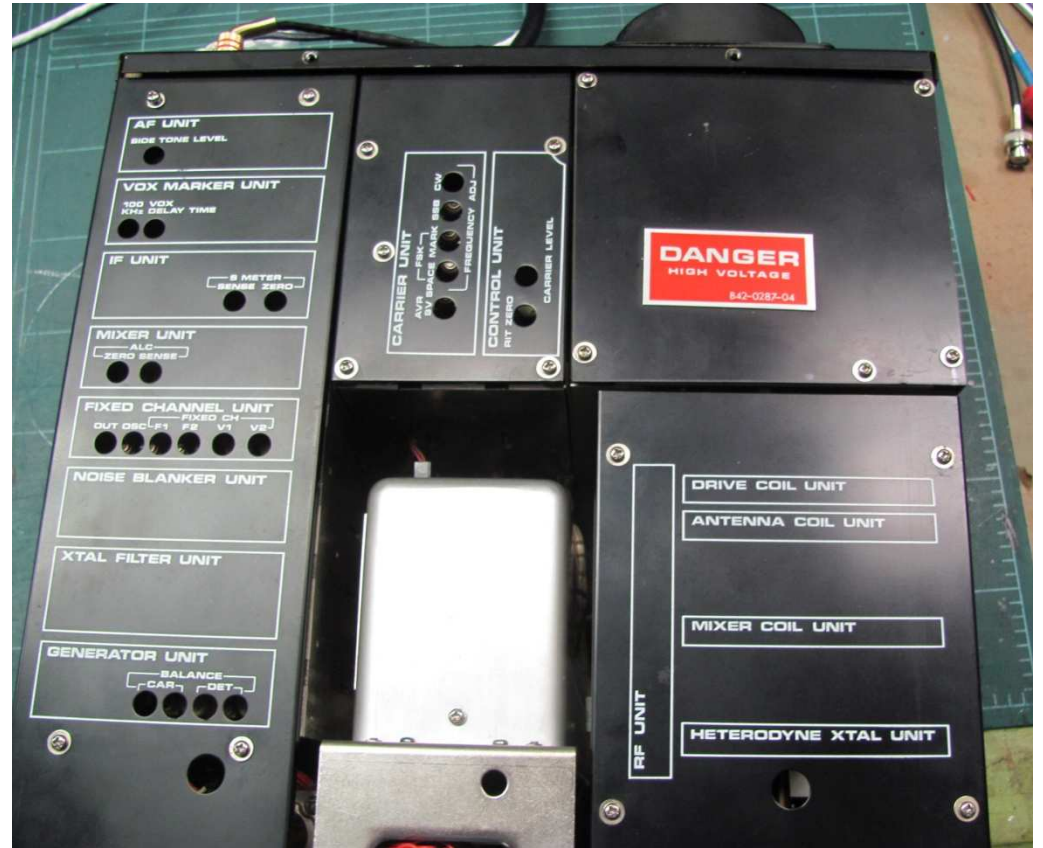
Bottom view of the wire harness



Audio balance pot is critical;
If set wrong, audio is distorted

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TS-900



- Extender board needed to adjust audio board; It's worth buying (\$25) on Ebay.
- Service Manual from Vintage Manuals W7FG.com (\$34)

Alignment finished; Last step to replace the nice decorative covers.

Thank You!...73 from N8CBX

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Band Switch Repair by W0NTA

- **Overview**
- Many of the ills with these radios can be attributed to a very dirty and poorly operating bandswitch. Many cases
- of poor drive and even no drive can be corrected by properly cleaning this switch assembly. Removing the board
- will give you access to the soldered switch wafers and other components on the board. Board removal can
- appear as a daunting task, but in reality, it is not that difficult.
- You should have a good idea as to the symptoms occurring in your radio before removing the RF board.
- Necessary to “rock” the bandswitch knob to get bands to “lock in”. Bandswitch needs cleaning.
- Unable to properly adjust L41, the 160 meter antenna coil. Very poor reception of on-air signals as well as the calibrator signal.
- Unable to get any drive on 15 and 18 meter bands when other bands are good. Can be a bad RFC L36.
- Other coil issues such as broken cores, bottomed out cores, etc.

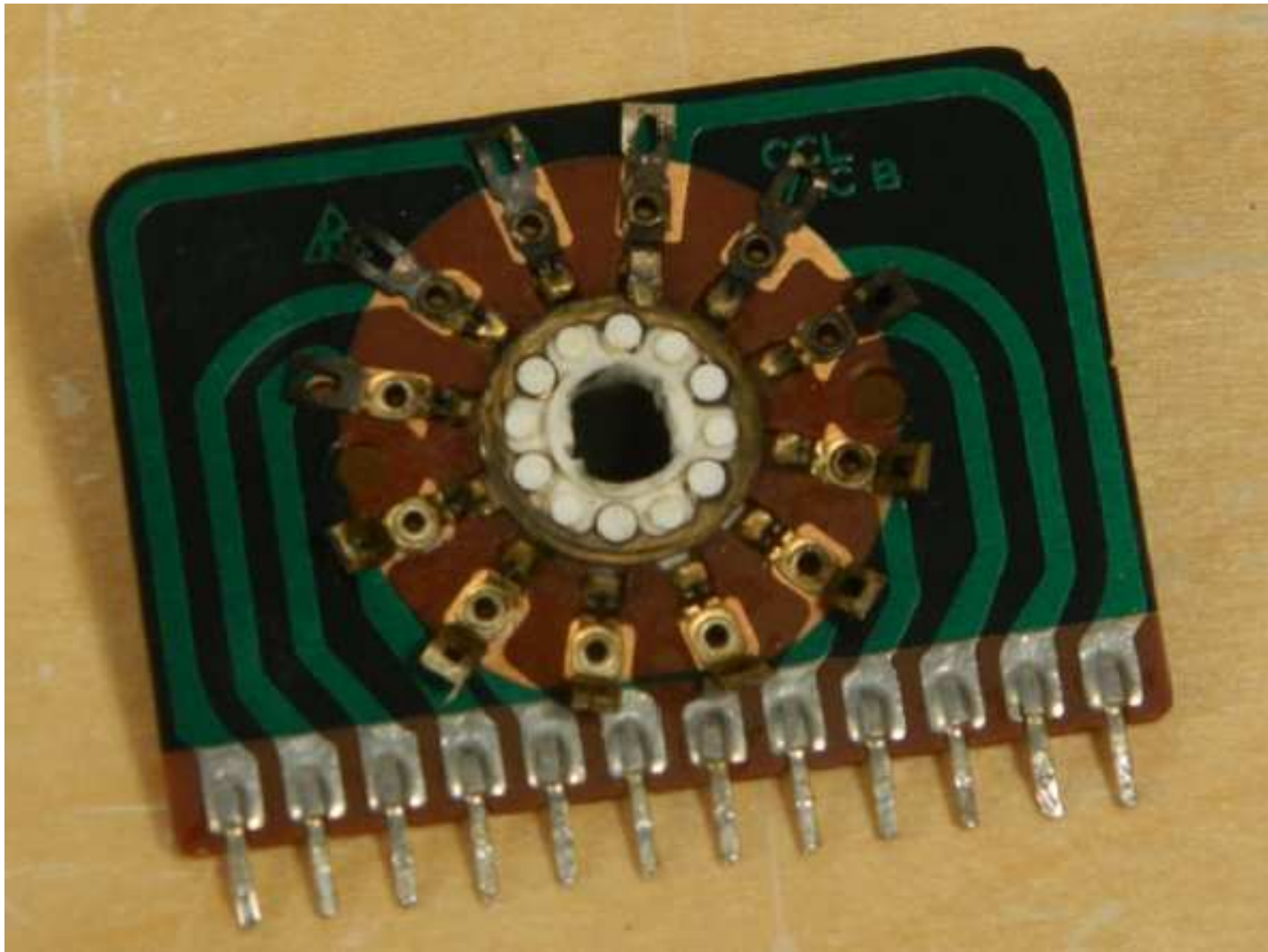
Full write up: WB4HFN.COM

- I have only attempted this procedure using a Hakko 808 de-soldering tool. I have not tried to remove the solder with wicking. You are on your own with this method.
- Removal of the RF board is not a difficult task. The main thing to keep in mind is the alignment of the bandswitch sections on the RF board and the final amplifier tank circuit switch located in the final compartment.
- These must remain in sync else you will have larger problems when the radio is reassembled.

Full write up: WB4HFN.COM

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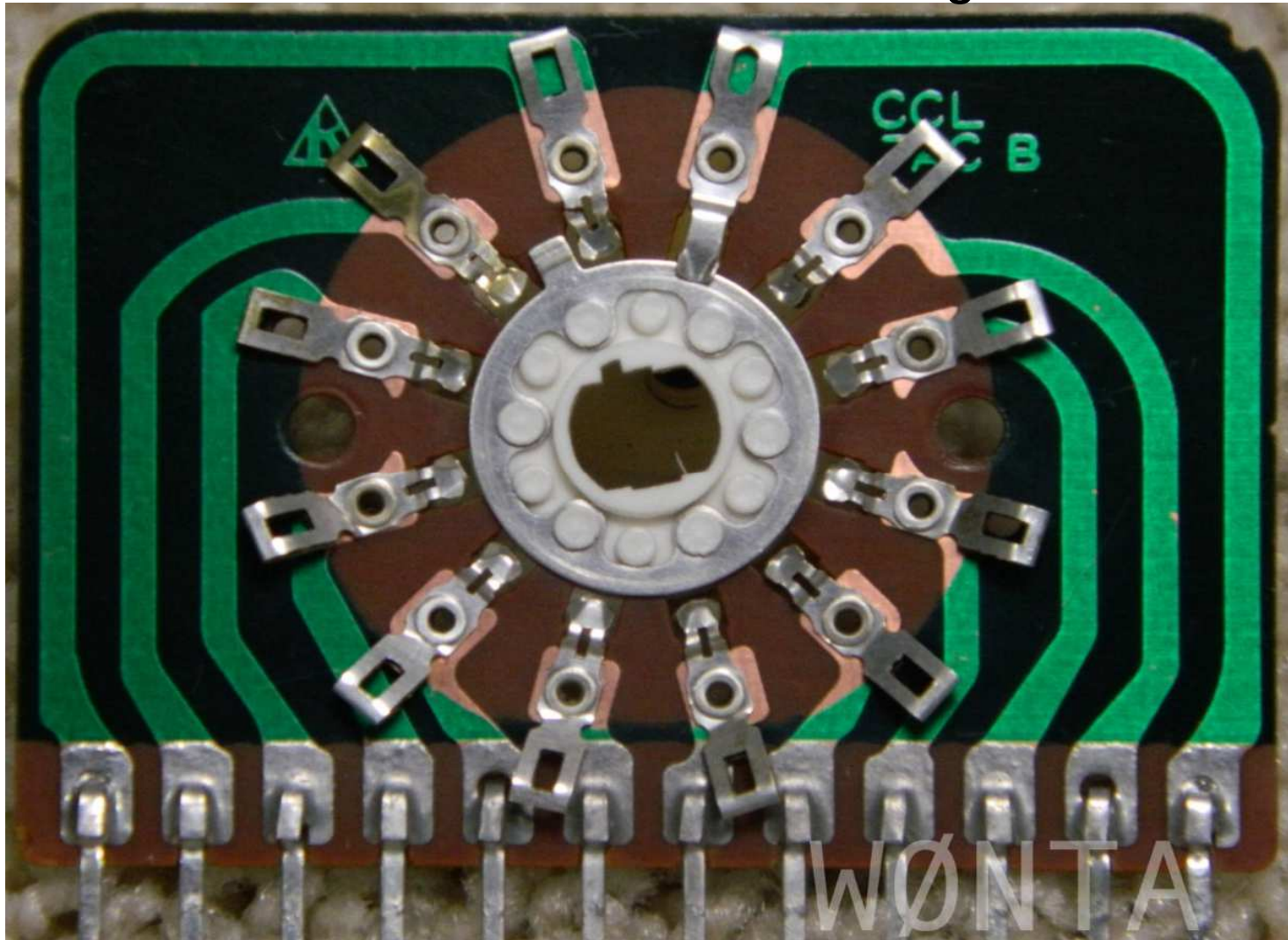
Band Switch Repair by W0NTA



Full write up: WB4HFN.COM

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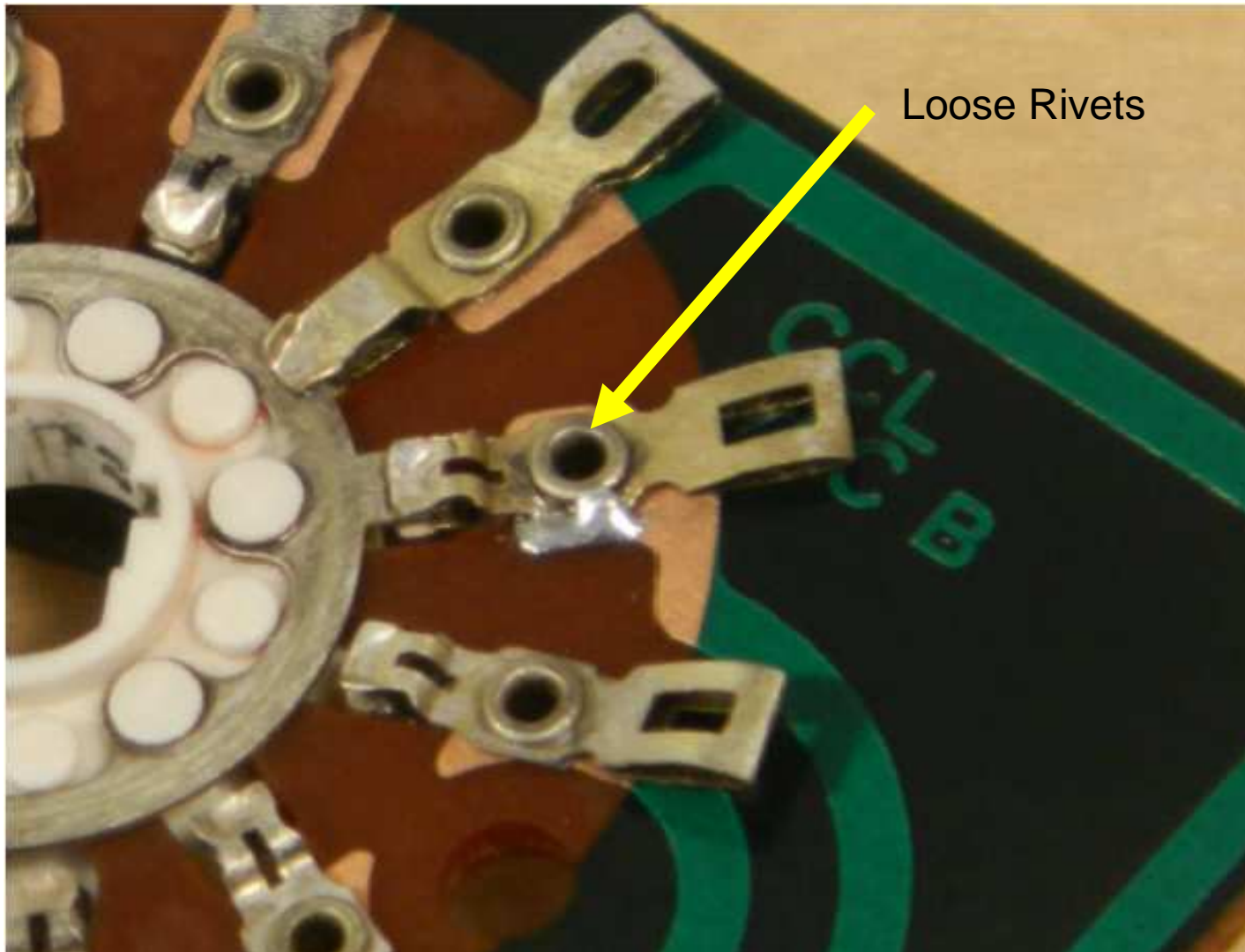
Band Switch Repair by W0NTA
After cleaninig.



Full write up: WB4HFN.COM

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Band Switch Repair by W0NTA



Full write up: WB4HFN.COM

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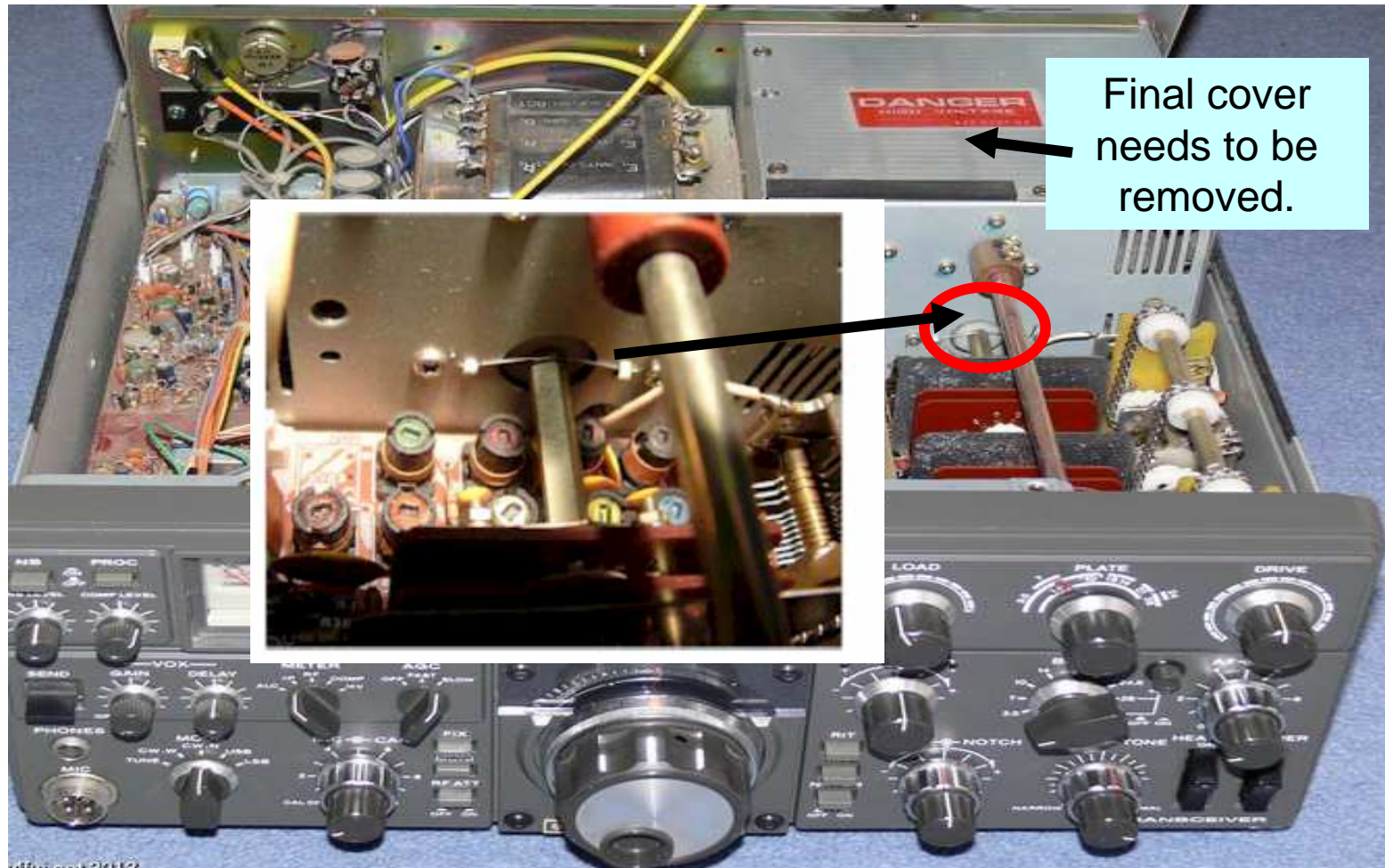
BAND SWITCH SLOPPY

- Band switch is sloppy (has a lot of play).
- The original band switch couple is probably cracked and needs to be replaced ASAP before equipment damage occurs.



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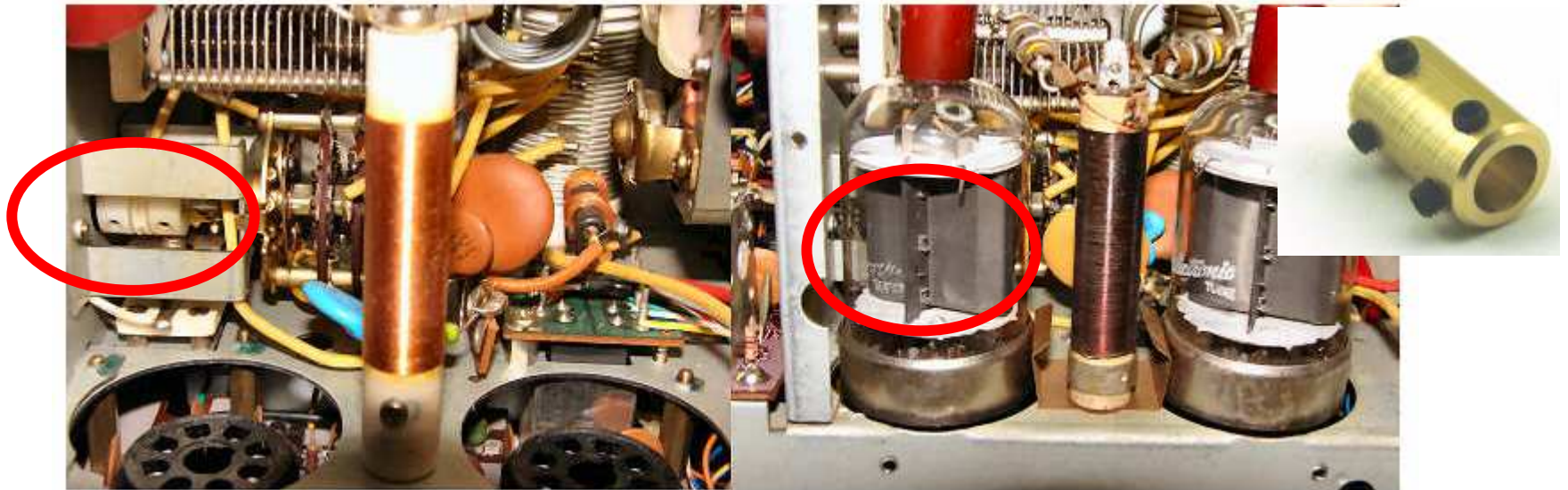
BAND SWITCH SLOPPY



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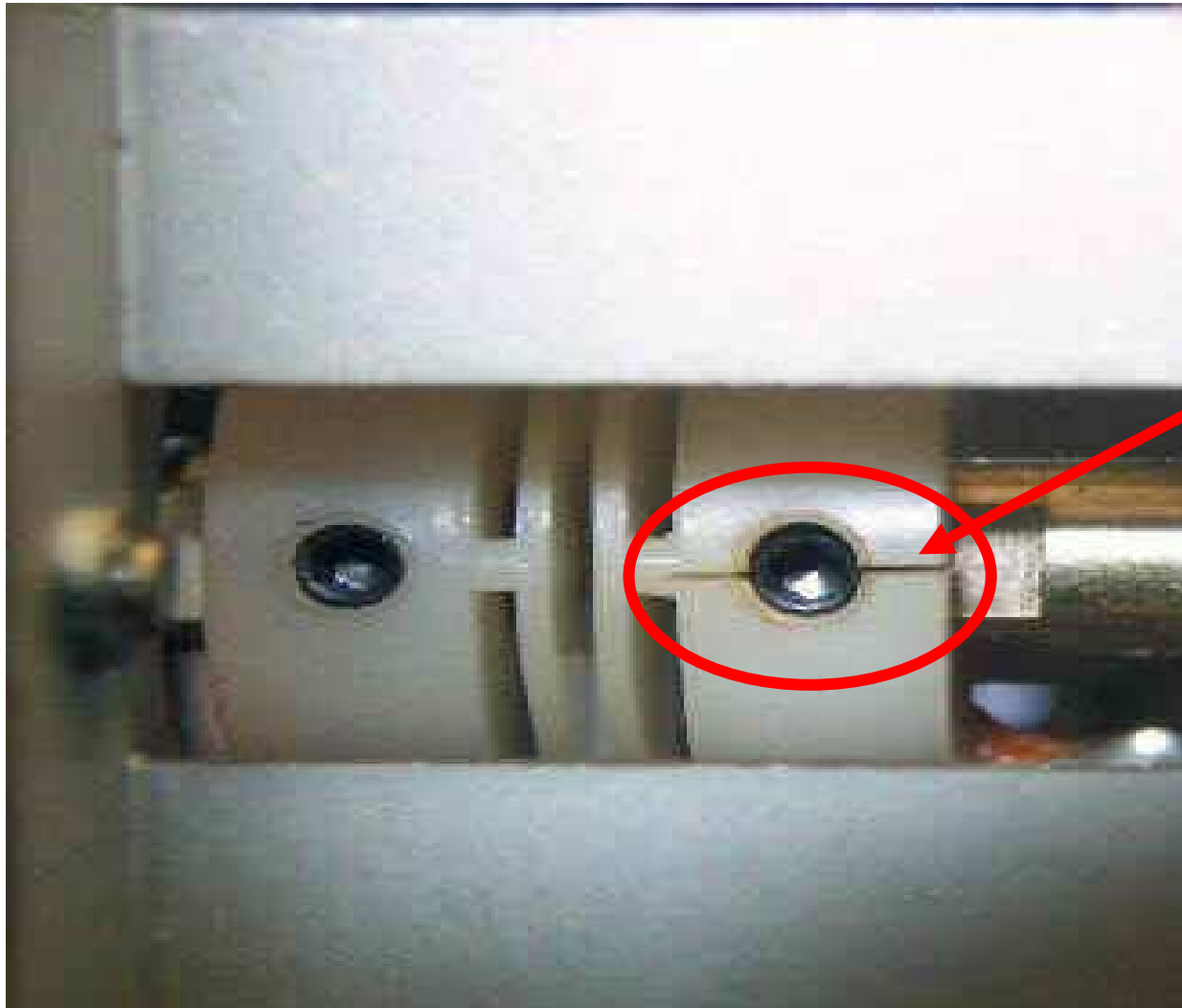
BAND SWITCH SLOPPY

- Procedure of inspecting and replacing this coupler are located at:
 - <http://wb4hfn.com/KENWOOD/Articles/>
- Replacement coupler sold at these 2 locations:
 - www.k4eaa.com
 - <http://www.hybridrestore.com/>



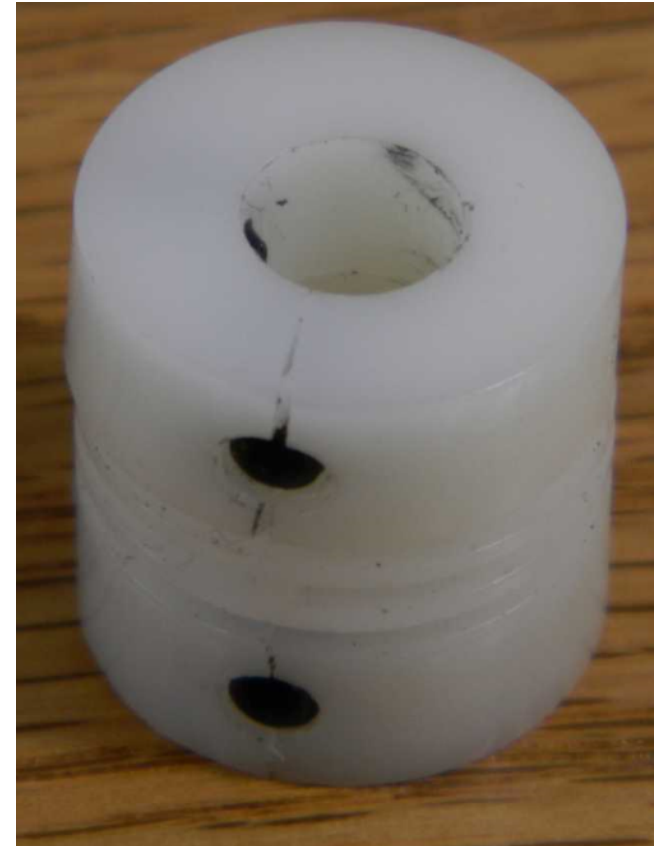
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BAND SWITCH SLOPPY



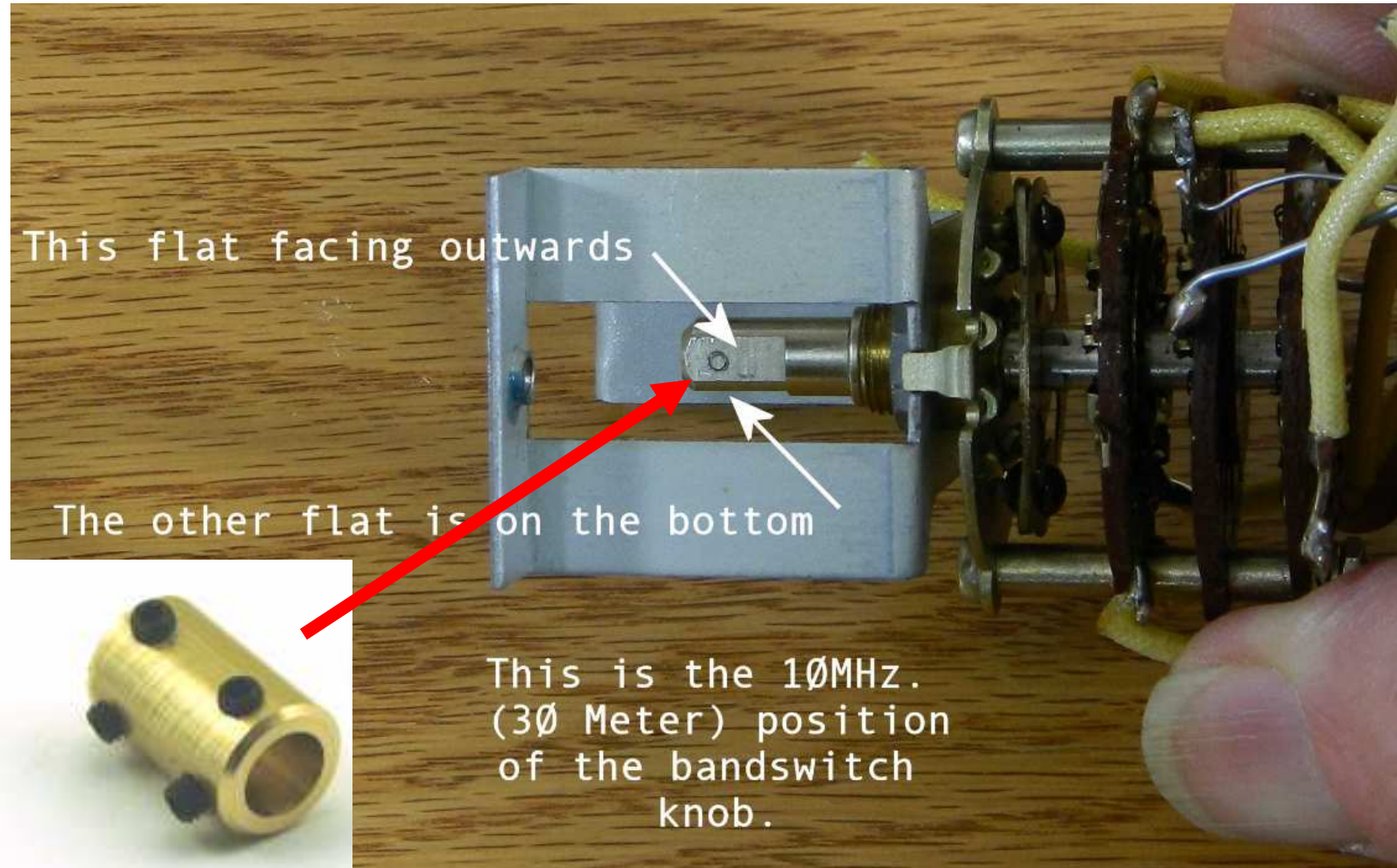
**Coupler
Crack**

- I begin by putting the band switch to the 160 meter position (1.5 on the switch scale).
- Loosen both of the set screws in the coupler.
- Turn the band switch to the 30 meter position (10 on the switch scale).
- Loosen the other two set screws.
- You can now pull the band switch knob and shaft out through the front panel.
- Do not move any of the switch wafers while this shaft is removed.
- I have found that one can simply remove the old coupler through the hole in the final cage and up over the driver coil set.
- Sometimes it takes some effort to get it in just the right position to get it out. I suppose one could cut the coupler off and remove the pieces, but have never had to do that.



- Install the new coupler on the shaft that has been removed and make sure the set screws are backed out so that the coupler will rotate all the way around the shaft. This will make it much easier to install.
- Now, position the new coupler on the shaft of the final amplifier band switch with one set of screws facing out and the other set facing downward. This is necessary so that the set screws will come into view as you rotate the switch shaft back towards the 160 meter position.
- Start the switch shaft into the front panel with the knob pointer pointing towards the 30 meter position.
- Install the band switch shaft back through each wafer and into the coupler. Position the coupler so that it can be tightened on both shafts.
- Tighten the two visible set screws.
- Rotate the switch back to the 160 meter position and tighten the other two set screws. That is it.

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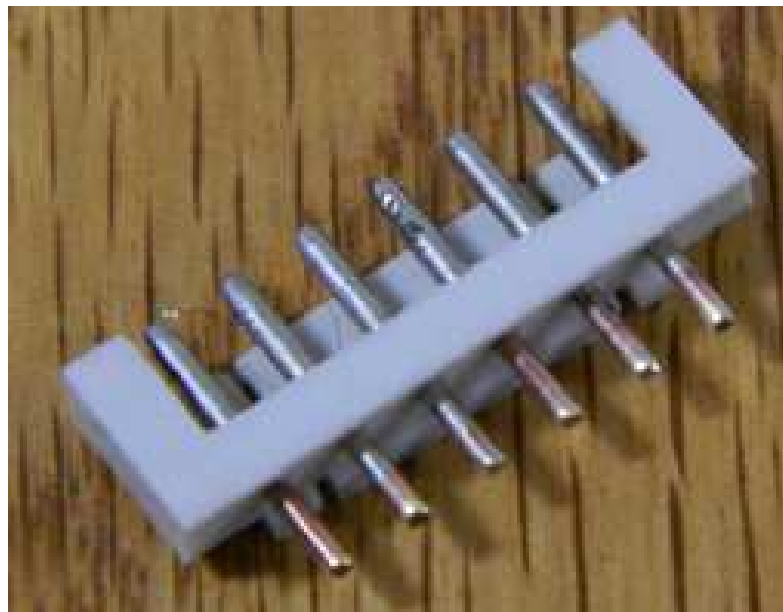
- The Kenwood Hybrid radios are full of the Molex connectors. They are on about every board in the radio.
- Poorly soldered connectors can cause many different issues with the way the radio performs.
- The joints can also be broken by rocking the connectors back and forth during cable removal.
- Dick always rock them towards the long end to prevent putting a lot of strain on the joint.
- Full article located at: **WWW.WB4HFN.COM**

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TS-530s/TS-830s Molex Connectors



Before Cleaning



After Cleaning

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Collins 500 Hz CW filter sub for YG-455C in TS-830S

By: Chris Kepus, W7JPG ckepus@comcast.net

- High Performance: Comparable to YG-455C
- Easy to Install
- No mods necessary
- Affordable and available
- Works great with TS-830S VBT and IF Shift systems*
- Proven performance: Used in Yaesu FT-817, FT-847, FT-890, FT-900, FT-1000MP and other models

* IF Shift “center” is at slightly different knob position

ckepus@comcast.net

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Collins filter has 2.53 dBm less insertion loss

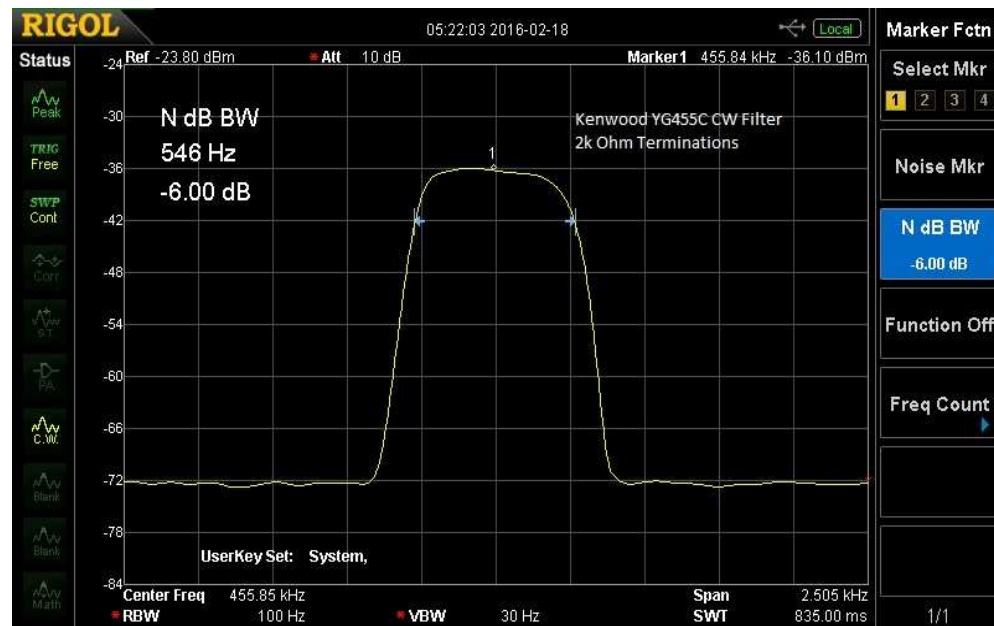
Collins passband ripple negligible



Kenwood filter is 86 Hz narrower at -6 dB ; 437 Hz narrower at -60 dB

Kenwood passband ripple negligible

Spectrum analyzer plots by Terry – K9TW



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Easy Installation - NO messy mods!

Dead Bug Mounting

- use double back tape

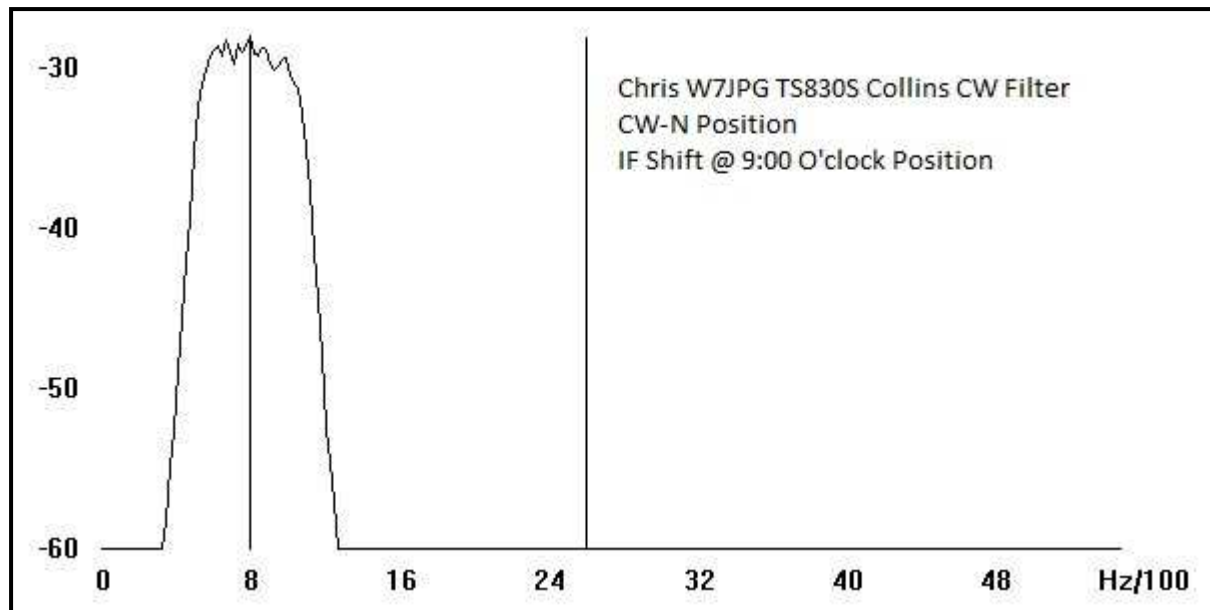
Easy Uninstall



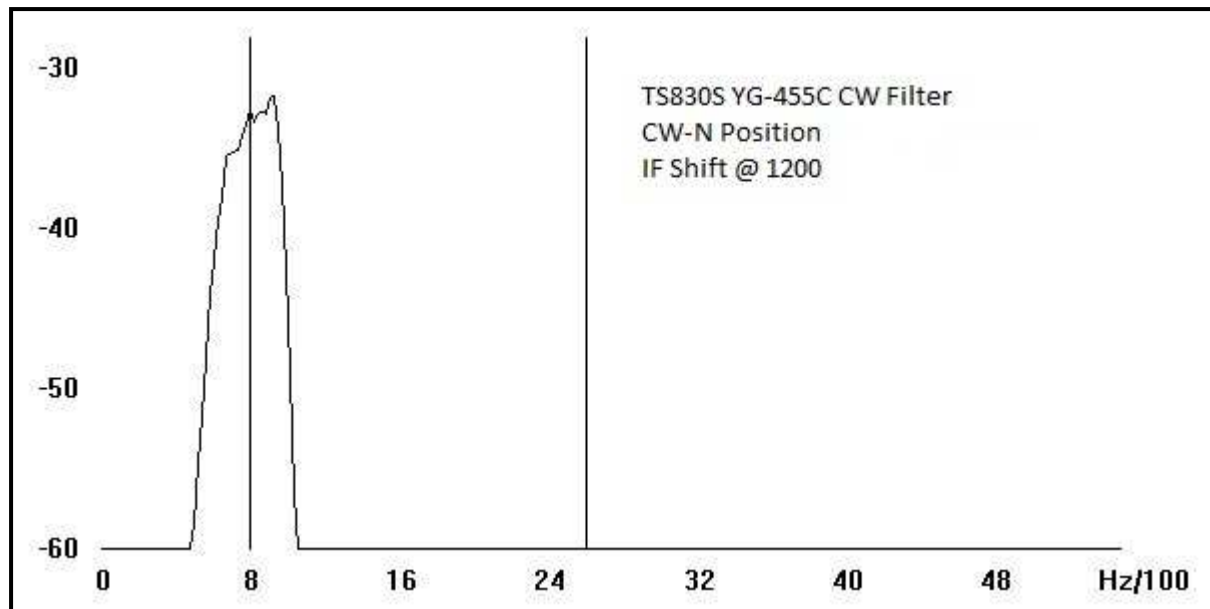
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Audio Response

Collins filter has less ripple and better symmetry



Spectrogram plots by Terry - K9TW



Summary

- High Performance - Collins quality
- Easy to Install / No Mods / Easy Uninstall
- Affordable and available**
- Works great with TS-830S systems

Notes - Credits

- Slides – Chris Kepus W7JPG
- Installation, Testing and Spectrum Analysis – Terry Wagoner K9TW
- Full write up/details posted @ WB4HFN web site
- Edited – Mark Gilger – WB0IQK

** Chris has a limited number of extra filters – contact directly for info: ckepus@comcast.net
eBay is the primary source – filters can be removed from Yaesu boards.

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- (All information supplied by Terry Wagoner, K9TW)
- Place 3 1N4007 diodes, Mouser PN: 512-1N4007 in series with the banded end towards ground from pin#1. These will limit the cathode voltage to about 2 volts.
- Place a 230Volt Varistor, Mouser PN: 576-V230LA20AP to screen grid, pin#3 to ground. These Varistors will turn on hard and clamp grids to ground at about 300 volts, in an attempt to prevent damage to the screen grids from anode to screen grid shorts.
- Place two 2 watt, 4.7 ohm resistors, Mouser PN: 588-OY-4.7-E in series with the HV output (Red Wire) from the electrolytic. These will limit the power supply short circuit current

Full write up: WB4HFN.COM

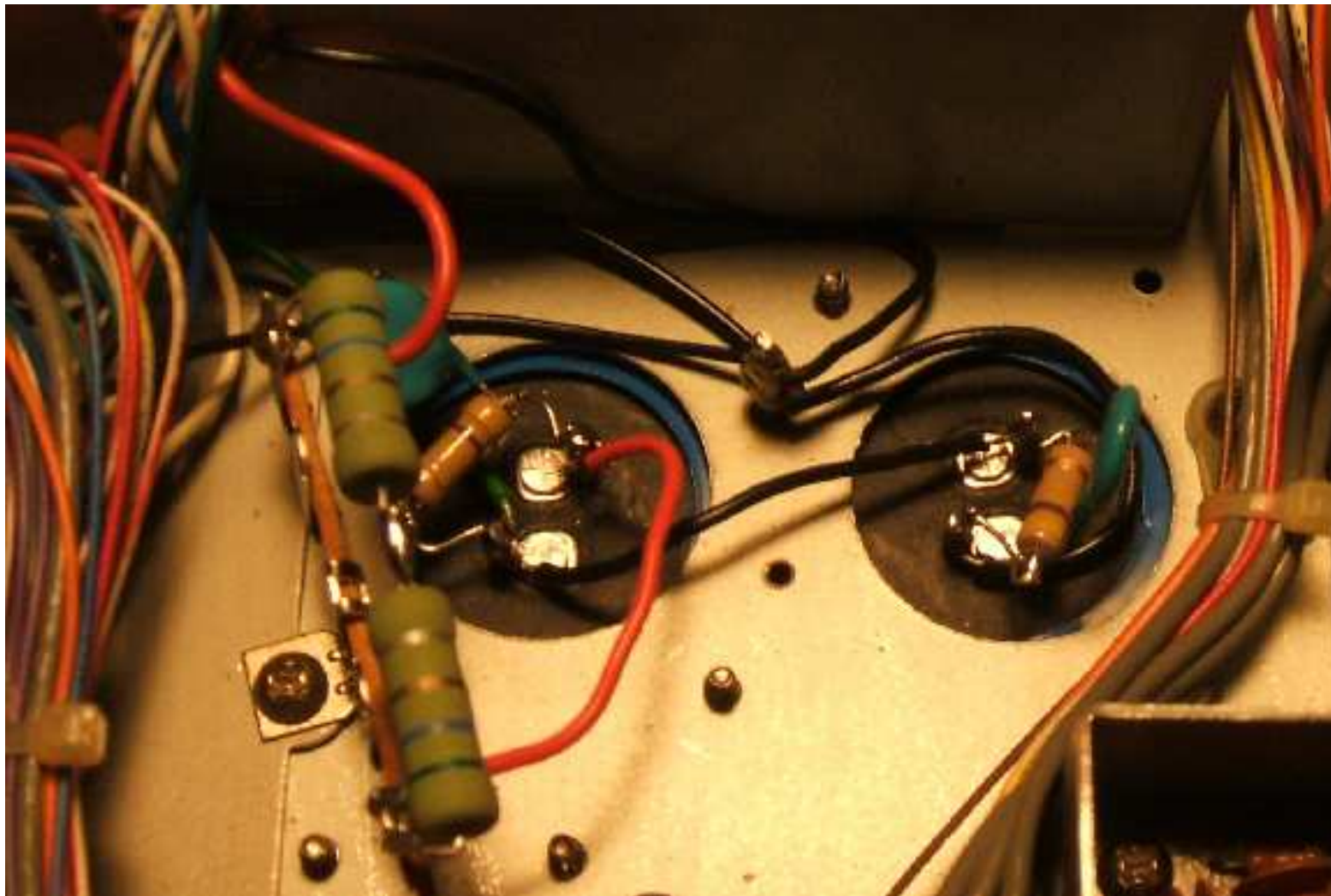
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Full write up: WB4HFN.COM



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Full write up: WB4HFN.COM



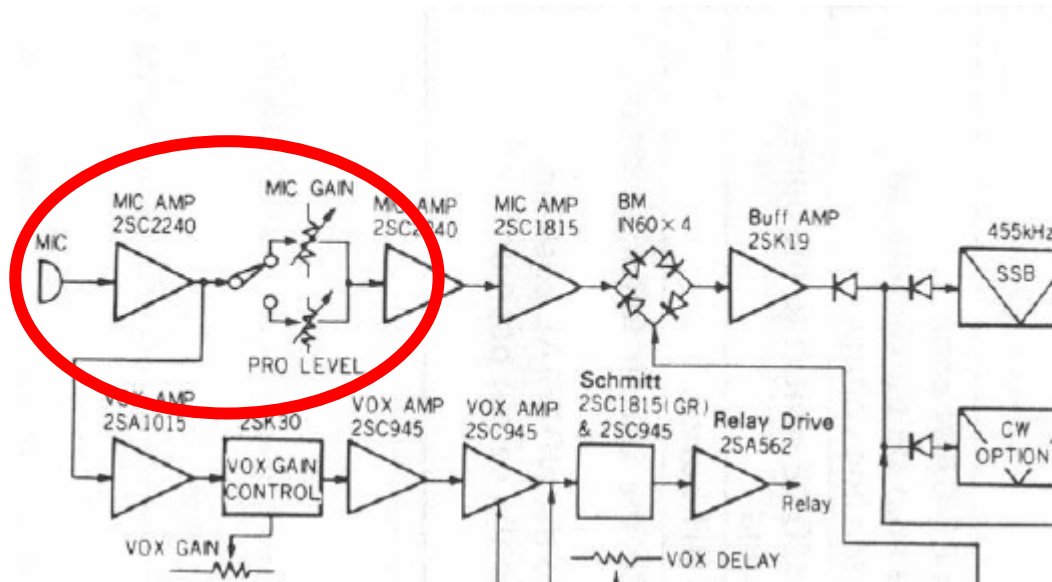
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- Running the Hybrid net one problem I've noticed that has been mentioned several times was low or no microphone audio level.
- The first suspect is a bad microphone. After switching mic's, the low audio level is still present. This has been brought up at least a dozen times.
- Is the audio level ok if the processor switch is depressed?

- If ALC levels are normal when the processor switch is depressed, the fix is to take the cover off of the radio.
- Locate the processor switch. There is a cover that protects the rear of the PROC switch..



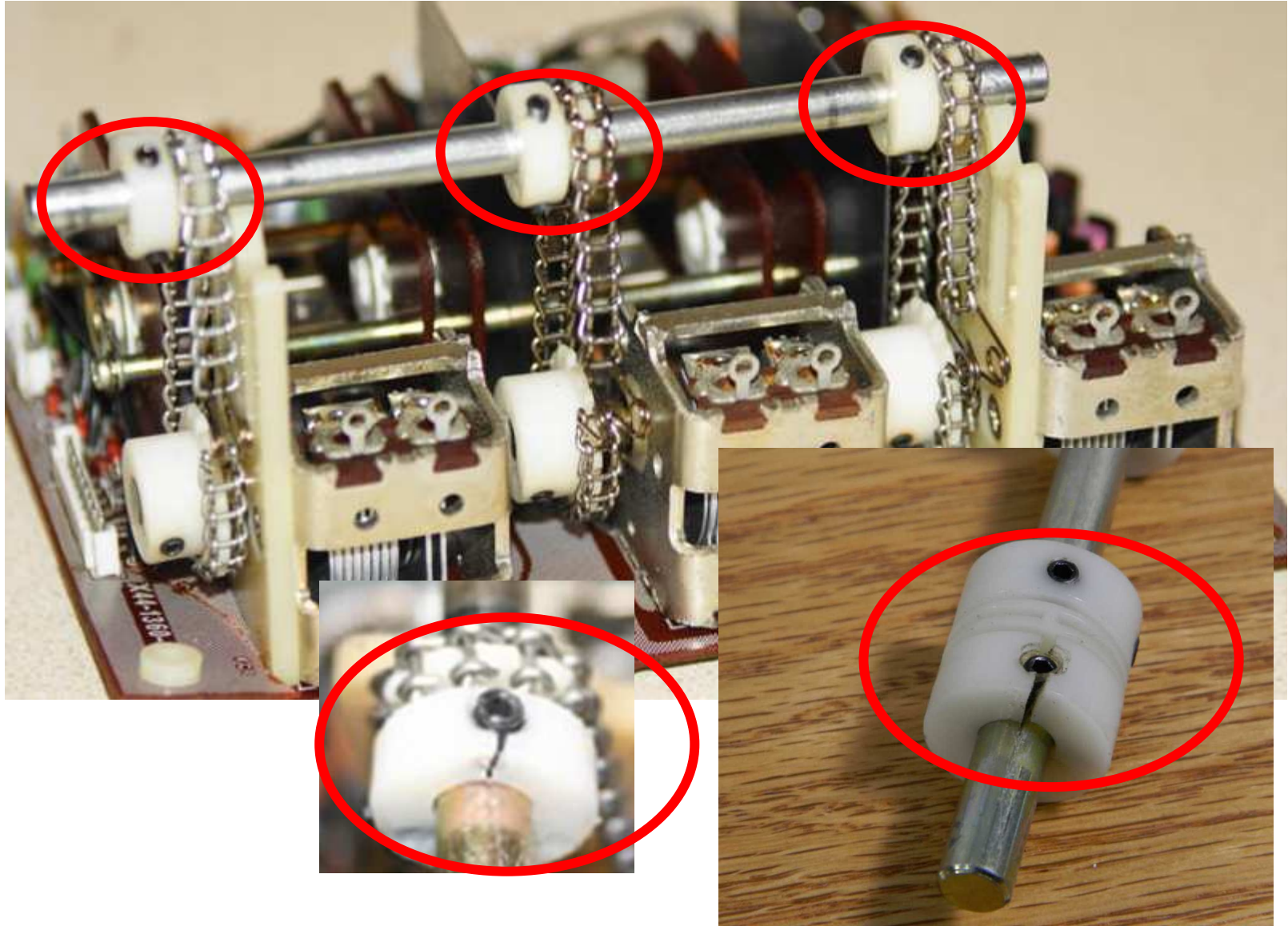
- Put the radio on it's back with the rear panel against the table top.
- One of the switch cover corners needs to be preyed apart enough to spray some DeOxit inside, letting it flow to the rear of the switch.
- Press the PROC switch several dozen times.
- This should fix the problem if the switch is in fact the problem.



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RF board cracked sprockets



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RF board cracked sprockets

- New replacement sprockets are now being manufactured for sale by Greg Graham NR6C at:
- <http://www.nr6c.com/sprocket.htm>
- A quick fix that I've used is to use a plastic tie wrap.

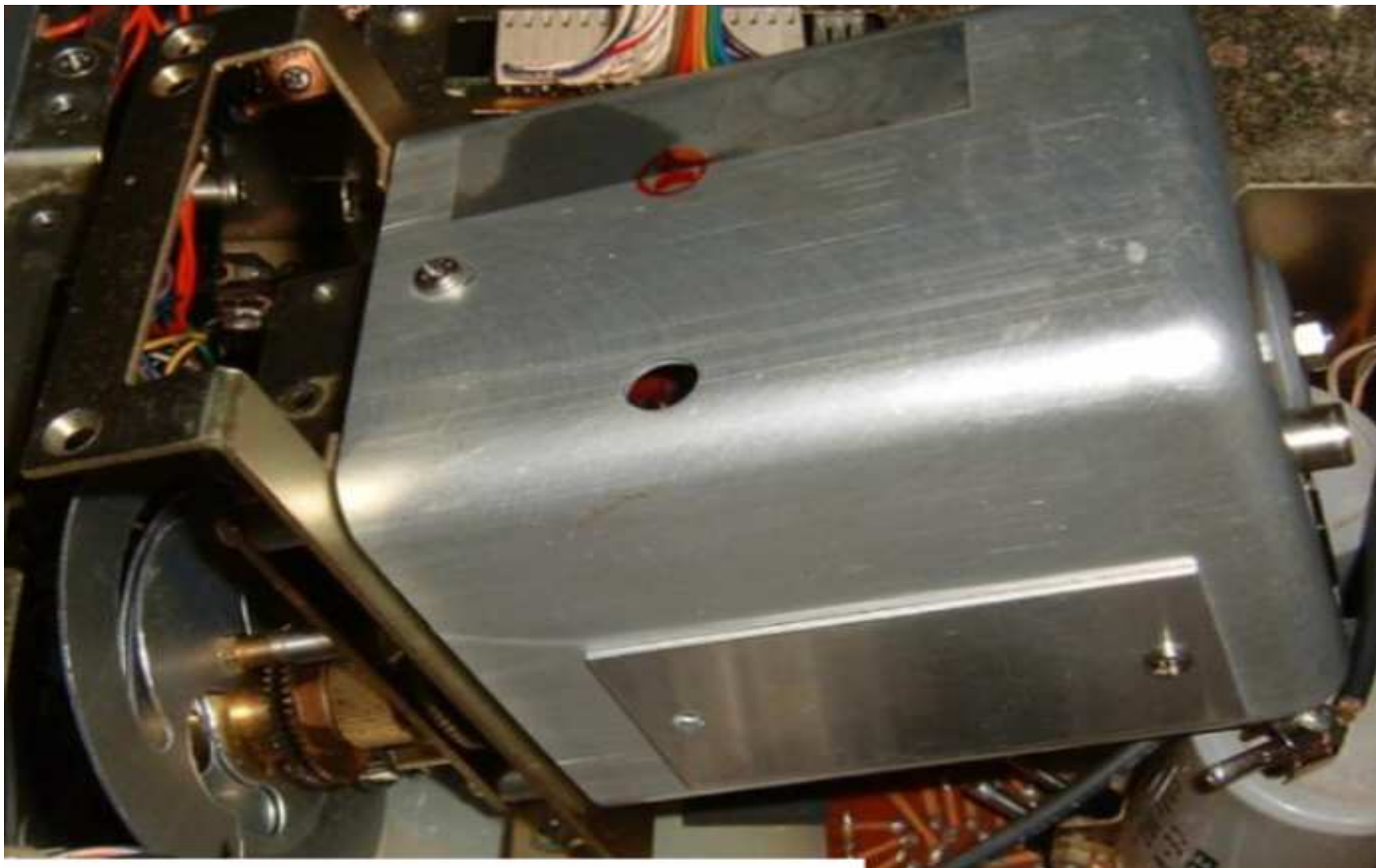


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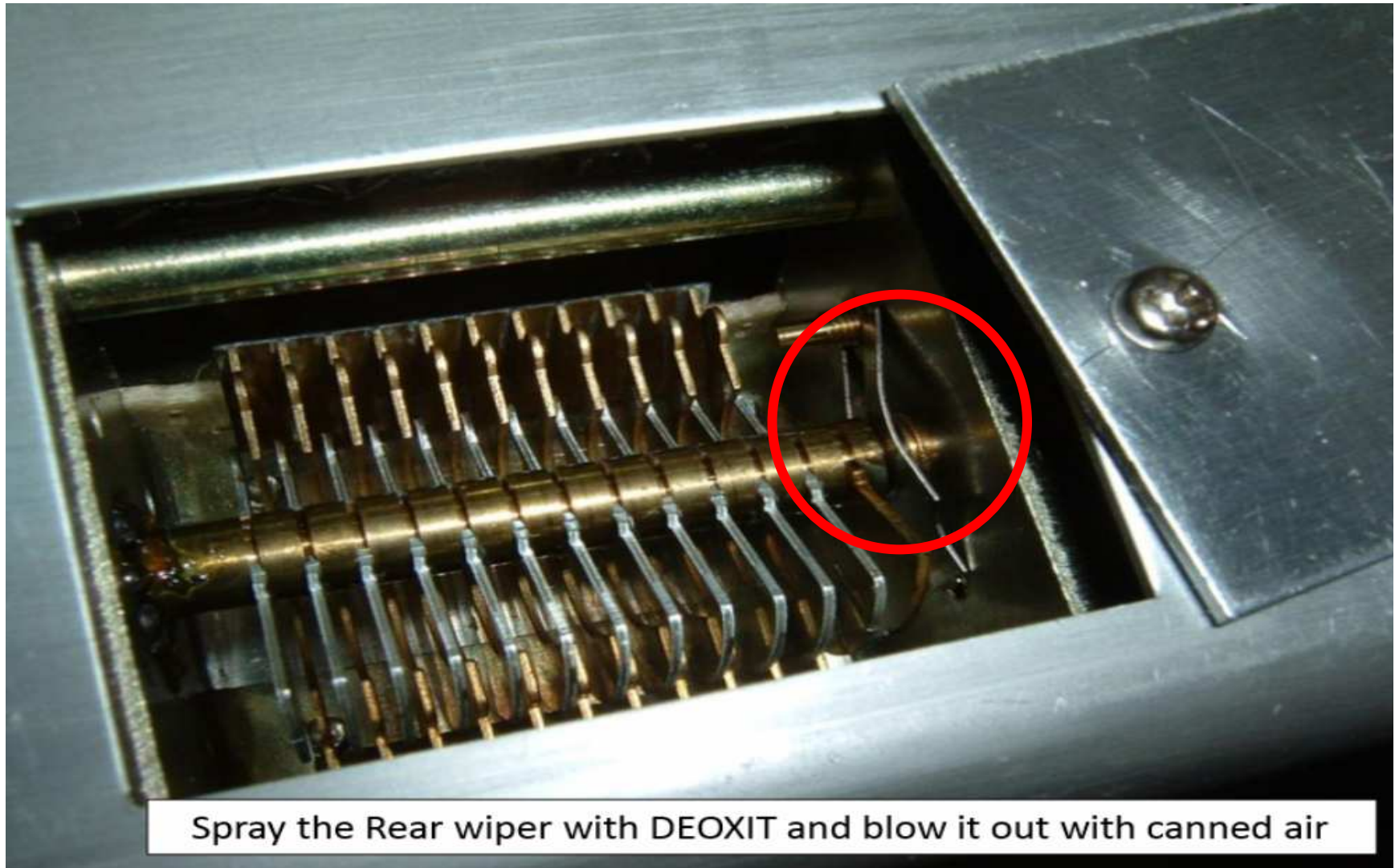
- Make sure the vfo rear wiper is clean.
- Clean front bearings and re-grease.
- VFO stabilizer might be a good options.

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HYBRID VFO STABILITY

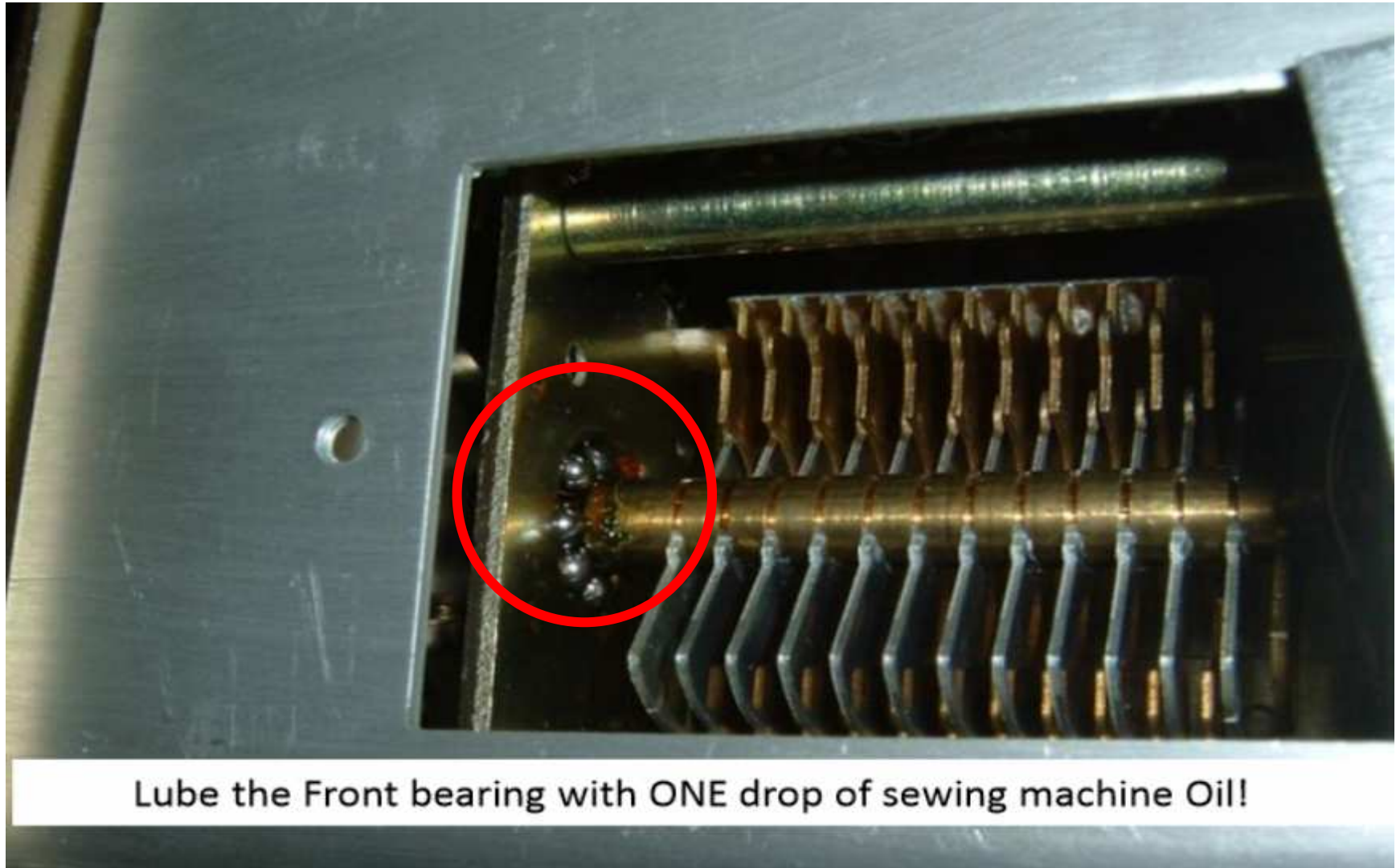


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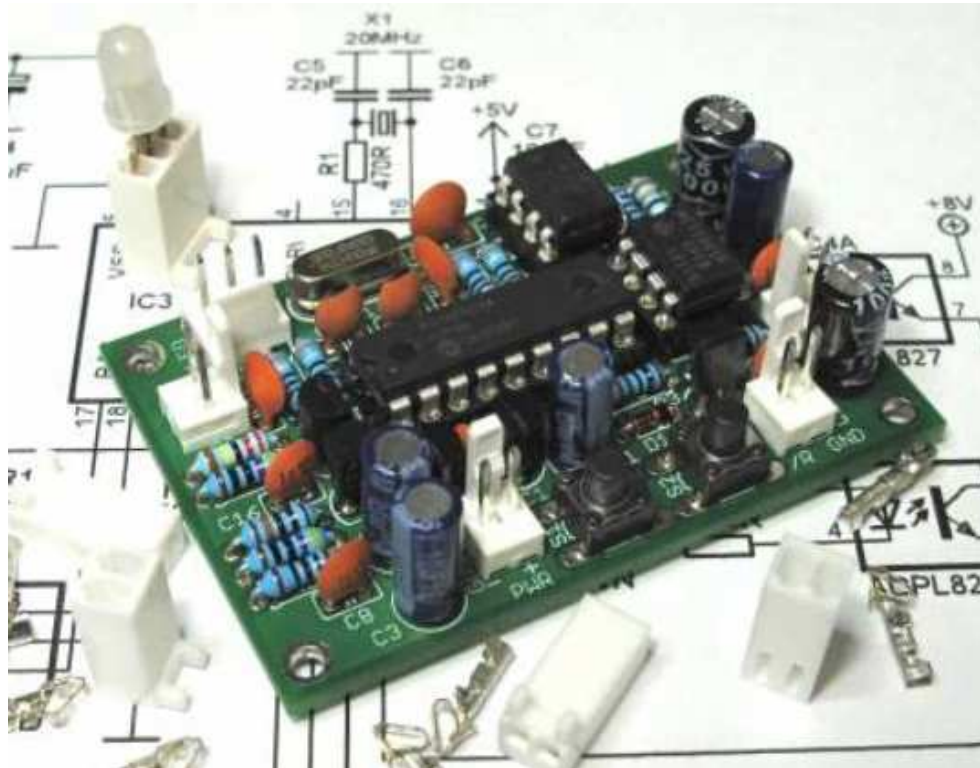
HYBRID VFO STABILITY



Lube the Front bearing with ONE drop of sewing machine Oil!

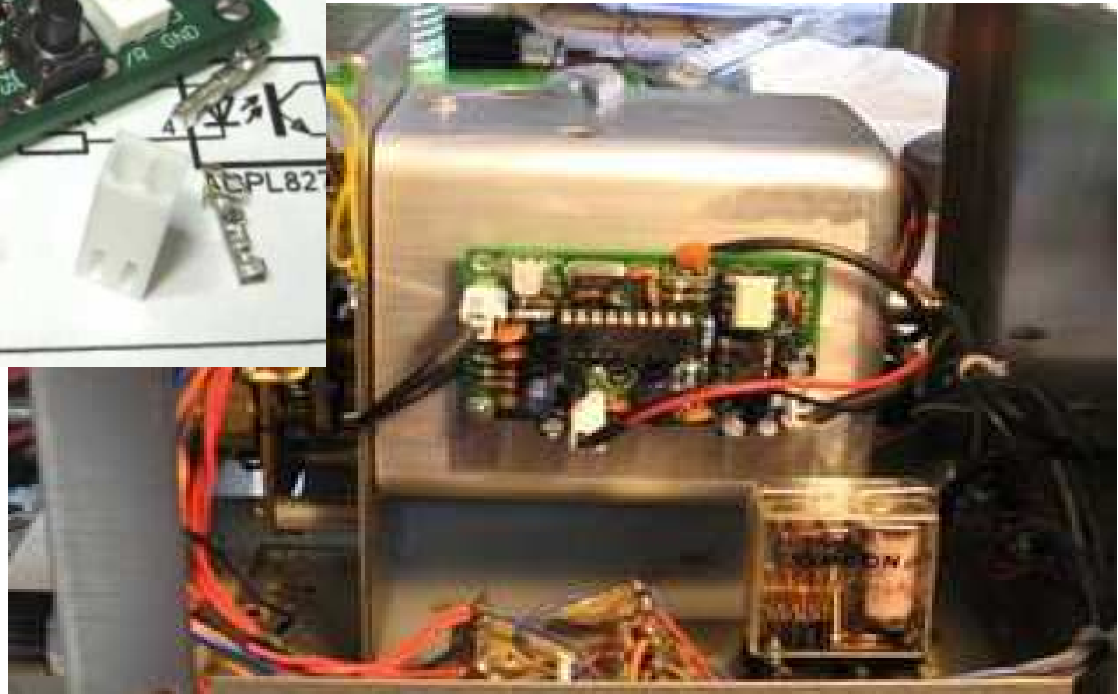
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HYBRID VFO STABILITY



**Cumbria Designs X-Lock
Easy to build kit.**

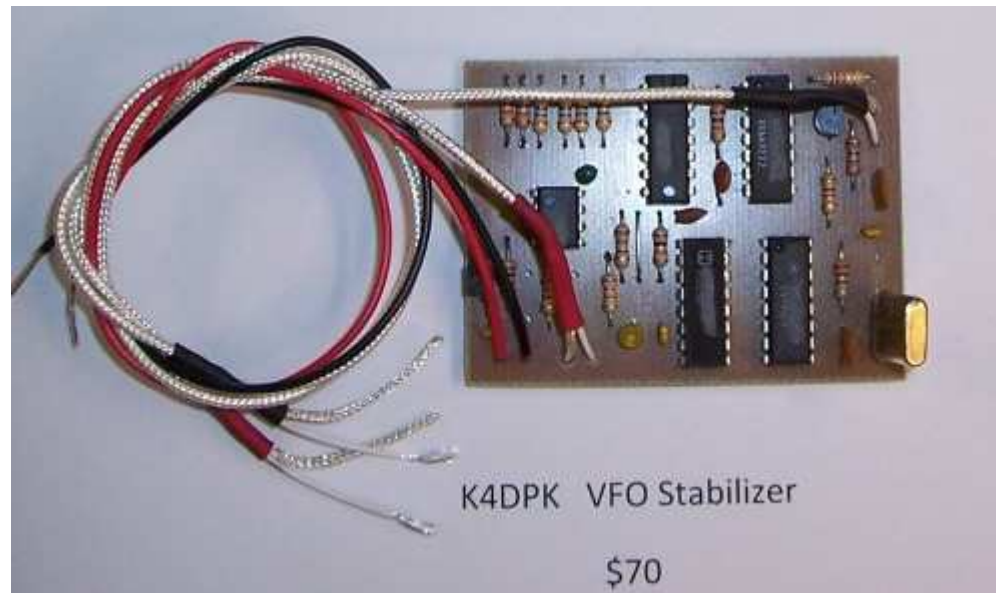
<http://www.cumbriadesigns.co.uk/x-lock.htm>



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HYBRID VFO STABILITY

- K4DPK VFO Stabilizer
- Preassembled, ready to go.
- Email for information: K4DPK.COM



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TS-820S DIGITAL DISPLAY



SERVICE BULLETIN

from: TRIO-KENWOOD COMMUNICATIONS, INC.

26

DATE 10-25-77

SUBJECT: SERVICE NOTE ON DG-1

It is our experience here in the Compton service facility that the vast majority of DG-1 problems are not component failure, but cold solder connections on the digital P.C.B. (X54-1160-00).

The second most frequent problem is dirty Molex connectors between the 2 P.C.B.'s in the DG-1.

Recommended service procedure: Remove both boards. Using a fine point, low wattage iron (less than 45W), and a good quality, low flux content solder, carefully resolder all component side connections plus the print throughs containing no components. (There are 18 of these points - only one is not top accessible, but is located under IC 11 and can be resoldered from the bottom). Resolder the Molex connectors. There are 9 print-thru's where solder may not have flowed thru to the component side.

Using a good quality tuner cleaner with silicone lubricant, spray both boards' Molex connectors and work the pins in 3 or 4 times to insure good contact. Reassemble and final check.

Total time on the bench: 20 minutes. We will allow up to 1 hour only warranty labor time.

JEB:adr

TRIO-KENWOOD 1111 WEST WALNUT STREET - COMPTON, CALIFORNIA 90220
COMMUNICATIONS, INC. MAILING: P.O. BOX 7065 - COMPTON, CALIFORNIA 90224



SERVICE BULLETIN

from: TRIO-KENWOOD COMMUNICATIONS, INC.

53

DATE 8/10/79

SUBJECT: DG-1 STANDARD SERVICE PROCEDURE

1 of 2

INTRODUCTION

A majority of DG-1 failures are caused by either dirty connectors, or cold soldered connector pins between the top and bottom foil paths of the double printed boards.

Before any component level service is attempted, it is advisable to eliminate the possibility of an intermittent connection causing or complicating Counter failure.

1. PHYSICALLY DISCONNECT THE MAIN POWER CORD!
2. Remove cabinet covers; top with speaker load, and bottom.
3. Unplug the top and bottom connectors from the DG-1 unit.
4. Remove the Digital Unit assembly by removing 4 screws from the chassis underside.
5. Disassemble the Digital Unit; remove 8 screw and slide off the cover.
6. Remove both PC Boards, 4 screws each.
7. For those connector pins joining top and bottom foil paths; reheat pin, flow .031" diameter solder from the top to insure the solder joint through the PC Board.
8. Wash the board to board Molex connectors with FRESH trichlorethylene. Heat dry and inspect for flux residue. If necessary, reclean. Also, remove the pin connectors from the DG-1 chassis, (note they insert from the Digital PC board side) and clean in FRESH trichlor. Heat dry and spray with silicone lubricant. Spray into the board mounted connectors with silicone.
9. Reassemble by reversing steps 8, 6, and 5.
10. Reinstall by reversing steps 4, 3, and 2.

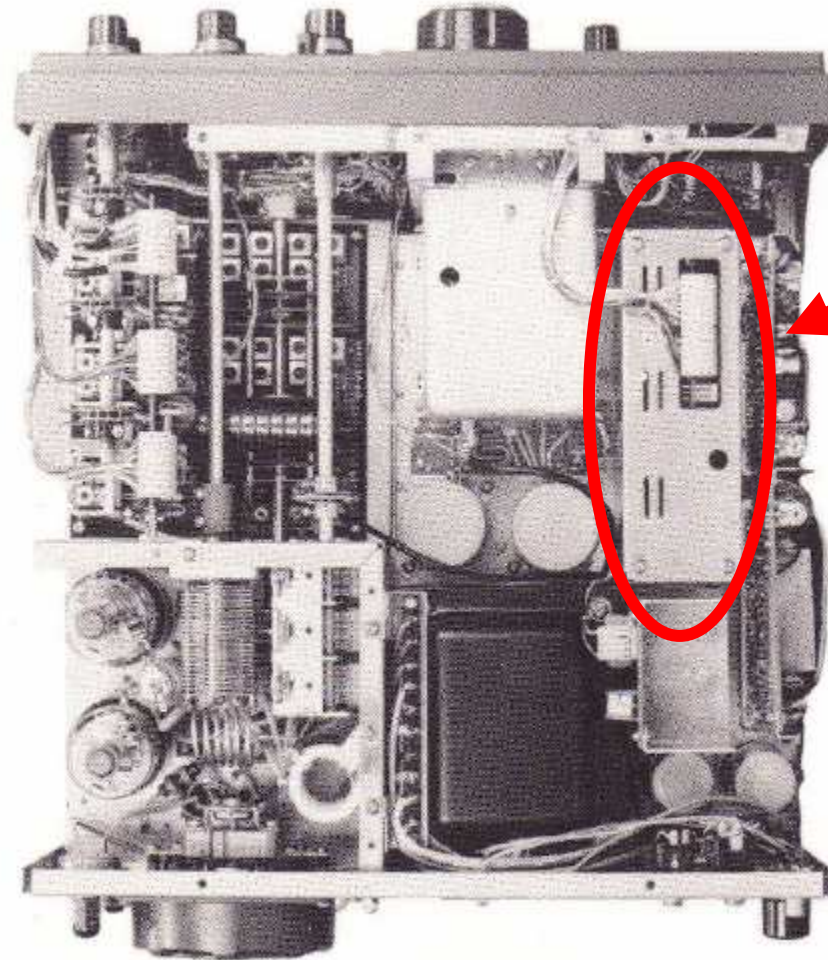
HOW TO SOLDER ON THE DG-1 PC BOARDS

1. Use a LOW POWER PENCIL, 35W or LESS!
2. Use rosin core solder, small diameter.
3. DO NOT create solder bridges or splashes.
4. DO NOT overheat or otherwise lift the foil from the board.
5. Wash excess flux away with FRESH trichlorethylene and a small flux brush. Neatness counts - it's YOUR radio.

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TS-820S DIGITAL DISPLAY



Remove 2
boards from
enclosure and
resolder
connector pins
between the top
& bottom foil
pins.

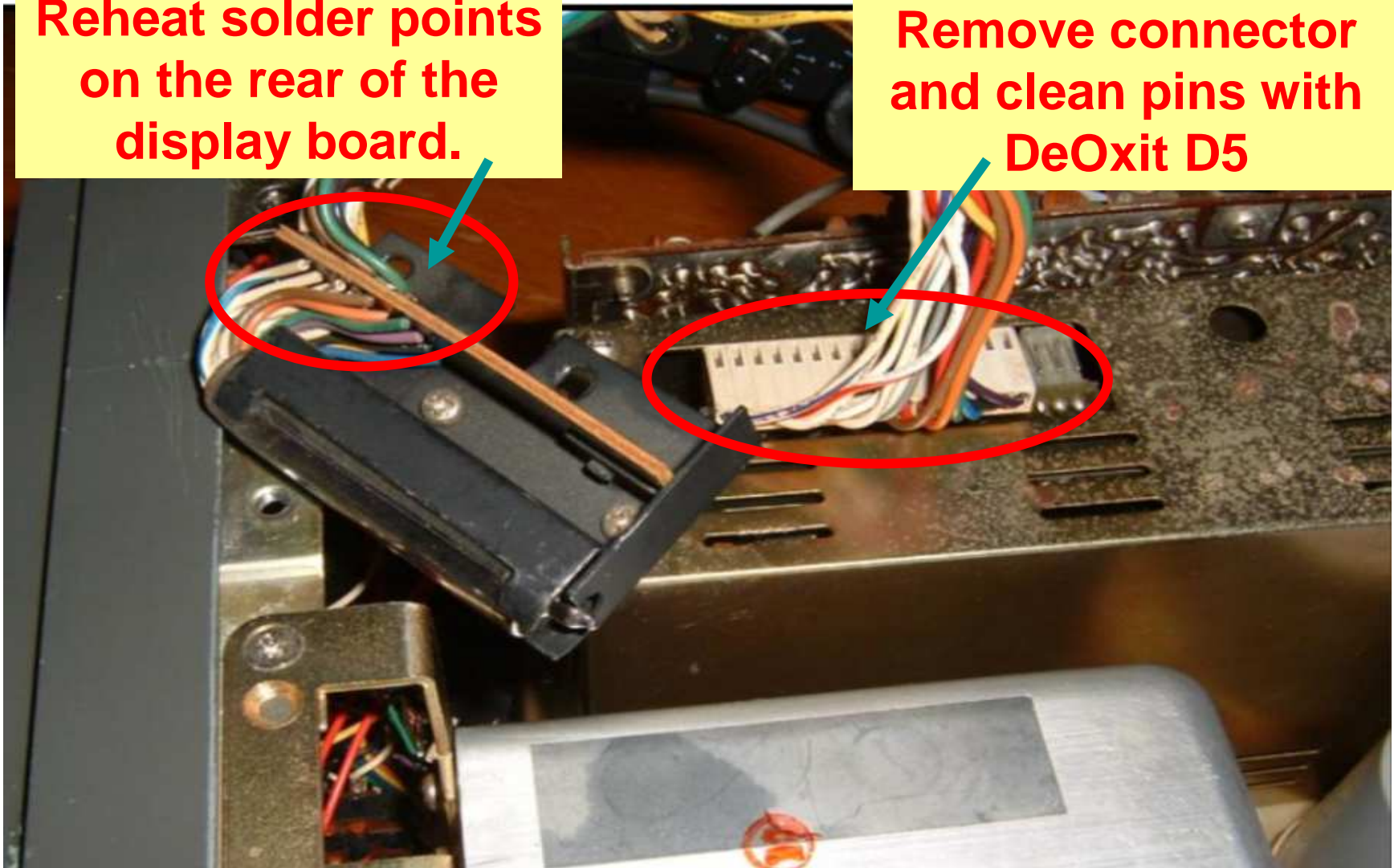
Top view

KENWOOD

TS-820S DIGITAL DISPLAY

**Reheat solder points
on the rear of the
display board.**

**Remove connector
and clean pins with
DeOxit D5**



KENWOOD



- DeOxit D5 or full strength D100 if needed.
- Magic Solution, published in Electric Radio May 2014. Good for aluminum chassis cleaning. Equal parts of:
 - Murphy's Oil Soap
 - Denatured Alcohol
 - Janitorial strength Ammonia
 - Acetone



- Simple Green does a good job on the front panels and cabinet.
- Magic Countertop Cleaner for front panels and cabinets.
- Windex does a good job on the cabinet and front panel knobs. Do not use it on the front panel.



- EVERCLEAR alcohol is excellent for cleaning Solder Flux from circuit boards.
 - EVERCLEAR is a pure grain alcohol. The brand, produced by David Sherman Corporation, comes in two strength bands, both 95% (190 proof), and 75.5% (151 proof) bottles. Although, the 95% is undeniably the most popular and most available type.



- Relays cleaning method.
 1. Put a drop of DeOxit on a thin piece of card stock and run it through the contacts.
 2. If step 1 does not do the trick, try a Burnishing contact cleaning tool with a drop of DeOxit.
 - **Mike Sandman**, Chicago's Telecom Expert, 390 E. Irving Park Rd., Roselle, IL 60172 Phone: 630-980-7710. Web: <http://www.sandman.com/> Order Model T001E for \$18.95
 - **Neuses Tools**, 1401 Rohlwing Rd., Rolling Meadows, IL 60008. Phone: 847-253-6555, Fax: 847-253-6652. Web: <http://www.pkneuses.com/www.pkneuses.com/index.html> (CB-5 Contact Burnisher with 6 (No.266B) .007" (.178mm) thick blades. (Included in the TK-18 Tool Kit. CB-54 Same as CB-5 except has 6 (No. 466B) .0035" (.089 mm) thick blades. CB-6 Same as CB-54 except also contains 6 (No. 266C) round ended abrasive rods. CB-7 Same as CB-5 except has 6 (No. 566B) smooth satin finished blades)



KENWOOD

Resource help for Parts, Service & Documentation

Kenwood Net Home Page

[Kenwood Brochures and Flyers](#)

[Kenwood Articles & Information](#)

[Kenwood Equipment Manuals](#)

[Kenwood Designed QSL Cards](#)

[Kenwood Magazine Advertisements](#)

Kenwood Hybrid Radio Nets:

Saturday - 7.235 MHz @ 3:30 EST

Sunday - 14.316 MHz @ 18:00 GMT



Kenwood Related Website Links

K4EAA – KEN - EMAIL: ken@k4eaa.com , Web: www.k4eaa.com

KE5FTF – Bob Mansker, Phone: (303)719-5433, Email: KE5FTF@mail.com Sells parts on eBay & QTH.COM

East Coast – Phone: (800)632-3323, Web: <http://www.kenwoodparts.com/parts/index.php>

Radio Boatanchor Parts: TEL: 207-942-5745 xfrmr@roadrunner.com <http://tubes.tubes.tubes.tripod.com/index.html>

Nationwide Radio & Eq. Sales LLC, Mark Olson, 1490 Norfield Rd, Suamico, WI. 54173, Email: ke9pq@new.rr.com

Phone: (920) 434-8097 Web: <http://marketplaceadviser.channeladvisor.com/StoreFrontProfiles/default.aspx?sfid=86409>

WB4HFN.COM



Resource help for Parts, Service & Documentation

www.wb4hfn.com

Kenwood service and technical support: Last Updated: 1/14/2016

K4EAA – Ken, FL, - EMAIL: ken@k4eaa.com , Web: www.k4eaa.com (**Suspended Hybrid Repairs**)

WA8SAJ – Jeff, OH - Phone: (440)951-6406, EMAIL: wa8saj@ncweb.com , Web: <http://wb4hfn.com/Services/WA8SAJ/SAJ-Repair.htm>

N9HE – Steve, AZ, Email: n9he@quarked.com

WB2KNR – Jim, NJ, Email: jimlamanteer@yahoo.com

AK4AA – David Lyndon, NC, Email: ak4aa36@gmail.com, Web: <http://oldhamdave.com/>

W0NTA – Dick, CO, Phone: (970)356-2011 Email: w0nta@arrl.net , Web: <http://www.w0nta.com>

K9TW – Terry, MI, Phone: (269)663-8943, Email: wagstw46@aol.com , Web: <http://www.k9tw.com>

HamRepair.com - Cal Fisher – TX, Phone: 214.476.5107, E-Mail: info@HamRepair.com, Web: <http://hamrepair.com/>

N0BXE, Affordable Radio Repair, Mike Alexander, Florence, CO. ,E-Mail: mike@affordableradiorepair.com Web:<http://www.affordableradiorepair.com/>

KA5IPF, Clif Holland, Avvid, Mabank, TX 75147 Phone: 214-850-0973 Email: clif@avvid.com Web: <http://www.avvid.com/> * **(Also TS-940)**

KE7OAY, Kenwood Restoration & Repair, Jim Showker, Eugene, Oregon, Email: jim@hybridrestore.com Web: <http://www.hybridrestore.com/>

K6ARU, Turner Radio, Lancaster, Calif., 616-945-9097 Email: k6aru@cwo.com

Midwest Technical Services, Watertown, Sdak, Phone: 605-882-1706, Email: tcmmoes@yahoo.com ,Web Page: <http://www.midwest-technical.com/>

AK4AA, Dave Lyndon, Hot Springs, NC, Phone: 828-622-0115, email: ak4aa36@gmail.com Web: www.oldhamdave.com * **(Also TS-940)**

KC9INK, Walley, Indianapolis, IN, Does local repair work only, Phone 317 823 9380, E Mail wallydoc@yahoo.com, ***(Also TS-940)**

K7ZS – Kevin Lahaie, Hillsboro, OR, Email: kevin@k7zs.com ***(Also TS-940's)**

Burghardt Radio Repair, Watertown, SD, Phone: (605) 886-7314, Email: service@burghardtadiorepair.com,

Web: <http://www.burghardt-amateur.com/> ***(Also TS-940's)**

www.wb4hfn.com

Kenwood Parts:

K4EAA – KEN - EMAIL: ken@k4eaa.com, Web: www.k4eaa.com

Kenwood Hybrid Restoration & Repair, KE7OAY, Jim Showker, Oregon Email: jim@hybridrestore.com Web: <http://www.hybridrestore.com/>

KD7DNY – Walter Dilley, Email: walterdilley@gmail.com (Bought all of Bob Mansker, KE5TTF inventory)

East Coast – Phone: (800)632-3323, Web: <http://www.kenwoodparts.com/parts/index.php>

Radio Boatanchor Parts: TEL: 207-942-5745 xfmrs@roadrunner.com Web: http://tubes_tubes_tubes.tripod.com/index.html

PacParts Inc., Phone: 800-421-5080, Web: <http://www.pacparts.com/>

Nationwide Radio & Eq. Sales LLC, Mark Olson "President", 1490 Norfield Rd, Suamico, WI. 54173, Email: ke9pq@new.r.com Phone: (920) 434-8097 Web: <http://marketplaceadviser.channeladvisor.com/StoreFrontProfiles/default.aspx?sfid=86409>

Ken's Electronics: 2825 Lake Street, Kalamazoo, MI 49048-5807, Phone: (269)345-4609, <http://www.kenselectronics.com/>

Parts Description:

Band Switch Coupler:

1. K4EAA – KEN - EMAIL: ken@k4eaa.com, Web: www.k4eaa.com
2. Kenwood Hybrid Restoration & Repair, Email: jim@hybridrestore.com Web: <http://www.hybridrestore.com/>
3. East Coast P/N: D22-0409-05 - (L5) NYLON COUPLER R-5000 TS-830S TS-820S R-1000 www.eastcoastransistor.com



TS-520, TS-820, TS-530, TS-830 Flat Pack RLL:

1. K4EAA – KEN - EMAIL: ken@k4eaa.com, Web: www.k4eaa.com
2. Kenwood Hybrid Restoration & Repair, Email: jim@hybridrestore.com Web: <http://www.hybridrestore.com/>
3. Online Components, Web: <http://www.onlinecomponents.com/keywordsearch.aspx?text=nf4eb-12v>



TS-520, TS-820 Antenna Relay:

1. Kense Electronics, Web: <http://www.kenselectronics.com/> P/N: 401013-S term 12VDC replace MH4P-12VDC in T599D, TS520S, TS820
2. Kenwood Hybrid Restoration & Repair, Email: jim@hybridrestore.com Web: <http://www.hybridrestore.com/>



Misc. Items:

TS-830 Rectifier board relay – Source unknown at this time...

TS-940 Relay Omron G6E134P-ST-US-DC12, Digikey Panasonic part # 255-1473-ND

TS-520, 820, 530, 830 Drive Sprockets, email: NR6C@roadrunner.com, Web: <http://nr6c.com/sprocket.htm>

TS-520/820 Paddle Switch Handles, eBay user: [id_dude](https://www.ebay.com/uid/144444444444) Search for "Kenwood Paddle Switch Handles".

TL-922 amplifier upgrades, Kessler Engineering LLC, Phone: 937-458-3173, email: don@KesslerEngineeringLLC.com, Web: www.KesslerEngineeringLLC.com

Cabinet Paint - ACE Hardware, Rust Stop, Machine & Implement, Ford Gray Gloss, Item# 082901171393



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Resource help for Parts, Service & Documentation

Kenwood Hybrid Transceiver Sales, Restoration & Service

by Ken K4EAA

Last Updated January 2013

Kenwood TS-520, TS-520D, TS-520S, TS-520SE, TS-520SP, TS-820, TS-820S, TS-530S, TS-830S, R-820

Amateur Radio equipment Information & Service : Transceivers, Receivers, VFO's, Antenna Tuners, Speakers, Ham Projects, Technical Information, Schematics, Repair Procedures, Information about Vintage Kenwood Ham Radio equipment



K4EAA.COM



Resource help for Parts, Service & Documentation

Kenwood Hybrid Restoration & Repair

Kenwood Models TS830S, TS530S, TS820, TS820S, TS520, TS520S, TS520D, TS520SE, TS520SP

jim@hybridrestore.com

Jim (KE7OAY)



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hybridrestore.com/parts/

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W0NTA.COM

Amateur Radio Station W0NTA



These items are not for sale.

[Click Here for Manual Download Page](#)

[My Participation in the FYBO QRP Contest 2006](#)

The FYBO (Freeze Your Buns Off) QRP contest is a fun event where you operate outdoors during a date in February when the temperatures are usually rather cold. A multiplier is determined by the temperature - the lower the temperature, the higher the multiplier. I found that this page is still available on the net and decided to put a link here. We have since sold the place in the mountains. I miss it dearly as it was a great operating location and a relaxing venue.

[Rebuilding the bandswitch on a Kenwood Hybrid radio – TS-530S and TS-830S](#)

Amateur Radio Items For Sale

KENWOOD

Resource help for Parts, Service & Documentation

K9TW Hybrid Service

K9TW.COM

Welcome

Hello:

I am Terry Wagoner K9TW. I have been a licensed amateur radio operator since 1960. I hold an Extra Class License and the former FCC 1st Class Radio Telephone License. I have owned and operated all the KW Hybrid models over the years and currently own two full filtered gold emblem TS-830S radios as my primary daily drivers.

I have been servicing Kenwood Hybrid Transceivers for just over 11 years. I troubleshoot, repair, and perform full factory service manual alignments.

I also will on a limited basis perform email and telephone consultation in an effort to help a KW hybrid owner resolve operational issues. I charge no fee for this help.

I am a member of the Yahoo Kenwood Hybrid forum where I devote a considerable amount of time trying to help newly licensed hams who have purchased a KW hybrid as their first HF rig.

You can read a more complete biography on the QRZ.com website.

Welcome to my website (it is my first attempt and a work in progress)

Best 73s
Terry Wagoner K9TW



Various operator and service manuals by manufacturer

KENWOOD HYBRID

DG-5

1. DG5 Service Manual
2. DG-5 operators manual

W5RKL.COM

TS-520

1. TS-520 operators manual
2. TS-520 service manual

TS-520S

1. TS-520S Operators Manual
2. TS520S service manual

<http://w5rkl.com/kenwood-hybrid-operator-and-service-manuals/>

Questions & Answers