



# Wizards Workshop

\*\*\*\*\*  
\* ALL SERVICE QUESTIONS FROM EUROPE, MIDDLE EAST, \*  
\* AND AFRICA SHOULD BE ADDRESSED TO THE EUROPEAN \*  
\* MARKETING CENTER SERVICE GROUP IN THE NETHERLANDS. \*  
\*\*\*\*\*

TEKTRONIX INTERNAL USE ONLY

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## GENERAL

### MICROFICHE AND MANUAL CORRECTION FORMS

There is some difference in the handling of the two forms and their intent.

1. MICROFICHE CORRECTION FORMS: Primarily intended to address corrections to the mechanics of microfiche. For example: Use that form to address upside-down pages, blurry pages, pages out of order, etc.
2. MANUAL CORRECTION FORMS: Primarily intended to address content of the manuals or microfiche.

However, the two groups (Microfiche and Manuals Maintenance) do copy each other for appropriate changes. A change in the content of a manual may take some time, since 1) the correction suggested or problem indicated must be verified, 2) new drawings or illustrations, or manual inserts may be required, and 3) if the resulting change enters the publishing cycle at the worst possible time, a new set of microfiche could take up to 9 weeks before circulation.

Thanks to the SAR from Dale Postma of Rockville generating this information request.

--Todd Paulus  
58/511, Ext. 1493

### TEKTRONIX MANUFACTURED INTEGRATED CIRCUITS

One of the most useful analytical tools to check Tektronix Integrated Circuit (IC) process and design quality is the failed component, particular one that has failed in service. I encourage you to send all failed Tek made IC's back to the Technical Products Management group in IC Manufacturing. At the present time, we receive only 20% of the reported failures. Please continue sending parts back through Reliability Information Services who will forward the parts on to me.

I also encourage you to provide as complete a description as possible on the service reports, including the customer's complaint, what you found wrong with the instrument, and what you did to repair it. With this information, we can spot potential process or application problems and correct them.

Please feel free to contact me with any questions you may have regarding Tek made IC's.

Send parts to:

Clair Gruver  
Reliability Information Services  
53-114

Written by--  
Len Harris  
Tech.Prod.Mngt.  
IC Manufacturing  
59-355 x. 1049DR

156-0072-00 DEFECTIVE DATE CODES

Various areas have found devices with internal shorts between pins 8 and 9, mixed in their stock. Only three Date Codes, 8019, 8021, and 8029 appear to be involved. Check all devices in stock under P/N 156-0072-00 and check all devices for internal shorts between pins 8 and 9. Purge all defective parts and reorder as necessary.

--Rich Andrusco  
58/511, Ext. 6509

311-0058-00 DEFECTIVE DATE CODE - "PURGE"

Some 1K Variable Resistors, Date Code 8045, were found to have the flat area on their shaft 90° from where they should be. This will cause index marks on knobs to be off. Check all stock areas under P/N 311-0058-00 and purge Date Code 8045; reorder as necessary.

--Rich Andrusco  
58/511, Ext. 5609

## ADMINISTRATIVE SUPPORT

### SERVICE RECORD PROCESSING - TRANSFERRED PRODUCTS

A transferred product is one which has been serviced by a service center other than the service center originally taking possession of the product from the customer. The product is transferred from the receiving RESP-CC to the servicing RESP-CC.

For job numbering and reporting purposes, the original RESP-CC should carry the job as a secondary job.

It is important that the RESP-CC performing services on the product forward a completed copy of the service record, including shipping charges, to the original service center. This copy is required to close out the open job and PPC (Product Processing Card) at the first service center.

--Bill Duerden  
56-037  
Ext. 8938 Merlo





## LABORATORY INSTRUMENT DIVISION

### SAMPLING

#### 1502/1503 CHART RECORDER WITH A TIGHT FIT

A chart recorder may not fit into a 1502 or 1503. This may be caused by the chart recorder rails being out of alignment or the 1502 or 1503 sub panel having a rolled off corner in the plug-in compartment. To correct a chart recorder being oversized, loosen the screws holding the side panels and set the recorder on a flat surface. Squeeze the side panels together and retighten the screws. If you have a 1502 or 1053 sub panel with rounded corners in the plug-in compartment, carefully square them off with a file; be sure not to get metal shavings into the instrument.

Thanks to Doug Williams of the Seattle Field Office for this information.

--Rich Kuhns  
58/511, Ext. 1240

### TM500

#### DC503A TIME A TO B DESIGN ERROR

When making Time A to B interval measurements with the DC503A, the instrument will not reset under certain conditions. If the reset button is pushed after the "A" event occurs, the counter will not reset until the "B" event occurs.

To correct this problem, connect a diode (PN 152-0075-00) from Pin 15 of A12U1320 to Pin 13 of A12U1321 on the back of the board. The anode is connected to Pin 15 of A12U1320 and the cathode to Pin 13 of A12U1321.

All new instruments will include this modification beginning with SN B021384 for standard instruments and SN B021530 for Option 015.

This is a high priority performance modification. All DC503As below the listed serial number should be updated. This is not a Code 18. Instruments should be updated as they come in for calibration or repair or upon customer request.

--Terry Turner  
92-236, Ext. 1288

DM501A 200Ω ZERO MODIFICATION UPDATE (REF. ISSUE 11-5, March 27, 1981)

Due to interaction, these adjustments should be performed in the following order:

2VdC Zero in Step 2

200nVdC Zero in Step 2

200Ω Zero in new Step 2A. For SN B025410 and up

This order of adjustment was not clear in the previous article. Please contact me if you have any questions.

--Terry Turner  
92-236, Ext. 1288

FG501A/FG507 DISTORTION MEASUREMENT CORRECTION

The 80KHz noise limiting figure for the AA501 (Ref. Issue 11-5, March 27, 1981) is not correct.

FG501A/FG507 total harmonic distortion (THD) in the 20Hz to 20KHz range is best measured using an AA501 or a 7L5/5L4 spectrum analyzer. The AA501 is recommended because total bandwidth is limited to 300KHz. A different distortion analyzer may be used if the bandwidth is limited to 300KHz. This 300KHz bandwidth limitation is called out in the specification section and the equipment list in both FG501A and FG507 manuals.

The 300KHz bandwidth limitation helps ensure that high frequency noise is not added to the THD measurement.

FG501A/FG507 THD should be less than or equal to .25%, not .0025% as mentioned in the original article.

Please call if you have any questions.

--Terry Turner  
92-236, Ext. 1288

## 5000 SERIES

### 5223, OPTION 10, G.P.I.B., RETROFIT INSTALLATION MAINTENANCE NOTES

Reference: 040-0946-00 Product Modification Kit

When installing the Option 10 040 Kit in standard instruments, there is a step that isn't clearly explained in the procedure. On Step 36 of the procedure, it tells you how to route the cables between the Digitizer and Interface circuit boards. In some cases you will find that P23 and P24 cables are too short to be connected. To cure this you can pull sufficient cable out of the bundle to make proper connection, as there is plenty of extra length at the other end.

--John Eaton  
58/511, Ext. 1237

### 5223, TROUBLESHOOTING W/MEMORY BOARD ON EXTENDER

Reference: 5223 Instruction Manual P/N 070-2932-00

It has been brought to Service Support's attention that a possible problem could exist when putting the Memory Board on the extension set, P/N 067-0967-00. It is possible that J16 could short out several pins to the metal shield on the back of the memory board. As an interim, unsolder and remove the metal shield from the memory board when troubleshooting on the extenders. A mod is in process to change the shield and will be announced in Wizard's Workshop when ready for the field.

--John Eaton  
58/511, Ext. 1237

## 7000 SERIES

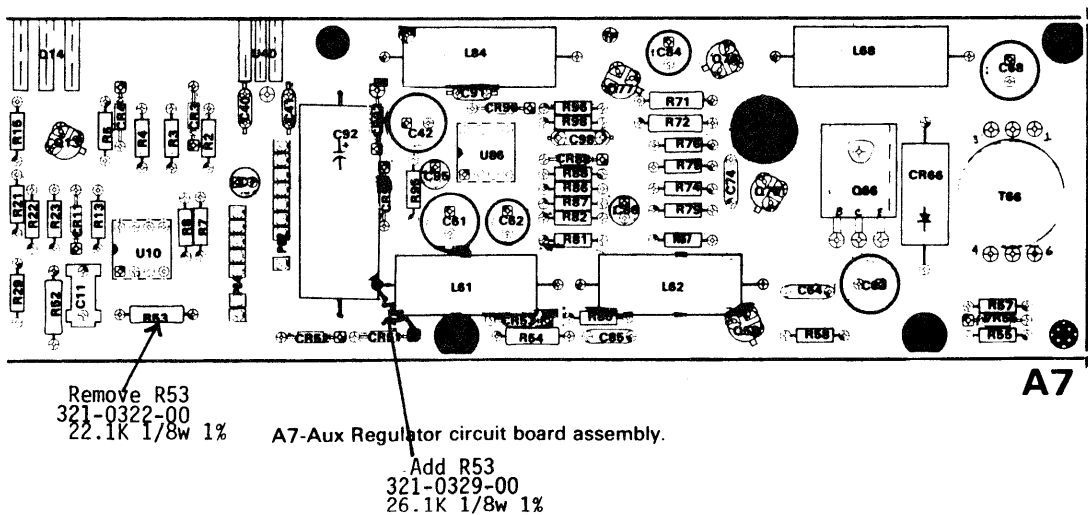
### 7854, PREVENTION OF POSSIBLE CRT BURNS

Reference: 7854 Service Manual P/N 070-2874-00  
Corporate Mod #M42549  
Corporate Mod #M42913

To assure performance and reliability Mod's #42549 and #M42913 should be installed as follows:

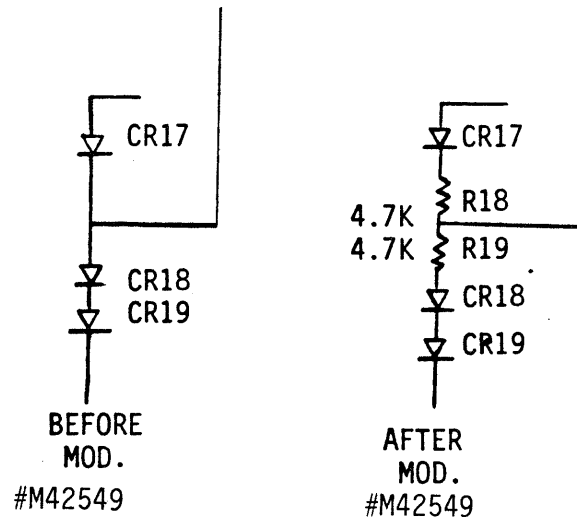
Mod #M42549 was first installed at Serial Number B010420 and consisted of removing CR17 and replacing it with P/N 152-0242-00, which is teeped with R18, 4.7K ohm, P/N 315-0472-00, which is a new part. Add R19, 4.7K ohm, P/N 315-0472-00, which is teeped in series with existing CR18. Mod #M42913 is being installed with serial numbers of B010600 and greater. This mod removes A7R53, 22.1K ohm, P/N 321-0322-00, resistor. The value is increased to 26.1K ohm, P/N 321-0329-00, and connected to the -17 volt supply. On the schematic this will show as R53 in the same position, but connected to -17 volts instead of -15 volts. See the following remove/add sketches and schematics for further info.

*NOTE: Both mods should be installed in instruments B010420 and below, and Mod #M42913 installed in instruments with serial numbers from B010421 to B010599.*



(Schematic continued on the following page)

7854, PREVENTION OF POSSIBLE CRT BURNS(CONTINUED)




--John Eaton  
58/511, Ext. 1237



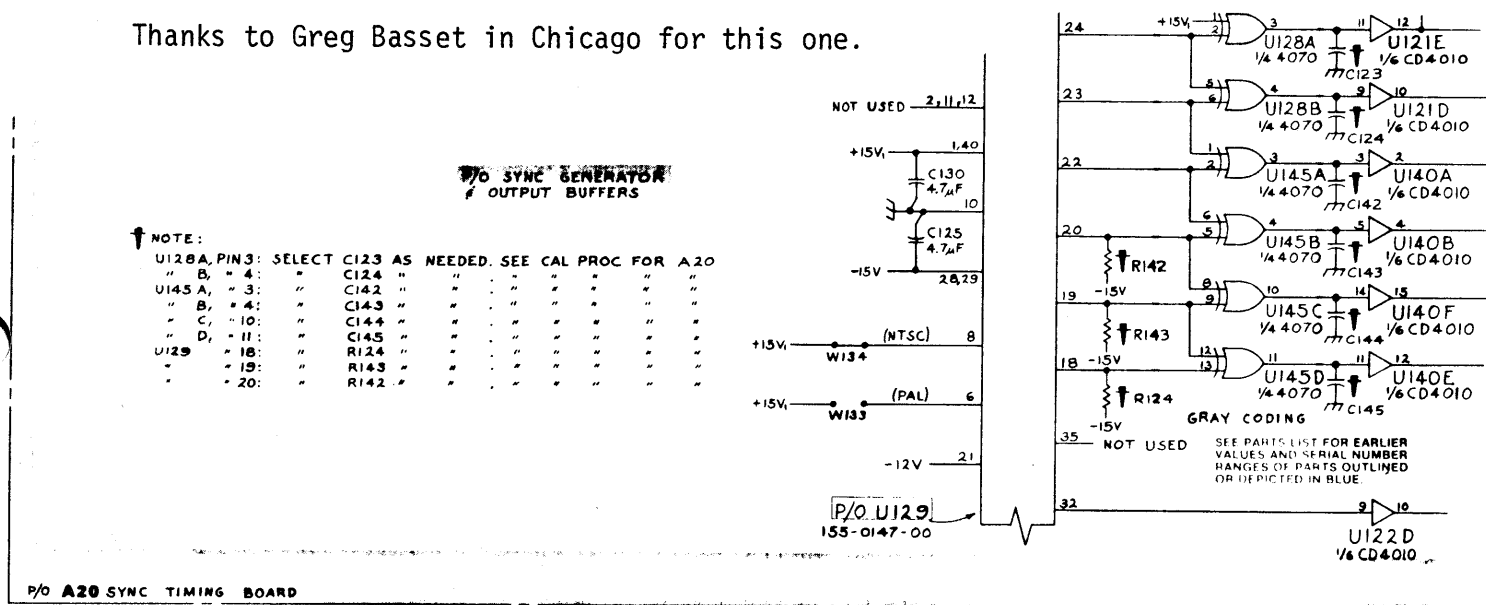
## TELEVISION PRODUCTS

# SPG1 MANUAL ERROR CORRECTION

Reference: SPG1/SPG2 Instruction Manual, P/N 070-2104-00

During a recent update of portions of the SPG1/SPG2 Instruction Manual, some circuit details were inadvertently left out. The diagram below shows the circuit in question (Sync Timing  a). This circuit applies up to S/N B019999. After B020000 the manual schematic is basically correct in this area. Manual correction requests have been submitted.

Thanks to Greg Basset in Chicago for this one.



SPG 1 &amp; 2

2104-23  
REV. A, MAR 1978

/GEM 5/76

--Bill Bean  
58/511, Ext. 1498

### TDC VOLTAGE CONTROLLED OSCILLATOR, A8U (UHF)

The following information provides some additional background details for use in understanding and maintaining the TDC family of instruments.

The two most important operating parameters for this circuit are: 1) to be able to provide proper regenerative feedback to Q33 to sustain oscillations and 2) to provide sufficient power at the L.O. frequency output to the VCO Amp Board (A9V) for it (the VCO Amp) to be able to drive the mixer with approximately 10 dBm of power and also drive the PLL board via the L.O. return with approximately 2 dBm of power.

The coupling of power between the ceramic coil (L55) and the coupling plate (L46) is directly related to the metallic surface areas of the two parts. This becomes critical at higher frequencies where the 2 and 3.8 turn coils' metal strip is cut to short lengths to provide resonance at these wavelengths. The problem arises when only a small surface area of metal is available to place in close proximity with coupling plate C46. At this point, it is advisable to use the "barberpole" effect to position as much area as possible above C46.

Another useful method is to actually move C46 along plane "A" (see diagram) towards C42, being careful not to break the metal support tab or the standoff resistors in the process. If it is possible to also move C46 in plane "B" towards the coil, this is also helpful.

If, at any time, the oscillations disappear entirely, the coupling plate (C42) may also have to be moved or bent to facilitate regenerative feedback for Q33.

Another important consideration when replacing the entire ECB is that the length of the pickoff loop (L58) and value of the selected chip capacitor (C58) are very important for termination purposes. There are no hard and fast values associated with these components, and they do vary between channels.

When installing, the best way to avoid cracking the ceramic VCO coil is to use a pair of pliers wrapped with electrical tape. These will enable the coil to be held in place while the end plug and assembly washers are screwed into place. Standing the hog-out (aluminum frame) on the inside corner of a test bench will free both hands to position and insert the coil, along with its associated parts, together and center it.

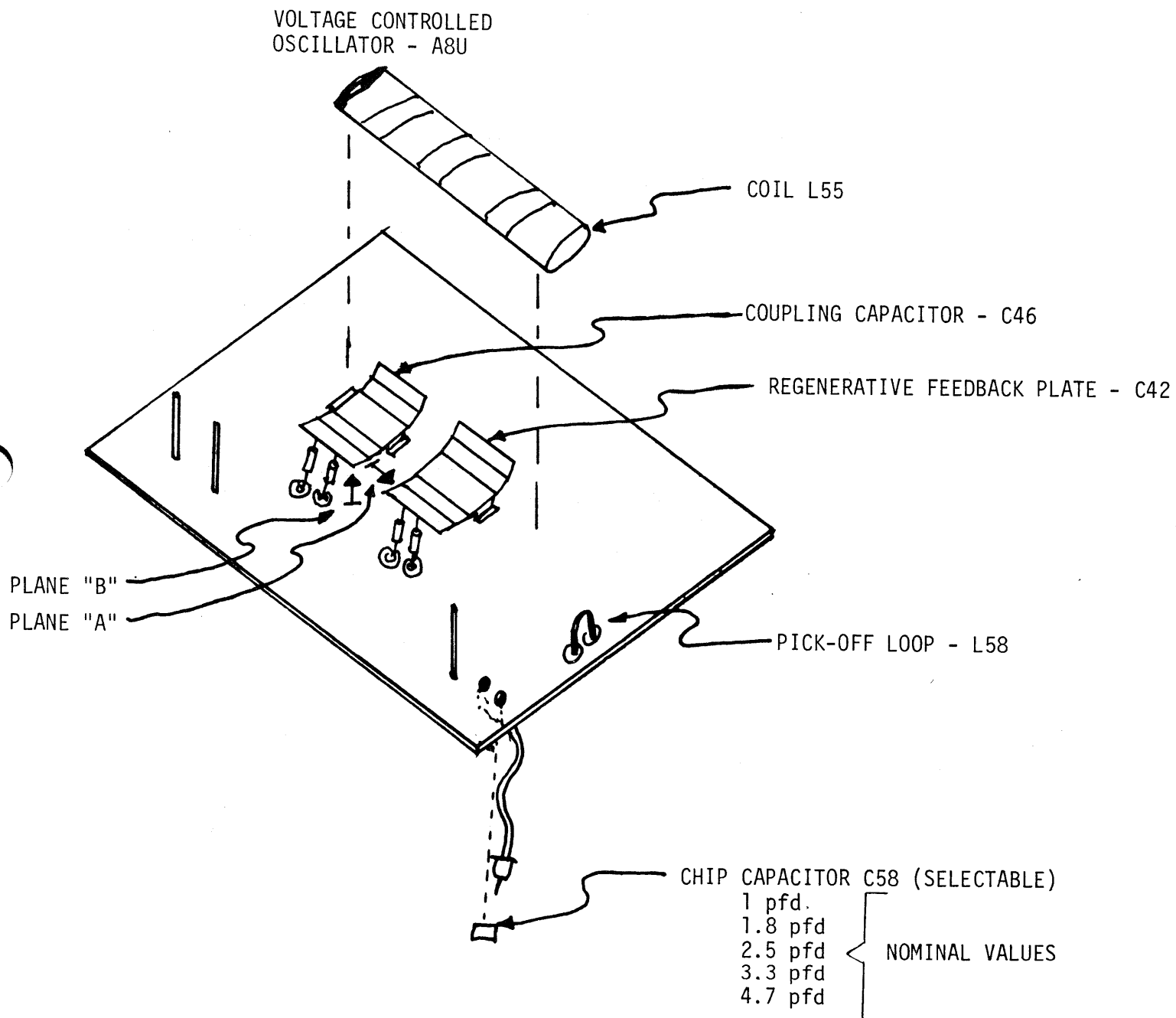
(Diagram on the following page)



## TDC VOLTAGE CONTROLLED OSCILLATOR, A8U (UHF) (CONTINUED)

If the coil is suspected of having a hairline fracture on its ceramic form, a felt-tip pen ran around the inside of either end will reveal the crack as the ink seeps through.

Thanks to Larry Mendenhall in 1450 Manufacturing for this information.



--Bill Bean  
58/511, Ext. 1498

#### 528A CRT IMPLOSION SHIELD

The 528A CRT Implosion Shield is normally light grey in color (P/N 378-0586-00). Some shields of a very dark green color have appeared in stock. Check your stock; purge and re-order as necessary. This part is also used in 1420, 1421, 1422 and the 528.

--Bill Bean  
58/511, Ext. 1498


#### 528A FUSES

When a CRT circuit problem is encountered that has the appearance of an open CRT filament, be sure to check the in-line fuse to the filament circuit. It is located near the CRT connector.

For further information, refer to 528A Service Maintenance Information of February 24, 1981.

--Bill Bean  
58/511, Ext. 1498

#### 650 SERIES RASTER/VIDEO CENTERING

To center the video in the raster, R1529 on diagram  was designated as a selectable part. Its values should range between 24K ohms and 34K ohms. An alternate and faster method of shifting the video in the raster is to select Q1520 (151-0223-00). The characteristics of this transistor from part to part and especially from vendor to vendor are different enough to make hand-selection a viable alternative.

Thanks to Tom Doak in Philadelphia for bringing this to our attention.

--Bill Bean  
58/511, Ext. 1498

#### 1430 PEDESTAL DELAY EXCESS

Reference: 1430 Instruction Manual, P/N 070-1455-00

Page 4-8, Step 5 d, addresses checking the DELAY control for proper operation. With the DELAY control rotated fully clockwise and the pedestal set to 26 $\mu$ sec in length, as addressed in steps b and c, the trailing edge of the pedestal should not go much further than the leading edge of the next sync pulse. If it does, U2063 (152-0265-00) can be selected for the proper stop time.

Thanks to Jerry Smith in Irvine for bringing this one to our attention.

--Bill Bean  
58/511, Ext. 6507

#### 1440 MODIFIED PRODUCTS REPAIRS

When a 1440 I2R, I3B, I3C or similar instrument is returned to a Service Center for work, ask the customer to return the rear chassis interface assembly (P/N TV3-0016-00) with the unit to be serviced. This will allow us to do a more complete and accurate calibration.

--Bill Bean  
58/511, Ext. 1498

#### 1470 PARTS LAYOUT DIAGRAMS

I have obtained copies of the circuit board filmwork including top and bottom layers, silkscreen and dolly sheet for the 1470 series. These are available to the TV Service Centers on a one-time request basis from me in photocopy format. These will provide parts location assistance for the bench technician. Call me or send an IOC for your copy.

--Bill Bean  
58/511, Ext. 1498

#### 1980 PART PROBLEM, 156-1309-00

We are experiencing open pins, failure to pass information, or no signal at output on this part. Check all stock for parts of code date 7922. Send parts with R.S.O. and marked "Return to Vendor" to Don Stalp, 78-092, and reference MQR #Q-188. Reorder as necessary.

--Bill Bean  
58/511, Ext. 1498



## SERVICE INSTRUMENT DIVISION

### ACCESSORIES

#### TEMPERATURE BATHS AND PROBES

The NESLAB model EX-100 is a temperature controlled bath used to verify and test our temperature probes:

P6430	010-6430-00
P6601	010-6601-01
P6058	010-0260-00

The EX-100 as a stand-alone unit is only capable of maintaining a temperature above ambient-room-temperature. To lower the bath below the surrounding temperature some kind of refrigeration unit must be attached. The CAPITAL PLANNING MANUAL recommends the NESLAB model EN-850 which will provide a minimum temperature of minus 35 degrees Celcius.

If you don't need to reach -35°C then the EN-350 to -25°C; or the EN-150 to -6°C, may suffice. The EN-150 price is less than 50% of the EN-850 price and it will allow the EX-100 to reach and maintain 0°C ± 0.01°C.

The EX-100 maintains the bath temperature by circulating the bath fluid around heating/cooling coils. The ability to maintain a temperature is dependent on the BTU load, fluid consistency, evaporation, and fluid composition. The fluid to use to achieve a balance of dependencies is a solution of 65% water and 35% ethylene-glycol. This solution is designed for a range of -35°C to 100°C. NESLAB recommends that only lab grade chemicals be used to keep contaminants at a minimum. All probes should be cleaned and free of dirt and soap before immersion.

The P6058 was not designed to be immersed in a liquid and will be shorted out if so done. To maintain consistency I recommend that all temperature probes either be placed in a dry block or a soft plastic bag to eliminate the water hazard.

You may call me in Beaverton on Ext. 1496 (Dan Ray) or NESLAB at 1-800-258-0830 for assistance.

Thermometers available from CSG are:	006-3442-00	25 to 100°C
	006-3443-00	100 to 160°C
	006-3444-00	0 to 60°C

--Tom Fox  
58/511, Ext. 1496

PORTABLES

T912 F702 VALUE CHANGE

Serial Number: B016846 and Below  
Reference: Power Supply and Storage, Schematic 2

F702 located in the CRT filament supply changes from a 1.5 amp to a 2.0 amp fuse, P/N 159-0203-00. Before this mod F702 would blow during turn on of the instrument in a warm environment. It is suggested all T912's in for warranty repair have the correct fuse inserted.

--Mike Laurens  
58/511, Ext. 1499

464, 465/B, 466, 475/A TRIGGER I.C. REPLACEMENT

Reference: 464, 465/B, 466-U540 U640  
475/A - U520, U720

Part number 155-0217-00 is a direct replacement for the old IC, P/N 155-0032-01. The old IC (P/N 155-0032-01) has an external 1K $\Omega$  resistor soldered in series with Pin 4. This resistor is now internal to P/N 155-0217-00, making this part a direct plug-in replacement.

--Mike Laurens  
58/511, Ext. 1499

468, MICROPROCESSOR LOCK-UP

Failure information received from the field shows incidents of the microprocessor going into a lock-up mode and the instrument not functioning. In order to identify the cause or causes, please send a written report of this type of failure.

Report all future failures from now through July, 1981 and any past failures if details of the failure can be supplied.

The information needed is: What operating mode or conditions caused the failure to occur; What exact symptoms were present when in the failure mode; What action was taken to correct the problem. Please include as much information as is available on each occurrence.

Please send the reports to me at Delivery Station 58/511.

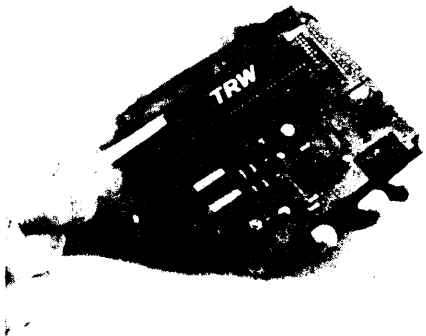
--Roy Lindley  
58/511, Ext. 1235

#### 468 REMOVAL AND REPLACEMENT OF U456 (A/D CONVERTER CHIP)

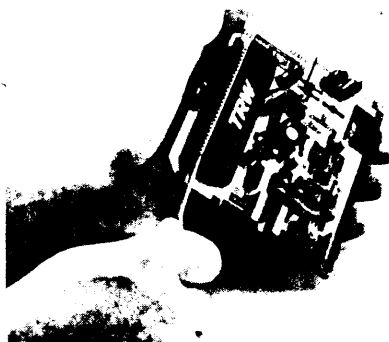
Inserting or removing U456, a 64 pin package, incorrectly will result in damage to the chip. Damage occurs when applying uneven pressure by inserting or prying on one end of the chip and then moving to the other end to complete the insertion or removal. Small cracks in the I.C. results from uneven pressure which will show up as missing waveforms or complete failure.

To accomplish insertion, use a piece of flat metal placed over the entire chip and apply pressure evenly until the chip sets properly. To remove the chip use the following procedure recommended by TRW.

#### **PROCEDURE FOR REMOVAL OF 64 PIN PACKAGE**



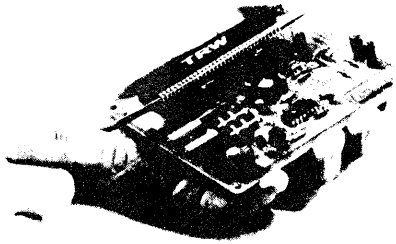
Slide a letter opener or similar device under the package and against one row of pins. (DO NOT USE A SCREWDRIVER).



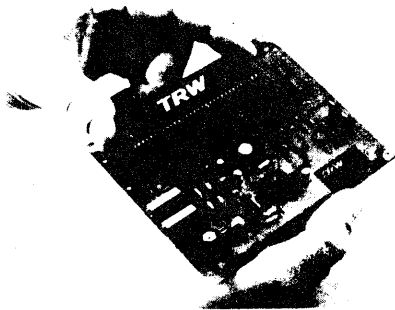
Slowly rotate the opener to push the row of pins upward.

(Procedure continued on the following page)

468 REMOVAL AND REPLACEMENT OF U456 (A/D CONVERTER CHIP)



Repeat the procedure for the other row of pins.



Lift the package from its socket. If there is resistance, repeat the procedure.

--Mike Laurens  
58/511, Ext. 1499



## 468 REPLACEMENT OF 74LS377'S THAT DRIVE L.E.D.'S

Reference: Storage Display Control and LED Readout Schematic 17

The 74LS377 s (P/N 156-0913-01) used to drive the front panel LED's are replaced with 74LS374 (P/N 156-0982-03) to improve reliability. The new part has a higher current rating. The following I.C. s located on the Storage Display Board (A16) are effected:

U207 Changed to P/N 156-0982-03

U223                   "

U228                   "

U723                   "

U748                   "

--Mike Laurens  
58/511, Ext. 1499

## TELEQUIPMENT

### TELEQUIPMENT SUPPORT QUESTIONS

All Technical questions on Telequipment products should be addressed to:

Tom Herd  
Ext. 8616 Merlo Road

If you ask for this extension you will save being transferred throughout Beaverton until you finally reach Tom.

--Editor



## INFORMATION DISPLAY DIVISION

### 4054 LINE FILTER MODIFICATION #41521

While using the 4054, line transients can cause some unpredictable operations. There has been a Modification completed that changes the current line filter to a filter with improved filtering capabilities. The new filter will insure better operation while transients occur on the line, and is a direct replacement for the old line filter. The part number for the new line filter is 119-1330-00.

--Darrell McGiverin  
63/503, ext. 3786 (WI)

DM:mao  
4/3/81

### 4611/4612 PAPER ROLL PRECAUTION

Care must be exercised during first time operation of a 4611 or 4612 if the product were shipped with a paper roll inside. During transportation, the paper roll can unwind and the loose paper may telescope from side to side. During copying, the paper may wander into the guide post, fold over and crease. The crease will then catch the nibs or lap weld on the printing belt resulting in a paper jam and/or belt damage.

Before powering up a transported product, inspect it for a tight and even paper roll. To be sure, remove the roll, stand it on end while pulling the paper taut to remove all slack, then reinstall the paper roll.

--George Kusiowski  
63/503, ext. 3928

4633A PARTIAL IMPLEMENTATION OF MODIFICATION 40750

Reference: "4631/32/33A/34: Clutch and Control Board Modifications #37349, 40065 and 40750"; Wizards Workshop issue 10-3 (June 27, 1980), pp. 30, 31.

An unknown number of 4633A products between S/N B010635 and S/N B011775 using the newer clutches have been shipped lacking modification 40750. The control boards for these instruments are easily identifiable by their level (670-4599-07) and by the 27 $\Omega$  value of R1.

As reported in the above mentioned reference, the new clutch assemblies used with an -06 or -07 version control board may fail to actuate under low line conditions. The solution is to replace R1 with a shorting strap and noting the change by rolling the board level to -08.

Do not use an -08 level control board with an old drive roller clutch. Absence of the limiting resistor (R1) may cause the clutch solenoid to overheat.

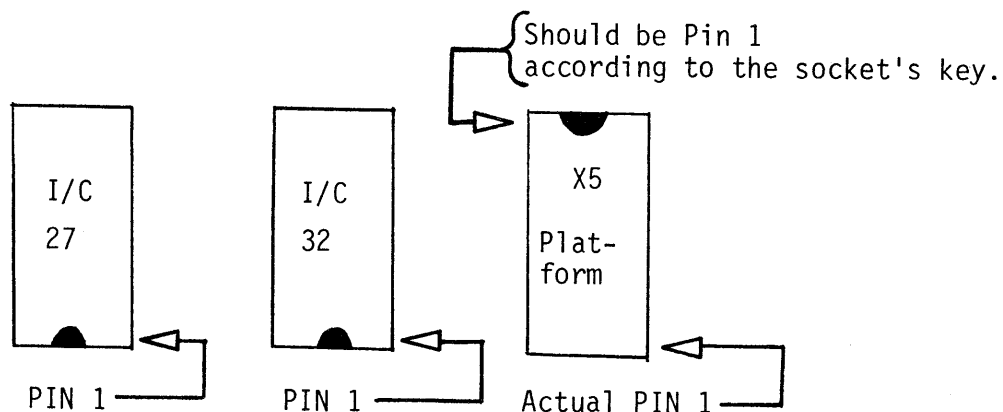
--George Kusiowski  
63-503, ext. 3928

## 4642 JUMPER CONFIGURATIONS (ARTICLE REPEAT)

There have been questions about the proper method for changing jumper configurations in a 4642. This is due to the various jumper styles used in this product. On the RS232 Interface Board the jumpers can be changed right on the board itself. However, on the Logic Board the jumpers are changed in sets of 16 at a time using a zero ohm resistor network which plugs into an I/C socket. The I/C sockets are referred to as jumper platforms in the manuals and are numbered X1 thru X6.

### CAUTION:

The jumper platforms are frequently mounted on the logic board reversed. When installing jumper networks into these sockets use the rest of the logic board's integrated circuits for a correct reference to the correct location of pin one. Note in the following example how pin one is the lower right pin, instead of the upper left pin, as the socket would indicate.



The following Platform Configuration table is the same table found on pages 4-21 thru 4-23 of the 4642 Service Manual, with the exception of asterisks (\*) that have been placed under the Binary Code column to indicate standard 4642 configuration.

(Article continued on the following page)

Table 4-3  
PLATFORM CONFIGURATION

Platform Location	Group	Octal Code	Binary Code	Platform Pin		Signal Function	Remarks
				From	To		
X1	I	20	1	1	16	ME6-3 = $\pm 0V$	Used for column width selection
			0 *	1	15	ME6-3 = $\pm 5V$	
	II	10	1	14	3	ME6-4 = $\pm 0V$	
			0 *	14	2	ME6-4 = $\pm 5V$	
	III	4	1	4	13	ME6-13 = $\pm 5V$	
			0 *	4	12	ME6-13 $\pm 0V$	
	IV	2	1	11	6	ME6-12 = $\pm 0V$	Used for column width selection
			0 *	11	5	ME6-12 = $\pm 5V$	
	V	1	1	7	10	NOT USED	
			0 *	7	9	NOT USED	
X1							
X2	I	20	1	1	16	INV. DATA STROBE	
			0 *	1	15	STD. DATA STROBE	
	II	10	1	14	3	ME12-12 = $\pm 0V$	Used for column width selection
			0 *	14	2	ME12-12 = $\pm 5V$	
	III	4	1	4	13	ME12-4 = $\pm 5V$	
			0 *	4	12	ME12-4 = $\pm 0V$	
	IV	2	1	11	6	ME12-13 = $\pm 0V$	
			0 *	11	5	ME12-13 = $\pm 5V$	
	V	1	1	7	10	ME12-3 = $\pm 5V$	Used for column width selection
			0 *	7	9	ME12-3 = $\pm 0V$	
X3	I	20	1 *	1	16	NON GATED STROBE	
			0	1	15	GATED STROBE	
	II	10	1 *	14	3	DS8* = DS8	Bit 8 Low
			0	14	2	DS8* = DS8	
	III	4	1	4	13	DSC	
			0 *	4	12	NOT DSC	
	IV	2	1	11	6	DS8' = DS8	X3-7 TO X3-10
			0 *	11	5	DS8' = DS8	
	V	1	1	7	10	DS8' = DS8 OR DS8	See X3 Group IV
			0 *	7	9	DS8' = $\pm 0V$	
X4	I	20	1	1	16	SELECT DOES NOT CAUSE PRIME	
			0 *	1	15	SELECT CAUSES PRIME	
	II	10	1	14	3	UCC RESET = TB8	In line elongated
			0 *	14	2	UCC RESET = PRIME	
	III	4	1	4	13	DECODED BIT 8	Octal 34 sets, 35 resets
			0 *	4	12	STD BIT 8	
	IV	2	1 *	11	6	UCCSET = UPSC	X4-7 to x4-9 full line elongated.
			0	11	5	UCCSET = $\pm 5V$	
	V	1	1	7	10	UCCSET = TB8	In line elongated
			0 *	7	9	UCCSET = UPSC OR $\pm 5V$	
X5	I	20	1	1	16	NOT USED	
			0 *	1	15	NOT USED	
	II	10	1 *	14	3	NO AUTO LF	
			0	14	2	AUTO LF	
	III	4	1	4	13	NOT USED	
			0 *	4	12	NOT USED	
	IV	2	1 *	11	6	PERFORMS LF WHEN VT OR TOF IS SENT	X5-7 to X5-10
			0	11	5	IGNORES VT OR TOF OR DOES NOT IGNORE VT OR TOF	
	V	1	1 *	7	10	IGNORES VT OR TOF OR PERFORMS LF WHEN VT OR TOF IS SENT	See X5 Group IV
			0	7	9	DOES NOT IGNORE VT OR TOF	
X6	I	20	1 *	1	16	ROMTB8 = TB7	
			0	1	15	ROMTB8 = TB8 OR TB8 $\pm 5V$ OR $\pm 0V$	
	II	10	1	14	3	CHADD7 = TB6	
			0 *	14	2	CHADD7 = TB7	
	III	4	1	4	13	ROM TB8 = TB8 OR TB8	See X6 Group IV, X6-1 to X6-15
			0 *	4	12	ROM TB8 = $\pm 5V$ OR $\pm 0V$	
	IV	2	1	11	6	ROM TB8 = TB8	X6-13 to X6-4, X6-15 to X6-1
			0 *	11	5	ROM TB8 = TB8	
	V	1	1	7	10	ROM TB8 = $\pm 0V$	X6-12 to X6-4, X6-15 to X6-1
			0 *	7	9	ROM TB8 = $\pm 5V$	

\* \* \* IN THE BINARY CODE COLUMN INDICATES THE STANDARD 4642 CONFIGURATION

## 4642 JUMPER CONFIGURATIONS (CONTINUED)

The following is an example of how to use this chart.

1. It is a customer's request for the 4642 to automatically line feed whenever it receives a carriage return.
2. The auto line-feed function can be found listed under the "Signal Function Remarks" column for platform location X5.
3. The platform jumper going from pin 14 to pin 3 should be removed and a new jumper from pin 14 to pin 2 added.
4. This changes the "Binary Code" for "Group II" to a zero. This in return, would remove the "Octal Code" value of 10 from platforms octal part number suffix. The correct Centronix part number for this new jumper configuration would change from a 63080164-2013 to 63080164-2003.
  - A. The last two digits of a jumper's part number, 63080164-20XX, is the total sum of its octal code.

The jumpers can be purchased pre-configured by the Centronix part number, or a blank jumper can be purchased and configured by hand.

The blank jumpers (Interconnect sockets), P/N 136-0503-00, have the necessary 16 pin network, but care must be taken when soldering the jumpers onto it because too much heat may deform the plastic base. If this happens, the jumper platform may not fit properly into the socket on the Logic Board.

For the RS232 Interface the jumper configuration options are listed in Table C-2 on page C-5 of the 4642 Service Manual. The standard 4642 configuration includes options C, F, I, L, N, and P; all other jumper options should not be present. Not included in the jumper options are the baud rate jumpers, E1 thru E20, which are normally set to 2400 Baud, although it can range from 600 to 9600 Baud.

Baud rates below 600 are not possible with a standard 4642 due to the limitations of the interfaces components. The following table shows the possible baud rate jumper configurations.

(CONTINUED)

# 4642 JUMPER CONFIGURATIONS (CONTINUED)

Baud Rate	Jumpers	
	From	To
600	E10	E20
	E9	E19
	E5	E15
	E7	E17
	E8	E18
	E2	E12
	E3	E13
	E1	E11
1200	E9	E19
	E4	E14
	E7	E17
	E8	E18
	E2	E12
	E3	E13
	E1	E11
* 2400	E4	E14
	E6	E16
	E8	E18
	E2	E12
	E3	E13
4800	E6	E16
	E5	E15
	E2	E12
	E3	E13
9600	E5	E15
	E7	E17
	E3	E13

\* Standard 4642 Configuration

The 4642 Service Manual is being updated to include this baud rate table.

--Larry North  
63-503 EXT. 3926



#### 4907 IMPROPERLY STRAPPED DISK DRIVES MAY DAMAGE FILES

A few 4907s have been found to be missing an internal strap called "DC", meaning disk change. This may occasionally damage information on a disk. Under unusual circumstances it may happen on single drive systems. It is more likely on multiple drive systems.

The absence of this strap may be detected with a simple sequence of operations on the 4907 without requiring disassembly. To detect a missing strap on drive 0, do the following:

- 1) Mount any disk on drive 0.
- 2) Call "dstat", 3, a\$.
- 3) Remove and reinsert the disk in drive 0.
- 4) Call "mount", 0, A\$.

If the disk head does not load and actually read information in step 4, then the "DC" strap is missing on drive 0.

Repeat the above procedure, replacing all zeros with ones and so on for all drives in your system.

--Darrell McGiverin  
63/503, ext. 3786

MICROCOMPUTER DEVELOPMENT PRODUCTS (MDP)

8002 MEMORY BOARDS

Past IOC's concerning 8001/8002 Memory Boards have made conflicting statements, i.e.:

- On January 22, 1979 - "High speed, Modified High speed and slow Memories are not compatible and should never be mixed".
- On May 7, 1979 - "Test results indicate Modified fast Memory Boards 670-5505-06 and 670-5505-07 are compatible with 670-5298-02. Except in word mode". Although they would be compatible in word mode provided you did not mate one slow and one modified fast to make a word.

Because of these conflicting statements and the large amount of modified fast Memory Boards plus the small amount of slow Memory Boards available, I would like to make one more attempt to clarify the use of Memory Boards.

FAST MEMORIES

The fast Memory Boards 670-5505-05 and below are not available anymore and are not supported by Tek. You can order only Modified fast Memory Boards (670-5505-06 and 670-5505-07) from Board Exchange. These modified fast Memory Boards will have the latest mods installed and will not have the high rate of Dos Error 66 problems that they have had in the past. We have a large amount of these boards available and they are fully supported and we will continue to support them in the future.

They can be mixed with the slow memory 670-5298-02 with reliable results provided you don't violate the word boundary, by using one slow and one modified fast Memory Board to make up a word.

SLOW MEMORY

You can order only 670-5298-02. At present there is a shortage of slow memory, so if you can, please use 670-5505-06 or 670-5505-07 as a replacement.

Board exchange will be contacting those people who have outstanding orders against the slow memory, asking them to accept the modified fast instead. Getting more Modified fast Boards into the field will help offset the shortage of the slow memory.

Both types of Boards will be available in the future, but it may take longer to get the slow memory.

Written by--  
Duane Whittum  
MRC, Ext. 8617

Inserted by--  
Editor

## SEMICONDUCTOR TEST SYSTEMS

### S-3200 IS2 (1140A651F) PROGRAMMABLE CURRENT SUPPLY CABLES

Reference Mod Number M41719

The second programmable power supply (1140A651F) available in S-3200 series test systems provides space for a second Programmable Current Supply (IS2). Test station cabling for IS2 requires two different cables. The standard cable for normal operation is 198-3728-00. A new cable is required for use with recal software to calibrate and verify IS2.

This new cable assembly, 175-3896-00, consists of the following:

- 1 each 131-0298-00 Conn, plug, elec, snap-on male.
- 1 each 131-0375-00 Conn, plug, elec, snap-on female.
- 2.0 ft. 175-1255-00 Cable, RF, 50  $\Omega$  coax, wht vinyl jkt.

The IS2 verification software program is TIS2.EDT:LIB. The IS1/IS2 calibration software program is ISCAL.EDT:RCL.

Submitted by Janet Brewer, STS Production Engineering.

--Inserted By:  
Ron Lang  
92-236, Ext. 1015

### S-3200 R1330651L, CONNECTOR: 131-0294-00

REFERENCE: Purchased Component Problems, Week 03, 1981

The Amphenol brand connector (131-0294-00) may have loose pins due to improper crimping. Replacement parts should be checked to ensure this connector has no pin problems prior to installation.

Parts with this problem should be returned to 78-092. Refer to MQR #T-12 to reorder.

Company Confidential

--Ron Lang  
92-236, Ext. 1015

## S-3200 SM-1 OPTION TEST (CABLES)

The E060.TST translated SM1.EDT; SM1 test requires two additional cables to check the SM1 Option. The test instructions are:

### SM-1 OPTION TEST

#### SETUP INSTRUCTIONS:

- (1) Remove the coaxial cables at J121 and J181 of the Delta T.
- (2) Connect an 8 ft. cable between J121 of the Delta T and J918 of the 1803 junction panel. Use cable 012-0737-00.
- (3) Connect an 8 ft cable between J181 of the Delta T and J917 of the 1803 junction panel. Use cable 012-0736-00.

Press Advance if this has been completed.

The 012-0736-00 and 012-0737-00 are the same except for labels which identify location and signal names.

--Ron Lang  
92-236, Ext. 1015

## SIGNAL PROCESSING SYSTEMS

### 7912AD: 040-0959-00 CHANGES REVISION LEVEL OF TWO BOARDS

REFERENCES: Wizard Issue 10-19, Page 39; 040-0959-00 Modification Kit.

When modification kit 040-0959-00 is installed in any 7912AD, it changes the 670-5155-00 to a 670-5155-01 and also changes the 670-5144-00 to a 670-5144-01.

A special thanks to Steve Durbin of the Santa Clara Service Center for bringing this to our attention.

**\*Special Note\*:** This 040-0959-00 Mod kit is extremely important to the protection of the CRT. It is highly recommended that all instruments in the field be updated to save CRT's. The kit is orderable and available.

--Randy Newton  
92-236, Ext. 1635

92-515

MICHAEL A MINALIK

COMBINATION WIZARD