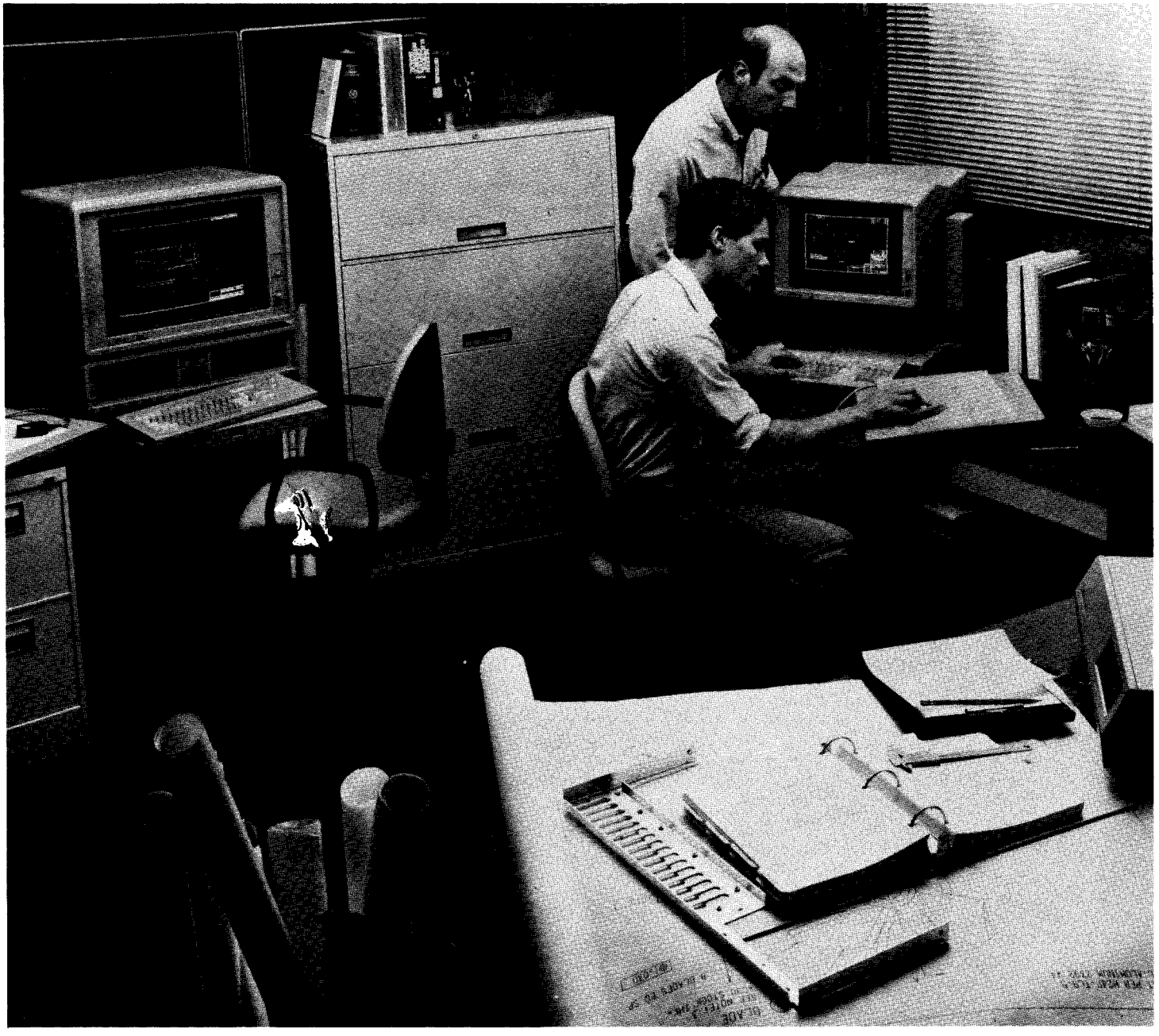
TEK CUSTOMER PRODUCT SERVICING INFORMATION

FEB 85

4992P/496P
520A

SERVICETEKNOTES



Published by Tektronix Service Administrative Support

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L-3 OPTION ONE (75 Ohm) CONVERSION

The following is a procedure for converting a standard 50 ohm L-3 input impedance to 75 ohm. Refer to the L-3 Plug In Module instruction manual, pages 4-9 and 4-10 for component locations.

Replace R58 with 321-0223-00 2.05K ohm 1%

Replace R66 with 321-0085-03 75 ohm .25%

Add R76 315-0513-00 51K ohm 5%

Replace front panel with 333-2218-01

To set the proper dBm readout code, change the strap on the programmable logic array from location D4 to location D1 on the mother board. If this is not done, the readout will be 2 digits off.

W2 Issue 15-1

SI5010 PLUGS INCORRECTLY INSTALLED

We have discovered that several SI5010's were manufactured with four connectors installed in reverse order. This will cause the wrong front panel light to illuminate when an output is activated. The functional operation is unaffected.

The serial number range affected is B010600 through B011000. The correct connections are as follows:

J1350	Brown
J1351	Red
J1540	Orange
J1541	Yellow

These connectors can be easily accessed by removing the top panel of the SI5010.

W2 Issue 15-1

SOLDERING PRECAUTIONS FOR POWER CONNECTORS, PART NUMBERS 119-0802-00 AND 119-0813-00

The power line connectors (P/N's 119-0802-00 and 119-0813-00) may experience reliability problems if installed wrong during assembly/repair.

The problem is that the spring contacts that interface with the line selector circuit board inside of the assembly may move when heat is applied to the external pins.

The solution is to--

1) Remove the internal circuit board during soldering,
2) Apply as little side pressure as possible when soldering wires on the external pins, and
3) Replace the circuit board only after the housing has had sufficient time to cool.

W2 Issue 14-18

S3200/1800 SERIES SYSTEMS SERVICING SAFETY NOTES

Correct service procedures for balancing three-phase system loads and servicing the AC Power Controllers need to be followed to ensure safe and reliable servicing and operation of your system. Correct procedures and recommended equipment for performing these functions are given in the following two sections. Proper service procedures should be followed when performing any service function.

1. The S3200 Series provides no overcurrent protection for the neutral conductor. If improperly balanced, the neutral current could exceed it's rated limits. When properly balanced, the system is protected from overload by the line

(ARTICLE CONTINUED ON THE NEXT PAGE)

S3200/1800 SERIES SYSTEMS SERVICING SAFETY NOTES (CONT.)

breakers. The phase currents should be balanced and the neutral current measured each time the system is re-configured or loads are changed. This procedure will ensure safe and reliable system operation.

WARNING

USE EXTREME CAUTION WHILE PERFORMING THE CURRENT MEASUREMENTS. DANGEROUS VOLTAGE POTENTIALS WILL BE EXPOSED.

To perform the current measurement, power down the system and disconnect the power cord from the AC power controller (or open the circuit breaker that supplies service to the system). Detach the rear panel from the controller and swing it open. Place the current probe around the phase or neutral wire to be measured. Reconnect the power cable and power up the system. Ensure that all the equipment in the equipment rack in ON and running.

The phase currents should never exceed the system amperage rating displayed on the rear of the controller. The neutral current should not exceed 80% of the system amperage rating. To adjust the phase and neutral currents, re-configure the rack equipment as necessary.

A detailed procedure for phase balancing can be obtained from your Tektronix service representative.

Recommended equipment for performing phase measurements:

Multimeter, digital, rms; Tektronix DM501, DM501A, DM502 or DM502A or Fluke Model No. 8502A or 8505A with options 8500A-03 and 8500A-09A

Probe, current, 1000X; Fluke Model No. Y8101

2. In some 1800 series test stations, a single component failure in the AC power controller could cause some internal circuits to be elevated to their normal operating level of 115 volts, even with the test station main circuit breaker in the OFF position. To ensure the safety of the service technician in the event of such a failure, follow the recommended service procedure of disconnecting the power cord before servicing.

   Tektronix has established a no-charge service update program to improve the reliability of the AC Power Controllers used in the 1800 series test stations. This update program will also reduce the possibility of component failure within these controllers. Contact your Tektronix service representative to determine if this program is applicable to your system. The Tektronix service representative can also schedule an update for your system, if needed.

W2 Issue 15-2

TDC1 FIRST L.O. TRACKING PROBLEMS

REF: TDC 1/2 INSTRUCTION MANUAL, P/N 070-2754-00

The alignment and calibration procedures for the first Local Oscillator section in the TDC1 have, at times, been difficult to optimize due to the channel-to-channel tracking requirements. Those requirements were, in turn, dependent upon the markings on the dial tape, and caused many rejects of first L.O. assemblies for tracking errors.

(ARTICLE CONTINUED ON THE NEXT PAGE)

TDC1 FIRST L.O. TRACKING PROBLEMS (CONT.)

To reduce this problem, the dial tape has been re-designed with larger boxes at the channel points. The new tape is P/N 331-0387-00, and the starting serial number for TDC1 options 01, 02, 03 or 11, is B010478.

I would highly recommend replacing the old tape with the new one before rejecting the first L.O. where tracking errors are the primary problem.

W2 Issue 14-18

49X/P: CHANGE IN SENSITIVITY WHEN GRATICULE LIGHTS ACTIVATED

RE: M53615

Some 49X instruments experience a change in sensitivity of about .2dB when the graticule lights are activated. This problem is the result of improper grounding for the Amp. Cal. and Log. Cal. pots on the front panel circuit board.

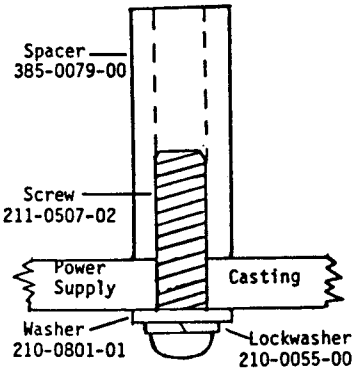
To eliminate this problem, the front panel circuit board, A38, must be changed. For instruments B010100 - B029999 use 050-1857-02. For instruments above B03XXXX, use 670-7050-03.

W2 Issue 15-1

49X POWER SUPPLY GRILLE SPACER REPLACEMENT -- (STANDARD CABINET ONLY!)

To replace one or both of the press-fit spacers that the Plastic Power Supply Grille is attached to, the following procedure has been developed.

Attach Hex Spacer (385-0079-00) to the Power Supply Casting using screw with nylon lock patch (211-0507-02), washer (210-0801-01), and lockwasher (210-0055-00). See drawing below. The washer and lockwasher must be used to provide adequate clearance within the spacer between the spacer attaching screw and the grille attaching screw.



W2 Issue 14-18

492/P AND 496/P FRONT PANEL CIRCUIT BOARD CHANGES

Reference: M50733

The front panel keyboard encoder I.C., A38U3039 P/N 156-1153-00, has been discontinued by the vendor and is no longer available. As a result, the 492/P and 496/P front panel circuit boards have been re-designed. The new circuit is similar to the 494 front panel circuit, and will appear in production units as follows: 492/P S/N B054245, 496/P S/N B020918, 492/P Opt. 06 S/N B620830.

For instruments below these serial numbers, replacement of A38U3039 requires changing the front panel circuit board as follows:

492/P S/N B010100 - B029999 Use 050-1857-03	496/P S/N B010100 - B020917 Use 670-7141-03
492/P S/N B03xxxx - B054244 Use 670-7050-03	492/P Opt. 06 S/N B610100 - B620829 Use 670-7141-03

(ARTICLE CONTINUED ON THE NEXT PAGE)

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MANUAL CHANGE INFORMATION

Date: 4-30-84 Change Reference: M50733

Product: 492/492P Spectrum Analyzer Service 2 Manual Part No.: 070-3784-01

DESCRIPTION

EFF SN B054245

Product Group 26

ELECTRICAL PARTS LIST AND SCHEMATIC CHANGES

CHANGE TO:

Component No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description
A38	670-7050-02			CKT BOARD ASSY:FRONT PANEL
A38C1016	283-0239-00			CAP.,FXD,CER DI:0.022UF,10%,50V
A38C1047	283-0204-00			CAP.,FXD,CER DI:0.01UF,20%,50V
A38C2046	283-0776-00			CAP.,FXD,MICA D:22UF,+50-10%,10V
A38C3030	283-0154-00			CAP.,FXD,CER DI:22PF,5%,50V
A38C4028	283-0204-00			CAP.,FXD,CER DI:0.01UF,20%,50V
A38C6021	283-0204-00			CAP.,FXD,CER DI:0.01UF,20%,50V
A38C6091	283-0204-00			CAP.,FXD,CER DI:0.01UF,20%,50V
A38CR1017	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38CR2018	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38CR2043	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38CR3012	152-0322-00			SEMICOND DEVICE:SILICON,15V,HOT CARRIER
A38CR3013	152-0322-00			SEMICOND DEVICE:SILICON,15V,HOT CARRIER
A38CR4017	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38CR4027	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38CR6035	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38CR6090	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38DS1048	150-1068-00			LT EMITTING DIO:RED
A38DS1054	150-1068-00			LT EMITTING DIO:RED
A38DS1121	150-1068-00			LT EMITTING DIO:RED
A38DS2014	150-1068-00			LT EMITTING DIO:RED
A38DS2016	150-1031-00			LT EMITTING DIO:RED,650NM,40MA MAX
A38DS2056	150-1068-00			LT EMITTING DIO:RED
A38DS2122	150-1068-00			LT EMITTING DIO:RED
A38DS2123	150-1068-00			LT EMITTING DIO:RED
A38DS3035	150-1068-00			LT EMITTING DIO:RED
A38DS3036	150-1068-00			LT EMITTING DIO:RED
A38DS3037	150-1068-00			LT EMITTING DIO:RED
A38DS3043	150-1068-00			LT EMITTING DIO:RED
A38DS3044	150-1068-00			LT EMITTING DIO:RED
A38DS3045	150-1068-00			LT EMITTING DIO:RED
A38DS3046	150-1068-00			LT EMITTING DIO:RED
A38DS3047	150-1068-00			LT EMITTING DIO:RED
A38DS3048	150-1068-00			LT EMITTING DIO:RED
A38DS3052	150-1068-00			LT EMITTING DIO:RED
A38DS3053	150-1068-00			LT EMITTING DIO:RED
A38DS3055	150-1068-00			LT EMITTING DIO:RED
A38DS3122	150-1068-00			LT EMITTING DIO:RED
A38DS3123	150-1068-00			LT EMITTING DIO:RED
A38DS4046	150-1068-00			LT EMITTING DIO:RED
A38DS4052	150-1068-00			LT EMITTING DIO:RED
A38DS4122	150-1068-00			LT EMITTING DIO:RED
A38DS4123	150-1068-00			LT EMITTING DIO:RED
A38DS5015	150-1029-00			LT EMITTING DIO:GREEN,565NM,35MA
A38DS5050	150-1068-00			LT EMITTING DIO:RED
A38DS5120	150-1068-00			LT EMITTING DIO:RED
A38DS5124	150-1031-00			LT EMITTING DIO:RED,650NM,40MA MAX
A38DS6046	150-1033-00			LT EMITTING DIO:YELLOW,585NM,40MA MAX
A38DS6052	150-1068-00			LT EMITTING DIO:RED
A38DS6062	150-1068-00			LT EMITTING DIO:RED

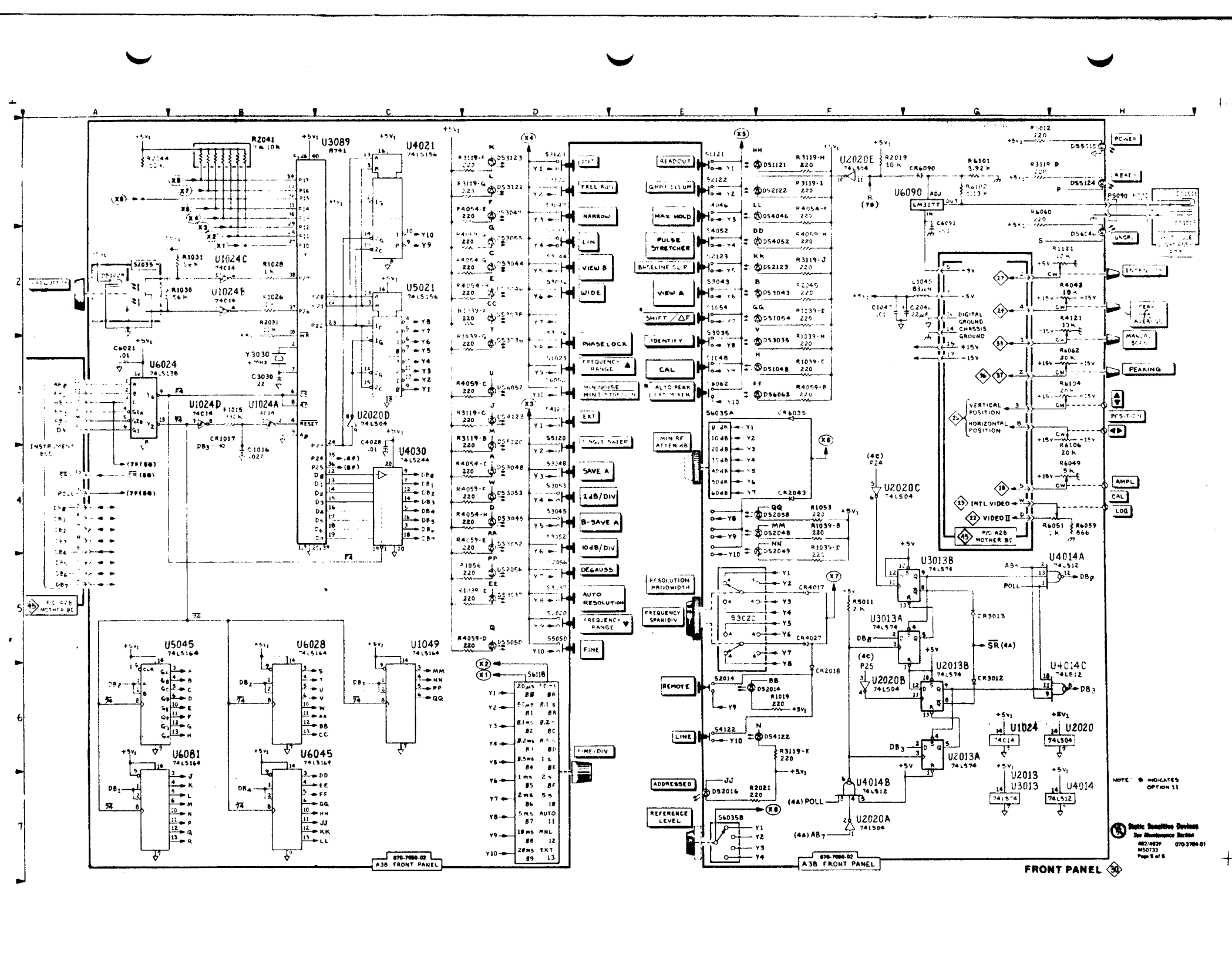
DESCRIPTION

Component No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description
A38L1045	108-0742-00			COIL,RF:83UH,TOROIDAL
A38R1015	315-0334-00			RES.,FXD,CMPSN:330K OHM,5%,0.25W
A38R1019	315-0221-00			RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R1026	315-0102-00			RES.,FXD,CMPSN:1K OHM,5%,0.25W
A38R1028	315-0102-00			RES.,FXD,CMPSN:1K OHM,5%,0.25W
A38R1030	315-0563-00			RES.,FXD,CMPSN:56K OHM,5%,0.25W
A38R1031	315-0563-00			RES.,FXD,CMPSN:56K OHM,5%,0.25W
A38R1039	307-0594-00			RES NTWK,FXD FI:7,220 OHM,2%,1.0W
A38R1053	315-0221-00			RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R1055	315-0221-00			RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R1056	315-0221-00			RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R1121	311-2051-00			RES.,VAR,NONWIR:10K OHM,20%,0.5W
A38R2019	315-0103-00			RES.,FXD,CMPSN:10K OHM,5%,0.25W
A38R2021	315-0221-00			RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R2031	315-0103-00			RES.,FXD,CMPSN:10K OHM,5%,0.25W
A38R2041	307-0696-00			RES NTWK,FXD,FI:7,10K OHM,2%,0.15W
A38R2044	315-0103-00			RES.,FXD,CMPSN:10K OHM,5%,0.25W
A38R2045	315-0221-00			RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R3119	307-0592-00			RES,NTWK,FXD FI:9,220 OHM,2%,2W
A38R4043	311-2051-00			RES.,VAR,NONWIR:10K OHM,20%,0.5W
A38R4054	307-0594-00			RES NTWK,FXD FI:7,220 OHM,2%,1.0W
A38R4059	307-0594-00			RES NTWK,FXD FI:7,220 OHM,2%,1.0W
A38R4121	311-2051-00			RES.,VAR,NONWIR:10K OHM,20%,0.5W
A38R5011	315-0202-00			RES.,FXD,CMPSN:2K OHM,5%,0.25W
A38R5012	315-0221-00			RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R6049	311-2049-00			RES.,VAR,NONWIR:5K OHM,20%,0.5W
A38R6051	311-2050-00			RES.,VAR,NONWIR:1K OHM,20%,0.5W
A38R6059	321-0187-00			RES.,FXD,FILM:866 OHM,1%,0.125W
A38R6060	315-0221-00			RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R6062	311-2054-00			RES.,VAR,NONWIR:20K OHM,20%,0.5W
A38R6101	321-0250-00			RES.,FXD,FILM:3.92K OHM,1%,0.125W
A38R6102	321-0198-00			RES.,FXD,FILM:1.13K OHM,1%,0.125W
A38R6104	311-2052-00			RES.,VAR,NONWIR:20K OHM,20%,0.5W
A38R6106	311-2052-00			RES.,VAR,NONWIR:20K OHM,20%,0.5W
A38S1023	263-0020-02			SWITCH,PB ASSY:MOMENTARY
A38S1048	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S1054	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S1121	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S2014	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S2020	263-0020-02			SWITCH,PB ASSY:MOMENTARY
A38S2035	263-0054-01			SWITCH,ROTARY:OPTICAL
A38S2056	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S2122	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S2123	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3035	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3036	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3037	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3043	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3044	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3045	263-0020-01			SWITCH,PB ASSY:MOMENTARY

DESCRIPTION

Component No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description
A38S3046	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3047	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3048	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3052	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3053	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3055	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3122	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S3123	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S4046	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S4052	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S4122	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S4123	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S5050	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S5120	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S6052	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38S6062	263-0020-01			SWITCH,PB ASSY:MOMENTARY
A38U1024	156-0876-00			MICROCIRCUIT,DI:HEX SCMITT TRIGGER
A38U1049	156-0651-02			MICROCIRCUIT,DI:8 BIT PRL-OUT SER SHF RGTR
A38U2013	156-0388-03			MICROCIRCUIT,DI:DUAL D FLIP-FLOP
A38U2020	156-0385-02			MICROCIRCUIT,DI:HEX INVERTER
A38U3013	156-0388-03			MICROCIRCUIT,DI:DUAL D FLIP-FLOP
A38U3039	160-2357-00			MICROCIRCUIT,DI:8-BIT MICROCOMPUTER
A38U4014	156-0722-02			MICROCIRCUIT,DI:TPL 3-INPUT POS NAND GATE
A38U4021	156-1432-00			MICROCIRCUIT,DI:DUAL 2/4 LINE DECD/DEMX
A38U4030	156-0956-02			MICROCIRCUIT,DI:DGTL OCTAL BFR
A38U5021	156-1432-00			MICROCIRCUIT,DI:DUAL 2/4 LINE DECD/DEMX
A38U5045	156-0651-02			MICROCIRCUIT,DI:8 BIT PRL-OUT SER SHF RGTR
A38U6024	156-0469-02			MICROCIRCUIT,DI:3/8 LINE DCDR
A38U6028	156-0651-02			MICROCIRCUIT,DI:8 BIT PRL-OUT SER SHF RGTR
A38U6045	156-0651-02			MICROCIRCUIT,DI:8 BIT PRL-OUT SER SHF RGTR
A38U6081	156-0651-02			MICROCIRCUIT,DI:8 BIT PRL-OUT SER SHF RGTR
A38U6090	156-1161-00			MICROCIRCUIT,LI:VOLTAGE REGULATOR
A38Y3030	158-0185-00			XTAL UNIT,QTZ:6 MHZ,0.015%,PAR

The above parts are located on the A38 Front Panel board and shown on diagram 30 FRONT PANEL


FRONT PANEL
A38 FRONT PANEL
READOUT
GRAT ILLUM
MAX HOLD
PULSE STRETCHER
BASELINE CLIP
VIEW A
SHIFT / ΔF
IDENTIFY
CAL
AUTO PEAK
MIN RF ATTEN
RESOLUTION BANDWIDTH
FREQUENCY SPAN/DIV
REMOTE
LINE
ADDRESSED
REFERENCE LEVEL
FREE RUN
NARROW
LIN
VIEW B
WIDE
PHASE LOCK
FREQUENCY RANGE
MIN NOISE
EXT
SINGLE SWEEP
SAVE A
2dB/DIV
B-SAVE A
10dB/DIV
DEGAUSS
AUTO RESOLUTION
FREQUENCY RANGE
FINE
TIME/DIV
POWER
BEAM
INTENSITY
FOCUS
ASTIGMATISM
TRACE ROTATION
VERTICAL POSITION
HORIZONTAL POSITION
PEAKING
AMPL CAL
LOG
INTL VIDEO
VIDEO II
P/C A28 MOTHER BC
P/C A26 MOTHER BE
INSTRUMENT BUS
NOTE: * INDICATES OPTION 11
Static Sensitive Devices
See Maintenance Section

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MANUAL CHANGE INFORMATION

Date: 4-30-84 Change Reference: M50733

Product: see below Manual Part No.: see below

DESCRIPTION

EFF SN B020918 (496/496P Service Vol. 2) 070-3482-00
EFF SN B620830 (492 Option 06 Service Vol. 2) 070-4233-00

Product Group 26

ELECTRICAL PARTS LIST AND SCHEMATIC CHANGES

CHANGE TO:

Component No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description
A38	670-7141-02			CKT BOARD ASSY:FRONT PANEL
A38C1016	283-0239-00			CAP.,FXD,CER DI:0.022UF,10%,50V
A38C1047	283-0204-00			CAP.,FXD,CER DI:0.01UF,20%,50V
A38C2046	283-0776-00			CAP.,FXD,MICA D:22UF,+50-10%,10V
A38C3030	283-0154-00			CAP.,FXD,CER DI:22PF,5%,50V
A38C4028	283-0204-00			CAP.,FXD,CER DI:0.01UF,20%,50V
A38C6021	283-0204-00			CAP.,FXD,CER DI:0.01UF,20%,50V
A38C6091	283-0204-00			CAP.,FXD,CER DI:0.01UF,20%,50V
A38CR1017	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38CR2018	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38CR2043	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38CR3012	152-0322-00			SEMICOND DEVICE:SILICON,15V,HOT CARRIER
A38CR3013	152-0322-00			SEMICOND DEVICE:SILICON,15V,HOT CARRIER
A38CR4017	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38CR4027	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38CR6035	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38CR6090	152-0141-02			SEMICOND DEVICE:SILICON,30V,150MA
A38DS1048	150-1068-00			LT EMITTING DIO:RED
A38DS1054	150-1068-00			LT EMITTING DIO:RED
A38DS1121	150-1068-00			LT EMITTING DIO:RED
A38DS2014	150-1068-00			LT EMITTING DIO:RED
A38DS2016	150-1031-00			LT EMITTING DIO:RED,650NM,40MA MAX
A38DS2056	150-1068-00			LT EMITTING DIO:RED
A38DS2122	150-1068-00			LT EMITTING DIO:RED
A38DS2123	150-1068-00			LT EMITTING DIO:RED
A38DS3036	150-1068-00			LT EMITTING DIO:RED
A38DS3037	150-1068-00			LT EMITTING DIO:RED
A38DS3038	150-1068-00			LT EMITTING DIO:RED
A38DS3043	150-1068-00			LT EMITTING DIO:RED
A38DS3044	150-1068-00			LT EMITTING DIO:RED
A38DS3045	150-1068-00			LT EMITTING DIO:RED
A38DS3046	150-1068-00			LT EMITTING DIO:RED
A38DS3047	150-1068-00			LT EMITTING DIO:RED
A38DS3048	150-1068-00			LT EMITTING DIO:RED
A38DS3052	150-1068-00			LT EMITTING DIO:RED
A38DS3053	150-1068-00			LT EMITTING DIO:RED
A38DS3055	150-1068-00			LT EMITTING DIO:RED
A38DS3122	150-1068-00			LT EMITTING DIO:RED
A38DS3123	150-1068-00			LT EMITTING DIO:RED
A38DS4046	150-1068-00			LT EMITTING DIO:RED
A38DS4052	150-1068-00			LT EMITTING DIO:RED
A38DS4122	150-1068-00			LT EMITTING DIO:RED
A38DS4123	150-1068-00			LT EMITTING DIO:RED
A38DS5015	150-1029-00			LT EMITTING DIO:GREEN,565NM,35MA
A38DS5050	150-1068-00			LT EMITTING DIO:RED
A38DS5120	150-1068-00			LT EMITTING DIO:RED
A38DS5124	150-1031-00			LT EMITTING DIO:RED,650NM,40MA MAX
A38DS6046	150-1033-00			LT EMITTING DIO:YELLOW,585NM,40MA MAX
A38DS6052	150-1068-00			LT EMITTING DIO:RED
A38DS6062	150-1068-00			LT EMITTING DIO:RED

DESCRIPTION

496/496P 070-3482-00
492 Option 06 070-4232-00

A38L1045	108-0742-00	COIL,RF:83UH,TOROIDAL
A38R1015	315-0334-00	RES.,FXD,CMPSN:330K OHM,5%,0.25W
A38R1019	315-0221-00	RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R1026	315-0102-00	RES.,FXD,CMPSN:1K OHM,5%,0.25W
A38R1028	315-0102-00	RES.,FXD,CMPSN:1K OHM,5%,0.25W
A38R1030	315-0563-00	RES.,FXD,CMPSN:56K OHM,5%,0.25W
A38R1031	315-0563-00	RES.,FXD,CMPSN:56K OHM,5%,0.25W
A38R1039	307-0594-00	RES NTWK,FXD FI:7,220 OHM,2%,1.0W
A38R1053	315-0221-00	RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R1055	315-0221-00	RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R1056	315-0221-00	RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R1121	311-2051-00	RES.,VAR,NONWIR:10K OHM,20%,0.5W
A38R2019	315-0103-00	RES.,FXD,CMPSN:10K OHM,5%,0.25W
A38R2021	315-0221-00	RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R2031	315-0103-00	RES.,FXD,CMPSN:10K OHM,5%,0.25W
A38R2041	307-0696-00	RES NTWK,FXD,FI:7,10K OHM,2%,0.15W
A38R2044	315-0103-00	RES.,FXD,CMPSN:10K OHM,5%,0.25W
A38R2045	315-0221-00	RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R3119	307-0592-00	RES,NTWK,FXD FI:9,220 OHM,2%,2W
A38R4043	311-2051-00	RES.,VAR,NONWIR:10K OHM,20%,0.5W
A38R4054	307-0594-00	RES NTWK,FXD FI:7,220 OHM,2%,1.0W
A38R4059	307-0594-00	RES NTWK,FXD FI:7,220 OHM,2%,1.0W
A38R4121	311-2051-00	RES.,VAR,NONWIR:10K OHM,20%,0.5W
A38R5011	315-0202-00	RES.,FXD,CMPSN:2K OHM,5%,0.25W
A38R5012	315-0221-00	RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R6049	311-2049-00	RES.,VAR,NONWIR:5K OHM,20%,0.5W
A38R6051	311-2050-00	RES.,VAR,NONWIR:1K OHM,20%,0.5W
A38R6059	321-0187-00	RES.,FXD,FILM:866 OHM,1%,0.125W
A38R6060	315-0221-00	RES.,FXD,CMPSN:220 OHM,5%,0.25W
A38R6062	311-2054-00	RES.,VAR,NONWIR:20K OHM,20%,0.5W
A38R6101	321-0250-00	RES.,FXD,FILM:3.92K OHM,1%,0.125W
A38R6102	321-0198-00	RES.,FXD,FILM:1.13K OHM,1%,0.125W
A38R6104	311-2052-00	RES.,VAR,NONWIR:20K OHM,20%,0.5W
A38R6106	311-2052-00	RES..VAR.NONWIR:20K OHM,20%.0.5W
A38S1048	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S1054	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S1121	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S2014	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S2035	263-0054-01	SWITCH,ROTARY:OPTICAL
A38S2056	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S2122	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S2123	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3036	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3037	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3038	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3043	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3044	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3045	263-0020-01	SWITCH,PB ASSY:MOMENTARY

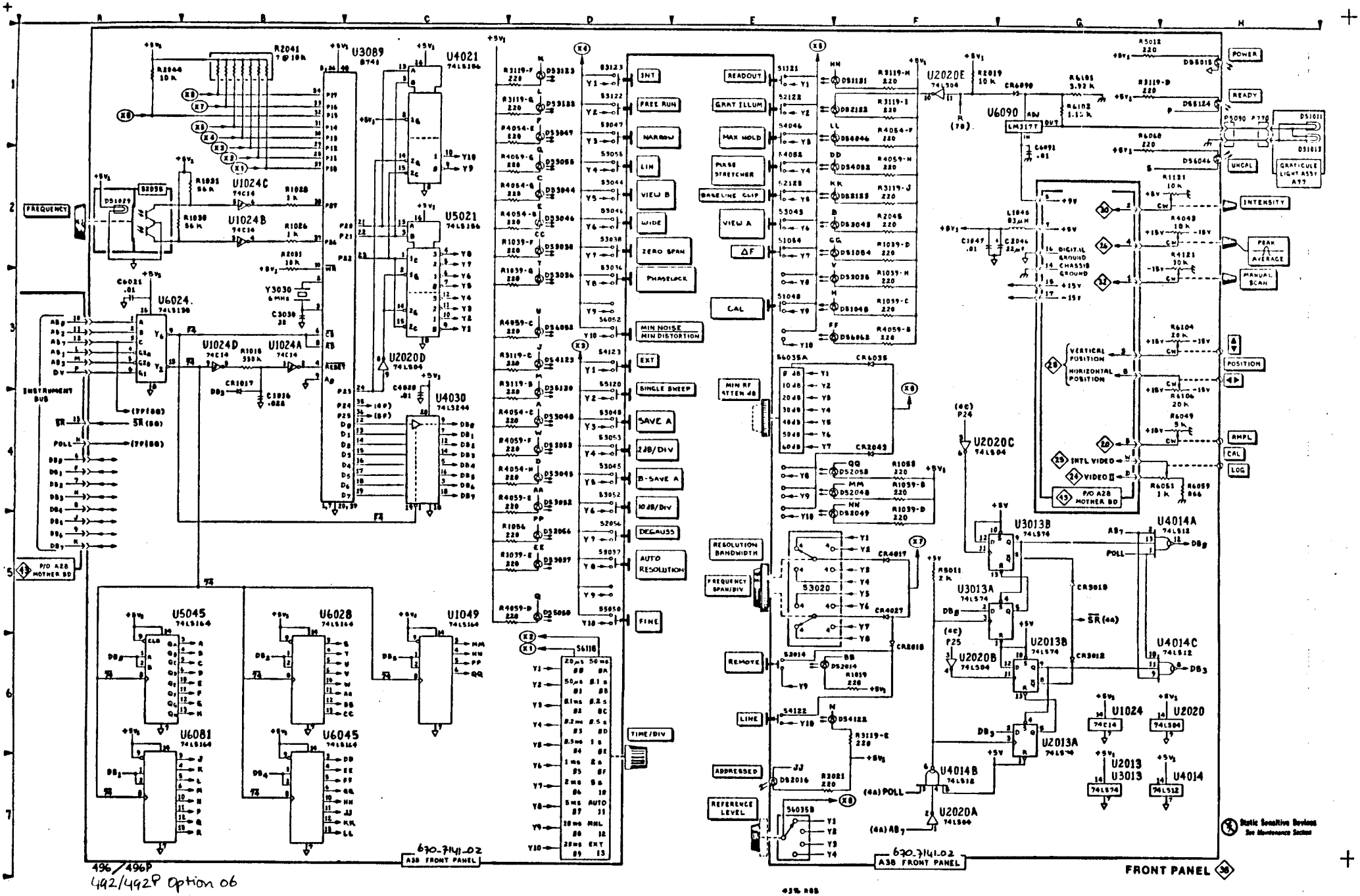
DESCRIPTION

496/496P 070-3482-00
492 Option 06 070-4232-00

A38S3046	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3047	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3048	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3052	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3053	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3055	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3122	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S3123	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S4046	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S4052	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S4122	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S4123	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S5050	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S5120	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38S6052	263-0020-01	SWITCH,PB ASSY:MOMENTARY
A38U1024	156-0876-00	MICROCIRCUIT,DI:HEX SCMITT TRIGGER
A38U1049	156-0651-02	MICROCIRCUIT,DI:8 BIT PRL-OUT SER SHF RGTR
A38U2013	156-0388-03	MICROCIRCUIT,DI:DUAL D FLIP-FLOP
A38U2020	156-0385-02	MICROCIRCUIT,DI:HEX INVERTER
A38U3013	156-0388-03	MICROCIRCUIT,DI:DUAL D FLIP-FLOP
A38U3039	160-2357-00	MICROCIRCUIT,DI:8-BIT MICROCOMPUTER
A38U4014	156-0722-02	MICROCIRCUIT,DI:TPL 3-INPUT POS NAND GATE
A38U4021	156-1432-00	MICROCIRCUIT,DI:DUAL 2/4 LINE DECD/DEMX
A38U4030	156-0956-02	MICROCIRCUIT,DI:DGTL OCTAL BFR
A38U5021	156-1432-00	MICROCIRCUIT,DI:DUAL 2/4 LINE DECD/DEMX
A38U5045	156-0651-02	MICROCIRCUIT,DI:8 BIT PRL-OUT SER SHF RGTR
A38U6024	156-0469-02	MICROCIRCUIT,DI:3/8 LINE DCDR
A38U6028	156-0651-02	MICROCIRCUIT,DI:8 BIT PRL-OUT SER SHF RGTR
A38U6045	156-0651-02	MICROCIRCUIT,DI:8 BIT PRL-OUT SER SHF RGTR
A38U6061	156-0651-02	MICROCIRCUIT,DI:8 BIT PRL-OUT SER SHF RGTR
A38U6090	156-1161-00	MICROCIRCUIT,LI:VOLTAGE REGULATOR
A38Y3030	158-0185-00	XTAL UNIT,QTZ:6 MHZ,0.015%,PAR

The above parts are located on the A38 Front Panel board and shown on diagram

FRONT PANEL



496/496P
492/492P Option 06

492/P & 496/P GPIB EXTENDER BOARD REPLACEMENT

RE: M53592

The 492P/496P GPIB extender Board, A56A1 (P/N 670-7060-00) has been discontinued by FDI manufacturing and is no longer available. Existing 494P circuitry has been used to replace A56A1. To ensure compatibility with the new GPIB extender board, P/N 670-7916-01, it is necessary to replace three more 492P/496P circuit boards, including A54 Memory, A56 GPIB and A58 Processor.

For Field replacement of A56A1, P/N 670-7060-00, please refer to the following list:

492P **except** Opt. 11/41
use 050-1971-00

496P and 492P Opt. 06
use 050-1972-00

492P Opt. 41
use 050-1973-00

492P Opt. 11
use 050-1974-00

492P Opt. 11/41
use 050-1975-00

W2 Issue 15-2

494/P AUXILIARY SYNTHESIZER

RE: MOD #54196

To eliminate the need to select A26 U3051; the value of R4052 has been changed to 50k ohm P/N 321-0756-00.

For field replacement of U3051, use 050-1911-00.

W2 Issue 14-18

494/P VARIABLE RESOLUTION -- "CALIBRATION INFO"

REF: Mod #M54777

Some changes have been made to the Variable Resolution Filter Select circuit boards to improve the range of some adjustments and to match the schematic with the parts used in the circuit.

In units with serial numbers below B010284, the following changes have been made:

A69A3

Change R2026 to 321-0054-00
35.7 ohm 0.5% 0.125W

Change R2027, R2028 to 321-0114-00
150 ohm 1.0% 0.125W

A68A2

Change R3014 to 321-0054-00
35.7 ohm 0.5% 0.125W

W2 Issue 14-18

496/P ZERO-HERTZ RESPONSE ADJUSTMENT PROCEDURE CORRECTED

The following is a revised procedure for adjusting the 496/P zero-hertz response amplitude. Refer to the 496/P Service Volume One Manual, page 4-20 figure 4-11A for adjustment locations.

A. Set the front panel controls as follows:

Frequency 0
Freq. Span/Div 200KHZ
Resolution Bandwidth 100KHZ
Vertical Display 10 dB/Div

(ARTICLE CONTINUED ON THE NEXT PAGE)

496/P ZERO-HERTZ RESPONSE ADJUSTMENT PROCEDURE CORRECTED (CONT.)

Digital Storage View A
Min. R.F. Attenuation 0dB
Min. Noise On
Triggering Free Run
Tim/Div Auto
Reference Level -20dBM

B. Terminate the RF Input with a 50 ohm termination (BNC-to-N adaptor and BNC 50 ohm terminator). Turn the 496/P over to gain access to the RF deck. Remove the protective cover from the end of the variable load assembly (see Fig. 11A) and center the start spur potentiometer.

C. Adjust the Frequency Control to center the zero-hertz response on screen.

D. Insert a small "Jewelers" screwdriver into the access hole, on the diode assembly for the 1st mixer, and adjust for minimum amplitude of the zero-hertz response.

CAUTION

Use extreme care when adjusting the screw clockwise so as not to crack the internal diode substrate due to excessive torque. The end of the range is easily recognized when the screw bottoms out.

E. Re-adjust the start spur potentiometer in the variable load assembly (see Fig. 11A) for a -20 dBM or less zero-hertz response amplitude.

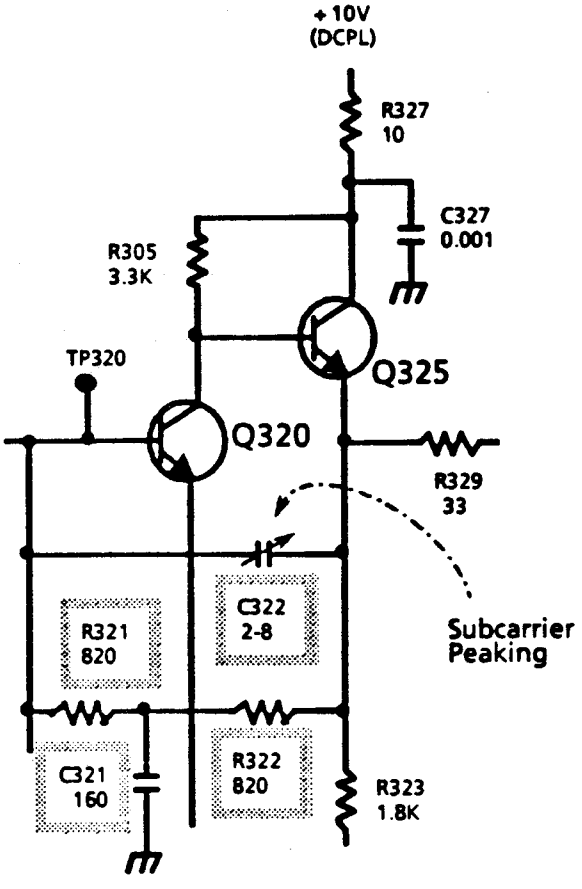
F. Replace the protective cover over the adjustment for the variable load assembly.

W2 Issue 15-1

520A SERIES CAL PROCEDURE

Ref: 520A Instruction Manual, 070-1709-00
521A Instruction Manual, 070-1794-00
522A Instruction Manual, 070-1874-00
Mod 56023

On the following page is a manual correction for 520A Series Vectorscopes that have been affected by Mod 56023.



Partial A9 showing added parts

(ARTICLE CONTINUED ON THE NEXT PAGE)

Tektronix COMMITTED TO EXCELLENCE

MANUAL CHANGE INFORMATION

Product Group 20

Date: 11/5/84 Change Reference: M56023

Product: 520 Series Manual Part No: See Below

DESCRIPTION

Inst:	520A	Man. P/N: 070-1709-00	Eff. S/N:	B540234
	521A	070-1794-00		B334603
	522A	070-1874-00		B160523

TEXT, SCHEMATIC, and PARTS LIST CHANGES

SECTION 2 ELECTRIAL MAINTENANCE, ADJUSTMENT PROCEDURE, Page 2-12.

CHANGE new step 18 (per M46781) TO READ:

18. ADJUST SUBCARRIER OSCILLATOR OUTPUT FILTER and PEAKING

Depress CH A, FULL FIELD, AΦ/BΦ ALT, and VECTOR pushbuttons. Connect the test oscilloscope probe to TP2460 on the Subcarrier Regenerator circuit board, A2. Adjust L2450 on A2 for maximum subcarrier amplitude.

Connect test oscilloscope probe to TP325 on the Input Sync circuit board, A9. Adjust C322 on A9 for maximum subcarrier amplitude.

SECTION 4 REPLACEABLE ELECTRICAL PARTS LIST

CHANGE TO READ:

A9	670-0538-04	CKT BD ASSY, INPUT SYNCH ; SERIES
C321	283-0640-00	CAP,FXD,CER:160pF,1%,100V
R321	315-0821-00	RES., FXD,CMPSN:820 OHM,5%,0.25W

ADD:

R322	315-0821-00	RES., FXD,CMPSN:820 OHM,5%,0.25W
C322	281-0091-00	CAP,VAR,CER DI:2-8pF,350V

DELETE:

R320	315-0103-00	RES., FXD,CMPSN: 10K OHM,5%,0.25W

These parts are located on the Input Synchronizer board, and are shown on diagram ◇3. Added parts and changed circuitry are shown in partial diagram, following.

602 MOD 705B HIGH VOLTAGE

Ref: 602 Instruction Manual, P/N 070-0799-00

The part number for the high voltage assembly used in the 602 Mod 705B is 119-1519-00. This is a custom part and must be ordered by contacting your Tektronix Sales Representative.

W2 Issue 14-18

634 ENGINEERING CHANGE #52566

Ref: 634 Service Manual, 070-2561-00

Engineering modification 52566 makes several changes to the 634 monitor.

First, two resistors are changed and one capacitor is added to the deflection circuitry to discourage vertical pin lines and raster line pairing. The part number for the new capacitor, C387 is 283-0000-00 and its value is .001 uf. It is added between pins 5 and 6 of the horizontal drive transformer, T390 on the yoke driver board. On the sync separator board, R231 and R298 are changed. Resistor R231 is changed from a 10K ohm device to 5.1K ohms. Its part number is 315-0512-00. Resistor R298, previously 22 ohms is replaced by a shorting strap, part number 131-0566-00.

Second, a value of 10K has been found to be too small for reliable sync with scan rates as low as 675/60 (above 875/60, R376 is 8.66K ohms). Resistor R376 is therefore changed from a 10K ohm device to 12.1K ohms, part number 321-0297-00 for scan rates below 875/60.

Finally, R352, a 2.7 ohm, .25 watt device is replaced by a .5 watt equivalent. The part number of the larger resistor is 307-0051-00. This is to reduce the likelihood of R352 overdissipating when the horizontal hold control, R375 is misadjusted. The most common cause of an R352 failure is overdissipation during calibration to a new scan rate. This is particularly so when a factory calibrated product (1084/60) is reconfigured with the values of R376, C253 and C364 for a scan rate below 875/60, or vice versa. Please preset the horizontal hold control, R375 clockwise when calibrating to high scan rates such as 1084/60. Preset R375 counterclockwise when calibrating to a lower scan rate such as 675/60.

As a result of these changes, the Option 15 yoke driver board rolls from 670-6122-06 to 670-6122-07, and the Option 15 sync separator board rolls from 670-6123-02 to 670-6123-03.

W2 Issue 15-2

1800 TEST STATION SECTOR CARD EXTRACTION TOOL

Reference: P/N 003-1362-00

A sector card extraction tool is now available, P/N 003-1362-00, which fits all 1800 Test Stations except the 1809V. This tool will make removal of sector cards easier on fingers with less chance of damaging components. P/N for the tool's cable tie, which wraps around the circuit board puller on the sector card, is 343-0149-00.

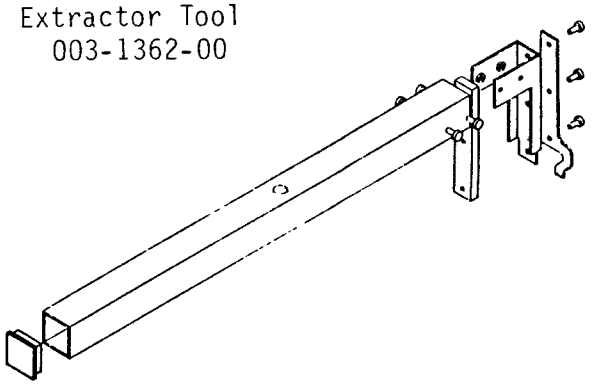
The tool is included in the following Recal kits:

Product	Recal Kit
S-3270	067-1009-01
S-3275	067-1104-00
S-3280	644-0175-02

(ARTICLE CONTINUED ON THE NEXT PAGE)

1800 TEST STATION SECTOR CARD EXTRACTION TOOL (CONT.)

Sector Card
Extractor Tool
003-1362-00



W2 Issue 14-16

4025A INSULATION BREAKDOWN ON D56 DIODE HOLDER

Ref: 4025A Service Manual Volume 2,
Part Number 070-4168-00

Insulation breakdown on the D56 diode holder and high-voltage wire (refer to figure 3-17, page 3-28, of the 4025A Service Manual) can occur if they are close to and/or touching the side of the monitor's chassis. To prevent this breakdown, turn the anode cap with D56 diode holder to a vertical position. Dress the high-voltage wire so that it is on the yoke side of the D56 diode holder (refer to figure 3-17). Also dress any wires that are below the D56 diode holder out of the way of the anode cap.

W2 Issue 14-18

4025A MONITOR POWER SUPPLY CONNECTOR MISWIRED

Ref: 4025A Service Manual Volume 2,
Part Number 070-4168-00

Recently, technicians from Sony/Tek discovered a wiring error on the connector J2 that connects to S2 from the monitor's power supply (refer to figure 4-42, exploded diagram of power supply between pages 8-12 and 8-13). This miswired connector caused the monitor to either not work properly or not work at all when the voltage selection on the 4025A was changed from 115V, 60 Hz, to any other setting.

The correct wiring to the connector J2 is:

Connector Pins	Wire Code
1	8-01
2	Not used
3	8-29
4	8-02
5	Not used
6	8-19

W2 Issue 14-18

4107 DISPLAY MODULE PART NUMBER

REF: Display Module for the 4107
Service Manual P/N 070-4891-00

4107 Computer Display Terminal
Service Manual P/N 070-4889-00

The part number for the 4107 Display Module is not correct as listed in the Display Module Service Manual. This number, 119-1593-00, is for the 4105 Display Module. The correct part number for the 4107 is 119-1711-00.

If a 4105 Display Module is installed in a 4107, the symptom will be loss of horizontal sync which cannot be corrected with the horizontal hold or horizontal position controls (there is no horizontal position control on a 4105, 119-1593-00, Display Module).

W2 Issue 14-18

4115B/M4115B KEYBOARD'S <RETURN> KEY BINDS

Ref: 070-4667-00 4115B Computer Display Terminal Service Manual, Volume 2.

After 4115B/M4115B keyboards have been used, the <RETURN> key starts binding. To stop this binding, Corporate Mod 55772 has been approved to remove the 1.5 ounce spring that is under the <RETURN> keycap and place two 1 ounce springs (P/N 118-4199-00) under the key.

W2 Issue 15-1

4691 DRUM MASK TAPE CHANGE MOD #55189

Ref: 4691 Service Manual, 070-4498-00
Supersedes article published 9/7/84, Issue 14-15

The 4691 drum mask tape has been changed. The previously used teflon tape, P/N 253-0315-00, has been replaced by a copper foil tape, P/N 253-0266-00. The part number is set up for a foot of tape. If you want a full roll of tape, you will need to order a quantity of 75.

The new tape has less tendency to produce the obnoxious high-pitched squeal caused by vibration between the paper and drum mask tape on 4691s used with "A" and "B" size media. The drum mask tape is easier to replace when the paper carrier is moved back over the paper tray and the chrome paper guide is removed.

W2 Issue 15-1

4691 OPTION 02 FIELD INSTALLATION DIFFICULTY

Ref: 4691 Option 02 Instruction Manual, 070-5004-00
4691 Service Manual, 070-4498-00

If the MUX fails to respond at all (LED indicator does not work) after installing the 4691 Option 02 (020-1232-00), check the Parallel Interface for the +5 volt and ground wiring to the interface connector. We have reports that some -02 and -03 revision level Parallel Interface boards have not been modified.

If the Parallel Interface needs this modification, perform steps 5 and 6 of connecting the MUX to the copier, page 3-6 of the 4691 Option 02 Instruction Manual, as if you have a -00 revision level board.

W2 Issue 15-2

4691 UPDATE PROCEDURE OMISSION

REF: 4691 Service Manual, P/N 070-4498-00

In regards to the 4691 reliability improvement installation procedure a significant omission has occurred.

Paragraph 5 of the 4691 "Auto Purge" Modification Installation Guide makes a point of warning against changing the thumbscrew setting of the pressure valve. It should have also mentioned the fact that rotating the relief air outlet fitting will also effect the pressure setting. This is very easy to do when tightening the newly installed adapter part "A" supplied with the kit.

When installing adapter part "A" on the air pump pressure controller, part "B" should be held with a wrench while tightening part "A". This is done to prevent part "C" from being disturbed and subsequently changing the air pressure.

(ARTICLE CONTINUED ON THE NEXT PAGE)

4691 UPDATE PROCEDURE OMISSION (CONT.)

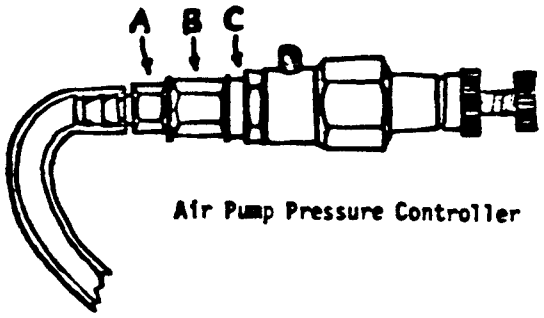


Figure 1.

W2 Issue 14-18

4691 VACUUM PAPER CARRIER CONCERN

Ref: 4691 Service Manual, 070-4498-00

Earlier version 4691s that were upgraded in the field may contain a manufacturing flaw. The earlier version 4691 has the right middle suction cannister (facing copier from the paper exit) fixed and plugged. The retainer for all the suction cannisters, should have a small rectangular piece of metal glued to the inside of said retainer assembly, such that it fixes the unused suction cannister up-and-out-of-the-way.

Some of the retainer assemblies that arrived in the field have the small rectangular piece of metal glued to the retainer, such that it fixes up the left center suction cannister instead of the right center suction cannister. This will cause problems when picking paper and especially transparencies.

The situation can be remedied by prying off the small piece of metal with an exacto knife and regluing said piece in the correct position. Please remember to clean the surface of the retainer so that the small rectangular piece of metal will stick properly.

4691 VACUUM PAPER CARRIER

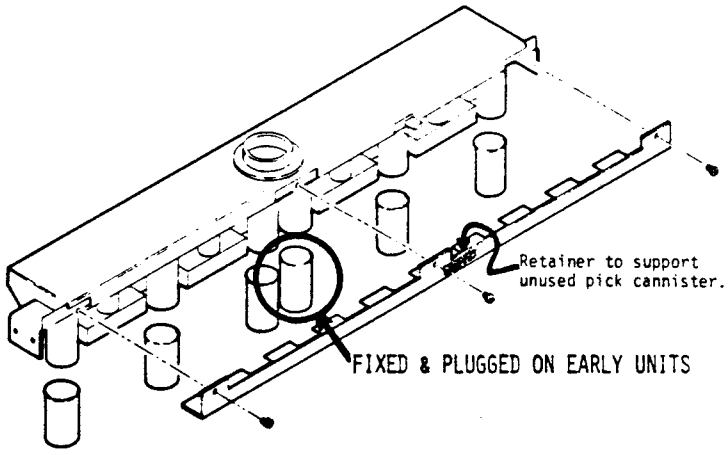


Figure 1.

Later version 4691s, which have the middle suction cannisters spaced further apart, do not have the right middle suction cannister fixed and plugged.

W2 Issue 15-1

4695 220/240 VOLT OPTION

REF: 4695 Operators Manual, 070-4646-00
4695 Service Manual, 070-4645-00

No kit has been made for the conversion of 4695 products from 110 volt to 220/240 volt operation. However, all the parts needed for the task are orderable and such a conversion is rather simple.

The 220/240 volt versions of the 4695 use an internal 2:1 stepdown transformer to lower the line voltage to 110 volts. This transformer is part of an assembly (118-3036-00) which contains a circuit board, mounting hardware and a small cable (see Figure 1). The cable carries the 110 volt output and plugs onto the power supply

(ARTICLE CONTINUED ON THE NEXT PAGE)

4695 220/240 VOLT OPTION (CONT.)

board at the same location as the power cord in a 110 volt product. The circuit board is represented in the System Interconnect Schematic in the service manual (please refer to the May 1984 version of the manual for the corrected schematic). The only field replaceable component on the circuit board is an 0.8 ampere fuse (P/N 159-0234-00). The transformer assembly as shipped, requires that leads from the winding taps be soldered to select either 220 or 240 volt mains. The manner of connection is self-evident by the silk screening on the circuit board.

Since the 4695 serial number tag describes the line voltage as shipped from the factory, a label must be added to identify the new line voltage. The 334-4760-00 (See Figure 2) can be used for this purpose. The label is blank and requires that the specialist type in the correct voltage setting, whether 110, 220 or 240.

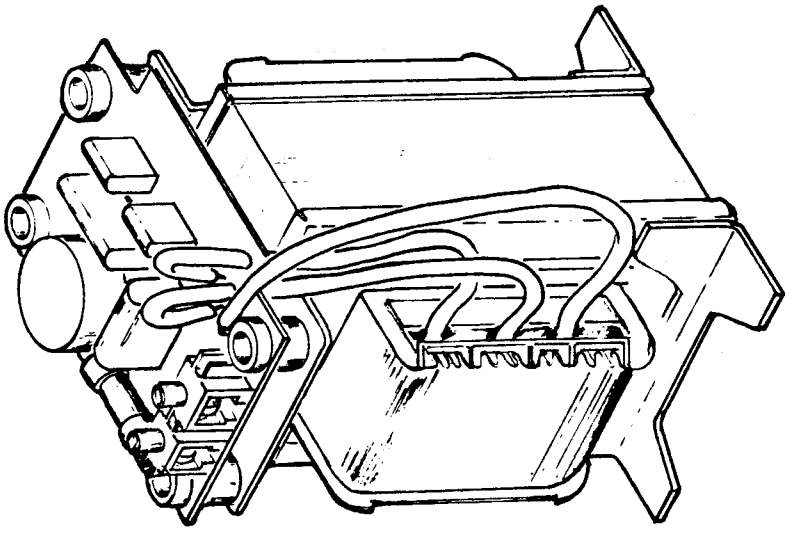


Figure 1
118-3036-00 Assembly

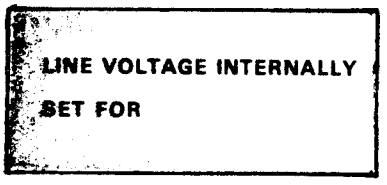


Figure 2
334-4760-00 Label

The only other part needed besides the label, transformer assembly, and spare fuses is the power cord. One of five possible cords is available for the A1 through A5 options:

A1	European 220	118-3037-00
A2	United Kingdom 240	118-3038-00
A3	Australian 240	118-3039-00
A4	North American 240	118-3040-00
A5	Swiss 240	118-3041-00

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4909 HARD DISK DRIVE STACK FAULT 09.1D

REF: 070-3999-00 Hard Disk Drive Service Manual
070-3998-00 Multi-User File Management System Service Manual

It has been brought to my attention that a specific fault has been showing up in the field. This fault will cause the system to shut down.

If the display indicators (stack) on the Control/Mux Circuit Board display the fault 09,1D (refer to pages 6-68 through 6-70 of the 4909 Hard Disk Drive Service Manual) the most probable causes are:

1. A binding voice coil.
2. An incorrect + or - 32VDC.
3. A sticky end-of-travel bumper for the voice coil.

(ARTICLE CONTINUED ON THE NEXT PAGE)

4909 HARD DISK DRIVE STACK FAULT 09.1D (CONT.)

A binding voice coil is most likely caused by dirty rails or incorrect adjustments of the rail assembly. The procedures for cleaning and/or adjusting these parts are well documented in the manual.

The incorrect + or - 32VDC is most likely caused by a power supply failure or a failure of the 32VDC board. This is to be replaced as necessary.

The sticky bumpers are caused by dirt or other foreign material on their surface or by a natural vacuum caused when two very smooth materials are forced together. If they are dirty they should be cleaned with isopropyl alcohol. If the problem persists, a shallow "X" can be cut into the surface of the bumpers to eliminate the totally flat surface.

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7612D FAN DRIVE RELIABILITY IMPROVEMENT PROCEDURE

REF: Material needed --
7612D Instruction Manual
(P/N 070-2387-00)

To prevent possible collector to base shorting of switching transistors A80Q501 and A80Q521, resulting in loss of Fan Drive Power, the installation of Mica washers (P/N 342-0202-00) between these transistors and circuit board is recommended for all units below S/N B041284.

The procedure below is provided for ease of installation of these parts.

STEP 1

Refer to 7612D Instruction Manual Page 4-16 and 4-17 and read the section on power supply removal. Special attention should be paid to the **"CAUTION"** (page 4-17), **ALLOW INPUT FILTER CAPACITORS SEVERAL MINUTES TO DISCHARGE BEFORE REMOVING THE POWER SUPPLY.**

STEP 2

- Turn off "PRINCIPLE POWER SWITCH" on rear of 7612D.
- Disconnect power cord and allow several minutes for filter capacitors to discharge before continuing.

STEP 3

- Set instrument on right side.
- Remove bottom and left side covers.
- Remove six nuts from power supply module bottom terminal posts and disconnect leads, noting orientation.
- Remove ground strap located directly above the six terminal posts of the power supply.
- Remove ribbon cable (9 pin) from J500 on the Main Interconnect Board (A68) located directly below the six terminals of the power supply.

STEP 4

- Looking at the left side of the instrument facing up, remove the two retaining nuts on the ribbon cable clamps and then remove the clamp sections. (Refer to Figure 3 chassis pull-out, index numbers 51 and 52 if unable to locate).
- Remove the ribbon connector P420 now exposed from under clamps.

STEP 5

- Remove four screws located at the corners of the power supply rear panel.
- Slide the power supply out of the chassis mainframe.

(ARTICLE CONTINUED ON THE NEXT PAGE)

7612D FAN DRIVE RELIABILITY IMPROVEMENT PROCEDURE (CONT.)

STEP 6

- Remove power supply cover (index #6, Figure 6, Power supply pull-out exploded view).
- Remove Fan Bracket (index #116, Figure 6) and fan (index #121, Figure 6) together as one piece from the rear of the module by removing the four retaining screws. The length of the fan power cable is long enough that removal is not needed. The fan may be pulled out and set to the side to allow access to the underside of the A80 circuit board.

STEP 7

- Position module with A80 facing up. Locate A80 Q501 and A80 Q521 and remove screws and nuts retaining them to the circuit board.
- Lift transistors up gently to enable installation of mica washers (P/N 342-0202-00).
- Reattach retaining hardware for transistors. (The use of two magnetic screw drivers, one to hold the nuts from underneath until started and one to turn screws from above, seems to work well.)

REASSEMBLY

STEP 1

- Inspect all cables and connectors before continuing.
- Reinstall fan/bracket (NOTE: insure proper routing of fan power cable).

STEP 2

- Install power supply cover checking for two cables (9 pin ribbon cable and a single wire ground) protruding from the opening in the rear of the cover. Secure ;cover with appropriate hardware.

STEP 3

- Slide the power supply into the chassis mainframe, and secure with proper hardware.

STEP 4

- Install cable to P420 at the power module.
- Reinstall ribbon cable clamps appropriately.

STEP 5

- Reinstall cable (9 pin) from the power module to J500 on the Main Interconnect (A68) board.
- Reinstall ground cable to chassis.
- Reinstall power supply cables to six terminal part noting proper orientation.

STEP 6

- Inspect all cables and hardware.
- Install instrument bottom and left side covers.
- Check out instrument operation appropriately.

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Tektronix, Inc.
P.O. Box 500
Beaverton, Oregon 97077

Attention: Janet Hemenway
SERVICE TEKNOTES Editor

Delivery Station: 53-102

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