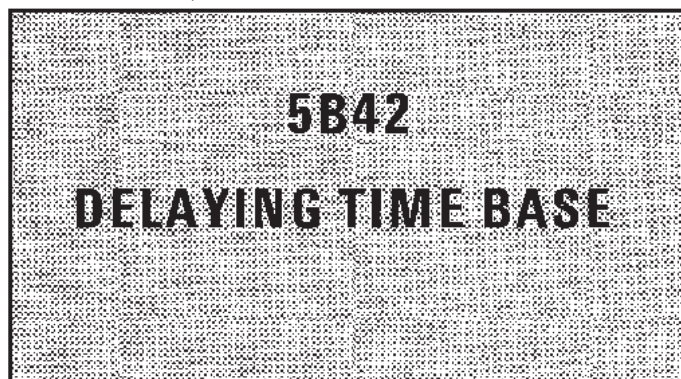


**TEKTRONIX®**



INSTRUCTION MANUAL

Tektronix, Inc.  
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Beaverton, Oregon 97005

Serial Number \_\_\_\_\_

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# OPERATING INSTRUCTIONS

## INSTRUMENT DESCRIPTION

The 5B42 Delaying Time Base provides normal and fully triggerable delayed sweeps for the 5400 series oscilloscopes. It features edge-lighted main and delayed SEC/DIV selector switches. When used in a mainframe with readout capabilities, the SEC/DIV information is displayed on the CRT face. All front panel controls are conveniently grouped and

color coded for ease of identification and operation. Pushbuttons select various trigger modes from either vertical plug-in compartment and the various sweep modes. Although designed for use in the right hand or sweep compartment of the oscilloscope, the 5B42 will operate in the vertical compartments to produce vertical sweeps.

## PREPARATION FOR USE

Your 5B42 is calibrated and ready for use when received. Fig. 1-1 shows installation-removal procedure. Refer to the Front Panel Controls illustration in the fold-out pages for a complete description of the front panel. Color patterns printed on the front panel help to identify functionally grouped controls. Blue surrounds controls

associated with the display mode, light green with the main trigger, and dark green with the delayed trigger controls. Also, the shades of grey on the TRIG LEVEL controls correspond with the grey on the SEC/DIV switch knobs for easy identification.

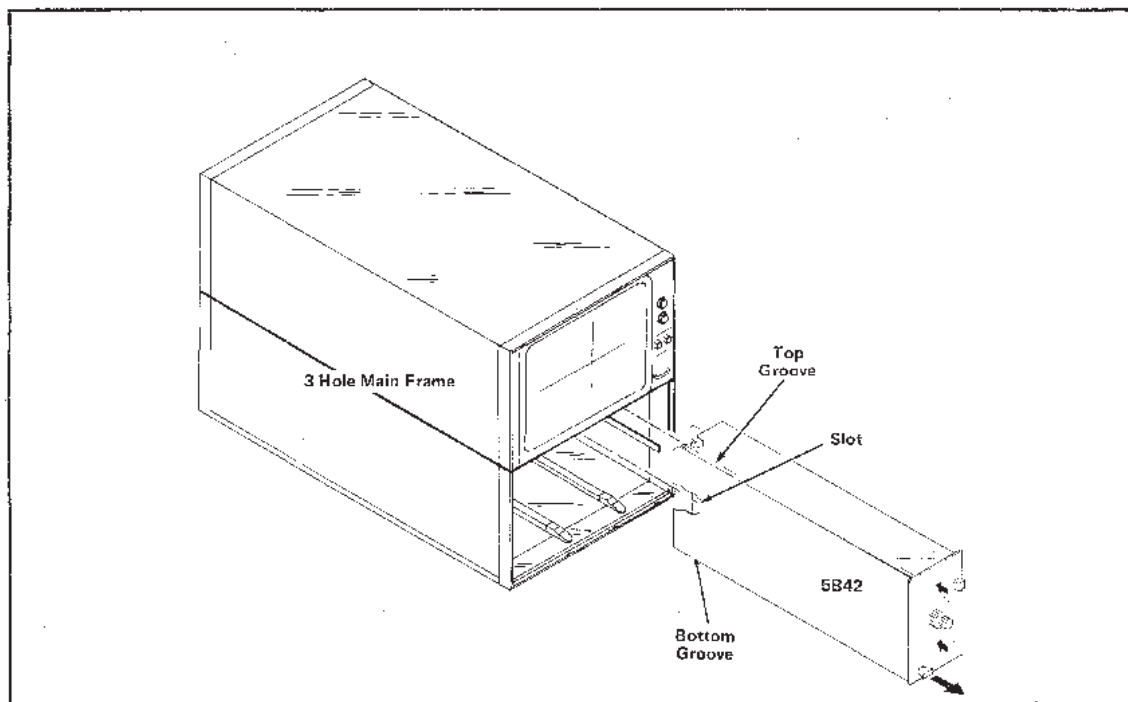


Fig. 1-1. 5B42 Installation-Removal Procedure.

## BASIC OPERATION

### NOTE

*Effective SN B090000 and up, the MAIN SEC/DIV-DLY'D SEC/DIV knob assembly is manufactured with a locking pin removed from the assembly (all instruments below SN B090000 use a locking pin). This pin removal allows the Delayed Sweep to operate at a slower sweep rate than the Main Sweep rate. Avoid this type of operation to prevent illogical displays, and always set the DLY'D SEC/DIV control for the same or a faster sweep rate than the MAIN SEC/DIV control.*

### Triggered Display

With the 5B42 Time Base properly installed in the horizontal plug-in compartment, apply power to the main frame. Connect the CALIBRATOR output on the display module to the vertical plug-in. Adjust the vertical plug-in gain for a two division display. Push the LEFT or RIGHT TRIGGER SOURCE button, depending on which compartment contains the vertical plug-in. Push the MAIN SWEEP button in the MODE column, and the AUTO TRIG button in the light green TRIG SOURCE area. Rotate the position controls for the vertical plug-in and 5B42 until a trace is visible. Adjust the MAIN TRIG LEVEL control until the display stabilizes. Now rotate the MAIN TRIG LEVEL control from stop to stop. Notice that the trace free runs over most of the control rotation. Release the AUTO TRIG button and rotate the MAIN TRIG LEVEL control from stop to stop. Notice that the trace appears only when it is triggered, and disappears over most of the control rotation.

### Single Sweep Mode

Obtain a stable display, positioning the sweep so that the start is visible. The sweep is starting on the negative-going portion of the square wave. Push the + SLOPE button. The trace will start on a positive-going waveform. Remove the jumper from the calibrator to the vertical plug-in. Depress the button labeled SINGL SWP. The READY light is now visible. Watch the CRT, and touch the jumper to the vertical plug-in input. If the intensity is high enough, a fast single trace will be visible and the READY light will extinguish. Remove the signal to the vertical, and depress the RESET button. The READY light will be visible again, and the sweep is rearmed. Release the SINGL SWP button and obtain a stable display by pushing the AUTO TRIG button, and adjusting the MAIN TRIG LEVEL control.

### Dual Trace Display Switching

The button labeled CHOP in the blue DISPLAY MODE section of the front panel selects the switching mode for dual sweep vertical plug-ins. With the button out, the switching is done in the alternate mode, i.e., one channel is displayed for one full sweep, and then the other channel is displayed. This can be demonstrated by using a dual channel vertical plug-in and slowing the 5B42 sweep speed to about 10 ms/div with the trace free running. Pushing the button in gives the chopped mode.

Use the chopped mode for viewing slower dual-trace displays and the alternate mode for faster displays. Return the vertical plug-in to a single channel display and re-connect the calibrator waveform.

### Delayed Sweep

Set the DELAY TIME MULT dial to mid-range. Obtain a triggered display. Push the INTENS SWP button in the blue DISPLAY MODE column. Notice the number illuminated in the outer ring of the SEC/DIV sweep dial. Set the DLY'D SEC/DIV to 1 m and the MAIN SEC/DIV to 5 m. Reduce the INTENSITY control on the display module until a portion of the display is visible as an intensified portion. Rotate the DELAY TIME MULT dial and notice the brightened portion move smoothly across the display. The brightened portion represents the delayed sweep, and occurs in one fifth the time of the main sweep according to the described SEC/DIV switch settings. The delayed sweep speed is independent of the main sweep speed, and may be set to any speed equal to or faster than the main sweep. Press the DLY'D SWP pushbutton in the blue DISPLAY MODE column; the bright portion of the display will spread across the entire CRT. See Fig. 1-2A.

### Triggered Delayed Sweep

Press the TRIG AFTER DLY and the INTENS SWP pushbuttons and adjust the DLY'D TRIG LEVEL control for a stable display with an intensified portion. Rotate the DELAY TIME MULT dial and the brightened portion will jump from waveform to waveform. Push the + SLOPE button located in the dark green area above the DELAYED TRIG LEVEL knob. The start of the intensified portion will shift from the negative portion of the waveform to the positive portion. Press the DLY'D SWP pushbutton. The intensified portion of the triggered waveform is now displayed across the entire CRT. Return to the INTENS SWP mode. In this mode the delayed sweep will not start until the main sweep has passed the number of divisions shown on the DELAY TIME MULT dial. The next trigger after this point will start the delayed sweep. One purpose of the triggered mode is to eliminate jitter that may be present in highly magnified displays. Another purpose is to select the trigger starting the delayed sweep. For example, to view a low level signal impressed on a high level signal, trigger the main sweep on the high level signal and the delayed sweep

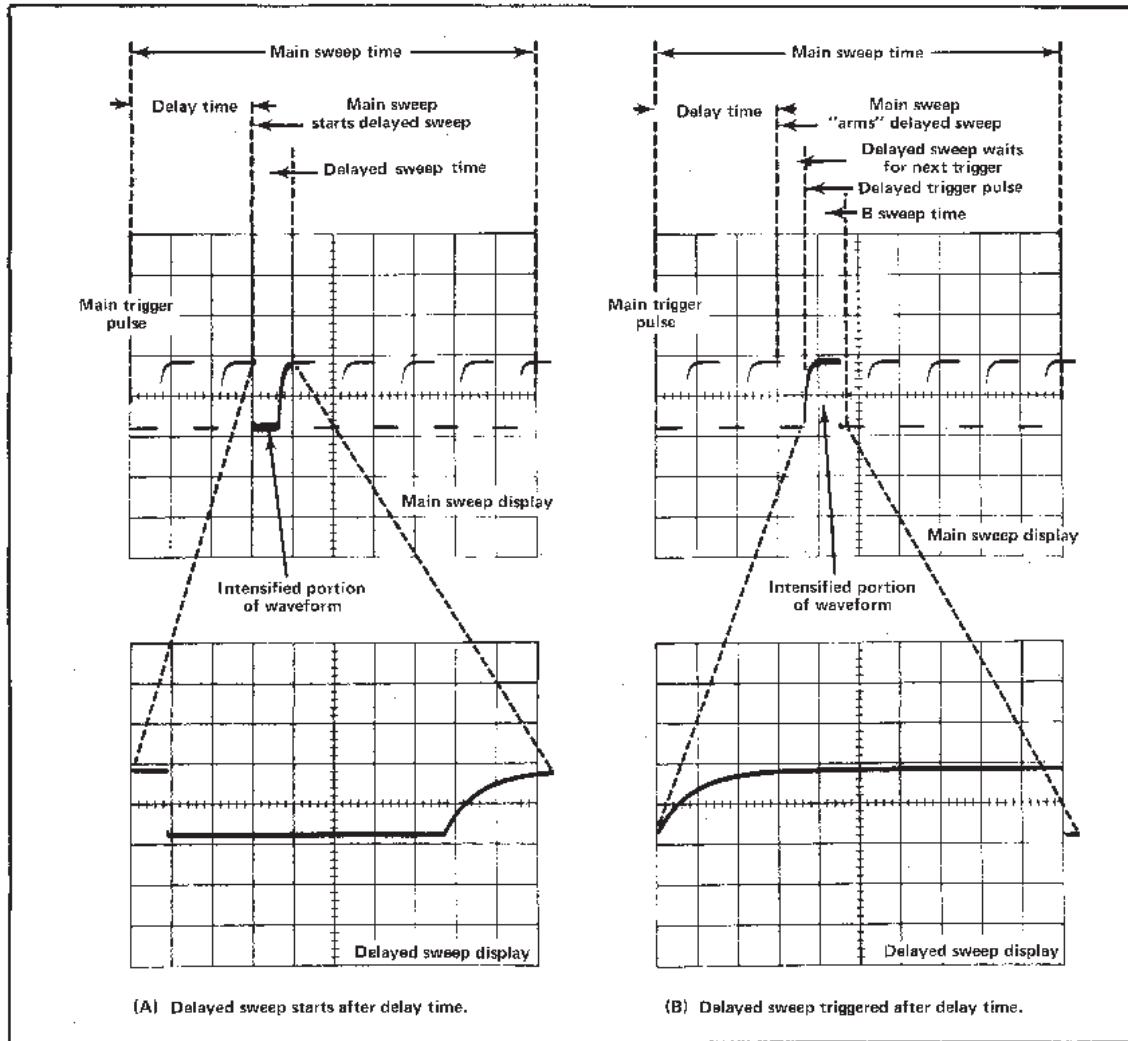


Fig. 1-2. Relationships of Main and Delayed sweeps.

on the low level signal. Select the portion to trigger the delayed sweep in the intensified mode. See Fig. 1-2B.

Press the SWP MAG button and notice the sweep speed increase by an order of magnitude. This is shown on the SEC/DIV dial and the CRT readout.

If the waveform viewed is line-frequency related, push the button labeled LINE in the light green TRIG SOURCE column. The signal activating the trigger circuits in this

mode is taken from the power line. External triggers may be applied to the EXT TRIG connector. Push the button labeled EXT in the light green TRIG SOURCE column.

#### External Horizontal Amplifier

To use the 5B42 as an amplifier, rotate the MAIN SEC/DIV switch fully CCW to the AMP position. Apply the calibrator waveform to the BNC connector marked EXT HORIZ AMPL. Two dots approximately eight divisions apart are visible. There is no front-panel gain adjustment for the external horizontal amplifier.

# SPECIFICATIONS

All references to divisions or VOLTS/DIV refer to major graticule divisions in this manual.

## Main Sweep

**ACCURACY:** (Measured in 5400 series oscilloscope over center 8 graticule divisions. Exclude the first 30 ns and the last 10 div of the magnified sweep):

	+15°C to +35°C		0°C to +50°C	
	Unmag	Mag	Unmag	Mag
1 s/div to 0.5 μs/div	3%	4%	4%	5.5%
5 s/div and 2 s/div 0.2 μs/div and 0.1 μs/div	4%	5%	5%	6.5%
Any two divisions within center 8 divisions	6.5%	6.5%	8%	8%

**VARIABLE RANGE:** Continuously variable between calibrated sweep rates. Extends sweep rate to at least 12.5 s/div.

## TRIGGERING:

Coupling	Vertical Plug In Series	Freq. Range	Minimum Signal Required	
			Int.	Ext.
DC	5400	DC to 10 MHz	0.4 div	100 mV
		10 MHz to 60 MHz	1.0 div	400 mV
	5100	DC to 2 MHz	0.4 div	
AC		Requirements increase below 50 Hz.		
LF REJ		Requirements increase below 7.5 kHz.		

**TRIGGER LEVEL RANGE:** ≥8 div.

**SINGLE SWEEP:** Same requirements as main sweep.

## EXTERNAL TRIGGER INPUT:

Maximum input voltage: 350 V DC + peak AC, 350 V P-P AC at ≤1 kHz.

Input R and C: 1 MΩ ±2% paralleled by ≈20 pF.

Trigger Level Range: ≥1.25 V.

## Delayed Sweep

**ACCURACY:** (Measured in 5400 series oscilloscope over center 8 graticule divisions):

	+15°C to +35°C		0°C to +50°C	
	Unmag	Mag	Unmag	Mag
0.1 s/div to 0.5 μs/div	3%	4%	4%	5.5%
0.5 s/div and 0.2 s/div; 0.2 μs/div and 0.1 μs/div	4%	5%	5%	6.5%
Any two divisions within center 8 divisions	6.5%	6.5%	8%	8%

## TRIGGERING:

DC to 10 MHz: 0.4 div.

60 MHz: 1 div.

## EXTERNAL HORIZONTAL INPUT:

Deflection Factor: 50 mV/div ±3%.

## Bandwidth:

DC Coupled: DC to ≥2 MHz.

AC Coupled: ≤50 Hz to ≥2 MHz.

**Delaying Sweep Characteristics**

DELAY TIME MULTIPLIER RANGE: 0.2 to 10 times the TIME/DIV setting.

INHERENT DELAY TO START OF DELAYED SWEEP: <100 ns.

**DIFFERENTIAL TIME MEASUREMENT ACCURACY:**

1  $\mu$ s/div to 0.5 s/div delay time:  $\leq 1\% + 0.2\%$  of full scale.

1 s/div to 5 s/div delay time:  $\leq 2\% + 0.2\%$  of full scale.

JITTER:  $\leq 1$  part in 20,000 of 10 times the main TIME/DIV setting.



# THEORY OF OPERATION

## Introduction

Refer to the complete schematic diagrams, and the block diagram, located in the pullout pages at the back of this manual, for a complete understanding of the 5B42 theory of operation.

## External Horizontal Amplifier

Signals applied to the EXT HORIZ AMPL input, J10, are fed through a divide-by-two attenuator, consisting of R11, R15, and AC compensating capacitor, C15, to the gate of source follower Q20. When S10A is in the AC COUPL position, C11 AC couples the signal to Q20. The circuit DC balance is set by R25 through Q24. In the AMP mode, the signal travels past protective diodes CR30 and VR30 to Q34, an emitter follower. The emitter of Q34 drives the emitter of Q36, operating as an operational amplifier. The feedback path is through VR42, R45, R50, and R52. The latter sets the gain at two. The amplifier is disabled, when the MAIN SEC/DIV switch is not in the AMP position, by raising the common emitters to about +5 V. The output from the amplifier is the junction of VR42 and R45. Positioning in the external mode is accomplished by a section of the main POSITION control connected to the base of Q36 through R49.

## External Trigger Channel Switch

The purpose of the trigger switches is to isolate the unwanted trigger source. They also provide gain. The output of Q20 feeds the base of Q60, whose emitter drives Q62 in a grounded-base configuration. The output of Q62 drives Q80 as a grounded-base amplifier. The base level of Q80 is set by CR80, R80, R83, and R85. To prevent coupling of the trigger signal through the switch, the emitters of Q60 and Q62 are disconnected from -15 V. The collector of Q62 rises toward +15 V as Q62 is turned off. Diode CR81 conducts, and causes a very low impedance to ground at the output of Q62. CR81 maintains the DC stability of the circuit, and shorts any capacity-coupled signal that may be present on the collector of Q62 to ground. C98 AC-couples the output of either Q80, Q90, or Q230 in the AC-coupled mode. C99 and R280 form a high pass RC combination for rejection of low frequency signals. Q90's base is connected to a secondary of the line transformer. A low level voltage at line frequency is obtained for line triggering. Q60, Q62, Q200, and Q210 are disabled in the line mode by removing the -15 V from their emitters.

## Internal Trigger Channel Switching

These switches (Schematic 2) operate in the same manner as the switch described in the preceding paragraph. The trigger signal from the right vertical plug-in is applied to the base of Q100, through pin 4A on the rear interface connector. The left vertical plug-in trigger signal is applied through pin 4B to the base of Q150. The outputs of the right or left trigger switches are applied to the internal trigger channel switch, and then to the main trigger comparator (Schematic 3). CR235 holds the base of Q230 positive when the plug-in is operating in the external amplifier mode to prevent coupling of any trigger signals from either vertical plug-in to the external horizontal amplifier.

## Main Trigger Comparator

This circuit selects the voltage level on the waveform where triggering takes place. The triggering signal is applied to the base of Q280. Q280 and Q290 serve as a voltage comparator. The DC level at the base of Q290 is set by R320, the MAIN TRIG LEVEL control. If the voltage at the base of Q280 is higher, current will flow through Q280 and the collector of Q290 will be high. The opposite is true if the base voltage of Q280 is lower, and the collector of Q290 will be low. C285 and R285 improve high frequency response. LR293, C293, LR299, and C299 prevent coupling of switching transients into the voltage supply lines.

## Delayed Trigger Comparator

This comparator operates in the same manner as the Main Trigger Comparator. The input to the base of Q370 is selected from either the right or left trigger channel switch. It is not possible to trigger the delayed sweep externally.

## Main Trigger Generator (SN B059999 and below)

This circuitry uses emitter-coupled logic. Significant high levels are approximately 4.2 V, and low levels 3.2 V. Low amplitude analog trigger signals may operate gates U320, U330A, U330B, and U335A. The remainder of the gates operate at digital levels exclusively.

Input to the main trigger generator is pin 7 of U320, an exclusive OR gate. Pushing the + SLOPE button sets a low on pin 9, which allows U320 to operate as a non-inverting amplifier with a gain of five. A positive-

## Theory of Operation—5B42

going trigger signal at pin 10 of U320 causes a positive output from pin 14 of U335C which starts the sweep. U335B and C form a latch, which generates the sweep gate. When the sweep ends, the junction of R356 and R357 goes high, setting latch U330C and D so that a high is on pin 14 of U330C. This high resets latch U335B and C. In this state, U335C can not initiate a sweep gate. When the hold-off time passes, the junction of R356 and R357 goes low. A low at pin 6 of U330B, or the next negative-going trigger, causes latch U330C and D to reset, enabling latch U335B and C. The next positive output from U320 initiates the sweep gate by lowering pin 13 of U335C. When negative slope triggering is desired, a high is placed on pin 9 of U320, which allows U320 to operate as an inverting amplifier with a gain of five.

### Main Trigger Generator (SN B060000 and up)

Integrated circuit U300 converts the trigger comparator output signal to a gate that is used for sweep control. With pin 1 connected to ground (+SLOPE), a positive-going signal on the input (pin 13) causes the output (pin 3) to rise to about 4.1 V. Pin 14 is negative-going under these conditions. The output gate occurs when a trigger signal passes through the hysteresis limits at the input of U300 (pin 13 is within 20 mV of pin 14). Placing pin 1 at +5 V (−SLOPE) creates an output gate at pin 3, when pin 13 is negative-going and pin 14 positive-going. After completion of the sweep, and during holdoff time, pins 6 and 10 are high (about +4.2 V). This action inhibits the trigger generator until these pins drop to about +3.2 V, which occurs after completion of holdoff time.

### Delayed Trigger Generator (SN B059999 and below)

This generator operates, in the triggered mode, in the same manner as the main trigger generator. In the delayed sweep and intensified sweep modes, the delayed sweep starts when the junction of R438 and R440 goes low. The highs placed on pins 14 and 15 of U410, through diodes CR410 and CR411, cause a continuous low at pin 6 of U420B. This causes pin 12 of U425C to go low at the beginning of the delayed pickoff gate. Pin 9 of U425B is held high, causing a continuous low on pin 13 of U425C. Two lows at the inputs of U425C cause a high at pin 14 starting the delayed sweep runup.

### Delayed Trigger Generator (SN B060000 and up)

In the Trig After Delay mode, this generator operates in the same manner as the Main Trigger Generator, U300. The delayed sweep starts when two conditions are met: the delay gate at pin 6 and 10 of U400 must be low (approximately +3.2 V), and a trigger signal must pass through the hysteresis limits at the input of U400 (i.e., pin 13 is within 20 mV of pin 14).

## Sweep Control

U450, with additional external circuitry, controls the main sweep generator. In the automatic triggering mode, pin 19 of U450 is connected to ground. If pin 1 of U450 receives no trigger pulses from the main trigger generator for a period of time determined by R495 and C495, circuitry in U450 outputs a negative-going square wave. This negative-going square wave from pin 3 of U450, drives the base of Q480 negative. The collector goes positive and stays positive for the duration of the sweep. A positive pulse at the emitter of Q480, from the trigger switches, also causes the collector of Q480 to go positive, starting the sweep. This positive pulse is also applied to the unblanking circuitry, in the plug-in and the mainframe, to unblank the CRT during the sweep.

The sweep ramp is fed to the base of Q470, which forms a comparator with Q460. Q470 is conducting and Q460 is off. As the ramp rises, current flow in Q470 is reduced until CR460 is forward biased, and Q460 comes sharply into conduction. This positive pulse at pin 16 of U450 causes the auto gate (from pin 3) to go positive, terminating the sweep through Q480. If the unit is operating in the triggered mode, a positive gate appears at pin 17, lowering the sweep gate via the main trigger generator and Q480, terminating the sweep.

As the sweep ramp decays toward ground, Q460 and Q470 switch, so that pin 16 of U450 again goes low. No negative pulse can appear at pin 3 to start the next sweep. Pin 17 remains high, locking out the main trigger generator until holdoff time is completed. This time is determined by C500, R500, C501 and C502. These components are switched according to sweep rates, as shown in the switch details. Holdoff is necessary to allow all sweep-generating circuits to discharge before the start of the next sweep.

When the external horizontal amplifier mode is used, pin 18 of U450 is connected through CR455 to +5 V. This disables the sweep until the switch is opened.

In the single sweep mode, the automatic trigger capability is removed by ungrounding pin 19 of U450. Pin 12 is connected to +5 V. The next trigger operates the sweep in the normal manner. The gate at pin 17, however, remains high, locking out further triggers until pin 11 of U450 is grounded and pin 15 is connected to +5 V through the spring-loaded RESET button. VR490 and CR490 provide −5 V for U450.

## Main Sweep Generator

The sweep ramp is generated in U550. The ramp is fed to the horizontal amplifiers and the sweep control from pin 8. Timing capacitors  $C_t$  and timing resistors  $R_t$  determine the rate of rise. The DELAY TIME MULT potentiometer

controls one half of a comparator in U550. The other half is connected internally to the ramp. When the ramp voltage reaches the voltage on the center arm of the delay time potentiometer, pin 4 of U550 goes high, driving the collector of Q570 low. This low gate starts the delayed sweep through the delayed trigger generator. A low at the collector of Q574 deactivates the delayed sweep by locking pin 4 of U550 in the low state. This occurs only when operating in the main sweep mode. When operating in other than the main sweep mode, pin 5 of U550 is high during main sweep time, allowing the delayed sweep to start at the selected time. Q540 aids in reducing sweep jitter, and R545 compensates for leakage current in U550.

### Delayed Sweep Generator

The delayed sweep generator integrated circuit is identical to the one used in the main sweep. Several external connections are changed to suit the delayed sweep operating mode. Pin 5 of U600 is always connected to +5 V, enabling the generator whenever the plug-in has power applied. When the positive sweep gate from the delayed trigger generator is applied to pin 1, the sweep starts, and the CRT is unblanked through the emitter of Q690. The sweep runs up until the delayed trigger generator receives a positive-going pulse from Q570. The delayed sweep gate, at pin 1 of U600, goes negative, the CRT is blanked and the sweep decays. If the sweep time of the delayed sweep is much faster than the main sweep, the delayed sweep ramp will reach 10 V, its limit, before the gate at pin 1 returns the ramp to ground. The voltage at pin 6 is fixed at 10 V. As the ramp rises past 10 V (at the end of the sweep) pin 4 goes high, blanking the CRT through Q690. Under this condition, the CRT is blanked through the base of Q690 from pin 4 of U600, and the delayed sweep remains high until turned off by the delayed sweep gate.

### Output Buffer

Main or delayed sweep ramps are applied to the base of Q650. Q650 and Q670 comprise an emitter-coupled paraphase buffer for the sweep ramp. In the magnified mode, emitter degeneration is reduced, resulting in an increase in gain by ten times. Clamping limits the peak-to-peak excursion at the collector of Q650 to about 1.2 V. Q665 is a constant current source. Sweep positioning is accomplished by varying current balance in the amplifier through the base of Q670.

When the plug-in is operated in the external amplifier mode, the base of Q680 is connected through R682 to +5 V. This saturates Q680 and eliminates the effect of the position control on the base of Q670. Positioning is accomplished in the external horizontal amplifier as described previously. The base of Q720 is made more positive through CR685 to unblank the CRT. Output from the external horizontal amplifier is connected to R672, and R672 is disconnected from ground.

The main sweep gate is applied at the base of Q730. CR732 conducts only when the emitter of Q730 goes negative at the end of the main sweep gate. This negative going pulse activates circuitry in the main frame to alternate traces in vertical plug-ins. When the CHOP pushbutton is in, pins 18A and 20A on the interface connector are connected together, causing the vertical plug-ins to operate in the chopped mode.

The main sweep gate, during sweep time, raises the base of Q720 through CR710. The collector is made more negative and the CRT is unblanked, during sweep time, through circuitry in the main frame. In the delayed sweep mode, the base of Q720 is held low, through CR712, preventing the CRT from unblanking by the main sweep gate. Q695 improves unblanking from the main sweep at the faster sweep speeds. CR690 and CR691 are protective diodes for Q690 and the internal circuitry of U600 connected to pin 1.

### Readout

The DLY'D, MAIN SEC/DIV, CAL, DLY'D SWP, MAIN SWP, INTENS SWP, and MAG switches have contacts wired into the readout circuitry. A zero to -15 V pulse, approximately 125  $\mu$ s in length, is applied at different times to all of the rear interface connectors associated with the readout circuitry, except the two column and row lines. These are the output lines. The readout circuitry, in the 5B42, sets the correct amount of current, to the appropriate channel row and column lines during the pulse time, for the particular character desired. See the main-frame manual for more details on the time slot and current required for each character. Connecting the anode of CR970 to +5 V, in the AMP mode, disables both main and delayed sweep readouts. When the DLY'D SWP pushbutton is in, +5 V is connected to the anode of CR971. This disables the main sweep readout. When either the MAIN SWP or INTENS SWP pushbuttons are depressed, the delay sweep readout is inactivated via CR976. When the MAG button is depressed, two additional zeros are added to the readout showing the correct time per division for the active sweeps. When the CAL knob is not in its detent position, the uncalibrated sign (>) appears in the slot for the main sweep only. Diodes CR901 through CR933, connected to the time slot lines, decouple noise pulses generated in the main frame readout circuitry.

### Timing Switch Details

Timing capacitors and resistors are connected according to the switching chart shown on Schematic 7. The CAL potentiometer varies the timing resistance in any position of the MAIN SEC/DIV switch. Lamps DS760 through DS766 illuminate the SEC/DIV knob skirts. The diodes in series with the lamps prevent series current from one lamp lighting another, in certain switch combinations.

# SERVICE INFORMATION

## Services Available

Tektronix, Inc. provides complete instrument repair and adjustment at local Field Service Centers and at the Factory Service Center. Contact your local Tektronix Field Office or Representative for further information.

## Maintenance

Refer to the oscilloscope mainframe manual for general service information. The "A" Board is the board on the left when facing the front of the 5B42. The "B" Board is on the right. To remove the A circuit board, remove the ten pushbuttons on the front panel located in the light green TRIG SOURCE area by pulling straight out. Remove the pushrods connected to the +SLOPE, SINGL SWP, and RESET switches by separating the ends of the rods with a screwdriver. Unsolder the white and orange wire connected to the POSITION control and the coaxial cable connected to the EXT TRIG bnc connector. Loosen the 0.050 inch Allen screw on the CAL switch shaft, accessible through the hole in the A board, located as shown on the Controls, Connectors & Block Diagram pullout page. The knob must be in the CAL position. Remove the shaft by pulling the knob. Remove five screws on the A Board and four screws on the B Board, as shown on the Internal Adjustment Procedure pullout page. Fold the A Board back to gain access to the cam switches or other switches located between the boards.

Removal of the B Board will not usually be necessary, but may be accomplished by removing all leads soldered to the board. Remove the attached switch knobs and levers, and the three screws holding the board to the chassis.

Jumpers for the +5 V, +15 V, +30 V, -15 V, and -30 V supplies are located in the lower rear corner of the A Board. Remove these jumpers rather than the board interconnecting cable to isolate the A Board from the power supplies.

## Repackaging for Shipment

If the Tektronix instrument is to be shipped to a Tektronix Service Center for service or repair, attach a tag showing: owner (with address) and the name of an individual at your firm that can be contacted, complete instrument serial number and a description of the service required.

Save and re-use the package in which your instrument was shipped. If the original packaging is unfit for use or not available, repackage the instrument as follows:

1. Obtain a carton of corrugated cardboard having inside dimensions of no less than six inches more than the instrument dimensions; this will allow for cushioning. Refer to the following table for carton test strength requirements.
2. Surround the instrument with polyethylene sheeting to protect the finish of the instrument.
3. Cushion the instrument on all sides by tightly packing dunnage or urethane foam between carton and instrument, allowing three inches on all sides.

### SHIPPING CARTON TEST STRENGTH

Gross Weight (lb)	Carton Test Strength (lb)
0-10	200
10-30	275
30-120	375
120-140	500
140-160	600

## DIAGRAMS AND CIRCUIT BOARD ILLUSTRATIONS

### Symbols and Reference Designators

Electrical components shown on the diagrams are in the following units unless noted otherwise:

- Capacitors = Values one or greater are in picofarads (pF).  
Values less than one are in microfarads (μF).
- Resistors = Ohms (Ω).

Graphic symbols and class designation letters are based on ANSI Standard Y32.2-1975.

Logic symbology is based on ANSI Y32.14-1973 in terms of positive logic. Logic symbols depict the logic function performed and may differ from the manufacturer's data.

The overline on a signal name indicates that the signal performs its intended function when it goes to the low state.

Abbreviations are based on ANSI Y1.1-1972.

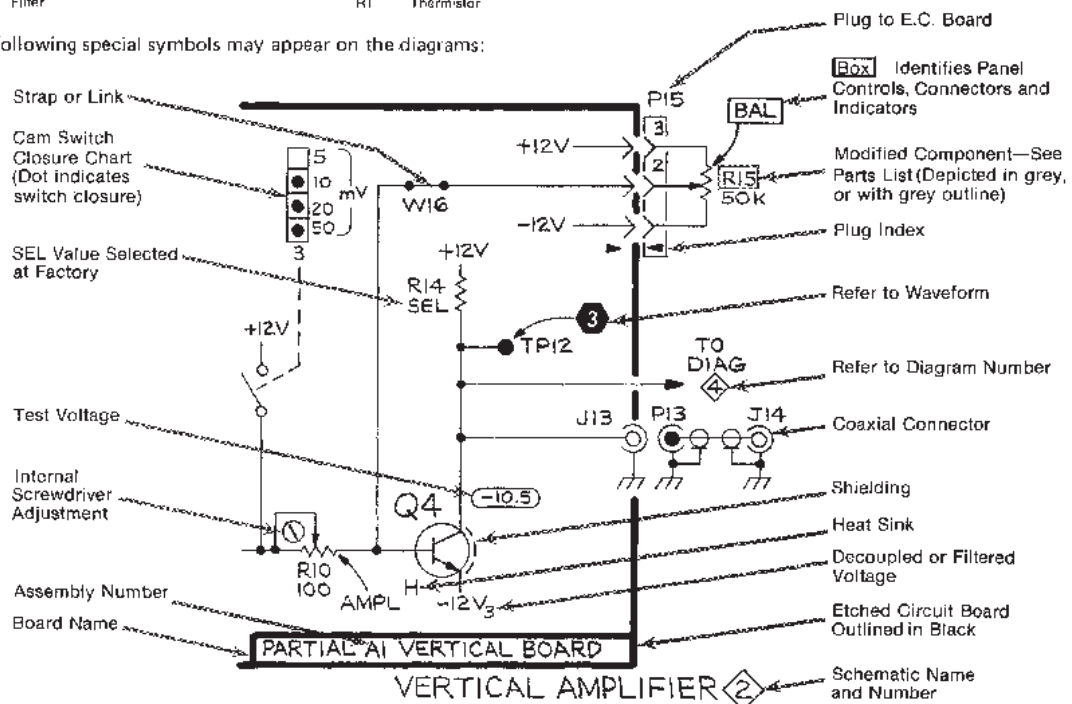
Other ANSI standards that are used in the preparation of diagrams by Tektronix, Inc. are:

- Y14.15, 1966 Drafting Practices.
- Y14.2, 1973 Line Conventions and Lettering.
- Y10.5, 1968 Letter Symbols for Quantities Used in Electrical Science and Electrical Engineering.

The following prefix letters are used as reference designators to identify components or assemblies on the diagrams.

A	Assembly, separable or repairable (circuit board, etc)	H	Heat dissipating device (heat sink, heat radiator, etc)	S	Switch or contactor
Ai	Attenuator, fixed or variable	HR	Heater	T	Transformer
B	Motor	HY	Hybrid circuit	TC	Thermocouple
BT	Battery	J	Connector, stationary portion	TP	Test point
C	Capacitor, fixed or variable	K	Relay	U	Assembly, inseparable or non-repairable (integrated circuit, etc.)
CB	Circuit breaker	L	Inductor, fixed or variable	V	Electron tube
CR	Diode, signal or rectifier	M	Meter	VR	Voltage regulator (zener diode, etc.)
DL	Delay line	P	Connector, moveable portion	W	Wirestrap or cable
DS	Indicating device (lamp)	Q	Transistor or silicon-controlled rectifier	Y	Crystal
E	Spark Gap, Ferrite bead	R	Resistor, fixed or variable	Z	Phase shifter
F	Fuse	RT	Thermistor		

The following special symbols may appear on the diagrams:



# REPLACEABLE ELECTRICAL PARTS

## PARTS ORDERING INFORMATION

Replacement parts are available from or through your local Tektronix, Inc. Field Office or representative.

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest circuit improvements developed in our engineering department. It is therefore important, when ordering parts, to include the following information in your order: Part number, instrument type or number, serial number, and modification number if applicable.

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc. Field Office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

## SPECIAL NOTES AND SYMBOLS

X000 Part first added at this serial number  
00X Part removed after this serial number

### ITEM NAME

In the Parts List, an Item Name is separated from the description by a colon (:). Because of space limitations, an Item Name may sometimes appear as incomplete. For further Item Name Identification, the U.S. Federal Cataloging Handbook H6-1 can be utilized where possible.

## ABBREVIATIONS

ACTR	ACTUATOR	PLSTC	PLASTIC
ASSY	ASSEMBLY	QTZ	QUARTZ
CAP	CAPACITOR	RECP	RECEPTACLE
CER	CERAMIC	RES	RESISTOR
CKT	CIRCUIT	RF	RADIO FREQUENCY
COMP	COMPOSITION	SEL	SELECTED
CONN	CONNECTOR	SEMICOND	SEMICONDUCTOR
ELECTLT	ELECTROLYTIC	SENS	SENSITIVE
ELEC	ELECTRICAL	VAR	VARIABLE
INCAND	INCANDESCENT	WW	WIREWOUND
LED	LIGHT EMITTING DIODE	XFMR	TRANSFORMER
NONWIFI	NON WIREWOUND	XTAL	CRYSTAL

Replaceable Electrical Parts—5B42

CROSS INDEX—MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip
00853	SANGAMO ELECTRIC CO., S. CAROLINA DIV.	P O BOX 128	PICKENS, SC 29671
01121	ALLEN-BRADLEY COMPANY	1201 2ND STREET SOUTH	MILWAUKEE, WI 53204
01295	TEXAS INSTRUMENTS, INC., SEMICONDUCTOR GROUP	P O BOX 5012, 13500 N CENTRAL EXPRESSWAY	DALLAS, TX 75222
02111	SPECTROL ELECTRONICS CORPORATION	17070 EAST GALE AVENUE	CITY OF INDUSTRY, CA 91745
04222	AVX CERAMICS, DIVISION OF AVX CORP.	P O BOX 867, 19TH AVE. SOUTH	MYRTLE BEACH, SC 29577
07263	FAIRCHILD SEMICONDUCTOR, A DIV. OF FAIRCHILD CAMERA AND INSTRUMENT CORP.	464 ELLIS STREET	MOUNTAIN VIEW, CA 94042
08806	GENERAL ELECTRIC CO., MINIATURE LAMP PRODUCTS DEPARTMENT	NELA PARK	CLEVELAND, OH 44112
11237	CTS KEENE, INC.	3230 RIVERSIDE AVE.	PASO ROBLES, CA 93446
12697	CLAROSTAT MFG. CO., INC.	LOWER WASHINGTON STREET	DOVER, NH 03820
13511	AMPHENOL CARDRE DIV., BUNKER RAMO CORP.		LOS GATOS, CA 95030
14433	ITT SEMICONDUCTORS	3301 ELECTRONICS WAY P O BOX 3049	WEST PALM BEACH, FL 33402
53944	ELT INC., GLOW-LITE DIVISION	BOX 598	PAULS VALLEY, OK 73075
55210	GETTIG ENG. AND MFG. COMPANY	PO BOX 85, OFF ROUTE 45	SPRING MILLS, PA 16875
56289	SPRAGUE ELECTRIC CO.		NORTH ADAMS, MA 01247
72982	ERIE TECHNOLOGICAL PRODUCTS, INC.	644 W. 12TH ST.	ERIE, PA 16512
73138	BECKMAN INSTRUMENTS, INC., HELLIPOT DIV.	2500 HARBOR BLVD.	FULLERTON, CA 92634
74970	JOHNSON, E. F., CO.	299 10TH AVE. S. W.	WASECA, MN 56093
75042	TRW ELECTRONIC COMPONENTS, IRC FIXED RESISTORS, PHILADELPHIA DIVISION	401 N. BROAD ST.	PHILADELPHIA, PA 19108
80009	TEKTRONIX, INC.	P O BOX 500	BEAVERTON, OR 97077
80031	ELECTRA-MIDLAND CORP., MEPCO DIV.	22 COLUMBIA ROAD	MORRISTOWN, NJ 07960
90201	MALLORY CAPACITOR CO., DIV. OF P. R. MALLORY AND CO., INC.	3029 E. WASHINGTON STREET P. O. BOX 372	INDIANAPOLIS, IN 46206
91637	DALE ELECTRONICS, INC.	P. O. BOX 609	COLUMBUS, NE 68601

Replacable Electrical Parts—5B42

Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
A1	670-2475-00	B010100	B059999	CKT BOARD ASSY:A	80009	670-2475-00
A1	670-2475-01	B060000	B063676	CKT BOARD ASSY:A	80009	670-2475-01
A1	670-2475-02	B063677	B079999	CKT BOARD ASSY:A	80009	670-2475-02
A1	670-2475-03	B080000		CKT BOARD ASSY:A	80009	670-2475-03
A2	670-2476-00	B010100	B053592	CKT BOARD ASSY:B	80009	670-2476-00
A2	670-2476-01	B053593	B059999	CKT BOARD ASSY:B	80009	670-2476-01
A2	670-2476-02	B060000	B069999	CKT BOARD ASSY:B	80009	670-2476-02
A2	670-2476-03	B070000	B079999	CKT BOARD ASSY:B	80009	670-2476-03
A2	670-2476-04	B080000		CKT BOARD ASSY:B	80009	670-2476-04
C10	281-0509-00			CAP.,FXD,CER DI:15PF,+/-1.5PF,500V	72982	301-000C0G0150K
C11	283-0001-00			CAP.,FXD,CER DI:0.005UF,+100-0%,500V	72982	831-559E502P
C15	281-0182-00			CAP.,VAR,PLSTC:1.8-10PF,500V	80031	2805D1R810BH02F0
C21	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C25	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C36	283-0003-00			CAP.,FXD,CER DI:0.01UF,+80-20%,150V	72982	855-558Z5U-103Z
C60	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C62	281-0562-00			CAP.,FXD,CER DI:39PF,10%,500V	72982	301-000U2J0390K
C67	290-0534-00	B010100	B053054	CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C67	283-0059-00	B053055		CAP.,FXD,CER DI:1UF,+80-20%,25V	72982	8131N031Z5U0105Z
C73	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C80	283-0003-00			CAP.,FXD,CER DI:0.01UF,+80-20%,150V	72982	855-558Z5U-103Z
C90	283-0110-00			CAP.,FXD,CER DI:0.005UF,+80-20%,150V	56289	19C242B
C97	283-0000-00			CAP.,FXD,CER DI:0.001UF,+100-0%,500V	72982	831-516E102P
C98	290-0524-00			CAP.,FXD,ELCTLT:4.7UF,20%,10V	90201	TDC475M1010E1
C99	283-0003-00			CAP.,FXD,CER DI:0.01UF,+80-20%,150V	72982	855-558Z5U-103Z
C105	281-0519-00			CAP.,FXD,CER DI:47PF,+/-4.7PF,500V	72982	308-000C0G0470K
C110	290-0534-00	B010100	B053054	CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C110	283-0059-00	B053055		CAP.,FXD,CER DI:1UF,+80-20%,25V	72982	8131N031Z5U0105Z
C118	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C130	283-0003-00			CAP.,FXD,CER DI:0.01UF,+80-20%,150V	72982	855-558Z5U-103Z
C155	281-0519-00			CAP.,FXD,CER DI:47PF,+/-4.7PF,500V	72982	308-000C0G0470K
C160	290-0534-00	B010100	B053054	CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C160	283-0059-00	B053055		CAP.,FXD,CER DI:1UF,+80-20%,25V	72982	8131N031Z5U0105Z
C168	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C180	283-0003-00			CAP.,FXD,CER DI:0.01UF,+80-20%,150V	72982	855-558Z5U-103Z
C200	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C205	281-0512-00			CAP.,FXD,CER DI:27PF,+/-2.7PF,500V	72982	308-000C0G0270K
C210	290-0534-00	B010100	B053054	CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C210	283-0059-00	B053055		CAP.,FXD,CER DI:1UF,+80-20%,25V	72982	8131N031Z5U0105Z
C218	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C230	283-0003-00			CAP.,FXD,CER DI:0.01UF,+80-20%,150V	72982	855-558Z5U-103Z
C280	283-0003-00	B010100	B059999X	CAP.,FXD,CER DI:0.01UF,+80-20%,150V	72982	855-558Z5U-103Z
C285	281-0510-00			CAP.,FXD,CER DI:22PF,+/-4.4PF,500V	72982	301-000C0G0220M
C293	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C299	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C300	290-0534-00	XB060000		CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C302	281-0528-00	XB060000	B063676	CAP.,FXD,CER DI:82PF,+/-8.2PF,500V	72982	301-000U2M0820K
C302	281-0510-00	B063677		CAP.,FXD,CER DI:22PF,+/-4.4PF,500V	72982	301-000C0G0220M
C304	281-0605-00	XB060000		CAP.,FXD,CER DI:200PF,10%,500V	04222	7001-1375
C310	281-0524-00	B010100	B050657	CAP.,FXD,CER DI:150PF,+/-30PF,500V	04222	7001-1381
C310	281-0523-00	B050658		CAP.,FXD,CER DI:100PF,+/-20PF,500V	72982	301-000U2M0101M
C314	283-0003-00			CAP.,FXD,CER DI:0.01UF,+80-20%,150V	72982	855-558Z5U-103Z
C330	290-0534-00	B010100	B059999X	CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C335	290-0534-00	B010100	B059999X	CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C350	281-0512-00	B010100	B030506	CAP.,FXD,CER DI:27PF,+/-2.7PF,500V	72982	308-000C0G0270K
C350	281-0605-00	B030507	B050657	CAP.,FXD,CER DI:200PF,10%,500V	04222	7001-1375
C350	281-0523-00	B050658	B059999X	CAP.,FXD,CER DI:100PF,+/-20PF,500V	72982	301-000U2M0101M



Replaceable Electrical Parts--5B42

Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
C370	283-0003-00	B010100	B053592X	CAP., FXD, CER DI: 0.01UF, +80-20%, 150V	72982	855-558Z5U-103Z
C375	281-0510-00			CAP., FXD, CER DI: 22PF, +/-4.4PF, 500V	72982	301-000C0G0220M
C383	290-0534-00			CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
C389	290-0534-00			CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
C400	281-0524-00			CAP., FXD, CER DI: 150PF, +/-30PF, 500V	04222	7001-1381
C401	290-0534-00	B053593		CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
C404	283-0003-00			CAP., FXD, CER DI: 0.01UF, +80-20%, 150V	72982	855-558Z5U-103Z
C410	283-0003-00	B010100	B053592X	CAP., FXD, CER DI: 0.01UF, +80-20%, 150V	72982	855-558Z5U-103Z
C411	290-0534-00	B010100	B053592X	CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
C420	290-0534-00	B010100	B053592X	CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
C425	290-0534-00	B010100	B053592X	CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
C445	290-0534-00			CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
C450	290-0534-00			CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
C473	283-0000-00			CAP., FXD, CER DI: 0.001UF, +100-0%, 500V	72982	831-516E102P
C480	281-0524-00			CAP., FXD, CER DI: 150PF, +/-30PF, 500V	04222	7001-1381
C490	290-0534-00			CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
C495	290-0534-00			CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
C500	281-0305-00			CAP., FXD, CER DI: 200PF, 10%, 500V	04222	7001-1375
C501	290-0534-00			CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
C502	283-0003-00			CAP., FXD, CER DI: 0.01UF, +80-20%, 150V	72982	855-558Z5U-103Z
C503	281-0523-00			CAP., FXD, CER DI: 100PF, +/-20PF, 500V	72982	301-000U2M0101M
C534	290-0534-00			CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
C536	283-0003-00			CAP., FXD, CER DI: 0.01UF, +80-20%, 150V	72982	855-558Z5U-103Z
C538	283-0003-00			CAP., FXD, CER DI: 0.01UF, +80-20%, 150V	72982	855-558Z5U-103Z
C542	281-0523-00			CAP., FXD, CER DI: 100PF, +/-20PF, 500V	72982	301-000U2M0101M
C543	281-0510-00	B010100	B063676	CAP., FXD, CER DI: 22PF, +/-4.4PF, 500V	72982	301-000C0G0220M
C543	281-0518-00	B063677		CAP., FXD, CER DI: 47PF, +/-9.4PF, 500V	72982	301-000U2J0470M
C547	283-0003-00			CAP., FXD, CER DI: 0.01UF, +80-20%, 150V	72982	855-558Z5U-103Z
C550	281-0078-00			CAP., VAR, ATR DI: 1.4-7.3PF, 750V	72982	542-000
C551	283-0649-00			CAP., FXD, MICA D: 105PF, 1%, 300V	00853	D153P1050F0
C554	285-0754-02			CAP., FXD, PLSTC: 0.001UF, 3%, 400V (C554, AVAILABLE AS A MATCHED SET, PART NUMBER 285-0151-00. THE LETTER SUFFIX AND TOLERANCE SHOULD BE THE SAME FOR ALL OF THE TIMING CAPACITORS IN THE ASSEMBLY)	80009	285-0754-02
C556	285-0781-01			CAP., FXD, PLSTC: 0.1UF, 3.5%, 100V (SEE FOOTNOTE ON C554)	80009	285-0781-01
C558	285-0784-01			CAP., FXD, PLSTC: 10.0UF, 3.5%, 25V (SEE FOOTNOTE ON C554)	80009	285-0784-01
C586	283-0003-00			CAP., FXD, CER DI: 0.01UF, +80-20%, 150V	72982	855-558Z5U-103Z
C590	283-0003-00			CAP., FXD, CER DI: 0.01UF, +80-20%, 150V	72982	855-558Z5U-103Z
C593	283-0003-00			CAP., FXD, CER DI: 0.01UF, +80-20%, 150V	72982	855-558Z5U-103Z
C610	281-0523-00			CAP., FXD, CER DI: 100PF, +/-20PF, 500V	72982	301-000U2M0101M
C612	281-0510-00			CAP., FXD, CER DI: 22PF, +/-4.4PF, 500V	72982	301-000C0G0220M
C615	281-0078-00	B010100	B010199	CAP., VAR, ATR DI: 1.4-7.3PF, 750V	72982	542-000
C615	281-0079-00	B010200		CAP., VAR, ATR DI: 1.5-9.1PF, 800V	74970	189-4-5
C616	283-0631-00			CAP., FXD, MICA D: 95PF, 1%, 100V	00853	D151E950F0
C618	285-0753-01			CAP., FXD, PLSTC: 0.01UF, 3%, 100V	80009	285-0753-01
C620	285-0752-00			CAP., FXD, PLSTC: 1UF, 3.5%, 50V	80009	285-0752-00
C654	281-0513-00			CAP., FXD, CER DI: 27PF, +/-5.4PF, 500V	72982	301-000P2G0270M
C685	283-0003-00			CAP., FXD, CER DI: 0.01UF, +80-20%, 150V	72982	855-558Z5U-103Z
C697	281-0512-00			CAP., FXD, CER DI: 27PF, +/-2.7PF, 500V	72982	308-000C0G0270X
C710	283-0000-00			CAP., FXD, CER DI: 0.001UF, +100-0%, 500V	72982	831-516E102P
C732	281-0546-00			CAP., FXD, CER DI: 330PF, 10%, 500V	04222	7001-1380
C750	283-0002-00	B010100	B069999X	CAP., FXD, CER DI: 0.01UF, +80-20%, 500V	72982	811-546E103Z
C762	283-0002-00	B010100	B069999X	CAP., FXD, CER DI: 0.01UF, +80-20%, 500V	72982	811-546E103Z

Replaceable Electrical Parts—5842

Ckt No.	Tektronix Part No.	Serial/Model No. Eif	Discont	Name & Description	Mfr Code	Mfr Part Number
CR30	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR36	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR80	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR81	152-0153-00			SEMICON D DEVICE: SILICON, 15V, 50MA	80009	152-0153-00
CR87	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
GR130	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR131	152-0153-00			SEMICON D DEVICE: SILICON, 15V, 50MA	80009	152-0153-00
CR180	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR181	152-0153-00			SEMICON D DEVICE: SILICON, 15V, 50MA	80009	152-0153-00
CR230	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR231	152-0153-00			SEMICON D DEVICE: SILICON, 15V, 50MA	80009	152-0153-00
CR235	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR339	152-0141-02	XB060000	B063676X	SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR340	152-0141-02	XB063677		SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR410	152-0153-00	B010100	B053592X	SEMICON D DEVICE: SILICON, 15V, 50MA	80009	152-0153-00
CR411	152-0153-00	R010100	B053592X	SEMICON D DEVICE: SILICON, 15V, 50MA	80009	152-0153-00
CR412	152-0141-02	XB053593		SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR440	152-0141-02	XB060000		SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR450	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR455	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR456	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR457	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR460	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR484	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR500	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR540	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR570	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR572	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR600	152-0153-00			SEMICON D DEVICE: SILICON, 15V, 50MA	80009	152-0153-00
CR683	152-0107-00	XB700000		SEMICON D DEVICE: SILICON, 400V, 400MA	80009	152-0107-00
CR685	152-0153-00			SEMICON D DEVICE: SILICON, 15V, 50MA	80009	152-0153-00
CR690	152-0153-00			SEMICON D DEVICE: SILICON, 15V, 50MA	80009	152-0153-00
CR691	152-0008-00			SEMICON D DEVICE: GERMANIUM, 75V, 60MA	14433	G1409
CR702	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR710	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR712	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR720	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR730	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR732	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR752	152-0107-00	B010100	B069999X	SEMICON D DEVICE: SILICON, 400V, 400MA	80009	152-0107-00
CR753	152-0107-00	XB070000		SEMICON D DEVICE: SILICON, 400V, 400MA	80009	152-0107-00
CR755	152-0107-00	XB070000		SEMICON D DEVICE: SILICON, 400V, 400MA	80009	152-0107-00
CR756	152-0107-00	B010100	B069999X	SEMICON D DEVICE: SILICON, 400V, 400MA	80009	152-0107-00
CR760	152-0107-00			SEMICON D DEVICE: SILICON, 400V, 400MA	80009	152-0107-00
CR761	152-0107-00	B010100	B069999X	SEMICON D DEVICE: SILICON, 400V, 400MA	80009	152-0107-00
CR762	152-0107-00			SEMICON D DEVICE: SILICON, 400V, 400MA	80009	152-0107-00
CR901	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR903	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR905	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR907	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR909	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR911	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR913	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR921	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR923	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR925	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R
CR927	152-0141-02			SEMICON D DEVICE: SILICON, 30V, 50NA	01295	1N4152R

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Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
CR929	152-0141-02			SEMICOND DEVICE: SILICON, 30V, 50MA	01295	1N4152R
CR931	152-0141-02			SEMICOND DEVICE: SILICON, 30V, 50MA	01295	1N4152R
CR933	152-0141-02			SEMICOND DEVICE: SILICON, 30V, 50MA	01295	1N4152R
CR970	152-0141-02			SEMICOND DEVICE: SILICON, 30V, 50MA	01295	1N4152R
CR971	152-0141-02			SEMICOND DEVICE: SILICON, 30V, 50MA	01295	1N4152R
CR975	152-0141-02			SEMICOND DEVICE: SILICON, 30V, 50MA	01295	1N4152R
CR976	152-0141-02			SEMICOND DEVICE: SILICON, 30V, 50MA	01295	1N4152R
DS450	150-0046-00			LAMP, INCAND: 10V, 0.04A	08806	2107D
DS760	150-0111-00	B010100	B069999	LAMP, GLOW: NEON, 1.2MA	53944	A1B-3
DS760	150-0130-00	B070000		LAMP, INCAND: 5V, 60MA	08806	2200DX
DS762	150-0111-00	B010100	B069999	LAMP, GLOW: NEON, 1.2MA	53944	A1B-3
DS762	150-0130-00	B070000		LAMP, INCAND: 5V, 60MA	08806	2200DX
DS764	150-0111-00	B010100	B069999	LAMP, GLOW: NEON, 1.2MA	53944	A1B-3
DS764	150-0130-00	B070000		LAMP, INCAND: 5V, 60MA	08806	2200DX
DS766	150-0111-00	B010100	B069999	LAMP, GLOW: NEON, 1.2MA	53944	A1B-3
DS766	150-0130-00	B070000		LAMP, INCAND: 5V, 60MA	08806	2200DX
J10	131-0955-00			CONNECTOR, ROPT, :BNC, FEMALE, W/HARDWARE	13511	31-279
LR60	108-0245-00			COIL, RF: 3.9UH	80009	108-0245-00
LR67	108-0245-00	B010100	B053122X	COIL, RF: 3.9UH	80009	108-0245-00
LR73	108-0245-00	B010100	B053122X	COIL, RF: 3.9UH	80009	108-0245-00
LR110	108-0245-00	B010100	B053122X	COIL, RF: 3.9UH	80009	108-0245-00
LR118	108-0245-00	B010100	B053122X	COIL, RF: 3.9UH	80009	108-0245-00
LR160	108-0245-00	B010100	B053122X	COIL, RF: 3.9UH	80009	108-0245-00
LR168	108-0245-00	B010100	B053122X	COIL, RF: 3.9UH	80009	108-0245-00
LR200	108-0245-00	B010100	B053122X	COIL, RF: 3.9UH	80009	108-0245-00
LR210	108-0245-00			COIL, RF: 3.9UH	80009	108-0245-00
LR218	108-0245-00	B010100	B053122X	COIL, RF: 3.9UH	80009	108-0245-00
LR293	108-0245-00	B010100	B053122X	COIL, RF: 3.9UH	80009	108-0245-00
LR299	108-0245-00	B010100	B053122X	COIL, RF: 3.9UH	80009	108-0245-00
LR300	108-0245-00	XB060000		COIL, RF: 3.9UH	80009	108-0245-00
LR330	108-0245-00	B010100	B059999X	COIL, RF: 3.9UH	80009	108-0245-00
LR335	108-0245-00	B010100	B059999X	COIL, RF: 3.9UH	80009	108-0245-00
LR383	108-0245-00			COIL, RF: 3.9UH	80009	108-0245-00
LR389	108-0245-00			COIL, RF: 3.9UH	80009	108-0245-00
LR400	108-0245-00	XB053593		COIL, RF: 3.9UH	80009	108-0245-00
LR410	108-0245-00	B010100	B053592X	COIL, RF: 3.9UH	80009	108-0245-00
LR420	108-0245-00	B010100	B053592X	COIL, RF: 3.9UH	80009	108-0245-00
LR425	108-0245-00	B010100	B053592X	COIL, RF: 3.9UH	80009	108-0245-00
LR445	108-0245-00			COIL, RF: 3.9UH	80009	108-0245-00
Q201	151-1042-00			SEMICOND DVC SE: MATCHED PAIR PBT	80009	151-1042-00
Q241						
Q34	151-0341-00			TRANSISTOR: SILICON, NPN	80009	151-0341-00
Q36	151-0341-00			TRANSISTOR: SILICON, NPN	80009	151-0341-00
Q50	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q62	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q80	151-0188-00			TRANSISTOR: SILICON, PNP	80009	151-0188-00
Q90	151-0341-00			TRANSISTOR: SILICON, NPN	80009	151-0341-00
Q100	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q110	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q130	151-0188-00			TRANSISTOR: SILICON, PNP	80009	151-0188-00
Q150	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q160	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q180	151-0188-00			TRANSISTOR: SILICON, PNP	80009	151-0188-00
Q200	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q210	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677

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Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Discnt	Name & Description	Mfr Code	Mfr Part Number
Q230	151-0188-00			TRANSISTOR: SILICON, PNP	80009	151-0188-00
Q280	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q290	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q340	151-0190-00	XB063677		TRANSISTOR: SILICON, NPN	07263	8032677
Q370	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q380	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q440	151-0190-00	XB060000		TRANSISTOR: SILICON, NPN	07263	8032677
Q460	151-0188-00			TRANSISTOR: SILICON, PNP	80009	151-0188-00
Q470	151-0188-00			TRANSISTOR: SILICON, PNP	80009	151-0188-00
Q480	151-0188-00			TRANSISTOR: SILICON, PNP	80009	151-0188-00
Q540	151-1005-00			TRANSISTOR: SILICON, JFE, N-CHANNEL	80009	151-1005-00
Q570	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q574	151-0341-00				TRANSISTOR: SILICON, NPN	80009
Q650	151-0220-00			TRANSISTOR: SILICON, PNP	80009	151-0220-00
Q665	151-0188-00			TRANSISTOR: SILICON, PNP	80009	151-0188-00
Q670	151-0220-00			TRANSISTOR: SILICON, PNP	80009	151-0220-00
Q680	151-0190-00			TRANSISTOR: SILICON, NPN	07263	8032677
Q690	151-0325-00			TRANSISTOR: SILICON, PNP, SEL FROM 2N4258	80009	151-0325-00
Q695	151-0188-00			TRANSISTOR: SILICON, PNP	80009	151-0188-00
Q700	151-0195-00			TRANSISTOR: SILICON, NPN	80009	151-0195-00
Q720	151-0195-00			TRANSISTOR: SILICON, NPN	80009	151-0195-00
Q730	151-0188-00			TRANSISTOR: SILICON, PNP	80009	151-0188-00
R10	316-0330-00	B010100	B085104	RES., FXD, CMPSN: 33 OHM, 10%, 0.25W	01121	CB3301
R10	315-0330-00	B085105		RES., FXD, CMPSN: 33 OHM, 5%, 0.25W	01121	CB3305
R11	321-0452-00			RES., FXD, FILM: 499K OHM, 1%, 0.125W	91637	MFF1816G49902F
R15	321-0452-00			RES., FXD, FILM: 499K OHM, 1%, 0.125W	91637	MFF1816G49902F
R16	315-0101-00	B010100	B085104	RES., FXD, CMPSN: 100 OHM, 10%, 0.25W	01121	CB1011
R16	315-0101-00	B085105		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
R20	315-0220-00	B010100	B085104	RES., FXD, CMPSN: 22 OHM, 10%, 0.25W	01121	CB2201
R20	315-0220-00	B085105		RES., FXD, CMPSN: 22 OHM, 5%, 0.25W	01121	CB2205
R21	315-0330-00	B010100	B085104	RES., FXD, CMPSN: 33 OHM, 10%, 0.25W	01121	CB3301
R21	315-0330-00	B085105		RES., FXD, CMPSN: 33 OHM, 5%, 0.25W	01121	CB3305
R25	311-1566-00			RES., VAR, NONWTR: 50 OHM, 20%, 0.50W	73138	91A R50
R26	316-0330-00	B010100	B085104	RES., FXD, CMPSN: 33 OHM, 10%, 0.25W	01121	CB3301
R26	315-0330-00	B085105		RES., FXD, CMPSN: 33 OHM, 5%, 0.25W	01121	CB3305
R30	316-0153-00	B010100	B085104	RES., FXD, CMPSN: 15K OHM, 10%, 0.25W	01121	CB1531
R30	315-0153-00	B085105		RES., FXD, CMPSN: 15K OHM, 5%, 0.25W	01121	CB1535
R36	316-0472-00	B010100	B085104	RES., FXD, CMPSN: 4.7K OHM, 10%, 0.25W	01121	CB4721
R36	315-0472-00	B085105		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
R38	315-0621-00			RES., FXD, CMPSN: 620 OHM, 5%, 0.25W	01121	CB6215
R40	316-0223-00	B010100	B085104	RES., FXD, CMPSN: 22K OHM, 10%, 0.25W	01121	CB2231
R40	315-0223-00	B085105		RES., FXD, CMPSN: 22K OHM, 5%, 0.25W	01121	CB2235
R42	315-0392-00			RES., FXD, CMPSN: 3.9K OHM, 5%, 0.25W	01121	CB3925
R45	321-0204-00			RES., FXD, FILM: 1.3K OHM, 1%, 0.125W	91637	MFF1816G13000F
R47	316-0153-00	B010100	B085104	RES., FXD, CMPSN: 15K OHM, 10%, 0.25W	01121	CB1531
R47	315-0153-00	B085105		RES., FXD, CMPSN: 15K OHM, 5%, 0.25W	01121	CB1535
R49	321-0342-00			RES., FXD, FILM: 35.7K OHM, 1%, 0.125W	91637	MFF1816G35701F
R50	321-0190-00			RES., FXD, FILM: 931 OHM, 1%, 0.125W	91637	MFF1816G931R0F
R52	311-1566-00			RES., VAR, NONWTR: 200 OHM, 20%, 0.50W	73138	91-88-0
R60	316-0330-00	B010100	B085104	RES., FXD, CMPSN: 33 OHM, 10%, 0.25W	01121	CB3301
R60	315-0330-00	B085105		RES., FXD, CMPSN: 33 OHM, 5%, 0.25W	01121	CB3305
R62	316-0390-00	B010100	B085104	RES., FXD, CMPSN: 39 OHM, 10%, 0.25W	01121	CB3901
R62	315-0390-00	B085105		RES., FXD, CMPSN: 39 OHM, 5%, 0.25W	01121	CB3905
R65	315-0680-00			RES., FXD, CMPSN: 68 OHM, 5%, 0.25W	01121	CB6805
R67	323-0185-00	B010100	B053122	RES., FXD, FILM: 825 OHM, 1%, 0.50W	75042	CECT0-8250F
R67	323-0633-00	B053123		RES., FXD, FILM: 801 OHM, 1%, 0.50W	75042	CECT0-8010F
R68	315-0240-00	B053123		RES., FXD, CMPSN: 24 OHM, 5%, 0.25W	01121	CB2405

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Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Uscont	Name & Description	Mfr Code	Mfr Part Number
R69	315-0680-00			RES., FXD, CMPSN: 68 OHM, 5%, 0.25W	01121	CB6805
R70	316-0330-00	B010100	B085104	RES., FXD, CMPSN: 33 OHM, 10%, 0.25W	01121	CB3301
R70	315-0330-00	B085105		RES., FXD, CMPSN: 33 OHM, 5%, 0.25W	01121	CB3305
R73	322-0173-00	B010100	B053122	RES., FXD, FILM: 619 OHM, 1%, 0.25W	75042	CEBT0-6190F
R73	322-0172-00	B053123		RES., FXD, FILM: 604 OHM, 1%, 0.25W	75042	CEBT0-6040F
R74	315-0150-00	XB053123		RES., FXD, CMPSN: 15 OHM, 5%, 0.25W	01121	CB1505
R80	315-0203-00			RES., FXD, CMPSN: 20K OHM, 5%, 0.25W	01121	CB2035
R83	316-0183-00	B010100	B085104	RES., FXD, CMPSN: 18K OHM, 10%, 0.25W	01121	CB1831
R83	315-0183-00	B085105		RES., FXD, CMPSN: 18K OHM, 5%, 0.25W	01121	CB1835
R85	315-0153-00	B010100	B085104	RES., FXD, CMPSN: 15K OHM, 10%, 0.25W	01121	CB1531
R85	315-0153-00	B085105		RES., FXD, CMPSN: 15K OHM, 5%, 0.25W	01121	CB1535
R87	322-0218-00			RES., FXD, FILM: 1.82K OHM, 1%, 0.25W	75042	CEBT0-1821F
R90	316-0564-00	B010100	B085104	RES., FXD, CMPSN: 560K OHM, 10%, 0.25W	01121	CB5641
R90	315-0564-00	B085105		RES., FXD, CMPSN: 560K OHM, 5%, 0.25W	01121	CB5645
R93	315-0222-00			RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
R95	316-0562-00	B010100	B085104	RES., FXD, CMPSN: 5.6K OHM, 10%, 0.25W	01121	CB5621
R95	315-0562-00	B085105		RES., FXD, CMPSN: 5.6K OHM, 5%, 0.25W	01121	CB5625
R97	321-0151-00			RES., FXD, FILM: 365 OHM, 1%, 0.125W	91637	MFF1816G365R0F
R100	316-0330-00	B010100	B085104	RES., FXD, CMPSN: 33 OHM, 10%, 0.25W	01121	CB3301
R100	315-0330-00	B085105		RES., FXD, CMPSN: 33 OHM, 5%, 0.25W	01121	CB3305
R103	321-0078-00			RES., FXD, FILM: 63.4 OHM, 1%, 0.125W	91637	MFF1816G63R40F
R105	316-0220-00	B010100	B085104	RES., FXD, CMPSN: 22 OHM, 10%, 0.25W	01121	CB2201
R105	315-0220-00	B085105		RES., FXD, CMPSN: 22 OHM, 5%, 0.25W	01121	CB2205
R108	315-0300-00			RES., FXD, CMPSN: 30 OHM, 5%, 0.25W	01121	CB3005
R110	323-0188-00	B010100	B053122	RES., FXD, FILM: 887 OHM, 1%, 0.50W	75042	CECT0-8870F
R110	323-0185-00	B053123		RES., FXD, FILM: 825 OHM, 1%, 0.50W	75042	CECT0-8250F
R111	315-0620-00	XB053123		RES., FXD, CMPSN: 62 OHM, 5%, 0.25W	01121	CB6205
R114	315-0300-00			RES., FXD, CMPSN: 30 OHM, 5%, 0.25W	01121	CB3005
R115	316-0330-00	B010100	B085104	RES., FXD, CMPSN: 33 OHM, 10%, 0.25W	01121	CB3301
R115	315-0330-00	B085105		RES., FXD, CMPSN: 33 OHM, 5%, 0.25W	01121	CB3305
R118	322-0175-00	B010100	B053122	RES., FXD, FILM: 649 OHM, 1%, 0.25W	75042	CEBT0-6490F
R118	322-0173-00	B053123		RES., FXD, FILM: 619 OHM, 1%, 0.25W	75042	CEBT0-6190F
R119	315-0300-00	XB053123		RES., FXD, CMPSN: 30 OHM, 5%, 0.25W	01121	CB3005
R130	315-0203-00			RES., FXD, CMPSN: 20K OHM, 5%, 0.25W	01121	CB2035
R135	316-0183-00	B010100	B085104	RES., FXD, CMPSN: 18K OHM, 10%, 0.25W	01121	CB1831
R135	315-0183-00	B085105		RES., FXD, CMPSN: 18K OHM, 5%, 0.25W	01121	CB1835
R137	316-0153-00	B010100	B085104	RES., FXD, CMPSN: 15K OHM, 10%, 0.25W	01121	CB1531
R137	315-0153-00	B085105		RES., FXD, CMPSN: 15K OHM, 5%, 0.25W	01121	CB1535
R139	321-0149-00			RES., FXD, FILM: 348 OHM, 1%, 0.125W	91637	MFF1816G348R0F
R140	322-0222-00			RES., FXD, FILM: 2K OHM, 1%, 0.25W	75042	CEBT0-2001F
R150	316-0330-00	B010100	B085104	RES., FXD, CMPSN: 33 OHM, 10%, 0.25W	01121	CB3301
R150	315-0330-00	B085105		RES., FXD, CMPSN: 33 OHM, 5%, 0.25W	01121	CB3305
R153	321-0078-00			RES., FXD, FILM: 63.4 OHM, 1%, 0.125W	91637	MFF1816G63R40F
R155	316-0220-00	B010100	B085104	RES., FXD, CMPSN: 22 OHM, 10%, 0.25W	01121	CB2201
R155	315-0220-00	B085105		RES., FXD, CMPSN: 22 OHM, 5%, 0.25W	01121	CB2205
R158	315-0300-00			RES., FXD, CMPSN: 30 OHM, 5%, 0.25W	01121	CB3005
R160	323-0188-00	B010100	B053122	RES., FXD, FILM: 887 OHM, 1%, 0.50W	75042	CECT0-8870F
R160	323-0185-00	B053123		RES., FXD, FILM: 825 OHM, 1%, 0.50W	75042	CECT0-8250F
R161	315-0620-00	XB053123		RES., FXD, CMPSN: 62 OHM, 5%, 0.25W	01121	CB6205
R164	315-0300-00			RES., FXD, CMPSN: 30 OHM, 5%, 0.25W	01121	CB3005
R165	316-0330-00	B010100	B085104	RES., FXD, CMPSN: 33 OHM, 10%, 0.25W	01121	CB3301
R165	315-0330-00	B085105		RES., FXD, CMPSN: 33 OHM, 5%, 0.25W	01121	CB3305
R168	322-0175-00	B010100	B053122	RES., FXD, FILM: 649 OHM, 1%, 0.25W	75042	CEBT0-6490F
R168	322-0173-00	B053123		RES., FXD, FILM: 619 OHM, 1%, 0.25W	75042	CEBT0-6190F
R169	315-0300-00	XB053123		RES., FXD, CMPSN: 30 OHM, 5%, 0.25W	01121	CB3005
R180	315-0203-00			RES., FXD, CMPSN: 20K OHM, 5%, 0.25W	01121	CB2035
R185	316-0183-00	B010100	B085104	RES., FXD, CMPSN: 18K OHM, 10%, 0.25W	01121	CB1831

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Ckt No.	Tektronix Part No.	Serial/Model No.		Name & Description	Mfr Code	Mfr Part Number
		Eff	Discont			
R185	315-0183-00	B085105		RES., FXD, CMPSK: 18K OHM, 5%, 0.25W	01121	CB1835
R187	316-0153-00	B010100	B085104	RES., FXD, CMPSK: 15K OHM, 10%, 0.25W	01121	CB1531
R187	315-0153-00	B085105		RES., FXD, CMPSK: 15K OHM, 5%, 0.25W	01121	CB1535
R200	316-0330-00	B010100	B085104	RES., FXD, CMPSN: 33 OHM, 10%, 0.25W	01121	CB3301
R200	315-0330-00	B085105		RES., FXD, CMPSN: 33 OHM, 5%, 0.25W	01121	CB3305
R205	316-0101-00	B010100	B085104	RES., FXD, CMPSK: 100 OHM, 10%, 0.25W	01121	CB1011
R205	315-0101-00	B085105		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
R208	315-0131-00			RES., FXD, CMPSN: 130 OHM, 5%, 0.25W	01121	CB1315
R210	323-0185-00	B010100	B053122	RES., FXD, FILM: 825 OHM, 1%, 0.50W	75042	CECTO-8250F
R210	323-0633-00	B053123		RES., FXD, FILM: 801 OHM, 1%, 0.50W	75042	CECTO-8010F
R211	315-0240-00	XB053123		RES., FXD, CMPSN: 24 OHM, 5%, 0.25W	01121	CB2405
R214	315-0131-00			RES., FXD, CMPSK: 130 OHM, 5%, 0.25W	01121	CB1315
R215	316-0330-00	B010100	B085104	RES., FXD, CMPSK: 33 OHM, 10%, 0.25W	01121	CB3301
R215	315-0330-00	B085105		RES., FXD, CMPSK: 33 OHM, 5%, 0.25W	01121	CB3305
R216	322-0175-00	B010100	B053122	RES., FXD, FILM: 619 OHM, 1%, 0.25W	75042	CEBTO-6190F
R218	322-0172-00	B053123		RES., FXD, FILM: 604 OHM, 1%, 0.25W	75042	CEBTO-6040F
R219	315-0150-00	XB053123		RES., FXD, CMPSN: 15 OHM, 5%, 0.25W	01121	CB1505
R228	316-0270-00	B010100	B085104	RES., FXD, CMPSN: 27 OHM, 10%, 0.25W	01121	CB2701
R228	315-0270-00	B085105		RES., FXD, CMPSN: 27 OHM, 5%, 0.25W	01121	CB2705
R230	315-0203-00			RES., FXD, CMPSN: 20K OHM, 5%, 0.25W	01121	CB2035
R235	315-0822-00			RES., FXD, CMPSN: 8.2K OHM, 5%, 0.25W	01121	CB8225
R236	315-0103-00			RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
R237	316-0155-00	B010100	B085104	RES., FXD, CMPSN: 15K OHM, 10%, 0.25W	01121	CB1531
R237	315-0153-00	B085105		RES., FXD, CMPSN: 15K OHM, 5%, 0.25W	01121	CB1535
R280	316-0222-00	B010100	B085104	RES., FXD, CMPSN: 2.2K OHM, 10%, 0.25W	01121	CB2221
R280	315-0222-00	B085105		RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
R282	315-0680-00			RES., FXD, CMPSN: 68 OHM, 5%, 0.25W	01121	CB6805
R285	315-0821-00			RES., FXD, CMPSN: 820 OHM, 5%, 0.25W	01121	CB8215
R287	315-0821-00			RES., FXD, CMPSN: 820 OHM, 5%, 0.25W	01121	CB8215
R290	315-0821-00			RES., FXD, CMPSN: 820 OHM, 5%, 0.25W	01121	CB8215
R293	323-0208-00			RES., FXD, FILM: 1.43K OHM, 1%, 0.50W	75042	CECTO-1431F
R297	321-0078-00	XB060000		RES., FXD, FILM: 63.4 OHM, 1%, 0.125W	91637	MFF1816G63R40F
R298	321-0097-00	B010100	B059999	RES., FXD, FILM: 100 OHM, 1%, 0.125W	91637	MFF1816G100R0F
R298	321-0078-00	B060000		RES., FXD, FILM: 63.4 OHM, 1%, 0.125W	91637	MFF1816G63R40F
R299	321-0087-00			RES., FXD, FILM: 78.7 OHM, 1%, 0.125W	91637	MFF1816G78R70F
R304	315-0133-00	XB060000		RES., FXD, CMPSN: 13K OHM, 5%, 0.25W	01121	CB1335
R306	315-0302-00	XB060000		RES., FXD, CMPSN: 3K OHM, 5%, 0.25W	01121	CB3025
R308	315-0103-00	XB060000		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
R310	315-0680-00			RES., FXD, CMPSN: 68 OHM, 5%, 0.25W	01121	CB6805
R312	315-0222-00			RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
R314	315-0133-00			RES., FXD, CMPSN: 13K OHM, 5%, 0.25W	01121	CB1335
R320	311-0580-00			RES., VAR, NONNLR: 50K OHM, 20%, 0.50W	11237	3008F-41695
R325	316-0122-00	B010100	B059999X	RES., FXD, CMPSN: 1.2K OHM, 10%, 0.25W	01121	CB1221
R326	315-0220-00	B010100	B059999X	RES., FXD, CMPSN: 22 OHM, 5%, 0.25W	01121	CB2205
R328	315-0130-00	B010100	B059999X	RES., FXD, CMPSN: 43 OHM, 5%, 0.25W	01121	CB4305
R329	316-0122-00	B010100	B059999X	RES., FXD, CMPSN: 1.2K OHM, 10%, 0.25W	01121	CB1221
R332	316-0102-00	B010100	B059999X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R334	316-0102-00	B010100	B059999X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R336	316-0102-00	B010100	B059999X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R337	315-0331-00	B010100	B059999X	RES., FXD, CMPSN: 330 OHM, 5%, 0.25W	01121	CB3315
R339	316-0102-00	B010100	B059999X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R339	315-0102-00	XB063677		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
R340	315-0361-00	XB063677		RES., FXD, CMPSN: 360 OHM, 5%, 0.25W	01121	CB3615
R342	316-0102-00	B010100	B059999X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R345	316-0102-00	B010100	B059999X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R347	316-0102-00	B010100	B059999X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R348	315-0682-00	B010100	B059999X	RES., FXD, CMPSN: 6.8K OHM, 5%, 0.25W	01121	CB6825

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Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Discont	Name & Description	Mfr Code	Mfr Part Number
R350	315-0362-00	B010100	B059999X	RES., FXD, CMPSN: 3.6K OHM, 5%, 0.25W	01121	CB3625
R354	315-0102-00	B010100	B050657	RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
R354	315-0132-00	B050658	B059999X	RES., FXD, CMPSN: 1.3K OHM, 5%, 0.25W	01121	CB1325
R356	315-0182-00	B010100	B059999X	RES., FXD, CMPSN: 1.8K OHM, 5%, 0.25W	01121	CB1825
R357	315-0102-00	B010100	B059999X	RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
R370	316-0330-00	B010100	B010250	RES., FXD, CMPSN: 33 OHM, 10%, 0.25W	01121	CB3301
R370	315-0680-00	B010251		RES., FXD, CMPSN: 68 OHM, 5%, 0.25W	01121	CB6805
R375	316-0101-00	B030100	B085104	RES., FXD, CMPSN: 100 OHM, 10%, 0.25W	01121	CB3101
R375	315-0101-00	B085105		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
R377	315-0820-00			RES., FXD, CMPSN: 82 OHM, 5%, 0.25W	01121	CB8205
R380	315-0820-00			RES., FXD, CMPSN: 82 OHM, 5%, 0.25W	01121	CB8205
R383	323-0208-00			RES., FXD, FILM: 1.43K OHM, 1%, 0.50W	75042	CBCT0-1431F
R388	321-0097-00	B010100	B053592	RES., FXD, FILM: 100 OHM, 1%, 0.125W	91637	MFF1816G100R0F
R388	321-0078-00	B053593		RES., FXD, FILM: 63.4 OHM, 1%, 0.125W	91637	MFF1816G63R40F
R389	321-0087-00			RES., FXD, FILM: 78.7 OHM, 1%, 0.125W	91637	MFF1816G78R70F
R390	321-0078-00	XB053593		RES., FXD, FILM: 63.4 OHM, 1%, 0.125W	91637	MFF1816G63R40F
R400	316-0330-00	B010100	B010250	RES., FXD, CMPSN: 33 OHM, 10%, 0.25W	01121	CB3301
R400	315-0680-00	B010251		RES., FXD, CMPSN: 68 OHM, 5%, 0.25W	01121	CB6805
R402	315-0222-00			RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
R404	315-0133-00			RES., FXD, CMPSN: 13K OHM, 5%, 0.25W	01121	CB1335
R410	311-0580-00			RES., VAR, NONWTR: 50K OHM, 20%, 0.50W	11237	3008F-41695
R415	316-0122-00	B010100	B053592X	RES., FXD, CMPSN: 1.2K OHM, 10%, 0.25W	01121	CB1221
R416	315-0220-00	B010100	B053592X	RES., FXD, CMPSN: 22 OHM, 5%, 0.25W	01121	CB2205
R418	315-0430-00	B010100	B053592X	RES., FXD, CMPSN: 43 OHM, 5%, 0.25W	01121	CB4305
R419	316-0122-00	B010100	B053592X	RES., FXD, CMPSN: 1.2K OHM, 10%, 0.25W	01121	CB1221
R422	316-0102-00	B010100	B053592X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R424	316-0102-00	B010100	B053592X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R426	316-0102-00	B010100	B053592X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R429	316-0102-00	B010100	B085104	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R429	315-0102-00	B085105		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
R432	316-0102-00	B010100	B053592X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R435	316-0102-00	B010100	B053592X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R437	316-0102-00	B010100	B053592X	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R438	315-0201-00	B010100	B053592X	RES., FXD, CMPSN: 200 OHM, 5%, 0.25W	01121	CB2015
R439	315-0361-00	XB060000		RES., FXD, CMPSN: 360 OHM, 5%, 0.25W	01121	CB3615
R440	315-0911-00			RES., FXD, CMPSN: 910 OHM, 5%, 0.25W	01121	CB9115
R442	315-0102-00	XB060000		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
R450	316-0102-00	B010100	B085104	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R450	315-0102-00	B085105		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
R451	316-0180-00	B010100	B085104	RES., FXD, CMPSN: 18 OHM, 10%, 0.25W	01121	CB1801
R451	315-0180-00	B085105		RES., FXD, CMPSN: 18 OHM, 5%, 0.25W	01121	CB1805
R452	315-0181-00	XB020000		RES., FXD, CMPSN: 180 OHM, 5%, 0.25W	01121	CB1815
R455	316-0472-00	B010100	B085104	RES., FXD, CMPSN: 4.7K OHM, 10%, 0.25W	01121	CB4721
R455	315-0472-00	B085105		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
R460	315-0202-00			RES., FXD, CMPSN: 2K OHM, 5%, 0.25W	01121	CB2025
R464	321-0259-00			RES., FXD, FILM: 4.87K OHM, 1%, 0.125W	91637	MFF1816G48700F
R465	315-0123-00	B010100	B039999	RES., FXD, CMPSN: 12K OHM, 5%, 0.25W	01121	CB1235
R465	321-0298-00	B040000		RES., FXD, FILM: 12.4K OHM, 1%, 0.125W	91637	MFF1816G12401F
R468	315-0242-00	B010100	B039999	RES., FXD, CMPSN: 2.4K OHM, 5%, 0.25W	01121	CB2425
R468	321-0228-00	B040000		RES., FXD, FILM: 2.32K OHM, 1%, 0.125W	91637	MFF1816G23200F
R470	321-0247-00			RES., FXD, FILM: 3.65K OHM, 1%, 0.125W	91637	MFF1816G36500F
R472	315-0223-00			RES., FXD, CMPSN: 22K OHM, 5%, 0.25W	01121	CB2235
R473	315-0202-00			RES., FXD, CMPSN: 2K OHM, 5%, 0.25W	01121	CB2025
R475	321-0193-00	B010100	B059999	RES., FXD, FILM: 1K OHM, 1%, 0.125W	91637	MFF1816G10000F
R475	321-0222-00	B060000	B063676	RES., FXD, FILM: 2K OHM, 1%, 0.125W	91637	MFF1816G20000F
R475	321-0193-00	B063677		RES., FXD, FILM: 1K OHM, 1%, 0.125W	91637	MFF1816G10000F
R476	321-0253-00	B010100	B059999	RES., FXD, FILM: 4.22K OHM, 1%, 0.125W	91637	MFF1816G42200F

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Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Serial/Model No. Dscont	Name & Description	Mfr Code	Mfr Part Number
R476	321-0282-00	B060000	B063676	RES.,FXD,FILM:8.45K OHM,1%,0.125W	91637	MFF1816G84500F
R476	321-0253-00	B063677		RES.,FXD,FILM:4.22K OHM,1%,0.125W	91637	MFF1816G42200F
R480	316-0102-00	B010100	B059999X	RES.,FXD,CMPSN:1K OHM,10%,0.25W	01121	CB1021
R480	315-0102-00	XB063677		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
R482	315-0471-00	B010100	B052429	RES.,FXD,CMPSN:470 OHM,5%,0.25W	01121	CB4715
R482	315-0511-00	B052430		RES.,FXD,CMPSN:510 OHM,5%,0.25W	01121	CB5115
R483	315-0131-00			RES.,FXD,CMPSN:130 OHM,5%,0.25W	01121	CB1315
R484	315-0681-00			RES.,FXD,CMPSN:680 OHM,5%,0.25W	01121	CB6815
R489	316-0332-00	B010100	B085104	RES.,FXD,CMPSN:3.3K OHM,10%,0.25W	01121	CB3321
R489	315-0332-00	B085105		RES.,FXD,CMPSN:3.3K OHM,5%,0.25W	01121	CB3325
R490	301-0391-00			RES.,FXD,CMPSN:390 OHM,5%,0.50W	01121	CB3915
R495	316-0334-00	B010100	B085104	RES.,FXD,CMPSN:330K OHM,10%,0.25W	01121	CB3341
R495	315-0334-00	B085105		RES.,FXD,CMPSN:330K OHM,5%,0.25W	01121	CB3345
R500	315-0163-00			RES.,FXD,CMPSN:16K OHM,5%,0.25W	01121	CB1635
R503	315-0154-00			RES.,FXD,CMPSN:150K OHM,5%,0.25W	01121	CB1545
R520	311-1324-00			RES.,VAR,WV:10K OHM,5%,2W	02111	534-4572 103J
R522	311-1560-00			RES.,VAR,NONWTR:5K OHM,20%,0.50W	73138	91A R5K
R523	321-0318-02			RES.,FXD,FILM:20K OHM,0.5%,0.125W	91637	MFF1816D20001D
R525	321-0829-02			RES.,FXD,FILM:202 OHM,0.5%,0.125W	91637	MFF1816D202R0D
R527	321-0332-00			RES.,FXD,FILM:28K OHM,1%,0.125W	91637	MFF1816G28001F
R530	311-1555-00			RES.,VAR,NONWTR:100K OHM,20%,0.5W	73138	91-77-0
R534	316-0103-00	B010100	B085104	RES.,FXD,CMPSN:10K OHM,10%,0.25W	01121	CB1031
R534	315-0103-00	B085105		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
R536	316-0104-00	B010100	B085104	RES.,FXD,CMPSN:100K OHM,10%,0.25W	01121	CB1041
R536	315-0104-00	B085105		RES.,FXD,CMPSN:100K OHM,5%,0.25W	01121	CB1045
R538	316-0100-00	B010100	B085104	RES.,FXD,CMPSN:10 OHM,10%,0.25W	01121	CB1001
R538	315-0100-00	B085105		RES.,FXD,CMPSN:10 OHM,5%,0.25W	01121	CB1005
R540	316-0153-00	B010100	B085104	RES.,FXD,CMPSN:15K OHM,10%,0.25W	01121	CB1531
R540	315-0153-00	B085105		RES.,FXD,CMPSN:15K OHM,5%,0.25W	01121	CB1535
R542	315-0101-00			RES.,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
R543	316-0274-00	B010100	B085104	RES.,FXD,CMPSN:270K OHM,10%,0.25W	01121	CB2741
R543	315-0274-00	B085105		RES.,FXD,CMPSN:270K OHM,5%,0.25W	01121	CB2745
R545	311-1555-00			RES.,VAR,NONWTR:100K OHM,20%,0.5W	73138	91-77-0
R547	315-0621-00			RES.,FXD,CMPSN:620 OHM,5%,0.25W	01121	CB6215
R549	316-0473-00	B010100	B085104	RES.,FXD,CMPSN:47K OHM,10%,0.25W	01121	CB4731
R549	315-0473-00	B085105		RES.,FXD,CMPSN:47K OHM,5%,0.25W	01121	CB4735
R550	311-1537-00	B010100	B095255	RES.,VAR,NONWTR:PNL,20K OHM,1W,W/SW (FURNISHED AS A UNIT WITH 6900)	12697	381-CM40064
R550	311-2007-00	B095256		RES.,VAR,NONWTR:PNL,20K OHM,20%,1W (FURNISHED AS A UNIT WITH 8900)	12697	CM41744
R551	321-0289-00			RES.,FXD,FILM:10K OHM,1%,0.125W	91637	MFF1816G10001F
R552	321-0164-00			RES.,FXD,FILM:499 OHM,1%,0.125W	91637	MFF1816G499R0F
R556	316-0124-00	B010100	B085104	RES.,FXD,CMPSN:120K OHM,10%,0.25W	01121	CB1241
R556	315-0124-00	B085105		RES.,FXD,CMPSN:120K OHM,5%,0.25W	01121	CB1245
R557	321-0234-00			RES.,FXD,FILM:2.67K OHM,1%,0.125W	91637	MFF1816G26700F
R558	315-0330-00	XB060000		RES.,FXD,CMPSN:33 OHM,5%,0.25W	01121	CB3305
R559	321-0268-03			RES.,FXD,FILM:6.04K OHM,0.25%,0.125W	91637	MFF1816D60400C
R560	321-0827-03			RES.,FXD,FILM:3.61K OHM,0.25%,0.125W	91637	MFF1816D36100C
R562	321-0830-03			RES.,FXD,FILM:2.41K OHM,0.25%,0.125W	91637	MFF1816D24100C
R564	321-0200-00			RES.,FXD,FILM:1.18K OHM,1%,0.125W	91637	MFF1816G11800F
R566	323-0498-03			RES.,FXD,FILM:1.5M OHM,0.25%,0.50W	91637	HFF12915003C
R567	323-0498-03			RES.,FXD,FILM:1.5M OHM,0.25%,0.50W	91637	HFF12915003C
R569	321-0917-03			RES.,FXD,FILM:27.2K OHM,0.25%,0.125W	91637	MFF1816D27201C
R570	321-0856-03			RES.,FXD,FILM:330K OHM,0.25%,0.125W	91637	MFF1816D33002C
R571	315-0912-00			RES.,FXD,CMPSN:9.1K OHM,5%,0.25W	01121	CB9125
R573	316-0332-00	B010100	B085104	RES.,FXD,CMPSN:3.3K OHM,10%,0.25W	01121	CB3321
R573	315-0332-00	B085105		RES.,FXD,CMPSN:3.3K OHM,5%,0.25W	01121	CB3325



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Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Discont	Name & Description	Mfr Code	Mfr Part Number
R574	315-0103-00	B085105		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
R574	316-0103-00	B010100	3085104	RES.,FXD,CMPSN:10K OHM,10%,0.25W	01121	CB1031
R580	315-0911-00			RES.,FXD,CMPSN:910 OHM,5%,0.25W	01121	CB9115
R581	315-0103-00			RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
R585	321-0365-00	B010100	3053592	RES.,FXD,FILM:61.9K OHM,1%,0.125W	91637	MFF1816G61901F
R585	321-0363-00	3053593		RES.,FXD,FILM:59K OHM,1%,0.125W	91637	MFF1816G59001F
R586	321-0385-00			RES.,FXD,FILM:100K OHM,1%,0.125W	91637	MFF1816G10002F
R590	315-0621-00			RES.,FXD,CMPSN:620 OHM,5%,0.25W	01121	CB6215
R593	316-0100-00	B010100	B085104	RES.,FXD,CMPSN:10 OHM,10%,0.25W	01121	CB1001
R593	315-0100-00	B085105		RES.,FXD,CMPSN:10 OHM,5%,0.25W	01121	CB1005
R595	316-0682-00	B010100	B085104	RES.,FXD,CMPSN:6.8K OHM,10%,0.25W	01121	CB6821
R595	315-0682-00	B085105		RES.,FXD,CMPSN:6.8K OHM,5%,0.25W	01121	CB6825
R600	316-0562-00	B010100	B053592	RES.,FXD,CMPSN:5.6K OHM,10%,0.25W	01121	CB5621
R600	315-0472-00	3053593		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
R604	316-0473-00	B010100	B085104	RES.,FXD,CMPSN:47K OHM,10%,0.25W	01121	CB4731
R604	315-0473-00	B085105		RES.,FXD,CMPSN:47K OHM,5%,0.25W	01121	CB4735
R610	316-0101-00	B010100	B085104	RES.,FXD,CMPSN:100 OHM,10%,0.25W	01121	CB1011
R610	315-0101-00	B085105		RES.,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
R615	321-0286-00			RES.,FXD,FILM:9.31K OHM,1%,0.125W	91637	MFF1816G93100F
R616	321-0154-00			RES.,FXD,FILM:499 OHM,1%,0.125W	91637	MFF1816G49900F
R618	321-0234-00			RES.,FXD,FILM:2.67K OHM,1%,0.125W	91637	MFF1816G26700F
R620	321-0268-03			RES.,FXD,FILM:6.04K OHM,0.25%,0.125W	91637	MFF1816G60400C
R622	321-0827-03			RES.,FXD,FILM:3.61K OHM,0.25%,0.125W	91637	MFF1816D36100C
R623	321-0830-03			RES.,FXD,FILM:2.41K OHM,0.25%,0.125W	91637	MFF1816D24100C
R625	321-0200-00			RES.,FXD,FILM:1.18K OHM,1%,0.125W	91637	MFF1816G11800F
R627	323-0498-03			RES.,FXD,FILM:1.5M OHM,0.25%,0.50W	91637	MFF12915003C
R628	323-0498-03			RES.,FXD,FILM:1.5M OHM,0.25%,0.50W	91637	MFF12915003C
R630	321-0917-03			RES.,FXD,FILM:27.2K OHM,0.25%,0.125W	91637	MFF1816D27201C
R632	321-0856-03			RES.,FXD,FILM:330K OHM,0.25%,0.125W	91637	MFF1816D33002C
R638	321-0830-03			RES.,FXD,FILM:2.41K OHM,0.25%,0.125W	91637	MFF1816D24100C
R640	321-0830-03			RES.,FXD,FILM:2.41K OHM,0.25%,0.125W	91637	MFF1816D24100C
R642	321-0193-00			RES.,FXD,FILM:1K OHM,1%,0.125W	91637	MFF1816G10000F
R648	321-0331-00			RES.,FXD,FILM:27.4K OHM,1%,0.125W	91637	MFF1816G27401F
R650	321-0259-00			RES.,FXD,FILM:4.87K OHM,1%,0.125W	91637	MFF1816G48700F
R651	321-0098-00			RES.,FXD,FILM:102 OHM,1%,0.125W	91637	MFF1816G102R0F
R652	321-0222-00			RES.,FXD,FILM:2K OHM,1%,0.125W	91637	MFF1816G20000F
R653	321-0231-00			RES.,FXD,FILM:2.49K OHM,1%,0.125W	91637	MFF1816G24900F
R655	311-1562-00			RES.,VAR,NONWTR:2K OHM,20%,0.50W	73138	91A R2K
R656	321-0222-00			RES.,FXD,FILM:2K OHM,1%,0.125W	91637	MFF1816G20000F
R658	311-1568-00			RES.,VAR,NONWTR:50 OHM,20%,0.50W	73138	91A R50
R660	321-0108-00			RES.,FXD,FILM:130 OHM,1%,0.125W	91637	MFF1816G130R0F
R665	316-0101-00	B010100	B085104	RES.,FXD,CMPSN:100 OHM,10%,0.25W	01121	CB1011
R665	315-0101-00	3085105		RES.,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
R667	322-0229-00			RES.,FXD,FILM:2.37K OHM,1%,0.25W	75042	CBRT0-2371F
R670	321-0259-00			RES.,FXD,FILM:4.87K OHM,1%,0.125W	91637	MFF1816G48700F
R672	321-0098-00			RES.,FXD,FILM:102 OHM,1%,0.125W	91637	MFF1816G102R0F
R674	321-0286-00			RES.,FXD,FILM:9.31K OHM,1%,0.125W	91637	MFF1816G93100F
R675	321-0210-00			RES.,FXD,FILM:1.5K OHM,1%,0.125W	91637	MFF1816G15000F
R678	321-0172-00			RES.,FXD,FILM:604 OHM,1%,0.125W	91637	MFF1816G604R0F
R679	321-0269-00			RES.,FXD,FILM:6.19K OHM,1%,0.125W	91637	MFF1816G61900F
R680	311-0310-01	B010100	B010250	RES.,VAR,NONWTR:5K OHM,20%,0.50W	01121	W-7350B
R680	311-0310-00	B010251		RES.,VAR,NONWTR:5K OHM,20%,0.50W	01121	W-7350A
R682	316-0332-00	B010100	B085104	RES.,FXD,CMPSN:3.3K OHM,10%,0.25W	01121	CB3321
R682	315-0332-00	B085105		RES.,FXD,CMPSN:3.3K OHM,5%,0.25W	01121	CB3325
R683	316-0332-00	B010100	B085104	RES.,FXD,CMPSN:3.3K OHM,10%,0.25W	01121	CB3321
R683	315-0332-00	B085105		RES.,FXD,CMPSN:3.3K OHM,5%,0.25W	01121	CB3325
R685	315-0272-00			RES.,FXD,CMPSN:2.7K OHM,5%,0.25W	01121	CB2725

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Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
R691	315-0202-00			RES., FXD, CMPSN: 2K OHM, 5%, 0.25W	01121	CB2025
R693	315-0471-00			RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
R695	315-0132-00			RES., FXD, CMPSN: 1.3K OHM, 5%, 0.25W	01121	CB1325
R697	315-0132-00			RES., FXD, CMPSN: 1.3K OHM, 5%, 0.25W	01121	CB1325
R700	315-0751-00			RES., FXD, CMPSN: 750 OHM, 5%, 0.25W	01121	CB7515
R702	315-0271-00			RES., FXD, CMPSN: 270 OHM, 5%, 0.25W	01121	CB2715
R705	315-0202-00			RES., FXD, CMPSN: 2K OHM, 5%, 0.25W	01121	CB2025
R710	315-0681-00			RES., FXD, CMPSN: 680 OHM, 5%, 0.25W	01121	CB6815
R720	315-0202-00			RES., FXD, CMPSN: 2K OHM, 5%, 0.25W	01121	CB2025
R722	315-0751-00			RES., FXD, CMPSN: 750 OHM, 5%, 0.25W	01121	CB7515
R724	315-0271-00			RES., FXD, CMPSN: 270 OHM, 5%, 0.25W	01121	CB2715
R732	315-0332-00			RES., FXD, CMPSN: 3.3K OHM, 5%, 0.25W	01121	CB3325
R735	315-0152-00			RES., FXD, CMPSN: 1.5K OHM, 5%, 0.25W	01121	CB1525
R750	316-0102-00	B010100	B069999	RES., FXD, CMPSN: 1K OHM, 10%, 0.25W	01121	CB1021
R750	315-0100-00	B070000	B079999X	RES., FXD, CMPSN: 10 OHM, 5%, 0.25W	01121	CB1005
R752	315-0913-00	B010100	B069999X	RES., FXD, CMPSN: 91K OHM, 5%, 0.25W	01121	CB9135
R754	315-0913-00	B010100	B069999X	RES., FXD, CMPSN: 91K OHM, 5%, 0.25W	01121	CB9135
R754	315-0913-00	B010100	B069999X	RES., FXD, CMPSN: 91K OHM, 5%, 0.25W	01121	CB9135
R900	315-0133-00			RES., FXD, CMPSN: 13K OHM, 5%, 0.25W	01121	CB1335
R901	315-0753-00			RES., FXD, CMPSN: 75K OHM, 5%, 0.25W	01121	CB7535
R903	315-0154-00			RES., FXD, CMPSN: 150K OHM, 5%, 0.25W	01121	CB1545
R905	315-0154-00			RES., FXD, CMPSN: 150K OHM, 5%, 0.25W	01121	CB1545
R907	321-0344-00			RES., FXD, FILM: 37.4K OHM, 1%, 0.125W	91637	MFF1816G37401F
R909	315-0154-00			RES., FXD, CMPSN: 150K OHM, 5%, 0.25W	01121	CB1545
R911	315-0753-00			RES., FXD, CMPSN: 75K OHM, 5%, 0.25W	01121	CB7535
R913	315-0513-00			RES., FXD, CMPSN: 51K OHM, 5%, 0.25W	01121	CB5135
R921	315-0513-00			RES., FXD, CMPSN: 51K OHM, 5%, 0.25W	01121	CB5135
R923	315-0753-00			RES., FXD, CMPSN: 75K OHM, 5%, 0.25W	01121	CB7535
R925	315-0154-00			RES., FXD, CMPSN: 150K OHM, 5%, 0.25W	01121	CB1545
R927	321-0344-00			RES., FXD, FILM: 37.4K OHM, 1%, 0.125W	91637	MFF1816G37401F
R929	315-0154-00			RES., FXD, CMPSN: 150K OHM, 5%, 0.25W	01121	CB1545
R931	315-0154-00			RES., FXD, CMPSN: 150K OHM, 5%, 0.25W	01121	CB1545
R933	315-0753-00			RES., FXD, CMPSN: 75K OHM, 5%, 0.25W	01121	CB7535
R940	321-0344-00			RES., FXD, FILM: 37.4K OHM, 1%, 0.125W	91637	MFF1816G37401F
R942	315-0513-00			RES., FXD, CMPSN: 51K OHM, 5%, 0.25W	01121	CB5135
R944	315-0753-00			RES., FXD, CMPSN: 75K OHM, 5%, 0.25W	01121	CB7535
R946	315-0154-00			RES., FXD, CMPSN: 150K OHM, 5%, 0.25W	01121	CB1545
R948	315-0753-00			RES., FXD, CMPSN: 75K OHM, 5%, 0.25W	01121	CB7535
R950	321-0344-00			RES., FXD, FILM: 37.4K OHM, 1%, 0.125W	91637	MFF1816G37401F
R952	315-0513-00			RES., FXD, CMPSN: 51K OHM, 5%, 0.25W	01121	CB5135
R954	315-0753-00			RES., FXD, CMPSN: 75K OHM, 5%, 0.25W	01121	CB7535
R956	315-0154-00			RES., FXD, CMPSN: 150K OHM, 5%, 0.25W	01121	CB1545
R958	315-0753-00			RES., FXD, CMPSN: 75K OHM, 5%, 0.25W	01121	CB7535
R960	315-0154-00			RES., FXD, CMPSN: 150K OHM, 5%, 0.25W	01121	CB1545
R961	315-0154-00			RES., FXD, CMPSN: 150K OHM, 5%, 0.25W	01121	CB1545
R965	315-0154-00			RES., FXD, CMPSN: 150K OHM, 5%, 0.25W	01121	CB1545
R970	316-0332-00	B010100	B085104	RES., FXD, CMPSN: 3.3K OHM, 10%, 0.25W	01121	CB3321
R970	315-0332-00	B085105		RES., FXD, CMPSN: 3.3K OHM, 5%, 0.25W	01121	CB3325
R975	316-0332-00	B010100	B085104	RES., FXD, CMPSN: 3.3K OHM, 10%, 0.25W	01121	CB3321
R975	315-0332-00	B085105		RES., FXD, CMPSN: 3.3K OHM, 5%, 0.25W	01121	CB3325
S10A } S10B } S10C }	260-1448-00			SWITCH, PUSH: 3 STA, NON-SHORT	80009	260-1448-00
S60A } S60B } S60C } S60D }	260-1556-00			SWITCH, PUSH: 4 STA, PB10, 2 POLE, INTERLOCK	80009	260-1556-00

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Ckt No.	Tektronix Part No.	Serial/Model No. Eff.	Dscont	Name & Description	Mfr Code	Mfr Part Number
S95	260-1554-00			SWITCH,PUSH:1 STA,PB1,2 POLE MOMENTARY	80009	260-1554-00
S320A } S320B } S320C }	260-1487-00			SWITCH,PUSH:3 BUTTON,PB10,2P,P-P & MOM	80009	260-1487-00
S400	260-1445-00			SWITCH,PUSH:1 STA, NON-SHORT	80009	260-1445-00
S410	260-1208-00			SWITCH,PUSH:DPDT, 28VDC, PUSH-PUSH	80009	260-1208-00
S550A	263-1023-00			SW CAM ACTR AS:TIME/DIV	80009	263-1023-00
S550B	263-1022-00	B010100	B095255	SW CAM ACTR AS:TIME/DIV	80009	263-1022-00
S550B	263-1022-02	B095256		SW CAM ACTR AS:TIME/DIV	80009	263-1022-02
S575A } S575B }	260-1555-00			SWITCH,PUSH:2 STA,PB10,4 POLE	80009	260-1555-00
S575C						
S650	260-1209-00			SWITCH,PUSH:4PDT, 1A, 25VDC	80009	260-1209-00
S700	260-1211-00			SWITCH,PUSH:1A,28VDC	80009	260-1211-00
S900	-----			(FURNISHED AS A UNIT WITH R550)		
U300	155-0109-01	XB060000		MICROCIRCUIT,LI:MONOLITHIC TRIGGER	80009	155-0109-01
U320	156-0295-00	B010100	B059999X	MICROCIRCUIT,DI:TRIPLE EXCL OR EXCL NOR	80009	156-0295-00
U330	156-0205-00	B010100	B059999X	MICROCIRCUIT,DI:QUAD 2-INPUT NOR GATE	80009	156-0205-00
U335	156-0182-00	B010100	B059999X	MICROCIRCUIT,DI:TRIPLE 2-3-2 INPUT GATE	80009	156-0182-00
U400	155-0109-01	XB053593		MICROCIRCUIT,LI:MONOLITHIC TRIGGER	80009	155-0109-01
U410	156-0295-00	B010100	B053592X	MICROCIRCUIT,DI:TRIPLE EXCL OR EXCL NOR	80009	156-0295-00
U420	156-0205-00	B010100	B053592X	MICROCIRCUIT,DI:QUAD 2-INPUT NOR GATE	80009	156-0205-00
U425	156-0182-00	B010100	B053592X	MICROCIRCUIT,DI:TRIPLE 2-3-2 INPUT GATE	80009	156-0182-00
U450	155-0049-01	B010100	B074280	MICROCIRCUIT,DI:MONOLITHIC SWEEP CONTROL	80009	155-0049-01
U450	155-0049-02	B074281		MICROCIRCUIT,DI:SWEEP CONTROL,W/LOCKOUT	80009	155-0049-02
U550	155-0042-03	B010100	B074749	MICROCIRCUIT,LI:MILLER INTEGRATOR	80009	155-0042-03
U550	155-0028-00	B074750		MICROCIRCUIT,LI:ML,MILLER INTEGRATOR	80009	155-0028-00
U600	155-0042-03	B010100	B074749	MICROCIRCUIT,LI:MILLER INTEGRATOR	80009	155-0042-03
U600	155-0028-00	B074750		MICROCIRCUIT,LI:ML,MILLER INTEGRATOR	80009	155-0028-00
VR30	152-0278-00			SEMICOND DEVICE:ZENER,0.4W,3V,5%	80009	152-0278-00
VR42	152-0226-00			SEMICOND DEVICE:ZENER,0.4W,5.1V,5%	80009	152-0226-00
VR490	152-0226-00	B010100	B051668	SEMICOND DEVICE:ZENER,0.4W,5.1V,5%	80009	152-0226-00
VR490	153-0059-00	B051669		SEMICOND DVC,SE:ZENER,0.4W,4.75V,5%,SEL	80009	153-0059-00
W761	131-0566-00	XB070000	B079999X	LINK,TERM.CONNTE:0.086 DIA X 2.975 INCH L	55210	L-2007-1

# REPLACEABLE MECHANICAL PARTS

## PARTS ORDERING INFORMATION

Replacement parts are available from or through your local Tektronix, Inc. Field Office or representative.

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest circuit improvements developed in our engineering department. It is therefore important, when ordering parts, to include the following information in your order: Part number, instrument type or number, serial number, and modification number if applicable.

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc. Field Office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

## SPECIAL NOTES AND SYMBOLS

X000 Part first added at this serial number  
00X Part removed after this serial number

## FIGURE AND INDEX NUMBERS

Items in this section are referenced by figure and index numbers to the illustrations.

## INDENTATION SYSTEM

This mechanical parts list is indented to indicate item relationships. Following is an example of the indentation system used in the description column.

```

1 2 3 4 5           Name & Description
Assembly and/or Component
Attaching parts for Assembly and/or Component
-----
Detail Part of Assembly and/or Component
Attaching parts for Detail Part
-----
Parts of Detail Part
Attaching parts for Parts of Detail Part
-----

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Attaching Parts always appear in the same indentation as the item it mounts, while the detail parts are indented to the right. Indented items are part of, and included with, the next higher indentation. The separation symbol ---^--- indicates the end of attaching parts.

Attaching parts must be purchased separately, unless otherwise specified.

## ITEM NAME

In the Parts List, an Item Name is separated from the description by a colon (:). Because of space limitations, an Item Name may sometimes appear as incomplete. For further Item Name identification, the U.S. Federal Cataloging Handbook H6-1 can be utilized where possible.

## ABBREVIATIONS

"	INCH	ELECTRN	ELECTRON	IN	INCH	SE	SINGLE END
#	NUMBER SIZE	ELEC	ELECTRICAL	INCAND	INCANDESCENT	SECT	SECTION
ACTR	ACTUATOR	ELECTLT	ELECTROLYTIC	INSUL	INSULATOR	SEMICOND	SEMICONDUCTOR
ADPTR	ADAPTER	ELEM	ELEMENT	INTL	INTERNAL	SHLD	SHIELD
ALIGN	ALIGNMENT	EPL	ELECTRICAL PARTS LIST	LPHLDR	LAMPHOLDER	SHLDR	SHOULDERED
AL	ALUMINUM	EQPT	EQUIPMENT	MACH	MACHINE	SKT	SOCKET
ASSEM	ASSEMBLY	EXT	EXTERNAL	MECH	MECHANICAL	SL	SLIDE
ASSY	ASSEMBLY	FIL	FILAMENT HEAD	MGTG	MOUNTING	SLFLKG	SELF-LOCKING
ATTEN	ATTENUATOR	FLEX	FLEXIBLE	NIP	NIPPLE	SLVG	SLEEVING
AWG	AMERICAN WIRE GAGE	FLH	FLAT HEAD	NON WIRE	NOT WIRE WOUND	SPR	SPRING
BD	BOARD	FLTR	FILTER	OD	ORDER BY DESCRIPTION	SQ	SQUARE
BRKT	BRACKET	FR	FRAME or FRONT	OD	OUTSIDE DIAMETER	SST	STAINLESS STEEL
BR	BRASS	FSTNR	FASTENER	OVH	OVAL HEAD	STL	STEEL
BRZ	BRONZE	FT	FOOT	PH BRZ	PHOSPHOR BRONZE	SW	SWITCH
BSHG	BUSHING	FXD	FIXED	PL	PLAIN or PLATE	T	TUBE
CAB	CABINET	GSKT	GASKET	PLSTC	PLASTIC	TERM	TERMINAL
CAP	CAPACITOR	HDI	HANDIE	PN	PART NUMBER	THD	THREAD
CER	CERAMIC	HEX	HEXAGON	PNH	PAN HEAD	THK	THICK
CHAS	CHASSIS	HEX HD	HEXAGONAL HEAD	PWR	POWER	TNSN	TENSION
CKT	CIRCUIT	HEX SOC	HEXAGONAL SOCKET	RCPT	RECEPTACLE	TPG	TAPPING
CCMP	COMPOSITION	HLCPS	HELICAL COMPRESSION	RES	RESISTOR	TRH	TRUSS HEAD
CONN	CONNECTOR	HLEXT	HELICAL EXTENSION	RBD	RIGID	V	VOLTAGE
COV	COVER	HV	HIGH VOLTAGE	RLF	RELIEF	VAR	VARIABLE
CPLG	COUPLING	IC	INTEGRATED CIRCUIT	RTNR	RETAINER	W/	WITH
CRT	CATHODE RAY TUBE	ID	INSIDE DIAMETER	SCH	SOCKET HEAD	WSHR	WASHER
DEG	DEGREE	IDNT	IDENTIFICATION	SCOPE	OSCILLOSCOPE	XFMR	TRANSFORMER
DWR	DRAWER	IMPLR	IMPELLER	SCR	SCREW	XSTR	TRANSISTOR

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CROSS INDEX—MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip
0008X	STAUFFER SUPPLY	105 SE TAYLOR	PORTLAND, OR 97214
000CY	NORTHWEST FASTENER SALES, INC.	7923 SW CIRRUS DRIVE	BEAVERTON, OREGON 97005
05129	KILO ENGINEERING COMPANY	2015 D	LA VERNE, CA 91750
05820	WAKEFIELD ENGINEERING, INC.	ABDUSON ROAD	WAKEFIELD, MA 01880
08261	SPECTRA-STRIP CORP.	7100 LAMPSON AVE.	GARDEN GROVE, CA 92642
12327	FREEWAY CORPORATION	9301 ALLEN DRIVE	CLEVELAND, OH 44125
12360	ALBANY PRODUCTS CO., DIV. OF PNEUMO DYNAMICS CORPORATION	145 WOODWARD AVENUE	SOUTH NORWALK, CT 06586
13511	AMPHENOL CARDRE DIV., BUNKER RAMO CORP.		LOS GATOS, CA 95030
15912	ANSLEY ELECTRONICS CORP., A SUB OF THOMAS AND BETTS CORP.	3208 HUMBOLDT ST.	LOS ANGELES, CA 90065
22526	BERG ELECTRONICS, INC.	YOUK EXPRESSWAY	NEW CUMBERLAND, PA 17070
45722	USM CORP., PARKER-KALON FASTENER DIV.		CAMPBELLSVILLE, KY 42718
55210	GETTIG ENG. AND MFG. COMPANY	PO BOX 85, OFF ROUTE 45	SPRING MILLS, PA 16875
71785	IRW, CINCH CONNECTORS	1501 MORSE AVENUE	ELK GROVE VILLAGE, IL 60007
73743	FISCHER SPECIAL MFG. CO.	446 MORGAN ST.	CINCINNATI, OH 45206
74443	HOLO-KROME CO.	31 BROOK ST. WEST	HARTFORD, CT 06110
78189	ILLINOIS TOOL WORKS, INC. SHAKEPROOF DIVISION	ST. CHARLES ROAD	ELGIN, IL 60120
78471	TILLEY MFG. CO.	900 INDUSTRIAL RD.	SAN CARLOS, CA 94070
79136	WALDES, KOHINOOR, INC.	47-16 AUSTEL PLACE	LONG ISLAND CITY, NY 11101
79807	WROUGHT WASHER MFG. CO.	2100 S. O BAY ST.	MILWAUKEE, WI 53207
80009	TEKTRONIX, INC.	P O BOX 500	BEAVERTON, OR 97077
82647	TEXAS INSTRUMENTS, INC., CONTROL PRODUCTS DIV.	34 FOREST ST.	ATTLEBORO, MA 02703
83309	ELECTRICAL SPECIALITY CO., SUBSIDIARY OF BELDEN CORP.	213 E. HARRIS AVE. SOUTH	SAN FRANCISCO, CA 94080
83385	CENTRAL SCREW CO.	2530 CRESCENT DR.	BROADVIEW, IL 60153
93907	CANGAR SCREW AND MFG. CO.	600 18TH AVE.	ROCKFORD, IL 61101
97464	INDUSTRIAL RETAINING RING CO.	57 CORDIER ST.	IRVINGTON, NJ 07111

Replaceable Mechanical Parts—5B42

Fig. & Index No.	Tektronix Part No.	Serial/Model No.		Qty	1 2 3 4 5					Name & Description	Mfr Code	Mfr Part Number
		Eff	Dscont									
1-1	337-1399-00			2						SHLD, ELECTRICAL: SDR	80009	337-1399-00
-2	366-0494-00			2						KNOB: GRAY WITH SETSCREW	80009	366-0494-00
	-----			-						. EACH KNOB INCLUDES:		
	213-0153-00			1						. SETSCREW: 5-40 X 0.125, STL BK OXD, HEX	000CY	0BD
-3	366-1125-00			1						KNOB: GY, 0.127 ID X 0.531 H	80009	366-1125-00
	213-0153-00			1						. SETSCREW: 5-40 X 0.125, STL BK OXD, HEX	000CY	0BD
-4	366-1373-01			1						KNOB: CAL	80009	366-1373-01
	213-0153-00			1						. SETSCREW: 5-40 X 0.125, STL BK OXD, HEX	000CY	0BD
-5	366-1456-00	B010100	B089999	1						KNOB: LIGHT GRAY--MAIN SEC/DIV	80009	366-1456-00
	366-1456-01	B090000		1						KNOB: GY, 0.252 ID X 1.15 OD X 0.59 H	80009	366-1456-01
	366-1710-00	B010100	B074789	1						KNOB SET: GY, SEC/DIV, 0.252 ID X 1.531	80009	366-1710-00
	213-0153-00			4						. SETSCREW: 5-40 X 0.125, STL BK OXD, HEX	000CY	0BD
	366-1710-01	B074790	B089999X	1						KNOB SET: GY, SEC/DIV, 0.252 ID X 1.531	80009	366-1710-01
	213-0153-00			4						. SETSCREW: 5-40 X 0.125, STL BK OXD, HEX	000CY	0BD
	213-0153-00			2						. SETSCREW: 5-40 X 0.125, STL BK OXD, HEX	000CY	0BD
	366-1710-00	B053007	B074789	1						KNOB SET: GRAY, SEC/DIV	80009	366-1710-00
	366-1710-01	B074790		1						KNOB SET: GRAY, SEC/DIV	80009	366-1710-01
	213-0153-00			4						. SETSCREW: 5-40 X 0.125, STL BK OXD, HEX	000CY	0BD
-6	358-0414-00	B010100	B074789	1						BUSHING, SLEEVE: 0.25 OD X 0.21 INCH LONG	80009	358-0414-00
	358-0603-00	B074790		1						BUSHING, SLEEVE: 0.125 ID X 0.2 L	80009	358-0603-00
-7	366-1455-00	B010100	B053006	1						KNOB: GRAY--DELAYED	80009	366-1455-00
	366-1455-01	B053007	B074789	1						KNOB: GY, 0.252 ID X 0.705 OD X 0.55 H	80009	366-1455-01
	366-1455-02	B074790	B089999	1						KNOB: CY, 0.249 ID X 0.705 OD X 0.55 H	80009	366-1455-02
	366-1453-03	B090000		1						KNOB: CY, 0.249 ID X 0.705 OD X 0.55 H	80009	366-1453-03
	213-0153-00			2						. SETSCREW: 5-40 X 0.125, STL BK OXD, HEX	000CY	0BD
-8	366-1286-02	B010100	B069999	1						KNOB: LATCH	80009	366-1286-02
	366-1690-00	B070000		1						KNOB: LATCH	80009	366-1690-00
										(ATTACHING PARTS)		
-9	214-1840-00	B010100	B069999	1						PIN, KNOB SECRG: 0.094 OD X 0.120 INCH LONG	80009	214-1840-00
	105-0719-00	B070000		1						LATCH, RETAINING: PLUG-IN	80009	105-0719-00
										----- * -----		
-10	366-1257-25			1						PUSH BUTTON: GRAY--AUTO TRIG	80009	366-1257-26
-11	366-1402-75			1						PUSH BUTTON: SIL GY, LF REJ	80009	366-1402-75
-12	366-1257-27			1						PUSH BUTTON:--AC COMPI.	80009	366-1257-27
-13	366-1257-28			1						PUSH BUTTON: GRAY--+SLOPE	80009	366-1257-28
-14	366-1257-29			1						PUSH BUTTON: GRAY--SNGL SWP	80009	366-1257-29
-15	366-1257-30			1						PUSH BUTTON: GRAY--RESET	80009	366-1257-30
-16	366-1257-57			1						PUSH BUTTON: GRAY--LEFT	80009	366-1257-57
-17	366-1257-58			1						PUSH BUTTON: GRAY--RIGHT	80009	366-1257-58
-18	366-1257-23			1						PUSH BUTTON: LINE	80009	366-1257-23
-19	366-1257-24			1						PUSH BUTTON: GRAY--EXT	80009	366-1257-24
-20	366-1328-26			1						PUSH BUTTON: DARK GRAY--TRIG AFTER DLY	80009	366-1328-26
-21	366-1402-80			1						PUSH BUTTON: GRAY--DLY'D SWP	80009	366-1402-80
-22	366-1402-79			1						PUSH BUTTON: GRAY--INTENS SWP	80009	366-1402-79
-23	366-1402-65			1						PUSH BUTTON: GRAY--MAIN SWP	80009	366-1402-65
-24	366-1257-31			1						PUSH BUTTON: SIL GRAY, CHOP	80009	366-1257-31
-25	366-1257-25			1						PUSH BUTTON: SWP MAG	80009	366-1257-25
-26	366-1328-22			1						PUSH BUTTON: DARK GRAY--+ SLOPE	80009	366-1328-22
-27	426-0681-00			17						FR, PUSH BUTTON: GRAY PLASTIC	80009	426-0681-00
-28	-----			1						RESISTOR, VAR: (SEE R520 EPL)		
										(ATTACHING PARTS)		
-29	331-0247-00			1						DIAL, CONTROL: 10 TURN	05129	771-6-1
										----- * -----		
-30	131-0955-00			1						CONNECTOR, RCPT, :BNC, FEMALE, W/HARDWARE	13511	31-279
-31	210-0255-00			1						TERMINAL, LUG: 0.391" ID INT TOOTH	80009	210-0255-00
-32	-----			1						RESISTOR, VAR: (SEE R680 EPL)		
										(ATTACHING PARTS)		
-33	210-0583-00			1						NUT, PLAIN, HEX.: 0.25-32 X 0.312 INCH, BRS	73743	2X20317-402
-34	210-0940-00			1						WASHER, FLAT: 0.25 ID X 0.375 INCH OD, STL	79807	0BD
										----- * -----		
-35	-----			2						RESISTOR, VAR: (SEE R320, R410 EPL)		
										(ATTACHING PARTS)		
-36	210-0583-00			2						NUT, PLAIN, HEX.: 0.25-32 X 0.312 INCH, BRS	73743	2X20317-402
-37	210-0940-00			2						WASHER, FLAT: 0.25 ID X 0.375 INCH OD, STL	79807	0BD
										----- * -----		

Replaceable Mechanical Parts--5B42

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	Discont	Qty	1 2 3 4 5	Name & Description	Mfr Code	Mfr Part Number
1-38	358-0029-00			1		BSHG, MACH, THD: HEX, 0.375-32 X 0.438" LONG (ATTACHING PARTS)	80009	358-0029-00
-39	210-0590-00			1		NUT, PLATN, HEX.: 0.375 X 0.438 INCH, STL	73743	2X28269-402
-40	210-0978-00			1		WASHER, FLAT: 0.375 ID X 0.50 INCH OD, STL	78471	OBD
-41	344-0195-01			1		CLIP, ELECTRICAL: CAM SHAFT - * - - -	80009	344-0195-01
-42	333-1665-00	B010100	B079999	1		PANEL, FRONT:	80009	333-1665-00
	333-1665-01	B080000		1		PANEL, FRONT:	80009	333-1665-01
-43	378-0729-00			4		LENS, LIGHT: CLEAR	80009	378-0729-00
-44	200-1482-00			1		COVER, LAMP: RIGHT	80009	200-1482-00
-45	200-1483-00			1		COVER, LAMP: LEFT	80009	200-1483-00
-46	214-1513-01	B010100	B069999	1		LCH, PLUG-IN RET:	80009	214-1513-01
	105-0718-00	B070000	B074915	1		BAR, LATCH RLSE:	80009	105-0718-00
	105-0718-01	B074916		1		BAR, LATCH RLSE: (ATTACHING PARTS)	80009	105-0718-01
-47	213-0254-00			1		SCREW, TPG, TF: 2-32 X 0.250, 100 DEG, PLH - * - - -	45722	OBD
-48	386-2354-00			1		SUBPANEL, FRONT: (ATTACHING PARTS)	80009	386-2354-00
-49	213-0229-00			4		SCR, TPG, THD FOR: 6-20 X 0.375" 100 DEG, PLH STL - * - - -	93907	OBD
-50	337-1701-00			1		SHIELD, ELEC: REAR SUBPANEL	80009	337-1701-00
-51	384-1101-00			3		EXTENSION SHAFT: 4.14 INCH LONG	80009	384-1101-00
-52	384-1136-00			1		EXTENSION SHAFT: 0.95 INCH LONG	80009	384-1136-00
-53	384-1099-00			4		EXTENSION SHAFT: PUSH BUTTON, 1.54 INCH LONG	80009	384-1099-00
-54	384-1129-00			3		EXTENSION SHAFT: 5.607 INCH LONG	80009	384-1129-00
-55	384-1059-00			1		EXTENSION SHAFT: 6.58 INCH LONG	80009	384-1059-00
-56	384-1116-00			1		EXTENSION SHAFT: 10.456 L X 0.081 OD SST	80009	384-1116-00
-57	378-0541-00			1		LENS, LIGHT: PROSTED	80009	378-0541-00
-58	162-0055-00			1		INSUL, SLVG, ELEC: 0.268 ID, VINYL, 0.303 OD	83309	OBD
-59	-----			1		CKT BOARD ASSY: A(SEE A1 EPL)		
-60	131-0566-00			5		LINK, TERM, CONNE: 0.086 DIA X 2.375 INCH L	55210	L-2007-1
-61	214-1292-00			1		HEAT SINK, ELEC: TRANSISTOR	05820	205-AB
-62	136-0241-00			1		SOCKET, PLUG-IN: 10 CONTACT, ROUND	71785	133-99-12-064
-63	136-0260-02	B010100	B053592	3		SOCKET, PLUG-IN: 16 CONTACT, LOW CLEARANCE	82647	C9316-18
	136-0260-02	B053593		2		SOCKET, PLUG-IN: 16 CONTACT, LOW CLEARANCE	82647	C9316-18
-64	136-0252-04			20		SOCKET, PIN TERM: U/W 0.016-0.018 DIA PINS	22526	75060-007
-65	214-0579-00			5		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
-66	131-0604-00			26		CONTACT, ELEC: CKT WD SW, SPR, CH BE (FOR REPAIR INFO SEE MAINTENANCE SECTION OF THE APPROPRIATE 5400-SERIES MANUAL.)	80009	131-0604-00
-67	263-1023-00			1		SW CAM ACTR AS: TIME/DIV	80009	263-1023-00
-68	354-0391-00			1		RING, RETAINING: 0.395" FREE ID X 0.025" STL	97464	3100-43-CD
-69	214-1139-02			1		SPRING, FLAT: GREEN COLORED	80009	214-1139-02
-70	214-1139-03			1		SPRING, FLAT: RED COLORED	80009	214-1139-03
-71	214-1127-00			2		ROLLER, DETENT: 0.125 DIA X 0.125 INCH L	80009	214-1127-00
-72	401-0081-02			1		BEARING, CAM SW: FRONT	80009	401-0081-02
-73	105-0407-00			1		ACTUATOR, CAM SW:	80009	105-0407-00
-74	401-0146-00			1		BEARING, CAM SW: REAR	80009	401-0146-00
-75	210-0406-00			8		NUT, PLAIN, HEX.: 4-40 X 0.188 INCH, BRS (ATTACHING PARTS FOR ACTR ASSY) - * - - -	73743	2X12151-402
-76	211-0116-00			4		SCR, ASSEM WSHR: 4-40 X 0.312 INCH, PNH BRS	83385	OBD
-77	337-1418-01	B010100	B095245	1		SHIELD, ELEC: CAM SWITCH CASTING	80009	337-1418-01
	337-1418-02	B095246		1		SHIELD, ELEC: CIRCUIT BOARD (ATTACHING PARTS)	80009	337-1418-02
-78	213-0277-00	B010100	B051668	3		SCR, TPG, THD FOR: 2-56 X 0.312 INCH, PNH STL	83385	OBD
-79	211-0001-00	B051669		3		SCREW, MACHINE: 2-56 X 0.25 INCH, PNH STL	83385	OBD
-80	210-0001-00			3		WASHER, LOCK: INTL, 0.092 ID X 0.18" OD, STL	78189	1202-00-00-0541C
-81	210-1008-00			3		WASHER, FLAT: 0.09 ID X 0.188" OD, BRS	12360	OBD
-82	342-0167-00			1		INSULATOR, PLATE: 2.45 INCH LONG - * - - -	80009	342-0167-00
-83	-----			1		SWITCH, PUSH: (SEE S320 EPL)		
-84	-----			1		SWITCH, PUSH: (SEE S10 EPL)		
-85	-----			1		SWITCH, PUSH: (SEE S95 EPL)		
-86	384-1136-00			1		EXTENSION SHAFT: 0.95 INCH LONG	80009	384-1136-00
-87	361-0382-00			10		SPACER, PB SW: BROWN, 0.275 INCH LONG	80009	361-0382-00
-88	-----			1		SWITCH, PUSH: (SEE S60 EPL)		

Replaceable Mechanical Parts—5B42

Fig. & Index No.	Tektronix Part No.	Serial/Model No.		Qty	1 2 3 4 5	Name & Description	Mfr Code	Mfr Part Number
		Eff	Dscont					
1-87	361-0384-00			8		SPACER, PB SW: 0.133 INCH LONG	80009	361-0384-00
-88	376-0039-00	B010100	B010389	1		ADPT, SHAFT, CPLG: 0.128 AND 0.082" DIA SHAFT	80009	376-0039-00
	376-0050-00	B010390		1		CPLG, SHAFT, FLBX: FOR 0.081/0.125 INCH SHAFTS	80009	376-0050-00
	213-0075-00	B010100	B010389	2		SETScrew: 4-40 X 0.094 INCH, HEX SOC STL	000HK	0BD
	213-0022-00	B010390		4		SETScrew: 4-40 X 0.188 INCH, HEX SOC STL	74445	0BD
-89	-----			1		RESISTOR, VAR: (SEE R550/S900 EPL) (ATTACHING PARTS)		
-90	210-0583-00			1		NUT, PLAIN, BRK: 0.25-32 X 0.312 INCH, BR	73743	2X20317-402
-91	210-0940-00			2		WASHER, FLAT: 0.25 ID X 0.375 INCH OD, STL	79807	0BD
-92	407-0803-00			1		BRACKET, ELEC SW: BRASS -----*----- (ATTACHING PARTS FOR CKT BD)	80009	407-0803-00
-93	211-0116-00			4		SCR, ASSEM WSHR: 4-40 X 0.312 INCH, PNH BRS	83385	0BD
-94	213-0336-00			1		SCR, TPG, THD FOR: 6-32 X 1.25 INCH, PNH STL	000BK	0BD
-95	210-0801-01			1		WASHER, FLAT: 0.140 ID X 0.281" OD, STL	12327	0BD
-96	361-0516-00			1		SPACER, SLIP: 0.189 OD X 0.986" LONG BRS -----*-----	80009	361-0516-00
-97	384-0883-00			1		SHAFT, CAM SW: 9.850 L X 0.125 OD INNER	80009	384-0883-00
-98	-----			1		CKT BOARD ASSY: 3 (SEE A2 EPL)		
-99	214-1292-00			1		HEAT SINK, ELEC: TRANSISTOR	05820	205-AB
-100	136-0241-00			1		SOCKET, PLUG-IN: 10 CONTACT, ROUND	71785	133-99-12-064
-101	136-0250-02	B010100	B053592	3		SOCKET, PLUG-IN: 16 CONTACT, LOW CLEARANCE	82647	09316-18
	136-0260-02	B053592		1		SOCKET, PLUG-IN: 16 CONTACT, LOW CLEARANCE	82647	09316-18
-102	214-0579-00			4		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
-103	131-0604-00			14		CONTACT, ELEC: CKT BD SW, SPR, CU BE (FOR REPAIR INFO SEE MAINTENANCE SECTION OF THE APPROPRIATE 5400-SERIES MANUAL.)	80009	131-0604-00
	131-0566-00	B070009		1		LINK, TERM. CONNE: 0.086 DIA X 2.375 INCH L	55210	L-2007-1
	263-1022-00	B010100	B095255	1		SW CAM ACTR AS: TIME/DIV	80009	263-1022-00
	263-1022-02	B095256		1		SW CAM ACTR ASY: TIME/DIV	80009	263-1022-02
-104	354-0391-00	B010100	B095255	1		RING, RETAINING: 0.395" FREE ID X 0.025" STL	97464	3100-43-00
	354-0390-00	B095256		1		RING, RETAINING: 0.338 ID X 0.025" THK, STL	79136	5100-37MD
-105	214-1139-02			1		SPRING, PLAT: GREEN COLORED	80009	214-1139-02
-106	214-1139-03			1		SPRING, PLAT: RED COLORED	80009	214-1139-03
-107	214-1127-00	B010100	B095255	2		ROLLER, DETENT: 0.125 DIA X 0.125 INCH L	80009	214-1127-00
	214-1752-00	B095256		2		ROLLER, DETENT:	80009	214-1752-00
-108	401-0081-02	B010100	B095255	1		BEARING, CAM SW: FRONT	80009	401-0081-02
	401-0180-00	B095256		1		BEARING, CAM SW: FRONT	80009	401-0180-00
-109	105-0408-00	B010100	B095255	1		ACTUATOR, CAM SW:	80009	105-0408-00
	105-0408-01	B095256		1		ACTUATOR, CAM SW: TIME/DIV, FRONT	80009	105-0408-01
-110	401-0115-00	B010100	B095255	1		BEARING, CAM SW: CENTER	80009	401-0115-00
	401-0178-04	B095256		1		BEARING, CAM SW: CENTER/REAR	80009	401-0178-04
-111	210-0406-00			8		NUT, PLAIN, HEX: 4-40 X 0.188 INCH, BRS (ATTACHING PARTS FOR ACTR ASSY)	73743	2X12161-402
-112	211-0116-00			4		SCR, ASSEM WSHR: 4-40 X 0.312 INCH, PNH BRS -----*-----	83385	0BD
-113	-----			1		SWITCH, PUSH: (SEE S700 EPL)		
-114	361-0363-00			2		SPACER, PB SW: CHARCOAL, 0.33 INCH LONG	80009	361-0363-00
-115	-----			1		SWITCH, PUSH: (SEE S400 EPL)		
-116	-----			1		SWITCH, PUSH: (SEE S575 EPL)		
-117	361-0384-00			6		SPACER, PB SW: 0.133 INCH LONG	80009	361-0384-00
-118	-----			1		SWITCH, PUSH: (SEE S650 EPL)		
-119	-----			1		SWITCH, PUSH: (SEE S410 EPL)		
-120	361-0382-00			4		SPACER, PB SW: BROWN, 0.275 INCH LONG (ATTACHING PARTS)	80009	361-0382-00
-121	213-0146-00			3		SCR, TPG, THD FOR: 6-20 X 0.313 INCH, PNH STL	83385	0BD
-122	210-0801-01	B010100	B010200X	3		WASHER, FLAT: 0.140 ID X 0.281" OD, STL	12327	0BD
-123	211-0116-00			4		SCR, ASSEM WSHR: 4-40 X 0.312 INCH, PNH BRS -----*-----	83385	0BD
-124	131-1372-00	B010100	B074325	2		CONTACT, ELEC: PLUG-IN GND, CU BE BRT DIP	80009	131-1372-00
	131-1372-01	B074327		2		CONTACT, ELEC: PLUG-IN GND, CU BE BRT DIP	80009	131-1372-01
-125	426-0724-02			1		FR SECT, PLUG-IN: BOTTOM	80009	426-0724-02
-126	426-0725-03			1		FR SECT, PLUG-IN: TOP	80009	426-0725-03
	198-2137-00			1		WIRE KIT, ELEC:	80009	198-2137-00
-127	175-0826-00	XB080000		FT		WIRE, ELECTRICAL: 3 WIRE RIBBON	80009	175-0826-00
-128	175-0827-00			FT		CABLE, SP, ELEC: 4, 26 AWG, STRD, PVC JKT, RBN	08261	5S04267(1061)0C
-129	175-1405-00			3		CA ASSY, SP, ELEC: PLAT, 2.0 LONG	15912	8ST 22A-10
	334-3448-00	XB085080		1		MARKER, IDENT: MARKED NOTICE	80009	334-3448-00



## INTERNAL ADJUSTMENT PROCEDURE

### Test Equipment

For calibration, and a complete accuracy check of the 5B42, the following equipment is required:

Tektronix TG 501 Time Mark Generator (requires a TM 500-series power module).

Square Wave Generator capable of producing a 0.5 V, 1-kHz square wave with  $\leq 20$  ns risetime. Tektronix PG 506 Calibration Generator (requires a TM 500-series power module).

Tektronix 5400-series oscilloscope (provides power for 5B42).

Vertical Plug-In for the 5400-series oscilloscope, such as the 5A48 Dual Trace Amplifier.

Voltmeter, at least 20,000  $\Omega/V$ , or a test oscilloscope with 10X probe capable of accurately determining 0 V.

50  $\Omega$  Coaxial Cable with bnc connectors, Tektronix Part No. 012-0057-01.

Plug-In Extender, Tektronix Part No. 067-0645-03.

50 $\Omega$  feed through termination, Tektronix Part No. 011-0049-01 or equivalent.

### Preparation

Remove the covers from the 5B42 and the cabinet panels from the 5400-series oscilloscope. Insert the 5B42 in the right hand plug-in compartment. Connect the plug-in extender to the left hand vertical plug-in interface connector, and connect the vertical plug-in to the extender. Make certain that the vertical plug-in is oriented properly: top of the plug-in to top of the extender, to top of the oscilloscope interface connector. Use of the extender on the vertical plug-in is necessary to gain access to adjustments on the A Board. See the Adjustments foldout page for the test point and adjustment locations. Make adjustments at an ambient temperature between +20°C and +30°C (+68°F and +86°F) for best accuracy.

### 1. Adjust External Horizontal Balance

Set the MAIN SEC/DIV switch to 1 m, and push the AUTO TRIG, EXT, and MAIN SWP buttons. All other buttons should be out. Obtain a visible free running trace that is vertically centered in the graticule area by adjusting the vertical and horizontal POSITION controls and the display module INTENSITY control. Using the 5B42 POSITION control, position the start of the trace at the extreme left vertical graticule line. Switch the MAIN SEC/DIV switch to the AMP position. Reduce the INTENSITY control, if necessary, to prevent burning the

phosphor. Move the spot horizontally to the graticule center by adjusting R25, Ext Hor Cent, located on the A Board.

### 2. Adjust External Horizontal Gain

Apply a 0.5 V, 1 kHz square wave from the square-wave generator through the coaxial cable to the EXT HORIZ AMPL connector. Adjust R52, Ext Hor Gain, located on the A Board for 10 divisions of horizontal deflection. Use the 5B42 POSITION control to position the dots to the extreme right and left vertical graticule lines while making this adjustment.

### 3. Adjust Input Attenuator Compensation

Connect a fast rise ( $\leq 20$  ns) 0.5 V square wave through a terminated coaxial cable to the A INPUT connector.

Adjust C15, Att Comp, located on the A Board for minimum horizontal overshoot or undershoot on the two dots referred to in the previous step.

### 4. Adjust Main Sweep Offset

Connect the probe of a test oscilloscope (set for 50 mV/Div) or the positive lead of the voltmeter to TP545. Connect the negative lead to the 5B42 chassis. Adjust R545, Main Swp Offset on the A Board for a reading of 0 V.

### 5. Adjust 1 ms Timing

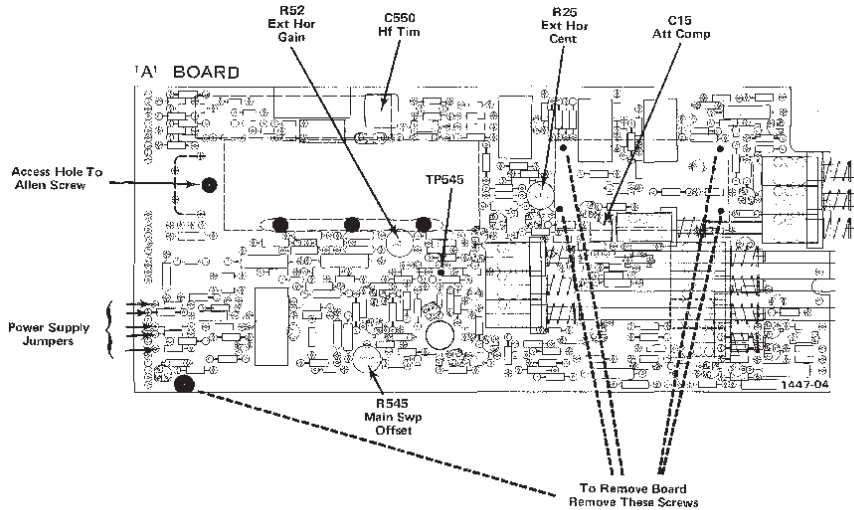
Connect the time mark generator to the vertical plug-in. Set the generator for 1 ms markers. Set the MAIN SEC/DIV switch to position 1 m, and push the LEFT TRIG SOURCE button. Obtain a stable display by adjusting the MAIN TRIG LEVEL knob. Make certain that the CAL knob is in the extreme clockwise detent position. Adjust R655, Lf Tim, on the B Board for a spacing of one time mark per vertical graticule line. Push the DLY'D SWP button. Check for a spacing of one marker per vertical graticule line, within specifications. Push the MAIN SWP button.

### 6. Adjust Fast Main Sweep Timing

Set the MAIN SEC/DIV switch to the 5  $\mu$  position. Apply 0.5  $\mu$ s markers to the vertical plug-in. Obtain a stable display. Adjust C550, Hf Tim, on the A Board for one time mark per vertical graticule line. Check the .2  $\mu$  and .1  $\mu$  positions of the MAIN SEC/DIV switch for one mark per vertical graticule line, within specifications. It may be necessary to go back to the 5  $\mu$  position and compromise the adjustment of C550 so that all three ranges are within specifications.

# ADJUSTMENTS

5B42



## 7. Adjust Magnifier Gain

Change the MAIN SEC/DIV switch to position 1 m. Apply 0.1 ms markers to the vertical plug-in. Obtain a stable display. Center the trace horizontally in the graticule area. Press the SWP MAG button. Adjust R658, Mag Gain, located on the B Board for one time mark per vertical graticule line. Release the SWP MAG button.

## 8. Adjust Delayed Sweep Fast Timing

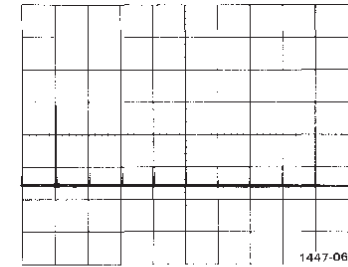
Push the DLY'D SWP button. Set the DLY'D SEC/DIV switch to the 5  $\mu$  position and the MAIN SEC/DIV switch to the 1  $\mu$  position. Apply 0.5  $\mu$ s markers to the vertical plug-in. Obtain a stable display by adjusting the MAIN TRIG LEVEL control. Set the DELAY TIME MULT dial fully CCW. Adjust C615, Hf Tim, on the B Board for one time mark per vertical graticule line.

## 9. Adjust Delay Sweep Start

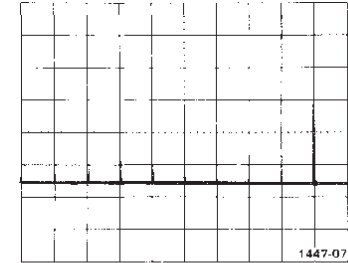
Change the MAIN SEC/DIV dial to the 0.1 m position. Press the INTENS SWP button. Set the DLY'D SEC/DIV switch to the 10  $\mu$  position. Apply 0.1 ms markers to the vertical plug-in. Obtain a stable display by adjusting the MAIN TRIG LEVEL control. Check that the DELAY TIME MULT dial reads 0.2 in the fully CCW position. If not, loosen the Allen set screw and reset the dial. Adjust the intensity control so that the intensified portion of the sweep is clearly visible. Position the trace so that the trace starts on the extreme left graticule line. Set the DELAY TIME MULT dial to read 1.00. Adjust R530, Dly Strt, located on the B Board so that the intensified portion of the sweep starts on the second vertical graticule line from the left of the graticule. See Fig. 3-1A.

## 10. Adjust Delay Sweep Stop

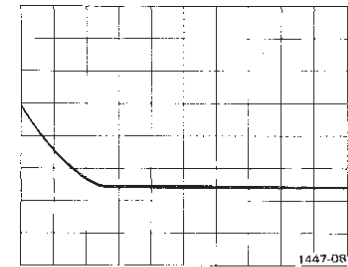
Make certain that the INTENS SWP button is depressed. Turn the DELAY TIME MULT dial to read 9.00. Make certain that the trace starts at the extreme left graticule line. Adjust R522, Dly Stp, located on the B Board so that the intensified portion of the trace starts on the second vertical graticule line from the right of the graticule. See Fig. 3-1B. Go back to step 9 and repeat both steps until no interaction exists. To make the final adjustments, press the DLY'D SWP button. Adjust the delay start and stop potentiometers so that the time marks, visible at the start of the intensified portion in the intensified sweep mode, are just visible at the start of the trace in the delayed sweep mode. Fig. 3-1C shows the correct settings.



(A) Intensified portion set to 2nd time marker.

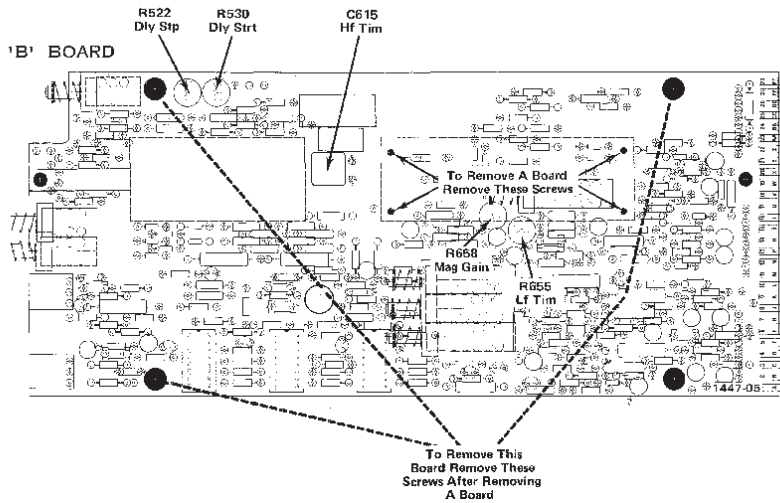


(B) Intensified portion set to 10th time marker.

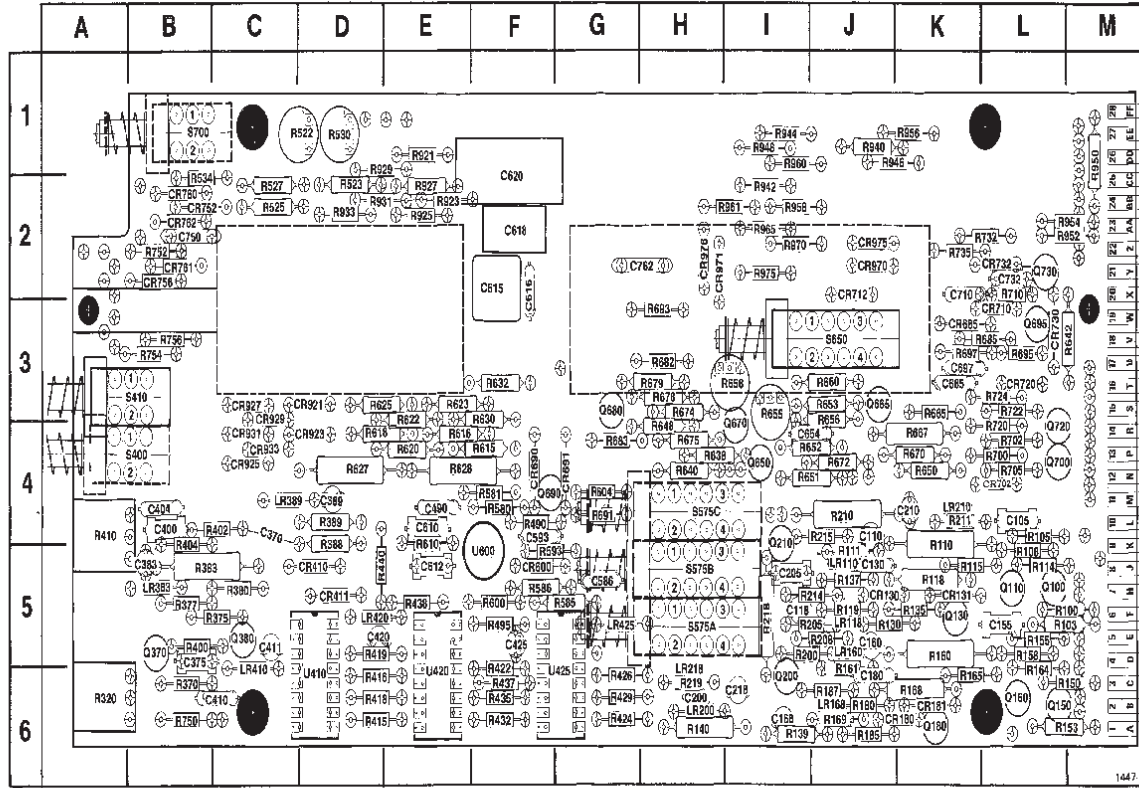


(C) Typical display showing correct adjustment of R522 and R530.

Fig. 3-1. Delay Start and Stop adjustments.



PARTS LOCATION GRID

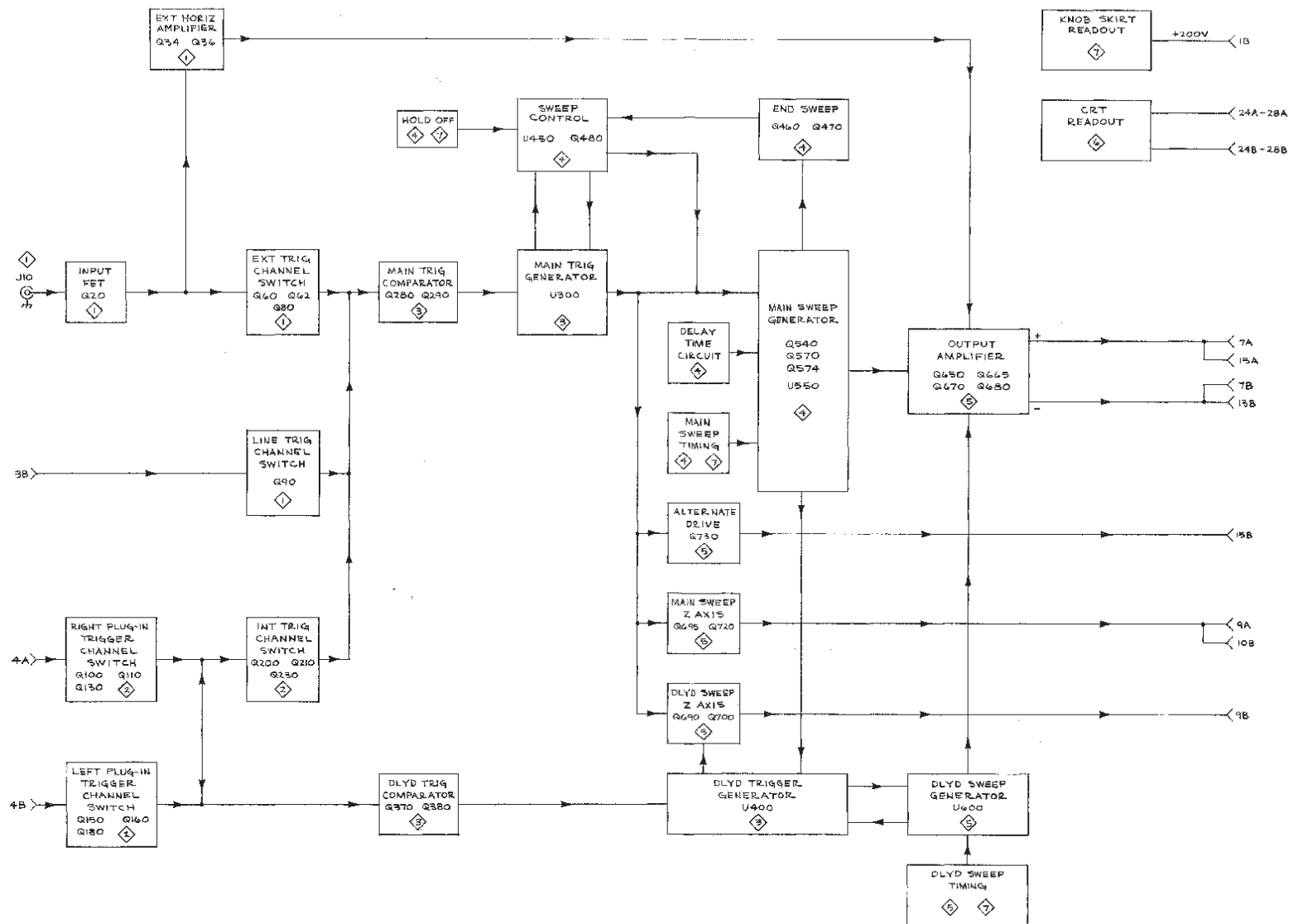


Components shown with dashed lines are located on back side of board.

A2-B circuit board (SV 8063892 & below).

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C105	L4	Q100	L5	R495	F5	R960	I1
C110	J4	Q110	L5	R522	D1	R961	I2
C118	I6	Q130	K3	R523	D2	R965	I2
C130	J5	Q150	L8	R526	C2	R970	I2
C155	L5	Q160	L6	R527	C2	R975	I2
C160	J5	Q180	K6	R530	D1		
C168	I6	Q200	I6	R534	B2	S400	B4
C160	J5	Q210	G5	R590	F4	S410	B3
C200	H6	Q370	G5	R591	F4	S575A	H5
C205	I5	Q380	C5	R585	G5	S575B	H5
C210	K4	Q650	I4	R586	F5	S575C	H4
C218	I6	Q665	J3	R593	F5	S650	J3
C370	C4	Q670	I4	R600	F5	S700	B1
C375	B5	Q680	G3	R604	G4		
C363	B5	Q690	F4	R610	E4	U110	D6
C369	D4	Q698	L3	R615	F4	U420	E8
C400	B4	Q700	L4	R616	E4	U425	G6
C404	B4	Q720	L4	R618	D4	U600	F5
C410	C6	Q730	L2	R620	E4		
C411	C5	R100	L5	R622	E3		
C420	D5	R103	L5	R623	E3		
C425	F5	R105	L4	R626	D3		
C490	E4	R105	L4	R627	D4		
C586	G5	R108	L5	R628	E4		
C593	F4	R110	K3	R630	F3		
C610	E4	R111	J5	R632	F3		
C612	E5	R114	L5	R636	H4		
C615	F2	R115	K5	R640	H4		
C616	F2	R119	K2	R642	L3		
C618	F2	R119	J5	R648	H4		
C620	F1	R130	J5	R650	K4		
C634	I4	R135	K5	R651	I4		
C685	K3	R137	J5	R652	I4		
C697	K3	R139	I5	R653	J3		
C710	K2	R140	H6	R655	I3		
C732	L2	R150	L6	R656	J3		
C750	B2	R153	L6	R658	I3		
C762	H2	R155	L5	R660	J3		
		R158	L5	R665	K3		
CR130	J5	R160	K5	R667	K4		
CR131	K5	R161	J6	R670	K4		
CR160	K6	R164	L6	R672	J4		
CR181	K6	R165	K6	R674	H3		
CR410	D5	R168	K6	R675	H4		
CR411	D5	R169	J6	R678	H3		
CR800	F5	R180	J6	R679	H3		
CR805	K3	R182	J6	R682	H3		
CR890	F4	R187	J6	R683	G4		
CR891	G4	R200	I5	R685	L3		
CR710	L3	R205	I5	R691	G4		
CR712	J2	R208	J5	R688	H3		
CR720	L3	R210	J4	R696	L3		
CR730	L3	R211	K4	R697	K3		
CR732	L2	R214	I5	R700	L4		
CR752	B2	R216	J4	R702	L4		
CR756	B2	R218	I5	R705	L4		
CR760	B2	R219	H6	R710	L2		
CR761	B2	R220	A6	R720	L4		
CR762	B2	R370	B6	R722	L3		
CR821	D3	R375	C5	R724	L3		
CR822	D4	R377	B6	R732	L2		
CR825	C4	R380	C5	R735	K2		
CR927	C3	R383	B5	R750	B6		
CR929	C3	R388	D4	R752	B2		
CR931	C4	R389	D4	R754	B3		
CR933	C4	R400	B5	R756	B3		
CR970	J2	R402	C3	R821	E1		
CR971	H2	R404	B5	R823	E2		
CR975	J2	R410	A4	R825	E2		
CR976	H2	R415	D6	R827	E2		
		R416	D6	R829	D1		
LR110	J5	R418	D6	R831	D2		
LR111	J5	R419	D5	R833	D2		
LR160	J6	R422	F6	R940	J1		
LR168	J6	R424	G6	R942	I2		
LR200	H6	R426	G6	R944	I1		
LR210	K4	R429	G6	R946	J1		
LR218	H6	R432	F6	R948	I1		
LR383	B5	R435	F6	R950	H1		
LR399	C4	R437	F6	R952	M2		
LR410	C5	R438	E5	R954	M2		
LR420	D5	R440	D5	R956	K1		
LR425	G5	R450	F4	R958	I2		

\*See Parts List for serial number ranges.

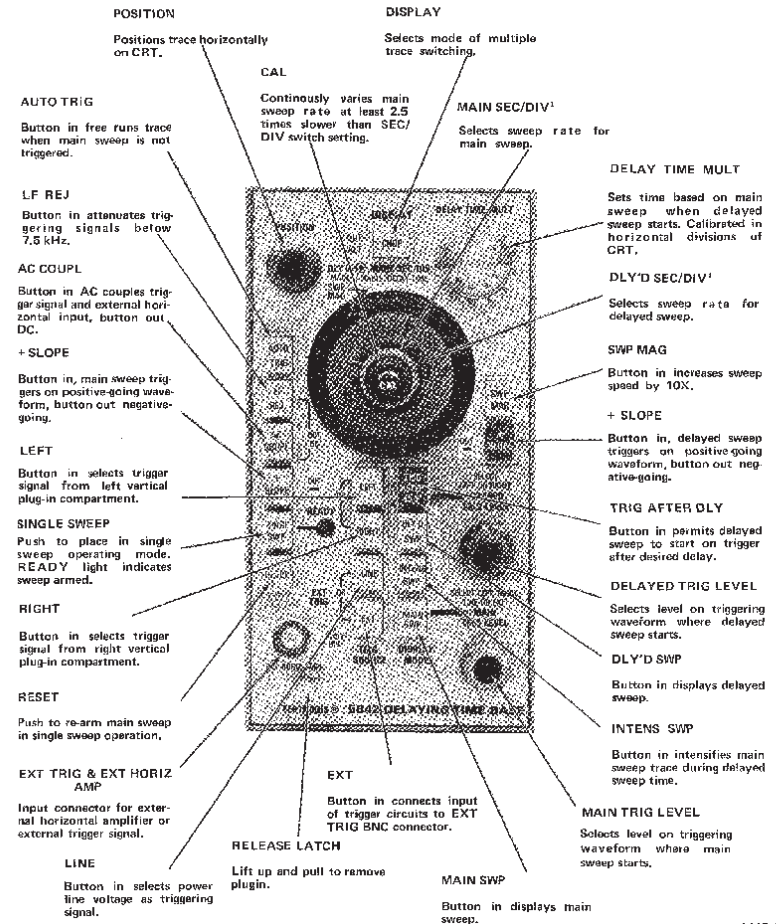


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BLOCK DIAGRAM 3EN 0273

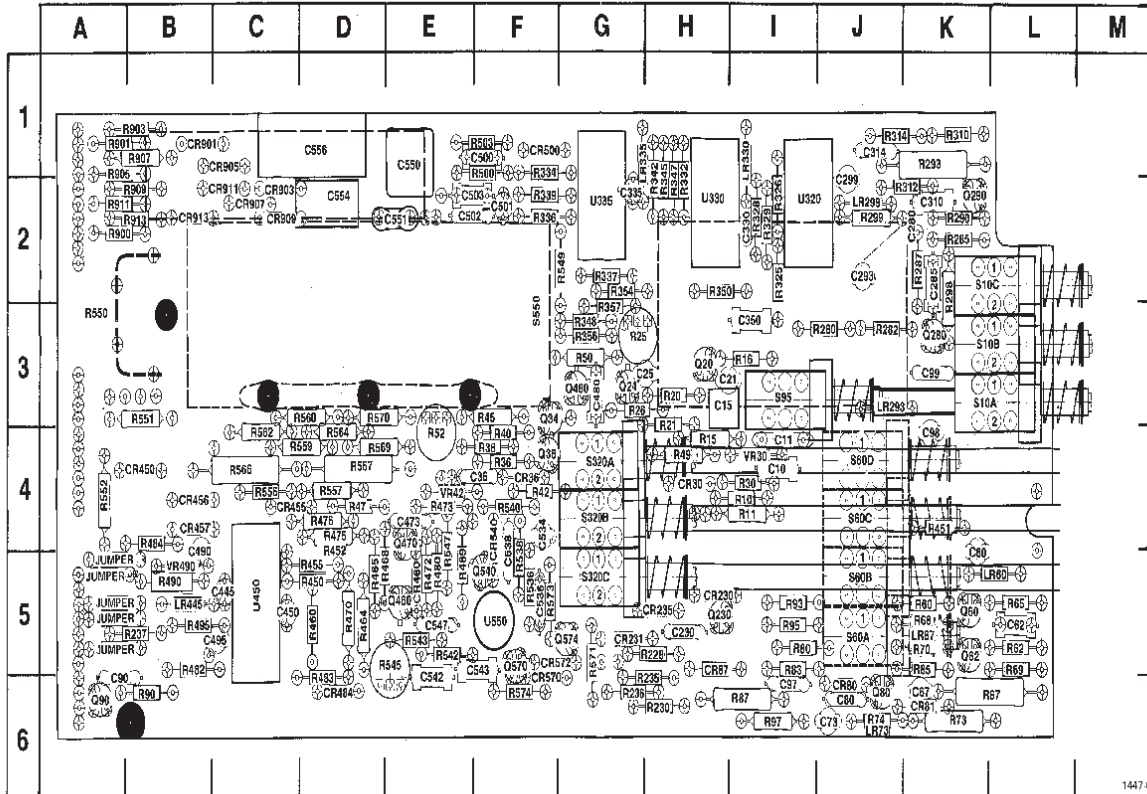
## CONTROLS AND CONNECTORS



1447-11

<sup>1</sup> Effective SN B090000 and up, the MAIN SEC/DIV-DLY'D SEC/DIV knob assembly is manufactured with a locking pin removed from the assembly (all instruments below SN B090000 use a locking pin). This pin removal allows the Delayed Sweep to operate at a slower sweep rate than the Main Sweep rate. Avoid this type of operation to prevent illogical displays, and always set the DLY'D SEC/DIV control for the same or a faster sweep rate than the MAIN SEC/DIV control.

### PARTS LOCATION GRID



Components shown with dashed lines are located on back side of board.

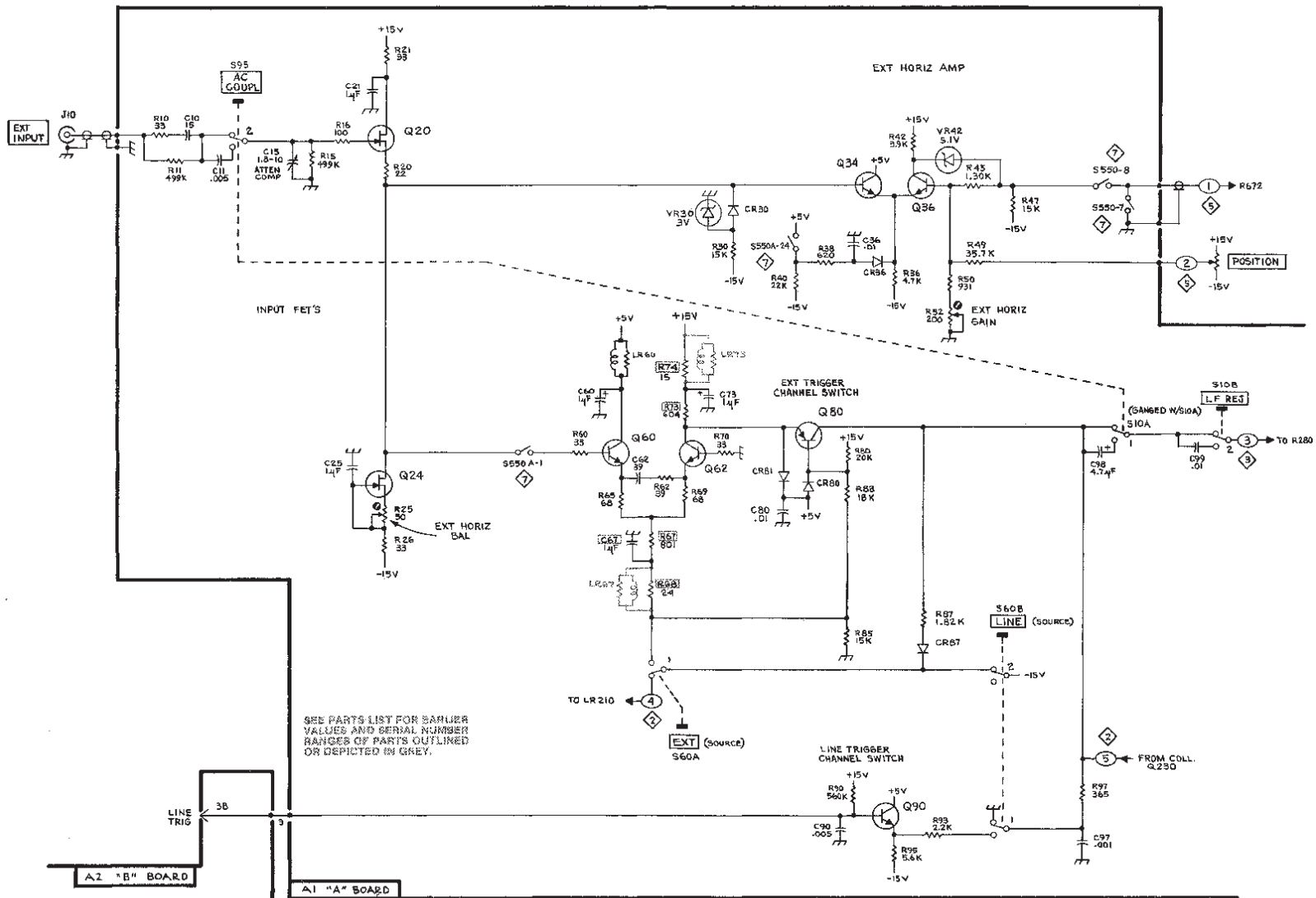
A1-A circuit board (SN B059099 & below).

1447.09

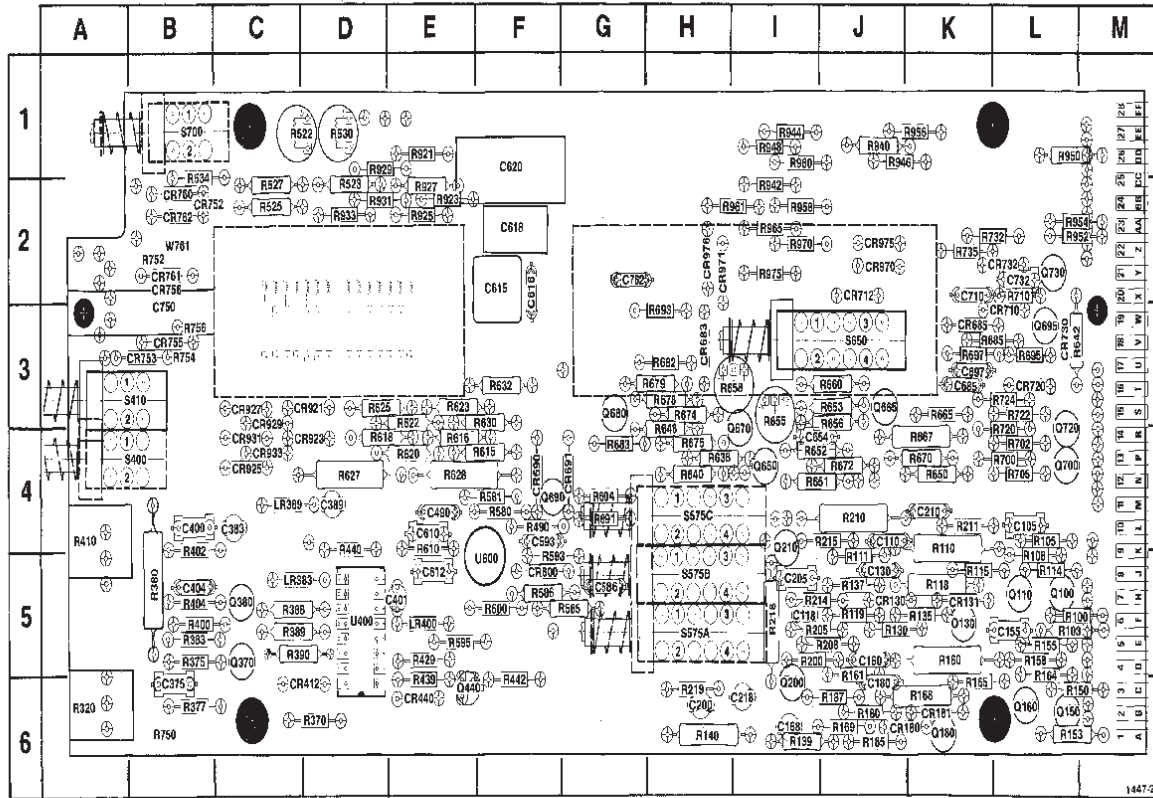
CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C10	I4	Q20	H3	R347	H2	VR30	I4
C11	I4	Q24	G3	R348	G3	VR42	E4
C15	H3	Q34	F3	R350	H2	VR490	B5
C21	H3	Q36	F4	R354	G2		
C25	H3	Q99	K5	R356	G3		
C36	F4	Q82	K5	R357	G3		
C60	K5	Q80	J6	R456	D5		
C82	L5	Q90	A8	R451	K4		
C87	K6	Q230	H5	R452*	D5		
C73	J6	Q280	K3	R455	D5		
C80	J6	Q290	K2	R460	D5		
C90	A6	Q480	E5	R464	D5		
C97	I6	Q470	E4	R465	D5		
C98	K4	Q480	G3	R468	D5		
C99	K3	Q540	F5	R470	D5		
C230	H5	Q570	F5	R472	E5		
C280	K2	Q574	G5	R473	E4		
C285	K2			R475	D4		
C290	J2	R10	I4	R476	D4		
C292	J2	R11	I4	R478	D4		
C310	K2	R15	H4	R482	B5		
C314	J1	R16	I3	R483	D5		
C330	I2	R20	H3	R484	B4		
C335	G2	R21	H4	R489	E5		
C350	I3	R25	G3	R490	B5		
C445	C5	R26	G3	R495	B5		
C450	C5	R30	I4	R500	F1		
C473	E4	R36	F4	R503	F1		
C480	G3	R38	F4	R536	F5		
C490	B5	R40	F4	R538	F6		
C485	C5	R42	F4	R540	F4		
C500	F1	R45	F3	R542	E5		
C501	F2	R47	D4	R543	E5		
C502	I2	R49	H4	R546	E5		
C503	F2	R50	G3	R547	E5		
C534	F4	R52	E4	R549	G2		
C536	F5	R50	K5	R550*	A3		
C538	F5	R52	L6	R551	B3		
C342	E6	R55	L5	R552	A4		
C543	F6	R57	K6	R556	C4		
C547	E5	R58*	K5	R557	D4		
C550	E1	R59	L5	R559	D4		
C551	E2	R70	K5	R580	D3		
C554	D2	R73	K8	R582	C4		
C556	D1	R74*	J6	R584	D4		
CR30	H4	R80	I5	R586	C4		
CR36	F4	R85	K5	R589	D4		
CR80	J6	R87	I8	R570	G5		
CR81	K6	R90	B6	R571	G5		
CR87	H5	R93	I5	R573	F5		
CR230	H5	R95	I5	R574	F6		
CR231	G5	R97	I6	R990	A2		
CR235	H5	R228	H5	R901	A1		
CR450	B4	R230	H6	R903	B1		
CR453	C4	R235	H6	R905	A1		
CR456	B4	R236	G6	R907	B1		
CR457	B4	R237	B5	R909	B2		
CR460	E5	R260	J3	R911	A2		
CR484	D6	R262	J9	R913	B2		
CR500	F1	R265	K2				
CR540	F4	R267	K2	S10A	K3		
CR570	F6	R260	K2	S10B	K3		
CR972	F5	R293	K1	S10C	K2		
CR901	B1	R288	K2	S60A	J5		
CR903	C2	R299	J2	S60B	J5		
CR905	C1	R310	K1	S60C	J4		
CR907	C2	R312	K2	S60D	J4		
CR908	C2	R314	J1	S55	I3		
CR911	C2	R325	I2	S320A	G4		
CR913	B2	R326	I2	S320B	G4		
		R328	I2	S320C	G6		
LR60	L5	R329	I2	S50	F3		
LR67*	K5	R332	H2				
LR74*	J6	R334	F1	U320	I2		
LR293*	J3	R356	F2	U330	H2		
LR299*	J2	R337	G2	U335	G2		
LR330	I1	R339	F2	U450	C5		
LR335	G1	R342	H2	U500	F5		
LR445	B5	R345	H2				

\*See Parts List for serial number ranges.

†Located on back of board.



## PARTS LOCATION GRID



Components shown with dashed lines are located on back side of board.

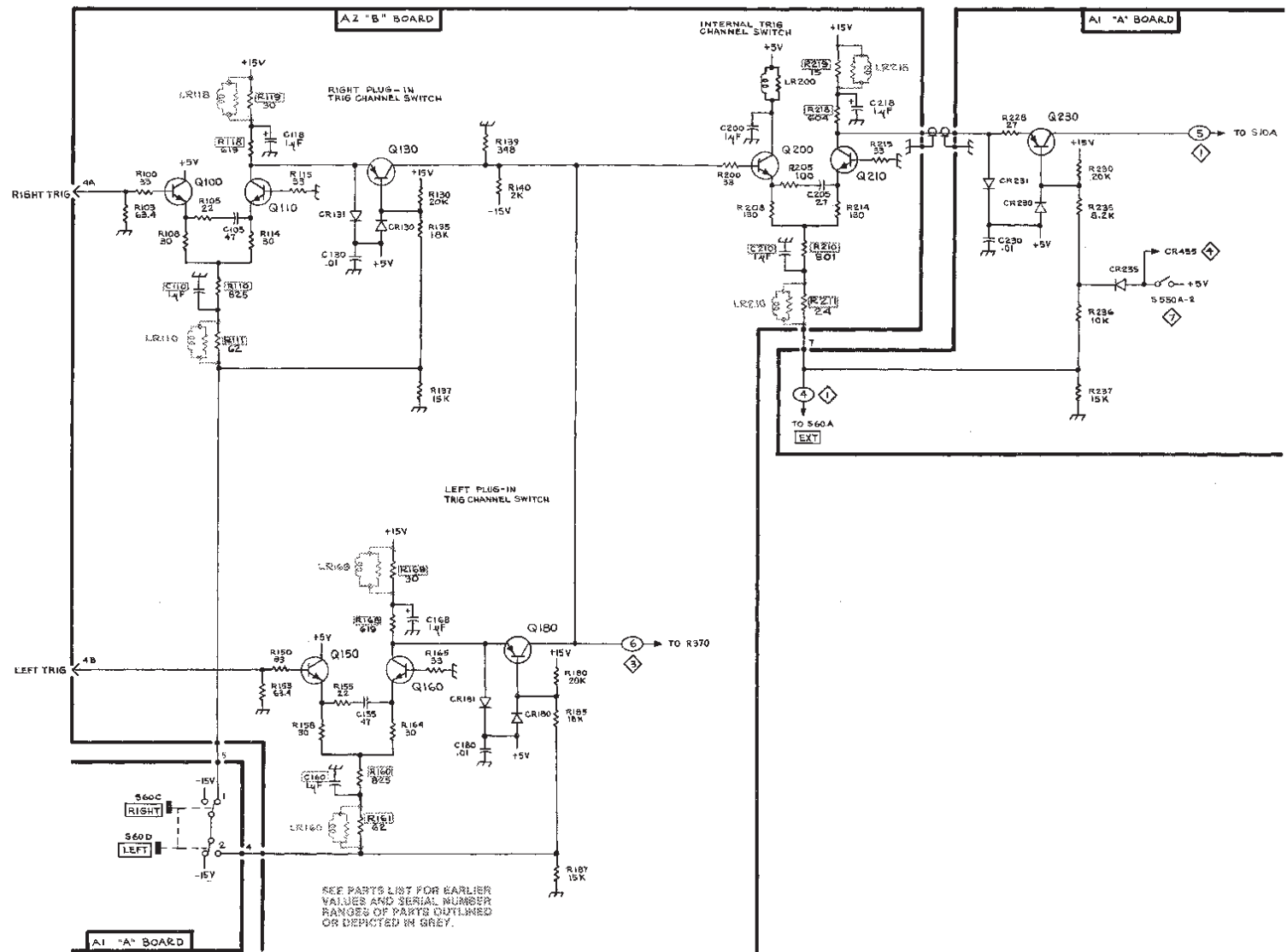
A2-B circuit board (SN B063680 & up).

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C105	L4	Q160	L5	R580	F4	R361	I2
C110	J4	Q180	K6	R581	F4	R365	I2
C118	I5	Q200	I6	R586	G5	R370	I2
C130	J5	Q210	J4	R586	F5	R375	I2
C155	L5	Q370	B5	R593	F5		
C180	J6	Q380	C5	R596	F5	S400	B4
C188	I6	Q440*	E6	R600	F5	S410	B3
C180	J6	Q650	I4	R604	G4	S575A	H5
C200	H6	Q665	J3	R610	E4	S575B	H5
C205	I5	Q670	I4	R615	F4	S575C	H4
C210	K4	Q680	G3	R616	E4	S630	J3
C218	I6	Q690	F4	R618	D4	S700	B1
C275	B5	Q695	L3	R620	E4		
C383	B5	Q700	L4	R622	E3	U400	D5
C388	D4	Q720	L4	R623	E3	U600	F5
C400	B4	Q730	L2	R625	D3		
C401	E5			R627	D4	W761*	B2
C404	B4	R100	L5	R628	E4		
C490	E4	R103	L5	R630	F3		
C586	G5	R105	L4	R632	F3		
C593	F4	R108	L5	R638	H4		
C610	E4	R110	K5	R640	H4		
C612	E5	R111	J5	R642	L3		
C615	F2	R114	L5	R648	H4		
C616	F2	R115	K5	R650	K4		
C618	F2	R116	K5	R651	I4		
C620	F1	R119	J5	R652	I4		
C654	I4	R130	J5	R653	J3		
C685	K3	R135	K6	R655	I3		
C687	K3	R137	J5	R655	J3		
C710	K2	R139	I6	R656	I3		
C732	L2	R140	H6	R660	J5		
C750*	D2	R150	L6	R665	K3		
C762*	H2	R153	I6	R667	K4		
		R155	L5	R670	K4		
		R158	L5	R672	J4		
CR130	J5	R160	K5	R674	H3		
CR181	K5	R161	J6	R675	H4		
CR180	K6	R164	L6	R676	H3		
CR191	K6	R165	K6	R679	H3		
CR410	D5	R166	K6	R680	H3		
CR440*	E6	R168	K6	R683	H3		
CR600	F5	R169	J6	R683	G4		
CR683*	H3	R160	J6	R685	L3		
CR685	K3	R165	J6	R691	G4		
CR690	F4	R167	J6	R693	H3		
CR691	G4	R200	I5	R695	L3		
CR710	L3	R205	I5	R697	K3		
CR712	J2	R208	J5	R700	L4		
CR720	L3	R210	J4	R702	L4		
CR730	L3	R211	K4	R705	L4		
CR732	L2	R214	I5	R710	L2		
CR752*	B2	R215	J4	R720	L4		
CR753*	B3	R218	I5	R722	L3		
CR755*	B3	R219	H6	R724*	L3		
CR755*	B2	R320	A6	R732	L2		
CR760	B2	R370	B6	R735	K2		
CR761*	B2	R375	C5	R750*	B6		
CR752	B2	R377	B5	R752*	B2		
CR821	D3	R380	C5	R754*	B3		
CR823	D4	R383	B5	R756*	B3		
CR825	C4	R386	D4	R821	E1		
CR827	C3	R389	D4	R823	E2		
CR828	C3	R390	C5	R825	E2		
CR931	C4	R400	B5	R827	E2		
CR933	C4	R402	C3	R929	D1		
CR970	J2	R404	B5	R931	D2		
CR971	H2	R410	A4	R933	D2		
CR975	J2	R429	G5	R940	J1		
CR976	H2	R438*	E6	R942	I2		
		R440*	D4	R944	I1		
		R442*	F6	R946	J1		
LR383	B5	R490	F4	R948	I1		
LR389	CA	R522	D1	R950	H1		
LR400	E6	R523	D2	R952	H2		
		R525	C2	R954	H2		
Q100	L5	R527	C2	R956	K1		
Q110	L6	R530	D1	R958	I2		
Q130	K5	R530	D1	R958	I2		
Q150	L6	R534	B2	R960	I1		

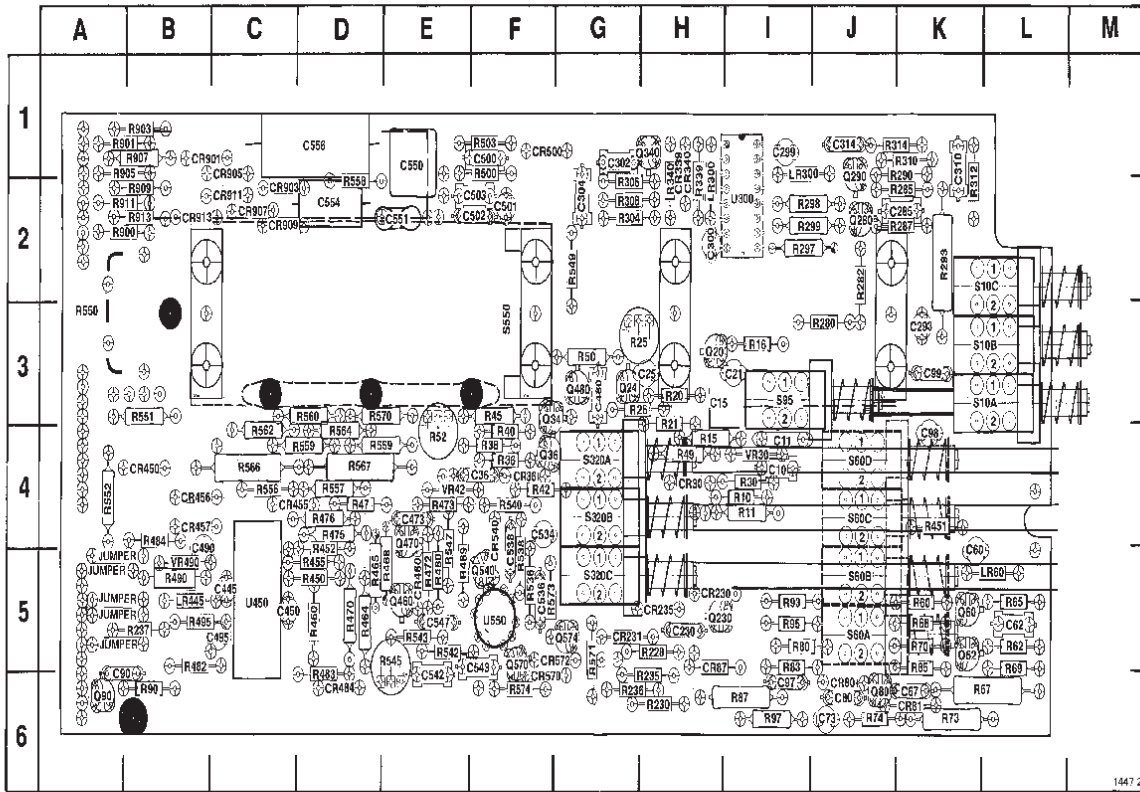
\*See Parts List for serial number ranges.

\*Located on back of board.





### PARTS LOCATION GRID



Components shown with dashed lines are located on back side of board.

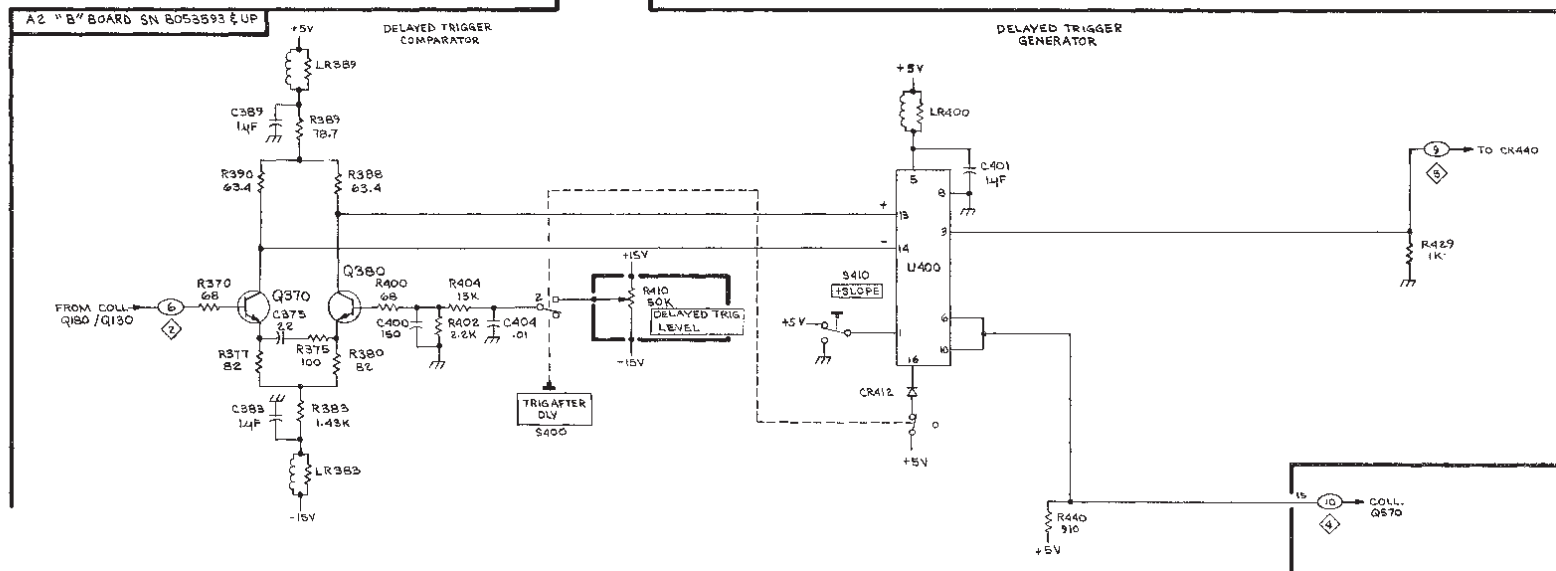
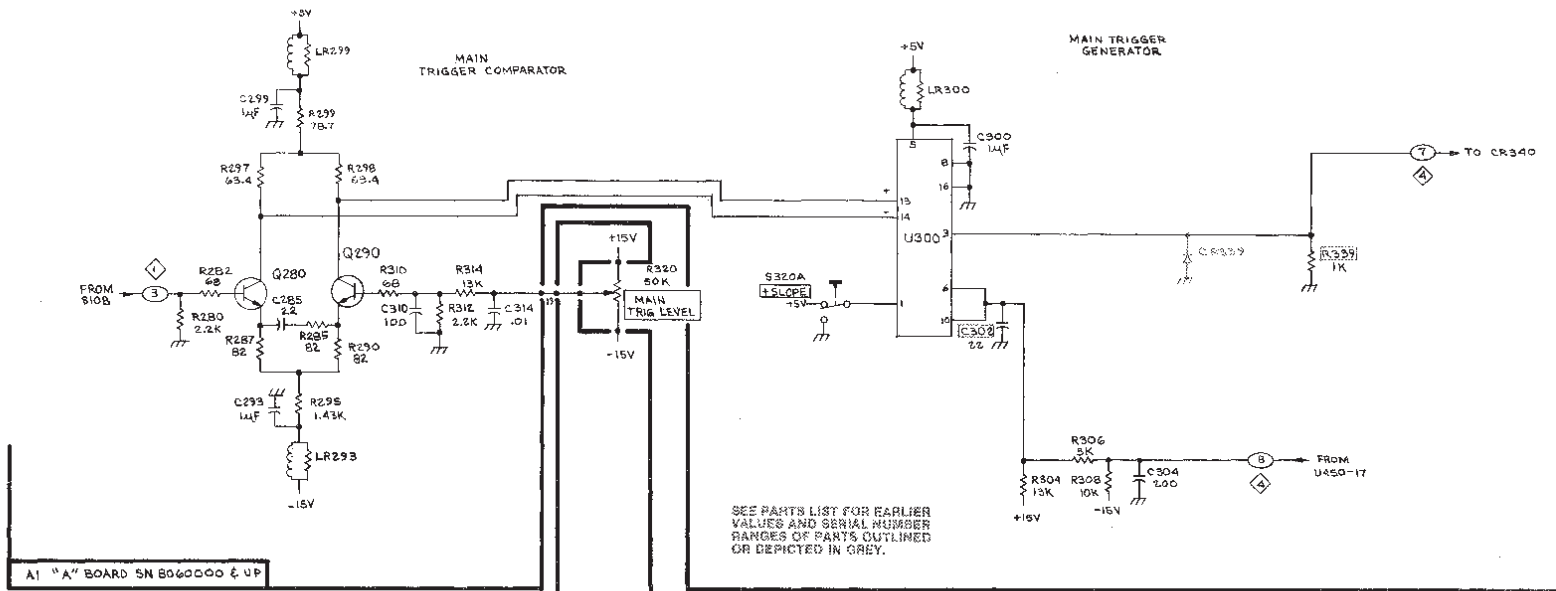
A1 - A circuit board (SN B060000 & up).

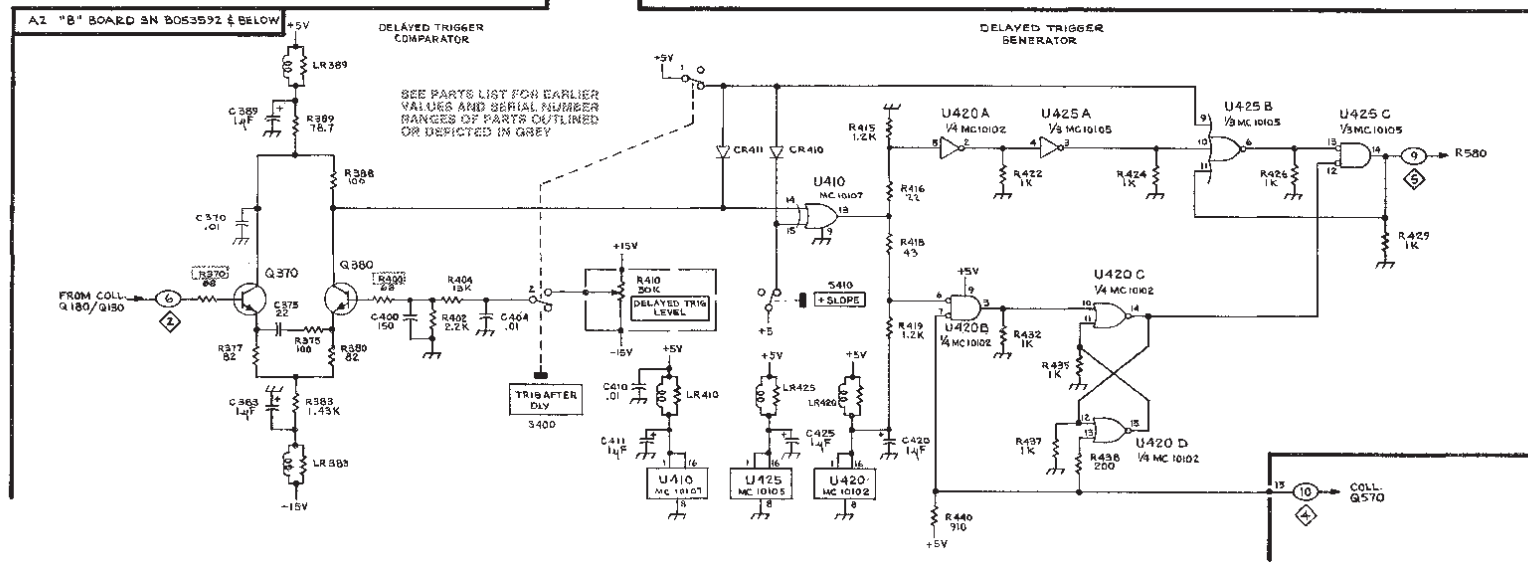
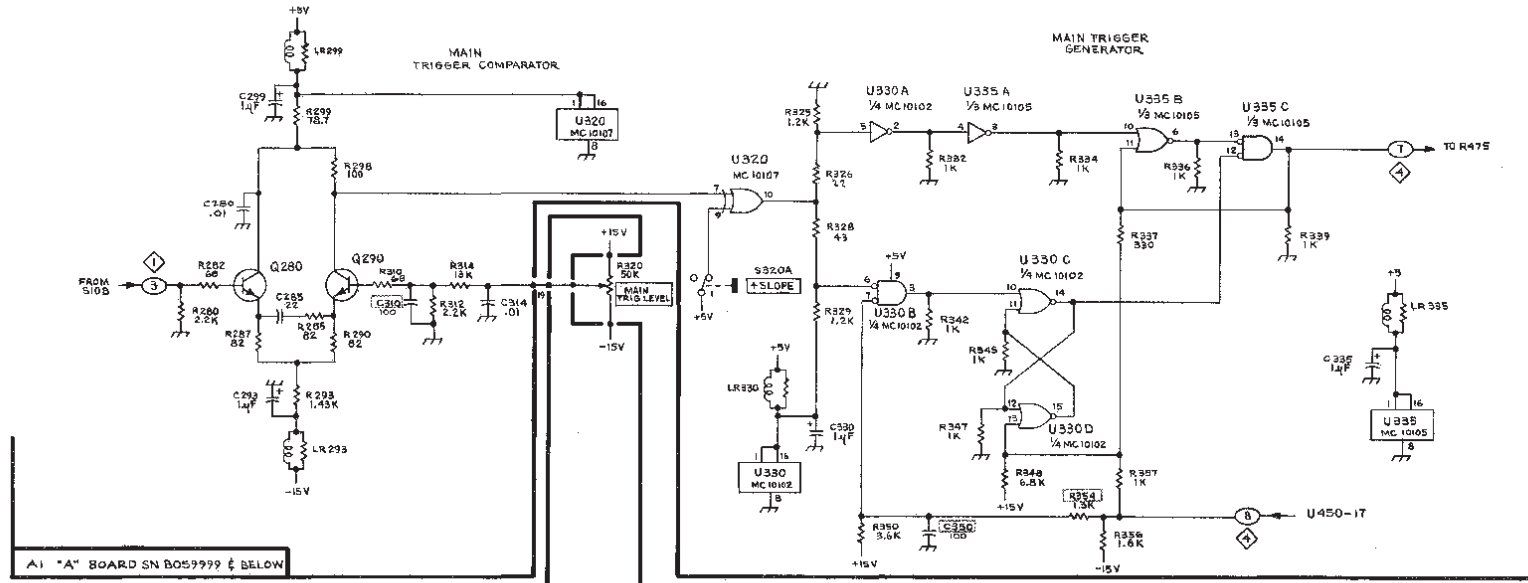
1447 21

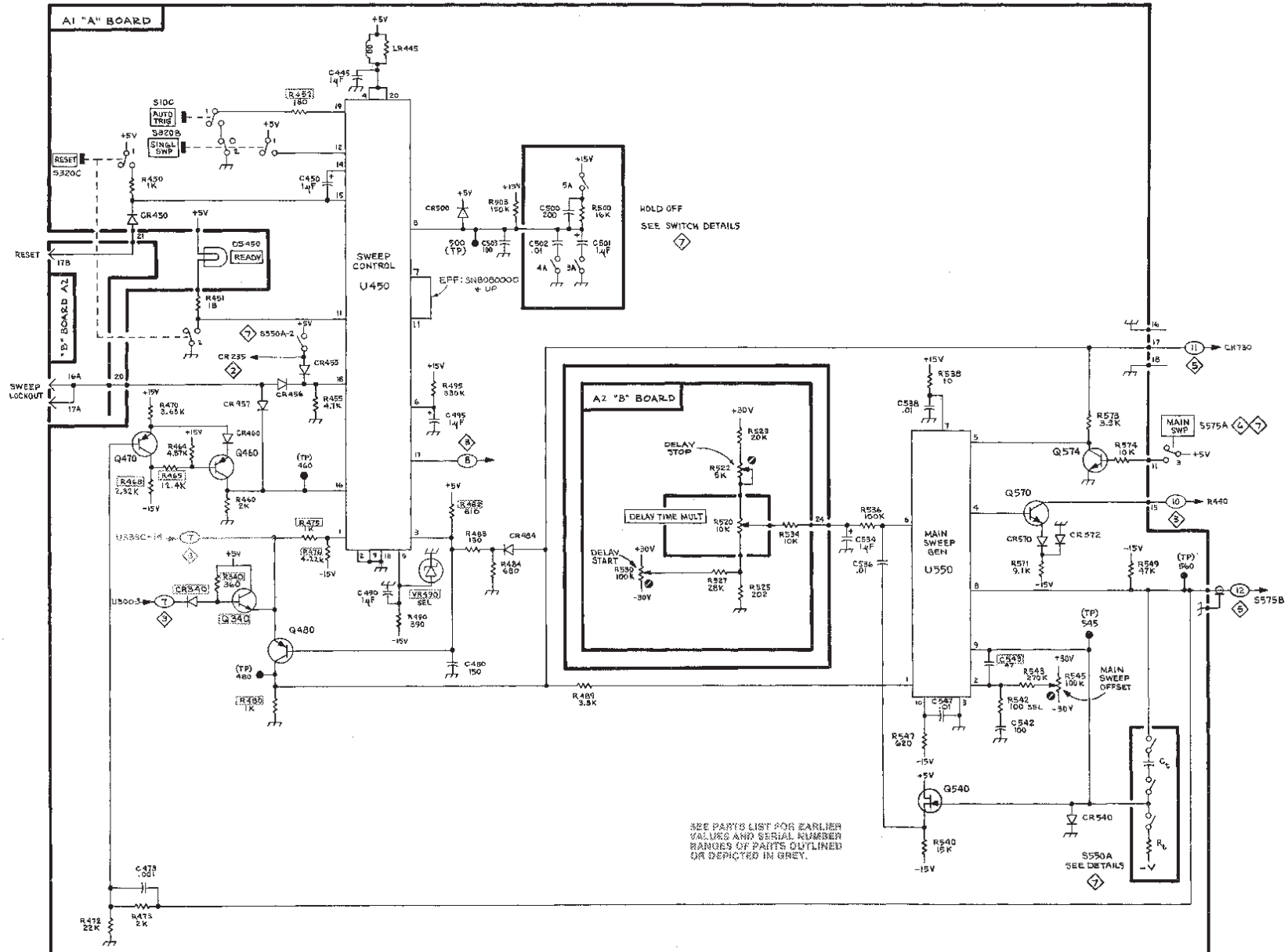
CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C10	I4	Q35	F4	R488	D5
C11	I4	Q60	K5	R470	D5
C15	H3	Q52	K5	R472	E5
C21	H3	Q80	J5	R473	E4
C25	H3	Q90	A6	R475	D4
C35	F4	Q230	H5	R476	D4
C60	K5	Q280	K3	R480*	E5
C62	L5	Q280	K2	R482	B5
C67	K5	Q340*	H1	R483	D6
C73	J6	Q460	E5	R484	E4
C80	J6	Q470	E4	R486	E5
C80	A5	Q460	G3	R490	B5
C87	I6	Q540	F5	R495	B5
C88	K4	Q570	F5	R500	F1
C99	K3	Q574	G5	R503	F1
C230	H5			R536	F5
C285	K2	R10	I4	R536	F5
C285	J2	R11	I4	R540	F4
C289	J2	R15	H4	R542	E5
C300	H2	R16	I3	R543	E5
C302	G1	R20	H3	R545	E5
C304	G2	R21	H4	R547	E5
C310	K2	R25	G3	R548	G2
C314	J1	R26	G3	R550*	A3
C445	C5	R30	I4	R551	B3
C450	C5	R36	F4	R552	AA
C473	E4	R38	F4	R556	C4
C480	G3	R40	F4	R557	D4
C480	B5	R42	F4	R558	D2
C485	C5	R45	F3	R559	D4
C500	F1	R47	D4	R560	D3
C501	F2	R48	H4	R562	C4
C502	F2	R50	G3	R564	D4
C503	F2	R52	E4	R565	D4
C534	F4	R60	K5	R567	C4
C536	F5	R62	L5	R568	D4
C538	F5	R65	L5	R570	G5
C542	E5	R67	K6	R571	G5
C543	F5	R68	K5	R573	F5
C547	E5	R69	L5	R574	F8
C550	E1	R70	K5	R580	A2
C551	E2	R73	K6	R601	A1
C554	D2	R74	J6	R603	B1
C556	D1	R80	I5	R605	A1
		R83	I5	R607	B1
CR30	H4	R85	K5	R609	B2
CR36	F4	R87	I6	R611	A2
CR80	J6	R90	B6	R613	B2
CR91	K6	R93	I5		
CR97	H5	R95	I5	S10A	K3
CR200	H5	R97	I6	S10B	K3
CR221	G5	R228	H5	S10C	K2
CR235	H5	R230	H6	S60A	J5
CR339*	H1	R235	H6	S60B	J5
CR340*	H1	R236	G6	S60C	J4
CR450	B4	R237	B5	S600	J4
CR455	C4	R280	J3	S65	I3
CR456	B4	R282	J3	S320A	G4
CR457	B4	R285	K2	S320B	G4
CR460	E5	R287	K2	S320C	G5
CR484	D6	R290	K2	S550	F3
CR500	F1	R293	K1		
CR540	F4	R297	J2	U300	I2
CR570	F8	R298	K2	U450	C5
CR572	F5	R299	J2	U550	F5
CR901	B1	R304	G2		
CR903	C2	R305	G2	VR30	I4
CR906	C1	R308	G2	VR42	E4
CR907	C2	R310	K1	VR480	B5
CR909	C2	R312	K2		
CR911	C2	R314	J1		
CR913	B2	R339	H2		
		R340*			
LR60	L5	R490	D5		
LR300	I1	R451	K4		
LR445	B5	R452	D5		
		R455	D5		
		R455	D5		
Q20	H3	R460	D5		
Q24	G3	R464	D5		
Q34	F3	R465	D5		

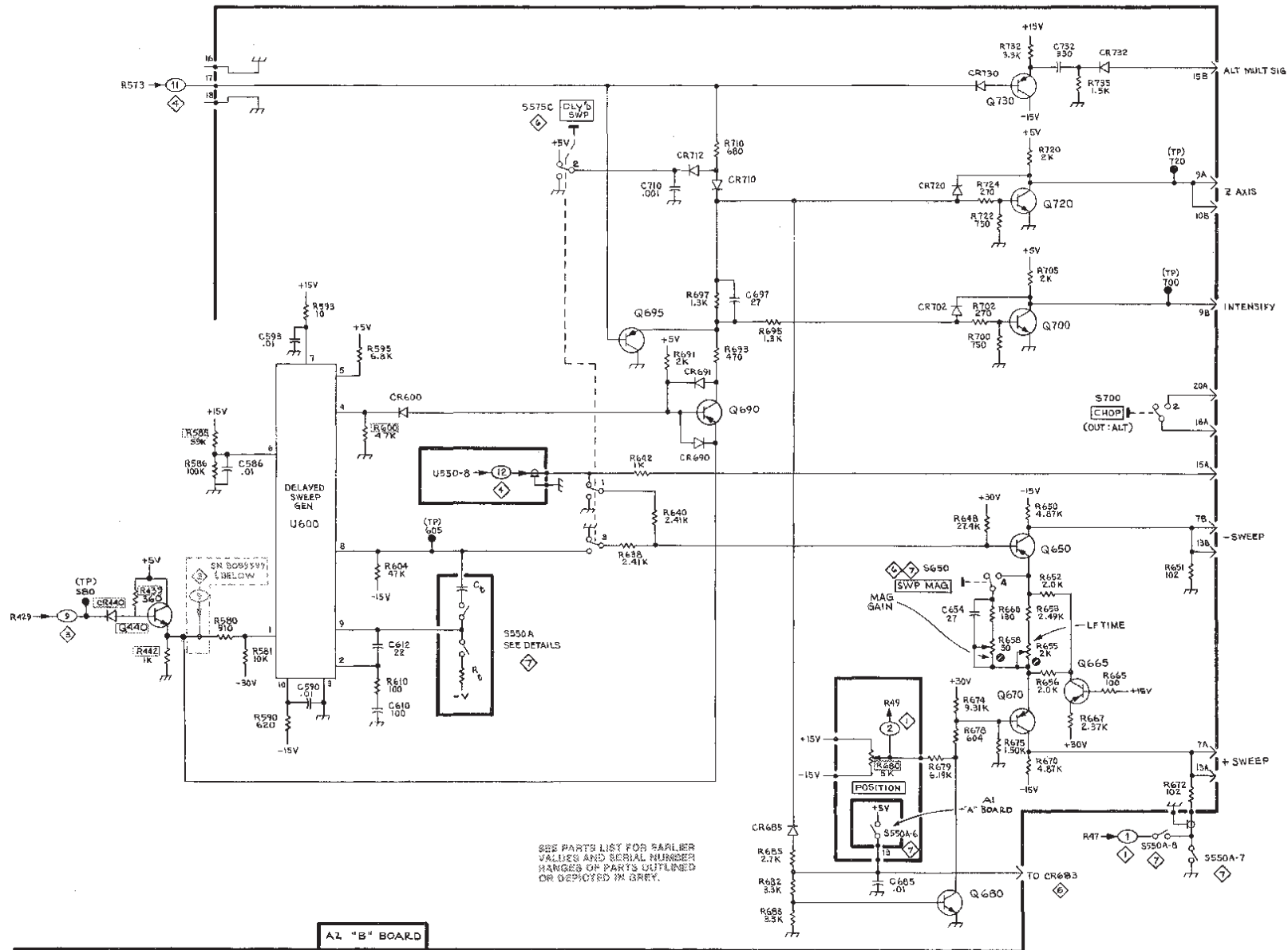
\*See Parts List for serial number ranges.

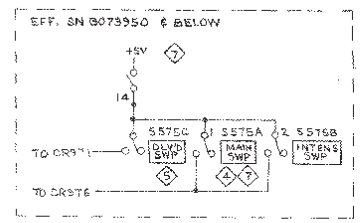
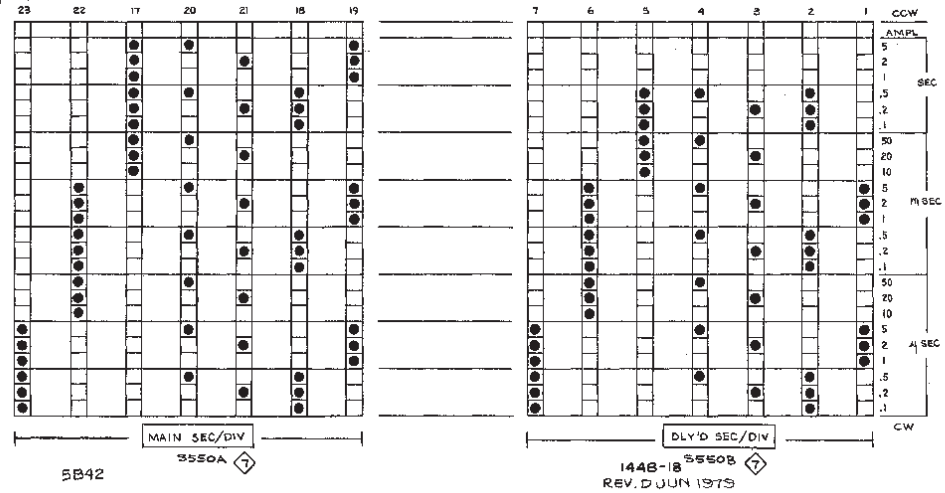
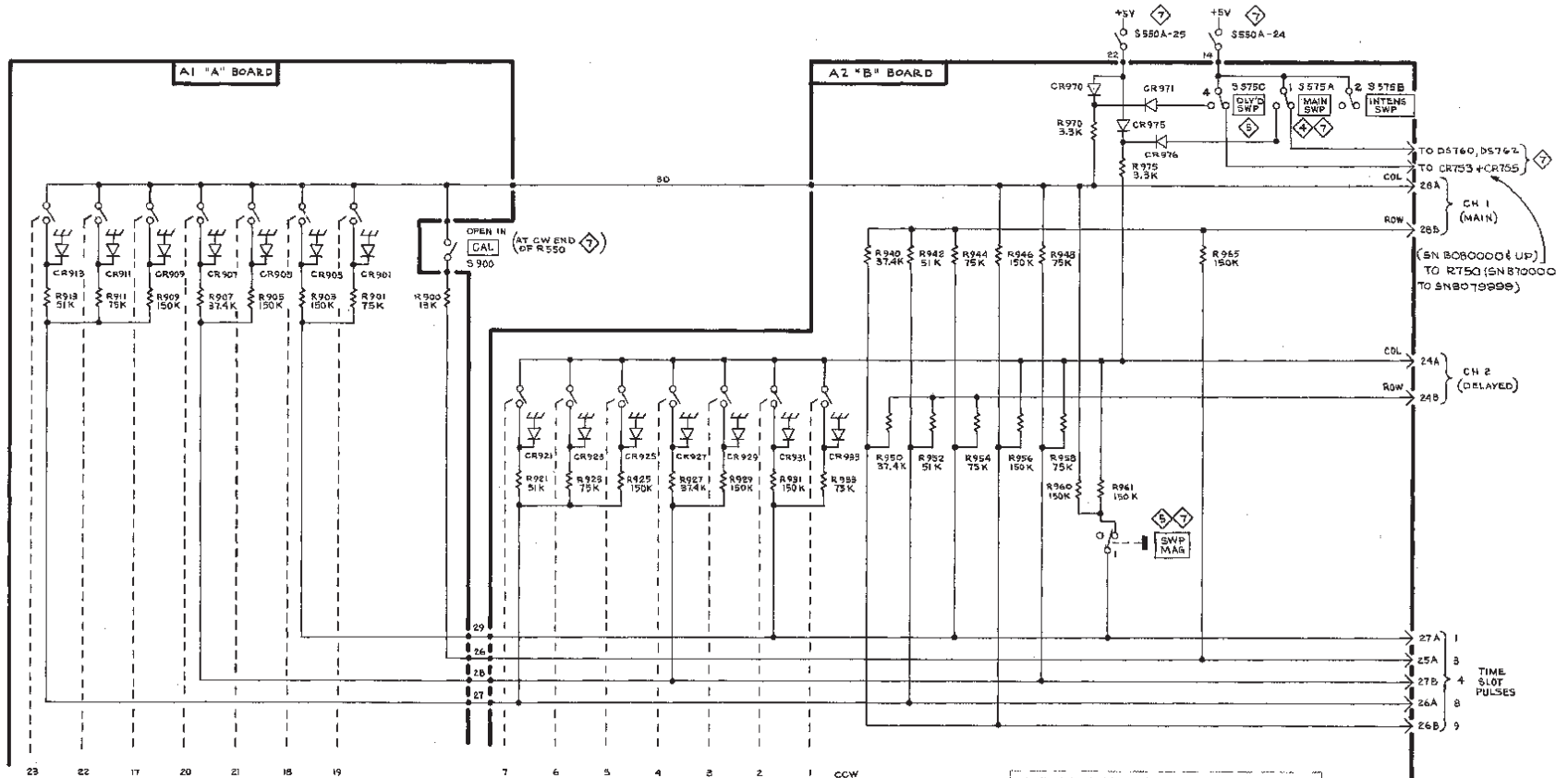
†Located on back of board.



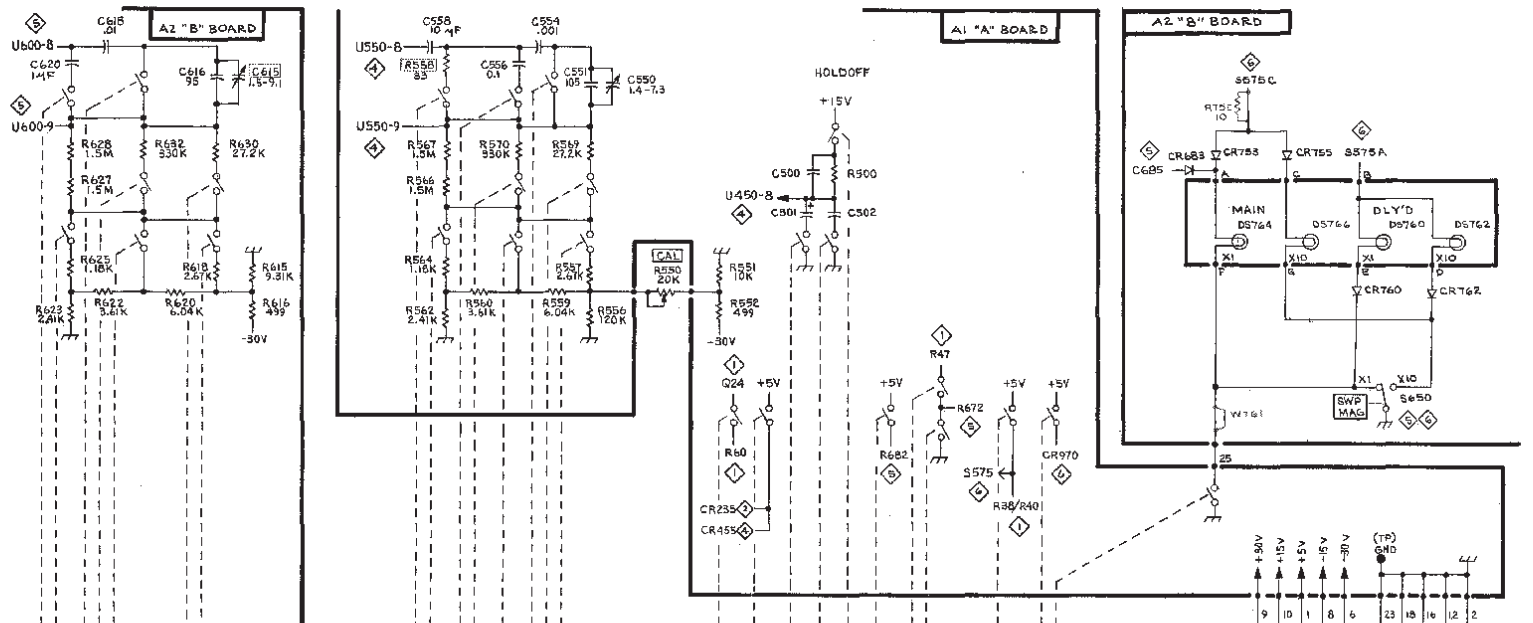




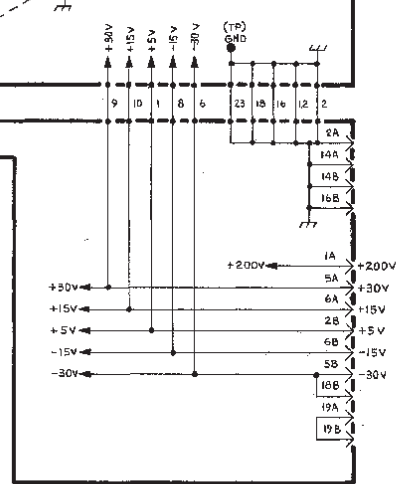




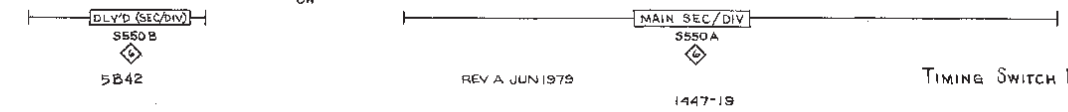
READOUT SWITCHING



SWITCH POSITION	CCW										CW																						
	15	14	13	10	12	11	5	2	3	4	5	6	7	24	25	26																	
AMPL	5	2	1	1	1	1	5	2	3	4	5	6	7	24	25	26																	
SEC	.5	.2	.1	.1	.1	.1	50	20	10	5	2	1	5	2	1	50	20	10	5	2	1	50	20	10	5	2	1	50	20	10	5	2	1
m SEC	5	2	1	1	1	1	50	20	10	5	2	1	5	2	1	50	20	10	5	2	1	50	20	10	5	2	1	50	20	10	5	2	1
4 SEC	5	2	1	1	1	1	50	20	10	5	2	1	5	2	1	50	20	10	5	2	1	50	20	10	5	2	1	50	20	10	5	2	1
CW																																	



SEE PARTS LIST FOR EARLIER VALUES AND SERIAL NUMBER RANGES OF PARTS OUTLINED OR DEPICTED IN GREY.

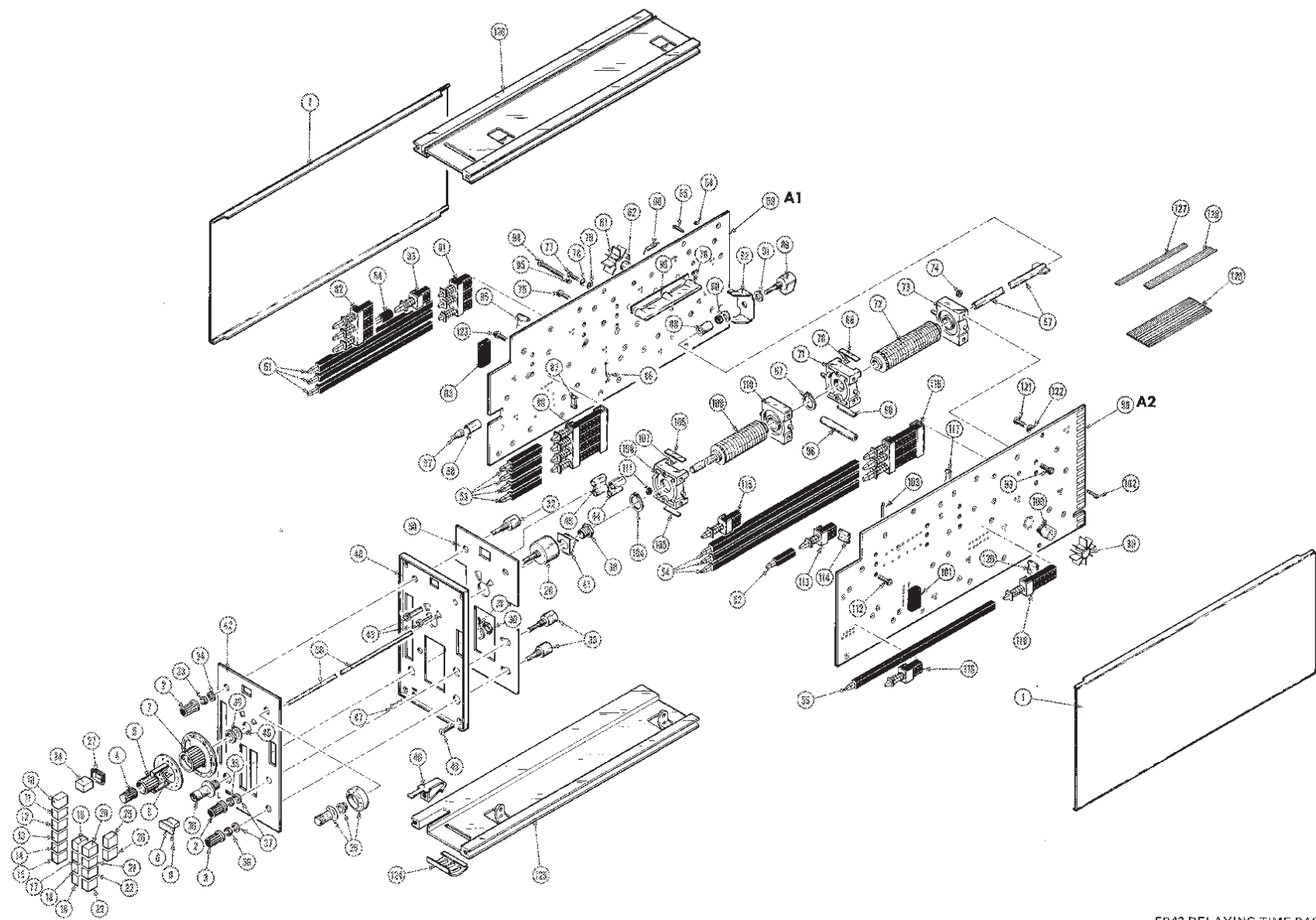


TIMING SWITCH DETAILS

BYZ



Index No.	Tektronix Part No.	Serial/Model No. Eff	Dscnt	Qty						Name & Description	Mfr Code	Mfr Part Number
					1	2	3	4	5			
	070-1447-00			1						MANUAL, TECH: INSTRUCTION	80009	070-1447-00



5B42 DELAYING TIME BASE

### **MANUAL CHANGE INFORMATION**

At Tektronix, we continually strive to keep up with latest electronic developments by adding circuit and component improvements to our instruments as soon as they are developed and tested.

Sometimes, due to printing and shipping requirements, we can't get these changes immediately into printed manuals. Hence, your manual may contain new change information on following pages.

A single change may affect several sections. Since the change information sheets are carried in the manual until all changes are permanently entered, some duplication may occur. If no such change pages appear following this page, your manual is correct as printed.

### **SERVICE NOTE**

Because of the universal parts procurement problem, some electrical parts in your instrument may be different from those described in the Replaceable Electrical Parts List. The parts used will in no way alter or compromise the performance or reliability of this instrument. They are installed when necessary to ensure prompt delivery to the customer. Order replacement parts from the Replaceable Electrical Parts List.

# CALIBRATION TEST EQUIPMENT REPLACEMENT

## Calibration Test Equipment Chart

This chart compares TM 500 product performance to that of older Tektronix equipment. Only those characteristics where significant specification differences occur, are listed. In some cases the new instrument may not be a total functional replacement. Additional support instrumentation may be needed or a change in calibration procedure may be necessary.

Comparison of Main Characteristics		
DM 501 replaces 7D13		
PG 501 replaces 107 108	PG 501 - Risetime less than 3.5 ns into 50 Ω. PG 501 - 5 V output pulse; 3.5 ns Risetime	107 - Risetime less than 3.0 ns into 50 Ω. 108 - 10 V output pulse 1 ns Risetime
PG 502 replaces 107 108 111	PG 502 - 5 V output PG 502 - Risetime less than 1 ns; 10 ns Pretrigger pulse delay	108 - 10 V output 111 - Risetime 0.5 ns; 30 to 250 ns Pretrigger pulse delay
PG 508 replaces 114 115 2101	Performance of replacement equipment is the same or better than equipment being replaced.	
PG 506 replaces 106 067-0502-01	PG 506 - Positive-going trigger output signal at least 1 V; High Amplitude output, 60 V. PG 506 - Does not have chopped feature.	106 - Positive and Negative-going trigger output signal, 50 ns and 1 V; High Amplitude output, 100 V. 0502-01 - Comparator output can be alternately chopped to a reference voltage.
SG 503 replaces 190, 190A, 190B 191 067-0532-01	SG 503 - Amplitude range 5 mV to 5.5 V p-p. SG 503 - Frequency range 250 kHz to 250 MHz.	190B - Amplitude range 40 mV to 10 V p-p. 0532-01 - Frequency range 65 MHz to 500 MHz.
SG 504 replaces 067-0532-01 067-0650-00	SG 504 - Frequency range 245 MHz to 1050 MHz.	0532-01 - Frequency range 65 MHz to 500 MHz.
TG 501 replaces 180, 180A 181 184 2901	TG 501 - Trigger output-slaved to marker output from 5 sec through 100 ns. One time-mark can be generated at a time. TG 501 - Trigger output-slaved to marker output from 5 sec through 100 ns. One time-mark can be generated at a time. TG 501 - Trigger output-slaved to marker output from 5 sec through 100 ns. One time-mark can be generated at a time.	180A - Trigger pulses 1, 10, 100 Hz; 1, 10, and 100 kHz. Multiple time-marks can be generated simultaneously. 181 - Multiple time-marks 184 - Separate trigger pulses of 1 and 0.1 sec; 10, 1, and 0.1 ms; 10 and 1 μs. 2901 - Separate trigger pulses, from 5 sec to 0.1 μs. Multiple time-marks can be generated simultaneously.

NOTE: All TM 500 generator outputs are short-proof. All TM 500 plug-in instruments require TM 500-Series Power Module.  
REV B, JUN 1978

# **K4XL's** **BAMA**

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