

OPERATING INSTRUCTIONS

INSTRUMENT DESCRIPTION

The 5B40 Time Base provides a fully triggerable sweep and external horizontal input for the 5400 series oscilloscopes. It features an edge-lighted main SECONDS/DIV selector switch. When used in a main-frame with readout capabilities, the SECONDS/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. Although designed for use in the right hand or sweep

compartment of the oscilloscope, the 5B40 will operate in the vertical compartments to produce vertical sweeps.

PREPARATION FOR USE

Your 5B40 is calibrated and ready for use when received. Fig. 1-1 shows installation-removal procedure. Refer to the Front Panel Controls illustration in the foldout 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; green, the triggering functions.

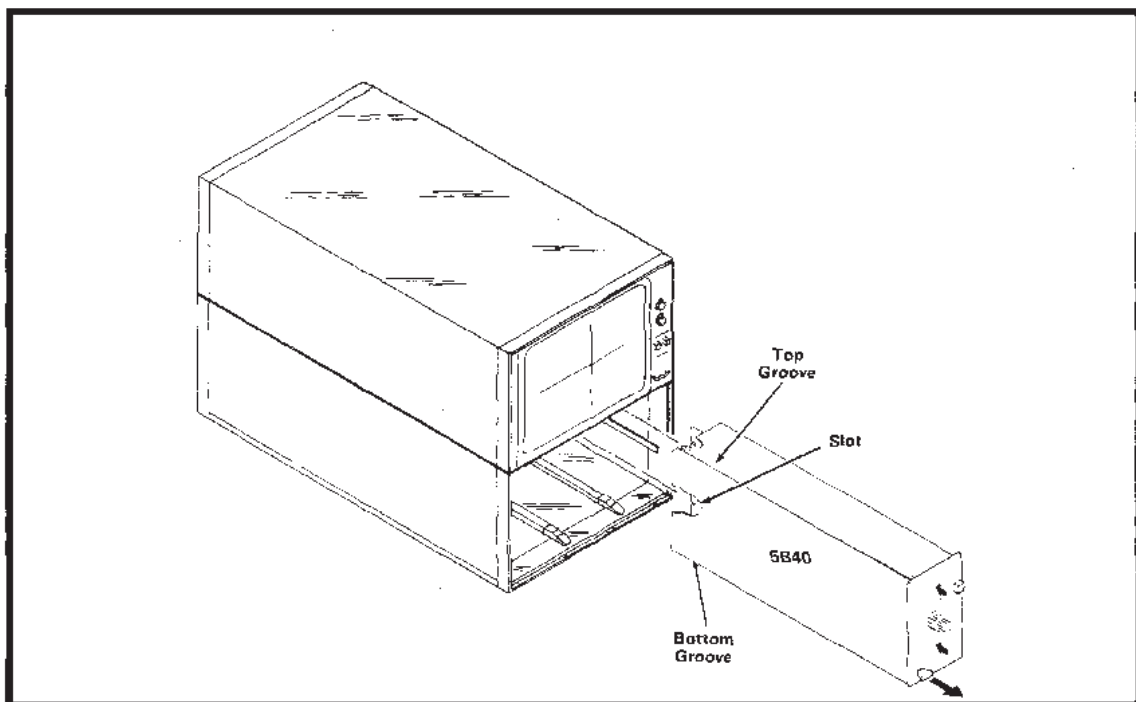


Fig. 1-1. 5B40 Installation-Removal Procedure.

BASIC OPERATION

TRIGGERED DISPLAY

With the 5B40 Time Base properly installed in the horizontal plug-in compartment, apply power to the mainframe. Connect the CALIBRATOR output on the display module to the vertical plug-in. Adjust the vertical plug-in gain for a two-division display. Set the SECONDS/DIV switch to the 1 m position and push the LEFT or RIGHT TRIGGERING SOURCE button, depending on which compartment contains the vertical plug-in. Push the AUTO TRIG button in the green TRIGGERING area. Rotate the position controls for the vertical plug-in and 5B40 until a trace is visible. Adjust the TRIGGERING LEVEL control until the display stabilizes. The TRIG'D READY light is now on. Now rotate the TRIGGERING LEVEL control from stop to stop. Notice that the trace free runs over most of the control rotation. The TRIG'D READY light is off when the sweep free runs. Release the AUTO TRIG button and rotate the TRIGGERING LEVEL control from stop to stop. Notice that the trace appears, and the TRIG'D READY light is on, 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. If the sweep is starting on the negative-going portion of the square wave, push the - SLOPE button. The trace will now start on a positive-going waveform. Remove the jumper from the calibrator to the vertical plug-in. Depress the button labeled SINGLE SWP, then depress the RESET button. The TRIG'D 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 TRIG'D READY light will extinguish. Remove the signal to the vertical, and depress the RESET button. The TRIG'D READY light will be visible again, and the sweep is rearmed. Release the SINGLE SWP button, reconnect the calibrator jumper and obtain a stable display by pushing the AUTO TRIG button (and adjusting the TRIGGERING LEVEL control, if necessary).

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, then the other channel is displayed. This can be demonstrated by using the dual channel vertical plug-in and slowing the 5B40 sweep speed to about 10 ms/div. Pushing the button in selects 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.

MAGNIFIED SWEEP

Press the SWP MAG button and notice the sweep speed increase, by an order of magnitude. This is shown on the SECONDS/DIV dial and the crt readout, if the mainframe is so equipped.

LINE AND EXTERNAL TRIGGERING

If the waveform viewed is line-frequency related, push the button labeled LINE in the green TRIGGERING 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 INPUT connector. Push the button labeled EXT in the green TRIGGERING SOURCE column.

EXTERNAL HORIZONTAL AMPLIFIER

To use the 5B40 as an amplifier, rotate the SECONDS/DIV switch fully ccw to the AMPL position and push the EXT button in the green area. Apply the calibrator waveform to the BNC connector marked EXT HORIZ AMPL. Two dots, approximately eight divisions apart, are visible. The AC COUPL pushbutton must be out. There is no front-panel gain adjustment for the external horizontal amplifier. If an attenuator probe is used, adjust the compensation of the probe for minimum horizontal overshoot or undershoot on the two dots. When the AC COUPL pushbutton is in, the signal to the external horizontal amplifier is ac coupled.

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. Include 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:

Surround the instrument with polyethylene sheeting to protect the finish of the instrument. Obtain a carton of corrugated cardboard of the correct carton strength and having inside dimensions of no less than six inches more than the instrument dimensions. Cushion the instrument by tightly packing three inches of dunnage or urethane foam between carton and instrument, on all sides. Seal carton with shipping tape or industrial stapler.

The carton test strength for your instrument is 200 pounds.

SPECIFICATIONS

SWEEP ACCURACY:

(Measured in a 5400 series oscilloscope over the center eight: graticule divisions. Valid for 100 div of the magnified sweep after the first 30 ns.)

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

| TRIGGERING: | | | |
|-------------|------------------------------------|-------------------------|--------|
| Coupling | Frequency Range ¹ | Minimum Signal Required | |
| | | Intl | Ext |
| DC | DC to 10 MHz | 0.4 div | 60 mV |
| | 10 MHz to 60 MHz | 1.0 div | 150 mV |
| | DC to 2 MHz | 0.4 div | |
| AC | Requirements increase below 50 Hz | | |
| LF REJ | Requirements increase below 20kHz | | |
| HF REJ | Requirements increase above 30 kHz | | |

¹On internal triggering only, frequency range is limited to the specified bandwidth of the vertical amplifier plug-in used.

VARIABLE RANGE:

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

INTERNAL TRIGGER LEVEL RANGE:

$\geq \pm 8$ 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 M Ω $\pm 2\%$, paralleled by ≈ 24 pF.

Trigger Level Range: $\geq \pm 1.5$ V.

EXTERNAL HORIZONTAL INPUT:

Deflection Factor: 50 mV/div $\pm 3\%$.

Input R and C: 1 M Ω $\pm 2\%$ paralleled by ≈ 24 pF.

Bandwidth:

dc Coupled: dc to ≥ 2 MHz.

ac Coupled: ≤ 50 Hz to ≥ 2 MHz.

Maximum Input Voltage: 350 V dc + peak ac, 350 V p-p ac at ≤ 1 kHz.

THEORY OF OPERATION

INTRODUCTION

Use the schematic diagrams, block diagram, waveform diagrams, all in the pull-out pages in the rear of this manual, and this discussion to understand the operation of the 5B40.

TRIGGER AND EXTERNAL HORIZONTAL INPUT AMPLIFIER

Trigger signals from the left and right vertical compartments in the main frame pass through their appropriate switches (S100) to the input of fet Q120. R109 and R110 combine with resistors in the mainframe to provide fifty-ohm terminations for the trigger lines. R105 and R107 are dividers for the ac line voltage used in the line trigger mode. C105 acts as a low-pass filter, keeping noise from affecting the triggering. The external horizontal input is applied through a compensated attenuator, (R100, R102, R116, C100, C115 and C116) to the gate of fet Q120 when S100 is in the proper position. All of the inputs are grounded when not in use.

S110A provides ac coupling by placing C112 and C114 in series with the gate of Q120 in the AC COUPL mode. R125 provides dc balance for the amplifier circuit through Q124. VR120, VR122, CR120 and CR122 provide over-voltage protection for this circuitry. CR124 shifts the voltage level at the base of Q130, causing its emitter to rest at approximately zero voltage with no signal. The signal is fed to Q130, an emitter follower. The emitter of Q130 drives the trigger comparator amplifier through S280-1. This switch opens when the external horizontal amplifier is used. Output is then taken from R130 and fed directly to Q310. In the LF REJ position, C130 is placed in series with Q130 and Q135. This capacitor, in conjunction with R132, acts as a high-pass filter above about 7.5 kHz.

TRIGGER COMPARATOR

This circuitry selects the voltage level on the waveform where triggering takes place. Q135 and Q140 serve as a voltage comparator. The triggering signal is applied to the base of Q135. The dc level at the base of Q140 is set by R160, the TRIGGERING LEVEL control. If the voltage at the base of Q135 is higher, current flows through Q135 and the collector of Q140 is high. The opposite is true if the base voltage of Q135 is lower, and the collector of Q140 is low. C133 and C140 are switched in the circuit in the HF REJ position. C133 prevents signals above about 50 kHz from reaching the base of Q135, while C140 attenuates the triggering signal between the collectors of the comparator transistors.

TRIGGER GENERATOR

U165, an integrated circuit, converts the trigger signal from the trigger comparator to a gate waveform used for sweep control. With pin 1 connected to ground (+ SLOPE), a positive going waveform (3 to 4 V) on the input (pin 13) causes pin 3 (output) to rise to about 4.1 V and pin 4 (output) to drop to about 3.2 V. Pin 14 is negative going under the above conditions. The output gate occurs when pins 13 and 14 are within about 20 mV of each other. Placing pin 1 at +5 V (- SLOPE) causes a gate output at pins 3 and 4 when pin 13 is negative going and pin 14 positive going. After completion of the sweep, during holdoff time, pins 6 and 10 are high (about -4.2 V). This inhibits the trigger generator until these pins drop to about 3.2 V after holdoff time.

SWEEP CONTROL

U175, with additional external circuitry, controls the sweep generator. In the automatic triggering mode, pin 19 of U175 is grounded. If pins 1 and 2 of U175 receive no trigger gates from the trigger generator for a period of time determined by R214 and C214, circuitry in U175 outputs a negative-going square-wave. This negative-going square-wave from pin 3 drives the base of Q218 negative. The collector goes positive and stays positive for the duration of the sweep.

When the sweep operates in the triggered mode, a negative pulse from the trigger generator to the base of Q218 also causes the collector of Q218 to go positive. This starts the sweep. In the single sweep mode, pin 12 is connected to +5 V and pin 19 is ungrounded. When the sweep is armed, pins 7 and 11 of U175 are low. This causes the collector of Q190 to rest near -5 V, lighting the TRIG'D READY lamp. This action at pins 7 and 11 also occurs when the sweep is in the triggered mode. The current through DS186 and R186 is not sufficient to allow DS186 to emit visible light, but enough to prevent high currents at turn on.

When pin 18 is at +5 V, -1 V, the sweep is disabled. When the voltage is at 0 V, -1 V, the sweep is enabled. This occurs through action at the anode of CR182 from the mainframe, through CR184 and the RESET button or in the external horizontal amplifier mode, through S280-9 and CR230. The sweep is disabled when the RESET button is held closed to prevent transients from falsely triggering the sweep in the single sweep mode.

Theory of Operation—5B40

Pin 17 outputs the lockout waveform. This connects to the trigger generator preventing this circuit from generating sweep gating waveforms during holdoff times or after a single sweep has occurred. The trigger generator must be disabled as the triggering waveform, in the triggered mode, passes through R225 and C225 to the base of Q218. U175 controls Q218 only in the automatic mode of operation.

Holdoff time begins at the peak of the sweep ramp. It is necessary to allow the sweep circuits to return completely to quiescent conditions before the next sweep starts. The capacitors and resistors connected to pin 8 of U175 determine the holdoff time. They are switched depending on the sweep speed. Holdoff time starts when pin 16 of U175 reaches about 2.4 V.

SWEEP GENERATOR

The sweep ramp is generated in U260 during the time pin 1 is high. The ramp is fed to the horizontal amplifiers from pin 8. Timing capacitors C, and timing resistors R, determine the rate of rise. R270 and R272 set the voltage (10 V) at one half of a comparator in U260. The other half is connected internally to the sweep ramp. When the ramp voltage reaches the voltage on pin 6, pin 4 goes high, providing end of sweep information for U175, pin 16, through CR267.

The waveform at the collector of Q218 also operates the unblanking circuitry through CR252 and Q245 during sweep time. When pin 4 of U260 goes high at the end of the sweep, Q290 conducts. This assures that the crt is blanked at the start of retrace. The crt is also unblanked by connecting the anode of CR255 to +5 V via S280-9 in the external horizontal operating mode. Under these conditions, the sweep is also disabled through CR230 and pin 18 of U175, as described previously. The pulse at the collector of Q218, through Q250, provides end of sweep information to vertical multi-trace plug-ins when used in the alternate sweep modes.

OUTPUT BUFFER

The sweep ramp is applied to the base of Q360. Q360 and Q335 compose an emitter-coupled paraphase buffer amplifier for the sweep ramp. In the magnified mode, emitter degeneration is reduced, resulting in a ten times

increase in gain. The collectors of Q335 and Q360 are current starved so that their voltage excursions are limited to about 1.2 V maximum. Q340 is a constant current source. Sweep positioning is accomplished by varying the current balance in the amplifier at the base of Q335. When the plug-in is operated in the external amplifier mode, the junction of R329 and R330 is grounded, thus eliminating the effect of the position control on the base of Q335.

EXTERNAL HORIZONTAL AMPLIFIER

Q300, Q310, and Q312 form the external horizontal amplifier. This configuration is an operational amplifier. The base of Q310 is the + input, the base of Q312 is the - input. R320 is R_f , and R315 and R317 make up R. Output is taken from the collector of Q300 to the + sweep output terminal. Positioning voltage is applied to the - input. When the 5B40 is not operating in the external horizontal mode Q310 and Q312 are disabled by raising their emitters to about 2.5 V through CR310 and S280-2.

READOUT

The SECONDS/DIV, CAL and SWP MAG switches have contacts wired into the readout circuitry. A zero to -15 V pulse, approximately 125 μ 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 5B40, 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 mainframe manual for more details on the time slot and current required for each character. Opening S280-10 in the AMPL mode disables the sweep readout. When the MAG button is depressed, the readout shows the time per division reduced by an order of magnitude. When the CAL knob is not in its detent position, the uncalibrated sign > appears in front of the sweep rate information. Diodes CR370 through CR376, and CR378 connected to the time slot lines, decouple noise pulses generated in the mainframe readout circuitry.

TIMING SWITCH DETAILS

Timing capacitors and resistors are connected according to the switching chart shown on Schematic 4. The CAL potentiometer varies the timing resistance in any position of the SECONDS/DIV switch. Neons DS390 and DS391 illuminate the SECONDS/DIV knob skirt.

SERVICE INFORMATION

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.

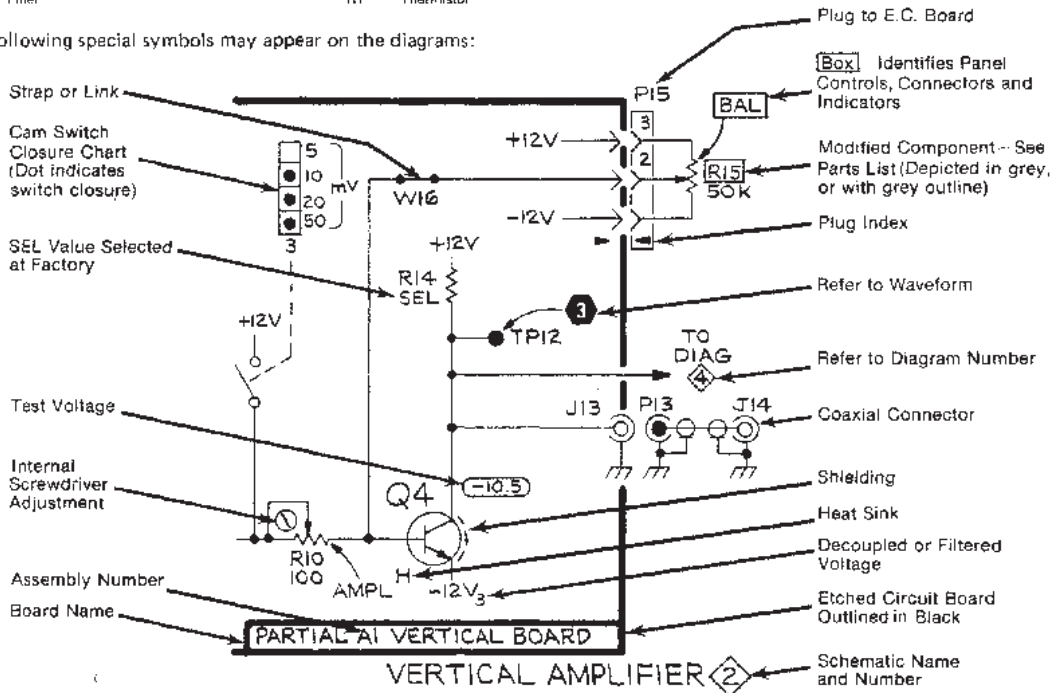
Other ANSI standards that are used in the preparation of diagrams by Tektronix, Inc. are:

- 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 |
| AT | Attenuator, fixed or variable | HR | Heater | T | Transformer |
| B | Motor | HY | Hybrid circuit | TC | Thermocouple |
| B ⁻ | 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 |
| CP | Diode, signal or rectifier | M | Meter | VR | Voltage regulator (zener diode, etc.) |
| DL | Delay line | P | Connector, movable 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 | | |
| FL | Filter | | | | |

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 H8-1 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 | SEMIGOND | SEMICONDUCTOR |
| ELECTLT | ELECTROLYTIC | SENS | SENSITIVE |
| ELEC | ELECTRICAL | VAR | VARIABLE |
| INCAND | INCANDESCENT | WW | WIREWOUND |
| LED | LIGHT EMITTING DIODE | XFMR | TRANSFORMER |
| NONWIR | NON WIREWOUND | XTAL | CRYSTAL |

Replaceable Electrical Parts—5B40

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 |
| 04713 | MOTOROLA, INC., SEMICONDUCTOR PROD. DIV. | 5005 E MCDOWELL RD. PO BOX 20923 | PHOENIX, AZ 85038 |
| 07253 | FAIRCHILD SEMICONDUCTOR, A DIV. OF FAIRCHILD CAMERA AND INSTRUMENT CORP. | 464 ELLIS STREET LOWER WASHINGTON STREET | MOUNTAIN VIEW, CA 94042 DOVER, NH 03820 |
| 12697 | CLAROSTAT MFG. CO., INC. | 580 PLEASANT STREET | WATERTOWN, MA 02172 |
| 12969 | UNITRODE CORPORATION | | LOS GATOS, CA 95030 |
| 13511 | AMPHENOL CARDRE DIV., BUNKER RAMO CORP. | | SANTA ANA, CA 92704 |
| 14552 | MICRO SEMICONDUCTOR CORP. | 2830 E FAIRVIEW ST. P O BOX 760 | MINERAL WELLS, TX 76067 |
| 19701 | ELECTRA-MIDLAND CORP., MEPCO ELECTRA INC. | | |
| 22229 | SOLITRON DEVICES, INC., SEMICONDUCTOR GROUP | 8808 BALBOA AVENUE | SAN DIEGO OPERS, CA 92123 |
| 24546 | CORNING GLASS WORKS, ELECTRONIC COMPONENTS DIVISION | 550 HIGH STREET | BRADFORD, PA 16701 |
| 31918 | IEE/SCHADOW INC. | 8081 WALLACE ROAD | EDEN PRAIRIE, MN 55343 |
| 32997 | BOURNS, INC., TRIMPOT PRODUCTS DIV. | 1200 COLUMBIA AVE. | RIVERSIDE, CA 92507 |
| 50434 | HEWLETT-PACKARD COMPANY | 540 PAGE MILL ROAD | PALO ALTO, CA 94304 |
| 52769 | SPRAGUE GOODMAN ELEC., INC. | 134 FULTON AVENUE | GARDEN CITY PARK, NY 11040 |
| 53944 | ELT INC., GLOW LITE DIVISION | BOX 698 | PAULS VALLEY, OK 73075 |
| 56289 | SPRAGUE ELECTRIC CO. | 87 MARSHALL ST. | NORTH ADAMS, MA 01247 |
| 57668 | R-OHM CORP. | 16931 MILLIKEN AVE. | IRVINE, CA 92713 |
| 53660 | TUSONIX INC. | 2155 N FORBES BLVD | TUCSON, AZ 85705 |
| 59821 | CENTRALAB INC SUB NORTH AMERICAN PHILIPS CORP | 7158 MERCHANT AVE | EL PASO, TX 79915 |
| 71590 | CENTRALAB ELECTRONICS, DIV. OF GLOBE-UNION, INC. | P O BOX 858 | FORT DODGE, IA 50501 |
| 71744 | CHICAGO MINIATURE LAMP WORKS | 4433 RAVENSWOOD AVE. | CHICAGO, IL 60640 |
| 73138 | BECKMAN INSTRUMENTS, INC., HELIPOT 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 |
| 76493 | BELL INDUSTRIES, INC., MILLER, J. W., DIV. | 19070 REYES AVE., P O BOX 5825 P O BOX 500 | COMPTON, CA 90224 BEAVERTON, OR 97077 |
| 80009 | TEKTRONIX, INC. | 3029 E. WASHINGTON STREET | |
| 90201 | MALLORY CAPACITOR CO., DIV. OF P. R. MALLORY AND CO., INC. | P. O. BOX 372 P. O. BOX 609 | INDIANAPOLIS, IN 46206 COLUMBUS, NE 68601 |
| 91637 | DALE ELECTRONICS, INC. | | |
| 92966 | SYLVANIA MINIATURE LIGHTING PRODUCTS, INC., SUB OF GTE SYLVANIA, LIGHT. PROD. | 525 ELM STREET | KEARNY, NJ 07032 |
| T0058 | NEC ELECTRON INC. | 252 HUMBOLT COURT | SUNNYVALE, CA 94086 |

Replaceable Electrical Parts—5B40

| Ckt No. | Tektronix | Serial/Model No | | Name & Description | Mfr Code | Mfr Part Number |
|---------|-------------|-----------------|---------|--------------------------------------|----------|------------------|
| | Part No. | Eff | Discont | | | |
| A1 | 670-2543-00 | B010100 | B021634 | CKT BOARD ASSY:MAIN | 80009 | 670-2543-00 |
| A1 | 670-2543-01 | 9021635 | B029999 | CKT BOARD ASSY:MAIN | 80009 | 670-2543-01 |
| A1 | 670-2543-02 | B030000 | B039999 | CKT BOARD ASSY:MAIN | 80009 | 670-2543-02 |
| A1 | 670-2543-03 | B040000 | B044252 | CKT BOARD ASSY:MAIN | 80009 | 670-2543-03 |
| A1 | 670-2543-04 | B044253 | B044468 | CKT BOARD ASSY:MAIN | 80009 | 670-2543-04 |
| A1 | 670-2543-05 | B044469 | | CKT BOARD ASSY:MAIN | 80009 | 670-2543-05 |
| C100 | 281-0511-00 | | | CAP.,FXD,CER DI:22PF,+/-2.2PF,500V | 59660 | 301-000C0G022DK |
| C105 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC EX |
| C112 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC EX |
| C114 | 283-0001-00 | | | CAP.,FXD,CER DI:0.005UF,+100-0%,500V | 59821 | 2DDH61L502P |
| C115 | 281-0504-00 | | | CAP.,FXD,CER DI:10PF,+/-1PF,500V | 59660 | 301000C0G0100F |
| C116 | 281-0207-00 | | | CAP.,VAR,PLSTC:2-18PF,100V | 52769 | GXA 18000 |
| C118 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C124 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C130 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC EX |
| C133 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC EX |
| C135 | 281-0524-00 | | | CAP.,FXD,CER DI:150PF,+/-30PF,500V | 59660 | 301000X5U151M |
| C137 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C140 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC EX |
| C145 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC EX |
| C146 | 290-0536-00 | | | CAP.,FXD,ELCTLT:10UF,20%,25V | 90201 | TDC106M025FL |
| C152 | 281-0524-00 | | | CAP.,FXD,CER DI:150PF,+/-30PF,500V | 59660 | 301000X5U151M |
| C154 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC EX |
| C165 | 290-0536-00 | | | CAP.,FXD,ELCTLT:10UF,20%,25V | 90201 | TDC106M025FL |
| C167 | 281-0605-00 | | | CAP.,FXD,CER DI:200PF,10%,500V | 59660 | 301000Y5D201K |
| C169 | 281-0528-00 | | | CAP.,FXD,CER DI:82PF,+/-8.2PF,500V | 59660 | 301-000U2M0820K |
| C190 | 290-0536-00 | | | CAP.,FXD,ELCTLT:10UF,20%,25V | 90201 | TDC106M025FL |
| C195 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C197 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C200 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C205 | 281-0523-00 | | | CAP.,FXD,CER DI:100PF,+/-20PF,500V | 59660 | 301-000U2M0101M |
| C208 | 281-0605-00 | | | CAP.,FXD,CER DI:200PF,10%,500V | 59660 | 301000Y5D201K |
| C210 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C212 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC EX |
| C214 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C220 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C225 | 281-0546-00 | | | CAP.,FXD,CER DI:330PF,10%,500V | 59660 | 301000X5P331K |
| C232 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC EX |
| C240 | 281-0516-00 | | | CAP.,FXD,CER DI:39PF,+/-3.9PF,500V | 59660 | 301-000U2J0390K |
| C248 | 281-0546-00 | | | CAP.,FXD,CER DI:330PF,10%,500V | 59660 | 301000X5P331K |
| C260 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC EX |
| C262 | 281-0523-00 | | | CAP.,FXD,CER DI:100PF,+/-20PF,500V | 59660 | 301-000U2M0101M |
| C263 | 281-0523-00 | | | CAP.,FXD,CER DI:100PF,+/-20PF,500V | 59660 | 301-000U2M0101M |
| C272 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC EX |
| C275 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C280 | 295-0143-00 | | | CAP.,SET,MTCHD:10UF,0.1UF,0.001UF | 80009 | 295-0143-00 |
| C282 | ----- | | | (PART OF C280) | | |
| C283 | ----- | | | (PART OF C280) | | |
| C285 | 283-0631-00 | | | CAP.,FXD,MICA D:95PF,1%,500V | 00853 | D155F950F0 |
| C286 | 281-0080-00 | | | CAP.,VAR,AIR DI:1.7-11PF,800V | 74970 | 189-0505-075 |
| C304 | 281-0546-00 | | | CAP.,FXD,CER DI:330PF,10%,500V | 59660 | 301000X5P331K |
| C310 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC EX |
| C312 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C320 | 281-0516-00 | | | CAP.,FXD,CER DI:39PF,+/-3.9PF,500V | 59660 | 301-000U2J0390K |

Replaceable Electrical Parts—5B40

| Ckt No. | Tektronix Part No. | Serial/Model No. | | Name & Description | Mfr Code | Mfr Part Number |
|---------|--------------------|------------------|---------|--|----------|------------------|
| | | Eff | Discont | | | |
| C329 | 283-0000-00 | | | CAP.,FXD,CER DI:0.001UF,+100-0%,500V | 59660 | 831610Y5U0102P |
| C345 | 281-0546-00 | B021635 | | CAP.,FXD,CER DI:330PF,10%,500V | 59660 | 301000X5P331K |
| C348 | 281-0504-00 | | | CAP.,FXD,CER DI:10PF,+/-1PF,500V | 59660 | 301000C0G0100F |
| C390 | 283-0003-00 | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 59821 | D103Z40Z5UJDC0EX |
| CR120 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR121 | 152-0141-02 | B044469 | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR122 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR124 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR178 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR180 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR182 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR184 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR195 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR205 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR216 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR230 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR240 | 152-0141-02 | B010100 | B044252 | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR240 | 152-0322-00 | B044253 | | SEMICON DEVICE:SILICON,15V,HOT CARRIER | 50434 | 5082-2672 |
| CR248 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR252 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR253 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR255 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR267 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR310 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR370 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR371 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR372 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR373 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR374 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR375 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR376 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| CR378 | 152-0141-02 | | | SEMICON DVC,DI:SW,SI,30V,150MA,30V,DO-35 | 12969 | NDP0263 (1N4152) |
| DS186 | 150-0046-00 | | | LAMP,INCAND:10V,0.04A | 71744 | CM2107 |
| DS390 | 150-0111-00 | B010100 | B029999 | LAMP,GLOW:NEON,1.2MA | 53944 | A1B-3 |
| DS390 | 150-0130-00 | B030000 | | LAMP,INCAND:5V,60MA | 92966 | 34254-TINNED |
| DS391 | 150-0111-00 | B010100 | B029999 | LAMP,GLOW:NEON,1.2MA | 53944 | A1B-3 |
| DS391 | 150-0130-00 | B030000 | | LAMP,INCAND:5V,60MA | 92966 | 34254-TINNED |
| J100 | 131-0955-00 | | | CONN,RCPT,ELEC:BNC,FEMALE | 13511 | 31-279 |
| LR137 | 108-0245-00 | | | COIL,RF:3.9UH | 76493 | B6310-1 |
| LR146 | 108-0245-00 | | | COIL,RF:3.9UH | 76493 | B6310-1 |
| LR165 | 108-0245-00 | | | COIL,RF:3.9UH | 76493 | B6310-1 |
| LR200 | 108-0245-00 | | | COIL,RF:3.9UH | 76493 | B6310-1 |
| LR275 | 108-0245-00 | | | COIL,RF:3.9UH | 76493 | B6310-1 |
| LR312 | 108-0245-00 | | | COIL,RF:3.9UH | 76493 | B6310-1 |
| Q120 | 151-1042-00 | | | SEMICON DVC SE:MATCHED PAIR FET | 22229 | S2089 |
| Q124 | ----- | | | (PART OF Q120) | | |
| Q130 | 151-0188-00 | | | TRANSISTOR:PNP,SI,TO-92 | T0058 | 2N3906 |
| Q135 | 151-0190-00 | | | TRANSISTOR:NPN,SI,TO-92 | 04713 | SPS7969 |
| Q140 | 151-0190-00 | | | TRANSISTOR:NPN,SI,TO-92 | 04713 | SPS7969 |
| Q190 | 151-0342-00 | | | TRANSISTOR:SILICON,PNP | 07263 | S035928 |
| Q218 | 151-0188-00 | | | TRANSISTOR:PNP,SI,TO-92 | T0058 | 2N3906 |
| Q240 | 151-0190-00 | | | TRANSISTOR:NPN,SI,TO-92 | 04713 | SPS7969 |
| Q245 | 151-0195-00 | | | TRANSISTOR:SILICON,NPN | 04713 | SPS8800 |
| Q250 | 151-0188-00 | | | TRANSISTOR:PNP,SI,TO-92 | T0058 | 2N3906 |
| Q300 | 151-0342-00 | | | TRANSISTOR:SILICON,PNP | 07263 | S035928 |

Replaceable Electrical Parts—5B40

| Ckt No. | Tektronix Part No. | Serial/Model No. | | Name & Description | Mfr Code | Mfr Part Number |
|---------|--------------------|------------------|---------|-----------------------------------|----------|-----------------|
| | | Eff | Dscont | | | |
| Q310 | 151-0341-00 | | | TRANSISTOR:NPN,SI,TO-106 | 04713 | SP56919 |
| Q312 | 151-0341-00 | | | TRANSISTOR:NPN,SI,TO-106 | 04713 | SP56919 |
| Q335 | 151-0188-00 | | | TRANSISTOR:PNP,SI,TO-92 | T0058 | 2N3906 |
| Q340 | 151-0188-00 | | | TRANSISTOR:PNP,SI,TO-92 | T0058 | 2N3906 |
| Q360 | 151-0188-00 | | | TRANSISTOR:PNP,SI,TO-92 | T0058 | 2N3906 |
| R100 | 315-0221-00 | | | RES.,FXD,CMPSN:220 OHM,5%,0.25W | 57668 | NTR25J-E220E |
| R102 | 322-0464-00 | | | RES.,FXD,FILM:665K OHM,1%,0.25W | 75042 | CEBT0-6653F |
| R105 | 315-0682-00 | | | RES.,FXD,CMPSN:6.8K OHM,5%,0.25W | 57668 | NTR25J-E06K8 |
| R107 | 315-0513-00 | | | RES.,FXD,CMPSN:51K OHM,5%,0.25W | 57668 | NTR25J-E51K0 |
| R109 | 321-0078-00 | | | RES.,FXD,FILM:63.4 OHM,1%,0.125W | 91637 | MFF1816G63R40F |
| R110 | 321-0078-00 | | | RES.,FXD,FILM:63.4 OHM,1%,0.125W | 91637 | MFF1816G63R40F |
| R116 | 321-0435-00 | | | RES.,FXD,FILM:332K OHM,1%,0.125W | 91637 | MFF1816G33202F |
| R118 | 315-0101-00 | | | RES.,FXD,CMPSN:100 OHM,5%,0.25W | 57668 | NTR25J-E 100E |
| R120 | 315-0220-00 | | | RES.,FXD,CMPSN:22 OHM,5%,0.25W | 57668 | NTR25J-E 22E |
| R125 | 311-1568-00 | | | RES.,VAR,NONWIR:50 OHM,20%,0.50W | 73138 | 91-90-0 |
| R126 | 315-0101-00 | | | RES.,FXD,CMPSN:100 OHM,5%,0.25W | 57668 | NTR25J-E 100E |
| R130 | 315-0272-00 | | | RES.,FXD,CMPSN:2.7K OHM,5%,0.25W | 57668 | NTR25J-E02K7 |
| R132 | 315-0222-00 | | | RES.,FXD,CMPSN:2.2K OHM,5%,0.25W | 57668 | NTR25J-E02K2 |
| R133 | 315-0101-00 | | | RES.,FXD,CMPSN:100 OHM,5%,0.25W | 57668 | NTR25J-E 100E |
| R135 | 315-0220-00 | | | RES.,FXD,CMPSN:22 OHM,5%,0.25W | 57668 | NTR25J-E 22E |
| R137 | 315-0302-00 | | | RES.,FXD,CMPSN:3K OHM,5%,0.25W | 57668 | NTR25J-E03K0 |
| R139 | 315-0220-00 | | | RES.,FXD,CMPSN:22 OHM,5%,0.25W | 57668 | NTR25J-E 22E |
| R142 | 315-0121-00 | | | RES.,FXD,CMPSN:120 OHM,5%,0.25W | 57668 | NTR25J-E 120E |
| R144 | 315-0121-00 | | | RES.,FXD,CMPSN:120 OHM,5%,0.25W | 57668 | NTR25J-E 120E |
| R146 | 315-0201-00 | | | RES.,FXD,CMPSN:200 OHM,5%,0.25W | 57668 | NTR25J-E200E |
| R150 | 315-0101-00 | | | RES.,FXD,CMPSN:100 OHM,5%,0.25W | 57668 | NTR25J-E 100E |
| R152 | 315-0222-00 | | | RES.,FXD,CMPSN:2.2K OHM,5%,0.25W | 57668 | NTR25J-E02K2 |
| R154 | 315-0513-00 | | | RES.,FXD,CMPSN:51K OHM,5%,0.25W | 57668 | NTR25J-E51K0 |
| R160 | 311-0580-00 | B010100 | B020591 | RES.,VAR,NONWIR:50K OHM,20%,0.50W | 01121 | W-6155 |
| R160 | 311-1782-00 | B020592 | | RES.,VAR,NONWIR:50K OHM,10%,0.50W | 12697 | 388-CM40914 |
| R162 | 315-0220-00 | | | RES.,FXD,CMPSN:22 OHM,5%,0.25W | 57668 | NTR25J-E 22E |
| R163 | 315-0220-00 | | | RES.,FXD,CMPSN:22 OHM,5%,0.25W | 57668 | NTR25J-E 22E |
| R165 | 315-0362-00 | | | RES.,FXD,CMPSN:3.6K OHM,5%,0.25W | 57668 | NTR25J-E 3K6 |
| R167 | 315-0102-00 | | | RES.,FXD,CMPSN:1K OHM,5%,0.25W | 57668 | NTR25J-E01K0 |
| R169 | 315-0182-00 | | | RES.,FXD,CMPSN:1.8K OHM,5%,0.25W | 57668 | NTR25J-E1K8 |
| R175 | 321-0193-00 | | | RES.,FXD,FILM:1K OHM,1%,0.125W | 19701 | 5043ED1K00F |
| R176 | 321-0253-00 | | | RES.,FXD,FILM:4.22K OHM,1%,0.125W | 91637 | MFF1816G42200F |
| R180 | 321-0193-00 | | | RES.,FXD,FILM:1K OHM,1%,0.125W | 19701 | 5043ED1K00F |
| R181 | 321-0253-00 | | | RES.,FXD,FILM:4.22K OHM,1%,0.125W | 91637 | MFF1816G42200F |
| R184 | 315-0472-00 | | | RES.,FXD,CMPSN:4.7K OHM,5%,0.25W | 57668 | NTR25J-E04K7 |
| R185 | 315-0271-00 | | | RES.,FXD,CMPSN:270 OHM,5%,0.25W | 01121 | CB2715 |
| R187 | 315-0220-00 | | | RES.,FXD,CMPSN:22 OHM,5%,0.25W | 57668 | NTR25J-E 22E |
| R190 | 315-0223-00 | | | RES.,FXD,CMPSN:22K OHM,5%,0.25W | 57668 | NTR25J-E 22K |
| R192 | 315-0222-00 | | | RES.,FXD,CMPSN:2.2K OHM,5%,0.25W | 57668 | NTR25J-E02K2 |
| R193 | 315-0153-00 | | | RES.,FXD,CMPSN:15K OHM,5%,0.25W | 57668 | NTR25J-E 15K |
| R195 | 315-0913-00 | | | RES.,FXD,CMPSN:91K OHM,5%,0.25W | 57668 | NTR25J-E 91K |
| R197 | 315-0473-00 | | | RES.,FXD,CMPSN:47K OHM,5%,0.25W | 57668 | NTR25J-E47K0 |
| R200 | 315-0181-00 | | | RES.,FXD,CMPSN:180 OHM,5%,0.25W | 57668 | NTR25J-E180E |
| R205 | 315-0154-00 | | | RES.,FXD,CMPSN:150K OHM,5%,0.25W | 57668 | NTR25J-E150K |
| R208 | 315-0163-00 | | | RES.,FXD,CMPSN:16K OHM,5%,0.25W | 57668 | NTR25J-E16K0 |
| R214 | 315-0334-00 | | | RES.,FXD,CMPSN:330K OHM,5%,0.25W | 01121 | CB3345 |
| R216 | 315-0473-00 | | | RES.,FXD,CMPSN:47K OHM,5%,0.25W | 57668 | NTR25J-E47K0 |
| R218 | 315-0102-00 | | | RES.,FXD,CMPSN:1K OHM,5%,0.25W | 57668 | NTR25J-E01K0 |
| R220 | 301-0391-00 | | | RES.,FXD,CMPSN:390 OHM,5%,0.5W | 01121 | EB3915 |

Replaceable Electrical Parts—5B40

| Ckt No. | Tektronix Part No. | Serial/Model No. Eff | Discont | Name & Description | Mfr Code | Mfr Part Number |
|---------|--------------------|----------------------|---------|--------------------------------------|----------|-----------------|
| R225 | 315-0271-00 | | | RES.,FXD,CMPNS:270 OHM,5%,0.25W | 01121 | CB2715 |
| R230 | 315-0682-00 | | | RES.,FXD,CMPNS:6.8K OHM,5%,0.25W | 57668 | NTR25J-E06K8 |
| R232 | 315-0222-00 | | | RES.,FXD,CMPNS:2.2K OHM,5%,0.25W | 57668 | NTR25J-E02K2 |
| R235 | 315-0102-00 | | | RES.,FXD,CMPNS:1K OHM,5%,0.25W | 57668 | NTR25J-E01K0 |
| R236 | 315-0272-00 | | | RES.,FXD,CMPNS:2.7K OHM,5%,0.25W | 57668 | NTR25J-E02K7 |
| R240 | 315-0911-00 | | | RES.,FXD,CMPNS:910 OHM,5%,0.25W | 57668 | NTR25J-E910E |
| R242 | 315-0271-00 | B010100 | B044252 | RES.,FXD,CMPNS:270 OHM,5%,0.25W | 01121 | CB2715 |
| R242 | 315-0680-00 | B044253 | | RES.,FXD,CMPNS:6.8K OHM,5%,0.25W | 57668 | NTR25J-E68E0 |
| R243 | 315-0751-00 | B010100 | B044252 | RES.,FXD,CMPNS:750 OHM,5%,0.25W | 57668 | NTR25J-E750E |
| R243 | 315-0911-00 | B044253 | | RES.,FXD,CMPNS:910 OHM,5%,0.25W | 57668 | NTR25J-E910E |
| R245 | 315-0202-00 | | | RES.,FXD,CMPNS:2K OHM,5%,0.25W | 57668 | NTR25J-E02K0 |
| R248 | 315-0152-00 | | | RES.,FXD,CMPNS:1.5K OHM,5%,0.25W | 57668 | NTR25J-E01K5 |
| R250 | 315-0302-00 | | | RES.,FXD,CMPNS:3K OHM,5%,0.25W | 57668 | NTR25J-E03K0 |
| R255 | 315-0682-00 | | | RES.,FXD,CMPNS:6.8K OHM,5%,0.25W | 57668 | NTR25J-E06K8 |
| R260 | 315-0621-00 | | | RES.,FXD,CMPNS:620 OHM,5%,0.25W | 57668 | NTR25J-E620E |
| R262 | 315-0101-00 | | | RES.,FXD,CMPNS:100 OHM,5%,0.25W | 57668 | NTR25J-E 100E |
| R265 | 315-0362-00 | | | RES.,FXD,CMPNS:3.6K OHM,5%,0.25W | 57668 | NTR25J-E 3K6 |
| R267 | 315-0223-00 | | | RES.,FXD,CMPNS:22K OHM,5%,0.25W | 57668 | NTR25J-E 22K |
| R270 | 321-0368-00 | | | RES.,FXD,FILM:107K OHM,1%,0.125W | 91637 | MFF1816G10702F |
| R272 | 321-0358-00 | B010100 | B021514 | RES.,FXD,FILM:52.3K OHM,1%,0.125W | 91637 | MFF1816G52301F |
| R272 | 321-0365-00 | B021515 | | RES.,FXD,FILM:61.9K OHM,1%,0.125W | 91637 | MFF1816G61901F |
| R275 | 315-0682-00 | | | RES.,FXD,CMPNS:6.8K OHM,5%,0.25W | 57668 | NTR25J-E06K8 |
| R278 | 315-0473-00 | | | RES.,FXD,CMPNS:47K OHM,5%,0.25W | 57668 | NTR25J-E47K0 |
| R279 | 315-0102-00 | | | RES.,FXD,CMPNS:1K OHM,5%,0.25W | 57668 | NTR25J-E01K0 |
| R280 | 315-0330-00 | B021515 | | RES.,FXD,CMPNS:33 OHM,5%,0.25W | 57668 | NTR25J-E 33E |
| R283 | 315-0100-00 | | | RES.,FXD,CMPNS:10 OHM,5%,0.25W | 57668 | NTR25J-E 10E0 |
| R285 | 323-0498-03 | | | RES.,FXD,FILM:1.5M OHM,0.25%,0.50W | 91637 | HFF12915003C |
| R286 | 323-0498-03 | | | RES.,FXD,FILM:1.5M OHM,0.25%,0.50W | 91637 | HFF12915003C |
| R287 | 321-0917-03 | | | RES.,FXD,FILM:27.2K OHM,0.25%,0.125W | 91637 | CMF55116D27201C |
| R288 | 321-0856-03 | | | RES.,FXD,FILM:330K OHM,0.25%,0.125W | 91637 | CMF55116D33002C |
| R289 | 321-0200-00 | | | RES.,FXD,FILM:1.19K OHM,1%,0.125W | 91637 | CMF55116G11800F |
| R290 | 321-0830-03 | | | RES.,FXD,FILM:2.41K OHM,0.25%,0.125W | 91637 | MFF1816D24100C |
| R291 | 321-0827-03 | | | RES.,FXD,FILM:3.61K OHM,0.25%,0.125W | 91637 | MFF1816D36100C |
| R292 | 321-0268-03 | | | RES.,FXD,FILM:6.04K OHM,0.25%,0.125W | 91637 | MFF1816D60400C |
| R293 | 321-0234-00 | | | RES.,FXD,FILM:2.67K OHM,1%,0.125W | 91637 | MFF1816G26700F |
| R294 | 315-0124-00 | | | RES.,FXD,CMPNS:120K OHM,5%,0.25W | 57668 | NTR25J-E 120K |
| R295 | 311-1402-00 | | | RES.,VAR, NONWIR:20K OHM,20%,0.50W | 01121 | 10M921 |
| R295 | — | | | (PART OF S378) | | |
| R296 | 321-0289-00 | | | RES.,FXD,FILM:10K OHM,1%,0.125W | 91637 | MFF1816G10001F |
| R297 | 321-0164-00 | | | RES.,FXD,FILM:499 OHM,1%,0.125W | 91637 | CMF55116G499R0F |
| R300 | 315-0911-00 | | | RES.,FXD,CMPNS:910 OHM,5%,0.25W | 57668 | NTR25J-E910E |
| R302 | 315-0221-00 | | | RES.,FXD,CMPNS:220 OHM,5%,0.25W | 57668 | NTR25J-E220E |
| R304 | 315-0121-00 | | | RES.,FXD,CMPNS:120 OHM,5%,0.25W | 57668 | NTR25J-E 120E |
| R308 | 315-0223-00 | | | RES.,FXD,CMPNS:22K OHM,5%,0.25W | 57668 | NTR25J-E 22K |
| R310 | 315-0621-00 | | | RES.,FXD,CMPNS:620 OHM,5%,0.25W | 57668 | NTR25J-E620E |
| R312 | 315-0472-00 | | | RES.,FXD,CMPNS:4.7K OHM,5%,0.25W | 57668 | NTR25J-E04K7 |
| R314 | 315-0472-00 | | | RES.,FXD,CMPNS:4.7K OHM,5%,0.25W | 57668 | NTR25J-E04K7 |
| R315 | 311-1566-00 | | | RES.,VAR, NONWIR:200 OHM,20%,0.50W | 73138 | 91-88-0 |
| R317 | 321-0172-00 | | | RES.,FXD,FILM:504 OHM,1%,0.125W | 91637 | CMF55116G604R0F |
| R320 | 321-0208-00 | | | RES.,FXD,FILM:1.43K OHM,1%,0.125W | 91637 | MFF1816G14300F |
| R323 | 321-0342-00 | | | RES.,FXD,FILM:35.7K OHM,1%,0.125W | 91637 | MFF1816G35701F |
| R325 | 311-0310-00 | B010100 | B020591 | RES.,VAR, NONWIR:5K OHM,20%,0.50W | 01121 | W-7350A |
| R325 | 311-1783-00 | B020592 | | RES.,VAR, NONWIR:5K OHM,10%,0.50W | 12697 | 388-CM40915 |
| R329 | 321-0269-00 | | | RES.,FXD,FILM:5.19K OHM,1%,0.125W | 91637 | MFF1816G61900F |

Replaceable Electrical Parts—5B40

| Ckt No. | Tektronix Part No. | Serial/Model No. | | Name & Description | Mfr Code | Mfr Part Number |
|---------|--------------------|------------------|---------|--|----------|-----------------|
| | | Eff | Discont | | | |
| R330 | 321-0172-00 | | | RES.,FXD,FILM:604 OHM,1%,0.125W | 91637 | CMF55116G604R0F |
| R332 | 321-0210-00 | | | RES.,FXD,FILM:1.5K OHM,1%,0.125W | 91637 | MFF1816G15000F |
| R334 | 321-0283-00 | | | RES.,FXD,FILM:8.68K OHM,1%,0.125W | 91637 | CMF55116G86800F |
| R335 | 321-0259-00 | | | RES.,FXD,FILM:4.87K OHM,1%,0.125W | 91637 | MFF1816G48700F |
| R337 | 321-0098-00 | | | RES.,FXD,FILM:102 OHM,1%,0.125W | 91637 | MFF1816G102R0F |
| R340 | 315-0101-00 | | | RES.,FXD,CMPSN:100 OHM,5%,0.25W | 57668 | NTR25J-E 100E |
| R341 | 322-0229-00 | | | RES.,FXD,FILM:2.37K OHM,1%,0.25W | 75042 | CEBT0-2371F |
| R342 | 321-0222-00 | | | RES.,FXD,FILM:2K OHM,1%,0.125W | 91637 | MFF1816G20000F |
| R344 | 321-0231-00 | | | RES.,FXD,FILM:2.49K OHM,1%,0.125W | 91637 | MFF1816G24900F |
| R345 | 311-1562-00 | | | RES.,VAR, NONWIR:TRMR,2K OHM,0.5W | 32997 | 3352T-1-202 |
| R346 | 315-0512-00 | B021635 | | RES.,FXD,CMPSN:5.1K OHM,5%,0.25W | 57668 | NTR25J-E05K1 |
| R348 | 321-0108-00 | | | RES.,FXD,FILM:130 OHM,1%,0.125W | 91637 | CMF55116G13000F |
| R350 | 311-1568-00 | | | RES.,VAR, NONWIR:50 OHM,20%,0.50W | 73138 | 91-90-0 |
| R352 | 321-0222-00 | | | RES.,FXD,FILM:2K OHM,1%,0.125W | 91637 | MFF1816G20000F |
| R355 | 321-0230-00 | | | RES.,FXD,FILM:2.43K OHM,1%,0.125W | 24546 | CT552431F |
| R356 | 321-0331-00 | | | RES.,FXD,FILM:27.4K OHM,1%,0.125W | 91637 | MFF1816G27401F |
| R357 | 321-0230-00 | | | RES.,FXD,FILM:2.43K OHM,1%,0.125W | 24546 | CT552431F |
| R360 | 321-0259-00 | | | RES.,FXD,FILM:4.87K OHM,1%,0.125W | 91637 | MFF1816G48700F |
| R362 | 321-0098-00 | | | RES.,FXD,FILM:102 OHM,1%,0.125W | 91637 | MFF1816G102R0F |
| R370 | 315-0513-00 | | | RES.,FXD,CMPSN:51K OHM,5%,0.25W | 57668 | NTR25J-E51K0 |
| R371 | 315-0753-00 | | | RES.,FXD,CMPSN:75K OHM,5%,0.25W | 57668 | NTR25J-E75K0 |
| R372 | 315-0154-00 | | | RES.,FXD,CMPSN:150K OHM,5%,0.25W | 57668 | NTR25J-E150K |
| R373 | 321-0344-00 | | | RES.,FXD,FILM:37.4K OHM,1%,0.125W | 91637 | MFF1816G37401F |
| R374 | 315-0154-00 | | | RES.,FXD,CMPSN:150K OHM,5%,0.25W | 57668 | NTR25J-E150K |
| R375 | 315-0154-00 | | | RES.,FXD,CMPSN:150K OHM,5%,0.25W | 57668 | NTR25J-E150K |
| R376 | 315-0753-00 | | | RES.,FXD,CMPSN:75K OHM,5%,0.25W | 57668 | NTR25J-E75K0 |
| R377 | 315-0154-00 | | | RES.,FXD,CMPSN:150K OHM,5%,0.25W | 57668 | NTR25J-E150K |
| R378 | 315-0133-00 | | | RES.,FXD,CMPSN:13K OHM,5%,0.25W | 57668 | NTR25J-E 13K |
| R379 | 315-0753-00 | | | RES.,FXD,CMPSN:75K OHM,5%,0.25W | 57668 | NTR25J-E75K0 |
| R380 | 315-0134-00 | | | RES.,FXD,CMPSN:150K OHM,5%,0.25W | 57668 | NTR25J-E150K |
| R381 | 315-0154-00 | | | RES.,FXD,CMPSN:150K OHM,5%,0.25W | 57668 | NTR25J-E150K |
| R382 | 321-0344-00 | | | RES.,FXD,FILM:37.4K OHM,1%,0.125W | 91637 | MFF1816G37401F |
| R383 | 315-0753-00 | | | RES.,FXD,CMPSN:75K OHM,5%,0.25W | 57668 | NTR25J-E75K0 |
| R384 | 315-0513-00 | | | RES.,FXD,CMPSN:51K OHM,5%,0.25W | 57668 | NTR25J-E51K0 |
| R390 | 315-0913-00 | B010100 | B029999 | RES.,FXD,CMPSN:91K OHM,5%,0.25W | 57668 | NTR25J-E 91K |
| R390 | 315-0270-00 | B030000 | | RES.,FXD,CMPSN:27 OHM,5%,0.25W | 57668 | NTR25J-E 27E |
| R391 | 315-0102-00 | B040000 | | RES.,FXD,CMPSN:1K OHM,5%,0.25W | 57668 | NTR25JEC1K0 |
| S100 | 260-1381-00 | | | SWITCH,PUSH:4 STA, NON-SHORT,INTLK | 71590 | 2KBC040000-618 |
| S110 | 260-1618-00 | | | SWITCH,PUSH:4 STA,2 POLE,PUSH-PUSH & MO | 71590 | 2KBM040000-XXX |
| S130 | 260-1448-00 | | | SWITCH,PUSH:3 STA, NON-SHORT | 59821 | 2KBB030000-638 |
| S280 | 263-1083-00 | | | ACTR ASSY,CAM S:ATTENUATOR | 80009 | 263-1083-00 |
| S340 | 260-1209-00 | | | SWITCH,PUSH:4PDT,1A,25VDC | 31918 | 601347 |
| S378 | ----- | | | (PART OF R295) | | |
| S395 | 260-1211-00 | | | SWITCH,PUSH:1A,28VDC | 31918 | 601348 |
| U165 | 155-0109-00 | B010100 | B021739 | MICROCIRCUIT,LI:MONOLITHIC,TRIG | 80009 | 155-0109-00 |
| U165 | 155-0109-01 | B021740 | | MICROCIRCUIT,LI:MONOLITHIC TRIGGER | 80009 | 155-0109-01 |
| U175 | 155-0049-01 | B010100 | B032162 | MICROCIRCUIT,DI:MONOLITHIC,SWEEP CONTROL | 80009 | 155-0049-01 |
| U175 | 155-0049-02 | B032163 | | MICROCIRCUIT,DI:SWEEP CONTROL,W/LOCKOUT | 80009 | 155-0049-02 |
| U260 | 155-0042-03 | B010100 | B042714 | MICROCIRCUIT,LI:MILLER INTEGRATOR | 80009 | 155-0042-03 |
| U260 | 155-0028-00 | B042715 | | MICROCIRCUIT,LI:ML,MILLER INTEGRATOR | 80009 | 155-0028-00 |
| VR120 | 152-0278-00 | | | SEMICOND DEVICE,ZENER,0.4W,3V,5% | 04713 | SZG35009K20 |
| VR122 | 152-0278-00 | | | SEMICOND DEVICE,ZENER,0.4W,3V,5% | 04713 | SZG35009K20 |
| VR220 | 152-0226-00 | B010100 | B010130 | SEMICOND DEVICE,ZENER,0.4W,5.1V,5% | 14552 | TD3810980 |
| VR220 | 153-0059-00 | B010131 | | SEMICOND DVC,SE:ZENER,0.4W,4.75V,5%,SEL | 80009 | 153-0059-00 |

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
    - - - * - - -
  
```

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

Replaceable Mechanical Parts—5B40

CROSS INDEX—MFR. CODE NUMBER TO MANUFACTURER

| Mfr. Code | Manufacturer | Address | City, State, Zip |
|-----------|---|--------------------------|-----------------------------|
| 000CY | NORTHWEST FASTENER SALES, INC. | 7923 SW CIRRHUS DRIVE | BEAVERTON, OR 97003 |
| 05820 | WAKEFIELD ENGINEERING, INC. | AUDUBON ROAD | WAKEFIELD, MA 01880 |
| 09922 | BURNDY CORPORATION | RICHARDS AVENUE | NORWALK, CT 06852 |
| 12327 | FREEMAN CORPORATION | 9301 ALLEN DRIVE | CLEVELAND, OH 44125 |
| 13511 | AMPHENOL CARDRE DIV., BUNKER RAMO CORP. | | LOS GATOS, CA 95030 |
| 22526 | BERG ELECTRONICS, INC. | YOUK EXPRESSWAY | NEW CUMBERLAND, PA 17070 |
| 45722 | USM CORP., PARKER-KALON FASTENER DIV. | | CAMPBELLSVILLE, KY 42718 |
| 71785 | TRW, CINGH CONNECTORS | 1501 MORSE AVENUE | ELK GROVE VILLAGE, IL 60007 |
| 73743 | FISCHER SPECIAL MFG. CO. | 446 MORGAN ST. | CINCINNATI, OH 45206 |
| 73803 | TEXAS INSTRUMENTS, INC., METALLURGICAL MATERIALS DIV. | 34 FOREST STREET | ATTLEBORO, MA 02703 |
| 77900 | SHAKEPROOF | | |
| | DIV OF ILLINOIS TOOL WORKS | SAINT CHARLES RD | ELGIN, IL 60120 |
| 78189 | ILLINOIS TOOL WORKS, INC. | | |
| | SHAKEPROOF DIVISION | ST. CHARLES ROAD | ELGIN, IL 60120 |
| 79136 | WALDES KOHINCOR, 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 |
| 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 |
| 90484 | ITT, SURPRENANT DIV. | 172 STERLING STREET | CLINTON, MA 01510 |
| 93807 | TEXTRON INC. CAMCAR DIV | 600 18TH AVE | ROCKFORD, IL 61101 |

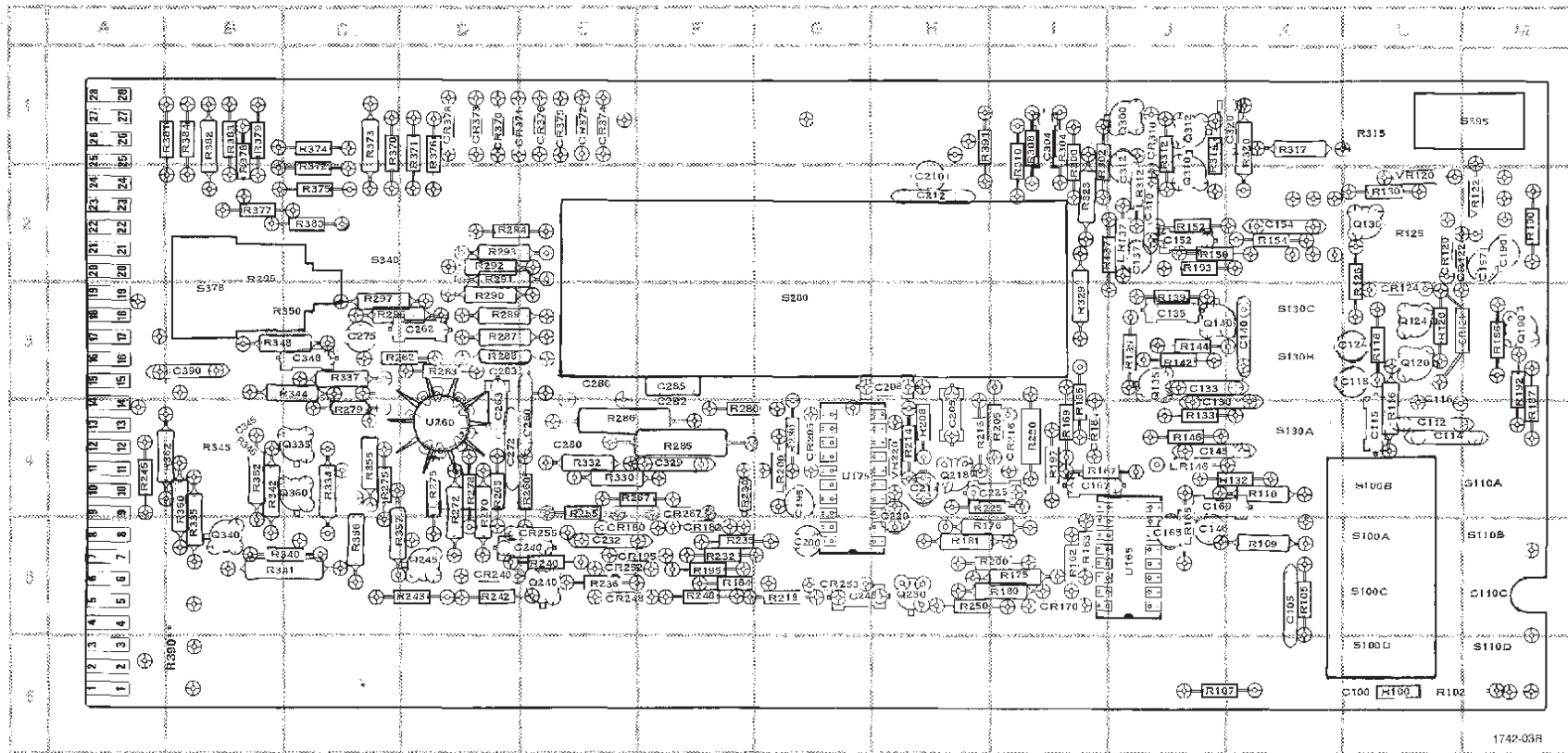
Replaceable Mechanical Parts—5B40

| Fig. & Index No. | Tektronix Part No. | Serial/Model No. | | Qty | 1 | 2 | 3 | 4 | 5 | Name & Description | Mfr Code | Mfr Part Number | |
|------------------|--------------------|------------------|---------|-----|---|---|---|---|---|---|----------|------------------|--|
| | | Eff | Dscort | | | | | | | | | | |
| 1-1 | 337-1399-00 | | | 2 | | | | | | SHLD,ELECTRICAL:SIDE | 80009 | 337-1399-00 | |
| -2 | 366-0494-00 | | | 2 | | | | | | KNOB:GRAY WITH SETSCREW | 80009 | 366-0494-00 | |
| | 213-0153-00 | | | 1 | | | | | | .SETSCREW:5-40 X 0.125,STL BK OXD,HEX | 000CY | ORD BY DESCR | |
| -3 | 366-1445-00 | B010100 | B044427 | 1 | | | | | | KNOB:GY,SEC/DIV,0.252 ID X 1.562 | 80009 | 366-1445-00 | |
| | 366-1445-01 | B044428 | | 1 | | | | | | KNOB:CLEAR,SEC/DIV,0.252 ID X 1 | 80009 | 366-1445-01 | |
| | 213-0153-00 | | | 2 | | | | | | .SETSCREW:5-40 X 0.125,STL BK OXD,HEX | 000CY | ORD BY DESCR | |
| -4 | 366-1317-00 | | | 1 | | | | | | KNOB:RED | 80009 | 366-1317-00 | |
| | 213-0153-00 | | | 1 | | | | | | .SETSCREW:5-40 X 0.125,STL BK OXD,HEX | 000CY | ORD BY DESCR | |
| -5 | 366-1257-23 | | | 1 | | | | | | PUSH BUTTON:LINE | 80009 | 366-1257-23 | |
| -6 | 366-1257-24 | | | 1 | | | | | | PUSH BUTTON:GRAY-EXT | 80009 | 366-1257-24 | |
| -7 | 366-1257-57 | | | 1 | | | | | | PUSH BUTTON:GRAY-LEFT | 80009 | 366-1257-57 | |
| -8 | 366-1257-58 | | | 1 | | | | | | PUSH BUTTON:GRAY-RIGHT | 80009 | 366-1257-58 | |
| -9 | 366-1257-25 | | | 1 | | | | | | PUSH BUTTON:SWP MAG | 80009 | 366-1257-25 | |
| -10 | 366-1257-26 | | | 1 | | | | | | PUSH BUTTON:GRAY-AUTO TRIG | 80009 | 366-1257-26 | |
| -11 | 366-1257-27 | | | 1 | | | | | | PUSH BUTTON:--AC COUPL | 80009 | 366-1257-27 | |
| -12 | 366-1257-28 | | | 1 | | | | | | PUSH BUTTON:GRAY--+ SLOPE | 80009 | 366-1257-28 | |
| -13 | 366-1257-29 | | | 1 | | | | | | PUSH BUTTON:SIL GY,SINGL SWP | 80009 | 366-1257-29 | |
| -14 | 366-1257-30 | | | 1 | | | | | | PUSH BUTTON:GRAY-RESET | 80009 | 366-1257-30 | |
| -15 | 366-1257-31 | | | 1 | | | | | | PUSH BUTTON:SIL GRAY,CHOP | 80009 | 366-1257-31 | |
| -16 | 366-1402-58 | | | 1 | | | | | | PUSH BUTTON:SIL GY,HF REJ | 80009 | 366-1402-58 | |
| -17 | 366-1402-75 | | | 1 | | | | | | PUSH BUTTON:SIL GY,LF REJ | 80009 | 366-1402-75 | |
| -18 | 366-1286-02 | B010100 | B032382 | 1 | | | | | | KNOB:LATCH | 80009 | 366-1286-02 | |
| | 366-1690-00 | B032383 | | 1 | | | | | | KNOB:SIL GY,0.53 X 0.23 X 1.059 *****[ATTACHING PARTS]***** | 80009 | 366-1690-00 | |
| -19 | 214-1840-00 | B010100 | B032382 | 1 | | | | | | PIN,KNOB SEC RG:0.094 OD X 0.120 INCH LONG *****[ATTACHING PARTS]***** | 80009 | 214-1840-00 | |
| -20 | 426-0681-00 | | | 13 | | | | | | FR.PUSH BUTTON: | 80009 | 426-0681-00 | |
| -21 | 131-0955-00 | | | 1 | | | | | | CONN,RCPT,ELEC:BNC,FEMALE *****[ATTACHING PARTS]***** | 13511 | 31-279 | |
| -22 | 210-0255-00 | | | 1 | | | | | | TERMINAL,LUG:0.391 ID,LOCKING,BRS CD PL *****[ATTACHING PARTS]***** | 80009 | 210-0255-00 | |
| -23 | ----- | | | 1 | | | | | | RES.,VAR:(SEE R160 REPL) *****[ATTACHING PARTS]***** | | | |
| -24 | 210-0583-00 | | | 1 | | | | | | NUT,PLAIN,HEX:0.25-32 X 0.312 INCH,BRS | 73743 | 2X20317-402 | |
| -25 | 210-0940-00 | | | 1 | | | | | | WASHER,FLAT:0.25 ID X 0.375 INCH OD,STL *****[ATTACHING PARTS]***** | 79807 | ORD BY DESCR | |
| -26 | ----- | | | 1 | | | | | | RES.,VAR:(SEE R325 REPL) *****[ATTACHING PARTS]***** | | | |
| | 210-0583-00 | | | 1 | | | | | | NUT,PLAIN,HEX:0.25-32 X 0.312 INCH,BRS | 73743 | 2X20317-402 | |
| | 210-0940-00 | | | 1 | | | | | | WASHER,FLAT:0.25 ID X 0.375 INCH OD,STL *****[ATTACHING PARTS]***** | 79807 | ORD BY DESCR | |
| -27 | 358-0029-00 | | | 1 | | | | | | BSHG,MACH,THD:HEX:0.375-32 X 0.438" LONG *****[ATTACHING PARTS]***** | 80009 | 358-0029-00 | |
| -28 | 210-0590-00 | | | 1 | | | | | | NUT,PLAIN,HEX:0.375-32 X 0.438" BRS | 73743 | 2X28289-402 | |
| -29 | 210-0978-00 | | | 1 | | | | | | WASHER,FLAT:0.375 ID X 0.50 INCH OD,STL | 12327 | ORD BY DESCR | |
| -30 | 344-0195-01 | B010100 | B021336 | 1 | | | | | | CLIP,ELECTRICAL:CAM SHAFT | 80009 | 344-0195-01 | |
| | 210-0012-00 | | | 1 | | | | | | WASHER,LOCK:INTL:0.384 ID,INTL:0.022 TH *****[ATTACHING PARTS]***** | 78189 | 1220-02-00-0541C | |
| -31 | 333-1662-00 | B010100 | B044317 | 1 | | | | | | PANEL,FRONT: | 80009 | 333-1662-00 | |
| | 333-1662-01 | B044318 | | 1 | | | | | | PANEL,FRONT: | 80009 | 333-1662-01 | |
| -32 | 214-1513-01 | B010100 | B032382 | 1 | | | | | | LCH,PLUG-IN RET: | 80009 | 214-1513-01 | |
| | 105-0719-00 | B032383 | | 1 | | | | | | LATCH,RETAINING:PLUG-IN *****[ATTACHING PARTS]***** | 80009 | 105-0719-00 | |
| -33 | 213-0254-00 | | | 1 | | | | | | SCREW,TPG,TF:2-32 X 0.250,100 DEG,FLH *****[ATTACHING PARTS]***** | 45722 | ORD BY DESCR | |
| | 105-0718-00 | B032383 | B042818 | 1 | | | | | | BAR,LATCH RLSE: | 80009 | 105-0718-00 | |
| | 105-0718-01 | B042819 | | 1 | | | | | | BAR,LATCH RLSE: | 80009 | 105-0718-01 | |
| -34 | 386-1915-00 | | | 1 | | | | | | SUBPANEL,FRONT: *****[ATTACHING PARTS]***** | 80009 | 386-1915-00 | |
| -35 | 213-0229-00 | | | 4 | | | | | | SCR,TPG,THD FOR:6-20 X0.375"100 DEG,FLH ST *****[ATTACHING PARTS]***** | 93907 | ORD BY DESCR | |
| -36 | 337-1395-00 | | | 1 | | | | | | SHIELD,ELEC:SUBPANEL | 80009 | 337-1395-00 | |
| -37 | 337-1430-00 | | | 2 | | | | | | SHIELD,LIGHT:LAMP | 80009 | 337-1430-00 | |
| -38 | 136-0431-00 | | | 2 | | | | | | LIGHT,INDICATOR:UW 0.244 OD LAMP | 80009 | 136-0431-00 | |

Replaceable Mechanical Parts—5B40

| Fig. & Index No. | Tektronix Part No. | Serial/Model No. | | Qty | | | | | | Name & Description | Mfr Code | Mfr Part Number |
|------------------|--------------------|------------------|---------|-----|---|---|---|---|---|--------------------|----------|------------------|
| | | Eff | Dscont | | 1 | 2 | 3 | 4 | 5 | | | |
| 1-39 | 384-1060-00 | | | 1 | | | | | | | 80009 | 384-1060-00 |
| -40 | 384-1136-00 | | | 4 | | | | | | | 80009 | 384-1136-00 |
| -41 | 384-1099-00 | | | 3 | | | | | | | 80009 | 384-1099-00 |
| -42 | 376-0541-00 | | | 1 | | | | | | | 80009 | 376-0541-00 |
| -43 | 162-0055-00 | | | IN | | | | | | | 83309 | ORD BY DESCR |
| | 334-3448-00 | B042939 | | 1 | | | | | | | 80009 | 334-3448-00 |
| -44 | 672-0448-00 | B010100 | B029999 | 1 | | | | | | | 80009 | 672-0448-00 |
| | 672-0448-01 | B030000 | | 1 | | | | | | | 80009 | 672-0448-01 |
| | | | | | | | | | | | | |
| -45 | 213-0146-00 | | | 4 | | | | | | | 83385 | ORD BY DESCR |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| -46 | 384-0271-00 | | | 1 | | | | | | | 80009 | 384-0271-00 |
| -47 | 376-0051-00 | | | 1 | | | | | | | 80009 | 376-0051-00 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| -48 | 354-0251-00 | | | 2 | | | | | | | 80009 | 354-0251-00 |
| | | | | 1 | | | | | | | | |
| -49 | 131-0604-00 | | | 27 | | | | | | | 80009 | 131-0604-00 |
| -50 | 136-0241-00 | | | 1 | | | | | | | 71785 | 133-99-12-064 |
| -51 | 136-0252-04 | B010100 | B020829 | 20 | | | | | | | 22528 | 75060-007 |
| | 136-0634-00 | B020800 | B044222 | 1 | | | | | | | 73803 | CS9002-20 |
| | 136-0752-00 | B044223 | | 1 | | | | | | | 09922 | D1LB20P-108 |
| -52 | 136-0260-02 | B010100 | B044222 | 1 | | | | | | | 09922 | D1LB18P-108T |
| | 136-0729-00 | B044223 | | 1 | | | | | | | 09922 | D1LB18P-108T |
| -53 | 214-1291-00 | | | 1 | | | | | | | 05820 | 2075B |
| -54 | | | | 1 | | | | | | | | |
| -55 | | | | 1 | | | | | | | | |
| -56 | | | | 1 | | | | | | | | |
| -57 | 361-0382-00 | | | 10 | | | | | | | 80009 | 361-0382-00 |
| -58 | | | | 1 | | | | | | | | |
| -59 | 361-0384-00 | | | 4 | | | | | | | 80009 | 361-0384-00 |
| -60 | | | | 1 | | | | | | | | |
| -61 | 361-0383-00 | | | 2 | | | | | | | 80009 | 361-0383-00 |
| | 263-1083-00 | | | 1 | | | | | | | 80009 | 263-1083-00 |
| | | | | | | | | | | | | |
| -62 | 211-0116-00 | | | 6 | | | | | | | 83385 | ORD BY DESCR |
| -63 | 105-0416-00 | | | 1 | | | | | | | 80009 | 105-0416-00 |
| -64 | 354-0219-00 | | | 1 | | | | | | | 79136 | 5103-25-MD-R |
| -65 | 131-1219-00 | | | 1 | | | | | | | 80009 | 131-1219-00 |
| -66 | 214-1139-00 | | | 1 | | | | | | | 80009 | 214-1139-00 |
| | 214-1139-02 | | | 1 | | | | | | | 80009 | 214-1139-02 |
| -67 | 214-1127-00 | | | 1 | | | | | | | 80009 | 214-1127-00 |
| -68 | 401-0056-00 | | | 1 | | | | | | | 80009 | 401-0056-00 |
| -69 | 401-0057-00 | | | 1 | | | | | | | 80009 | 401-0057-00 |
| -70 | 407-0653-00 | | | 1 | | | | | | | 80009 | 407-0653-00 |
| -71 | 210-0406-00 | | | 6 | | | | | | | 73743 | 12161-50 |
| -72 | 200-1695-00 | | | 1 | | | | | | | 80009 | 200-1695-00 |
| | | | | | | | | | | | | |
| -73 | 211-0022-00 | | | 4 | | | | | | | 83385 | ORD BY DESCR |
| -74 | 210-0001-00 | | | 3 | | | | | | | 77900 | 1202-00-00-0541C |
| -75 | 210-0259-00 | | | 1 | | | | | | | 80009 | 210-0259-00 |
| | 210-0405-00 | | | 4 | | | | | | | 73743 | 12157-50 |
| | | | | | | | | | | | | |
| -76 | 131-1372-00 | B010100 | B033142 | 2 | | | | | | | 80009 | 131-1372-00 |
| | 131-1372-01 | B033143 | | 2 | | | | | | | 80009 | 131-1372-01 |
| -77 | 426-0724-02 | | | 1 | | | | | | | 80009 | 426-0724-02 |
| -78 | 426-0725-02 | | | 1 | | | | | | | 80009 | 426-0725-02 |
| -79 | 175-0826-00 | | | FT | | | | | | | 80009 | 175-0826-00 |
| -80 | 175-1020-00 | | | FT | | | | | | | 90484 | DAB70JAAWHITE |

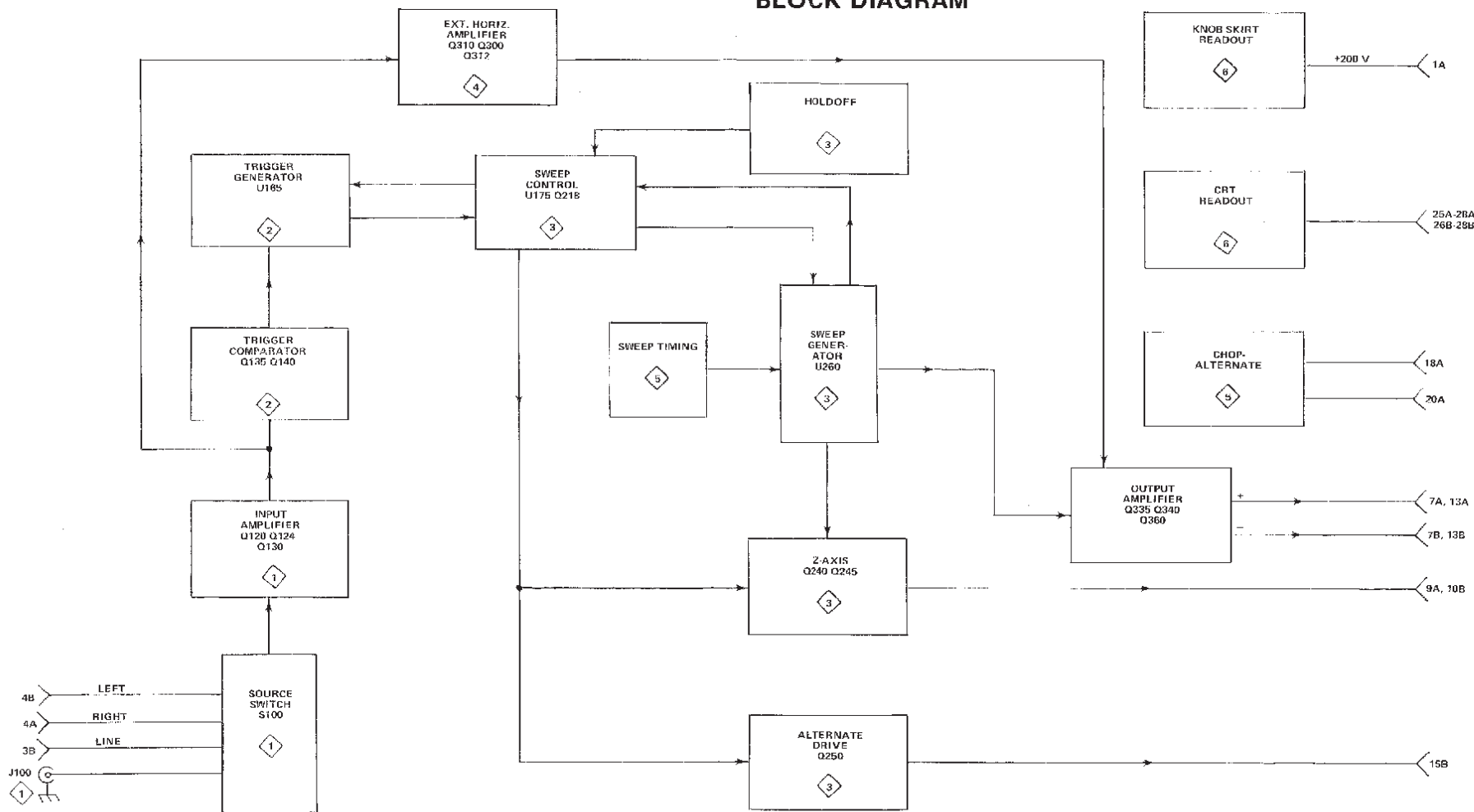
PARTS LOCATION GRID



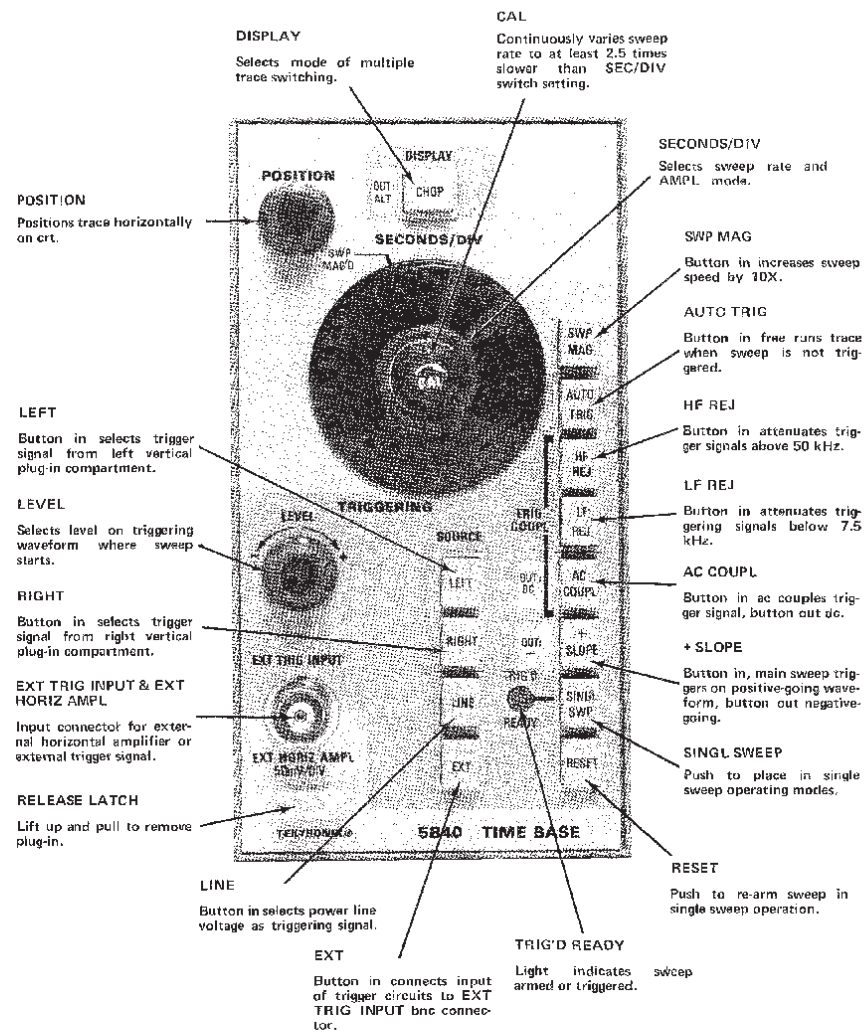
*See parts list for serial number ranges.
 †Located on back of board.
 **Earlier location.



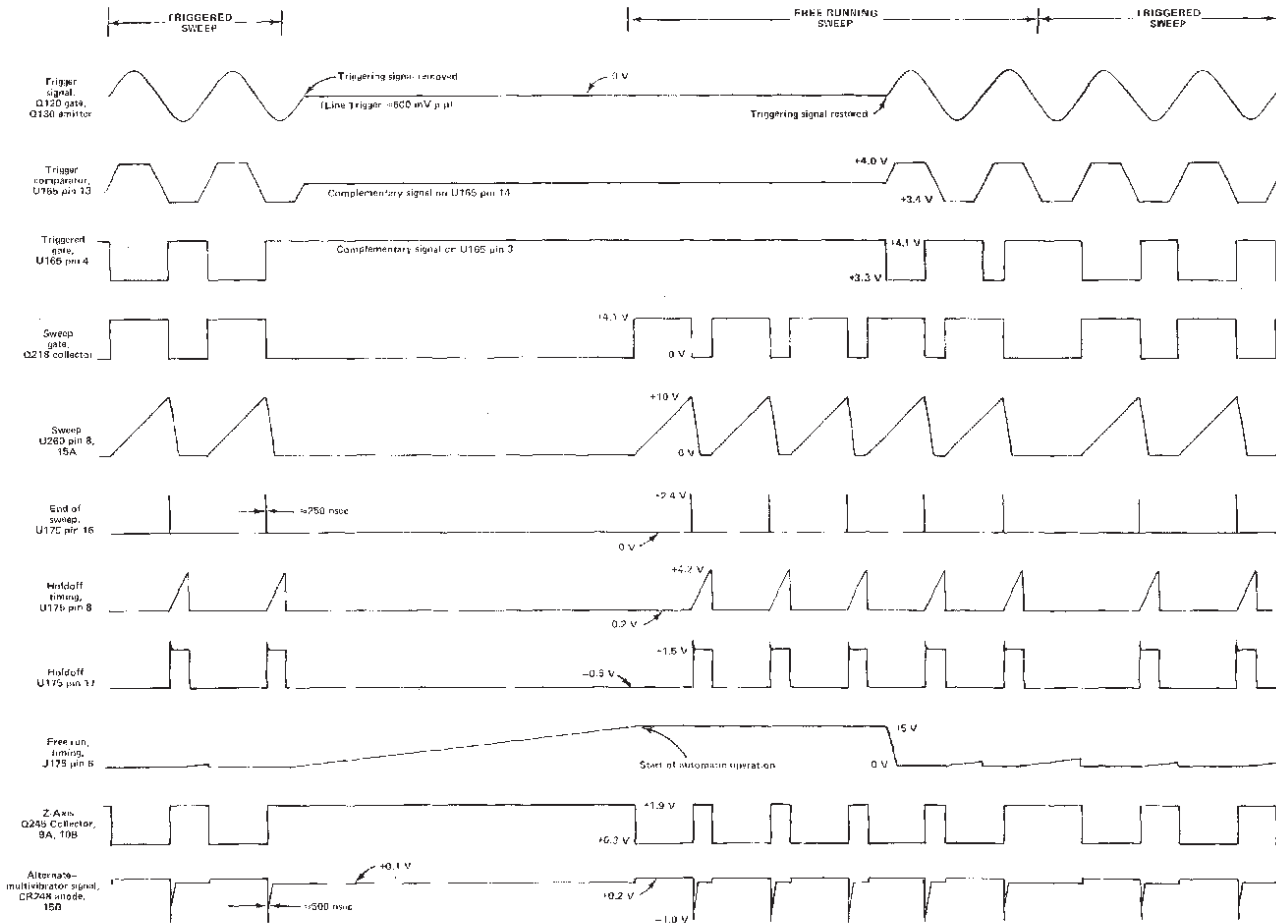
BLOCK DIAGRAM



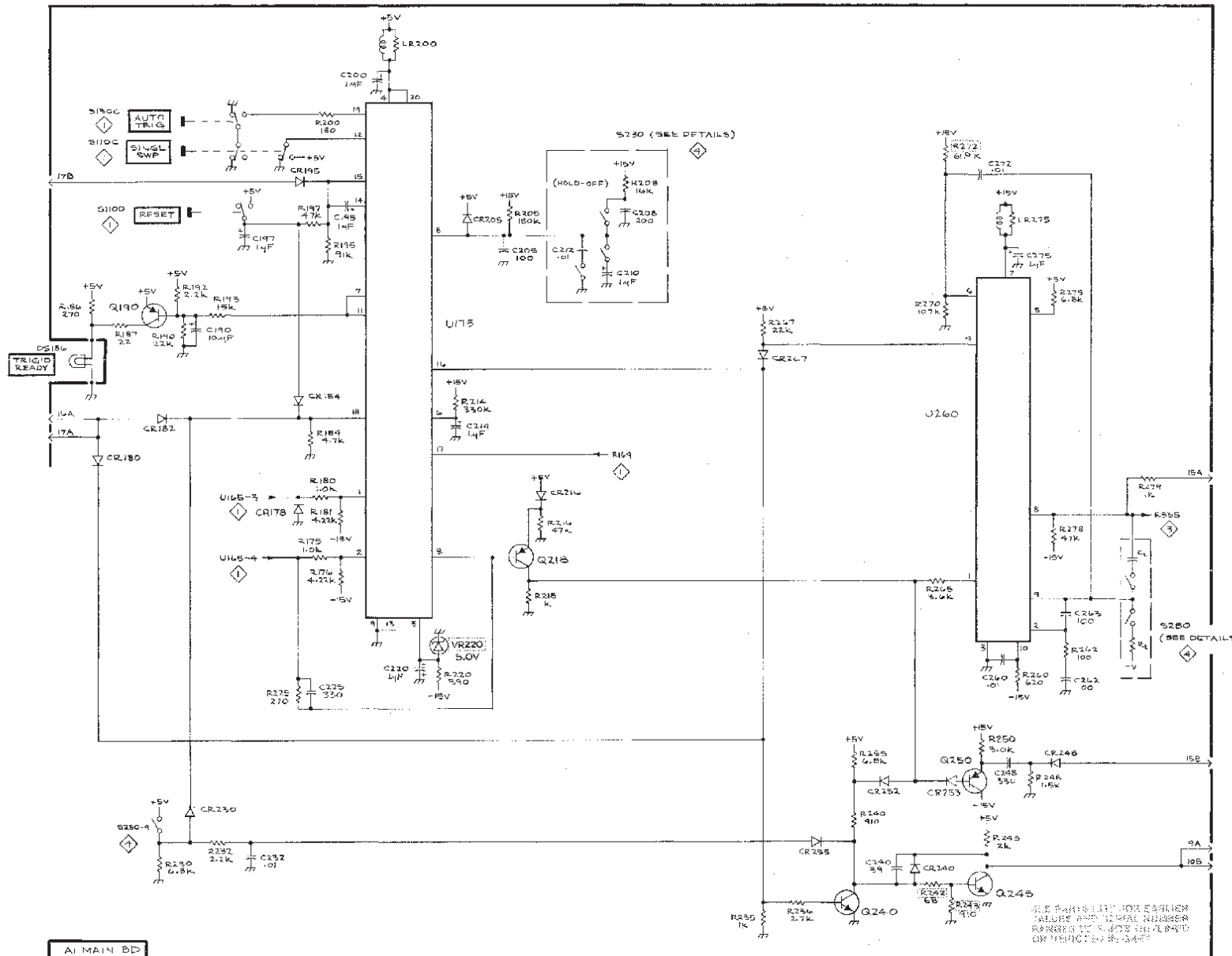
CONTROL AND CONNECTORS



WAVEFORM DIAGRAMS

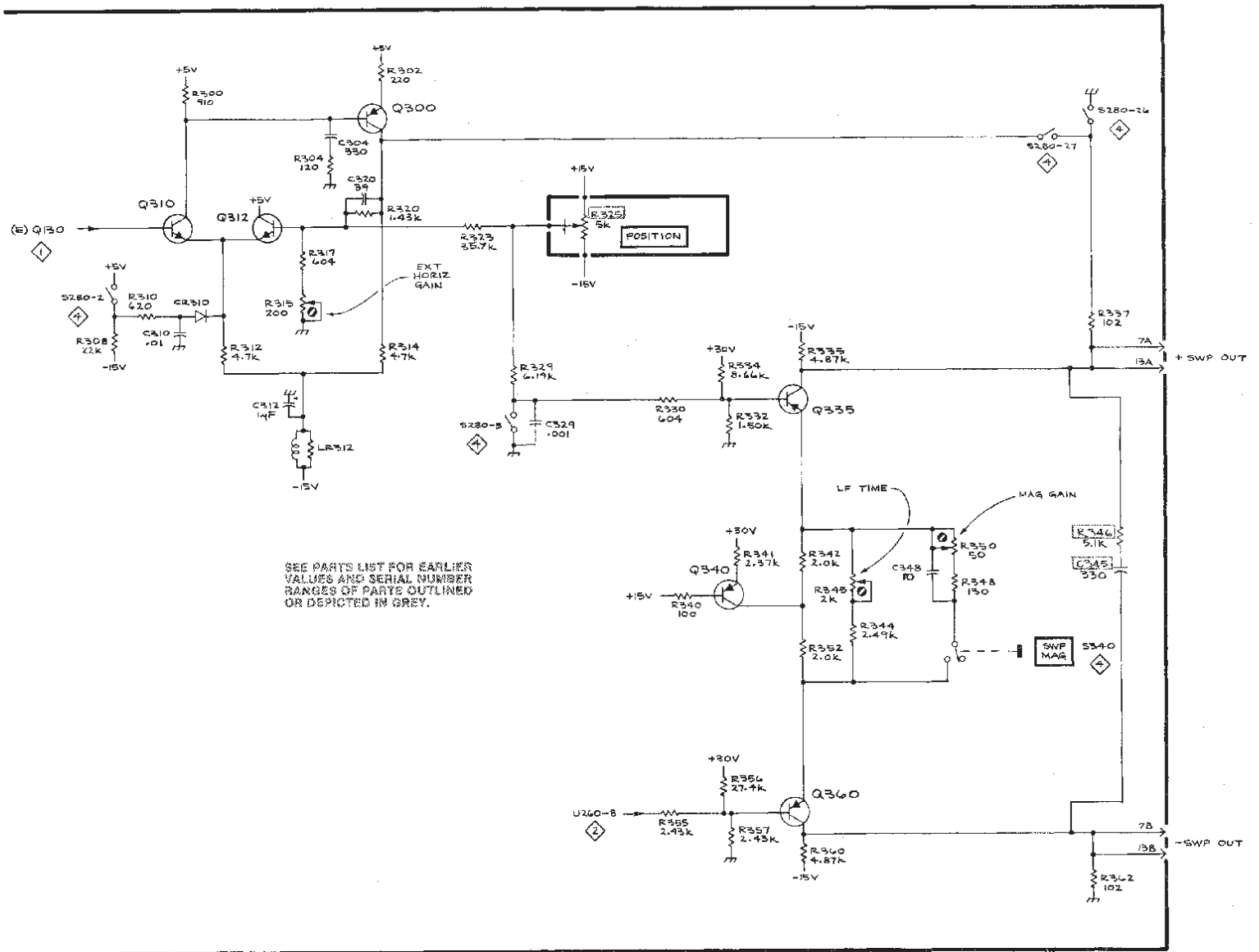


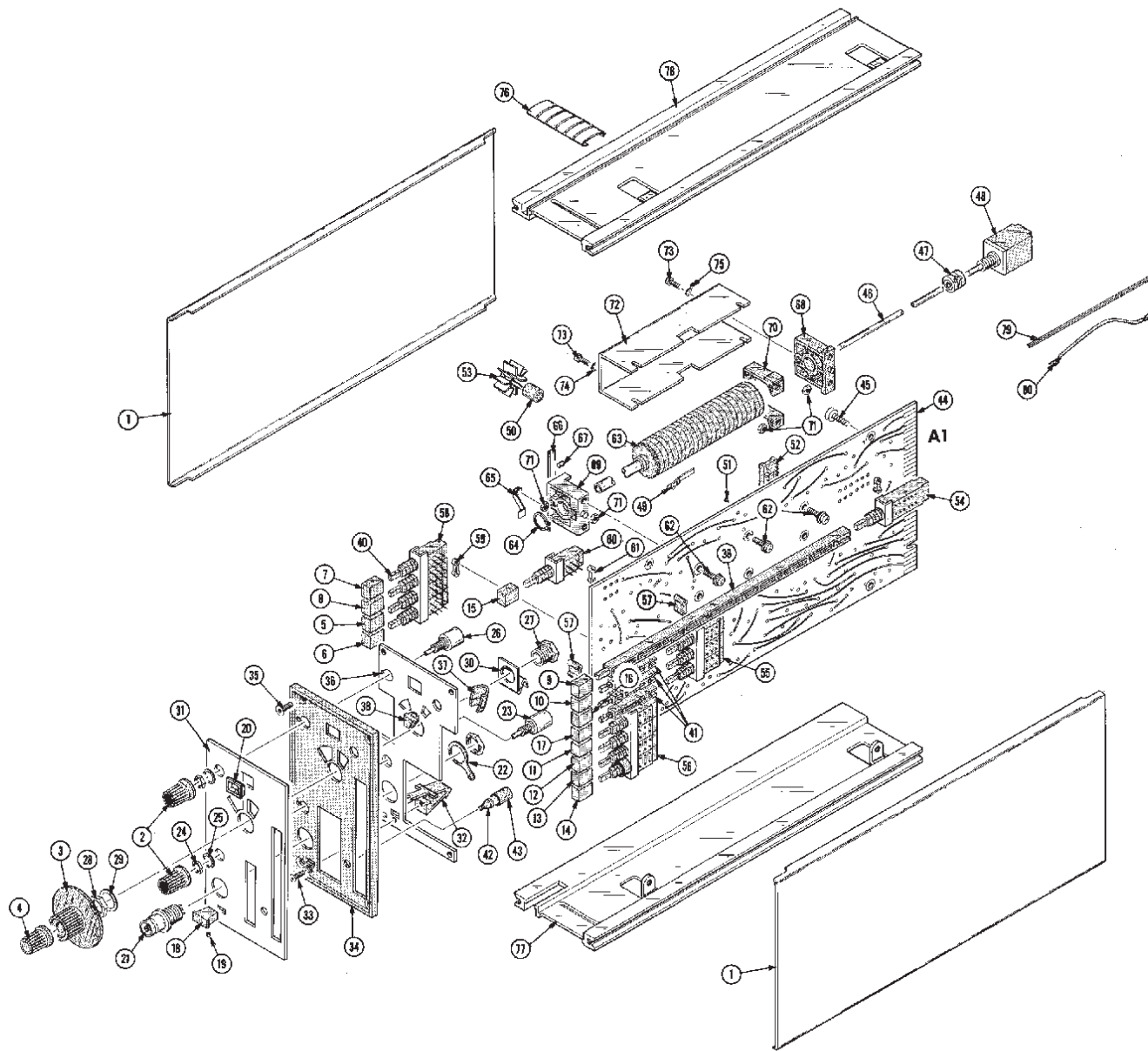
CONDITIONS All buttons out except LINE, - SLOPE and AUTO TRIG. Set SECONDS/DIV to 1 m and CAL in the detent position. Waveform voltages are accurate within ten percent. Time relationships with respect to line frequencies are approximate.



A1 MAIN BD

USE PARTS LIST FOR EXACT
VALUES AND SERIAL NUMBER
RANGES IN CASES WHERE
OR TYPICAL VALUES





5B40 STANDARD SWEEP

| Index No. | Tektronix Part No. | Serial/Model No. | | Qty | 1 | 2 | 3 | 4 | 5 | Name & Description | Mfr Code | Mfr Part Number |
|--------------|-----------------------|------------------|---------|-----|---|---|---|---|---|---------------------------|-------------|-----------------|
| | | Eff | Discont | | | | | | | | | |
| | 070-1742-00 | | | 1 | | | | | | MANUAL, TECH: INSTRUCTION | 86009 | 070-1742-00 |

K4XL's **BAMA**

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