

FLUORENSOR

TEKTRONIX®

**605
STORAGE
MONITOR
FLUORENSOR**

INSTRUCTION MANUAL

**Tektronix, Inc.
P.O. Box 500
Beaverton, Oregon 97005**

Serial Number _____



WARRANTY

All TEKTRONIX instruments are warranted against defective materials and workmanship for one year. Any questions with respect to the warranty should be taken up with your TEKTRONIX Field Engineer or representative.

All requests for repairs and replacement parts should be directed to the TEKTRONIX Field Office or representative in your area. This will assure you the fastest possible service. Please include the instrument Type Number or Part Number and Serial Number with all requests for parts or service.

Specifications and price change privileges reserved.

Copyright © 1974 by Tektronix, Inc., Beaverton, Oregon. Printed in the United States of America. All rights reserved. Contents of this publication may not be reproduced in any form without permission of Tektronix, Inc.

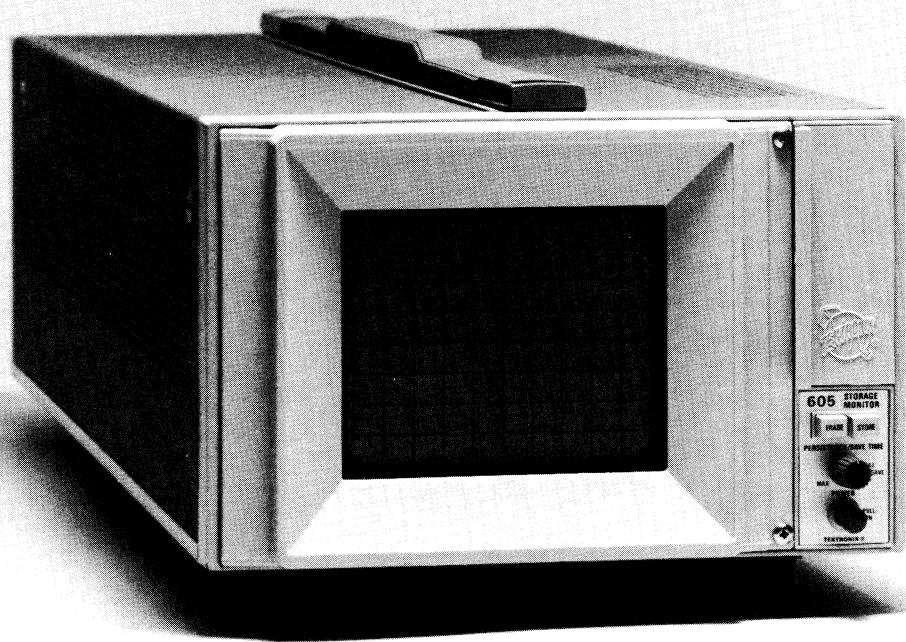
U.S.A. and foreign TEKTRONIX products covered by U.S. and foreign patents and/or patents pending.

TEKTRONIX is a registered trademark of Tektronix, Inc.

TABLE OF CONTENTS

| | Page | |
|------------------|---|------|
| SECTION 1 | INSTALLATION | 1-1 |
| SECTION 2 | OPERATING INSTRUCTIONS | |
| | Basic Operation | 2-1 |
| | Setup Information | 2-1 |
| | Storage Operation (Variable Persistence) | 2-1 |
| | Storage Operation (Without Variable Persistence) | 2-2 |
| | General Operating Information | 2-2 |
| | Signal Connectors | 2-2 |
| | Input Requirements | 2-2 |
| | Input Attenuators | 2-2 |
| | Remote Program Connector | 2-3 |
| | Care of Storage Screen | 2-4 |
| | Storage Operation | 2-4 |
| SECTION 3 | SERVICE INFORMATION | |
| | Panel Removal | 3-1 |
| | Cleaning | 3-1 |
| | Adjustment | 3-1 |
| | Repair | 3-1 |
| | Troubleshooting Aids | 3-1 |
| | Troubleshooting Equipment | 3-2 |
| | Troubleshooting Techniques | 3-3 |
| | Replacement Parts | 3-4 |
| | Component Replacement | 3-4 |
| | Specifications | 3-7 |
| | Table 3-3 Vertical and Horizontal Amplifiers | 3-7 |
| | Table 3-4 Z Axis Amplifier | 3-8 |
| | Table 3-5 Cathode-Ray Tube Display | 3-9 |
| | Table 3-6 Environmental | 3-9 |
| | Table 3-7 Physical | 3-10 |
| | Symbols and Reference Designators | 3-11 |
| | OPTIONS (Option Table of Contents located on this page) | 3-12 |
| | Electrical Parts List | 3-13 |
| | Front-Panel Controls & Block Diagram | |
| | Diagram 1 Theory & Adjustments (back side of foldout) | |
| | Parts Location Grid & Diagram 1 | |
| | Diagram 2 Theory & Adjustments (back side of foldout) | |
| | Parts Location Grid & Diagram 2 | |
| | Diagram 3 Theory & Adjustments (back side of foldout) | |
| | Parts Location Grid & Diagram 3 | |
| | Diagram 4 Theory & Adjustments (back side of foldout) | |
| | Parts Location Grid & Diagram 4 | |
| | Diagram 5 Theory & Adjustments (back side of foldout) | |
| | Parts Location Grid & Diagram 5 | |
| | Diagram 6 & 7 Theory (back side of foldout) | |
| | Parts Location Grid & Diagram 6 | |
| | Diagram 6 & 7 Adjustments (back side of foldout) | |
| | Diagram 7 | |
| | Option 4 Adjustments (back side of foldout) | |
| | Option 4 Theory & Diagram | |
| | Option 4 Parts Lists | |
| | Mechanical Parts List | |
| | Fig. 1 Exploded & Option 1 | |
| | Fig. 2 Accessories & Repackaging | |

CHANGE INFORMATION



INSTALLATION

Before you start

1. Check the line voltage indicator for line voltage. Use the bail to raise the front of the instrument.

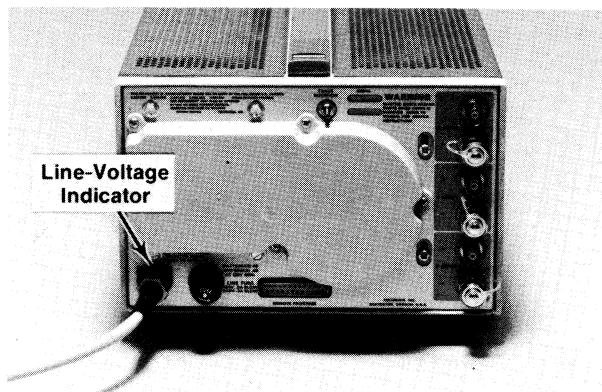


Fig. 1-1. Location of Line-Voltage Indicator showing line voltage that instrument has been set to operate on.

... go to Operating Instructions ...

2. If a change is needed, follow these steps:

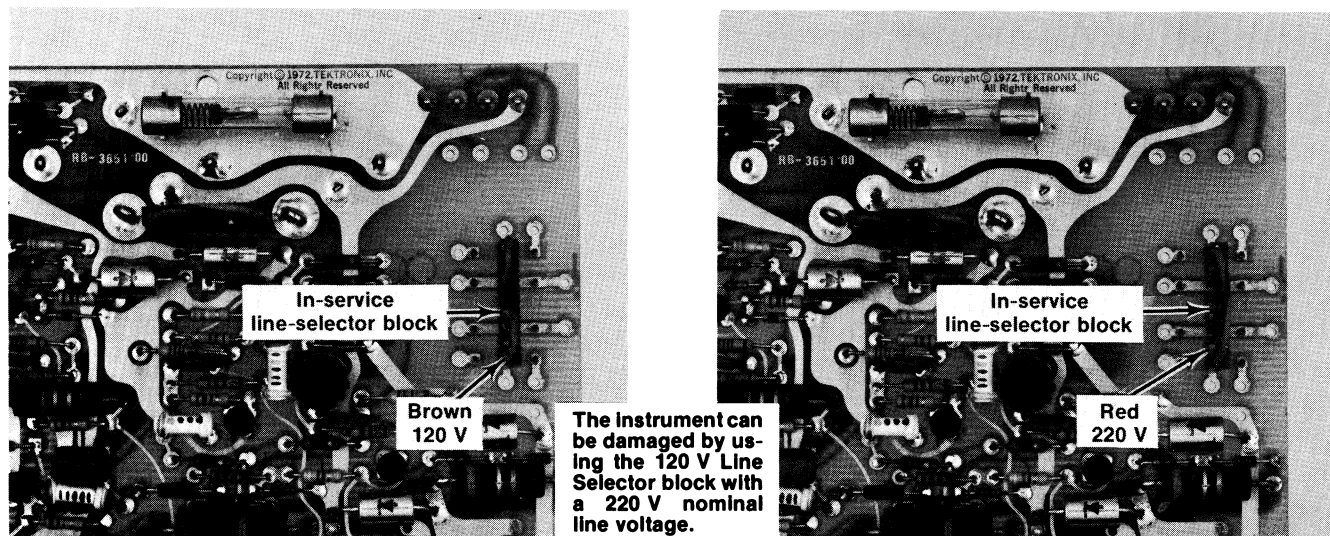


Fig. 1-2. Illustration showing a portion of L.V. power supply circuit board.

a. Line Selector Blocks(s)

Remove the bottom dust cover by removing the two screws and turning the four slotted fasteners a quarter turn counterclockwise. This gives easy access to the Line Selector blocks located on the LV power supply circuit board.

Regulating Ranges for Power Transformer

| Line Selector Block Position | Regulating Ranges | |
|------------------------------|--------------------|--------------------|
| | 120 Volts Nominal | 220 Volts Nominal |
| L | 90 VAC to 110 VAC | 180 VAC to 220 VAC |
| M | 99 VAC to 121 VAC | 198 VAC to 242 VAC |
| H | 108 VAC to 132 VAC | 216 VAC to 264 VAC |
| Line Fuse Data | 0.5 A slow-blow | 0.3 A slow-blow |

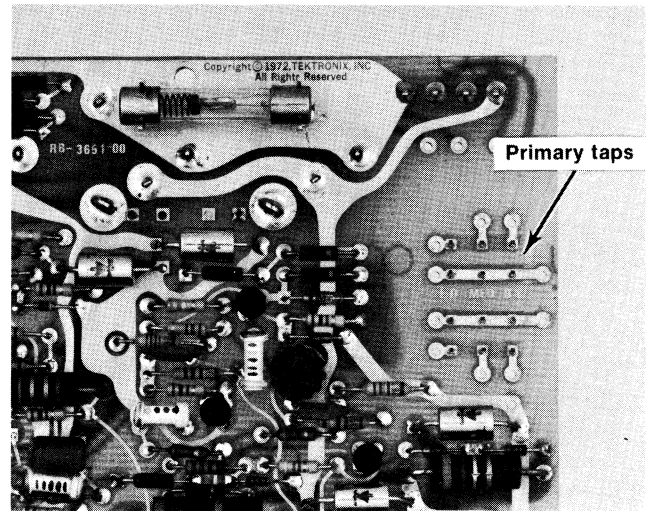


Fig. 1-3. Primary taps area of L.V. power supply circuit board.

b. Line Range Taps

c. Rear Panel

3. Replace the bottom dust cover.
4. If necessary, change the line cord plug to match the power source receptacle or use an adapter.

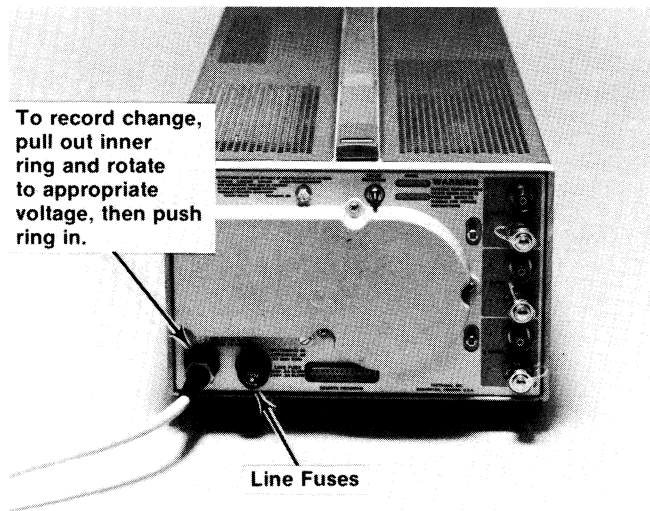


Fig. 1-4. View showing rear-panel.

5. Plug the cord into the power source.
6. Use the bail to raise the front of the instrument.

. . . go to

Operating

Instructions. . .

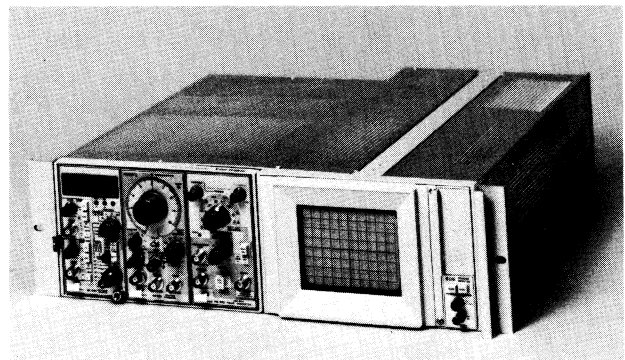
INSTRUMENT CONVERSION

CABINET TO RACKMOUNT

TEKTRONIX PART NO. 040-0601-00. This conversion kit is designed to mount one 605 in a standard 19-inch wide rack. The kit is equipped with a slide-out assembly and includes securing hardware and a blank front panel to cover the second instrument opening in the kit.

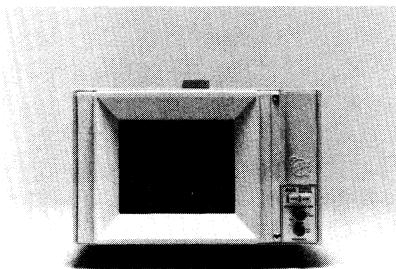
TEKTRONIX PART NO. 040-0600-00. This conversion kit will mount two 605 or a 605 and either a 603 or 604 side-by-side in a standard 19-inch wide rack. The kit comes equipped with a slide-out assembly and includes securing hardware.

TEKTRONIX PART NO. 040-0624-00. This kit is designed to convert one TM 503 and one 605 to mount side-by-side in a standard 19-inch wide rack. The kit is equipped with a slide-out assembly and includes securing hardware.



RACKMOUNT TO CABINET

TEKTRONIX PART NO. 040-0602-00. This conversion kit converts one 605 from a rackmount configuration to a cabinet configuration.



OPERATING INSTRUCTIONS

The 605 Storage Monitor is a fast writing speed X-Y display monitor having variable storage persistence. It provides a bright display of analog data on an 8 x 10 division (0.9 cm/div) area. The 605 is well suited for many display applications in ultrasonic detection systems, electron microscope systems, radiation and thermal scanning systems, speech therapy, mechanical pressure, volume, and vibration analysis, and medical and biophysical systems. The 605 may also be used to provide stored displays of alpha-numeric and graphic information from computers and other data-transmission systems.

All display axes (vertical, horizontal and intensity) can be operated differentially as well as from a single-signal source. A remote-program connector permits the monitor to be operated from a remote station. The 605 storage tube (crt) allows a display to be held in excess of five minutes, depending on the setting of the Operate Level control (longer display times are possible in the 'Save' mode). The monitor can be operated from either a 120-volt or a 220-volt nominal line-voltage source.

BASIC OPERATION

SETUP INFORMATION

NOTE

The PULL TO SAVE switch must be pushed in to permit viewing of either stored or non-stored displays.

1. Pull the POWER switch out to turn the instrument on. After a short delay, with the position controls set to midrange and the PULL TO SAVE switch pushed in, slowly increase the INTENSITY until the spot is visible.

2. Position the spot to the desired starting location. The position controls are located behind the access door, and arrows on the panel adjacent to the knobs indicate the positioning direction.

3. Activate the vertical, horizontal, and z-axis signals and check for proper display. If the vertical or horizontal deflection factor is wrong, those input signals can be adjusted up to about 5X; see General Operating Information in this section. Adjust the FOCUS control for a sharp, well-defined display.

6. Move the display spot around the crt viewing area with the position controls; a display should be visible, but will fade out within a few seconds. Increase the PERSISTENCE/SAVE TIME control setting (counterclockwise) if a display of longer retention is required. Increase the OPERATE LEVEL to increase the sensitivity to the writing beam (increase writing rate). If there is no display visible increase the INTENSITY control setting and move the display spot around.

7. Press the ERASE button; the crt should turn positive and erase. Move the display spot around on the crt to obtain another stored display on the crt. Pull the PULL TO SAVE switch; the display is stored and no other data or change in position will affect the display. The PULL TO SAVE switch, when pulled, locks out the z-axis erase circuit and cuts off the current to the flood gun cathode as long as the PERSISTENCE/SAVE TIME control is turned fully counterclockwise (display stored at the maximum time). Turning the PERSISTENCE/SAVE TIME control clockwise will decrease the time a stored display is retained on the crt. When the display is not being used, turn the PERSISTENCE/SAVE TIME control fully counterclockwise (the display will not be visible on the screen); the information has not been lost or destroyed. Turn the PERSISTENCE/SAVE TIME control clockwise until a display is visible when needed.

STORAGE OPERATION (VARIABLE PERSISTENCE)

4. Disconnect any vertical, horizontal or 2-axis input signals.

5. Press the STORE button and note that the crt will momentarily be flooded positive.

NOTE

The 605 save time control and the variable persistence control are combined into one control. If the PERSISTENCE/SAVE TIME control has been adjusted to view the display in the 'Save' mode and the 605 is then taken out of the 'Save' mode, the display will fade rapidly since the persistence is not now set for a long time.

STORAGE OPERATION (WITHOUT VARIABLE PERSISTENCE)

8. Rotate the PERSISTENCE/SAVE TIME control to its fully counterclockwise position and push the PULL TO SAVE switch in.

9. Move the display spot around the crt viewing area with the position controls; a display should be visible. Increase the OPERATE LEVEL to increase the sensitivity to the writing beam (increase writing rate). If there is no display visible, increase the INTENSITY control setting, and move the display spot around.

10. Press the ERASE button and note that the stored display is erased. Another display can be stored by again writing the crt with the display spot.

NOTE

If a bright spot or stationary display is present on the crt viewing area and the OPERATE LEVEL is set to a high level, the crt viewing area will eventually fade positive (screen will be totally bright).

GENERAL OPERATING INFORMATION

SIGNAL CONNECTORS

BNC connectors are provided at the rear of the instrument for application of input signal (either single-ended or differential) to the X and Y deflection amplifiers and to the Z-axis amplifier to control beam intensity. The + inputs for the X and Y deflection amplifiers and the Z-axis amplifier are also connected to the 25-pin remote program connector. As shipped, the instrument is prepared for single-ended inputs; BNC grounding caps are connected to the BNC - inputs. For differential operation, the BNC grounding cap is removed and a signal is applied to both BNC connectors. Also, the BNC connectors can be internally disconnected from ground, permitting a "floating" input. See Electrical Characteristics in Section 3 for differential capability data.

INPUT REQUIREMENTS

The vertical and horizontal deflection factors are set by the factory to a nominal 1 volt for full scale deflection on each axis. Thus the input requirements are 0.125 volt for each division (0.9 cm) of vertical deflection, and 0.1 volt for each division of horizontal deflection. An internal gain control for each deflection amplifier permits an adjustable full-scale range from 0.5 volt or less to 2.5 volts or more, and an internally selectable 5:1 attenuator extends the deflection factor range to 12.5 volts or more for full scale deflection. Best transient response is achieved when the input signals are no larger than needed to provide full screen displays, i.e., severely overdriving inputs will degrade instrument performance. In any case, do not apply a signal with amplitudes exceeding 100 volts to the X or Y inputs.

With no signals applied to the Z INPUT connectors, the intensity of the display is controlled by the front-panel INTENSITY control. The intensity range provided by this control is from no visual intensity (crt beam off) to full bright. To control the intensity with an externally applied signal, set the INTENSITY control to about midrange. An internal gain control permits the Z input requirement for full intensity control to be adjustable from +1 volt or less to +5 volts or more, depending on the exact setting of the INTENSITY control. A zero-volt input cuts off visual intensity when the INTENSITY control is at about

midrange. Exercise care in establishing the correct display intensity; a too-high amplitude Z input signal combined with a too-high INTENSITY control setting may increase the beam current above the phosphor-damaging level. Best transient response is achieved when the input signal is no larger than needed to provide maximum intensity change, i.e., severely overdriving input will degrade instrument performance. In any case, do not apply a Z input signal with amplitudes exceeding 100 volts.

INPUT ATTENUATORS

Each X and Y input circuit includes a selectable 1:1 to 5:1 attenuator, which is set for 1:1 operation when shipped from the factory. The switches for selecting 5:1 attenuation are located on the Deflection Amplifier circuit board at the left rear of the instrument; see Fig. 2-1. Remove the left side panel to gain access.

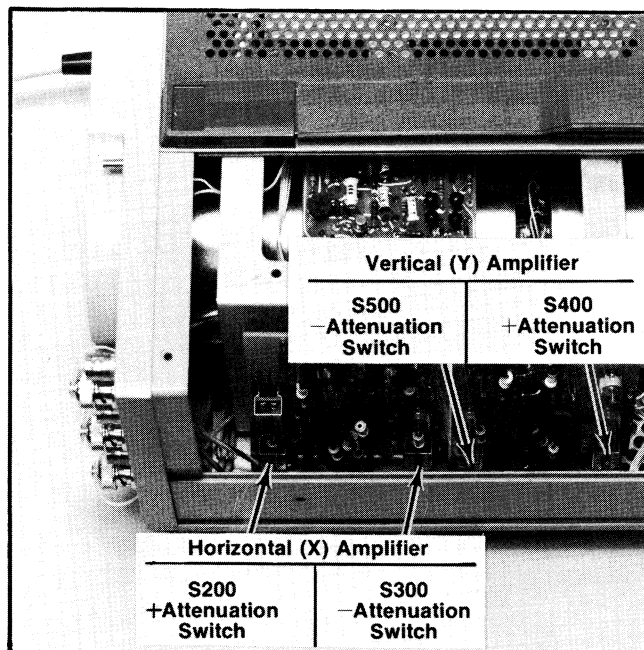


Fig. 2-1. Location of input attenuation switches for the X and Y deflection amplifiers.

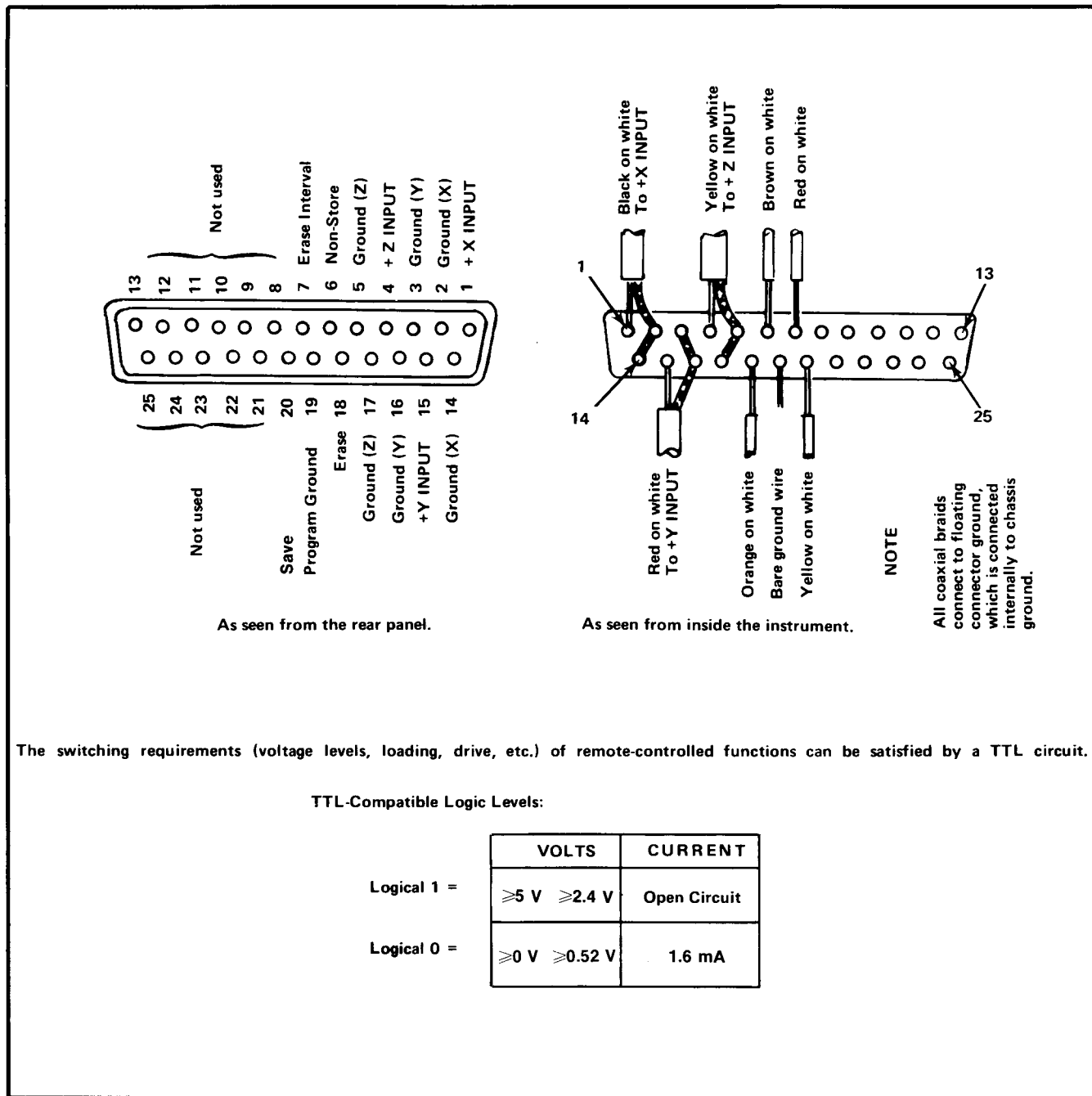
REMOTE PROGRAM CONNECTOR

The Remote Program connector, located on the rear panel, provides direct connections to the + inputs of the X, Y, and Z amplifiers from a remote location. Also, erase, non-store and save storage operation can be controlled from a remote location; however, the front-panel controls of the instrument override the remote inputs. All inputs and outputs are TTL compatible. See Fig. 2-2 for details.

NOTE

Circuit protection requires a logical 0 level of ≤ 0.52 V. This level should be satisfied by the TTL output levels, providing the loading rules of the TTL output device are observed.

REMOTE ERASE. Stored display will be erased when a remote contact is closed to ground, or logical 0 (TTL) is applied.



The switching requirements (voltage levels, loading, drive, etc.) of remote-controlled functions can be satisfied by a TTL circuit.

TTL-Compatible Logic Levels:

| | VOLTS | CURRENT |
|-------------|--------------------------|--------------|
| Logical 1 = | ≥ 5 V ≥ 2.4 V | Open Circuit |
| Logical 0 = | ≤ 0 V ≤ 0.52 V | 1.6 mA |

Fig. 2-2. Remote program connector data.

Operating Instructions—605

REMOTE NON-STORE. Closing the remote contact to ground or applying a logical 0 (see Fig. 2-2) allows the storage crt to operate in the non-store mode.

REMOTE SAVE. Grounding the remote contact or applying a logical 0 (TTL) places the 605 in the save mode. The front-panel PERSISTENCE/SAVE TIME control sets the save time.

ERASE INTERVAL. During the erase interval, a negative-going pulse, logical 0 (TTL), is present at this contact. This can be used to notify associated equipment that information stored on the 605 crt is being erased.

CARE OF STORAGE SCREEN

The following precautions will prolong the useful storage life of the crt screen used in this instrument.

1. Use the minimum beam intensity required to produce a clear, well-defined display. A too-high beam intensity may permanently damage the crt screen, particularly if a bright spot is allowed to remain stationary on the display area.

2. Avoid repeated use of the same area of the screen. If a particular display is being stored repeatedly, change the vertical position occasionally to use other portions of the display area.

3. Do not leave a stored display on the screen when it is no longer needed.

4. Operate the instrument in the non-store mode unless storage is required.

STORAGE OPERATION

The storage feature greatly increases the versatility of the 605. The storage cathode-ray tube allows a display to be retained for a longer period of time. When the STORE button is out, the instrument operates as a conventional monitor.

When the STORE button is in, the instrument operates in a storage mode. Two modes of storage are available. They are Variable Persistence, where the persistence of the crt is electrically controlled by the PERSISTENCE/SAVE TIME control; and a conventional storage mode, which allows longer retention of the displayed information. When the PULL TO SAVE switch is pulled out, the length of time the stored image can be retained is greatly extended. A lockout function prevents accidental erasure of the stored display in the Save mode.

A stored display is erased by pressing in the ERASE switch. In the Save mode, the erase function is disabled.

SERVICE INFORMATION

Maintenance (consisting of cleaning, visual inspection, etc.) performed on a regular basis, will improve the reliability of the oscilloscope. Periodic checks of the semiconductor devices used in the system are not recommended as a preventive maintenance measure. See semiconductor-checking information given under troubleshooting. A convenient time to perform preventive maintenance is preceding instrument adjustments.

PANEL REMOVAL

WARNING

Disconnect the power before cleaning the unit or replacing parts.

The cabinet panels are held in place by slotted fasteners. To remove the panels, turn each fastener counterclockwise a quarter turn with a large screwdriver, coin, or similar device. Lift the panels away. Operate the unit with its panels in place to protect the interior from dust, and to eliminate shock hazard.

CLEANING

CAUTION

Avoid the use of chemical cleaning agents which might damage plastic parts. Avoid chemicals containing benzene, toluene, xylene, acetone, or similar solvents.

EXTERIOR. Loose dust may be removed with a soft cloth or a dry brush. Water and mild detergent may be used; however, abrasive cleaners should not be used.

INTERIOR. Cleaning the interior of the unit should precede adjustment, since the cleaning process can alter the settings of the adjustments. Use low-velocity compressed air to blow off the accumulated dust. Hardened dirt can be removed with a soft, dry brush, cotton-tipped swab, or cloth dampened with a water and mild detergent solution.

NOTE

Circuit boards and components must be dry before applying power to the instrument.

ADJUSTMENT

To ensure accurate measurements, the performance of the 605 should be checked periodically. Complete adjustment instructions are given later in this manual.

The adjustment procedure can be helpful in isolating major troubles. Moreover, minor troubles not apparent during regular operation may be revealed and corrected during adjustment.

REPAIR

TROUBLESHOOTING AIDS

DIAGRAMS. Circuit diagrams are given on foldout pages in each individual manual. The circuit number and electrical value of each component in this instrument system is shown on the diagrams (see first page with a tab for definition of the reference designators used to identify components in each unit). Each main circuit is assigned a series of component numbers. The portions of the circuits mounted on circuit boards are enclosed with blue lines.

CAM SWITCH CONTACT IDENTIFICATION. Cam switches shown on the diagrams are coded to indicate the position of the contact in the complete switch assembly

counting from the front, or knob end of the switch, toward the rear. The contact closure chart given on the diagrams indicates when each contact is closed.

CIRCUIT BOARDS. Illustrations of the circuit boards are shown on the foldouts. These pictures are located near their respective associated schematic diagrams to aid in cross-reference between the diagrams and the circuit board illustrations. Each electrical component on the boards is identified by its circuit number. The circuit boards are also outlined, on the diagrams, with a blue line that shows which portions of the circuit are located on a circuit board.

COMPONENT AND WIRING COLOR CODE. Colored stripes or dots on resistors and capacitors signify electrical values, tolerances, etc., according to the EIA standard color code. Components not color-coded usually have the value printed on the body.

WARNING

This color code applies to leads within the 605 Storage Monitor only. Color code of the ac power cord is:

| | |
|----------------------------|-----------------------|
| Black | Line |
| White | Neutral |
| Green with a yellow stripe | Safety Earth (ground) |

SEMICONDUCTOR LEAD CONFIGURATION.

Fig. 3-1 shows the lead configuration of the semiconductor devices used in this instrument.

MULTI-CONNECTOR HOLDERS. The multi-connector holder is keyed with two triangles, one on the holder and one on the circuit board. When a connection is made perpendicular to a circuit board surface, the orientation of the triangle and the slot numbers on the connector holder is determined by the direction of the nomenclature marking (see Fig. 3-2).

TROUBLESHOOTING EQUIPMENT

The following equipment is useful for troubleshooting the 605 Storage Monitor:

SEMICONDUCTOR TESTER

Description: Dynamic-type tester.

Purpose: To test the semiconductors used in this instrument system.

Recommended type: Tektronix Type 576 Transistor Curve Tracer or equivalent.

MULTIMETER

Description: VTVM, 10-megohm input impedance and 0 to 300 volts range, ac and dc; ohmmeter, 0 to 50 megohms. Accuracy, within 3%. Test probes must be insulated to prevent accidental shorting.

Purpose: To check voltages and for general troubleshooting in this instrument system.

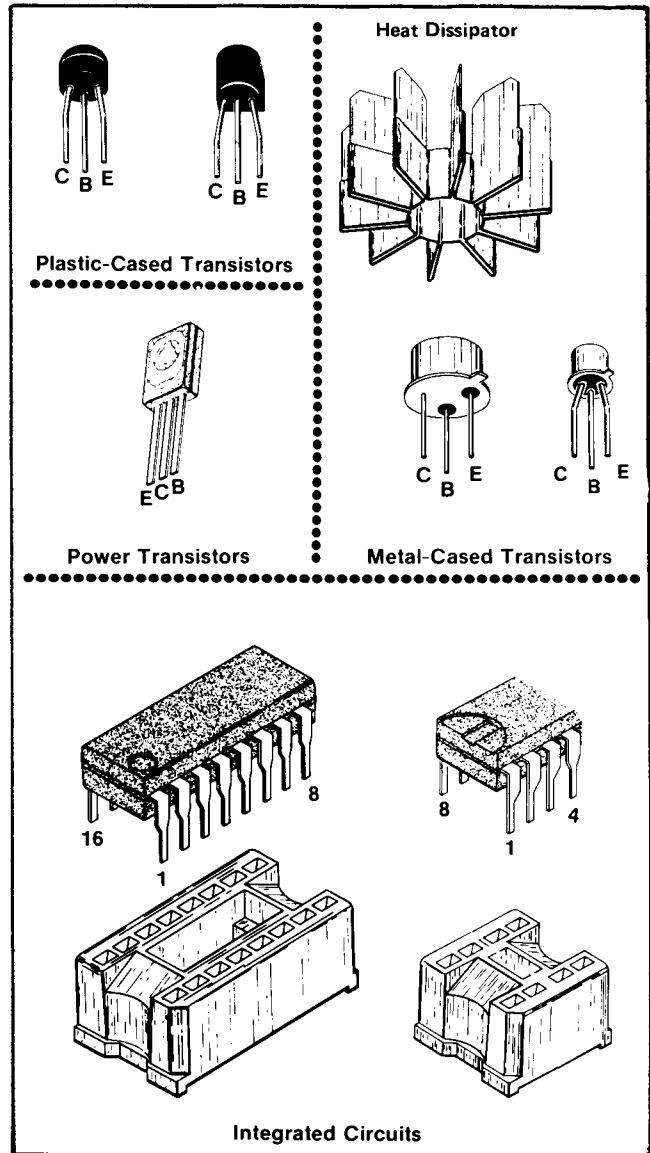


Fig. 3-1. Electrode configuration data for semiconductor devices.

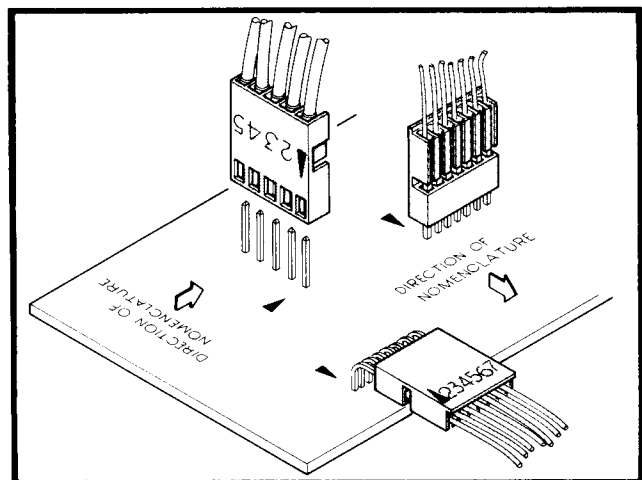


Fig. 3-2. Multi-connector holder orientation.

NOTE

A 20,000 ohms/volts VOM can be used to check the voltages in this instrument if allowances are made for the circuit loading of the VOM at high-impedance points.

TEST OSCILLOSCOPE

Description: Frequency response, dc to 2 megahertz (to 8 megahertz for troubleshooting Z axis amplifier) minimum; deflection factor, 1 millivolt/division to 5 volts/division. A 10X, 10-megohm voltage probe should be used to reduce circuit loading for voltage measurements.

Purpose: To check operating waveforms in this instrument.

TROUBLESHOOTING TECHNIQUES

This troubleshooting procedure is arranged in an order that checks the simple trouble possibilities before proceeding with extensive troubleshooting. When a defective component is located, it should be replaced, following the replacement procedure given under Component Replacement.

CHECK CONTROL SETTINGS. Incorrect control settings can indicate a trouble that does not exist. If there is any question about the correct function or operation of any control, see the operating instructions for the instrument involved.

CHECK 605 AND SYSTEM. Before proceeding with troubleshooting of the 605, check that the other instruments in the system are operating correctly. Check for proper interconnection between the display unit and the other instruments in the system.

VISUAL CHECK. Visually check the portion of the instrument in which the trouble is suspected. Many troubles can be located by visual indications such as unsoldered connections, broken wires, damaged circuit board, damaged components, etc.

CHECK INSTRUMENT ADJUSTMENT. Check the adjustment of the 605, or check the affected circuit if the trouble appears in one circuit. The apparent trouble may only be a result of misadjustment. Complete adjustment instructions are given later in this manual.

ISOLATE THE TROUBLE TO A CIRCUIT. To isolate trouble to a particular circuit, note the trouble symptom. The symptom often identifies the circuit in which the trouble is located. For example, poor focus indicates that the crt circuit (includes high-voltage supplies) is probably at fault. When trouble symptoms appear in more than one circuit, check affected circuits by taking voltage and waveform readings.

Incorrect operation of all circuits often indicates trouble in the power supply. Check first for correct voltage of the individual supplies. However, a defective component elsewhere in the instrument can appear as a power-supply trouble and may also affect the operation of other circuits. Table 3-1 lists the tolerances of the power supplies in this instrument. These voltages are measured between the power-supply test points and ground on the Power Supply Circuit Board (see the adjustments LV Power Supply Circuit Board foldout page in this manual for test point locations). If a power-supply voltage is within the listed tolerance, the supply can be assumed to be working correctly. If outside the tolerance, the supply may be misadjusted or operating incorrectly. Use the procedure given in the adjustment procedure to adjust the power supplies.

TABLE 3-1
Power Supply Tolerances

| Power Supply | Tolerance | Typical Peak-to-Peak Ripple |
|--------------|----------------------|-----------------------------|
| -30 V | -29.10 V to -30.90 V | 5 mV or less |
| +5 V | +4.75 V to +5.25 V | 5 mV or less |
| +15 V | +14.92 V to +15.08 V | 5 mV or less |
| +85 V | +75 V to +90 V | 0.5 mV or less |
| +120 V | +160 V to +190 V | 1 V or less |
| -1500 V | -1470 V to -1530 V | |

CHECK VOLTAGES AND WAVEFORMS. Often the defective component can be located by checking for the correct voltage or waveform in the circuit.

CHECK INDIVIDUAL COMPONENTS. The following methods are provided for checking the individual components in the 605. Components that are soldered in place are best checked by disconnecting one end, isolating the measurement from the effects of surrounding circuitry.

CAUTION

Power switch must be turned off before removing or replacing components, including semiconductors.

Transistors and Integrated Circuits. A good check of transistor operation is actual performance under operating conditions. A transistor can most effectively be checked by substituting a new component for it (or one which has been checked previously). However, be sure that circuit conditions are not such that a replacement transistor might also be damaged. If substitute transistors are not available, use a dynamic tester. Static-type testers are not recommended, since they do not check operation under simulated operating conditions. A desoldering tool must be used to remove soldered-in transistors; see component replacement procedure for details.

Integrated circuits (IC's) can be checked with a voltmeter, test oscilloscope, or by direct substitution. A good understanding of the circuit description is essential to troubleshooting circuits using IC's. Operating waveforms, logic levels, and other operating information for the IC's are given in the Theory of Operation section. Use care when checking voltages and waveforms around the IC's so that adjacent leads are not shorted together. A convenient means of clipping a test probe to a 14- and 16-pin in-line IC is with an integrated-circuit test clip. This device also doubles as an extraction tool.

Diodes. A diode can be checked for an open or shorted condition by measuring the resistance between terminals. With an ohmmeter scale having an internal source of between 800 millivolts and 3 volts, the resistance should be essentially infinite in one direction and very low when the leads are reversed.



Do not use an ohmmeter that has a high internal current. High currents may damage the diode.

Resistors. Check the resistors with an ohmmeter. Resistor tolerance is given in the electrical parts list. Resistors normally do not need to be replaced unless the measured value varies widely from the specified value.

Capacitors. A leaky or shorted capacitor can be detected by checking resistance with an ohmmeter on the highest scale. Use an ohmmeter that does not exceed the voltage rating of the capacitor. The resistance reading should be high after initial charge of the capacitor. An open capacitor can best be detected with a capacitance meter, or by checking whether the capacitor passes ac signals.

REPAIR AND READJUST THE CIRCUIT. Special techniques required to replace the components in this unit are given under Component Replacement. Be sure to check the performance of any circuit that has been

repaired or that has had any electrical components replaced. Adjustment of the affected circuit may be necessary.

REPLACEMENT PARTS

STANDARD PARTS. All electrical and mechanical part replacements for the 605 can be obtained through your local Tektronix Field Office or representative. However, many of the standard electronic components can be obtained locally in less time than is required to order them from Tektronix, Inc. Before purchasing or ordering replacement parts, check the parts lists for value, tolerance, rating, and description.

NOTE

When selecting replacement parts, it is important to remember that the physical size and shape of the component may affect its performance in the instrument. All replacement parts should be direct replacements unless it is known that a different component will not adversely affect the instrument performance.

SPECIAL PARTS. Some parts are manufactured or selected by Tektronix to satisfy particular requirements, or are manufactured for Tektronix to our specifications. These special parts are indicated in the parts list by an asterisk preceding the part number. Most of the mechanical parts used in this system have been manufactured by Tektronix. Order all special parts directly from your local Tektronix Field Office or representative.

ORDERING PARTS. When ordering replacement parts from Tektronix, Inc., refer to the page immediately preceding the electrical parts list. Include the following information:

1. Instrument Type
2. Instrument Serial Number
3. A description of the part (if electrical, include the circuit number)
4. Tektronix Part Number

COMPONENT REPLACEMENT

The exploded-view drawings associated with the mechanical parts list (foldout pages) may be helpful when disassembling or re-assembling individual components or sub-assemblies.

CIRCUIT BOARD REPLACEMENT. If a circuit board is damaged beyond repair, the entire assembly, including all soldered-on components can be replaced. Part numbers are given in the mechanical parts lists for completely wired boards.

To remove or replace a board, proceed as follows:

1. Disconnect all leads connected to the board (both soldered lead connections and solderless pin connections).
2. Remove all screws holding the board to the chassis or other mounting surface. Some boards may be held fast on one side by a slotted plastic bar or slotted plastic clips in addition to the screws (for example, the low-voltage power supply and deflection boards). For these, remove the screws then pull the circuit board from its slot to free the board. Also, remove any obstructions, such as the push-on clips for the power transistor on the power supply board, that would prevent the board from being lifted out of the instrument.
3. Lift the circuit board out of the unit. Do not force or bend the board.
4. To replace the board, reverse the order of removal. Use care when replacing pin connectors; if forced into place incorrectly positioned, the pin connectors may be damaged.

TRANSISTOR AND INTEGRATED CIRCUIT REPLACEMENT. Transistors and IC's should not be replaced unless they are actually defective. If removed from their sockets during routine maintenance, return them to their original sockets. Unnecessary replacement or switching of semiconductor devices may affect the instrument adjustment. When a transistor is replaced, check the operation of the part of the instrument that may be affected.

CAUTION

POWER switch must be turned off before removing or replacing semiconductors.

Replacement semiconductors should be of the original type or a direct replacement. Fig. 3-1 shows the lead configuration of the semiconductors used in this instrument system. When removing soldered-in transistors, use a desoldering tool to remove the solder from the holes in the circuit board.

An extracting tool should be used to remove the 14- and 16-pin integrated circuits to prevent damage to the pins. This tool is available from Tektronix, Inc.; order Tektronix Part No. 003-0619-00. If an extracting tool is not available, use care to avoid damaging the pins. Pull slowly and evenly on both ends of the IC. Try to avoid having one end of the IC disengage from the socket before the other end.

To replace one of the power transistors mounted on the chassis adjacent to the Power Supply circuit board, first unsolder the leads. Then, remove the push-on clip that clamps the transistor to the chassis. Remove the defective transistor. When replacing the transistor, use silicone grease on both sides of the insulator plate and on the metal tab, if the transistor has one, to increase heat transfer from the transistor to the chassis.

INTERCONNECTING PIN REPLACEMENT. To replace a pin which is mounted on a circuit board, first disconnect any pin connectors. Then, unsolder the damaged pin and pull it out of the board with a pair of pliers. Be careful not to damage the wiring on the board with too much heat. Ream out the hole in the circuit board with a 0.031-inch drill. Remove the ferrule from the new interconnecting pin and press the new pin into the hole in the circuit board. Position the pin in the same manner as the old pin. If the old pin was bent at an angle to mate with a connector, bend the new pin to match the associated pins.

NOTE

A pin replacement kit including necessary tools, instructions, and replacement pins is available from Tektronix, Inc.; order Tektronix Part No. 040-0542-00.

SWITCH REPLACEMENT. The following special maintenance information is provided for the cam switches and pushbutton switches used in this instrument system.

CAUTION

Repair of cam switches should be undertaken only by experienced repair personnel. Switch alignment and spring tension of the contacts must be carefully maintained for proper operation of the switch. For assistance in repair of the cam switches, contact your local Tektronix Field Office or representative.

1. CAM SWITCHES

A Cam Switch Repair Kit, Tektronix Part No. 040-0541-00 is available to repair the cam switch in the 605 sweep option.

Service Information—605

The cam switch consists of a rotating drum with lobes, whose position is controlled by the front-panel knob, which actuates spring-leaf contacts.

The following instructions have been generalized.

a. Remove any shields, switch shafts, interfering wires, components, or circuit boards which prevent access to the circuit board with the base cam switch contact.

NOTE

Cam switch bearing blocks that attach to more than one circuit board should not be separated from both boards during disassembly, unless absolutely necessary, because proper bearing realignment will be difficult.

b. Completely remove from the instrument the circuit board having the defective cam switch contact.

c. To replace the defective cam switch contacts, follow the instructions given in the switch repair kit.

d. To reassemble the instrument, reverse the disassembly procedure.

2. PUSHBUTTON SWITCHES

The pushbutton switches are not repairable and should be replaced as a unit if defective. Use a desoldering tool to remove solder from the holes in the circuit board when unsoldering the switches.

CATHODE-RAY TUBE REPLACEMENT. The following procedure outlines the removal and replacement of the cathode-ray tube.

WARNING

Use care when handling a crt. Protective clothing and safety glasses should be worn. Avoid striking it on any object which might cause it to crack or implode. When storing a crt, place it in a protective carton or set it face down in a protected location on a smooth surface with a soft mat under the faceplate to protect it from scratches.

1. REMOVAL

a. Remove the bezel assembly, which is held in place with two screws. (The bezel assembly includes a snap-in implosion shield.)

b. Disconnect deflection leads from crt neck pins, and disconnect the storage-element cable connector from the Storage circuit board.

NOTE

The red and black wires entering the crt shield are connected to the trace-rotation coil inside the shield. They will not hamper crt removal and need not be unsoldered.

c. Remove the crt base cover on the rear panel of the instrument. Remove the crt base-pin socket.

d. Disconnect the crt anode plug from the jack located on the panel adjacent to the left side of the crt shield.

WARNING

Ground the crt anode plug to the chassis momentarily to dissipate any stored charge.

e. With one hand on the crt faceplate, push on the crt base being sure to feed the storage-element cable and the anode lead through the slot and hole in the bottom and rear of the main portion of the crt shield as the crt slides forward. Pull the crt out of the instrument from the front.

2. REPLACEMENT

a. Make sure the soft plastic crt faceplate supports are in place, then insert the crt into the shield while feeding the storage-element cable and the anode lead through the slot and hole in the bottom and rear of the crt shield.

b. With the crt fully inserted and the shield hardware loose, mount the bezel assembly into place and tighten the bezel screws.

NOTE

If the crt support ring has come out of the crt shield, place over rear of crt and position inside crt shield between crt and crt shield.

c. Position the rear of the crt (socket end) so that there is no tilt of the faceplate in relation to the bezel assembly, then tighten the positioning screws. Check that the four deflection crt neck pin receptacles are centered in the neck shield cutout, then tighten the clamp hardware.

d. Place the crt base socket onto the crt base pins. Replace the crt base cover on the rear panel. Connect the storage-element cable to the pin connectors on the Storage circuit board, and connect the deflection leads to the crt neck pins. Reconnect the crt anode plug to the jack from the high-voltage circuit board.

e. Replacing the crt will require partial instrument adjustment. Refer to the Adjustments information later in this manual.

POWER TRANSFORMER REPLACEMENT. Replace the power transformer only with a direct replacement Tektronix transformer. After the transformer has been replaced, check the power supply output voltages and the crt operation as outlined in the Adjustments information later in this manual.

FUSE REPLACEMENT. Table 3-2 gives the rating, location, and function of the fuses used in this instrument.

TABLE 3-2

| Circuit Number | Rating | Function | Location |
|----------------|---------------------------|--|-----------------------|
| F10 | 2 A fast-blow | +20 V Unreg Supply for high-voltage oscillator | HV Power Supply Board |
| F120 | 120 VAC - 0.5 A slow-blow | Line-Voltage Input | Rear Panel |
| | 220 VAC - 0.3 A slow-blow | | |

SPECIFICATIONS

The electrical specifications are valid only if (1) the instrument has been calibrated at an ambient temperature between +20°C and +30°C; (2) the instrument is operating at an ambient temperature between 0°C and +50°C, unless otherwise noted.

TABLE 3-3

Vertical and Horizontal Amplifiers

| Characteristics | Performance Requirements | Supplemental Information |
|--------------------------------|---|---|
| Deflection Factor Vertical | Nominally set for 1 V full scale. | Internally adjustable from ≤ 0.5 V to ≥ 2.5 V full scale. An internal 5:1 attenuator extends the deflection factor range to ≥ 12.5 V full scale. |
| Horizontal | Nominally set for 1 V full scale. | Internally adjustable from ≤ 0.5 V to ≥ 2.5 V full scale. An internal 5:1 attenuator extends the deflection factor range to ≥ 12.5 V full scale. |
| Polarity (Differential Inputs) | Positive signal applied to + input deflects beam up or to the right; negative signal deflects beam down or to the left. Positive signal applied to - input deflects beam down or to the left; negative signal deflects beam up or to the right. | |
| Response | Spot must reach new writing position within 1 μ s from any on-screen position. | |

TABLE 3-3 (cont)

| Characteristics | Performance Requirements | Supplemental Information |
|---|---|--|
| Bandwidth | With 80% full-screen reference signal, amplifier bandwidth is 3 MHz; risetime 116 ns or less. | |
| Differential Capability 3 V Non-Attenuated Common Mode Dynamic Range | At least 100:1 CMRR to 100 kHz. | |
| 15 V Common Mode Dynamic Range with 5% Attenuation | At least 50:1 CMRR to 100 kHz. | |
| Phase Difference | Within 1° between equal-gain X and Y amplifiers to 500 kHz. | |
| Position Stability | 0.1 division or less per hour after 20 minute warm-up. | |
| Input Resistance and Capacitance | 1 MΩ paralleled by less than 47 pF. | |
| Maximum Input Voltage | ±100 V (dc + peak ac). | |
| Position Range | | About ±12 major divisions from screen center to allow setting zero signal position anywhere on screen. |

TABLE 3-4

Z Axis Amplifier

| Characteristics | Performance Requirements | Supplemental Information |
|--|---|---------------------------------|
| Useful Input Voltage | Adjustable from ≤ +1 V to ≥ +5 V for full intensity control when INTENSITY control is set to midrange. 0 V input cuts off visual intensity. | |
| Useful Frequency Range | DC to 5 MHz at -3 dB point. 70 ns risetime. | |
| Differential Capability 5 V Common Mode Dynamic Range | At least 100:1 CMRR to 100 kHz. | |
| Input Resistance and Capacitance | 1 MΩ paralleled by less than 47 pF (differential inputs). | |
| Maximum Safe Input Voltage | ±100 V (dc + peak ac) when INTENSITY control is fully ccw. | Crt beam positioned off screen. |
| Remote Inputs | ≤ 0.52 V provides active low logic. Open, or ≥ 2.5 V is high logic level. | Gates are TTL compatible. |
| Erase Interval Output | Active low logic is ≤ 0.4 V. High logic level is ≥ 2.5 V. | Gate will drive 10 TTL loads. |

TABLE 3-5

Cathode-Ray Tube Display

| Characteristics | Performance Requirements | Supplemental Information |
|------------------------|--|--|
| Geometry | Bowing or tilt ≤ 0.1 division | |
| Orthogonality | $90^\circ \pm 0.7^\circ$ | |
| Halftone Luminance | ≥ 100 fl. | CRT viewing area saturated. |
| Halftone Writing Speed | ≥ 1 div/ μ s for 15 seconds at 40μ A beam current. | Front-panel OPERATE LEVEL control fully cw. |
| Halftone Resolution | ≥ 10 lines/div. | |
| Erase Time | ≈ 0.5 s. | |
| Phosphor | P31 standard. | |
| Deflection | Electrostatic. | |
| Acceleration Potential | 8.5 kV. | |
| Graticule | | |
| External Graticule | 8 X 10 divisions with 0.9 cm/div. | |
| (See Option 1) | | Orange graticule lines for Option 1 internal 8 X 10 division (0.9 cm/div) graticule. |

TABLE 3-6

Environmental

| Characteristics | Performance Requirements | Supplemental Information |
|---|--|--------------------------|
| Temperature Operating | 0°C to $+50^\circ\text{C}$. | |
| Storage | -40°C to $+70^\circ\text{C}$. | |
| Altitude Operating | To 15,000 feet. | |
| Storage | To 50,000 feet. | |
| Vibration Operating and Nonoperating | With the instrument complete and operating, vibration frequency swept from 10 to 50 to 10 Hz at 1 minute per sweep. Vibrated 15 minutes in each of the three major axes at 0.025" total displacement. Held 3 minutes at any major resonance, or if none, at 50 Hz. Total time, 54 minutes. | |

TABLE 3-6 (cont)

| Characteristics | Performance Requirements | Supplemental Information |
|-------------------------------------|--|--------------------------|
| Shock Operating and Nonoperating | 30 g's, 1/2 sine, 11 ms duration, 2 shocks in each direction along 3 major axes, for a total of 12 shocks. | |
| Transportation | Qualified under National Safe Transit Committee Test Procedure 1A, Category II. | |

TABLE 3-7

Physical

| Parameter | Information |
|--------------------------------------|--|
| Finish | Anodized aluminum panel with gray vinyl-coated frame. Blue vinyl-coated cabinet. |
| Overall Dimensions | See Fig. 3-3. |
| Total Depth of Rack for Rackmounting | 19 inches. |

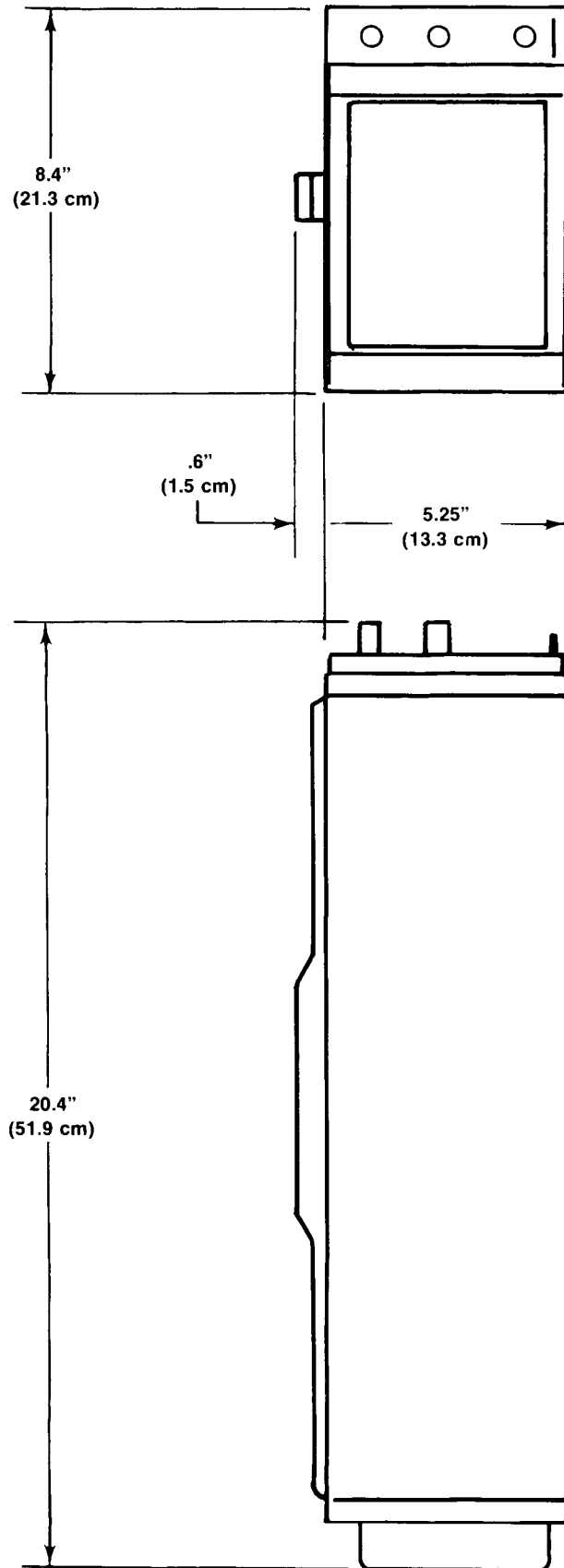


Fig. 3-3. Illustration showing dimensions of 605.

SYMBOLS AND REFERENCE DESIGNATORS

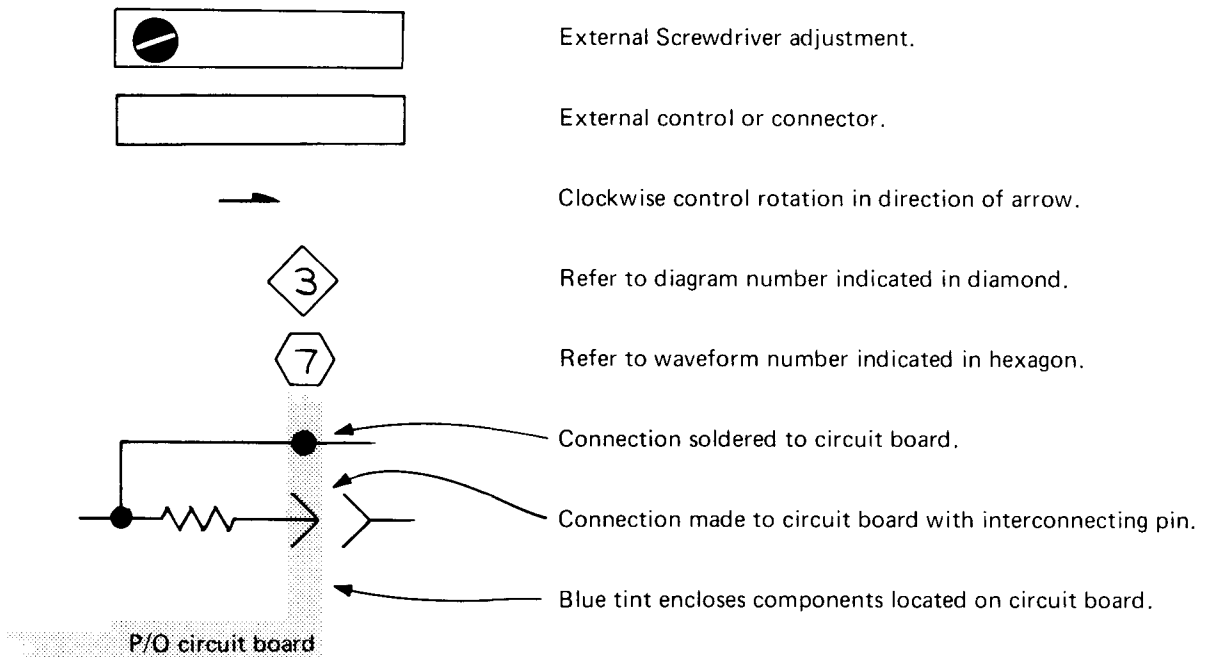
Electrical components shown on the diagrams are in the following units unless noted otherwise:

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

Symbols used on the diagrams are based on ANSI Y32.2 – 1970.

Logic symbology is based on MIL-STD-806B in terms of positive logic. Logic symbols depict the logic function performed and may differ from the manufacturer's data.

The following special symbols are used on the diagrams:



OPTIONS

Your instrument may be equipped with one or more options. This section describes those options, or directs the reader to where the option is documented.

Option 1 — Information relating to Option 1 (crt having internal graticule without graticule lights) is found in the Electrical Parts list near V100.

Option 2 — Not applicable.

Option 3 — Information on Option 3 (instrument without handle or feet) will be found on the Fig. 1 Exploded & Option No. 3 foldout.

Option 4 — Information for Option 4 (time base) will be found in the foldout pages.

ELECTRICAL REPLACEABLE PARTS LIST

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 |
| ELCTLT | ELECTROLYTIC | SENS | SENSITIVE |
| ELEC | ELECTRICAL | SEP | SEPARATELY |
| FXD | FIXED | VAR | VARIABLE |
| INCAND | INCANDESCENT | WW | WIREWOUND |
| LED | LIGHT EMITTING DIODE | XFMR | TRANSFORMER |
| NONWIR | NON WIREWOUND | XTAL | CRYSTAL |

CROSS INDEX MFR. CODE NUMBER TO MANUFACTURER

| MFR. CODE | MANUFACTURER | ADDRESS | CITY, STATE, ZIP |
|-----------|--|-----------------------------|-------------------------|
| 01002 | General Electric Co., Industrial and Power Capacitor Products Dept. | John St. | Hudson Falls, NY 12839 |
| 01121 | Allen-Bradley Co. | 1201 2nd St. South | Milwaukee, WI 53204 |
| 02735 | RCA Corp., Solid State Division | Route 202 | Somerville, NY 08876 |
| 03888 | Pyrofilm Corp. | 60 S. Jefferson Rd. | Whippany, NJ 07981 |
| 04713 | Motorola, Inc., Semiconductor Products Div. | 5005 E. McDowell Rd. | Phoenix, AZ 85008 |
| 07263 | Fairchild Semiconductor, A Div. of Fairchild Camera and Instrument Corp. | 464 Ellis St. | Mountain View, CA 94040 |
| 07910 | Teledyne Semiconductor | 12515 Chadron Ave. | Hawthorne, CA 90250 |
| 08806 | General Electric Co., Miniature Lamp Products Dept. | Nela Pk. | Cleveland, OH 44112 |
| 11237 | CTS Keene, Inc. | 3230 Riverside Ave. | Paso Robles, CA 93446 |
| 12040 | National Semiconductor Corp. | Commerce Drive | Danbury, CT 06810 |
| 12969 | Unitrode Corp. | 580 Pleasant St. | Watertown, MA 02172 |
| 13715 | Fairchild Semiconductor, A Div. of Fairchild Camera and Instrument Corp. | 4300 Redwood Hwy. | San Rafael, CA 94903 |
| 14936 | General Instrument Corp., Semiconductor Products Group | 600 W. John St. | Hicksville, NY 11802 |
| 18796 | Erie Technological Products, Inc. State College Division | 1900 W. College Ave. | State College, PA 16801 |
| 22229 | Solitron Devices, Inc. | 8808 Balboa Ave. | San Diego, CA 92123 |
| 24931 | Specialty Connector Co., Inc. | 3560 Madison Ave. | Indianapolis, IN 46227 |
| 56285 | Sprague and Carleton | | Avon Keene, NH 03431 |
| 56289 | Sprague Electric Co. | | North Adams, MA 01247 |
| 63743 | Ward Leonard Electric Co., Inc. | 31 South St. | Mount Vernon, NY 10550 |
| 71400 | Bussman Mfg., Division of McGraw Edison Co. | 2536 W. University St. | St. Louis, MO 63107 |
| 71468 | ITT Cannon Electric | 666 E. Dyer Rd. | Santa Ana, CA 92702 |
| 71590 | Centralab Electronics, Div. of Globe-Union, Inc. | 5757 N. Green Bay Ave. | Milwaukee, WI 53201 |
| 72136 | Electro Motive Mfg. Co., Inc., The | South Park and John Streets | Willimantic, CT 06226 |
| 72982 | Erie Technological Products, Inc. | 644 W. 12th St. | Erie, PA 16512 |
| 73138 | Beckman Instruments, Inc., Helipot Div. | 2500 Harbor Blvd. | Fullerton, CA 92634 |
| 75042 | TRW Electronic Components, IRC Fixed Resistors, Philadelphia Division | 401 N. Broad St. | Philadelphia, PA 19108 |
| 76493 | Bell Industries, Inc., Miller, J. W., Div. | P. O. Box 5825 | Compton, CA 90224 |
| 80009 | Tektronix, Inc. | P. O. Box 500 | Beaverton, OR 97005 |
| 80031 | Mepco/Electa Inc., A North American Phillips Co. | Columbia Rd. | Morristown, NJ 07960 |
| 80740 | Beckman Instruments, Inc. | 2500 Harbor Blvd. | Fullerton, CA 92634 |
| 81483 | International Rectifier Corp. | 9220 Sunset Blvd. | Los Angeles, CA 90069 |
| 82383 | Stevens Mfg. Co. | New Germany Rd. | Ebensberg, PA 15931 |
| 83003 | Varo, Inc. | 800 W. Garland Ave. | Garland, TX 75040 |
| 90201 | Mallory Capacitor Co., Div. of P. R. Mallory Co., Inc. | 3029 E. Washington St. | Indianapolis, IN 46206 |
| 91637 | Dale Electronics, Inc. | P. O. Box 609 | Columbus, NB 68601 |
| 91929 | Honeywell, Inc., Micro Switch Div. | Chicago & Spring Sts. | Freeport, IL 61032 |

| Ckt No. | Tektronix Part No. | Serial/Model No. Eff Dscont | Name & Description | Mfr Code | Mfr Part Number |
|---------|--------------------|-----------------------------|--|----------|-----------------|
| A1 | 670-3125-00 | | CKT BOARD ASSY:LOW VOLTAGE | 80009 | 670-3125-00 |
| A2 | 670-3081-00 | | CKT BOARD ASSY:HIGH VOLTAGE | 80009 | 670-3081-00 |
| A3 | 670-3178-00 | | CKT BOARD ASSY:DEFLECTION | 80009 | 670-3178-00 |
| A4 | 670-3182-00 | | CKT BOARD ASSY:Z AXIS | 80009 | 670-3182-00 |
| A5 | 670-3083-00 | | CKT BOARD ASSY:FRONT PANEL CONTROL & STORAGE | 80009 | 670-3083-00 |
| C18 | 290-0702-00 | | CAP.,FXD,ELCTLT:2000UF,+100-0%,50V | 56289 | 68D10715 |
| C20 | 290-0571-00 | | CAP.,FXD,ELCTLT:500UF,+100-10%,25V | 90201 | 20-36043 |
| C21 | 290-0571-00 | | CAP.,FXD,ELCTLT:500UF,+100-10%,25V | 90201 | 20-36043 |
| C36 | 290-0512-00 | | CAP.,FXD,ELCTLT:22UF,20%,15V | 56285 | 196D226X0015KA1 |
| C40 | 283-0003-00 | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C46 | 281-0525-00 | | CAP.,FXD,CER DI:470PF,+/-94PF,500V | 72982 | 301-000X5U0471M |
| C58 | 281-0543-00 | | CAP.,FXD,CER DI:270PF,10%,500V | 72982 | 301-055X5P271K |
| C60 | 283-0003-00 | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C62 | 290-0535-00 | | CAP.,FXD,ELCTLT:33UF,20%,10V | 56289 | 196D336X0010KA1 |
| C78 | 281-0524-00 | | CAP.,FXD,CER DI:150PF,+/-30PF,500V | 72982 | 301-000X5U0151M |
| C88 | 283-0003-00 | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C90 | 290-0528-00 | | CAP.,FXD,ELCTLT:15UF,20%,50V | 90201 | TDC156M050WLC |
| C104 | 283-0111-00 | | CAP.,FXD,CER DI:0.1UF,20%,50V | 72982 | 8131-050651104M |
| C106 | 283-0021-00 | | CAP.,FXD,CER DI:0.001UF,20%,5000V | 72982 | 828-005Y5S0102M |
| C112 | 290-0527-00 | | CAP.,FXD,ELCTLT:15UF,20%,20V | 90201 | TDC156M020FL |
| C114 | 283-0142-00 | | CAP.,FXD,CER DI:0.0027UF,5%,200V | 72982 | 875-030Y5D0272J |
| C117 | 283-0081-00 | | CAP.,FXD,CER DI:0.1UF,+80-20%,25V | 56289 | 36C600 |
| C118 | 283-0010-00 | | CAP.,FXD,CER DI:0.05UF,+80-20%,150V | 18796 | 855547Z5U0502Z |
| C126 | 290-0536-00 | | CAP.,FXD,ELCTLT:10UF,20%,25V | 90201 | TDC106M025FL |
| C128 | 290-0536-00 | | CAP.,FXD,ELCTLT:10UF,20%,25V | 90201 | TDC106M025FL |
| C132 | 283-0000-00 | | CAP.,FXD,CER DI:0.001UF,+100-0%,500V | 56289 | 40C626 |
| C138 | 283-0300-00 | | CAP.,FXD,CER DI:0.001UF,+80-20%,10,000V | 72982 | 391BW509X5R142Z |
| C140 | 283-0300-00 | | CAP.,FXD,CER DI:0.001UF,+80-20%,10,000V | 72982 | 391BW509X5R142Z |
| C148 | 283-0105-00 | | CAP.,FXD,CER DI:0.01UF,+80-20%,2000V | 56289 | 41C316 |
| C149 | 283-0105-00 | | CAP.,FXD,CER DI:0.01UF,+80-20%,2000V | 56289 | 41C316 |
| C | 281-0512-00 | | CAP.,FXD,CER DI:27PF,+/-2.7PF,500V | 72982 | 308-000C0G0270K |
| C | 283-0057-00 | | CAP.,FXD,CER DI:0.1UF,+80-20%,200V | 56289 | 274C10 |
| C156 | 283-0057-00 | | CAP.,FXD,CER DI:0.1UF,+80-20%,200V | 56289 | 274C10 |
| C158 | 290-0164-00 | | CAP.,FXD,ELCTLT:1UF,+50-10%,150V | 56289 | 30D105F150BA4 |
| C160 | 290-0164-00 | | CAP.,FXD,ELCTLT:1UF,+50-10%,150V | 56289 | 30D105F150BA4 |
| C180 | 283-0105-00 | | CAP.,FXD,CER DI:0.01UF,+80-20%,2000V | 56289 | 41C316 |
| C186 | 283-0021-00 | | CAP.,FXD,CER DI:0.001UF,20%,5000V | 72982 | 828-005Y5S0102M |
| C188 | 290-0164-00 | | CAP.,FXD,ELCTLT:1UF,+50-10%,150V | 56289 | 30D105F150BA4 |
| C200 | 281-0203-00 | | CAP.,VAR,PLSTC:2-10PF,100V | 80031 | C010EA/10E |
| C202 | 281-0510-00 | | CAP.,FXD,CER DI:22PF,+/-4.4PF,500V | 72982 | 301-000C0G0220M |
| C206 | 283-0003-00 | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C212 | 281-0544-00 | | CAP.,FXD,CER DI:5.6PF,10%,500V | 72982 | 301-000C0H0569D |
| C218 | 281-0518-00 | | CAP.,FXD,CER DI:47PF,+/-9.4PF,500V | 72982 | 301-000U2J0470M |
| C246 | 281-0203-00 | | CAP.,VAR,PLSTC:2-10PF,100V | 80031 | C010EA/10E |
| C250 | 281-0661-00 | | CAP.,FXD,CER DI:0.8PF,+/-0.1PF,500V | 72982 | 301-000C0G0808B |
| C256 | 281-0628-00 | | CAP.,FXD,CER DI:15PF,5%,600V | 72982 | 301-000C0G150J |
| C300 | 281-0203-00 | | CAP.,VAR,PLSTC:2-10PF,100V | 80031 | C010EA/10E |
| C302 | 281-0510-00 | | CAP.,FXD,CER DI:22PF,+/-4.4PF,500V | 72982 | 301-000C0G0220M |
| C306 | 283-0003-00 | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C312 | 281-0544-00 | | CAP.,FXD,CER DI:5.6PF,10%,500V | 72982 | 301-000C0H0569D |
| C320 | 283-0003-00 | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C326 | 283-0003-00 | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C350 | 281-0661-00 | | CAP.,FXD,CER DI:0.8PF,+/-0.1PF,500V | 72982 | 301-000C0G0808B |
| C380 | 290-0572-00 | | CAP.,FXD,ELCTLT:0.1UF,20%,50V | 56289 | 196D104X0050HA1 |
| C382 | 290-0534-00 | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C384 | 290-0572-00 | | CAP.,FXD,ELCTLT:0.1UF,20%,50V | 56289 | 196D104X0050HA1 |
| C400 | 281-0203-00 | | CAP.,VAR,PLSTC:2-10PF,100V | 80031 | C010EA/10E |
| C402 | 281-0510-00 | | CAP.,FXD,CER DI:22PF,+/-4.4PF,500V | 72982 | 301-000C0G0220M |
| C406 | 283-0003-00 | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C412 | 281-0544-00 | | CAP.,FXD,CER DI:5.6PF,10%,500V | 72982 | 301-000C0H0569D |
| C418 | 281-0518-00 | | CAP.,FXD,CER DI:47PF,+/-9.4PF,500V | 72982 | 301-000U2J0470M |
| C446 | 281-0203-00 | | CAP.,VAR,PLSTC:2-10PF,100V | 80031 | C010EA/10E |

Electrical Parts List—605

| Ckt No. | Tektronix | | Serial/Model No. | | Name & Description | Mfr Code | Mfr Part Number |
|---------|-------------|-----|------------------|--------|--------------------------------------|----------|-----------------|
| | Part No. | Eff | Model No. | Dscont | | | |
| C450 | 281-0534-00 | | | | CAP.,FXD,CER DI:3.3PF,+/-0.25PF,500V | 72982 | 301-000C0J0339C |
| C456 | 283-0663-00 | | | | CAP.,FXD,MICA D:16.8PF,+/0.5PF,500V | 72136 | DM15C1689D0500 |
| C470 | 281-0203-00 | | | | CAP.,FXD,PLSTC:2-10PF,100V | 80031 | C010EA/10E |
| C500 | 281-0203-00 | | | | CAP.,FXD,PLSTC:2-10PF,100V | 80031 | C010EA/10E |
| C502 | 281-0510-00 | | | | CAP.,FXD,CER DI:22PF,+/-4.4PF,500V | 72982 | 301-000C0G0220M |
| C506 | 283-0003-00 | | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C512 | 281-0544-00 | | | | CAP.,FXD,CER DI:5.6PF,10%,500V | 72982 | 301-000C0H0569D |
| C520 | 283-0003-00 | | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C526 | 283-0003-00 | | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C550 | 281-0534-00 | | | | CAP.,FXD,CER DI:3.3PF,+/-0.25PF,500V | 72982 | 301-000C0J0339C |
| C606 | 283-0003-00 | | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C612 | 281-0508-00 | | | | CAP.,FXD,CER DI:12PF,+/-0.6PF,500V | 72982 | 301-000C0G0120J |
| C614 | 281-0549-00 | | | | CAP.,FXD,CER DI:68PF,10%,500V | 72982 | 301-000U2J0680K |
| C642 | 283-0003-00 | | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C656 | 283-0003-00 | | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C662 | 281-0508-00 | | | | CAP.,FXD,CER DI:12PF,+/-0.6PF,500V | 72982 | 301-000C0G0120J |
| C670 | 290-0534-00 | | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C690 | 281-0534-00 | | | | CAP.,FXD,CER DI:3.3PF,+/-0.25PF,500V | 72982 | 301-000C0J0339C |
| C692 | 281-0526-00 | | | | CAP.,FXD,CER DI:1.5PF,+/-0.5PF,500V | 72982 | 301-000S2K0159D |
| C716 | 281-0629-00 | | | | CAP.,FXD,CER DI:33PF,5%,600V | 71590 | TCZ33 |
| C718 | 283-0003-00 | | | | CAP.,FXD,CER DI:0.01UF,+80-20%,150V | 56289 | 20C205A1 |
| C724 | 283-0057-00 | | | | CAP.,FXD,CER DI:0.1UF,+80-20%,200V | 56289 | 274C10 |
| C734 | 281-0064-00 | | | | CAP.,VAR,PLSTC:0.25-1.5PF,600V | 72982 | 530-002 |
| C740 | 283-0057-00 | | | | CAP.,FXD,CER DI:0.1UF,+80-20%,200V | 56289 | 274C10 |
| C810 | 290-0572-00 | | | | CAP.,FXD,ELCTLT:0.1UF,20%,50V | 56289 | 196D104X0050HA1 |
| C812 | 283-0081-00 | | | | CAP.,FXD,CER DI:0.1UF,+80-20%,25V | 56289 | 36C600 |
| C814 | 290-0534-00 | | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C816 | 283-0010-00 | | | | CAP.,FXD,CER DI:0.05UF,+100-20%,50V | 56289 | 273C20 |
| C820 | 290-0536-00 | | | | CAP.,FXD,ELCTLT:10UF,20%,25V | 90201 | TDC106M025FL |
| C840 | 290-0534-00 | | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C848 | 290-0529-00 | | | | CAP.,FXD,ELCTLT:47UF,20%,20V | 56289 | 196D476X0020Lj |
| C886 | 285-0686-00 | | | | CAP.,FXD,PLSTC:0.068UF,10%,100V | 01002 | 64F22AA683 |
| C890 | 290-0535-00 | | | | CAP.,FXD,ELCTLT:33UF,20%,10V | 56289 | 196D336X0010KA1 |
| C895 | 285-0686-00 | | | | CAP.,FXD,PLSTC:0.068UF,10%,100V | 01002 | 64F22AA683 |
| C904 | 290-0534-00 | | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C1062 | 281-0627-00 | | | | CAP.,FXD,CER DI:1PF,+/-0.25PF,500V | 72982 | 301-000C0K0109C |
| CR15 | 152-0107-00 | | | | SEMICONV DEVICE:SILICON,375V,400MA | 80009 | 152-0107-00 |
| CR16 | 152-0107-00 | | | | SEMICONV DEVICE:SILICON,375V,400MA | 80009 | 152-0107-00 |
| CR17 | 152-0107-00 | | | | SEMICONV DEVICE:SILICON,375V,400MA | 80009 | 152-0107-00 |
| CR18 | 152-0107-00 | | | | SEMICONV DEVICE:SILICON,375V,400MA | 80009 | 152-0107-00 |
| CR20 | 152-0556-00 | | | | SEMICONV DEVICE:BRIDGE,50V,2.5A | 04713 | MDA960-1 |
| CR25 | 152-0107-00 | | | | SEMICONV DEVICE:SILICON,375V,400MA | 80009 | 152-0107-00 |
| CR27 | 152-0107-00 | | | | SEMICONV DEVICE:SILICON,375V,400MA | 80009 | 152-0107-00 |
| CR29 | 152-0066-00 | | | | SEMICONV DEVICE:SILICON,400V,750MA | 02735 | 1N3194 |
| CR30 | 152-0141-02 | | | | SEMICONV DEVICE:SILICON,30V,150MA | 07910 | CD8220 |
| CR32 | 152-0066-00 | | | | SEMICONV DEVICE:SILICON,400V,750MA | 02735 | 1N3194 |
| CR36 | 152-0066-00 | | | | SEMICONV DEVICE:SILICON,400V,750MA | 02735 | 1N3194 |
| CR40 | 152-0141-02 | | | | SEMICONV DEVICE:SILICON,30V,150MA | 07910 | CD8220 |
| CR41 | 152-0141-02 | | | | SEMICONV DEVICE:SILICON,30V,150MA | 07910 | CD8220 |
| CR48 | 152-0141-02 | | | | SEMICONV DEVICE:SILICON,30V,150MA | 07910 | CD8220 |
| CR74 | 152-0141-02 | | | | SEMICONV DEVICE:SILICON,30V,150MA | 07910 | CD8220 |
| CR80 | 152-0141-02 | | | | SEMICONV DEVICE:SILICON,30V,150MA | 07910 | CD8220 |
| CR82 | 152-0141-02 | | | | SEMICONV DEVICE:SILICON,30V,150MA | 07910 | CD8220 |
| CR90 | 152-0066-00 | | | | SEMICONV DEVICE:SILICON,400V,750MA | 02735 | 1N3194 |
| CR106 | 152-0333-00 | | | | SEMICONV DEVICE:SILICON,55V,200MA | 07263 | FDH6012 |
| CR107 | 152-0333-00 | | | | SEMICONV DEVICE:SILICON,55V,200MA | 07263 | FDH6012 |
| CR120 | 152-0141-02 | | | | SEMICONV DEVICE:SILICON,30V,150MA | 07910 | CD8220 |
| CR138 | 152-0409-00 | | | | SEMICONV DEVICE:SILICON,1200V,5MA | 83003 | VG12X |
| CR139 | 152-0409-00 | | | | SEMICONV DEVICE:SILICON,1200V,5MA | 83003 | VG12X |
| CR148 | 152-0242-00 | | | | SEMICONV DEVICE:SILICON,225V,200MA | 12969 | NDP341 |
| CR150 | 152-0409-00 | | | | SEMICONV DEVICE:SILICON,1200V,5MA | 83003 | VG12X |
| CR154 | 152-0586-00 | | | | SEMICONV DEVICE:SILICON,600V,500MA | 14936 | RMP5060 |

| Ckt No. | Tektronix Part No. | Serial/Model No. | | Name & Description | Mfr Code | Mfr Part Number | |
|------------------|--------------------|------------------|--------|---|----------|-----------------|--|
| | | Eff | Dscont | | | | |
| CR158 | 152-0586-00 | | | SEMICON DEVICE: SILICON, 600V, 500MA | 14936 | RMP5060 | |
| CR180 | 152-0242-00 | | | SEMICON DEVICE: SILICON, 225V, 200MA | 12969 | NDP341 | |
| CR182 | 152-0242-00 | | | SEMICON DEVICE: SILICON, 225V, 200MA | 12969 | NDP341 | |
| CR186 | 152-0242-00 | | | SEMICON DEVICE: SILICON, 225V, 200MA | 12969 | NDP341 | |
| CR208 | 152-0246-00 | | | SEMICON DEVICE: SILICON, 400PIV, 200MA | 07910 | CD12676 | |
| CR254 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR255 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR256 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR257 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR270 | 152-0061-00 | | | SEMICON DEVICE: SILICON, 175V, 100MA | 13715 | FD2161 | |
| CR272 | 152-0061-00 | | | SEMICON DEVICE: SILICON, 175V, 100MA | 13715 | FD2161 | |
| CR308 | 152-0246-00 | | | SEMICON DEVICE: SILICON, 400PIV, 200MA | 07910 | CD12676 | |
| CR408 | 152-0246-00 | | | SEMICON DEVICE: SILICON, 400PIV, 200MA | 07910 | CD12676 | |
| CR420 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR454 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR455 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR456 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR457 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR508 | 152-0246-00 | | | SEMICON DEVICE: SILICON, 400PIV, 200MA | 07910 | CD12676 | |
| CR520 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR608 | 152-0246-00 | | | SEMICON DEVICE: SILICON, 400PIV, 200MA | 07910 | CD12676 | |
| CR620 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR642 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR658 | 152-0246-00 | | | SEMICON DEVICE: SILICON, 400PIV, 200MA | 07910 | CD12676 | |
| CR670 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR698 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR699 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR730 | 152-0574-00 | | | SEMICON DEVICE: SILICON, 120V | 80009 | 152-0574-00 | |
| CR801 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR802 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR812 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR814 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR852 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR853 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR856 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR857 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR860 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR861 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR874 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR888 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR890 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR902 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR910 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR912 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR950 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR952 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR954 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR956 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR960 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR962 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR972 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR973 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR975 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR982 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR984 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR986 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR996 | 152-0107-00 | | | SEMICON DEVICE: SILICON, 375V, 400MA | 80009 | 152-0107-00 | |
| CR998 | 152-0107-00 | | | SEMICON DEVICE: SILICON, 375V, 400MA | 80009 | 152-0107-00 | |
| CR1000 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR1016 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| CR1018 | 152-0141-02 | | | SEMICON DEVICE: SILICON, 30V, 150MA | 07910 | CD8220 | |
| F10 | 159-0029-00 | | | FUSE, CARTRIDGE: 3AG, 0.3A, 250V, MED-BLOW | 71400 | MDL3-10 | |
| F10 ¹ | 159-0032-00 | | | FUSE, CARTRIDGE: 3AG, 0.5A, 250V, SLOW-BLOW | 71400 | MDL1-2 | |

¹For 240V line only.

Electrical Parts List—605

| Ckt No. | Tektronix Part No. | Serial/Model No. Eff Dscont | Name & Description | Mfr Code | Mfr Part Number |
|----------|--------------------|-----------------------------|---|----------|-----------------|
| F120 | 159-0021-00 | | FUSE, CARTRIDGE: 3AG, 2A, 250V, FAST BLOW | 71400 | AGC2 |
| J20 | 131-0569-00 | | CONNECTOR, RCPT, : 25 PIN, FEMALE | 71468 | DB25S |
| J200 | 131-0955-00 | | CONNECTOR, RCPT, : BNC, FEMALE | 24931 | 28JR200-1 |
| J300 | 131-0955-00 | | CONNECTOR, RCPT, : BNC, FEMALE | 24931 | 28JR200-1 |
| J400 | 131-0955-00 | | CONNECTOR, RCPT, : BNC, FEMALE | 24931 | 28JR200-1 |
| J500 | 131-0955-00 | | CONNECTOR, RCPT, : BNC, FEMALE | 24931 | 28JR200-1 |
| J600 | 131-0955-00 | | CONNECTOR, RCPT, : BNC, FEMALE | 24931 | 28JR200-1 |
| J650 | 131-0955-00 | | CONNECTOR, RCPT, : BNC, FEMALE | 24931 | 28JR200-1 |
| L145 | 108-0792-00 | | COIL, RF: TRACE ROTATOR | 80009 | 108-0792-00 |
| L154 | 108-0324-00 | | COIL, RF: 10MH | 76493 | 70F102A1 |
| L158 | 108-0324-00 | | COIL, RF: 10MH | 76493 | 70F102A1 |
| P10 | 161-0033-12 | | CABLE ASSY, PWR: | 80009 | 161-0033-12 |
| P20 | 131-0570-00 | | CONNECTOR, RCPT, : 25 PIN, MALE | 71468 | DB25P |
| Q30 | 151-0405-00 | | TRANSISTOR: SILICON, NPN | 04713 | SJE943 |
| Q32 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q50 | 151-0341-00 | | TRANSISTOR: SILICON, NPN | 07263 | 2N3565 |
| Q60 | 151-0405-00 | | TRANSISTOR: SILICON, NPN | 04713 | SJE943 |
| Q64 | 151-0341-00 | | TRANSISTOR: SILICON, NPN | 07263 | 2N3565 |
| Q70 | 151-0405-00 | | TRANSISTOR: SILICON, NPN | 04713 | SJE943 |
| Q76 | 151-0341-00 | | TRANSISTOR: SILICON, NPN | 07263 | 2N3565 |
| Q80 | 151-0341-00 | | TRANSISTOR: SILICON, NPN | 07263 | 2N3565 |
| Q120 | 151-0302-00 | | TRANSISTOR: SILICON, NPN | 04713 | 2N2222A |
| Q130 | 151-0349-00 | | TRANSISTOR: SILICON, NPN SEL FROM MJE2801 | 80009 | 151-0349-00 |
| Q132 | 151-0103-00 | | TRANSISTOR: SILICON, NPN | 04713 | 2N2219A |
| Q210A, B | 151-1054-00 | | TRANSISTOR: SILICON, JFE, N-CHANNEL, DUAL | 22229 | FD1644 |
| Q220 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q230 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q232 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q260 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q264 | 151-0279-00 | | TRANSISTOR: SILICON, NPN | 07263 | S025381 |
| Q320 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q330 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q332 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q360 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q364 | 151-0279-00 | | TRANSISTOR: SILICON, NPN | 07263 | S025381 |
| Q410A, B | 151-1054-00 | | TRANSISTOR: SILICON, JFE, N-CHANNEL, DUAL | 22229 | FD1644 |
| Q420 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q430 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q432 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q460 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q464 | 151-0190-00 | | TRANSISTOR: SILICON, NPN | 04713 | 2N3904 |
| Q520 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q530 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q532 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q560 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q564 | 151-0190-00 | | TRANSISTOR: SILICON, NPN | 04713 | 2N3904 |
| Q610A, B | 151-1054-00 | | TRANSISTOR: SILICON, JFE, N-CHANNEL, DUAL | 22229 | FD1644 |
| Q620 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q630 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q640 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q670 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q680 | 151-0342-00 | | TRANSISTOR: SILICON, PNP | 07263 | 2N4249 |
| Q690 | 151-0341-00 | | TRANSISTOR: SILICON, NPN | 07263 | 2N3565 |
| Q700 | 151-0341-00 | | TRANSISTOR: SILICON, NPN | 07263 | 2N3565 |
| Q710 | 151-0341-00 | | TRANSISTOR: SILICON, NPN | 07263 | 2N3565 |
| Q720 | 151-0279-00 | | TRANSISTOR: SILICON, NPN | 07263 | S025381 |
| Q724 | 151-0270-00 | | TRANSISTOR: SILICON, PNP, SEL FROM 2N3495 | 80009 | 151-0270-00 |
| Q810 | 151-0341-00 | | TRANSISTOR: SILICON, NPN | 07263 | 2N3565 |
| Q835 | 151-0126-00 | | TRANSISTOR: SILICON, NPN | 07263 | 2N2484 |
| Q872 | 151-0188-00 | | TRANSISTOR: SILICON, PNP | 04713 | 2N3906 |
| Q876 | 151-0190-00 | | TRANSISTOR: SILICON, NPN | 04713 | 2N3904 |

| Ckt No. | Tektronix Part No. | Serial/Model No. | | Name & Description | Mfr Code | Mfr Part Number |
|---------|--------------------|------------------|--------|-----------------------------------|----------|-----------------|
| | | Eff | Dscont | | | |
| Q990 | 151-0190-00 | | | TRANSISTOR:SILICON,NPN | 04713 | 2N3904 |
| Q996 | 151-0292-00 | | | TRANSISTOR:SILICON,NPN | 80009 | 151-0292-00 |
| Q1010 | 151-0292-00 | | | TRANSISTOR:SILICON,NPN | 80009 | 151-0292-00 |
| Q1026 | 151-0341-00 | | | TRANSISTOR:SILICON,NPN | 07263 | 2N3565 |
| Q1036 | 151-0292-00 | | | TRANSISTOR:SILICON,NPN | 80009 | 151-0292-00 |
| Q1050 | 151-0292-00 | | | TRANSISTOR:SILICON,NPN | 80009 | 151-0292-00 |
| Q1060 | 151-0216-00 | | | TRANSISTOR:SILICON,PNP | 04713 | MPS6523 |
| Q1066 | 151-0292-00 | | | TRANSISTOR:SILICON,NPN | 80009 | 151-0292-00 |
| R25 | 315-0221-00 | | | RES.,FXD,COMP:220 OHM,5%,0.25W | 01121 | CB2215 |
| R27 | 315-0221-00 | | | RES.,FXD,COMP:220 OHM,5%,0.25W | 01121 | CB2215 |
| R30 | 315-0333-00 | | | RES.,FXD,COMP:33K OHM,5%,0.25W | 01121 | CB3335 |
| R31 | 315-0472-00 | | | RES.,FXD,COMP:4.7K OHM,5%,0.25W | 01121 | CB4725 |
| R34 | 308-0568-00 | | | RES.,FXD,WW:35 OHM,5%,5W | 91637 | RS5-K35R00J |
| R36 | 308-0755-00 | | | RES.,FXD,WW:0.75 OHM,5%,2W | 75042 | BWH-R7500J |
| R38 | 321-0250-00 | | | RES.,FXD,FILM:3.92K OHM,1%,0.125W | 75042 | CEAT0-3921F |
| R40 | 311-1565-00 | | | RES.,VAR,NONWIR:250 OHM,20%,0.50W | 73138 | 91A250R0M |
| R42 | 321-0242-00 | | | RES.,FXD,FILM:3.24K OHM,1%,0.125W | 75042 | CEAT0-3241F |
| R44 | 315-0334-00 | | | RES.,FXD,COMP:330K OHM,5%,0.25W | 01121 | CB3345 |
| R46 | 315-0561-00 | | | RES.,FXD,COMP:560 OHM,5%,0.25W | 01121 | CB5615 |
| R48 | 315-0101-00 | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R50 | 315-0202-00 | | | RES.,FXD,COMP:2K OHM,5%,0.25W | 01121 | CB2025 |
| R54 | 315-0822-00 | | | RES.,FXD,COMP:8.2K OHM,5%,0.25W | 01121 | CB8225 |
| R56 | 305-0620-00 | | | RES.,FXD,COMP:62 OHM,5%,2W | 01121 | HB6205 |
| R58 | 315-0152-00 | | | RES.,FXD,COMP:1.5K OHM,5%,0.25W | 01121 | CB1525 |
| R60 | 321-0254-00 | | | RES.,FXD,FILM:4.32K OHM,1%,0.125W | 75042 | CEAT0-4321F |
| R62 | 321-0335-00 | | | RES.,FXD,FILM:30.1K OHM,1%,0.125W | 75042 | CEAT0-3012F |
| R64 | 315-0101-00 | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R70 | 308-0218-00 | | | RES.,FXD,WW:150 OHM,5%,3W | 56289 | 242E151J |
| R72 | 308-0764-00 | | | RES.,FXD,WW:2.7 OHM,5%,2W | 75042 | BWF2R70F |
| I | 315-0101-00 | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| K | 315-0823-00 | | | RES.,FXD,COMP:82K OHM,5%,0.25W | 01121 | CB8235 |
| R78 | 315-0331-00 | | | RES.,FXD,COMP:330 OHM,5%,0.25W | 01121 | CB3315 |
| R80 | 315-0334-00 | | | RES.,FXD,COMP:330K OHM,5%,0.25W | 01121 | CB3345 |
| R82 | 315-0183-00 | | | RES.,FXD,COMP:18K OHM,5%,0.25W | 01121 | CB1835 |
| R84 | 315-0101-00 | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R86 | 321-0306-00 | | | RES.,FXD,FILM:15K OHM,1%,0.125W | 91637 | MFF186G15401F |
| R88 | 321-0335-00 | | | RES.,FXD,FILM:30.1K OHM,1%,0.125W | 75042 | CEAT0-3012F |
| R100 | 311-1555-00 | | | RES.,VAR,NONWIR:100K OHM,20%,0.5W | 73138 | 91A-10002M |
| R102 | 321-0473-00 | | | RES.,FXD,FILM:825K OHM,1%,0.125W | 75042 | CEAT0-8253F |
| R104A,B | 307-0290-06 | | | RES.,FXD,FILM:HIGH VOLTAGE DIV | 80009 | 307-0290-06 |
| R104C,D | 307-0290-06 | | | RES.,FXD,FILM:HIGH VOLTAGE DIV | 80009 | 307-0290-06 |
| R106 | 315-0123-00 | | | RES.,FXD,COMP:12K OHM,5%,0.25W | 01121 | CB1235 |
| R108 | 321-0360-00 | | | RES.,FXD,FILM:54.9K OHM,1%,0.125W | 75042 | CEAT0-5492F |
| R110 | 321-0258-00 | | | RES.,FXD,FILM:4.75K OHM,1%,0.125W | 75042 | CEAT0-4751F |
| R112 | 315-0821-00 | | | RES.,FXD,COMP:820 OHM,5%,0.25W | 01121 | CB8215 |
| R114 | 315-0104-00 | | | RES.,FXD,COMP:100K OHM,5%,0.25W | 01121 | CB1045 |
| R116 | 315-0563-00 | | | RES.,FXD,COMP:56K OHM,5%,0.25W | 01121 | CB5635 |
| R118 | 315-0331-00 | | | RES.,FXD,COMP:330 OHM,5%,0.25W | 01121 | CB3315 |
| R120 | 315-0101-00 | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R124 | 315-0273-00 | | | RES.,FXD,COMP:27K OHM,5%,0.25W | 01121 | CB2735 |
| R126 | 315-0152-00 | | | RES.,FXD,COMP:1.5K OHM,5%,0.25W | 01121 | CB1525 |
| R128 | 308-0459-00 | | | RES.,FXD,WW:1.1 OHM,5%,3W | 91637 | RS2B-D1R100J |
| R130 | 315-0271-00 | | | RES.,FXD,COMP:270 OHM,5%,0.25W | 01121 | CB2715 |
| R132 | 315-0391-00 | | | RES.,FXD,COMP:390 OHM,5%,0.25W | 01121 | CB3915 |
| R140 | 301-0335-00 | | | RES.,FXD,COMP:3.3M OHM,5%,0.50W | 01121 | EB3355 |
| R141 | 301-0335-00 | | | RES.,FXD,COMP:3.3M OHM,5%,0.50W | 01121 | EB3355 |
| R145 | 311-1332-00 | | | RES.,VAR,NONWIR:5K OHM,10%,2W | 01121 | 10M48 |
| R148 | 315-0103-00 | | | RES.,FXD,COMP:10K OHM,5%,0.25W | 01121 | CB1035 |
| R150 | 315-0564-00 | | | RES.,FXD,COMP:560K OHM,5%,0.25W | 01121 | CB5645 |
| R158 | 315-0180-00 | | | RES.,FXD,COMP:18 OHM,5%,0.25W | 01121 | CB1805 |
| R162 | 315-0133-00 | | | RES.,FXD,COMP:13K OHM,5%,0.25W | 01121 | CB1335 |
| R165 | 311-1555-00 | | | RES.,VAR,NONWIR:100K OHM,20%,0.5W | 73138 | 91A-10002M |

Electrical Parts List—605

| Ckt No. | Tektronix | | Serial/Model No. | | Name & Description | Mfr Code | Mfr Part Number |
|---------|-------------|-----|------------------|---------|-------------------------------------|----------|-----------------|
| | Part No. | Eff | Model No. | Discont | | | |
| R170 | 311-1555-00 | | | | RES.,VAR, NONWIR:100K OHM,20%,0.5W | 73138 | 91A-10002M |
| R175A,B | 311-1687-00 | | | | RES.,VAR, NONWIR:2K OHM,20%,0.5W | 01121 | 12M359 |
| R180 | 315-0101-00 | | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R182 | 315-0106-00 | | | | RES.,FXD,COMP:10M OHM,5%,0.25W | 01121 | CB1065 |
| R184 | 315-0102-00 | | | | RES.,FXD,COMP:1K OHM,5%,0.25W | 01121 | CB1025 |
| R186 | 315-0471-00 | | | | RES.,FXD,COMP:470 OHM,5%,0.25W | 01121 | CB4715 |
| R188 | 315-0221-00 | | | | RES.,FXD,COMP:220 OHM,5%,0.25W | 01121 | CB2215 |
| R190 | 321-0373-00 | | | | RES.,FXD,FILM:75K OHM,1%,0.125W | 75042 | CEAT0-7502F |
| R192 | 311-1555-00 | | | | RES.,VAR, NONWIR:100K OHM,20%,0.5W | 73138 | 91A-10002M |
| R194 | 321-0373-00 | | | | RES.,FXD,FILM:75K OHM,1%,0.125W | 75042 | CEAT0-7502F |
| R200 | 321-0891-00 | | | | RES.,FXD,FILM:800K OHM,1%,0.125W | 75042 | CEAT0-8003F |
| R202 | 321-0423-00 | | | | RES.,FXD,FILM:249K OHM,1%,0.125W | 75042 | CEAT0-2493F |
| R204 | 322-0481-00 | | | | RES.,FXD,FILM:1M OHM,1%,0.25W | 75042 | CEBT0-1004F |
| R206 | 321-0385-00 | | | | RES.,FXD,FILM:100K OHM,1%,0.125W | 75042 | CEAT0-1003F |
| R208 | 315-0102-00 | | | | RES.,FXD,COMP:1K OHM,5%,0.25W | 01121 | CB1025 |
| R210 | 315-0822-00 | | | | RES.,FXD,COMP:8.2K OHM,5%,0.25W | 01121 | CB8225 |
| R212 | 321-0207-00 | | | | RES.,FXD,FILM:1.4K OHM,1%,0.125W | 75042 | CEAT0-1401F |
| R215 | 311-1561-00 | | | | RES.,VAR, NONWIR:2.5K OHM,20%,0.50W | 73138 | 91A-25000M |
| R216 | 315-0470-00 | | | | RES.,FXD,COMP:47 OHM,5%,0.25W | 01121 | CB4705 |
| R218 | 321-0126-00 | | | | RES.,FXD,FILM:200 OHM,1%,0.125W | 75042 | CEAT0-2000F |
| R220 | 315-0751-00 | | | | RES.,FXD,COMP:750 OHM,5%,0.25W | 01121 | CB7515 |
| R222 | 315-0752-00 | | | | RES.,FXD,COMP:7.5K OHM,5%,0.25W | 01121 | CB7525 |
| R226 | 315-0153-00 | | | | RES.,FXD,COMP:15K OHM,5%,0.25W | 01121 | CB1535 |
| R228 | 315-0101-00 | | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R230 | 315-0822-00 | | | | RES.,FXD,COMP:8.2K OHM,5%,0.25W | 01121 | CB8225 |
| R232 | 315-0101-00 | | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R234 | 315-0101-00 | | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R238 | 315-0392-00 | | | | RES.,FXD,COMP:3.9K OHM,5%,0.25W | 01121 | CB3925 |
| R240 | 311-1311-00 | | | | RES.,VAR, NONWIR:1K OHM,20%,1W | 01121 | 10M155A |
| R242 | 321-0289-00 | | | | RES.,FXD,FILM:10K OHM,1%,0.125W | 75042 | CEAT0-1002F |
| R246 | 315-0182-00 | | | | RES.,FXD,COMP:1.8K OHM,5%,0.25W | 01121 | CB1825 |
| R250 | 321-0385-00 | | | | RES.,FXD,FILM:100K OHM,1%,0.125W | 75042 | CEAT0-1003F |
| R254 | 315-0752-00 | | | | RES.,FXD,COMP:7.5K OHM,5%,0.25W | 01121 | CB7525 |
| R256 | 315-0821-00 | | | | RES.,FXD,COMP:820 OHM,5%,0.25W | 01121 | CB8215 |
| R260 | 315-0103-00 | | | | RES.,FXD,COMP:10K OHM,5%,0.25W | 01121 | CB1035 |
| R262 | 315-0471-00 | | | | RES.,FXD,COMP:470 OHM,5%,0.25W | 01121 | CB4715 |
| R264 | 315-0101-00 | | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R266 | 308-0349-00 | | | | RES.,FXD,WW:3.6K OHM,1%,3W | 63743 | 27988 |
| R268 | 315-0240-00 | | | | RES.,FXD,COMP:24 OHM,5%,0.25W | 01121 | CB2405 |
| R270 | 323-0154-00 | | | | RES.,FXD,FILM:392 OHM,1%,0.50W | 75042 | CECT0-3920F |
| R272 | 315-0103-00 | | | | RES.,FXD,COMP:10K OHM,5%,0.25W | 01121 | CB1035 |
| R300 | 321-0891-00 | | | | RES.,FXD,FILM:800K OHM,1%,0.125W | 75042 | CEAT0-8003F |
| R302 | 321-0423-00 | | | | RES.,FXD,FILM:249K OHM,1%,0.125W | 75042 | CEAT0-2493F |
| R304 | 322-0481-00 | | | | RES.,FXD,FILM:1M OHM,1%,0.25W | 75042 | CEBT0-1004F |
| R306 | 321-0385-00 | | | | RES.,FXD,FILM:100K OHM,1%,0.125W | 75042 | CEAT0-1003F |
| R308 | 315-0102-00 | | | | RES.,FXD,COMP:1K OHM,5%,0.25W | 01121 | CB1025 |
| R310 | 315-0822-00 | | | | RES.,FXD,COMP:8.2K OHM,5%,0.25W | 01121 | CB8225 |
| R312 | 321-0207-00 | | | | RES.,FXD,FILM:1.4K OHM,1%,0.125W | 75042 | CEAT0-1401F |
| R322 | 315-0752-00 | | | | RES.,FXD,COMP:7.5K OHM,5%,0.25W | 01121 | CB7525 |
| R326 | 315-0153-00 | | | | RES.,FXD,COMP:15K OHM,5%,0.25W | 01121 | CB1535 |
| R328 | 315-0101-00 | | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R330 | 315-0822-00 | | | | RES.,FXD,COMP:8.2K OHM,5%,0.25W | 01121 | CB8225 |
| R332 | 315-0101-00 | | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R334 | 315-0101-00 | | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R350 | 321-0385-00 | | | | RES.,FXD,FILM:100K OHM,1%,0.125W | 75042 | CEAT0-1003F |
| R360 | 315-0103-00 | | | | RES.,FXD,COMP:10K OHM,5%,0.25W | 01121 | CB1035 |
| R362 | 315-0471-00 | | | | RES.,FXD,COMP:470 OHM,5%,0.25W | 01121 | CB4715 |
| R364 | 315-0101-00 | | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R366 | 308-0349-00 | | | | RES.,FXD,WW:3.6K OHM,1%,3W | 63743 | 27988 |
| R368 | 315-0240-00 | | | | RES.,FXD,COMP:24 OHM,5%,0.25W | 01121 | CB2405 |
| R380 | 315-0183-00 | | | | RES.,FXD,COMP:18K OHM,5%,0.25W | 01121 | CB1835 |
| R382 | 315-0392-00 | | | | RES.,FXD,COMP:3.9K OHM,5%,0.25W | 01121 | CB3925 |
| R400 | 321-0891-00 | | | | RES.,FXD,FILM:800K OHM,1%,0.125W | 75042 | CEAT0-8003F |

| Ckt No. | Tektronix Part No. | Serial/Model No. | | Name & Description | Mfr Code | Mfr Part Number |
|---------|-----------------------|------------------|--------|------------------------------------|-------------|-----------------|
| | | Eff | Dscont | | | |
| R402 | 321-0423-00 | | | RES.,FXD,FILM:249K OHM,1%,0.125W | 75042 | CEAT0-2493F |
| R404 | 322-0481-00 | | | RES.,FXD,FILM:1M OHM,1%,0.25W | 75042 | CEBT0-1004F |
| R406 | 321-0385-00 | | | RES.,FXD,FILM:100K OHM,1%,0.125W | 75042 | CEAT0-1003F |
| R408 | 315-0102-00 | | | RES.,FXD,COMP:1K OHM,5%,0.25W | 01121 | CB1025 |
| R410 | 315-0822-00 | | | RES.,FXD,COMP:8.2K OHM,5%,0.25W | 01121 | CB8225 |
| R412 | 321-0207-00 | | | RES.,FXD,FILM:1.4K OHM,1%,0.125W | 75042 | CEAT0-1401F |
| R415 | 311-1561-00 | | | RES.,VAR,NONWIR:2.5K OHM,20%,0.50W | 73138 | 91A-25000M |
| R416 | 315-0470-00 | | | RES.,FXD,COMP:47 OHM,5%,0.25W | 01121 | CB4705 |
| R418 | 321-0126-00 | | | RES.,FXD,FILM:200 OHM,1%,0.125W | 75042 | CEAT0-2000F |
| R420 | 315-0751-00 | | | RES.,FXD,COMP:750 OHM,5%,0.25W | 01121 | CB7515 |
| R422 | 315-0752-00 | | | RES.,FXD,COMP:7.5K OHM,5%,0.25W | 01121 | CB7525 |
| R426 | 315-0153-00 | | | RES.,FXD,COMP:15K OHM,5%,0.25W | 01121 | CB1535 |
| R428 | 315-0101-00 | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R430 | 315-0153-00 | | | RES.,FXD,COMP:15K OHM,5%,0.25W | 01121 | CB1535 |
| R432 | 315-0101-00 | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R434 | 315-0101-00 | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R438 | 315-0392-00 | | | RES.,FXD,COMP:3.9K OHM,5%,0.25W | 01121 | CB3925 |
| R440 | 311-1311-00 | | | RES.,VAR,NONWIR:1K OHM,20%,1W | 01121 | 10M155A |
| R442 | 321-0311-00 | | | RES.,FXD,FILM:16.9K OHM,1%,0.125W | 75042 | CEAT0-1822F |
| R446 | 315-0472-00 | | | RES.,FXD,COMP:4.7K OHM,5%,0.25W | 01121 | CB4725 |
| R450 | 321-0354-00 | | | RES.,FXD,FILM:47.5K OHM,1%,0.125W | 75042 | CEAT0-4752F |
| R454 | 315-0472-00 | | | RES.,FXD,COMP:4.7K OHM,5%,0.25W | 01121 | CB4725 |
| R456 | 315-0391-00 | | | RES.,FXD,COMP:390 OHM,5%,0.25W | 01121 | CB3915 |
| R460 | 315-0912-00 | | | RES.,FXD,COMP:9.1K OHM,5%,0.25W | 01121 | CB9125 |
| R464 | 315-0271-00 | | | RES.,FXD,COMP:270 OHM,5%,0.25W | 01121 | CB2715 |
| R466 | 321-0247-00 | | | RES.,FXD,FILM:3.65K OHM,1%,0.125W | 75042 | CEAT0-3651F |
| R468 | 315-0430-00 | | | RES.,FXD,COMP:43 OHM,5%,0.25W | 01121 | CB4305 |
| R470 | 321-0196-00 | | | RES.,FXD,FILM:1.07K OHM,1%,0.125W | 75042 | CEAT0-1071F |
| R500 | 321-0891-00 | | | RES.,FXD,FILM:800K OHM,1%,0.125W | 75042 | CEAT0-8003F |
| R502 | 321-0423-00 | | | RES.,FXD,FILM:249K OHM,1%,0.125W | 75042 | CEAT0-2493F |
| R504 | 322-0481-00 | | | RES.,FXD,FILM:1M OHM,1%,0.25W | 75042 | CEBT0-1004F |
| R506 | 321-0385-00 | | | RES.,FXD,FILM:100K OHM,1%,0.125W | 75042 | CEAT0-1003F |
| R508 | 315-0102-00 | | | RES.,FXD,COMP:1K OHM,5%,0.25W | 01121 | CB1025 |
| R510 | 315-0822-00 | | | RES.,FXD,COMP:8.2K OHM,5%,0.25W | 01121 | CB8225 |
| R512 | 321-0207-00 | | | RES.,FXD,FILM:1.4K OHM,1%,0.125W | 75042 | CEAT0-1401F |
| R522 | 315-0752-00 | | | RES.,FXD,COMP:7.5K OHM,5%,0.25W | 01121 | CB7525 |
| R526 | 315-0153-00 | | | RES.,FXD,COMP:15K OHM,5%,0.25W | 01121 | CB1535 |
| R528 | 315-0101-00 | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R530 | 315-0153-00 | | | RES.,FXD,COMP:15K OHM,5%,0.25W | 01121 | CB1535 |
| R532 | 315-0101-00 | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R534 | 315-0101-00 | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R550 | 321-0354-00 | | | RES.,FXD,FILM:47.5K OHM,1%,0.125W | 75042 | CEAT0-4752F |
| R560 | 315-0912-00 | | | RES.,FXD,COMP:9.1K OHM,5%,0.25W | 01121 | CB9125 |
| R564 | 315-0271-00 | | | RES.,FXD,COMP:270 OHM,5%,0.25W | 01121 | CB2715 |
| R566 | 321-0247-00 | | | RES.,FXD,FILM:3.65K OHM,1%,0.125W | 75042 | CEAT0-3651F |
| R568 | 315-0430-00 | | | RES.,FXD,COMP:43 OHM,5%,0.25W | 01121 | CB4305 |
| R604 | 322-0481-00 | | | RES.,FXD,FILM:1M OHM,1%,0.25W | 75042 | CEBT0-1004F |
| R606 | 315-0104-00 | | | RES.,FXD,COMP:100K OHM,5%,0.25W | 01121 | CB1045 |
| R608 | 315-0102-00 | | | RES.,FXD,COMP:1K OHM,5%,0.25W | 01121 | CB1025 |
| R610 | 315-0682-00 | | | RES.,FXD,COMP:6.8K OHM,5%,0.25W | 01121 | CB6825 |
| R612 | 321-0210-00 | | | RES.,FXD,FILM:1.5K OHM,1%,0.125W | 75042 | CEAT0-1501F |
| R614 | 321-0142-00 | | | RES.,FXD,FILM:294 OHM,1%,0.125W | 75042 | CEAT0-2940F |
| R615 | 311-1561-00 | | | RES.,VAR,NONWIR:2.5K OHM,20%,0.50W | 73138 | 91A-25000M |
| R620 | 315-0751-00 | | | RES.,FXD,COMP:750 OHM,5%,0.25W | 01121 | CB7515 |
| R622 | 315-0183-00 | | | RES.,FXD,COMP:18K OHM,5%,0.25W | 01121 | CB1835 |
| R630 | 321-0198-00 | | | RES.,FXD,FILM:1.13K OHM,1%,0.125W | 75042 | CEAT0-1131F |
| R632 | 321-0193-00 | | | RES.,FXD,FILM:1K OHM,1%,0.125W | 75042 | CEAT0-1001F |
| R636 | 321-0158-00 | | | RES.,FXD,FILM:432 OHM,1%,0.125W | 75042 | CEAT0-4320F |
| R640 | 321-0127-00 | | | RES.,FXD,FILM:205 OHM,1%,0.125W | 75042 | CEAT0-2050F |
| R642 | 321-0208-00 | | | RES.,FXD,FILM:1.43K OHM,1%,0.125W | 75042 | CEAT0-1431F |
| R644 | 321-0321-00 | | | RES.,FXD,FILM:21.5K OHM,1%,0.125W | 75042 | CEAT0-2152F |
| R654 | 322-0481-00 | | | RES.,FXD,FILM:1M OHM,1%,0.25W | 75042 | CEBT0-1004F |
| R656 | 315-0104-00 | | | RES.,FXD,COMP:100K OHM,5%,0.25W | 01121 | CB1045 |

Electrical Parts List—605

| Ckt No. | Tektronix Part No. | Serial/Model No. Eff Dscont | Name & Description | Mfr Code | Mfr Part Number |
|---------|--------------------|-----------------------------|-----------------------------------|----------|-----------------|
| R658 | 315-0102-00 | | RES.,FXD,COMP:1K OHM,5%,0.25W | 01121 | CB1025 |
| R660 | 315-0682-00 | | RES.,FXD,COMP:6.8K OHM,5%,0.25W | 01121 | CB6825 |
| R662 | 321-0210-00 | | RES.,FXD,FILM:1.5K OHM,1%,0.125W | 75042 | CEAT0-1501F |
| R672 | 315-0183-00 | | RES.,FXD,COMP:18K OHM,5%,0.25W | 01121 | CB1835 |
| R680 | 321-0198-00 | | RES.,FXD,FILM:1.13K OHM,1%,0.125W | 75042 | CEAT0-1131F |
| R682 | 321-0193-00 | | RES.,FXD,FILM:1K OHM,1%,0.125W | 75042 | CEAT0-1001F |
| R690 | 315-0101-00 | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R692 | 321-0254-00 | | RES.,FXD,FILM:4.32K OHM,1%,0.125W | 75042 | CEAT0-4321F |
| R698 | 315-0392-00 | | RES.,FXD,COMP:3.9K OHM,5%,0.25W | 01121 | CB3925 |
| R710 | 315-0101-00 | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R712 | 315-0472-00 | | RES.,FXD,COMP:4.7K OHM,5%,0.25W | 01121 | CB4725 |
| R716 | 315-0181-00 | | RES.,FXD,COMP:180 OHM,5%,0.25W | 01121 | CB1815 |
| R724 | 301-0561-00 | | RES.,FXD,COMP:560 OHM,5%,0.50W | 01121 | EB5615 |
| R726 | 315-0562-00 | | RES.,FXD,COMP:5.6K OHM,5%,0.25W | 01121 | CB5625 |
| R728 | 315-0303-00 | | RES.,FXD,COMP:30K OHM,5%,0.25W | 01121 | CB3035 |
| R730 | 315-0100-00 | | RES.,FXD,COMP:10 OHM,5%,0.25W | 01121 | CB1005 |
| R734 | 322-0613-00 | | RES.,FXD,FILM:20.4K OHM,1%,0.25W | 75042 | CEBT0-2052F |
| R735 | 321-0253-00 | | RES.,FXD,FILM:4.22K OHM,1%,0.125W | 75042 | CEAT0-4221F |
| R740 | 301-0821-00 | | RES.,FXD,COMP:820 OHM,5%,0.50W | 01121 | EB8215 |
| R802 | 315-0181-00 | | RES.,FXD,COMP:180 OHM,5%,0.25W | 01121 | CB1815 |
| R806 | 315-0133-00 | | RES.,FXD,COMP:13K OHM,5%,0.25W | 01121 | CB1335 |
| R808 | 315-0393-00 | | RES.,FXD,COMP:39K OHM,5%,0.25W | 01121 | CB3935 |
| R810 | 315-0154-00 | | RES.,FXD,COMP:150K OHM,5%,0.25W | 01121 | CB1545 |
| R812 | 315-0473-00 | | RES.,FXD,COMP:47K OHM,5%,0.25W | 01121 | CB4735 |
| R814 | 315-0333-00 | | RES.,FXD,COMP:33K OHM,5%,0.25W | 01121 | CB3335 |
| R816 | 315-0393-00 | | RES.,FXD,COMP:39K OHM,5%,0.25W | 01121 | CB3935 |
| R820 | 315-0752-00 | | RES.,FXD,COMP:7.5K OHM,5%,0.25W | 01121 | CB7525 |
| R822 | 315-0152-00 | | RES.,FXD,COMP:1.5K OHM,5%,0.25W | 01121 | CB1525 |
| R824 | 315-0753-00 | | RES.,FXD,COMP:75K OHM,5%,0.25W | 01121 | CB7535 |
| R828 | 315-0102-00 | | RES.,FXD,COMP:1K OHM,5%,0.25W | 01121 | CB1025 |
| R830 | 315-0123-00 | | RES.,FXD,COMP:12K OHM,5%,0.25W | 01121 | CB1235 |
| R834 | 321-0458-00 | | RES.,FXD,FILM:576K OHM,1%,0.125W | 91637 | MFF1816G57602F |
| R835 | 311-1557-00 | | RES.,VAR,NONWIR:25K OHM,20%,0.50W | 73138 | 91A-2500LM |
| R838 | 315-0472-00 | | RES.,FXD,COMP:4.7K OHM,5%,0.25W | 01121 | CB4725 |
| R840 | 315-0154-00 | | RES.,FXD,COMP:150K OHM,5%,0.25W | 01121 | CB1545 |
| R844 | 315-0471-00 | | RES.,FXD,COMP:470 OHM,5%,0.25W | 01121 | CB4715 |
| R846 | 315-0102-00 | | RES.,FXD,COMP:1K OHM,5%,0.25W | 01121 | CB1025 |
| R848 | 315-0163-00 | | RES.,FXD,COMP:16K OHM,5%,0.25W | 01121 | CB1635 |
| R852 | 315-0470-00 | | RES.,FXD,COMP:47 OHM,5%,0.25W | 01121 | CB4705 |
| R853 | 315-0222-00 | | RES.,FXD,COMP:2.2K OHM,5%,0.25W | 01121 | CB2225 |
| R856 | 315-0183-00 | | RES.,FXD,COMP:18K OHM,5%,0.25W | 01121 | CB1835 |
| R860 | 315-0181-00 | | RES.,FXD,COMP:180 OHM,5%,0.25W | 01121 | CB1815 |
| R862 | 315-0393-00 | | RES.,FXD,COMP:39K OHM,5%,0.25W | 01121 | CB3935 |
| R864 | 315-0393-00 | | RES.,FXD,COMP:39K OHM,5%,0.25W | 01121 | CB3935 |
| R866 | 315-0471-00 | | RES.,FXD,COMP:470 OHM,5%,0.25W | 01121 | CB4715 |
| R870 | 315-0153-00 | | RES.,FXD,COMP:15K OHM,5%,0.25W | 01121 | CB1535 |
| R872 | 315-0364-00 | | RES.,FXD,COMP:360K OHM,5%,0.25W | 01121 | CB3645 |
| R874 | 315-0153-00 | | RES.,FXD,COMP:15K OHM,5%,0.25W | 01121 | CB1535 |
| R875 | 315-0104-00 | | RES.,FXD,COMP:100K OHM,5%,0.25W | 01121 | CB1045 |
| R878 | 315-0562-00 | | RES.,FXD,COMP:5.6K OHM,5%,0.25W | 01121 | CB5625 |
| R880 | 315-0121-00 | | RES.,FXD,COMP:120 OHM,5%,0.25W | 01121 | CB1215 |
| R882 | 315-0221-00 | | RES.,FXD,COMP:220 OHM,5%,0.25W | 01121 | CB2215 |
| R886 | 315-0125-00 | | RES.,FXD,COMP:1.2M OHM,5%,0.25W | 01121 | CB1255 |
| R888 | 315-0106-00 | | RES.,FXD,COMP:10M OHM,5%,0.25W | 01121 | CB1065 |
| R890 | 315-0471-00 | | RES.,FXD,COMP:470 OHM,5%,0.25W | 01121 | CB4715 |
| R892 | 315-0301-00 | | RES.,FXD,COMP:300 OHM,5%,0.25W | 01121 | CB3015 |
| R894 | 315-0204-00 | | RES.,FXD,COMP:200K OHM,5%,0.25W | 01121 | CB2045 |
| R895 | 311-1688-00 | | RES.,VAR,NONWIR:50K OHM,20%,1W | 01121 | 12M360 |
| R896 | 315-0102-00 | | RES.,FXD,COMP:1K OHM,5%,0.25W | 01121 | CB1025 |
| R897 | 315-0821-00 | | RES.,FXD,COMP:820 OHM,5%,0.25W | 01121 | CB8215 |
| R898 | 315-0473-00 | | RES.,FXD,COMP:47K OHM,5%,0.25W | 01121 | CB4735 |
| R902 | 315-0272-00 | | RES.,FXD,COMP:2.7K OHM,5%,0.25W | 01121 | CB2725 |
| R906 | 315-0393-00 | | RES.,FXD,COMP:39K OHM,5%,0.25W | 01121 | CB3935 |

| Ckt No. | Tektronix | | Serial/Model No. | | Name & Description | Mfr Code | Mfr Part Number |
|-------------------|-------------|--|------------------|--------|--|----------|-----------------|
| | Part No. | | Eff | Dscont | | | |
| R908 | 315-0393-00 | | | | RES.,FXD,COMP:39K OHM,5%,0.25W | 01121 | CB3935 |
| R912 | 315-0181-00 | | | | RES.,FXD,COMP:180 OHM,5%,0.25W | 01121 | CB1815 |
| R950 | 321-0393-00 | | | | RES.,FXD,FILM:121K OHM,1%,0.125K | 75042 | CEAT0-1213F |
| R960 | 315-0152-00 | | | | RES.,FXD,COMP:1.5K OHM,5%,0.25W | 01121 | CB1525 |
| R962 | 315-0753-00 | | | | RES.,FXD,COMP:75K OHM,5%,0.25W | 01121 | CB7535 |
| R965 | 311-1555-00 | | | | RES.,VAR,NONWIR:100K OHM,20%,0.5W | 73138 | 91A-10002M |
| R966 | 321-0466-00 | | | | RES.,FXD,FILM:698K OHM,1%,0.125W | 75042 | CEAT0-6983F |
| R968 | 315-0106-00 | | | | RES.,FXD,COMP:10M OHM,5%,0.25W | 01121 | CB1065 |
| R970 | 311-1710-00 | | | | RES.,VAR,NONWIR:20K OHM,20%,1W | 01121 | 12M565 |
| R972 | 315-0152-00 | | | | RES.,FXD,COMP:1.5K OHM,5%,0.25W | 01121 | CB1525 |
| R973 | 315-0753-00 | | | | RES.,FXD,COMP:75K OHM,5%,0.25W | 01121 | CB7535 |
| R975 | 311-1550-00 | | | | RES.,VAR,NONWIR:2M OHM,20%,0.50W | 73138 | 91A-20003M |
| R976 | 315-0335-00 | | | | RES.,FXD,COMP:3.3M OHM,5%,0.25W | 01121 | CB3355 |
| R982 | 315-0103-00 | | | | RES.,FXD,COMP:10K OHM,5%,0.25W | 01121 | CB1035 |
| R984 | 315-0153-00 | | | | RES.,FXD,COMP:15K OHM,5%,0.25W | 01121 | CB1535 |
| R986 | 315-0822-00 | | | | RES.,FXD,COMP:8.2K OHM,5%,0.25W | 01121 | CB8225 |
| R990 | 315-0272-00 | | | | RES.,FXD,COMP:2.7K OHM,5%,0.25W | 01121 | CB2725 |
| R992 | 315-0472-00 | | | | RES.,FXD,COMP:4.7K OHM,5%,0.25W | 01121 | CB4725 |
| R994 | 308-0503-00 | | | | RES.,FXD,WW:6.8 OHM,5%,2.50W | 91637 | RS2B-D6R800J |
| R996 | 315-0272-00 | | | | RES.,FXD,COMP:2.7K OHM,5%,0.25W | 01121 | CB2725 |
| R998 | 315-0104-00 | | | | RES.,FXD,COMP:100K OHM,5%,0.25W | 01121 | CB1045 |
| R1000 | 315-0182-00 | | | | RES.,FXD,COMP:1.8K OHM,5%,0.25W | 01121 | CB1825 |
| R1010 | 303-0303-00 | | | | RES.,FXD,COMP:30K OHM,5%,1W | 01121 | GB3035 |
| R1012 | 315-0563-00 | | | | RES.,FXD,COMP:56K OHM,5%,0.25W | 01121 | CB5635 |
| R1014 | 315-0513-00 | | | | RES.,FXD,COMP:56K OHM,5%,0.25W | 01121 | CB1535 |
| R1016 | 315-0471-00 | | | | RES.,FXD,COMP:470 OHM,5%,0.25W | 01121 | CB4715 |
| R1018 | 315-0123-00 | | | | RES.,FXD,COMP:12K OHM,5%,0.25W | 01121 | CB1235 |
| R1026 | 315-0163-00 | | | | RES.,FXD,COMP:16K OHM,5%,0.25W | 01121 | CB1635 |
| R1030 | 311-1556-00 | | | | RES.,VAR,NONWIR:50K OHM,20%,0.50W | 73138 | 91A-50001M |
| R1032 | 315-0273-00 | | | | RES.,FXD,COMP:27K OHM,5%,0.25W | 01121 | CB2735 |
| R1034 | 315-0223-00 | | | | RES.,FXD,COMP:22K OHM,5%,0.25W | 01121 | CB2235 |
| R1036 | 305-0243-00 | | | | RES.,FXD,COMP:24K OHM,5%,2W | 01121 | HB2435 |
| R1040 | 315-0513-00 | | | | RES.,FXD,COMP:51K OHM,5%,0.25W | 01121 | CB5135 |
| R1045 | 311-1556-00 | | | | RES.,VAR,NONWIR:50K OHM,20%,0.50W | 73138 | 91A-50001M |
| R1046 | 315-0101-00 | | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| R1050 | 303-0223-00 | | | | RES.,FXD,COMP:22K OHM,5%,1W | 01121 | GB2235 |
| R1052 | 321-0380-00 | | | | RES.,FXD,FILM:88.7K OHM,1%,0.125W | 75042 | CEAT0-8872F |
| R1054 | 321-0372-00 | | | | RES.,FXD,FILM:73.2K OHM,1%,0.125W | 75042 | CEAT0-7322F |
| R1060 | 321-0423-00 | | | | RES.,FXD,FILM:249K OHM,1%,0.125W | 75042 | CEAT0-2493F |
| R1062 | 321-0481-00 | | | | RES.,FXD,FILM:1M OHM,1%,0.125W | 75042 | CEAT0-1004F |
| R1064 | 315-0683-00 | | | | RES.,FXD,COMP:68K OHM,5%,0.25W | 01121 | CB6835 |
| R1066 | 303-0563-00 | | | | RES.,FXD,COMP:56K OHM,5%,1W | 01121 | GB5635 |
| R1068 | 315-0101-00 | | | | RES.,FXD,COMP:100 OHM,5%,0.25W | 01121 | CB1015 |
| S10 | 260-0413-00 | | | | SW,THERMOSTATIC:10A,240V | 82383 | 110090 |
| S12 | 260-1222-00 | | | | SWITCH,PUSH-PUL:10A,250VAC | 91929 | 2DM301 |
| S200 | 260-0723-00 | | | | SWITCH,SLIDE:DPDT,0.5A,125VAC | 80009 | 260-0723-00 |
| S220 ¹ | 260-0723-00 | | | | SWITCH,SLIDE:DPDT,0.5A,125VAC | 80009 | 260-0723-00 |
| S300 | 260-0723-00 | | | | SWITCH,SLIDE:DPDT,0.5A,125VAC | 80009 | 260-0723-00 |
| S400 | 260-0723-00 | | | | SWITCH,SLIDE:DPDT,0.5A,125VAC | 80009 | 260-0723-00 |
| S500 | 260-0723-00 | | | | SWITCH,SLIDE:DPDT,0.5A,125VAC | 80009 | 260-0723-00 |
| S735 ¹ | 260-0723-00 | | | | SWITCH,SLIDE:DPDT,0.5A,125VAC | 80009 | 260-0723-00 |
| S860 ² | | | | | | | |
| S870 | 260-1308-00 | | | | SWITCH,PUSH: | 71590 | 2KAA010000-440 |
| S895 ² | | | | | | | |
| S910 | 260-1211-00 | | | | SWITCH,PUSH:DPDT,PUSH-PUSH | 71590 | 2KAB010000-357 |
| T15 | 120-0925-00 | | | | TRANSFORMER,PWR: | 80009 | 120-0925-00 |
| T120 | 120-0926-00 | | | | TRANSFORMER,HV: | 80009 | 120-0926-00 |
| U110 | 156-0067-00 | | | | MICROCIRCUIT LI:OPERATIONAL AMPLIFIER | 07263 | UA741 |
| U810 | 156-0057-00 | | | | MICROCIRCUIT DI:QUAD 2-INPUT NAND GATE | 07263 | 9N01PC |
| U820 | 156-0072-00 | | | | MICROCIRCUIT LI:MONOSTABLE MV,TTL | 12040 | DM71421N |
| U850 | 156-0072-00 | | | | MICROCIRCUIT LI:MONOSTABLE MV,TTL | 12040 | DM71421N |

¹...ion 4 only.

²Furnished as a unit with R895.

Electrical Parts List—605

| Ckt No. | Tektronix Part No. | Serial/Model No. Eff Dscont | Name & Description | Mfr Code | Mfr Part Number |
|---------|--------------------|-----------------------------|------------------------------------|----------|-----------------|
| U895 | 156-0072-00 | | MICROCIRCUIT LI:MONOSTABLE MV,TTL | 12040 | DM71421N |
| V100 | 154-0697-10 | | ELECTRON TUBE:OPT 1 ONLY | 80009 | 154-0697-10 |
| V100 | 154-0697-11 | | ELECTRON TUBE: | 80009 | 154-0697-11 |
| VR50 | 152-0166-00 | | SEMICOND DEVICE:ZENER,0.4W,6.2V,5% | 81483 | 69-9035 |
| VR130 | 152-0243-00 | | SEMICOND DEVICE:ZENER,0.4W,15V,5% | 81483 | 1N965B |
| VR182 | 150-0111-00 | | LAMP,GLOW:125V,1.2MA | 08806 | 2AC-AT |
| VR183 | 150-0111-00 | | LAMP,GLOW:125V,1.2MA | 08806 | 2AC-AT |
| VR270 | 152-0149-00 | | SEMICOND DEVICE:ZENER,0.4W,10V,5% | 04713 | 1N961B |
| VR670 | 152-0149-00 | | SEMICOND DEVICE:ZENER,0.4W,10V,5% | 04713 | 1N961B |
| VR690 | 152-0227-00 | | SEMICOND DEVICE:ZENER,0.4W,6.2V,5% | 81483 | 69-6585 |
| VR915 | 152-0166-00 | | SEMICOND DEVICE:ZENER,0.4W,6.2V,5% | 81483 | 69-9035 |

ADJUSTMENTS

LOW-VOLTAGE POWER SUPPLIES

Adjustment is generally required after a repair has been made, or after long time intervals in which normal aging of components may affect instrument accuracy. To assure instrument accuracy, check the calibration after every 2000 hours of operation, or every six months if used infrequently.

Before complete calibration, thoroughly clean and inspect this instrument as outlined in the Service Information section of this manual. The Service Information section also contains information for general maintenance of this instrument, including preventive maintenance, component identification and replacement, etc.

SERVICES AVAILABLE

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

WARNING

Dangerous potentials exist at several points throughout this instrument. When the instrument is operated with the covers removed, do not touch exposed connections or components. Disconnect power before cleaning the instrument or replacing parts.

ADJUST AND CHECK POWER SUPPLIES

Connect the precision dc voltmeter between the +15-volt test point and ground. Adjust R40 +15 V, Adj, for a voltmeter reading of exactly +15-volts.

Connect the precision dc voltmeter between the remaining supply test points and ground, and check for the following accuracies:

| | |
|--------|----------------------|
| -30 V | -29.10 V to -30.90 V |
| +5 V | +4.75 V to +5.25 V |
| +85 V | +75 V to +90 V |
| +120 V | +160 V to +190 V |

Disconnect the precision dc voltmeter.

EQUIPMENT REQUIRED

1. DC voltmeter having an accuracy within $\pm 0.1\%$ and a measurement range of -30 volts to +180 volts. For example, a DM 501 Digital Multimeter (operates in a TM 500-Series Power Module), or any dc voltmeter meeting the requirements may be used.

PRELIMINARY PROCEDURE

NOTE

The performance of this instrument can be checked at any temperature within the 0°C to +50°C range. Make any adjustment at a temperature of +25°C, $\pm 5^\circ\text{C}$.

a. Check that the correct nominal line-selector block (120 VAC or 220 VAC) has been installed on the line selector pins and that the regulating range selected includes the input line voltage, see Installation section.

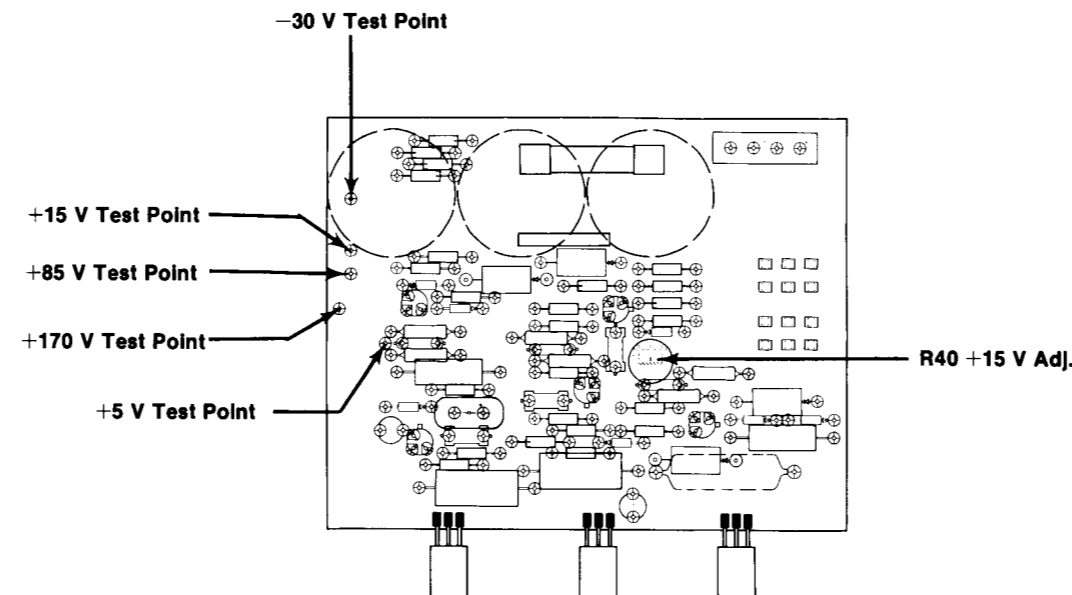
b. Check that the crt screen (display area) has an 8 x 10-division scribed graticule; install one if necessary.

c. Remove the outside cabinet panels to gain access to internal controls and test points.

d. Connect the Monitor to the Line voltage source and apply power.

e. Set the following controls:

| | |
|--|--------------------------------|
| Internal attenuator slide switches (Deflection Amplifier board) | 1:1 (up position) |
| XY-YT (Deflection Amplifier board and Z Axis board in Option 4 instruments only) | XY (down and to left position) |
| POWER | PULL ON (knob pulled out) |
| PULL TO SAVE | Knob pushed in |
| PERSISTENCE/SAVE TIME | Fully ccw |
| STORE | Non-store (button out) |
| INTENSITY | Fully ccw |
| FOCUS | Midrange |
| OPERATE LEVEL | As is |
| Vertical Position | Midrange |
| Horizontal Position | Midrange |



THEORY OF OPERATION DIAGRAM 1

LOW-VOLTAGE POWER SUPPLIES

POWER INPUT

Power is applied to the primary of transformer T15 through fuse F10, thermal cutout S10, power switch S12, and line-selector block P15. The line-selector block allows changing the primary-winding taps of T15 to fit different line requirements.

LOW-VOLTAGE RECTIFIERS AND UNREGULATED OUTPUTS

The full-wave bridge rectifiers and associated filter components in the secondaries of T15 provide filtered dc voltages. The unregulated +20-volt output goes to the high-voltage transformer, where it is fuse protected.

LOW-VOLTAGE REGULATORS

+15-VOLT SUPPLY. The +15-volt supply, besides providing power to circuitry throughout the instrument, provides a reference-voltage source to establish operating levels for the feedback regulators in the -30-volt and the +5-volt supplies. The regulator for the +15-volt supply is a feedback amplifier system that operates between ground and the unregulated +20-volts. Current to the load is delivered by series-pass transistor Q30 and the supply voltage is established by the drop across R38, R40 and R42, which is compared to the voltage drop across VR50 and the emitter-base junction of Q50. The feedback path is through CR40, CR41 and Q32 to the base of Q30. Any variation in output voltage due to ripple, change of current through the load, etc., is immediately

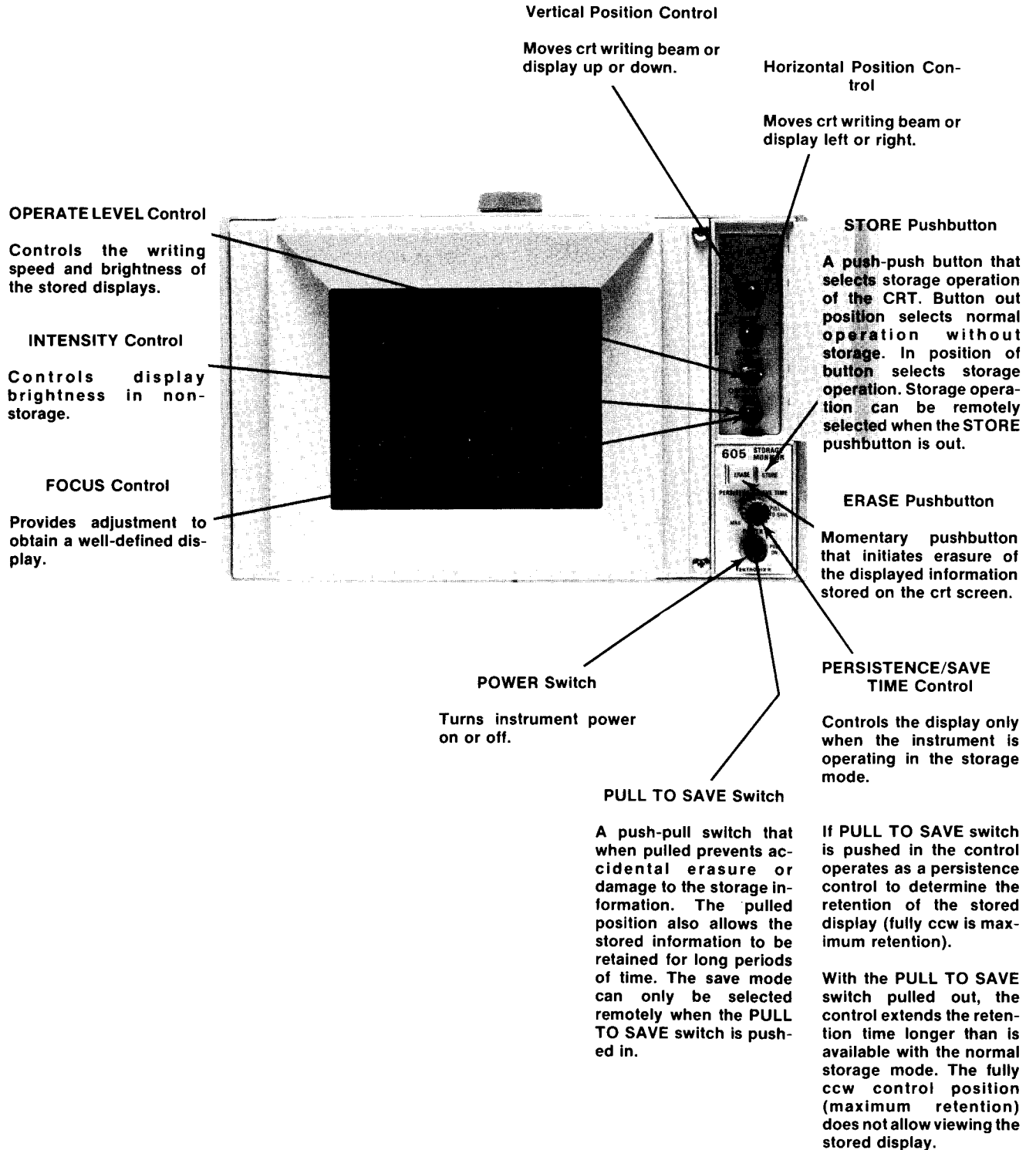
transmitted to the base of Q30 and nullified by a change in Q30 conduction, thus maintaining a steady output. The output of the supply is set to exactly +15-volts by adjustment of R40, +15 V adjust. This control sets the conduction of Q50, which controls the bias level of Q30 via emitter-follower Q32. CR27 and CR25 provide initial starting current to turn on Q840. Q30 +80 V and +170 V supplied by the high-voltage circuit plus shunt resistor R34 provides sufficient operating voltage to start the high-voltage circuit.

Q32 protects the supply in the event of a current overload. The overload will cause the voltage across R36 to become high enough to overcome the voltage drops across CR40, CR41 and the base-collector junction of Q32. At this time, Q32 will become saturated and short out Q30, thereby current limiting the supply.

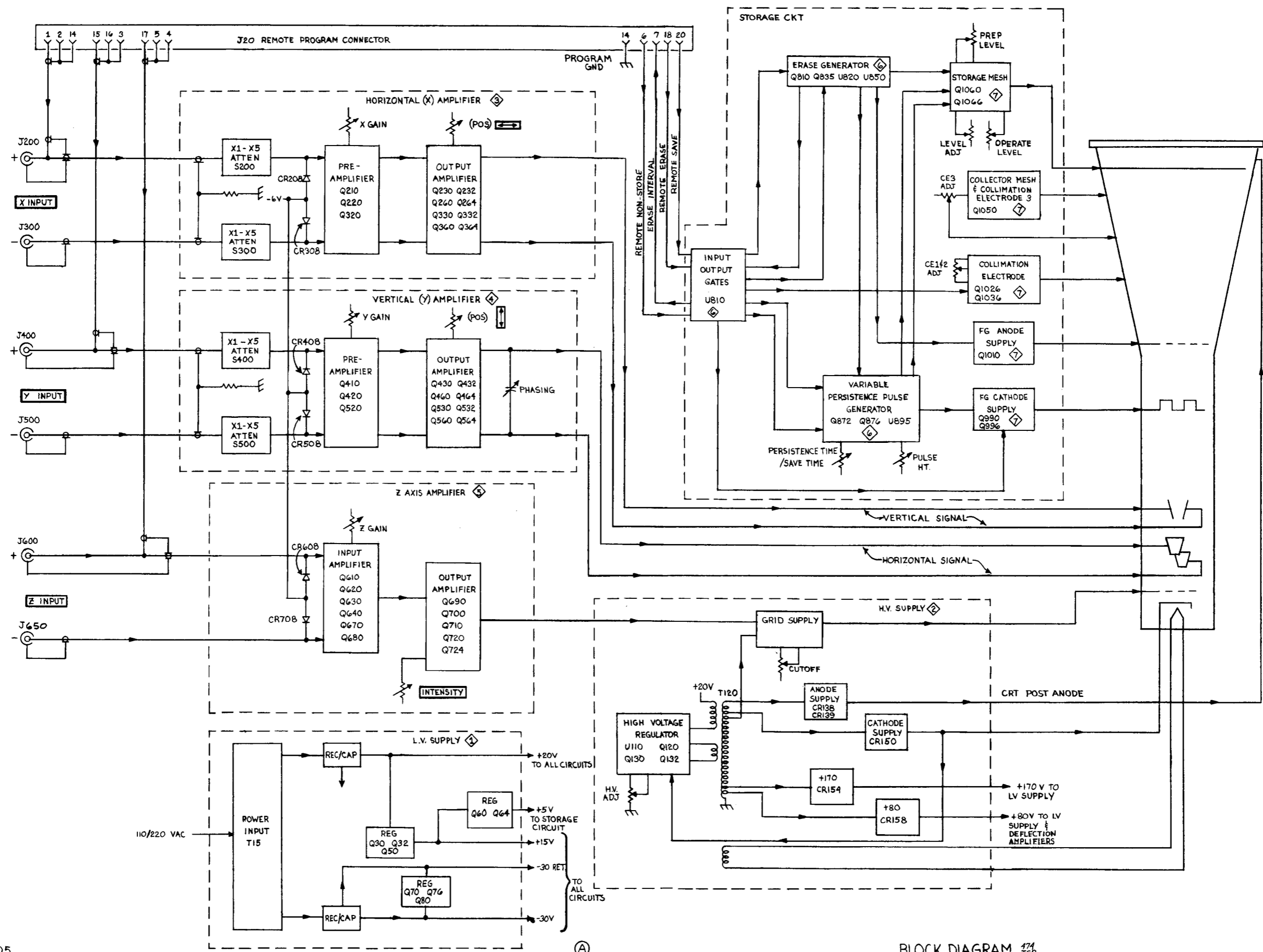
-30-Volt Supply. The regulator for the -30-volt supply consists of series-pass transistor Q70 and error amplifier Q80. This is a feedback amplifier system similar to that just described for the +15-volt supply. Q76 protects the supply in the event the output is shorted by limiting the current demanded from the series-pass transistor under excessive load.

+5-Volt Supply. The regulator for the +5-volt supply consists of series-pass transistor Q60 and error amplifier Q64. Operation of this feedback amplifier system is similar to that described for the +15-volt supply. Current limiting, in the event of an overload, is provided by R56.

CONTROLS & CONNECTORS



BLOCK DIAGRAM AND FRONT-PANEL CONTROLS



ADJUSTMENTS

CRT CIRCUIT

WARNING

Dangerous potentials exist at several points throughout this instrument. When the instrument is operated with the covers removed, do not touch exposed connections or components. Disconnect power before cleaning the instrument or replacing parts.

EQUIPMENT REQUIRED

1. DC voltmeter, to measure HV supply. Minimum sensitivity rating, 20 k Ω /volt; range of at least 1500 volts full scale, accuracy within 1 1/2%. For example, Triplet 630 NA.

2. Ramp generator having a sawtooth amplitude between +1 volt and +3 volts, a +1 volt to +5 volt gate signal that is coincident with the sawtooth, and sweep rates from 10 μ s to 0.5 ms. For example, a RG 501 Ramp Generator (operates in a TM 500-Series Power Module), or any ramp generator meeting the requirements may be used.

3. Coaxial cables (2). Impedance, 50 Ω ; length, 42 inches; connectors, BNC. Tektronix Part No. 012-0057-01.

PRELIMINARY PROCEDURE

NOTE

The performance of this instrument can be checked at any temperature within the 0 $^{\circ}$ C to +50 $^{\circ}$ C range. Make any adjustment at a temperature of +25 $^{\circ}$ C, \pm 5 $^{\circ}$ C.

a. Check that the correct nominal line-selector (120 VAC or 220 VAC) has been installed on the line selector pins and that the regulating range selected includes the input line voltage, see Installation section.

b. Check that the crt screen (display area) has an 8 x 10-division scribed graticule; install one if necessary.

c. Remove the outside cabinet panels to gain access to internal controls and test points.

d. Connect the Monitor to the line voltage source and apply power.

e. Set the following controls:

| | |
|---|--------------------------------|
| Internal attenuator slide switches (Deflection Amplifier board) | 1:1 (up position) |
| XY-TY (Deflection Amplifier board and Z Axis board in Option 4 instrument only) | XY (down and to left position) |
| POWER | PULL ON (knob pulled out) |
| PULL TO SAVE | Knob pushed in |

| | |
|------------------------|------------------------|
| PERSISTENCE/SAVE, TIME | Fully ccw |
| STORE | Non-store (button out) |
| INTENSITY | Fully ccw |
| FOCUS | Midrange |
| OPERATE LEVEL | As is |
| Vertical Position | Midrange |
| Horizontal Position | Midrange |

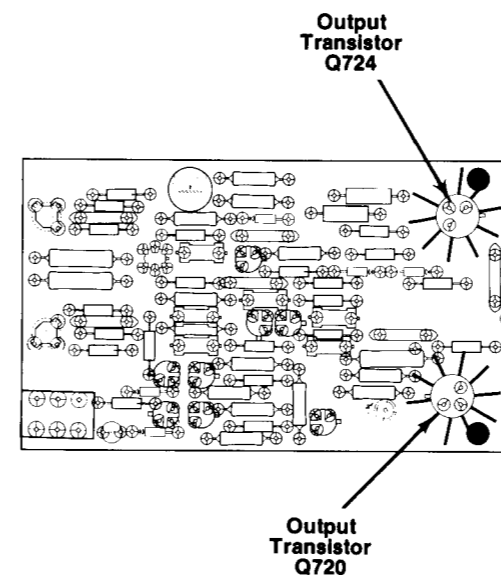
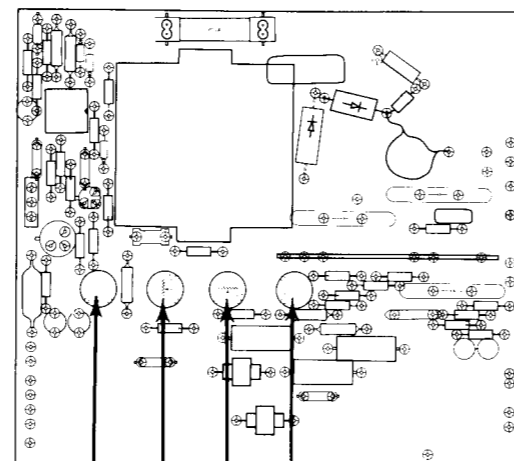
1. ADJUST AND CHECK HIGH-VOLTAGE POWER SUPPLY

CAUTION

Turn off instrument power when connecting and disconnecting the dc voltmeter.

Connect a dc voltmeter (20 k Ω /volt VOM set to measure at least -15 volts) between ground and the -1500 volt test point (pin 2 of the crt base-pin socket). Adjust R100, HV Adj, for -1500 volts. Tolerance of the high-voltage supply is -1500 V, \pm 30 V.

Disconnect precision dc voltmeter.



2. ADJUST CRT OPERATION

NOTE

Connect a positive-going sweep sawtooth from the ramp generator to the +X INPUT. Set the sweep rate for 0.5 millisecond/division and check for a horizontal sweep 10 graticule divisions in length. Adjust INTENSITY, FOCUS, and positioning as needed.

a. CRT BIAS

Connect a voltmeter between ground and the collectors of Z-Axis Amplifier output transistors Q720 and Q724. Adjust the front-panel INTENSITY control to provide a voltmeter reading of 10 volts.

Adjust R192 Cutoff, until the trace just disappears. Then adjust the INTENSITY control for a trace of normal display brightness. Disconnect the dc voltmeter.

b. ASTIGMATISM

Temporarily disconnect the sweep from the +X INPUT connector. Turn FOCUS control fully cw, then adjust R170, Astig, for a round spot.

Reconnect the sweep signal and adjust the FOCUS control for optimum trace definition.

c. TRACE ROTATION

Move the trace to the center of the graticule. Adjust R145, TRACE ROTATION control (located on the rear panel) to align the trace horizontally, using the horizontal graticule lines as a guide.

d. GEOMETRY

Position the trace first to the top of the graticule, then to the bottom. Bowing of the trace must not exceed 0.1 division at either position. Remove the positive-going sweep sawtooth signal from the +X INPUT and connect it to the +Y INPUT. Position the trace, first to the left of the graticule, then to the right. Bowing of the trace must not exceed 0.1 division at either position. Disconnect the positive-going sweep sawtooth signal from the +Y INPUT and connect it to the +X INPUT.

Adjust R165, Geom, for minimum curvature of the trace. Repeat bowing measurements as necessary to achieve best overall geometry adjustment. Some compromising of the geometry adjustment may be necessary to achieve both good focus and good geometry.

THEORY OF OPERATION DIAGRAM 2

CRT CIRCUIT

HIGH-VOLTAGE REGULATOR

HIGH-VOLTAGE PRIMARY. A repetitive, sinusoidal signal is produced by a regenerative feedback oscillator in the primary of T120 and induced into the secondary. Current drive for the primary winding is furnished by Q130-Q132.

The conduction of Q130 and Q132 is controlled by the output voltage of U110.

HIGH-VOLTAGE REGULATION. Regulation is accomplished by applying a sample of the -1500 V, from the R104A-R104B divider, to the positive input (pin 3) of U110. The negative input (pin 2) of U400 is set by HV adj R400. If the output level of the cathode supply goes above the nominal -15 kV (goes more negative), the positive input (pin 3) of U110 goes negative from its quiescent $+1.2$ V. The output of U100 goes less positive, reducing the conduction of Q130-Q132. This reduces the peak-to-peak sinusoidal signal amplitude, resulting in a reduced voltage in the secondary of T120. Conversely, if the output drops below -1.5 kV (goes more positive), Q130-Q132 will conduct harder, i.e., have a larger sinusoidal signal amplitude. Q390 protects the high-voltage supply in the event the output is shorted by limiting the maximum current drawn by the high-voltage oscillator, Q130-Q132.

HIGH-VOLTAGE OUTPUTS

The secondary winding of T120 provides the negative and positive accelerating potentials for the crt, the bias voltage for the control grid, the $+80$ V and $+170$ V supply voltages used elsewhere in the 605 and the crt writing gun filament voltage.

Positive accelerating voltage for the crt anode is supplied by voltage doubler C138-CR138-CR139-C140. The applied voltage to the input of the doubler from the T120 secondary winding is about $+7$ kV peak-to-peak.

The output voltage of the doubler is about $+14$ kV at the crt anode. The negative accelerating voltage for the crt cathode is also obtained from the T120 secondary winding. CR150 half-wave rectifies the transformer output and supplies the 1.5 kV to the crt cathode. CRT writing gun filament voltage is provided by a winding on the secondary of T120 which is elevated to -1.5 kV.

Diodes CR182 and CR180 provide the rectified negative voltage for the crt control grid. The output level of this supply is set by the Cutoff adjustment R192. Diodes CR148 and CR186 clip the crt grid bias voltage from the T120 secondary, to determine the operating level at the control grid. CR148 limits the negative excursions of the bias voltage, depending upon the output voltage of the Z-Axis Amplifier. The positive clipping level at the cathode of CR186 is set by the Cutoff adjustment. CR182 acts as a dc restorer and CR4180 as a rectifier. This results in a dc level across R182 equal to the peak-to-peak excursion at the anode of CR186.

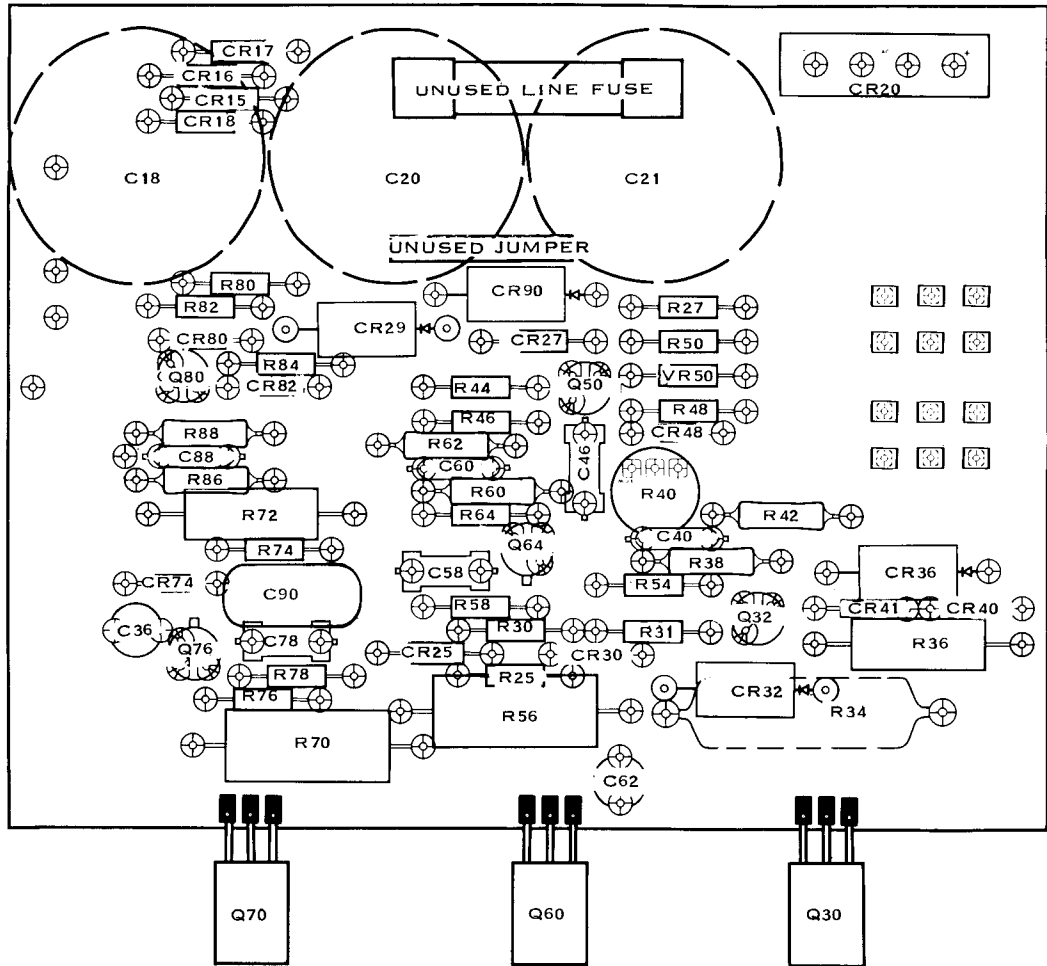
CRT CONTROL CIRCUITS

In addition to the INTENSITY control discussed previously, front-panel FOCUS and internal astigmatism controls have been incorporated for arriving at an optimum crt display. FOCUS control R175B provides the correct voltage for the second anode in the crt. Proper voltage for the third anode is obtained by adjusting Astig control R170. In order to obtain optimum spot size and shape, both the FOCUS and Astig controls are adjusted to provide the proper electrostatic lens configuration in the crt.

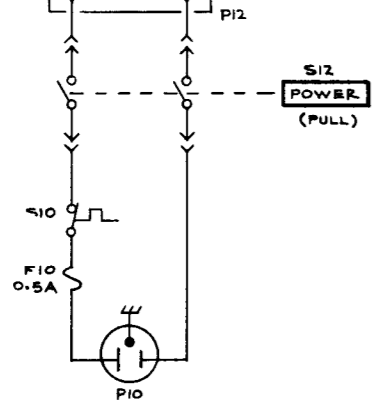
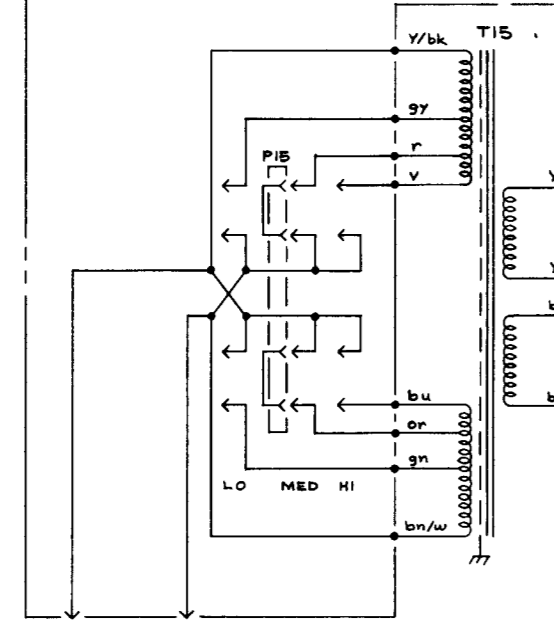
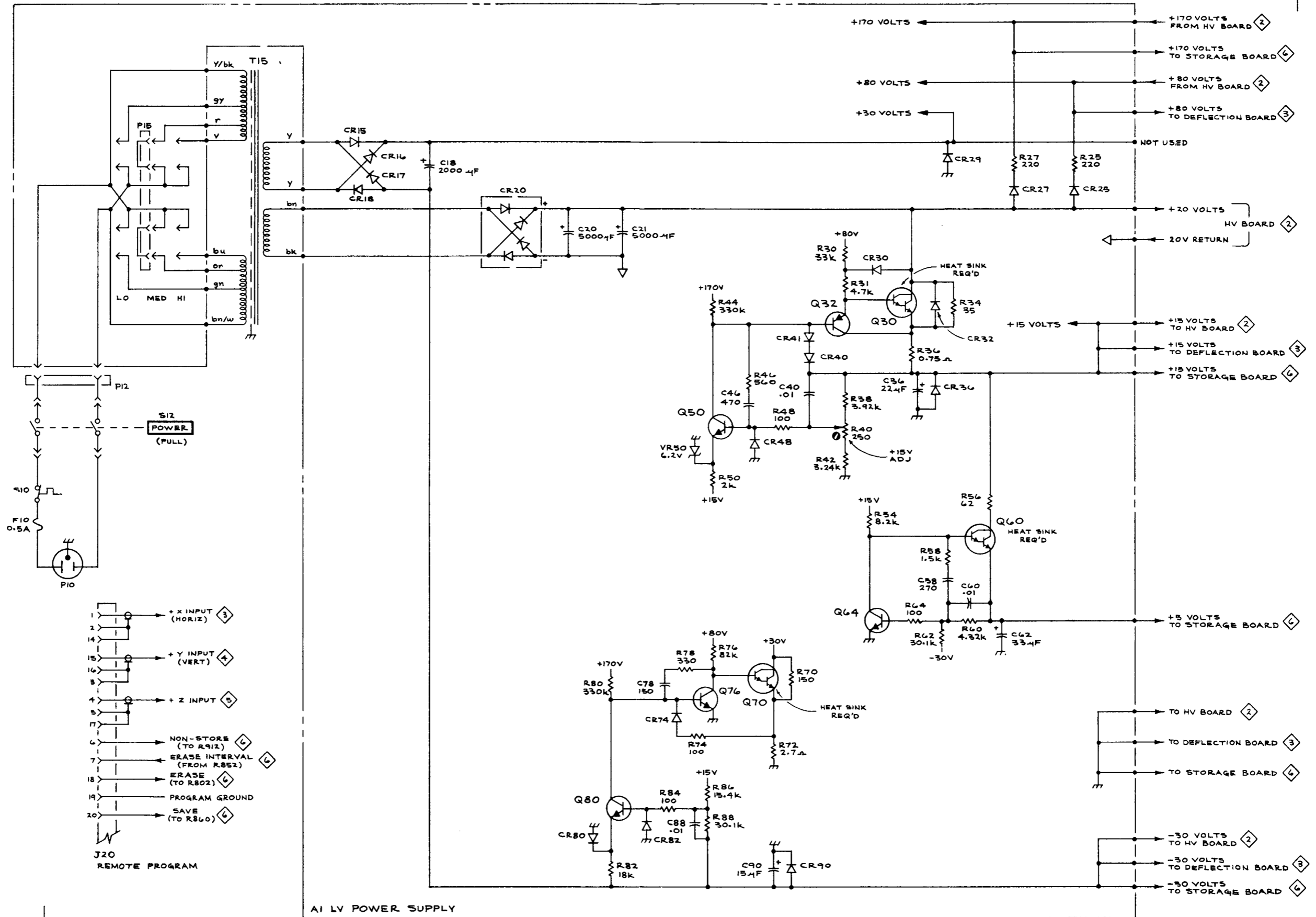
The Geom Adjustment R165 varies the positive level on the horizontal deflection plate shields to control the overall geometry of the display. The trace rotation control, R145, permits adjustment of the dc current through beam-rotation coil L145 to align the display horizontally.

PARTS LOCATION GRID

LOW VOLTAGE



| CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC |
|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|
| C18 | A1 | CR15 | B1 | CR41 | E4 | Q60 | D5 | R36 | F4 | R62 | C3 | VR50 | D2 |
| C20 | C1 | CR16 | B1 | CR48 | D3 | Q64 | D3 | R38 | D3 | R64 | C3 | | |
| C21 | D1 | CR17 | B1 | CR74 | B4 | Q70 | B5 | R40 | D3 | R70 | B4 | | |
| C36 | B4 | CR18 | B1 | CR80 | B2 | Q76 | B4 | R42 | E3 | R72 | B3 | | |
| C40 | D3 | CR20 | E1 | CR82 | B3 | Q80 | B2 | R44 | C3 | R74 | B3 | | |
| C46 | D3 | CR25 | C4 | CR90 | C2 | | | R46 | C3 | R76 | B4 | | |
| C58 | C3 | CR27 | D2 | | | | | R48 | D3 | R78 | B4 | | |
| C60 | C3 | CR29 | C2 | | | R25 | C4 | R50 | D2 | R80 | B2 | | |
| C62 | D5 | CR30 | D4 | | | R27 | D2 | R54 | D4 | R82 | B2 | | |
| C78 | B4 | CR32 | E4 | Q30 | E5 | R30 | C4 | R56 | C4 | R84 | B2 | | |
| C88 | B3 | CR36 | F3 | Q32 | E4 | R31 | D4 | R58 | C4 | R86 | B3 | | |
| C90 | B4 | CR40 | F4 | Q50 | D3 | R34 | E4 | R60 | C3 | R88 | B3 | | |



- 1 → + X INPUT (HORIZ) ③
 - 2 →
 - 14 → + Y INPUT (VERT) ④
 - 15 →
 - 16 → + Z INPUT ⑤
 - 3 →
 - 5 →
 - 7 →
 - 6 → NON-STORE (TO R91Z) ⑥
 - 7 → ERASE INTERVAL (FROM R85Z) ⑥
 - 18 → ERASE (TO R80Z) ⑥
 - 19 → PROGRAM GROUND
 - 20 → SAVE (TO R86L) ⑥
- J20
REMOTE PROGRAM

AI LV POWER SUPPLY

THEORY OF OPERATION DIAGRAM 3

X DEFLECTION AMPLIFIER

The X Deflection Amplifier provides a push-pull output suitable to drive the crt deflection plates. Input signals can be applied either single-ended or differentially.

Input Signals can be applied to either J200 (+) or J300 (-) as single-ended inputs, or to both connectors as a differential input. Also, a signal may be applied via pin 1 of J20 (remote program connector) to the + input. S200 (+) and S300 (-), internal switches for each input, allow a choice of either 1:1 or 5:1 attenuation of the input signal before it is applied to the gate(s) of field effect transistor (fet) Q210. The input 5X attenuators are frequency-compensated voltage dividers.

PREAMPLIFIER

The preamplifier stage employs a dual fet to provide a high input impedance. This stage consists of two identical feedback amplifiers, Q210A-Q220 and Q210B-Q320, which can be operated as either a paraphase amplifier (with single-ended input) or as a differential amplifier. A push-pull signal is produced at the collectors of Q220 and Q320. The fet gates are diode-clamped on negative-going overdrive signals, protecting the transistors in the amplifier. R215, X Gain, provides an adjustable amplification factor to allow a crt full-scale deflection range from 0.5 volt or less to 2.5 volts or more. This control is normally set for a nominal 1 volt for full-scale deflection.

OUTPUT AMPLIFIER

The output amplifier stage consists of two identical non-inverting operational amplifiers connected in a differential configuration. Q232 and Q332 provide constant current for input emitter followers Q230 and Q330. Q230 and Q330 receive the push-pull signal from the preamplifier stage, and the input signal is developed across the resistance between their emitters. The signal current is forced through R250 and R185, producing the deflection-plate drive signal at the collectors of Q264 and Q364. Q260 and Q360, whose bases are diode-limited to ensure quick overdrive recovery, provide the drive for the output transistors. The Q264-Q364 collectors are diode-clamped on negative-going overdrive signals.

Display positioning is accomplished by R240, which provides a shift in the constant-current source transistors, shifting the quiescent voltage. Capacitor C246 HF Comp provides frequency compensation. Custom bandpass limiting is provided by connecting a customer-selected capacitor between the two * points. S220 (Option 4 only) permits connecting the output amplifier either to the output of the preamplifier, X-Y switch position, or connecting the output amplifier to the output of a sweep circuit, Y-T switch position.

ADJUSTMENTS

X&Y DEFLECTION AMPLIFIERS

WARNING

Dangerous potentials exist at several points throughout this instrument. When the instrument is operated with the covers removed, do not touch exposed connections or components.

Disconnect power before cleaning the instrument or replacing parts.

EQUIPMENT REQUIRED

1. Test oscilloscope with compatible 1X probe, to monitor test signals and to provide a sweep-generating

signal. Bandwidth, dc to 2MHz (to 8 MHz for checking Z-axis bandwidth); deflection factor, 0.2 to 5 volts/div with 2% accuracy; sweep rates, 0.5 ms and 20 μ s/div (0.2 μ s/div for checking Z-axis circuit). For example, a 5403/D40 Oscilloscope with 5A48 Dual Trace Ampl and 5B42 Delaying Time Base plug-ins.

2. Ramp generator having a sawtooth amplitude between +1 volt and +3 volts, and a +1 volt to +5 volt gate signal that is coincident with the sawtooth, and sweep rates from 10 μ s to 0.5 ms. For example, a RG 501 Ramp Generator (operates in a TM 500-Series Power Module), or any other ramp generator meeting the requirements may be used.

3. Square-wave generator. Frequency, 1 kHz, 10 kHz, and 100 kHz; risetime, less than 50 nanoseconds; output amplitude, 1 volt. For example a PG 506 Square Wave Generator (operates in a TM 500-Series Power Module) or any other square-wave generator meeting the requirements may be used.

4. Leveled sine-wave generator. Frequency, 350 kHz to above 5 MHz; reference frequency, 50 kHz; output amplitude, from about 0.5 volt to about 5 volts, within 3% as frequency is varied. For example, a SG 503 Leveled Sine Wave Generator (operates in a TM 500-Series Power Module) or any other sine-wave generator meeting the requirements may be used.

5. Coaxial Cables (2). Impedance, 50 Ω ; length, 42 inches; connectors, BNC. Tektronix Part No. 012-0057-01.

6. T connector, BNC. Tektronix Part No. 103-0030-00.

7. 5X attenuator (optional, depending on test equipment used). Impedance, 50 Ω ; accuracy, within 2%; connectors, BNC. Tektronix Part No. 011-0060-02.

PRELIMINARY PROCEDURE

NOTE

The performance of this instrument can be checked at any temperature within the 0° C to +50° C range. Make any adjustment at a temperature of +25° C, $\pm 5^\circ$ c.

a. Check that the correct nominal line-selector block (120 VAC or 220 VAC) has been installed on the line selector pins and that the regulating range selected includes the input line voltage, see Installation section.

b. Check that the crt screen (display area) has a 8 X 10-division scribed graticule; install one if necessary.

c. Remove the outside cabinet panels to gain access to internal controls and test points.

d. Connect the Monitor to the line voltage source and apply power.

e. Set the following controls:

Internal attenuator Slide switches (Deflection Amplifier board) 1:1 (up position)

| | |
|--|--------------------------------|
| XY-YT (Deflection Amplifier board and Z Axis board in Option 4 instruments only) | XY (down and to left position) |
| POWER | PULL ON (knob pulled out) |
| PULL TO SAVE | Knob pushed in |
| PERSISTENCE/SAVE TIME | Fully ccw |
| STORE | Non-store (button out) |
| INTENSITY | As is |
| FOCUS | Midrange |
| OPERATE LEVEL | As is |
| Vertical Position | Midrange |
| Horizontal Position | Midrange |

ADJUST AND CHECK VERTICAL (Y) AND HORIZONTAL (X) DEFLECTION SYSTEMS

NOTE

The X and Y gains should be adjusted for full-scale deflection, depending upon the input signals used. As an example, the following procedure shows the proper adjustment for one volt full-scale deflection on both axes. BE SURE TO PLACE GROUNDING CAPS ON UNUSED INPUTS.

Connect a positive-going sweep sawtooth from the ramp generator to the +X INPUT. Set the sweep rate for 0.5 millisecond/division and check for a horizontal sweep 10 graticule divisions in length. Adjust INTENSITY, FOCUS, and positioning as needed.

VERTICAL AXIS GAIN AND COMPENSATION

While applying the 0.5-millisecond/division sweep signal to the +X INPUT, apply a 1-kilohertz square-wave signal from the square-wave generator to the +Y INPUT through a coaxial cable between the T connector and the input to the test oscilloscope to monitor the square-wave signal. Set the test oscilloscope vertical deflection factor to 0.2 volt/division and adjust the square-wave generator for a 1-volt display amplitude (5 displayed divisions on the test oscilloscope). Use an attenuator if necessary.

Adjust R415, Y Gain, for eight vertical divisions of square-wave display. Set slide switch S400 to X5 (down position).

Adjust C400, +Y Attenuator Compensation, for minimum roll-off or overshoot of the leading corner of the square-wave display. Set S400 back to the X1 position and move the square-wave signal to the -Y INPUT. Set slide switch S500 to X5.

Adjust C500, -Y Attenuator Compensation, for optimum square-wave bottom. Set S500 back to the X1 position. Change the test oscilloscope sweep rate to 10 microseconds/division. Set the square-wave generator for a 0.7-volt, 100-kilohertz output and move the square-wave signal to the +Y INPUT.

Adjust C446 HF Comp, for optimum square-wave bottom.

HORIZONTAL AXIS GAIN AND COMPENSATION

Move the sweep signal to the +Y INPUT and the square-wave signal to the +X INPUT. Using the signals and conditions given in the Vertical Axis Gain and Compensation part of this step, adjust the following controls:

R215, X Gain

C200, +X Attenuator Compensation (set S200 to X5)

C300, -X Attenuator Compensation (set S300 to X5)

C246, HF Comp

BANDWIDTH

Set the test oscilloscope sweep rate to 1 millisecond/division and replace the square-wave generator with the sine-wave generator. Adjust the sine-wave generator for eight vertical divisions of 50-kilohertz display as a reference. Then slowly increase the frequency until the display amplitude is 5.66 divisions. This is the upper -3 dB point. The frequency at the upper -3 dB point must be at least three megahertz.

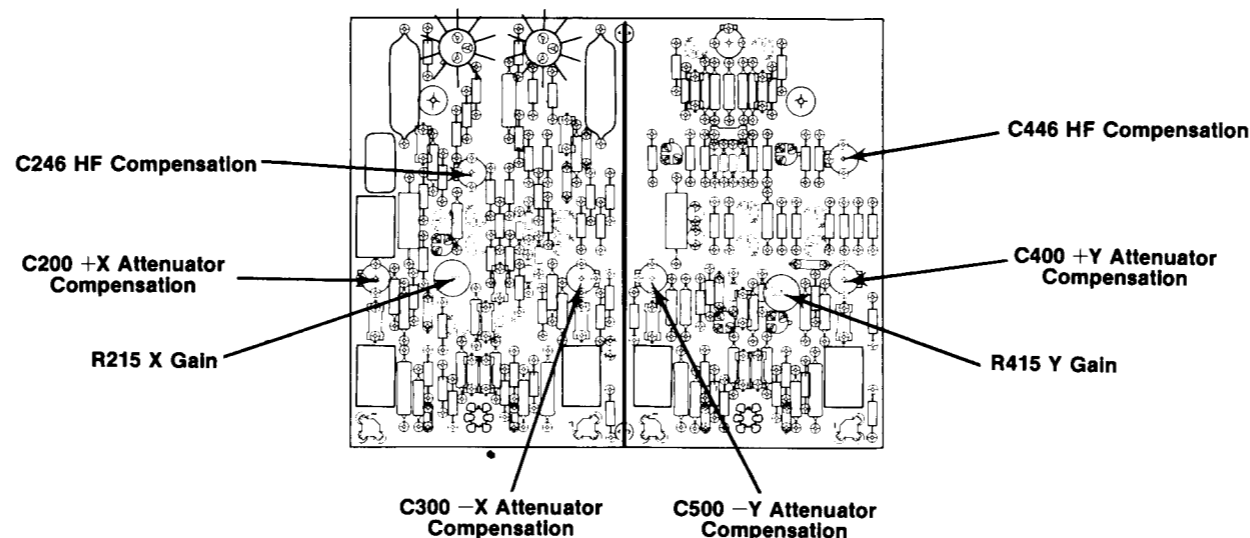
Move the sweep signal to the -X INPUT and the sine-wave signal to the +Y INPUT. Repeat the above paragraph to verify horizontal bandwidth.

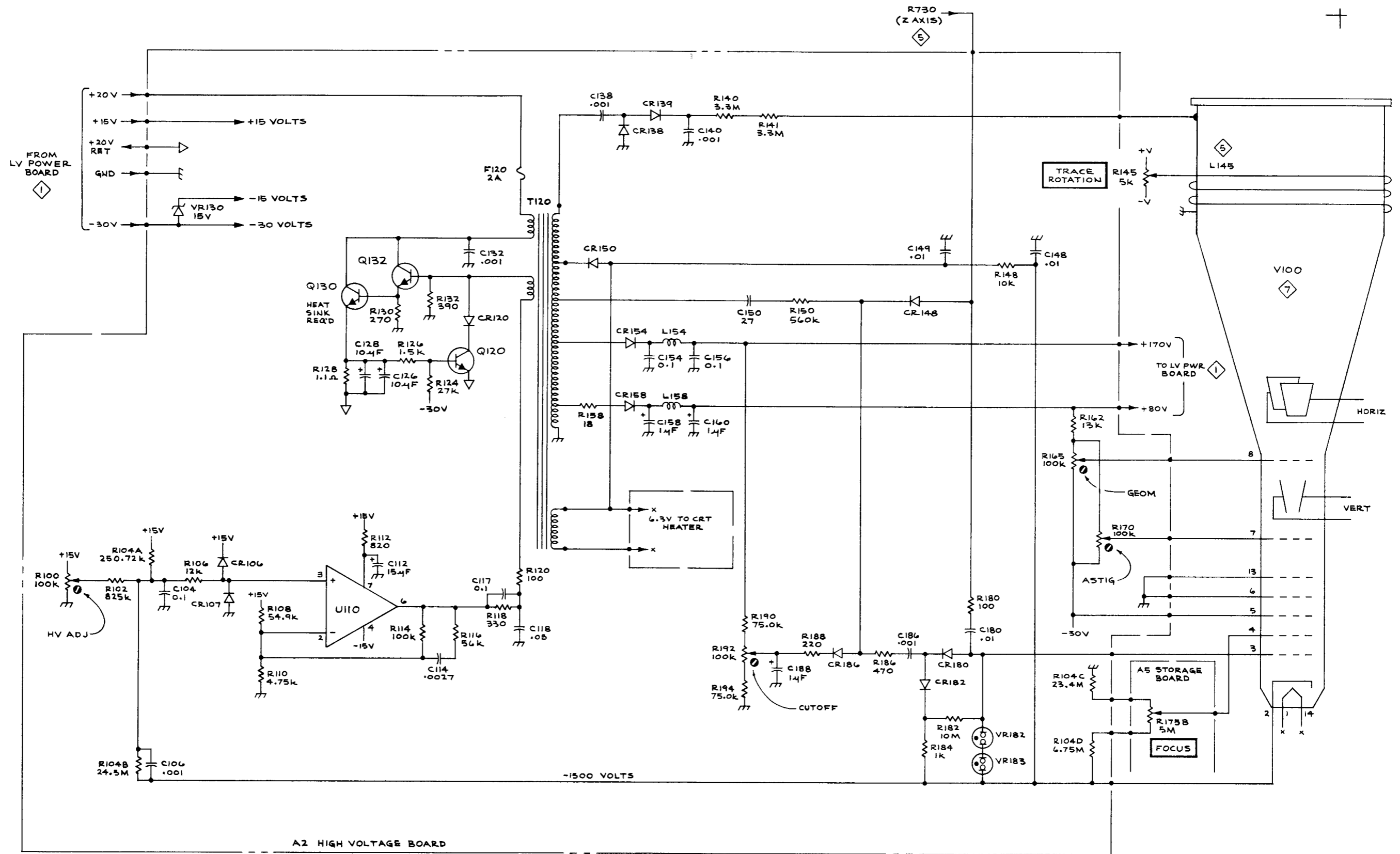
PHASE DIFFERENCE

Remove the sweep signal and apply sine-wave signal to both the +Y and +X input. Adjust the sine-wave generator and positioning controls so that the display is a diagonal line running from the lower left-hand corner of the graticule to the upper right-hand corner. Adjust R215, X Gain, so the horizontal display width is 8 divisions, then set the sine-wave generator frequency to 500 kilohertz.

Any opening of the loop indicates a phase shift. The vertical height of the opening at the center of the graticule should not exceed 0.1 division. If necessary, slightly adjust C446, and C246 to reduce phase shift. These adjustments will affect frequency response, if adjustment is necessary, repeat all of the above steps to obtain minimum phase shift with best frequency response.

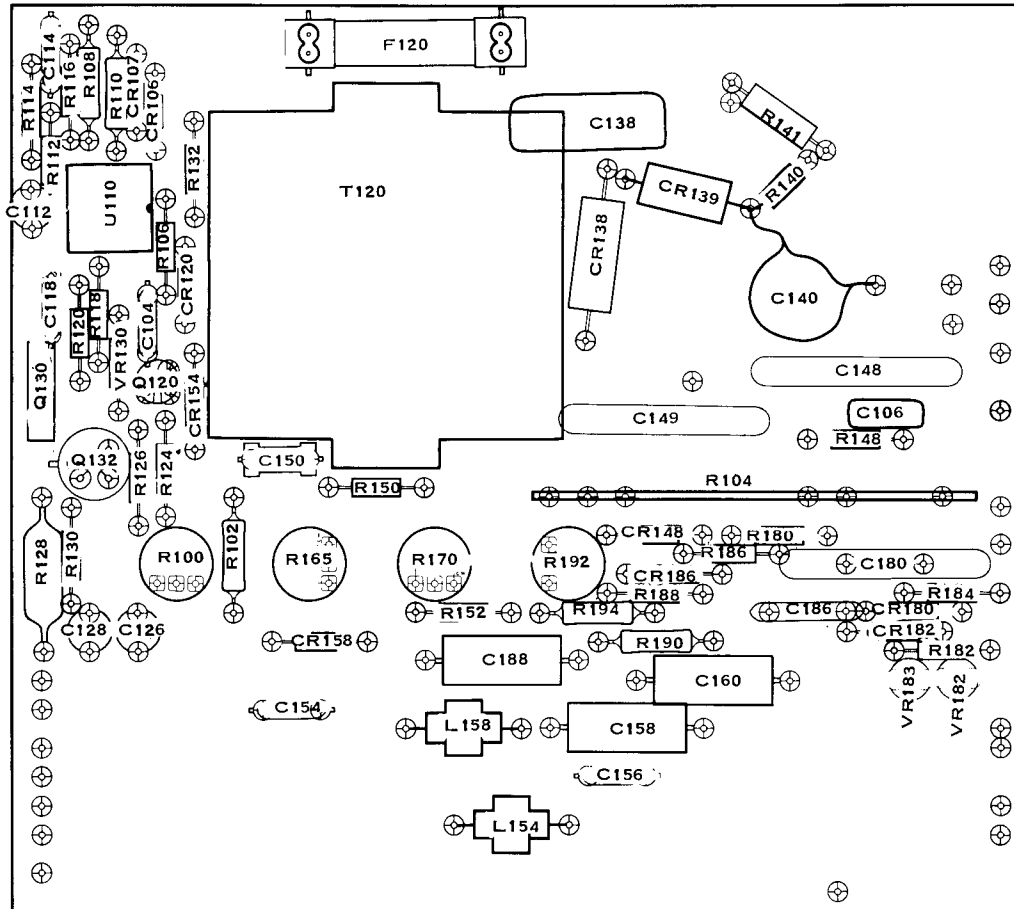
Adjust R215 X Gain, so the horizontal display width is 10 divisions, as it was before making the X-Y phasing check. Remove the sine-wave signal from the X and Y inputs.





PARTS LOCATION GRID

CRT CIRCUIT



| CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC |
|--------|----------|--------|----------|--------|----------|--------|----------|
| C104 | B2 | CR106 | B1 | R100 | B3 | R150 | C3 |
| C106 | E3 | CR107 | A1 | R102 | B3 | R152 | C4 |
| C112 | A2 | CR120 | B2 | R104 | D3 | R165 | B3 |
| C114 | A1 | CR138 | D2 | R106 | B2 | R170 | C3 |
| C118 | A2 | CR139 | D2 | R108 | A1 | R180 | E3 |
| C126 | A4 | CR148 | D3 | R110 | A1 | R182 | F4 |
| C128 | A4 | CR154 | B3 | R112 | A1 | R184 | F4 |
| C138 | D1 | CR158 | B4 | R114 | A1 | R186 | E3 |
| C140 | E2 | CR180 | E4 | R116 | A1 | R188 | D4 |
| C148 | E2 | CR182 | E4 | R118 | A2 | R190 | D4 |
| C149 | D3 | CR186 | D4 | R120 | A2 | R192 | D3 |
| C150 | B3 | F120 | C1 | R124 | B3 | R194 | D4 |
| C154 | B4 | L154 | C5 | R126 | B3 | T120 | C2 |
| C156 | D5 | L158 | C4 | R128 | A3 | U110 | A2 |
| C158 | D4 | Q120 | B2 | R130 | A3 | VR130 | A2 |
| C160 | D4 | Q130 | A2 | R132 | B1 | VR182 | F4 |
| C180 | E3 | Q132 | A3 | R140 | E1 | VR183 | E4 |
| C186 | E4 | | | R141 | E1 | | |
| C188 | C4 | | | R148 | E3 | | |

THEORY OF OPERATION DIAGRAM 4

Y DEFLECTION AMPLIFIER

The Y Deflection Amplifier provides a push-pull output suitable to drive the crt deflection plates. Input signals can be applied either single-ended or differentially.

INPUT

Signals can be applied to either J400 (+) or J500 (-) as single-ended inputs, or to both connectors as a differential input. Also, a signal may be applied via pin 15 of J20 (remote program connector) to the + input. S400 (+) and S500 (-) internal switches for each input, allow a choice of either 1:1 or 5:1 attenuation of the input signal before it is applied to the gate(s) of field-effect transistor (fet) Q410. The input 5X attenuators are frequency-compensated voltage dividers.

PREAMPLIFIER

The preamplifier stage employs a dual fet to provide a high input impedance. This stage consists of two identical feedback amplifiers. Q410A-Q420 and Q410B-Q520, which can be operated as either a paraphase amplifier (with single-ended input) or as a differential amplifier. A push-pull signal is produced at the collectors of Q420 and Q520. The fet gates are diode-clamped on negative-going overdrive signals, protecting the transistors in the

amplifier. R415, Y Gain, provides an adjustable amplification factor to allow a crt full-scale deflection range from 0.5 volt or less to 2.5 volts or more. This control is normally set for a nominal 1 volt for full-scale deflection.

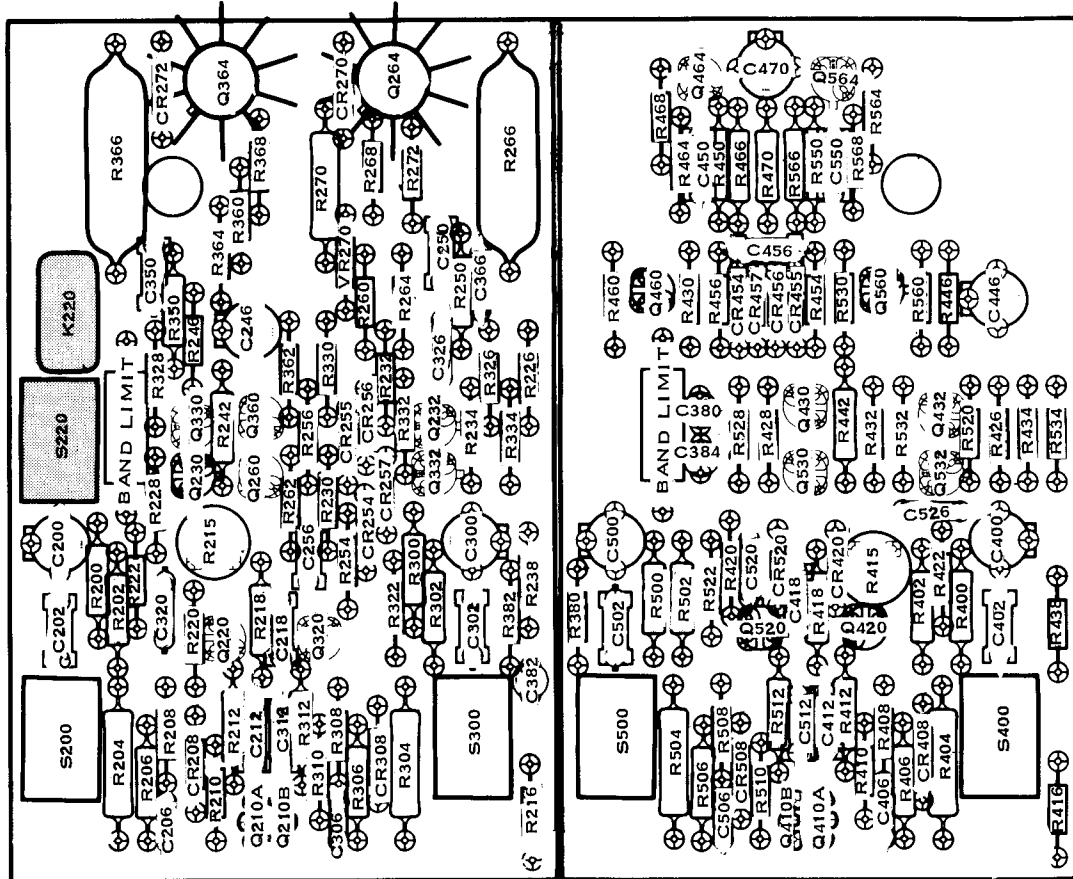
OUTPUT AMPLIFIER

The output amplifier stage consists of two identical non-inverting operational amplifiers connected in a differential configuration. Q432 and Q532 provide constant current for input emitter followers Q430 and Q530. Q430 and Q530 receive the push-pull signal from the preamplifier stage, and the input signal is developed across the resistance between their emitters. The signal current is forced through R450 and R550, producing the deflection-plate drive signal at the collectors of Q464 and Q564. Q460 and Q560, whose bases are diode-limited to ensure quick overdrive recovery, provide the drive for the output transistors.

Display positioning is accomplished by R440, which provides a shift in the constant-current source transistors, shifting the quiescent voltage. Capacitor C446 HF Comp provides frequency compensation. Custom bandpass limiting is provided by connecting a customer-selected capacitor between the two * points.

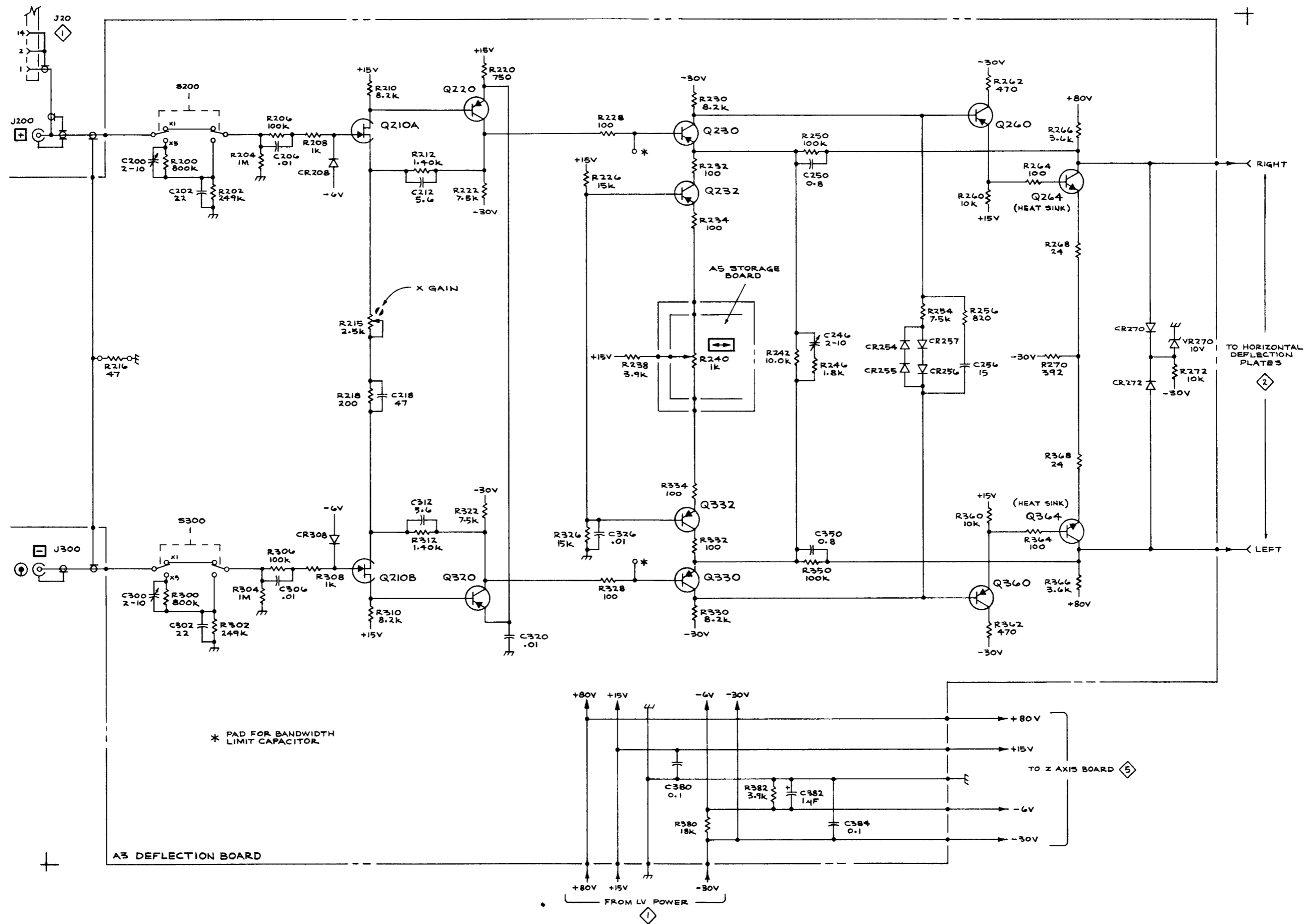
PARTS LOCATION GRID

DEFLECTION AMP



AREA INDICATES OPTION 4

| CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC |
|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|
| C200 | A3 | C415 | E3 | CR420 | E3 | Q460 | D2 | R232 | C2 | R326 | C2 | R422 | F3 | R512 | E4 |
| C202 | A4 | C418 | E4 | CR454 | D2 | Q464 | D1 | R234 | C3 | R328 | A2 | R426 | F3 | R522 | D3 |
| C206 | B5 | C446 | F2 | CR455 | E2 | Q520 | E4 | R238 | C3 | R330 | B2 | R428 | E2 | R526 | F3 |
| C212 | B4 | C450 | D1 | CR456 | E2 | Q530 | E3 | R242 | B3 | R332 | C3 | R430 | D2 | R528 | E3 |
| C218 | B4 | C465 | E2 | CR457 | E2 | Q532 | F3 | R246 | B2 | R334 | C3 | R432 | E3 | R530 | E2 |
| C246 | B2 | C470 | E1 | CR508 | E4 | Q560 | E2 | R250 | C2 | R350 | B2 | R434 | F3 | R532 | E3 |
| C250 | C2 | C500 | D3 | CR520 | E3 | Q564 | E1 | R254 | B3 | R360 | B2 | R438 | F4 | R534 | F3 |
| C256 | B3 | C502 | D4 | | | | | R256 | B3 | R362 | B2 | R442 | E3 | R550 | E1 |
| C300 | C3 | C506 | D5 | Q210 | B5 | R200 | A3 | R260 | C2 | R364 | B2 | R446 | F2 | R560 | E2 |
| C302 | C4 | C512 | E4 | Q220 | B4 | R202 | A4 | R262 | B3 | R366 | A1 | R450 | D1 | R564 | E1 |
| C306 | B5 | C520 | E3 | Q230 | B3 | R204 | A4 | R264 | C2 | R368 | B1 | R454 | E2 | R566 | E1 |
| C312 | B4 | C526 | E3 | Q232 | C3 | R206 | A4 | R266 | C1 | R380 | D4 | R456 | D2 | R568 | E1 |
| C320 | B4 | C550 | E1 | Q260 | B3 | R208 | B4 | R268 | C1 | R382 | C4 | R460 | D2 | | |
| C326 | C2 | | | Q264 | C1 | R210 | B4 | R270 | B1 | R400 | F4 | R464 | D1 | S200 | A4 |
| C350 | A2 | CR208 | B4 | Q320 | B4 | R212 | B4 | R272 | C1 | R402 | E4 | R466 | E1 | S300 | C4 |
| C366 | C2 | CR254 | C3 | Q330 | B3 | R215 | B3 | R300 | C3 | R404 | F4 | R468 | D1 | S400 | F4 |
| C380 | D3 | CR255 | B3 | Q332 | C3 | R216 | C5 | R302 | C4 | R406 | E4 | R470 | E1 | S500 | D4 |
| C382 | C4 | CR256 | C3 | Q360 | B3 | R218 | B4 | R304 | C4 | R408 | E4 | R500 | D4 | | |
| C384 | D3 | CR257 | C3 | Q364 | B1 | R220 | B4 | R306 | C4 | R410 | E4 | R502 | D4 | VR270 | B2 |
| C400 | F3 | CR270 | B1 | Q410 | E5 | R222 | A3 | R308 | B4 | R412 | E4 | R504 | D4 | | |
| C402 | F4 | CR272 | B1 | Q420 | E4 | R226 | C2 | R310 | B4 | R416 | F5 | R506 | D4 | | |
| C406 | E5 | CR308 | C4 | Q430 | E3 | R228 | A3 | R312 | B4 | R418 | E4 | R508 | D4 | | |
| C412 | E4 | CR408 | E4 | Q432 | F3 | R230 | B3 | R322 | C4 | R420 | D3 | R510 | E4 | | |



THEORY OF OPERATION DIAGRAM 5

Z-AXIS AMPLIFIER

INPUT

Signals can be applied to either J600 (+) or J650 (-) as single-ended inputs, or to both connectors as a differential input. Also, a signal may be applied via pin 17 of J20 (remote program connector) to the + input. A provision is made on each input line to permit installation of attenuating resistors.

PREAMPLIFIER

The Z-axis preamplifier stage employs a dual field-effect transistor (fet) Q610 to provide a high input impedance. The stage consists of two identical feedback amplifiers, Q610A-Q620-Q630 and Q610B-Q670-Q680, which can be operated as either a paraphase amplifier (with a single-ended input) or as a differential amplifier. A single-ended output is produced at the collector of Q630, and is opposite in polarity to a signal applied to the + input and in phase with a signal applied to the - input. Constant current for the stage is supplied by Q640. The fet gates are diode-clamped on negative-going overdrive signals, protecting the transistors in the preamplifier. R615, Z Gain, provides an adjustable amplification factor to

provide a maximum allowable crt grid drive when a signal from +1 volt or less to +5 volts or more is applied to the Z-input and the INTENSITY control in the output stage is set to about midrange. Under this condition, a zero-volt input cuts off visual intensity.

OUTPUT AMPLIFIER

The output amplifier is a noninverting operational amplifier consisting of Q690, Q710, Q727, and Q720. The feedback resistor is R734 while C734 provides a means of adjusting the amplifier response. Q724 and Q720 are connected as a collector-coupled complementary amplifier to provide a fast, linear output signal while consuming minimum quiescent power. The quiescent output level can be set by adjustment of the INTENSITY control R175A. The output is applied to the crt control grid circuit.

To prevent damage to the information being saved, Q700 gates the Z-axis amplifier off when the 605 is operated in the save mode.

ADJUSTMENTS

Z-AXIS AMPLIFIERS

WARNING

Dangerous potential exist at several points throughout this instrument. When the instrument is operated with the covers removed, do not touch exposed connections or components. Disconnect power before cleaning the instrument or replacing parts.

EQUIPMENT REQUIRED

1. Test oscilloscope with compatible 1X probe, to monitor test signals and to provide a sweep-generating signal. Bandwidth, dc to 2 MHz (to 8 MHz for checking Z-axis bandwidth); deflection factor, 0.2 to 5 volts/div with 2% accuracy; sweep rates, 0.5 ms and 20 μ s/div (0.2 μ s/div for checking Z-axis circuit). For example, a 5403/D40 Oscilloscope with 5A48 Dual Trace Ampl and 5B42 Delaying Time Base plug-ins.

2. Ramp generator having a sawtooth amplitude between +1 volt and +3 volts, and a +1 volt to +5 volt gate signal that is coincident with the sawtooth, and sweep rates from 10 μ s to 0.5 ms. For example, an RG501 Ramp Generator (operates in a TM 500-Series Power Module) or any other ramp generator meeting the requirements may be used.

3. Square-wave generator. Frequency, 1 kHz, 10 kHz, and 100 kHz; risetime, less than 50 nanoseconds; output amplitude adjustable to 1 volt, both negative- and positive-going from ground. For example, a PG 506 Square Wave Generator (operates in a TM 500-Series Power Module) or any other square-wave generator meeting the requirements may be used.

4. Leveled sine-wave generator. Frequency 350 kHz to above 5 MHz; reference frequency, 50 kHz; output amplitude, from about 0.5 volt to about 5 volts, within 3% as frequency is varied. For example a SG 503 Leveled Sine Wave Generator (operates in a TM 500-Series Power Module) or any other sine-wave generator meeting the requirements may be used.

5. Coaxial Cables (2). Impedance, 50 Ω ; length, 42 inches; connectors BNC, Tektronix Part No. 012-0057-01.

6. T connector, BNC. Tektronix Part No. 103-0030-00.

7. 10X probe. Connectors, BNC; length, 6 feet. For example, a Tektronix P6065 probe.

PRELIMINARY PROCEDURE

NOTE

The performance of this instrument can be checked at any temperature within the 0° C to +50° C range. Make any adjustment at a temperature of +25° C, $\pm 5^\circ$ C.

a. Check that the correct nominal line-selector block (120 VAC or 220 VAC) has been installed on the line selector pins and that the regulating range selected includes the input line voltage, see Installation section.

b. Check that the crt screen (display area) has an 8 X 10-division scribed graticule; install one if necessary.

c. Remove the outside cabinet panels to gain access to internal controls and test points.

d. Connect the Monitor to the line voltage source and apply power.

e. Set the following controls:

| | |
|--|--------------------------------|
| Internal attenuator slide switches (Deflection Amplifier board) | 1:1 (up position) |
| XY-YT (Deflection Amplifier board and Z Axis board in Option 4 instruments only) | XY (down and to left position) |
| POWER | PULL ON (knob pulled out) |
| PULL TO SAVE | Knob pushed in |
| PERSISTENCE/SAVE TIME | Fully ccw |
| STORE | Non-store (button out) |
| INTENSITY | As is |
| FOCUS | Midrange |
| OPERATE LEVEL | As is |
| Vertical Position | Midrange |
| Horizontal Position | Midrange |

ADJUST AND CHECK Z AXIS AMPLIFIER

NOTE

The test oscilloscope should have a bandwidth of at least 8 MHz to permit checking the Z-Axis Amplifier bandwidth and making the HF compensation adjustment.

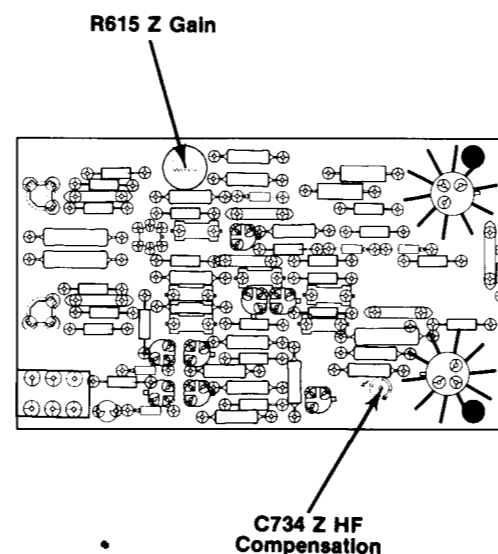
Apply a 20-microsecond/division sweep signal to the +X INPUT. Apply a 50-kilohertz negative-going square-wave signal simultaneously to the +Z INPUT and to the test oscilloscope. Adjust the square-wave amplitude for one volt peak-to-peak. Set the INTENSITY control fully clockwise.

Adjust R615, Z Gain, so the display appears as full-bright line segments that are completely blanked between segments. This indicates a full intensity control range of one volt. This procedure can be repeated using any voltage up to 5 volts to provide the intensity control range. Reduce INTENSITY control setting, then remove the 50 kHz signal from the +Z INPUT.

Connect a 10X probe between the collectors of Z-Axis Amplifier output transistors Q724 and Q720 and the test oscilloscope vertical input. Set the test oscilloscope vertical deflection factor to 5 volt/division and the sweep rate to 0.2 microsecond/division. Adjust the INTENSITY control for a 10-volt dc level at the Z-axis output. With a square-wave generator, apply a 100-kilohertz symmetrical positive-going square-wave to the +Z INPUT. Adjust the square-wave amplitude for 4 vertical divisions of test oscilloscope display.

Adjust C734, Z HF Comp, for minimum roll-off or overshoot of leading edge of square-wave signal.

Replace the square-wave generator with the sine-wave generator to check the Z-axis bandwidth. Apply a 50-kilohertz sine wave to the +Z INPUT. Adjust the INTENSITY control for a 30-volt dc level at the Z-axis output. Adjust the sine wave amplitude for a test oscilloscope display of 8 vertical divisions. Then increase the frequency until the display amplitude is 5.66 divisions. This is the upper -3 dB point of the bandwidth. The frequency at the upper -3 dB should be at least 5 megahertz. Disconnect all test equipment.



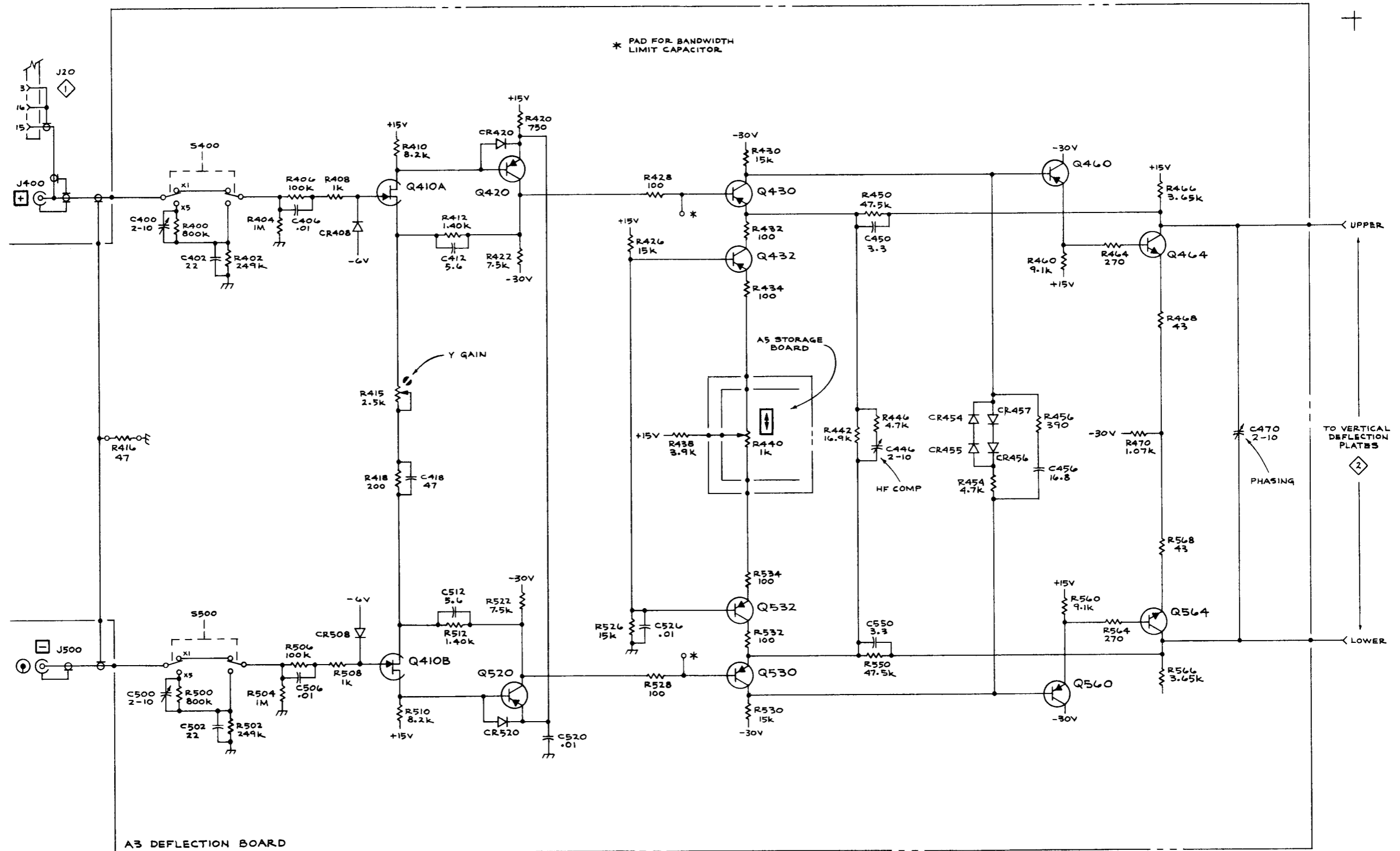


DIAGRAM AND PARTS

LOCATION GRID

The Cathode-Ray tube is a standard transmission halftone storage tube. The collector mesh is a coarse mesh that accelerates electrons toward the target area. The target (storage mesh) is a fine mesh with a highly insulative dielectric layer deposited on it. It is in the dielectric layer that storage occurs. The flood guns cover the entire storage target with a continuous stream of low velocity electrons; these electrons are prevented from reaching the phosphor screen unless a display has been written on the storage mesh.

When the 605 is placed in the non-store mode, either remotely or by using the STORE pushbutton, pin 10 of U810C goes high. Q990 is turned on by U810C going high and Q996 is turned off by Q990 but only after about a 50 ms delay caused by CR1000 and R1000, which couples the output of U820. Changing the storage mode initiates an erase cycle, with the 50 ms delay being necessary to ensure that the storage mesh is in the proper electrical condition for non-store operation.

STORAGE ELEMENT SUPPLIES

The storage element supply circuits provide operating and control voltages for the storage and flood-gun crt elements.

FLOOD-GUN CATHODE. Q990 and Q996 form a clamped switching circuit whose control signals were described earlier. When Q996 is on, the flood-gun cathode is held at +15 V and cathode current flows. With Q996 off, the flood-gun cathode is positive with respect to the flood-gun anode, and no cathode current flows.

FLOOD-GUN ANODE. Q1010 forms a shunt regulator whose output voltage is set by R1014 and R1012 to about +35 V. During an erase cycle, the flood-gun anode voltage is raised by the added current supplied by R1018. Normally, the additional R1018 current is supplied to pin 1 of U850, however, when the output (pin 1) of U850 goes low for the duration of the erase cycle, CR1018 turns off, CR81016 turns on and the current is supplied to Q1010 base.

CE1-2. Q1036 forms a shunt regulator, with R1034, R1032 and R1030, with CE1-2 control setting the output voltage. When the 605 is changed from store to non-store mode, Q0126 is turned on, switching to ground the additional current from the base of Q1036 through R1026. This raises the collimation electrode voltage.

COLLECTOR MESH AND CE3. Emitter follower Q1050 and divider resistors R1054 and R1052 set the collector mesh element voltage to about +100 V. Voltage divider resistors R1040 and R1045, with CE3 control provides an adjustable voltage for the collimation electrode.

STORAGE MESH. Q1060 and Q1066 make up a shunt regulated supply. The output dc level of the supply is set by R970, OPERATE LEVEL and R965, Level Adj. controls.

In addition to the input signals mentioned earlier that modulate the supply during erase cycle and variable persistence modes of operation, an additional input in the form of a modified ramp is made to the summing point (base of Q1060). The modified ramp provides more consistent storage performance and is supplied from the relaxation oscillator Q872-Q876.

ERASE GENERATOR

The Erase Generator consists of three timing circuits, the outputs of which are summed together to form composite erase pulse T1 in Fig. A. The 50 ms, approximately 120 V pulse T1 is derived from monostable multivibrator U1. At the end of T1, T2 (Fig. A), which is formed by rc network R838-C840 and switching transistor Q835, returns the storage mesh to 0 V for approximately 10 ms. T3 (Fig. A), which is initiated at the start of T1, maintains control over the storage mesh after T1 and T2 have passed and sets the storage mesh prep level for the

THEORY OF OPERATION DIAGRAM 6 & 7

STORAGE CIRCUIT

remainder of the erase cycle. T1, T2 and T3 signals control diode gates CR952, CR954 and CR956, which in turn supply the control currents to the summing point at the base of Q1060. Q1060 and Q1066 form an operational amplifier that is used as a current-to-voltage conversion amplifier to control the storage mesh.

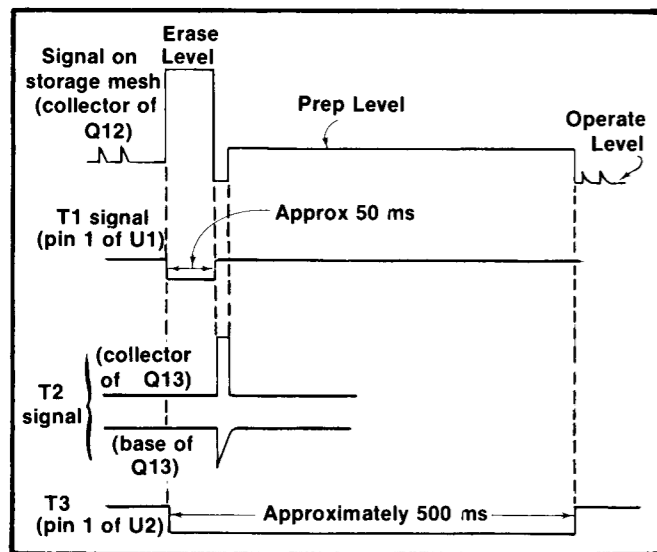


Fig. A. Idealized waveform ladder showing the outputs of the Erase Generator.

Pin 6 of U85D drives U810A, the output of which becomes the Erase Interval Out signal. The output from U810A is also used as a lockout signal for U820 and U895 when the 605 is used in the variable persistence mode of operation. U895 generates variable width pulses to control the storage mesh persistence.

VARIABLE PERSISTENCE PULSE GENERATOR

Q872 and Q876 are connected as a relaxation oscillator that generates sharp positive pulses, see Fig. B, at a 100 Hz rate. The timing components for the relaxation oscillator are R875 and C886. The sharp positive pulses from the emitter of Q876 are used to trigger monostable multivibrator U895. The on time of U895 is controlled by C895, R892, R894 and R895 PERSISTENCE/SAVE TIME

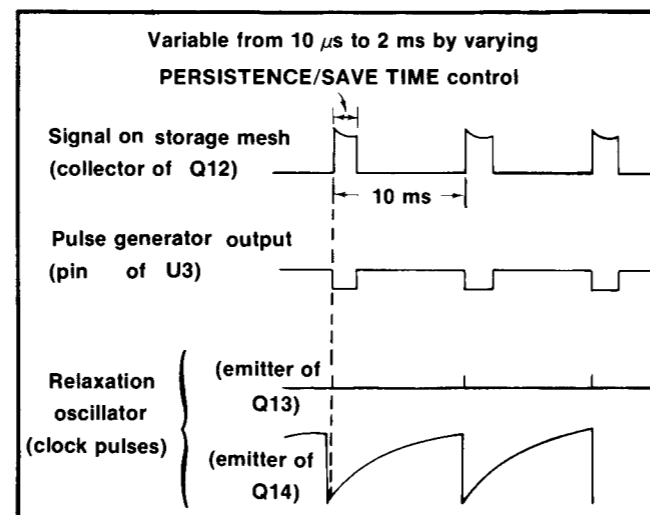


Fig. B. Idealized waveform ladder showing the output and internal clock pulses of the Variable Persistence Pulse Generator.

control. The output of U895 controls diode gate CR6, which subtracts current from the summing point at the base of Q1060m thus causing the U895 output to modulate the storage mesh. The amount of current to be subtracted is set by R975 Pulse Height control.

Turning the PERSISTENCE/SAVE TIME control fully counterclockwise (maximum persistence position) closes S895, grounding the output of the relaxation oscillator through R882, thereby preventing U895 from being triggered.

Pulling the PULL TO SAVE knob causes the output of U895 to be steered to the flood-gun cathode. This is accomplished by using the output of U810D. With the output of U895 modulating the flood-gun cathode current instead of the storage mesh, the stored image can now be observed, without complete loss of the save feature by adjusting the PERSISTENCE/SAVE TIME control. The maximum average flood-gun cathode current corresponds to the fully clockwise position (minimum per-

sistence) of the PERSISTENCE/SAVE TIME control. When the PERSISTENCE/SAVE TIME control is fully counterclockwise, U895 is not triggered and the flood-gun cathode current is zero resulting in maximum save time. During the time U895 is not triggered (PERSISTENCE/SAVE TIME control fully counterclockwise), the flood-gun cathode sets positive with respect to the flood-gun anode level, which is approximately +35 V, and no flood-gun cathode current flows (Q996 is turned off).

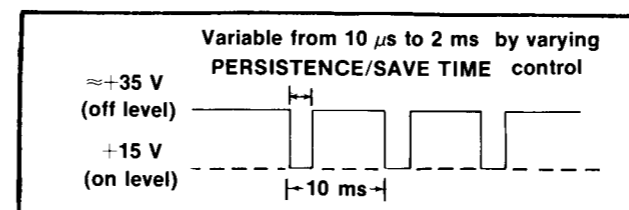


Fig. C. Waveform on flood-gun cathode when 605 is in save mode.

The collimation bands (electrodes) are used as a lens that uniformly distributes flood-gun electrons over the storage target area. In the non-store mode, the collimation bands have no control over the crt.

Switching from the non-store mode to the store mode is done by either pushing the front-panel STORE pushbutton, or by applying a TTL low level to pin 6 of J20. When changing modes from non-storage to storage operation, an erase cycle is generated automatically.

NOTE

While the presence of the modified ramp produces more consistent performance over the entire storage area at lower writing speed requirements, some improvement of image contrast, under specific conditions, may result if the waveform is not present. Jumper 988 disconnects the waveform from the storage mesh circuit.

INPUT-OUTPUT GATES

U810A, U810C and U810B provide inputs and outputs for remote programming of the 605. R802-R808-R852-R853-R912-R906, and CR802-CR852-CR853-CR910-CR912 provide limited protection against accidental line transients as an additional voltage drop is introduced. A

low logic level of ≤ 0.52 V is required for reliable operation. Since nearly all TTL outputs specify a 0.4 V maximum for the low logic level, the 605 gates are compatible with most TTL logic systems.

NOTE

If low logic levels of ≤ 0.8 V are required, the current limiting resistors may be replaced with jumpers. However, since the diodes will no longer have any current limiting, transient protection will be severely reduced.

ERASE INITIATE CIRCUIT

The output of U810B is used to trigger U820 to initiate an erase cycle. If the front-panel ERASE pushbutton is held depressed longer than one erase cycle, the erase cycle will repeat, therefore, this is a way to achieve multiple erase cycles to clear a crt of such problems as residual images.

When an erase cycle is initiated pin 1 of U850 goes negative causing C890 to discharge through CR890. When pin 1 of U850 returns positive, at the end of the erase cycle, C890 momentarily pulls pin 6 of U810B positive, then recharges negative because of the current in R870. As the U810B pin 6 input swings to its low level, the output of U810B pin 4 goes high again triggering U820. This cycle will repeat as long as the front-panel ERASE pushbutton is depressed. Multiple erase cycles cannot be obtained when using the remote erase feature.

Q810 along with C814 and C810 form a circuit to initiate an erase cycle whenever the 605 storage mode is changed, that is, from store to non-store or vice versa. Switching to the non-store mode causes pin 10 of U810C to go high, turning on Q810, which in turn pulls pin 6 of U810B low through C810, thereby initiating an erase cycle. Also, pin 3 of U820 is pulled high through CR812 by pin 10 of U810C to disable U820 and prevent unwanted erase cycles. If the mode is changed to store, pin 10 of U810C goes low, pulling pin 6 of U820 low through CR814 and C814. C814 is large enough so that pin 4 of U820 has time to drop and enable U820 before the erase initiation pulse has disappeared.

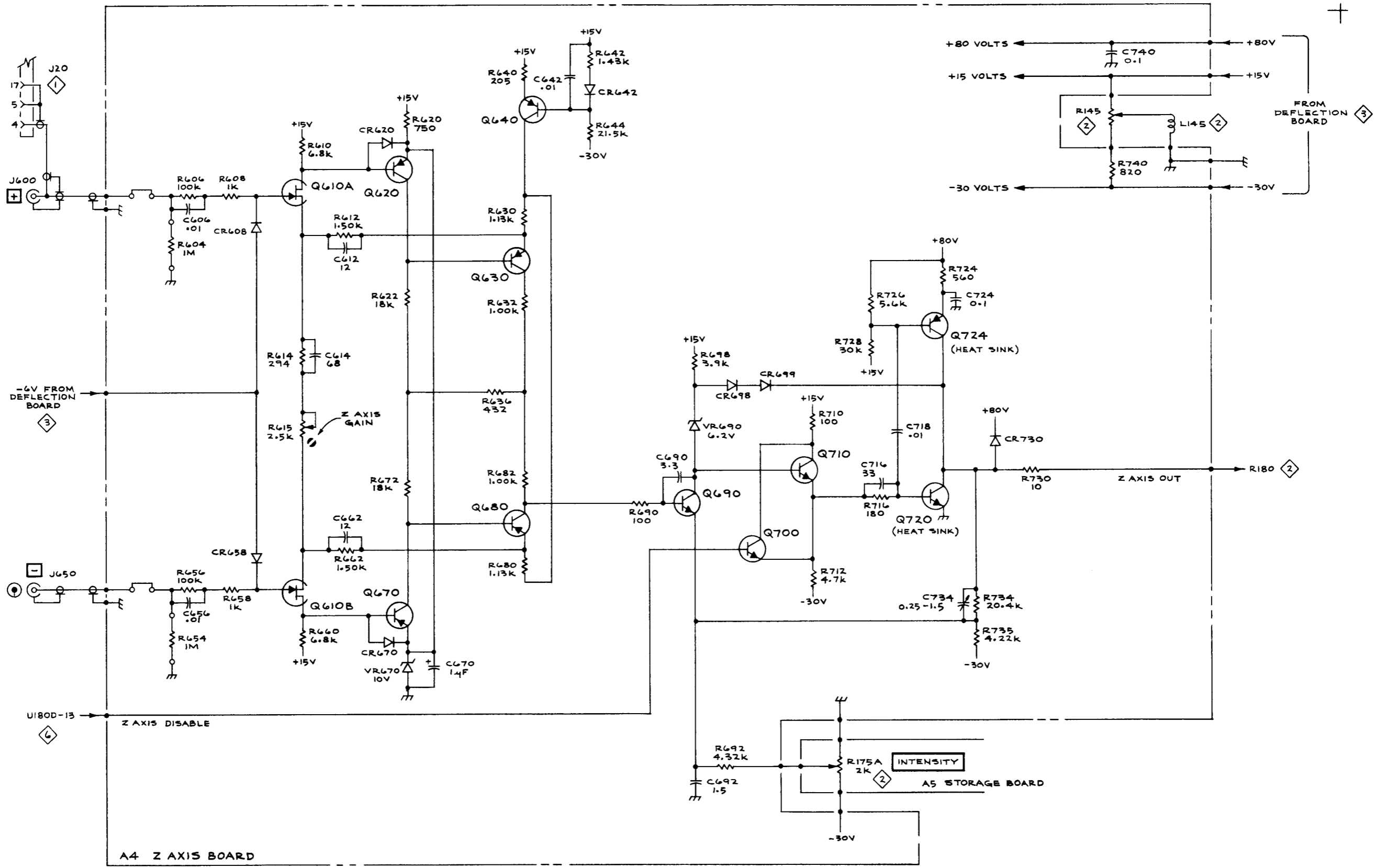
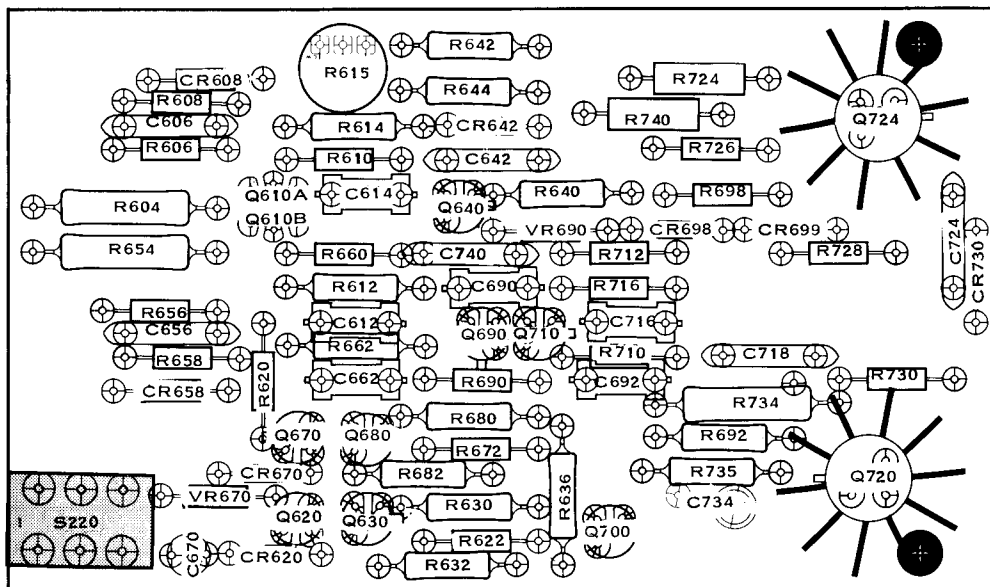


DIAGRAM AND PARTS LOCATION GRID

PARTS LOCATION GRID

Z AXIS AMP



AREA INDICATES OPTION 4

| CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC |
|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|
| C606 | B1 | CR608 | B1 | Q610 | B2 | R604 | A2 | R636 | D3 | R682 | C3 | R735 | E3 |
| C612 | C3 | CR620 | B4 | Q620 | B4 | R606 | B2 | R640 | D2 | R690 | C3 | R740 | D2 |
| C614 | C2 | CR642 | C2 | Q630 | C4 | R608 | B1 | R642 | C1 | R692 | E3 | | |
| C642 | C2 | CR658 | B3 | Q640 | C2 | R610 | C2 | R644 | C1 | R698 | E2 | VR670 | B3 |
| C656 | B3 | CR670 | B3 | Q670 | B3 | R612 | C2 | R654 | A2 | R710 | D3 | VR690 | D2 |
| C662 | C3 | CR698 | D2 | Q680 | C3 | R614 | C2 | R656 | B3 | R712 | D2 | | |
| C670 | B4 | CR699 | E2 | Q690 | C3 | R615 | C1 | R658 | B3 | R716 | D2 | | |
| C690 | C2 | CR730 | F2 | Q700 | D4 | R620 | B3 | R660 | C2 | R724 | D1 | | |
| C692 | D3 | | | Q710 | D3 | R622 | C4 | R662 | C3 | R726 | E2 | | |
| C716 | D3 | | | Q720 | E3 | R630 | C3 | R672 | C3 | R728 | E2 | | |
| C718 | E3 | | | Q724 | E2 | R632 | C4 | R680 | C3 | R734 | E3 | | |
| C724 | F2 | | | | | | | | | | | | |
| C734 | D3 | | | | | | | | | | | | |
| C740 | C2 | | | | | | | | | | | | |

ADJUSTMENTS 6 & 7 STORAGE CIRCUIT

WARNING

Dangerous potentials exist at several points throughout this instrument. When the instrument is operated with the covers removed, do not touch exposed connections or components.

Disconnect power before cleaning the instrument or replacing parts.

EQUIPMENT REQUIRED

1. Test oscilloscope with compatible 1X probe, to monitor test signals and to provide a sweep-generating signal. Bandwidth, dc to 2 MHz (to 8 MHz for checking Z-axis bandwidth); deflection factor, 0.2 to 5 volts/div with 2% accuracy; sweep rates, 0.5 ms and 20 μ s/div (0.2 μ s/div for checking Z-axis circuit). For example, a 5403/D40 Oscilloscope with 5A48 Dual Trace Ampl and 5B42 Delaying Time Base plug-ins.

2. 10X Probe. For example, a Tektronix P6065 Probe or any probe compatible with the vertical input of the test oscilloscope.

PRELIMINARY PROCEDURE

NOTE

The performance of this instrument can be checked at any temperature within the 0° C to +59° C range. Make any adjustment at a temperature of +25° C, \pm 5% C.

a. Check that the correct nominal line-selector block (120 VAC or 220 VAC) has been installed on the line selector pins and that the regulating range selected includes the input line voltage, see Installation section.

b. Remove any input signals from the 605.

c. Remove the outside cabinet panels to gain access to internal controls and test points.

d. Connect the Monitor to the line voltage source and apply power.

e. Set the following controls:

| | |
|--|--------------------------------|
| Internal attenuator slide switches (Deflection Amplifier board) | 1:1 (up position) |
| XY-YT (Deflection Amplifier board and Z Axis board in Option 4 instruments only) | XY (down and to left position) |
| POWER | PULL ON (knob pulled out) |
| PULL TO SAVE | Knob pushed in |
| PERSISTENCE/SAVE TIME | Fully ccw |
| STORE | Store (button in) |
| INTENSITY | As is |
| FOCUS | Midrange |
| OPERATE LEVEL | Fully cw |
| Vertical Position | Midrange |
| Horizontal Position | Midrange |

1. CE1-2 and CE3, R1030 and R1045.

Adjust R1030, CE1-2 and R1045 CE3 alternately until the brightened storage area does not have any shadowed corners or scallops.

2. OPERATE LEVEL, Prep Level and Level Adj R970, R835 and R965

Connect a 10X probe from a test oscilloscope to the operate level test point. Set the oscilloscope controls for a dc-coupled vertical deflection of 10 V/div and a free-running sweep with a 0.1 ms/div sweep rate.

Note the dc level of the operate level, then hold the ERASE Pushbutton in and observe the prep level. The prep level is the level the test oscilloscope remains at during most of the erase cycle. Adjust R835, Prep Level until the prep level observed on the test oscilloscope is the same as the operate level. Release the ERASE pushbutton after adjustment.

Adjust R965, Level Adjust ccw until the noted test oscilloscope operate level is lowered by five volts. Push the ERASE pushbutton and check for a clean erase. (Crt brightness should be significantly lower than it was and there should not be any large bright areas.) If a clean erase is not obtained, lower the prep level to the present operate

level and repeat this paragraph until a clean erase is obtained.

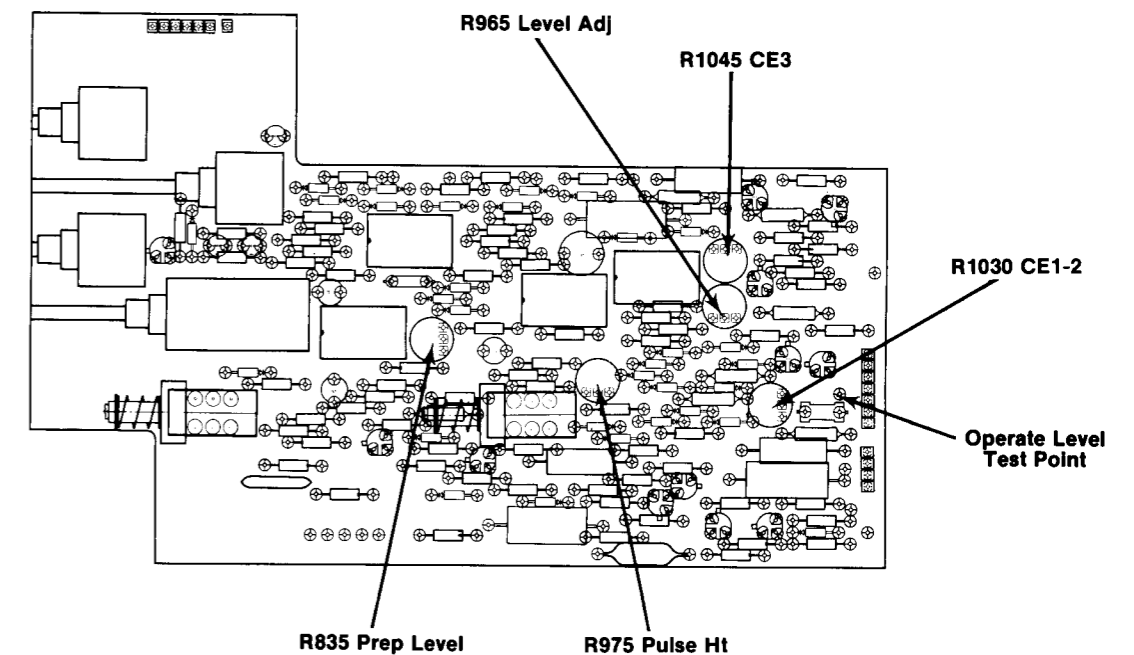
After a clean erase is obtained, adjust R835, Prep Level ccw in small increments, pushing the ERASE pushbutton after each incremental change, until a slight glow remains after the erase cycle.

3. Pulse Ht, R975

With the test oscilloscope still connected as in step 2, turn the PERSISTENCE/SAVE TIME control cw until a waveform is displayed on the test oscilloscope.

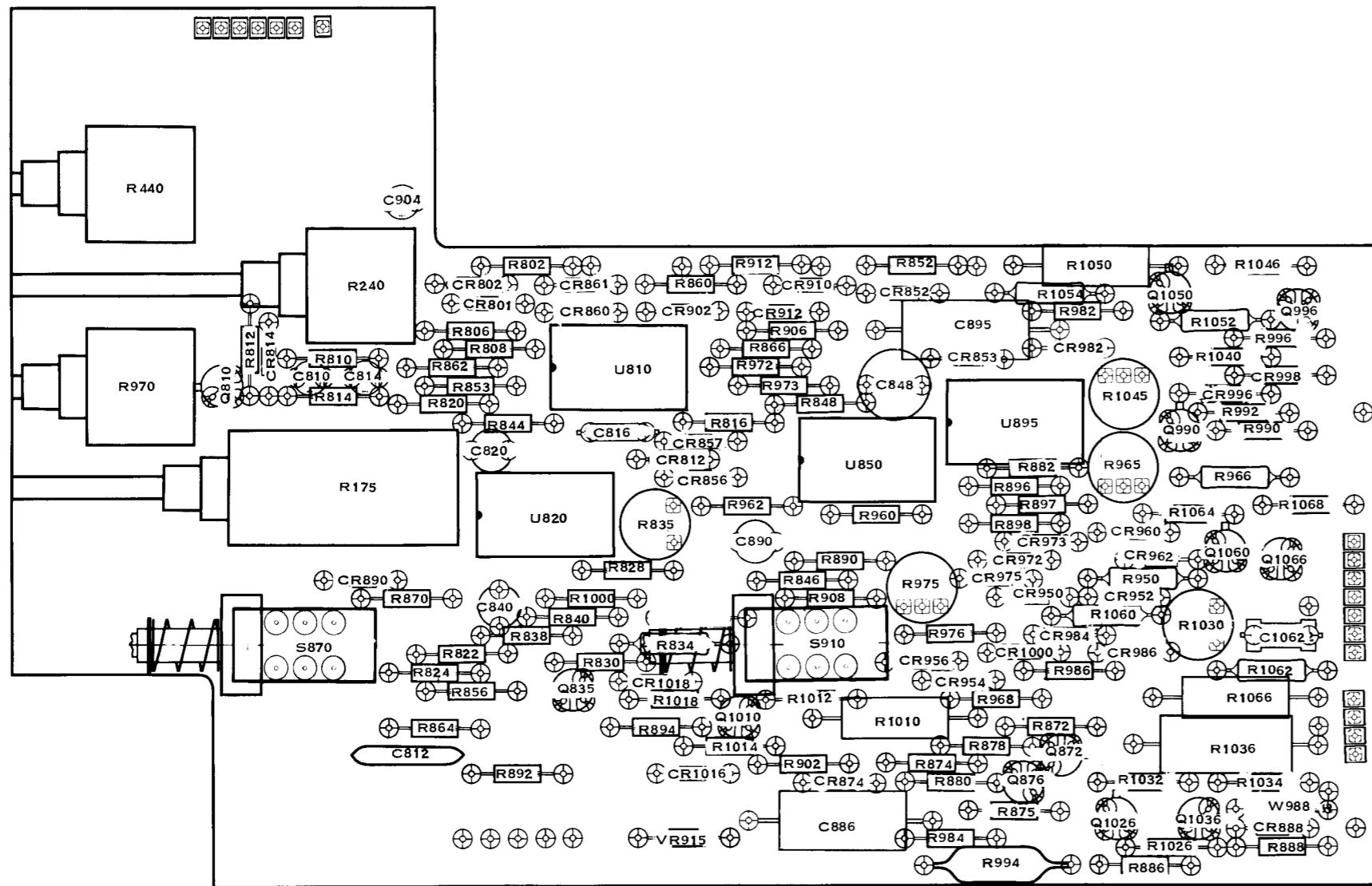
Adjust R975 Pulse Ht until the top of the waveform is one volt above the prep level on the oscilloscope. The ERASE pushbutton will have to be pushed to observe the prep level.

Disconnect the test oscilloscope and 10X probe.

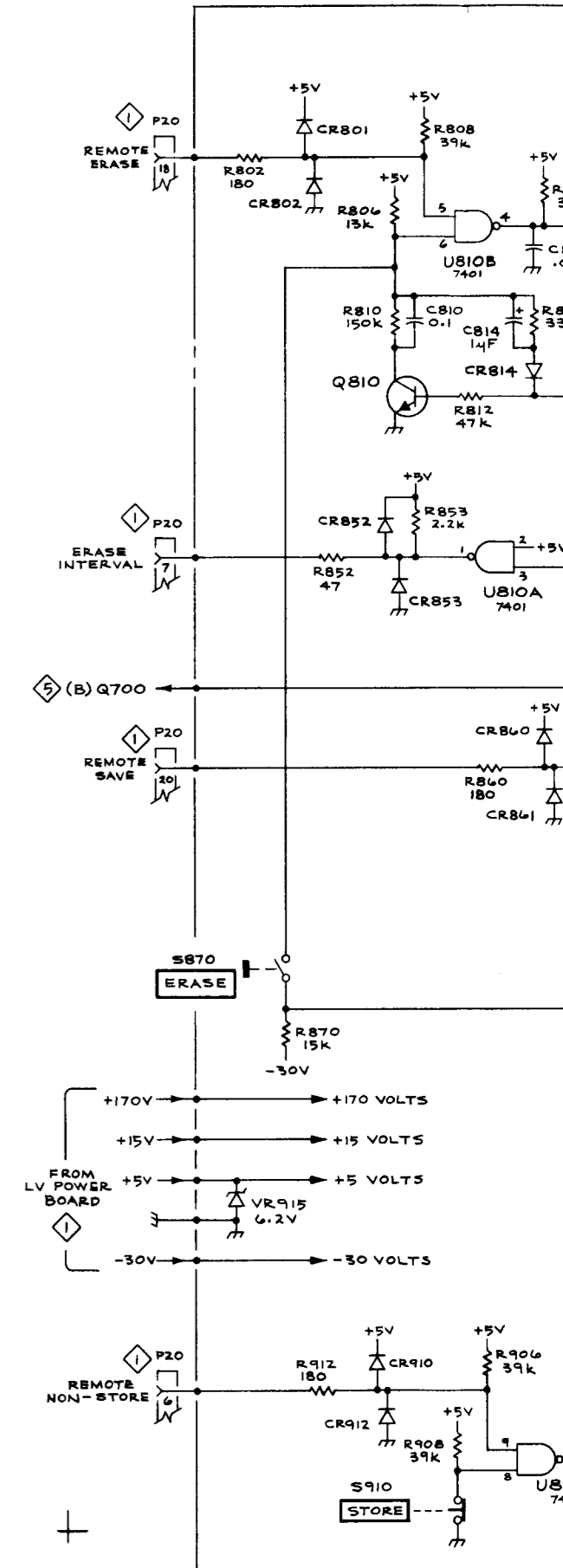


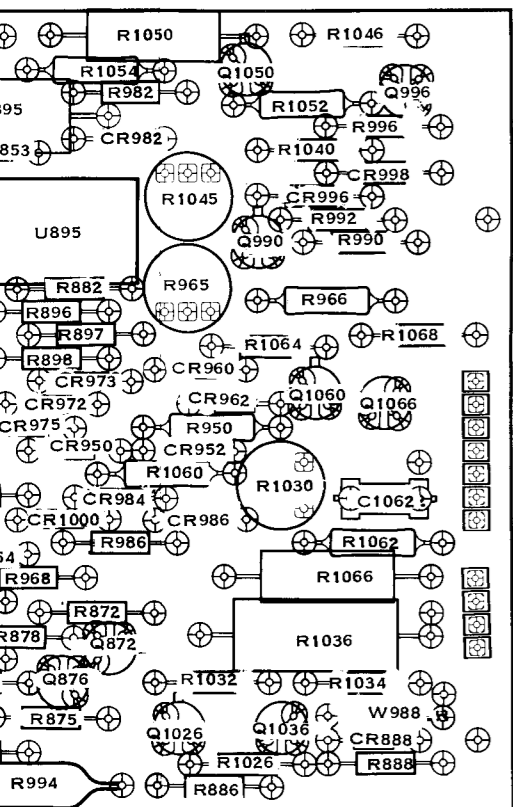
PARTS LOCATION GRID

STORAGE BD



| CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | | |
|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|-------|----|
| C810 | C3 | CR801 | D2 | CR890 | C4 | CR973 | G4 | Q835 | D5 | R175 | C4 | R828 | E4 | R860 | E2 | R888 | I6 | R960 | F4 | R986 | G5 | R1032 | H6 | R1066 | H5 |
| C812 | C5 | CR802 | D2 | CR902 | E3 | CR975 | G4 | Q872 | G5 | R240 | C2 | R830 | D5 | R862 | C3 | R890 | F4 | R962 | E4 | R990 | I3 | R1034 | I6 | R1068 | I4 |
| C814 | C3 | CR812 | E4 | CR910 | F2 | CR982 | G3 | Q876 | G6 | R802 | D2 | R834 | E5 | R864 | C5 | R892 | D6 | R965 | H4 | R992 | I3 | R1036 | H5 | | |
| C816 | D3 | CR814 | B3 | CR912 | F3 | CR984 | G5 | Q890 | H3 | R806 | D3 | R835 | E4 | R866 | E3 | R894 | E5 | R966 | H4 | R994 | G6 | R1040 | H3 | S870 | B5 |
| C820 | D3 | CR852 | F2 | CR950 | G4 | CR986 | H5 | Q990 | H3 | R808 | D3 | R838 | D5 | R870 | C4 | R896 | G4 | R968 | G5 | R996 | I3 | R1045 | H3 | S910 | F5 |
| C840 | D4 | CR853 | G3 | CR952 | H4 | CR996 | H3 | Q996 | I3 | R810 | C3 | R840 | D5 | R872 | G5 | R897 | G4 | R970 | A3 | R1000 | D4 | R1046 | I2 | | |
| C848 | F3 | CR856 | E4 | CR954 | G5 | CR998 | I3 | Q1010 | E5 | R812 | B3 | R844 | D3 | R874 | F5 | R898 | G4 | R972 | E3 | R1010 | F5 | R1050 | G2 | U810 | D3 |
| C886 | F6 | CR857 | E3 | CR956 | F5 | CR1000 | G5 | Q1026 | H6 | R814 | C3 | R846 | F4 | R875 | G6 | R902 | F5 | R973 | F3 | R1012 | F5 | R1052 | H3 | U820 | D4 |
| C890 | E4 | CR860 | D3 | CR960 | H4 | CR1016 | E6 | Q1036 | H6 | R816 | E3 | R848 | F3 | R878 | G5 | R906 | F3 | R975 | F4 | R1014 | E5 | R1054 | G2 | U850 | F4 |
| C895 | G3 | CR861 | D2 | CR962 | H4 | CR1018 | E5 | Q1050 | H2 | R820 | C3 | R852 | F2 | R880 | G6 | R908 | F4 | R976 | G5 | R1018 | E5 | R1056 | H5 | U895 | G3 |
| C904 | C2 | CR874 | F6 | CR968 | G5 | | | Q1060 | H4 | R822 | C5 | R853 | D3 | R882 | G4 | R912 | E2 | R982 | G3 | R1026 | H6 | R1062 | I5 | | |
| C1062 | I5 | CR888 | I6 | CR972 | G4 | Q810 | B3 | Q1066 | I4 | R824 | C5 | R856 | C5 | R886 | H6 | R950 | H4 | R984 | G6 | R1030 | H5 | R1064 | H4 | VR915 | E6 |





| ID | CKT | GRID | CKT | GRID | CKT | GRID | CKT | GRID | CKT | GRID |
|----|------|------|------|------|-------|------|-------|------|-------|------|
| C | NO | LOC | NO | LOC | NO | LOC | NO | LOC | NO | LOC |
| | R888 | I6 | R960 | F4 | R986 | G5 | R1032 | H6 | R1066 | H5 |
| | R890 | F4 | R962 | E4 | R990 | I3 | R1034 | I6 | R1068 | I4 |
| | R892 | D6 | R965 | H4 | R992 | I3 | R1036 | H5 | | |
| | R894 | E5 | R966 | H4 | R994 | G6 | R1040 | H3 | S870 | B5 |
| | R896 | G4 | R968 | G5 | R996 | I3 | R1045 | H3 | S910 | F5 |
| | R897 | G4 | R970 | A3 | R1000 | D4 | R1046 | I2 | | |
| | R898 | G4 | R972 | E3 | R1010 | F5 | R1050 | G2 | U810 | D3 |
| | R902 | F5 | R973 | F3 | R1012 | F5 | R1052 | H3 | U820 | D4 |
| | R906 | F3 | R975 | F4 | R1014 | E5 | R1054 | G2 | U850 | F4 |
| | R908 | F4 | R976 | G5 | R1018 | E5 | R1060 | H5 | U895 | G3 |
| | R912 | E2 | R982 | G3 | R1026 | H6 | R1062 | I5 | | |
| | R950 | H4 | R984 | G6 | R1030 | H5 | R1064 | H4 | VR915 | E6 |

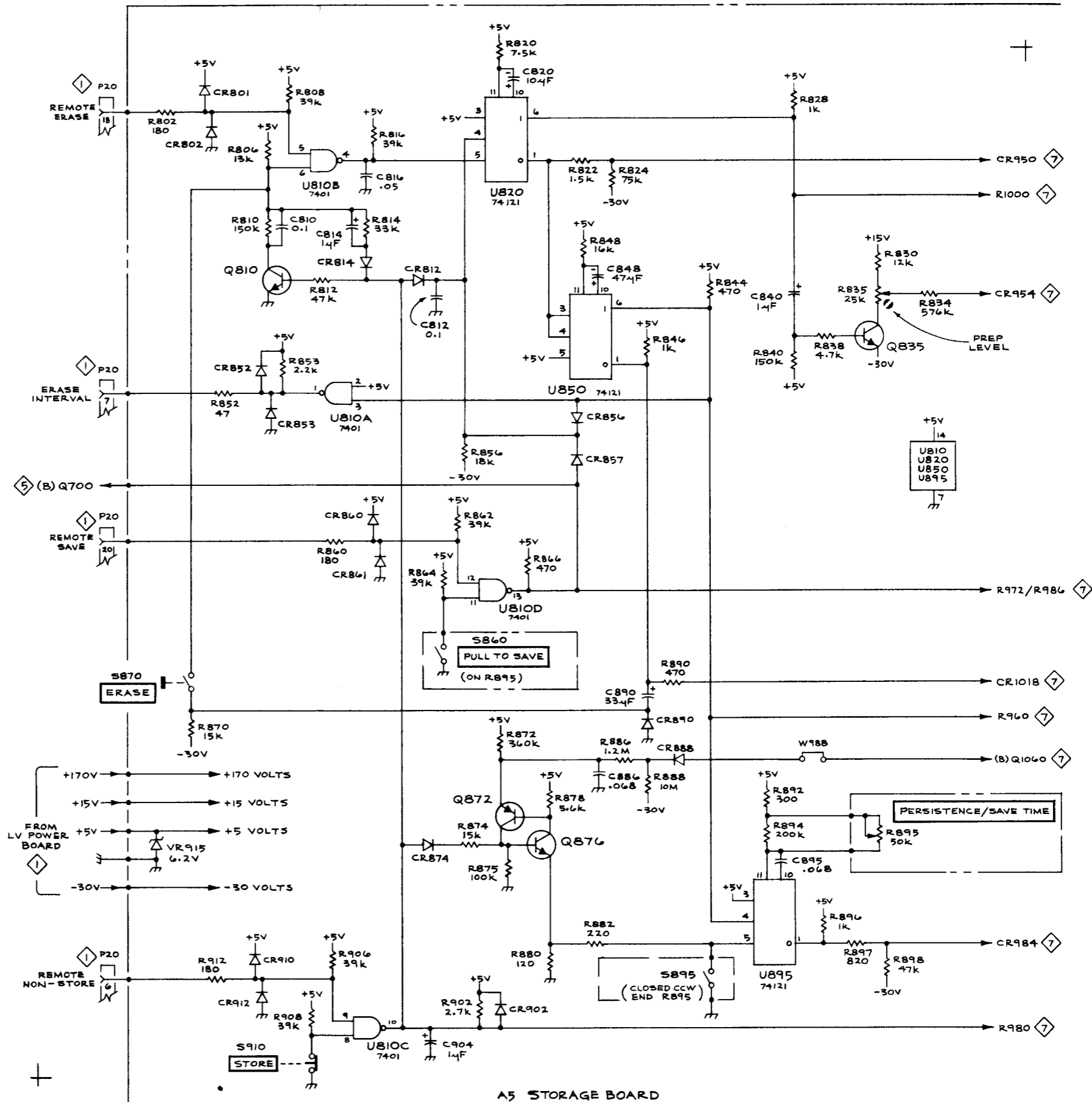


DIAGRAM AND PARTS LOCATION GRID

(S)

ADJUSTMENTS OPTION 4

| | |
|-------------------------|---------------------------|
| Norm Auto (Sweep board) | Auto (rear position) |
| POWER | PULL ON (knob pulled out) |
| PULL TO SAVE | Knob pushed in |
| PERSISTENCE/SAVE TIME | Fully ccw |
| STORE | Non-store (button out) |
| INTENSITY | As desired |
| FOCUS | As desired |
| OPERATE LEVEL | As is |
| Vertical Position | Midrange |
| Horizontal Position | Midrange |
| SEC/DIV | 1 μ |
| VARIABLE | Fully cw |

Adjust R1115, Sweep Length, so the sweep is about 10.5 divisions in length. Check the sweep timing over middle eight divisions. The distance between the second and tenth markers must be 8 divisions, ± 0.24 division ($\pm 3\%$); if not adjust R1165, Sweep Cal, so the second and tenth markers are exactly 8 divisions apart.

Check the timing accuracy of the other five positions of the SEC/DIV switch using time markers that correspond to each switch position. Accuracy is $\pm 3\%$. Disconnect all test equipment.

NOTE

When changing from Sweep operation to XY operation, it is necessary to set the XY-YT switches S220 and S735 to the XY position. S220 is located on the Deflection Amplifier board, while S735 is located on the Z Axis board.

Apply a 2-megahertz signal from the sine-wave generator to the +Y INPUT. Adjust the sine-wave generator for 0.5 division of vertical deflection. Check that a stable display can be obtained by rotating the TRIG SLOPE/LEVEL control. Disconnect the sine-wave generator. Set the SEC/DIV switch to 1 m, and VARIABLE screwdriver control fully clockwise.

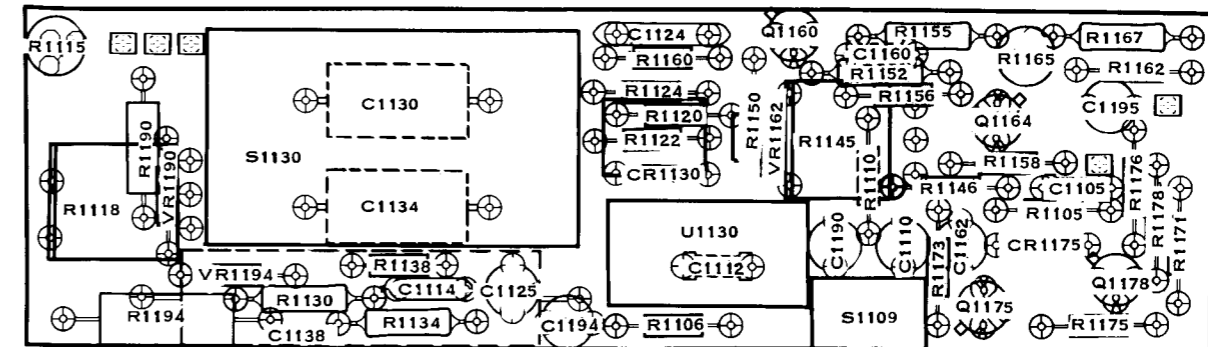
Apply one-millisecond markers from the time-mark generator via a coaxial cable and 50 Ω termination to the +Y INPUT. The displayed time markers should be between 2 and 6 divisions in amplitude; use attenuators if necessary. Position the first marker to the left edge of the graticule. Check for one 1 ms marker per major graticule division.

ADJUST AND CHECK OPTION 4 SWEEP GENERATOR

NOTE

If sweep is disconnected, reconnect by reversing order of the disconnect procedure outlined in the note under Preliminary Procedure on the Adjustments pull-out pages.

Set the internal XY-YT switch on the Deflection Amplifier board to the YT (up) position and the Z Axis board XY-YT switch to its YT (right) position. Set the Norm-Auto switch on the Sweep board to Auto (rear position). Set the front-panel SEC/DIV switch to 1 μ .



| CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC | CKT NO | GRID LOC |
|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|
| C1105 | F2 | CR1130 | D2 | R1120 | D1 | R1158 | F1 | S1109 | E2 |
| C1110 | E2 | CR1175 | F2 | R1122 | D1 | R1160 | D1 | S1130 | B1 |
| C1112 | D2 | | | R1124 | D1 | R1162 | G1 | | |
| C1114 | C2 | Q1160 | E1 | R1130 | B2 | R1165 | F1 | | |
| C1124 | D1 | Q1164 | F1 | R1134 | C2 | R1167 | F1 | U1130 | D2 |
| C1125 | C2 | Q1175 | F2 | R1138 | C2 | R1171 | G2 | | |
| C1130 | C1 | Q1178 | F2 | R1145 | E1 | R1173 | F2 | | |
| C1134 | C2 | | | R1146 | F2 | R1175 | F2 | VR1130 | D2 |
| C1138 | B2 | | | R1150 | E1 | R1176 | G2 | VR1162 | E1 |
| C1160 | E1 | R1105 | F2 | R1152 | E1 | R1178 | G2 | VR1190 | B2 |
| C1162 | F2 | R1106 | D2 | R1155 | E1 | R1190 | A1 | VR1194 | B2 |
| C1190 | E2 | R1110 | E2 | R1156 | E1 | | | | |
| C1194 | D2 | R1115 | A1 | | | | | | |
| C1195 | F1 | R1118 | A2 | | | | | | |

Adjustment is generally required after a repair has been made, or after long time intervals in which normal aging of components may affect instrument accuracy.

Before complete calibration, thoroughly clean and inspect this instrument as outlined in the Service Information section of this manual. The Service Information section also contains information for general maintenance of this instrument, including preventive maintenance, component identification and replacement, etc.

SERVICES AVAILABLE

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

WARNING

Dangerous potentials exist at several points throughout this instrument. When the instrument is operated with the covers removed, do not touch exposed connections or components. Disconnect power before cleaning the instrument or replacing parts.

EQUIPMENT REQUIRED

1. Leveled sine-wave generator. Frequency 350 kHz to above 5 MHz; reference frequency, 50 kHz; output amplitude, from about 0.5 volt to about 5 volts, within 3% as frequency is varied. For example, an SG 503 Leveled Sine Wave Generator (operates in a TM 500-Series Power Module) or any time-mark generator meeting the requirements may be used

2. Time-mark generator (for checking optional sweep timing). Marker outputs, 1 μ s to 0.1 s; marker accuracy, within 0.1%. For example, a TG 501 Time Mark Generator (operates in a TM 500-Series Power Module) or any time-mark generator meeting the requirements may be used.

3. Coaxial cable. Impedance, 50 Ω ; length, 42 inches; connectors, BNC. Tektronix Part No. 012-0057-01.

4. In line termination. Impedance, 50 Ω ; accuracy, $\pm 2\%$; connectors, BNC. Tektronix Part No. 011-0049-01.

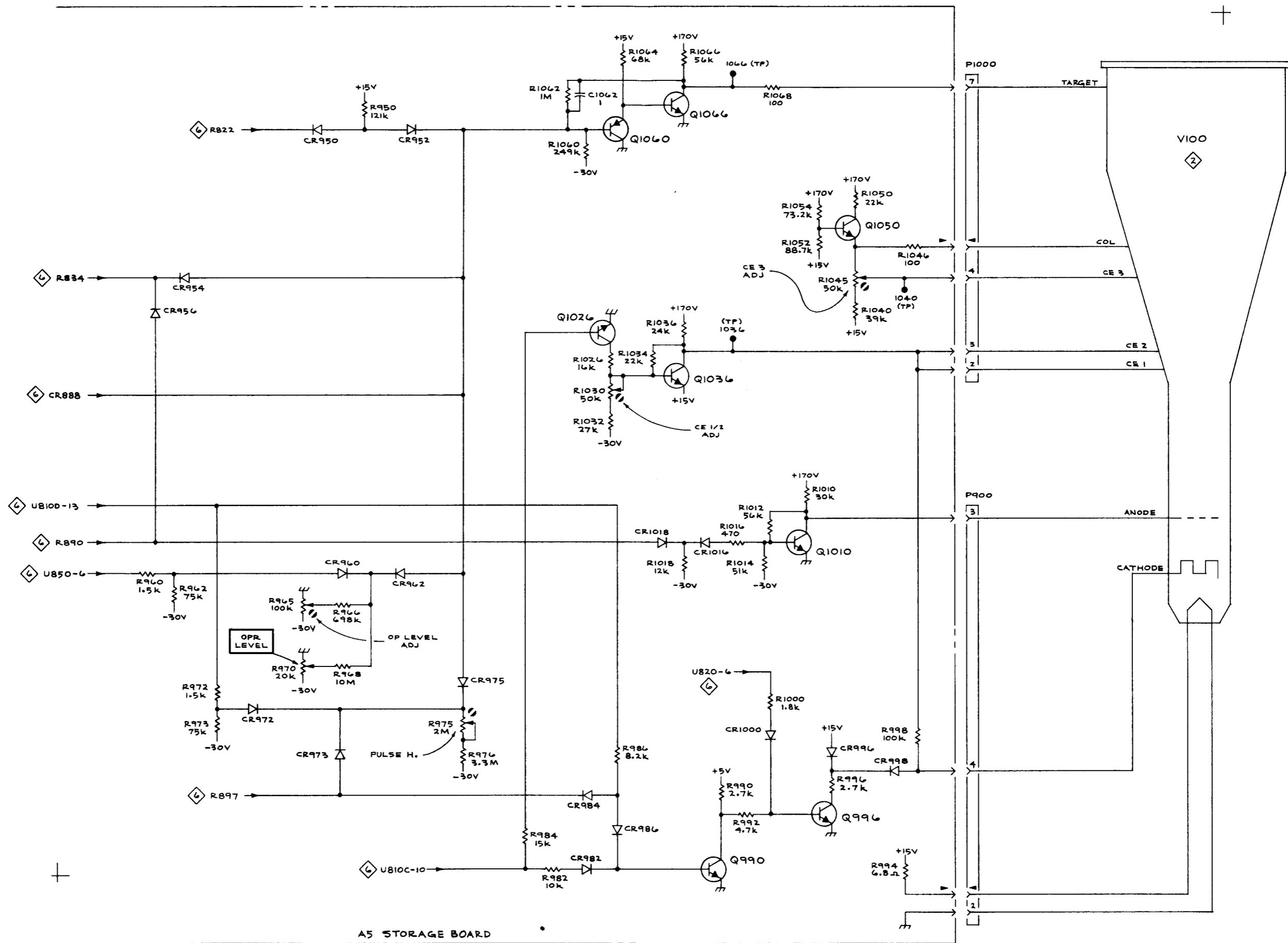
PRELIMINARY PROCEDURE

NOTE

The performance of this instrument can be checked at any temperature within the 0° C to +50° C range. Make any adjustment at a temperature of +25° C $\pm 5^\circ$ C.

- a. Check that the correct nominal line-selector block (110 VAC or 220 VAC) has been installed on the line selector pins and that the regulating range selected includes the input line voltage, see Installation section.
- b. Check that the crt screen (display area) has an 8 x 10 division scribed graticule; install one if necessary.
- c. Remove the outside cabinet panels to gain access to internal controls and test points.
- d. Connect the Monitor to the line voltage source and apply power.
- e. Set the following controls:

| | |
|---|--------------------------------|
| Internal attenuator slide switches (Deflection Amplifier board) | 1:1 (up position) |
| XY-YT (Deflection Amplifier board and Z Axis board) | YT (up and far right position) |



THEORY OF OPERATION OPTION 4

The Sweep Generator circuit produces a positive-going sawtooth voltage that is amplified by the horizontal Deflection Amplifier to provide sweep deflection in the crt. Six sweep rates are provided, 0.1 s through 1 μ s in decade steps. A negative-going gate is produced at the same time the sawtooth is being produced to unblank the crt.

The Sweep Generator circuit is a Tektronix integrated circuit, U1130, and its associated discrete circuit components. The active circuits in the IC include the trigger generator, the sweep-gating circuit, and an operational amplifier to form the basis of a miller integrator. Power is applied to pins 7 and 12 to establish the operating levels within the device. An internal reference Zener provides 6.4 volts between pins 8 and 9 for operation of external controls; pin 8 provides a level two diode junctions above the negative level at pin 12.

The timing rc components are selected by SEC/DIV switch S1130, permitting one of six nominal sweep rates to be chosen. VARIABLE potentiometer R1145 provides an adjustment of the timing current to produce a continuously variable sweep rate.

SWEEP OUTPUT AMPLIFIER

Operational amplifier system Q1160-Q1164 provides amplification of the sweep sawtooth to a suitable amplitude to meet the sensitivity requirements of the Deflection Amplifier. R1165, Sweep Cal, permits calibrating the sweep to the crt graticule. The base of Q1160 is the null point, R1150 is the R_{in} element, and R1155 is the feedback element. A positive-going sawtooth is produced at the emitter of Q1164.

UNBLANKING GATE OUTPUT

The negative-going gate produced at pin 16 of U1130 is amplified by Q1175 and Q1178. The negative-going gate produced at the collector of Q1178 is applied to R735 in the crt grid circuit to turn on the crt during the sweep.

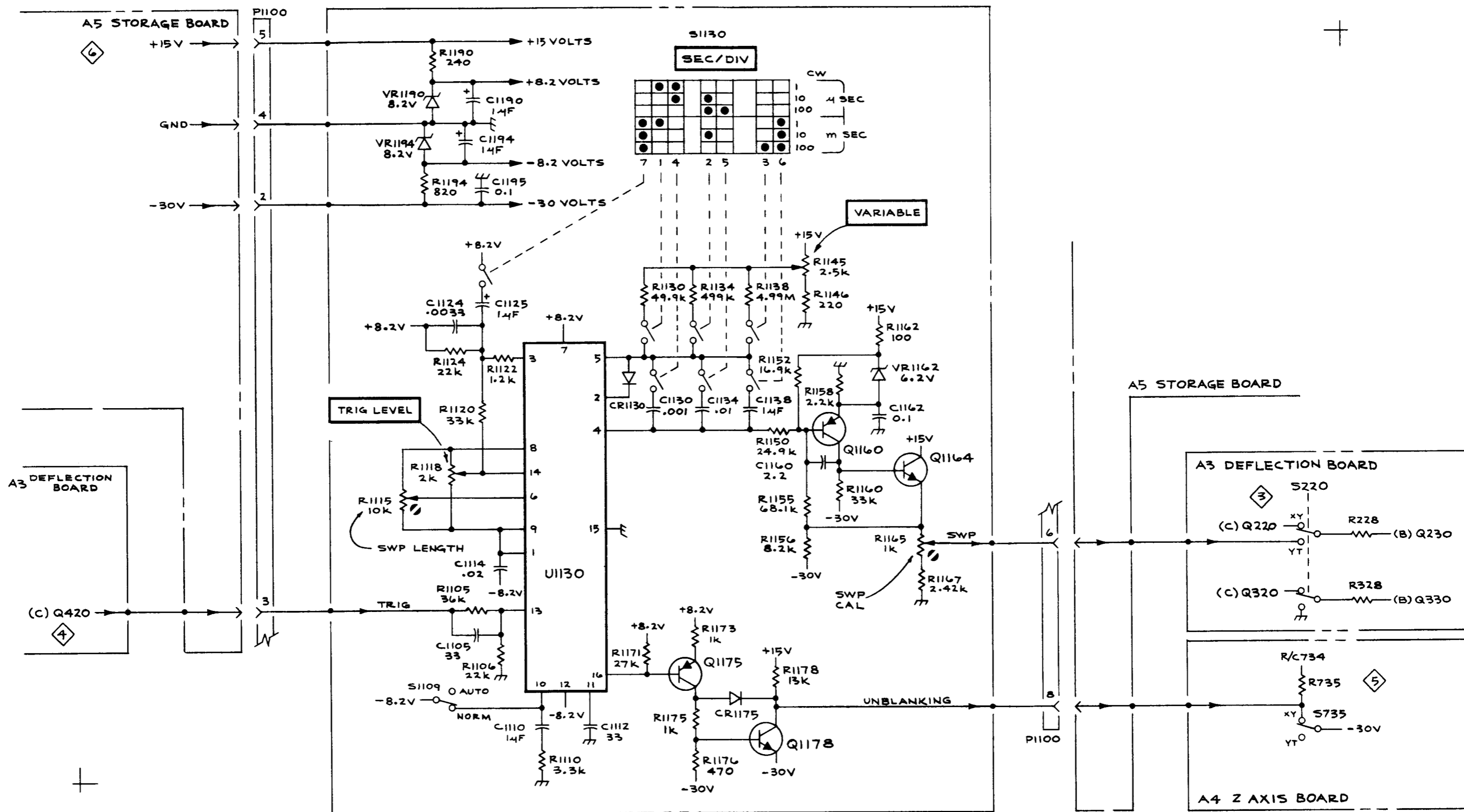
TRIGGER GENERATOR

Pins 10, 11, 13, and 14 are associated with the trigger generator portion of U1130. The triggering signal is applied to a field effect transistor (fet) input at pin 13. The TRIG SLOPE/LEVEL potentiometer R1118 at pin 14 controls the internal comparators that determine the level and slope at which the internal Schmitt multivibrator switches states, initiating a sweep trigger. Differentiating capacitor C1112 at pin 11 determines the trigger-pulse width.

For normal triggered operation, -8.2 volts is applied to pin 10 to hold the bright baseline auto circuit inactive. In this mode, when the triggering signal is lost, a sweep cannot be produced. When internal Auto-Norm switch S1109 is set to Auto, the -8.2 volts is disconnected to permit a free-running sweep, or bright baseline, to be produced. Pin 10 moves positive as C1110 charges, and this positive potential replaces the incoming triggering signal. A new sweep will be initiated immediately following the sweep holdoff time. However, in the auto mode, any incoming triggering signal will discharge C1110; if the signal is occurring at a rate greater than about 20 hertz, C1110 will be held below the auto-trigger level, permitting a triggered sweep to be produced.

SWEEP GATE AND MILLER INTEGRATOR

Pins 1, 2, 3, 4, 5, 6, and 16 are associated with the sweep generator portion of U1130. Upon receipt of a trigger from the trigger generator, the sweep gate turns on. While the gate is on, CR1130 is turned off by a high logic level at pin 2, allowing the current through external R_i components R1130-R1146 to be switched into the feedback timing capacitor C1130-C1138. Pin 5 is the operational amplifier null point, thus the nearly constant timing current charges the capacitor linearly, producing at pin 4 a linear, negative-going sawtooth voltage. When the sawtooth reaches a level determined by R1115, Sweep Length (pin 6), the sweep terminates. At this point, the sweep gate turns off, turning on CR1130 and quickly discharging the timing capacitor. A short-duration trigger-lockout period to allow the sweep generator to reset and stabilize is provided by C1124-C1125 at pin 3.



Electrical Parts List

| Ckt No. | Tektronix Part No. | Serial/Model No. | | Name & Description | Mfr Code | Mfr Part Number |
|--------------------|--------------------|------------------|--------|--|----------|-----------------|
| | | Eff | Dscont | | | |
| A6 | 670-2278-00 | | | CKT BOARD ASSY:SWEEP | 80009 | 670-2278-00 |
| C1105 | 281-0503-00 | | | CAP.,FXD,CER DI:8PF,+/-0.5PF,500V | 72982 | 301-000C0H0809D |
| C1110 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C1112 | 281-0629-00 | | | CAP.,FXD,CER DI:33PF,5%,600V | 71590 | TC233 |
| C1114 | 283-0004-00 | | | CAP.,FXD,CER DI:0.02UF,+80-20%,150V | 56289 | 55C21A7 |
| C1124 | 283-0041-00 | | | CAP.,FXD,CER DI:0.0033UF,5%,500V | 72982 | 841-000Z5D0332J |
| C1125 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C1130 | 295-0159-00 | | | CAP.SET,MTCHD:1.0UF,0.01UF,0.001UF MTCHD | 80009 | 295-0159-00 |
| C1134 | | | | | | |
| C1138 | | | | | | |
| C1160 | 281-0604-00 | | | CAP.,FXD,CER DI:2.2PF,+/-0.25PF,500V | 72982 | 301-000C0J0229C |
| C1162 | 290-0572-00 | | | CAP.,FXD,ELCTLT:0.1UF,20%,50V | 56289 | 196D104X0050HA1 |
| C1190 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C1194 | 290-0534-00 | | | CAP.,FXD,ELCTLT:1UF,20%,35V | 56289 | 196D105X0035HA1 |
| C1195 | 290-0572-00 | | | CAP.,FXD,ELCTLT:0.1UF,20%,50V | 56289 | 196D104X0050HA1 |
| CR1130 | 152-0141-02 | | | SEMICONV DEVICE:SILICON,30V,150MA | 07910 | CD8220 |
| CR1175 | 152-0141-02 | | | SEMICONV DEVICE:SILICON,30V,150MA | 07910 | CD8220 |
| Q1160 | 151-0342-00 | | | TRANSISTOR:SILICON,PNP | 07263 | 2N4249 |
| Q1164 | 151-0341-00 | | | TRANSISTOR:SILICON,NPN | 07263 | 2N3565 |
| Q1175 | 151-0342-00 | | | TRANSISTOR:SILICON,PNP | 07263 | 2N4249 |
| Q1178 | 151-0190-00 | | | TRANSISTOR:SILICON,NPN | 04713 | 2N3904 |
| R1105 | 315-0363-00 | | | RES.,FXD,COMP:36K OHM,5%,0.25W | 01121 | CB3635 |
| R1106 | 315-0223-00 | | | RES.,FXD,COMP:22K OHM,5%,0.25W | 01121 | CB2235 |
| R1110 | 316-0332-00 | | | RES.,FXD,COMP:3.3K OHM,10%,0.25W | 01121 | CB3321 |
| R1115 | 311-0607-00 | | | RES.,VAR,NONWIR:10K OHM,10%,0.50W | 80740 | 62-59-3 |
| R1118 | 311-0949-00 | | | RES.,VAR,NONWIR:2K OHM,10%,0.50W | 01121 | WA1G040S202UA |
| R1120 | 316-0333-00 | | | RES.,FXD,COMP:33K OHM,10%,0.25W | 01121 | CB3331 |
| R1122 | 316-0122-00 | | | RES.,FXD,COMP:1.2K OHM,10%,0.25W | 01121 | CB1221 |
| R1124 | 315-0223-00 | | | RES.,FXD,COMP:22K OHM,5%,0.25W | 01121 | CB2235 |
| R1130 | 321-0356-00 | | | RES.,FXD,FILM:49.9K OHM,1%,0.125W | 75042 | CEAT0-4992F |
| R1134 | 321-0452-00 | | | RES.,FXD,FILM:499K OHM,1%,0.125W | 75042 | CEAT0-4993F |
| R1138 | 307-0381-00 | | | RES.,FXD,FILM:4.99M OHM,1%,0.50W | 03888 | FL12-499D34 |
| R1145 | 311-0443-00 | | | RES.,VAR,NONWIR:2500 OHM,20%,0.75W | 11237 | 41330 |
| R1146 | 315-0221-00 | | | RES.,FXD,COMP:220 OHM,5%,0.25W | 01121 | CB2215 |
| R1150 | 321-0327-00 | | | RES.,FXD,FILM:24.9K OHM,1%,0.125W | 75042 | CEAT0-2492F |
| R1152 | 321-0311-00 | | | RES.,FXD,FILM:16.9K OHM,1%,0.125W | 75042 | CEAT0-1692F |
| R1155 | 321-0369-00 | | | RES.,FXD,FILM:68.1K OHM,1%,0.125W | 75042 | CEAT0-6812F |
| R1156 | 315-0822-00 | | | RES.,FXD,COMP:8.2K OHM,5%,0.25W | 01121 | CB8225 |
| R1158 | 316-0222-00 | | | RES.,FXD,COMP:2.2K OHM,10%,0.25W | 01121 | CB2221 |
| R1160 | 316-0333-00 | | | RES.,FXD,COMP:33K OHM,10%,0.25W | 01121 | CB3331 |
| R1162 | 316-0101-00 | | | RES.,FXD,COMP:100 OHM,10%,0.25W | 01121 | CB1011 |
| R1165 | 311-0635-00 | | | RES.,VAR,NONWIR:1K OHM,10%,0.50W | 80740 | 62-56-3 |
| R1167 | 321-0230-00 | | | RES.,FXD,FILM:2.43K OHM,1%,0.125W | 75042 | CEAT0-2431F |
| R1171 | 315-0273-00 | | | RES.,FXD,COMP:27K OHM,5%,0.25W | 01121 | CB2735 |
| R1173 | 316-0102-00 | | | RES.,FXD,COMP:1K OHM,10%,0.25W | 01121 | CB1021 |
| R1175 | 316-0102-00 | | | RES.,FXD,COMP:1K OHM,10%,0.25W | 01121 | CB1021 |
| R1176 | 316-0471-00 | | | RES.,FXD,COMP:470 OHM,10%,0.25W | 01121 | CB4711 |
| R1178 | 315-0133-00 | | | RES.,FXD,COMP:13K OHM,5%,0.25W | 01121 | CB1335 |
| R1190 | 301-0241-00 | | | RES.,FXD,COMP:240 OHM,5%,0.50W | 01121 | EB2415 |
| R1194 | 303-0821-00 | | | RES.,FXD,COMP:820 OHM,5%,1W | 01121 | GB8215 |
| S1109 | 260-0960-01 | | | SWITCH,SLIDE:0.5A,120VDC,CKT BD MT | 80009 | 260-0960-01 |
| S1130 ² | 105-0389-00 | | | DRUM ASSY,CAM S: | 80009 | 105-0389-00 |
| U1130 | 155-0055-00 | | | MICROCIRCUIT,LI:MONOLITHIC,TRIG & SWEEP | 80009 | 155-0055-00 |
| VR1162 | 152-0166-00 | | | SEMICONV DEVICE:ZENER,0.4W,6.2V,5% | 81483 | 69-9035 |
| VR1190 | 152-0217-00 | | | SEMICONV DEVICE:ZENER,400MW,8.2V,5% | 07910 | 1N756A |
| VR1194 | 152-0217-00 | | | SEMICONV DEVICE:ZENER,400MW,8.2V,5% | 07910 | 1N756A |

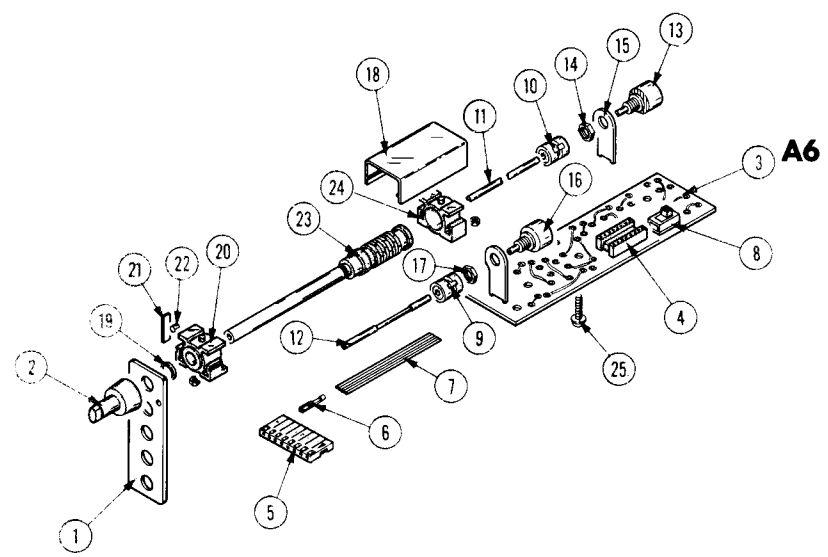
¹Individual timing capacitors in this assembly must be ordered by the 9 digit part number, letter suffix and tolerance printed on the timing capacitor to be replaced. The letter suffix and the tolerance should be the same for all of the timing capacitors in the assembly. EXAMPLE:

| 285-XXXX-XX F- |

²See Mechanical Parts List for replacement parts.

| Fig. & Index No. | |
|------------------|----|
| 2-9 | 37 |
| | 35 |
| | 37 |
| | 21 |
| -10 | 37 |
| | 35 |
| | 37 |
| | 21 |
| -11 | 38 |
| -12 | 38 |
| -13 | -- |
| -14 | 21 |
| | 21 |
| -15 | 38 |
| | -- |
| -16 | -- |
| -17 | 21 |
| | 21 |
| | 38 |
| | 10 |
| | -- |
| -18 | 20 |
| -19 | 35 |
| -20 | 40 |
| -21 | 21 |
| | 21 |
| | 21 |
| -22 | 21 |
| -23 | 10 |
| -24 | 40 |
| -25 | 21 |
| | 21 |

OPTION 4



| Fig. & Index No. | Tektronix Part No. | Serial/Model No. Eff | Dscnt | Qty | Name & Description | | | | | Mfr Code | Mfr Part Number |
|------------------|--------------------|----------------------|-------|-----|---|---|---|---|---|----------|-----------------|
| | | | | | 1 | 2 | 3 | 4 | 5 | | |
| 2-1 | 333-2001-00 | | | 1 | PANEL, FRONT: OPTION 4 | | | | | 80009 | 333-2001-00 |
| -2 | 366-1360-00 | | | 1 | KNOB: GRAY, W/ SETSCREW | | | | | 80009 | 366-1360-00 |
| | 179-2178-00 | | | 1 | WIRING HARNESS: | | | | | 80009 | 179-2178-00 |
| -3 | ----- | | | 1 | CKT BOARD ASSY: SWEEP (SEE A6 EPL) | | | | | | |
| | ----- | | | - | . CKT BOARD ASSY INCLUDES: | | | | | | |
| | 131-0604-00 | | | 7 | . CONTACT, ELEC: 0.025 SQ X 0.365 INCH LONG | | | | | 80009 | 131-0604-00 |
| -4 | 136-0260-01 | | | 1 | . SOCKET, SEMICOND: 16 CONTACT, RECT SHAPE | | | | | 71785 | 133-51-02-075 |
| -5 | 352-0166-05 | | | 1 | . HOLDER, TERM. CON: 8 WIRE, GREEN | | | | | 80009 | 352-0166-05 |
| -6 | 131-0707-00 | | | 6 | . CONTACT, ELEC: 0.48 "L, 22-26 AWG WIRE | | | | | 22526 | 47439 |
| -7 | 175-0828-00 | | | FT | . WIRE, ELECTRICAL: 5 WIRE RIBBON | | | | | 23499 | TEK-175-0828-00 |
| | 175-1020-00 | | | FT | . CABLE, RF: | | | | | 90484 | DAB70JAAAWHITE |
| -8 | 260-0960-01 | | | 1 | . SWITCH, SLIDE: 0.50A, 120V | | | | | | |

+

OPTION 4 (CONT)

| Fig. & Index No. | Tektronix Part No. | Serial/Model No. Eff Dscont | Qty | | | | | | Name & Description | Mfr Code | Mfr Part Number | |
|------------------|--------------------|-----------------------------|-----|---|---|---|---|---|--|----------|-----------------|--|
| | | | | 1 | 2 | 3 | 4 | 5 | | | | |
| 2-9 | 376-0051-00 | | 1 | . | . | . | . | . | CPLG, SHAFT, FLEX: FOR 0.125 INCH DIA SHAFTS | 80009 | 376-0051-00 | |
| | ----- | | - | . | . | . | . | . | COUPLING SHAFT, FLEXIBLE INCLUDES: | | | |
| | 354-0251-00 | | 2 | . | . | . | . | . | RING, COUPLING: | 80009 | 354-0251-00 | |
| | 376-0049-00 | | 2 | . | . | . | . | . | CPLG, SHAFT, FLEX: PLASTIC | 80009 | 376-0049-00 | |
| | 213-0022-00 | | 4 | . | . | . | . | . | SETSCREW: 4-40 X 0.188 INCH, HEX SOC STL | 74445 | OBD | |
| -10 | 376-0051-01 | | 1 | . | . | . | . | . | CPLG, SHAFT, FLEX: FOR 0.125 INCH | 80009 | 376-0051-01 | |
| | ----- | | - | . | . | . | . | . | COUPLING SHAFT, FLEXIBLE INCLUDES: | | | |
| | 354-0251-00 | | 2 | . | . | . | . | . | RING, COUPLING: | 80009 | 354-0251-00 | |
| | 376-0049-00 | | 2 | . | . | . | . | . | CPLG, SHAFT, FLEX: PLASTIC | 80009 | 376-0049-00 | |
| | 213-0048-00 | | 4 | . | . | . | . | . | SETSCREW: 4-40 X 0.125 INCH HEX SOC STL | 74445 | OBD | |
| -11 | 384-0284-00 | | 1 | . | . | . | . | . | EXTENSION SHAFT: 5.688 INC LONG | 80009 | 384-0284-00 | |
| -12 | 384-1156-00 | | 1 | . | . | . | . | . | EXTENSION SHAFT: 2.20 INCH LONG | 80009 | 384-1156-00 | |
| -13 | ----- | | 1 | . | . | . | . | . | RES. VAR: (SEE R945 EPL) | | | |
| | | | | . | . | . | . | . | (ATTACHING PARTS) | | | |
| -14 | 210-0583-00 | | 1 | . | . | . | . | . | NUT, PLAIN, HEX.: 0.25-32 X 0.312 INCH, BRS | 73743 | 2X20319-402 | |
| | 210-0590-00 | | 1 | . | . | . | . | . | NUT, PLAIN, HEX.: 0.375 X 0.438 INCH, STL | 73743 | 2X28269-402 | |
| -15 | 387-0794-00 | | 1 | . | . | . | . | . | BRKT, VAR RES: BRS | 80009 | 387-0794-00 | |
| | | | | . | . | . | . | . | - - - * - - - | | | |
| -16 | ----- | | 1 | . | . | . | . | . | RES., VAR: (SEE R918 EPL) | | | |
| | | | | . | . | . | . | . | (ATTACHING PARTS) | | | |
| -17 | 210-0583-00 | | 1 | . | . | . | . | . | NUT, PLAIN, HEX.: 0.25-32 X 0.312 INCH, BRS | 73743 | 2X20319-402 | |
| | 210-0590-00 | | 1 | . | . | . | . | . | NUT, PLAIN, HEX.: 0.375 X 0.438 INCH, STL | 73743 | 2X28269-402 | |
| | 386-2351-00 | | 1 | . | . | . | . | . | PL, VAR RES MTG: | 80009 | 386-2351-00 | |
| | | | | . | . | . | . | . | - - - * - - - | | | |
| | 105-0389-00 | | 1 | . | . | . | . | . | DRUM ASSY, CAM S: | 80009 | 105-0389-00 | |
| | ----- | | - | . | . | . | . | . | ACTUATOR ASSY INCLUDES: | | | |
| -18 | 200-1441-00 | | 1 | . | . | . | . | . | COVER, CAM SW: 7 ELEMENTS | 80009 | 200-1441-00 | |
| -19 | 354-0219-00 | | 1 | . | . | . | . | . | RING, RETAINING: FOR 0.25 INCH SHAFT | 79136 | 5103-25-MD-R | |
| -20 | 401-0155-00 | | 1 | . | . | . | . | . | BEARING, CAM SW: FRONT | 80009 | 401-0155-00 | |
| -21 | 214-1704-00 | | - | . | . | . | . | . | SPRING, FLAT: CAM SW DETENT, 0.006 INCH THK | 80009 | 214-1704-00 | |
| | 214-1704-01 | | - | . | . | . | . | . | SPRING, FLAT: CAM SW DETENT, 0.008 INCH THK | 80009 | 214-1704-01 | |
| | 214-1704-02 | | - | . | . | . | . | . | SPRING, FLAT: CAM SW DETENT, 0.010 INCH THK | 80009 | 214-1704-02 | |
| -22 | 214-1127-00 | | 1 | . | . | . | . | . | ROLLER, DETENT: 0.125 DIA X 0.125 INCH L | 80009 | 214-1127-00 | |
| -23 | 105-0388-00 | | 1 | . | . | . | . | . | DRUM, CAM SWITCH: | 80009 | 105-0388-00 | |
| -24 | 401-0156-00 | | 1 | . | . | . | . | . | BEARING, CAM SW: REAR | 80009 | 401-0156-00 | |
| | | | | . | . | . | . | . | (ATTACHING PARTS) | | | |
| -25 | 211-0116-00 | | 4 | . | . | . | . | . | SCR, ASSEM WSHR: 4-40 X 0.312 INCH, PNH BRS | 83385 | OBD | |
| | | | | . | . | . | . | . | - - - * - - - | | | |
| | | | | . | . | . | . | . | (ATTACHING PARTS) | | | |
| | 211-0008-00 | | 4 | . | . | . | . | . | SCREW, MACHINE: 4-40 X 0.25 INCH, PNH STL | 83385 | OBD | |
| | | | | . | . | . | . | . | - - - * - - - | | | |

Part Number

- 3-2001-00
- 6-1360-00
- 9-2178-00
- 1-0604-00
- 3-51-02-075
- 2-0166-05
- 439
- K-175-0828-00
- B70JAAAWHITE

MECHANICAL REPLACEABLE PARTS LIST

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 | <i>Name & Description</i> |
|---|---|---|---|---|--|
| | | | | | <i>Assembly and/or Component</i> |
| | | | | | <i>Attaching parts for Assembly and/or Component</i> |
| | | | | | --- * --- |
| | | | | | <i>Detail Part of Assembly and/or Component</i> |
| | | | | | <i>Attaching parts for Detail Part</i> |
| | | | | | --- * --- |
| | | | | | <i>Parts of Detail Part</i> |
| | | | | | <i>Attaching parts for Parts of Detail Part</i> |
| | | | | | --- * --- |

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

CROSS INDEX MFR. CODE NUMBER TO MANUFACTURER

| MFR. CODE | MANUFACTURER | ADDRESS | CITY, STATE, ZIP |
|-----------|--|-----------------------------|-------------------------|
| 01002 | General Electric Co., Industrial and Power Capacitor Products Dept. | John St. | Hudson Falls, NY 12839 |
| 01121 | Allen-Bradley Co. | 1201 2nd St. South | Milwaukee, WI 53204 |
| 02735 | RCA Corp., Solid State Division | Route 202 | Somerville, NY 08876 |
| 03888 | Pyrofilm Corp. | 60 S. Jefferson Rd. | Whippany, NJ 07981 |
| 04713 | Motorola, Inc., Semiconductor Products Div. | 5005 E. McDowell Rd. | Phoenix, AZ 85008 |
| 07263 | Fairchild Semiconductor, A Div. of Fairchild Camera and Instrument Corp. | 464 Ellis St. | Mountain View, CA 94040 |
| 07910 | Teledyne Semiconductor | 12515 Chadron Ave. | Hawthorne, CA 90250 |
| 08806 | General Electric Co., Miniature Lamp Products Dept. | Nela PK. | Cleveland, OH 44112 |
| 11237 | CTS Keene, Inc. | 3230 Riverside Ave. | Paso Robles, CA 93446 |
| 12040 | National Semiconductor Corp. | Commerce Drive | Danbury, CT 06810 |
| 12969 | Unitrode Corp. | 580 Pleasant St. | Watertown, MA 02172 |
| 13715 | Fairchild Semiconductor, A Div. of Fairchild Camera and Instrument Corp. | 4300 Redwood Hwy. | San Rafael, CA 94903 |
| 14936 | General Instrument Corp., Semiconductor Products Group | 600 W. John St. | Hicksville, NY 11802 |
| 18796 | Erie Technological Products, Inc. State College Division | 1900 W. College Ave. | State College, PA 16801 |
| 22229 | Solitron Devices, Inc. | 8808 Balboa Ave. | San Diego, CA 92123 |
| 24931 | Specialty Connector Co., Inc. | 3560 Madison Ave. | Indianapolis, IN 46227 |
| 56285 | Sprague and Carleton | | Avon Keene, NH 03431 |
| 56289 | Sprague Electric Co. | | North Adams, MA 01247 |
| 63743 | Ward Leonard Electric Co., Inc. | 31 South St. | Mount Vernon, NY 10550 |
| 71400 | Bussman Mfg., Division of McGraw Edison Co. | 2536 W. University St. | St. Louis, MO 63107 |
| 71468 | ITT Cannon Electric | 666 E. Dyer Rd. | Santa Ana, CA 92702 |
| 71590 | Centralab Electronics, Div. of Globe-Union, Inc. | 5757 N. Green Bay Ave. | Milwaukee, WI 53201 |
| 72136 | Electro Motive Mfg. Co., Inc., The | South Park and John Streets | Willimantic, CT 06226 |
| 72982 | Erie Technological Products, Inc. | 644 W. 12th St. | Erie, PA 16512 |
| 73138 | Beckman Instruments, Inc., Helipot Div. | 2500 Harbor Blvd. | Fullerton, CA 92634 |
| 75042 | TRW Electronic Components, IRC Fixed Resistors, Philadelphia Division | 401 N. Broad St. | Philadelphia, PA 19108 |
| 76493 | Bell Industries, Inc., Miller, J. W., Div. | P. O. Box 5825 | Compton, CA 90224 |
| 80009 | Tektronix, Inc. | P. O. Box 500 | Beaverton, OR 97005 |
| 80031 | Mepco/Electa Inc., A North American Phillips Co. | Columbia Rd. | Morristown, NJ 07960 |
| 80740 | Beckman Instruments, Inc. | 2500 Harbor Blvd. | Fullerton, CA 92634 |
| 81483 | International Rectifier Corp. | 9220 Sunset Blvd. | Los Angeles, CA 90069 |
| 82383 | Stevens Mfg. Co. | New Germany Rd. | Ebensberg, PA 15931 |
| 83003 | Varo, Inc. | 800 W. Garland Ave. | Garland, TX 75040 |
| 90201 | Mallory Capacitor Co., Div. of P. R. Mallory Co., Inc. | 3029 E. Washington St. | Indianapolis, IN 46206 |
| 91637 | Dale Electronics, Inc. | P. O. Box 609 | Columbus, NB 68601 |
| 91929 | Honeywell, Inc., Micro Switch Div. | Chicago & Spring Sts. | Freeport, IL 61032 |

Mechanical Parts List—605

FIGURE 1 EXPLODED

| Fig. & Index No. | Tektronix Part No. | Serial/Model No. Eff Dscont | Qty | | | | | | Name & Description | Mfr Code | Mfr Part Number |
|------------------|--------------------|-----------------------------|-----|---|---|---|---|---|---|----------|------------------|
| | | | | 1 | 2 | 3 | 4 | 5 | | | |
| 1-1 | 390-0270-00 | | 1 | | | | | | CABINET SIDE:LEFT | 80009 | 390-0270-00 |
| | 390-0244-00 | | 1 | | | | | | CABINET SIDE:RIGHT | 80009 | 390-0244-00 |
| | ----- | | - | | | | | | . EACH CABINET INCLUDES: | | |
| | 214-0812-00 | | 2 | | | | | | . FASTENER,PAWL: | 80009 | 214-0812-00 |
| | ----- | | - | | | | | | . . . EACH LATCH ASSY INCLUDES: | | |
| -2 | 386-0226-00 | | 1 | | | | | | . . . PL,LATCH LKG:FOR 0.080 INCH THICKNESS | 80009 | 386-0226-00 |
| -3 | 386-0227-00 | | 1 | | | | | | . . . PL,LATCH INDEX: | 80009 | 386-0227-00 |
| -4 | 214-0604-00 | | 1 | | | | | | . . . WASH.,SPG TNSN:0.26 ID X 0.47INCH OD | 80009 | 214-0604-00 |
| -5 | 214-0603-01 | | 1 | | | | | | . . . PIN,SECURING:0.27 INCH LONG | 80009 | 214-0603-01 |
| -6 | 390-0280-00 | | 1 | | | | | | CAB.BOTTOM:MONITOR | 80009 | 390-0280-00 |
| | 390-0281-00 | | 1 | | | | | | CAB.BOTTOM:OPT 3 ONLY | 80009 | 390-0281-00 |
| | ----- | | - | | | | | | . CABINET BOTTOM INCLUDES: | | |
| | 214-0812-00 | | 4 | | | | | | . FASTENER,PAWL: | 80009 | 214-0812-00 |
| | ----- | | - | | | | | | . . . EACH LATCH ASSY INCLUDES: | | |
| -7 | 386-0226-00 | | 1 | | | | | | . . . PL,LATCH LKG:FOR 0.080 INCH THICKNESS | 80009 | 386-0226-00 |
| -8 | 386-0227-00 | | 1 | | | | | | . . . PL,LATCH INDEX: | 80009 | 386-0227-00 |
| -9 | 214-0604-00 | | 1 | | | | | | . . . WASH.,SPG TNSN:0.26 ID X 0.47INCH OD | 80009 | 214-0604-00 |
| -10 | 214-0603-01 | | 1 | | | | | | . . . PIN,SECURING:0.27 INCH LONG | 80009 | 214-0603-01 |
| -11 | 348-0074-00 | | 2 | | | | | | . SPT PIVOT,FLIP:(STANDARD CAB.BOTTOM ONLY) | 80009 | 348-0074-00 |
| | | | | | | | | | (ATTACHING PARTS FOR EACH) | | |
| -12 | 211-0532-00 | | 2 | | | | | | . SCREW,MACHINE:6-32 X 0.75 INCH,FILH STL | 83385 | OBD |
| -13 | 210-0457-00 | | 2 | | | | | | . NUT,PLAIN,EXT W:6-32 X 0.312,INCH,STL | 83385 | OBD |
| | | | | | | | | | -----* | | |
| -14 | 348-0207-00 | | 2 | | | | | | . FOOT CAB:RF & LR (STANDARD CAB.BOTTOM ONLY) | 80009 | 348-0207-00 |
| -15 | 348-0073-00 | | 2 | | | | | | . SPT PIVOT,FLIP:(STANDARD CAB.BOTTOM ONLY) | 80009 | 348-0073-00 |
| | | | | | | | | | (ATTACHING PARTS FOR EACH) | | |
| -16 | 211-0532-00 | | 2 | | | | | | . SCREW,MACHINE:6-32 X 0.75 INCH,FILH STL | 83385 | OBD |
| | 210-0457-00 | | 2 | | | | | | . NUT,PLAIN,EXT W:6-32 X 0.312,INCH,STL | 83385 | OBD |
| | | | | | | | | | -----* | | |
| -17 | 348-0208-00 | | 2 | | | | | | . FOOT CAB:LF & RR (STANDARD CAB.BOTTOM ONLY) | 80009 | 348-0208-00 |
| -18 | 200-0728-00 | | 2 | | | | | | COV,HANDLE END: | 80009 | 200-0728-00 |
| -19 | 367-0116-00 | | 1 | | | | | | HANDLE,CARRYING:STRAP TYPE | 80009 | 367-0116-00 |
| | | | | | | | | | (ATTACHING PARTS) | | |
| -20 | 212-0597-00 | | 4 | | | | | | SCREW,MACHINE:10-32 X 0.355 INCH SHLDR,STL | 70276 | OBD |
| -21 | 386-1624-00 | | 2 | | | | | | PL,RET.,HANDLE: | 80009 | 386-1624-00 |
| -22 | 386-1283-00 | | 2 | | | | | | PL,HANDLE MTG:FRONT | 80009 | 386-1283-00 |
| | | | | | | | | | -----* | | |
| -23 | 348-0275-00 | | 1 | | | | | | FLIPSTAND,CAB: | 80009 | 348-0275-00 |
| -24 | 200-1661-00 | | 1 | | | | | | BEZEL,CRT:FOR 605 | 80009 | 200-1661-00 |
| | | | | | | | | | (ATTACHING PARTS) | | |
| -25 | 211-0188-00 | | 2 | | | | | | SCREW,MACHINE:4-40 X 0.70 INCH SLOT,SST | 76689 | OBD |
| | | | | | | | | | -----* | | |
| -26 | 337-1674-06 | | 1 | | | | | | SHLD,ELCTR N TUB:CRT | 80009 | 337-1674-06 |
| -27 | 386-2340-00 | | 4 | | | | | | SUPPORT,CRT:FRONT | 80009 | 386-2340-00 |
| -28 | 386-2899-00 | | 1 | | | | | | SUPPORT,CRT:FRONT | 80009 | 386-2899-00 |
| -29 | 384-1270-00 | | 1 | | | | | | SHAFT,EXT:PWR ON SW | 80009 | 384-1270-00 |
| -30 | 358-0216-00 | | 1 | | | | | | BUSHING,PLASTIC:0.257 ID X 0.412 INCH OD | 80009 | 358-0216-00 |
| -31 | 376-0127-00 | | 1 | | | | | | COUPLER,SHAFT:PLASTIC | 80009 | 376-0127-00 |
| -32 | 385-0033-00 | | 1 | | | | | | INS,STANDOFF:0.625 INCH LONG,NYLON | 80009 | 385-0033-00 |
| | | | | | | | | | (ATTACHING PARTS) | | |
| -33 | 211-0538-00 | | 1 | | | | | | SCREW,MACHINE:6-32 X 0.312"100 DEG,FLH STL | 83385 | OBD |
| | | | | | | | | | -----* | | |
| -34 | 260-1222-00 | | 1 | | | | | | SWITCH,PUSH-PUL:10A,250VAC | 91929 | 2DM301 |
| -35 | 200-1282-00 | | 1 | | | | | | DOOR,ACCESS,PNL: | 80009 | 200-1282-00 |
| -36 | 333-1875-00 | | 1 | | | | | | PANEL,FRONT: | 80009 | 333-1875-00 |
| | | | | | | | | | (ATTACHING PARTS) | | |
| -37 | 210-0406-00 | | 3 | | | | | | NUT,PLAIN,HEX.:4-40 X 0.188 INCH,BRS | 73743 | 2X12161-402 |
| -38 | 210-0054-00 | | 3 | | | | | | WASHER,LOCK:SPLIT,0.118 ID X 0.212"OD STL | 83385 | OBD |
| | | | | | | | | | -----* | | |
| -39 | 366-1023-01 | | 1 | | | | | | KNOB:GRAY 80009 366-1023-01 | | |
| | ----- | | - | | | | | | . KNOB INCLUDES: | | |
| | 213-0153-00 | | 1 | | | | | | . SETSCREW:5-40 X 0.125 INCH,HEX SOC STL | 74445 | OBD |
| -40 | 366-1257-84 | | 1 | | | | | | PUSH BUTTON:GRAY--ERASE | 80009 | 366-1257-84 |
| | 366-1257-85 | | 1 | | | | | | PUSH BUTTON:GRAY--STORE | 80009 | 366-1257-85 |
| -41 | 426-0681-00 | | 2 | | | | | | FR,PUSH BUTTON:GRAY PLASTIC | 80009 | 426-0681-00 |
| -42 | ----- | | 1 | | | | | | RES.,VAR:(SEE R895 EPL) | | |
| | | | | | | | | | (ATTACHING PARTS) | | |
| -43 | 210-0583-00 | | 1 | | | | | | NUT,PLAIN,HEX.:0.25-32 X 0.312 INCH,BRS | 73743 | 2X20319-402 |
| | 210-0940-00 | | 1 | | | | | | WASHER,FLAT:0.25 ID X 0.375 INCH OD,STL | 79807 | OBD |
| -44 | 210-0046-00 | | 1 | | | | | | WASHER,LOCK:INTL,0.26 ID X 0.40" OD,STL | 78189 | 1214-05-00-0541C |
| | | | | | | | | | -----* | | |

FIGURE 1 EXPLODED (CONT)

| Index No. | Tektronix Part No. | Serial/Model No. Eff Dscont | Qty | | | | | | Name & Description | Mfr Code | Mfr Part Number |
|--------------|-----------------------|--------------------------------|-----|---|---|---|---|---|--------------------|------------------|-----------------|
| | | | | 1 | 2 | 3 | 4 | 5 | | | |
| 1-45 | 333-1876-00 | | 1 | | | | | | 80009 | 333-1876-00 | |
| -46 | 386-2067-00 | | 1 | | | | | SUBPANEL,FRONT:FOR 605 | 80009 | 386-2067-00 | |
| -47 | 334-1379-00 | | 1 | | | | | LABEL:CRT,ADHESIVE VACK | 80009 | 334-1379-00 | |
| -48 | 348-0064-00 | | 1 | | | | | GROMMET,PLASTIC:FOR 0.625 INCH HOLE | 80009 | 348-0064-00 | |
| -49 | 348-0253-00 | | 1 | | | | | GROMMET,PLASTIC:1.24 X 0.739 X 0.108 OA | 80009 | 348-0253-00 | |
| -50 | 337-1998-00 | | 1 | | | | | SHIELD,CRT:FRONT (ATTACHING PARTS) | 80009 | 337-1998-00 | |
| -51 | 210-0586-00 | | 2 | | | | | NUT,PLAIN,EXT W:4-40 X 0.25 INCH,STL | 78189 | OBD | |
| | 211-0116-00 | | 2 | | | | | SCR,ASSEM WSHR:4-40 X 0.312 INCH,PNH BRS - - - * - - - | 83385 | OBD | |
| -52 | ----- | | 1 | | | | | COIL:TRACE ROTATION (SEE L145 EPL) | | | |
| -53 | 337-1986-00 | | 1 | | | | | SHIELD,SECT,CRT:REAR | 80009 | 337-1986-00 | |
| -54 | 348-0145-00 | | 1 | | | | | GROMMET,PLASTIC:U-SHP,1.0 X 0.42 INCH | 80009 | 348-0145-00 | |
| -55 | 386-2246-00 | | 1 | | | | | SUPPORT,CRTREAR | 80009 | 386-2246-00 | |
| -56 | 386-2876-00 | | 1 | | | | | SUPPORT,CRT:CENTER | 80009 | 386-2876-00 | |
| -57 | 407-1128-00 | | 1 | | | | | BRKT,CRT SHIELD:REAR (ATTACHING PARTS) | 80009 | 407-1128-00 | |
| -58 | 220-0419-00 | | 3 | | | | | NUT,PLAIN,SQ:6-32 X 0.312 INCH,STL | 83385 | OBD | |
| -59 | 211-0589-00 | | 1 | | | | | SCREW,MACHINE:6-32 X 0.312 INCH,PNH BRS | 83385 | OBD | |
| | 211-0507-00 | | 2 | | | | | SCREW,MACHINE:6-32 X 0.312 INCH,PNH STL - - - * - - - | 83385 | OBD | |
| -60 | 161-0033-12 | | 1 | | | | | CABLE ASSY,PWR: | 80009 | 161-0033-12 | |
| -61 | 200-1646-00 | | 1 | | | | | CABLE,NIPPLE,EL: | 80009 | 200-1646-00 | |
| -62 | 214-2038-00 | | 1 | | | | | IND,LINE V:FOR 605 | 80009 | 214-2038-00 | |
| -63 | 358-0515-00 | | 1 | | | | | BSHG,STRAIN RLF:TOP | 80009 | 358-0515-00 | |
| -64 | 358-0516-00 | | 1 | | | | | BSHG,STRAIN RLF:BOTTOM | 80009 | 358-0516-00 | |
| -65 | 352-0076-00 | | 1 | | | | | FUSEHOLDER:3AG (ATTACHING PARTS) | 75915 | 342012 | |
| -66 | 210-0873-00 | | 1 | | | | | WASHER,NONMETAL:0.5 ID X 0.688 INCH OD - - - * - - - | 71400 | OBD | |
| -67 | 200-1308-00 | | 1 | | | | | COVER,CRT:REAR (ATTACHING PARTS) | 80009 | 200-1308-00 | |
| -68 | 211-0097-00 | | 5 | | | | | SCREW,MACHINE:4-40 X 0.312 INCH,PNH STL - - - * - - - | 83385 | OBD | |
| -69 | 210-0201-00 | | 1 | | | | | TERMINAL,LUG:SE #4 (ATTACHING PARTS) | 78189 | 2104-04-00-2520N | |
| -70 | 210-0586-00 | | 1 | | | | | NUT,PLAIN,EXT W:4-40 X 0.25 INCH,STL - - - * - - - | 78189 | OBD | |
| -71 | 200-0616-01 | | 1 | | | | | COV,ELECTRON TU: | 80009 | 200-0616-01 | |
| -72 | 136-0596-00 | | 1 | | | | | SOCKET ASSY,CRT:FOR 605 | 80009 | 136-0596-00 | |
| -73 | 136-0301-01 | | 1 | | | | | SOCKET,PLUG-IN: | 80009 | 136-0301-01 | |
| | 195-0135-00 | | 1 | | | | | LEAD SET,CRT DE: | 80009 | 195-0135-00 | |
| -74 | 346-0045-00 | | 3 | | | | | STRAP,CONN COV: | 80009 | 346-0045-00 | |
| -75 | 200-0991-00 | | 3 | | | | | COV,ELEC CONN: | 80009 | 200-0991-00 | |
| -76 | 131-0955-00 | | 6 | | | | | CONNECTOR,RCPT,:BNC,FEMALE (ATTACHING PARTS) | 24931 | 28JR200-1 | |
| -77 | 210-0255-00 | | 6 | | | | | TERMINAL,LUG:0.391" ID INT TOOTH - - - * - - - | 80009 | 210-0255-00 | |
| -78 | 342-0117-00 | | 12 | | | | | INSULATOR,BUSH:BNC | 80009 | 342-0117-00 | |
| -79 | ----- | | 1 | | | | | RES.,VAR:(SEE R145 EPL) (ATTACHING PARTS) | | | |
| -80 | 210-0583-00 | | 1 | | | | | NUT,PLAIN,HEX.:0.25-32 X 0.312 INCH,BRS | 73743 | 2X20319-402 | |
| -81 | 210-0940-00 | | 1 | | | | | WASHER,FLAT:0.25 ID X 0.375 INCH OD,STL | 79807 | OBD | |
| | 210-0046-00 | | 1 | | | | | WASHER,LOCK:INTL,0.26 ID X 0.40" OD,STL - - - * - - - | 78189 | 1214-05-00-0541C | |
| -82 | 333-1829-00 | | 1 | | | | | PANEL,REAR:FOR 605 | 80009 | 333-1829-00 | |
| -83 | ----- | | 1 | | | | | TRANSFORMER:(SEE T15 EPL) (ATTACHING PARTS) | | | |
| -84 | 212-0100-00 | | 4 | | | | | SCREW,MACHINE:8-32 X 0.625 INCH SLOT,STL | 83385 | OBD | |
| -85 | 343-0267-00 | | 2 | | | | | BRKT,HOLD DOWN:TRANSFORMER | 80009 | 343-0267-00 | |
| | 210-0804-00 | | 4 | | | | | WASHER,FLAT:0.170 ID X 0.375 INCH OD,STL | 12327 | OBD | |
| -86 | 210-0458-00 | | 4 | | | | | NUT,PLAIN,EXT W:8-32 X 0344 INCH,STL - - - * - - - | 83385 | OBD | |
| -87 | 337-2006-00 | | 1 | | | | | SHIELD,ELEC:HIGH VOLTAGE (ATTACHING PARTS) | 80009 | 337-2006-00 | |
| -88 | 211-0008-00 | | 2 | | | | | SCREW,MACHINE:4-40 X 0.25 INCH,PNH STL - - - * - - - | 83385 | OBD | |

Mechanical Parts List—605

FIGURE 1 EXPLODED (CONT)

| Fig. & Index No. | Tektronix Part No. | Serial/Model No. Eff Dscont | Qty | 1 2 3 4 5 | | | | | Name & Description | Mfr Code | Mfr Part Number |
|------------------|--------------------------|-----------------------------|-----|-----------|--|--|--|--|--|----------|-----------------|
| | | | | | | | | | | | |
| 1-89 | ----- | ----- | 1 | | | | | | CKT BOARD ASSY:FRONT PANEL CONTROL | | |
| | ----- | ----- | - | | | | | | STORAGE BOARD(SEE A5 EPL) | | |
| | ----- | ----- | - | | | | | | CKT BOARD ASSY INCLUDES: | | |
| -90 | 131-0566-00 | | 1 | | | | | | . LINK,TERM.CONNE:0.086 DIA X 2.375 INCH L | 0000C | L-2007-1 |
| -91 | 131-0608-00 | | 18 | | | | | | . CONTACT,ELEC:0.365 INCH LONG | 22526 | 47357 |
| -92 | ----- | ----- | 1 | | | | | | . RES.,VAR:(SEE R175A,B EPL) | | |
| -93 | 131-1635-00 | | 1 | | | | | | . CONTACT,ELEC:GND | 80009 | 131-1635-00 |
| -94 | ----- | ----- | 2 | | | | | | . RES.,VAR:(SEE R240,R440 EPL) | | |
| -95 | ----- | ----- | 1 | | | | | | . RES.,VAR:(SEE R970 EPL) | | |
| -96 | 136-0269-02 | | 4 | | | | | | . SOCKET,SEMICON:14 CONTACT,LOW CLEARANCE | 01295 | C931402 |
| -97 | 214-0579-00 | | 3 | | | | | | . TERM.,TEST PT:0.40 INCH LONG | 80009 | 214-0579-00 |
| -98 | 260-1211-00 | | 1 | | | | | | . SWITCH,PUSH:DPDT,PUSH-PUSH | 71590 | 2KAB010000-357 |
| -99 | 361-0383-00 | | 2 | | | | | | . SPACER,PB SW:CHARCOAL,0.33INCH LONG | 80009 | 361-0383-00 |
| -100 | 260-1308-00 | | 1 | | | | | | . SWITCH,PUSH: | 71590 | 1KAA010000-440 |
| | 175-0827-00 | | FT | | | | | | . WIRE,ELECTRICAL:4 WIRE RIBBON | 08261 | TEK-175-0827-00 |
| | 175-0828-00 | | FT | | | | | | . WIRE,ELECTRICAL:4 WIRE RIBBON | 23499 | TEK-175-0828-00 |
| | 175-0829-00 | | FT | | | | | | . WIRE,ELECTRICAL:6 WIRE RIBBON | 83501 | TEK-175-0829-00 |
| | | | | | | | | | (ATTACHING PARTS) | | |
| -101 | 211-0008-00 | | 5 | | | | | | SCREW,MACHINE:4-40 X 0.25 INCH,PNH STL | 83385 | OBD |
| | | | | | | | | | - - - * - - - | | |
| -102 | 366-1369-00 | | 1 | | | | | | KNOB:W/SETSCREW | 80009 | 366-1369-00 |
| -103 | 366-1432-00 | | 3 | | | | | | KNOB:GRAY,PUSH-ON MT | 80009 | 366-1432-00 |
| -104 | ----- | ----- | 1 | | | | | | CKT BOARD ASSY:HIGH VOLTAGE(SEE A2 EPL) | | |
| | ----- | ----- | - | | | | | | CKT BOARD ASSY INCLUDES: | | |
| -105 | 124-0118-00 | | 1 | | | | | | . TERMINAL BOARD:1 NOTCH | 80009 | 124-0118-00 |
| | ----- | ----- | - | | | | | | . . TERMINAL BOARD INCLUDES: | | |
| -106 | 355-0046-00 | | 1 | | | | | | . MOUNT,TERM.BD:0.577 INCH H | 80009 | 355-0046-00 |
| -107 | 361-0007-00 | | 1 | | | | | | . . SPACER,SLEEVE:NYLON | 80009 | 361-0007-00 |
| -108 | 136-0514-00 | | 1 | | | | | | . . SOCKET,SEMICON:MICROCIRCUIT,8 CONTACT | 82647 | C930802 |
| -109 | 344-0154-00 | | 2 | | | | | | . . CLIP,ELECTRICAL:FOR 0.25 INCH DIA FUSE | 80009 | 344-0154-00 |
| | 175-0830-00 | | FT | | | | | | . . WIRE,ELECTRICAL:7 WIRE RIBBON | 08261 | TEK-175-0830-00 |
| | | | | | | | | | (ATTACHING PARTS) | | |
| -110 | 211-0008-00 | | 3 | | | | | | SCREW,MACHINE:4-40 X 0.25 INCH,PNH STL | 83385 | OBD |
| | | | | | | | | | - - - * - - - | | |
| -111 | ----- | ----- | 1 | | | | | | CKT BOARD ASSY:Z AXIS(SEE A4 EPL) | | |
| | ----- | ----- | - | | | | | | CKT BOARD ASSY INCLUDES: | | |
| -112 | 136-0252-04 | | 6 | | | | | | . SOCKET,PIN CONN:0.188 INCH LONG | 22526 | 75060-001 |
| -113 | 214-0579-00 | | 9 | | | | | | . TERM.,TEST PT:0.40 INCH LONG | 80009 | 214-0579-00 |
| -114 | 214-1291-00 | | 2 | | | | | | . HEAT SINK,ELEC:XSTR,0.72 OD X 0.375"H | 05820 | OBD |
| | 260-0723-00 ¹ | | 1 | | | | | | . SWITCH,SLIDE:DPDT,0.5A,125VAC | 80009 | 260-0723-00 |
| -115 | 351-0280-00 | | 2 | | | | | | . GUIDE-POST LOCK:0.620 INCH LONG | 80009 | 351-0280-00 |
| | 131-0566-00 ² | | 2 | | | | | | . LINK,TERM.CONN:0.086 DIA X 2.030 INCH L | 0000C | L-2007-1 |
| | | | | | | | | | (ATTACHING PARTS) | | |
| | 211-0008-00 | | 2 | | | | | | SCREW,MACHINE:4-40 X 0.25 INCH,PNH STL | 83385 | OBD |
| | | | | | | | | | - - - * - - - | | |
| -116 | ----- | ----- | 1 | | | | | | CKT BOARD ASSY:DEFLECTION(SEE A3 EPL) | | |
| | ----- | ----- | - | | | | | | CKT BOARD ASSY INCLUDES: | | |
| -117 | 136-0252-01 | | 8 | | | | | | . SOCKET,PIN CONN:0.178 INCH LONG | 00779 | 1-332095-2 |
| | 136-0252-04 | | 12 | | | | | | . SOCKET,PIN CONN:0.188 INCH LONG | 22526 | 75060-001 |
| -118 | 214-1291-00 | | 2 | | | | | | . HEAT SINK,ELEC:XSTR,0.72 OD X 0.375"H | 05820 | OBD |
| -119 | 260-0723-00 ¹ | | 4 | | | | | | . SWITCH,SLIDE:DPDT,0.5A,125VAC | 80009 | 260-0723-00 |
| | 260-0723-00 ¹ | | 1 | | | | | | . SWITCH,SLIDE:DPDT,0.5A,125VAC | 80009 | 260-0723-00 |
| -120 | 337-1995-00 | | 1 | | | | | | . SHIELD,ELEC:DEFLECTION | 80009 | 337-1995-00 |
| | 175-0827-00 | | FT | | | | | | . WIRE,ELECTRICAL:4 WIRE RIBBON | 08261 | TEK-175-0827-00 |
| | 131-0566-00 ² | | 2 | | | | | | . LINK,TERM.CONN:0.086 DIA X 2.030 INCH L | 0000C | L-2007-1 |
| | | | | | | | | | (ATTACHING PARTS) | | |
| -121 | 211-0008-00 | | 2 | | | | | | SCREW,MACHINE:4-40 X 0.25 INCH,PNH STL | 83385 | OBD |
| | | | | | | | | | - - - * - - - | | |
| -122 | ----- | ----- | 1 | | | | | | CKT BOARD ASSY:LV POWER(SEE A1 EPL) | | |
| | ----- | ----- | - | | | | | | CKT BOARD ASSY INCLUDES: | | |
| -123 | 131-0608-00 | | 14 | | | | | | . CONTACT,ELEC:0.365 INCH LONG | 22526 | 47357 |
| | 344-0154-00 | | 2 | | | | | | . CLIP,ELECTRICAL:FOR 0.25 INCH DIA FUSE | 80009 | 344-0154-00 |
| | 175-0739-00 | | FT | | | | | | . WIRE,INSUL:WHITE | 80009 | 175-0739-00 |
| | 131-0707-00 | | 8 | | | | | | . CONTACT,ELEC:0.48"L,22-26 AWG WIRE | 22526 | 47439 |
| -124 | 352-0166-01 | | 2 | | | | | | . HOLDER,TERM.CON:8 WIRE,BROWN | 80009 | 352-0166-01 |
| | 343-0213-00 | | 1 | | | | | | . CLAMP,LOOP:0.128 DIA | 80009 | 343-0213-00 |
| | | | | | | | | | (ATTACHING PARTS) | | |
| -125 | 211-0008-00 | | 2 | | | | | | SCREW,MACHINE:4-40 X 0.25 INCH,PNH STL | 83385 | OBD |
| | | | | | | | | | - - - * - - - | | |

¹Option 4 only.
²Standard instrument only.

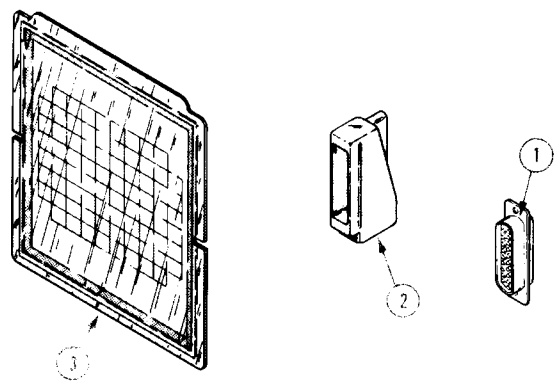
FIGURE 1 EXPLODED (CONT)

| Fig. & Index No. | Tektronix Part No. | Serial/Model No. Eff Dscont | Qty | Name & Description | | | | | Mfr Code | Mfr Part Number |
|------------------|--------------------|-----------------------------|-----|---|---|---|---|---|----------|------------------|
| | | | | 1 | 2 | 3 | 4 | 5 | | |
| 1-126 | 441-1222-00 | | 1 | CHAS,MONITOR:DEFLECTION | | | | | 80009 | 441-1222-00 |
| | ----- | | - | . CHASSIS INCLUDES: | | | | | | |
| -127 | 344-0133-00 | | 2 | . CLIP,SPR,TNSN:CIRCUIT BOARD MOUNTING | | | | | 80009 | 344-0133-00 |
| -128 | 210-0659-01 | | 2 | . EYELET,METALLIC:0.121 OD X 0.156 INCH L (ATTACHING PARTS) | | | | | 80009 | 210-0659-01 |
| -129 | 211-0025-00 | | 2 | SCREW,MACHINE:4-40 X 0.375 100 DEG,FLH STL | | | | | 83385 | OBD |
| | 211-0114-00 | | 1 | SCREW,MACHINE:4-40 X 0.438 INCH,FLH STL | | | | | 83385 | OBD |
| | 210-0586-00 | | 3 | NUT,PLAIN,EXT W:4-40 X 0.25 INCH,STL | | | | | 78189 | OBD |
| | 211-0538-00 | | 2 | SCREW,MACHINE:6-32 X 0.312"100 DEG,FLH STL - - - * - - - | | | | | 83385 | OBD |
| -130 | 441-1223-00 | | 1 | CHAS,MONITOR:HV (ATTACHING PARTS) | | | | | 80009 | 441-1223-00 |
| -131 | 211-0008-00 | | 2 | SCREW,MACHINE:4-40 X 0.25 INCH,PNH STL | | | | | 83385 | OBD |
| | 211-0538-00 | | 3 | SCREW,MACHINE:6-32 X 0.312"100 DEG,FLH STL | | | | | 83385 | OBD |
| | 210-0457-00 | | 3 | NUT,PLAIN,EXT W:6-32 X 0.312,INCH,STL - - - * - - - | | | | | 83385 | OBD |
| | ----- | | - | . CHASSIS INCLUDES: | | | | | | |
| -132 | 344-0131-00 | | 2 | . CLIP,SPG,TENS:CIRCUIT BOARD MOUNTING | | | | | 80009 | 344-0131-00 |
| -133 | 210-0659-01 | | 2 | . EYELET,METALLIC:0.121 OD X 0.156 INCH L | | | | | 80009 | 210-0659-01 |
| -134 | 351-0087-00 | | 1 | GUIDE,CKT CARD:4.75 INCH,WHITE PLASTIC | | | | | 80009 | 351-0087-00 |
| -135 | ----- | | 1 | TRANSISTOR:(SEE Q130 EPL) | | | | | | |
| -136 | 343-0521-00 | | 1 | CLAMP,XSTR:4-40 THD HOLE (ATTACHING PARTS) | | | | | 80009 | 343-0521-00 |
| -137 | 211-0014-00 | | 1 | SCREW,MACHINE:4-40 X 0.500 INCH,PNH STL - - - * - - - | | | | | 83385 | OBD |
| -138 | 260-0413-00 | | 1 | SW,THERMOSTATIC:10A,240VAC (ATTACHING PARTS) | | | | | 82383 | 110090 |
| -139 | 210-0586-00 | | 2 | NUT,PLAIN,EXT W:4-40 X 0.25 INCH,STL - - - * - - - | | | | | 78189 | OBD |
| -140 | 407-1498-00 | | 1 | BRACKET,ANGLE:POWER SUPPLY (ATTACHING PARTS) | | | | | 80009 | 407-1498-00 |
| | 211-0008-00 | | 2 | SCREW,MACHINE:4-40 X 0.25 INCH,PNH STL | | | | | 83385 | OBD |
| | 210-0586-00 | | 2 | NUT,PLAIN,EXT W:4-40 X 0.25 INCH,STL - - - * - - - | | | | | 78189 | OBD |
| -141 | ----- | | 3 | TRANSISTOR:(SEE Q30,Q60,Q70 EPL) | | | | | | |
| -142 | 342-0082-00 | | 3 | INSULATOR,PL:ALUM | | | | | 80009 | 342-0082-00 |
| -143 | 344-0236-00 | | 3 | CLIP,SPG TENS:TRANSISTOR MTG | | | | | 80009 | 344-0236-00 |
| -144 | 441-1224-00 | | 1 | CHAS,MONITOR:STORAGE (ATTACHING PARTS) | | | | | 80009 | 441-1224-00 |
| | 211-0538-00 | | 2 | SCREW,MACHINE:6-32 X 0.312"100 DEG,FLH STL | | | | | 83385 | OBD |
| -145 | 210-0457-00 | | 2 | NUT,PLAIN,EXT W:6-32 X 0.312,INCH,STL - - - * - - - | | | | | 83385 | OBD |
| -146 | 348-0051-00 | | 1 | GROMMET,RUBBER:0.938 INCH DIA | | | | | 83907 | 1107 |
| -147 | 343-0006-00 | | 1 | CLAMP,LOOP:0.050 INCH (ATTACHING PARTS) | | | | | 95987 | 1-2-68 |
| -148 | 211-0014-00 | | 1 | SCREW,MACHINE:4-40 X 0.50 INCH PNH STL | | | | | 83385 | OBD |
| -149 | 210-0863-00 | | 1 | WSHR,LOOP CLAMP: | | | | | 95987 | CL191 |
| | 210-0994-00 | | 1 | WASHER,FLAT:0.125 ID X 0.25" OD,STL - - - * - - - | | | | | 83385 | OBD |
| -150 | 166-0038-00 | | 1 | SPACER,SLEEVE:0.180IDX0.250ODX0.750 INCH L (ATTACHING PARTS) | | | | | 80009 | 166-0038-00 |
| -151 | 211-0145-00 | | 1 | SCREW,MACHINE:4-40 X 1.00 INCH,PNH BRS | | | | | 83385 | OBD |
| -152 | 210-0586-00 | | 2 | NUT,PLAIN,EXT W:4-40 X 0.25 INCH,STL - - - * - - - | | | | | 78189 | OBD |
| -153 | 131-0569-00 | | 1 | CONNECTOR,RCPT,:25 PIN,MALE (ATTACHING PARTS) | | | | | 71468 | DB25S |
| -154 | 211-0101-00 | | 2 | SCREW,MACHINE:4-40 X 0.25" 100 DEG,FLH STL | | | | | 83385 | OBD |
| -155 | 210-0004-00 | | 2 | WASHER,LOCK:INTL,0.12 ID X 0.26"OD,STL | | | | | 78189 | 1204-00-00-0541C |
| -156 | 210-0406-00 | | 2 | NUT,PLAIN,HEX.:4-40 X 0.188 INCH,BRS - - - * - - - | | | | | 73743 | 2X12161-402 |
| -157 | 384-1061-00 | | 1 | EXTENSION SHAFT:3.981 INCH LONG | | | | | 80009 | 384-1061-00 |
| -158 | 384-1099-00 | | 1 | EXTENSION SHAFT:PUSH BUTTON,1.54 INCH LONG | | | | | 80009 | 384-1099-00 |
| -159 | 384-1121-00 | | 1 | EXTENSION SHAFT:1.41 INCH LONG | | | | | 80009 | 384-1121-00 |
| -160 | 131-0773-00 | | 1 | LEAD,ELECTRICAL:18 INCH,W/30KVDC RATING | | | | | 01009 | 8111LF |
| -161 | 426-1111-00 | | 1 | FR ASSY,MONITOR:FOR 605 | | | | | 80009 | 426-1111-00 |
| | 179-2163-00 | | 1 | WIRING HARNESS:POWER | | | | | 80009 | 179-2163-00 |
| | 175-0825-00 | | FT | WIRE,ELECTRICAL:2 WIRE RIBBON | | | | | 23499 | TEK-175-0825-00 |
| | 175-0828-00 | | FT | WIRE,ELECTRICAL:5 WIRE RIBBON | | | | | 23499 | TEK-175-0828-00 |
| -162 | 200-1075-00 | | 1 | COVER,ELEC CONN:PLASTIC | | | | | 00779 | 1-480435-0 |

REPACKAGING

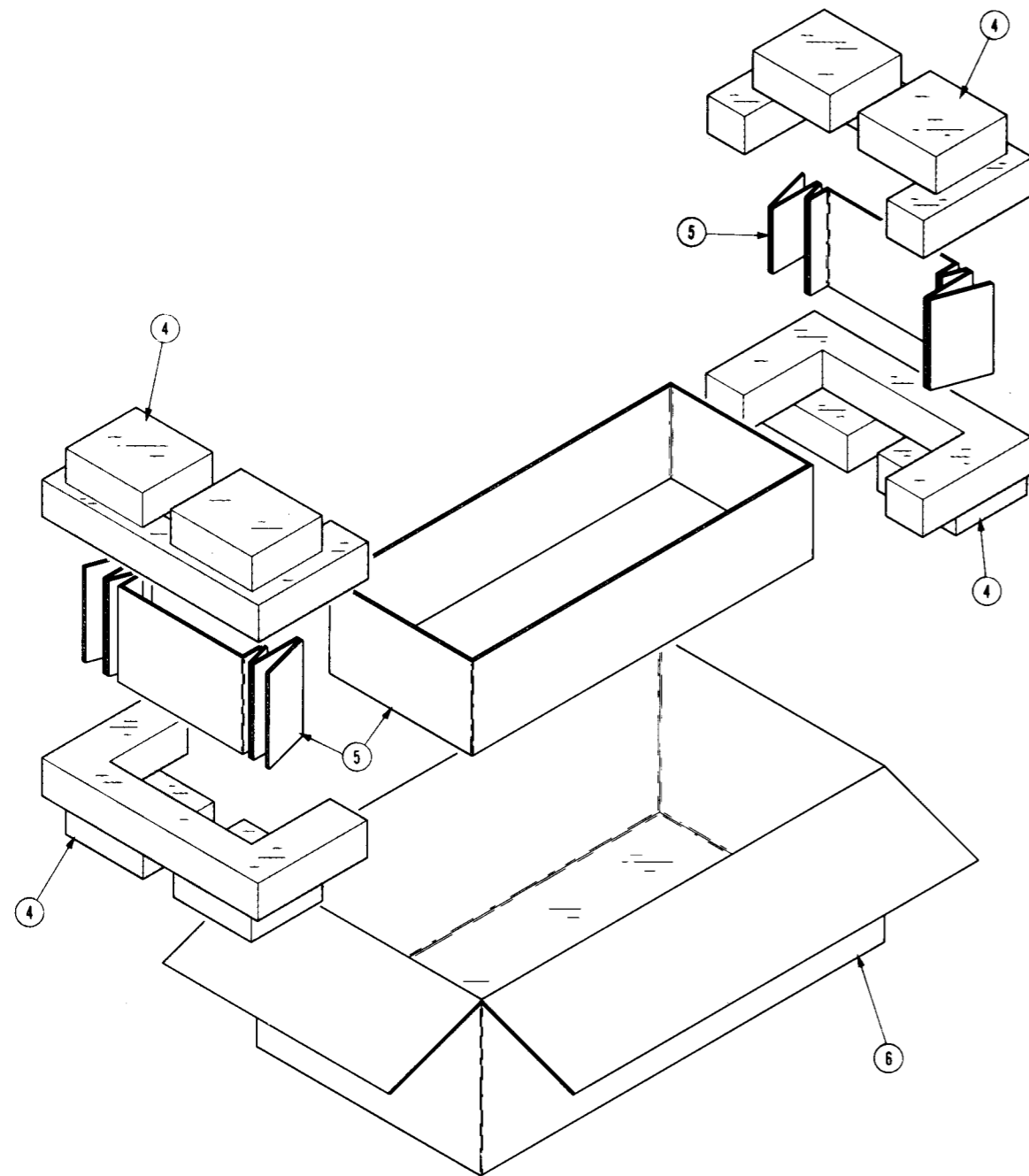
+

ACCESSORIES



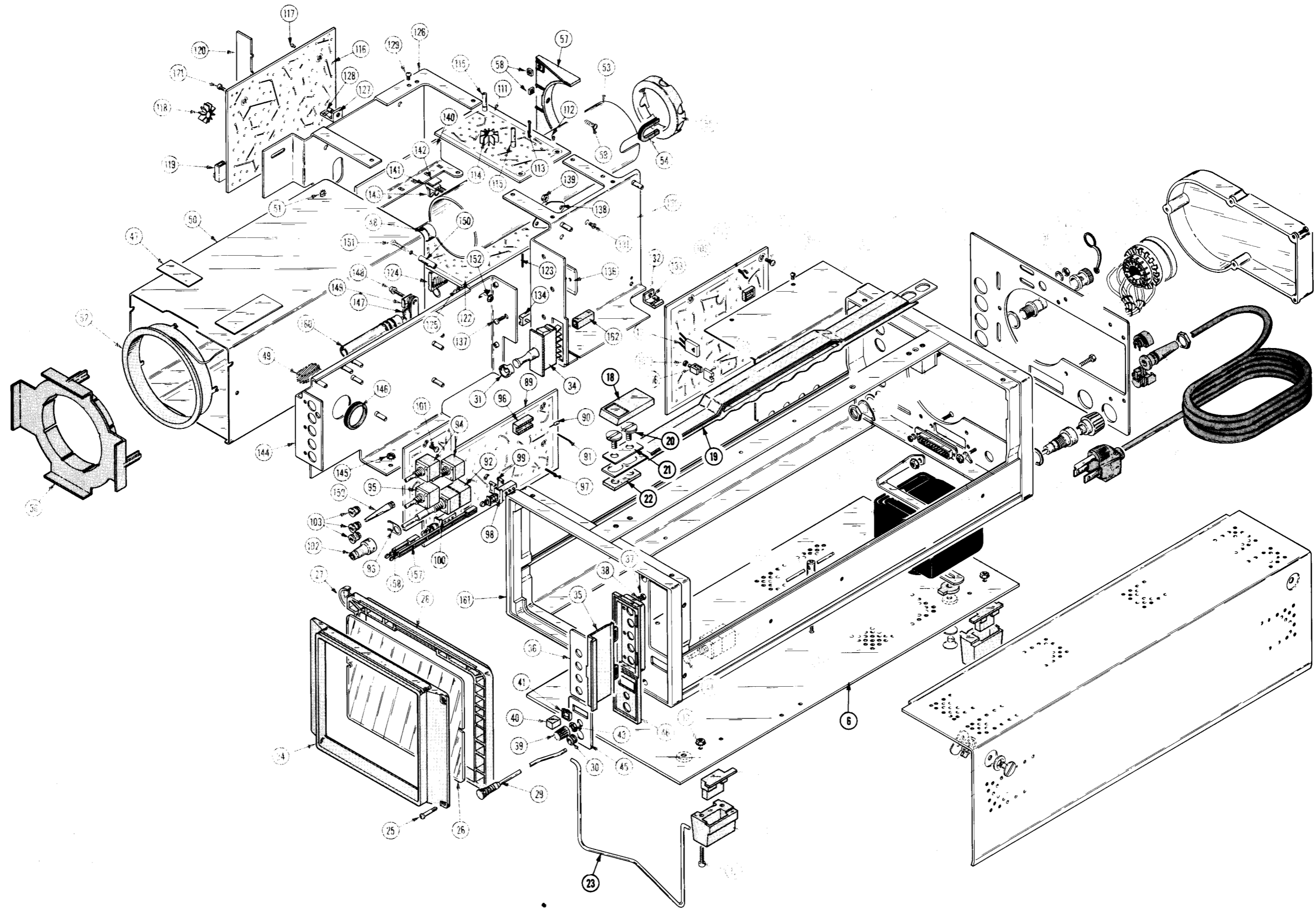
| Fig. & Index No. | Tektronix Part No. | Serial/Model No. Eff | No. Dscont | Qty | 1 | 2 | 3 | 4 | 5 | Name & Description | Mfr | |
|------------------|--------------------|----------------------|------------|-----|---|---|---|---|---|--------------------------------|-------|-----------------|
| | | | | | | | | | | | Code | Mfr Part Number |
| 2- | 070-1679-00 | | | 1 | | | | | | MANUAL, TECH: INSTRUCTION | 80009 | 070-1679-00 |
| -1 | 131-0570-00 | | | 1 | | | | | | CONN, RECPT, ELEC: 25 PIN MALE | 71468 | DB25P |
| -2 | 200-0821-00 | | | 1 | | | | | | COVER, ELEC. CONN: 25 PIN | 09133 | DB-51213-1 |
| -3 | 331-0391-00 | | | 1 | | | | | | GRATICULE, CRT: | 80009 | 331-0391-00 |

REPACKAGING



| Fig. & Index No. | Tektronix Part No. | Serial/Model No. Eff | Dscnt | Qty | Name & Description | | | | | Mfr | |
|------------------------|-----------------------|-------------------------|-------|-----|--------------------|---|---|---|---|-------|-----------------|
| | | | | | 1 | 2 | 3 | 4 | 5 | Code | Mfr Part Number |
| 2- | 065-0150-00 | | | 1 | | | | | | 80009 | 065-0150-00 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| -4 | 004-0281-00 | | | 2 | | | | | | 80009 | 004-0281-00 |
| -5 | 004-1097-00 | | | 1 | | | | | | 80009 | 004-1097-00 |
| -6 | 004-0791-00 | | | 1 | | | | | | 80009 | 004-0791-00 |

+



Delete black reference numbers for Option 3 only.



TEKTRONIX®

committed to
technical excellence

MANUAL CHANGE INFORMATION

PRODUCT 605

CHANGE REFERENCE C1/474

EFF SN B010100-up

DATE 4-30-74

CHANGE:

DESCRIPTION

ELECTRICAL PARTS LIST AND SCHEMATIC CHANGES

CHANGE TO:

| | | |
|------|-------------|--|
| C816 | 283-0003-00 | CAP.,FXD,CER DI: 0.01 μ F, +80%-20%, 150 V |
| CR15 | 152-0066-00 | SEMICOND,SILICON, 400 V, 1A, 1N3194 |
| CR16 | 152-0066-00 | SEMICOND,SILICON, 400 V, 1A, 1N3194 |
| CR17 | 152-0066-00 | SEMICOND,SILICON, 400 V, 1A, 1N3194 |
| CR18 | 152-0066-00 | SEMICOND,SILICON, 400 V, 1A, 1N3194 |
| R36 | 308-0702-00 | RES.,FXD,WW 0.33 OHM, 2W, 5% |

(Two diodes, CR270 and CR272 on the Horizontal Amplifier diagram 3, are drawn backwards).