606B MONITOR WITH OPTIONS



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TEKTRONIX AB
Service
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TEK SERVICE MANUAL

Part No. 070-2821-00 Product Group 3N

606B MONITOR WITH OPTIONS

Please Check for CHANGE INFORMATION at the Rear of This Manual

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WARNING

THE FOLLOWING SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED PERSONNEL ONLY. TO AVOID PERSONAL INJURY, DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.

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SAFETY SUMMARY

The general safety information contained in this summary is for servicing personnel. Specific warnings and cautions will be found throughout the manual where they apply, but may not appear in this summary.

TERMS

IN THIS MANUAL

CAUTION statements identify conditions or practices that could result in damage to the equipment or other property.

WARNING statements identify conditions or practices that could result in personal injury or loss of life.

AS MARKED ON EQUIPMENT

CAUTION indicates a personal injury hazard not immediately accessible as one reads the marking, or a hazard to property including the equipment itself.

DANGER indicates a personal injury hazard immediately accessible as one reads the marking.

SYMBOLS

IN THIS MANUAL



Static-Sensitive Devices.



This symbol indicates where applicable cautionary or other information is to be found.

AS MARKED ON EQUIPMENT



DANGER-High voltage.



Protective ground (earth) terminal.



ATTENTION—refer to manual.

WARNINGS

POWER SOURCE

This product is intended to operate from a power source that will not apply more than 250 volts rms between the supply conductors or between either supply conductor and ground. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

GROUNDING THE PRODUCT

This product is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

USE THE PROPER POWER CORD

Use only the power cord and connector specified for your product. Use only a power cord that is in good condition.

For detailed information on power cords and connectors, see the Operating Power Information in Section 1, General Information.

DANGER ARISING FROM LOSS OF GROUND

Upon loss of the protective-ground connection, all accessible conductive parts (including knobs and controls that may appear to be insulating), can render an electric shock.

USE THE PROPER FUSE

To avoid fire hazard, use only the fuse specified in the parts list for your product, and which is identical in type, voltage rating, and current rating.

DO NOT OPERATE IN EXPLOSIVE ATMOSPHERES

To avoid explosion, do not operate this product in an atmosphere of explosive gases unless it has been specifically certified for such operation.

DO NOT SERVICE ALONE

Do not perform internal service or adjustment of this product unless another person capable of rendering first aid and resuscitation is present.

USE CARE WHEN SERVICING WITH POWER ON

Dangerous voltages exist at several points in this product. To avoid personal injury, do not touch exposed connections and components while power is on.

Disconnect power before removing protective panels, soldering, or replacing components.

CRT HANDLING

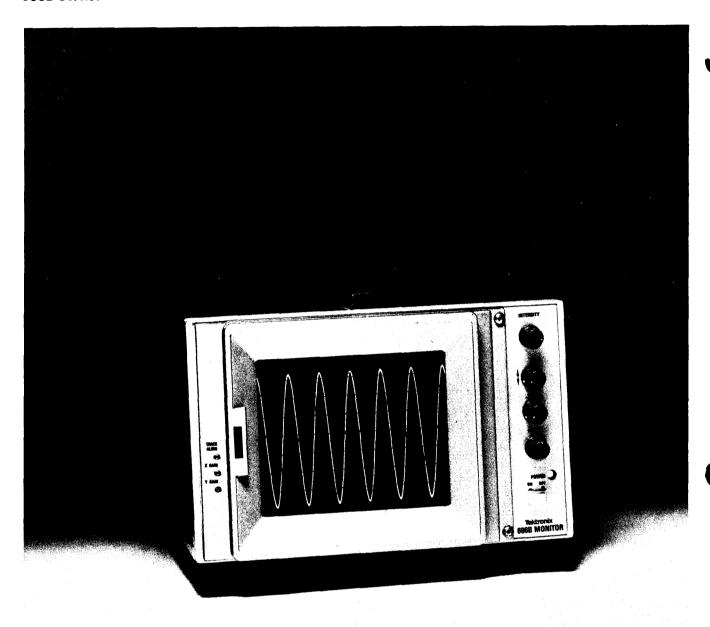
Use care when handling a crt. Breakage of the crt causes a high-velocity scattering of glass fragments (implosion). Protective clothing and safety glasses should be worn. Avoid striking the crt on any object which might cause it to crack or implode. When storing a crt, place it in a protective carton or set it face down in a protected location on a smooth surface with a soft mat under the faceplate.

CRT IMPLOSION SHIELD

Do not operate the instrument without the proper implosion shield installed.

SILICONE GREASE HANDLING

Handle silicone grease with care. Avoid getting the silicone grease in your eyes. Wash hands thoroughly after use.



2821-1

606B FEATURES

The 606B Monitor is a general purpose, very high-resolution, X-Y display monitor providing a clear, bright display of analog data. This instrument is designed for display applications as in ultrasonic detection systems, electronic microscope systems, radiation and thermal scanning systems, speech therapy, volume and vibration analysis, and medical and biophysical systems. The 606B Monitor may also be used to provide displays of alpha-numeric and graphic information from computers and other data transmission systems. Resolution of the crt in this instrument is excellent (shown with Option 6 installed).

GENERAL INFORMATION

This section contains a basic content description of both the Operators and Service Manuals, instrument functional description, rackmounting information, exterior cleaning, instrument packaging, and specifications. The Specification portion consists of three tables; Electrical, Environmental, and Physical Characteristics.

A Standard Accessories list and full-page instrument Dimensional Drawing is also contained in this section.

OPERATORS MANUAL

The Operators Manual is divided into the following three sections:

Section 1—General Information contains instrument description, electrical specifications, environmental characteristics, standard and recommended accessories, and packaging for shipment instructions.

Section 2—Operating Instructions contain information relative to operating and checking the instrument operation.

Section 3—Instrument Options contains a description of available options and gives the location of the incorporated information for those options.

SERVICE MANUAL

WARNING

The Service Manual contains instructions for use by qualified service personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so.

Section 1—General Information contains instrument description, electrical specifications, environmental characteristics, standard and recommended accessories, installation, and packaging for shipment instructions.

Section 2—Operating Instructions contains information on instrument installation, front-and rearpanel controls, connectors and indicators, internal switches and selectors, checkout procedure and other information relative to operating and checking instrument operation.

Section 3—Theory of Operation contains basic and general circuit analysis that may be useful for servicing or operating the instrument.

Section 4—Maintenance describes routine and corrective maintenance procedures with detailed instructions for replacing assemblies, subassemblies, and individual components.

Section 5—Calibration contains procedures to check the operational performance and electrical characteristics of the instrument. Procedures also include methods for adjustment of the instrument to meet specifications.

Section 6—Instrument Options contains a description of available options and locations of incorporated information for those options.

Section 7—Replaceable Electrical Parts contains information necessary to order replaceable parts and assemblies related to the electrical functions of the instrument.

Section 8—Diagrams and Circuit Board Illustrations includes detailed circuit schematics, locations of assembled boards within the instrument, voltage and waveform information, circuit board component locators, and locations of adjustments to aid in the performing of the Adjustment and Performance Check portion of the Calibration procedure.

Section 9—Replaceable Mechanical Parts includes information necessary to order replaceable mechanical parts and shows exploded drawings which identify assemblies.

INSTRUMENT DESCRIPTION

The 606B Monitor is a compact, solid-state instrument with excellent resolution providing accurate displays of information from the X, Y, and Z signal inputs.

WARNING

High voltage is present inside the instrument. To avoid electric shock hazards, operating personnel must not remove protective instrument covers. Component replacement and internal adjustments must be made by qualified service personnel only.

General Information-606B

The Horizontal (X) and Vertical (Y) Amplifiers process the input signals (either single-ended or differential) and provide push-pull outputs to drive the crt deflection plates. The input signals are applied through the appropriate + (noninverting) and - (inverting) INPUT connectors.

The Z-Axis Amplifier controls the display intensity by providing a voltage to drive the crt control grid. The input signals (either single-ended or differential) are applied through the appropriate + (noninverting) and – (inverting) INPUT connectors.

The High-Voltage and Low-Voltage Power Supplies provide all the voltages necessary for operation of this instrument.

INSTALLATION

INITIAL INSPECTION

This instrument was inspected both mechanically and electrically before shipment. It should be free of mars or scratches and should meet or exceed all electrical specifications. To confirm this, inspect the instrument for physical damage incurred in transit and test the electrical performance by following the Checkout Procedure in Section 2, Operating Instructions. Verify performance requirements by referring a qualified service person to the servicing sections of the Service Manual. If there is damage or deficiency, contact your local Tektronix Field Office or representative.

OPERATING POWER INFORMATION

This instrument can be operated from either a 120-volt or 220-volt nominal line-voltage source, 48 to 440 hertz. In addition, three regulating ranges are provided for each nominal line-voltage source.

CAUTION

To prevent damage to the instrument, always check the line-voltage information recorded on the rear panel before applying power to the instrument.

Power Cord Information

WARNING

This instrument is intended to be operated from a single-phase earth-referenced power source having one current-carrying conductor (the Neutral Conductor) near earth potential. Operation from power sources where both current-carrying conductors are live with respect to earth (such as phase-to-phase on a three-wire system) is not recommended, since only the line conductor has over-current (fuse) protection within the instrument.

This instrument has a three-wire power cord with a polarized two-pole, three-terminal plug for connection to the power source and safety-earth. The safety-earth terminal of the plug is directly connected to the instrument frame. For electric-shock protection, insert this plug only in a mating outlet with a safety-earth contact.

Do not defeat the grounding connection. Any interruption of the grounding connection can create an electric-shock hazard. Before making external connections to this instrument, always ground the instrument first by connecting the power cord to a properly mated power outlet.

TABLE 1-1
Power-Cord Conductor Identification

Conductor	Color	Alternate Color
Ungrounded (Line)	Brown	Black
Grounded (Neutral)	Light Blue	White
Grounding (Earthing)	Green/Yellow	Green/Yellow

The power-cord plug required depends upon the ac input voltage and the country in which the instrument is to be used. Should you require a power-cord plug other than that supplied with your instrument, refer to the standards listed in Table 1-2.

TABLE 1-2 Location of Power-Cord Configuration Information

Nominal Line Voltage	Reference Standards
120 V AC	¹ ANSI C73.11
	² NEMA 5-15P (Hospital Grade)
220 V AC	ANSI C73.20
	³ AS C112
	⁴ BS 1363
	⁵ CEE 7, sheets IV, VI and VII
	NEMA 6-15-P

¹ANSI-American National Standard Institute

For medical-dental applications, use NEMA 5-15-P (Hospital Grade) plug for 120-volt operation, or NEMA 6-15-P plug for 220-volt operation.

Line-Voltage and Regulating-Range Selection



Damage to the instrument may result from incorrect placement of the line-voltage selector plug. (See Ambient Temperature Considerations, page 2-1.)

To select the correct nominal line voltage and regulating range, proceed as follows:

- 1. Disconnect the instrument from the power source.
- 2. Insert the proper line-voltage selector plug (the brown plug for 120-volt operation or the red plug for 220-volt operation) on the line-voltage selector pins (located on the Low-Voltage Power & Z Axis board) labeled for the desired nominal line-voltage range. Refer to Figure 1-1 for location and additional information.
- 3. Remove the line fuse from the fuse holder and check for the correct rating. Replace it with one having the correct rating, if necessary. Refer to Figure 1-1 for fuse information and location.

NOTE

An alternate line fuse, intended for the linevoltage source for which the Monitor was not set when shipped from the factory, is clipped to the Low-Voltage Power & Z Axis board (see Fig. 1-1).

- 4. Change the voltage range indicating screw to the appropriate hole in the line-voltage information chart on the 606B rear panel.
- 5. Apply power to the Monitor.

INSTALLATION IN PATIENT-CARE FACILITIES

WARNING

Do not use the amplifier INPUTS for directpatient connection. Signal currents at these connectors, as well as leakage currents, may exceed values considered nonhazardous for direct-patient connection.

Although this Monitor is not to be connected directly to a patient, interconnecting this Monitor to other equipment can result in the application of excessive current to a patient. It is extremely important that the interconnection is made in accordance with NFPA 76B-5, Tentative Standard for the Safe Use of Electricity in Patient Care Areas of Health Care Facilities, section 3038, "Signal Transmission Between Appliances".

Among the situations involving the above-mentioned patient hazard is one in which two or more pieces of interconnected equipment are grounded at locations remote from one another. The standard mentioned in the preceding warning describes both this hazard and the appropriate corrective measures.

INPUT ATTENUATION

The Horizontal (X) and Vertical (Y) Amplifiers include selectable 1X/5X step attenuators in both the + (non-inverting) and the - (inverting) input circuits. These attenuators extend the deflection factor range of the appropriate amplifier to at least 12.5 volts for 8 cm signal deflection. Refer to the Internal Control and Selector Locations foldout page in Section 8, Diagrams and Circuit Board Illustrations for the position settings and locations of the attenuator switches. To maintain proper differential operation of the amplifier, always change both the + and - attenuators to the same settings. These step attenuators are set in the 1X position when shipped from the factory.

NOTE

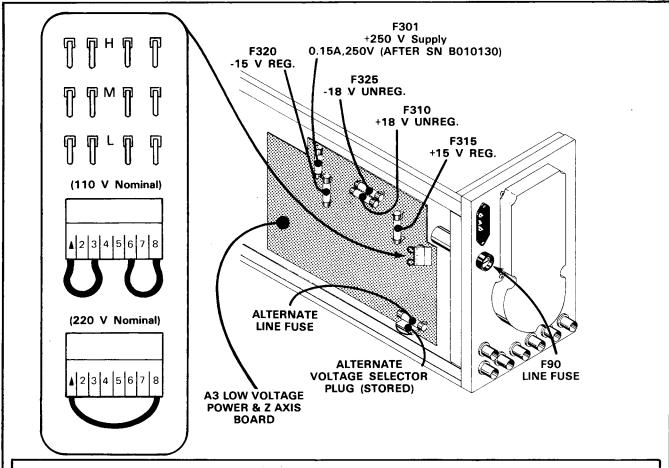
Settling Time specifications (Table 1-1, General Information) are guaranteed only when using the 1X attenuator position.

²NEMA—National Electrical Manufacturer's Association

³AS-Standards Association of Australia

⁴BS-British Standards Institution

⁵CEE—International Commission on Rules for the Approval of Electrical Equipment



Regulating Range Data		
Line-Voltage Selector Position 110 Volts (Nominal) 220 Volts (Nomin		220 Volts (Nominal)
L (LOW)	90 to 110 V ac	180 to 220 V ac
M (MED)	99 to 121 V ac	198 to 242 V ac
H (HIGH)	108 to 132 V ac	216 to 250 V ac

Fuse Data		
Supply .	Description	
Line	1.2 A (110 V Nominal) 0.6 A (220 V Nominal) slow	
+18 v dc Unregulated	1.5 A 250 V fast blow	
-18 V dc Unregulated	1.5 A 250 V fast blow	
+15 V dc Regulated	0.5 A 250 V fast blow	
-15 V dc Regulated	0.5 A 250 V fast blow	
+250 V dc Regulated	0.15 A 250 V fast blow	

Figure 1-1. Location of line-voltage selector plugs, regulating-range pins and fuses.

INPUT IMPEDANCE

The X, Y, and Z-Axis amplifiers of the 606B Monitor are shipped from the factory with an input impedance of 50 Ω . Jumpers are provided on the X-Y Pre-Amplifier board (for the X and Y amplifiers) and on the Low Voltage Power and Z Axis board (for the Z-Axis amplifier) to facilitate changing the input impedance from the factory set impedance (50 Ω) to 1 M Ω .

Refer to Internal Control and Selector Locations foldout page in Section 8, Diagrams and Circuit Board Illustrations for locations and positions.

RACKMOUNTING INFORMATION

The 606B can be operated in a standard 19-inch instrument rack with front and rear holes that conform to universal hole spacing. Kits are available to convert the 606B from the cabinet to a rackmounted configuration, and vice versa. Complete instructions are included in the kits. A brief description of each available conversion kit is given here. Consult your Tektronix Field Office or representative for additional information.



Reliability and performance of the 606B will be affected if the ventilation holes in the protective panels are obstructed. Forced ventilation methods will be needed if the 606B is operated at an ambient temperature higher than +50°C (see Ambient Temperature Considerations in Section 2 of this manual).

CABINET-TO-RACKMOUNT CONVERSION

Tektronix Part 040-0600-XX. Mounts two 606B Monitors side-by-side in a standard 19-inch wide rack. The kit comes equipped with a slide-out assembly and includes the securing hardware. Complete rackmounting instructions are included in each kit.

Tektronix Part 040-0601-XX. Mounts 606B Monitor in a standard 19-inch wide rack. The kit is equipped with a slide-out assembly, securing hardware, and a blank front panel to cover the second instrument opening in the rack. Complete rackmounting instructions are included in each kit.

Tektronix Part 040-0624-XX. Converts one TM 503 Power Module and one 606B Monitor to mount side-by-side in a standard 19-inch wide instrument rack. The kit includes slide-out assembly and securing hardware. Complete rackmounting instructions are included with each kit

RACKMOUNT-TO-CABINET CONVERSION

Tektronix Part 040-0602-XX. Converts one 606B Monitor from a rackmount configuration to a cabinet configuration. Complete instructions are included in each kit.

SLIDE-OUT TRACKS

The slide-out tracks provided in the conversion kits support the monitor in their fully extended position. This allows access to the instrument for maintenance without removing it from the rack. Be sure the power cord and signal cables are long enough to allow operation in the extended position. Refer to the instructions in the appropriate rackmount kit for information on track installation and adjustment.

REMOVING OR INSTALLING THE INSTRUMENT

The instrument can be installed or removed by following the instructions given in Figure 1-2. No further adjustments are required under normal conditions.

SLIDE-OUT TRACK LUBRICATION

The special finish on the sliding surfaces of the tracks provides permanent lubrication. However, if the tracks require additional lubrication, a thin coat of paraffin can be rubbed onto the sliding surfaces.

INSTRUMENT PACKAGING

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

Save and reuse the package in which your 606B Monitor was shipped to you. If the original packaging is unfit for use or is not available, repackage the instrument as follows:

- 1. Obtain a corrugated cardboard carton with a 275 pound test strength, and having inside dimensions of no less than six inches more than the instrument dimensions; this allows for cushioning.
- 2. Surround the instrument with polyethylene sheeting to protect the finish.
- Surround the instrument frame with heavy cardboard (if no protective cabinet panels are available) to minimize the danger of component damage by the packing material.
- 4. Cushion the instrument on all sides by tightly packaging dunnage or urethane foam between the carton and the instrument, allowing three inches on all sides.
- 5. Seal the carton with shipping tape or with an industrial stapler.
- 6. Mark the address of the Tektronix Service Center and your return address on the carton in one or more prominent locations.

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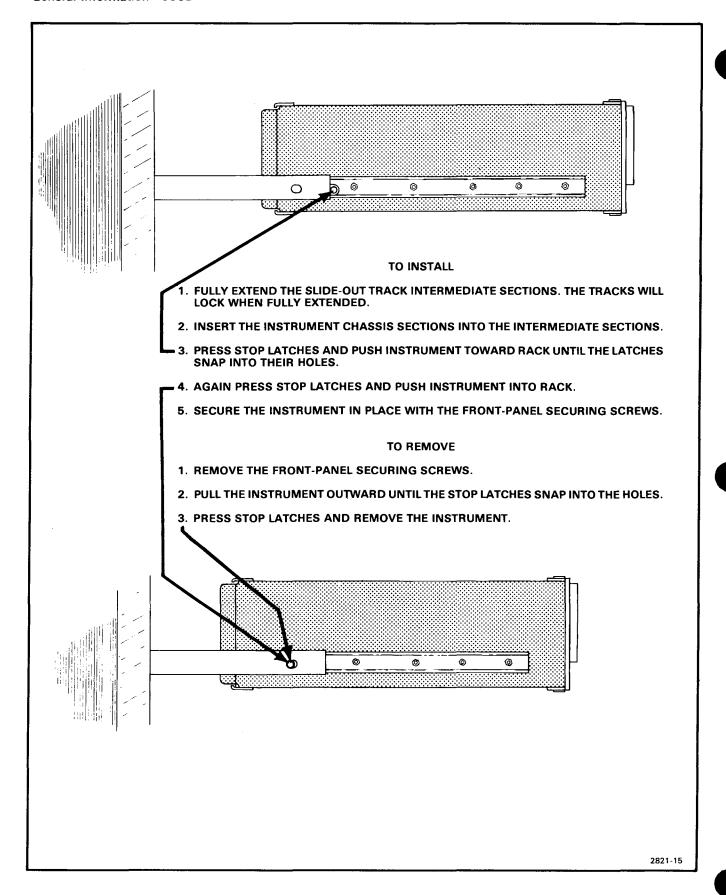


Figure 1-2. Installing and removing a rackmounted instrument.

SPECIFICATION

The electrical specifications listed in Table 1-3 apply when the following conditions are met: (1) The instrument must have been adjusted at an ambient temperature between $+15^{\circ}$ and $+25^{\circ}$ C, (2) The instrument must be operating in an ambient temperature between 0° and $+50^{\circ}$ C and (3) The instrument must have been operating for at least 20 minutes.

TABLE 1-3 Electrical Characteristics

Characteristic	Performance Requirement	
VERTICAL AND HORIZONTAL AMPLIFIERS		
Deflection Factor		
Vertical	Internally adjustable from 0.5 volt to 2.5 volts for 8 divisions of deflection. Externally adjustable for at least $\pm 10\%$ of nominal.	
Horizontal	Internally adjustable from 0.5 volt to 2.5 volts for 8 divisions of deflection. Externally adjustable for at least ±10% of nominal.	
Attenuators	Internal 1X-5X step attenuators extend the deflection factor range to at least 12.5 volts full screen.	
Polarity		
+X INPUT	Positive signal applied deflects beam to the right; negative signal applied deflects beam to the left.	
-X INPUT	Positive signal applied deflects beam to the left; negative signal applied deflects beam to the right.	
+Y INPUT	Positive signal applied deflects beam up; negative signal applied deflects beam down.	
-Y INPUT	Positive signal applied deflects beam down; negative signal applied deflects beam up.	
Bandwidth (80% full screen reference signal)	Dc to at least 3 MHz at -3 dB point.	
Risetime	116 nsec or less.	
Settling time (input attenuators in 1X position)		
After deflection between any two points on screen	Spot must reach new writing position, within 0.012 cm (0.005 inch), within 500 ns.	
After deflection to any point on screen from within 10 cm of screen center.	Spot must reach new writing position, within 0.012 cm (0.005 inch), within 700 ns.	
Phase Difference (Dc to 500 kHz)	1 degree or less between X and Y amplifiers. X and Y amplifie gain must be set for the same deflection factor (Volts/Div).	

Characteristic	Performance Requirement	
Common-Mode Rejection		
Attenuator 1X (±3 volts peak input)		
DC to 500 kHz	At least 100:1.	
500 kHz to 1 MHz	At least 40:1.	
Attenuator 5X (±15 volts peak input)		
DC to 500 kHz	At least 40:1.	
Input Impedance	1 M Ω within 1%, or 50 Ω within 1%; paralleled by 47 pF or less.	
Maximum Nondestructive Input Voltage (fault condition only)		
1 M Ω Input Impedance	±100 V dc + peak ac.	
50 Ω Input Impedance	±5 V dc + peak ac.	
Dynamic Range	At least ±1.5 screen diameters from screen center (±10 cm).	
Position Range	Spot may be positioned anywhere on screen with no signal input.	
Position Stability	0.1 cm or less drift per hour after 20 minutes warmup. Less than 0.2 cm drift in 24 hr. with cabinet covers in place. Less than 0.2 cm drift from 0° to 50° C ambient temperature variation, after 20 min. warmup.	
Gain Stability	Less than 1% change under all conditions of line voltage and temperature.	
Crosstalk	and temperature.	
Between X and Y Amplifiers at 1 MHz	0.005 cm (0.002 inch) or less of deflection on the undriven channel with full screen amplitude of 1 MHz sinewave applied to the other channel. Other inputs grounded or terminated into 50 ohms.	
Between Z and X or Y Amplifier	0.012 cm (0.005 inch) or less of deflection on the undriven channels when the Z-Axis Amplifier is driven for a 70 V output with a 1 MHz sinewave. X and Y inputs grounded or terminated into 50 ohms.	
Z	AXIS AMPLIFIER	
Gain Range	Internal adjustment allows a 1 volt to 5 volts input to generat the maximum allowable voltage swing at the crt control grid (0 V to ~ 70 V).	
Bandwidth	Dc to 5 MHz at -3 dB point.	
Risetime	35 ns or less.	
Aberration	5% or less.	
Common Mode Rejection		
Dc to 1 MHz	At least 100:1 (±5 volts peak input).	

Characteristic Performance Requirement		
Input Impedance	1 M Ω within 1%, or 50 Ω within 1%; paralleled by 47 pF or less.	
Maximum Nondestructive Input Voltage (fault condition only)		
1 M Ω Input Impedance	±100 V dc + peak ac.	
50 Ω Input Impedance	±5 V dc + peak ac.	
Transfer Curve	Deviation from linear response of light output to voltage input is less than 20% of maximum intensity, between 10% and 100% of maximum intensity.	
TTL Input	Logic input blanks or unblanks crt to level set by INTENSITY control and Z INPUT voltage.	
Н	+2.4 V to +5 V.	
LO	0 V to +0.8 V.	
Rise Time	35 ns or less.	
Fall Time	35 ns or less.	
Stability	Light output varies less than 5% under all conditions of line voltage and temperature, when intensity is set for at least 10% of maximum brightness.	

CATHODE-RAY TUBE

Display Area	8 × 10 cm.
Quality Area	7 × 9 cm.
Geometry (full screen)	Bowing or tilt 1 mm or less.
Orthogonality (full screen)	90° within 0.7°.
Compression and Expansion	Less than 1% of full screen deflection.
Phosphor	
Standard	P31.
Option 78	P11.
Deflection	Electrostatic.
Spot Diameter (P31 phosphor)	0.079 cm (0.0031 inch) or less, with INTENSITY set for 3.45 μ W/cm², 700 line, 7 × 9 cm focused raster.
Spot Shape (quality area)	The ratio between two perpendicular spot cross sections does not exceed 1.5:1.
Spot Growth (quality area)	Not greater than 20% at constant intensity.

Characteristic	Performance Requirement
Grid Drive	Approximately 70 V above the level of visible cutoff. Measured at crt grid.
Acceleration Potential	5.4 kV within 1%.
Light Output (quality area)	Greater than 20 μ W/cm ² using a 700 line 60 Hz refresh raster with a 100% duty cycle. Maximum allowable drive to the crt.
Light Output Uniformity (quality area)	When screen is flooded using raster method and light output is at least 10% of maximum, light output will vary less than 2%/cm and vary less than 10% over the entire quality area.
Defects	The following definitions apply to measuring screen defects: LENGTH: The maximum linear dimension in any direction across the defect in question. WIDTH: The maximum linear dimension perpendicular to the length.
Quality Area	 Any number of defects less than 5 mils in both width and length. No defects with length plus width exceeding 20 mils except when the width is less than one mil. Any number of defects with width less than one mil. No more than five defects greater than one mil in width, greater than five mils in length, and with length plus width equal to or less than 20 mils. No two such defects can be within one centimeter of each other.
Outside Quality Area	Not more than three holes with length plus width equal to or more than 25 mils.

POWER SOURCE

90 to 110 V ac.
99 to 121 V ac.
108 to 132 V ac.
180 to 220 V ac.
198 to 242 V ac.
216 to 250 V ac.
48 to 440 Hz.
75 W, 120 V ac, 60 Hz.
50 W, 120 V ac, 60 Hz.

Characteristic	Performance Requirement	
Fuse Data		
LO Line Voltage	Slow blow, 1.2 Amp.	
HI Line Voltage	Slow blow, 0.6 Amp.	

POWER SUPPLIES

Supply (dc)	Voltage Range	Ripple (p-p)
-15 V dc	-15.2 V to -14.8 V	2 mV or less
+15 V dc	+14.95 V to +15.05 V	2 mV or less
+95 V dc	+94.0 V to +98.0 V	100 mV or less
+250 V dc	+249 V to +251 V	150 mV or less
-5.4 kV dc	-5.25 kV to −5.45 kV	

TABLE 1-4
Environmental Characteristics

Characteristic	Information
Ventilation	Convection cooling.
Position	Instrument has to be positioned with the bottom or the rear panel down, within 45 degrees.
Temperature (ambient)	
Operating	0° C to +50° C (+32° F to +122° F).
Nonoperating	-40° C to +70° C (-40° F to +158° F).
Altitude	
Operating	To 4.5 km (15,000 ft.).
Nonoperating	To 14.5 km (50,000 ft.).
Vibration	With the instrument complete and operating, vibration frequency swept 10 to 50 to 10 Hz at 1 minute per sweep. Vibrate 15 minutes in each of the 3 major axes at 0.025 inch total displacement. Hold 3 minutes at any major resonance, or if none, at 50 Hz. Total time 54 minutes.

TABLE 1-4 (CONT) Environmental Characteristics

Characteristic	Information
Shock	50 g, 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.
Humidity (Class 5)	Test to MIL-STD-810C method 507.1 procedure IV modified and specified in MIL-T-28800B Par. 4.5.5.1.1.2.
Operating	50° C 90 to 95% R.H.
Nonoperating	60° C 90 to 95% R.H.

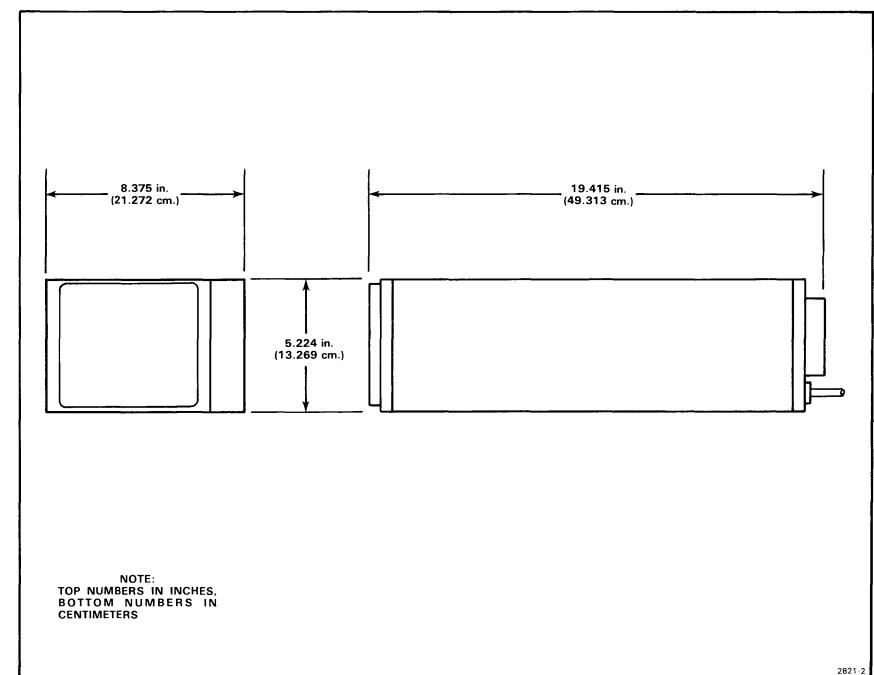
TABLE 1-5 Physical Characteristics

Characteristic	Information Approximately 17.5 lbs.	
Weight		
Overall dimensions	See 606B Dimensional Drawing, Figure 1-3.	

STANDARD ACCESSORIES

1	ea Operators Manual
1	ea

For more detailed information, refer to the tabbed Accessories page at the rear of this Manual.



OPERATING INFORMATION

To operate this instrument effectively, the user must become familiar with the operation and capabilities of the instrument. This section contains preliminary operating information, a description of front- and rear-panel controls, connectors, and indicators, and a checkout procedure. Detailed operating information and typical applications are included in this section.

AMBIENT TEMPERATURE CONSIDERATIONS

This instrument can be operated where the ambient air temperature is between 0° and +50° C, and can be stored in ambient temperatures between -40° and +70° C. After being stored in temperatures beyond the operating limits, allow the chassis temperature to return to within the operating limits before applying power. Allowing the Monitor to operate at an ambient temperature substantially higher than that specified may result in poor reliability as well as inaccurate performance.

When the 606B is mounted in a rack with other equipment, do not allow the temperature surrounding the monitor to exceed +50° C. Additional clearance or forced ventilation methods (fan) may be necessary to maintain ambient temperatures below +50° C. The reliability and performance of the 606B will be affected if the ventilation holes in the protective panels are obstructed or if the 606B is operated at an ambient temperature higher than +50° C. Other environments and mounting configurations may require additional cooling measures.

CONTROLS AND CONNECTORS

Controls and connectors necessary for operation of the 606B Monitor are located on the front and rear panels of the instrument. To make full use of the capabilities of the 606B the operator should be familiar with the function and use of each external control and connector. The front-panel controls are shown and described in Figure 2-1. Brief descriptions of the rear-panel controls and connectors are given in Figure 2-2.

DETAILED OPERATING INFORMATION

SIGNAL CONNECTORS

The bnc connectors on the rear panel of the standard 606B Monitor are provided for application of input signals to the vertical (Y) and horizontal (X) Amplifiers for display on the crt, and to the Z-Axis Amplifier to control the display intensity. An additional bnc connector is provided to allow application of TTL-compatible input voltages to blank the display.

The 606B Monitor also provides a 25-pin male Cannon connector located on the rear panel for direct connections to the X, Y and Z-Axis Amplifiers and the Dynamic Focus. Signal requirements are the same as for the bnc inputs. See Figure 2-3 for pin assignments.

NOTE

The bnc grounding caps will short the equivalent input from the ALTERNATE INPUTS connector. Be sure the grounding cap is on the -INPUT before making connection to the ALTERNATE INPUTS connector.

INPUT SIGNAL REQUIREMENTS

The horizontal (X) and vertical (Y) deflection factors are set at the factory to one volt for eight divisions of deflection on each axis. Thus, as shipped, the input signal required for each division of deflection is 0.125 volt.

The best transient response from the 606B Monitor is achieved when the input signal amplitude to the X and Y INPUT is no greater than that sufficient to provide full-screen deflection.

WARNING

To avoid electric shock hazard, do not apply input signals at more than 25 volts (dc plus peak ac).

With no signals applied to the Z INPUT, the intensity of the display is controlled only by the front-panel INTENSITY control. To control the display intensity with an externally applied signal, set the INTENSITY control to about midrange, and apply the input signal to the Z INPUT connector.

CAUTION

Exercise care in establishing the correct display intensity; a high-amplitude Z-Axis input signal, combined with an excessively high setting of the INTENSITY control, may damage the crt phosphor. The very small spot size of this instrument increases the chances of crt phosphor damage. Do not allow a stationary, bright, focused spot to remain on the screen.

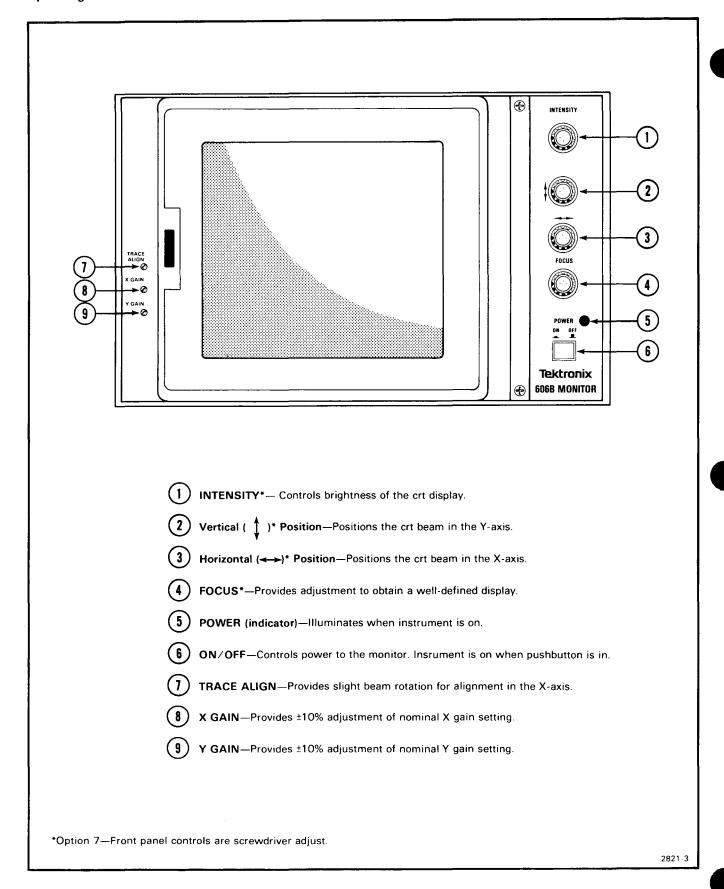
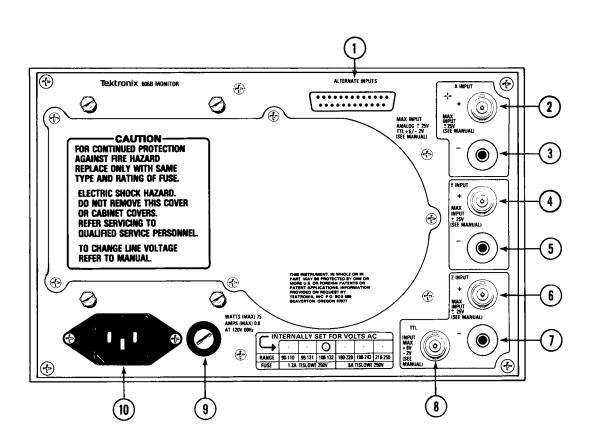


Figure 2-1. Front panel controls and indicators (Option 7-Position, FOCUS and INTENSITY controls are screwdriver adjustable).



- ALTERNATE INPUTS—multi-pin connector provides alternate inputs for the +X, +Y, and +Z-axis signals, and Remote Defocus.
- +X INPUT—bnc input connector to allow application of input signals. A positive signal applied deflects beam to the right; a negative signal deflects beam to the left.
- -X INPUT—bnc input connector with grounding cap. A positive signal deflects beam to the left; a negative signal deflects beam to the right.
- 4 +Y INPUT—bnc input connector. A positive signal applied deflects beam up; a negative signal deflects beam down.
- **5** -Y INPUT—bnc input connector with grounding cap. A positive signal applied deflects beam down; a negative signal deflects beam up.
- 6 +Z INPUT—bnc input connector. A positive signal applied provides a linear function to increase display brightness; a negative signal decreases display brightness.
- -Z INPUT—input connector with grounding cap. A positive signal applied provides a linear function to decrease display brightness; a negative signal increases display brightness.
- (8) TTL Z INPUT—bnc input connector to allow application of TTL-compatible voltages to unblank the crt display.
- (9) Line Fuse—120 V 1.2 A SLOW; 220 V 0.6 A SLOW (use 3 AG 250 V fuse).
- (10) Power Connector—allows connection to the ac power source to operate the instrument.

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Figure 2-2. 606B Rear panel controls and connectors.

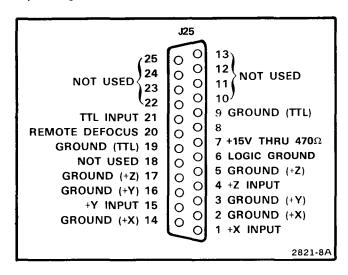


Figure 2-3. Alternate input connector data.

The input signal required for maximum display intensity, through the Z INPUT connector, is set at the factory for approximately +1 volt. The input signal required to visually cut off the display intensity (INTENSITY set at midrange) is set at the factory for approximately -1 volt. The best transient response of the Z-Axis Amplifier is achieved when the input signal is the minimum required to provide the desired intensity change.

An additional bnc connector is provided on the rear panel for application of TTL-compatible input voltages to blank the crt display. The input voltage level necessary to produce blanking is internally selectable. Refer to the Internal Control and Selector Locations foldout in Section 8, Diagrams and Circuit Board Locations, at the rear of the manual.

CHECKOUT PROCEDURE

The Checkout Procedure may be used to verify proper operation of the front-panel controls and for familiarization with the instrument. Only instrument functions (not measurement quantities or specifications) are checked in the procedure; therefore, a minimum amount of test equipment is required. If performing the Checkout Procedure reveals improper performance or instrument malfunction, check the operation of associated equipment; then refer to the Calibration section for repair or adjustment of the instrument.

WARNING

High voltage is present inside the instrument. Use extreme caution to avoid electric-shock hazards whenever the covers are removed.

TEST EQUIPMENT REQUIRED

The following test equipment was used as a basis to write the Checkout procedure. Other test equipment, which meets these requirements, may be substituted. When other equipment is substituted, the control settings or set up may need to be altered.

1. Power Module

Description: TEKTRONIX TM 500-Series Power Module with one or more plug-in compartments.

Type Used: TEKTRONIX TM 501 (used with the FG 503 Function Generator).

2. Function Generator

Description: Frequency range, one hertz to 50 kilohertz; output amplitude, one volt peak-to-peak into 50 ohms, waveform output, sine wave.

Type Used: TEKTRONIX FG 503 Function Generator (used with TM 501 Power Module).

3. Cables bnc (3 required)

Description: Length, 42 inches (1 required), 18 inches (2 required); connectors, bnc.

Type Used: Type RG-58/U, 50-ohm coaxial, Tektronix Part 012-0057-01 (42 inch), Tektronix Part 012-0076-00 (18 inch).

4. T Connector

Description: Connectors, bnc-to-bnc.

Type Used: Bnc-to-bnc T connector, Tektronix Part 103-0030-00.

5. 50-ohm Termination

Description: Impedance, 50 ohm; connectors, bnc.

Type Used: Tektronix Part 011-0049-01.

6. 5X Attenuator

Description: Impedance 50 ohm; connectors, bnc.

Type Used: Tektronix Part 011-0060-02.

PRELIMINARY SET UP

- 1. Install the function generator in the power module and turn on the power module.
- 2. Connect the 606B power cord to a compatible power source.

NOTE

Check the line voltage information recorded on the rear panel. If the source voltage is not within this range, refer to the servicing information sections of this Manual. 3. Set the front-panel controls as follows:

Vertical and Horizontal Position midrange
INTENSITYfully counterclockwise
FOCUS midrange
ON/OFF ON (pushbutton in)

- 4. Allow at least one minute for the instrument to warm up.
- 5. Proceed to the functional check procedure.

DISPLAY FUNCTIONS

- 1. Perform the Preliminary Set-Up procedure.
- 2. Notice that a spot will appear on the crt, increasing in brightness as you slowly turn the INTENSITY control clockwise.

NOTE

A high intensity level combined with a stationary spot will damage the crt phosphor. Therefore, set the INTENSITY control to the minimum necessary for good visibility.

- 3. Adjust the FOCUS control for a sharp, well-defined display. Final focus adjustment must be made with a magnifier or microscope to guarantee resolution.
- 4. Turn the Vertical and Horizontal Position controls and notice that the spot position can be controlled by both controls.

DEFLECTION AND Z-AXIS FUNCTIONS

- 1. Perform the Preliminary Set Up procedure.
- 2. Set the function generator for a 1-volt (peak-to-peak), 50-kilohertz sine-wave output as measured through a 50 ohm terminator.
- 3. Connect the function generator output to the rearpanel +X INPUT connector via the 42-inch cable and the 50 ohm terminator.
- 4. Center the display with the horizontal Position control, and check for 8 divisions of horizontal deflection.
- 5. Remove the grounding cap from the -X INPUT connector.
- 6. Disconnect the signal from the +X INPUT connector and apply it to the -X INPUT connector through the 50 ohm terminator.
- 7. Place the grounding cap on the +X INPUT connector.
- 8. Center the display with the horizontal Position control.

- 9. Check for 8 divisions of horizontal deflection.
- 10. Disconnect the signal from the -X INPUT connector and apply it to the +Y INPUT connector through the 50 ohm terminator.
- 11. Center the display on the crt with the vertical Position control.
- · 12. Check for 8 divisions of vertical deflection.
- 13. Remove the grounding cap from the -Y INPUT connector.
- 14. Disconnect the signal from the +Y INPUT connector and apply it to the -Y INPUT connector through the 50 ohm terminator.
- 15. Place the grounding cap on the +Y INPUT connector.
- 16. Center the display on the crt with the vertical Position control.
- 17. Check for 8 divisions of vertical deflection.
- 18. Adjust the INTENSITY control for a barely-visible display.
- 19. Remove the grounding caps from the +X INPUT and the +Z INPUT connectors.
- 20. Disconnect the signal from the -Y INPUT connector and apply it to the +X INPUT and the +Z INPUT connectors via the 42-inch cable, bnc-to-bnc adapter, bnc T connector, and the two 18-inch cables. Connect a 5X attenuator between the 18 inch cable and the +Z INPUT.
- 21. Place the grounding caps on the -X INPUT and the -Z INPUT connectors.
- 22. Notice that the right end of the crt display becomes bright, and that the left end disappears.
- 23. Remove the grounding cap from the -Z INPUT connector.
- 24. Disconnect the signal from the +Z INPUT connector and apply it to the -Z INPUT connector through the 5X attenuator.
- 25. Place the grounding cap on the +Z INPUT connector.
- 26. Notice that the left end of the crt display becomes bright, and that the right end disapppears.
- 27. Disconnect the Function Generator.

This completes the Checkout Procedure.

THEORY OF OPERATION

This section of the manual describes the circuitry in the 606B Monitor. The description begins with a discussion of the instrument using a block diagram, then continues in detail, showing the relationships between the stages in each major circuit. Schematics of all major circuits are given in Section 8, Diagrams and Circuit Board Illustrations. Stages are outlined on the schematics with wide shaded lines; the stage names are in shaded boxes. Refer to these schematics throughout the following discussions for specific electrical values and relationships.

BLOCK DIAGRAM

The following discussion is provided to aid in understanding the overall concept of the 606B before the individual circuits are discussed in detail. A basic block diagram is shown in Figure 3-1.

The Horizontal (X) and Vertical (Y) Amplifiers process the input signals (either single-ended or differential) and provide push-pull outputs to drive the crt deflection plates. The input signals are applied through the appropriate + (noninverting) and - (inverting) input connectors.

The Z-Axis Amplifier controls the display intensity by providing a voltage to drive the crt control grid. The input signals (either single-ended or differential) are applied through the appropriate + (noninverting) and – (inverting) input connectors or to the ALTERNATE INPUTS connector.

The Dynamic Focus circuit provides focus correction for the display when it is deflected from the crt center. Thus, by varying the voltage to the crt gun elements, the Dynamic Focus circuit compensates for geometric defocusing.

The High-Voltage and Low-Voltage Power Supplies provide all the voltage necessary for operation of this instrument.

DETAILED CIRCUIT OPERATION

Complete schematic diagrams are provided in Section 8, Diagrams and Circuit Board Illustrations. The numbers inside the diamond above a heading in the following discussions refer to the schematic diagram for that circuit. The schematic diagrams contain wide shaded borders around the major stages of the circuits to conveniently locate the components mentioned in the following discussions. The name of each stage is given in a shaded box on the diagram and as subheadings in the discussion of that schematic diagram.



HORIZONTAL (X) AMPLIFIER

The Horizontal (X) Amplifier processes the X input signals (either single-ended or differential) and provides final amplification to drive the horizontal deflection plates of the crt. A schematic diagram of the Horizontal (X) Amplifier is shown on diagram 1. A detailed block diagram, identifying each major stage of the Horizontal (X) Amplifier, is superimposed on the schematic with wide shaded lines to conveniently locate the components

mentioned here. The stage names (given as subheadings in the following discussion) can be found in the shaded boxes on diagram 1.

X INPUTS

Three input signal connectors are provided to the X Inputs stage: (1) the +X INPUT (noninverting) bnc connector J10, (2) the -X INPUT (inverting) bnc connector J20 and (3) the ALTERNATE INPUTS (noninverting) cannon connector J25.

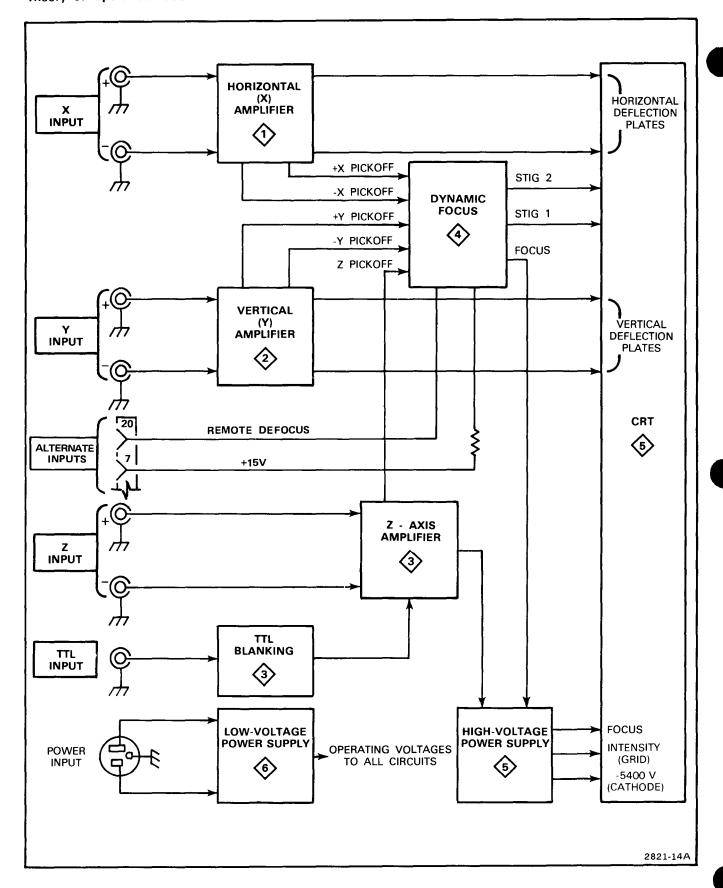


Figure 3-1. 606B Monitor Block Diagram.

Signals can be applied to any X input connector as a single-ended input; or to either noninverting X input (J10, J25) and the -X INPUT (inverting) for a differential input. Refer to Figure 2-3 in Section 2, Operating Information for J25 (ALTERNATE INPUTS connector) pin assignments.

Internal switches S100 and S105 allow selection of either 1X or 5X attenuation of the input signal before it is applied to the X Preamplifer. The 5X position of each attenuator is a frequency-compensated voltage divider. These step attenuators are set in the 1X position when shipped from the factory.

A jumper is provided on each input line to allow selection of either 1 M Ω or 50 Ω input impedance. Both jumpers (P101, P105) should normally be in the same position for proper circuit operation.

Stray signal pickup and cross-coupling are prevented by the use of grounding caps on the unused inputs. (When the ALTERNATE INPUTS connector is used, the grounding cap is installed on the -X INPUT).

X PREAMPLIFIER

The X Preamplifier is a differential amplifier employing two identical and inverting feedback amplifiers. The feedback amplifiers, consisting of Q120A-Q130-Q140 and Q120B-Q135-Q145 supply the push-pull voltage required to drive the X Output Amplifier.

Transistor Q120 provides high input impedance and temperature stability.

The FET gates are diode-clamped on the negative-going overdrive signals to protect the field-effect transistors from excessive input voltages.

The X Gain adjust, R129, allows setting the 8 cm deflection from 0.5 volts to at least 2.5 volts (12.5 volts with attenuator switches S100 and S105 in the 5X position).

Front panel control, R66, provides horizontal positioning by differentially altering the bias voltage on the base elements of Q150 and Q155. Transistors Q150 and Q155 function as a differential current source for the push-pull output of the X Preamplifier.

SCAN LIMITER

Transistors Q180, Q185 and diodes CR180, CR185 prevent overdriving the X Output Amplifier by limiting the X Preamplifier signals to within about 6 volts of each other.

X FOCUS-CORRECTION PICKOFF

Samples of the +X and -X signals are coupled from the X Preamplifier to the X Absolute Value Amplifier (diagram 4) for focus correction in the X axis. A sampling of the +X voltage signal is converted to a current signal by Q170, and the -X voltage signal by Q175, before being applied to the X Absolute Value Amplifier.

X OUTPUT AMPLIFIER

The X Output Amplifier consists of two identical noninverting operational amplifiers connected in a differential configuration. For ease of explanation, only the – side will be discussed.

Transistors Q100-Q120-Q130-Q140-Q150-Q160-Q170 and Q180 are the active components of the -X operational amplifier. Feedback is provided through R174 and C174 to the emitter of Q100.

Transistor Q115 provides additional emitter current to Q100. This current, varied by R119 (X-Plate DC Level), determines the dc voltage output level.

The signal from the X Preamplifier stage is amplified by Q100 and fed through emitter followers Q120-Q130 to a cascode driver Q140. Complimentary amplifiers Q150-Q160 provide the final gain for the -X Output Amplifier signals, with emitter followers Q170-Q180 supplying the high current to drive the capacitive load of the crt plates.

The capacitance between the mounting tabs of transistors Q150-Q160 and the metal work (circuit board and chassis) is minimized by driving a metal shield, to which Q150-Q160 are mounted, with the current output of emitter followers Q170-Q180.

The X GAIN control, R104, provides a 'fine' gain adjustment of at least ±10% of the 8 cm deflection. This control in conjunction with R129, X Gain (internal screwdriver adjust on the Pre-Amplifier board), is normally set to a nominal 1 volt for 8 divisions of deflection (step attenuator in the 1X position).

Potentiometer R109 (Output Amplifier Gain) is provided to match the X Output Amplifier gain to the crt sensitivity, and not to alter the deflection factor. The compensation networks connected to the emitter of Q100 optimize the square wave response to provide the very good settling time performance.



The Vertical (Y) Amplifier processes the Y input signals (either single-ended or differential) and provides final amplification to drive the vertical deflection plates of the crt. A schematic diagram of the Vertical (Y) Amplifier is shown on diagram 2. A detailed block diagram, identifying each major stage of the Vertical (Y) Amplifier, is superimposed on the schematic with wide shaded lines to conveniently locate the components mentioned here. The stage names (given as sub-headings in the following discussion) can be found in the shaded boxes on diagram 2.

Y INPUTS

Three input signal connectors are provided to the Y Inputs stage: (1) the +Y INPUT (noninverting) bnc connector J30, (2) the -Y INPUT (inverting) bnc connector J40 and (3) the ALTERNATE INPUTS (noninverting) cannon connector J25.

Signals can be applied to any Y input connector as a single-ended input; or to either noninverting Y input (J30, J25) and the -Y INPUT (inverting) for a differential input. Refer to Figure 2-3 in Section 2, Operating Instructions for J25 (ALTERNATE INPUTS connector) pin assignments.

Internal switches S200 and S205 allow selection of either 1X or 5X attenuation of the input signal before it is applied to the Y Preamplifier. The 5X position of each attenuator is a frequency-compensated voltage divider. These step attenuators are set in the 1X position when shipped from the factory.

A jumper is provided on each input line to allow selection of either 1 M Ω or 50 Ω input impedance. Both jumpers (P201, P205) should normally be in the same position for proper circuit operation.

Stray signal pickup and cross-coupling are prevented by the use of grounding caps on the unused inputs. (When the ALTERNATE INPUTS connector is used, the grounding cap is installed on the -Y INPUT).

Y PREAMPLIFIER

The Y Preamplifier is a differential amplifier employing two identical and inverting feedback amplifiers. The feedback amplifiers, consisting of Q220A-Q230-Q240 and Q220B-Q235-Q245 supply the push-pull voltage required to drive the Y Output Amplifier.

Field effect transistor Q220 provides high input impedance and temperature stability.

The FET gates are diode-clamped on the negative-going overdrive signals to protect the field-effect transistors from excessive input voltages.

The Y Gain adjust, R229, allows settling the 8 cm deflection from 0.5 volts to at least 2.5 volts (12.5 volts with attenuator switches S200 and S205 in the 5X position).

Front panel control, R56, provides vertical positioning by differentially altering the bias voltage on the base elements of Q250 and Q255. Transistors Q250 and Q255 function as a differential current source for the push-pull output of the Y Preamplifier.

SCAN LIMITER

Transistors Q280, Q285 and diodes CR280, CR285 prevent overdriving the Y Output Amplifier by limiting the Y Preamplifier signals to within about 5 volts of each other.

Y FOCUS-CORRECTION PICKOFF

Samples of the +Y and -Y signals are coupled from the Y Preamplifier to the Y Absolute Value Amplifier (diagram 4) for focus correction in the Y axis. A sampling of the +Y voltage signal is converted to a current signal by Q270, and the -Y voltage signal by Q275, before being applied to the Y Absolute Value Amplifier.

Y OUTPUT AMPLIFIER

The Y Output Amplifier consists of two identical and noninverting operational amplifiers connected in a differential configuration. For ease of explanation, only the – side will be discussed.

Transistors Q200-Q220-Q230-Q240-Q250-Q260-Q270 and Q280 are the active components of the -Y operational amplifier. Feedback is provided through R274 and C274 to the emitter of Q200.

Transistor $\Omega 215$ provides additional emitter current to $\Omega 200$. This current determines the dc voltage output level.

The signal from the Y Preamplifier stage is amplified by Q200 and fed through emitter followers Q220-Q230 to a cascode driver Q240. Complimentary amplifiers Q250-Q260 provide the final gain for the -Y Output Amplifier signals, with emitter followers Q270-Q280 supplying the high current to drive the capacitive load of the crt plates.

The capacitance between the mounting tabs of transistors $\Omega250$ - $\Omega260$ and the metal work (circuit board and chassis) is minimized by driving a metal shield, to which $\Omega250$ - $\Omega260$ are mounted, with the current output of emitter followers $\Omega270$ - $\Omega280$.

The Y GAIN control, R204, provides a 'fine' gain adjustment of at least $\pm 10\%$ of the 8 cm deflection. This control in conjunction with R229, Y Gain (internal screwdriver adjust on the Pre-Amplifier board), is normally set to a nominal 1 volt for 8 divisions of deflection (step attenuator in the 1X position).

Resistor R209 (Output Amplifier Gain) is provided to match the Y Output Amplifier gain to the crt sensitivity, and not to alter the deflection factor.

The compensation networks connected to the emitter of Q200 optimize the square wave response to provide the very good settling time performance.



The Z-Axis Amplifier processes the Z input signals (either single-ended or differential) and provides the drive signal to control the crt intensity. A schematic diagram of the Z-Axis Amplifier is shown on diagram 3. A detailed block diagram, identifying each major stage of the Z-Axis Amplifier, is superimposed on the schematic with wide shaded lines to conveniently locate the components mentioned here. The stage names (given as subheadings in the following discussion) can be found in the shaded boxes on diagram 3.

Z INPUTS

Three input signal connectors are provided to the Z Inputs circuit: (1) the +Z INPUT (noninverting) bnc connector J50, (2) the -Z INPUT (inverting) bnc connector J60 and (3) the ALTERNATE INPUTS (noninverting) cannon connector J25.

Signals can be applied to any Z input connector as a single-ended input; or to either noninverting Z input (J50 or J25) and the –Z INPUT (inverting) for a differential input. Refer to Figure 2-3 in Section 2, Operating Instructions for J25 (ALTERNATE INPUTS connector) pin assignments.

A jumper is provided on each input line to allow selection of either 1 M Ω or 50 Ω input impedance. Both jumpers (P102, P106) should normally be in the same position for proper circuit operation.

Stray signal pickup and cross-coupling are prevented by the use of grounding caps on the unused inputs. (When the ALTERNATE INPUTS connector is used, the grounding cap is installed on the -Z INPUT).

Z PREAMPLIFIER

The Z Preamplifier is a differential amplifier employing two identical and inverting feedback amplifiers. The feedback amplifiers, consisting of Q120A-Q130-Q140 and Q120B-Q135-Q145 supply the push-pull voltage required to drive the Z Output Amplifier.

Field-effect transistor Q120 provides high input impedance and temperature stability.

The FET gates are diode-clamped on the negative-going overdrive signals to protect the field-effect transistors from excessive input voltages.

Front-panel control, R46, provides intensity control by differentially altering the bias voltage on the base elements of Q150 and Q155. Transistors Q150 and Q155 function as a differential current source for the push-pull output of the Z Preamplifier.

LIMITER

Diodes CR164 and VR163 prevent overdriving the Z Output Amplifier by limiting the Z Preamplifier signals to within about 6 volts of each other.

Z FOCUS-CORRECTION PICKOFF

Samples of the +Z and -Z signals are combined, and coupled from the Z Preamplifier to the Z Focus circuit (diagram 4) for focus correction in the Z axis. Samples of the +Z and -Z signals are fed to Q180 and Q185. Transistors Q180 and Q185 provide a single-ended output to drive the Z Focus circuit.

Z OUTPUT AMPLIFIER

The push-pull signals from the Z Preamplifier stage are applied to the bases of Q220 and Q225. Transistors Q220-Q225 are voltage-to-current converters which, with Q230, Q240 and Q245 produce a single-ended current signal.

Transistors Q240-Q245-Q250-Q260-Q270 are connected as an operational amplifier, with the feedback path provided through R285-R286 and C285-C286. High-current, low-impedance drive is provided by the complementary configuration of emitter followers Q240-Q245. Complementary amplifiers Q260-Q270 provide the final gain for the Z output signals. Transistor Q250 supplies the additional current necessary at high frequencies (sine wave) to drive the capacitive load. High-frequency compensation is provided by the combination of C285 and R239.

TTL BLANKING

Input signals applied to the rear-panel TTL INPUT bnc connector J70 or ALTERNATE INPUTS connector (see Fig. 2-3) may be either a TTL LO (0 to +0.8 volt) or a TTL HI level (+2.4 to +5 volts). The TTL level necessary to provide blanking of the crt display is determined by the blanking level selecting jumpers P176 and P179. With P176-P179 in the plus (+) position, a TTL LO level will blank the display; with P176-P179 in the minus – position, a TTL HI level will blank the display. Refer to Internal Control and Selector Locations foldout in section 8 for locations of jumpers. With no signal applied to the TTL INPUT connector, an internal pull-up circuit consisting of R175 and R176 will pull the input to a TTL HI level.

Transistors Q170-Q175 are connected as a voltage comparator. The reference voltage for the comparator, developed across R178 and R179, is approximately +2 volts. In the HI blank – position as shown on the schematic, input signals are applied to Q170, and the base of Q175 is connected to the reference voltage. A HI TTL input turns off Q175 and turns on Q165. The bias on Q165 with Q175 off is approximately +10 volts which, when Q165 conducts, forward biases CR170. The TTL blanking stage overrides Z Preamplifier signals and clamps the output of the Z-Axis Amplifier LO.



The Dynamic Focus circuit provides focus correction as the crt beam is deflected to the edges of the display area in both the vertical (Y) and horizontal (X) axis. A schematic diagram of the Dynamic Focus circuit is shown in diagram 4. A detailed block diagram, showing the major stages of this circuit, is superimposed on the schematic diagram with wide shaded lines. The stage names (given as sub-headings in the following discussion) can be found in the shaded boxes on diagram 4.

Geometric defocusing, a contributing factor to overall crt defocusing, occurs when the beam is deflected from the crt center. The electron beam, at center screen, is focused for a particular beam length. When the beam is deflected, either vertically or horizontally, the beam length changes. However, the focusing voltage remains the same. As a result, the display is defocused, appearing larger at the edge of the screen than at crt center (see Figure 3-2).

The Dynamic Focus circuit varies the voltages to the focus and stigmator elements of the crt depending upon the vertical and horizontal positions of the electron beam. Therefore, overall focus is improved over the crt display area.

X ABSOLUTE VALUE AMPLIFIER

The differential output current from the X Focus Correction Pickoff (diagram 1) is fed through P150, pins 1,2 to the X Absolute Value Amplifier of which Q100 and Q110 are the active components.

The X Absolute Value Amplifier converts the differential X pickoff current from the X-Y Pre-Amplifier Board to alternate on outputs (when CR100 is on, CR110 is off and vice versa). This allows implementation of separate focus corrections on each side of the screen.

The output from the X Absolute Value Amplifier stage is fed to the Stigmator 1 Correction Shaper (U150-U160), the Stigmator 2 Correction Shaper and Mixer and the Focus Correction Shaper and Mixer stages.

Y ABSOLUTE VALUE AMPLIFIER

The differential output current from the Y Focus Correction Pickoff is fed through P150, pins 4,3 to the Y Absolute Value Amplifier of which Q120 and Q130 are the active components.

The Y Absolute Value Amplifier converts the differential Y pickoff current from the X-Y Pre-Amplifier Board to alternate on outputs (when CR120 is on, CR130 is off and vice-versa).

This allows implementation of separate focus corrections on the top and bottom of the screen.

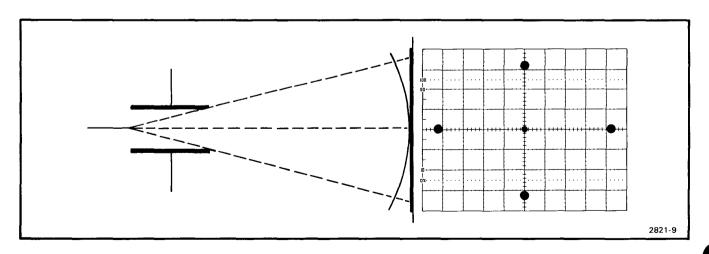


Figure 3-2. Simplified illustration of geometric defocusing.

The output from the Y Absolute Value Amplifier stage is fed to the Stigmator 1 Correction Shaper (U150-U160), the Stigmator 2 Correction Shaper and Mixer and the Focus Correction Shaper and Mixer stages.

STIGMATOR 1 CORRECTION SHAPER

The Stigmator 1 Correction Shaper provides independent gain control of the X times Y function of the crt trace at each corner of the screen.

Information from the X and Y Absolute Value Amplifiers is processed by U150 (multiplier I.C. for the top half of the screen) and U160 (multiplier I.C. for the bottom half of the screen) then combined and fed to the Stigmator 1 Output Amplifier and Level Shifter through a level shifter, Q300.

For reference in this description, assume the crt beam is deflected to the upper left quadrant of the screen (X < 0, Y > 0). The voltage at the collector of Q100 (X Absolute Value Amplifier) is greater than the clamp voltage (± 5.5 volts) while the voltage at the collector of Q110 is clamped to ± 5.5 volts by CR110.

Similarly, the output of Q120 (Y Absolute Value Amplifier) is active while the voltage at the collector of Q130 is clamped to +5.5 volts by CR130. The output from Q100 is applied to U150 pin 9 through R152 (Top Left S1) and to U160 pin 12 through R161 (Bottom Left S1). The output from Q120 is applied directly to U150 pin 8.

Looking at U150, the difference in the signal at pin 8 (amplitude determined by the location of the trace in the Y axis) and the +5.5 volts on pin 4 is multiplied in U150 by the signal present at pin 9.

At U160, the signal at pin 12 is multiplied in U160 by the signal at pin 8. The signal at pin 8, however, comes from the output of Q130 which is presently clamped. Therefore, the product is zero and there is no change in the current at U160 pin 14.

The outputs at pin 14 of U150 and U160 are fed through a current-to-voltage converter Q300 to the Stigmator 1 Output Amplifier and Level Shifter. The Bias control, R306 is provided to center the output of the Stigmator 1 Output Amplifier and Level Shifter.

Diode CR303 provides overdrive protection to the output amplifier.

STIGMATOR 1 OUTPUT AMPLIFIER AND LEVEL SHIFTER

The stigmator 1 output amplifier is a feedback amplifier consisting of Q310-Q320-Q330-Q340-Q350-Q360. The feedback network consists of R373-C373-C374 with C373 and C374 supplying high frequency compensation. The input signal is applied to the bases of emitter followers Q310-Q320 and fed to complimentary amplifiers Q330-Q340. Complimentary coupled emitter followers Q350-Q360 supply the high current necessary to drive the capacitive load.

The output signal of the stigmator 1 output amplifier at Q360 is approximately 43 volts at zero deflection, and plus or minus 40 volts (from the 43 V reference) at maximum deflection. The correction required by the stigmator 1 elements of the crt needs to be centered around the deflection plate average (125 volts). Transistor Q380 and associated circuitry provides the necessary correction to shift the output voltage level before it's applied to the crt through P298 pin 1.

REMOTE DEFOCUS

The Remote Defocus provides a means of increasing the crt spot size. The circuit creates an error in the stigmator voltage, that, if the crt is otherwise correctly focused, will make the dot larger and still fairly round. (Adjusted for a round dot rather than a small dot.)

Quiescently, Q390 is biased off. When Q390 turns on, (either by placement of the jumper, P398, or by remote input through pin 20 of the rear-panel mounted 25-pin connector) that is, when the voltage at the base of Q390 increases, it pulls current from the emitter of Q380, causing the voltage to drop at the output of the level shifter, Q390.

At pin 7 of the 25-pin connector, \pm 15 V is available through R397 to provide an external bias voltage for the Remote Defocus input, pin 20. The voltage may be altered by a variable resistive divider to ground, to allow external variable control of spot size.

STIGMATOR 2 CORRECTION SHAPER AND MIXER

Outputs from both the X and Y Absolute Value Amplifiers are fed to the appropriate diode shaper circuits, the outputs of which approximate a parabolic transfer function. The resultant waveforms are fed through independent gain controls (R215, R205, R225, R235) to a mixer and clamp circuit (Q240-CR245-CR242-CR243). The output of Q240 is then fed to the Stigmator 2 Output Amplifier and Level Shifter before being applied to V50-6 (crt).

STIGMATOR 2 OUTPUT AMPLIFIER AND LEVEL SHIFTER

The stigmator 2 output amplifier is a feedback amplifier consisting of Q250-Q260-Q270-Q280. The feedback network consists of R283-C283 with C283 supplying high-frequency compensation.

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Transistors Q270 and Q280 are connected as a collector coupled complimentary amplifier to provide a fast linear output signal. Ac coupling is provided by C275 to decrease the high-frequency risetime.

The output signal of the amplifier at Q280 ranges from approximately +5 volts to +75 volts. The correction required by the Stigmator 2 element of the crt needs to be centered around the deflection plate average (125 volts). Transistor Q290 and associated circuitry provide the necessary correction to shift the output voltage level before it's applied to the crt (V50-6).

FOCUS CORRECTION SHAPER AND MIXER

Outputs from both the X and Y Absolute Value Amplifiers are fed to the appropriate diode shaper circuits (Q400-CR400, Q410-CR410, Q420-CR420, Q430-CR430) the outputs of which approximate a parabolic transfer function. The resultant waveforms are fed through independent gain controls (R415, R405, R425, R435) to a mixer and clamp circuit (Q435-CR433-CR434-CR437). The output of Q435 is fed to the Focus Output Amplifier.

Z FOCUS

A single-ended output current from the Z-Focus-Correction Pickoff stage on diagram 3 is coupled through P150 pin 5 to the emitter of Q140. The output of the current-to-voltage converter Q140 is adjusted (Z-Focus correction) and fed through limiting diodes CR458-CR459 to the input of the Focus Output Amplifier.

FOCUS OUTPUT AMPLIFIER

A correction voltage from the Z Focus stage is combined with the output of the Focus Correction Shaper and Mixer. The resultant waveform is processed by the Focus Output Amplifier and fed through P195-1 to the Focus Element DC Restorer circuit on diagram 5.

The Focus Output Amplifier is a feedback amplifier consisting of Q440-Q450-Q460-Q470-Q480-Q490. The feedback network consists of R492-R493-C492-C493 with C492 and C493 supplying high-frequency compensation.

The input signals are combined at the bases of emitter followers Q440-Q450 and fed to complimentary amplifiers Q460-Q470. Transistors Q460-Q470 provide the final gain, with complimentary coupled emitter followers Q480-Q490 supplying the high current necessary to drive the capacitive load.



CONVERTER AND HIGH-VOLTAGE POWER SUPPLY

The Converter and High-Voltage Power Supply provides the voltage levels and control circuits necessary for operation of the deflection system and the cathode-ray tube (crt). A schematic diagram of the Converter and High-Voltage Power Supply is shown on diagram 5. A detailed block diagram, showing each major stage of this circuit, is superimposed on the schematic diagram with wide shaded lines. The stage names (given as subheadings in the following discussion) can be found in the shaded boxes on diagram 5.

CONVERTER OSCILLATOR

The Converter Oscillator uses an external resistance, R124-R125 to establish a constant charging current into C121. Capacitor C121 provides a linear ramp voltage used as a reference for the comparator. The comparator then couples the information from the Error Amplifier to the Converter Base Drive circuit.

The discharge time of C127 (Converter Base Drive stage) determines the minimum pulse width of the oscillator output pulse. This pulse is used as a blanking pulse to both outputs (U120, pins 11,12,13,14) to insure that there is no possibility of having both outputs on simultaneously during transition.

ERROR AMPLIFIER

The Error Amplifier stage is a differential input, transconductance amplifier.

The 250 volt supply is sampled by R101-R102 and R110-R112 and fed to U120, pin 1, the – input to the Error Amplifier. The other input (U120, pin 2) is connected to a reference voltage provided by the voltage divider R114-R115.

Any increase or decrease in the voltage at U120, pin 1 will cause a corresponding decrease or increase in the output of the Error Amplifier.

The over-voltage circuit will shut down U120's output when the voltage of the +95 volt supply reaches approximately 110 volt (VR109); the Over-Voltage transistor turns on, thereby pulling the Error Amplifier output toward ground.

CURRENT LIMITER

The Current Limiter stage provides circuit protection by disabling the Error Amplifier output. Shutdown will occur when a current of approximately 1.5 amperes is exceeded in the Converter Output transistors Q180-Q190. The current limit amplifier (U120, pin 4) turns on, pulling the output of the Error Amplifier toward ground, thus shutting off the outputs.

CONVERTER BASE DRIVE

The Converter Base Drive circuit uses the pulses from the Converter Oscillator to generate the pulse width modulated signal necessary to drive base-drive transformer T170.

Quiescently, the output transistors of U120 (pins 11-12, 13-14) are off. Current flows from the +20 volt supply to Q165-Q175 via VR160-VR170, R135-R136, and R152-R145.

Zener diodes VR160-VR170 are conducting, reverse biasing CR135-CR136. (The base/emitter junction potential of Q165-Q175 plus the zener drop of VR160-VR170 are felt at the cathodes of CR135-CR136. The base of Q130 is at the +5 volt Reference Regulator level from U120, pin 16.)

Transistor Q130 is off, and the base of Q150 is pulled to its emitter potential through R130. Since Q150 is off, as just stated, and Q165-Q175 are conducting, transformer T170 is shorted.

In operation, the output transistor (U120, pins 13, 14) is turned on (saturated). Two events simultaneously occur; (1) Transistor Q170 saturates and turns off Q175, and (2) the on current of U120, pins 13 and 14 increases the voltage drop across R136 and turns on CR136, Q130 and Q150.

Transistor Q165 pulls current through the upper half of T170 from current source Q150.

CONVERTER OUTPUT

The Converter Output circuit processes the output of the Converter Base Drive and couples the voltage generated in the primary of T170 to the Deflection Voltage Supplies and the HV Regulator stages.

The output of Q165 is coupled through T170 to the base of Q180. Transistor Q180 turns on to charge the LC tank (L185-C185-C187) and supply a current through the primary of T200. Transistor Q180 is turned off and a ringing effect results due to the energy stored in the LC tank. Diode CR190 turns on then off; after CR190 turns off, diode CR180 turns on, then off again. When CR180 turns off, transistor Q190 turns on and pulls energy back through the transformer, T200.

DEFLECTION VOLTAGE SUPPLIES

The Deflection Voltage Supplies stage provide +95 volts, +250 volts and +300 volts for the monitor.

+95 Volts

The ac voltage from pins 18 and 20 of T200 is rectified by CR205-CR206, filtered by L205-C205 and fed to the circuit locations indicated on the schematic.

+250 Volts

The ac voltage from pins 22 and 16 of T200 is rectified by CR201-CR202, filtered by L201-CL201 and fed to the circuit locations indicated on the schematic.

+300 Volts

The ac voltage from pin 15 of T200 is rectified by CR209 and filtered by C209 before being applied to the H. V. Regulator.

H. V. REGULATOR

The H. V. Regulator provides a small feedback voltage to the input of the 4X multiplier to keep its output to a specified limit.

The converter transformer T200 provides a 1300 volt peak signal to the 4X multiplier. The 4X multiplier consists of C67, CR171, CR173, CR177, CR179, C173, C162 and C171. Filtering of the resultant –5400 volts is provided by R156-C152, C162 and the regulator loop.

The -5400 volts is sampled at R127D and fed to the + input of U280 through P400-9. The voltage at P400-9 is adjusted to approximately 0 volt by R295 (H. V. ADJ.). Input protection, feedback and compensation are provided to U280 by CR283-CR285, R270 and R275-C275, respectively.

The output of U280 is fed through R266-R265 to the base of the regulator transistor, Q260. Transistor Q260 in conjunction with Q250 sets the voltage on the feedback line (through R260, R250, R153) to the multiplier return (junction of C162-C171) to set the voltage on the anode of CR171. (The cathode will go more or less positive but remain above ground.)

CONTROL-GRID DC RESTORER

The Control-Grid DC Restorer stage couples the dc and low-frequency components of the Z-Axis Amplifier output signal to the crt control grid (pin 3 of V50). This allows the Z-Axis Amplifier to control the crt beam intensity. The potential difference between the Z-Axis Amplifier output level and the crt control grid prohibits direct coupling.

The Control-Grid DC Restorer stage is actually a cathodereferenced bias supply for the crt control grid. Quiescently, its output voltage is more negative than the crt cathode by an amount determined by the Z-Axis Amplifier output level and the setting of the Grid Bias adjustment, R245. (The cutoff voltage at the crt control grid is typically about 100 volts more negative than the crt cathode level.)

The Control-Grid DC Restorer stage is divided into two sections for ease of explanation. The first section can be considered a modulator at low-voltage potentials, and the remaining section as a demodulator at high-voltage potentials.

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Theory of Operation-606B

Modulator

When the secondary winding output of T200 (pin 16) swings positive, C131 charges through C230, R230, R236 and R131 to a voltage level determined by the setting of the Grid Bias adjustment, R245. At this voltage level (approximately 100 volts), diode CR240 conducts, preventing any additional increase in the positive voltage across C131. When the secondary-winding output swings negative, diode CR240 turns off. Then CR232 conducts and clamps the negative excursion at C131 to the voltage level of the Z-Axis Amplifier output. The result is a square-wave output from the Modulator; the output amplitude is determined by the difference between the Z-Axis Amplifier output level and the Grid Bias adjustment setting. This square wave is coupled through C131 to the Demodulator.

Demodulator

The Demodulator rectifies the signal from the Modulator and references it to the crt cathode supply level. The positive swing is limited by CR137 to the level of the cathode supply; the negative excursion is coupled through CR134 to C133. Quiescently, C133 will charge to about -5400 volts through R148. After repetitive cycles from C131, C133 will charge to its maximum negative level. Capacitor C133 filters the output of the demodulator, and also provides a path for the high-frequency portions of the Z-Axis Amplifier output signal to be coupled to the crt control grid.

The remainder of the components provide circuit protection in the event of a high-voltage arc, or other malfunction.

FOCUS-ELEMENT DC RESTORER

The Focus-Element DC Restorer stage couples the dc and low-frequency components of the Dynamic Focus correction signals (diagram 4) to the crt focus element of V50. This allows the Dynamic Focus circuit to control the focus-element potential. The potential difference between the Dynamic Focus output and the focus element prohibits direct coupling.

The Focus-Element DC Restorer stage is divided into 2 sections for ease of explanation. The first section can be considered a modulator at low-voltage potentials and the remaining section a demodulator at high-voltage potentials.

Modulator

When the secondary-winding output at T200 (pin 16) swings positive, C111 charges through C215, R215 and R220 to a voltage level determined by the output level from the Focus Output Amplifier stage of the Dynamic Focus circuit (diagram 4). At this voltage level (approximately +15 volts for center-screen deflection) CR217 conducts, preventing any additional increase in positive voltage across C111. When the secondary-winding output swings negative, CR217 turns off. Then CR218 conducts and clamps the negative excursion at

C111 a diode drop below ground. The result is a square-wave output from the Modulator, with the output amplitude determined by the difference between the level of the Dynamic Focus circuit (diagram 4) and approximately ground. The Modulator output is coupled through C111 to the Demodulator.

Demodulator

The Demodulator rectifies the signal from the Modulator and references it to the potential on C121. The potential on C121 is determined by voltage divider R127A, R127B and Coarse Focus control R125. The negative swing of the supply is limited by CR116 to the level of C121; the positive excursion is coupled through CR114 and R112 to C112. Quiescently, C112 will charge to about -3250 volts through R112. After repetitive cycles from C111, C112 will charge to the cathode supply level. Capacitor C112 filters the output of the demodulator, and also provides a path for the high-frequency portions of the focus-correction signal to be coupled to the crt focus element at V50.

The remainder of the components provide circuit protection in the event of a high-voltage arc or other malfunction.

Geometry adjustment, R185, varies the positive level on the geometry element to control the overall geometry of the display. TRACE ALIGN adjustment, R290, controls the current through L50 to provide adjustment of the display alignment.

The Stig 1 and Stig 2 functions are described in the circuit description of the Dynamic Focus, diagram 4.



LOW-VOLTAGE POWER SUPPLY

The Low-Voltage Power Supply provides the operating power for the Monitor. Electronic regulation is used to provide stable, low-ripple output voltages. A schematic diagram of the Low-Voltage Power Supply is shown on diagram 6 at the rear of this manual. A detailed block diagram, showing each major stage of this circuit, is superimposed on the schematic with wide shaded lines. The stage names (given as sub-heading in the following discussion) can be found in the shaded blocks on diagram 6

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3-10

POWER INPUT

Power is applied to the primary of transformer T95 through fuse F90, thermal cutout S92, POWER switch S90, and Line-Voltage Selector plug P390. The Line-Voltage Selector plugs allow changing the primary winding taps of T95 to meet different line-voltage and regulating range requirements. Line fuse F90 should be changed for each nominal line voltage (current rating of fuse for 220 volt operation must be 0.6 ampere slow-blowing type; for 120 volt operation the current rating of the fuse must be 1.2 ampere slow-blowing type).

Thermal cutout S92 provides thermal protection for this instrument. If the internal temperature of the instrument exceeds a safe operating level, S92 opens to interrupt the applied power. When the temperature returns to a safe level, S92 automatically closes to re-apply the power.

RECTIFIER AND FILTER

A full-wave bridge circuit, composed of CR301-CR302-CR305-CR306 rectifies the ac voltage from the secondary of T95. Filtering is provided by C300-C305-C310-C315.

+18 VOLT UNREGULATED SUPPLY

The +18 Volt Unregulated Supply provides the +18 volt unregulated power for the Converter Board on diagram 5. Fuse F310 provides circuit protection in the event of an overload.

-18 VOLT UNREGULATED SUPPLY

The -18 Volt Unregulated Supply provides the -18 volt unregulated power for the Converter Board. Fuse F325 provides circuit protection in the event of an overload.

+15 VOLT REGULATED SUPPLY

The +15 Volt Regulated Supply, in addition to providing power to circuitry throughout the instrument, provides a reference-voltage source for all other power supplies. The regulator for the +15 volt Regulated Supply is a feedback amplifier system that operates between ground and the +18 Volt Unregulated Supply. Current to the load is delivered by series-pass transistor Q350, which is located in the output side of the supply. The supply voltage is established by the drop across resistive-divider network R335-R337-R339. The feedback through this network is compared to the reference level established at the base of Q320 by the voltage drop across VR327. Any variation in output voltage of the supply (due to ripple, change of current through the load, etc.), is immediately transmitted to the base of Q350 and cancelled by a change in Q350 conduction, maintaining a steady output.

The output of the supply is set to exactly +15 volts by adjustment of R337, the +15 V Adjust.

Transistor Q340 protects the +15 volt series regulator (Q350) if excess current is demanded from this supply. Essentially, all current from this supply flows through R351. When excess current is demanded from the +15 volt series regulator, due to a short circuit or similar malfunction at the output of this supply, the voltage drop across R351 increases enough to turn on Q340. The resulting current through Q340 reduces the conduction of Q350 to limit the supply current to a safe level. Fuse F315 provides circuit protection in the event of an overload (long term) or regulator malfunction.

-15 VOLT REGULATED SUPPLY

The regulator for the -15 Volt Regulated Supply consists of series-pass transistor Q390 and error amplifier Q360-Q370-Q380. This is a feedback amplifier system similar to that just described for the +15 Volt Regulated Supply.

The center of resistive-divider network R377-R379 is set by the error amplifier to be zero volts, with respect to ground, during normal operation. Any variation in output from the -15 Volt Regulated Supply is coupled to the error amplifier, which changes the bias of the -15 volt series regulator (Q390). This change in bias, and resulting change in conduction of the regulator, cancels the output variation to maintain a steady level from the supply.

Diode CR385 protects the -15 volt series regulator (Q390) if excess current is demanded from this supply. Essentially, all current from this supply flows through R390. When excess current is demanded from the -15 volt series regulator, due to a short circuit or similar malfunctionat the output of this supply, the voltage drop across R390 increases enough to forward bias CR385. This increases the conduction of Q380, which then reduces the conduction of Q390 to limit the supply current to a safe level. Fuse F320 provides circuit protection in the event of an overload (long term) or regulator malfunction.



Diagram 7 shows the six circuit boards in the Monitor, and the source and destination (schematic number) of all signals and voltages applied to each pin.

MAINTENANCE

This section of the manual contains information for performing preventive maintenance, troubleshooting, and corrective maintenance for the 606B Monitor.

PREVENTIVE MAINTENANCE

Preventive maintenance, when performed on a regular basis, can prevent or forestall instrument breakdown and may improve the reliability of the instrument. The severity of the environment to which the instrument is subjected will determine the frequency of maintenance. A convenient time to perform preventive maintenance is preceding electrical adjustment of the instrument.

VISUAL INSPECTION

The 606B Monitor should be inspected occasionally for such defects as broken connections, improperly seated semiconductors, damaged or improperly installed circuit boards, and heat-damaged parts. The corrective procedure for most visible defects is obvious; however, particular care must be taken if heat-damaged parts are found. Overheating usually indicates other trouble in the instrument; therefore, the cause of overheating must be corrected to prevent recurrence of the damage.

CLEANING

The 606B Monitor should be cleaned as often as operating conditions require. Accumulation of dirt in the instrument can cause overheating and component breakdown. Dirt on components acts as an insulating blanket which prevents efficient heat dissipation, and also provides an electrical conduction path which may result in instrument failure. Cabinet panels will provide some protection against dust in the interior of the instrument.

CAUTION

Avoid the use of chemical cleaning agents which might damage the plastics used in this instrument. Use a nonresidue type of cleaner, preferably isopropyl alcohol or total denatured ethyl alcohol. Before using any other type of cleaner, consult your Tektronix Service Center.

EXTERIOR

Loose dust accumulated on the outside of the instrument can be removed with a soft cloth or small brush. The brush is particularly useful for dislodging dirt on and around the front-panel controls. Dirt which remains can be removed with a soft cloth dampened in a mild detergent and water solution. Abrasive cleaners should not be used.

CRT

Clean the crt faceplate with a soft, lint-free cloth dampened with denatured alcohol.

INTERIOR

Cleaning the interior of the instrument should be performed in conjunction with the visual inspection. The best way to clean the interior is to blow off the accumulated dust with dry, low-velocity air (approximately 5 lb/in²). Remove any dirt which remains with a soft brush or a cloth dampened with a mild detergent and water solution. A cotton-tipped applicator is useful for cleaning in narrow spaces, or for cleaning more delicate circuit components.



Circuit boards and components must be dry before applying power to the instrument to prevent damage from electrical arcing.

The high-voltage circuits should receive special attention. Excessive dirt in this area may cause high-voltage arcing and result in improper instrument operation.

SEMICONDUCTOR CHECKS

Periodic checks of semiconductors are not recommended. The best check of semiconductor performance is actual operation in the instrument. More details on semiconductors are given under Troubleshooting later in this section.

PERIODIC ELECTRICAL ADJUSTMENT

To ensure accurate measurements, check the electrial adjustment of this instrument after each 1000 hours of operation, or every six months if used infrequently. In addition, replacement of components may necessitate adjustment of the affected circuits. Complete adjustment instructions are given in Section 5, Calibration. This procedure can be helpful in localizing certain troubles in the instrument, and in some cases, may correct them.

TROUBLESHOOTING

The following information is provided to facilitate troubleshooting of the Monitor. Information contained in other sections of this manual should be used in conjunction with the following data to aid in locating a defective component. An understanding of the circuit operation is helpful in locating troubles. See Section 3, Theory of Operation, for this information.

TROUBLESHOOTING AIDS

DIAGRAMS

Complete schematic diagrams are located on the foldout pages in Section 8, Diagrams and Circuit Board Illustrations. The component number and electrical value of each component in this instrument are shown on these diagrams. (See the first page of the Diagrams and Circuit Board Illustrations section for definitions of the reference designators and symbols used to identify components in this instrument.) Important voltages and numbered waveform test points are also shown on the diagrams. Corresponding numbered waveforms are located adjacent to each diagram. The portions of circuits mounted on circuit boards are enclosed with heavy solid black lines. Each schematic diagram is divided into functional stage blocks, as indicated by the wide shaded lines. These functional blocks are described in detail in Section 3, Theory of Operation.

CIRCUIT BOARD ILLUSTRATIONS

A circuit board location illustration appears on the back of the foldout page facing the schematic diagram. In addition, an illustration of the circuit board is included here, to identify the physical location of the components and waveform test points that appear on the schematic diagram. Each circuit board illustration is arranged in a grid locator with an index to facilitate rapid location of components contained in the schematic diagrams.

TROUBLESHOOTING CHART

A troubleshooting chart is given in Section 8, Diagrams and Circuit Board Illustrations, to aid in locating a defective circuit. The shaded blocks of the Troubleshooting Chart indicate stages which may cause the indicated malfunction. The stage names given in shaded blocks correspond directly to the names given in the functional stage blocks of the schematic diagrams. The circuits are discussed in detail in Section 3, Theory of Operation.

TEST POINT AND ADJUSTMENT LOCATIONS

To aid in locating test points and adjustable components called out in the Calibration procedure, a Test Point and Adjustment Locations foldout page is provided in Section 8, Diagrams and Circuit Board Illustrations.

COMPONENT COLOR CODING

The instrument contains brown composition resistors, some metal-film resistors and some wire-wound resistors. The resistance values of wire-wound resistors are usually printed on the component body. The resistance values of composition resistors and metal-film resistors are color coded on the components using the EIA color code (some metal-film resistors may have the value printed on the body). The color code is read starting with the stripe nearest the end of the resistor. Composition resistors have four stripes, which consist of two significant figures, a multiplier, and a tolerance value (see Fig. 4-1). Metal film resistors have five stripes consisting of three significant figures, a multiplier, and a tolerance value.

The values of common disc capacitors and small electrolytics are marked on the side of the component body. The white ceramic and epoxy-coated tantalum capacitors used in the instrument are color coded using a modified EIA code (see Fig. 4-1).

The cathode end of glass-encased diodes is indicated by a stripe, a series of stripes, or a dot. The cathode and anode ends of metal-encased diodes can be identified by the diode symbol marked on the body.

SEMICONDUCTOR LEAD CONFIGURATIONS

Figure 4-2 shows the lead configurations of the semiconductors in the 606B Monitor.

MULTI-PIN CONNECTOR HOLDERS

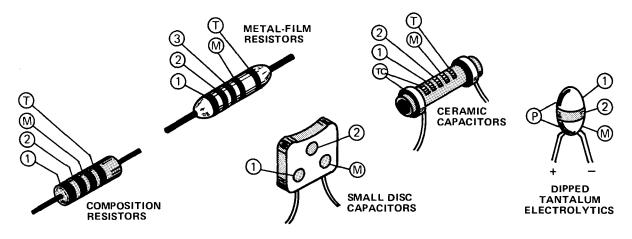
The multi-pin connector holders are keyed with two triangles, one on the holder and one on the circuit board. When a connection is made perpendicular to a circuit board surface, the orientation of the triangle on the endlead multi-pin connector holder is determined by the placement of the multi-pin connector index (see Fig. 4-3).

COLOR CODE

- 1 2 AND 3 1st, 2nd, AND 3rd SIGNIFICANT FIGS.
 - T AND/OR TO COLOR CODE MAY NOT BE PRESENT ON SOME CAPACITORS; T - TOLERANCE;
- (TC) TEMPERATURE COEFFICIENT.

M - MULTIPLIER;

(P) - POSITIVE (+) POLARITY AND VOLTAGE RATING.



		RESIS	TORS		CAPACITORS		DIPPED TANTALUM
COLOR	SIGNIFICANT FIGURES	MULTIPLIER		MULTIPLIER	TOLE	RANCE	VOLTAGE
		(OHMS)	TOLERANCE	(pF)	OVER 10pF	UNDER 10 pF	RATING
BLACK	0	1		1	±20%	<u>+</u> 2pF	4VDC
BROWN	1	10	±1%	10	±1%	±0.1pF	6VDC
RED	2	10 ² or 100	±2%	10 ² or 100	±2%		10VDC
ORANGE	3	10 ³ or 1 K	±3%	10 ³ or 1000	±3%		15VDC
YELLOW	4	10 ⁴ or 10K	±4%	10 ⁴ or 10,000	+100% 0%		20VDC
GREEN	5	10 ⁵ or 100 K	±1/2%	10 ⁵ or 100,000	±5%	±0.5pF	25VDC
BLUE	6	10 ⁶ or 1 M	±1/4%	10 ⁶ or 1,000,000			35VDC
VIOLET	7		±1/10%	10 ⁷ or 10,000,000		- - -	50VDC
GRAY	8			10 ⁻² or 0.01	+80% -20%	±0.2 5 pF	
WHITE	9			10 ⁻¹ or 0.1	±10%	±1pF	3VDC
GOLD		10 ⁻¹ or 0.1	±5%				
SILVER		10 ⁻² or 0.01	±10%				
NONE			±20%		±10%	±1pF	

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Figure 4-1. Color code for resistors and capacitors.

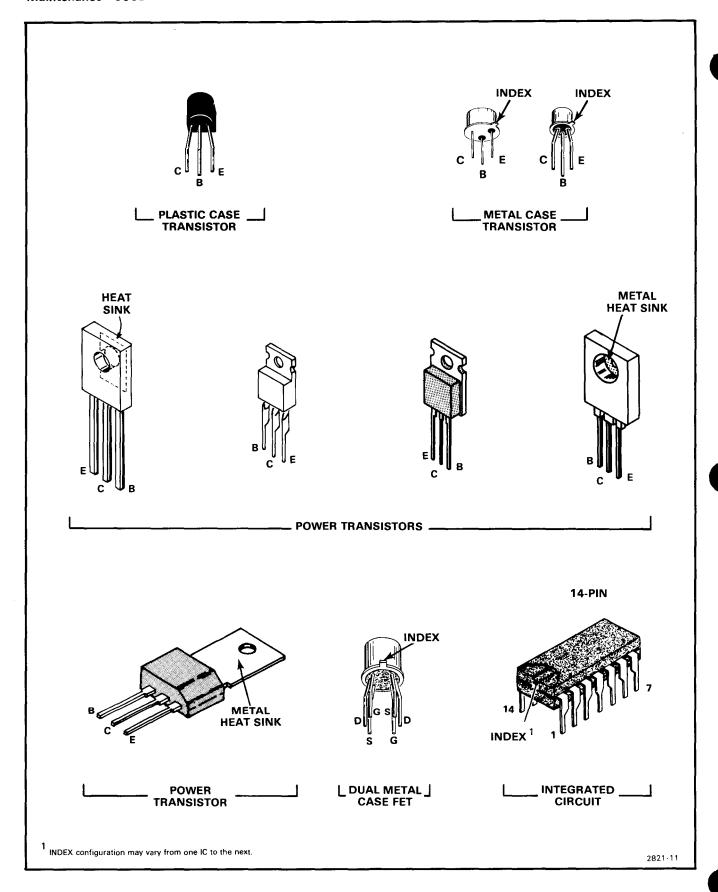


Figure 4-2. Semiconductor lead configuration.

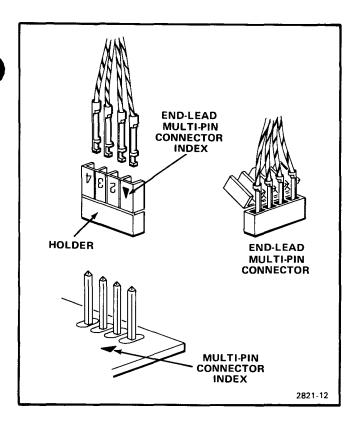


Figure 4-3. Orientation of multi-pin connector holders.

TROUBLESHOOTING EQUIPMENT

The following equipment, in addition to that listed in the Performance Check and Adjustment section, is useful for troubleshooting the 606B Monitor:

Semiconductor Tester

Description: Dynamic-type tester.

Purpose: To test the semiconductors used in this instrument.

Recommended Type: TEKTRONIX Type 576 Curve Tracer or equivalent.

Multimeter

Description: Ten 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: General troubleshooting.

Test Oscilloscope

Description: Frequency response, dc to ten megahertz minimum; deflection factor, one millivolt/division to five volts/division. A 10X, ten megohm voltage probe should be used to reduce circuit loading for voltage measurements.

Purpose: To check operating waveforms.

Service Extender Kit

Description: The 067-0958-00 Service Extender kit consists of all the electrical parts necessary to mount the High Voltage board (A5) at a right angle with the Converter board (A4). This provides access to the component side of the High Voltage board as well as expose circuitry on the Converter board for troubleshooting purposes.

TROUBLESHOOTING TECHNIQUES

This troubleshooting procedure is arranged in an order that checks the simple trouble possibilities before proceeding with extensive troubleshooting. The first few checks assure proper connection, operation, and adjustment. If the trouble is located by these checks, the remaining steps aid in locating the defective component. When the defective component is located, replace it using the replacement procedure given under Component Replacement in this section.

1. 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 on the 606B, refer to Section 2, Operating Instructions.

2. CHECK ASSOCIATED EQUIPMENT

Before proceeding with troubleshooting, check that the equipment used with this instrument is operating correctly. Also, check that the input signals are properly connected and that the interconnecting cables are not defective. Check the line-voltage source.

WARNING

Although this Monitor is not to be connected to a patient, interconnecting this Monitor to other equipment can result in the application of excessive current to a patient. It is extremely important that the interconnection is made in accordance with NFPA 76B-T, Tentative Standard for the Safe Use of Electricity in Patient Care Areas of Health Care Facilities, section 3038, "Signal Transmission Between Appliances".

3. VISUAL CHECK

Visually check that portion of the instrument in which the trouble is located. Many troubles can be found by visible indications, such as unsoldered connections, broken wires, damaged circuit boards and damaged components.

4. CHECK INSTRUMENT ADJUSTMENT

Check the electrical adjustment of this instrument, or of 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 in Section 5, Calibration.

5. ISOLATE 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. When trouble symptoms appear in more than one circuit, check the affected circuits by taking voltage and waveform readings.

Incorrect operation of all circuits often indicates trouble in the power supplies. Check first for the correct output voltage of the individual supplies. A defective component elsewhere in the instrument can appear as a powersupply trouble and may also affect the operation of other circuits. Table 4-1 lists the output voltage range and typical ripple of the power supplies in this instrument. These voltages are measured between the power-supply test points and ground (see the Test Point and Adjustment Locations foldout pages in Section 8, Diagrams and Circuit Board Illustrations, for test point locations). If the power-supply voltage and ripple is within the listed range, the supply can be assumed to be working correctly. If outside the range, the supply may be misadjusted or operating incorrectly. Use the procedure given in Section 5, Calibration, to adjust the power supplies.

TABLE 4-1 Low-Voltage Supply Limits

Supply (dc)	Test Point	Limits (Volts dc)	Ripple (p-p)
+15 V	TP352	+14.95 to +15.05	2 mV or less
-15 V	TP354	-15.2 to -14.8	2 mV or less
+95 V	TP351	+94.0 to +98.0	100 mV or less
+250 V	TP350	+249 to +251	150 mV or less

Figure 8-17 in Section 8, Diagrams and Circuit Board Illustrations, provides a guide for locating a defective circuit. Start at the top left of the Troubleshooting Chart and perform the checks given across the top of the chart until the indicated results are not found. Then proceed to further checks, or the circuit in which trouble is suspected, as listed underneath the step. The shaded blocks of the Troubleshooting Chart indicate circuit stages that may cause the malfunction, and correspond

directly to the functional blocks on the schematic diagrams. The circuits listed are discussed in detail in Section 3, Theory of Operation. After the defective circuit has been located, proceed with steps 6 and 7 of Troubleshooting Techniques to isolate the defective component.

6. CHECK VOLTAGES AND WAVEFORMS

Often the defective component can be located by checking for the correct voltages or waveforms in the circuit. Typical voltages and waveforms are given in Section 8, Diagrams and Circuit Board Illustrations.

NOTE

Voltages and waveforms given in Section 8, Diagrams and Circuit Board Illustrations, are not absolute and may vary slightly between Monitors. To obtain operating conditions similar to those used to make these readings, see the appropriate schematic.

7. CHECK INDIVIDUAL COMPONENTS

The following procedures describe methods of checking individual components. Components which are soldered in place are best checked by first disconnecting one end. This isolates the measurement from the effects of surrounding circuitry.

WARNING

To avoid electric shock, always disconnect the Monitor from the power source before replacing components.

Fuses

Check for open fuses by checking the continuity with an ohmmeter. The location and rating of power-supply fuses is shown in Figure 1-1, General Information section.

Transistors

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.

Integrated Circuits

Integrated circuits can be checked with a voltmeter, test oscilloscope, or by direct substitution. A good understanding of the circuit operation is essential when troubleshooting circuits using integrated circuits. In addition, operating waveforms, logic levels, and other operating information for the integrated circuits are give

in Section 3, Theory of Operation, and Section 8, Diagrams and Circuit Board Illustrations. Use care when checking voltages and waveforms around the integrated circuits so that adjacent leads are not shorted together. A convenient means of clipping a test probe to the in-line multi-pin integrated circuits is with an integrated-circuit test clip. This device also doubles as an integrated-circuit extraction tool.

Diodes

A diode can be checked for an open or shorted condition by measuring the resistance between terminals with an ohmmeter set on a scale having a low internal source current, such as the R X 1K scale. The resistance should be very high in one direction and very low when the meter leads are reversed.



When checking diodes, do not use an ohmmeter scale that has a high internal current, since high currents may damage the diodes under test.

Resistors

Check the resistors with an ohmmeter. Resistor tolerance is given in Section 7, Replaceable Electrical Parts. Normally, resistors do not need to be replaced unless the measured value varies widely from the specified value.

Capacitors

A leaky or shorted capacitor can best be detected by checking resistance with an ohmmeter on the highest scale. Do 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 if the capacitor passes ac signals.

8. REPAIR AND READJUST THE CIRCUIT

If any defective parts are located, follow the replacement procedures given under Component Replacement in this section. Check the performance of any circuit that has been repaired or that has had any electrical components replaced. Adjustment of the circuit may be necessary.

CORRECTIVE MAINTENANCE

Corrective maintenance consists of component replacement and instrument repair. Special techniques required to replace components are given here.

OBTAINING REPLACEMENT PARTS

Most electrical and mechanical parts can be obtained through your local Tektronix Field Office or representative. However, many of the standard electronic components can be obtained locally. Before ordering or purchasing a part from a source other than Tektronix, Inc., check the electrical parts list for the proper value, tolerance, rating, and description.

Some parts are manufactured or selected by Tektronix, Inc. to satisfy particular requirements, or are manufactured for Tektronix, Inc. to our specifications.

NOTE

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

Most of the mechanical parts used in this instrument have been manufactured by Tektronix, Inc. To determine manufacturer of parts, refer to Parts List, Cross Index Mfr. Code Number to Manufacturer. When ordering replacement parts from Tektronix, Inc., include the following information:

- 1. Instrument type.
- 2. Instrument serial number.
- 3. A description of the part (if electrical, include the circuit number, if crt, also include all data on crt tag).
- 4. Tektronix part number.

SOLDERING TECHNIQUES

WARNING

To avoid electric shock, disconnect the Monitor from the power source before soldering.

The reliability and accuracy of this instrument can be maintained only if proper soldering techniques are used when repairing or replacing parts. General soldering techniques which apply to maintenance of any precision electronic equipment should be used when working on

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this instrument. Use only 60/40 resin-core, electricgrade solder. The choice of soldering iron is determined by the repair to be made. When soldering on circuit boards or small wiring, use only a 15-watt, pencil-type soldering iron. A higher wattage soldering iron can cause the etched circuit run to separate from the board base material and melt the insulation from small wiring. Always keep the soldering-iron tip properly tinned to ensure the best heat transfer to the solder joint. Apply only enough heat to remove the component or to make a good solder joint. To protect heat-sensitive components, hold the component lead between the component body and the solder joint with a pair of long-nose pliers or an alligator clip. Use a solder-removing wick to remove excess solder from connections or to clean circuit board pads.

The following technique should be used to replace a component on any of the circuit boards in this instrument. Most components can be replaced without removing the board(s) from the instrument.

- 1. Touch the soldering iron to the lead at the solder connection. Never place the iron directly on the board, as this may damage the board.
- 2. Melt a small amount of solder onto the component lead connection. This replaces the flux, which may have been removed during instrument cleaning, and facilitates removal of the component.
- 3. Grip the component lead with a pair of long-nose pliers. When the solder begins to flow, gently pull the component lead from the board. If unable to separate the lead from the board, try removing the other end of the component.

NOTE

Some components are difficult to remove from the circuit board due to a bend placed in each lead during machine insertion of the component. The purpose of the bent leads is to hold the component in position during a flow-solder manufacturing process which solders all components at once. To make removal of machine inserted components easier, straighten the leads of the component on the back of the circuit board using a small screwdriver or pliers, while heating the soldered connection.

- 4. Bend the leads of the replacement component to fit the holes in the circuit board. If the component is replaced while the board is mounted in the instrument, cut the leads so they will just protrude through the board. Insert the leads into the holes in the board so that the component is firmly seated against the board, or as originally positioned.
- 5. Touch the iron to the connection and apply enough solder to make a firm solder joint.

- 6. Cut off any excess lead protruding through the board (if not clipped in step 4).
- 7. Clean the area around the solder connection with a flux-removing solvent. Be careful not to remove information printed on the circuit board.

COMPONENT REMOVAL AND REPLACEMENT

WARNING

To avoid electric shock, always disconnect the Monitor from the power source before replacing components.

The exploded-view drawings associated with the Replaceable Mechanical Parts list (located at the rear of this manual) may be helpful in the removal or disassembly of individual components or sub-assemblies.

CATHODE-RAY TUBE REMOVAL

Remove the cathode-ray tube (crt) as follows (see Fig. 4-4):

WARNING

Use care when handling a crt. Breakage of the crt causes a high-velocity scattering of glass fragments (implosion). Protective clothing and safety glasses should be worn. Avoid striking the crt 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.

- 1. Remove any protective side cabinet panels to gain access to the crt leads.
- 2. Disconnect 6 leads from the crt neck pins.

NOTE

The red and black leads exiting the crt shield to the X-Y Output Amplifier board are connected to the display-rotation coil inside the shield. They will not hamper crt removal and need not be disconnected.

- 3. Remove the 5 crt rear-cover securing screws and remove the cover.
- 4. Remove the crt base-pin socket.

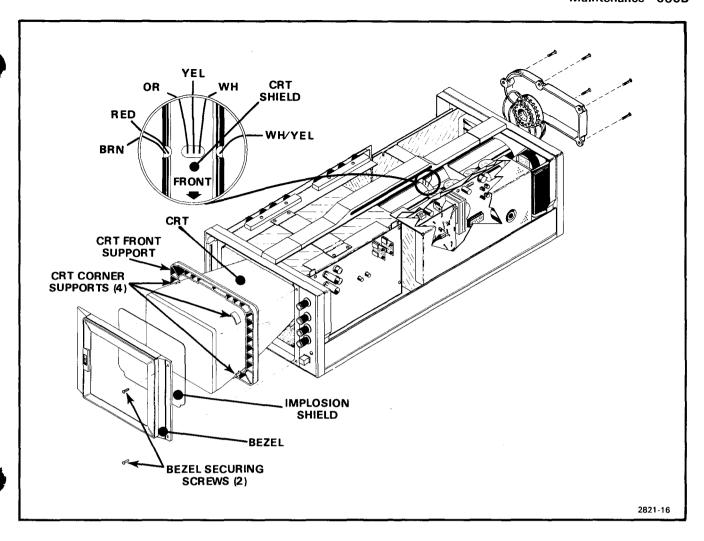


Figure 4-4. Crt removal.

- 5. Remove the bezel and snap-in implosion shield by removing the 2 bezel securing screws on the front of the instrument.
- 6. With one hand on the front of the instrument, gently push on the crt base to slide the crt forward. The crt front support will slide out with the crt.
- 7. Press the crt front support toward the rear of the crt. The corner supports will fall away.

CATHODE-RAY TUBE REPLACEMENT

Replace the cathode-ray tube (crt) as follows (see Fig. 4-4):

1. Install the front and corner supports on the crt.

- 2. Guide the neck of the crt into the shield.
- 3. Mount and fasten the bezel and implosion shield to the front panel with the 2 bezel securing screws.

NOTE

Align the extender shafts with the appropriate holes in bezel.

- 4. Place the crt base-pin socket onto the crt base pins.
- 5. Install the socket cover.
- 5. Position and secure the rear cover.
- 6. Connect the 6 leads to the proper crt neck pins.

NOTE

The replacement crt will require that the Monitor be readjusted. Refer to Section 5, Calibration.

CIRCUIT BOARD REPLACEMENT

If a circuit board is damaged beyond repair, the entire assembly, including all soldered-on components, can be replaced. Part numbers for the completely wired boards are given in Section 7, Replaceable Electrical Parts.

A1 X-Y Output Amplifier Board Removal

Remove the A1 X-Y Output Amplifier board as follows (refer to Figure 4-5):

- 1. Remove the shield.
- 2. Remove the 2 Transistor Retaining Blocks and 4 fish paper insulation strips.
- 3. Unsolder the 8 transistors, noting the location of each. (These transistors are not shipped as part of the board assembly.)

- 4. Unplug the 2-pin Harmonica, P290, and 4 individual pins connected to the crt deflection plates.
- 5. Position the instrument on its right side.
- 6. Remove 8 Transistor Retaining Screws, 1 board mounting screw, and 1 threaded spacer post.
- 7. Pry up (with fingers) on the board near the interboard connector. When the pins are completely disengaged pull the board to the rear until the extender shafts clear the bezel

Install the A1 X-Y Output Amplifier board as follows (refer to Figure 4-5):

- 1. Align extender shafts with appropriate holes in bezel.
- 2. Fully engage the interboard connector.

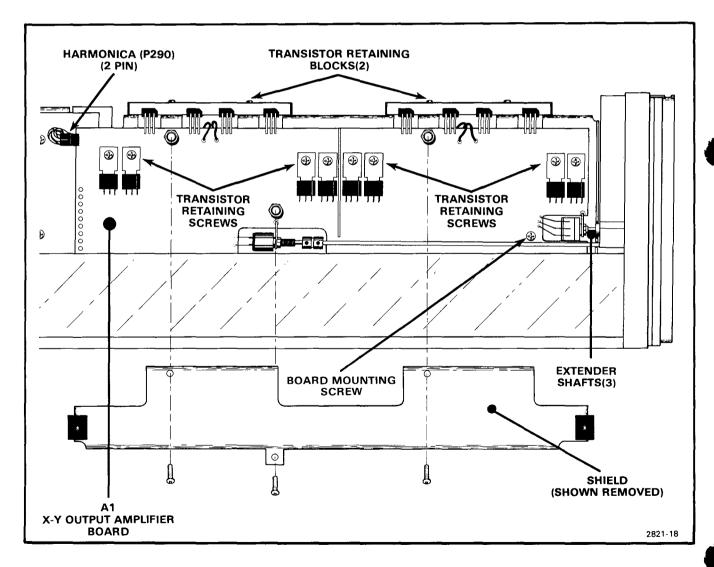


Figure 4-5. A1 X-Y Output Amplifier board removal.

- 3. Replace 1 Board Mounting Screw, 1 threaded spacer post and the 8 Transistor Retaining Screws. Leave loose.
- 4. Tighten all 9 screws and the spacer post.
- 5. Plug in the 2-pin Harmonica (P290) and the 4 individual crt neck pin connectors.
- 6. Solder in 8 transistors.
- 7. Position the fish paper insulation strips on both sides of the transistor mounting tabs. Align the holes in the Transistor Retaining Blocks with those in the fish paper insulation strips and the chassis. Secure the Transistor Retaining Blocks.
- 8. Snap the shield in place, then secure with 2 screws.

A2 X-Y Pre-Amplifier Board

Remove the X-Y Pre-amplifier board as follows (refer to Fig. 4-6):

- 1. Remove the small "L" shaped shield covering the upper edge of the X-Y Pre-Amplifier board.
- 2. Then remove the X-Y Output Amplifier board as previously described, however, do not unsolder the 8 transistors in step 3. Next, proceed with the following instructions.

- 3. Unplug the four 2-pin Harmonica connectors.
- 4. Remove 4 mounting screws.
- 5. Separate the interboard connector and pull the board from the instrument.
- To replace the board, reverse the preceding removal procedure.

A3 Low-Voltage Power And Z-Axis Board

Remove the Low-Voltage Power and Z-Axis board as follows (refer to Figure 4-7):

- 1. Unplug the 10-pin Harmonica connectors (both ends of the ribbon cable).
- 2. Remove the High Voltage Shield.
- 3. Loosen the 2 screws securing the transistor heat sinks to the chassis.
- 4. Remove 2 Transistors mounted to the chassis by spring clips.
- 5. Remove the Voltage Selector Plug to gain access to the leads behind it.

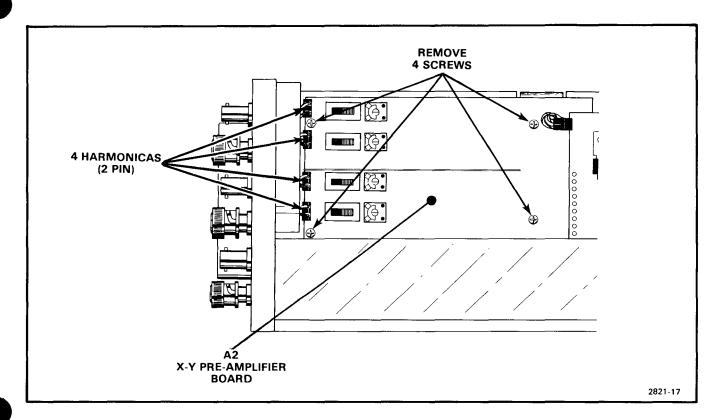


Figure 4-6. A2 X-Y Pre-Amplifier board removal.

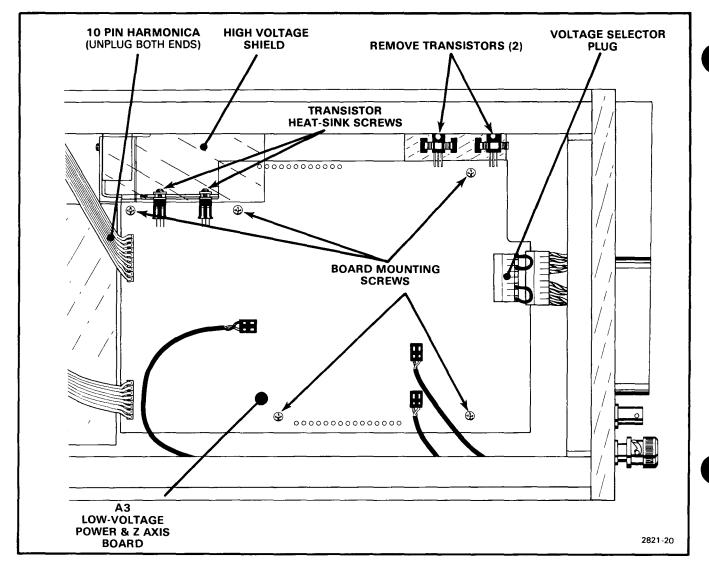


Figure 4-7. A3 Low Voltage Power and Z-Axis board removal.

- 6. Unsolder the 2 leads behind the Voltage Selector Plug and the 4 leads (2 black and 2 red) that come to the board from the transformer.
- 7. Remove the remaining 6 Harmonica connectors.
- 8. Remove 5 Board Mounting Screws.
- 9. Pry up on the board near the interboard connectors (2) while guiding the two heat sinks from their slots. (See step 3.)
- 10. Remove the board.
- 11. To install the board, reverse the removal procedure.

A4 Converter Board

Remove the Converter board as follows (refer to Fig. 4-8):

- 1. Follow the procedure for the High Voltage board removal (delete step 7), then proceed with the following instructions.
- 2. Remove the 2 transitor Spring Clips. Retain the white Insulating Chips (2) located between the transistors and the chassis.
- 3. Unplug the 2 single Harmonica connectors.
- 4. Remove 6 board-mounting screws.
- 5. Pry up on the board near the Interboard Connector.

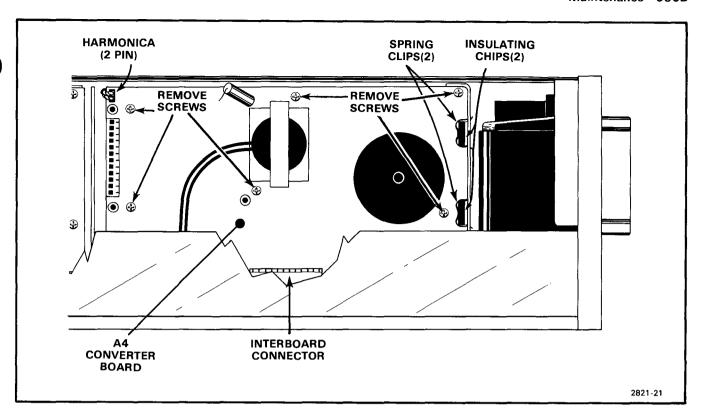


Figure 4-8. A4 Converter board removal.

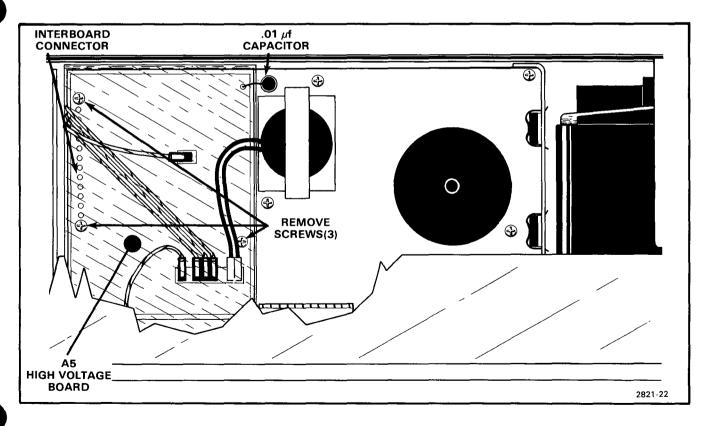


Figure 4-9. A5 High Voltage board removal.

Maintenance-606B

- 6. Remove the board.
- 7. To install the board, reverse the removal procedure.

A5 High Voltage Board

Remove the High Voltage Board as follows (refer to Fig. 4-9):

- 1. Remove the metal shield (2 screws).
- 2. Remove the plastic high voltage shield (remove 3 nylon screws).
- 3. Unplug all harmonica connectors (4).
- 4. Unsolder the 0.01 μF Capacitor from the High Voltage Board.
- 5. Pry up on the board near the Interboard Connector. Remove the board.
- 6. Remove the plastic (Lexan) shield from the board.

7. To install the board, reverse the removal procedure.

A6 Dynamic Focus Board

Remove the Dynamic Focus board as follows (refer to Fig. 4-10):

- 1. Remove the Plastic Shield
- 2. Unplug all harmonica connectors.
- 3. Remove the Transistor Retaining Block and insulating fish paper.
- 4. Remove 2 board-mounting screws and 2 Threaded Spacer Posts (3/16 wrench).
- 5. Remove the board.
- 6. To install the board, reverse the removal procedure.

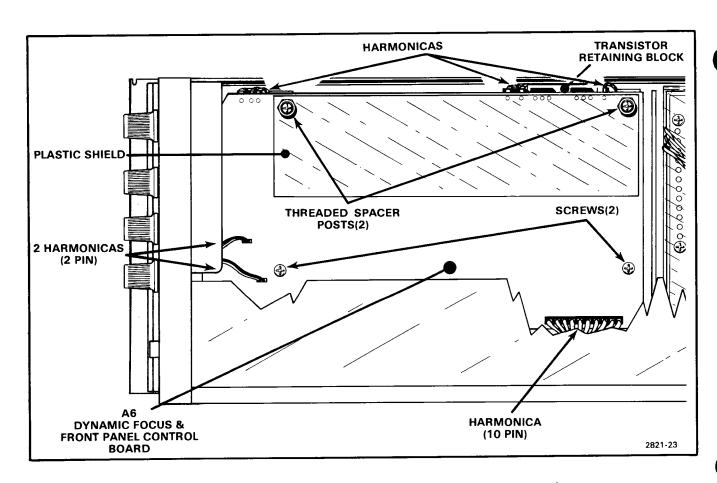


Figure 4-10. A6 Dynamic Focus and Front Panel Control board removal.

SEMICONDUCTORS

Semiconductors should not be replaced unless actually defective. If removed from their sockets during routine maintenance, return them to their original sockets. Unnecessary replacement of semiconductors may affect the adjustment of the instrument. When semiconductors are replaced, check the operation of circuits which may be affected.

WARNING

Always disconnect the Monitor from the power source before replacing components to avoid electrical-shock hazard.

Replacement semiconductors should be of the original type or a direct replacement. Lead configurations of the semiconductors used in this instrument are shown in Figure 4-2. Some plastic case transistors have lead configurations which do not agree with those shown. If a replacement transistor is made by a different manufacturer than the original, check the manufacturer's basing diagram for correct basing. All transistor sockets are wired for the standard basing as used for metal-cased transistors.

WARNING

Handle silicone grease with care. Avoid getting silicone grease in your eyes. Wash hands thoroughly after use.

When removing soldered-in transistors, use a solder-removing wick to remove the solder from the circuit board pads. Transistors which have heat radiators or are mounted on the chassis use silicone grease to increase heat transfer. Replace the silicone grease on both sides of the insulator plate and on the metal tab, if the transistor has one, when replacing these transistors.

INTERCONNECTING CIRCUIT-BOARD PIN REPLACEMENT

A circuit-board pin replacement kit, including necessary tools, instructions, and replacement pins with attached spare ferrules, is available from Tektronix, Inc. Order Tektronix Part 040-0542-00.

To replace a damaged pin, first disconnect any pin connectors. Then unsolder (see Soldering Techniques) the damaged pin and pull it from the board with a pair of pliers, leaving the ferrule (see Fig. 4-11) in the hole if possible. If the ferrule remains in the circuit board, remove the spare ferrule from the replacement pin and press the new pin into the hole in the circuit board. If the ferrule is removed with the damaged pin, clean out the hole using a solder-removing wick and a scribe. Then,

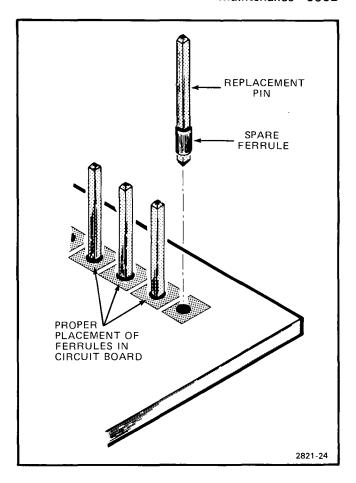


Figure 4-11. Exploded View of circuit board pin and ferrule.

press the replacement pin, with attached spare ferrule, into the hole. Position the replacement pin in the same manner as the original pin had been. Solder the pin to the circuit board on each side of the circuit board. If the original pin was bent at an angle to mate with a connector, carefully bend the new pin to the same angle. Replace the pin connector.

END-LEAD PIN CONNECTORS

The pin connectors used to connect the wires to the interconnecting pins are clamped to the ends of the associated leads. To remove or replace damaged endlead pin connectors, remove the old pin connector from the end of the lead and clamp the replacement connector to the lead.

Some of the pin connectors are grouped and mounted in a plastic holder; the overall result is that these connectors are removed and installed as a multi-pin connector (see Troubleshooting Aids). If the individual end-lead pin connectors are removed from the plastic holder, note the order of the individual wires for correct replacement in the holder.

Scan by Zenith

CALIBRATION

This section provides procedures for calibrating this instrument. These procedures are designed to compare the performance of this instrument with measurement instruments of known accuracy to detect, correlate, or eliminate by adjustment, any variation from the electrical specifications. These procedures also verify that the controls function properly.

This section is divided into two parts: Part I—Performance Check is provided for those who wish to verify that this instrument meets the applicable electrical specifications in section 1 without making internal adjustments. Part II—Adjustment and Performance Check provides a complete calibration procedure that includes adjustments and performance checks in addition to verifying that the controls function properly. The procedures in Part I and Part II are written so that the entire instrument, or any major circuit or part of a circuit, can be checked or adjusted.

Table 5-1, Calibration Procedure Electives, lists the choices available and instructions for performing complete or partial calibration procedures. Also refer to Using These Procedures, for more detailed information.

TABLE 5-1
Calibration Procedure Electives

Electives	Procedures
Functional Check	A functional check only is provided in the Checkout Procedure in section 2.
	A functional check is also accomplished by performing Part II—Adjustment and Performance Check.
Performance Check Only	Perform Part I—Performance Check.
Complete Calibration	Perform Part II—Adjustment and Performance Check.
Partial Procedures	Proceed to the desired step(s) (e.g., A2, A3, B2, B3, etc.; as listed in the Index to part I—Performance Check or Index to Part II—Adjustment and Performance Check).
	NOTE
	When adjustments are made we recommend that the entire major functional circuit procedure be performed.

USING THESE PROCEDURES NOTE

In these procedures, capital letters are used within the body of the text to identify front-panel controls, indicators, and connectors on the 606B (e.g., FOCUS). Initial capitalization is used to identify all the associated test equipment and their controls, indicators, and connectors (e.g., Amplitude) used in the procedures. Initial capitalization is also used to identify internal adjustments of the 606B (e.g., X-Plate DC Level).

These procedures are divided into subsections by major functional circuits (e.g., A. Power Supplies, B. Crt, etc.). The order in which the subsections and procedures appear is the recommended sequence for a complete performance check or calibration of the instrument.

The first step in each subsection (A1, B1, C1, etc.) contains reference information and control settings that must be performed before proceeding.

The Setup Conditions provide equipment connection information and control settings for both this instrument and any associated test equipment. Also, the Setup Conditions are written so that if desired, each subsection (A, B, C, etc.) or step (A2, A3, B2, B3, etc.) can be performed independently.

The terms CHECK, EXAMINE, ADJUST, or INTERACTION when used as the first word of an instruction are defined as follows:

1. CHECK—indicates the instruction accomplishes an electrical specification check. Each electrical specification checked is listed in Table 5-2. Performance Check Summary (see the following Performance Check Summary discussion for more information).

- 2. **EXAMINE**—usually precedes an ADJUST instruction and indicates that the instruction determines whether adjustment is necessary. If no ADJUST instruction appears in the same step, the EXAMINE instruction concerns measurement limits that do not have a related adjustment. Measurement limits following the word EXAMINE are not to be interpreted as electrical specifications. They are provided as indicators of a properly functioning instrument and to aid in the adjustment process.
- 3. **ADJUST**—describes which adjustment to make and the desired result. We recommend that adjustments not be made if a previous CHECK or EXAMINE instruction indicates that no adjustment is necessary.
- 4. **INTERACTION**—indicates that the adjustment described in the preceding instruction interacts with other circuits. The nature of the interaction is described and reference is made to the step(s) affected.

PERFORMANCE CHECK SUMMARY

Table 5-2, Performance Check Summary, lists the electrical specifications that are checked in Part I and Part II of this section. Table 5-2 is intended to provide a convenient means for locating the procedures in Part I and Part II that check and/or adjust the instrument to meet the applicable electrical specifications. For example: if the Z-Axis Amplifier had been repaired, use Table 5-2 to locate the electrical specifications affected by the repair. Then note the title of the procedure in Part I or Part II in which those specifications are checked and/or adjusted. Use the index provided at the front of Part I and Part II to determine the page number of the desired procedures.

TABLE 5-2
Performance Check Summary

Characteristic	Performance Requirement	Part I Performance Check Procedure Title	Part II Adjustment and Performance Check Procedure Title
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POWER SOURCE

LO Line Voltage Range	e	Does not normally require customer verification.
L (100 V ac)	90 to 110 V ac.	
M (110 V ac)	99 to 121 V ac.	
H (120 V ac)	108 to 132 V ac.	

Performance Requirement	Part I Performance Check Procedure Title	Part II Adjustment and Performance Check Procedure Title
	Does not normally require cust	omer verification.
180 to 220 V ac.		
198 to 242 V ac.		
216 to 250 V ac.		
48 to 440 Hz.		
75 W, 120 V ac, 60 Hz.		•
50 W, 120 V ac, 60 Hz.		
	180 to 220 V ac. 198 to 242 V ac. 216 to 250 V ac. 48 to 440 Hz.	Performance Requirement Does not normally require cust 180 to 220 V ac. 198 to 242 V ac. 216 to 250 V ac. 48 to 440 Hz. 75 W, 120 V ac, 60 Hz.

CATHODE-RAY TUBE

Quality Area	7 × 9 cm.	Does not normally require of	ustomer verification.
Geometry	Bowing or tilt 1 mm or less over the full screen.	B3. Check Geometry (R185).	B4. Check/Adjust Geometry (R185).
Orthogonality	90° within 0.7°.	B2. Check Orthogonality.	B3. Check Orthogonality.
Compression and Expansion	Less than 1% of full screen deflection.	Does not normally require of	sustomer verification.
Spot Diameter	0.079 cm (0.0031 in.) or less, with intensity set for 3.45 μ W/cm ² (P31), 700 line, 7 × 9 cm focused raster. Measured with the shrinking raster method. (125 lines/cm, center screen).	F2. Check Spot Diameter.	F5. Check Spot Diameter.
Spot Shape	Measured within the quality area. The ratio between two perpendicular spot crossections does not exceed 1.5:1.	Does not normally require of	customer verification.
Spot Growth	Not greater than 20% at constant intensity within the quality area.		
Light Output	Greater than $20 \mu \text{W/cm}^2$ with a 700 line 60 Hz refresh raster, with a 100% duty cycle, at maximum allowable drive to the crt, over a $7 \times 9 \text{cm}$ area.		

Characteristic	Performance Requirement	Part I Performance Check Procedure Title	Part II Adjustment and Performance Check Procedure Title	
HORIZONTAL (X) AMPLIFIER				
Deflection Factor	Internally adjustable from 0.5 V to 2.5 V for 8 divisions of deflection. Externally adjustable for at least ±10% of nominal.	C2. Check Positioning and Gain.	C3. Adjust X Amplifier Gain and Check Positioning.	
Input Attenuators	Allows a 5X increase in deflection factor.	C5. Check Horizontal Input Attenuation.	C7. Check Horizontal Input Attenuation.	
Polarity	+Signal deflects beam to the right, -Signal deflects beam to the left.	Does not normally require cu	stomer verification.	
Bandwidth	Dc to at least 3 MHz at -3 dB point.	C4. Check Horizontal Bandwidth.	C6. Check Horizontal Bandwidth.	
Settling Time		C3. Check Horizontal Settling Time.	C5. Check Horizontal Settling Time.	
After deflection between any 2 points on screen	Spot must reach new writing position, within 0.008 cm (0.003 inch), within 500 ns.			
After deflection to any point on screen from within 20 cm of screen center.	Spot must reach new writing position, within 0.008 cm (0.003 inch), within 700 ns.			
Risetime	116 nsec or less.		istomer verification. However, om the Horizontal Bandwidth.	
Common Mode Rejection		C6. Check Horizontal Common-Mode Rejection.	C8. Check Horizontal Common-Mode Rejection.	
Atten in X1 Position				
DC to 500 kHz	At least 100:1 for signals of ±3 V peak, or less.			
500 kHz to 1 MHz	At least 40:1 for signals of ±15 V peak, or less.			
Atten in X5 Position				
DC to 500 KHz	At least 40:1 for signals of ±15 V peak, or less.			

Characteristic	Performance Requirement	Part I Performance Check Procedure Title	Part II Adjustment and Performance Check Procedure Title
Maximum Non- Destructive Input Voltage (fault condition only)	1 MΩ input impedance: +100 V or -100 V dc + peak ac. 50 Ω input impedance: +15 V or -5 V dc + peak ac.	Specification applicable under this is not a procedural check.	fault condition only; therefore
Position Range	Spot can be positioned anywhere on the screen.	C2. Check Positioning and Gain.	C3. Adjust X Amplifier Gain and Check Positioning.
Position Stability	0.1 cm or less drift per hr. after 20 minute warmup.	Does not normally require cus	stomer verification.
Gain Stability	Less than 1% change under all conditions of line voltage and temperature.		
Crosstalk			
Between X and Y Amplifiers	0.005 cm (0.002 inch) or less of deflection on the undriven channel with full screen amplitude of 1 MHz sine wave applied to the other channel. Other inputs grounded or terminated into 50 ohms.		
From Z to X Amplifier	0.012 cm (0.005 inch) or less of deflection on the undriven channels when the Z-Axis Amplifier is driven for a 70 V output with a 1 MHz sine wave. X and Y inputs grounded or terminated into 50 ohms.		

VERTICAL (Y) AMPLIFIER

Deflection Factor	Internally adjustable from 0.5 V to 2.5 V for 8 divisions of deflection. Externally adjustable for at least ±10% of nominal.	D2. Check Positioning and Gain.	D2. Adjust Y Amplifier Gain and Check Positioning.
Input Attenuators	Allows a 5X increase in deflection factor.	D5. Check Vertical Input Attenuation.	D6. Check Vertical Input Attenuation.

Characteristic	Performance Requirement	Part I Performance Check Procedure Title	Part II Adjustment and Performance Check Procedure Title
Polarity	+Signal deflects beam to the right, -Signal deflects beam to the left.	Does not normally require customer verification.	
Bandwidth	Dc to at least 3 MHz at -3 dB point.	D4. Check Vertical Bandwidth.	D5. Check Vertical Bandwidth.
Settling Time		D3. Check Vertical Settling Time.	D4. Check Vertical Settling Time.
After deflection between any 2 points on screen	Spot must reach new writing position, within 0.008 cm (0.003 inch), within 500 ns.		
After deflection to any point on screen from within 10 cm of screen center.	Spot must reach new writing position, within 0.008 cm (0.003 inch), within 700 ns.		
Phase Difference (Dc to 500 kHz)	1° or less between X and Y amplifiers.	D7. Check Phasing.	D8. Check Phasing.
Risetime	116 nsec or less.	Does not normally require customer verification. However risetime can be calculated from the Horizontal Bandwidth.	
Common Mode Rejection		D6. Check Vertical (Y) Common-Mode Rejection.	D7. Check Vertical (Y) Common-Mode Rejection.
Atten in X1 Position			
DC to 500 kHz	At least 100:1 for signals of ±3 V peak, or less.		
500 kHz to 1 MHz	At least 40:1 for signals of ±15 V peak, or less.		
Atten in X5 Position			
DC to 500 kHz	At least 40:1 for signals of ±15 V peak, or less.		
Maximum Non- Destructive Input Voltage (fault condition only)	1 MΩ input impedance: +100 V or -100 V dc + peak ac. 50 Ω input impedance: +5 V or -5 V dc + peak ac.	Specification applicable under fault condition only; therefo this is not a procedural check.	
Position Range	Spot can be positioned anywhere on the screen.	D2. Check Positioning and Gain.	D2. Adjust Y Amplifier Gain and Check Positioning

Characteristic	Performance Requirement	Part I Performance Check Procedure Title	Part II Adjustment and Performance Check Procedure Title
Dynamic Range	At least +1.5 screen diameters from screen center (±10 cm).	Does not normally require cust	omer verification.
Position Stability	0.1 cm or less drift per hr. after 20 minute warmup.		
Gain Stability	Less than 1% change under all conditions of line voltage and temperature.		
Crosstalk			
Between X and Y Amplifiers	0.005 cm (0.002 inch) or less of deflection on the undriven channel with full screen amplitude of 1 MHz sine wave applied to the other channel. Other inputs grounded or terminated into 50 Ω .		
From Z to Y Amplifier	0.012 cm (0.005 inch) or less of deflection on the undriven channels when the Z-Axis Amplifier is driven for a 70 V output with a 1 MHz sine wave. X and Y inputs grounded or terminated into 50 Ω .		

Z AXIS AMPLIFIER

Gain Range	Internally adjustable to allow 0.5 V to 2.5 V at the input connector to generate maximum allowable voltge swing at the crt control grid. (0 V to 70 V).	Does not normally require	customer verification.
Bandwidth	Dc to 5 MHz at -3 dB point.	E3. Check Z-Axis Amplifier Bandwidth.	E4. Check Z-Axis Amplifier Bandwidth.
Risetime	35 ns or less.	Does not normally require customer verification.	
Aberration	5% or less.	E2. Check Aberrations.	E3. Adjust Z-Axis Compensation and Check Aberrations.

Characteristic	Performance Requirement	Part I Performance Check Procedure Title	Part II Adjustment and Performance Check Procedure Title
Common Mode Rejection			
Dc to 100 kHz	At least 100:1 with input signals up to 5 V p-p at any gain setting.	E4. Check Z-Axis Common-Mode Rejection.	E5. Check Z-Axis Common-Mode Rejection.
Input Impedance	1 MΩ within 1%, or 50 Ω within 1%; paralleled by 47 pF or less.	Does not normally require customer verification.	
Maximum Non- Destructive Input Voltage (fault condition only)	1 MΩ input impedance: +100 V dc + peak ac. 50 Ω input impedance: +5 V or -5 V dc + peak ac.		
TTL Input	Logic input blanks or unblanks Crt to level set by front panel INTENSITY control and Z-axis input voltage.	E5. Check Z-Axis Blanking.	E6. Check Z-Axis Blanking.
НІ	+2.4 to +5 V.		
LO	0 V to +0.8 V.		

ADJUSTMENT INTERVAL

To maintain instrument accuracy, check performance every 1000 hours of operation, or every 6 months if used infrequently. Before complete adjustment, thoroughly clean and inspect this instrument as outlined in the Maintenance section.

TEKTRONIX FIELD SERVICE

Tektronix Field Service Centers and the Factory Service Center provide instrument repair and adjustment services. Contact your Tektronix Field Office or representative for further information.

TEST EQUIPMENT REQUIRED

The test equipment listed in Table 5-3 is required for a complete Adjustment and Performance Check of the instrument. If only a Performance Check is to be performed, the items required for Adjustment are not required and are indicated by footnote 1. The remaining test equipment is common to both procedures.

The specifications for test equipment, given in Table 5-3 are the minimum required to meet the performance requirements. Detailed operating instructions for test equipment are omitted in these procedures. Refer to the test equipment instruction manual if more information is needed.

SPECIAL FIXTURES

Special fixtures are used only where they facilitate instrument adjustment. These fixtures are available from Tektronix, Inc. Order by part number from Tektronix Field Offices or representatives.

TEST EQUIPMENT ALTERNATIVES

All of the listed test equipment is required to completely calibrate this instrument. However, complete checking or adjusting may not always be necessary or desirable. You may be satisfied with checking only selected characteristics, thereby reducing the amount of test equipment actually required.

The calibration procedures in Part I and Part II are based on the first item of equipment given as an example. When other equipment is substituted, control settings or setups may need to be altered. If the exact item of equipment given as an example in Table 5-3 is not available, first check the Minimum Specifications column carefully to see if any other equipment might suffice. Then check the Purpose column to see what this item is used for. If used for a performance check or adjustment that is of little or no importance for your measurement requirements, the item and corresponding step(s) can be deleted.

TABLE 5-3 Test Equipment

Description	Minimum Specifications	Purpose	Examples of Applicable Test Equipment
. DVM (Digital 'oltmeter) (with est leads)	Measurement range, -15 V to +250 V.	Check/adjust low voltage supplies. Check/adjust X Output DC Level. Adjust bias (R306, dynamic focus) Crt grid bias (R245). Check spot diameter.	a. TEKTRONIX DM 501A Option 02 Digital Multi-Meter (operates in TM 500-series power module). b. TEKTRONIX 7D13 Digital
			Multi-Meter (operates in 7000-series mainframe).
			c. TEKTRONIX DM 502A Option 02 Multi-Meter (operates in TM-500 series power module).
2. DC Voltmeter (with test leads)	Measurement range, -5450V to -5350V dc.	Check/adjust -5400 V supply.	a. Triplett Model 630-NA.
			b. Simpson Model 262.
3. Ramp Generator (2 required)	Ramp duration, 5 ms to 100 μ s within 3%; ramp amplitude, 0.5 to 2 V into 1 M Ω ; external trigger input, compatible with square-wave generator trigger output; gate output, 1 to 3 V into 1 M Ω .	Adjust gain and compensation of the vertical, horizontal, and Z-axis amplifiers. Check vertical and horizontal, bandwidth, common mode rejection and settling time. Check vertical and horizontal positioning. Adjust TRACE ALIGN and geometry. Check Orthogonality and Waveforms for Dynamic focus circuit.	a. TEKTRONIX RG 501 Ramp Generator (operates in TM 500-series power module)
4. Calibration Generator (Square-wave Generator)	Amplitude Calibrator Mode: Frequency, approx. 1 kHz; amplitude, 0.5V to 10V into 2 M Ω ; within 0.25%. Pulse Mode: High-Amplitude Output; Freq-1 kHz to 100 kHz; amplitude, 0.5V to 10V into 50 Ω ; risetime, 10 ns or less into 50 Ω .	Adjust gain and compensation of the vertical, horizontal, and Z-axis amplifiers. Check vertical and horizontal settling time. Check and adjust vertical and horizontal input attenuators.	a. TEKTRONIX PG 506 Calibration Generator (operates in TM 500-series power module).

TABLE 5-3 (CONT) Test Equipment

Description	Minimum Specifications	Purpose	Examples of Applicable Test Equipment
5. Sine-wave Generator	Frequency range, 500 kHz to at least 5 MHz; reference frequency, 50 kHz; amplitude, 0.5V to 5V into 50 Ω; amplitude accuracy, constant within 5% of reference as output frequency changes.	Check common-mode rejection and bandwidth of the horizontal (X), vertical (Y), and Z-Axis amplifiers.	a. TEKTRONIX SG 503 Leveled Sine-Wave Generator (operates in TM 500-series power module).
6. Dot Generator	Provides dot-raster display; frame rate, at least 45 frames/second.	Adjust focus and stig- mators. (An alternative method is provided which does not require a dot generator.	a. TEKTRONIX 067-0845-00 Dot Generator (operates in TM 500-series power module). b. TEKTRONIX 067-0561-01 Test Display Generator Calibration Fixture.
7. Power Module Mainframe (TM 500-series)	Capable of powering and housing 3 to 6 TM 500-series test instruments.	Provide housing and power for TM 500-series test signal generators and precision dc voltmeter.	a. TEKTRONIX TM 503, TM 504 or TM 506 Power Module.
8. Digital Counter	Dual channels, separate inputs (A, B). Measurement of ratio of A/B averaged over 10 ⁵ cycles of B. AC coupling.	Check spot diameter.	a. TEKTRONIX DC 503 Universal Counter (operates in TM 500-series power module).
9. Test Oscilloscope (with 10X probe)	Bandwidth, dc to at least 50 MHz; deflection factor 0.1 to 20 V/div within 2%; sweep rate, 1 ms to 10 μs/div.	Check/adjust Z-axis gain, compensation, bandwidth and common-mode rejection. Adjust focus and stigmators.	a. TEKTRONIX 7904 Oscilloscope, 7892 time base and 7A13 Differential Comparator with P6063A 10X probe. b. TEKTRONIX 7603 Oscilloscope, 7A15A Amplifier, 7B50A Time Base and P6063A 10X probe. c. Refer to Tektronix catalog for compatible oscilloscope system.
10. Function Generator	Waveshape, sine; Frequency range, 500 kHz to 1 MHz amplitude 0-15 V (p-p).	Check horizontal, vertical, and Z-axis common-mode rejection. Check Z-axis blanking.	a. TEKTRONIX FG 503 Function Generator (operates in TM 500-Series power module.
11. Dual-input Coupler	Connectors, bnc.	Check/adjust horizontal (X), vertical (Y), and Z-axis common-mode rejection and blanking, horizontal and vertical phasing, attenuation compensation and check spot diameter.	a. TEKTRONIX 067-0525-01 Calibration Fixture.
12. 50-ohm Terminator	Impedance, 50 Ω; connectors, bnc.	Adjust Z-axis gain, check Z-axis common- mode rejection.	a. TEKTRONIX part 011-0049-01.

TABLE 5-3 (CONT) Test Equipment

Description	Minimum Specifications	Purpose	Examples of Applicable Test Equipment
13. 5X Attenuator	5X, 50 Ω, 2 W.	Checkout procedure.	a. TEKTRONIX part 011-0060-02.
14. 10X Attenuator	10X, 50 Ω, 2 W.	Check Z-axis blanking.	a. TEKTRONIX part 011-0059-02.
15. 50-ohm cables (4 required)	Impedance, 50 Ω; length, 42 inches; connectors, bnc.	Provide signal inter- connection.	a. TEKTRONIX part 012-0057-01.
16. Screwdriver	3/32-inch bit.	Front panel screwdriver adjustments.	a. XCELITE R3323.
17. Low-capacitance Screwdriver	Double blade, 3/64 and 7/64-inch. Total length 4-3/8 inches.	Adjust variable capaci- tors, and internal variable resistors.	a. TEKTRONIX part 003-0675-01.
18. Screwdriver (insulated-with metal tip)	7/32-inch bit.	Adjust internal variable resistors.	a. TEKTRONIX part 003-0000-00. b. TEKTRONIX part 003-0374-00.
19. T Connector	Connectors, bnc-to-bnc.	Checkout procedure.	a. TEKTRONIX part 103-0030-00.
20. Variable AC Power Supply	90 V to 120 V.	Adjust Freq. (R124)	a. General Radio W8MT3VM Variac Autotransformer.
21. 9X Magnifier	5X to 10X magnifi- cation.	Adjust X and Y amplifier compensation, settling time. Adjust stigmators.	a. Edmund Scientific Co. model no. 30224, 9X Magnifier.
22. 24X Magnifier	15X to 30X magnification.	Check spot diameter.	a. Southern Precision model no. 1836, 6X used with aux 4X eyepiece. (Comes standard with 10X eyepiece.)

5-11

PART I—PERFORMANCE CHECK

The following procedure (Part I—Performance Check) verifies electrical specifications without making internal adjustments. All tolerances given are as specified in the Specification tables (section 1) in this manual.

Part II—Adjustment and Performance Check provides the information necessary to: (1) verify that the instrument meets the electrical specifications, (2) verify that the controls function properly, and (3) perform all internal adjustments.

A separate Checkout Procedure is provided in section 2 to provide instrument familiarization and to verify that the controls function properly.

See Table 5-1, Calibration Procedure Electives, at the beginning of this section, for information on performing a Partial Part I—Performance Check procedure.

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PERFORMANCE CHECK POWER-UP SEQUENCE

NOTE

The performance of this instrument can be checked at any ambient temperature from 0° to +50° C unless otherwise stated. Adjustments must be performed at an ambient temperature from +15° to +25° C for specified accuracies.

- 1. Remove any cabinet panels to gain access to the internal controls, selectors and test points.
- 2. Check that the internal Line Voltage Selector plug has been set to the appropriate line voltage and range. (See Fig. 1-1 of Section 1, General Information).
- 3. Check the rear panel to determine which options have been installed in your Monitor.
- 4. Check that grounding caps are on the -INPUTs.
- 5. Check that the Input Impedance Selecting jumpers for the X and Y Amplifiers are in the 50 Ω position.
- 6. Check that the crt has an implosion shield with 8×10 division graticule.
- 7. Connect the Monitor and appropriate test equipment to the power source.
- 8. Set 606B INTENSITY to midrange.



Do not allow a high-intensity dot to remain stationary on the crt. The crt phosphor could be permanently damaged.

9. Switch on the Monitor and appropriate test equipment and allow at least 20 minutes warmup before proceeding.

A. POWER SUPPLIES

There are no performance checks for the Power Supplies.

B. CRT

Equipment Required: (Numbers correspond to those listed in Table 5-3, Test Equipment.)

1. DVM (Digital Voltmeter)

15. 50-ohm bnc cable (1 required)

3. Ramp Generator (1 required)

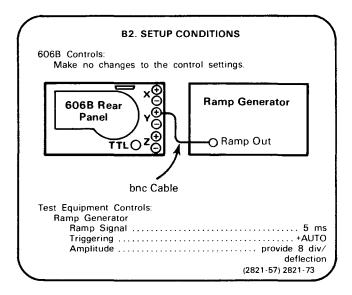
B1. CRT PRELIMINARY SETUP

- a. Perform the Performance Check Power-Up Sequence given at the beginning of Part I—Performance Check.
- b. Refer to Section 6, Instrument Options, and the Change Information at the rear of this manual for any modifications which may affect this procedure.
- c. See TEST POINT AND ADJUSTMENT LOCATIONS and INTERNAL CONTROL AND SELECTOR LOCATIONS foldout pages in Section 8, Diagrams and Circuit Board Illustrations.
- d. Set 606B controls:

Vertical and Horizontal Position..... Midrange
FOCUS..... Well-defined display

B2. CHECK ORTHOGONALITY NOTE

Perform step B1, then proceed.

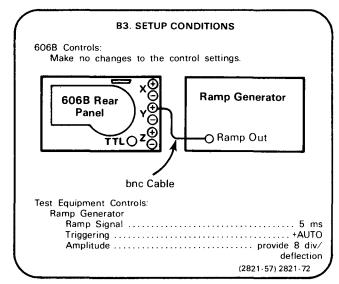


- a. Position the trace to the center vertical graticule line.
- b. **CHECK**—That the vertical trace is aligned with the center vertical graticule line at the top and bottom of the graticule within 0.1 division.

B3. CHECK GEOMETRY

NOTE

If the preceding step was not performed, first perform Step B1, then proceed.



- a. Position the trace to the left edge of the graticule, and then to the right edge.
- b. CHECK—the vertical trace for 0.1 division or less of bowing at the left and right edges of the graticule.

C. HORIZONTAL (X) AMPLIFIER

Equipment Required: (Numbers correspond to those listed in Table 5-3, Test Equipment).

- 1. DVM (Digital Voltmeter)
- 3. Ramp Generator
- 4. Calibration Generator
- 5. Sine Wave Generator
- 9. Test Oscilloscope (with 10X probe)

- 10. Function Generator
- 11. Dual Input Coupler
- 15. bnc cables (3 required)

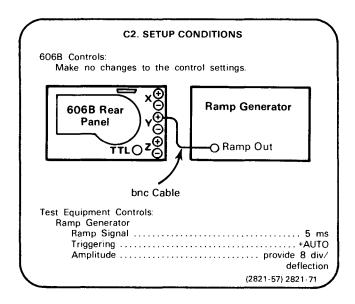
C1. HORIZONTAL (X) AMPLIFIER PRELIMINARY SETUP

- a. Perform the Performance Check Power-Up Sequence given at the beginning of Part I—Performance Check.
- b. Refer to Section 6, Instrument Options, and the Change Information at the rear of this manual for any modifications which may affect this procedure.
- c. See TEST POINT AND ADJUSTMENT LOCATIONS and INTERNAL CONTROL AND SELECTOR LOCATIONS foldout pages in Section 8, Diagrams and Circuit Board Illustrations.
- d. Set 606B Controls:

INTENSITY Visible display
Vertical and Horizontal Position Midrange
FOCUS Well-defined display

C2. CHECK POSITIONING AND GAIN NOTE

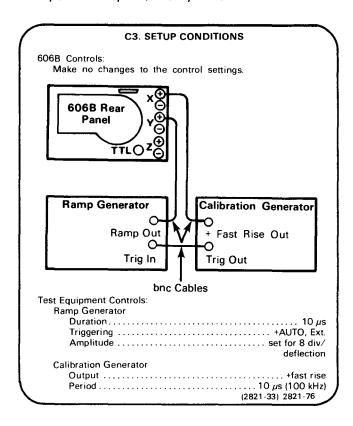
Perform step C1, then proceed.



- a. CHECK—Rotate the horizontal Position control and check that the vertical trace can be positioned horizontally anywhere in the graticule area.
- b. Disconnect the Ramp Generator for the +Y INPUT and apply the ramp to the test Oscilloscope vertical input. Set Volts/Div. switch to 1 V position (with 10X probe).
- c. **CHECK**—For a 1-division display on the test Oscilloscope.

C3. CHECK HORIZONTAL SETTLING TIME NOTE

If the preceding step was not performed, first perform step C1, then proceed.



- a. Rotate the Var Period control (Calibration Generator) until 1 full cycle is displayed on the crt.
- b. CHECK—that the time required for the leading edge of the square wave to travel from the zero percent level to the 100 percent level (see Fig. 5-1) is 500 ns (0.4 div) or less, within a trace width (0.008 cm).

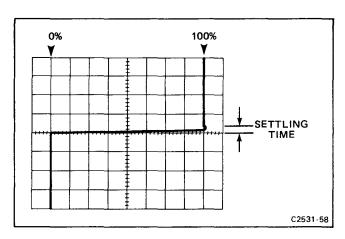
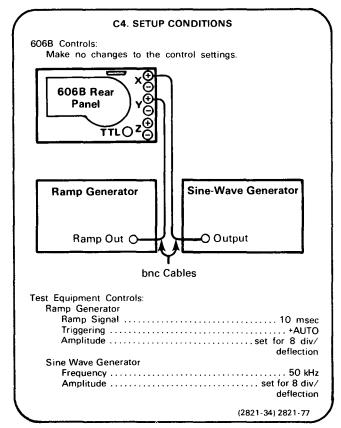


Figure 5-1. Typical crt display for horizontal settling time measurement.

C4. CHECK HORIZONTAL BANDWIDTH NOTE

If the preceding step was not performed, first perform step C1, then proceed.

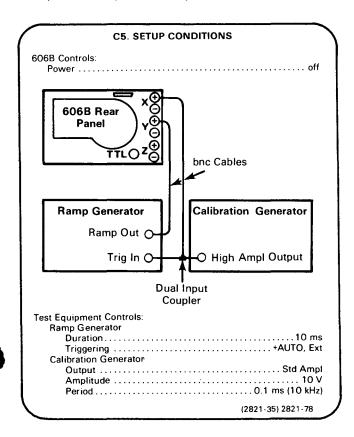


- a. Slowly increase the Sine-Wave Generator output frequency until the display amplitude is 5.6 divisions.
- b. CHECK—That the Sine-Wave Generator frequency is at least 3 MHz.

C5. CHECK HORIZONTAL INPUT ATTENUATION

NOTE

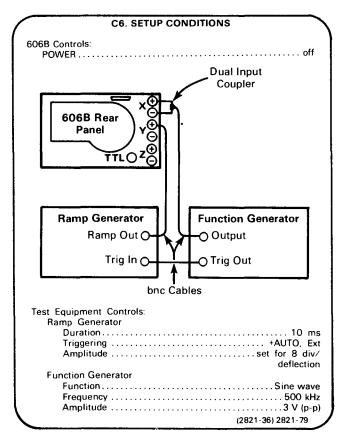
If the preceding step was not performed, first perform step C1, then proceed.



- a. Set the + and atten switches (\$100, \$105) in the 5X position (back). Turn on the 606B POWER.
- b. CHECK-For 8 divisions of horizontal deflection.

C6. CHECK HORIZONTAL (X) COMMON MODE REJECTION (1X, 5X ATTEN) NOTE

If the preceding step was not performed, first perform step C1, then proceed.



- a. Move the 50 $\Omega/1$ M Ω X INPUT Impedance Selecting Jumpers to the 1 M Ω position.
- b. Turn on the 606B POWER.
- c. Connect the Function Generator output to the test Oscilloscope vertical input. (Do not terminate).
- d. Set the Function Generator controls for a 500 kHz, 3 volt (p-p) sinewave as indicated on the test Oscilloscope.
- e. Disconnect the sine wave signal from the test Oscilloscope and connect it (using the dual-input coupler) to both the +X and -X INPUT connectors on the 606B.
- f. **CHECK**—For 0.24 division, or less, of free running horizontal display on the 606B (position as necessary).
- g. Turn off the 606B POWER. Set S100 (+X Atten) and \$105 (-X Atten) to the 5X position (switches back).

Calibration Part I—606B Performance Check

- h. Turn on the 606B POWER.
- i. Repeat part c and d, then increase the Function Generator output to 15 volts (p-p).
- j. Repeat part e.

- k. **CHECK**—For 0.6 division, or less, of free-running horizontal display on the 606B (position as necessary).
- I. Turn off the 606B POWER. Return S100 (+X Atten) and S105 (-X Atten) to the 1X (forward) position.
- m. Change the input impedance to 50 Ω_{\cdot}

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D. VERTICAL (Y) AMPLIFIER

Equipment Required: (Numbers correspond to those listed in Table 5-3, Test Equipment.)

- 3. Ramp Generator
- 4. Calibrator Generator
- 5. Sine Wave Generator
- 9. Test Oscilloscope (with 10X probe)

- 10. Function Generator
- 11. Dual Input Coupler (1 required)
- 15. bnc cables (3 required)

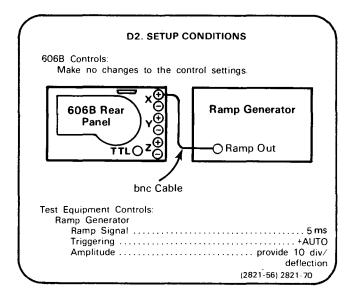
D1. VERTICAL (Y) AMPLIFIER PRELIMINARY SETUP

- a. Perform the Performance Check Power-Up Sequence given at the beginning of Part I—Performance Check.
- b. Refer to Section 6, Instrument Options, and the Change Information at the rear of this manual for any modifications which may affect this procedure.
- c. See TEST POINT AND ADJUSTMENT LOCATIONS and INTERNAL CONTROL AND SELECTOR LOCATIONS foldout pages in Section 8, Diagrams and Circuit Board Illustrations.
- d. Set 606B controls:

INTENSITY Visible display
Vertical and Horizontal PositionMidrange
FOCUS Well-defined display

D2. CHECK POSITIONING AND GAIN NOTE

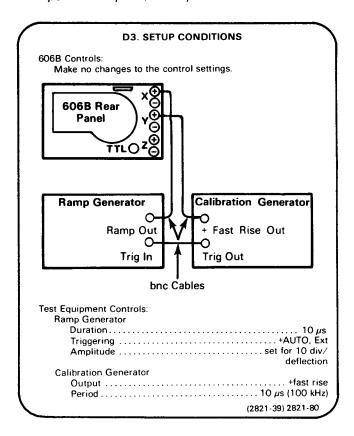
Perform step D1, then proceed.



- a. CHECK—Rotate the vertical Position control and check that the horizontal trace can be positioned vertically anywhere in the graticule area.
- b. Reduce the Ramp Generator Amplitude to provide 8 div/deflection on the 606B.
- c. Disconnect the Ramp Generator from the +X INPUT and apply it to the test Oscilloscope vertical input. Set Volts/Div switch to 1 V position (with 10X probe).
- d. **CHECK**—For a 1-division display on the test Oscilloscope.

D3. CHECK VERTICAL SETTLING TIME NOTE

If the preceding step was not performed, first perform step D1, then proceed.



- a. Rotate the Var Period control (Calibration Generator) until 1 full cycle is displayed on the crt.
- b. CHECK—That the time required for the leading edge of the square wave to travel from the zero percent level to the 100 percent level (see Fig. 5-2) is 500 ns (0.4 div) or less, within a trace width (0.008 cm).

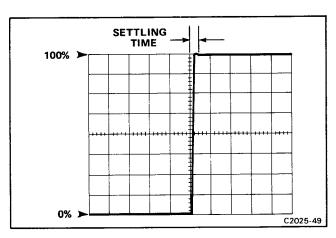
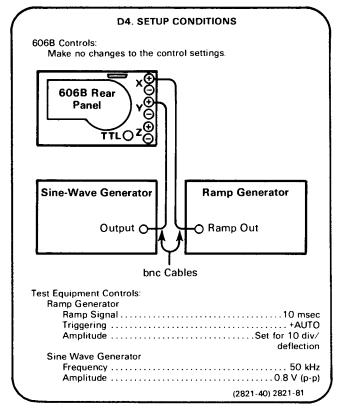


Figure 5-2. Typical crt display for vertical settling time measurement.

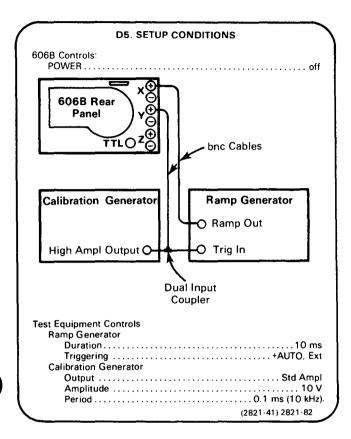
D4. CHECK VERTICAL BANDWIDTH NOTE



- a. Set the Sine-Wave Generator amplitude for 6 divisions of deflection.
- b. Slowly increase the Sine-Wave Generator output frequency until the display amplitude is 4.2 divisions.
- c. **CHECK**—That the Sine-Wave Generator is at least 3 MHz.

D5. CHECK VERTICAL INPUT ATTENUATION NOTE

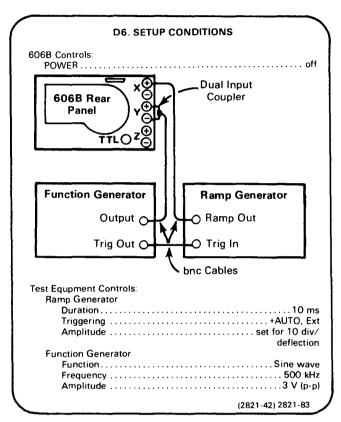
If the preceding step was not performed, first perform step D1, then proceed.



- a. Set the + and Atten switches (S200, S205) in the 5X position (back). Turn on the 606B POWER.
- b. CHECK-For 8 divisions of deflection.

D6. CHECK VERTICAL (Y) COMMON MODE REJECTION (1X, 5X ATTEN)

NOTE



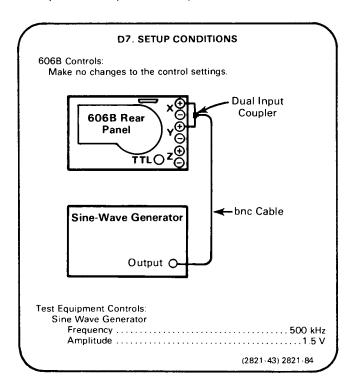
- a. Move the 50 $\Omega/1$ M Ω Y INPUT Impedance Selecting Jumpers to the 1 M Ω position.
- b. Turn on the 606B POWER.
- c. Connect the Function Generator output to the test Oscilloscope vertical input. (Do not terminate.)
- d. Set the Function Generator controls for a 500 kHz, 3 volt (p-p) sinewave as indicated on the test Oscilloscope.
- e. Disconnect the sine-wave signal from the test Oscilloscope and connect it (using the dual-input coupler) to both the +Y and -Y INPUT connectors on the 606B.
- f. CHECK—For 0.24 division, or less, of free running vertical display on the 606B (position as necessary).
- g. Turn off the 606B POWER. Set S200 (+Y Atten) and S105 (-Y Atten) to the 5X position (switches back).
- h. Turn on the 606B POWER.

Calibration Part I—606B Performance Check

- i. Repeat part c and d, then increase the Function Generator output to 15 volts (p-p).
- j. Repeat part e.
- k. CHECK—For 0.6 division, or less, of free-running vertical display on the 606B (position as necessary).
- I. Turn off the 606B POWER. Return S200 (+Y ATTEN) and S105 (-Y ATTEN) to the 1X (forward) position. Turn on the 606B POWER.

D7. CHECK PHASING

NOTE



- a. Center the display within the graticule area.
- b. **CHECK**—That the diameter of the displayed ellipse, measured vertically at the center of the graticule, is 0.1 division or less.

E. Z-AXIS AMPLIFIER

Equipment Required: (Numbers correspond to those listed in Table 5-3, Test Equipment.)

- 3. Ramp Generator
- 4. Calibration Generator
- 5. Sine Wave Generator
- 9. Test Oscilloscope (with 10X probe)
- 10. Function Generator

- 11. Dual input coupler
- 12. 50 Ω terminator
- 14. 10X Attenuator
- 15, 50 ohm bnc cables (3 required)

E1. Z-AXIS AMPLIFIER PRELIMINARY SETUP

a. Perform the Performance Check Power-Up Sequence given at the beginning of Part I—Performance Check.

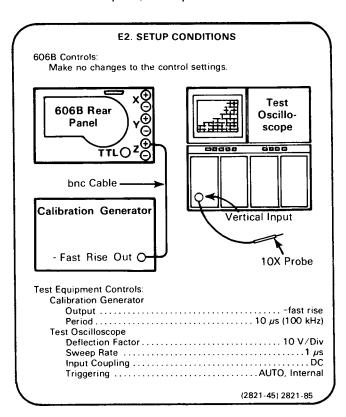
- b. Refer to Section 6, Instrument Options, and the Change Information at the rear of this manual for any modifications which may affect this procedure.
- c. See TEST POINT AND ADJUSTMENT LOCATIONS and INTERNAL CONTROL AND SELECTOR LOCATIONS foldout pages in Section 8, Diagrams and Circuit Board Illustrations.
- d. Set 606B controls:

Vertical and Horizontal Position..... Midrange
FOCUS...... Well-defined display

E2. CHECK ABERRATIONS

NOTE

Perform step E1, then proceed.



- a. Connect a 10X probe from the test Oscilloscope vertical input to TP280.
- b. Set the INTENSITY (606B) control and Calibration Generator amplitude for 60 Volts (6 divisions amplitude as indicated on the test Oscilloscope.

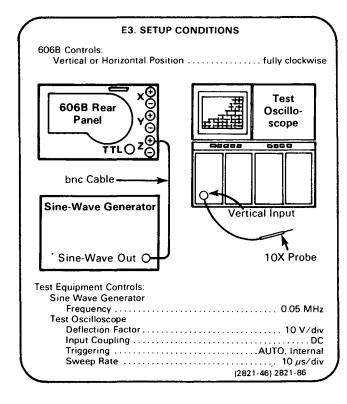
c. **CHECK**—The square wave displayed on the test Oscilloscope for 0.6 division (3 volts) or less aberrations on the top front corner of the displayed pulse.

NOTE

Probes having an input capacitance greater than 4 pF will cause some front corner overshoot at higher output levels. A 3-5% overshoot at 70 V output is normal with probes having 10 pF capacitance.

E3. CHECK Z-AXIS AMPLIFIER BANDWIDTH NOTE

If the preceding step was not performed, first perform step E1, then proceed.

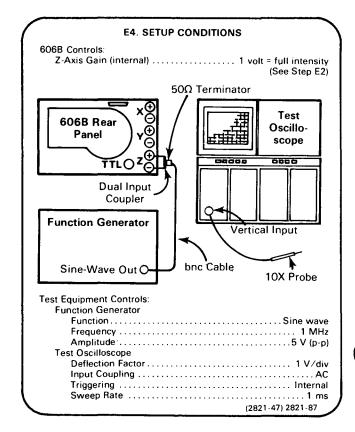


- a. Connect a 10X probe from the test Oscilloscope vertical input to TP280.
- b. Set the 606B INTENSITY control and the Sine Wave Generator Amplitude for a 7-division (70 V) display on the test Oscilloscope. (Make sure no clipping occurs on the test Oscilloscope display.)
- c. Slowly increase the Sine-Wave Generator output frequency until the display amplitude is 4.9 divisions on the test Oscilloscope.
- d. CHECK—That the Sine-Wave Generator output frequency is at least 5 megahertz.

E4. CHECK Z-AXIS COMMON MODE REJECTION

NOTE

If the preceding step was not performed, first perform step E1, then proceed.



NOTE

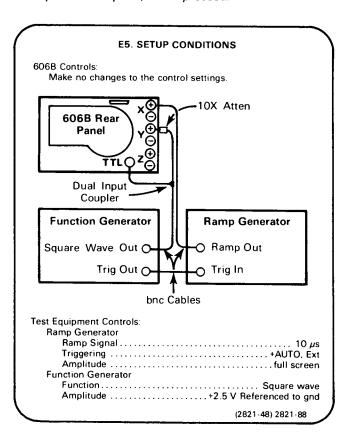
Verify that the Z-Axis Gain is set for 1 volt full intensity before performing this step. Input Impedance Selecting jumpers (P102, P106) are in the 1 $M\Omega$ position as shipped from the factory.

- a. Connect the 10X probe from TP280 to the vertical input of the test Oscilloscope.
- b. CHECK—The test Oscilloscope for 3.5 divisions (3.5 V) or less.

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E5. CHECK Z-AXIS BLANKING NOTE

If the preceding step was not performed, first perform step E1, then proceed.



- a. Disconnect the signal to the Y INPUT.
- b. **EXAMINE**—That the full square wave is visible. Connect the signal to the Y INPUT.
- c. Turn off the 606B. Move P176 and P179 to the LO (+) position.
- d. CHECK—That only the positive portion of the square wave is displayed.
- e. Turn off the 606B POWER. Move the jumpers (P176, P179) to the (-) position.
- f. CHECK—That only the negative portion of the square wave is displayed.

NOTE

The Blanking Level Selecting jumpers should remain in the LO (+) position for normal operation.

F. DYNAMIC FOCUS

Equipment Required: (Numbers correspond to those listed in Table 5-3, Test Equipment.)

1. Digital Voltmeter (DVM)

15. bnc cables (4 required)

3. Ramp Generator (2 required)

22. 24X Magnifier

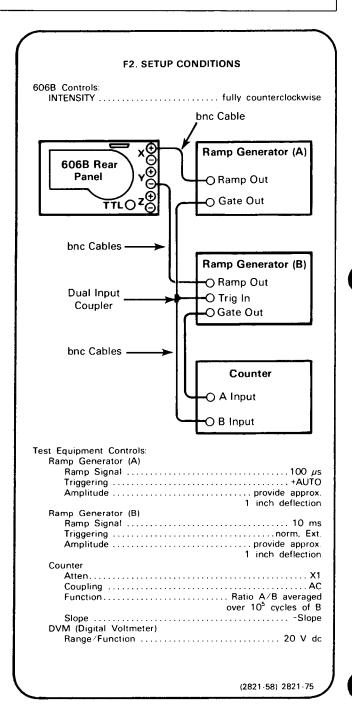
8. Digital Counter

F1. DYNAMIC FOCUS PRELIMINARY SETUP

- a. Perform the Performance Check Power-Up Sequence given at the beginning of Part I—Performance Check.
- b. Refer to Section 6, Instrument Options, and the Change Information at the rear of this manual for any modifications which may affect this procedure.
- c. See TEST POINT AND ADJUSTMENT LOCATIONS and INTERNAL CONTROL AND SELECTOR LOCATIONS foldout pages in Section 8, Diagrams and Circuit Board Illustrations.
- d. Set 606B controls:

F2. CHECK SPOT DIAMETER NOTE

Perform step F1, then proceed.



a. Connect the DVM between TP280 (Z-Axis output) and ground. Rotate the INTENSITY control till a reading of \pm 20 V is measured at TP280.

NOTE

The intensity is now set to approximately $3.5 \, \mu \text{W/cm}^2$. This setting is sufficiently accurate under normal circumstances for verification of the spot size, however, a photometer may be used if available.

Place the Photometer probe against the face of the crt while displaying a 700 line, 7×9 cm raster. Rotate the INTENSITY until a reading of 3.5 $\mu W/cm^2$ is read on the photometer.

- b. Disconnect the DVM. Do not move the INTENSITY control.
- c. Using the Level control of Ramp Generator (A) provide a synchronized raster.
- d. While viewing the raster with a 24X magnifier, rotate the duration multiplier (Ramp Generator A) clockwise until the lines just merge to a uniform field.

e. Record the Counter reading.

f. Turn off the 606B POWER.

- g. Interchange the 606B X and Y inputs (to check horizontal spot diameter).
- h. Turn on the 606B POWER.
- i. Set the Amplitude of Ramp Generator B to provide exactly one inch of deflection.
- j. Repeat part d.
- k. CHECK—The average of the present Counter reading and the reading recorded in part e. The average of the two readings must be 0.0031 inch or less.
- I. Turn off the 606B POWER.

This completes the Part I—Performance Check procedure.

1000 C 100 C 100 Come.

PART II—ADJUSTMENT AND PERFORMANCE CHECK

The following procedure (Part II—Adjustment and Performance Check) provides the information necessary to: (1) verify that the instrument meets the electrical specifications, (2) verify that the controls function properly, and (3) perform all internal adjustments.

Part I—Performance Check verifies that the instrument meets the electrical specifications without making internal adjustments. All tolerances given are as specified in the Specification tables (section 1) in this manual.

A separate Checkout Procedure is provided in section 2 for instrument familiarization and also to verify that the controls function properly.

See Table 5-1, Calibration Procedure Electives, at the beginning of this section, for information on performing a Partial Part II—Adjustment and Performance Check Procedure.

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1. Horizontal (X) Amplifier Preliminary Setup 5-35	4. Check Z-Axis Amplifier Bandwidth 5-49
2. Adjust X Output Dc Level 5-35	5. Check Z-Axis Common Mode Rejection 5-49
Adjust X Amplifier Gain (R104, R109,	6. Check Z-Axis Blanking 5-50
R129) And Check Positioning 5-36	
Adjust X Amplifier Compensation (C106,	
C108, C179, R103) And Examine	
Scan Limiter 5-37	F. DYNAMIC FOCUS 5-51
5. Check Horizontal Settling Time 5-38	1. Dynamic Focus Preliminary Setup 5-51
6. Check Horizontal Bandwidth 5-38	2. Adjust Bias (R306) 5-51
7. Adjust Horizontal (X) Attenuation	3. Adjust Focus And Stigmators (With
Compensation (C103, C107) And Check	Dot Generator) 5-52
Horizontal Input Attenuation 5-39	Adjust Focus And Stigmators (Without
8. Check Horizontal (X) Common Mode	Dot Generator
Rejection (1X, 5X Atten)	5. Check Spot Diameter 5-55

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ADJUSTMENT AND PERFORMANCE CHECK POWER-UP SEQUENCE

NOTE

The performance of this instrument can be checked at any ambient temperature from 0° to +50° C unless otherwise stated. Adjustments must be performed at an ambient temperature from +15° to +25° C for specified accuracies.

- 1. Remove any cabinet panels to gain access to the internal controls, selectors and test points.
- 2. Check that the internal Line Voltage Selector plug has been set to the appropriate line voltage and range. (See Fig. 1-1 of Section 1, General Information).
- 3. Check the rear panel to determine which options have been installed in your Monitor.
- 4. Check that grounding caps are on the -INPUTs.

- 5. Check that the Input Impedance Selecting jumpers for the X and Y Amplifiers are in the 50 Ω position.
- 6. Check that the crt has an implosion shield with 8 $\times\,10$ division graticule.
- 7. Connect the Monitor and appropriate test equipment to the power source.
- 8. Set 606B INTENSITY to midrange.



Do not allow a high-intensity dot to remain stationary on the crt. The crt phosphor could be permanently damaged.

9. Switch on the Monitor and appropriate test equipment and allow at least 20 minutes warmup before proceeding.

A. POWER SUPPLIES

Equipment Required: (Numbers correspond to those listed in Table 5-3, Test Equipment.)

- 1. Digital Voltmeter (DVM) (low-voltage supplies)
- 21. Variable AC Power Supply
- 2. DC Voltmeter (high-voltage supply)

A1. POWER SUPPLIES PRELIMINARY SETUP

- a. Perform the Adjustment and Performance Check Power Up Sequence.
- b. Refer to Section 6, Instrument Options, and the Change Information at the rear of this manual for any modifications which may affect this procedure.
- c. See TEST POINT AND ADJUSTMENT LOCATIONS and INTERNAL CONTROL AND SELECTOR LOCATIONS foldout pages in Section 8, Diagrams and Circuit Board Illustrations.
- d. Set 606B controls:

INTENSITY fully counter-clockwise Vertical and Horizontal Position..... off-screen

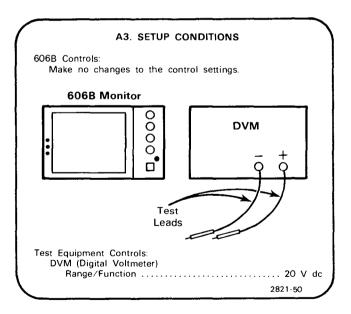
A2. ADJUST +15 V SUPPLY NOTE

First perform step A1, then proceed.

A2. SETUP	CONDITIONS
606B Controls: Make no changes to the	control settings.
606B Monitor	
00000	+ 0 0
Tes Lead	, ,
Test Equipment Controls: DVM (Digital Voltmeter) Range/Function	20 V dc
	2821-49

- a. Connect the DVM test leads between the +15 V test point (TP352) and ground (TP353).
- b. **EXAMINE**—For a voltage reading within the range given in Table 5-4.
- c. ADJUST—R337 for a voltmeter reading of exactly +15.0 V dc.

A3. EXAMINE -15 V SUPPLY NOTE



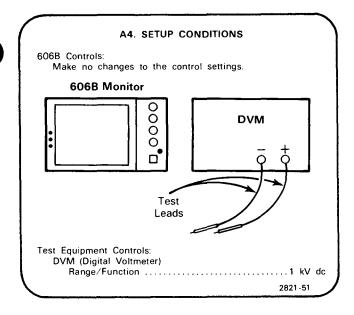
- a. Connect the DVM between the -15~V test point (TP354) and ground (TP353).
- b. **EXAMINE**—For a voltage reading within the range given in Table 5-4.

TABLE 5-4 Low-Voltage Supply Limits

Supply (dc)	Test Point	Limits (Volts dc)	Ripple (p-p)	
+15 V	TP352	+14.95 to +15.05	2 mV or less	
-15 V	TP354	-15.2 to -14.8	2 mV or less	
+95 V	TP351	+94.0 to +98.0	100 mV or less	
+250 V	TP350	+249 to +251	150 mV or less	

A4. ADJUST +250 V SUPPLY NOTE

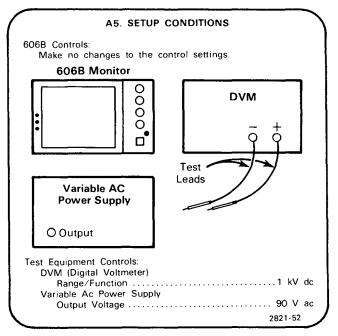
If the preceding step was not performed, first perform step A1, then proceed.



- a. Connect the DVM between the +250 V test point (TP350) and ground (TP353).
- b. **EXAMINE**—For a voltage reading within the range given in Table 5-4.
- c. Remove the high voltage shield.
- d. ADJUST—R112 (250 V Adj, located on the Converter board) for a voltmeter reading of exactly +250 V.

A5. ADJUST FREQ (R124) NOTE

If the preceding step was not performed, first perform step A1, then proceed.

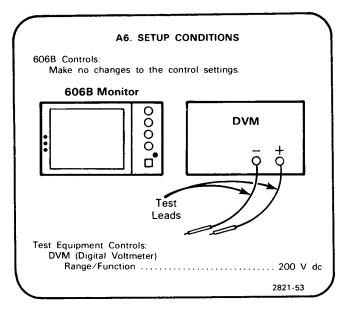


180 1/

- a. Disconnect /the 606B from the power source and Connect the 90 volts from the Variable AC Power Supply to the 606B rear-panel power input.
- b. Connect the DVM between the +250 V Test point (TP350) and ground (TP353).
- c. ADJUST—R124 (FREQ) for maximum voltage at TP350.
- <15 d. Set the line voltage to $\frac{107 \text{ V}}{100}$ ac (Variable AC Power Supply).
- e. Position dot off screen and set INTENSITY full on.
- f. **ADJUST**—R124 (FREQ) CCW until the +250 V Supply first moves, then approximately 10° CW.
- g. Reduce the INTENSITY control to midrange.
- h. Reset the line voltage to 120 V ac.

A6. EXAMINE +95 V SUPPLY NOTE

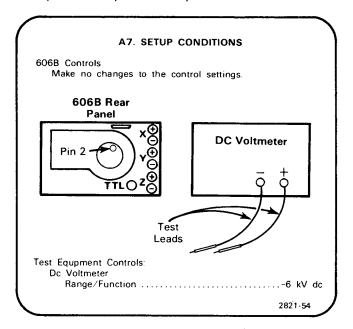
If the preceding step was not performed, first perform step A1, then proceed.



- a. Connect the DVM between the +95 V test point (TP351) and ground (TP353).
- b. **EXAMINE**—For a voltmeter reading within the range given in Table 5-4.

A7. ADJUST -5400 V SUPPLY NOTE

If the preceding step was not performed, first perform step A1, then proceed.



- a. Turn off the 606B POWER.
- b. Remove the rear cover (see Fig. 4-4 in Maintenance Section) and locate the test port in the crt socket cover assembly.
- c. Connect the DC Voltmeter between V50 (crt) pin 2 (accessable through test port) and ground.
- d. Turn on the 606B POWER.
- e. **EXAMINE**—For a voltage reading between -5250 and -5450.
- f. ADJUST—R295 (HV Adj) for a voltage reading of approximately -5400 volts.
- g. **EXAMINE**—For no movement of the -5400 V Supply when the INTENSITY is varied.



A high intensity spot or slow-scanning display will damage the crt phosphor. Be sure the display is positioned off screen while examining for no movement of the -5400 V Supply.

- h. Turn off the 606B POWER.
- Remove the test leads from the Monitor and replace the rear cover and the high voltage shield.

B. CRT

Equipment Required: (Numbers correspond to those listed in Table 5-3, Test Equipment.)

1. DVM (Digital Voltmeter)

15. 50-ohm bnc cable

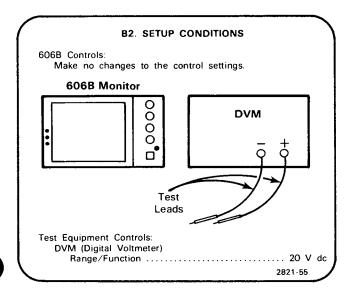
3. Ramp Generator (2 required)

B1. CRT PRELIMINARY SETUP

- a. Perform the Adjustment and Performance Check Power-Up Sequence given at the beginning of Part II—Adjustment and Performance Check.
- b. Refer to Section 6, Instrument Options, and the Change Information at the rear of this manual for any modifications which may affect this procedure.
- c. See TEST POINT AND ADJUSTMENT LOCATIONS and INTERNAL CONTROL AND SELECTOR LOCATIONS foldout pages in Section 8, Diagrams and Circuit Board Illustrations.
- d. Set 606B controls:

B2. ADJUST CRT GRID BIAS (R245) NOTE

First perform Step B1, then proceed.



- a. Position the sharply focused dot display near graticule center.
- b. Rotate the INTENSITY control counter-clockwise till the dot just disappears.
- c. Connect the DVM between TP280 (Z-Axis out) and ground (TP353).
- d. **EXAMINE**—For a DVM reading of approximately 0 volt.
- e. Set the INTENSITY control for a DVM reading of 0 volt.

NOTE

If in part e the dot disappears, rotate the Grid Bias (R245) till the dot becomes visible then proceed with part f.

- f. ADJUST—R245 (Grid Bias) until the dot just disappears.
- g. Disconnect the DVM from the Monitor.
- h. Set the INTENSITY control for a visible display.

CRT sector extremit

Kansligt låt ej dot

Stanny på sæmma

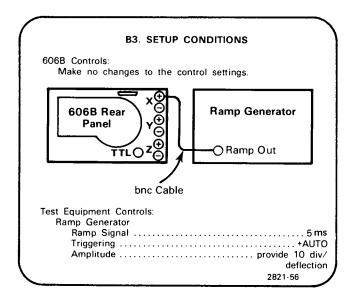
punkt om inte

Intensiteten är mycket

B3. ADJUST TRACE ALIGN (R290 FRONT PANEL) AND CHECK ORTHOGONALITY

NOTE

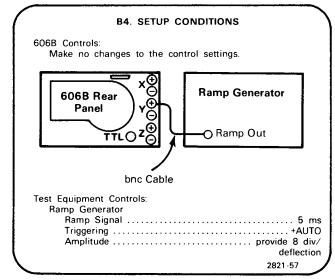
If the preceding step was not performed, first perform step B1, then proceed.



- a. Position the trace to the center horizontal graticule line.
- b. **EXAMINE**—The trace for alignment with the horizontal graticule line.
- c. ADJUST—R290 (front panel TRACE ALIGN) to align the trace with the center horizontal graticule line.
- d. Disconnect the Ramp Generator from the +X INPUT and connect it to the +Y INPUT. Reduce the Ramp-Generator Amplitude to provide 8-divisions of vertical deflection.
- e. Position the trace to the center vertical graticule line.
- f. CHECK—That the vertical trace is aligned with the center vertical graticule line at the top and bottom of the graticule within 0.1 division.

B4. CHECK/ADJUST GEOMETRY (R185) NOTE

If the preceding step was not performed, first perform Step B1, then proceed.



- a. Position the trace to the left edge of the graticule, and then to the right edge.
- b. CHECK—the vertical trace for 0.1 division or less of bowing at the left and right edges of the graticule.
- c. ADJUST—R185 (Geometry) for minimum trace bowing at the left and right edges of the graticule.
- d. Disconnect the Ramp Generator from the +Y INPUT and connect it to the +X INPUT. Horizontally center the display on the graticule. Increase the Ramp Amplitude (Ramp Generator) to provide full screen-width (10 division) deflection.
- e. Position the horizontal trace to the top edge of the graticule, and then to the bottom edge.
- f. CHECK—The horizontal trace for 0.1 division or less of bowing at the top and bottom edges of the graticule.
- g. INTERACTION—If necessary, readjust R185 (Geometry) for minimum trace bowing at the top and bottom edges of the graticule. Then, reconnect the Ramp Generator to the +Y INPUT and repeat step B4 until optimum geometry is achieved.

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C. HORIZONTAL (X) AMPLIFIER

Equipment Required: (Numbers correspond to those listed in Table 5-3, Test Equipment).

- 1. Digital Voltmeter (DVM)
- 3. Ramp Generator
- 4. Calibration Generator
- 5. Sine-Wave Generator
- 10. Function Generator

- 11. Dual-Input Coupler
- 15. bnc cables (3 required)
- 21. 9X Magnifier

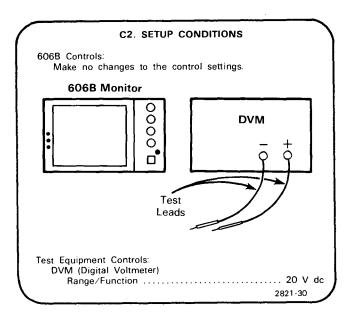
C1. HORIZONTAL (X) AMPLIFIER PRELIMINARY **SETUP**

- a. Perform the Adjustment and Performance Check Power-Up Sequence given at the beginning of Part II-Adjustment and Performance Check.
- b. Refer to Section 6, Instrument Options, and the Change Information at the rear of this manual for any modifications which may affect this procedure.
- c. See TEST POINT AND ADJUSTMENT LOCATIONS and INTERNAL CONTROL AND SELECTOR LOCATIONS foldout pages in Section 8, Diagrams and Circuit Board Illustrations.
- d. Set 606B Controls:

INTENSITY Visible display
Vertical and Horizontal Position Midrange
FOCUS Well-defined display

C2. ADJUST X OUTPUT DC LEVEL NOTE

Perform step C1, then proceed.

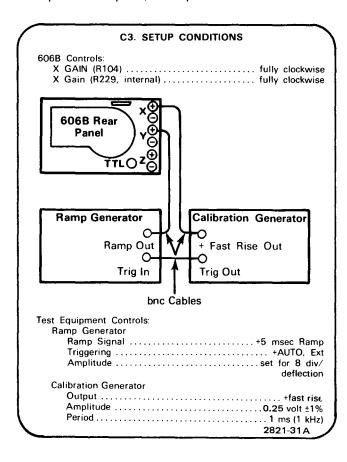


- a. Position the display to graticule center.
- b. With no signal applied to the X INPUT, connect the Precision Dc Voltmeter probes between the X Output Amplifier outputs (TP173, TP178).
- c. Set the voltage between TP173 and TP178 to 0 Volt within 1 Volt, using the horizontal position control on the 606B.
- d. Remove the DVM LO (-) INPUT lead from the test points (TP173 or TP178) and connect it to chassis ground.

- e. **EXAMINE**—DVM for X plate dc level of +125 V within 1 volt
- f. ADJUST—The X Plate DC Level (R119) for +125 V within 1.0 V.

C3. ADJUST X AMPLIFIER GAIN (R104, R109, R129) AND CHECK POSITIONING NOTE

If the preceding step was not performed, first perform step C1, then proceed.



NOTE

This procedure adjusts all gain set controls (R104, R109, R129) for the Horizontal (X) Amplifier. Normally, the Output Amplifier Gain (R109) will not be adjusted unless the X-Y Output Amplifier board has been serviced or the crt has been replaced.

The Calibration Generator output must be set within 1% nominally for this adjustment. Check that input impedance selecting jumpers (P101, P105) are in the 50 Ω position.

WARNING

Up to 250 V dc at potentially lethal currents are present at the power transistor tabs and at other points on the X-Y Output Amplifier board. Use caution when servicing.

- a. Assure that attenuator switches (S100, S105) are in the 1X position and grounding caps are on all unused INPUTS.
- b. Position the display near horizontal screen center.
- c. **EXAMINE**—For a crt display of exactly 4.5 cm amplitude.
- d. ADJUST—R109 (Output Amplifier Gain) located on the X-Y Output for a crt display of exactly 4.5 cm amplitude.

NOTE

This adjustment standardizes the output amplifier gain, and must not be used for adjusting deflection sensitivity. Altering this adjustment will change HF Compensation and misadjustment may cause output amplifier saturation, resulting in poor off-screen recovery and degradation of settling time performance.

- e. **ADJUST**—X GAIN (R104, front panel) for a crt display of exactly 4 cm of deflection.
- f. Disconnect the Calibration Generator from the Monitor.
- g. CHECK—Rotate the horizontal Position control and check that the vertical trace can be positioned horizontally anywhere in the graticule area.

NOTE

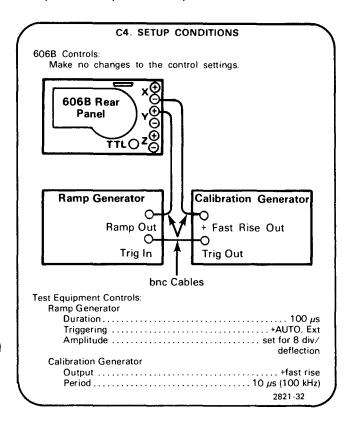
The Horizontal system is now adjusted to maximum sensitivity (0.5V/8cm). This internal X Gain (R129, X-Y Pre-Amplifier board) may be readjusted for any deflection factor within specified limits (0.5V/8cm to ≥2.5V/8cm) by applying the desired input amplitude and adjusting for appropriate horizontal deflection.

This instrument is factory adjusted for a deflection factor at 1V/8cm within 2%.

C4. ADJUST X AMPLIFIER COMPENSATION (C106, C108, C179, R103) AND EXAMINE SCAN LIMITER

NOTE

If the preceding step was not performed, first perform step C1, then proceed.



NOTE

The use of a hand magnifier of at least 5X is necessary for observing the square-wave front corner and flatness. The alignment tool must be a low capacitance; insulated type. Remove the tool from the adjustment screw before determining that the adjustment is optimum.

The capacitance shield must be in place for the following adjustments.

- a. Set the square-wave amplitude to provide 7.5 cm of horizontal deflection, then center the display using the horizontal Position control.
- b. Using the front panel FOCUS control, adjust the trace for optimum width while observing with the hand magnifier.

c. **ADJUST**—C106 (HF Comp 1) and R103 (HF Comp 3) for optimum bottom leading corner.

NOTE

R103 affects the "sharpness" of the leading corner. Adjust so that the corner and the area just after the corner is flat.

- d. Remove the square wave from the -X INPUT and apply it to the +X INPUT. Install the grounding cap on the unused input. Center the display.
- e. **EXAMINE**—The front corner, and move C179 (HF Comp 2) slightly to verify that the corner is optimum.

NOTE

If C179 or the board was replaced, preset C179 to approximately 1/2 its adjustable length.

- f. ADJUST—C179 (HF Comp 2) for optimum front corner. (Use the hand magnifier for close observation).
- g. **INTERACTION**—Repeat steps c and f, adjusting C179 (HF Comp 2) for the top (+) corner and C106 (HF Comp 1) for the bottom (-) corner until both positive and negative going waveforms are optimum.
- h. Increase the ramp duration to 3 ms and set the Calibration Generator period to 0.1 ms (10 kHz) to obtain about 4 cycles/cm.
- i. ADJUST—C108 (LF Comp) for optimum front corner.
- j. Move C179 slightly to verify that the front corner is optimum.

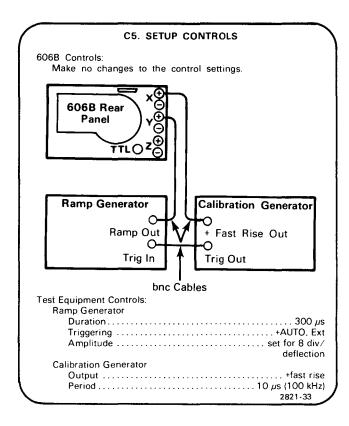
NOTE

The last fine adjustment should be made with C179.

- k. Position the display slowly, left and right of graticule center until 1 cm remains on screen.
- I. **EXAMINE**—That no visible shift in front corner response occurs.

C5. CHECK HORIZONTAL SETTLING TIME NOTE

If the preceding step was not performed, first perform step C1, then proceed.



- a. Set the square wave amplitude to provide 8 cm of horizontal deflection while centering the display using the horizontal Position control.
- b. **EXAMINE**—That the area after the front corner is flat, within a finely focused trace width (0.003 inch).
- c. Set the Ramp Generator to 10 μs and increase the amplitude to provide 10 cm of horizontal deflection.
- d. **CHECK**—That the time required for the leading edge of the square wave to travel from the zero percent level to the 100 percent level (see Fig. 5-3) is 500 ns (0.4 div.) or less, within a trace width (0.008 cm).

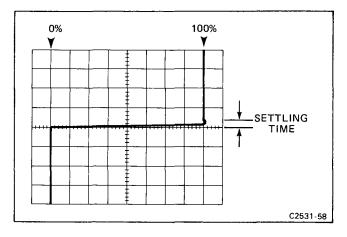
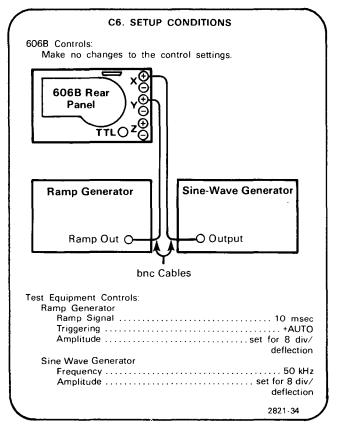


Figure 5-3. Typical crt display for horizontal settling time measurement.

C6. CHECK HORIZONTAL BANDWIDTH NOTE



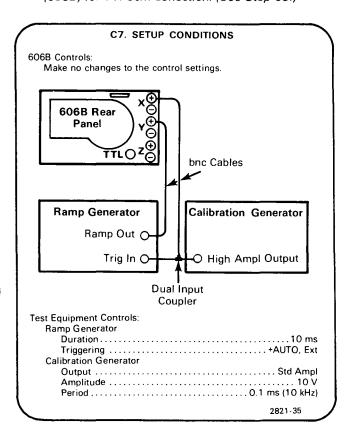
- a. Slowly increase the Sine-Wave Generator output frequency until the display amplitude is 5.6 divisions.
- b. **CHECK**—That the Sine-Wave Generator frequency is at least 3 MHz.

C7. ADJUST HORIZONTAL (X) ATTENUATOR COMPENSATION (C103, C107) AND CHECK HORIZONTAL INPUT ATTENUATION

NOTE

If the preceding step was not performed, first perform step C1, then proceed.

Before performing the following procedure, set the Horizontal (X) Amplifier sensitivity (606B) for 1V/8cm deflection. (See Step C3.)



NOTE

In this step, the test oscilloscope is used as the amplitude measurement standard. The accuracy of the measurement of input attenuation is determined by the test Oscilloscope vertical sensitivity calibration.

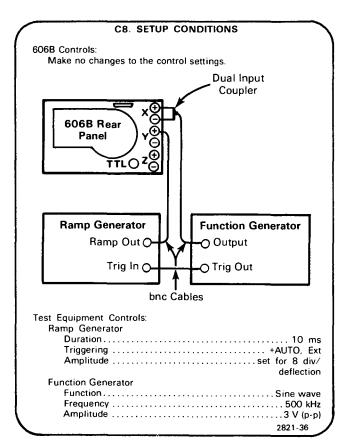
- a. Verify that the Horizontal (X) Amplifier sensitivity is set for 1V/8cm deflection.
- b. Turn off the instrument POWER. Set the + and atten switches (S100, S105) in the 5X position (back). Turn on the 606B POWER.
- c. Connect the Calibration Generator Std Ampl Output to the Vertical Input of the test oscilloscope through a 50 ohm terminator.

- d. Set the test Oscilloscope deflection factor (Volts/Div) to 1 V/Div. Accurately set the test oscilloscope vertical gain for 5 divisions of deflection.
- e. Change the Calibration Generator mode to High Ampl, and set the Period control to 1 ms (1 kHz). Set the Calibration Generator Pulse Amplitude for exactly five divisions of vertical deflection on the test oscilloscope (position as necessary).
- f. Disconnect the Calibration Generator from the test Oscilloscope vertical input, and connect it (Calibration Generator High Ampl Output) through the dual input coupler to the +X INPUT connector on the 606B, and the external trigger input on the Ramp Generator.
- g. Apply a positive-going 10 msec ramp of 1 volt amplitude to the +Y INPUT connector.
- h. CHECK—For 8 divisions of horizontal deflection.
- i. ADJUST—C103 (+X Atten Comp) for optimum square corner.
- h. Disconnect the Calibration Generator from the +X INPUT and connect it to the -X INPUT. Install the grounding cap on the +X INPUT.
- k. Center the display.
- I. ADJUST—C107 (-X Atten Comp) for optimum square corner.

C8. CHECK HORIZONTAL (X) COMMON MODE REJECTION (1X, 5X ATTEN)

NOTE

If the preceding step was not performed, first perform step C1, then proceed.



a. Turn off the 606B POWER. Move the 50 $\Omega/1$ M Ω X INPUT Impedance Selecting Jumpers to the 1 M Ω position.

- b. Turn on the 606B POWER.
- c. Connect the Function Generator output to the test Oscilloscope vertical input. (Do not terminate).
- d. Set the Function Generator controls for a 500 kHz, 3-volt (p-p) sinewave as indicated on the test Oscilloscope.
- e. Disconnect the sine wave signal from the test Oscilloscope and connect it (using the dual-input coupler) to both the +X and -X INPUT connectors on the 606B.
- f. CHECK—For 0.24 division, or less, of free running horizontal display on the 606B (position as necessary).
- g. Turn off the 606B POWER. Set S100 (+X Atten) and S105 (-X Atten) to the 5X position (switches back).
- h. Turn on the 606B POWER.
- i. Repeat part c and d, then increase the Function Generator output to 15 volts (p-p).
- j. Repeat part e.
- k. CHECK—For 0.6 division, or less, of free-running horizontal display on the 606B (position as necessary).
- I. Turn off the 606B POWER. Return S100 (+X Atten) and S105 (-X Atten) to the 1X (forward) position.
- m. Change the input impedance to 50 Ω .

D. VERTICAL (Y) AMPLIFIER

Equipment Required: (Numbers correspond to those listed in Table 5-3, Test Equipment.)

- 3. Ramp Generator
- 5. Sine-Wave Generator

4. Calibrator Generator

10. Function Generator

- 11. Dual-Input Coupler (1 required)
- 15. bnc cables (3 required)
- 21. 9X magnifier

D1. VERTICAL (Y) AMPLIFIER PRELIMINARY SETUP

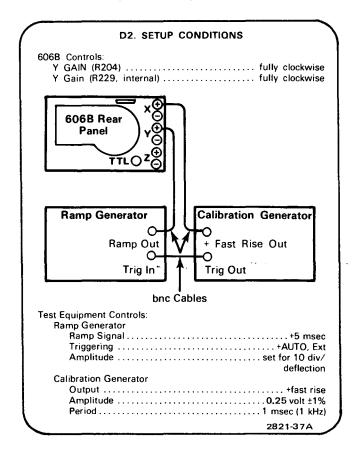
- a. Perform the Adjustment and Performance Check Power-Up Sequence given at the beginning of Part II— Adjustment and Performance Check.
- b. Refer to Section 6, Instrument Options, and the Change Information at the rear of this manual for any modifications which may affect this procedure.
- c. See TEST POINT AND ADJUSTMENT LOCATIONS and INTERNAL CONTROL AND SELECTOR LOCATIONS foldout pages in Section 8, Diagrams and Circuit Board Illustrations.
- d. Set 606B controls:

Vertical and Horizontal Position..... Midrange
FOCUS...... Well-defined display

D2. ADJUST Y AMPLIFIER GAIN (R204, R209, R229) AND CHECK POSITIONING

NOTE

Perform step D1, then proceed.



NOTE

This procedure adjusts all gain set controls (R204, R209, R229) for maximum sensitivity of the Vertical (Y) Amplifier. Normally, the Output Amplifier Gain (R209) will not be adjusted unless the X-Y Output Amplifier board has been serviced or the crt has been replaced.

The Calibration Generator output must be set within 1% nominally for the adjustment. Check that the input impedance selecting jumpers (P101, P105) are in the 50 Ω position.

WARNING

Up to 250 V dc at potentially lethal currents are present at the power transistor tabs and at other points on the X Y Output Amplifier board. Use caution when servicing.

- a. Assure that attenuator switches (S200, S205) are in the 1X position and grounding caps are on all unused INPUTs.
- b. Position the display near vertical screen center.
- c. **EXAMINE**—For a crt display of exactly **4.5** cm amplitude.
- d. **ADJUST**—R209 (Output Amplifier Gain) located on the X-Y Output board for a crt display of exactly 4.5 cm amplitude.

NOTE

This adjustment standardizes the output amplifier gain, and must not be used for adjusting deflection sensitivity. Altering this adjustment will change HF Compensation and misadjustment may cause output amplifier saturation, resulting in poor off-screen recovery and degradation of settling time performance.

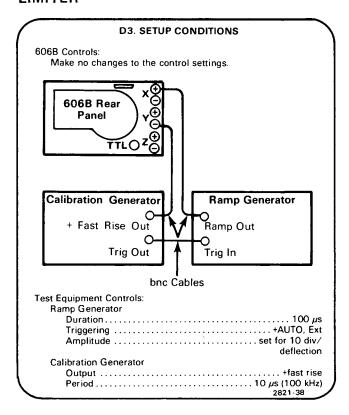
- e. ADJUST—Y GAIN (R204, front panel) for a crt display of exactly 4 cm of deflection.
- f. Disconnect the Calibration Generator from the Monitor.
- g. CHECK—Rotate the vertical Position control and check that the horizontal trace can be positioned vertically anywhere in the graticule area.

NOTE

The Vertical system is now adjusted to maximum sensitivity (0.5V/8cm). The internal Y Gain (R229, X-Y Pre-Amplifier board) may be readjusted for any deflection factor within specified limits (0.5V/8cm to ≥2.5V/8cm) by applying the desired input amplitude and adjusting for appropriate vertical deflection.

This instrument is factory adjusted for a deflection factor of 1V/8cm, within 2%.

D3. ADJUST Y AMPLIFIER COMPENSATION (C206, C208, C279, R203) AND EXAMINE SCAN LIMITER



NOTE

The use of a hand magnifier of at least 5X is necessary for observing the square-wave front corner and flatness. The alignment tool must be a low capacitance, insulated type. Remove the tool from the adjustment screw before determining that the adjustment is optimum.

The capacitance shield must be in place for the following adjustments.

- a. Set the square-wave amplitude to provide 7.5 cm of vertical deflection, then center the display using the vertical Position control.
- b. Using the front panel FOCUS control, adjust the trace for optimum width while observing with the hand magnifier.
- c. ADJUST—C206 (HF Comp 1) and R203 (HF Comp 3) for optimum bottom leading corner.

NOTE

R203 affects the "sharpness" of the leading corner. Adjust so that the corner and the area just after is flat.

- d. Remove the square-wave from the -Y INPUT and apply it to the +Y INPUT. Install the grounding cap on the unused input. Center the display.
- e. **EXAMINE**—The front corner, and move C279 (HF Comp 2) slightly to verify that the corner is optimum.

NOTE

If C279 or the board was replaced, preset C279 to approximately 1/2 its adjustable length.

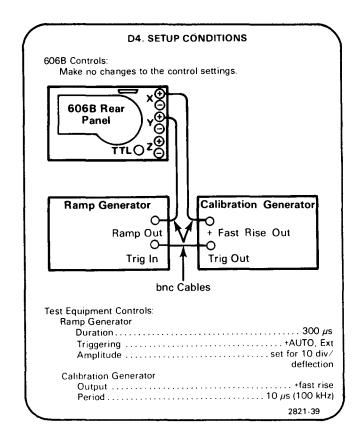
- f. **ADJUST**—C279 (HF Comp 2) for optimum front corner. (Use the hand magnifier for close observation).
- g. **INTERACTION**—Repeat steps c and f, adjusting C279 (HF Comp 2) for the top (+) corner and C206 (HF Comp 1) for the bottom (-) corner until both positive and negative going waveforms are optimum.
- h. Increase the ramp duration to 3 ms and set the Calibration Generator period to 0.1 ms (10 kHz) to obtain about 4 cycles/cm.
- i. ADJUST-C208 for optimum front corner.
- j. Move C279 slightly to verify that the front corner is optimum.

NOTE

The last fine adjustment should be made with C279.

- k. Position the display slowly, above and below the graticule center, until 1 cm of display remains on the screen.
- I. **EXAMINE**—That no visible shift in front corner response occurs.

D4. CHECK VERTICAL SETTLING TIME NOTE



- a. Set the square wave amplitude to provide 8 cm of vertical deflection while centering the display using the vertical Position control.
- b. **EXAMINE**—That the area after the front corner is flat, within a finely focused trace width (0.003 inch).
- c. Set the Ramp Generator to 10 μ s.
- d. CHECK—That the time required for the leading edge of the square wave to travel from the zero percent level to the 100 percent level (see Fig. 5-4) is 500 ns (0.5 div.) or less, within a trace width (0.008 cm).

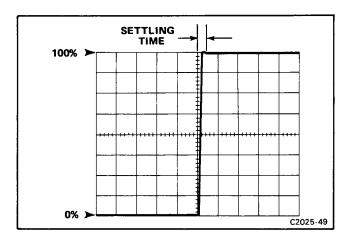
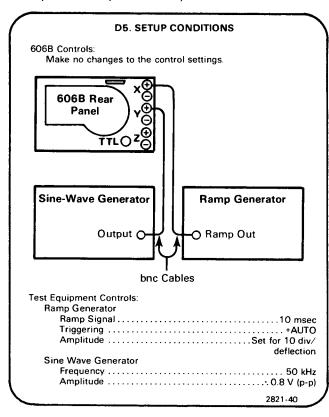


Figure 5-4. Typical crt display for vertical settling time measurement.

D5. CHECK VERTICAL BANDWIDTH NOTE

If the preceding step was not performed, first perform step D1, then proceed.



- a. Set the Sine-Wave Generator amplitude for 6 divisions of deflection.
- b. Slowly increase the Sine-Wave Generator output frequency until the display amplitude is 4.2 divisions.

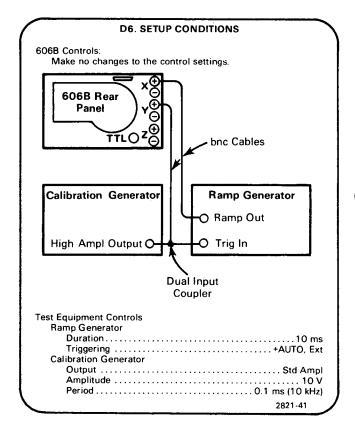
c. **CHECK**—That the Sine-Wave Generator is at least 3 MHz.

D6. ADJUST VERTICAL (Y) ATTENUATOR COMPENSATION (203, C207) AND CHECK VERTICAL INPUT ATTENUATION

NOTE

If the preceding step was not performed, first perform step D1, then proceed.

Before performing the following procedure, set the Vertical (Y) Amplifier sensitivity (606B) for 1V/8cm deflection. (See step D2.)



NOTE

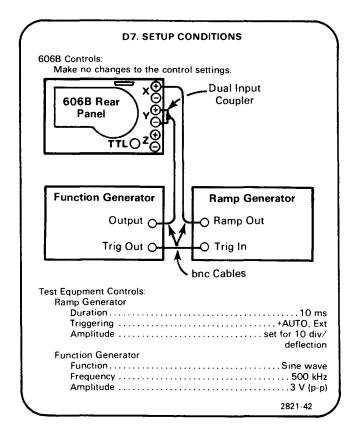
In this step, the test Oscilloscope is used as the amplitude-measurement standard. The accuracy of the measurement of input attenuation is determined by the test Oscilloscope vertical sensitivity calibration.

- a. Verify that the Vertical (Y) Amplifier sensitivity is set for 1V/8cm deflection.
- b. Turn off the 606B POWER. Set the + and Atten switches (S200, S205) in the 5X position (back). Turn on the 606B POWER.

- c. Connect the Calibration Generator Std Ampl Output to the vertical input of the test Oscilloscpe through a 50 ohm terminator.
- d. Set the test Oscilloscope deflection factor (Volts/Div) to 1 V/Div. Accurately set the test Oscilloscope vertical gain for 5 divisions of deflection.
- e. Change the Calibration Generator Mode to High Ampl, and set the Period control to 1 ms (1 kHz). Set the Calibration Generator Pulse Amplitude for exactly five divisions of vertical deflection on the test Oscilloscope. (position as necessary).
- f. Disconnect the Calibration Generator from the test Oscilloscope vertical input, and connect it (Calibration Generator High Ampl Output) through the dual input coupler to the +Y INPUT connector on the 606B, and the external trigger input on the Ramp Generator.
- g. CHECK—For 8 divisions of deflection.
- h. **ADJUST**—C203 (+Y Atten Comp) for optimum square corner.
- i. Disconnect the Calibration Generator from the +Y INPUT and connect it to the -Y INPUT. Install the grounding cap on the +Y INPUT.
- j. Center the display.
- k. ADJUST—C207 (-Y Atten Comp) for optimum square corner.

D7. CHECK VERTICAL (Y) COMMON MODE REJECTION (1X, 5X ATTEN)

NOTE



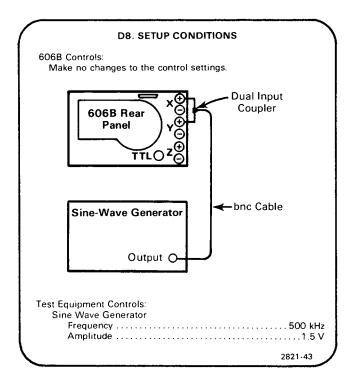
- a. Move the 50 $\Omega/1$ M Ω Y INPUT Impedance Selecting Jumpers to the 1 M Ω position.
- b. Turn on the 606B POWER.
- c. Connect the Function Generator output to the test Oscilloscope vertical input. (Do not terminate.)
- d. Set the Function Generator controls for a 500 kHz, 3 volt (p-p) sine-wave as indicated on the test Oscilloscope.
- e. Disconnect the sine wave signal from the test Oscilloscope and connect it (using the dual-input coupler) to both the +Y and -Y INPUT connectors on the 606B.
- f. CHECK—For 0.24 division, or less, of free running vertical display on the 606B (position as necessary).
- g. Turn off the 606B POWER. Set S200 (+Y Atten) and S105 (-Y Atten) to the 5X position (switches back).
- h. Turn on the 606B POWER.

Calibration Part II—606B Adjustment and Performance Check

- i. Repeat part c and d, then increase the Function Generator output to 15 volts (p-p).
- j. Repeat part e.
- k. CHECK—For 0.6 division, or less, of free-running vertical display on the 606B (position as necessary).
- I. Turn off the 606B POWER. Return S200 (+Y ATTEN) and S105 (-Y ATTEN) to the 1X (forward) position. Turn on the 606B POWER.

D8. CHECK PHASING

NOTE



- a. Center the display within the graticule area.
- b. CHECK—That the diameter of the displayed ellipse, measured vertically at the center of the graticule, is 0.1 division or less.

E. Z-AXIS AMPLIFIER

Equipment Required: (Numbers correspond to those listed in Table 5-3, Test Equipment.)

- 3. Ramp Generator
- 4. Calibration Generator
- 5. Sine-Wave Generator
- 9. Test Oscilloscope (with 10X probe)
- 10. Function Generator

- 11. Dual-input coupler
- 12. 50 Ω terminator
- 14. 10X Attenuator
- 15. 50-ohm bnc cables (3 required)

E1. Z-AXIS AMPLIFIER PRELIMINARY SETUP

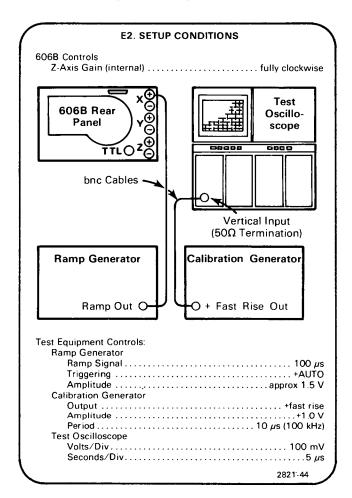
- a. Perform the Adjustment and Performance Check Power-Up Sequence given at the beginning of Part II—Adjustment and Performance Check.
- b. Refer to Section 6, Instrument Options, and the Change Information at the rear of this manual for any modifications which may affect this procedure.
- c. See TEST POINT AND ADJUSTMENT LOCATIONS and INTERNAL CONTROL AND SELECTOR LOCATIONS foldout pages in Section 8, Diagrams and Circuit Board Illustrations.
- d. Set 606B controls:

INTENSITY Visible display
Vertical and Horizontal PositionMidrange
FOCUS Well-defined display

E2. ADJUST Z-AXIS GAIN (R124)

NOTE

Perform step E1, then proceed.



NOTE

The following procedure sets Z-Axis Amplifier Gain for full intensity range from a +1 volt input. This procedure can be repeated for any voltage, up to +5 volts, to provide the desired intensity control range.

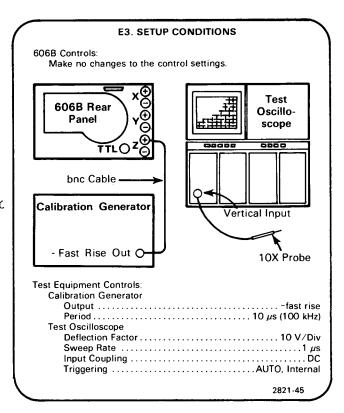
- a. Set the Calibration Generator Pulse Amplitude for 1 volt as indicated on the test Oscilloscope.
- b. Disconnect the 1-volt square wave from the test oscillosocpe.
- c. Connect a 10X probe from the test Oscilloscope vertical input to TP280 (606B). Set the test Oscilloscope for dc input coupling and a deflection factor of 20 volts/div with the 10X probe.
- d. Set the INTENSITY control so that the trace on the 606B just disappears. $\partial V \partial \mathcal{P} 220 + \mathcal{P} 220 + \mathcal{P} 200 + \mathcal{P}$
- e. Note the dc level on the test Oscilloscope (denotes Z-Axis cutoff level).

el tyrn trace off-screen

- f. Connect the 1 V square-wave signal to the +Z INPUT connector.
- g. ADJUST—R124 (Z-Axis Gain) so that the upper level of the square wave (displayed on the test Oscilloscope) is 70 volts higher than the cutoff level noted in step e.
- h. Check the 606B for a fully brightened trace.

E3. ADJUST Z-AXIS COMPENSATION (R239 AND C285) AND CHECK ABERRATIONS NOTE

If the preceding step was not performed, first perform step E1, then proceed.



- a. Connect a 10X probe from the test Oscilloscope vertical input to TP280 (606B).
- b. Set the INTENSITY (606B) control and Calibration Generator amplitude for 60 Volts (6 divisions amplitude as indicated on the test Oscilloscope.
- c. **CHECK**—The square wave displayed on the test Oscilloscope for 0.6 divisions (3 volts) or less aberrations on the top front corner of the displayed pulse.

NOTE

Probes having an input capacitance greater than 4 pF will cause some front corner overshoot at higher output levels. A 3-5% overshoot at 70 V output is normal with probes having 10 pF capacitance.

d. **ADJUST**—Preset HF Comp (R239, C285) to midrange. Adjust R239 for minimum aberrations and C285 for optimum front corner. (Use a low-capacitance screwdriver when adjusting C285).

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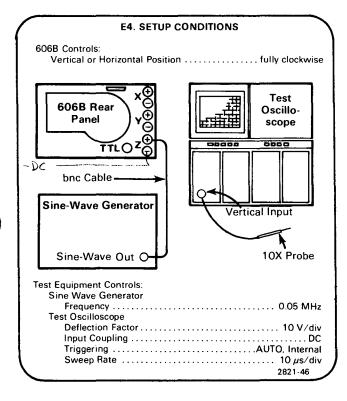
e. **INTERACTION**—Repeat adjustments in part d for optimum square corner and minimum aberrations.

NOTE

Changing the adjustment of R239 or C285 may affect the check in E4 (Check Z-Axis Amplifier Bandwidth).

E4. CHECK Z-AXIS AMPLIFIER BANDWIDTH NOTE

If the preceding step was not performed, first perform step E1, then proceed.

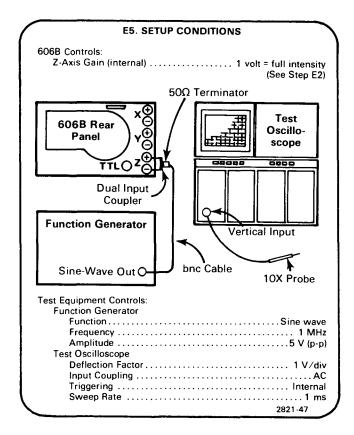


- a. Connect a 10X probe from the test Oscilloscope vertical input to TP280.
- b. Set the 606B INTENSITY control and the Sine-Wave Generator Amplitude for a 7-division (70 V) display on the test Oscilloscope. (Make sure no clipping occurs on the test Oscilloscope display.)
- c. Slowly increase the sine-wave generator output frequency until the display amplitude is 4.9 divisions on the test Oscilloscope.
- d. CHECK—That the Sine-Wave Generator output frequency is at least 5 megahertz.
- e. INTERACTION—If the check requirement in part d cannot be met, repeat the adjustments in step E3.

E5. CHECK Z-AXIS COMMON MODE REJECTION

NOTE

If the preceding step was not performed, first perform step E1, then proceed.



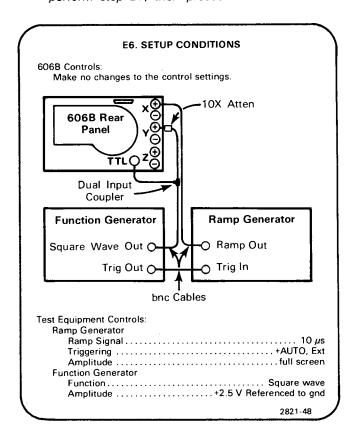
NOTE

The Z-Axis Gain must be set for 1 volt full intensity when performing this step. Input Impedance Selecting jumpers (P102, P106) are in the 1 $M\Omega$ position as shipped from the factory.

- a. Connect the 10X probe from TP280 to the vertical input of the test Oscilloscope.
- b. CHECK—The test Oscilloscope for 3.5 divisions (3.5 V) or less.

E6. CHECK Z-AXIS BLANKING NOTE

If the preceding step was not performed, first perform step E1, then proceed.



- a. Disconnect the signal to the Y INPUT.
- b. **CHECK**—That the full square-wave is visible. Connect the signal to the Y INPUT.
- c. Turn off the 606B. Move P176 and P179 to the LO (+) position.
- d. CHECK—That only the positive portion of the square wave is displayed.
- e. Turn off the 606B POWER. Move the jumpers (P176, P179) to the (-) position.
- f. CHECK—That only the negative portion of the square wave is displayed.

NOTE

The Blanking Level Selecting jumpers should remain in the LO (+) position for normal operation.

F. DYNAMIC FOCUS

Equipment Required: (Numbers correspond to those listed in Table 5-3, Test Equipment.)

- 1. Digital Voltmeter (DVM)
- 3. Ramp Generator (2 required)
- 6. Dot Generator

- 9. Test Oscilloscope (with 10X probe)
- 15. bnc cables (3 required)
- 22. 24X Magnifier

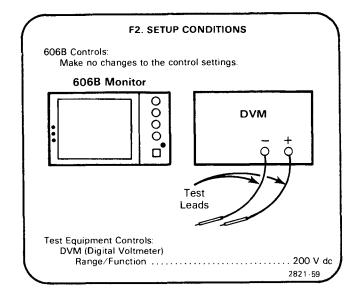
F1. DYNAMIC FOCUS PRELIMINARY SETUP

- a. Perform the Adjustment and Performance Check Power-Up Sequence given at the beginning of Part II—Adjustment and Performance Check.
- b. Refer to Section 6, Instrument Options, and the Change Information at the rear of this manual for any modifications which may affect this procedure.
- c. See TEST POINT AND ADJUSTMENT LOCATIONS and INTERNAL CONTROL AND SELECTOR LOCATIONS foldout pages in Section 8, Diagrams and Circuit Board Illustrations.
- d. Set 606B controls:

F2. ADJUST BIAS (R306)

NOTE

Perform Step F1, then proceed.

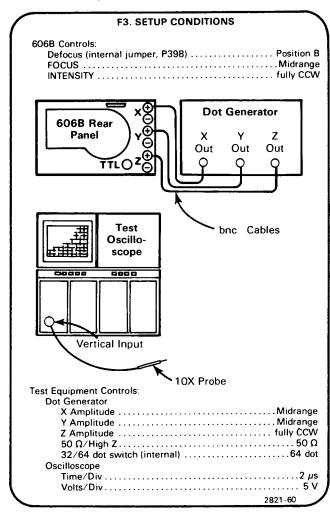


- a. Connect the DVM between TP370 and ground.
- EXAMINE—For a voltmeter reading between 42.5 V and 43.5 V.
- c. ADJUST—R306 (Bias) for a voltmeter reading between 42.5 V and 43.5 V.

F3. ADJUST FOCUS AND STIGMATORS (WITH DOT GENERATOR)

NOTE

Perform Step F1, then proceed. If a dot Generator is unavailable, go to Step F4, Adjust Focus and Stigmators (Without Dot Generator).



- a. Turn off the 606B POWER.
- b. Observe that the defocus jumper (P398) is in position
- c. Connect the test oscilloscope 10X probe to TP280 (Z-Axis output).
- d. Turn on the 606B POWER.
- e. Rotate the 606B INTENSITY control clockwise until 0 volt is measured at TP280, then rotate the Z-Amplitude (Dot Generator) clockwise until a pulse amplitude of 20 Volts is obtained (at TP280).
- f. Disconnect the Test Oscilloscope from the Monitor.

- g. Provide a centered 7×9 division dot display on the 606B using the X and Y Amplitude controls (Dot Generator) and the horizontal and vertical Position controls (606B).
- h. Set the FOCUS (R76, front panel) to midrange.

NOTE

For optimum performance, a hand magnifier of at least 5X should be used for viewing and ADJUSTing dots.

- i. **ADJUST**—Coarse Focus (R125, located on High Voltage board) for smallest center dot.
- j. Set the FOCUS (R76, front panel) fully counter-clockwise.
- k. ADJUST—R385 (Center Stig 1) and R295 (Center Stig 2) for roundest center dot.
- I. Locate the Stigmator 2 adjustments.
- m. Observe right center edge¹ of screen.
- n. ADJUST-R215 (Right, S2) for roundest2 dot.
- o. Observe left center edge of screen.
- p. ADJUST-R205 (Left, S2) for roundest dot.
- q. Observe top center edge of screen.
- r. ADJUST-R225 (Top, S2) for roundest dot.
- s. Observe bottom center edge of screen.
- t. ADJUST-R235 (bottom, S2) for roundest dot.
- u. Turn off the 606B POWER and move P398 (Defocus) jumper to position A.
- v. Turn on the 606B POWER.
- w. Adjust FOCUS (R76, front panel) for roundest center
- x. Observe right center edge of screen.
- y. ADJUST-R415 (right, focus) for roundest dot.
- z. Observe left center edge of screen.

 $^{^{1}}$ "Edge" means "center of edge of 7 \times 9 cm quality area".

²At the edges and corners of the screen the defocused dot may be roughly triangular in shape. "Roundest" dot then means "most nearly equilateral".

- aa. ADJUST-R405 (left, focus) for roundest dot.
- bb. Observe top center edge of screen.
- cc. ADJUST-R425 (top, focus) for roundest dot.
- dd. Observe bottom center edge of screen.
- ee. ADJUST-R435 (bottom, focus) for roundest dot.
- ff. Turn off the 606B POWER and move P398 (Defocus) jumper to position B.
- gg. Turn on the 606B POWER.
- hh. Turn the FOCUS (R76, front panel) fully counter-clockwise to defocus the dot.
- ii. Observe the top right corner of the 7×9 quality area.
- jj. ADJUST-R151 (top right, S1) for roundest dot.
- kk. Observe the other three corners.
- II. ADJUST—R152 (Top left, S1), R161 (bottom left, S1), and R162 (bottom right, S1) for roundest dot in their respective corners.
- mm. At this point, corner focus may be further improved by slight compromises of edge S2 adjustments.
- nn. Turn off the 606B POWER.
- oo. Move P398 (Defocus) jumper to position A. Turn on the 606B POWER.
- pp. ADJUST—R76 (Focus, front panel) for roundest center dot.
- qq. Connect the Test Oscilloscope to TP280 (Z-Axis output).
- rr. Set the Dot Generator Amplitude to 1 V and adjust the 606B INTENSITY for 70 V at TP280.
- ss. ADJUST-R455 (Z Focus) for roundest dot.
- tt. Turn off the 606B POWER and, move P398 (Defocus) jumper to position B.

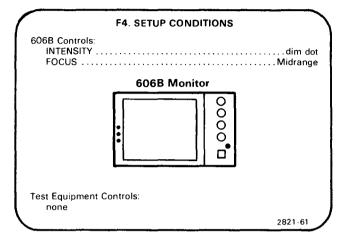


Always turn off the 606B POWER before turning off the Dot Generator. The INTENSITY control may be set to a level that will cause burning of the crt phosphor when the display is a single, stationary dot.

F4. ADJUST FOCUS AND STIGMATORS (WITHOUT DOT GENERATOR)

NOTE

Perform Step F1, then proceed. See Step F3 to Adjust Focus and Stigmators (With Dot Generator).



- a. Turn off the 606B POWER.
- b. Locate the Defocus jumper (P398) and check that it is in position B. Turn on the 606B POWER.
- c. Set the INTENSITY for a barely visible dot, and position it to center screen.
- d. Set the FOCUS (R76, front panel) to midrange.

NOTE

For optimum performance, a hand magnifier of at least 5X should be used for viewing and ADJUSTing dots.

- e. **ADJUST**—Coarse Focus (R125, located on High Voltage board) for smallest dot.
- f. Set the FOCUS (R76, front panel) fully counter-clockwise.
- g. ADJUST—R385 (Center Stig 1) and R295 (Center Stig 2) for roundest dot.
- h. Locate the Stigmator 2 adjustments.
- i. Move the dot to the right center edge¹ of screen.
- j. ADJUST-R215 (Right, S2) for roundest² dot.

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^{1&}quot;Edge" means "center of edge of 7 × 9 cm quality area".

² At the edges and corners of the screen the defocused dot may be roughly triangular in shape. "Roundest" dot then means "most nearly equilateral".

Calibration Part II—606B Adjustment and Performance Check

- k. Move the dot to the left center edge of screen.
- I. ADJUST-R205 (Left, S2) for roundest dot.
- m. Move the dot to the top center edge of screen.
- n. ADJUST-R225 (Top, S2) for roundest dot.
- o. Move the dot to the bottom center edge of screen.
- p. ADJUST-R235 (bottom, S2) for roundest dot.
- q. Turn off the 606B POWER and move P398 (Defocus) jumper to position A.
- r. Turn on the 606B POWER.
- s. Adjust FOCUS (R76, front panel) for roundest dot.
- t. Move the dot to the right center edge of screen.
- u. ADJUST-R415 (right, focus) for roundest dot.
- v. Move the dot to the left center edge of screen.
- w. ADJUST-R405 (left, focus) for roundest dot.
- x. Move the dot to the top center edge of screen.
- y. ADJUST-R425 (top, focus) for roundest dot.
- z. Move the dot to the bottom center edge of screen.
- aa. ADJUST-R435 (bottom, focus) for roundest dot.
- bb. Turn off the 606B POWER and move P398 (Defocus) jumper to position B.
- cc. Turn on the 606B POWER.
- dd. Turn the FOCUS (R76, front panel) fully counter-clockwise to defocus the dot.
- ee. Move the dot to the the top corner of the 7×9 quality area.
- ff. ADJUST-R151 (top right, S1) for roundest dot.
- gg. Move the dot, in turn, to each of the other three corners
- hh. **ADJUST**—R152 (Top left, S1), R161 (bottom left, S1), and R162 (bottom right, S1) for roundest dot in their respective corners.

- ii. At this point, corner focus may be further improved by slight compromises of edge S2 adjustments.
- ij. Turn off the 606B POWER.
- kk. Move P398 (Defocus) jumper to position A. Turn on the 606B POWER.
- II. ADJUST-R76 (FOCUS, front panel) for roundest dot.
- mm. Connect the Monitor to the appropriate test equipment as illustrated in Figure 5-5.

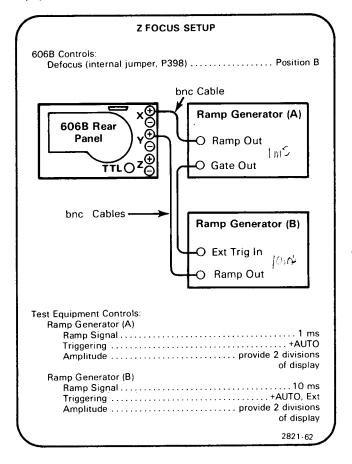


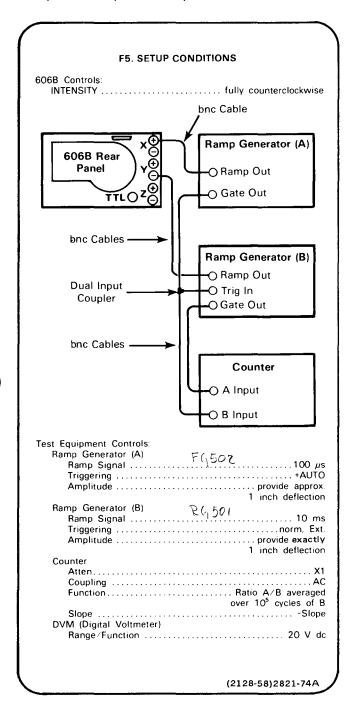
Figure 5-5. Adjust Focus and Stigmators (without Dot Generator)

- nn. Connect the DVM between TP280 (Z-Axis output) and ground.
- oo. Provide a synchronized, non-merged raster covering an area of 1 square inch on the screen.
- pp. Turn the INTENSITY control to obtain a 60 V reading at TP280.
- qq. ADJUST-R455 (Z-Focus) for best focus.
- rr. Turn INTENSITY down.

F5. CHECK SPOT DIAMETER

NOTE

If the preceding step was not performed, first perform step F1, then proceed.



a. Connect the DVM between TP280 (Z-Axis output) and ground. Rotate the INTENSITY control till a reading of +20 V is measured at TP280.

NOTE

The intensity is now set to approximately $3.5 \, \mu \text{W/cm}^2$. This setting is sufficiently accurate under normal circumstances for verification of the spot size, however, a photometer may be used if available.

Place the photometer probe against the face of the crt while displaying a 700 line, 7×9 cm raster. Rotate the INTENSITY until a reading of 3.5 μ W/cm² is read on the photometer.

- b. Disconnect the DVM. Do not move the INTENSITY control.
- c. Using the Level control of Ramp Generator (A) provide a synchronized raster.
- d. While viewing the raster with a 24X magnifier rotate the duration multiplier (Ramp Generator A) clockwise until the lines just merge to a uniform field.
- e. Record the Counter reading.
- f. Turn off the 606B POWER.
- g. Interchange the 606B X and Y inputs (to check horizontal spot diameter).
- h. Turn on the 606B POWER.
- i. Set the amplitude of Ramp Generator B to provide exactly 1 inch of deflection.
- j. Repeat part d.
- k. CHECK—The average of the present Counter reading and the reading recorded in part e. The average of the two readings must be 0.0031 inch or less.
- I. Turn off the 606B POWER.
- m. Remove all test equipment from the Monitor.

This completes Part II—Performance Check and Adjustment.

INSTRUMENT OPTIONS

Your instrument may be equipped with one or more instrument options. A brief description of each available option is given in the following discussion. Detailed information unique to each option is provided in appropriate locations within this manual. For further information on options, see your Tektronix Catalog or contact your Tektronix Field Office.

OPTION 06

Listed as Professional Medical Equipment by Underwriters Laboratories, Inc. (UL 544). Modifications include warnings required for medical equipment, a hospital grade cord and plug cap, a carrying handle, protective panels, and feet (cannot be ordered with Option 09 or Option 28).

OPTION 07

Front panel controls are screwdriver adjust.

OPTION 09

Certified as a recognized component. Professional Medical Equipment, by Underwriters Laboratories, Inc. (UL 544). (Cannot be ordered with Option 06.)

OPTION 28

Includes protective cabinet panels and rear feet. (Cannot be ordered with Option 06 or rackmount and special cabinet kits.)

OPTION 78

P11 Phosphor.

TABLE 6-1
Option Information Locator

	Locat	ion		
Instrument Option	Manual Section	Heading	Information	
Option 06	6 Instrument Options	Option 06	A description of the Option 06 instrume is given.	
	9 Replaceable Mechanical Parts	Fig. 1 Exploded	View of front subpanel.	
Option 07	2 Operating Instructions	Controls and Connectors	Figure 2-1 describes the controls.	
	6 Instrument Options	Option 07	A description of the Option 07 instrument is given.	
	9 Replaceable Mechanical Parts	Fig. 1 Exploded	Depicts assembly and disassembly procedure.	
Option 09	6 Instrument Options	Option 09	A description of the Option 09 instrument is given.	

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TABLE 6-1 (CONT) Option Information Locator

	Location	on	
Instrument Option	Manual Section	Heading	Information
Option 28	2 Operating Information	Ambient Temperature Considerations	Clearance requirements.
	6 Instrument Options	Option 28	A description of the Option 28 instrument is given.
Option 78	6 Instrument Options	Option 78	A description of the Option 78 instrument is given.

REPLACEABLE ELECTRICAL PARTS

PARTS ORDERING INFORMATION

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

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

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

Change information, if any, is located at the rear of this manual $% \left(1\right) =\left(1\right) +\left(1\right) +$

LIST OF ASSEMBLIES

A list of assemblies can be found at the beginning of the Electrical Parts List. The assemblies are listed in numerical order. When the complete component number of a part is known, this list will identify the assembly in which the part is located.

CROSS INDEX-MFR. CODE NUMBER TO MANUFACTURER

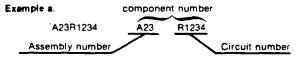
The Mfr Code Number to Manufacturer index for the Electrical Parts List is located immediately after this page. The Cross Index provides codes, names and addresses of manufacturers of components listed in the Electrical Parts List.

ABBREVIATIONS

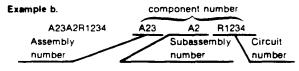
Abbreviations conform to American National Standard Y1.1.

COMPONENT NUMBER (column one of the Electrical Parts List)

A numbering method has been used to identify assemblies, subassemblies and parts. Examples of this numbering method and typical expansions are illustrated by the following:



Read: Resistor 1234 of Assembly 23



Read: Resistor 1234 of Subassembly 2 of Assembly 23

Only the circuit number will appear on the diagrams and circuit board illustrations. Each diagram and circuit board illustration is clearly marked with the assembly number Assembly numbers are also marked on the mechanical exploded views located in the Mechanical Parts List. The component number is obtained by adding the assembly number prefix to the circuit number.

The Electrical Parts List is divided and arranged by assemblies in numerical sequence (e.g., assembly A1 with its subassemblies and parts, precedes assembly A2 with its subassemblies and parts)

Chassis-mounted parts have no assembly number prefix and are located at the end of the Electrical Parts List

TEKTRONIX PART NO. (column two of the Electrical Parts List)

Indicates part number to be used when ordering replacement part from Tektronix.

SERIAL/MODEL NO. (columns three and four of the Electrical Parts List)

Column three (3) indicates the serial number at which the part was first used. Column four (4) indicates the serial number at which the part was removed. No serial number entered indicates part is good for all serial numbers.

NAME & DESCRIPTION (column five of the Electrical Parts List)

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.

MFR. CODE (column six of the Electrical Parts List)

Indicates the code number of the actual manufacturer of the part. (Code to name and address cross reference can be found immediately after this page.)

MFR. PART NUMBER (column seven of the Electrical Parts List)

Indicates actual manufacturers part number

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

Mfr.			
Code	Manufacturer	Address	City, State, Zip Code
00213	NYTRONICS COMPONENTS GROUP INC SUBSIDIARY OF NYTRONICS INC	ORANGE ST	DARLINGTON SC 29532
01121	ALLEN-BRADLEY CO	1201 SOUTH 2ND ST	MILWAUKEE WI 53204-2410
03508	GENERAL ELECTRIC CO SEMI-CONDUCTOR PRODUCTS DEPT	W GENESEE ST	AUBURN NY 13021
04099	CAPCO INC	1328 WINTERS AVE PO BOX 1028	GRAND JUNCTION CO 81502
04222	AVX CERAMICS DIV OF AVX CORP	19TH AVE SOUTH P 0 BOX 867	MYRTLE BEACH SC 29577
04713	MOTOROLA INC SEMICONDUCTOR GROUP UNION CARRIDE CORP MATERIALS SYSTEMS	5005 E MCDOWELL RD	PHOENIX AZ 85008
05397	UNION CARBIDE CORP MATERIALS SYSTEMS DIV	11901 MADISON AVE	CLEVELAND OH 44101
05828	GENERAL INSTRUMENT CORP GOVERNMENT SYSTEMS DIV	600 W JOHN ST	HICKSVILLE NY 11802
07263	FAIRCHILD SEMICONDUCTOR CORP NORTH AMERICAN SALES SUB OF SCHLUMBERGER LTD MS 118	10400 RIDGEVIEW CT	CUPERTINO CAW CA 95014
07716	TRW INC TRW ELECTRONICS COMPONENTS TRW IRC FIXED RESISTORS/BURLINGTON	2850 MT PLEASANT AVE	BURLINGTON IA 52601
12294	MURATA ERIE NORTH AMERICA INC DIV OF MURATA ERIE		TRENTON ONT CAN K8V 5S1
12697		LOWER WASHINGTON ST	DOVER NH 03820
12954	MICROSEMI CORP	LOWER WASHINGTON ST 8700 E THOMAS RD	SCOTTSDALE AZ 85252
12969	UNITRODE CORP	P O BOX 1390	WATERTOWN MA 02172
13511	AMPHENOL CADRE DIV BUNKER RAMO CORP	580 PLEASANT ST	100 04700 04
14193	CAL-R INC	1601 OLYMPIC BLVD PO BOX 1397	SANTA MONICA CA 90406
14433	ITT SEMICONDUCTORS DIV MICRO/SEMICONDUCTOR CORP ELECTRO CUBE INC		WEST PALM BEACH FL
14552	MICRO/SEMICONDUCTOR CORP	2830 S FAIRVIEW ST	SANTA ANA CA 92704
14752 19701	MEPCO/CENTRALAB	P 0 B0X 760	MINERAL WELLS IX /606/-0/60
24546	CORNING GLASS WORKS	550 HIGH ST	BRADFORD PA 16701-3737
25088	SIEMENS CORP	186 WOOD AVE S	ISELIN NJ 08830
25 40 3	A NORTH AMERICAN PHILIPS CO CORNING GLASS WORKS SIEMENS CORP AMPEREX ELECTRONIC CORP SEMICONDUCTOR SOLID STATE AND ACTIVE DEVICES-ELECTRO OPTICAL DEVICES	550 HIGH ST 186 WOOD AVE S PROVIDENCE PIKE	SLATERSVILLE RI 02876
27014	NATIONAL SEMICONDUCTOR CORP	2900 SEMICONDUCTOR DR 8081 WALLACE RD	SANTA CLARA CA 95051
31918			
32997	BOURNS INC TRIMPOT DIV	1200 COLUMBIA AVE	RIVERSIDE CA 92507-2114
34333		11651 MONARCH ST 370 W TRIMBLE RD	GARDEN GROVE CA 92641
50434	OPTOELECTRONICS DIV	370 W TRIMBLE RD	SAN JOSE CA 95131
50558	ELECTRONIC CONCEPTS INC	526 INDUSTRIAL WAY WEST	EATONTOWN NJ 07724-2212
51406	MURATA ERIE NORTH AMERICA INC GEORGIA OPERATIONS		MARIETTA GA 30067
51642 52763	CENTRE ENGINEERING INC STETTNER ELECTRONICS INC	2820 E COLLEGE AVE 6135 AIRWAYS BLVD PO BOX 21947	STATE COLLEGE PA 16801 CHATTANOOGA TN 37421
52769 539 4 4	SPRAGUE-GOODMAN ELECTRONICS INC GLOW LITE CORP	134 FULTON AVE S HWY 77 PO BOX 698	GARDEN CITY PARK NY 11040 PAULS VALLEY OK 73075
54473	MATSUSHITA ELECTRIC CORP OF AMERICA		SECAUCUS NJ 07094
54583	TDK ELECTRONICS CORP	755 EASTGATE BLVD	GARDEN CITY NY 11530
55680	NICHICON /AMERICA/ CORP	927 E STATE PKY	SCHAUMBURG IL 60195
56289 57668	SPRAGUE ELECTRIC CO ROHM CORP	87 MARSHALL ST 16931 MILLIKEN AVE	NORTH ADAMS MA 01247
57668 59660	THEORITY THE	2155 N FORBES BLVD	IRVINE CA 92713 TUCSON, ARIZONA 85705
59821	MEPCO/CENTRALAB	7158 MERCHANT AVE	EL PASO TX 79915-1207
	A NORTH AMERICAN PHILIPS CO		
60705	CERA-MITE CORPORATION	1327 6TH AVE	GRAFTON WI 53024-1831

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

Mfr.			
Code	Manufacturer	Address	City, State, Zip Code
71400	BUSSMANN	114 OLD STATE RD	ST LOUIS MO 63178
	DIV OF COOPER INDUSTRIES INC	PO BOX 14460	
71468	ITT CANNON	10550 TALBERT AVE	FOUNTAIN VALLEY CA 92728-8040
	DIV OF ITT CORP	PO BOX 8040	
73803	TEXAS INSTRUMENTS INC	34 FOREST ST	ATTLEBORO MA 02703
	METALLURGICAL MATERIALS DIVISION		
74970	JOHNSON E F CO	299 10TH AVE S W	WASECA MN 56093-2539
75042	TRW INC	401 N BROAD ST	PHILADELPHIA PA 19108-1001
	TRW ELECTRONIC COMPONENTS		
75045	IRC FIXED RESISTORS PHILADELPHIA DIV	000 5 100511 507 1407	DEO DIATMES IL COOLS
75915	LITTELFUSE INC	800 E NORTHWEST HWY	DES PLAINES IL 60016
76493	BELL INDUSTRIES INC	19070 REYES AVE	COMPTON CA 90224-5825
80009	JW MILLER DIV	PO BOX 5825	BEAVERTON OR 97077
00009	TEKTRONIX INC	4900 S W GRIFFITH DR P O BOX 500	DEAVERTUR OR 9/0//
82389	SWITCHCRAFT INC	5555 N ELSTRON AVE	CHICAGO IL 60630
02303	SUB OF RAYTHEON CO	JJJJ N ELSTRON AVE	CHICAGO IL 00030
83003	VARO INC	2203 WALNUT ST	GARLAND TX 75040
03003	VARO INC	P O BOX 401426	UNICAND IN 75040
91637	DALE ELECTRONICS INC	2064 12TH AVE	COLUMBUS NE 68601-3632
31007	DALL CLECTRONICS INC	PO BOX 609	COLUMBOS HE COOST SCOE
TK0961	NEC ELECTRONICS USA INC	401 ELLIS ST	MOUNTAIN VIEW CA 94043
TK1345	ZMAN AND ASSOCIATES	7633 S 180TH	KENT WA 98032
TK1375	ESAM	PO BOX 376	GRANTS PASS OR 97526

Component No.	Tektronix Part No.	Serial/Asse Effective	embly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1	670-6213-00	B010100	B010725	CIRCUIT BD ASSY:X-Y OUTPUT AMPLIFIER	80009	670-6213-00
A1	670-6213-01	B010726	B010928	CIRCUIT BD ASSY:X-Y OUTPUT AMPLIFIER	80009	670-6213-01
A1	670-6213-02	B010929		CIRCUIT BD ASSY:X-Y OUTPUT AMPLIFIER	80009	670-6213-02
A2	670-6212-00			CIRCUIT BD ASSY:X-Y PRE AMPLIFIER	80009	670-6212-00
A3	670-6215-00			CIRCUIT BD ASSY:LOW VOLTAGE POWER & Z AXIS	80009	670-6215-00
A4	670-6216-00			CIRCUIT BD ASSY:CONVERTER	80009	670-6216-00
A5	670-6243-00			CIRCUIT BD ASSY:HV	80009	670-6243-00
A6	670-6214-00	B010100	B010871	CIRCUIT BD ASSY:DYN FOCUS & FR PNL CONT	80009	670-6214-00
A6	670-6214-02	B010872		CIRCUIT BD ASSY: DYNAMIC FOCUS & FR PNL CONT	80009	670-6214-02

Company No.	Tektronix Part No.	Serial/Assembly Effective D	y No. Iscont	N 0 D			Mfr. Code	Mfr. Part No.
Al Al Al Al AlC101 AlC102 AlC103	670-6213-00 670-6213-01 670-6213-02 283-0069-00 281-0544-00 283-0348-00	B010100 B0 B010726 B0	10725 10928	CIRCUIT BD CIRCUIT BD CIRCUIT BD CAP, FXD, CER CAP, FXD, CER	ASSY:X-Y OUTPUT AMPR ASSY:X-Y OUTPUT AMPR ASSY:X-Y OUTPUT AMPR DI:15PF,20%,50V DI:5.6PF,+/0.5PF,50 DI:0.5PF,+/-0.1PF,	IFIER IFIER OOV	80009 80009 80009 04222 52763 51642	670-6213-00 670-6213-01 670-6213-02 MAIOIAI50KAA 2RDPLZ007 270PMO W150100NP0508B
A1C106 A1C106 A1C107 A1C108 A1C109 A1C111	281-0203-00 281-0153-00 281-0564-00 281-0138-00 281-0788-00 281-0811-00		910725	CAP, VAR, AIR CAP, FXD, CER CAP, VAR, PLA CAP, FXD, CER	STIC:2-10PF,100V DI:1.7-10PF,250V DI:24PF,5%,500V STIC:0.4-1.2PF,600V DI:470PF,10%,100V DI:10PF,10%,100V		52769 74970 52763 74970 04222 04222	GYA 10000 187-0106-055 2RDPLZ007 24POJC 273-0001-007 MA101C471KAA MA101A100KAA
A1C120 A1C125 A1C133 A1C139 A1C142 A1C147	281-0773-00 281-0773-00 281-0791-00 281-0791-00 281-0773-00 281-0773-00			CAP, FXD, CER CAP, FXD, CER CAP, FXD, CER CAP, FXD, CER	DI:0.01UF,10%,100V DI:0.01UF,10%,100V DI:270PF,10%,100V DI:270PF,10%,100V DI:0.01UF,10%,100V DI:0.01UF,10%,100V		04222 04222 04222 04222 04222 04222	MA201C103KAA MA201C103KAA MA101C271KAA MA101C271KAA MA201C103KAA MA201C103KAA
A1C160 A1C162 A1C165 A1C167 A1C174 A1C179	283-0414-00 283-0189-00 283-0414-00 283-0189-00 281-0538-00 281-0095-00			CAP, FXD, CER CAP, FXD, CER CAP, FXD, CER CAP, FXD, CER	DI:0.022UF,20%,500V DI:0.1UF,20%,400V DI:0.022UF,20%,500V DI:0.1UF,20%,400V DI:1PF,20%,500V STIC:0.25-1.5PF,600V	I	51642 51642 51642 51642 54583 12294	300-500X7R223M 500400X5R 104M 300-500X7R223M 500400X5R 104M MA12X7R2H1R0M 057001
A1C180 A1C183 A1C185 A1C188 A1C190 A1C195	281-0773-00 281-0773-00 281-0773-00 281-0773-00 283-0189-00 290-0267-00			CAP, FXD, CER CAP, FXD, CER CAP, FXD, CER CAP, FXD, CER	DI:0.01UF,10%,100V DI:0.01UF,10%,100V DI:0.01UF,10%,100V DI:0.01UF,10%,100V DI:0.1UF,20%,400V TLT:1UF,20%,35V		04222 04222 04222 04222 51642 05397	MA201C103KAA MA201C103KAA MA201C103KAA MA201C103KAA 500400X5R 104M T320A105M035AS
A1C196 A1C198 A1C199 A1C201 A1C203 A1C206 A1C206	290-0267-00 290-0267-00 290-0267-00 283-0069-00 283-0348-00 281-0203-00 281-0153-00		10725	CAP, FXD, ELC CAP, FXD, ELC CAP, FXD, CER CAP, FXD, CER CAP, VAR, PLA	TLT:1UF,20%,35V TLT:1UF,20%,35V TLT:1UF,20%,35V DI:15PF,20%,50V DI:0.5PF,+/-0.1PF,: STIC:2-10PF,100V DI:1.7-10PF,250V	LOOV	05397 05397 05397 04222 51642 52769 74970	T320A105M035AS T320A105M035AS T320A105M035AS MA101A150KAA W150100NP0508B GYA 10000 187-0106-055
A1C207 A1C208 A1C211 A1C220 A1C225 A1C233	281-0564-00 281-0138-00 281-0811-00 281-0773-00 281-0773-00 281-0791-00			CAP, VAR, PLA CAP, FXD, CER CAP, FXD, CER CAP, FXD, CER	DI:24PF,5%,500V STIC:0.4-1.2PF,600V DI:10PF,10%,100V DI:0.01UF,10%,100V DI:0.01UF,10%,100V DI:270PF,10%,100V		52763 74970 04222 04222 04222 04222	2RDPLZ007 24POJC 273-0001-007 MA101A100KAA MA201C103KAA MA201C103KAA MA101C271KAA
A1C239 A1C242 A1C247 A1C260 A1C262 A1C265	281-0791-00 281-0773-00 281-0773-00 283-0414-00 283-0189-00 283-0414-00			CAP, FXD, CER CAP, FXD, CER CAP, FXD, CER CAP, FXD, CER	DI:270PF,10%,100V DI:0.01UF,10%,100V DI:0.01UF,10%,100V DI:0.022UF,20%,500' DI:0.1UF,20%,400V DI:0.022UF,20%,500'		04222 04222 04222 51642 51642 51642	MA101C271KAA MA201C103KAA MA201C103KAA 300-500X7R223M 500400X5R 104M 300-500X7R223M
A1C267 A1C269 A1C274 A1C279 A1C280 A1C283	283-0189-00 283-0189-00 281-0538-00 281-0095-00 281-0773-00 281-0773-00			CAP, FXD, CER CAP, FXD, CER CAP, VAR, PLA CAP, FXD, CER	DI:0.1UF,20%,400V DI:0.1UF,20%,400V DI:1PF,20%,500V STIC:0.25-1.5PF,600 DI:0.01UF,10%,100V DI:0.01UF,10%,100V	ı	51642 51642 54583 12294 04222 04222	500400X5R 104M 500400X5R 104M MA12X7R2H1R0M 057001 MA201C103KAA MA201C103KAA
A1C285 A1C288 A1CR116	281-0773-00 281-0773-00 152-0141-02			CAP, FXD, CER	DI:0.01UF,10%,100V DI:0.01UF,10%,100V C,DI:SW,SI,30V,150M	A,30V,DO-35	04222 04222 03508	MA201C103KAA MA201C103KAA DA2527 (1N4152)

Component No.	Tektronix Part No.	Serial/Ass Effective		Name & Description	Mfr. Code	Mfr. Part No.
A1CR120 A1CR121 A1CR125 A1CR126 A1CR150 A1CR155	152-0141-02 152-0141-02 152-0141-02 152-0141-02 152-0141-02 152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508 03508 03508 03508 03508 03508	DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152)
A1CR160 A1CR165 A1CR170 A1CR170 A1CR175 A1CR175	152-0141-02 152-0141-02 152-0242-00 152-0751-00 152-0242-00 152-0751-00	B010235 B010100	B010234 B010234	SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SIG,SI,225V,0.2A,DO-7 SEMICOND DVC,DI:RECT,SI,SWITCHING,265V,DO-7 SEMICOND DVC,DI:SIG,SI,225V,0.2A,DO-7 SEMICOND DVC,DI:RECT,SI,SWITCHING,265V,DO-7	03508 03508 07263 12969 07263 12969	DA2527 (1N4152) DA2527 (1N4152) FDH5004 NDP0661 FDH5004 NDP0661
A1CR216 A1CR220 A1CR221 A1CR225 A1CR226 A1CR250	152-0141-02 152-0141-02 152-0141-02 152-0141-02 152-0141-02 152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508 03508 03508 03508 03508 03508	DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152)
A1CR255 A1CR260 A1CR265 A1CR270 A1CR270 A1CR275 A1CR275	152-0141-02 152-0141-02 152-0141-02 152-0242-00 152-0751-00 152-0242-00 152-0751-00	B010235	B010234 B010234	SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SIG,SI,225V,0.2A,DO-7 SEMICOND DVC,DI:RECT,SI,SWITCHING,265V,DO-7 SEMICOND DVC,DI:RECT,SI,SWITCHING,265V,DO-7 SEMICOND DVC,DI:RECT,SI,SWITCHING,265V,DO-7	03508 03508 03508 07263 12969 07263 12969	DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) FDH5004 NDP0661 FDH5004 NDP0661
A1L143 A1L146 A1L190 A1L243 A1L246 A1Q100	108-0298-00 108-0298-00 108-0240-00 108-0298-00 108-0298-00 151-0188-00			COIL,RF:FIXED,230NH COIL,RF:FIXED,230NH COIL,RF:FIXED,820UH COIL,RF:FIXED,230NH COIL,RF:FIXED,230NH TRANSISTOR:PNP,SI,TO-92		
A10105 A10115 A10120 A10125 A10130 A10135	151-0188-00 151-0188-00 151-0301-00 151-0301-00 151-0302-00 151-0302-00			TRANSISTOR: PNP,SI,TO-92 TRANSISTOR: PNP,SI,TO-92 TRANSISTOR: PNP,SI,TO-18 TRANSISTOR: PNP,SI,TO-18 TRANSISTOR: NPN,SI,TO-18 TRANSISTOR: NPN,SI,TO-18 TRANSISTOR: NPN,SI,TO-18	80009 80009 04713 04713 04713	151-0188-00 151-0188-00 ST898 ST898 ST899 ST899
A1Q140 A1Q140 A1Q145 A1Q145 A1Q150 A1Q155	151-0302-00 151-0195-00 151-0302-00 151-0195-00 151-0615-00 151-0615-00	B010726 B010100	B010725 B010725	TRANSISTOR: NPN,SI,TO-18 TRANSISTOR: SELECTED TRANSISTOR: NPN,SI,TO-18 TRANSISTOR: SELECTED TRANSISTOR: NPN,SI,TO-202 TRANSISTOR: NPN,SI,TO-202	04713 80009 04713 80009 04713 04713	ST899 151-0195-00 ST899 151-0195-00 SDS358K SDS358K
A1Q160 A1Q165 A1Q200 A1Q205 A1Q215 A1Q220	151-0612-00 151-0612-00 151-0188-00 151-0188-00 151-0188-00 151-0301-00			TRANSISTOR: PNP, SI TRANSISTOR: PNP, SI TRANSISTOR: PNP, SI, TO-92 TRANSISTOR: PNP, SI, TO-92 TRANSISTOR: PNP, SI, TO-92 TRANSISTOR: PNP, SI, TO-92 TRANSISTOR: PNP, SI, TO-18	04713 04713 80009 80009 80009 04713	SDS359 SDS359 151-0188-00 151-0188-00 151-0188-00 ST898
A1Q225 A1Q230 A1Q235 A1Q240 A1Q240 A1Q245 A1Q245	151-0301-00 151-0302-00 151-0302-00 151-0302-00 151-0195-00 151-0302-00 151-0195-00	B010726	B010725 B010725	TRANSISTOR: PNP,SI,TO-18 TRANSISTOR: NPN,SI,TO-18 TRANSISTOR: NPN,SI,TO-18 TRANSISTOR: NPN,SI,TO-18 TRANSISTOR: SELECTED TRANSISTOR: NPN,SI,TO-18 TRANSISTOR: SELECTED TRANSISTOR: SELECTED	04713 04713 04713 04713 80009 04713 80009	ST898 ST899 ST899 ST899 151-0195-00 ST899 151-0195-00
A1Q250 A1Q255	151-0615-00 151-0615-00			TRANSISTOR:NPN,SI,TO-202 TRANSISTOR:NPN,SI,TO-202	04713 04713	SDS358K SDS358K

Component No.	Tektronix Part No.	Serial/Asse Effective		Name & Description	Mfr. Code	Mfr. Part No.
A1Q260 A1Q265	151-0612-00 151-0612-00			TRANSISTOR:PNP,SI TRANSISTOR:PNP,SI	04713 04713	SDS359 SDS359
A1R100	315-0101-00			RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A1R101	315-0911-00			RES.FXD.FILM:910 OHM.5%,0.25W	57668	NTR25J-E910E
A1R102	321-0226-00			RES, FXD, FILM: 2.21K OHM, 1%, 0.125W, TC=TO	01121	RNK2211F
A1R104	311-0310-00			RES, VAR, NONWW: PNL, 5K OHM, 0.5W	01121	W7350A
A1R105	315-0101-00			RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A1R106	315-0911-00			RES, FXD, FILM: 910 OHM, 5%, 0.25W	57668	NTR25J-E910E
A1R107 A1R108	315-0395-00			RES,FXD,FILM:3.9M OHM,5%,0.25W RES,FXD,FILM:510K OHM,5%,0.25W	01121 19701	CB3955 5043CX510K0J
A1R109	315-0514-00 311-1559-00			RES, VAR, NONW: TRMR, 10K OHM, 0.5W	32997	3352T-1-103
A1R110	321-0276-00			RES, FXD, FILM: 7.32K OHM, 1%, 0.125W, TC=TO	19701	5043ED7K320F
A1R111	315-0135-00			RES, FXD, FILM: 1.3M OHM, 5%, 0.25W	19701	5043CX1M300J
A1R112	321-0231-00			RES, FXD, FILM: 2.49K OHM, 1%, 0.125W, TC=TO	19701	5033ED2K49F
A1R113	321-0231-00			RES,FXD,FILM:2.49K OHM,1%,0.125W,TC=T0	19701	5033ED2K49F
A1R115	321-0164-00			RES,FXD,FILM:499 OHM,1%,0.125W,TC=T0	19701	5033ED499R0F
A1R116	321-0260-00			RES, FXD, FILM: 4.99K OHM, 1%, 0.125W, TC=TO	19701	5033ED4K990F
A1R117	321-0380-00			RES,FXD,FILM:88.7K OHM,1%,0.125W,TC=TO	07716	CEAD88701F
A1R119	311-1557-00			RES, VAR, NONWY: TRMR, 25K OHM, 0.5W	32997 19701	3352T-1-253
A1R120 A1R121	321-0239-00			RES,FXD,FILM:3.01K OHM,1%,0.125W,TC=TO RES,FXD,FILM:100 OHM,5%,0.25W	57668	5043ED3K010F NTR25J-E 100E
A1R124	315-0101-00 315-0510-00			RES.FXD.FILM:51 OHM.5%,0.25W	19701	5043CX51R00J
A1R125	321-0239-00			RES.FXD.FILM:3.01K OHM.1%,0.125W.TC=T0	19701	5043ED3K010F
A1R126	315-0101-00			RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A1R129	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A1R130	315-0101-00			RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A1R133	315-0910-00		B010928	RES,FXD,FILM:91 OHM,5%,0.25W	19701	5043CX91R00J
A1R133	315-0620-00	B010929		RES, FXD, FILM: 62 OHM, 5%, 0.25W	19701	5043CX63R00J
A1R135	315-0101-00	0010100	D010000	RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668 19701	NTR25J-E 100E 5043CX91R00J
A1R139 A1R139	315-0910-00 315-0620-00		B010928	RES,FXD,FILM:91 OHM,5%,0.25W RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A1R140	315-0472-00			RES.FXD.FILM:4.7K OHM,5%,0.25W	5 76 68	NTR25J-E04K7
A1R142	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A1R144	315-0330-00			RES,FXD,FILM:33 OHM,5%,0.25W	19701	5043CX33R00J
A1R145	315-0472-00			RES, FXD, FILM: 4.7K OHM, 5%, 0.25W	57668	NTR25J-E04K7
A1R147	315-0471-00			RES, FXD, FILM: 470 OHM, 5%, 0.25W	57668	NTR25J-E470E
A1R150	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A1R155	315-0101-00			RES. FXD, FILM: 100 OHM, 5%, 0.25W	57 66 8	NTR25J-E 100E
A1R160 A1R162	315-0471-00 315-0220-00			RES, FXD, FILM: 470 OHM, 5%, 0.25W RES, FXD, FILM: 22 OHM, 5%, 0.25W	57668 19701	NTR25J-E470E 5043CX22R00J
A1R164	321-0168-00			RES, FXD, FILM: 549 OHM, 1%, 0.125W, TC=T0	07716	CEAD549R0F
A1R165	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A1R167	315-0220-00			RES, FXD, FILM: 22 OHM, 5%, 0.25W	19701	5043CX22R00J
A1R169	321-0168 - 00			RES, FXD, FILM: 549 OHM, 1%, 0.125W, TC=TO	07716	CEAD549R0F
A1R170	315-0470-00			RES, FXD, FILM: 47 OHM, 5%, 0.25W	57668	NTR25J-E47E0
A1R171	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A1R173	315-0271-00			RES, FXD, FILM: 270 OHM, 5%, 0.25W	57668	NTR25J-E270E
A1R174 A1R175	323-0393-00 315 - 0470-00			RES,FXD,FILM:121K OHM,1%,0.5W,TC=TO RES,FXD,FILM:47 OHM,5%,0.25W	24546 57668	NA65D1213F NTR25J-E47E0
A1R176	315-0101-00			RES.FXD.FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A1R178	315-0271-00			RES.FXD.FILM:270 OHM.5%,0.25W	57668	NTR25J-E270E
A1R179	323-0393-00			RES, FXD, FILM: 121K OHM, 1%, 0.5W, TC=TO	24546	NA65D1213F
A1R180	315-0470-00			RES, FXD, FILM: 47 OHM, 5%, 0.25W	57668	NTR25J-E47E0
A1R182	315-0101-00			RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A1R183	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A1R185	315-0470-00			RES,FXD,FILM:47 OHM,5%,0.25W	57668	NTR25J-E47E0
A1R187	315-0101-00			RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A1R188	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J

Component No.	Tektronix Part No.	Serial/Ass Effective	sembly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1R192 A1R193 A1R195 A1R196 A1R198 A1R199	301-0683-00 301-0683-00 315-0100-00 315-0100-00 315-0100-00 315-0100-00			RES,FXD,FILM:68K OHM,5%,0.5W RES,FXD,FILM:68K OHM,5%,0.5W RES,FXD,FILM:10 OHM,5%,0.25W RES,FXD,FILM:10 OHM,5%,0.25W RES,FXD,FILM:10 OHM,5%,0.25W RES,FXD,FILM:10 OHM,5%,0.25W	19701 19701 19701 19701 19701	5053CX68K00J 5053CX68K00J 5043CX10RR00J 5043CX10RR00J 5043CX10RR00J 5043CX10RR00J
A1R200 A1R201 A1R202 A1R203 A1R204 A1R205	315-0101-00 315-0911-00 321-0226-00 311-0660-00 311-0310-00 315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W RES,FXD,FILM:910 OHM,5%,0.25W RES,FXD,FILM:2.21K OHM,1%,0.125W,TC=T0 RES,VAR,NONWW:TRMR,200K OHM,0.5W RES,VAR,NONWW:PNL,5K OHM,0.5W RES,FXD,FILM:100 OHM,5%,0.25W	57668 57668 01121 32997 01121 57668	NTR25J-E 100E NTR25J-E910E RNK2211F 3329H-L58-204 W7350A NTR25J-E 100E
A1R206 A1R208 A1R209 A1R210 A1R211 A1R212	315-0911-00 315-0754-00 311-1559-00 321-0284-00 315-0185-00 321-0231-00			RES,FXD,FILM:910 OHM,5%,0.25W RES,FXD,FILM:750K OHM,5%,0.25W,MI RES,VAR,NONWW:TRMR,10K OHM,0.5W RES,FXD,FILM:8.87K OHM,1%,0.125W,TC=T0 RES,FXD,FILM:1.8M OHM,5%,0.25W RES,FXD,FILM:2.49K OHM,1%,0.125W,TC=T0	57668 19701 32997 19701 01121 19701	NTR25J-E910E 5043CX750K0J 335ZT-1-103 5043ED8K870F CB1855 5033ED2K49F
A1R213 A1R215 A1R216 A1R217 A1R220 A1R221	321-0231-00 321-0164-00 321-0260-00 321-0383-00 321-0239-00 315-0101-00			RES,FXD,FILM:2.49K OHM,1%,0.125W,TC=TO RES,FXD,FILM:499 OHM,1%,0.125W,TC=TO RES,FXD,FILM:4.99K OHM,1%,0.125W,TC=TO RES,FXD,FILM:95.3K OHM,1%,0.125W,TC=TO RES,FXD,FILM:3.01K OHM,1%,0.125W,TC=TO RES,FXD,FILM:100 OHM,5%,0.25W	19701 19701 19701 07716 19701 57668	5033ED2K49F 5033ED499R0F 5033ED4K990F CEAD95301F 5043ED3K010F NTR25J-E 100E
A1R224 A1R225 A1R226 A1R229 A1R230 A1R233 A1R233	315-0510-00 321-0239-00 315-0101-00 315-0510-00 315-0101-00 315-0910-00 315-0620-00		B010928	RES,FXD,FILM:51 OHM,5%,0.25W RES,FXD,FILM:3.01K OHM,1%,0.125W,TC=TO RES,FXD,FILM:100 OHM,5%,0.25W RES,FXD,FILM:51 OHM,5%,0.25W RES,FXD,FILM:100 OHM,5%,0.25W RES,FXD,FILM:91 OHM,5%,0.25W RES,FXD,FILM:62 OHM,5%,0.25W	19701 19701 57668 19701 57668 19701	5043CX51R00J 5043ED3K010F NTR25J-E 100E 5043CX51R00J NTR25J-E 100E 5043CX91R00J 5043CX63R00J
A1R235 A1R239 A1R239 A1R240 A1R242 A1R244	315-0101-00 315-0910-00 315-0620-00 315-0472-00 315-0471-00 315-0330-00	B010100 B010929	B010928	RES.FXD,FILM:100 OHM,5%,0.25W RES.FXD,FILM:91 OHM,5%,0.25W RES.FXD,FILM:62 OHM,5%,0.25W RES.FXD,FILM:4.7K OHM,5%,0.25W RES.FXD,FILM:470 OHM,5%,0.25W RES.FXD,FILM:433 OHM,5%,0.25W	57668 19701 19701 57668 57668 19701	NTR25J-E 100E 5043CX91R00J 5043CX63R00J NTR25J-E04K7 NTR25J-E470E 5043CX33R00J
A1R245 A1R247 A1R250 A1R255 A1R260 A1R262	315-0472-00 315-0471-00 315-0101-00 315-0101-00 315-0471-00 315-0220-00			RES,FXD,FILM:4.7K OHM,5%,0.25W RES,FXD,FILM:470 OHM,5%,0.25W RES,FXD,FILM:100 OHM,5%,0.25W RES,FXD,FILM:100 OHM,5%,0.25W RES,FXD,FILM:470 OHM,5%,0.25W RES,FXD,FILM:22 OHM,5%,0.25W	57668 57668 57668 57668 57668 19701	NTR25J-E04K7 NTR25J-E470E NTR25J-E·100E NTR25J-E·100E NTR25J-E470E 5043CX22R00J
A1R264 A1R265 A1R267 A1R269 A1R270 A1R271	321-0168-00 315-0471-00 315-0220-00 321-0168-00 315-0470-00 315-0101-00			RES,FXD,FILM:549 OHM,1%,0.125W,TC=TO RES,FXD,FILM:470 OHM,5%,0.25W RES,FXD,FILM:22 OHM,5%,0.25W RES,FXD,FILM:549 OHM,1%,0.125W,TC=TO RES,FXD,FILM:47 OHM,5%,0.25W RES,FXD,FILM:100 OHM,5%,0.25W	07716 57668 19701 07716 57668 57668	CEAD549R0F NTR25J-E470E 5043CX22R00J CEAD549R0F NTR25J-E47E0 NTR25J-E 100E
A1R273 A1R274 A1R275 A1R276 A1R278 A1R279	315-0271-00 323-0393-00 315-0470-00 315-0101-00 315-0271-00 323-0393-00			RES,FXD,FILM:270 OHM,5%,0.25W RES,FXD,FILM:121K OHM,1%,0.5W,TC=T0 RES,FXD,FILM:47 OHM,5%,0.25W RES,FXD,FILM:100 OHM,5%,0.25W RES,FXD,FILM:270 OHM,5%,0.25W RES,FXD,FILM:271 OHM,5%,0.25W RES,FXD,FILM:121K OHM,1%,0.5W,TC=T0	57668 24546 57668 57668 57668 24546	NTR25J-E270E NA65D1213F NTR25J-E47E0 NTR25J-E 100E NTR25J-E270E NA65D1213F
A1R280 A1R282 A1R283	315-0470-00 315-0101-00 315-0620-00			RES,FXD,FILM:47 OHM,5%,0.25W RES,FXD,FILM:100 OHM,5%,0.25W RES,FXD,FILM:62 OHM,5%,0.25W	57668 57668 19701	NTR25J-E47E0 NTR25J-E 100E 5043CX63R00J

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Component No.	Tektronix Part No.	Serial/Assembly No. Effective Dscont	Name & Description	Mfr. Code	Mfr. Part No.	
A1R285	315-0470-00		RES.FXD.FILM:47 OHM.5%,0.25W	57668	NTR25J-E47E0	
A1R287	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E	
A1R288	315-0620-00		RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J	
A1R290	311-1332-00		RES, VAR, NONWW: PNL, 5K OHM, 2W	12697	CM40936	
A1TP173	214-0579-00		TERM.TEST POINT:BRS CD PL	80009	214-0579-00	
A1TP178	214-0579-00		TERM. TEST POINT: BRS CD PL	80009	214-0579-00	
A1TP273	214-0579-00		TERM, TEST POINT:BRS CD PL	80009	214-0579-00	
A1TP278	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00	
A1VR144	152-0227-00		SEMICOND DVC,DI:ZEN,SI,6.2V,5%,O.4W,DO-7	04713	SZ13903	
A1VR192	152-0693-00		SEMICOND DVC, DI: ZEN, SI, 4.0V, 5%, 1MA, 400MW	04713	SZG30068	
A1VR193	152-0693-00		SEMICOND DVC, DI:ZEN, SI, 4.0V, 5%, 1MA, 400MW	04713	SZG30068	
A1VR244	152-0227-00		SEMICOND DVC,DI:ZEN,SI,6.2V,5%,0.4W,DO-7	04713	SZ13903	
A1W192	131-0566-00		BUS, CONDUCTOR: DUMMY RES, 0.094 OD X 0.225 L	24546	OMA 07	

Component No.	Tektronix Part No.	Serial/Assembly No. Effective Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A2 A2C103 A2C104 A2C107 A2C108 A2C112	670-6212-00 281-0080-00 281-0759-00 281-0080-00 281-0759-00 281-0773-00		CIRCUIT BD ASSY:X-Y PRE AMPLIFIER CAP, VAR, AIR DI:1.7-11PF,375V CAP, FXD, CER DI:22PF,10%,100V CAP, VAR, AIR DI:1.7-11PF,375V CAP, FXD, CER DI:22PF,10%,100V CAP, FXD, CER DI:0.01UF,10%,100V	80009 74970 04222 74970 04222 04222	670-6212-00 189-0505-075 MA101A220KAA 189-0505-075 MA101A220KAA MA201C103KAA
A2C117 A2C130 A2C135 A2C150 A2C161 A2C167	281-0773-00 281-0592-00 281-0592-00 281-0773-00 290-0188-00 290-0188-00		CAP, FXD, CER DI:0.01UF, 10%, 100V CAP, FXD, CER DI:4.7PF,+/-0.5PF,500V CAP, FXD, CER DI:4.7PF,+/-0.5PF,500V CAP, FXD, CER DI:0.01UF, 10%, 100V CAP, FXD, ELCTLT:0.1UF, 10%, 35V CAP, FXD, ELCTLT:0.1UF, 10%, 35V	04222 52763 52763 04222 05397 05397	MA201C103KAA 2RDPLZ007 4P70DC 2RDPLZ007 4P70DC MA201C103KAA T322A104K035AS T322A104K035AS
A2C170 A2C190 A2C192 A2C194 A2C196 A2C198	281-0564-00 290-0301-00 281-0775-00 281-0775-00 290-0301-00 290-0267-00		CAP, FXD, CER DI: 24PF, 5%, 500V CAP, FXD, ELCTLT: 10UF, 10%, 20V CAP, FXD, CER DI: 0.1UF, 20%, 50V CAP, FXD, CER DI: 0.1UF, 20%, 50V CAP, FXD, ELCTLT: 10UF, 10%, 20V CAP, FXD, ELCTLT: 1UF, 20%, 35V	52763 05397 04222 04222 05397 05397	2RDPLZ007 24POJC T110B106K020AS MA205E104MAA MA205E104MAA T110B106K020AS T320A105M035AS
A2C203 A2C204 A2C207 A2C208 A2C212 A2C217	281-0080-00 281-0759-00 281-0080-00 281-0759-00 281-0773-00 281-0773-00		CAP, VAR, AIR DI:1.7-11PF, 375V CAP, FXD, CER DI:22PF, 10%, 100V CAP, VAR, AIR DI:1.7-11PF, 375V CAP, FXD, CER DI:22PF, 10%, 100V CAP, FXD, CER DI:0.01UF, 10%, 100V CAP, FXD, CER DI:0.01UF, 10%, 100V	74970 04222 74970 04222 04222 04222	189-0505-075 MA101A220KAA 189-0505-075 MA101A220KAA MA201C103KAA MA201C103KAA
A2C230 A2C235 A2C250 A2C261 A2C267 A2C270 A2C270	281-0592-00 281-0592-00 281-0773-00 290-0188-00 291-0629-00 281-0819-00	B010100 B010264	CAP,FXD,CER DI:4.7PF,+/-0.5PF,500V CAP,FXD,CER DI:4.7PF,+/-0.5PF,500V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,ELCTLT:0.1UF,10%,35V CAP,FXD,ELCTLT:0.1UF,10%,35V CAP,FXD,CER DI:33PF,5%,600V CAP,FXD,CER DI:33 PF,5%,50V	52763 52763 04222 05397 05397 52763 04222	2RDPLZ007 4P70DC 2RDPLZ007 4P70DC MA201C103KAA T322A104K035AS T322A104K035AS 2RDPLZ007 33POJC GC105A33OJ
A2CR114 A2CR119 A2CR130 A2CR135 A2CR180 A2CR185	152-0246-00 152-0246-00 152-0333-00 152-0333-00 152-0333-00 152-0333-00		SEMICOND DVC,DI:SW,SI,40V,200MA,DO-7 SEMICOND DVC,DI:SW,SI,40V,200MA,DO-7 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	14433 14433 07263 07263 07263	WG1537TK WG1537TK FDH-6012 FDH-6012 FDH-6012 FDH-6012
A2CR214 A2CR219 A2CR230 A2CR235 A2CR280 A2CR285	152-0246-00 152-0246-00 152-0333-00 152-0333-00 152-0333-00 152-0333-00		SEMICOND DVC,DI:SW,SI,40V,200MA,DO-7 SEMICOND DVC,DI:SW,SI,40V,200MA,DO-7 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	14433 14433 07263 07263 07263 07263	WG1537TK WG1537TK FDH-6012 FDH-6012 FDH-6012 FDH-6012
A20120 A20130 A20135 A20140 A20145 A20150	151-1054-00 151-0188-00 151-0188-00 151-0302-00 151-0302-00 151-0190-00		TRANSISTOR: FET, N-CHAN, SI, TO-71 TRANSISTOR: PNP, SI, TO-92 TRANSISTOR: PNP, SI, TO-92 TRANSISTOR: NPN, SI, TO-18 TRANSISTOR: NPN, SI, TO-18 TRANSISTOR: NPN, SI, TO-18 TRANSISTOR: NPN, SI, TO-92	80009 80009 80009 04713 04713 80009	151-1054-00 151-0188-00 151-0188-00 ST899 ST899 151-0190-00
A20155 A20170 A20175 A20180 A20185 A20220	151-0190-00 151-0190-00 151-0190-00 151-0190-00 151-0190-00 151-1054-00		TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:FET,N-CHAN,SI,TO-71	80009 80009 80009 80009 80009	151-0190-00 151-0190-00 151-0190-00 151-0190-00 151-0190-00 151-1054-00
A2Q230 A2Q235 A2Q240	151-0188-00 151-0188-00 151-0302-02		TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:NPN,SI,TO-18	80009 80009 07263	151-0188-00 151-0188-00 S038487

Component No.	Tektronix Part No.	Serial/Assembly No. Effective Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A2Q245	151-0302-02		TRANSISTOR: NPN, SI, TO-18	07263	S038487
A2Q250	151-0190-00		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A2Q255	151-0190-00		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A2Q270	151-0190-00		TRANSISTOR: NPN, SI, TO-92	80009	151-0190-00
A2Q275	151-0190-00		TRANSISTOR: NPN, SI, TO-92	80009	151-0190-00
A2Q280	151-0190-00		TRANSISTOR: NPN, SI, TO-92	80009	151-0190-00
A2Q285	151-0190-00		TRANSISTOR: NPN, SI, TO-92	80009	151-0190-00
A2R101	323-0626-00		RES, FXD, FILM: 50 OHM, 1%, 0.5W, TC=TO	91637	MFF1226G50R00F
A2R103	321-0891-00		RES, FXD, FILM: 800K OHM, 1%, 0.125W, TC=T0	19701	5043ED800K0F
A2R104	321-0423-00		RES,FXD,FILM:249K OHM,1%,0.125W,TC=T0	19701	5043ED249K0F
A2R105	323-0626-00		RES, FXD, FILM: 50 OHM. 1%, 0.5W, TC=TO	91637	MFF1226G50R00F
A2R107	321-0891-00		RES, FXD, FILM: 800K OHM, 1%, 0.125W, TC=TO	19701	5043ED800K0F
A2R108	321-0423-00		RES.FXD.FILM:249K OHM.1%,0.125W.TC=T0	19701	5043ED249K0F
A2R110	321-0481-00		RES, FXD, FILM: 1M OHM, 1%, 0.125W, TC=TO	19701	5043ED1M000F
A2R112	315-0104-00			57668	NTR25J-E100K
A2R112 A2R114			RES,FXD,FILM:100K 0HM,5%,0.25W	57668	NTR25J-E470E
	315-0471-00		RES, FXD, FILM: 470 OHM, 5%, 0.25W		
A2R115	321-0481-00		RES, FXD, FILM: 1M OHM, 1%, 0.125W, TC=TO	19701	5043ED1M000F
A2R117	315-0104-00		RES, FXD, FILM: 100K OHM, 5%, 0.25W	57668	NTR25J-E100K
A2R119	315-0471-00		RES, FXD, FILM: 470 OHM, 5%, 0.25W	57668	NTR25J-E470E
A2R120	321-0285-00		RES,FXD,FILM:9.09K OHM,1%,0.125W,TC=T0	07716	CEAD90900F
A2R122	315-0750-00		RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A2R124	321-0104-00		RES, FXD, FILM: 118 OHM, 1%, 0.125W, TC=TO	24546	NA55D1180F
A2R125	321-0285-00		RES, FXD, FILM: 9.09K OHM, 1%, 0.125W, TC=T0	07716	CEAD90900F
A2R127	315-0750-00		RES, FXD, FILM:75 OHM, 5%, 0.25W	57668	NTR25J-E75E0
A2R129	311-1224-00		RES. VAR. NONW: TRMR. 500 OHM, 0.5W	32997	3386F-T04-501
A2R130	315-0220-00		RES.FXD.FILM:22 OHM.5%,0.25W	19701	5043CX22R00J
				57668	NTR25J-E05K6
A2R132	315-0562-00		RES.FXD.FILM:5.6K OHM.5%,0.25W		
A2R135	315-0182-00		RES, FXD, FILM: 1.8K OHM, 5%, 0.25W	57668	NTR25J-E1K8
A2R137	315-0562-00		RES, FXD, FILM: 5.6K OHM, 5%, 0.25W	57668	NTR25J-E05K6
A2R139	315-0220-00		RES,FXD,FILM:22 OHM,5%,0.25W	19701	5043CX22R00J
A2R140	323-0175-00		RES,FXD,FILM:649 OHM,1%,0.5W,TC=T0	75042	CECT0-6490F
A2R145	323-0175-00		RES,FXD,FILM:649 OHM,1%,0.5W,TC=TO	75042	CECT0-6490F
A2R150	315-0101-00		RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A2R151	321-0151-00		RES,FXD,FILM:365 OHM,1%,0.125W,TC=T0	07716	CEAD365R0F
A2R155	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A2R156	321-0151-00		RES, FXD, FILM: 365 OHM, 1%, 0.125W, TC=T0	07716	CEAD365R0F
A2R160	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A2R161	321-0272-00		RES, FXD, FILM: 6.65K OHM, 1%, 0.125W, TC=T0	19701	5043ED6K650F
A2R165	321-0194-00		RES, FXD, FILM: 1.02K OHM, 1%, 0.125W, TC=TO	07716	CEAD10200F
A2R166	315-0101-00		RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A2R167	321-0272-00		RES, FXD, FILM: 6.65K OHM, 1%, 0.125W, TC=TO	19701	5043ED6K650F
A2R170	315-0470-00		RES, FXD, FILM: 47 OHM, 5%, 0.25W	57668	NTR25J-E47E0
A2R171	315-0471-00		RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A2R172	315-0470-00		RES,FXD,FILM:47 OHM,5%,0.25W	57668	NTR25J-E47E0
A2R175	315-0470-00		RES,FXD,FILM:47 OHM,5%,0.25W	57668	NTR25J-E47E0
A2R176	315-0471-00		RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A2R178	321-0932-00		RES,FXD,FILM:2.5K OHM,1%,0.125W,TC=TO	24546	NA55D2501F
A2R179	315-0470-00		RES,FXD,FILM:47 OHM,5%,0.25W	57668	NTR25J-E47E0
A2R181	321-0228-00		RES, FXD, FILM: 2.32K OHM, 1%, 0.125W, TC=TO	19701	5043ED2K32F
A2R182	321-0332-00		RES, FXD, FILM: 28.0K OHM, 1%, 0.125W, TC=T0	07716	CEAD28001F
A2R184	315-0393-00	-	RES, FXD, FILM: 39K OHM, 5%, 0.25W	57668	NTR25J-E39K0
A2R186	321-0228-00		RES, FXD, FILM: 2.32K OHM, 1%, 0.125W, TC=T0	19701	5043ED2K32F
A2R187	321-0332-00		RES, FXD, FILM: 28.0K OHM, 1%, 0.125W, TC=T0	07716	CEAD28001F
A2R189	315-0393-00		RES, FXD, FILM: 39K OHM, 5%, 0.25W	57668	NTR25J-E39K0
A2R190	315-0100-00		RES.FXD.FILM:10 OHM.5%.0.25W	19701	5043CX10RR00J
A2R196	315-0100-00		RES, FXD, FILM: 10 OHM, 5%, 0.25W	19701	5043CX10RR00J
A2R198	315-0100-00		RES, FXD, FILM: 10 OHM, 5%, 0.25W	57668	NTR25J-E06K8
A2R201	323-0626-00		RES, FXD, FILM:50 OHM, 1%, 0.5W, TC=TO	91637	MFF1226G50R00F

Component No.	Tektronix Part No.	Serial/Assembly No. Effective_Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A2R203	321-0891-00		RES, FXD, FILM: 800K OHM, 1%, 0.125W, TC=T0	19701	5043ED800K0F
A2R204	321-0423-00		RES, FXD, FILM: 249K OHM, 1%, 0.125W, TC=TO	19701	5043ED249K0F
A2R205	323-0626-00		RES, FXD, FILM: 50 OHM, 1%, 0.5W, TC=T0	91637	MFF1226G50R00F
A2R207	321-0891-00		RES, FXD, FILM: 800K OHM, 1%, 0.125W, TC=T0	19701	5043ED800K0F
A2R208	321-0423-00		RES.FXD.FILM:249K OHM.1%,0.125W,TC=T0	19701	5043ED249K0F
A2R210	321-0481-00		RES,FXD,FILM:1M OHM,1%,0.125W,TC=T0	19701	5043ED1M000F
A2R212	315-0104-00		RES, FXD, FILM: 100K OHM, 5%, 0.25W	57668	NTR25J-E100K
A2R214	315-0471-00		RES, FXD, FILM: 470 OHM, 5%, 0.25W	57668	NTR25J-E470E
A2R215	321-0481-00		RES.FXD.FILM:1M OHM.1%.0.125W.TC=TO	19701	5043ED1M000F
A2R217	315-0104-00		RES, FXD, FILM: 100K OHM, 5%, 0.25W	57668	NTR25J-E100K
A2R219	315-0471-00		RES, FXD, FILM: 470 OHM, 5%, 0.25W	57668	NTR25J-E470E
A2R220	321-0285-00		RES, FXD, FILM: 9.09K 0HM, 1%, 0.125W, TC=T0	07716	CEAD90900F
A2R222	315-0750-00		RES.FXD.FILM:75 OHM.5%.0.25W	57668	NTR25J-E75E0
A2R224	321-0104-00		RES, FXD, FILM: 118 OHM, 1%, 0.125W, TC=TO	24546	NA55D1180F
A2R225	321-0285-00		RES, FXD, FILM: 9.09K OHM, 1%, 0.125W, TC=T0	07716	CEAD90900F
A2R227	315-0750-00		RES, FXD, FILM: 75 OHM, 5%, 0.25W	57668	NTR25J-E75E0
A2R229	311-1224-00		RES, VAR, NONWW: TRMR, 500 OHM, 0.5W	32997	3386F-T04-501
A2R230	315-0220-00		RES, FXD, FILM: 22 OHM, 5%, 0.25W	19701	5043CX22R00J
A2R232	315-0562-00		RES,FXD,FILM:5.6K OHM,5%,0.25W	57668	NTR25J-E05K6
A2R235	315-0182-00		RES, FXD, FILM: 1.8K OHM, 5%, 0.25W	57668	NTR25J-E1K8
A2R237	315-0562-00		RES, FXD, FILM: 5.6K OHM, 5%, 0.25W	57668	NTR25J-E05K6
A2R239	315-0220-00		RES.FXD.FILM:22 OHM.5%.0.25W	19701	5043CX22R00J
A2R240	323-0175-00		RES, FXD, FILM: 649 OHM, 1%, 0.5W, TC=TO	75042	CECTO-6490F
A2R245	323-0175-00		RES, FXD, FILM: 649 OHM, 1%, 0.5W, TC=TO	75042	CECTO-6490F
A2R250	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A2R251	321-0151-00		RES, FXD, FILM: 365 OHM, 1%, 0.125W, TC=T0	07716	CEAD365R0F
A2R255	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A2R256	321-0151-00		RES, FXD, FILM: 365 OHM, 1%, 0.125W, TC=T0	07716	CEAD365R0F
A2R260	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A2R261	321-0272-00		RES, FXD, FILM: 6.65K OHM, 1%, 0.125W, TC=T0	19701	5043ED6K650F
A2R265	321-0194-00		RES,FXD,FILM:1.02K OHM,1%,0.125W,TC=T0	07716	CEAD10200F
A2R266	315-0101-00		RES.FXD.FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A2R267	321-0272-00		RES, FXD, FILM: 6.65K OHM, 1%, 0.125W, TC=T0	19701	5043ED6K650F
A2R270	315-0470-00		RES, FXD, FILM: 47 OHM, 5%, 0.25W	57668	NTR25J-E47E0
A2R271	315-0511-00		RES, FXD, FILM:510 OHM, 5%, 0.25W	19701	5043CX510R0J
A2R272	315-0470-00		RES, FXD, FILM: 47 OHM, 5%, 0.25W	57668	NTR25J-E47E0
A2R275	315-0470-00		RES.FXD.FILM:47 OHM.5%.0.25W	57668	NTR25J-E47E0
A2R276	315-0511-00		RES, FXD, FILM: 510 OHM, 5%, 0.25W	19701	5043CX510R0J
A2R278	321-0244-00		RES, FXD, FILM: 3.40K OHM, 1%, 0.125W, TC=T0	19701	5043ED3K400F
A2R279	315-0470-00		RES, FXD, FILM: 47 OHM, 5%, 0.25W	57668	NTR25J-E47E0
A2R281	321-0225-00		RES,FXD,F1LM:2.15K OHM,1%,0.125W,TC=T0	19701	5033ED2K15F
A2R282	321-0332-00		RES, FXD, FILM: 28.0K OHM, 1%, 0.125W, TC=TO	07716	CEAD28001F
A2R284	315-0393-00		RES.FXD.FILM:39K OHM.5%,0.25W	57668	NTR25J-E39K0
A2R286	321-0225-00		RES.FXD.FILM:2.15K OHM.1%.0.125W.TC=T0	19701	5033ED2K15F
A2R287	321-0332-00		RES.FXD.FILM:28.0K OHM.1%.0.125W.TC=T0	07716	CEAD28001F
A2R289	315-0393-00		RES, FXD, FILM: 39K OHM, 5%, 0.25W	57668	NTR25J-E39K0
A2S100	260-1811-00		SWITCH, SLIDE: DPDT, 0.5A, 125VAC-DC	82389	11P-1137
A2S105	260-1811-00		SWITCH, SLIDE: DPDT, 0.5A, 125VAC-DC	82389	11P-1137
A2S200	260-1811-00		SWITCH.SLIDE: DPDT.0.5A.125VAC-DC	82389	11P-1137
A2S205	260-1811-00		SWITCH, SLIDE: DPDT, 0.5A, 125VAC-DC	82389	11P-1137
A2VR192	152-0227-00		SEMICOND DVC.DI:ZEN,SI,6.2V,5%,0.4W,DO-7	04713	SZ13903
A2VR194	152-0227-00		SEMICOND DVC, DI: ZEN, SI, 6.2V, 5%, 0.4W, DO-7	04713	SZ13903
A2VR198	152-0227-00		SEMICOND DVC, DI:ZEN, SI, 6.2V, 5%, 0.4W, DO-7	04713	SZ13903
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Component No.	Tektronix Part No.	Serial/Asser Effective		Name & Description	Mfr. Code	Mfr. Part No.
A3 A3C110 A3C115 A3C130 A3C135 A3C153	670-6215-00 281-0773-00 281-0773-00 281-0604-00 281-0529-00 281-0775-00			CIRCUIT BD ASSY:LOW VOLTAGE POWER & Z AXIS CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:2.2PF,+/-0.25PF,500V CAP,FXD,CER DI:1.5PF,+/-25PF,500V CAP,FXD,CER DI:0.1UF,20%,50V	80009 04222 04222 52763 52763 04222	670-6215-00 MA201C103KAA MA201C103KAA 2RDPLZ007 2P20CC 2RDPLZ007 1P50CC MA205E104MAA
A3C159 A3C170 A3C179 A3C189 A3C223 A3C225 A3C225	281-0775-00 281-0593-00 281-0773-00 281-0759-00 281-0627-00 281-0544-00 281-0811-00		B010174	CAP,FXD,CER DI:0.1UF,20%,50V CAP,FXD,CER DI:3.9PF,+/-0.25PF,500V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:22PF,10%,100V CAP,FXD,CER DI:1PF,+/-0.25PF,500V CAP,FXD,CER DI:5.6PF,+/0.5PF,500V CAP,FXD,CER DI:10PF,10%,100V	04222 52763 04222 04222 52763 52763 04222	MA205E104MAA 2RDPLZ007 3P90CC MA201C103KAA MA101A220KAA 2RDPLZ007 1P00CC 2RDPLZ007 270PMO MA101A100KAA
A3C235 A3C239 A3C245 A3C250 A3C250 A3C255	281-0773-00 281-0513-00 281-0773-00 281-0783-00 283-0008-00 281-0773-00		B010154	CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:27PF,+/-5.4PF,500V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:0.1 UF 20%,100V CAP,FXD,CER DI:0.1UF,20%,500V CAP,FXD,CER DI:0.01UF,10%,100V	04222 52763 04222 04222 51642 04222	MA201C103KAA 2RDPLZ007 27POMP MA201C103KAA MA401C104MAA 500-500-X7R-104M MA201C103KAA
A3C270 A3C275 A3C285 A3C286 A3C290 A3C292	281-0775-00 281-0773-00 281-0064-00 281-0537-00 283-0057-00 290-0136-00			CAP,FXD,CER DI:0.1UF,20%,50V CAP,FXD,CER DI:0.01UF,10%,100V CAP,VAR,PLASTIC:0.25-1.5PF,600V CAP,FXD,CER DI:0.68PF,20%,600V CAP,FXD,CER DI:0.1UF,+80-20%,200V CAP,FXD,ELCTLT:2.2UF,20%,20V	04222 04222 52769 54583 04222 05397	MA205E104MAA MA201C103KAA ER-530-013 MA12C0G2HR68M SR306E104ZAA T322B225M020AS
A3C294 A3C296 A3C297 A3C300 A3C301 A3C302	281-0813-00 290-0136-00 290-0267-00 290-0884-00 290-0881-00 290-0766-00			CAP,FXD,CER DI:0.047UF,20%,50V CAP,FXD,ELCTLT:2.2UF,20%,20V CAP,FXD,ELCTLT:1UF,20%,35V CAP,FXD,ELCTLT:5000UF,+100-10%,30V CAP,FXD,ELCTLT:10UF,+50-10%,315V CAP,FXD,ELCTLT:2.2UF,+50-10%,160VDC	05397 05397 05397 56289 55680 54473	C412C473M5V2CA T322B225M020AS T320A105M035AS 68D ADVISE UHU2F100TEA ECEA2CS2R2
A3C305 A3C310 A3C315 A3C328 A3C331 A3C335	290-0884-00 290-0884-00 290-0884-00 290-0527-00 281-0788-00 281-0773-00			CAP,FXD,ELCTLT:5000UF,+100-10%,30V CAP,FXD,ELCTLT:5000UF,+100-10%,30V CAP,FXD,ELCTLT:5000UF,+100-10%,30V CAP,FXD,ELCTLT:15UF,20%,20V CAP,FXD,CER DI:470PF,10%,100V CAP,FXD,CER DI:0.01UF,10%,100V	56289 56289 56289 05397 04222 04222	68D ADVISE 68D ADVISE 68D ADVISE T368B156M020AS MA101C471KAA MA201C103KAA
A3C348 A3C350 A3C355 A3C379 A3C382 A3C395	283-0203-00 281-0775-00 290-0745-00 281-0773-00 281-0788-00 290-0745-00			CAP,FXD,CER DI:0.47UF,20%,50V CAP,FXD,CER DI:0.1UF,20%,50V CAP,FXD,ELCTLT:22UF,+50-20%,25WVDC CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:470PF,10%,100V CAP,FXD,ELCTLT:22UF,+50-20%,25WVDC	04222 04222 54473 04222 04222 54473	SR305SC474MAA MA205E104MAA ECE-A25V22L MA201C103KAA MA101C471KAA ECE-A25V22L
A3CR112 A3CR117 A3CR130 A3CR135 A3CR164 A3CR170	152-0246-00 152-0246-00 152-0333-00 152-0333-00 152-0322-00 152-0322-00			SEMICOND DVC,DI:SW,SI,40V,200MA,DO-7 SEMICOND DVC,DI:SW,SI,40V,200MA,DO-7 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35 SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	14433 14433 07263 07263 50434 50434	WG1537TK WG1537TK FDH-6012 FDH-6012 5082-2672 5082-2672
A3CR229 A3CR235 A3CR237 A3CR250 A3CR280 A3CR282	152-0333-00 152-0333-00 152-0333-00 152-0333-00 152-0242-00 152-0242-00			SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SIG,SI,225V,0.2A,DO-7 SEMICOND DVC,DI:SIG,SI,225V,0.2A,DO-7	07263 07263 07263 07263 07263 07263	FDH-6012 FDH-6012 FDH-6012 FDH-6012 FDH5004 FDH5004
A3CR301 A3CR302 A3CR305	152-0659-00 152-0659-00 152-0659-00			SEMICOND DVC,DI:RECT,SI,100V,6A,A264 SEMICOND DVC,DI:RECT,SI,100V,6A,A264 SEMICOND DVC,DI:RECT,SI,100V,6A,A264	04713 04713 04713	MR751 MR751 MR751

Component No.	Tektronix Part No.	Serial/Asso		Name & Description	Mfr. Code	Mfr. Part No.
A3CR306 A3CR320 A3CR330 A3CR340 A3CR348 A3CR350	152-0659-00 152-0141-02 152-0141-02 152-0141-02 152-0141-02 152-0066-00			SEMICOND DVC,DI:RECT,SI,100V,6A,A264 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41	04713 03508 03508 03508 03508 03508 05828	MR751 DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) GP10G-020
A3CR355 A3CR370 A3CR385 A3CR390 A3CR395 A3F301 A3F301	152-0066-00 152-0141-02 152-0141-02 152-0066-00 152-0066-00 159-0049-00 159-0083-00	B010100	B010129	SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41 SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41 FUSE,CARTRIDGE:1AG,0.15A,3V,0.015EC FUSE,CARTRIDGE:3AG,0.15A,250V,0.25SEC	05828 03508 03508 05828 05828 71400 71400	GP10G-020 DA2527 (1N4152) DA2527 (1N4152) GP10G-020 GP10G-020 GKN 15/100 AGC-CW-15/100
A3F310 A3F315 A3F320 A3F325 A3L310 A3Q120	159-0016-00 159-0025-00 159-0025-00 159-0016-00 108-0337-00 151-1054-00			FUSE, CARTRIDGE: 3AG, 1.5, 250V, FAST BLOW FUSE, CARTRIDGE: 3AG, 0.5A, 250V, 0.25SEC FUSE, CARTRIDGE: 3AG, 0.5A, 250V, 0.25SEC FUSE, CARTRIDGE: 3AG, 1.5, 250V, FAST BLOW COIL, RF: FIXED, 25UH TRANSISTOR: FET, N-CHAN, SI, TO-71	71400 71400 71400 71400 80009 80009	AGC-CW-1 1/2 AGC-CW-1/2 AGC-CW-1/2 AGC-CW-1 1/2 108-0337-00 151-1054-00
A3Q130 A3Q135 A3Q140 A3Q145 A3Q150 A3Q155	151-0188-00 151-0188-00 151-0302-00 151-0302-00 151-0190-00 151-0190-00			TRANSISTOR: PNP, SI, TO-92 TRANSISTOR: PNP, SI, TO-92 TRANSISTOR: NPN, SI, TO-18 TRANSISTOR: NPN, SI, TO-18 TRANSISTOR: NPN, SI, TO-92 TRANSISTOR: NPN, SI, TO-92	80009 80009 04713 04713 80009 80009	151-0188-00 151-0188-00 ST899 ST899 151-0190-00 151-0190-00
A3Q165 A3Q170 A3Q175 A3Q180 A3Q185 A3Q220	151-0190-00 151-0190-00 151-0190-00 151-0190-00 151-0190-00 151-0188-00			TRANSISTOR: NPN, SI, TO-92 TRANSISTOR: PNP, SI, TO-92	80009 80009 80009 80009 80009 80009	151-0190-00 151-0190-00 151-0190-00 151-0190-00 151-0190-00 151-0188-00
A3Q225 A3Q230 A3Q240 A3Q245 A3Q250 A3Q260	151-0188-00 151-0190-00 151-0190-00 151-0188-00 151-0301-00 151-0406-00			TRANSISTOR: PNP, SI, TO-92 TRANSISTOR: NPN, SI, TO-92 TRANSISTOR: NPN, SI, TO-92 TRANSISTOR: PNP, SI, TO-92 TRANSISTOR: PNP, SI, TO-18 TRANSISTOR: PNP, SI, TO-39	80009 80009 80009 80009 04713 04713	151-0188-00 151-0190-00 151-0190-00 151-0188-00 ST898 ST1264
A3Q270 A3Q320 A3Q330 A3Q340 A3Q350 A3Q360	151-0124-00 151-0190-00 151-0190-00 151-0190-00 151-0405-00 151-0188-00			TRANSISTOR:NPN,SI,TO-39 TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:SELECTED TRANSISTOR:PNP,SI,TO-92	04713 80009 80009 80009 04713 80009	SM8138 151-0190-00 151-0190-00 151-0190-00 SJE943 151-0188-00
A3Q370 A3Q380 A3Q390 A3R102 A3R104 A3R106	151-0188-00 151-0190-00 151-0405-00 323-0626-00 321-0481-00 323-0626-00			TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:SELECTED RES,FXD,FILM:50 OHM,1%,0.5W,TC=T0 RES,FXD,FILM:1M OHM,1%,0.125W,TC=T0 RES,FXD,FILM:50 OHM,1%,0.5W,TC=T0	80009 80009 04713 91637 19701 91637	151-0188-00 151-0190-00 SJE943 MFF1226G50R00F 5043ED1M000F MFF1226G50R00F
A3R108 A3R110 A3R112 A3R115 A3R117 A3R120	321-0481-00 315-0104-00 315-0821-00 315-0104-00 315-0821-00 321-0285-00			RES,FXD,FILM:1M OHM,1%,0.125W,TC=TO RES,FXD,FILM:100K OHM,5%,0.25W RES,FXD,FILM:820 OHM,5%,0.25W RES,FXD,FILM:100K OHM,5%,0.25W RES,FXD,FILM:820 OHM,5%,0.25W RES,FXD,FILM:820 OHM,1%,0.125W,TC=T0	19701 57668 19701 57668 19701 07716	5043ED1M000F NTR25J-E100K 5043CX820R0J NTR25J-E100K 5043CX820R0J CEAD90900F
A3R122 A3R124 A3R125	315-0750-00 311-0826-00 321-0285-00			RES,FXD,FILM:75 OHM,5%,0.25W RES,VAR,NONWW:TRMR,750 OHM,0.5W RES,FXD,FILM:9.09K OHM,1%,0.125W,TC=T0	57668 32997 07716	NTR25J-E75E0 3352T-10 CEAD90900F

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Component No.	Tektronix Part No.	Serial/Assembly No. Effective Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3R127	315-0750-00		RES.FXD.FILM:75 OHM.5%.0.25W	57668	NTR25J-E75E0
A3R129	321-0113-00		RES.FXD.FILM:147 OHM.1%,0.125W,TC=T0	07716	CEAD147R0F
				19701	5043CX10RR00J
A3R130	315-0100-00		RES, FXD, FILM: 10 OHM, 5%, 0.25W		
A3R132	315-0272-00		RES, FXD, FILM: 2.7K OHM, 5%, 0.25W	57668	NTR25J-E02K7
A3R135	315-0100-00		RES,FXD,FILM:10 OHM,5%,0.25W	19701	5043CX10RR00J
A3R137	315-0272-00		RES,FXD,FILM:2.7K OHM,5%,0.25W	57668	NTR25J-E02K7
A3R140	322-0159-00		RES,FXD,FILM:442 OHM,1%,0.25W,TC=T0	24546	NA60D4420F
A3R142	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	5 76 68	NTR25J-E 100E
A3R145	322-0159-00		RES.FXD.FILM:442 OHM.1%.0.25W.TC=T0	24546	NA60D4420F
A3R147	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A3R150	321-0173-00		RES, FXD, FILM: 619 OHM, 1%, 0.125W, TC=T0	07716	CEAD619R0F
A3R152	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A3R153	321-0241-00		RES.FXD.FILM:3.16K OHM.1%,0.125W,TC=T0	07716	CEAD31600F
A3R155	321-0173-00		RES, FXD, FILM: 619 OHM, 1%, 0.125W, TC=T0	07716	CEAD619R0F
				07716	CEAD11500F
A3R156	321-0199-00		RES, FXD, FILM: 1.15K OHM, 1%, 0.125W, TC=T0		
A3R158	315-0101-00		RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A3R159	321-0241-00		RES, FXD, FILM: 3.16K OHM, 1%, 0.125W, TC=TO	07716	CEAD31600F
A3R160	321-0193-00		RES,FXD,FILM:1K OHM,1%,0.125W,TC=TO	19701	5033ED1K00F
A3R163	321-0756-00		RES,FXD,FILM:50K OHM,1%,0.125W,TC=T0	24546	NA55D5002F
A3R165	315-0271-00		RES,FXD,FILM:270 OHM,5%,0.25W	57668	NTR25J-E270E
A3R167	315-0751-00		RES, FXD, FILM: 750 OHM, 5%, 0.25W	57668	NTR25J-E750E
A3R168	315-0182-00		RES,FXD,FILM:1.8K OHM,5%,0.25W	57668	NTR25J-E1K8
A3R170	315-0271-00		RES,FXD,FILM:270 OHM,5%,0.25W	57668	NTR25J-E270E
A3R171	315-0162-00		RES, FXD, FILM: 1.6K OHM, 5%, 0.25W	19701	5043CX1K600J
A3R173	315-0271-00		RES.FXD.FILM:270 OHM,5%,0.25W	57668	NTR25J-E270E
A3R175	315-0433-00		RES, FXD, FILM: 43K OHM, 5%, 0.25W	19701	5043CX43K00J
A3R175 A3R176			RES.FXD.FILM: 22K OHM, 5%, 0.25W	19701	5043CX22K00J92U
	315-0223-00				NTR25J-E05K1
A3R178	315-0512-00		RES, FXD, FILM: 5.1K OHM, 5%, 0.25W	57668	
A3R179	315-0511-00		RES, FXD, FILM: 510 OHM, 5%, 0.25W	19701 57668	5043CX510R0J NTR25J-E47E0
A3R180	315-0470-00		RES,FXD,FILM:47 OHM,5%,0.25W	3/000	N1R230-E47E0
A3R181	315-0470-00		RES, FXD, FILM: 47 OHM, 5%, 0.25W	57668	NTR25J-E47E0
A3R182	315-0470-00		RES.FXD.FILM:47 OHM.5%,0.25W	57668	NTR25J-E47E0
A3R183	315-0470-00		RES,FXD,FILM:47 OHM,5%,0.25W	57668	NTR25J-E47E0
A3R184	315-0470-00		RES.FXD.FILM:47 OHM.5%,0.25W	57668	NTR25J-E47E0
A3R185	315-0470-00		RES, FXD, FILM: 47 OHM, 5%, 0.25W	57668	NTR25J-E47E0
A3R186	315-0471-00		RES, FXD, FILM: 470 OHM, 5%, 0.25W	57668	NTR25J-E470E
				F7000	NTDOE 1 E470E
A3R187	315-0471-00		RES, FXD, FILM: 470 OHM, 5%, 0.25W	57668	NTR25J-E470E
A3R189	321-0222-00		RES, FXD, FILM: 2.00K OHM, 1%, 0.125W, TC=TO	19701	5033ED2K00F
A3R220	321-0294-00		RES,FXD,FILM:11.3K OHM,1%,0.125W,TC=T0	19701	5043ED11K30F
A3R221	321-0198-00		RES,FXD,FILM:1.13K OHM,1%,0.125W,TC=T0	07716	CEAD11300F
A3R223	315-0163-00		RES,FXD,FILM:16K OHM,5%,0.25W	57668	NTR25J-E 16K
A3R226	321-0198-00		RES,FXD,FILM:1.13K OHM,1%,0.125W,TC=TO	07716	CEAD11300F
A3R229	321-0151-00		RES,FXD,FILM:365 OHM,1%,0.125W,TC=T0	07716	CEAD365R0F
A3R230	321-0151-00		RES, FXD, FILM: 365 OHM, 1%, 0.125W, TC=T0	07716	CEAD365R0F
A3R235	315-0151-00		RES, FXD, FILM: 150 OHM, 5%, 0.25W	57668	NTR25J-E150E
A3R238	315-0271-00		RES, FXD, FILM: 270 OHM, 5%, 0.25W	57668	NTR25J-E270E
A3R239			RES, VAR, NONWY: TRMR, 500 OHM, 0.5W	32997	3352T-CK5501
	311-1564-00		RES, FXD, FILM: 22 OHM, 5%, 0.25W	19701	5043CX22R00J
A3R240	315-0220-00		RLO,FAU,FILM.62 UFM,5%,U.COW	15/01	JU4JUVE ELLING
A3R241	315-0220-00		RES, FXD, FILM: 22 OHM, 5%, 0.25W	19701	5043CX22R00J
A3R245	315-0470-00		RES, FXD, FILM: 47 OHM, 5%, 0.25W	57668	NTR25J-E47E0
A3R247	315-0220-00		RES, FXD, FILM: 22 OHM, 5%, 0.25W	19701	5043CX22R00J
A3R248	315-0220-00		RES, FXD, FILM: 22 OHM, 5%, 0.25W	19701	5043CX22R00J
A3R250	307-0107-00		RES, FXD, CMPSN: 5.6 OHM, 5%, 0.25W	01121	CB56G5
A3R251	307-0110-00		RES,FXD,CMPSN:3 OHM,5%,0.25W	80009	307-0110-00
A3R255	315-0471-00		RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A3R260	321-0143-00		RES,FXD,FILM:301 OHM,1%,0.125W,TC=T0	07716	CEAD301R0F
A3R265	321-0251-00		RES,FXD,FILM:4.02K OHM,1%,0.125W,TC=T0	19701	5033ED4K020F
A3R266	321-0372-00		RES, FXD, FILM:73.2K OHM, 1%, 0.125W, TC=TO	07716	CEAD73201F

Component No.	Tektronix Part No.	Serial/Assembly No. Effective Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3R270	315-0101-00		RES.FXD.FILM:100 OHM.5%,0.25W	57668	NTR25J-E 100E
A3R272	307-0103-00		RES, FXD, CMPSN: 2.7 OHM, 5%, 0.25W	01121	CB27G5
A3R275	315-0102-00		RES, FXD, FILM: 1K OHM, 5%, 0.25W	57668	NTR25JE01K0
A3R276	315-0100-00		RES, FXD, FILM: 10 OHM, 5%, 0.25W	19701	5043CX10RR00J
A3R280	315-0270-00		RES.FXD.FILM:27 OHM.5%,0.25W	19701	5043CX27R00J
A3R285	321-0284-00		RES.FXD.FILM:8.87K OHM,1%,0.125W,TC=TO	19701	5043ED8K870F
AUREOU	321 0204 00		NEDITABLE TELEVISION STREET TO THE		
A3R286	321-0284-00		RES, FXD, FILM: 8.87K OHM, 1%, 0.125W, TC=T0	19701	5043ED8K870F
A3R290	315-0100-00		RES, FXD, FILM: 10 OHM, 5%, 0.25W	19701	5043CX10RR00J
A3R296	315-0682-00		RES, FXD, FILM: 6.8K OHM, 5%, 0.25W	5 766 8	NTR25J-E06K8
A3R320	315-0122-00		RES,FXD,FILM:1.2K OHM,5%,0.25W	5 76 68	NTR25J-E01K2
A3R325	315-0202-00		RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A3R327	321-0184-00		RES, FXD, FILM: 806 OHM, 1%, 0.125W, TC=T0	19701	5033ED806R0F
			DEC EVE EXIM 100 OUR EV D OFFI	F7000	NTR25J-E 100E
A3R328	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	
A3R330	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A3R331	315-0331-00		RES, FXD, FILM: 330 OHM, 5%, 0.25W	57668	NTR25J-E330E
A3R335	321-0213-00		RES, FXD, FILM: 1.62K OHM, 1%, 0.125W, TC=T0	07716	CEAD16200F
A3R337	311-1564-00		RES, VAR, NONW: TRMR, 500 OHM, 0.5W	32997	3352T-CK5501
A3R339	321-0232-00		RES,FXD,FILM:2.55K OHM,1%,0.125W,TC=T0	19701	5043ED2K550F
A3R340	315-0101-00		RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A3R347	315-0432-00		RES, FXD, FILM: 4.3K OHM, 5%, 0.25W	57668	NTR25J-E04K3
A3R348	301-0303-00		RES, FXD, FILM: 30K OHM, 5%, 0.5W	57668	TR50J-E30K
A3R351	308-0767-00		RES.FXD.WW:1.1 OHM.5%,1W	75042	BW-20-1R100J
A3R352	308-0079-00		RES.FXD.WW:117 OHM, 5%, 5W	00213	1500S-117-5
A3R360	315-0182-00		RES, FXD, FILM: 1.8K OHM, 5%, 0.25W	57668	NTR25J-E1K8
			777 770 771 V 400 0184 774 0 0714	F7660	NTDOEL E 100E
A3R361	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A3R365	315-0682-00		RES, FXD, FILM: 6.8K OHM, 5%, 0.25W	57668	NTR25J-E06K8
A3R370	315-0102-00		RES, FXD, FILM: 1K OHM, 5%, 0.25W	57668	NTR25JE01K0
A3R371	315-0681-00		RES, FXD, FILM: 680 OHM, 5%, 0.25W	57668	NTR25J-E680E
A3R373	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A3R377	321-0779-03		RES, FXD, FILM: 7.020K OHM, 0.25%, 0.125W, TC=T2	07716	CEAC70200C
A3R379	321-0779-03		RES.FXD.FILM:7.020K 0HM,0.25%,0.125W,TC=T2	07716	CEAC70200C
A3R380	315-0103-00		RES, FXD, FILM: 10K OHM, 5%, 0.25W	19701	5043CX10K00J
A3R382	315-0391-00		RES, FXD, FILM:390 OHM, 5%, 0.25W	57668	NTR25J-E390E
A3R385	315-0101-00		RES, FXD, FILM: 100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
A3R390	308-0685-00		RES, FXD, WW: 1.5 OHM, 5%, 1W	75042	BW-20-1R500J
A3R391	308-0079-00		RES, FXD, WW:117 OHM, 5%, 5W	00213	1500S-117-5
			,		014 0570 00
A3TP280	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3TP350	214-0579-00		TERM, TEST_POINT:BRS_CD_PL	80009	214-0579-00
A3TP351	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3TP352	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3TP353	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3TP354	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3VR163	152-0662-00		SEMICOND DVC.DI:ZEN,SI,5V,1%,400MW,D0-7	04713	SZG195RL
A3VR270	152-0227-00		SEMICOND DVC.DI:ZEN,SI,6.2V,5%,0.4W,DO-7	04713	SZ13903
A3VR294	152-0227-00		SEMICOND DVC.DI:ZEN,SI,6.2V,5%,0.4W,DO-7	04713	SZ13903
A3VR296	152-0227-00		SEMICOND DVC.DI:ZEN,SI,6.2V,5%,0.4W,DO-7	04713	SZ13903
A3VR327	152-0212-00		SEMICOND DVC.DI:ZEN,SI,9V.5%,O.5W,DO-7	04713	SZ50646RL
A3W352	131-0566-00		BUS, CONDUCTOR: DUMMY RES, 0.094 OD X 0.225 L	24546	OMA 07
A3W354	131-0566-00		BUS, CONDUCTOR: DUMMY RES, 0.094 OD X 0.225 L	24546	OMA 07

Component No.	Tektronix Part No.	Serial/Assembly No Effective Dscom	Name & Description	Mfr. Code	Mfr. Part No.
		27.000110 000011	······································		
A4	670-6216-00		CIRCUIT BD ASSY:CONVERTER	80009	670-6216-00
A4C67	285-1184-00		CAP, FXD, MTLZD: 0.01 UF, 20%, 4000V	56289	430P591
A4C101	283-0013-00		CAP, FXD, CER DI:0.01UF, -0+100%, 1000V	59660	818-602ZSU0103P
				04222	
A4C103	281-0773-00		CAP, FXD, CER DI:0.01UF, 10%, 100V		MA201C103KAA
A4C108	283-0221-00		CAP,FXD,CER DI:0.47UF,20%,50V	04222	3430 050C 474M
A4C109	290-0534-00		CAP, FXD, ELCTLT: 1UF, 20%, 35V	05397	T368A105M035AZ
7770200	200 000 . 00		0.11 /1.710/ LLO. / LO. / LO. / LO.		1000,1200,1000,12
A 4C1 O1	000 0100 00		CAD EVD CED DI 10 0047HE 109/ 2004	04000	CD2DCA 470KAA
A4C121	283-0100-00		CAP, FXD, CER DI:0.0047UF, 10%, 200V	04222	SR306A472KAA
A4C127	281-0809-00		CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A4C129	283-0198-00		CAP, FXD, CER DI:0.22UF, 20%, 50V	05397	C330C224M5U1CA
A4C130	290-0745-00		CAP.FXD.ELCTLT:22UF.+50-20%.25WVDC	54473	ECE-A25V22L
A4C132	283-0422-00		CAP, FXD, CER DI:0.047UF, +80-20%, 50V	04222	MD015E473ZAA
A4C145	290-0719-00		CAP, FXD, ELCTLT: 47UF, 20%, 25V	56289	196D476X0025TE3
A4C146	290-0527-00		CAP.FXD.ELCTLT:15UF.20%.20V	05397	T368B156M020AS
			• • • • • • • • • • • • • • • • • • • •		
A4C160	281-0809-00		CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A4C162	281-0788-00		CAP, FXD, CER DI:470PF, 10%, 100V	04222	MA101C471KAA
A4C165	281-0772-00		CAP, FXD, CER DI: 4700PF, 10%, 100V	04222	MA201C472KAA
A4C170	281-0809-00		CAP, FXD, CER DI: 200 PF, 5%, 100V	04222	MA101A201JAA
A4C172	281-0788-00		CAP,FXD,CER DI:470PF,10%,100V	04222	MA101C471KAA
A4C180	290-0770-00		CAP, FXD, ELCTLT: 100UF, +50-10%, 25VDC	54473	ECE-A25V100L
A4C183	290-0797-00		CAP, FXD, ELCTLT: 470UF, +50-10%, 50V, AL	56289	D73403
				50558	PT1-2152
A4C185	285-1148-00		CAP, FXD, PLASTIC:0.22UF, 5%, 200VDC		
A4C187	285-1148-00		CAP,FXD,PLASTIC:0.22UF,5%,200VDC	50558	PT1-2152
A4C190	290-0770-00		CAP.FXD.ELCTLT: 100UF.+50~10%,25VDC	54473	ECE-A25V100L
A4C201	290-0806-00		CAP,FXD,ELCTLT:3.3UF,+75-10%,350VDC	55680	UHU2V3R3TPA
A4C201	250-0000-00		CAF, FAD, LLC1L1.3.30F, +73-10%, 330VDC	33000	ONOE VOICE IT A
A4C205	290-0880-00		CAP, FXD, ELCTLT: 10UF, +50-10%, 160V	54473	ECE-A160V10U
A4C209	290-0806-00		CAP,FXD,ELCTLT:3.3UF,+75-10%,350VDC	55680	UHU2V3R3TPA
A4C215	283-0340-00		CAP, FXD, CER DI: 45PF, 5%, 1000V	59660	808-XXXC0G0-450J
A4C220	283-0189-00		CAP, FXD, CER DI:0.1UF, 20%, 400V	51642	500400X5R 104M
A4C230	281-0760-00		CAP,FXD,CER DI:22PF,10%,500V	04222	MA107A220KAA
A4C241	290-0758-00		CAP, FXD, ELCTLT: 2.2UF, +50-10%, 200V	56289	502D227
			, -,		
A4C251	281-0775-00		CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	MA205E104MAA
A4C257	283-0189-00		CAP, FXD, CER DI:0.1UF, 20%, 400V	51642	500400X5R 104M
A4C259	283-0013-00		CAP, FXD, CER DI:0.01UF, -0+100%, 1000V	59660	818-602ZSU0103P
A4C261	285-1065-00		CAP, FXD, PLASTIC: 0.01UF, 20%, 600V	14752	230B1F103
A4C268	283-0221-00		CAP.FXD.CER DI:0.47UF.20%,50V	04222	3430 050C 474M
A4C275	283-0176-00		CAP, FXD, CER DI: 0.0022UF, 20%, 50V	04222	SR205C222MAA
A4C283	290-0534-00		CAP.FXD.ELCTLT:1UF.20%.35V	05397	T368A105M035AZ
A4C285	290-0534-00		CAP, FXD, ELCTLT: 1UF, 20%, 35V	05397	T368A105M035AZ
A4C291				04222	
	283-0221-00		CAP, FXD, CER DI:0.47UF, 20%, 50V		3430 050C 474M
A4C295	281-0775-00		CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4CR102	152-0246-00		SEMICOND DVC,DI:SW,SI,40V,200MA,DO-7	14433	WG1537TK
A4CR110	152-0246-00		SEMICOND DVC, DI:SW, SI, 40V, 200MA, DO-7	14433	WG1537TK
71.01.220	102 02 10 00			1.100	######################################
AACD12E	150 0141 00		CENTROND DUR DILCH CT 200 150M 200 DO 25	02500	DAGEG7 (1N41EG)
A4CR135	152-0141-02		SEMICOND DVC,DI:SW,SI,30V,150MA,30V,D0-35	03508	DA2527 (1N4152)
A4CR136	152-0141-02		SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR180	152-0400-00		SEMICOND DVC,DI:RECT,SI,400V,1A	04713	SR1977K
A4CR190	152-0400-00		SEMICOND DVC, DI:RECT, SI, 400V, 1A	04713	SR1977K
A4CR201	152-0586-00		SEMICOND DVC,DI:RECT,SI,600V,0.5A	25403	BYV96D OR BYV95C
A4CR202	152-0586-00		SEMICOND DVC,DI:RECT,SI,600V,0.5A	25403	BYV96D OR BYV95C
A4CR205	152-0586-00		SEMICOND DVC.DI:RECT.SI.600V.0.5A	25403	BYV96D OR BYV95C
A4CR206			SEMICOND DVC,DI:RECT,SI,600V,0.5A	25403	BYV96D OR BYV95C
	152-0586-00				
A4CR209	152-0586-00		SEMICOND DVC,DI:RECT,SI,600V,O.5A	25403	BYV96D OR BYV95C
A4CR217	152-0242-00	B010100 B010234	SEMICOND DVC,DI:SIG,SI,225V,0.2A,DO-7	07263	FDH5004
A4CR217	152-0751-00	B010235	SEMICOND DVC,DI:RECT,SI,SWITCHING,265V,DO-7	12969	NDP0661
A4CR218	152-0242-00	B010100 B010234	SEMICOND DVC,DI:SIG,SI,225V,O.2A,DO-7	07263	FDH5004
A4CR218	152-0751 - 00	B010235	SEMICOND DVC,DI:RECT,SI,SWITCHING,265V,DO-7	12969	NDP0661
A4CR220	152-0586-00	B010100 B010234	SEMICOND DVC,DI:RECT,SI,600V,O.5A	25403	BYV96D OR BYV95C
A4CR220	152-0751-00	B010235	SEMICOND DVC, DI: RECT, SI, SWITCHING, 265V, DO-7	12969	NDP0661
A4CR232	152-0242-00	B010100 B010234	SEMICOND DVC, DI:SIG, SI, 225V, 0.2A, DO-7	07263	FDH5004
ハナレハとンと	106-0646-00	POTOTOO D010524	SERICORD DVC,DI.31G,31,223V,U.2A,DU~/	01 203	1 DI 10004

Component No.	Tektronix Part No.	Serial/Assembly No. Effective Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A4CR232 A4CR240 A4CR240 A4CR251 A4CR259 A4CR260	152-0751-00 152-0242-00 152-0751-00 152-0141-02 152-0586-00 152-0141-02		SEMICOND DVC,DI:RECT,SI,SWITCHING,265V,DO-7 SEMICOND DVC,DI:SIG,SI,225V,O.2A,DO-7 SEMICOND DVC,DI:RECT,SI,SWITCHING,265V,DO-7 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:RECT,SI,600V,O.5A SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	07263	NDP0661 FDH5004 NDP0661 DA2527 (1N4152) BYV96D OR BYV95C DA2527 (1N4152)
A4CR283 A4CR285 A4DS237 A4DS239 A4E220 A4E235	152-0246-00 152-0246-00 150-0111-00 150-0111-00 119-0287-00 119-0181-00		SEMICOND DVC,DI:SW,SI,40V,200MA,DO-7 SEMICOND DVC,DI:SW,SI,40V,200MA,DO-7 LAMP,GLOW:125V MAX,1.5MA,2AC-AT,WIRE LAMP,GLOW:125V MAX,1.5MA,2AC-AT,WIRE ARSR,ELEC SURGE:800 +/-200VDC ARSR,ELEC SURGE:230,GAS FILLED	14433 14433 53944 53944 25088 25088	WG1537TK WG1537TK A1B-9 A1B-9 A71-H08 B1-A230
A4L185 A4L201 A4L205 A4Q130 A4Q140 A4Q150	108-1002-00 108-0472-00 108-0691-00 151-0190-00 151-0188-00 151-0134-00		COIL,RF:FIXED,120UH COIL,RF:FIXED,162UH COIL,RF:FIXED,1.8MH TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:PNP,SI,TO-39	80009 80009 76493 80009 80009 04713	108-1002-00 108-0472-00 02279 151-0190-00 151-0188-00 \$M3195
A4Q160 A4Q165 A4Q170 A4Q175 A4Q180 A4Q190	151-0190-00 151-0302-00 151-0190-00 151-0302-00 151-0426-00 151-0426-00		TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:NPN,SI,TO-18 TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:NPN,SI,TO-18 TRANSISTOR:NPN,SI,TO-220 TRANSISTOR:NPN,SI,TO-220 TRANSISTOR:NPN,SI,TO-220	80009 04713 80009 04713 03508 03508	151-0190-00 ST899 151-0190-00 ST899 X44HR242 X44HR242
A4Q250 A4Q260 A4R101 A4R102 A4R108 A4R109	151-0694-00 151-0423-00 321-0481-03 315-0102-03 315-0432-00 315-0103-00		TRANSISTOR: PNP,SI,TO-202 TRANSISTOR: NPN,SI,TO-220 RES,FXD,FILM: 1M OHM,0.25%,0.125w,TC=T2 RES,FXD,CMPSN: 1K OHM,5%,0.25w RES,FXD,FILM: 4.3K OHM,5%,0.25w RES,FXD,FILM: 10K OHM,5%,0.25w	04713 TK0961 19701 01121 57668 19701	SDS357 NTC2333L 5033RC1M000C CB1025 NTR25J-E04K3 5043CX10K00J
A4R110 A4R112 A4R114 A4R115 A4R121 A4R124	321-1642-06 311-1749-00 321-0389-03 321-0406-02 315-0105-00 311-1562-00		RES,FXD,FILM:72.3K OHM,0.25%,0.125W,TC=T9 RES,VAR,NONWW:TRMR,1.5K OHM,0.5W RES,FXD,FILM:110K OHM,0.25%,0.125W,TC=T2 RES,FXD,FILM:165K OHM,0.5%,0.125W,TC=T2 RES,FXD,FILM:1M OHM,5%,0.25W RES,VAR,NONWW:TRMR,2K OHM,0.5W	19701 32997 07716 07716 19701 32997	5033RE72K32C 3352T-1-152 CEAC11002C CEAC16502D 5043CX1M000J 3352T-DY7-202
A4R125 A4R130 A4R132 A4R135 A4R136 A4R140	321-0255-00 315-0121-00 315-0102-03 301-0152-00 301-0152-00 315-0243-00		RES,FXD,FILM:4.42K OHM,1%,0.125W,TC=T0 RES,FXD,FILM:120 OHM,5%,0.25W RES,FXD,CMPSN:1K OHM,5%,0.25W RES,FXD,FILM:1.5K OHM,5%,0.5W RES,FXD,FILM:1.5K OHM,5%,0.5W RES,FXD,FILM:24K OHM,5%,0.25W	19701 19701 01121 19701 19701 57668	5033ED4K420F 5043CX120R0J CB1025 5053CX1K500J 5053CX1K500J NTR25J-E24K0
A4R142 A4R145 A4R146 A4R147 A4R150 A4R152	315-0102-03 308-0463-00 315-0103-00 315-0681-00 308-0431-00 303-0200-00		RES, FXD, CMPSN:1K OHM, 5%, 0.25W RES, FXD, WW:0.3 OHM, 1%, 3W RES, FXD, FILM:10K OHM, 5%, 0.25W RES, FXD, FILM:680 OHM, 5%, 0.25W RES, FXD, WW:120 OHM, 5%, 3W RES, FXD, CMPSN:20 OHM, 5%, 1W	01121 14193 19701 57668 14193 01121	CB1025 SA31-R300F 5043CX10K00J NTR25J-E680E SA31-1200J GB2005
A4R162 A4R163 A4R165 A4R172 A4R173 A4R180	315-0301-00 315-0820-00 315-0122-00 315-0301-00 315-0820-00 307-0062-00		RES,FXD,FILM:300 OHM,5%,0.25W RES,FXD,FILM:82 OHM,5%,0.25W RES,FXD,FILM:1.2K OHM,5%,0.25W RES,FXD,FILM:300 OHM,5%,0.25W RES,FXD,FILM:82 OHM,5%,0.25W RES,FXD,CMPSN:8.2 OHM,5%,0.5W	57668 57668 57668 57668 57668 01121	NTR25J-E300E NTR25J-E82E0 NTR25J-E01K2 NTR25J-E300E NTR25J-E82E0 EB82G5
A4R190 A4R215 A4R220 A4R230	307-0062-00 315-0224-00 315-0271-03 315-0564-00		RES,FXD,CMPSN:8.2 OHM,5%,0.5W RES,FXD,FILM:220K OHM,5%,0.25W RES,FXD,CMPSN:270 OHM,5%,0.25W RES,FXD,FILM:560K OHM,5%,0.25W	01121 57668 01121 19701	EB82G5 NTR25J-E220K CB2715 5043CX560K0J

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	Tektronix	Serial/Asse	mbiy No.		Mfr.	
Component No.	Part No.	Effective	Dscont	Name & Description	Code	Mfr. Part No.
A4R232	315-0471-03			RES, FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A4R236	315-0471-03			RES, FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A4R243	321-0371-00			RES, FXD, FILM: 71.5K OHM, 1%, 0.125W, TC=T0	07716	CEAD71501F
A4R245	311-1240-00			RES. VAR, NONWY: TRMR, 25K OHM, 10%, 0.5W	32997	3386X-T07-253
A4R247	321-0342-00			RES.FXD.FILM:35.7K OHM.1%.0.125W.TC=T0	07716	CEAD35701F
A4R250	315-0101-03			RES, FXD, CMPSN:100 OHM, 5%, 0.25W	01121	CB1015
A4R251	315-0272-00			RES, FXD, FILM: 2.7K OHM, 5%, 0.25W	57668	NTR25J-E02K7
A4R255	301-0124-00			RES, FXD, FILM: 120K OHM, 5%, 0.5W	19701	5053CX120K0J
A4R257	315-0100-00			RES,FXD,FILM:10 OHM,5%,0.25W	19701	5043CX10RR00J
A4R259	303-0204-00	B010100	B010184	RES, FXD, CMPSN: 200K OHM, 5%, 1W	01121	GB2045
A4R259	303-0224-00	B010185		RES,FXD,CMPSN:220K OHM,5%,1W	01121	GB2245
A4R260	315-0101-03			RES,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
A4R261	315-0100-00			RES,FXD,FILM:10 OHM,5%,0.25W	19701	5043CX10RR00J
A4R265	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A4R266	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A4R268	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	19701	5043CX120R0J
A4R270	315-0105-00			RES,FXD,FILM:1M OHM,5%,0.25W	19701	5043CX1M000J
A4R275	315-0154-00			RES,FXD,FILM:150K OHM,5%,0.25W	57668	NTR25J-E150K
A4R280	315-0101-03			RES,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
A4R283	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A4R285	315-0222-00			RES, FXD, FILM: 2.2K OHM, 5%, 0.25W	57668	NTR25J-E02K2
A4R290	315-0101-03			RES, FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A4R291	315-0560-00			RES,FXD,FILM:56 OHM,5%,0.25W	57668	NTR25J-E56E0
A4R295	311-1237-00			RES, VAR, NONWW:1K OHM, 10%, 0.50W	32997	3386X-DY6-102
A4R296	321-0276-00			RES, FXD, FILM: 7.32K OHM, 1%, 0.125W, TC=TO	19701	5043ED7K320F
A4T170	120-1274-00			TRANSFORMER,RF:BASE DRIVE	80009	120-1274-00
A4T200	120-1275-00			XFMR, PWR, SDN&SU: HV	80009	120-1275-00
A4U120	156-0933-00			MICROCKT, LINEAR: REGULATOR, PULSE WIDTH MOD	34333	SG9257
A4U280	156-1149-00			MICROCKT, LINEAR: OPERATIONAL AMP, JFET INPUT	27014	LF351N/GLEA134
A4VR109	152-0287-00			SEMICOND DVC,DI:ZEN,SI,110V,5%,0.4W,D0-7	12954	1N986B
A4VR160	152-0166-00			SEMICOND DVC,DI:ZEN,SI,6.2V,5%,0.4W,DO-7	04713	SZ11738RL
A4VR170	152-0166-00			SEMICOND DVC, DI:ZEN, SI, 6.2V, 5%, 0.4W, DO-7	04713	SZ11738RL
A4VR254	152-0166-00			SEMICOND DVC, DI: ZEN, SI, 6.2V, 5%, 0.4W, DO-7	04713	SZ11738RL
A4VR259	152-0150-00			SEMICOND DVC, DI:ZEN, SI, 51V, 5%, 1W, DO-13	04713	SZM25000K2RL
A4W240	131 -0 566-00			BUS, CONDUCTOR: DUMMY RES, 0.094 OD X 0.225 L	24546	OMA 07

Component No.	Tektronix Part No.	Serial/Ass Effective		Name & Description	Mfr. Code	Mfr. Part No.
A5	670-6243-00			CIRCUIT BD ASSY:HV	80009	670-6243-00
A5C111	283-0188-00			CAP, FXD, CER DI: 1000PF, 20%, 6000V	51406	DHR19X5T102M-6KV
A5C112 A5C121	283-0188-00			CAP, FXD, CER DI:1000PF, 20%, 6000V	51406 51406	DHR19X5T102M-6KV
A5C131	283-0188-00 283-0368-00			CAP.FXD.CER DI:1000PF.20%,6000V CAP.FXD.CER DI:1000PF.20%,12000V	51406	DHR19X5T102M-6KV DHR18Y5F102M12KV
A5C133	285-1138-00			CAP, FXD, PLASTIC: 0.01UF, 10%, 8K VDC	04099	TEK45-3
	200 1100 00			Grafino, Electerated (100) ex vee	01000	TERRIO O
A5C152	285-1202-00			CAP, FXD, MTLZD: 0.022UF, 10%, 8000V	56289	430P573
A5C153	283-0267-00			CAP, FXD, CER DI: 0.01UF, 20%, 500V	59660	0841546Y5500103M
A5C162 A5C171	285-1138-00			CAP, FXD, PLASTIC:0.01UF, 10%, 8K, VDC	04099	TEK45-3
A5C171 A5C173	285-1184 - 00 285-1184 - 00			CAP,FXD,MTLZD:0.01 UF,20%,4000V CAP,FXD,MTLZD:0.01 UF,20%,4000V	56289 56289	430P591 430P591
A5C192	285-1136-00			CAP, FXD, PLASTIC: 0.001UF, 10%, 8K V	56289	430P559
7100102	200 1100 00			CAL (170) EAST 10.0.0010/ , 10/6,0K	30203	400, 300
A5CR114	152-0242-00		B010234	SEMICOND DVC,DI:SIG,SI,225V,O.2A,DO-7	07263	FDH5004
A5CR114	152-0751-00			SEMICOND DVC, DI:RECT, SI, SWITCHING, 265V, DO-7		NDP0661
A5CR116	152-0242-00		B010234	SEMICOND DVC, DI:SIG, SI, 225V, 0.2A, DO-7	07263	FDH5004
A5CR116 A5CR134	152-0751-00		PO1 0224	SEMICOND DVC.DI:RECT,SI,SWITCHING,265V,DO-7		NDP0661
A5CR134	152-0242 - 00 152-0751 - 00		B010234	SEMICOND DVC,DI:SIG,SI,225V,0.2A,DO-7 SEMICOND DVC,DI:RECT,SI,SWITCHING,265V,DO-7	07263	FDH5004 NDP0661
NOBINIO 4	132 0/31 00	0010233		3ENICOND D10, D1. REC1, 31, 3#110/frid, 2031, 00 7	12303	NDI COOI
A5CR137	152-0242-00	B010100	B010234	SEMICOND DVC,DI:SIG,SI,225V,0.2A,DO-7	07263	FDH5004
A5CR137	152-0751-00	B010235		SEMICOND DVC,DI:RECT,SI,SWITCHING,265V,DO-7	12969	NDP0661
A5CR171	152-0429-00			SEMICOND DVC,DI:RECT,SI,5000V,10MA,A298J	8300 3	VG5X-1
A5CR173	152-0429-00			SEMICOND DVC,DI:RECT,SI,5000V,10MA,A298J	83003	VG5X-1
A5CR177	152-0429-00			SEMICOND DVC,DI:RECT,SI,5000V,10MA,A298J	83003	VG5X-1
A5CR179	152-0429-00			SEMICOND DVC,DI:RECT,SI,5000V,10MA,A298J	83003	VG5X-1
A5DS142	150-0111-00			LAMP,GLOW:125V MAX,1.5MA,2AC-AT,WIRE	53944	A1B-9
A5DS144	150-0111-00			LAMP,GLOW:125V MAX,1.5MA,2AC-AT,WIRE	53944	A1B-9
A5DS156	150-0111-00			LAMP,GLOW:125V MAX,1.5MA,2AC-AT,WIRE	53944	A1B-9
A5E119	119-0181-00		B010274	ARSR,ELEC SURGE:230,GAS FILLED	25088	B1-A230
A5E119	119-0181-01		501007.	ARSR, ELEC SURGE: 230V, GAS FILLED, SCREENED	25088	B1-A230-Y8
A5E148	119-0181-00		B010274	ARSR, ELEC SURGE: 230, GAS FILLED	25088	B1-A230
A5E148	119-0181-01	B010275		ARSR, ELEC SURGE: 230V, GAS FILLED, SCREENED	25088	B1-A230-Y8
A5R111	315-0223-03			RES,FXD,CMPSN:22K OHM,5%,0.25 W	01121	CB2235
A5R112	315-0271-03			RES, FXD, CMPSN: 270 OHM, 5%, 0.25W	01121	CB2715
A5R114	315-0102-03			RES, FXD, CMPSN:1K OHM, 5%, 0.25W	01121	CB1025
A5R120	315-0272-03			RES, FXD, CMPSN: 2.7K 5%, 0.25W	80009	315-0272-03
A5R121	315-0106-00			RES, FXD, FILM: 10M OHM, 5%, 0.25W	01121	CB1065
A5R125	311-1256-00			RES, VAR, NONWW: TRMR, 2.5M OHM, 0.5W	32997	3386F-T04-255
A5R127	307-0664-00			RES NTWK,THK FI:HIGH DIVIDER	80009	307-0664-00
A5R131	315-0471-03			RES,FXD,CMPSN:470 OHM,5%,0.25W	01121	CB4715
A5R137	315-0102-03			RES,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A5R148	315-0226-00			RES,FXD,FILM:22M OHM,5%,0.25W	80009	315-0226-00
A5R149	315-0181-02			RES, FXD, CMPSN: 180 OHM, 5%, 0.25W	01121	CB1815
A5R152	301-0220-00			RES,FXD,FILM:22 OHM,5%,0.5W	19701	5053CX22R00J
A5R153	315-0103-03			RES, FXD, CMPSN: 10K OHM, 5%, 0.25W	80009	315-0103-03
A5R156	301-0203-00			RES, FXD, FILM: 20K OHM, 5%, 0.5W	19701	5053CX20K00J
A5R162	301-0391-00			RES, FXD, FILM: 390 OHM, 5%, 0.5W	01121	EB3915
A5R178	307-0112-00			RES, FXD, CMPSN: 4.3 OHM, 5%, 0.25W	80009	307-0112-00
A5RV153	307-0663-00			RES,V SENSITIVE:330 V,0.25 W	03508	V250LA4

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Component No.	Tektronix Part No.	Serial/Asse Effective		Name & Description	Mfr. Code	Mfr. Part No.
A6 A6 A6C177 A6C181 A6C187 A6C190	670-6214-00 670-6214-02 283-0425-00 283-0328-00 283-0328-00 283-0008-00		B010871	CIRCUIT BD ASSY:DYN FOCUS & FR PNL CONT CIRCUIT BD ASSY:DYNAMIC FOCUS & FR PNL CONT CAP,FXD,CER DI:650PF,10%,1000V CAP,FXD,CER DI:0.03UF,+80-20%,200V CAP,FXD,CER DI:0.03UF,+80-20%,200V CAP,FXD,CER DI:0.1UF,20%,500V	80009 80009 60705 05397 05397 51642	670-6214-00 670-6214-02 ORDER BY DESCR C330C303Z2U5CA C330C303Z2U5CA 500-500-X7R-104M
A6C191 A6C191 A6C194 A6C194 A6C195 A6C195	281-0783-00 283-0008-00 290-0301-00 290-0748-00 290-0301-00 290-0748-00	B010155 B010100 B010300 B010100	B010154 B010299 B010299	CAP,FXD,CER DI:0.1 UF 20%,100V CAP,FXD,CER DI:0.1UF,20%,500V CAP,FXD,ELCTLT:10UF,10%,20V CAP,FXD,ELCTLT:10UF,+50-20%,25wVDC CAP,FXD,ELCTLT:10UF,10%,20V CAP,FXD,ELCTLT:10UF,+50-20%,25wVDC	04222 51642 05397 54473 05397 54473	MA401C104MAA 500-500-X7R-104M T110B106K020AS ECE-BIEV100S T110B106K020AS ECE-BIEV100S
A6C199 A6C250 A6C270 A6C270 A6C275 A6C283	290-0776-00 281-0773-00 281-0783-00 283-0008-00 281-0773-00 281-0538-00		B010154	CAP,FXD,ELCTLT:22UF,+50-20 %,10V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:0.1 UF 20%,100V CAP,FXD,CER DI:0.1UF,20%,500V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:1PF,20%,500V	55680 04222 04222 51642 04222 54583	ULA1A220TAA MA201C103KAA MA401C104MAA 500-500-X7R-104M MA201C103KAA MA12X7R2H1ROM
A6C297 A6C307 A6C310 A6C330 A6C330 A6C335	283-0002-00 281-0773-00 281-0773-00 281-0783-00 283-0008-00 281-0773-00		B010154	CAP,FXD,CER DI:0.01UF,+80-20%,500V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:0.1 UF 20%,100V CAP,FXD,CER DI:0.1UF,20%,500V CAP,FXD,CER DI:0.01UF,10%,100V	59821 04222 04222 04222 51642 04222	D103Z40Z5ULADEG MA201C103KAA MA201C103KAA MA401C104MAA 500-500-X7R-104M MA201C103KAA
A6C340 A6C350 A6C355 A6C360 A6C373 A6C374	281-0775-00 281-0773-00 281-0773-00 281-0773-00 281-0538-00 281-0538-00			CAP,FXD,CER DI:0.1UF,20%,50V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:1PF,20%,500V CAP,FXD,CER DI:1PF,20%,500V	04222 04222 04222 04222 54583 54583	MA205E104MAA MA201C103KAA MA201C103KAA MA201C103KAA MA12X7R2H1ROM MA12X7R2H1ROM
A6C375 A6C382 A6C396 A6C440 A6C460 A6C465	283-0002-00 281-0773-00 281-0773-00 281-0773-00 283-0008-00 283-0002-00			CAP,FXD,CER DI:0.01UF,+80-20%,500V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:0.1UF,20%,500V CAP,FXD,CER DI:0.01UF,+80-20%,500V	59821 04222 04222 04222 51642 59821	D103Z40Z5ULADEG MA201C103KAA MA201C103KAA MA201C103KAA 500-500-X7R-104M D103Z40Z5ULADEG
A6C480 A6C485 A6C490 A6C492 A6C493 A6CR100	283-0002-00 281-0773-00 281-0773-00 281-0538-00 281-0547-00 152-0333-00			CAP,FXD,CER DI:0.01UF,+80-20%,500V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:0.01UF,10%,100V CAP,FXD,CER DI:1PF,20%,500V CAP,FXD,CER DI:2.7PF,+/-0.25PF,500V SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	59821 04222 04222 54583 52763 07263	D103Z40Z5ULADEG MA201C103KAA MA201C103KAA MA12X7R2H1ROM 2RDPLZ007 2P70CC FDH-6012
A6CR110 A6CR120 A6CR130 A6CR170 A6CR181 A6CR193	152-0333-00 152-0333-00 152-0333-00 152-0333-00 152-0242-00 152-0333-00			SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SIG,SI,225V,0.2A,DO-7 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	07263 07263 07263 07263 07263 07263	FDH-6012 FDH-6012 FDH-6012 FDH-6012 FDH5004 FDH-6012
A6CR199 A6CR200 A6CR210 A6CR220 A6CR230 A6CR242	152-0141-02 152-0141-02 152-0141-02 152-0141-02 152-0141-02 152-0153-00			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,D0-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,D0-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,D0-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,D0-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,D0-35 SEMICOND DVC,DI:SW,SI,10V,50MA,.D0-7	03508 03508 03508 03508 03508 07263	DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) FD7003
A6CR243 A6CR245 A6CR260 A6CR270	152-0333-00 152-0333-00 152-0141-02 152-0141-02			SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	07263 07263 03508 03508	FDH-6012 FDH-6012 DA2527 (1N4152) DA2527 (1N4152)

Component No.	Tektronix Part No.	Serial/Assembly No. Effective Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A6CR296 A6CR298 A6CR303 A6CR306 A6CR330 A6CR331	152-0242-00 152-0586-00 152-0153-00 152-0333-00 152-0333-00 152-0141-02		SEMICOND DVC,DI:SIG,SI,225V,0.2A,DO-7 SEMICOND DVC,DI:RECT,SI,600V,0.5A SEMICOND DVC,DI:SW,SI,10V,50MA,.DO-7 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	07263 25403 07263 07263 07263 03508	FDH5004 BYY96D OR BYV95C FD7003 FDH-6012 FDH-6012 DA2527 (1N4152)
A6CR335 A6CR340 A6CR370 A6CR379 A6CR390 A6CR400	152-0333-00 152-0333-00 152-0242-00 152-0586-00 152-0333-00 152-0141-02		SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SIG,SI,225V,0.2A,DO-7 SEMICOND DVC,DI:RECT,SI,600V,0.5A SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	07263 07263 07263 25403 07263 03508	FDH-6012 FDH-6012 FDH5004 BYV96D OR BYV95C FDH-6012 DA2527 (1N4152)
A6CR410 A6CR420 A6CR430 A6CR433 A6CR434 A6CR437	152-0141-02 152-0141-02 152-0141-02 152-0333-00 152-0333-00 152-0153-00		SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,10V,50MA,DO-7	03508 03508 03508 07263 07263 07263	DA2527 (1N4152) DA2527 (1N4152) DA2527 (1N4152) FDH-6012 FDH-6012 FD7003
A6CR450 A6CR458 A6CR459 A6CR460 A6CR461 A6CR470	152-0141-02 152-0333-00 152-0333-00 152-0333-00 152-0141-02 152-0333-00		SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35 SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35 SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	03508 07263 07263 07263 03508 07263	DA2527 (1N4152) FDH-6012 FDH-6012 FDH-6012 DA2527 (1N4152) FDH-6012
A6Q100 A6Q110 A6Q120 A6Q130 A6Q140 A6Q190	151-0188-00 151-0188-00 151-0188-00 151-0188-00 151-0216-00 151-0192-00		TRANSISTOR: PNP, SI, TO-92 TRANSISTOR: SELECTED	80009 80009 80009 80009 04713 04713	151-0188-00 151-0188-00 151-0188-00 151-0188-00 SPS8803 SPS8801
A6Q191 A6Q200 A6Q210 A6Q220 A6Q230 A6Q240	151-0190-00 151-0188-00 151-0188-00 151-0188-00 151-0188-00 151-0190-00		TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:NPN,SI,TO-92	80009 80009 80009 80009 80009	151-0190-00 151-0188-00 151-0188-00 151-0188-00 151-0188-00 151-0190-00
A6Q250 A6Q260 A6Q270 A6Q280 A6Q290 A6Q300	151-0190-00 151-0188-00 151-0612-00 151-0615-00 151-0443-00 151-0188-00		TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:PNP,SI TRANSISTOR:NPN,SI,TO-202 TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:PNP,SI,TO-92	80009 80009 04713 04713 04713 80009	151-0190-00 151-0188-00 SDS359 SDS358K SPS7950 151-0188-00
A6Q310 A6Q320 A6Q330 A6Q340 A6Q350 A6Q360	151-0190-00 151-0188-00 151-0406-00 151-0407-01 151-0407-01 151-0406-00		TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:PNP,SI,TO-39 TRANSISTOR:NPN,SI,SEL TRANSISTOR:NPN,SI,SEL TRANSISTOR:PNP,SI,TO-39	80009 80009 04713 80009 80009 04713	151-0190-00 151-0188-00 ST1264 151-0407-01 151-0407-01 ST1264
A6Q380 A6Q390 A6Q400 A6Q410 A6Q420 A6Q430	151-0443-00 151-0444-00 151-0188-00 151-0188-00 151-0188-00 151-0188-00		TRANSISTOR: PNP, SI, TO-92 TRANSISTOR: NPN, SI, TO-92 TRANSISTOR: PNP, SI, TO-92	04713 04713 80009 80009 80009 80009	SPS7950 SPS797 151-0188-00 151-0188-00 151-0188-00 151-0188-00
A6Q435 A6Q440 A6Q450 A6Q460	151-0190-00 151-0190-00 151-0188-00 151-0612-00		TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:NPN,SI,TO-92 TRANSISTOR:PNP,SI,TO-92 TRANSISTOR:PNP,SI	80009 80009 80009 04713	151-0190-00 151-0190-00 151-0188-00 SDS359

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Component No.	Tektronix Part No.	Serial/Asser Effective	mbly No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A6Q470	151-0615-00			TRANSISTOR: NPN, SI, TO-202	04713	SDS358K
A6R100	315-0101-03			RES, FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A6R102	321-0159-00			RES, FXD, FILM: 442 OHM, 1%, 0.125W, TC=TO	07716	CEAD442R0F
A6R105	321-0222-00			RES, FXD, FILM: 2.00K OHM, 1%, 0.125W, TC=T0	19701	5033ED2K00F
A6R110	315-0101-03			RES, FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A6R112	321-0159-00			RES, FXD, FILM: 442 OHM, 1%, 0.125W, TC=TO	07716	CEAD442R0F
A6R115	321-0222-00			RES, FXD, FILM: 2.00K OHM, 1%, 0.125W, TC=T0	19701	5033ED2K00F
A6R120	315-0101-03			RES, FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A6R122	321-0166-00			RES, FXD, FILM: 523 OHM, 1%, 0.125W, TC=TO	07716	CEAD523R0F
A6R125 A6R130	321-0222-00 315-0101-03			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=TO RES,FXD,CMPSN:100 OHM,5%,0.25W	19701 01121	5033ED2K00F CB1015
A6R132	321-0166-00			RES, FXD, FILM: 523 OHM, 1%, 0.125W, TC=T0	07716	CEAD523R0F
A6R135	321-0222 - 00			RES.FXD.FIŁM:2.00K OHM.1%,0.125W,TC=T0	19701	5033ED2K00F
A6R140	315-0101-03			RES.FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
A6R142	321-0163-00			RES.FXD.FILM:487 OHM.1%.0.125W.TC=T0	07716	CEAD487R0F
A6R145	321-0282-00			RES,FXD,FILM:8.45K OHM,1%,0.125W,TC=TO	07716	CFAD84500F
A6R151	311-1559-00			RES, VAR, NONWW: TRMR, 10K OHM, 0.5W	32997	3352T-1-103
A6R152	311-1559-00			RES, VAR, NONW: TRMR, 10K OHM, 0.5W	32997	3352T-1-103
A6R155	315-0561-00			RES, FXD, FILM: 560 OHM, 5%, 0.25W	19701	5043CX560R0J
A6R157	321-0219-00			RES,FXD,FILM:1.87K OHM,1%,0.125W,TC=T0	07716	CEAD18700F
A6R158	321-0219-00			RES,FXD,FILM:1.87K OHM,1%,0.125W,TC=T0	07716	CEAD18700F
A6R161	311-1559-00			RES, VAR, NONWW: TRMR, 10K OHM, 0.5W	32997	3352T-1-103
A6R162	311-1559-00			RES, VAR, NONWW: TRMR, 10K OHM, 0.5W	32997	3352T-1-103
A6R165	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A6R167	321-0219-00			RES, FXD, FILM: 1.87K OHM, 1%, 0.125W, TC=T0	07716	CEAD18700F
A6R168	321-0219-00			RES, FXD, FILM: 1.87K OHM, 1%, 0.125W, TC=TO	07716	CEAD18700F
A6R169	321-0204-00			RES, FXD, FILM: 1.30K OHM, 1%, 0.125W, TC=T0	19701 19701	5033ED1K300F
A6R170 A6R177	315-0103-00 301 - 0361-00			RES,FXD,FILM:10K OHM,5%,0.25W RES,FXD,FILM:360 OHM,5%,0.5W	19701	5043CX10K00J 5053CX360R0J
A6R181	315-0471-03			RES, FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A6R184	315-0623-00			RES,FXD,FILM:62K OHM,5%,0.25W	19701	5043CX62K00J
A6R185	311-1556-00			RES, VAR, NONW: TRMR, 50K OHM, 0.5W	32997	3352T-DY7-503
A6R187	315-0471-03			RES, FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A6R189	315-0823-00			RES, FXD, FILM: 82K OHM, 5%, 0.25W	5766 8	NTR25J-E82K
A6R191	315-0391-00			RES, FXD, FILM: 390 OHM, 5%, 0.25W	57668	NTR25J-E390E
A6R192	315-0822-00			RES, FXD, FILM: 8.2K OHM, 5%, 0.25W	19701	5043CX8K200J
A6R193	321-0325-00			RES,FXD,FILM:23.7K OHM,1%,0.125W,TC=T0	07716	CEAD23701F
A6R197	315-0103-00			RES, FXD, FILM: 10K OHM, 5%, 0.25W	19701	5043CX10K00J
A6R199	321-0289-00			RES, FXD, FILM: 10.0K OHM, 1%, 0.125W, TC=T0	19701	5033ED10K0F
A6R200	321-0197-00			RES, FXD, FILM: 1.10K OHM, 1%, 0.125W, TC=TO	07716	CEAD11000F
A6R201 A6R205	321-0197-00			RES,FXD,FILM:1.10K OHM,1%,0.125W,TC=TO RES,VAR,NONWW:TRMR,2K OHM,0.5W	07716 32997	CEAD11000F 3352T-DY7-202
AGRZUS	311-1562-00			RES, VAR, NONWW: IRMIR, ZN UTIM, U. SW	32997	33321-017-202
A6R208	315-0392-00			RES, FXD, FILM: 3.9K OHM, 5%, 0.25W	57668	NTR25J-E03K9
A6R209	315-0112-00			RES, FXD, FILM: 1.1K OHM, 5%, 0.25W	19701	5043CX1K100J
A6R210	321-0197-00			RES, FXD, FILM: 1.10K OHM, 1%, 0.125W, TC=T0	07716	CEAD11000F
A6R211	321-0197-00			RES, FXD, FILM: 1.10K OHM, 1%, 0.125W, TC=TO	07716	CEAD11000F
A6R215	311-1562-00			RES, VAR, NONW: TRMR, 2K OHM, 0.5W	32997	3352T-DY7-202
A6R220	321-0197-00			RES,FXD,FILM:1.10K OHM,1%,0.125W,TC=TO	07716	CEAD11000F
A6R221	321-0197-00			RES, FXD, FILM: 1.10K OHM, 1%, 0.125W, TC=TO	07716	CEAD11000F
A6R225	311-1562-00			RES, VAR, NONWY: TRMR, 2K OHM, 0.5W	32997 57 66 8	3352T-DY7-202
A6R228 A6R229	315-0392-00 315-0112-00			RES, FXD, FILM: 3.9K OHM, 5%, 0.25W RES, FXD, FILM: 1.1K OHM, 5%, 0.25W	19701	NTR25J-E03K9 5043CX1K100J
A6R230	321-0197-00			RES, FXD, FILM:1.10K OHM, 1%, 0.125W, TC=TO	07716	CEAD11000F
A6R231	321-0197-00			RES, FXD, FILM: 1.10K OHM, 1%, 0.125W, TC=TO	07716	CEAD11000F
A6R235	311-1562-00			RES, VAR, NONW: TRMR, 2K OHM, 0.5W	32997	3352T-DY7-202
A6R242	321-0215-00			RES, FXD, FILM: 1.69K OHM, 1%, 0.125W, TC=TO	07716	CEAD16900F
A6R243	315-0101-03			RES, FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A6R245	315-0103-00			RES, FXD, FILM: 10K OHM, 5%, 0.25W	19701	5043CX10K00J

Component No.	Tektronix Part No.	Serial/Asse Effective		Name & Description	Mfr. Code	Mfr. Part No.
A6R250 A6R252 A6R257 A6R260 A6R262 A6R270	315-0472-00 315-0331-03 315-0124-00 315-0331-03 315-0472-00 321-0203-00			RES,FXD,FILM:4.7K OHM,5%,0.25W RES,FXD,CMPSN:330 OHM 5%,0.25W RES,FXD,FILM:120K OHM,5%,0.25W RES,FXD,CMPSN:330 OHM 5%,0.25W RES,FXD,FILM:4.7K OHM,5%,0.25W RES,FXD,FILM:4.7K OHM,1%,0.125W,TC=T0	57668 01121 19701 01121 57668 07716	NTR25J-E04K7 CB3315 5043CX120K0J CB3315 NTR25J-E04K7 CEAD12700F
A6R275 A6R276 A6R280 A6R283 A6R290 A6R292	321-0280-00 321-0338-00 315-0101-03 322-0613-00 321-0269-00 321-0336-00			RES,FXD,FILM:8.06K OHM,1%,0.125W,TC=TO RES,FXD,FILM:32.4K OHM,1%,0.125W,TC=TO RES,FXD,CMPSN:100 OHM,5%,0.25W RES,FXD,FILM:20.4K OHM,1%,0.25W,TC=TO RES,FXD,FILM:6.19K OHM,1%,0.125W,TC=TO RES,FXD,FILM:30.9K OHM,1%,0.125W,TC=TO	19701 19701 01121 24546 07716 19701	5033ED8K060F 5033ED32K40F CB1015 NA60D2042F CEAD61900F 5043ED30K90F
A6R293 A6R295 A6R297 A6R298 A6R300 A6R300	321-0452-00 311-1554-00 315-0513-00 315-0221-03 321-0162-00 321-0660-00		8010871	RES,FXD,FILM:499K OHM,1%,0.125W,TC=TO RES,VAR,NONWW:TRMR,200K OHM,0.5W RES,FXD,FILM:51K OHM,5%,0.25W RES,FXD,CMPSN:220 OHM,5%,0.25W RES,FXD,FILM:475 OHM,1%,0.125W,TC=TO RES,FXD,FILM:417 OHM,1%,0.125W,TC=TO	19701 32997 57668 01121 19701 91637	5043ED499K0F 3352T-1-204 NTR25J-E51K0 CB2215 5033ED475R0F MFF1816G417R0F
A6R305 A6R305 A6R306 A6R307 A6R309 A6R310	321-0194-00 321-0192-00 311-1223-00 321-0256-00 315-0103-00 315-0272-00		B010299	RES,FXD,FILM:1.02K OHM,1%,0.125W,TC=TO RES,FXD,FILM:976 OHM,1%,0.125W,TC=TO RES,VAR,NONWW:TRMR,250 OHM,0.5W RES,FXD,FILM:4.53K OHM,1%,0.125W,TC=T9 RES,FXD,FILM:10K OHM,5%,0.25W RES,FXD,FILM:2.7K OHM,5%,0.25W	07716 19701 32997 19701 19701 57668	CEAD10200F 5033ED976R0F 3386F-T04-251 5033ED4K530F 5043CX10K00J NTR25J-E02K7
A6R311 A6R312 A6R317 A6R320 A6R321 A6R330	321-0238-00 315-0101-03 321-0234-00 315-0272-00 315-0101-03 321-0173-00			RES, FXD, FILM: 2.94K OHM, 1%, 0.125W, TC=TO RES, FXD, CMPSN: 100 OHM, 5%, 0.25W RES, FXD, FILM: 2.67K OHM, 1%, 0.125W, TC=TO RES, FXD, FILM: 2.7K OHM, 5%, 0.25W RES, FXD, CMPSN: 100 OHM, 5%, 0.25W RES, FXD, FILM: 619 OHM, 1%, 0.125W, TC=TO	07716 01121 19701 57668 01121 07716	CEAD29400F CB1015 5033ED2K67F NTR25J-E02K7 CB1015 CEAD619R0F
A6R335 A6R336 A6R340 A6R350 A6R355 A6R360	321-0226-00 321-0359-00 321-0211-00 315-0101-03 315-0510-00 315-0101-03			RES,FXD,FILM:2.21K OHM,1%,0.125W,TC=TO RES,FXD,FILM:53.6K OHM,1%,0.125W,TC=TO RES,FXD,FILM:1.54K OHM,1%,0.125W,TC=TO RES,FXD,CMPSN:100 OHM,5%,0.25W RES,FXD,FILM:51 OHM,5%,0.25W RES,FXD,CMPSN:100 OHM,5%,0.25W	01121 07716 07716 01121 19701 01121	RNK2211F CEAD53601F CEAD15400F CB1015 5043CX51R00J CB1015
A6R370 A6R373 A6R375 A6R379 A6R380 A6R382	315-0101-03 322-0349-00 315-0513-00 315-0221-03 321-0269-00 321-0336-00			RES,FXD,CMPSN:100 OHM,5%,0.25W RES,FXD,FILM:42.2K OHM,1%,0.25W,TC=T0 RES,FXD,FILM:51K OHM,5%,0.25W RES,FXD,CMPSN:220 OHM,5%,0.25W RES,FXD,FILM:6.19K OHM,1%,0.125W,TC=T0 RES,FXD,FILM:30.9K OHM,1%,0.125W,TC=T0	01121 75042 57668 01121 07716 19701	CB1015 CEBT0-4222F NTR25J-E51K0 CB2215 CEAD61900F 5043ED30K90F
A6R384 A6R385 A6R390 A6R391 A6R395 A6R396	321-0452-00 311-1554-00 315-0103-00 315-0303-00 315-0103-00 315-0103-00			RES,FXD,FILM:499K OHM,1%,0.125W,TC=TO RES,VAR,NONWW:TRMR,200K OHM,0.5W RES,FXD,FILM:10K OHM,5%,0.25W RES,FXD,FILM:30K OHM,5%,0.25W RES,FXD,FILM:10K OHM,5%,0.25W RES,FXD,FILM:10K OHM,5%,0.25W	19701 32997 19701 19701 19701 19701	5043ED499K0F 3352T-1-204 5043CX10K00J 5043CX30K00J 5043CX10K00J 5043CX10K00J
A6R397 A6R398 A6R400 A6R401 A6R405 A6R408	315-0471-03 315-0103-00 321-0197-00 321-0197-00 311-1562-00 315-0392-00			RES,FXD,CMPSN:470 OHM,5%,0.25W RES,FXD,FILM:10K OHM,5%,0.25W RES,FXD,FILM:1.10K OHM,1%,0.125W,TC=T0 RES,FXD,FILM:1.10K OHM,1%,0.125W,TC=T0 RES,VAR,NONWW:TRMR,2K OHM,0.5W RES,FXD,FILM:3.9K OHM,5%,0.25W	01121 19701 07716 07716 32997 57668	CB4715 5043CX10K00J CEAD11000F CEAD11000F 3352T-DY7-202 NTR25J-E03K9
A6R409 A6R410 A6R411 A6R415	315-0112-00 321-0197-00 321-0197-00 311-1562-00			RES,FXD,FILM:1.1K OHM,5%,0.25W RES,FXD,FILM:1.10K OHM,1%,0.125W,TC=T0 RES,FXD,FILM:1.10K OHM,1%,0.125W,TC=T0 RES,VAR,NONWW:TRMR,2K OHM,0.5W	19701 07716 07716 32997	5043CX1K100J CEAD11000F CEAD11000F 3352T-DY7-202

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	Tektronix	Serial/Ass	embly No		Mfr.				
Component No.	Part No.	Effective Dscont		Name & Description	Code	Mfr. Part No.			
A6R420	321-0197-00			RES, FXD, FILM: 1.10K OHM, 1%, 0.125W, TC=T0	07716	CEAD11000F			
A6R421	321-0197-00			RES.FXD.FILM:1.10K OHM,1%,0.125W,TC=T0	07716	CEAD11000F			
A6R425	311-1562-00			RES, VAR, NONWW: TRMR, 2K OHM, 0.5W	32997	3352T-DY7-202			
A6R428	315-0392-00			RES.FXD.FILM:3.9K OHM.5%,0.25W	57668	NTR25J-E03K9			
A6R429	315-0112-00			RES, FXD, FILM: 1.1K OHM, 5%, 0.25W	19701	5043CX1K100J			
A6R430	321-0197-00			RES, FXD, FILM: 1.10K OHM, 1%, 0.125W, TC=T0	07716	CEAD11000F			
A6R431	321-0197-00			RES, FXD, FILM: 1.10K OHM, 1%, 0.125W, TC=T0	07716	CEAD11000F			
A6R433	315-0101-03			RES.FXD.CMPSN:100 OHM,5%,0.25W	01121	CB1015			
A6R434	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J			
A6R435	311-1562-00			RES, VAR, NONWW: TRMR, 2K OHM, 0.5W	32997	3352T-DY7-202			
A6R438	315-0103-00			RES.FXD.FILM:10K OHM.5%.0.25W	19701	5043CX10K00J			
A6R439	321-0219-00			RES, FXD, FILM: 1.87K OHM, 1%, 0.125W, TC=TO	07716	CEAD18700F			
A6R440	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7			
A6R441	315-0331-03			RES,FXD,CMPSN:330 OHM 5%,0.25W	01121	CB3315			
A6R450	315-0472-00			RES, FXD, FILM: 4.7K OHM, 5%, 0.25W	57668	NTR25J-E04K7			
A6R451	315-0331-03			RES, FXD, CMPSN:330 OHM 5%, 0.25W	01121	CB3315			
A6R454	315-0683-00	B010100	B010299	RES, FXD, FILM: 68K OHM, 5%, 0.25W	57668	NTR25J-E68K0			
A6R454	315-003-00	B010100 B010300	0010299	RES, FXD, FILM: OOK OHM, 5%, 0.25W	57668	NTR25J-E00KU NTR25J-E130K			
A6R455	311-1562-00			RES, VAR, NONWW: TRMR, 2K OHM, 0.5W	32997	3352T-DY7-202			
A6R458	321-0210-00			RES,FXD,FILM:1.50K OHM,1%,0.125W,TC=T0	19701	5033ED1K50F			
A6R459	321-0299-00	B010100	B010299	RES,FXD,FILM:12.7K OHM,1%,0.125W,TC=TO	19701	5033ED12K70F			
A6R459	321-0285-00	B010300		RES, FXD, FILM: 9.09K OHM, 1%, 0.125W, TC=T0	07716	CEAD90900F			
A6R460	323-0272-00	B010100	B010299	RES,FXD,FILM:6.65K OHM,1%,0.5W,TC=T0	75042	CECT0-6651F			
A6R460	322-0257-00	B010300		RES,FXD,FILM:4.64K OHM,1%,0.25W,TC=T0	75042	CEBT0-4641F			
A6R465	321-0347-00	B010100	B010299	RES, FXD, FILM: 40.2K OHM, 1%, 0.125W, TC=TO	91637	CMF55116G40201F			
A6R465	321-0340-00	B010300		RES, FXD, FILM: 34.0K OHM, 1%, 0.125W, TC=TO	19701	5043ED34K00F			
A6R466	321-0385-00	B010100	B010299	RES, FXD, FILM: 100K OHM, 1%, 0.125W, TC=T0	19701	5033ED100K0F			
A6R466	321-0396-00	B010300	0010233	RES, FXD, FILM: 130K OHM, 1%, 0.125W, TC=T0	07716	CEAD13002F			
A6R480	315-0101-03	D010300		RES, FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015			
A6R485	315-0510-00			RES, FXD, GMPSN: 100 OFFM, 5%, 0.25W	19701	5043CX51R00J			
ACD400					01101				
A6R490	315-0101-03			RES, FXD, CMPSN:100 OHM, 5%, 0.25W	01121	CB1015			
A6R492	323-0323-00			RES, FXD, FILM: 22.6K OHM, 1%, 0.5W, TC=TO	07716	CECD22601F			
A6R493	323-0323-00			RES, FXD, FILM: 22.6K OHM, 1%, 0.5W, TC=TO	07716	CECD22601F			
A6R495	315-0221-03			RES, FXD, CMPSN: 220 OHM, 5%, 0.25W	01121	CB2215			
A6TP280	214-0579-00			TERM, TEST POINT: BRS CD PL	80009	214-0579-00			
A6TP298	214-0579-00	B010872		TERM, TEST POINT: BRS CD PL	80009	214-0579-00			
A6TP370	214-0579-00			TERM, TEST POINT: BRS CD PL	80009	214-0579-00			
A6TP490	214-0579-00			TERM, TEST POINT: BRS CD PL	80009	214-0579-00			
A6U150	156-0407-02			MICROCKT, LINEAR: 4-QUAD MULTI, SCREENED	04713	MC1495LDS			
A6U160	156-0407-02			MICROCKT, LINEAR: 4-QUAD MULTI, SCREENED	04713	MC1495LDS			
A6VR185	152-0357-00			SEMICOND DVC,DI:ZEN,SI,82V,5%,0.4W,DO-7	04713	SZ12461KRL			
A6VR189	152-0282-00			SEMICOND DVC,DI:ZEN,SI,30V,2%,400MW	04713	SZG35009K13			
A6VR190	152-0168-00			SEMICOND DVC,DI:ZEN,SI,12V,5%,0.4W,DO-763B	14552	TD331689			
A6VR197	152-0461-00			SEMICOND DVC,DI:ZEN,SI,6.2V,5%,0.4W,DO-7	04713	SZG25002K2			
A6W284	131-0566-00	R010100	B010871	BUS, CONDUCTOR: DUMMY RES, 0.094 OD X 0.225 L	24546	0MA 07			
A6W297				•					
NUWL3/	131-0566 - 00	DOTOTOD	B010871	BUS, CONDUCTOR: DUMMY RES, 0.094 OD X 0.225 L	24546	OMA 07			

Component No.	Tektronix Part No.	Serial/Asser Effective		Name & Description	Mfr. Code	Mfr. Part No.
DS90	150-1017-00			LT EMITTING DIO:GREEN, 550NM, 55MA MAX	50434	HLMP3910
F90	159-0158-00			FUSE, CARTRIDGE: 3AG, 1.2A, 250V, SLOW BLOW (STANDARD VOLTAGE FUSE)	75915	31301.2
F90	159-0043-00			FUSE, CARTRIDGE: 3AG, 0.6A, 250V, 25SEC (ALTERNATE LINE FUSE)	71400	MDL 6/10
J10	131-0955-00			CONN, RCPT, ELEC: BNC, FEMALE	13511	31-279
J20	131-0955-00			CONN, RCPT, ELEC: BNC, FEMALE	13511	31-279
J25	131-0569-00			CONN,RCPT,ELEC:25 CONTACT,FEMALE	71468	DB-25S
J30	131-0955-00			CONN, RCPT, ELEC: BNC, FEMALE	13511	31-279
J40	131-0955-00			CONN, RCPT, ÉLEC: BNC, FEMALE	13511	31-279
J50	131-0955-00			CONN, RCPT, ELEC: BNC, FEMALE	13511	31-279
J60	131-0955-00			CONN, RCPT, ELEC: BNC, FEMALE	13511	31-279
J70	131-0955-00			CONN, RCPT, ELEC: BNC, FEMALE	13511	31-279
L50	108-0805-00			COIL, TUBE DEFL: FIXED, TRACE ROTATOR	80009	108-0805-00
P66	175-2575-00			CA ASSY,SP,ELEC:9,26 AWG,14.5 L,RIBBON	80009	175-2575-00
P76	175 - 2576-00			CA ASSY,SP,ELEC:2,26 AWG,3.0 L,RIBBON	80009	175-2576-00
P77	175-2623-00			CA ASSY,SP,ELEC:2,26 AWG,3.0 L,RIBBON	TK1375	ORDER BY DESCR
P103	175 -2560-0 0			CABLE ASSY,RF:50 OHM COAX,4.0 L,9-0	80009	175-2560-00
P104	175-2565-00			CABLE ASSY,RF:50 OHM COAX,6.0 L,9-5	80009	175-2565-00
P107	175-2561-00			CABLE ASSY,RF:50 OHM COAX,4.0 L,9-1	80009	175-2561-00
P108	175-2564-00			CABLE ASSY,RF:50 OHM COAX,6.0 L,9-4	80009	175-2564-00
P150	175-2559-00			CA ASSY,SP,ELEC:10,26 AWG,5.0 L,RIBBON	80009	175-2559-00
P173	175-2566 - 00			CABLE ASSY,RF:50 OHM COAX,10.0 L,9-6	80009	175-2566-00
P203	175-2562-00			CABLE ASSY,RF:50 OHM COAX,4.0 L,9-2	8000 9	175-2562-00
P207	175-2563-00			CABLE ASSY,RF:50 OHM COAX,4.0 L,9-3	80009	175 -256 3-00
Q170	151-0612-00			TRANSISTOR: PNP, SI	04713	SDS359
Q175	151-0612-00			TRANSISTOR: PNP, SI	04713	SDS359
Q180	151-0615-00			TRANSISTOR: NPN, SI, TO-202	04713	SDS358K
Q185	151-0615-00			TRANSISTOR: NPN, SI, TO-202	04713	SDS358K
Q2 7 0	151-0612-00			TRANSISTOR: PNP, SI	04713	SDS359
Q275	151-0612-00			TRANSISTOR: PNP, SI	0471 3	SDS359
Q280	151-0615-00			TRANSISTOR:NPN,SI,TO-202	04713	SDS358K
Q285	151-0615-00			TRANSISTOR: NPN, SI, TO-202	04713	SDS358K
Q480	151-0615-00			TRANSISTOR: NPN, SI, TO-202	04713	SDS358K
Q490	151-0612-00			TRANSISTOR: PNP, SI	04713	SD\$359
R46	311-0668-00			RES, VAR, WW: PNL, 2K OHM, 1W	32997	3700S-488
R56	311-0949-00			RES, VAR, NONWW: TRMR, 2K OHM, 0.5W	01121	W-7789
R66	311-0949-00			RES, VAR, NONWW:TRMR, 2K OHM, 0.5W	01121	W-7789
R76	311-2065-00			RES, VAR, NONWW: PNL, 5M OHM, 10%, 1W	01121	73A1G040L505U
S90	260-1849 - 02		B010856	SWITCH, PUSH: DPDT, 4A, 250VAC, W/BRACKET	31918	601005
S90	260-2047-00	B010857		SWITCH, PUSH: DPST, 4A, 250V	31918	600983
S92	260-0413-00			SW,THRMSTC:NC OPEN 79.4,CL 68.3,10A,240V	73803	20700L63-253
T95	120-1273-00			XFMR,PWR,STPDN:LF	80009	120-1273-00
V 50	154-0828-00			ELECTRON TUBE:CRT,P31,INT SC	80009	154-0828-00

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DIAGRAMS AND CIRCUIT BOARD ILLUSTRATIONS

Symbols

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

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

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

Abbreviations are based on ANSI Y1.1-1972.

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

Y14.15, 1966 Drafting Practices.

Y14.2, 1973 Line Conventions and Lettering.

Y10.5, 1968 Letter Symbols for Quantities Used in

Electrical Science and Electrical Engineering.

American National Standard Institute

1430 Broadway New York, New York 10018

Component Values

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) .

Assembly Numbers and Grid Coordinates

Each assembly in the instrument is assigned an assembly number (e.g., A20). The assembly number appears on the circuit board outline on the diagram, in the title for the circuit board component location illustration, and in the lookup table for the schematic diagram and corresponding component locator illustration. The Replaceable Electrical Parts list is arranged by assemblies in numerical sequence; the components are listed by component number (see following illustration for constructing a component number).

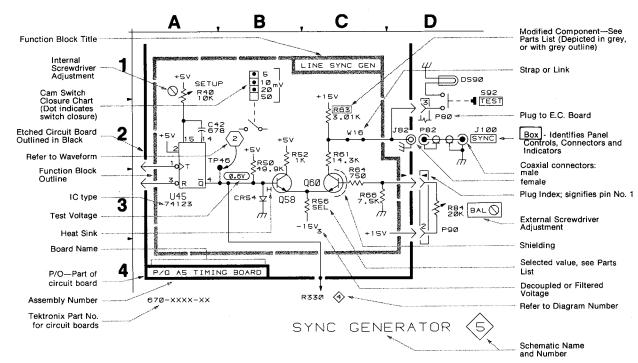
COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

The schematic diagram and circuit board component location illustration have grids. A lookup table with the grid coordinates is provided for ease of locating the component. Only the components illustrated on the facing diagram are listed in the lookup table. When more than one schematic diagram is used to illustrate the circuitry on a circuit board, the circuit board illustration may only appear opposite the first diagram on which it was illustrated; the lookup table will list the diagram number of other diagrams that the circuitry of the circuit board appears on.

The following special symbols may appear on the diagrams:



Scan by Zenith

Figure 8-2. 606B Circuit Board Locator.

B2

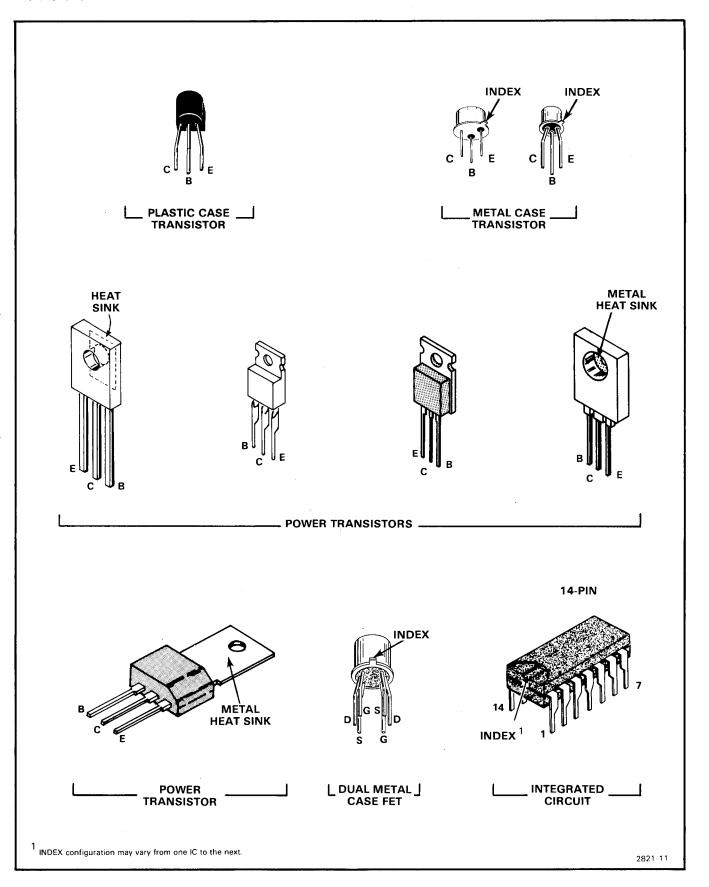
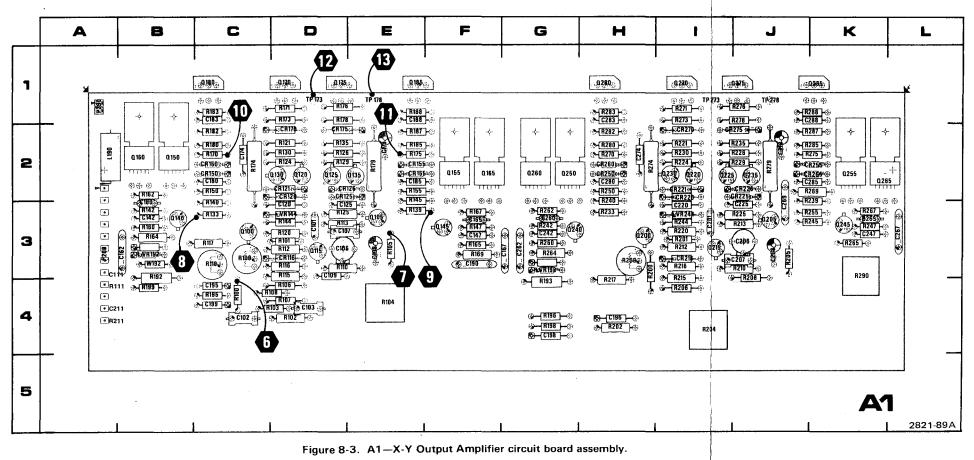


Figure 8-1. Semiconductor Lead Configurations.

Reverse Side A1 & A2

2821-25

606B



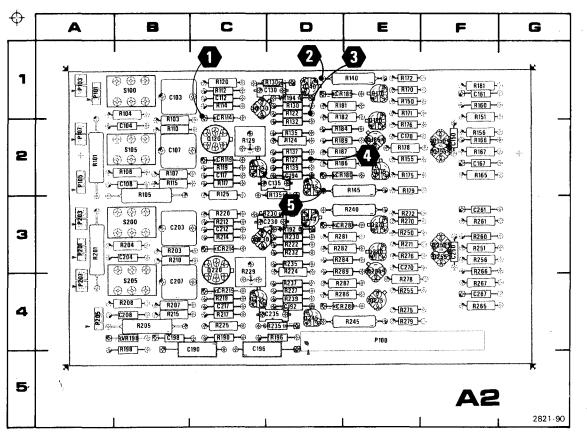


Figure 8-4. A2—X-Y Preamplifier circuit board assembly.

Shown on Diagrams
1, 2, & 6

X-Y OUTPUT AMPLIFIER
BOARD
Shown on Diagrams
1, 2, & 5

COMPONENT NUMBER EXAMPLE

Component Number

A23, A2, R1234,
Assembly
Number (if used)

Chassis-mounted components have no Assembly Number
prefix—see end of Replaceable Electrical Parts List.

X-Y PREAMPLIFIER

HORIZONTAL (X) AMPLIFIER DIAGRAM

PARTIAL AT ABSY	f													··· -	
SAUMER COCATION	PARTIAL	A1 ASSY		1		 			· 			* .			
COLOR 63 C4 C4 C198 02 C4 C198 02 C4 C198 02 C4 C198 02 C4 C108 C4 C10															
PARTIAL AZ ASSY CIRCUIT SCHEM BOARD NUMBER LOCATION LOCATION NUMBER LO	C102 C103 C106 C107 C108 C109 C111 C120 C125 C142 C147 C160 C162 C165 C167 C174 C179 C180 C183 C185 C188 C190 C195	E3 E3 E3 E3 F3 E3 F2 F4 G2 G4 G2 G1 G4 G5 G3 G4 G2 G4 G1 D2	C4 D4 D3 D3 E3 D3 D3 D3 D3 B3 B3 B3 B3 C2 E2 C2 C1 E2 E1 F3 C4	C199 CR116 CR120 CR121 CR125 CR126 CR150 CR155 CR160 CR165 CR170 CR175 L190 P200 P200 Q100 Q105 Q115 Q120 Q125 Q130 Q135	D2 F3 F2 F2 F4 G2 G4 G2 G4 G2 G4 D1 D1 E4 F3 F4 F3 F2 G4 F2 F4	C4 D3 D2 D2 D2 C2 E2 C2 E2 D2	Q150 Q155 Q160 Q165 Q170 Q185 R100 R101 R102 R103 R104 R105 R106 R107 R108 R110 R111 R1112 R113 R115 R115 R116	G2 G4 G5 G2 G4 G2 G5 F2 E3 E3 E3 E3 E3 F3 F3 F3 F3 F3 F3 F3 F3 F3 F3	B2 F2 B2 D1 D1 C1 E1 C4 D3 D4 C4 E3 D4 C4 C3 D3 D3 D3 D3 D3 D3	R121 R124 R125 R126 R129 R130 R133 R135 R139 R140 R142 R144 R145 R147 R150 R162 R164 R165 R167 R169 R170 R171	F2 F2 F4 F4 F4 F4 G2 G2 G3 G4 G2 G4 G1 G1 G5 G5 G5 G2 G2	D2 D2 D3 D2 D2 C3 C3 C3 C3 C3 C3 C3 C4 C5	R176 R178 R179 R180 R182 R183 R185 R187 R188 R192 R193 R195 R196 R198 R199 TP173 TP178 VR144 VR192 VR193	G4 G4 G3 G2 G1 G2 G4 G5 G4 D1 D2 D2 D2 D2 H2 H4	D1 D1 E2 C2 C2 C1 E2 E2 E1 B3 G4 C4 G4 G4 G4 G4 G5 B4 D1 E1 D3 B3 G3
CIRCUIT SCHEM BOARD NUMBER LOCATION LOCATION NUMBER LOCATION NUMBER LOCATION NUMBER LOCATION LOCATION NUMBER L	P/O A1														
NUMBER LOCATION	PARTIAL	A2 ASSY													
C1004 B3 B2 CR135 B4 D2 CR135 B4 D2 CR135 B4 D2 CR135 B4 D2 R135 C3 D2 R178 D4 E2 C108 B4 B2 P100 C3 E4 R101 A3 A3 A2 R135 C3 D2 R178 D4 E2 C112 B2 C1 P100 C5 E4 R103 A3 B1 R137 C3 D2 R178 D4 E2 C117 B3 C2 P101 A3 A1 R104 A3 B1 R137 C3 D2 R181 D3 D1 C117 B3 C2 P101 A3 A1 R104 A3 B1 R137 C3 D2 R181 D3 D1 C130 C3 D1 P103 A3 A1 R104 A3 B1 R139 C4 D2 R182 D3 D1 C130 C3 D1 P103 A3 A1 R106 A4 B2 R140 C2 E1 R184 D3 D2 C135 C3 D2 P105 A4 A2 R107 A4 B2 R140 C2 E1 R184 D3 D2 C135 C3 D2 P107 A3 A2 R107 A4 B2 R140 C2 E1 R184 D3 D2 C135 C3 D2 P107 A3 A2 R107 A4 B2 R140 C3 E1 R187 D3 D2 C135 C3 F2 P107 A3 A2 R108 A4 B2 R150 C3 E1 R187 D3 D2 C150 C3 F2 P107 A3 A2 R108 A4 B2 R150 C3 E1 R187 D3 D2 C151 C3 F2 C150 C3 F2 P107 A3 A2 R108 A4 B2 R150 C3 E1 R187 D3 D2 C161 C3 F2 R100 B3 C2 R112 B3 C1 R155 C3 E2 R190 B1 C4 C170 D4 E2 C1208 B4 C2 R114 B3 C1 R155 C3 E2 R190 B1 C4 C190 B1 C4 C130 C2 C1 R115 B4 B2 R160 C3 F2 R196 B2 D4 C190 B1 C4 C190 B1 C4 C135 C4 C2 R117 B4 C2 R151 C3 F1 R198 B2 B4 C192 B2 D4 C135 C4 C2 R117 B4 C2 R151 C3 F1 R198 B2 B4 C192 B2 D4 C135 C4 C2 R117 B4 C2 R151 C3 F1 R198 B2 B4 C192 B2 D4 C135 C4 C2 R117 B4 C2 R151 C3 F1 R198 B2 B4 C194 B1 D2 C140 C3 F1 R198 B2 B4 C2 R150 C3 F2 S105 B3 B2 C1 R168 C3 F2 S105 B3 B2 C1 R198 B2 B4 C1 R105 B2 C1 R168 C3 F2 S105 B3 B2 C1 R119 B3 C2 C1 R158 C3 F2 S105 B3 B2 C1 R119 B3 C2 C1 R158 C3 F2 S105 B3 B2 C1 R119 B3 C2 C1 R158 C3 F2 S105 B3 B2 C1 R198 B3 C1 C1 C170 D4 E1 R125 B4 C2 R150 C3 F2 S105 B3 B2 C1 R198 B3 C1 C1 C170 D4 E1 R125 B4 C2 R150 C3 F2 S105 B3 B2 C1 R119 B3 C2 C1 R158 B0ARD NUMBER LOCATION LOCATION RUMBER LOCATION LO															
CIRCUIT SCHEM BOARD NUMBER LOCATION LOC	C104 C107 C108 C112 C117 C130 C135 C150 C161 C167 C170 C190 C192 C194 C196 C198 CR114 CR119	B3 B4 B4 B2 B3 C3 C3 C3 C3 C3 C4 B1 B2 B1 B2 B2 B3 B3	B2 B2 B2 C1 C2 D1 D2 F2 F1 F2 C4 D4 D4 D2 C4 B4	CR135 P100 P101 P103 P105 P107 Q120A Q120B Q130 Q135 Q140 Q145 Q156 Q170 Q175	B4 C3 C5 A3 A4 A3 B3 B4 C2 C4 C3 C4 C3 C4 C3 C4 C3	D2 E4 E4 A1 A1 A2 A2 C2 C1 C2 C1 C2 E1 E2 E1	Q185	E3 A3 A3 A4 A4 B3 B3 B4 B4 B4 B2 B3 B3 B4	E2 :	R130 R132 R135 R137 R139 R140 R150 R151 R155 R166 R160 R161 R165 R166 R167 R167 R170	C2 C3 C3 C4 C2 C4 C3 C3 C3 C3 C3 C3 C3 C3 C3	D1 D2 D2 D2 E1 E1 E1 F2 F1 F2 F2 F2 F2 F2	R176 R178 R179 R181 R182 R184 R186 R187 R189 R190 R196 R198 S100 S105	D4 D4 D4 D3 D3 D3 D4 D3 D3 B1 B2 B2 B2 B3	E2 E2 E2 D1 D1 D2 D2 D2 D2 C4 D4 B4 B1 B2
NUMBER LOCATION LOCATION NUMBER LOCATION LOCATION P66 D3 A5 P150 C5 A3* P/O A3 ASSY also shown on diagrams 2, 3, & 6. CHASSIS MOUNTED PARTS CIRCUIT SCHEM BOARD NUMBER LOCATION LOCATION	PARTIAL	A3 ASSY													
P/O A3 ASSY also shown on diagrams 2, 3, & 6. CHASSIS MOUNTED PARTS CIRCUIT SCHEM BOARD NUMBER LOCATION LOCATION							*See Figur	e 8 7 to loc	ate parts.						
CHASSIS MOUNTED PARTS CIRCUIT SCHEM BOARD NUMBER LOCATION LOCATIO						A3*									
CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD NUMBER LOCATION LOCATION LOCATION NUMBER LOCATION LOCATION NUMBER LOCATION LOCATION NUMBER LOCATION LOCATION				grams 2, 3, 8	6.			 				•			
	CIRCUIT	SCHEM	BOARD												
	J10										D3	CHASSIS		T-11	



1280

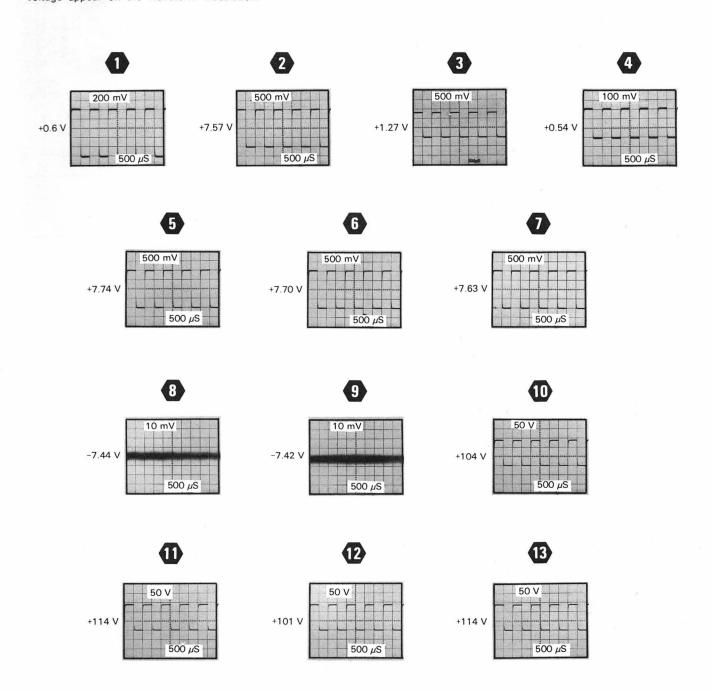
VOLTAGE AND WAVEFORM CONDITIONS

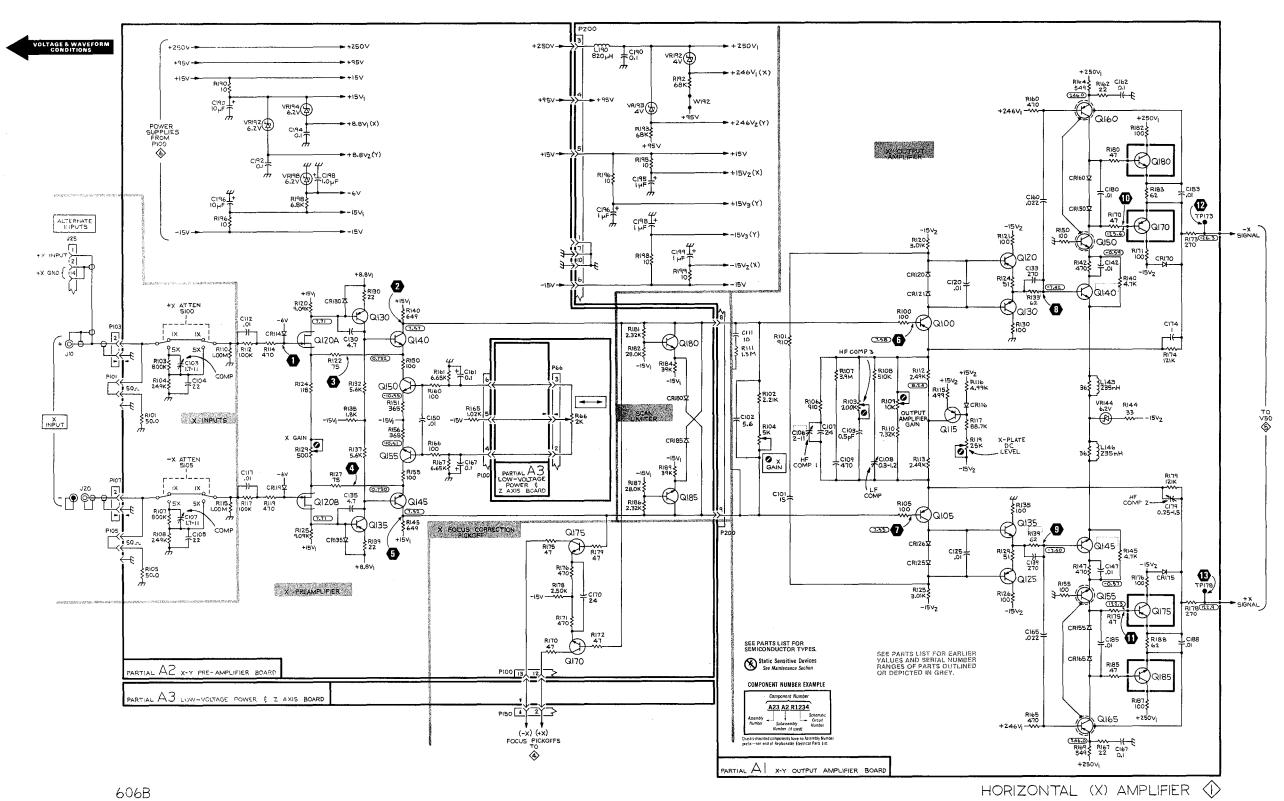
NOTE

Alternative test equipment may be listed in Table 5-3, Test Equipment.

Voltage Conditions. The voltages shown on the diagram were obtained using a digital multimeter with a 1 M Ω input impedance (TEKTRONIX DM 501 Digital Multimeter installed in a TM 503 Main Frame) and no signals applied to the 606B INPUTs. The barely visible dot was positioned near center screen.

Waveform Conditions. The waveforms shown below were obtained using a test oscilloscope system with 1 M Ω input impedance and at least 50 MHz bandwidth (TEKTRONIX 7904 Oscilloscope, 7B92 Time Base, and 7A13 Differential Comparator with P6063A 10X probe). A 1.0 Volt, 1 kHz square wave was applied to the 606B +X INPUT. Test oscilloscope deflection factor and sweep rate, and the offset voltage appear on the waveform illustration.





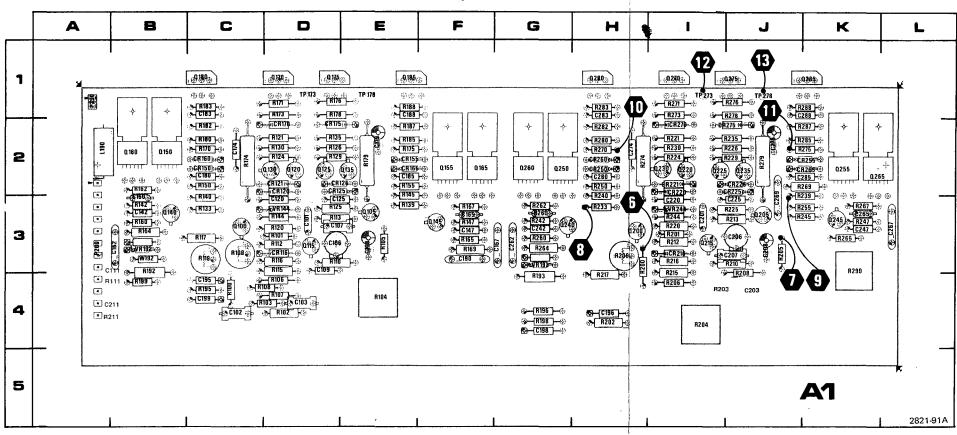


Figure 8-5. A1-X-Y Output Amplifier circuit board assembly.

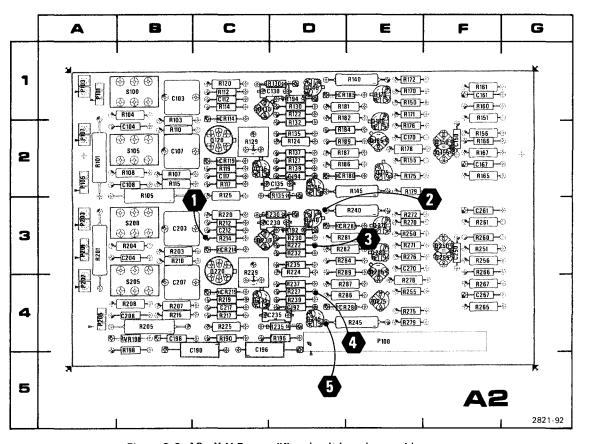
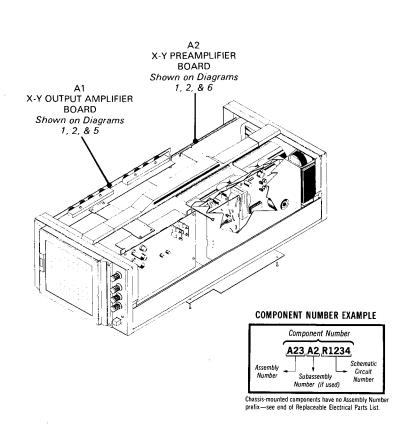


Figure 8-6. A2—X-Y Preamplifier circuit board assembly.



VERTICAL (Y) AMPLIFIER DIAGRAM

PARTIAL	A1 ASSY	· · ·									
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
C201 C203 C206 C207 C208 C211 C220 C225 C242 C247 C260 C262 C265 C267 C269 C274 C279 C280 C283 C283 C285 C288 CR216 CR220 CR221 CR225 CR226 CR250	E3 E3 E3 E3 F3 E3 F4 G2 G4 G2 G1 G4 G5 G1 G2 G4 G2 G2 G4 G2 G4 G2 F4 F4 F5 F5 F6 F7 F7 F7 F7 F7 F7 F7 F7 F7 F7 F7 F7 F7	13 J4 J3 J3 J3 A4 13 G3 K3 G3 K3 J3 H2 J1 H2 H1 K2 H1 K2 H1 K2 H1 K2 H1 K2 H1 K2 H1	CR255 CR260 CR266 CR265 CR270 CR275 P200 Q200 Q205 Q215 Q220 Q225 Q230 Q235 Q240 Q245 Q250 Q255 Q260 Q265 Q270 Q275 Q280 Q285 R200 R201 R202	G4 G2 G4 G2 G4 E2 F4 F3 G2 F4 G2 G4 G2 G4 G1 G5 G2 G4 G2 G4 G2 G4 G2 G4 G2 G4	K2 H2 K2 I2 K2 A3 H3 J3 I2 I2 I2 I2 I2 G3 K3 G2 K2 G2 K2 I1 J1 H1 K1 H3 H3 H3	R203 R204 R205 R206 R208 R209 R210 R211 R212 R213 R215 R216 R217 R220 R220 R221 R224 R225 R226 R230 R233 R235 R239 R240 R244 R244 R245	E3 E3 F3 F3 F3 F3 F3 F3 F3 F3 F2 F2 F2 F4 F4 F4 F4 G2 G3 G4	14 14 J3 14 H3 J3 A4 13 J3 H4 I3 J2 J2 J2 J2 J2 K3 H3 J2 K3 H3 K3	R247 R250 R255 R260 R262 R264 R265 R267 R269 R270 R271 R273 R274 R275 R276 R278 R279 R280 R282 R283 R283 R283 R284 R287 R285 R287 R288 R288	G4 G2 G4 G1 G1 G5 G5 G5 G2 G2 G2 G3 G4 G4 G4 G3 G1 G1 G5 G5 G4 G4	K3 H2 K3 G3 G3 G3 K3 K2 H1 H2 H1 H2 K2 H2 H1 J1 J1 J1 J2 H2 H1 J1 J1 J2 H2 H1 J1 J1 J2 J1
	ASSY also	shown on dia	ngrams 1 & 5.								
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
C203 C204 C207 C208 C212 C217 C230 C235 C250 C261 C267 C270 CR214 CR219 CR235 CR280 CR285 P100 P100 P201	B3 B4 B4 B4 B2 B3 C3 C3 C3 C3 C3 C2 B3 B3 B2 B4 D3 D3	B3 B4 B4 C3 C4 D3 D4 F3 F4 E3 C3 C4 D3 D4 D4 D4 D3	P203 P205 P207 Q220A Q220B Q230 Q235 Q240 Q245 Q250 Q275 Q285 R201 R203 R204 R205 R207 R208	A2 A4 A3 B3 B3 C2 C4 C3 C3 C3 C3 D2 D2 D3 D3 A3 A3 A4 A4 A4	A3 A4 A4 C3 C3 C3 C4 D3 D4 F3 E3 E4 E3 E3 E4 E3 B3 B3 B4 B4 B4	R210 R212 R214 R215 R217 R219 R220 R222 R224 R225 R227 R229 R230 R232 R235 R237 R239 R240 R245 R251 R250 R251 R255 R256	B3 B3 B3 B3 B3 B2 B3 B4 B3 C2 C3 C3 C4 C2 C4 C2 C4 C3 C3	B3 C3 C3 C3 B4 C4 C4 C3 D3 D3 C4 D4 C3 D3 D3 D3 D3 D4 D4 E3 E4 E3 E4 E3 E4 E3 E4 E3 E4 E3 E4 E5 E4 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5	R260 R261 R265 R266 R267 R270 R271 R272 R275 R276 R278 R279 R281 R282 R284 R286 R287 R289	C3 C3 C3 C3 C3 C2 D2 D2 D2 D2 D2 D2 D3	F3 F4 F3 F4 E3 E3 E3 E4 E3 E4 D3 D3 D3 D4 D4 D4 D3 B3 B4
		shown on dia	ngrams 1 & 6					_			
<u> </u>	A3 ASSY					<u> </u>					
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	*See Figi	ure 8-7 to lo	ocate parts.	···		
P66	D3	A5*	P150	C1	A3*						
			agrams 1, 3, 8	\$ 6				_			
CHASSIS CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION			



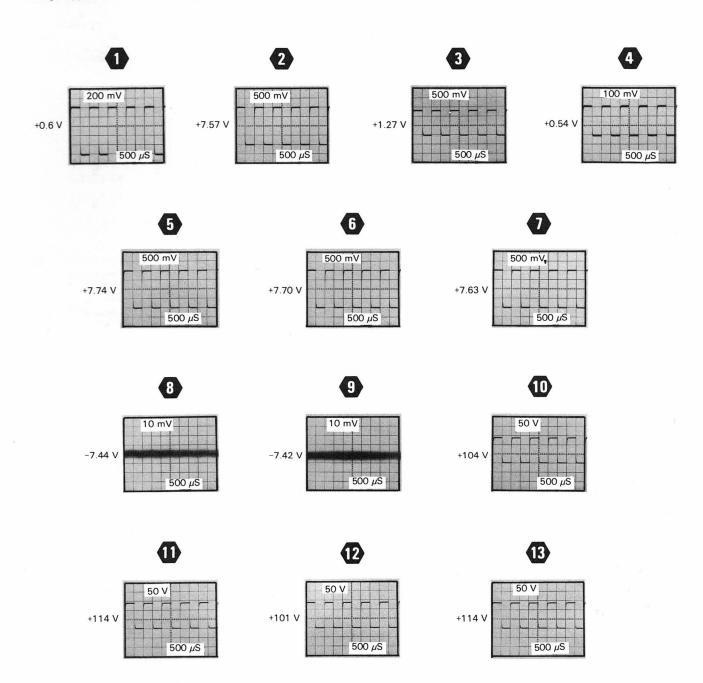
VOLTAGE AND WAVEFORM CONDITIONS

NOTE

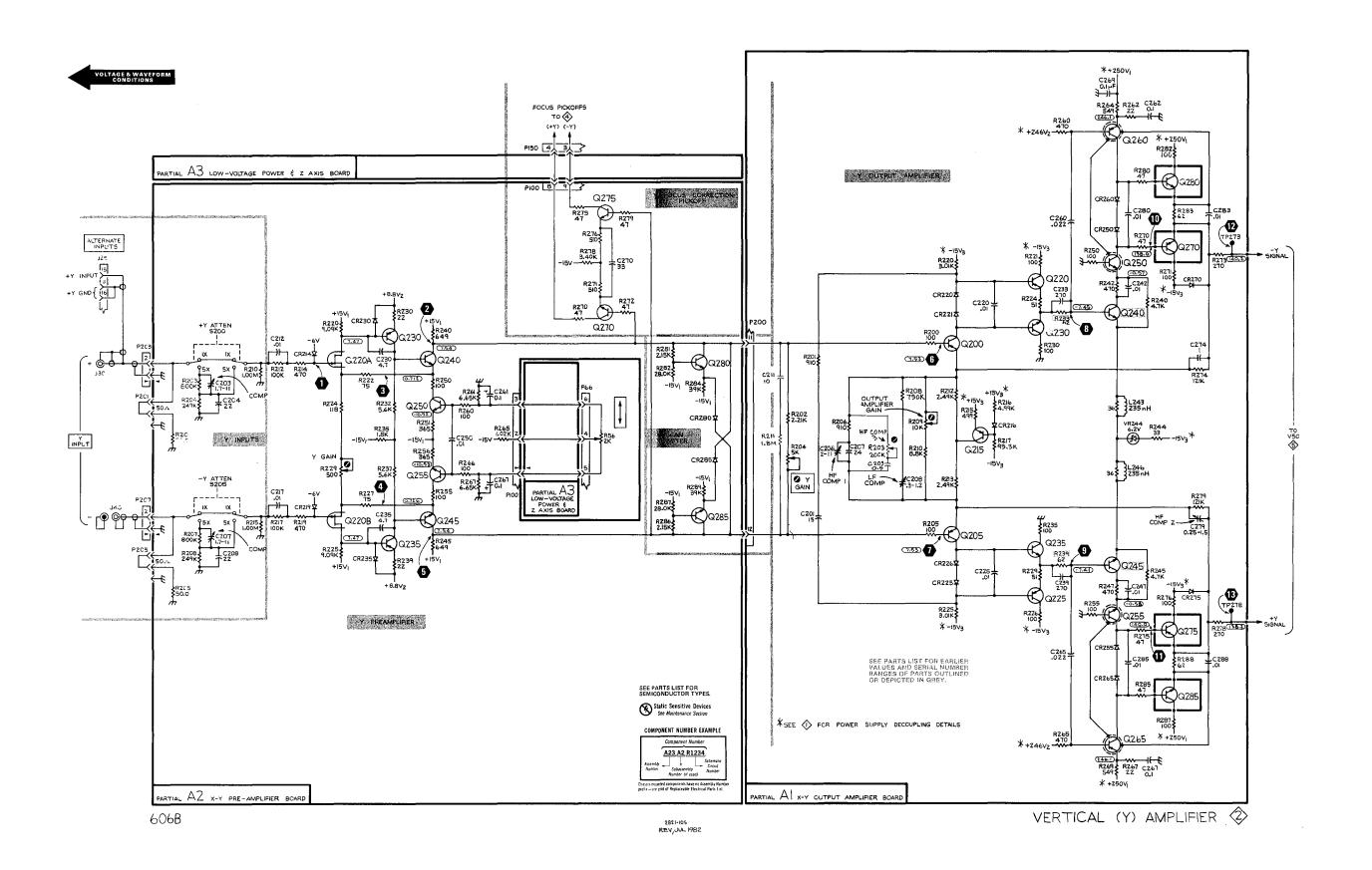
Alternative test equipment may be listed in Table 5-3, Test Equipment.

Voltage Conditions. The voltages shown on the diagram were obtained using a digital multimeter with a 1 M Ω input impedance (TEKTRONIX DM 501 Digital Multimeter installed in a TM 503 Main Frame) and no signals applied to the 606B INPUTs. The barely visible dot was positioned near center screen.

Waveform Conditions. The waveforms shown below were obtained using a test oscilloscope system with 1 M Ω input impedance and at least 50 MHz bandwidth (TEKTRONIX 7904 Oscilloscope, 7B92 Time Base, and 7A13 Differential Comparator with P6063A 10X probe). A 1.0 Volt, 1 kHz square wave was applied to the 606B +Y INPUT. Test oscilloscope deflection factor and sweep rate, and the offset voltage appear on the waveform illustrations.



SSE



Nertical (Y)
Amplifier

Scan by Zenith

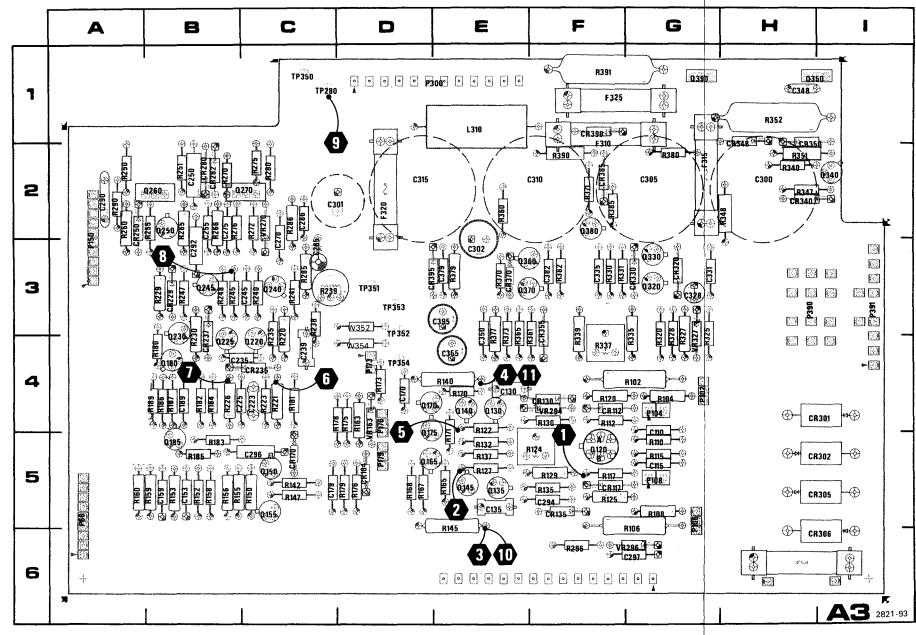
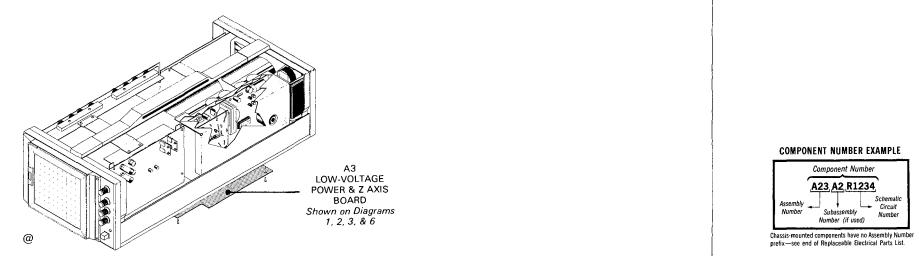


Figure 8-7. A3—Low-Voltage Power & Z Axis circuit board assembly.



Z-AXIS AMPLIFIER DIAGRAM (3)

NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
C110	B2	G5	Q135	B4	E5	R171	D4	E5
C115	В3	G5	Q140	C2	E4	R173	A4	D4
C130	B2	E4	Q145	C4	E5	R175	C4	D4
C135	B3	E5	Q150	C3	C5	R176	C4	D 5
C153	C3	B5	Q155	C3	C5	R178	C4	C4
C159	C3	B5	Q165	D3	D5	R179	C5	D5
C170	D4	D4	Q170	D4	D4	R180	D1	B4
			Q175	D4	D5	R181	D2	C4
C179	C5	C5	Q175			4		B4
C189	D2	B4		D1	B4	R182	D1	
C223	E3	C4	Q185	D2	B5	R183	D2	B5
C225	D3	B4	Q220	E2	C4	R184	D4	B4
C235	E3	84	Q230	E4	B4	R185	D2	B5
C239	E3	C4	Q240	E2	C3	R186	D2	В4
C245	E3	C3	Q245	E4	B3	R187	D2	B4
C250	F3	B2	Q250	F3	B2	R189	D2	B4
C255	F3	B2	Q260	F3	B2	R220	E2	C4
C270	F4	C3	Q270	F3	C2	R221	E2	C4
C275	F3	B2	İ			R223	E3	C4
C285	F2	C3	R102	A3	G4	R226	E3	B4
C286	F2	C2	R104	A2	G4	R229	E4	В3
C290	E4	A2	R106	A4	G6	R230	E4	В4
C292	E4	В3	R108	A4	G5	R235	E3	C4
C294	E5	F5	R110	B2	G5	R238	E2	C3
C296	E5	C5	R112	B2	F4	R239	E2	C3
C297	E5	G6	R115	B4	G5	R240	E2	C3
C297	E9	GU	R117	B4	F5	R241	E2	C3
CD112	no.	F4	R120	B2	F4	R245	E3	B3
CR112	B2				E5	R245	E4	B3
CR117	B3	F5	R122	B3				
CR130	B2	F4	R124	B3	F5	R248	E4	B3
CR135	B4	F5	R125	84	F5	R250	F3	A2
CR164	D3	D5	R127	B3	E 5	R251	F3	B2
CR170	D3	C5	R129	В3	F5	R255	F3	B2
CR229	E4	В3	R130	B2	F4	R260	F3	A2
CR235	E3	C4	R132	B2	E5	R265	E3	B2
CR237	E3	B4	R135	B4	F5	R266	E3	B2
CR250	E3	A2	R137	В3	E5	R270	F3	B2
CR280	F3	B2	R140	C2	E4	R272	F4	C2
CR282	F3	B2	R142	C3	C5	R275	F3	C2
			R145	C4	E6	R276	F3	82
P66	C3	A 5	R147	C3	C5	R280	F3	C2
P102	A3	G4	R150	C3	C5	R285	F2	C3
P104	A2	G4	R152	C3	B5	R286	F2	C2
P106	A4	G6	R153	C3	B5	R290	E4	A2
P108	A3	G5	R155	C3	B5	R296	E5	F6
P150	D1	A3	R156	C3	B 5	1	-	-
P173	A4	D4	R158	C3	B5	TP280	G3	C1
P176	D5	D4	R159	C3	B5	l		٠.
P179	D5	D5	R160	C3	A5	VR163	D3	D4
P300	G3	E1	R163	D3	D4	VR103	F4	C2
F300	GS	E1	R165	D3	E5	VR270 VR294	E5	F4
01004	02	re-						
Q120A	B2	F5	R167	D3	D5	VR296	E5	G6
Q120B	84	F5	R168	D3	D5	1		
Q130	B2	E4	R170	D4	E4	L		
	MOUNTE	shown on diag	rams 1, 2, c	§ 6.	<u></u>		-	
		,						
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION
J25	A4	CHASSIS	J60	A2	CHASSIS	R46	C3	CHASSIS



VOLTAGE AND WAVEFORM CONDITIONS

NOTE

Alternative test equipment may be listed in Table 5-3, Test Equipment.

Voltage Conditions. The voltages shown on the diagram were obtained using a digital multimeter with a 1 M Ω input impedance (TEKTRONIX DM 501 Digital Multimeter installed in a TM 503 Mainframe) and no signals applied to the 606B INPUTS. The INTENSITY was set for 0 Volt at TP280 (Z-Axis output).

Waveform Conditions. The waveforms shown below were obtained using a test oscilloscope system (TEKTRONIX 7904 Oscilloscope, 7B92 Time Base, and 7A13 Differential Comparator with P6063A 10X probe. A 1.0 Volt, 1 kHz square wave was applied to the 606B +Z INPUT. Test oscilloscope deflection factor and sweep rate, and the offset voltage appear at the waveform illustrations.

Waveforms 10 and 11 were taken with (in addition to the 1.0 Volt input to the +Z INPUT) a 5 Volt, 1 kHz square wave applied to the TTL Z INPUT.

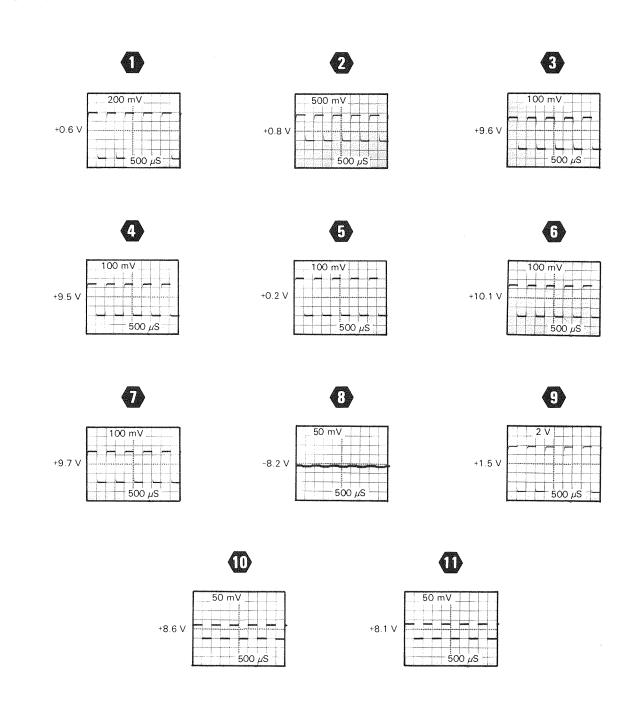
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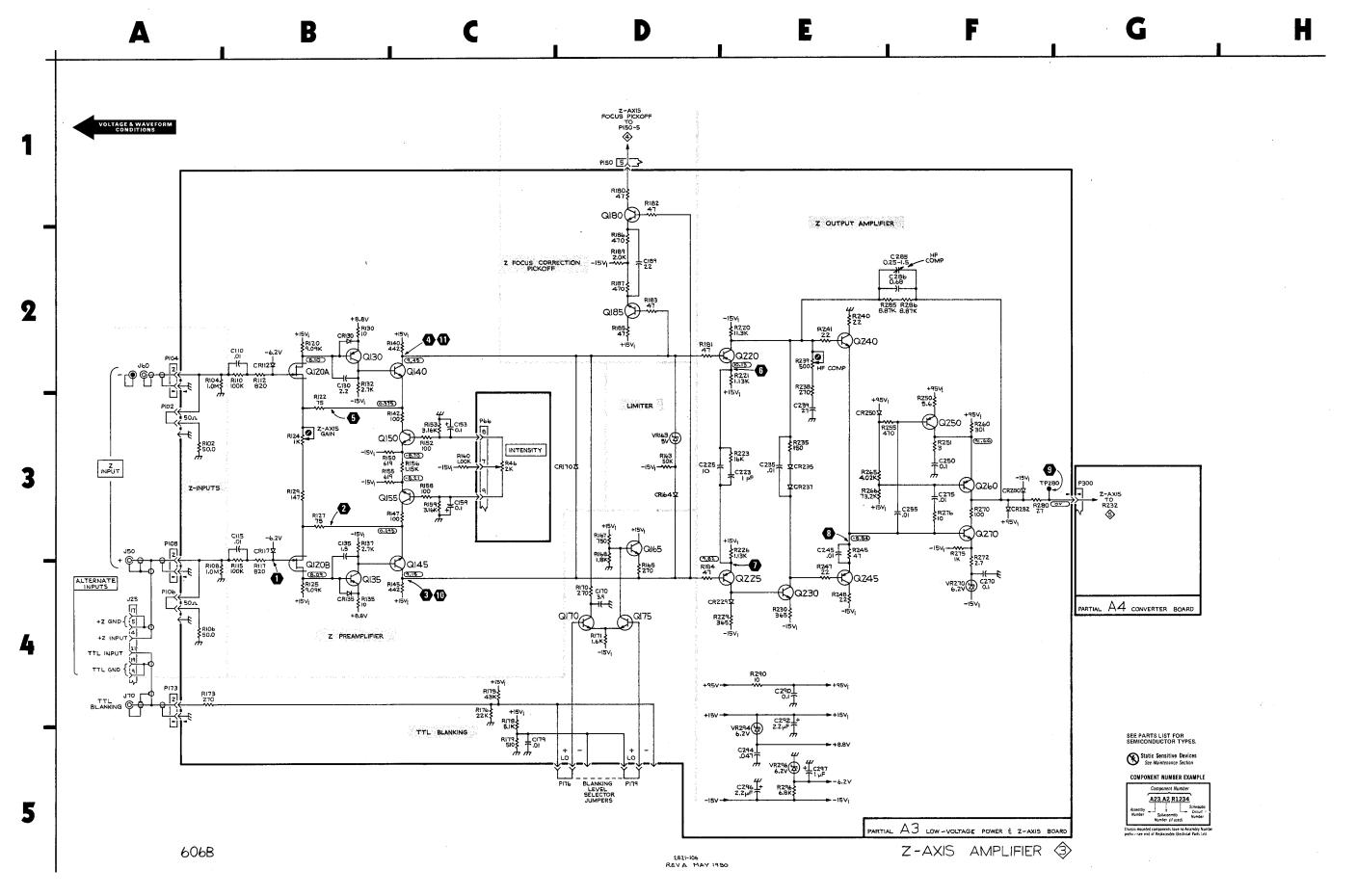
C194

C19*

NEF

A2 R1





Amplifier

A6

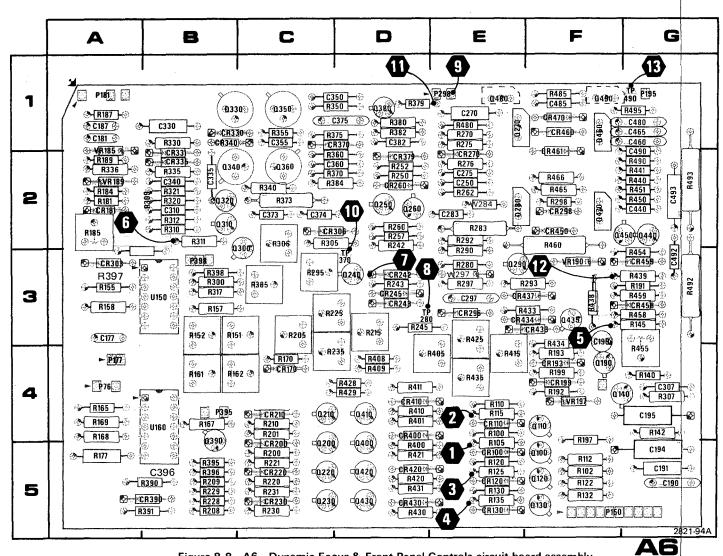
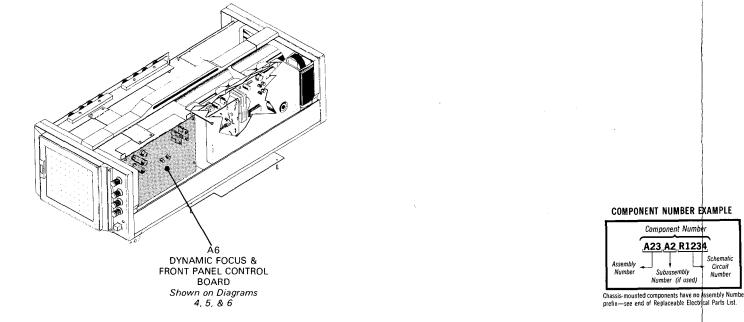


Figure 8-8. A6—Dynamic Focus & Front Panel Controls circuit board assembly.



DYNAMIC FOCUS DIAGRAM (4)

	A6 ASSY	20422	CIRCUIT	COUEM	BOARD	CIDCUIT	COUEN	BOARD	OIDCLUT	SCUEM	BOARD	CIRCUIT	CCHEM	BOARD
CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEM LOCATION	BOARD LOCATION	NUMBER	SCHEM LOCATION	BOARD LOCATION
C190	A2	G5	CR335	F3	B2	Q430	D5	D5	R230	D2	C5	R397†	G3	A3
C191	A2	G5	CR340	F3	B1	Q435	E4	F3	R231	D2	C5	R398	H2	В3
C194	A2	G5	CR370	G3	D1	Q440	F4	G2	R235	E1	C4	R400	D3	D5
C195	A2	G4	CR379	G3	D2	Q450	F5	G2	R242	F1	D2	R401	D3	D4
C199	A4	F4	CR390	G3	B5	Q460	F4	F1	R243	E1 E2	D3 D3	R405 R408	E4 E3	E4 D4
C250	F1	E2	CR400	D3	D4 D4	Q470	F4	F2	R245 R250	F1	D3 D2	R408	E3	D4 D4
C270	G1	E1 E2	CR410 CR420	D3 D4	D4 D5	Q480 Q490	G4 G4	E1 F1	R250	F1	D2 D2	R410	D3	D4
C275 C283	F1 F2	E2	CR420	D4 D4	D5	Q490	G4	FI	R257	F2	D2	R411	D4	D4
C283	G1	E3 1	CR433	E4	F3	R100	A1	E4	R260	F2	D2	R415	E4	E4
C307	D4	G4	CR434	£4	E3	R102	A1	F5	R262	F1	E2	R420	D4	D5
C310	F3	B2	CR437	E4	E3	R105	A1	E5	R270	F1	E1	R421	D4	D5
C330	F2	B1	CR450	F4	F2	R110	A1	E4	R275	F1	E1	R425	E4	E3
C335	F3	B2	CR458	E5	G3	R112	Α1	F5	R276	F1	E2	R428	E4	D4
C340	F3	B2 ·	CR459	F5	G3	R115	A1	E4	R280	G1	E3	R429	E4	D4
C350	G3	D1	CR460	F4	F1	R120	A4	E5	R283	F2	E2	R430	D4	D5
C355	G3	C1	CR461	F4	F2	R122	A4	F5	R290	G1	E3	R431	D5	D5
C360	G3	D2	CR470	F4	F1	R125	A4	.E5	R292	G1	E2	R433	E4	E3
C373	F4 .	C2				R130	A4	E5	R293	G1	E3	R434	E4	F4
C374	F4	C2	P150	A1	F5	R132	A4	F5	R295	G1	C3	R435	E4	E4
C375	G3	D1	P395	. H2	B4	R135	A5	E5 .	R297	G1	E3	R438	E4	F3
C382	G2	D1	P398	H2	В3	R140	A5	G4	R298	G1	F2	R439	F4	G3
C396†	G3	B5				R142	A 5	G4	R300	D3	В3	R440	F4	G2
C440	F4	G2	Q100	A1	F5	R145	A 5	G3	R305	D3	D2	R441	F4	G2
C460	F4	G1	Q110	A1	F4	R151	B2	В3	R306	D3	C2	R450	F4	G2
C465	F4	G1	Q120	A4	F5	R152	B2	В3	R307	D4	G4	R451	F5	G2
C480	G4	G1	Q130	A5	F5	R155	C1	A3	R309†	E3	B2	R454	F5	G3
C485	G4	F1	Q140	A5	F4	R157	C2	B3	R310	F3	B2	R455	E5	G4
C490	G5	G2	Q190	A4	F4	R158	C2	A3	R311 R312	F3 F3	B2 B2	R458 R459	E5 E5	G3 G3
C492	F5	G3	Q191	B4	G3 C5	R161	B3	B4	R312	F3	B3	R460	F4	F2
C493	F5 A1	G2 E5	Ω200 Ω210	D1 D1	C4	R162 R165	B3 C3	B4 A4	R320	F3	B2	R465	F4	F2
CR100 CR110	A1	E4	Q210 Q220	D2	C5	R167	C3	B4	R321	F3	B2	R466	F4	F2
CR110	A4	E5	Q230	D2	C5	R167	C4	A4	R330	F2	B1	R480	F4	E1
CR130	A4	E5	Q240	E1	D3	R169	C4	A4	R335	F2	B2	R485	F4	F1
CR170	B3	C4	Q250	F1	D2	R170	B4	C4	R336	F3	A2	R490	F5	G2
CR193	A4	F4	Q260	F2	D2	R191	84	G3	R340	F3	C2	R492	F5	G3
CR199	A4	F4	Q270	G1	E1	R192	A4	F4	R350	F3	D1	R493	F5	G2
CR200	D1	C5	Q280	G1	E2	R193	A4	F4	R355	F3	C1	R495	G4	C3
CR210	D1	C4	Q290	G1	E3	R197	A3	F5	R360	F3	D2	TP280	G1	D3
CR220	D2	C5	Q300	D3	C3	R199	A4	F4	R3 7 0	G3	D2	TP370	G3	D3
CR230	D2	C5	Q310	F3	В2	R200	D1	C5	R373	F3	C2	TP490	G4	G1
CR242	E1	D3	Q320	F3	B2	R201	D1	C4	R375	G3	D1	1		
CR243	É1	D3	Q330	F3	В1	R205	E1	C3	R379	G3	D1	U150	B2	В3
CR245	E1	D3	Q340	F3	B2	R209	E1	85	R380	G2	D1	U160	В3	B4
CR260	F1	D2	Q350	G3	C1	R210	D1	C4	R382	G2	D1			
CR270	F1	E2	Q360	G3	C2	R211	D1	C4	R384	G3	D2	VR190	B4	F3
CR296	G1	E3	Q380	G3	D1	R215	E1	D3	R385	G3	C3	VR197	A3	F4
CR303	E3	A3	Q390	G2	B5	R220	D2	C5	R390	G3	B5			5 0
CR306	D3	D2	Q400	D3	D5	R225	E1 .	D3	R391	G3	B5	W284	F2	E2
CR330	F3	B1	0410	D4	D4	R228	E2	B 5	R395	H2	85	W297	G1	E3
CR331	F3	B2	0420	D4	D5	R229	E2	B5	R396	H2	B5	l		
		shown on diag	rams 5 & 6.										<u> </u>	
HASSIS	MOUNTE	PARTS							-					
CIRCUIT	SCHEM LOCATION	BOARD												
AO MDEU	LOCATION	LUCATION												
	H2	CHASSIS												

Static Sensitive Devices

A23 A2 R1234

†Located on back of board.

Scan by Zenith

VOLTAGE AND WAVEFORM CONDITIONS

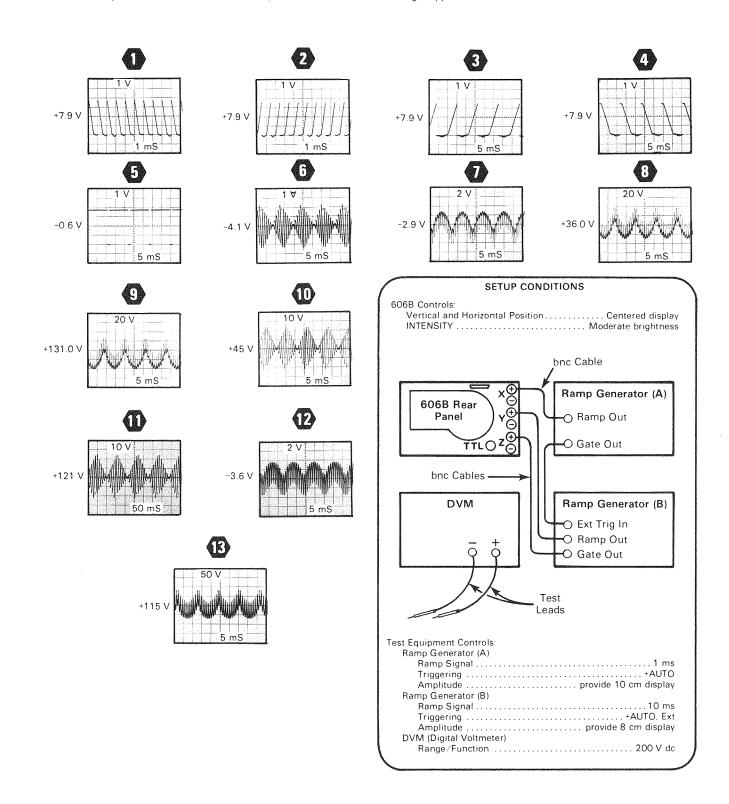
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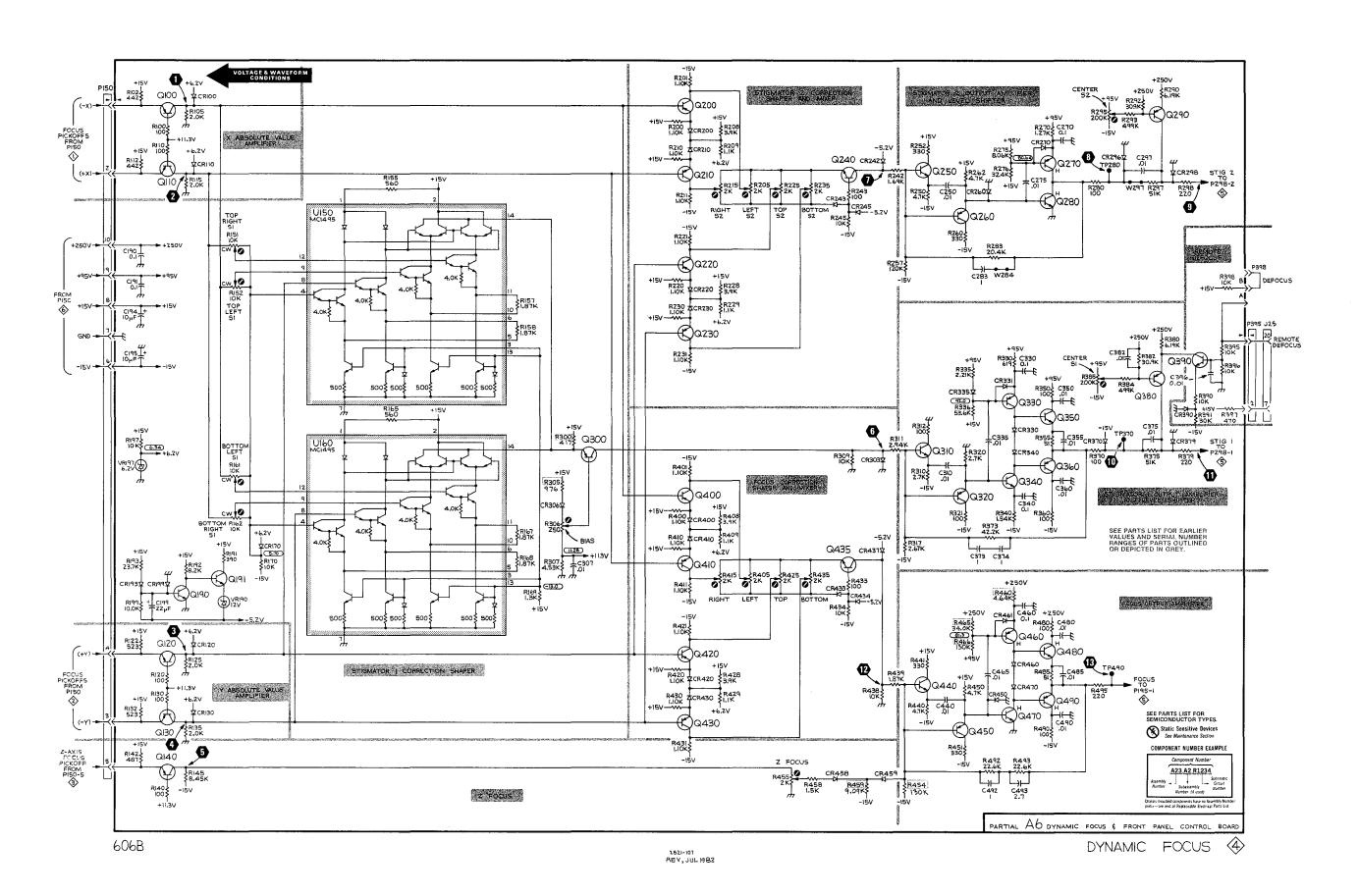
Alternative test equipment may be listed in Table 5-3, Test Equipment.

Voltage Conditions. The voltages shown on the diagram were obtained using a digital multimeter with a 1 M Ω input impedance (TEKTRONIX DM 501 Digital Multimeter installed in a TM 503 Main Frame) and no signals applied to the 606B INPUTs. The barely visible dot was positioned near center screen.

Waveform Conditions. The waveforms shown below were obtained using a test oscilloscope system (TEKTRONIX 7904 Oscilloscope, 7B92 Time Base, and 7A13 Differential Comparator with P6063A 10X probe). Two TEKTRONIX RG 501 Ramp Generators were used to provide an 8 \times 10 cm synchronized 10 line raster on the 606B. The INTENSITY was set for moderate brightness (approx. 35 Volts at TP280). The 606B input impedance jumpers for the X and Y INPUTS were set to 1 M Ω , the Z INPUT to 50 Ω .

Test oscilloscope deflection factor and sweep rate, and the offset voltage appear on the waveform illustration.





606B

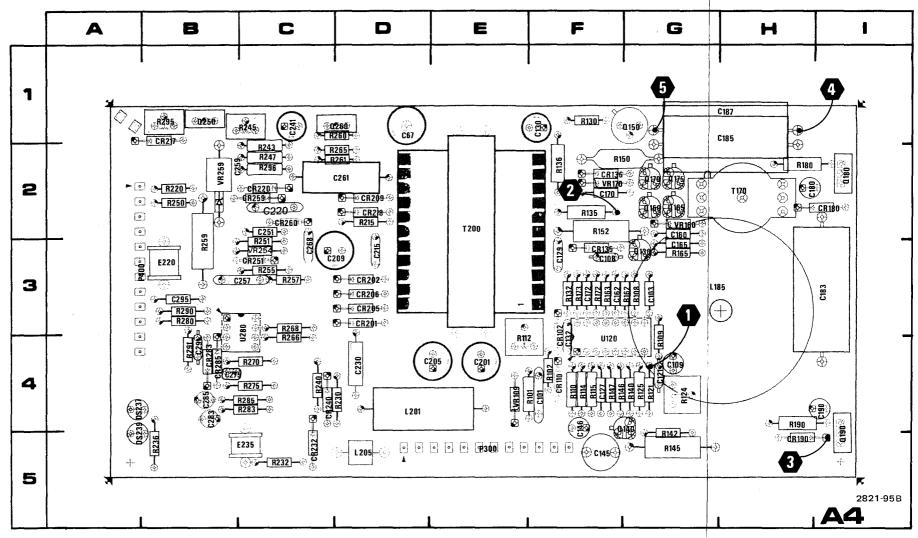
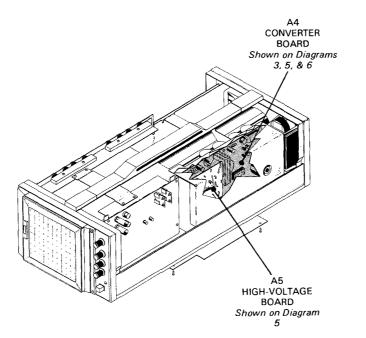


Figure 8-9. A4—Converter circuit board assembly.



CONVERTER AND HIGH-VOLTAGE POWER SUPPLY DIAGRAM (5)

CHICLIT SCHEM ROAD CARLON CAR				_								
PARTIAL AA ASSY				i e			*See Fi	gure 8-3 to 1	ocate parts.	!	·	
## CHANGER SCHEM BOAD	_				H1	K3*						
CRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT COATION CIRCUIT SCHEM BOARD CIRCUIT COATION C			shown on diag	grams 1 & 2.								-
NAMBER	PARTIAL	A4 ASSY										
CIOS B2 F3 CR195 B2 F3 COT70 B4 G2 P322 E2 C5 B5 COT80 B2 F3 COT80 B2 F3 C7 CT95 B2 F3 COT80 B2 F3 C7 CT95 B2 F3 COT80 B2 F3 C7 CT95 B2 F3 CT95 B3												
C103 A2 G3 C1135 B2 F3 O170 B4 G2 F322 E2 C5 C106 B2 F3 F3 C170 B4 G2 F322 E2 C5 B5 C106 B2 F3 F3 C170 B4 G2 F323 E2 B5 C106 B2 F3 C170 B4 G2 F324 E2 B5 C170 B4 F324 B4 F325 E3 B4 F325 E3 C170 B4 F324 B4 F325 E	C101	A2	F4	CR110	A2	F4	Q165	СЗ	G2	R230	E2	D4
CION B3 G4 CRIBO C3 I2 O180 C3 I2 R240 E2 C4 C121 A3 G4 CRIBO C4 H5 O190 C4 H4 C121 A3 G4 CRIBO C5 H5 C190 C5 H5 R240 E2 C2 C121 A3 G4 CRIBO C5 H5 C190 D3 C280 D3 B1 R447 D2 C2 C121 A3 G4 C7		A2	G3		B2		Q170		G2	R232	E2	
CIT27 A4 F4 F4 CH201 D1 D21 C250 D3 B1 R246 D2 C1												
C129 B2 F3 C720 D2 D3 D3 B1 R246 D2 C1 C120 D3												
C130 B2 F1 CR205 D1 D3 B101 A2 F4 R251 D3 C3 C131 B2 F4 CR206 D2 D3 B101 A2 F4 R251 D3 C3 C131 B2 F4 CR206 D2 D3 B101 A2 F4 R251 D3 C3 C3 C134 C7		A4	F4		D1	D3						
C132 B2 F4 CR206 D2 D3 R101 A2 F4 R251 D3 C3 C3 C146 C1 F5 CR209 D2 D2 D2 D2 R102 A2 F4 R251 D3 C3 C3 C146 C1 F5 CR209 D2 D2 D2 D2 D2 R102 A2 F4 R251 D3 C3 C3 C146 B3 F62 CR211 E2 B1 R108 B2 B2 G3 R277 E3 C3 C3 C166 B3 F63 C2 CR211 E2 B1 R108 B2 B2 G3 R277 E3 C3 C3 C166 B3 F63 CR272 D2 C2 C2 R110 A2 F4 R251 D3 C3 C3 C166 C3 C7							Q260	D3	D1			
C145 C1 F5 CR209 D2 D2 R102 A2 F4 R256 E3 C3 C146 B3 F4 CR217 F2 B1 R108 B2 C3 A2 R257 E3 C3 C150 B3 F4 CR218 E2 D2 R109 B2 C44 R258 D3 B3 C160 B3 F5 CR209 E2 C4 R110 B2 C44 R258 D3 B3 B3 C162 CR218 E2 D2 R109 B2 C44 R258 D3 B3 B3 C162 CR209 E2 C4 R111 A3 C4 H4 R258 D3 D2 C172 B4 F3 CR251 D3 C3 R115 A3 F4 R256 C3 C4 C170 C4 F2 C75							P101	٨٦	E4			
C146 B3 F4 CR217 E2 B1 R108 B2 G3 R257 E3 C3 C3 C160 B3 G2 CR218 E2 D2 R109 B2 G4 R259 D3 B3 C160 B3 G2 CR218 E2 D2 R109 B2 G4 R259 D3 B3 C160 C761 B3 G2 CR218 E2 D2 R109 B2 G4 R259 D3 B3 C160 C761 B3 G2 CR218 E2 C2 R111 A2 CR24 R260 D3 D1 C761 B3 C761 B												
CIGES B3 F3 CR3220 E2 C2 R110 A2 F4 R280 D3 D1 C165 C3 G3 G3 CR322 E2 C5 R112 A3 E64 R261 D3 D2 C170 C4 F2 CR440 E2 C4 R114 A2 F4 R286 D3 D2 C170 C4 F2 CR440 E2 C4 R114 A2 F4 R286 D3 D2 C170 C4 F2 CR440 E2 C4 R114 A2 F4 R286 D3 D2 C180 C180 C180 C180 C180 C180 C180 C180												
CIGES C3 G3 C3 C722 E2 C5 H112 A3 F4 R261 D3 D2 C177 C4 F2 CR240 E2 C4 R114 A2 F4 R265 D3 D2 C177 C4 F2 CR240 E2 C4 R114 A2 F4 R265 D3 D2 C177 B4 F3 CR251 D3 C3 R115 A3 F4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R266 E3 C4 C180 C3 H2 C72 R121 A3 G4 R267 E3 C4 C180 C3 H2 C72 R121 A3 G4 R122 R122 R122 R121 A3 G4 R122 R122 R122 R122 R122 R122 R122 R12												
C170 C4 F2 C8240 E2 C4 R114 A2 F4 R266 D3 C2 C172 B4 F3 C8251 D3 C3 C3 R115 A3 F4 R266 E3 C4 C180 C3 H2 C8259 D4 C2 R124 A3 G4 R268 E4 C3 C183 C3 H3 C7260 D4 C2 R124 A3 G4 R268 E4 C3 C183 C3 H3 C7260 D4 C2 R124 A3 G4 R268 E4 C3 C183 C3 H3 C7260 D4 C2 R124 A3 G4 R268 E4 C3 C183 C3 H3 C7260 D4 C2 R124 A3 G4 R268 E4 C3 C183 C3 H3 C7260 D4 C2 R124 A3 G4 R268 E4 C3 C180 C4 M4 R150 C4 R124 A3 G4 R268 E4 C3 C180 C4 M4 R150 C4 R124 A3 G4 R268 E4 C3 C180 C4 M4 R150 C4 R124 A3 G4 R268 E4 C3 C205 D1 E4 D5239 E3 A5 R136 B2 F2 R283 E3 C4 C206 D1 E4 D5239 E3 A5 R136 B2 F2 R283 E3 C4 C209 D2 D3 E220 F1 B3 R142 C1 G4 R280 E3 E3 C201 D1 E4 D529 E3 A5 R136 B2 F2 R283 E3 C4 C209 D2 D3 E220 F1 B3 R142 C1 G4 R280 E4 B3 C201 D2 C2 D3 E220 F1 B3 R142 C1 G4 R280 E4 B3 C202 D4 E2 D4 E235 E2 C5 R146 B2 R2 F2 R283 E3 C2 C241 E2 C1 L185 C3 G3 R147 C3 F4 R286 E4 C3 C257 E3 C3 L205 D1 D5 R152 C1 F2 T2 C0 R148 B3 G3 C257 E3 C3 L205 D1 D5 R152 C1 F2 T2 C0 D1 E2 C257 E3 C3 C2 L201 D1 D4 R150 C2 F2 T170 C3 H2 C257 E3 C3 C2 L201 D1 D4 R3150 C2 F2 T170 C3 H2 C257 E3 C3 C2 L201 D1 D4 R3150 C2 F2 T170 C3 H2 C266 D3 C2 F4 R20 D4 A3 R169 B3 G3 C27 F2												
C172 B4 F3 CR251 D3 C3 R115 A3 F4 R266 E3 C4 C180 C3 H2 CR259 D4 C2 R121 A3 G4 R266 E4 C3 C181 C3 H2 CR250 D4 C2 R121 A3 G4 R268 E4 C3 C181 C3 H1 CR285 E4 B4 R125 A3 G4 R268 E4 C3 C181 D3 H1 CR285 E4 B4 R125 A3 G4 R268 E4 C3 C181 D3 H1 CR285 E4 B4 R135 B2 F1 R200 E3 C4 C181 D3 H1 CR285 E4 B4 R135 B2 F1 R200 E3 C4 C205 D1 E4 D5237 E3 A4 R136 B2 F2 R200 E4 C3 C205 D1 E4 D5237 E3 A4 R136 B2 F2 R200 E4 C4 C205 D1 E4 D5237 E3 A4 R136 B2 F2 R200 E4 B3 C215 E2 D3 E220 F1 B3 R142 C1 G5 R291 E4 B4 C220 D4 C2 E235 E2 C5 R146 C1 G5 R291 E4 B4 C230 E2 D4 C2 E235 E7 C5 R146 C1 G5 R291 E4 B4 C230 E2 D4 C2 E235 E7 C5 R146 C1 G5 R291 E4 B4 C230 E2 D4 C2 E235 E7 C5 R146 C1 G5 R291 E4 B4 C230 E2 D4 C2 E235 E7 C7 R145 C1 G5 R291 E4 B4 C230 E2 D4 C2 E235 E7 C7 R145 C1 G5 R291 E4 B4 C230 E2 D4 C2 E235 C2 L201 D1 D3 R140 C2 F2												
C183 C3 I3 CR260 D4 C2 F1124 A3 G4 R268 F4 C3 C186 D4 H1 CR283 E3 B4 R125 A3 G4 R268 F4 C3 C4 C187 D3 H1 CR285 E4 B4 R130 B2 F1 R275 E3 C4 C180 D3 H1 CR285 E4 B4 R130 B2 F1 R275 E3 C4 C190 D3 H1 CR285 E4 B4 R130 B2 F1 R275 E3 C4 C190 D3 H1 CR285 E4 B4 R130 B2 F1 R275 E3 C4 C190 D3 H1 CR285 E4 B4 R130 B2 F2 F3 R278 E3 C3 C4 C209 D2 D3 C2 D3 C2 C209 D2 D3 C2 D3 C2 C209 D2 D3 C2 D3 C2 C209 D2 D3 C2 C209 D2 D3 C2 C209 D4 C2 E235 E2 C5 R146 C1 C6 R291 E4 B4 C220 D4 C2 E235 E2 C5 R146 C1 C6 R291 E4 B4 C220 D4 C2 E235 E2 C5 R146 C1 C6 R291 E4 B4 C220 D4 C2 E235 E2 C5 R146 C1 C6 R291 E4 B4 C220 D4 C2 E235 E2 C5 R146 C1 C6 R291 E4 B4 C220 D4 C2 E235 E2 C5 R146 C1 C6 R291 E4 B4 C220 D4 C2 E235 D5 D1 D4 R150 C1 C7 F2 T170 C3 H2 C251 D5 C2 C259 D3 C2 C268 D4 C3 R146 B3 F4 R296 E3 C2 C259 D3 C2 C268 D4 C3 R291 E4 B4 R152 B3 G3 C2 C268 D4 C3 P400 D4 A3 R150 C1 F2 T170 D4 R150 C2 C1 F2 T170 D4 F2 C268 D4 C3 P400 D4 A3 R150 C3 R153 B3 F3 C3 C200 D1 E2 C268 D4 C3 P400 F2 A3 R152 B4 F3 C225 B4 F4 C3 C255 E3 B4 P400 F2 A3 R173 B4 F3 C225 E3 B4 C3 C275 E3 B4 P400 F2 A3 R173 B4 F3 C225 E4 B4 C3 C285 E4 B4 C3 R173 B4 F3 C268 E4 B4 C3 C285 E4 B4 C3 R173 B4 F3 C268 E4 B4 C3 C285 E4 B4 C3 R173 B4 F3 C268 E4 B4 C3 C285 E4 B4 C3 C285 E4 B4 C3 C3 R173 B4 F3 C268 E4 B4 C3 C3 C3 R173 B4 F3 C4 C4 C3	C172			CR251		C3	R115			R266	E3	C4
C185 D4 H1 CR283 E3 B4 R125 A3 G4 R270 E3 C4 C187 D3 H1 CR285 E4 B4 R130 B2 F1 R275 E3 C4 C190 C4 I4 C190 C4 C190 C4 I4 C190 C4 C1												
C187 D.3 H1 (CR285 F.4 B4 R130 B2 F.1 R275 E3 C4 C190 C190 C4 I4 B												
C201												
C205												
C209												
C215 E2 D3 E220 F1 B3 R142 C1 G5 R291 E4 B4 C220 D4 C2 E235 E2 C5 R145 C1 G5 R295 E3 B1 C230 E2 D4 C241 E2 C1 L185 C3 G3 R147 C3 F4 R296 E3 C2 C2 C241 E2 C1 L185 C3 G3 R147 C3 F4 R296 E3 C2 C2 C257 E3 C3 L205 D1 D1 D4 R150 C2 F2 T170 C3 H2 C257 E3 C3 L205 D1 D5 M1 R150 C1 F2 T200 D1 E2 C259 D3 C2 L201 D1 D4 R150 C2 F2 T170 C3 H2 C259 D3 C2 L201 D1 D5 R150 C1 F2 T200 D1 E2 C259 D3 C2 L201 D1 D5 R150 C1 F2 T200 D1 E2 C259 D3 C2 L201 D1 D5 R150 C3 R3 R3 G3 U120 A4 F4 C288 D4 C3 P400 E2 A3 R150 C4 G3 U280 E4 C3 C3 C3 L305 D1 C2 A3 R150 C4 G3 U280 E4 C3 C3 C3 L305 D1 C2 A3 R150 C4 G3 U280 E4 C3 C3 C3 L305 D1 C5 C4 C4 C5				03239	ES	Ab						
C230 E2				E220	F1	В3						
CZ251				E235	E2	C5						
C251				1105	Ca	C2				R296	E3	C2
C257 E3										T170	C3	H2
C261	C257		С3		D1	D5	R152	C1	F2	T200	D1	E2
C268				D400	04	4.2				11120	A 4	E4
C275 E3 B4 P400 F2 A3 R172 B4 F3 VR109 B2 E4 C285 E4 B4 Q130 B2 G3 R180 C3 H2 VR160 B3 G2 C295 E3 B4 Q140 C1 G4 R190 C2 H4 VR170 B4 F2 CR102 A2 F4 Q160 B3 G2 R215 E2 D2 VR254 D3 C3 CRIOZ A2 F4 Q160 B3 G2 R20 E2 D2 VR254 D3 C3 CRICUIT SCHEM BOARD NUMBER LOCATION												
C285 E4 B4 O130 B2 G3 R180 C3 H2 VR160 B3 G2 C291 E4 B4 O140 C1 G4 R190 C4 H4 VR170 B4 F2 C295 E3 B3 O150 C2 G1 R215 E2 D2 VR254 D3 C3 C3 CR102 A2 F4 O160 B3 G2 R220 E2 B2 VR259 D4 B2 P7/O A4 ASSY also shown an diagram 6 PARTIAL A5 ASSY CIRCUIT SCHEM BOARD NUMBER LOCATION LOCATION NUMBER LOCATION LOCATION LOCATION LOCATION LOCATION NUMBER LOCATION LO										0200	-,	00
C291												
C295												
PARTIAL A5 ASSY CIRCUIT SCHEM BOARD NUMBER LOCATION NUMBER LOCATION LOC												
CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD COATION DOCATION DO	CR102	A2	F4	Q160	В3	G2	R220	E2	B2	VR259	D4	В2
CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD NUMBER LOCATION LOC			shown on dia	gram 6.								
NUMBER LOCATION			BOARD	CIRCUIT	SCHEM	BOARD	CIRCUIT	SCHEM	BOARD	CIRCUIT	SCHEM	BOARD
C112												
C121 F2												
C131 F2 C5 CR177 D5 B2 R120 R149 F3 B6 C133 F2 C5 CR179 D5 A3 R111 F2 C2 R152 D4 B4 C162 D4 C3 R112 F2 C2 R153 D4 D4 C1653 D4 D1 D5142 F3 A5 R114 F2 C2 R156 D4 B4 C162 D4 C4 D5144 F3 A5 R120 F2 C2 R156 D4 A4 C171 D4 B2 D5156 F4 A4 R121 F2 C3 R178 D5 A5 C173 D5 A2 C192 F4 C5 E119 F2 C2 R127A F2 C4 R127A F2 C4 C192 F4 C5 E119 F2 C2 R127A F2 C4 R127A F2 C4 C192 F4 C5 E148 F3 A5 R127B F2 C4 R127A F2 C4 C4 C192 F4 C5 E148 F3 A5 R127B F2 C4 R127A F2 C4 R144 F2 C2 R134 F2 C2 B5 P67 D5 A5 R127D F4 C4 C4 C4 C4 C4 C5 C7												
C133 F2 C5 CR179 D5 A3 R111 F2 C2 R152 D4 B4 C152 D4 C3 C153 D4 D1 DS142 F3 A5 R114 F2 C2 R153 D4 D4 C162 D4 C4 DS144 F3 A5 R114 F2 C2 R156 D4 B4 C162 D4 C4 DS144 F3 A5 R120 F2 C2 R162 D4 A4 C171 D4 B2 DS156 F4 A4 R121 F2 C3 R178 D5 A5 C173 D5 A2 R125 F2 C4 C192 F4 C5 E119 F2 C2 R127A F2 C4 C192 F4 C5 E119 F2 C2 R127A F2 C4 CR114 F2 C2 B5 P67 D5 A5 R127D F4 C4 CR114 F2 C2 B5 P67 D5 A5 R127D F4 C4 CR134 F2 B5 P67 D5 A5 R127D F4 C4 CR134 F2 B5 P67 D5 A5 R127D F4 C4 CR177 F1 A3 P76 F1 A4 R181 G2 A2 C187 H3 A1 P181 F1 A1 R184 H3 A2 VR189 H3 A2 C187 H3 A1 P181 G2 A1 R185 H2 A2 C187 H3 A1 P181 G2 A1 R185 H2 A2 C187 H3 A1 P181 G2 A1 R185 H2 A2 C187 H3 A1 P181 G2 A1 R185 H2 A2 C187 H3 A1 P181 G4 A1 R185 H2 A2 CR181 H2 A2 P195 E1 G1 R189 H3 A2 CR181 H2 A2 P195 E1 G1 R189 H3 A2 CRASSIS MOUNTED PARTS CIRCUIT SCHEM BOARD							1 170	G 4	00			
C153	C133	F2	C5							R152	D4	B4
C162				06142	Eo	ΛE						
C171												
C192 F4 C5 E119 F2 C2 R127A F2 C4 RV153 D4 D4 CR114 F2 C2 C2 R127B F2 C4 CR134 F2 B5 P67 D5 A5 R127D F4 C4 CR134 F2 B5 P67 D5 A5 R127D F4 C4 CRCHIT SCHEM BOARD NUMBER LOCATION LOCATION NUMBER LOCATION LOCATION NUMBER LOCATION LOCATION LOCATION NUMBER LOCATION	C171	D4	В2				R121	F2	С3			
CR114				5110	50	-00						
CR114	C192	F4	C5							RV153	D4	D4
CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD BOARD NUMBER LOCATION LOCATI	CR114	F2	C2	2.40		7.0						
CIRCUIT NUMBER SCHEM LOCATION BOARD LOCATION CIRCUIT NUMBER CIRCUIT LOCATION SCHEM LOCATION LOCATION BOARD LOCATION LOCATION CIRCUIT NUMBER SCHEM LOCATION LOCATION BOARD NUMBER CIRCUIT LOCATION LOCATION CIRCUIT NUMBER COLOTION LOCATION CIRCUIT NUMBER CIRCUIT LOCATION LOCATION CIRCUIT NUMBER COLOTION LOCATION CIRCUIT NUMBER COLOTION LOCATION CIRCUIT NUMBER COLOTION LOCATION CIRCUIT NUMBER CIRCUIT NU			В5	P67	D5	A5	R127D	F4	C4			
NUMBER LOCATION LOCATION NUMBER LOCATION NUMBER LOCATION NUMBER LOCATION NUMBER LOCATION NUMBER LOCATION NUMBER LOCATION NUMBER LOCATION LOCATION LOCATION NUMBER LOCATION LOCATION LOCATION NUMBER LOCATION L			BOARD	CIRCUIT	CCHEM	BOARD	CIRCUIT	COUEM	BOARD	CIRCUIT	CCHEM	BOARD
C181 G3 A1 P181 F1 A1 R184 H3 A2 VR189 H3 A2 C187 H3 A1 P181 G2 A1 R185 H2 A2 P181 G2 A1 R185 H2 A2 P181 G4 A1 R187 H3 A1 For board location of parts See Figure 8-8. CR181 H2 A2 P195 E1 G1 R189 H3 A2 See Figure 8-8. P/O A6 ASSY also shown on diagrams 4 & 6 CHASSIS MOUNTED PARTS CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD												
C187 H3 A1 P181 G2 A1 R185 H2 A2 For board location of parts CR181 H2 A2 P195 E1 G1 R189 H3 A2 See Figure 8-8. P298 G3 E1 P/O A6 ASSY also shown on diagrams 4 & 6 CHASSIS MOUNTED PARTS CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD												
CR181 H2 A2 P181 P195 P1 P195 P1 G1 P196 P298 P298 P298 P298 P298 P298 P298 P298										VR189	Н3	A2
CR181 H2 A2 P195 P298 G3 E1 G1 E1 R189 H3 A2 see Figure 8-8. P/O A6 ASSY also shown on diagrams 4 & 6 CHASSIS MOUNTED PARTS CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD	C10/	пэ	A1							For boar	d location of	parts
P298 G3 E1 P/O A6 ASSY also shown on diagrams 4 & 6 CHASSIS MOUNTED PARTS CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD	CR181	H2	A2	P195	E1	G1						
CHASSIS MOUNTED PARTS CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD	0.0.1-	4007 1	- h		G3	E1						
CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD CIRCUIT SCHEM BOARD	אוו/ע	ASSY also :		grams 4 & 6								· · ·
NOWIDER LOCATION LOCATION NOWIDER LOCATION LOCATION NOWIDER LOCATION LOCATION NOWIDER LOCATION		MOUNTE	D PARIS									
	CHASSIS CIRCUIT	SCHEM	BOARD									

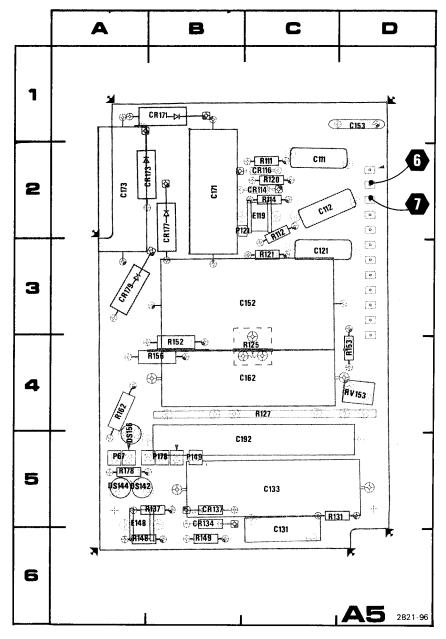
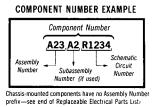


Figure 8-10. A5—High-Voltage circuit board assembly.



Static Sensitive Devices
See Maintenance Section

VOLTAGE AND WAVEFORM CONDITIONS

NOTE

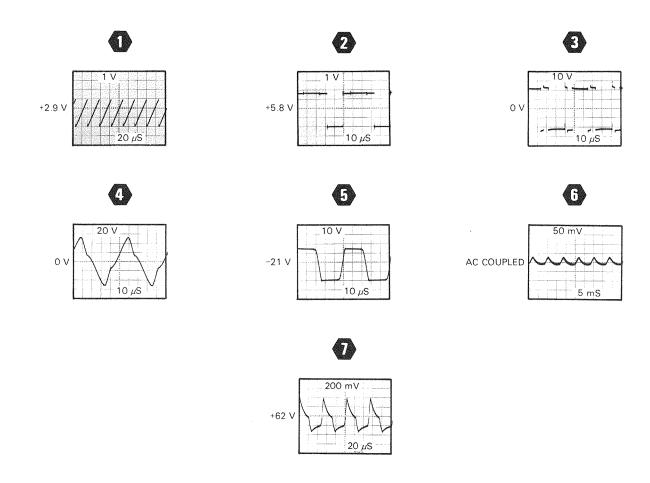
Alternative test equipment may be listed in Table 5-3, Test Equipment.

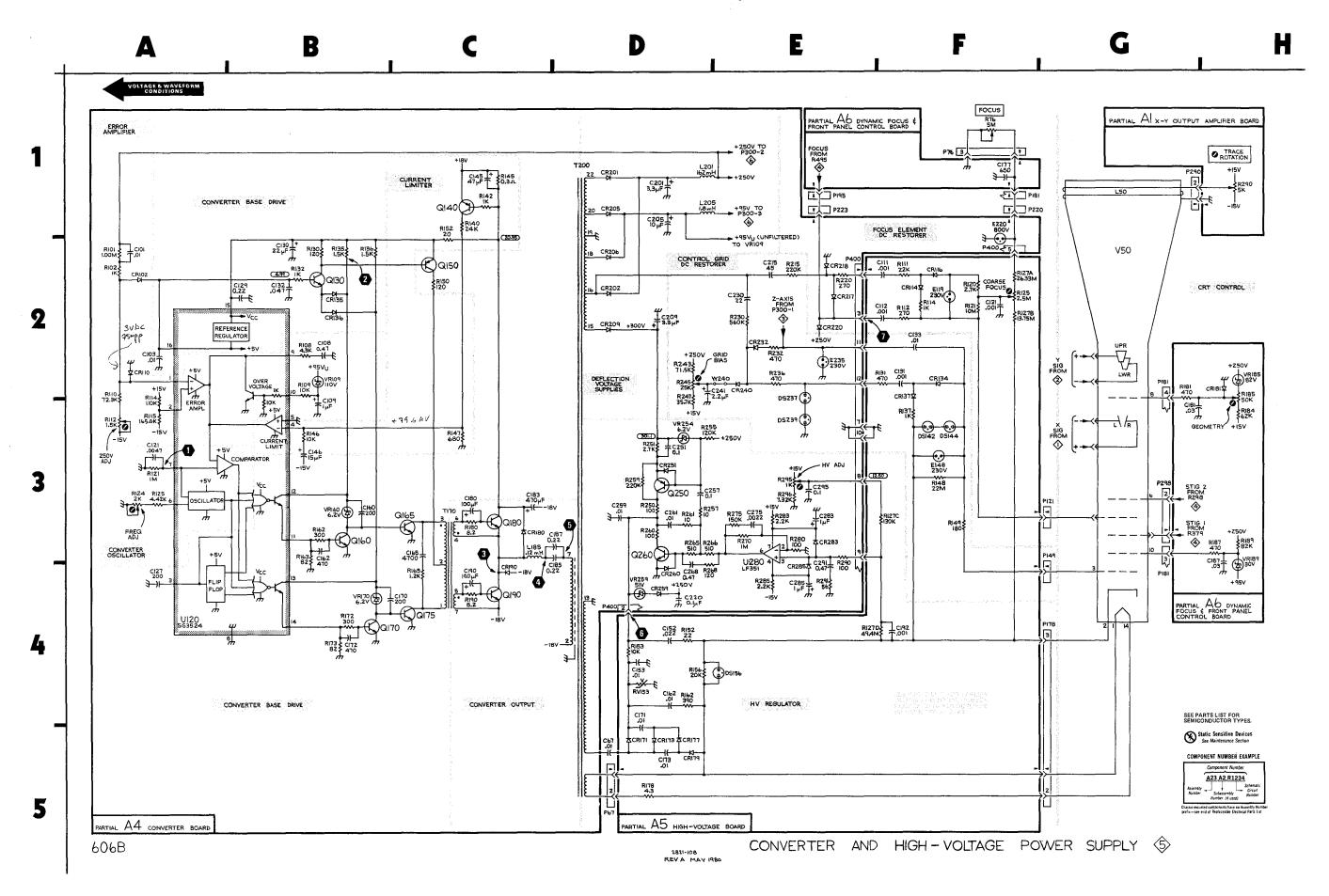
Voltage Conditions. The voltages shown on the diagram were obtained using a digital multimeter with a 1 M Ω input impedance (TEKTRONIX DM 501 Digital Multimeter installed in a TM 503 Main Frame) and no signals applied to the 606B INPUTs. The barely visible dot was positioned near center screen.

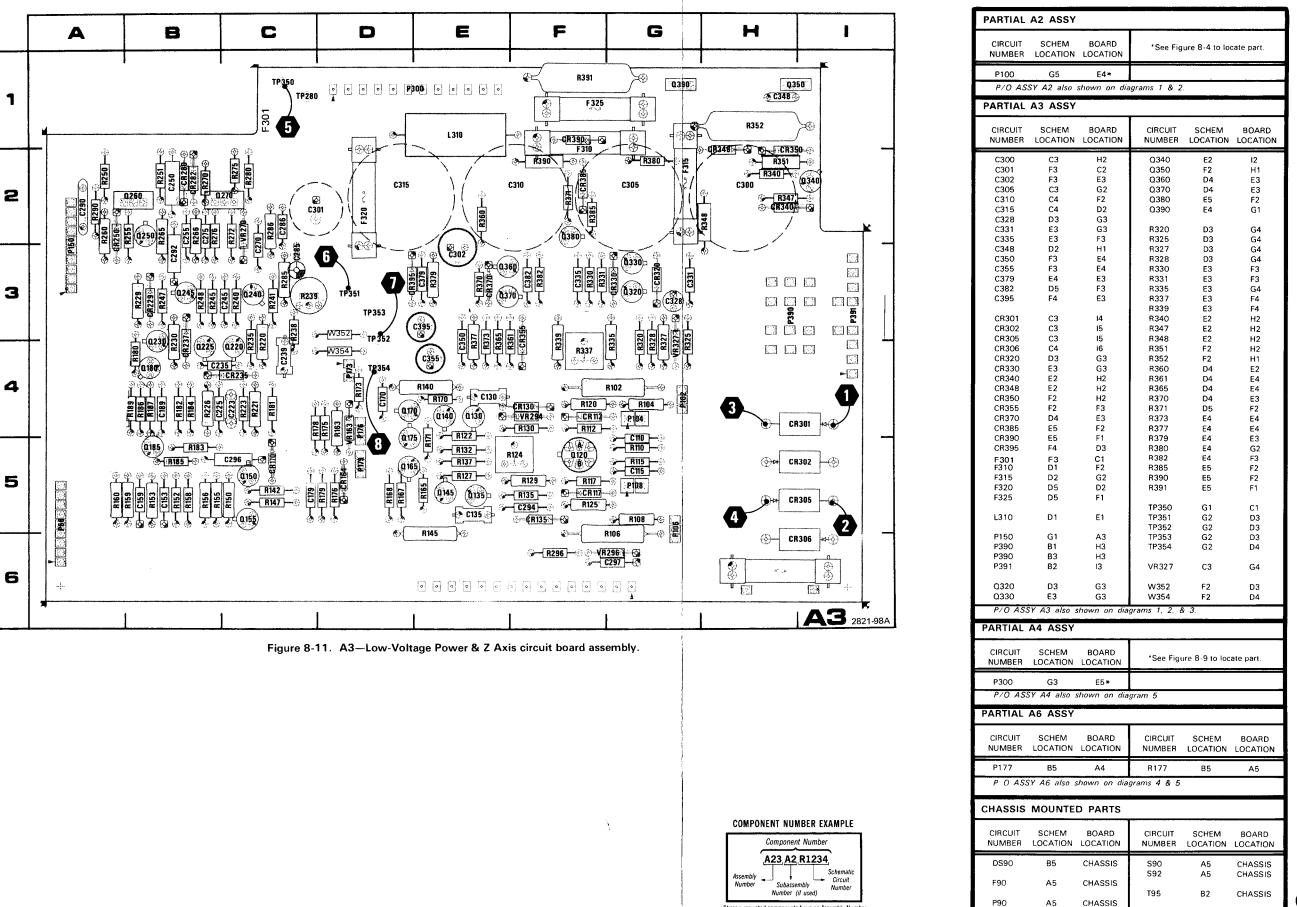
Waveform Conditions. The waveforms shown below were obtained using a test oscilloscope system (TEKTRONIX 7904 Oscilloscope, 7B92 Time Base, and 7A13 Differential Comparator with P6063A 10X probe).

Test oscilloscope deflection factor and sweep rate, and the offset voltage appear on the waveform illustrations.

The input Voltage Selector plug was in the H Position and 120 V ac applied. The barely visible dot was positioned near center screen.







Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

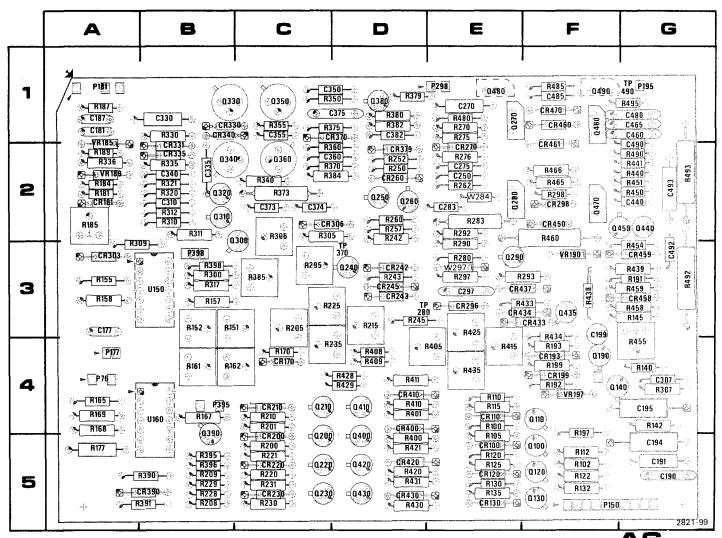
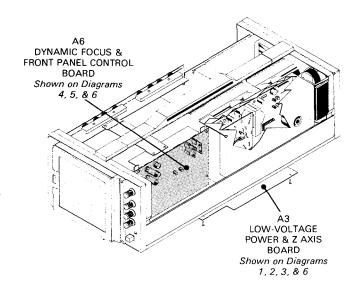


Figure 8-12. A6—Dynamic Focus & Front Panel Controls circuit board assembly.



vices

Scan by Zenith

VOLTAGE AND WAVEFORM CONDITIONS

NOTE

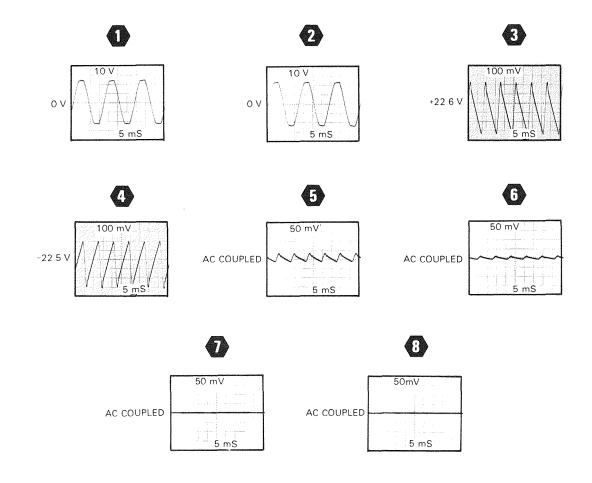
Alternative test equipment may be listed in Table 5-3, Test Equipment.

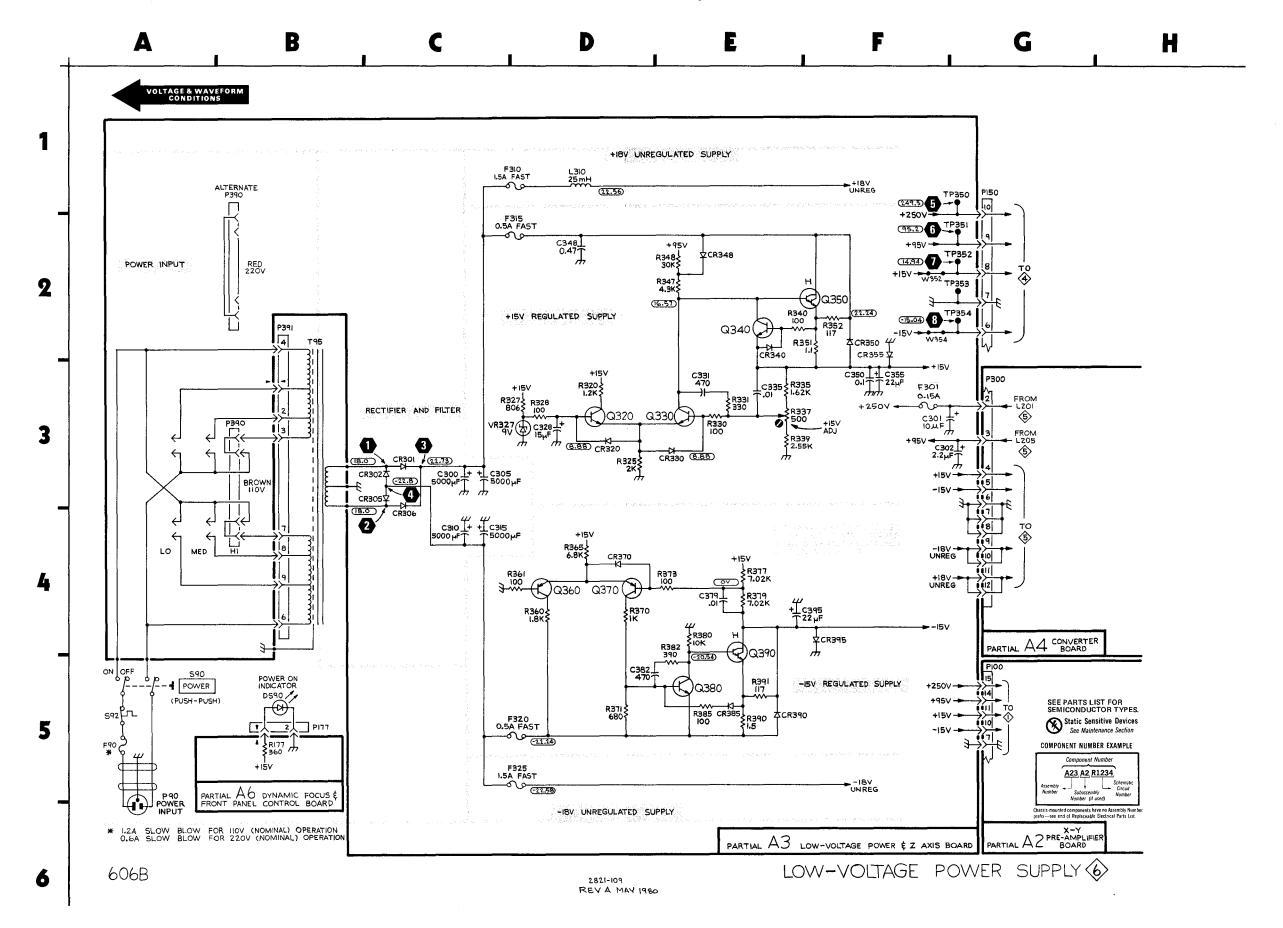
Voltage Conditions. The voltages shown on the diagram were obtained using a digital multimeter with a 1 M Ω input impedance (TEKTRONIX DM 501 Digital Multimeter installed in a TM 503 Main Frame) and no signals applied to the 606B INPUTs. The barely visible dot was positioned near center screen.

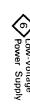
Waveform Conditions. The waveforms shown below were obtained using a test oscilloscope system (TEKTRONIX 7904 Oscilloscope, 7892 Time Base, and 7A13 Differential Comparator with P6063A 10X probe).

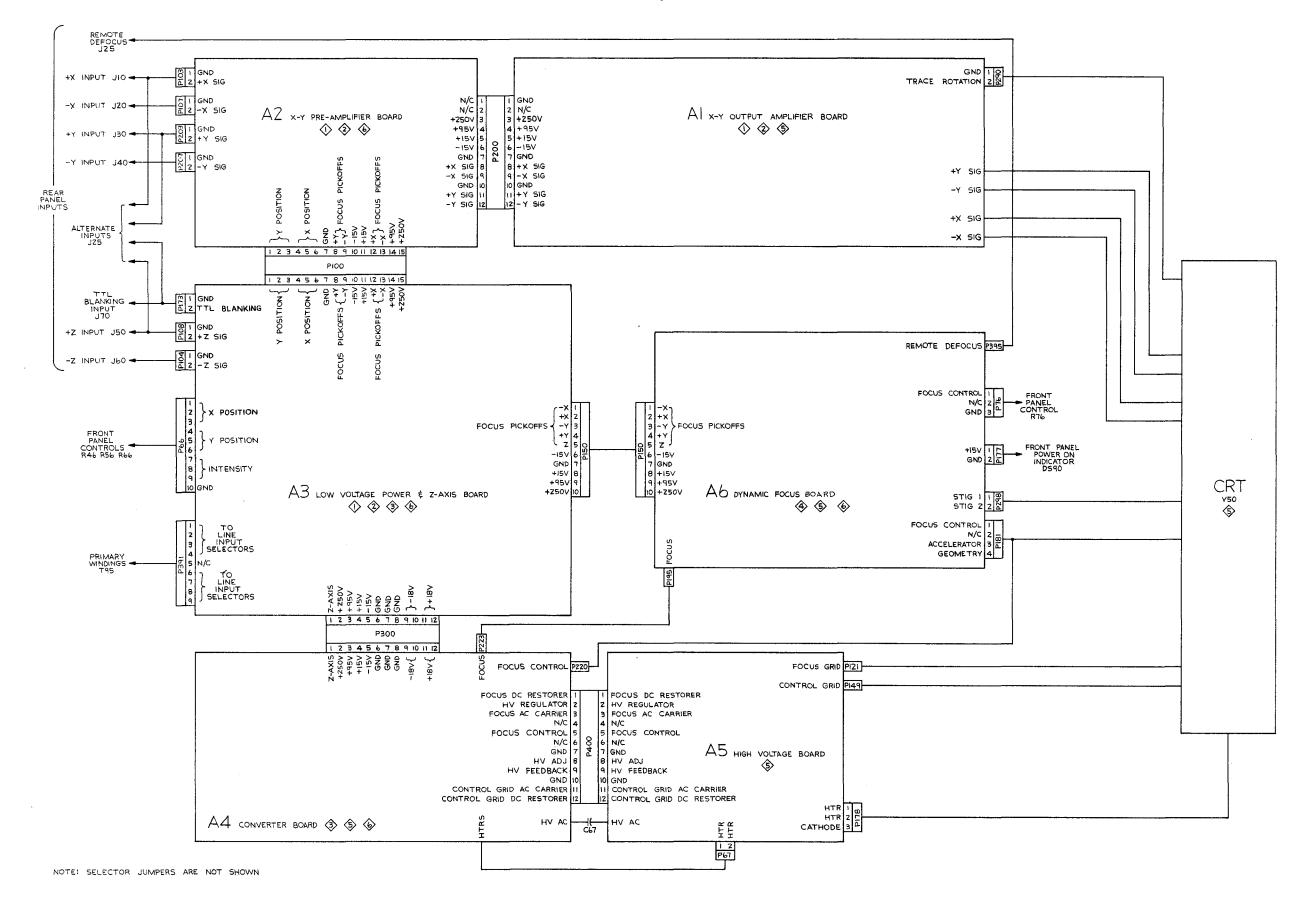
Test oscilloscope deflection factor and sweep rate, and the offset voltage appear on the waveform illustrations.

The input Voltage Selector plug was in the H Position and 120 V ac applied. The barely visible dot was positioned near center screen.

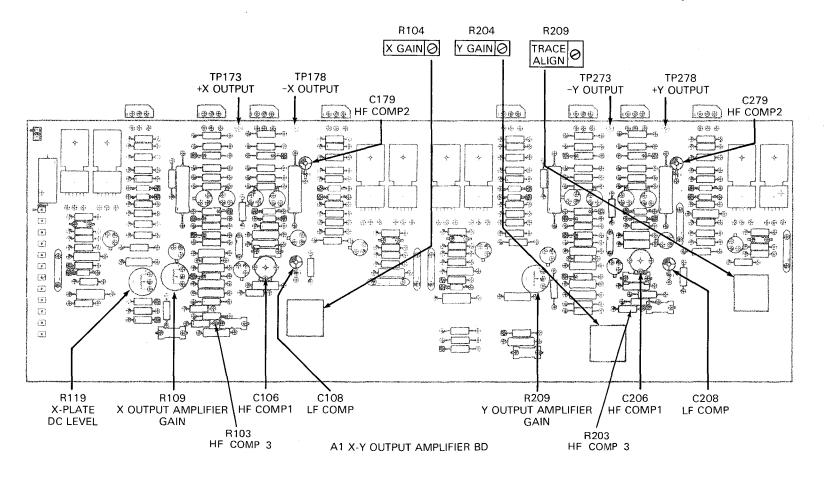


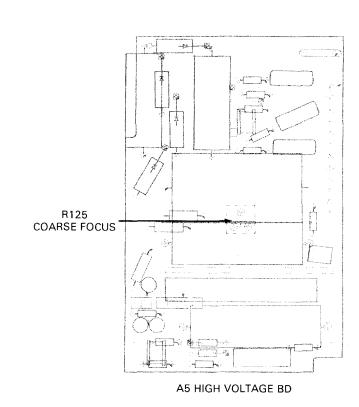


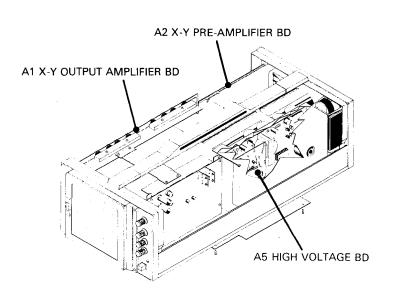


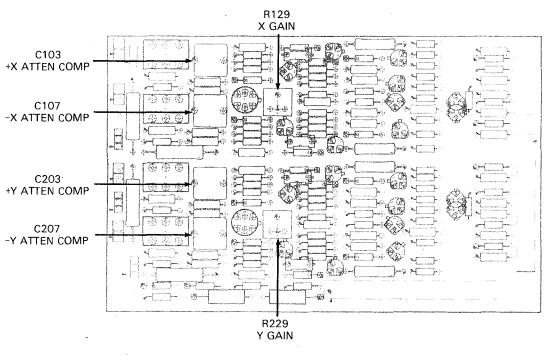


7)Interconnections



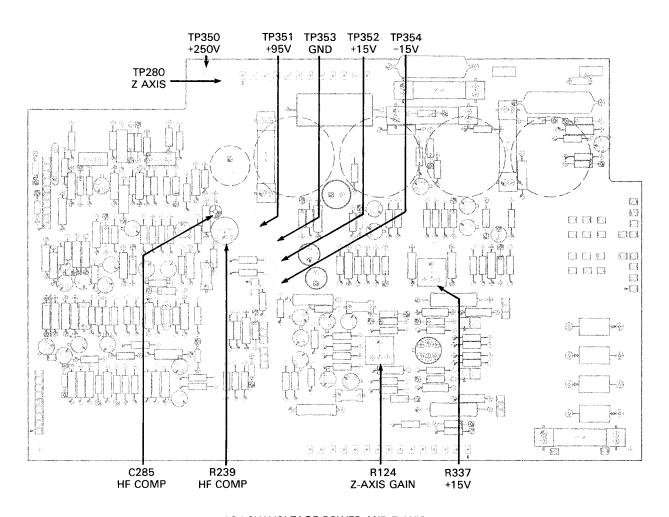




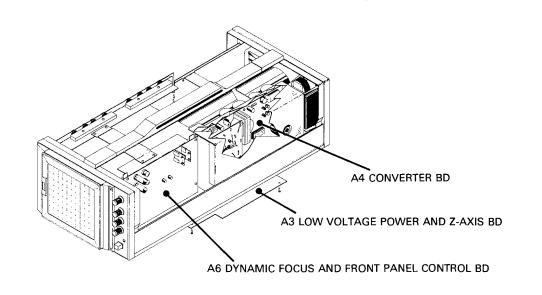


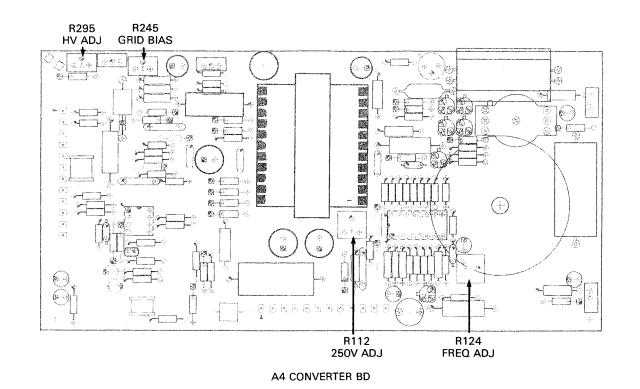
A2 X-Y PRE-AMPLIFIER BD

2821-100A



A3 LOW VOLTAGE POWER AND Z-AXIS BD





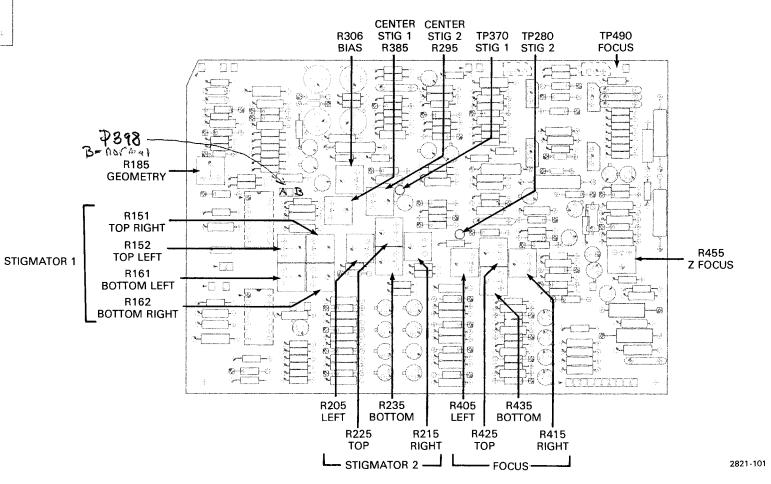
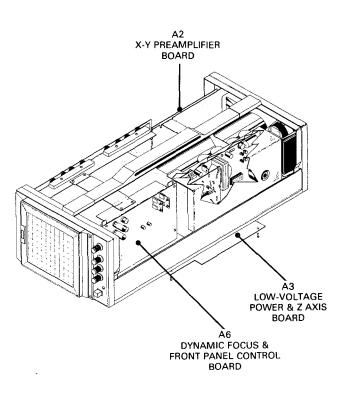
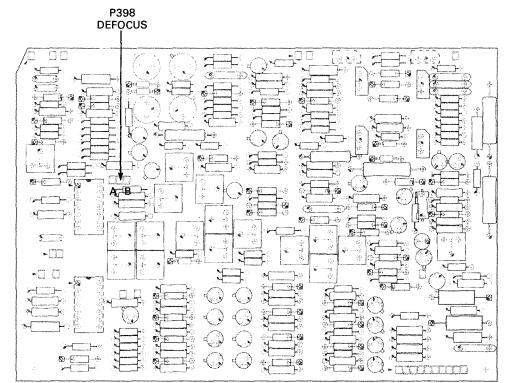


Figure 8-14. Test Point and Adjustment Locations B.

A6 DYNAMIC FOCUS AND FRONT PANEL CONTROL BD





DYNAMIC FOCUS & FRONT PANEL CONTROL BD

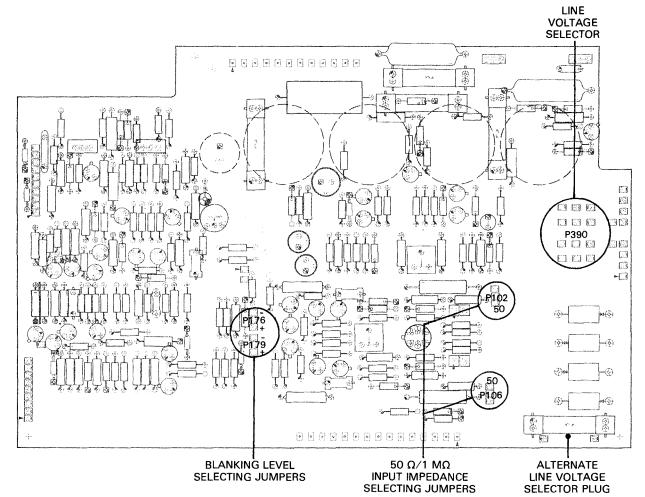


Figure 8-15. Internal Control and Selector Locations.

LOW VOLTAGE POWER AND Z-AXIS BD

2821-102

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TROUBLESHOOTING CHART INSTRUCTIONS

- Beginning at the top left block of the chart, proceed with the instructions following the solid arrows, until the instrument does not perform as indicated.
- 2. Then follow the dashed arrows, as the symptom indicates, until a malfunction is located. Each shaded block indicates a circuit which may be the cause of the malfunction, and corresponds directly to the circuit names given on the schematic diagrams.
- 3. Refer to the numbered schematic indicated in the shaded box. Important voltages and numbered waveform test points are given on the schematics. Typical waveforms, and the conditions under which the voltages and waveforms were taken, are located adjacent to the schematic. Located on the back of the foldout page facing the schematic is an illustration of the 606B showing the location of the circuit board. In addition, an illustration of the circuit board is included here, identifying the physical location of the circuit components and waveform test points.
- 4. If additional understanding of the circuit is required, refer to section 3, Theory of Operation. The circuit or stage names given in this chart and on the schematics are repeated as sub-headings in section 3, where they are discussed in detail.

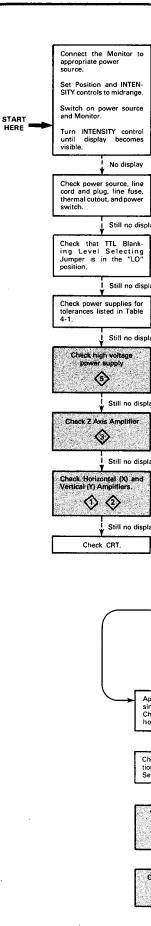
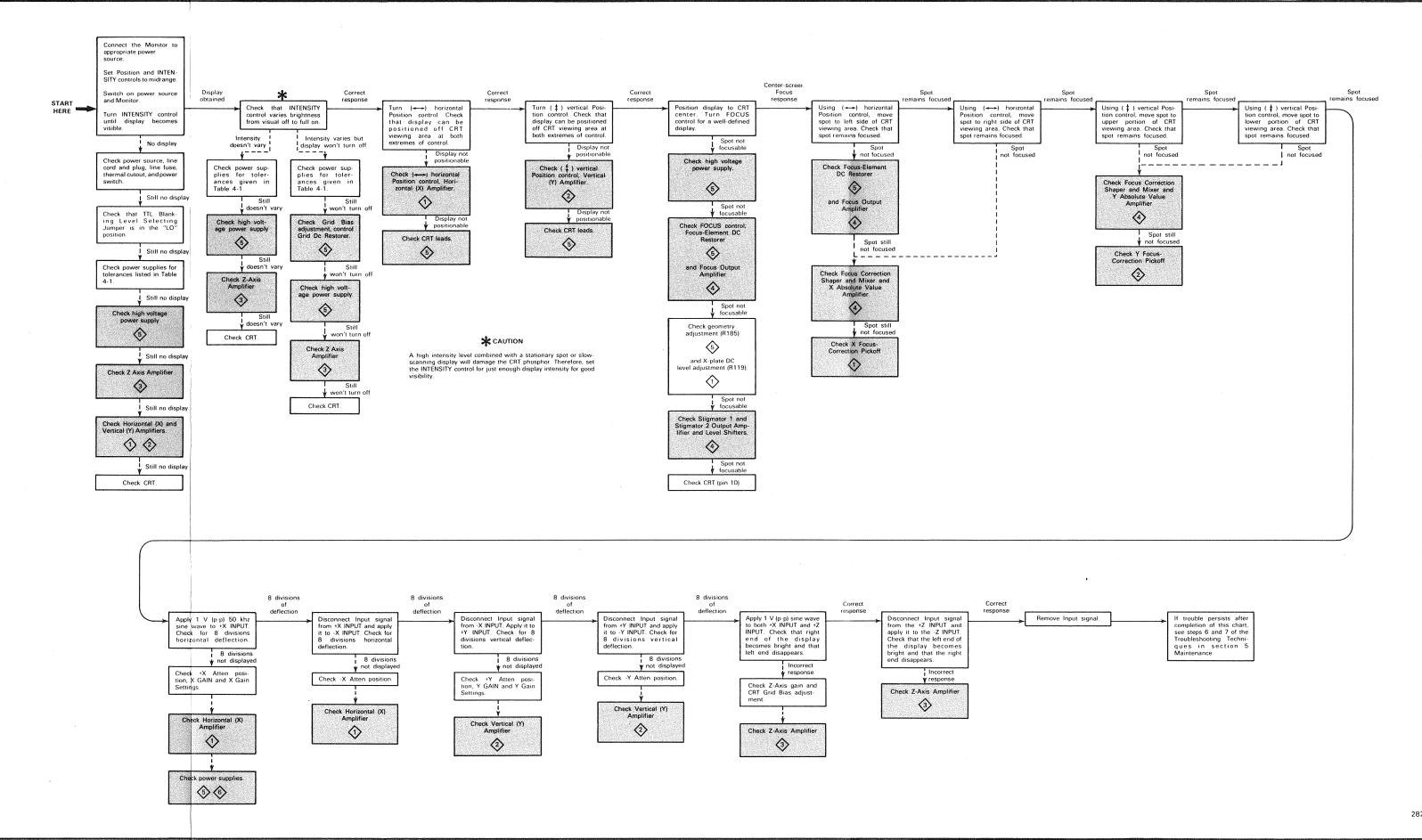
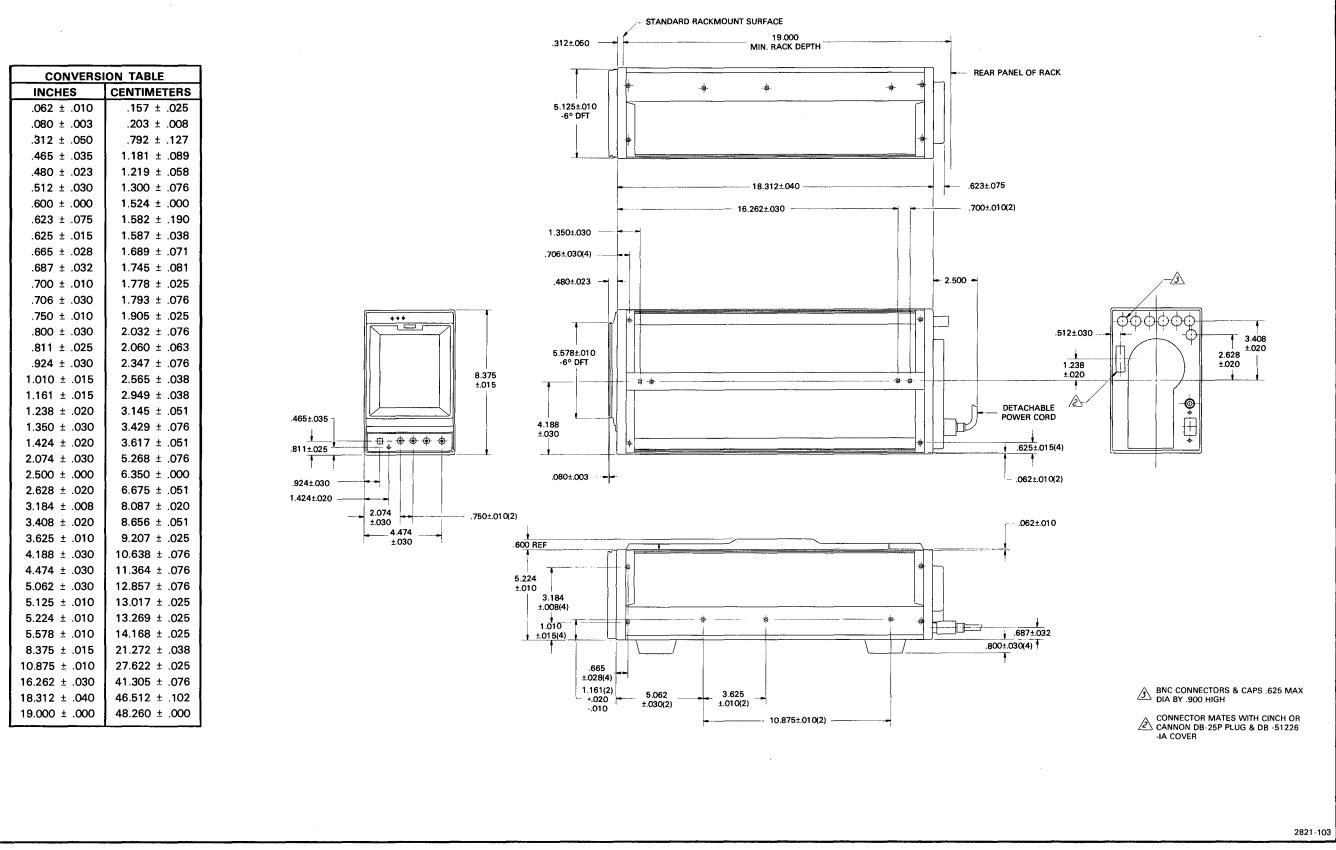


Figure 8-16. Troubleshooting Chart.





REPLACEABLE MECHANICAL PARTS

PARTS ORDERING INFORMATION

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

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

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

Change information, if any, is located at the rear of this manual $% \left(1\right) =\left(1\right) \left(1\right)$

SPECIAL NOTES AND SYMBOLS

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

FIGURE AND INDEX NUMBERS

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

INDENTATION SYSTEM

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

1 2 3 4 5

Name & Description

Assembly and/or Component
Attaching parts for Assembly and/or Component

Detail Part of Assembly and/or Component Attaching parts for Detail Part

Parts of Detail Part
Attaching parts for Parts of Detail Part

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

Attaching parts must be purchased separately, unless otherwise specified.

ITEM NAME

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

ABBREVIATIONS

ACTR ADPTR ALIGN AL ASSEM ASSEY ATTEN AWG BRKT BRS BRZ BSHG CAB CCAB CCAC CCMP	INCH NUMBER SIZE ACTUATOR ADAPTER ALIGNMENT ALUMINUM ASSEMBLED ASSEMBLY ATTENUATOR AMERICAN WIRE GAGE BOARD BRACKET BRASS BRONZE BUSHING CABINET CAPACITOR CERAMIC CHASSIS CIRCUIT COMPOSITION	ELCTRN ELEC ELCTLT ELEM EPL EOPT EXT FIL FLEX FLH FLTR FR FSTNR FT FXD GSKT HDL HEX HD HEX SOC HLCPS	ELECTRON ELECTRICAL ELECTROLYTIC ELEMENT ELECTRICAL PARTS LIST EOUIPMENT EXTERNAL FILLISTER HEAD FLEXIBLE FLAT HEAD FILTER FRAME OF FRONT FASTENER FOOT FIXED GASKET HANDLE HEXAGONAL HEAD HEXAGONAL SOCKET HELICAL COMPRESSION	OBD OD OVH PH BRZ PL PLSTC PN PNH PWR RCPT RES	INCH INCANDESCENT INSULATOR INTERNAL LAMPHOLDER MACHINE MECHANICAL MOUNTING NIPPLE NOT WIRE WOUND ORDER BY DESCRIPTION OUTSIDE DIAMETER OVAL HEAD PHOSPHOR BRONZE PLAIN OF PLATE PLASTIC PART NUMBER PAN HEAD POWER RECEPTACLE RESISTOR	SHLD SHLDR SKT SL SLFLKG SLFLKG SLFUG SPR SO SST STL SW T TERM THD THK TNSN TPG TRH	SINGLE END SECTION SECTION SECTION SHIELD SHOULDERED SOCKET SLIDE SELF-LOCKING SLEEVING SPRING SPRING SOUARE STAINLESS STEEL STEEL SWITCH TUBE TERMINAL THREAD THICK TENSION TAPPING TRUSS HEAD
CER	CERAMIC	HEX	HEXAGON	PNH	PAN HEAD	THK	THICK
CHAS	CHASSIS	HEX HD	HEXAGONAL HEAD	PWR	POWER	TNSN	TENSION
CKT	CIRCUIT	HEX SOC	HEXAGONAL SOCKET	RCPT	RECEPTACLE	TPG	TAPPING

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

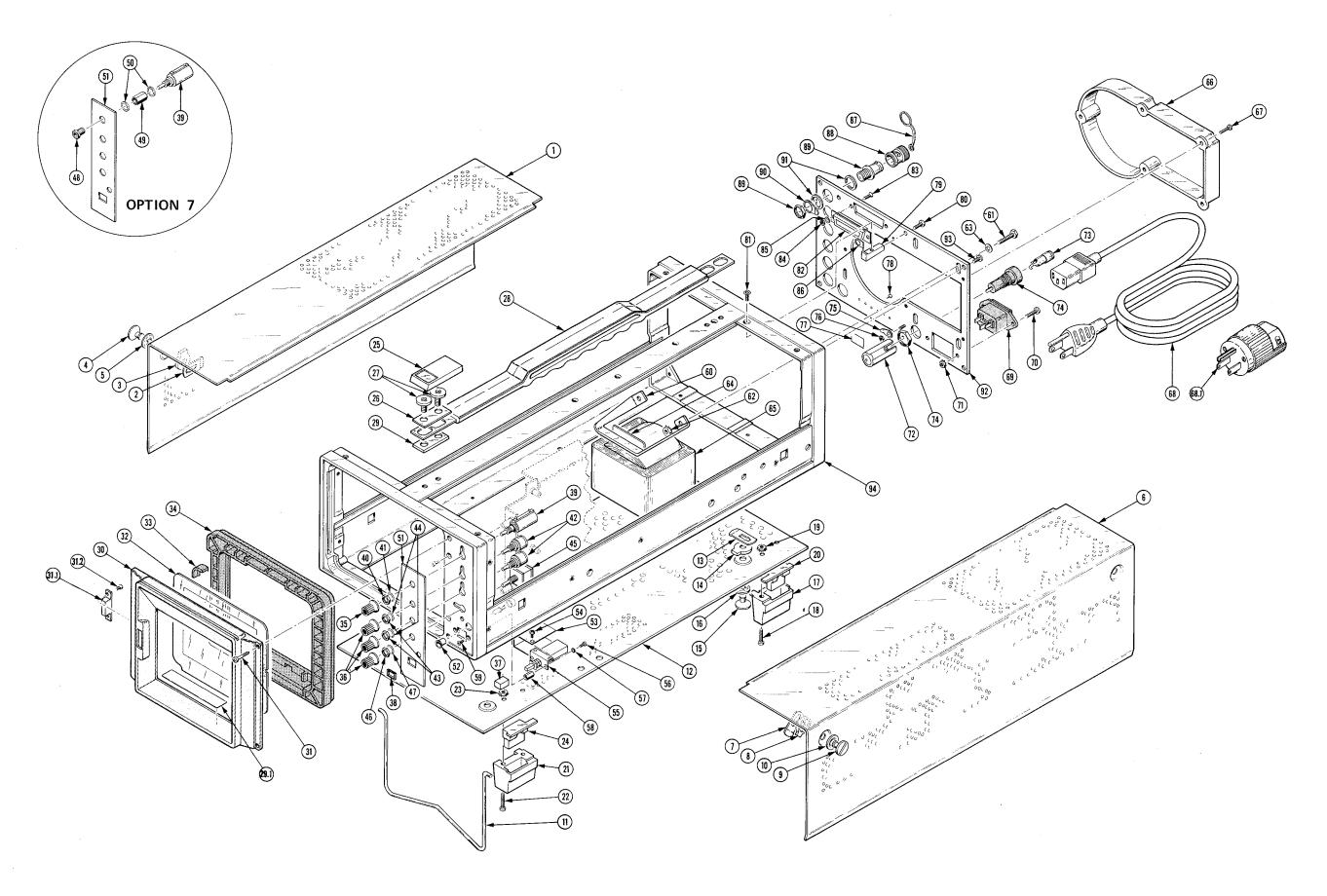
Mfr. Code	Manufacturer	Address	City, State, Zip Code
03984	GENERAL ELECTRIC CO SEMI-CONDUCTOR	Photo Coo	CLYDE NY
06229	PRODUCTS DEPT ELECTROVERT INC	ACC MAIN CT	NEW ROCHELL NYY 10801
06383	PANDUIT CORP	466 MAIN ST 17301 RIDGELAND 13001 E TEMPLE AVE	TINLEY PARK IL 60477
06950	VST CORP	13001 F TEMPLE AVE	CITY OF INDUSTRY CA 91746
00000	SCREWCORP DIVISION	10001 2 1211 22 742	of the subsection of or the
07416	NELSON NAME PLATE CO	3191 CASITAS	LOS ANGELES CA 90039
09922	BURNDY CORP	RICHARDS AVE	NORWALK CT 06852
12136	P H C INDUSTRIES INC	1643 HADDON AVE	CAMDEN NJ 08103
12327	FREEWAY CORP	9301 ALLEN DR	CLEVELAND OH 44125-4632
13103	THERMALLOY CO INC	2021 W VALLEY VIEW LANE P O BOX 34829	DALLAS TX 75234
16428	VSI CORP SCREWCORP DIVISION NELSON NAME PLATE CO BURNDY CORP P H C INDUSTRIES INC FREEWAY CORP THERMALLOY CO INC COOPER BELDEN ELECTRONIC WIRE AND CA SUB OF COOPER INDUSTRIES INC	NW N ST	RICHMOND IN 47374
18310	CONCORD ELECTRONICS CORP DU PONT E I DE NEMOURS AND CO INC	37 GREAT JONES ST	NEW YORK NY 10012-1115
22526	DU PONT E I DE NEMOURS AND CO INC DU PONT CONNECTOR SYSTEMS DIV MILITARY PRODUCTS GROUP	515 FISHING CREEK RD	NEW CUMBERLAND PA 17070-3007
22670	G M NAMEPLATE INC	2040 15TH AVE WEST	SEATTLE WA 98119-2728
23740	AMUNEAL MFG CORP	4737 DARRAH	PHILADELPHIA PA 19124-2705
27264	MOLEX INC CORPORATE HO	2222 WELLINGTON COURT	LISLE IL 60532
28520	HEYCO MOLDED PRODUCTS	750 BOULEVARD P O BOX 160	KENILWORTH NJ 07033-1721
55285	BERGQUIST CO INC THE	5300 EDINA INDUSTRIAL BLVD	MINNEAPOLIS MN 55435-3707
71468	ITT CANNON	10550 TALBERT AVE	FOUNTAIN VALLEY CA 92728-8040
	DIV OF ITT CORP	PO BOX 8040	
73743	FISCHER SPECIAL MFG CO	111 INDUSTRIAL RD	COLD SPRING KY 41076-9749
74445	HOLO-KROME CO	31 BROOK ST	ELMWOOD CT 06110-2350
77820	DU PONT CONNECTOR SYSTEMS DIV MILITARY PRODUCTS GROUP G M NAMEPLATE INC AMUNEAL MFG CORP MOLEX INC CORPORATE HQ HEYCO MOLDED PRODUCTS BERGQUIST CO INC THE ITT CANNON DIV OF ITT CORP FISCHER SPECIAL MFG CO HOLO-KROME CO AMPHENOL CORP SUB OF ALLIED CORP BENDIX CONNECTOR OPNS SHAKEPROOF DIV OF ILLINOIS TOOL WORKS ILLINOIS TOOL WORKS INC SHAKEPROOF DIVISION VARFLEX CORP	40-60 DELAWARE ST	SIDNEY NY 13838
77900	SHAKEPROOF DIV OF ILLINOIS TOOL WORKS	SAINT CHARLES RD	ELGIN IL 60120
78189	ILLINOIS TOOL WORKS INC SHAKEPROOF DIVISION	ST CHARLES ROAD	ELGIN IL 60120
79074	VARFLEX CORP	512 WEST COURT ST	ROME NY 13440
79136	WALDES KOHINOOR INC	47-16 AUSTEL PLACE	LONG ISLAND CITY NY 11101
80009	TEKTRONIX INC	4900 S W GRIFFITH DR P O BOX 500	BEAVERTON OR 97077
83385	SHAKEPROOF DIVISION VARFLEX CORP WALDES KOHINOOR INC TEKTRONIX INC MICRODOT MFG INC GREER-CENTRAL DIV ELCO INDUSTRIES INC ASSOCIATED SPRING BARNES GROUP INC	3221 W BIG BEAVER RD	TROY MI 48098
83486	ELCO INDUSTRIES INC	1101 SAMUELSON RD	ROCKFORD IL 61101
83553	ASSOCIATED SPRING BARNES GROUP INC		GARDENA CA 90248-1819
85471	BOYD CORP	13885 RAMOMA AVE 701 SONORA AVE	CHINO CA 91710
86928	SEASTROM MFG CO INC	701 SONORA AVE	GLENDALE CA 91201
87930	TOWER MFG CORP	158 PINE ST	PROVIDENCE RI 02903
93907	TEXTRON INC CAMCAR DIV	600 18TH AVE	ROCKFORD IL 61101
95987	WECKESSER CO INC	4444 WEST IRVING PARK RD	CHICAGO IL 60641
96904	NATVAR CO	ROUTE 70 EAST	CLAYTON NC 27520
98978	DIV OF HIGH VOLTAGE ENGINEERING CORP INTERNATIONAL ELECTRONIC RESEARCH	PO BOX 658 135 W MAGNOLIA BLVD	BURBANK CA 91502
	CORP	PO BOX 7704	
S3629	SCHURTER AG H C/O PANEL COMPONENTS CORP	2015 SECOND STREET	BERKELEY CA 94170
TK0392	NORTHWEST FASTENER SALES INC	7923 SW CIRRUS DRIVE	BEAVERTON OR 97005
TK0433	PORTLAND SCREW CO	6520 N BASIN	PORTLAND OR 97217
TK0435 TK0858	LEWIS SCREW CO	4114 S PEORIA	CHICAGO IL 60609
TK1287	STAUFFER SUPPLY CO ENOCH MFG CO	105 SE TAYLOR 14242 SE 82ND DR	PORTLAND OR 97214 CLACKAMAS OR 97015
INTEGI	LITOGIT PILO CO	PO BOX 98	OFMOWNING OK 21013
TK1316	BOYD CORP	6136 NE 87TH AVE	PORTLAND OR 97220
TK1386	PYRAMID/INTERFACE	PO BOX 20038 8623 SOUTH 212-TH STREET	KENT WA 98031

9-2 REV NOV 1987

Fig. & Index	Tektronix	Serial/Assembly No.			Mfr.	
No.	Part No.	Effective Dscont	Qty	12345 Name & Description	Code	Mfr. Part No.
1-1	390-0543-00	B010100 B011944	2	CAB.SIDE,MON: (OPTION O6 ONLY)	80009	390-0543-00
	390-0543-01	B011945	2	CAB.SIDE,MON:	80009	390-0543-01
	390-0270-00		1	(OPTION 06 ONLY) CAB.SIDE,MON:LEFT 0.032 AL	00000	390-0270-00
	390-0270-00		1	(OPTION 28 ONLY)	00003	390-0270-00
-2	386-1151-00		2	EACH COVER INCLUDES:	02552	ORDER BY DESCR
-2 -3	386-0227-00		2 2	.CLAMP,RIM CLENC:SPG STL CD PL .STOP,CLP,RIM CL:		386-0227 - 00
-4	214-0603-02		2	.PIN ASSY, SECRG: W/SPRING WASHER		214-0603-02
-5	214-0604-00		2	WASHER,SPR TNSN:0.26 ID X 0.47 OD,SST		214-0604-00
-6	390-0244-00		1	CAB.SIDE, MON: RIGHT, 0.032 AL		390-0244-00
				(OPTION 28 ONLY)		
-7	386-1151-00		2	.CLAMP.RIM.CLENC:SPG STL CD PL		ORDER BY DESCR
-8	386-0227-00		2	STOP, CLP, RIM CL:		386-0227-00 214-0603-02
-9	214-0603-02		2	.PIN ASSY, SECRG: W/SPRING WASHER		214-0604-00
-10	214-0604-00		2	WASHER,SPR TNSN:0.26 ID X 0.47 OD,SST		348-0275-00
-11	348-0275-00	D04.04.00	1	FLIP-STAND,CAB.:3.75 H,SST (OPTION 06 ONLY)		
-12	390-0523-00	B010100 B011944	1	CAB.BOTTOM,MON: (OPTION 06 ONLY)	80009	390-0523-00
	390-0523-04	B011945	1	CABINET BOTTOM:	80009	390-0523-04
			_	(OPTION O6 ONLY)		
	390-0281-00		1	COVER, MONITOR: BOTTOM	80009	390-0281-00
				(OPTION 28 ONLY)		
••	000 1151 00			EACH COVER INCLUDES:	02552	ODDED BY DECCE
-13	386-1151-00		4	.CLAMP, RIM CLENC: SPG STL CD PL	03333	ORDER BY DESCR 386-0227-00
-14	386-0227-00		4			
-15	214-0603-02		4	.PIN ASSY, SEURG: W/SPRING WASHER	80009	214-0603-02
-16	214-0604-00		2	.PIN ASSY,SECRG:W/SPRING WASHERWASHER,SPR TNSN:0.26 ID X 0.47 OD,SST(OPTION 06 ONLY)	80009	214-0604-00
-17	348-0073-00		2	.HINGE BLOCK, STA: L FR, R REAR, BLACK ACETAL	80009	348-0073-00
				.(OPTION 06 ONLY)		
				.(ATTACHING PARTS)	TI40 40 F	ODDED DV DECCD
-18	211-0532-00		4	.SCREW,MACHINE:6-32 X .750,FILH,STL .(OPTION 06 ONLY)	1K0435	ORDER BY DESCR
-19	210-0457-00		4	.NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL	78189	511-061800-00
				.(OPTION 06 ONLY)		
			_	.(END ATTACHING PARTS)	00000	240 0000 00
~20	348-0208-00		2	.FOOT,CABINET:L FRONT,BLACK PU	80009	348-0208-00
-21	348-0074-00		2	.(OPTION 06 ONLY) .HINGE BLOCK,STA:R FR,L REAR,BLACK ACETAL	80009	348-0074-00
	040 00/4 00		-	.(OPTION O6 ONLY)	••••	
				.(ATTACHING PARTS)		
-22	211-0532-00		4	.SCREW,MACHINE:6-32 X .750,FILH,STL	TK0435	ORDER BY DESCR
	010 0457 00			.(OPTION 06 ONLY)	70100	E11 001000 00
-23	210-0457-00		4	.NUT.PL,ASSEM WA:6-32 X 0.312,STL CD PL .(OPTION 06 ONLY)	70109	211-001000-00
				.(END ATTACHING PARTS)		
-24	348-0207-00		2	.FOOT,CABINET:R FRONT,BLACK,PU	80009	348-0207-00
			_	.(OPTION 06 ONLY)		
-25	200-0728-00		2	COVER, HDL END: 1.91 X 0.91 X 0.36 BLUE	80009	200-0728-00
-26	206_1624_00		2	(OPTION O6 ONLY) PLATE, HDL RTNG: STAINLESS STEEL	80000	386-1624-00
-20	386-1624-00		2	(OPTION OF ONLY)	00003	300 1024 00
				(ATTACHING PARTS)		
-27	212-0597-00		4	SCREW,SHOULDER:10-32 X 0.55,0.5 RDH,STL	83486	ORDER BY DESCR
				(OPTION OF ONLY)		
-28	367-0116-00		1	(END ATTACHING PARTS) HANDLE,CARRYING:16.54 L,BLUE VINYL	12136	ORDER BY DESCR
20	307 0110 00		1	(OPTION OF ONLY)	12100	ONDER DI DEDOR
-29	386-1283-00		2	PLATE, HDL MTG: FRONT	8000 9	386-1283-00
00.1	204 2507 00		4	(OPTION OF ONLY)	onnn	224 2567 00
-29.1	334-3567-00		1	MARKER, IDENT: MARKED DANGER (OPTION 06 ONLY)	60003	334~3567-00
-30	200-2178-02		1	RTNR, CRT SCALE:	80009	200-2178-02
			•	(ATTACHING PARTS)		
-31	211-0188-00		2	SCREW, MACHINE: 4-40 X 0.6, PNH, SST	80009	211-0188-00

ig.& ndex o.	Tektronix Part No.	Serial/Ass Effective	sembly No. e Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
	101010.	Literia	. 030011	467			,
ļ-					(END ATTACHING PARTS)	00000	104 0100 00
-31.1	134-0163-00			1	PLUG, HOLE: PLASTIC	80009	134-0163-00
					(ATTACHING PARTS)		
-31.2	213-0816-00			2	SCREW, TPG, TC: 2-56 X 0.188L, TYPE T, PNH, STL	TK0858	ORDER BY DESCR
					(END ATTACHING PARTS)		
-32	337-1674-13			1	SHLD, IMPLOSION: CLEAR	80009	337-1674-13
-33	386-2544-00			4	SUPPORT, CRT: FRONT		386-2544-00
-34	386-3530-00			í			386-3530-00
-35	366-0495-00			1	MIND CV 0 006 ID V 0 5 0D V 0 531 H	80009	
				_	SUPPORT, CRI: FROM I KNOB:GY, 0.096 ID X 0.5 OD X 0.531 H KNOB:GY, 0.127 ID X 0.5 OD X 0.531 PUSH BUTTON:SIL GY, 0.43 X 0.32 X 0.253 EDAME DISH BITS	90003	366-1189-00
-36	366-1189-00			3	NNUB: GT, U.12/ 1U X U.5 UU X U.531	80009	
-37	366-1257-00			1	PUSH BUTTON: STL GY, 0.43 X 0.32 X 0.253	80009	366-1257-00
-38	426-0681-00			1	HOUSE, OSH BIN.	80009	426-0681-00
-39				1	RES., VAR, WW: (SEE_R46_REPL)		
					(ATTACHING PARTS)		
-40	210-0583-00			1	NUT, PLAIN, HEX: 0.25-32 X 0.312, BRS CD PL WASHER, FLAT: 0.25 ID X 0.375 OD X 0.02, STL	73743	2X-20319-402
-41	210-0940-00			1	WASHER.FLAT: 0.25 ID X 0.375 OD X 0.02.STL	12327	ORDER BY DESCR
					(END ATTACHING PARTS)		
-42				2	RES., VAR, NONWIR: (SEE R56, R66 REPL)		
				-	(ATTACHING PARTS)		
-43	210-0583-00			2	MIT DIATA HEY O 25_22 Y O 212 RDC CD DI	727/12	27-20310-402
-43 -44	210-0940-00			2	NUT, PLAIN, HEX: 0.25-32 X 0.312, BRS CD PL WASHER, FLAT: 0.25 ID X 0.375 0D X 0.02, STL	10207	UDDED BY DECUD
-44	210-0340-00			۷	WASHER, FLACTURED ADTO	1232/	OWNER DI NESCK
					(END ATTACHING PARTS)		
-45				1	RES., VAR, NONWIR: (SEE R76 REPL)		
					(ATTACHING PARTS)		
-46	210-0583-00			1	NUT, PLAIN, HEX: 0.25-32 X 0.312, BRS CD PL WASHER, FLAT: 0.25 ID X 0.375 OD X 0.02, STL	73743	2X-20319-402
-47	210-0940-00			1	WASHER, FLAT: 0.25 ID X 0.375 OD X 0.02, STL	12327	ORDER BY DESCR
					(END ATTACHING PARTS)		
-48	358-0054-00			4	BSHG, MACH THD: 0.25-32 X 0.159 ID, BRS NP	80009	358-0054-00
	000 0001 00			7	(OPTION O7 ONLY)	00000	000 0004 00
40	100 0050 00				(ATTACHING PARTS)	00000	
-49	129-0252-00			4	SPCR, POST: 0.471 L, 0.25-32 THRU, AL, 0.312 HEX	80009	129-0252-00
_					(OPTION 07 ONLY)		
-50	210-0046-00			8	WASHER, LOCK: 0.261 ID, INTL, 0.018 THK, STL	77900	1214-05-00-0541C
					(OPTION 07 ONLY)		
-51	333-2591-00			1	PANEL, FRONT:	80009	333-2591-00
-52				1	LAMP, LED: (SEE DS90 REPL)		
-53	342-0481-00			ī	INSULATOR, SW:	80009	342-0481-00
	0.2 0.01 00			•	(ATTACHING PARTS)	00005	0-12 0-101 00
-54	213-0138-00			2	SCREW, TPG, TF:4-24 X 0.188, TYPE B, PNH, STL	TVOASE	ODDED BY DECCD
-J 4	213-0130-00			2		180435	OKUEK DI DESUK
e.					(END ATTACHING PARTS)		
-5 5				1	SWITCH, PUSH: (SEE S90 REPL)		
					(ATTACHING PARTS)		
-56	211-0022-00			2	SCREW,MACHINE:2-56 X 0.188,PNH,STL WASHER,LOCK:#2 SPLIT,0.02 THK STL	TK0435	ORDER BY DESCR
-57	210-0053-00			2	WASHER, LOCK: #2 SPLIT, 0.02 THK STL	78189	ORDER BY DESCR
					(END ATTACHING PARTS)		
-58	361-0861-00			2	SPACER, SLEEVE: 0.36 L X 0.09 ID, ALUMINUM	80009	361-0861-00
-	001 0001 00			-	(ATTACHING PARTS)	00003	301 0001 00
-59	211-0087-01	P010100	P010220	2		TVOASE	ODDED BY DECCD
-59			B010239	2	SCREW, MACHINE: 2-56 X 0.188, FLH, 82 DEG, STL		ORDER BY DESCR
	211-0030-00	B010240		2	SCREW, MACHINE: 2-56 X 0.25, FLH, 82 DEG, STL	1K0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
-60	343-0267-00			2	BRACKET, HLDN: TRANSFORMER, AL	80009	343-0267-00
					(ATTACHING PARTS)		
61	212-0100-00			4	SCREW, MACHINE: 8-32 X 0.625, HEX HD, STL	83385	ORDER BY DESCR
62	210-0458-00			4	NUT,PL,ASSEM WA:8-32 X 0.344,STL CD PL		511-081800-00
63	210-0804-00			4	WASHER, FLAT: 0.17 ID X 0.375 OD X 0.032		76430-000
	- · · · ·			•	(END ATTACHING PARTS)		
64	342-0028-00			2	INSULATOR, PLATE: TRANSFORMER, ANODIZED AL	80009	342-0028-00
65				1	XFMR, PWR, STPDN: (SEE T95 REPL)	55005	J.E 00E0 00
-66	200-1308-03					ΩΛΛΛΩ	200_1308_02
UU	500-1300 - 03			1	COVER, CRT:	80009	200-1308-03
67	011 0000 00			_	(ATTACHING PARTS)	0000	ADDED BY DECCE
-67	211-0008-00			5	SCREW, MACHINE: 4-40 X 0.25, PNH, STL	93907	ORDER BY DESCR
					(END ATTACHING PARTS)		
-68				1	CABLE ASSY, PWR:3,16 AWG, 125V, 96.01		
					(SEE STANDARD ACCESSORY)		
-68.1	131-1703-00			1	CONN, PLUG, ELEC: PWR, MALE, 125V, 15A W/HOSP GND	03984	GED 0511H
				•	(OPTION OF ONLY)		******
6 9	131-1084-00			1	CONN, RCPT, ELEC: PWR, MALE, 250VAC, 15A	87930	0367

Fig. &							
Index	Tektronix	Serial/Ass				Mfr.	
No.	Part No.	Effective	Dscont	Qty_	12345 Name & Description	Code	Mfr. Part No.
1-70	211-0198-00			2	SCREW.MACHINE:4-40 X 0.438.PNH.STL	TK0435	ORDER BY DESCR
-71	210-0586-00			2	NUT, PL, ASSEM WA: 4-40 X 0.25, STL CD PL	78189	211-041800-00
					(END ATTACHING PARTS)		
-72	200-0237-04			1	COVER, FUHLR: PLASTIC	80009	200-0237-04
-73	200-2264-00			1	CAP, FUSEHOLDER: 3AG FUSES	\$3629	FEK 031 1666
-74	204-0837-00			1	BODY, FUSEHOLDER: 3AG, 6.3A, 250V, PNL MT, UL	S3629	031.1681
-75	210-0202-00			1	CAP, FUSEHOLDER: 3AG FUSES BODY, FUSEHOLDER: 3AG, 6.3A, 250V, PNL MT, UL TERMINAL, LUG: 0.146 ID, LOCKING, BRZ TIN PL (ATTACHING PARTS)	86928	A-373-158-2
-76	210-0407-00			1	NUT, PLAIN, HEX:6-32 X 0.25, BRS CD PL (END ATTACHING PARTS)	73743	3038-402
-77	334-3379-00	B010100	B011806	1	MARKER, IDENT: MARKED GROUND SYMBOL	07416	ORDER BY DESCR
	334-3379-02	B011807		1	MARKER, IDENT: MARKED GROUND SYMBOL	22670	ORDER BY DESCR
-78	213-0816-00			1	SCREW, TPG, TC: 2-56 X 0.188L, TYPE T, PNH, STL	TK0858	ORDER BY DESCR
-79	220-0809-00			2	NUT BLOCK:6-32 X 0.95,AL (ATTACHING PARTS)	80009	220-0809-00
-80	211~0507-00			2	SCREW, MACHINE: 6-32 X 0.312, PNH, STL	83385	ORDER BY DESCR
-81	211-0541-00			2	SCREW,MACHINE:6-32 X 0.312,PNH,STL SCREW,MACHINE:6-32 X 0.25,FLH,100 DEG,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESCR
	334-3852-00	B010172		1	MARKER, IDENT: MKD BLANK		334-3852-00
	195-0653-00			1	LEAD, ELECTRICAL: 26 AWG, 25.0 L, 2-N	80009	195-0653-00
-82	131-0569-00			1	CONN,RCPT,ELEC:25 CONTACT,FEMALE (ATTACHING PARTS)	71468	DB-25S
-83	211-0038-00			2	SCREW, MACHINE: 4-40 X 0.312, FLH, 100 DEG, STL	TK0435	ORDER BY DESCR
-84	210-0406-00	B010100	B010239	2	NUT,PLAIN,HEX:4-40 X 0.188,BRS CD PL		12161-50
-85	210-0004-00		B010239	2	WASHER,LOCK:#4 INTL,0.015 THK,STL		1204-00-00-0541C
	210-0586-00	B010240		2	NUT,PL,ASSEM WA:4-40 X 0.25,STL CD PL		211-041800-00
-86	210-0201-00			1	TERMINAL,LUG:0.12 ID,LOCKING,BRZ TIN PL (END ATTACHING PARTS)		A373-157-2
-87	346-0045-00			3	STRAP,CONN COV:BNC ONE END,POLYPROPYLENE COVER,ELEC CONN:BNC,GROUNDING W/O CHAIN	80009	346-0045-00
-88	200-0991-00			3		77820	2096- 5
-89				7	CONNECTOR,RCPT: (SEE J10,J20,J30,J40,J50,J60,J70 REPL)		
-90	210-0255-00			7	TERMINAL, LUG: 0.391 ID, LOCKING, BRS CD PL	12327	ORDER BY DESCR
-91	342-0117-00			14	INSULATOR, BSHG: 0.375 ID X 0.625 OD		342-0117-00
-92	333-2579-00			1	PANEL,REAR: (ATTACHING PARTS)	80009	333-2579-00
-93	211-0507-00			4	SCREW,MACHINE:6-32 X 0.312,PNH,STL (END ATTACHING PARTS)	83385	ORDER BY DESCR
-94	426-1655-00			1	FRAME, MONITOR:	80009	426-1655-00



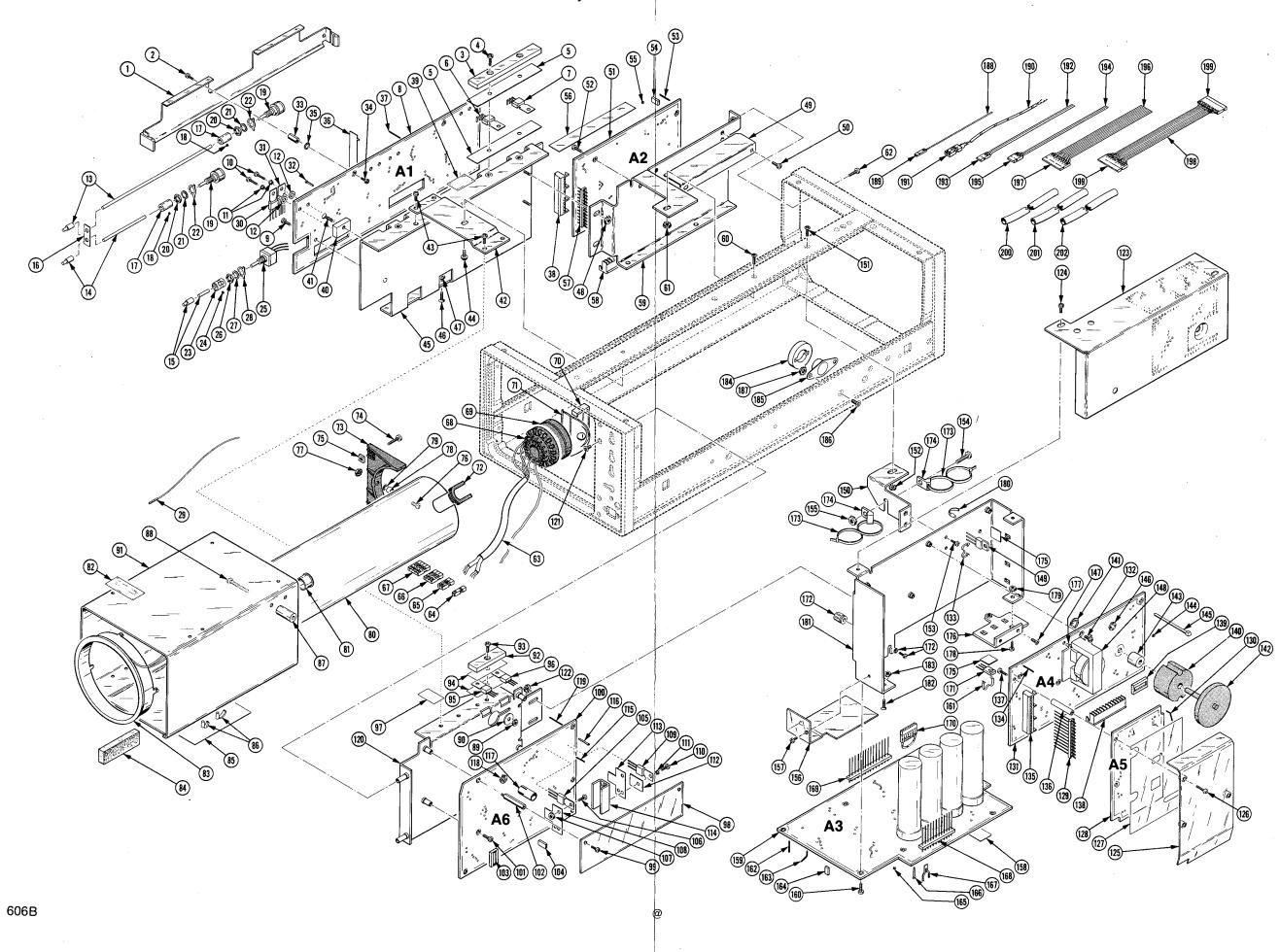


Fig. &							
Index No.	Tektronix Part No.	Serial/Asse Effective		Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
2-1	337-2726-00			1	SHIELD, ELEC: CIRCUIT BOARD, AL (ATTACHING PARTS)	80009	337-2726-00
-2	211-0008-00			3	SCREW, MACHINE: 4-40 X 0.25, PNH, STL (END ATTACHING PARTS)	93907	ORDER BY DESCR
-3	214-3011-00			2	HEAT SINK,XSTR:(4) TO-202,AL (ATTACHING PARTS)	80009	214-3011-00
-4	211-0097-00			4	SCREW, MACHINE: 4-40 X 0.312, PNH, STL (END ATTACHING PARTS)	TK0435	ORDER BY DESCR
-5 -6	342-0494-00			4 4	INSULATOR, PLATE: TRANSISTOR, FIBER SHEET TRANSISTOR: (SEE Q170,Q175,Q270,Q275 REPL)	80009	342-0494-00
-7				4	TRANSISTOR: (SEE Q180,Q185,Q280,Q285 REPL)		
-8	252-0562-00	B010715		AR 1	PLASTIC EXTR:0.1 X 0.12, POLYETHYLENE CKT BOARD ASSY:X-Y OUTPUT AMP(SEE A1 REPL)	06229	GS2
-9	211-0008-00			1	(ATTACHING PARTS) SCREW,MACHINE:4-40 X 0.25,PNH,STL	93907	ORDER BY DESCR
J	129-0339-00			i	SPACER, POST: 0.28 L,4-40 TAP/STUD, BRS, CU SN ZN PL,0.25 HEX		129-0339-00
-10	211-0062-00			8	SCREW, MACHINE: 2-56 X 0.312, PNH, STL		ORDER BY DESCR
-11	210-1156-00			8 8	WASHER, SHLDR: 0.091D X 0.20D X0.085D, NYL INSULATOR, WSHR: 0.134 ID X 0.3 OD X 0.08		210-1156-00 361-0555-00
-12	361-0555-00			0	(END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	00000	301 3000 30
-13	384-1112-05			1	EXTENSION SHAFT:7.1 L X 0.188 OD,PLASTIC		384-1112-05
-14	384-1112-06			1	.EXTENSION SHAFT:2.9 L X 0.188 OD,PLASTIC		384-1112-06
-15	384-1112-07			1	EXTENSION SHAFT:1.0 L X 0.188 OD, PLASTIC		384-1112-07 386-4323-00
-16	386-4323-00			1 2	.SUPPORT,SHAFT:BRASS .CPLG,SHAFT,RGD:0.128 ID X 0.312 OD,AL		376-0029-00
-17 -18	376-0029-00 213 - 0075-00			4	SETSCREW:4-40 X 0.094,STL		ORDER BY DESCR
-19				i	.RES.,VAR,NONWIR:(SEE A1R104,R204 REPL) .(ATTACHING PARTS)		
-20	210-0583-00			2	NUT PLAIN HEX: 0.25-32 X 0.312, BRS CD PL		2X-20319-402
-21	210-0046-00			2	.WASHER, LOCK: 0.261 ID, INTL, 0.018 THK, STL		1214-05-00-0541C 386-4256-00
-22	386-4256-00			2	.PLATE,CMPNT MTG:VARIABLE RESISTOR,AL .(END ATTACHING PARTS) .CPLG,SHAFT,FLEX:0.127 ID X 0.375 OD,DELRIN		376-0051-01
-23	376-0051-01			1 4	SETSCREW:4-40 X 0.125,STL		ORDER BY DESCR
-24 - 25	213-0048-00			1	.RES.,VAR,NONWIR:(SEE R290 REPL) (ATTACHING PARTS)		
-26	210-0583-00			1	NUT PLAIN HEX: 0.25-32 X 0.312, BRS CD PL	73743	2X-20319-402
-27	210-0046-00			1	WASHER LOCK: 0.261 ID. INTL, 0.018 THK, STL		1214-05-00-0541C 386-4256-00
-28	386-4256-00 162-0008-00			1 AR	.PLATE,CMPNT MTG:VARIABLE RESISTOR,AL .INSUL SLVG,ELEC:0.034 ID,VINYL,BLK,105 DEG	80009	162-0008-00
	0400 00	0010100	B010414	1	.(END ATTACHING PARTS) .LEAD,ELECTRICAL:22 AWG,12.5 L,8-2	80009	195-0486-00
-29	195-0486-00 195-0486-01	B010100 B010415	DU10414	1	IFAD_ELECTRICAL:22 AWG,12.5 L,8-2	80009	195-0486-01
	195-0487-00	B010100	B010414	ī	LEAD.ELECTRICAL:22 AWG,11.0 L,1N		195-0487-00 195-0487-01
	195-0487-01	B010415		1	.LEAD,ELECTRICAL:22 AWG,11.0 L,8-1	80009	195-0488-00
	195-0488-00		B010414	1	LEAD,ELECTRICAL:22 AWG,6.0 L,8-4 .LEAD,ELECTRICAL:22 AWG,6.0 L,8-4		195-0488-01
	195-0488-01		B010414	1 1	LEAD, ELECTRICAL: 22 AWG, 5.5 L, 8-3	80009	195-0489-00
	195-0489-00 195-0489-01		0010414	1	.LEAD,ELECTRICAL:22 AWG,5.5 L,8-3	80009	195- 04 89 - 01
-30	193-0403-01			4	.transistor: .(SEE A1Q160,165,260,265 REPL)		
-31				4	.TRANSISTOR: .(SEE A1Q150,155,250,255 REPL)		
-32				4	TERM, TEST POINT: .(SEE AlTP173,178,273,278 REPL)	80000	3 129-0553-00
-33	129-0553-00)		2	SPACER, POST: 0.41 L, 4-40, BRS, 0.188 HEX (ATTACHING PARTS)		ORDER BY DESCR
-34 -35	211-0008-00 210-0004-00			2 2	SCREW, MACHINE:4-40 X 0.25, PNH, STL .WASHER, LOCK:#4 INTL, 0.015 THK, STL .(END ATTACHING PARTS)	77900	1204-00-00-05410
_				1	SHIFLD FLFC:CIRCUIT BD:2.300 X .400 IN	80008	337-1197-02
-36	337-1197-02 131-0589-00			2	TERMINAL PIN: 0.46 L X 0.025 SQ PH BRZ	22526	5 48283-029 4 00-52-3123
-37 -38	131-0589-00			1	.CONN.RCPT,ELEC:CKT BD,1 X 12,FEMALE	27264	4 09-52-3123 9 334-2360-00
-39	334-2360-00			1	MARKER, IDENT: MKD DANGER	8000	9 214-2988-00
-40	214-2988-00			4	HEAT SINK,XSTR:TO-202,AL (ATTACHING PARTS)	0000	= '
					(MITMODING TAINIS)		

Replaceable Mechanical Parts - 606B

Tecktromix Serial Assembly No. Per Per No. Per	Fig. 8	•					
2-41	Index	Tektronix			Qty	12345 Name & Description	Mfr. Code Mfr. Part No.
-43 211-0007-00	2-41	211-0038-00			4	SCREW, MACHINE: 4-40 X 0.312, FLH, 100 DEG, STL	
211-0007-00	-42	407-2414-00			1	BRACKET, CMPNT: MONITOR, AL	
CHOS CHORD CHOS		211-0007-00			4	SCREW, MACHINE: 4-40 X 0.188, PNH, STL	TK0435 ORDER BY DESCR
-46	-44	211-0665-00			1	(END ATTACHING PARTS)	
211-0538-00 2 SCREM, MACHINEE-632 X 0.312, FILL, 100 DE6, STL 93907 ORDER BY DESCR	-45	441-1505-00			1	CHASSIS, MONITOR: DEFLÉCTION OUTPUT	
-49 337-2737-00	-46	211-0538-00			2	SCREW, MACHINE: 6-32 X 0.312, FLH, 100 DEG, STL	93907 ORDER BY DESCR
-49 337-2737-00						NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL	78189 511-061800-00
CATTACHING PARTS 93907 ORDER BY DESCR					2		
211-0008-00 2 SCREN, MACHINE: 4-40 X 0. 25, PMI-STL 93907 ORDER BY DESCR	-49	337-2737-00			1	(ATTACHING PARTS)	
-51	-50	211-0008-00			2	SCREW, MACHINE: 4-40 X 0.25, PNH, STL	93907 ORDER BY DESCR
SECREM_MACHINE: 4-40 X 0.25, PMH, STL 93907 ORDER BY DESCR	-51				1	CKT BOARD ASSY:X-Y PREAMP(SEE A2 REPL)	
CEND ATTACHING PARTS CENT BORD AS SYST INCLUDES: 131-0593-00	~52	211-0008-00			4	SCREW MACHINE (4-40 X n 25 PNH STI	93907 ADDED BY DESCO
-53 131-0589-00					•	(END ATTACHING PARTS)	
-60 211-0025-00	-53	131-0589-00			20	TERMINAL PIN:0.46 L X 0.025 SO PH BR7	22526 48283_020
-60 211-0025-00		131-0993-00				.BUS, CONDUCTOR: SHUNT ASSEMBLY, BLACK	22526 65474-005
-60 211-0025-00					12	.SOCKET, PIN CONN:W/O DIMPLE	22526 75060-012
-60 211-0025-00					1	.SHIELD, ELEC: DEFLECTION CKT BD	80009 337-1995-00
-60 211-0025-00						.CONN,RCPT,ELEC:CKT BD,12 MALE,TIN PLATED	27264 09-64-1127
-60 211-0025-00						.TERM, FEEDTHRU: CKT BD, RTANG, 15 FEMALE	27264 09-52-3151
136-0740-00 B010100 B010414 1 SKT, PL-IN ELEK:CRT, 14 W/LEADS B0009 136-0740-00 B010415 1 SKT, PL-IN ELEK:CRT, 14 PIN W/LEADS B0009 136-0740-01 B010415 1 SKT, PL-IN ELEK:CRT, 14 PIN W/LEADS B0009 352-0197-00 SKT, PL-IN ELEK:CRT, 14 PIN W/LEADS B0009 352-0197-00 B010415 BV BV BV BV BV BV BV B					1	CHASSIS,MONITOR:PREAMPLIFIER (ATTACHING PARTS)	80009 441-1504-00
136-0740-00 B010100 B010414 1 SKT, PL-IN ELEK:CRT, 14 W/LEADS B0009 136-0740-00 B010415 1 SKT, PL-IN ELEK:CRT, 14 PIN W/LEADS B0009 136-0740-01 B010415 1 SKT, PL-IN ELEK:CRT, 14 PIN W/LEADS B0009 352-0197-00 SKT, PL-IN ELEK:CRT, 14 PIN W/LEADS B0009 352-0197-00 B010415 BV BV BV BV BV BV BV B						SCREW, MACHINE: 4-40 X 0.375, FLH, 100 DEG, STL	TK0435 ORDER BY DESCR
136-0740-00 B010100 B010414 1 SKT, PL-IN ELEK:CRT, 14 W/LEADS B0009 136-0740-00 B010415 1 SKT, PL-IN ELEK:CRT, 14 PIN W/LEADS B0009 136-0740-01 B010415 1 SKT, PL-IN ELEK:CRT, 14 PIN W/LEADS B0009 352-0197-00 SKT, PL-IN ELEK:CRT, 14 PIN W/LEADS B0009 352-0197-00 B010415 BV BV BV BV BV BV BV B						NUT,PL,ASSEM WA:4-40 X 0.25,STL CD PL	78189 211-041800-00
-65 352-0198-00				_			
-65 352-0198-00	-63	136-0/40-00	B010100	B010414		SKT,PL-IN ELEK:CRT,14 W/LEADS	80009 136-0740-00
-65 352-0198-00	-64		DU1U415			SKT, PL-IN ELEK: CRT, 14 PIN W/LEADS	80009 136-0740-01
1						.HLDR,TERM CONN:1 WIRE,BLACK	80009 352-0197-00
1						HLDR TERM CONN: 2 WIRE, BLACK	80009 352-0198-00
1						HIDD TERM CONN.4 VIDE BLACK	80009 352-0199-00
1						WIDE SET FIEC.	80009 352-0200-00
-71 367-0117-00 1DLF, JLCKINN TOBE: JLCK		136-0304-03				SKT PI - IN FIFK - FIFCTOON THRE 14 CONTACT	80009 198-423/-00
-71 367-0117-00 1DLF, JLCKINN TOBE: JLCK						COVER.CRT SKT-2 052 OD Y 0 291 H PLASTIC	90000 300 0017 00
1PULL_SOCKET:CRT, PLASTIC 8009 367-0117-00 348-0145-00 1 GROMMET, PLASTIC:GRAY, U SHAPE, 0.48 ID 8009 348-0145-00 407-0931-00 1 GROMMET, PLASTIC:GRAY, U SHAPE, 0.48 ID 8009 348-0145-00 407-0931-00 (ATTACHING PARTS) 8385 ORDER BY DESCR NUT, PLAIN, SQ: 6-32 X 0.312 SQ: STL CD PL 83385 ORDER BY DESCR NUT, PLAIN, SQ: 6-32 X 0.312 SQ: STL CD PL 83385 ORDER BY DESCR NUT, PLAIN, SQ: 6-32 X 0.312 SQ: STL CD PL 83385 ORDER BY DESCR NUT, PLAIN, SQ: 6-32 X 0.312 SQ: STL CD PL 83385 ORDER BY DESCR NUT, PLAIN, SQ: 6-32 X 0.312 SQ: STL CD PL 83385 ORDER BY DESCR NUT, PLAIN, SQ: 6-32 X 0.312 SQ: STL CD PL 83385 ORDER BY DESCR NUT, PLAIN, SQ: 6-32 X 0.312 SQ: STL CD PL 83385 ORDER BY DESCR NUT, PLAIN, SQ: 6-32 X 0.25, STL CD PL						CLP, ELCTRN TUBE: DELRIN	80009 200-0917-02
1 GROMMET, PLASTIC:GRAY, U SHAPE, 0. 48 ID 80009 348-0145-00 1 BRKT, CRT SHIELD:REAR, POLYAMIDE 80009 407-0931-00 1 BRKT, CRT SHIELD:REAR, POLYAMIDE 80009 407-0931-00 1 BRKT, CRT SHIELD:REAR, POLYAMIDE 80009 407-0931-00 1 SCREW, MACHINE:6-32 X 0.312 PNH, STL 83385 ORDER BY DESCR PLASTIC PLASTI						PULL,SOCKET:CRT,PLASTIC	80009 367-0117-00
BRKT, CRT SHIELD:REAR, POLYAMIDE						GROMMET, PLASTIC: GRAY, U. SHAPF, 0, 48, TD	80009 348-0145-00
-75						(ATTACHING PARTS)	80009 407-0931-00
-76						SCREW, MACHINE: 6-32 X 0.312, PNH, STL	83385 ORDER BY DESCR
-77 210-0586-00 1 NUT, PL, ASSEM WA:4-40 X 0.188, PNH, STL TK0435 ORDER BY DESCR 78189 211-041800-00 (END ATTACHING PARTS) -78 129-0260-00 3 SPACER, POST:4-40 EXT/INT, AL, CSK STUD 80009 129-0260-00 (END ATTACHING PARTS) -79 210-0004-00 3 WASHER, LOCK:#4 INTL, 0.015 THK, STL 77900 1204-00-00-0541C (END ATTACHING PARTS) -81 348-0518-00 1 SHIELD, CRT: 28520 S6-625-8 (ES-625-8) BL 28520 S6-						NUT, PLAIN, SQ:6-32 X 0.312 SQ, STL CD PL	83385 ORDER BY DESCR
1						SCREW, MACHINE: 4-40 X 0.188, PNH, STL	TK0435 ORDER BY DESCR
-79						(END ATTACHING PARTS)	78189 211-041800-00
-80 337-2709-00 1 SHELD, CRT: 28520 S6-625-8 -81 348-0518-00 1 SHELD, CRT: 28520 S6-625-8 -82 334-1379-00 1 GROMMET, PLASTIC: BLACK, ROUND, 0.5 ID 28520 2073 (SB 625-8) BL 07416 0RDER BY DESCR -84 348-0090-00 3 PAD, CUSHIONING: 2.03 X 0.69 X 0.312 SI RBR 85471 R-10470MED/PSA 334-3771-01 B010335 1 MARKER, IDENT: MKD FUSE DATA 80009 334-3771-01 -86 343-0213-00 5 CLAMP, CABLE: 0.2 ID, PLASTIC 80009 343-0213-00 -87 361-0895-00 1 SPACER, SLEEVE: 0.4 L X 0.172 ID, ALUMINUM 80009 361-0895-00 -88 211-0017-00 1 SCREW, MACHINE: 4-40 X 0.75, PNH, STL 93907 ORDER BY DESCR						SPACER, POST: 4-40 EXT/INT, AL, CSK STUD	80009 129-0260-00
-81 348-0518-00						WASHER, LOCK:#4 INTL, 0.015 THK, STL	77900 1204-00-00-0541C
-82 334-1379-00 1 1 MARKER, IDENT:MKD HI VACUUM 28520 2073(SB 625-8)BL ORDER BY DESCR -84 348-0090-00 3 243-3771-01 B010335 1 MARKER, IDENT:MKD FUSE DATA 80009 334-3771-01 B010335 1 MARKER, IDENT:MKD FUSE DATA 80009 334-3771-01 B010335 1 MARKER, IDENT:MKD FUSE DATA 80009 334-3771-01 B010335 1 MARKER, IDENT:MARKED FUSE DATA 80009 334-3771-01 CLAMP, CABLE:0.2 ID, PLASTIC 80009 343-0213-00 (ATTACHING PARTS) 5 CLAMP, CABLE:0.2 ID, PLASTIC 80009 343-0213-00 (ATTACHING PARTS) 1 SCREW, MACHINE:4-40 X 0.75, PNH, STL 93907 ORDER BY DESCR		348-0518-00					28520 S6-625-8
-83	-82					MARKED IDENTIFIED AT MARKET	28520 2073(SB 625-8)BL
-85 334-3771-00 8010100 8010334 1 MARKER, IDENT:MKD FUSE DATA 80009 334-3771-01 8010335 1 MARKER, IDENT:MKD FUSE DATA 80009 334-3771-01 80093 334-3771-01						COTI TUR DEFI (SEE LEG DEDI)	07416 ORDER BY DESCR
-85 334-3771-00 B010100 B010334 1 MARKER, IDENT: MKD FUSE DATA 80009 334-3771-00 8010335 1 MARKER, IDENT: MARKED FUSE DATA 80009 334-3771-01 80009 30009 800		348-0090-00				PAD. CUSHIONING: 2.03 X 0.60 X 0.312 CT DBD	0E471 D 10470HF0 :
-86 343-0213-00 5 CLAMP, CABLE: 0.2 ID, PLASTIC 80009 343-0213-00 -87 361-0895-00 1 SPACER, SLEEVE: 0.4 L X 0.172 ID, ALUMINUM 80009 361-0895-00 -88 211-0017-00 (ATTACHING PARTS) -89 210-0586-00 1 SCREW, MACHINE: 4-40 X 0.75, PNH, STL 93907 ORDER BY DESCR	-8 5	334-3771-00 B(010100 B	010334		MARKER, IDENT: MKD FUSE DATA	
-87 361-0895-00 5 CLAMP, CABLE: 0.2 ID, PLASTIC 80009 343-0213-00 -88 211-0017-00 (ATTACHING PARTS) -89 210-0586-00 1 SCREW, MACHINE: 4-40 X 0.75, PNH, STL 93907 ORDER BY DESCR	-00	334-3//1-01 B(010335		1	MARKER, IDENT: MARKED FUSE DATA	
1 SPACER, SLEEVE: 0.4 L X 0.172 ID, ALUMINUM 80009 361-0895-00 -88 211-0017-00 (ATTACHING PARTS) -89 210-0586-00 1 SCREW, MACHINE: 4-40 X 0.75, PNH, STL 93907 ORDER BY DESCR						CLAMP, CABLE: 0.2 ID, PLASTIC	
-89 210-0586-00 1 SCREW,MACHINE:4-40 X 0.75, PNH, STL 93907 ORDER BY DESCR					1	SPACER, SLEEVE: 0.4 L X 0.172 ID. ALIMINIM	
MIT DI ACCEMINA AD VI DI DESCRI		211-0017-00 210 0500 00			1	SCREW, MACHINE: 4-40 X 0 75 DNILL CTI	00007 00000 000
78189 211-041800-00	03	£10-096-00			1	NUT, PL, ASSEM WA: 4-40 X 0 25 STI CD DI	939U/ ORDER BY DESCR
						- W OLEOPOIL OF PL	70109 ZII-041800-00

ndex o.	Tektronix Part No.	Serial/Assen Effective	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
2-90	210-0949-00 210-0004-00		1	WASHER,FLAT:0.141 ID X 0.5 OD X 0.062,BRS WASHER,LOCK:#4 INTL,0.015 THK,STL (END ATTACHING PARTS)		ORDER BY DESCR 1204-00-00-0541
-91	337-2306-00		1	SHIELD, CRT: FRONT	23740	337-2306-00-A
-92	214-3015-00		ī	HEAT SINK, XSTR: TO-202, AL		214-3015-00
-93	211-0097-00		1	(ATTACHING PARTS) SCREW, MACHINE: 4-40 X 0.312, PNH, STL	TK0435	ORDER BY DESCR
-94	342-0495-00		2	(END ATTACHING PARTS) INSULATOR,PLATE:TRANSISTOR,FIBER SHEET	80009	342-0495-00
-95			ī	TRANSISTOR: (SEE Q480 REPL)		
-96			1	TRANSISTOR: (SEE Q490 REPL)		
-97	334-2360-00		1	MARKER, IDENT: MKD DANGER		334-2360-00
-98	337-2725-00		1	SHIELD, ELEC: CIRCUIT BOARD, POLYCARBONATE (ATTACHING PARTS)		337-2725-00
-99	211-0008-00		2	SCREW,MACHINE:4-40 X 0.25,PNH,STL (END ATTACHING PARTS)	93907	ORDER BY DESCR
-100			1	CKT BD ASSY:DYN FOC & FR PNL(SEE A6 REPL)		
-101	211-0008-00		2	SCREW.MACHINE: 4-40 X 0.25, PNH, STL	93907	ORDER BY DESCR
-102	129-0457-00		2	SCREW, MACHINE: 4-40 X 0.25, PNH, STL SPACER, POST: 1.07 L, 4-40 TAP/STUD, BRS (END ATTACHING PARTS)		
			•	CKT BOARD ASSY INCLUDES: .SKT,PL-IN ELEK:MICROCIRCUIT,14 DIP .BUS,CONDUCTOR:SHUNT ASSEMBLY,BLACK	00000	DT: D14D 100T
-103	136-0269-02		2	. SKI, PL-IN ELEK: MICKUCIKCUII, 14 DIP	03377	D1LD14F-1001
-104 -105	131-0993-00		1 2	.TRANSISTOR:(SEE AGQ270,Q460 REPL) .(ATTACHING PARTS)	22320	03474-003
1.00	011 0000 00		2	CODELL MACHINE MAKES /	93907	ORDER BY DESCR
-106 -107	211-0008-00 210-0586-00		2 2	.SCREW,MACHINE:4-40 X 0.25,PNH,STL .NUT,PL,ASSEM WA:4-40 X 0.25,STL CD PL .(END ATTACHING PARTS)	78189	211-041800-00
-108	214-2454-00		1	.HEAT SINK, ELEC: CKT BOARD, CONTROL	80009	214-2454-00
-109			2	.TRANSISTOR:(SEE A6Q280,Q470 REPL) .(ATTACHING PARTS)		
-110	211-0008-00		2	SCREW, MACHINE: 4-40 X 0.25, PNH, STL	93907	ORDER BY DESCR
-111	210-1178-00		2	.WASHER, SHLDR:	13103	7721-7PPS
-112	342-0355-00		2	.INSULATOR, PLATE: TRANSISTOR, SILICONE RUBBER	55285	7403-09FR-51
-113	214-2454-00		1	.HEAT SINK, ELEC: CKT BOARD, CONTROL	80009	214-2454-00
-114	214-2995-00		1	.HEAT SINK,XSTR:(2) TO-202,AL (FND ATTACHING PARTS)		214-2995-00
-115 -116	131-0608-00		20 3	.TERMINAL,PIN:0.365 L X 0.025 BRZ GLD PL .TERM,TEST POINT:	22526	48283-036
				(SEE AGTP280,370,490 REPL)	00070	TXD-032-75
-117	214-0269-00		2	HEAT SINK, XSTR: 0.312 DIA X 0.75 L		7717-5N-BLUE
-118	342-0324-00		4	.INSULATOR,DISK:TRANSISTOR,NYLON .TERMINAL,PIN:0.46 L X 0.025 SQ PH BRZ		48283-029
-119	131-0589-00		6			441-1502-00
-120	441-1502-00		1	CHASSIS, MONITOR: CONTROL (ATTACHING PARTS)		
-121 -122	211-0101-00 210-0586-00		2 2	SCREW, MACHINE: 4-40 X 0.25, FLH, 100 DEG, STL NUT, PL, ASSEM WA: 4-40 X 0.25, STL CD PL		5 ORDER BY DESCR 211-041800-00
-123	337-2681-00		1	(END ATTACHING PARTS) SHIELD, ELEC: HIGH VOLTAGE BOARD	80009	337-2681-00
-124	211-0008-00		2	(ATTACHING PARTS) SCREW,MACHINE:4-40 X 0.25,PNH,STL	93907	ORDER BY DESCR
-125	337-2679-00		1	(END ATTACHING PARTS) SHIELD,CKT BD:HIGH VOLTAGE BOARD (ATTACHING PARTS)	80009	337-2679-00
-126	211-0171-00		3	SCREW, MACHINE: 4-40 X 0.625, BDGH, NYL (END ATTACHING PARTS)	95987	ORDER BY DESCR
-127 -128	342-0497-00		1	INSULATOR, PLATE: HIGH VOLTAGE CKT BD, PLASTIC CKT BOARD ASSY: HIGH VOLTAGE (SEE A5 REPL)	TK1310	ORDER BY DESCR
-129	131-1783-00		1	.CONN,RCPT,ELEC:FD-THRU,12 MALE,TIN PLATED .AFETY CONTROLLED	S 27264	09-64-1123
-130 -131	131-0787-00		7 1	TERMINAL, PIN: 0.64 L X 0.025 SQ PH BRZ CKT BOARD ASSY:CONVERTER(SEE A4 REPL) (ATTACHING PARTS)		47359-000
-132 -133	211-0008-00 344-0236-00		6 2	SCREW,MACHINE:4-40 X 0.25,PNH,STL CLIP,SPR TNSN:XSTR MTG,CU BE BRIGHT DIP (END ATTACHING PARTS)		ORDER BY DESCR 344-0236-00

Fig. & Index No.	Tektronix Part No.	Serial/Assembly N		12345 Name & Description	Mfr. Code	Mfr. Part No.
	121 0500 00		2	.TERMINAL,PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
2-134	131-0589-00		1	CONN, RCPT, ELEC: RTANG, 12 FEM, 0.045 SQ PIN		09-52-3121
-135	131-1782-00		3	.SPACER, POST: 1.125 L,4-40 EA END, PLSTC		ORDER BY DESCR
-136	129-0251-00		3		iideo,	ONDER D. DECO.
			•	.(ATTACHING PARTS) .SCREW,MACHINE:4-40 X 0.25,PNH,STL	93907	ORDER BY DESCR
-137	211-0008-00		3	.SUREW,MACHINE:4-40 X 0.43,FNH,31L	33301	OKBER BI BESCK
				(END ATTACHING PARTS)	27264	09-52-3123
-138	131-2418-00		1	.CONN,RCPT,ELEC:CKT BD,1 X 12,FEMALE .SKT,PL-IN ELEK:MICROCIRCUIT,16 DIP	00022	DILB16P-108T
-139	136-0260-02		1	.SKI, PL-IN ELEK: MICKOCIRCUIT, 10 DIF	03322	DIEDIO, 1001
-140			1	.COIL,RF:(SEE A4L185 REPL)		
			_	. (ATTACHING PARTS)	70126	5115-18
-141	354-0553-00		1	.RING, RETAINING: EXT CIRC PUSH-UN	/9130	
-142	352-0526-00		1	RINGRETAINING: EXT CIRC PUSH-ON HOLDER, COIL: BLACK NYLON SPACER, SLEEVE: 0.464 L X 0.196 ID, AL	80009	352-0526-00
-143	361 -0 995-00		1	.SPACER, SLEEVE: 0.464 L X 0.196 ID, AL	80009	361-0995-00
				.(END ATTACHING PARTS)	00500	75000 010
-144	136-0252-07		8	.(END ATTACHING PARTS) .SOCKET, PIN CONN:W/O DIMPLE .STRAP, TIEDOWN, E: 8.0 L X 0.1 W, NYLON .INSULATOR, DISK: TRANSISTOR, NYLON .TERMINAL, PIN: 0.25 L X 0.04 OO, BRS, SLDR PL	22526	75060-012
-145	346-0128-00		1	.STRAP, TIEDOWN, E:8.0 L X 0.1 W, NYLON	06383	PLIZM
-146	342-0324-00		1	.INSULATOR, DISK: TRANSISTOR, NYLON	13103	7717-5N-BLUE
-147	131-0157-00		1	TERMINAL, PIN: 0.25 L X 0.04 OD, BRS, SLDR PL	18310	1100-34-0519
-148			1	.XFMR,PWR,SDN&SU:(SEE A41200 REPL)		
-149			2	.TRANSISTOR:(SEE A4Q180,Q190 REPL)		
-150	407-2374-00		1	BRACKET, ANGLE: HV CHASSIS, ALUMINUM	80009	407-2374-00
				(ATTACHING PARTS)		
-151	211-0025-00		1	SCREW, MACHINE: 4-40 X 0.375, FLH, 100 DEG, STL	TK0435	ORDER BY DESCR
-152	210-0586-00		1	NUT, PL, ASSEM WA: 4-40 X 0.25, STL CD PL	78189	211-041800-00
-153	211-0007-00		2	SCREW, MACHINE: 4-40 X 0.188, PNH, STL	TK0435	ORDER BY DESCR
-154	212-0023-00		1	NUT,PL,ASSEM WA:4-40 X 0.25,STL CD PL SCREW,MACHINE:4-40 X 0.188,PNH,STL SCREW,MACHINE:8-32 X 0.375,PNH,STL NUT,PLAIN,HEX:0.25-32 X 0.312,BRS CD PL	TK0435	ORDER BY DESCR
-155	210-0583-00		1	NUT.PLAIN.HEX:0.25-32 X 0.312.BRS CD PL	73743	2X-20319-402
200	220 0000 00		-			
-156	337-2723-00		1	SHIELD, ELEC: CIRCUIT BOARD, POLYCARBONATE	80009	337-2723-00
100	007 2720 00		•	(ATTACHING PARTS)		
-157	211-0008-00		1	SCREW, MACHINE: 4-40 X 0.25, PNH, STL	93907	ORDER BY DESCR
107	211 0000 00		•	(FND ATTACHING DARTC)		
-158	334-2359-00		1	MARKER IDENT: MKD DANGER	80009	334-2359-00
130	348-0128-00		1	MARKER, IDENT: MKD DANGER FOOT, CABINET: BLACK POLYURETHANE	80009	348-0128-00
-159	540 ·0120 ·00		i	CKT BOARD ASSY:LV POWER & Z AXIS	••••	3.0 3200 34
-139			•	(SEE AS REPL)		
				(
-160	211-0008-00		5	(ATTACHING PARTS) SCREW, MACHINE: 4-40 X 0.25, PNH, STL CLIP, SPR TNSN: XSTR MTG, CU BE BRIGHT DIP	93907	ORDER BY DESCR
-161	344-0236-00		2	CLID COD THEN YETD MTG OH RE ROIGHT DID	80009	344-0236-00
-101	344-0230-00		2	(END ATTACHING PARTS)	00000	07. 0200 00
				CKT BOARD ASSY INCLUDES:		
-162	131-0608-00		45	.TERMINAL, PIN: 0.365 L X 0.025 BRZ GLD PL	22526	48283-036
				.TERMINAL, PIN: 0.365 E X 0.025 SQ PH BRZ		48283-029
-163	131-0589-00		14	BUS, CONDUCTOR: SHUNT ASSEMBLY, BLACK		65474-005
-164	131-0993-00		4			75060-012
-165	136-0252-07		6	.SOCKET, PIN CONN:W/O DIMPLE		214-0579-00
-166	214-0579-00		6	.TERM,TEST POINT:BRS CD PL		344-0154-00
-167	344-0154-00			.CLIP, ELECTRICAL: FUSE, CKT BD MT		
-168	131-1783-01		1	.CONN,RCPT,ELEC:CKT BD,12 MALE,TIN PLATED		09-64-1127
-169	131-2078-00		1	TERM, FEEDTHRU:15 PIN, INSULATED, 0.045 RND		09-64-1151
-170	131-1896-00		1	.BUS, CONDUCTOR: 8.22 AWG, 1.5 L	80009	131-1896-00
	101 1005 00			. (STANDARD VOLTAGE SELECTOR)	90000	121 1905 00
	131-1895-00		1	.BUS, CONDUCTOR:8,22 AWG,1.5L	80009	131-1895-00
171			0	. (ALTERNATE VOLTAGE SELECTOR)		
-171			2	.TRANSISTOR: (SEE A3Q350,Q390 REPL)	00070	TXP0503B
-172	214-0757-00		2	.HEAT SINK, XSTR: TO-5, CU BE CD PL		
-173	346-0128-00		2	.STRAP,TIEDOWN,E:8.0 L X 0.1 W,NYLON		PLT2M
-174	343-0150-00	D010100	2	.CLAMP, TIEDOWN: PLASTIC		TYPE A-30
175		B010130	2	.CLIP, ELECTRICAL: FUSE, CKT BD MT		344-0154 - 00
~175	342-0082-00		2	INSULATOR, PLATE: TRANSISTOR, ALUMINA		342-0082-00 407-2372-00
-176	407-2373-00		1	BRACKET, ANGLE: POWER SUPPLY, ALUMINUM	00009	407-2373-00
	011 010:		_	(ATTACHING PARTS)	TVOAGE	ODDED BY DECCE
-177	211-0101-00		2	SCREW, MACHINE: 4-40 X 0.25, FLH, 100 DEG, STL		ORDER BY DESCR
-178	211-0097-00		1	SCREW, MACHINE: 4-40 X 0.312, PNH, STL		ORDER BY DESCR
-179	210~0586-00		1	NUT, PL, ASSEM WA: 4-40 X 0.25, STL CD PL	18188	211-041800-00
100	242 0012 02		-	(END ATTACHING PARTS)	00000	242 0012 00
-180	343-0213-00		2	CLAMP, CABLE: 0.2 ID, PLASTIC		343-0213-00
. 101	162-0013-00	B010100 B01050	AR	INSUL SLVG, ELEC: 0.148 ID, VINYL, BLK, 105 DEG		TYPE400SIZE7BLK
-181	441-1503-00	B010100 B01056	9 1	CHASSIS, MONITOR: HIGH VOLTAGE	80009	441-1503-00

Fig. &	
Index Tektronix Serial/Assembly No.	MC Don't No
No. Part No. Effective Dscont Qty 12345 Name & Description Code	
2- 441-1503-01 B010570 1 CHASSIS,MONITOR:HIGH VOLTAGE 80009 (ATTACHING PARTS)	9 441-1503-01
-182 211-0538-00 1 SCREW,MACHINE:6-32 X 0.312,FLH,100 DEG,STL 93907	7 ORDER BY DESCR
-183 210-0457-00 1 NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL 78189 (END ATTACHING PARTS)	9 511-061800-00
	3 200-1789-00
-185 1 SWITCH,THRMSTC:(SEE S92 REPL) (ATTACHING PARTS)	
	35 ORDER BY DESCR
-187 210-0457-00 2 NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL 78189 (END ATTACHING PARTS)	9 511-061800-00
	9 195-0537-00
-189 352-0171-01 1 .HLDR,TERM_CONN:1 WIRE,BROWN 80009	352-0171-01
-190 1 WIRE ASSY:(SEE P103 REPL)	
-191 352-0198-00 1 .HLDR,TERM CONN:2 WIRE,BLACK 80009	352-0198-00
1 WIRE ASSY:(SEE P107 REPL)	050 0100 00
	352-0198-00
1 WIRE ASSY:(SEE P203 REPL) 352-0198-00 1 .HLDR,TERM CONN:2 WIRE,BLACK 80009	352-0198-00
1 WIRE ASSY:(SEE P207 REPL)	332-0190-00
352-0198-00 1 .HLDR,TERM CONN:2 WIRE,BLACK 80009	352-0198-00
1 WIRE ASSY:(SEE P108 REPL)	002 0100 00
352-0198-00 1 .HLDR, TERM CONN: 2 WIRE, BLACK 80005	352-0198-00
1 WIRE ASSY:(SEE P104 REPL)	
352-0198-00 1 .HLDR,TERM CONN:2 WIRE,BLACK 80009	352-0198-00
1 WIRE ASSY:(SEE P173 REPL)	
	352-0198-00
-192 1 WIRE ASSY:(SEE P77 REPL)	
-193 352-0169-00 1 .HLDR, TERM CONN: 2 WIRE, BLACK 80009	352-0169-00
-194 1 WIRE ASSY:(SEE P76 REPL)	050 0161 00
	352-0161-00
	352-0167-00
-198 1 WIRE ASSY:(SEE P150 REPL)	332-0107-00
-199 352-0168-00 2 .HLDR,TERM CONN:10 WIRE,BLACK 8000S	352-0168-00
198-4242-00 1 WIRE SET, ELEC: 80005	
-200 162-0004-00 AR INSUL SLVG, ELEC: 0.263 ID, VINYL, BLK, 105 DEG 96904	
-201 162-0005-00 AR .INSUL SLVG, ELEC: 0.133 ID, PVC, BLK, 105 DEG 96904	
	VARGLAS A-397

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
3-				STANDARD ACCESSORIES		
-1 -2 -3 -4	131-0570-00 200-0821-00 337-1674-10 161-0123-00 070-2821-00 070-2820-00		1 1 1 1 1	CONN,RCPT,ELEC:25 CONTACT,MALE SHLD,ELEC CONN:R ANGLE U/W 25 CONT D SER SHLD,IMPLOSION:4.295 X 4.92,CLEAR CABLE ASSY,PWR,:3,16 AWG,125V,96.01 L MANUAL,TECH:SERVICE MANUAL,TECH:OPERATORS	71468 71468 80009 16428 80009	DB51213 337-1674-10 CH-9028 070-2821-00

