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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.

PLEASE CHECK FOR CHANGE INFORMATION AT THE REAR OF THIS MANUAL.

1101 ACCESSORY POWER SUPPLY

INSTRUCTION MANUAL

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

070-0949-00

Serial Number _____

First Printing OCT 1969

INSTRUMENT SERIAL NUMBERS

Each instrument has a serial number on a panel insert, tag, or stamped on the chassis. The first number or letter designates the country of manufacture. The last five digits of the serial number are assigned sequentially and are unique to each instrument. Those manufactured in the United States have six unique digits. The country of manufacture is identified as follows:

B000000	Tektronix, Inc., Beaverton, Oregon, USA
100000	Tektronix Guernsey, Ltd., Channel Islands
200000	Tektronix United Kingdom, Ltd., London
300000	Sony/Tektronix, Japan
700000	Tektronix Holland, NV, Heerenveen, The Netherlands

TABLE OF CONTENTS

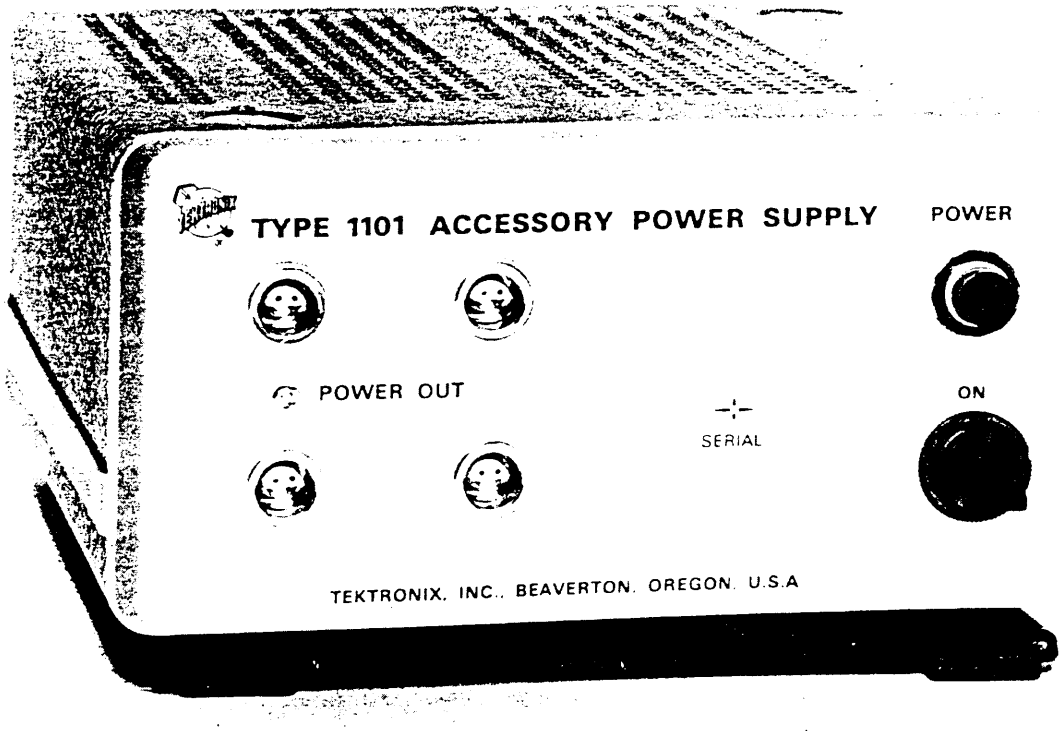


Fig. 1-1. Type 1101 Accessory Power Supply.

SECTION 1
TYPE 1101 SPECIFICATION

escription

he Type 1101 Accessory Power Supply is designed to ish power for one to four active probes when used oscilloscopes that do not have a probe power supply. Type 1101 provides +15 V, −15 V and +5 V and is -circuit protected.

aracteristics

he characteristics in this section are categorized as elec-, environmental and physical. The electrical and envi-ental characteristcis are valid only if the instrument is ated within the limitations described and if the instru- is calibrated.

TABLE 1-1

Electrical Characteristics

Characteristic	Performance Requirement	
ut Voltage		
5 V	+15 V ±0.75% (Adjustable)	
5 V	−15 V ±1.5%	
5 V	+5 V ±2.0%	
ut Current (Maximum)	≥400 mA from each supply, short circuit protected	
e	≤1 mV, each supply with a 400 mA load	
Voltage (RMS)	115 VAC	230 VAC
Range	90 V to 118 V	180 V to 236 V
Range	104 V to 136 V	208 V to 272 V
Current (RMS)		
Range	≤455 mA	
Range	≤390 mA	
Frequency Range	50 Hz to 400 Hz	
Maximum)		
Range	47 W at 115 V, 60 Hz	
Range	39 W at 115 V, 60 Hz	
Data		
V Operation	0.6 A slow-blowing type	
V Operation	0.3 A slow-blowing type	

TABLE 1-2

Environmental Characteristics

Characteristic	Performance Requirement
Temperature	
Non-operating	−40°C to +65°C
Operating	0°C to +50°C
Altitude	
Non-operating	To 50,000 feet
Operating	To 15,000 feet
Vibration (Operating)	15 minutes along each axis at 0.015 inch. Vary the frequency from 10 to 50 to 10 c/s in 1 minute cycles. 3 minutes at any resonant point or at 50 c/s.
Shock (Non-operating)	30 g's, ½ sine, 11 ms duration, 2 shocks per axis. Total of 6 shocks.
Transportation	Qualifies under National Safe Transit Committee Test Procedure Category IV (48 inch drop).

TABLE 1-3

Physical Characteristics

Characteristic	Description
Dimensions	
Cabinet	Height: ≈3⅛ inches overall
	Width: ≈5¼ inches
	Length: ≈8¼ inches
Power Cord	≈6 feet
Weight	
Net	≈3½ pounds
Shipping	≈5 pounds

Standard accessories supplied with the Type 1101 are listed in the Mechanical Parts Section.

SECTION 2
OPERATING INSTRUCTIONS

General Information

This section provides the basic information required for operation of the Type 1101 Accessory Power Supply. The unit powers active probes when the oscilloscope does not provide a power source for the probes.

Operating Information

WARNING

The Type 1101 is intended to be connected to an AC-power source which has the neutral wire at ground (earth) potential.

On the right side of the Type 1101, place the LINE VOLTAGE (115/230) selector switch in the position that indicates the line voltage that is to be applied to the Type 1101. Select the position of the LINE VOLTAGE (HI/LO) selector switch according to the line voltage table placed on the back of the unit.

After the LINE VOLTAGE selector switches have been positioned, connect the power cord to the AC-line, connect the power supply lead from the active probe to one of the POWER OUT connectors and place the POWER switch at ON. The POWER indicator will light.

SECTION 3
CIRCUIT DESCRIPTION

The Type 1101 Power Supply provides regulated voltages f +15 V, —15 V and +5 V for active probes when the scilloscope does not have this provision.

The power supply operates from either a 115 VAC or a 30 VAC power source. The primary windings of transformer T10 are connected in parallel for 115 VAC operation and in series for 230 VAC operation through the voltage selector switch S2. Fuse F1 provides overload protection for 115 VAC operation. Fuse F2, is connected in series with when S2 (voltage selector) is switched to the 230 VAC position, to provide overload protection for 230 VAC operation. The power indicator light DS10 is connected across the secondary winding (terminals 12 and 13) of transformer 0 and indicates when the power supply is on. S3 (HI/LO witch) selects the transformer primary taps. The correct /LO position is selected according to the table on the ck of the Type 1101.

-15 V Supply

This supply consists of bridge rectifier CR11, CR12, CR13 d CR14 connected across the secondary winding (terminals and 11) of T10, filter capacitors C11, C12 and the voltage regulator circuit containing Q23, Q29, Q33, Q35 and 38. This supply is the reference supply for the —15 V and 5 V supplies.

The +15 V regulator circuit consists of comparator Q23, or amplifier Q29, and the series regulator Q38. Q33 and 35 are the active components for an overload protector cuit in the supply. The reference voltage for Q23B is set the 9 V Zener diode VR20. Q23A samples the +15 V ply through the voltage divider consisting of R15, R17 d —15 V potentiometer R16. A difference between the erence voltage and the sampled voltage from the +15 V ply produces an error signal output on the collector of 23B which is amplified by Q29 and applied as a correcte signal to regulator Q38. For example, an increased load mand on the +15 V supply produces a negative-going tput error signal at the collector of Q23. This signal is plified and inverted by Q29 and is applied as a positive-ng corrective signal to the base of the series regulator 38. This positive-going signal increases the forward bias the regulator so the additional current demanded by the d is supplied by the regulator.

The regulator circuit can never completely compensate any change in output voltage, because there must be an or input for the circuit to operate. However, any error the output is reduced by a factor equal to the loop gain the regulator circuit.

An overload on the supply in excess of 400 mA (such as hort circuit) produces a voltage drop across R38 which ufficient to turn on Q33 and drive Q35 into conduction. en Q35 conducts, the voltage drop at the collector turns diode CR35 and pulls the base of Q38 down. This decses the forward bias of the series regulator and limits the current output of the supply to protect the circuit from overload current demands.

The low impedance of CR26 increases the gain of error amplifier Q29. Thermistor RT32 temperature-compensates the current limiting circuitry.

At the time the Type 1101 is turned on with the load connected, most of the supply voltage appears across Q38, which is cut off. Therefore, the output voltage is about zero volts. Q98 in the —15 V Power Supply is also turned off, since that supply does not have the +15 V necessary for proper operation. Network R27, R28, R29 and CR27 applies forward bias and turns on Q38. With about zero volts applied to R27 instead of the normal operating voltage of —15 V, there is approximately —27 V at the junction of R27-R28, and CR27 is biased into conduction. The resulting voltage drop across R29 biases Q38 into conduction and the +15 V Power Supply operates properly. CR27 is now reverse biased.

+5 V Supply

This supply consists of bridge rectifier CR41 through CR44, connected across another secondary winding (terminals 14 and 15) of T10, filter capacitor C41 and the voltage regulator circuit consisting of Q53, Q59, Q63 and Q68.

The +5 V regulator circuit consists of comparator Q53, error amplifier Q59 and series regulator Q68. Q63 provides the overload protection for the supply.

Reference voltage for the base of Q53B is set at approximately —2 V by the voltage divider R50, R51 and R52, between the +15 V and —15 V supplies. The base of Q53A is connected through voltage divider network R45 and R46 to the +5 V supply. Any difference between the reference voltage and the sampled +5 V supply results in an error signal output from the compartor. This error signal is amplified by Q59 and is applied as a corrective signal to the base of series regulator Q68. For example, an increased current demand by the load produces a negative-going signal across R46 at the base of comparator Q53A. This results in a negative-going output signal to the base of error amplifier Q59. The amplified and inverted error signal voltage from the error amplifier is applied as a positive-going corrective signal to series regulator Q68, increasing its forward bias and, as a result, the current output of the regulator to the load.

Any overload condition (such as short circuit) produces enough voltage drop across R68 to turn on Q63. The increased current from Q63 through R49 pulls the emitters of comparator Q53 up, which decreases the forward bias on the error amplifier. This reduces the drive to series regulator Q68 and limits the output current.

—15 V Supply

This supply consists of the bridge rectifier, containing the four diodes CR71 through CR74, connected across a

third secondary winding (terminals 12 and 13) of T10, filter capacitors C71, C72 and the voltage regulator circuit containing Q83, Q89, Q93 and Q98.

The −15 V regulator circuit contains comparator Q83, error amplifier Q89 and series regulator Q98. Overload protection for the supply is provided by Q93 and its circuitry.

Operation of the regulator circuit is similar to the +5 V regulator. The voltage divider containing R75 and R76 between the −15 V supply and the +15 V supply samples the −15 V for Q83A. Any error voltage output at the Q83B collector is amplified by Q89 and applied to the base of Q98 as a corrective signal to control the forward bias of the regulator. Overload protection for the supply is very similar to the circuit in the +5 V supply as described previously.

SECTION 4
MAINTENANCE

Introduction

The Type 1101 Power Supply provides reliable service with routine maintenance and periodic checks or adjustment. Servicing and recalibration is recommended every 1000 hour period of operation or very six months if used only occasionally. Checks and servicing should be performed more frequently if the instrument is used under adverse conditions such as high temperature, high humidity, dust, or corrosive atmospheric conditions.

Preventive Maintenance

Preventive mainteance consists of cleaning and inspecting the instrument for visual defects such as poor connections, damaged components and improperly seated transistors. Clean the exterior of the instrument by brushing loose dirt off with a soft cloth or brush. Dirt that remains can be removed with a soft cloth dampened in a mild solution of water and detergent. Abrasive cleaners should not be used.

CAUTION

Avoid the use of chemical cleaning agents which might damage the plastic and paint used in this instrument. Some chemicals to avoid are benzene, toluene, xylene, acetone or similar solvents.

Because of its conductivity in a humid environment, dust in the instrument interior should be removed. Blow accumulated dust off with dry low velocity air, then wipe or brush the remaining dirt off with a soft paint brush or cloth. The cloth may be dampened with a mild detergent and water solution. A cotton tipped swab is handy for cleaning in and around narrow spaces.

After the instrument is cleaned, inspect for such defects as poor connections, damaged parts, improperly seated transistors and overheated components. The remedy for most defects is obvious; however, if damage is due to heat, determine the cause of overheating before replacing heat damaged components, otherwise the new component may also be damaged.

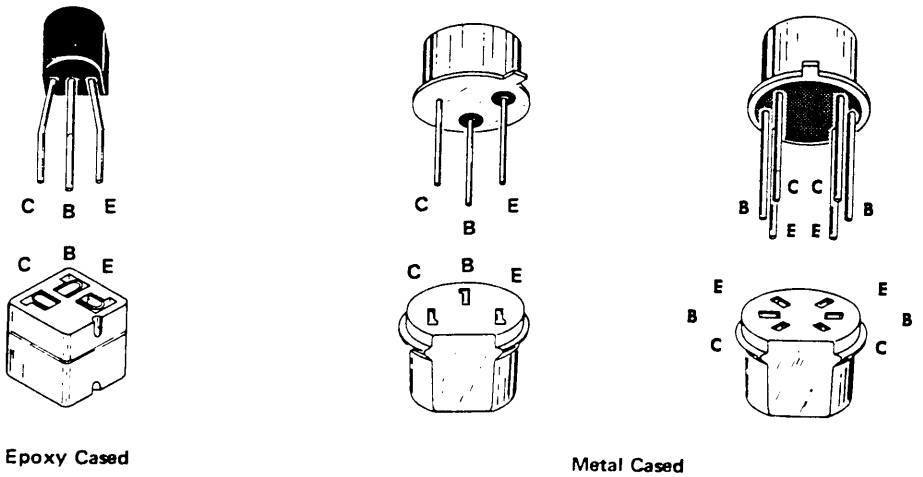
Transistor Checks

Periodic checks which include the removal of transistors and testing them in a tester are not recommended. Circuit operation provides the only satisfactory check of transistor performance. Defective transistors are usually detected when the instrument is calibrated.

If there is any doubt about the tranistor performance, substitute with a new or known good transistor after insuring the circuit voltages are correct. Note the transistor lead configuration (Fig. 4-1) before inserting the replacement transistor in the socket.

Resistor Color-Code

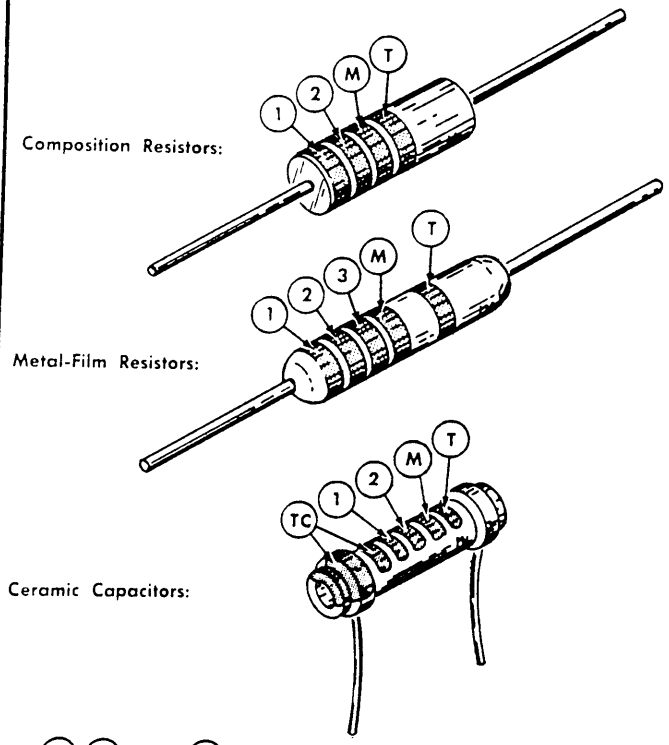
In addition to the brown composition resistors some metal-film resistors are used in the Type 1101. The resistance values



Epoxy Cased

Metal Cased

Fig. 4-1. Electrode configuration for socket-mounted transistors.



1 2 and 3 —1st, 2nd and 3rd significant figures;
M —multiplier; T —tolerance;
TC —temperature coefficient.

Resistor and Capacitor Color Code

Color	Significant Figures	Multiplier		Tolerance	
		Resistors	Capacitors	Resistors	Capacitors
Silver	---	10^{-2}	---	±10%	---
Gold	---	10^{-1}	---	±5%	---
Black	0	1	1	---	±20% or 2 pF*
Brown	1	10	10	±1%	±1% or 0.1 pF*
Red	2	10^2	10^2	±2%	±2%
Orange	3	10^3	10^3	±3%	±3%
Yellow	4	10^4	10^4	±4%	+100% −0%
Green	5	10^5	10^5	±0.5%	±5% or 0.5 pF*
Blue	6	10^6	10^6	---	---
Violet	7	---	---	---	---
Gray	8	---	10^{-2}	---	+80% −20% or 0.25 pF*
White	9	---	10^{-1}	---	±10% or 1 pF*
(none)	---	---	---	±20%	±10% or 1 pF*

*For capacitance of 10 pF or less.

NOTE: T and/or TC color code for capacitors depends upon manufacturer and capacitor type. May not be present in some cases.

Fig. 4-2. Color code for resistors and ceramic capacitors.

of composition resistors and metal-film resistors are color-coded on the components (some metal film resistors may have the value printed on the body) with EIA color-code. 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. 4-2). Metal-film resistors have five stripes consisting of three significant figures, a multiplier and a tolerance value.

In-Circuit Diode Checks

A diode may be checked in the circuit with a voltmeter. Forward-to-reverse resistance ratios also may be checked by removing appropriate transistors and then using an ohmmeter. The resistance measurements will be affected by other resistors in the circuit. The Zener diode voltage may be checked with a voltmeter after removing Q23.

CAUTION

Do not use an ohmmeter scale that has a high internal current to check the forward-to-back resistance ratio. Do not check the resistance ratio of the zener diode.

Obtaining Replacement Parts

All electrical and mechanical parts for the Type 1101 are obtainable through your local Tektronix Field Office or representative. However, many standard electronic components such as resistors can be purchased locally in less time than is required to order from Tektronix, Inc. Before ordering or purchasing a part, consult the Parts List in sections 6 and 7 for the value, tolerance and rating of the component. The Parts List also contains instructions for ordering the replacement item from Tektronix, Inc.

NOTE

It is important to remember that the physical size and shape of a component may affect circuit performance. This should be considered when a component is to be replaced with a new component.

A circuit board without components or a completely wired circuit board with components may be ordered. See the Mechanical Parts List.

In addition to standard electronic components, some special parts are manufactured or selected by Tektronix, Inc. to meet specific performance requirements. These special parts are indicated in the Parts List by an asterisk preceding the part number. Most mechanical parts used in this instrument have been manufactured by Tektronix, Inc. Order all special and mechanical parts directly from your Tektronix Field Office or representative.

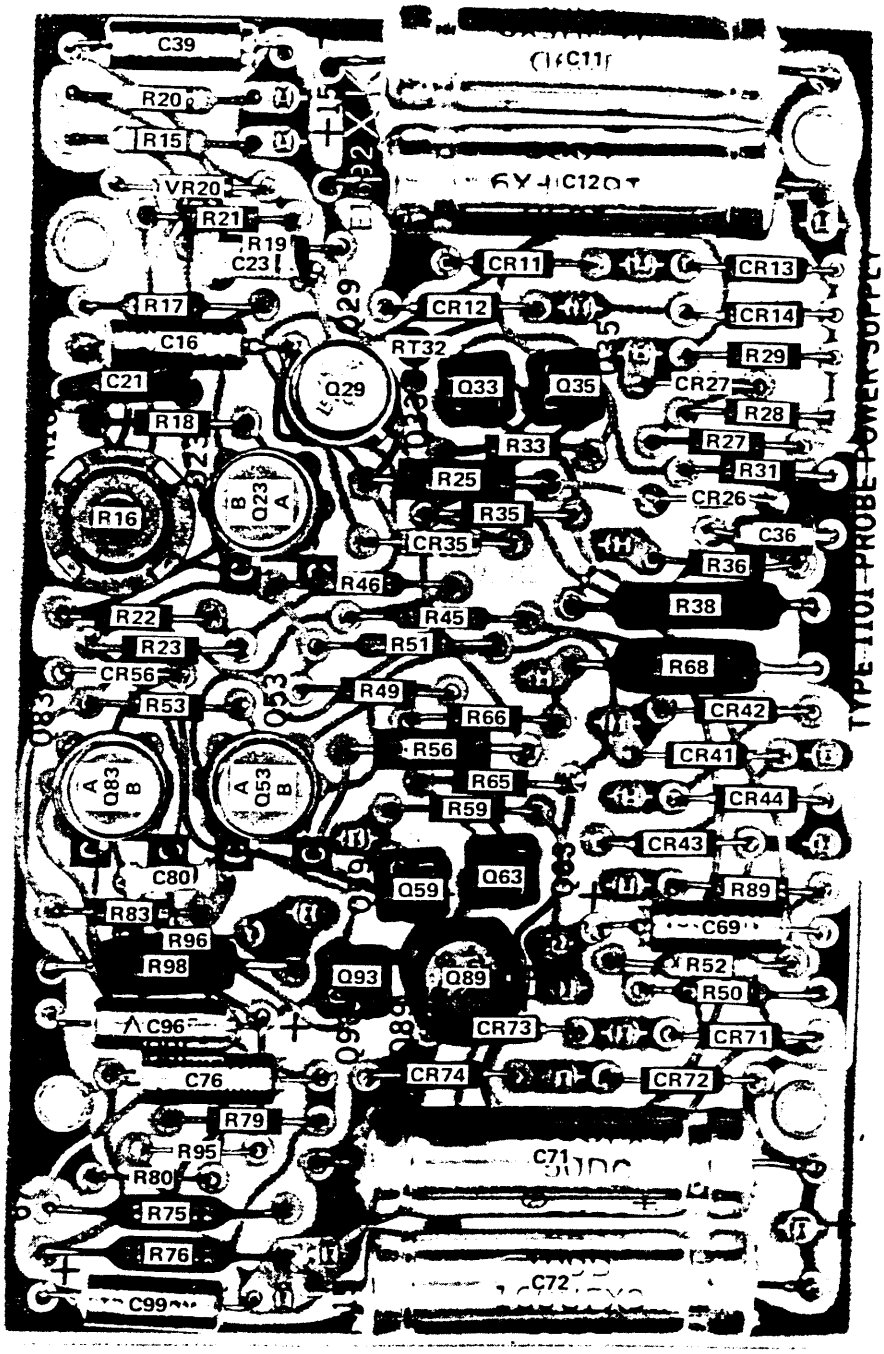


Fig. 4-3. Power supply circuit board.

Soldering Technique

The recommended solder for use on the Tektronix circuit boards is a eutectic-type cored-wire solder, size #20 AWG, composed of 63% tin and 37% lead, with a central core of activated rosin flux.

WARNING

Disconnect the instrument from the power source before soldering.

To solder or unsolder any small or short-lead component:

1. Use needle-nose pliers or a hemostat to act as a heat sink between the soldered or soldering point and the component.

2. Use a moderately hot iron for a short period of time.

3. Manipulate your tools with care to avoid damage to small components.

4. Use only enough solder to make a good bond. Use a 35- to 40-watt pencil type soldering iron on the circuit boards. A higher wattage soldering iron may separate the etched wiring from the base material. The tip of the iron should be clean and properly tinned for best heat transfer to the solder joint.

After soldering any connection, clip off the excess length of the soldered leads. Be sure that ends do not drop into the instrument.

The following technique is recommended when replacing a component on a circuit board:

1. Grip the component lead with long-nosed pliers or hemostat. Touch the soledering iron to the lead at the solder connection. (Do not lay the iron directly on the board, as it may damage the board).

2. When the solder begins to melt, gently pull the lead out. This should leave a clean hole in the board. If not, the hole can be cleaned by reheating the solder and placing a sharp object such as a toothpick or enameled wire into the hole.

3. Bend the leads of the new component to fit the holes in the board. If the component is replaced while the board is mounted in the instrument, cut the leads so they just protrude through the board. Insert the leads through the placed holes until the component is firmly seated. If it does not seat properly, heat the solder and gently press the component into place.

4. To protect heat-sensitive components, hold the lead between the component body and the solder joint with a pair of long-nose pliers or other heat sink. Apply the iron to the connection then only enough solder to make a firm solder joint. Too much solder may wick through the eyelet and short to another circuit.

5. Clip off any excess leads that protrude through the board.

6. Clean the area around the solder connection with a flux-remover solvent to maintain good environmental characteristics. Be careful not to remove the information printed on the board.

Observe the following precautions when soldering to metal terminals:

1. Apply only enough heat to make the solder flow freely.

2. Apply only enough solder to form a solid connection.

3. If a wire extends beyond the solder joint clip off excess that protrudes beyond the soldered joint.

4. Clean the flux from the solder joint with a flux-remover solvent to maintain good environmental characteristics.

Circuit Board Removal and Installation

The circuit board is held in position by three plastic clips and one electrical grounding screw. Two of the clips are located on the front edge of the circuit board and the third clip is located on the rear edge of the circuit board. The electrical grounding screw is located on the circuit board near the power transformer.

To remove the circuit board, first remove the electrical grounding screw and then spring the three clips away from the circuit board. The circuit board will be pushed out by springs underneath the circuit board that are on the alignment pins. Be careful not to bend the pins that insert into the circuit board during removal or installation.

Installation of the circuit board requires that the alignment holes in the circuit board be above the alignment pins on the chassis before carefully pressing the circuit board into position.

Power Cord Conductor Identification

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

Repackaging for Shipment

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

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

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

The carton test strength for your instrument is 200 pounds.

SECTION 5
PERFORMANCE CHECK / CALIBRATION

troduction

The following procedure may be used as a front-panel eck of the instrument's performance, or as a calibration ocedure. When the Performance Check is completed, the trument is checked to the "Performance Requirements" en in Section 1. Step 1 of the Performance Check/Cali-tion procedure contains the only calibration adjustment. s adjustment is done only if the instrument does not meet listed requirement.

The instrument must be calibrated at an ambient tempera-e between +20°C and +30°C.

EQUIPMENT REQUIRED

The equipment listed below or its equivalent is required a complete check and calibration of the Type 1101 Ac-sory Power Supply. Equipment specifications given are minimum necessary for the particular use of each item. test equipment must be correctly calibrated. If other ipment is substituted, it must meet or exceed the limits ed below.

. Oscilloscope, Tektronix Type 7504 with 7B50 Time-base it (or Tektronix Type 540-series).

2. Differential Comparator, Tektronix Type 7A13 or other ferential comparator (Tektronix Type W Unit) capable measuring ±15 V ±0.1%.

3. 1×/10× Probe, Tektronix Type P6052 (Tektronix Type 28 1× Probe).

4. Metered autotransformer with output voltage variable ween 90 VAC and 136 VAC or 180 VAC and 272 VAC with minimum rating of 47 W. For example, General Radio 0MT3W Metered Variac Autotransformer.

5. Test loads for the power supplies:

−15 V and −15 V supplies; (one each) 37.5 Ω, 10 W, 1% rance. Tektronix Part No. 308-0635-00.
−5 V supply; 12.5 Ω, 5 W, 1% tolerance. Tektronix Part 308-0634-00.

6. Four contact plug connector, Lemo size 0, Tektronix No. 131-0778-00.

PERFORMANCE CHECK AND CALIBRATION RECORD INDEX

The following abridged procedure may be used as a per-mance check or calibration procedure guide by the erienced calibrator, or it may be used as a record. tronix, Inc. authorizes reproduction of the abridged edure by any user of the equipment.) The step numbers titles are identical to those used in the complete pro-ure. When the instrument meets the requirements in Performance Check steps, the Type 1101 will meet all trical Characteristics listed in Section 1.

1. Check/Adjust Output Voltages, R16

+15 V ±0.75%
−15 V ±1.5%
+ 5 V ±2.0%

For all line voltages listed on the back panel of the instrument.

2. Check Output Voltage Ripple Content

Ripple ≤1 mV for each supply with a 400 mA load.

Preliminary Procedure

a. Construct a test load for the Type 1101 using the special connector and the load resistor values given in the test equipment list. Test load resistors (Equipment List item 5) are a 400 mA load for each supply. Connect the test load to one of the output connectors on the Type 1101. Fig. 5-1 shows a typical setup.

b. Place the voltage selector switches on the side of the Type 1101 at 115 V and at HI and then connect the Type 1101 to the variable autotransformer.

NOTE

If the line voltage is 230 V, place the line voltage selector switch at 230 V and use the 230 V portion of the voltage table which is on the back of the Type 1101 for the line voltage variation checks.

c. Turn on the oscilloscope and the autotransformer. Set the autotransformer at 115 V and turn on the Type 1101. Allow a 10 minute equipment warmup.

d. Connect a 1×/10× P6052 Probe to the Type 7A13 +Input and set the probe switch for 10× attenuation.

e. Make the following control settings:

Type 7A13

Vc	+15.00
+Input	DC
−Input	Vc
Volts/Div	10mV
BW	5MHz

Type 7B50

Triggering	
Mode	Auto
Coupling	AC
Source	INT
Magnifier	×1
Display Mode	Time Base
Time/Div	1 ms/Div

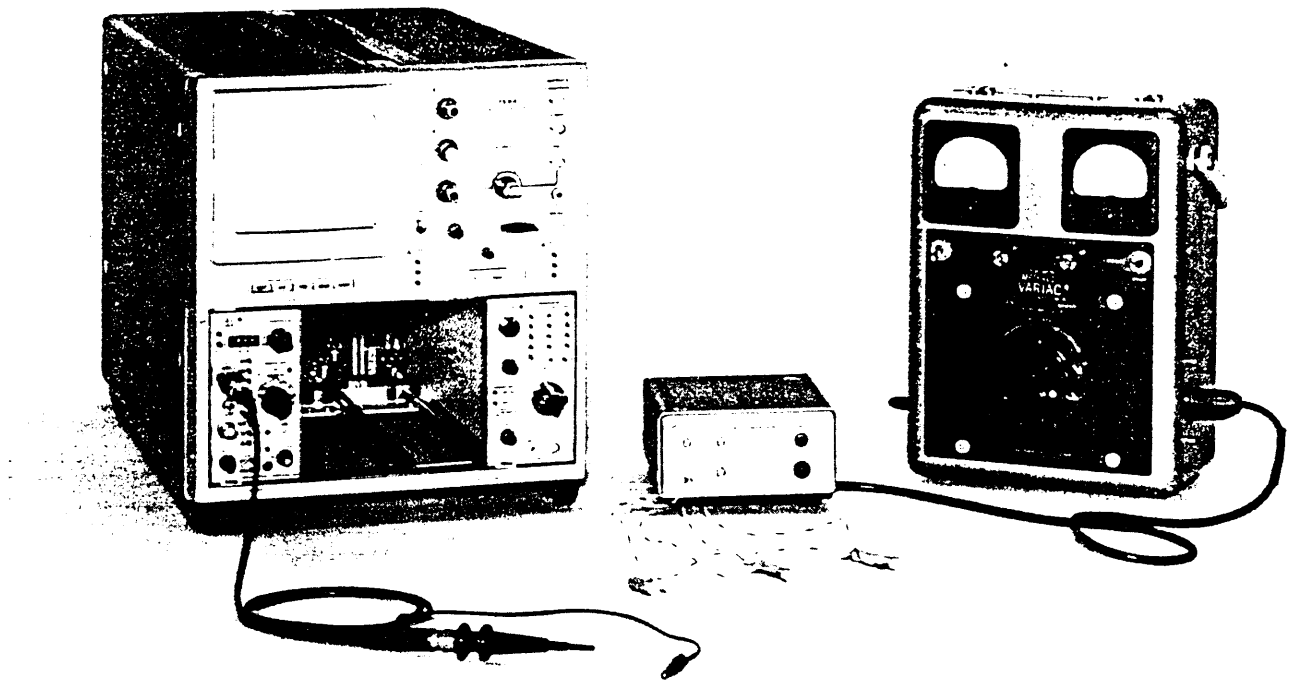


Fig. 5-1. Equipment setup for checking or calibrating the Type 1101.

f. Push the Type 7A13 Vc Ref Ident switch and position the trace at graticule center for a zero reference. After each measurement, check the zero reference for trace shift.

PROCEDURE

1. Check/Adjust Output Voltages, R16

Requirements: +15 V ±0.75%, −15 V ±1.5% and +5 V ±2.0% for the line voltages listed on the back of the Type 1101.

a. Connect the probe to the +15 V line at the load resistor and measure the voltage by adjusting the Comparator Voltage (Vc) to place the trace on the graticule center. The Vc readout range is 14.89 V to 15.11 V. If the supply is out of tolerance, remove the top and adjust R16, which is on the circuit board, to correct the voltage. Adjusting R16 affects all three output voltages.

b. Momentarily short the load resistor with a shorting strap then check that the voltage is in tolerance.

c. Vary the autotransformer output voltage from 90 to 136 V and check that the voltage stays within tolerance. The HI/LO line switch must be in the correct position according to the voltage table on the back of the Type 1101.

d. Push the −Vc Polarity switch and measure the voltage of the −15 V supply at the load resistor. Adjust Vc to place the trace on graticule center. The Vc readout range is 14.77 V to 15.23 V. If the supply is out of tolerance, just R16.

e. Repeat parts b and c.

f. Place the Vc at 5.00 V, push the +Vc Polarity sw and measure the voltage of the +5 V supply at the lo resistor. Adjust Vc to place the trace on graticule ce The Vc readout range is 4.90 V to 5.10 V. If the suppl out of tolerance, adjust R16.

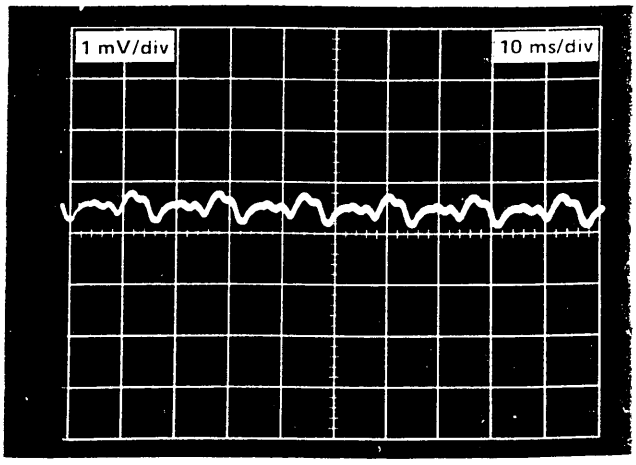


Fig. 5-2. Typical display of ripple.

g. Repeat part b and c.

h. If R16 has been readjusted, repeat the check procedure.

i. Restore the line voltage to 115 V.

Check Output Voltage Ripple Content

Requirement: Ripple $\leq$1 mA P-P for each supply with 400 mA load.

a. Switch the probe to 1× attenuation and attach the probe ground clip to the power supply ground.

b. Place the Volts /Div switch at 1 mV/Div.

c. Place the Time/Div switch at 10 ms/Div.

d. Push the +Input AC switch and the —Input GND switch.

e. Vary the line voltage from 90 V to 136 V (use the correct position of the HI/LO line switch) and check that the output voltage ripple of each supply is $\leq$1 mV. See Fig. 5-2.

Section 6
REPLACEABLE
ELECTRICAL PARTS

PARTS ORDERING INFORMATION

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

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

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

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

SPECIAL NOTES AND SYMBOLS

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

ITEM NAME

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

ABBREVIATIONS

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

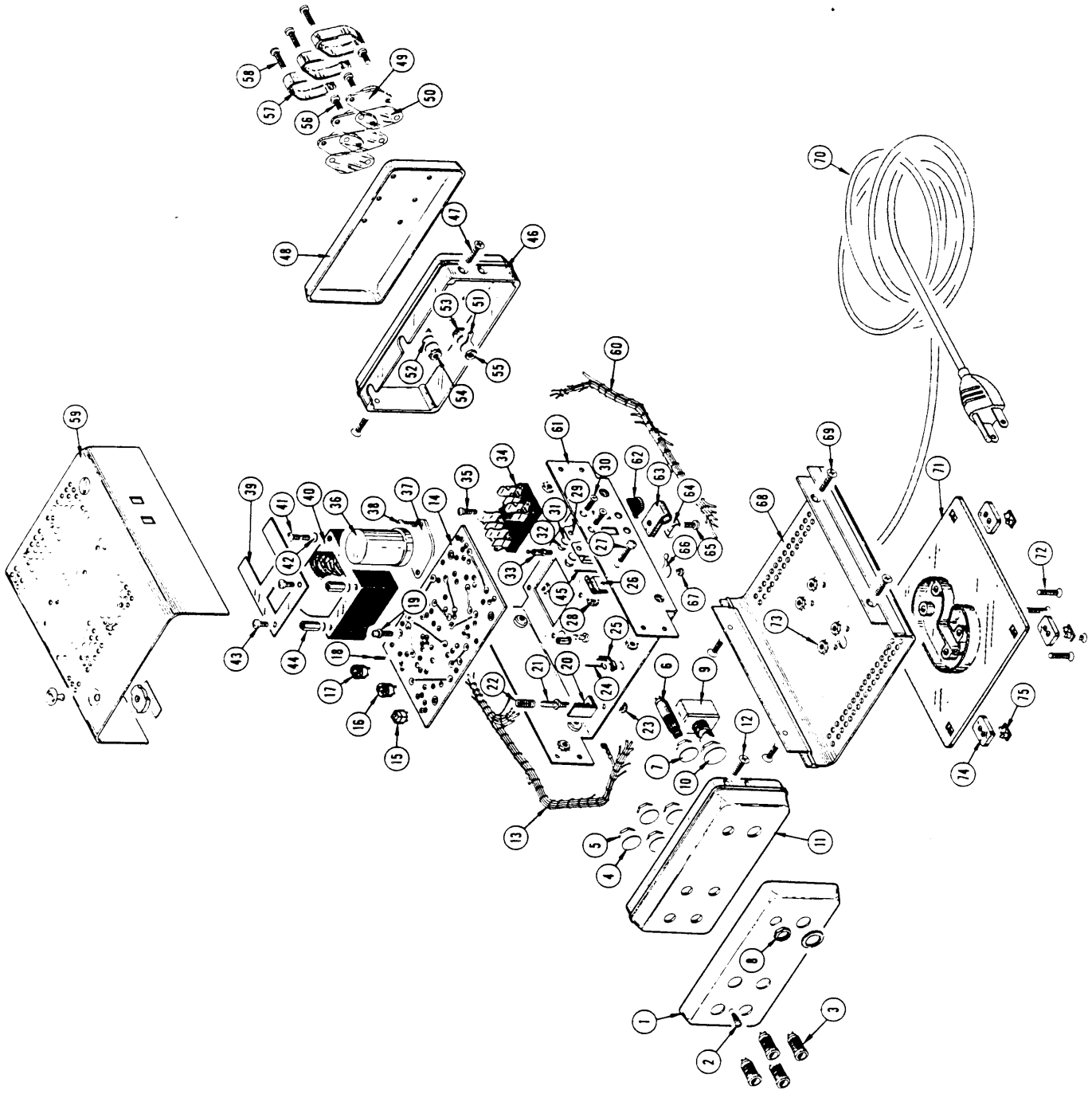
CROSS INDEX—MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip
0000A	LEMO USA	2015 SECOND ST.	BERKELEY, CA 94710
01121	ALLEN-BRADLEY COMPANY	1201 2ND STREET SOUTH	MILWAUKEE, WI 53204
01295	TEXAS INSTRUMENTS, INC., SEMICONDUCTOR GROUP	P O BOX 5012, 13500 N CENTRAL EXPRESSWAY	DALLAS, TX 75222
02111	SPECTROL ELECTRONICS CORPORATION	17070 EAST GALE AVENUE	CITY OF INDUSTRY, CA 91745
02735	RCA CORPORATION, SOLID STATE DIVISION	ROUTE 202	SOMERVILLE, NY 08876
04713	MOTOROLA, INC., SEMICONDUCTOR PROD. DIV.	5005 E MCDOWELL RD,PO BOX 20923	PHOENIX, AZ 85036
14433	ITT SEMICONDUCTORS	3301 ELECTRONICS WAY P O BOX 3049	WEST PALM BEACH, FL 33402
15605	CUTLER-HAMMER, INC.	4201 27TH STREET	MILWAUKEE, WI 53216
27014	NATIONAL SEMICONDUCTOR CORP.	2900 SEMICONDUCTOR DR.	SANTA CLARA, CA 95051
50157	MIDWEST COMPONENTS INC.	P. O. BOX 787 1981 PORT CITY BLVD.	MUSKEGON, MI 49443
56289	SPRAGUE ELECTRIC CO.	87 MARSHALL ST.	NORTH ADAMS, MA 01247
71400	BUSSMAN MFG., DIVISION OF MCGRAW-EDISON CO.	2536 W. UNIVERSITY ST.	ST. LOUIS, MO 63107
72619	DIALIGHT, DIV. AMPEREX ELECTRONIC	203 HARRISON PLACE	BROOKLYN, NY 11237
72982	ERIE TECHNOLOGICAL PRODUCTS, INC.	644 W. 12TH ST.	ERIE, PA 16512
75042	TRW ELECTRONIC COMPONENTS, IRC FIXED RESISTORS, PHILADELPHIA DIVISION	401 N. BROAD ST.	PHILADELPHIA, PA 19108
80009	TEKTRONIX, INC.	P O BOX 500	BEAVERTON, OR 97077
82389	SWITCHCRAFT, INC.	5555 N. ELSTON AVE.	CHICAGO, IL 60630
90201	MALLORY CAPACITOR CO., DIV. OF P. R. MALLORY AND CO., INC.	3029 E. WASHINGTON STREET P. O. BOX 372	INDIANAPOLIS, IN 46206
91637	DALE ELECTRONICS, INC.	P. O. BOX 609	COLUMBUS, NE 68601

‹tronix :t No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
-0312-00	B010100	B039999	CKT BOARD ASSY:POWER SUPPLY	80009	670-0312-00
-0312-01	B040000		CKT BOARD ASSY:POWER SUPPLY	80009	670-0312-01
-0394-00			CAP.,FXD,ELCTLT:160UF,10%,50V	56289	109D167X9050WZ
-0394-00			CAP.,FXD,ELCTLT:160UF,10%,50V	56289	109D167X9050WZ
-0135-00			CAP.,FXD,ELCTLT:15UF,20%,20V	56289	150D156X0020B2
-0026-00			CAP.,FXD,CER DI:0.2UF,+80-20%,25V	56289	274C3
-0549-00			CAP.,FXD,CER DI:68PF,10%,500V	72982	301-000U2J0680K
-0183-00			CAP.,FXD,ELCTLT:1UF,10%,35V	90201	TAE105K035P1A
-0135-00			CAP.,FXD,ELCTLT:15UF,20%,20V	56289	150D156X0020B2
-0135-00			CAP.,FXD,ELCTLT:15UF,20%,20V	56289	150D156X0020B2
-0394-00			CAP.,FXD,ELCTLT:160UF,10%,50V	56289	109D167X9050WZ
-0394-00			CAP.,FXD,ELCTLT:160UF,10%,50V	56289	109D167X9050WZ
-0135-00			CAP.,FXD,ELCTLT:15UF,20%,20V	56289	150D156X0020B2
-0651-00			CAP.,FXD,CER DI:47PF,5%,200V	72982	374001T2H0470J
-0301-00			CAP.,FXD,ELCTLT:10UF,10%,20V	56289	150D106X9020B2
-0135-00			CAP.,FXD,ELCTLT:15UF,20%,20V	56289	150D156X0020B2
-0107-00			SEMICOND DEVICE:SILICON,400V,400MA	01295	G727
-0107-00			SEMICOND DEVICE:SILICON,400V,400MA	01295	G727
-0107-00			SEMICOND DEVICE:SILICON,400V,400MA	01295	G727
-0107-00			SEMICOND DEVICE:SILICON,400V,400MA	01295	G727
-0141-02			SEMICOND DEVICE:SILICON,30V,150MA	01295	1N4152R
-0141-02			SEMICOND DEVICE:SILICON,30V,150MA	01295	1N4152R
-0075-00			SEMICOND DEVICE:GE,25V,40MA	14433	G866
-0107-00			SEMICOND DEVICE:SILICON,400V,400MA	01295	G727
-0107-00			SEMICOND DEVICE:SILICON,400V,400MA	01295	G727
-0107-00			SEMICOND DEVICE:SILICON,400V,400MA	01295	G727
-0107-00			SEMICOND DEVICE:SILICON,400V,400MA	01295	G727
-0141-02			SEMICOND DEVICE:SILICON,30V,150MA	01295	1N4152R
-0107-00			SEMICOND DEVICE:SILICON,400V,400MA	01295	G727
-0107-00			SEMICOND DEVICE:SILICON,400V,400MA	01295	G727
-0107-00			SEMICOND DEVICE:SILICON,400V,400MA	01295	G727
-0107-00			SEMICOND DEVICE:SILICON,400V,400MA	01295	G727
-0141-02	XB040000		SEMICOND DEVICE:SILICON,30V,150MA	01295	1N4152R
0261-00			TRANSISTOR:SILICON,PNP,DUAL	80009	151-0261-00
0134-00			TRANSISTOR:SILICON,PNP	80009	151-0134-00
0188-00			TRANSISTOR:SILICON,PNP	04713	SPS6868K
0192-00			TRANSISTOR:SILICON,NPN,SEL FROM MPS6521	04713	SPS8801
0232-00	B010100	B041879	TRANSISTOR:SILICON,NPN,DUAL	80009	151-0232-00
0232-03	B041880		TRANSISTOR:SILICON,NPN	27014	ND07480
0188-00			TRANSISTOR:SILICON,PNP	04713	SPS6868K
0188-00			TRANSISTOR:SILICON,PNP	04713	SPS6868K
0232-00	B010100	B041879	TRANSISTOR:SILICON,NPN,DUAL	80009	151-0232-00
0232-03	B041880		TRANSISTOR:SILICON,NPN	27014	ND07480
0103-00			TRANSISTOR:SILICON,NPN	80009	151-0103-00
0192-00			TRANSISTOR:SILICON,NPN,SEL FROM MPS6521	04713	SPS8801
0163-00			RES.,FXD,FILM:487 OHM,1%,0.125W	91637	MFF1816G487R0F
0442-00	B010100	B019999	RES.,VAR,NONWIR:250 OHM,10%,0.25W	01121	FR251U
1223-00	B020000		RES.,VAR,NONWIR:TRMR,250 OHM,0.5W	02111	63M251T602
0183-00			RES.,FXD,FILM:787 OHM,1%,0.125W	91637	MFF1816G787R0F
0201-00			RES.,FXD,CMPSN:200 OHM,5%,0.25W	01121	CB2015
0132-00			RES.,FXD,CMPSN:1.3K OHM,5%,0.25W	01121	CB1325
0184-00			RES.,FXD,FILM:806 OHM,1%,0.125W	91637	MFF1816G806R0F
0391-00			RES.,FXD,CMPSN:390 OHM,5%,0.25W	01121	CB3915
0201-00			RES.,FXD,CMPSN:200 OHM,5%,0.25W	01121	CB2015
0752-00			RES.,FXD,CMPSN:7.5K OHM,5%,0.25W	01121	CB7525
0821-00			RES.,FXD,CMPSN:820 OHM,5%,0.50W	01121	EB8215

Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
R27	315-0103-00			RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
R28	315-0102-00			RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
R29	315-0102-00			RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
R31	315-0270-00			RES.,FXD,CMPSN:27 OHM,5%,0.25W	01121	CB2705
R33	315-0131-00			RES.,FXD,CMPSN:130 OHM,5%,0.25W	01121	CB1315
R35	315-0512-00			RES.,FXD,CMPSN:5.1K OHM,5%,0.25W	01121	CB5125
R36	315-0101-00			RES.,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
R38	308-0459-00			RES.,FXD,WW:1.1 OHM,5%,3W	91637	CW2B-1R100J
R45	321-0199-06			RES.,FXD,FILM:1.15K OHM,0.25%,0.125W	91637	MFF1816C11500C
R46	321-0225-06			RES.,FXD,FILM:2.15K OHM,0.25%,0.125W	91637	MFF1816C21500C
R49	315-0622-00			RES.,FXD,CMPSN:6.2K OHM,5%,0.25W	01121	CB6225
R50	321-0822-06			RES.,FXD,FILM:1.76K OHM,0.25%,0.125W	91637	MFF1816C17600C
R51	321-0225-06			RES.,FXD,FILM:2.15K OHM,0.25%,0.125W	91637	MFF1816C21500C
R52	321-0823-01			RES.,FXD,FILM:3.425K OHM,0.5%,0.125W	91637	MFF1816G34250D
R53	315-0153-00			RES.,FXD,CMPSN:15K OHM,5%,0.25W	01121	CB1535
R56	301-0621-00			RES.,FXD,CMPSN:620 OHM,5%,0.50W	01121	EB6215
R59	315-0102-00			RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
R65	315-0182-00			RES.,FXD,CMPSN:1.8K OHM,5%,0.25W	01121	CB1825
R66	315-0121-00			RES.,FXD,CMPSN:120 OHM,5%,0.25W	01121	CB1215
R68	308-0365-00			RES.,FXD,WW:1.5 OHM,5%,3W	91637	CW2B-1R500J
R75	322-0210-00			RES.,FXD,FILM:1.5K OHM,1%,0.25W	75042	CEBT0-1501F
R76	322-0210-00			RES.,FXD,FILM:1.5K OHM,1%,0.25W	75042	CEBT0-1501F
R77	315-0153-00	XB041670		RES.,FXD,CMPSN:15K OHM,5%,0.25W	01121	CB1535
R79	315-0242-00			RES.,FXD,CMPSN:2.4K OHM,5%,0.25W	01121	CB2425
R80	317-0751-00			RES.,FXD,CMPSN:750 OHM,5%,0.125W	01121	BB7515
R83	315-0472-00			RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
R89	315-0331-00			RES.,FXD,CMPSN:330 OHM,5%,0.25W	01121	CB3315
R95	317-0472-00			RES.,FXD,CMPSN:4.7K OHM,5%,0.125W	01121	BB4725
R96	317-0121-00			RES.,FXD,CMPSN:120 OHM,5%,0.125W	01121	BB1215
R98	308-0365-00			RES.,FXD,WW:1.5 OHM,5%,3W	91637	CW2B-1R500J
RT32	307-0127-00			RES.,THERMAL:1K OHM,10%	50157	2D1596
VR20	152-0212-00			SEMICOND DEVICE:ZENER,0.5W,9V,5%	04713	SZ50646RL
				CHASSIS PARTS		
C41	290-0445-00			CAP.,FXD,ELCTLT:1000UF,+ 100-10%	56289	60D10093
DS10	150-0033-00			LAMP CARTRIDGE:28V,0.04A,GREEN LENS	72619	50739171472600
F1	159-0043-00			FUSE,CARTRIDGE:3AG,0.6A,250V,SLOW-BLOW	71400	MDL 6/10
F2	159-0029-00			FUSE,CARTRIDGE:3AG,0.3A,250V,SLOW-BLOW	71400	MDL3/10
J7	131-0771-00			CONN,RCPT,ELEC:4 CONT,QUICK DISCONNECT	0000A	ROA-304NYL
J8	131-0771-00			CONN,RCPT,ELEC:4 CONT,QUICK DISCONNECT	0000A	ROA-304NYL
J9	131-0771-00			CONN,RCPT,ELEC:4 CONT,QUICK DISCONNECT	0000A	ROA-304NYL
J10	131-0771-00			CONN,RCPT,ELEC:4 CONT,QUICK DISCONNECT	0000A	ROA-304NYL
Q38	151-0148-00			TRANSISTOR:SILICON,NPN	02735	36568
Q68	151-0148-00			TRANSISTOR:SILICON,NPN	02735	36568
Q98	151-0227-00			TRANSISTOR:SILICON,PNP	80009	151-0227-00
S1	260-1113-00			SWITCH,TOGGLE:DPST,6A,125V	15605	8370K24H
S2	260-0675-00			SWITCH,SLIDE:DPDT,W/O DETENTS	82389	11A1024
S3	260-0675-00			SWITCH,SLIDE:DPDT,W/O DETENTS	82389	11A1024
T10	120-0651-00			XFMR,PWR,STPDN:	80009	120-0651-00

FIGURE 1 EXPLODED



Section 7
REPLACEABLE MECHANICAL PARTS

PARTS ORDERING INFORMATION

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

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

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

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

SPECIAL NOTES AND SYMBOLS

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

FIGURE AND INDEX NUMBERS

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

INDENTATION SYSTEM

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

```
1 2 3 4 5                    Name & Description

Assembly and/or Component
Attaching parts for Assembly and/or Component
        - - - * - - -
  Detail Part of Assembly and/or Component
  Attaching parts for Detail Part
        - - - * - - -
    Parts of Detail Part
    Attaching parts for Parts of Detail Part
        - - - * - - -
```

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

Attaching parts must be purchased separately, unless otherwise specified.

ITEM NAME

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

ABBREVIATIONS

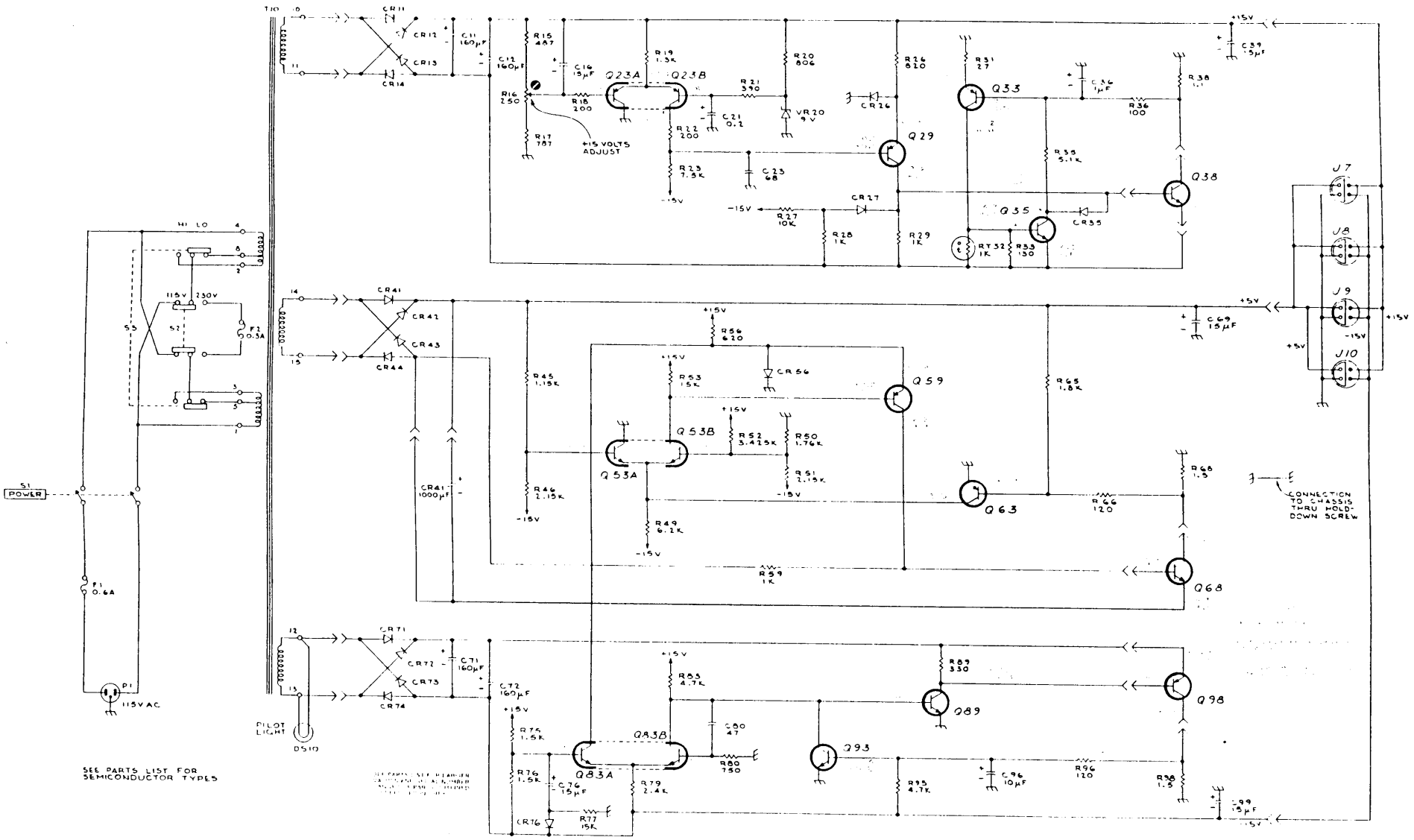
	INCH
=	NUMBER SIZE
ACTR	ACTUATOR
ADPTR	ADAPTER
ALIGN	ALIGNMENT
AL	ALUMINUM
ASSEM	ASSEMBLED
ASSY	ASSEMBLY
ATTEN	ATTENUATOR
AWG	AMERICAN WIRE GAGE
BD	BOARD
BRKT	BRACKET
BRS	BRASS
BRZ	BRONZE
BSHG	BUSHING
CAB	CABINET
CAP	CAPACITOR
CER	CERAMIC
CHAS	CHASSIS
CKT	CIRCUIT
COMP	COMPOSITION
CONN	CONNECTOR
COV	COVER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

CROSS INDEX—MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip
0000A	LEMO USA	2015 SECOND ST.	BERKELEY, CA 94710
00779	AMP, INC.	P O BOX 3608	HARRISBURG, PA 17105
02735	RCA CORPORATION, SOLID STATE DIVISION	ROUTE 202	SOMERVILLE, NY 08876
12327	FREEWAY CORPORATION	9301 ALLEN DRIVE	CLEVELAND, OH 44125
22526	BERG ELECTRONICS, INC.	YOUK EXPRESSWAY	NEW CUMBERLAND, PA 17070
71279	CAMBRIDGE THERMIONIC CORP.	445 CONCORD AVE.	CAMBRIDGE, MA 02138
71785	TRW, CINCH CONNECTORS	1501 MORSE AVENUE	ELK GROVE VILLAGE, IL 6000
72041	EAGLE ELECTRIC MFG. CO.	23-10 BRIDGE PLAZA S	LONG ISLAND CITY, NY 11101
73743	FISCHER SPECIAL MFG. CO.	446 MORGAN ST.	CINCINNATI, OH 45206
74921	ITEN FIBRE CO.,	4001 BENEFIT AVE., P O BOX 9	ASHTABULA, OH 44004
75915	LITTELFUSE, INC.	800 E. NORTHWEST HWY	DES PLAINES, IL 60016
77250	PHEOLL MANUFACTURING CO., DIVISION OF ALLIED PRODUCTS CORP.	5700 W. ROOSEVELT RD.	CHICAGO, IL 60650
78189	ILLINOIS TOOL WORKS, INC. SHAKEPROOF DIVISION	ST. CHARLES ROAD	ELGIN, IL 60120
79136	WALDES, KOHINOOR, INC.	47-16 AUSTEL PLACE	LONG ISLAND CITY, NY 11101
80009	TEKTRONIX, INC.	P O BOX 500	BEAVERTON, OR 97077
82389	SWITCHCRAFT, INC.	5555 N. ELSTON AVE.	CHICAGO, IL 60630
83385	CENTRAL SCREW CO.	2530 CRESCENT DR.	BROADVIEW, IL 60153
85703	JOSLYN STAMPING COMPANY	1020 WALLACE PLACE	CITY OF INDUSTRY, CA 91748
86928	SEASTROM MFG. COMPANY, INC.	701 SONORA AVENUE	GLENDALE, CA 91201
95987	WECKESSER CO., INC.	4444 WEST IRVING PARK RD.	CHICAGO, IL 60641

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Qty	1 2 3 4 5	Name & Description	Mfr Code	Mfr Part Number
1-1	333-1223-00			1		PANEL,FRONT:	80009	333-1223-00
						(ATTACHING PARTS)		
-2	211-0079-00			1		SCREW,MACHINE:2-56 X 0.188 INCH,PNH STL	77250	OBD
						- - - * - - -		
-3	131-0771-00			4		CONN,RCPT,ELEC:4 CONT,QUICK DISCONNECT	0000A	ROA-304NYL
						(ATTACHING PARTS)		
-4	210-0012-00			1		WASHER,LOCK:INTL,0.375 ID X 0.50" OD STL	78189	1220-02-00-0541C
-5	220-0551-00			1		NUT,PLAIN,HEX.:9 MM X 0.437 INCH	73743	OBD
						- - - * - - -		
-6	136-0164-00			1		LAMPHOLDER:0.375 INCH MOUNTING HOLE	75915	910-211X-241XX
						(ATTACHING PARTS)		
-7	210-0012-00			1		WASHER,LOCK:INTL,0.375 ID X 0.50" OD STL	78189	1220-02-00-0541C
-8	220-0480-02			1		NUT,PLAIN,DODEC:0.375-32 X 0.91 INCH,BRS	80009	220-0480-02
						- - - * - - -		
-9	----- -----			1		SWITCH,TOGGLE:(SEE S1 REPL)		
						(ATTACHING PARTS)		
-10	210-0021-00			1		WASHER,LOCK:INTL,0.476 ID X 0.60"OD STL	78189	1222-01-00-0541C
						- - - * - - -		
-11	386-1597-03			1		SUBPANEL,FRONT:	80009	386-1597-03
	354-0329-00			1		. RING,RETAINING:EXT TYPE E,U/O 0.94 DIA	79136	5133-12MD
						(ATTACHING PARTS)		
	210-0457-00			4		NUT,PL,ASSEM WA:6-32 X 0.312 INCH,STL	83385	OBD
-12	211-0559-00			4		SCREW,MACHINE:6-32 X 0.375"100 DEG,FLH STL	83385	OBD
						- - - * - - -		
-13	179-1421-00	B010100	B010124	1		WIRING HARNESS:AC	80009	179-1421-00
	179-1517-00	B010125		1		WIRING HARNESS:POWER	80009	179-1517-00
	131-0512-00			22		. CONTACT,ELEC:0.315 " L,22-26 AWG WIRE	00779	61507-1
-14	----- -----			1		CKT BOARD ASSY:POWER SUPPLY(SEE REPL)		
-15	136-0220-00			5		. SKT,PL-IN ELEK:TRANSISTOR 3 CONTACT,PCB MT	71785	133-23-11-034
-16	136-0183-00			2		. SOCKET,PLUG-IN:3 PIN,ROUND	80009	136-0183-00
-17	136-0235-00			3		. SOCKET,PLUG-IN:6 CONTACT,ROUND	71785	133-96-12-062
-18	136-0263-01	B010100	B030659	22		. SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN	00779	85861-2
	136-0263-04	B020660		22		. SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN	22526	75377-001
						(ATTACHING PARTS)		
-19	211-0116-00			1		SCR,ASSEM WSHR:4-40 X 0.312 INCH,PNH BRS	83385	OBD
						- - - * - - -		
-20	344-0147-00			3		CLIP,SPR,TNSN:CIRCUIT CARD MOUNTING	80009	344-0147-00
						(ATTACHING PARTS)		
-21	214-0967-00			3		PIN,SHLD,HDLS:0.119 OD X 1.035 L,0.25 HEX	80009	214-0967-00
-22	214-0966-00			3		SPRING,HLCPS:0.212 OD X 0.438 L,SST	80009	214-0966-00
-23	210-0586-00			3		NUT,PL,ASSEM WA:4-40 X 0.25,STL CD PL	83385	OBD
						- - - * - - -		
-24	131-0513-00			22		TERM,FEEDTHRU:1.384 L X 0.025 SQ EA END	00779	1-86074-5
-25	358-0329-00			22		BSHG,FEED THRU:FUSEHOLDER TERM,DELRIN	80009	358-0329-00
-26	343-0081-00			1		STRAP,RETAINING:	95987	3/16-H
						(ATTACHING PARTS)		
-27	211-0504-00			1		SCREW,MACHINE:6-32 X 0.25 INCH,PNH STL	83385	OBD
-28	210-0457-00			1		NUT,PL,ASSEM WA:6-32 X 0.312 INCH,STL	83385	OBD
						- - - * - - -		
-29	----- -----			2		SWITCH,SLIDE:(SEE S2,S3 REPL)		
						(ATTACHING PARTS)		
-30	211-0101-00			4		SCREW,MACHINE:4-40 X 0.25" 100 DEG,FLH STL	83385	OBD
-31	210-0054-00			4		WASHER,LOCK:SPLIT,0.118 ID X 0.212"OD STL	83385	OBD
-32	210-0406-00			4		NUT,PLAIN,HEX.:4-40 X 0.188 INCH,BRS	73743	2X12161-402
						- - - * - - -		
-33	131-0373-00			1		TERMINAL,STUD:0.593 L	71279	572-4894-01-0516
						(ATTACHING PARTS)		
	210-0001-00			1		WASHER,LOCK:INTL,0.092 ID X 0.18"OD,STL	78189	1202-00-00-0541C
	210-0405-00			1		NUT,PLAIN,HEX.:2-56 X 0.188 INCH,BRS	73743	2X12157-402
						- - - * - - -		
-34	352-0025-00			1		FUSEHOLDER,BLK:(2)3AG,15A,250V,CHASSIS MT	75915	35700200
						(ATTACHING PARTS)		
-35	211-0510-00			2		SCREW,MACHINE:6-32 X 0.375,PNH,STL,CD PL	83385	OBD
	210-0457-00			2		NUT,PL,ASSEM WA:6-32 X 0.312 INCH,STL	83385	OBD
						- - - * - - -		

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Qty	1 2 3 4 5	Name & Description	Mfr Code	Mfr Part N
1-36	----- -----			1		CAPACITOR:		
						(ATTACHING PARTS)		
-37	386-0252-00			1		RETAINER,CAP.:SMALL FIBER	85703	OBD
-38	211-0507-00			2		SCREW,MACHINE:6-32 X 0.312 INCH,PNH STL	83385	OBD
	210-0457-00			2		NUT,PL,ASSEM WA:6-32 X 0.312 INCH,STL	83385	OBD
						- - - * - - -		
-39	337-1261-00			1		SHIELD,ELEC:TRANSFORMER	80009	337-1261-
-40	----- -----			1		TRANSFORMER:(SEE T10 REPL)		
						(ATTACHING PARTS)		
-41	211-0552-00			4		SCREW,MACHINE:6-32 X 2 INCH,PNH STL	83385	OBD
-42	210-0823-00			4		WASHER,FLAT:0.14 ID X 0.031 THK,RED FBR	74921	OBD
-43	211-0503-00			2		SCREW,MACHINE:6-32 X 0.188 INCH,PNH STL	83385	OBD
-44	385-0080-00			2		SPACER,POST:0.437 L W/6-32 THD THRU,AL	80009	385-0080-
	210-0055-00			2		WASHER,LOCK:SPLIT,0.145 ID X 0.253 OD,STL	83385	OBD
						- - - * - - -		
-45	337-1036-00			2		SHIELD,SOLDER:6 TERM SLIDE SWITCH	82389	429T003
-46	386-1597-06			1		SUBPANEL,REAR:	80009	386-1597-
	354-0163-00			1		. RING,RETAINING:TRUARC,CAD PLATE	79136	5133-12MI
						(ATTACHING PARTS)		
-47	211-0559-00			3		SCREW,MACHINE:6-32 X 0.375"100 DEG,FLH STL	83385	OBD
	210-0457-00			3		NUT,PL,ASSEM WA:6-32 X 0.312 INCH,STL	83385	OBD
						- - - * - - -		
-48	333-1222-00			1		PANEL,FRONT:	80009	333-1222-
-49	----- -----			3		TRANSISTOR:		
						(ATTACHING PARTS FOR EACH)		
-50	386-0143-00			3		INSULATOR,PLATE:TRANSISTOR MICA	02735	DF31A
-51	210-0202-00			3		TERMINAL,LUG:0.146 ID,LOCKING,BRZ TINNED	78189	2104-06-0
-52	210-0802-00			6		WASHER,FLAT:0.15 ID X 0.312 INCH OD	12327	OBD
-53	210-0811-00			6		WSHR,SHOULDERED:0.125 ID X 0.50 INCH OD	86928	5604-47
-54	210-0457-00			3		NUT,PL,ASSEM WA:6-32 X 0.312 INCH,STL	83385	OBD
-55	210-0407-00			3		NUT,PLAIN,HEX.:6-32 X 0.25 INCH,BRS	73743	3038-0228
-56	211-0511-00			3		SCREW,MACHINE:6-32 X 0.500,PNH,STL,CD PL	83385	OBD
-57	200-0669-00			3		COV,TRANSISTOR:INSULATING	80009	200-0669-
-58	211-0513-00			3		SCREW,MACHINE:6-32 X 0.625 INCH,PNH STL	83385	OBD
						- - - * - - -		
-59	390-0109-00			1		COVER,PWR SPLY:TOP	80009	390-0109-
	214-0603-01			2		. PIN,SECURING:0.27 INCH LONG	80009	214-0603-
	214-0604-00			2		. WASH.,SPG TNSN:0.26 ID X 0.47 INCH OD	80009	214-0604-
	386-0227-00			2		. STOP,CLP,RIM CL:ACETAL	80009	386-0227-
	386-1151-00			2		. CLAMP,RIM CLENC:SPG STL CD PL	80009	386-1151-
-60	179-1420-00	B010100	B010124X	1		WIRING HARNESS:POWER	80009	179-1420-
-61	441-0889-00			1		CHAS,PWR SPLY:POWER SPLY	80009	441-0889-
-62	348-0063-00			1		GROMMET,PLASTIC:0.50 INCH DIA	80009	348-0063-
-63	343-0136-00			1		CLAMP,LOOP:0.234 INCH MOUNTING HOLE	80009	343-0136-
						(ATTACHING PARTS)		
-64	210-0863-00			1		WSHR,LOOP CLAMP:FOR 0.50" WIDE CLAMP,STL	95987	C191
-65	211-0507-00			1		SCREW,MACHINE:6-32 X 0.312 INCH,PNH STL	83385	OBD
						- - - * - - -		
-66	210-0201-00			1		TERMINAL,LUG:SE #4	86928	A373-157-
						(ATTACHING PARTS)		
-67	213-0088-00			1		SCR,TPG,THD CTG:4-24 X 0.25 INCH,PNH STL	83385	OBD
						- - - * - - -		
-68	390-0110-00			1		CHAS,PWR SPLY:BOTTOM	80009	390-0110-
						(ATTACHING PARTS)		
-69	211-0541-00			4		SCREW,MACHINE:6-32 X 0.25"100 DEG,FLH STL	83385	OBD
						- - - * - - -		
-70	161-0038-01			1		CABLE ASSY,PWR,:3,18 AWG,115V,74.0 L	80009	161-0038-
-71	432-0065-00			1		BASE,PWR SUPPLY:	80009	432-0065-
						(ATTACHING PARTS)		
-72	211-0522-00			4		SCREW,MACHINE:6-32 X 0.625 FLH,100 DEG ST	83385	OBD
-73	210-0457-00			4		NUT,PL,ASSEM WA:6-32 X 0.312 INCH,STL	83385	OBD
						- - - * - - -		
-74	348-0202-00			4		FOOT,CABINET:BLACK POLYURETHANE	80009	348-0202-
						(ATTACHING PARTS)		
-75	386-1618-00			4		PLATE,FOOT MTG:DELRIN	80009	386-1618-
						ACCESSORIES		
	103-0013-00			1		ADAPTER,CONN:3 WIRE TO 2 WIRE(NOT SHOWN)	72041	419
	070-0949-00			2		MANUAL,TECH:INSTRUCTION(NOT SHOWN)	80009	070-0949-



TYPE 1101

REV APR 1981

PROBE POWER SUPPLY

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