

**067-0500-00 CALIBRATION FIXTURE**  
CRT Deflection Capacitance Normalizer

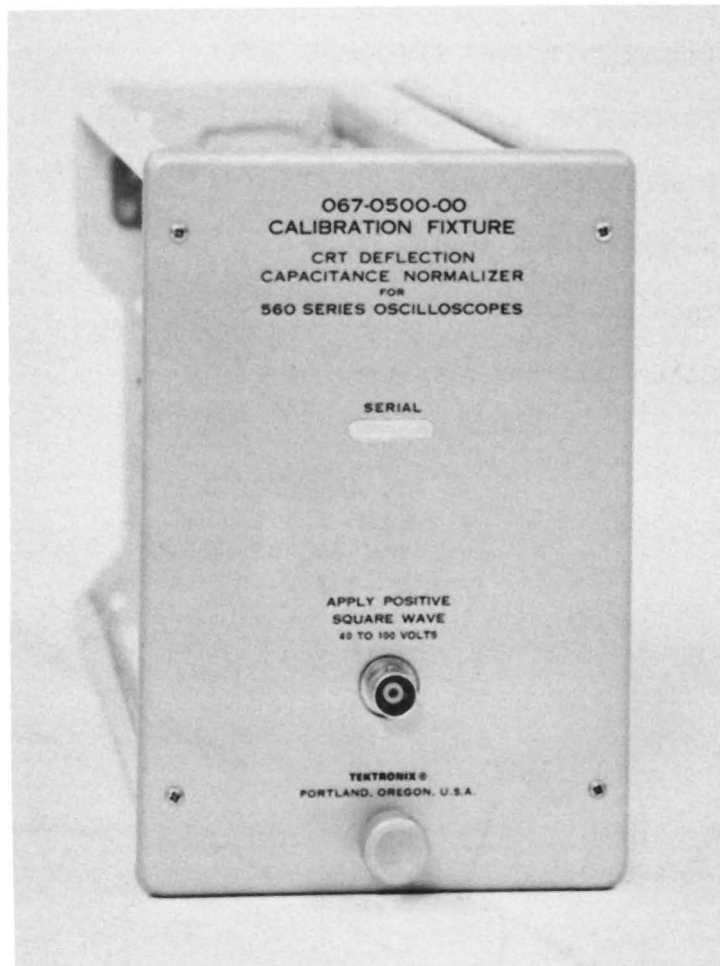


MANUFACTURERS OF CATHODE-RAY OSCILLOSCOPES

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**067-0500-00 CALIBRATION FIXTURE**

CRT Deflection Capacitance Normalizer



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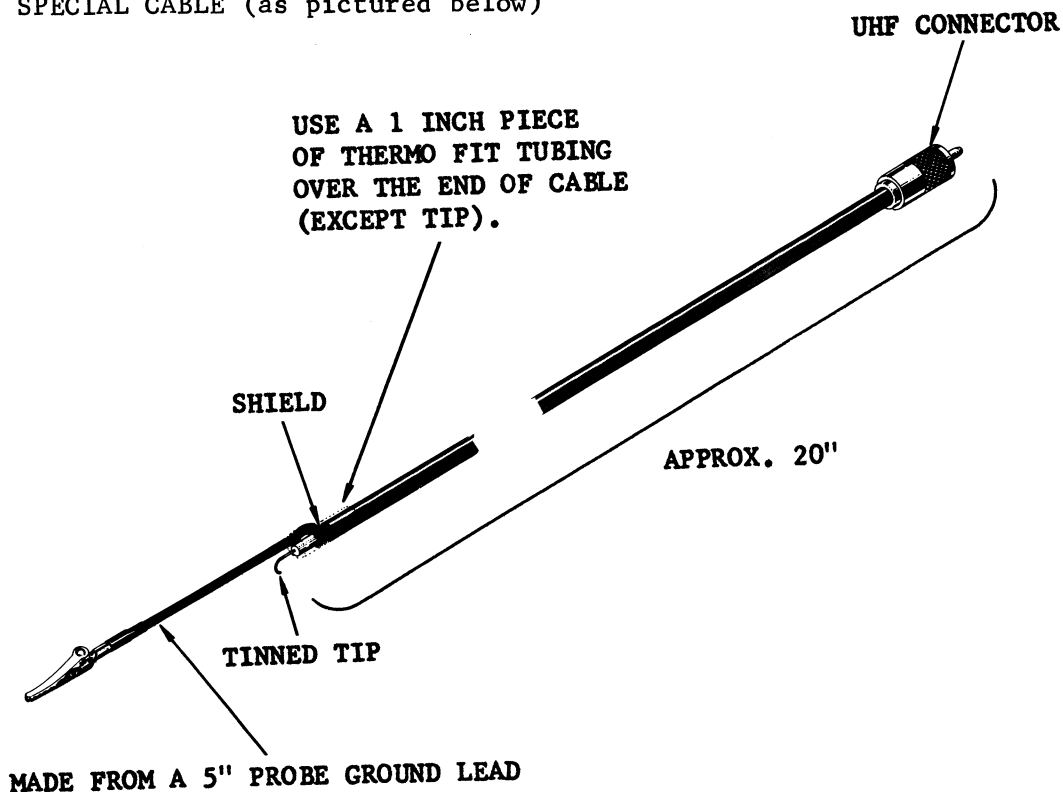
The 067-0500-00 is a plug-in unit for normalizing CRT deflection plate capacitance in 560 series instruments.

The plates of the Schmitt multivibrator are connected push-pull through time constant dividers to the CRT deflection plate. A squarewave approximately 5 cm high will be displayed when a positive squarewave of 40 to 100 volts in amplitude is applied to the input. C760 or C761 in 560 series scopes is adjusted for optimum square corner (no rolloff or spike) to achieve normalization.

CALIBRATION PROCEDURE

EQUIPMENT REQUIRED

- 1 TEKTRONIX TYPE 561A OSCILLOSCOPE
- 1 TEKTRONIX TYPE 2B67 TIME-BASE UNIT
- 1 TEKTRONIX TYPE 130 DIRECT-READING LC METER
- 1 S-30 DELTA STANDARD P/N 015-0001-00
- 1 1 kHz CALIBRATOR 40-100 VOLTS
- 1 42 inch BNC CABLE P/N 012-0057-01
- 1 SPECIAL CABLE (as pictured below)



Strip cable back approximately 3/8 inch, exposing 1/8 inch of shield. Tin tip of the cable. Solder end of ground lead to shield of cable. Ground lead should be approximately 5 inches long.

CALIBRATION

Step 1. CHECK CALIBRATION OF TYPE 130 LC METER. Use S-30 Delta Standard to check for accurate calibration of 3 pF and 10 pF scales. Consult Type 130 Instruction Manual for proper operation of the meter.

PRECAUTIONS

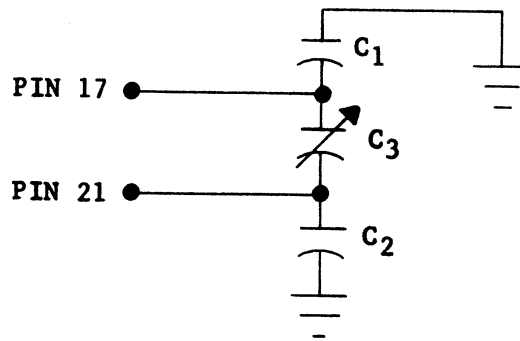
- (1) Make measurements on a wooden bench away from masses of metal which might overload the guard voltage.
- (2) Do not contact conducting surfaces of the 561A or LC 130 with hands when zeroing meter or when making measurements. This may either load the guard voltage or give an incorrect zero.
- (3) Remove both vertical and horizontal plug-ins from the 561A and make certain there are no connections to the 561A including line cord.
- (4) Be extremely careful not to accidentally move the CRT deflection plate leads when making measurements or when adjusting C760. They may, of course, be moved to intentionally change  $C_{\text{eff}}$ .

Step 2. ADJUST C760 OF THE 561A FOR CORRECT EFFECTIVE DEFLECTION PLATE CAPACITANCE. (For C760 between Pin 17 and Pin 21.)

- (a) Measure and record the capacitance between the lower deflection plate pin and ground. Guard the upper deflection plate pin. This is the value of  $C_1$  in the equation below.
- (b) Measure and record the capacitance between the upper deflection plate pin and the ground. Guard the lower deflection plate pin. This is the value of  $C_2$  in the equation below.
- (c) Substitute the values of  $C_1$  and  $C_2$  into the following equation:

$$C_3 = 7.15 - \left( \frac{C_1 + C_2}{4} \right)$$

$C_3$  is the value of capacitance which is to be measured between the two deflection plate pins guarded. Adjust C760 to obtain this value of  $C_3$ .

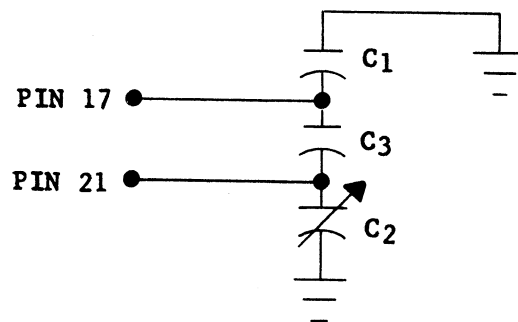


Step 3. ADJUST C760 OF THE 561A FOR CORRECT EFFECTIVE DEFLECTION PLATE CAPACITANCE. (For C760 between Pin 21 and Ground.)

- (a) Measure and record the capacitance between the lower deflection plate pin and ground. Guard the upper deflection plate pin. This is the value of  $C_1$  in the equation below.
- (b) Measure and record the capacitance between the two CRT deflection plate pins guarding ground. This is  $C_3$  in the equation below.
- (c) Substitute the values of  $C_1$  and  $C_3$  in picofarads into the following equation:

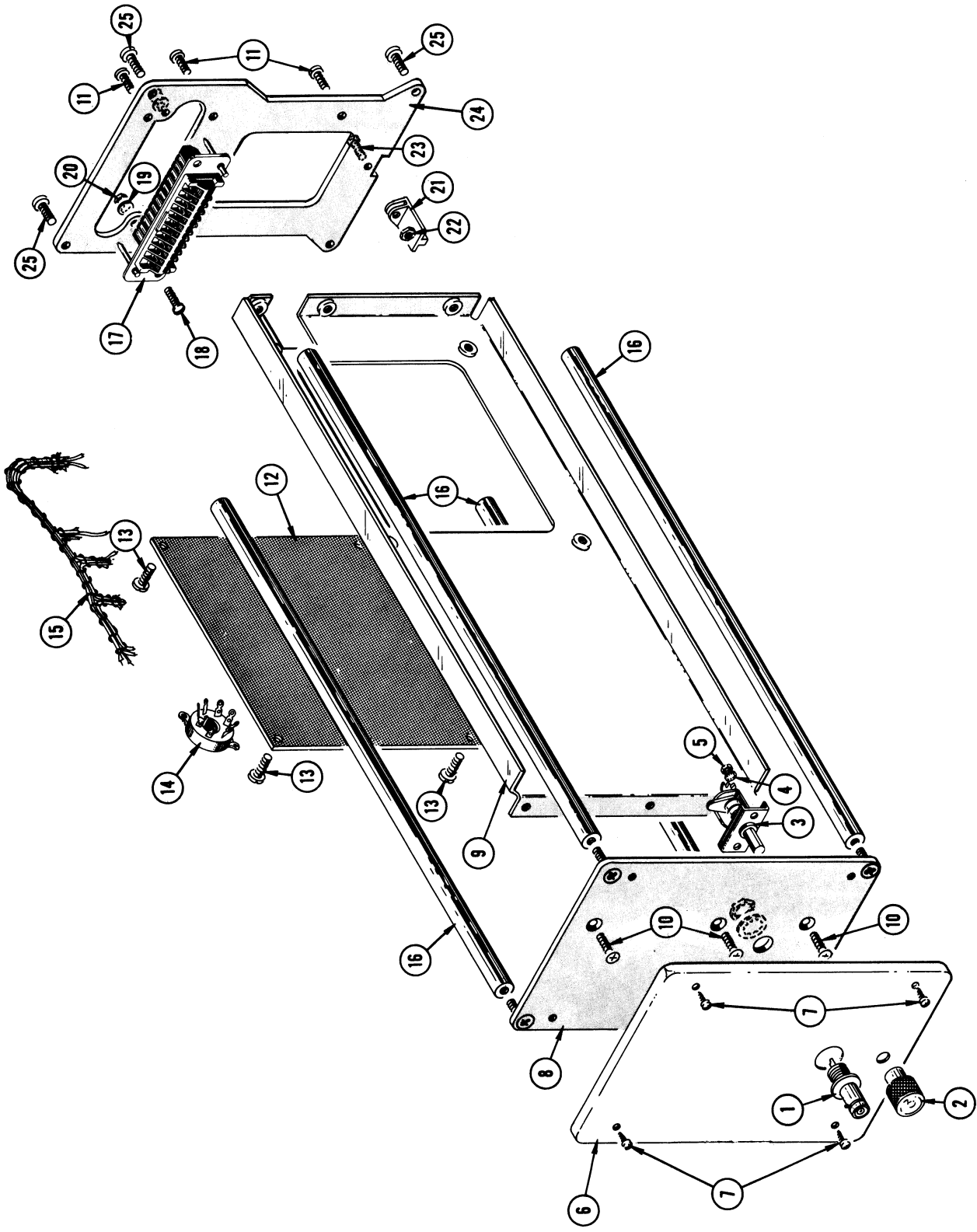
$$C_2 = 28.6 - (C_1 + 4 C_3)$$

$C_2$  is the value of capacitance which is to be measured between the upper deflection plate pin and ground with the lower deflection plate guarded. Adjust C760 to obtain this value of  $C_2$ .



## Step 4. CALIBRATION OF THE TYPE 067-0500-00.

- (a) Place a 560 Series Time-Base Unit into the right hand plug-in compartment.
- (b) Place the 067-0500-00 to be calibrated into the left hand plug-in compartment.
- (c) Apply the appropriate calibration waveform to the input of the 067-0500-00 and adjust the time base unit for a stable display.
- (d) Adjust C131 and C136 of the 067-0500-00 for optimum square corner at both top and bottom of waveform.





## MECHANICAL PARTS LIST

Fig. & Index No.	Tektronix Part No.	Serial/Model Eff	No. Disc	Q					Description
				y	1	2	3	4	
	067-0500-00			1					CRT Deflection Capacitance Normalizer
	- - - - -			-					CRT deflection capacitance normalizer
	- - - - -			-					includes:
1	131-0106-00			1					CONNECTOR, coaxial, 1 contact, BNC,
	- - - - -			-					w/hardware
2	366-0109-00			1					KNOB, plug-in securing
3	214-0052-00			1					FASTENER, pawl right, w/stop
	- - - - -			-					mounting hardware: (not included
	- - - - -			-					w/fastener)
4	210-0004-00			2					WASHER, lock, internal, 0.12 ID x 0.26
	- - - - -			-					inch OD
5	210-0406-00			2					NUT, hex., 4-40 x 0.188 inch
6	333-1017-01			1					PANEL, front
	- - - - -			-					mounting hardware: (not included w/panel)
7	213-0120-00			4					SCREW, thread forming, 2-32 x 0.25 inch,
	- - - - -			-					PHS
8	386-1298-00			1					PLATE, subpanel
	- - - - -			-					mounting hardware: (not included w/plate)
	212-0043-00			4					SCREW, 8-32 x 0.50 inch, 100° csk, FHS
9	441-0754-00			1					CHASSIS
	- - - - -			-					mounting hardware: (not included w/chassis)
10	211-0538-00			3					SCREW, 6-32 x 0.312 inch, 100° csk, FHS
11	211-0507-00			3					SCREW, 6-32 x 0.312 inch, PHS
12	670-1418-00			1					CIRCUIT BOARD ASSEMBLY
	- - - - -			-					circuit board assembly includes:
	388-0611-01			1					CIRCUIT BOARD
	- - - - -			-					mounting hardware: (not included w/circuit
	- - - - -			-					board assembly)
13	211-0507-00		374	4					SCREW, 6-32 x 0.312 inch, PHS
	211-0601-00	375		4					SCREW, sems, 6-32 x 0.312 inch, PHS
14	136-0061-00			1					SOCKET, tube, 9 pin
15	179-0955-00			1					CABLE HARNESS
16	384-0615-00			4					ROD, spacer
17	131-0149-00			1					CONNECTOR, 24 contact
	- - - - -			-					mounting hardware: (not included
	- - - - -			-					w/connector
18	211-0008-00			2					SCREW, 4-40 x 0.25 inch, PHS
19	210-0004-00			2					WASHER, lock, internal, 0.12 ID x 0.26
	- - - - -			-					inch OD
20	210-0406-00			2					NUT, hex., 4-40 x 0.188 inch
21	351-0037-00			1					GUIDE, plug-in
	- - - - -			-					mounting hardware: (not included w/guide)
22	210-0406-00			1					NUT, hex., 4-40 x 0.312 inch

MECHANICAL PARTS LIST (cont)

Fig. & Index No.	Tektronix Part No.	Serial/Model Eff	No. Disc	Q t y					Description
				1	2	3	4	5	
23	211-0013-00			1					SCREW, 4-40 x 0.375 inch, RHS
24	387-0581-00			1					PLATE, rear
	- - - - -			-					mounting hardware: (not included
	- - - - -			-					w/plate)
25	212-0023-00			4					SCREW, 8-32 x 0.50 inch, PHS

STANDARD ACCESSORIES

062-0806-00	1	MANUAL, instruction (not shown)
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ELECTRICAL PARTS LIST--067-0500-00

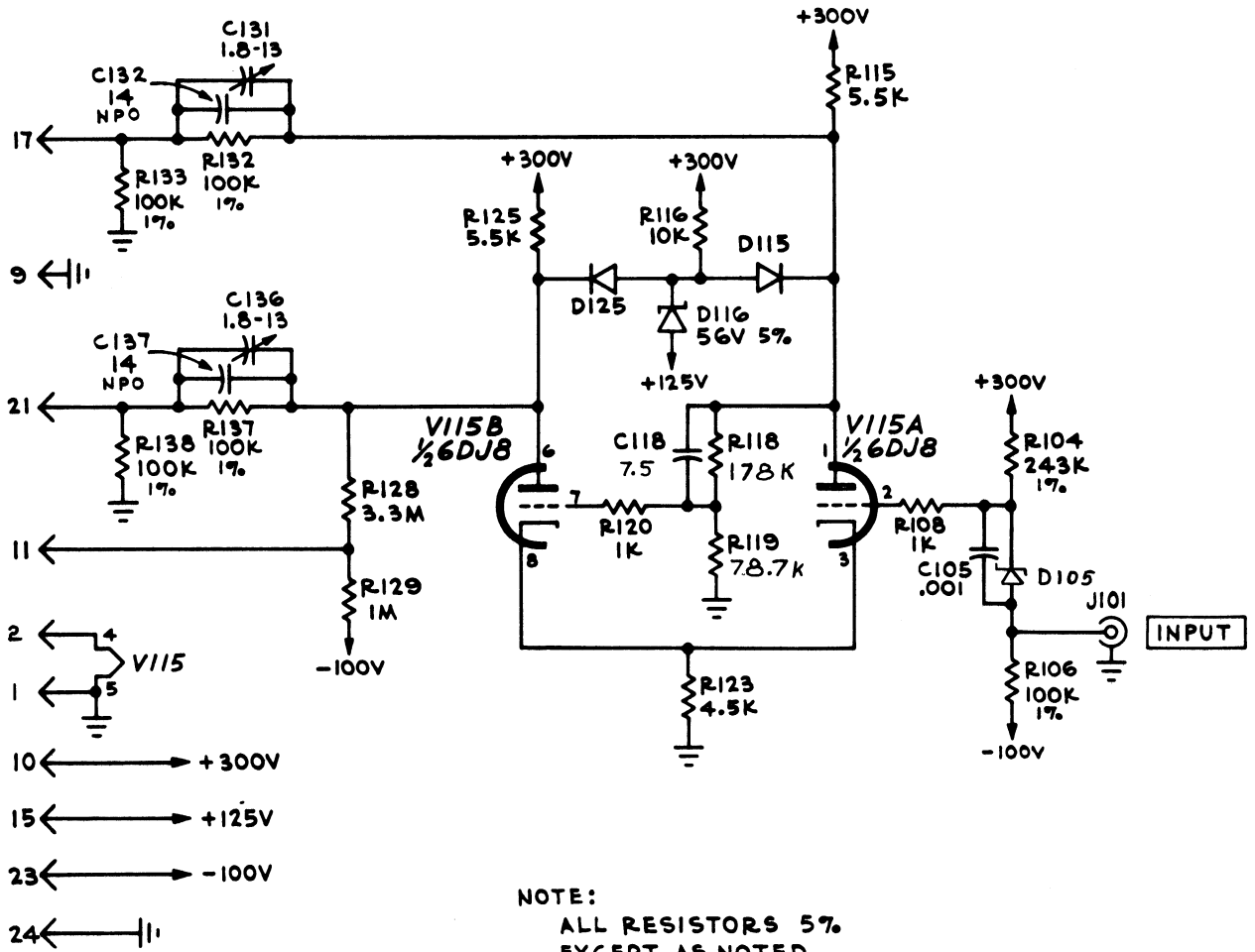
Values are fixed unless marked Variable.

Ckt. No.	Tektronix Part No.	Serial/Model No. Eff	Disc	Description			
CAPACITORS							
Tolerance $\pm 20\%$ unless otherwise indicated.							
C105	283-0000-00			0.001 $\mu$ F	Cer	500 V	
C118	281-0506-00		454	12 pF	Cer	500 V	10%
C118	281-0601-00	455		7.5 pF	Cer	500 V	10%
C131	281-0081-00			1.8-13 pF	Cer	Var	
C132	281-0577-00			14 pF	Cer	500 V	5%
C136	281-0081-00			1.8-13 pF	Cer	Var	
C137	281-0577-00			14 pF	Cer	500 V	5%
DIODES							
D105	152-0285-00	X455		Zener		62 V	5%
D115	*152-0061-00			Silicon	Tek Spec		
D116	152-0057-00		324	Zener	1N3807B	1 W	56 V
D116	152-0264-00	325		Zener		3 W	56 V
D125	*152-0061-00			Silicon	Tek Spec		
CONNECTOR							
J101	131-0106-00			Coaxial, 1 contact, female			
RESISTORS							
Resistors are fixed, composition, $\pm 10\%$ unless otherwise indicated.							
R104	323-0422-00			243 k $\Omega$	1/2 W	Prec	1%
R106	323-0385-00			100 k $\Omega$	1/2 W	Prec	1%
R108	301-0102-00			1 k $\Omega$	1/2 W		5%
R115	308-0101-00			5.5 k $\Omega$	5 W	WW	5%

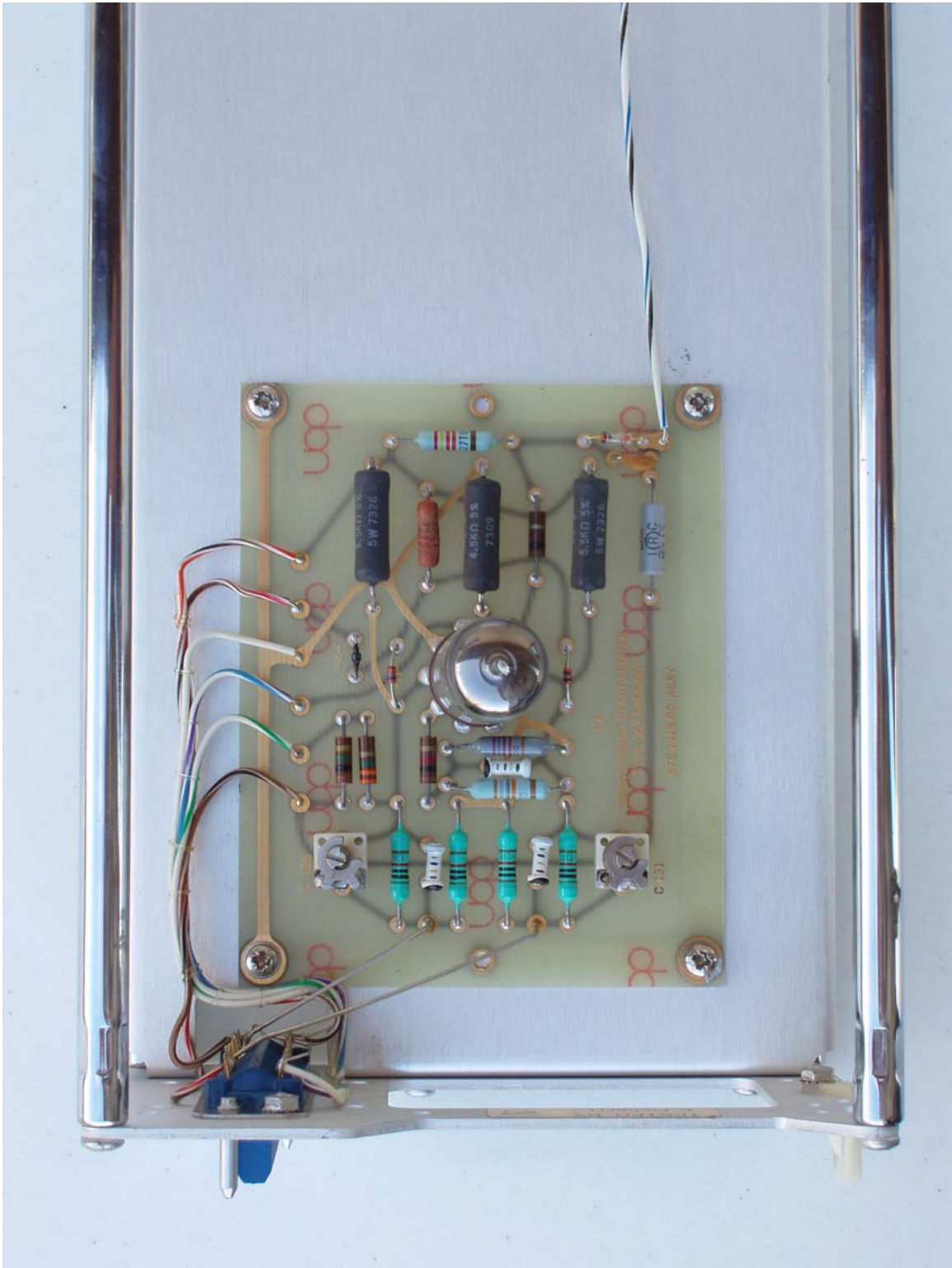
## ELECTRICAL PARTS LIST--067-0500-00 (CONT)

Values are fixed unless marked Variable.

Ckt. No.	Tektronix Part No.	Serial/Model No. Eff	No. Disc	Description			
RESISTORS (CONT)							
R116	308-0212-00			10 k $\Omega$	3 W	WW	5%
R118	323-0404-00		454	158 k $\Omega$	1/2 W	Prec	1%
R118	323-0409-00	455		178 k $\Omega$	1/2 W	Prec	1%
R119	323-0384-00		454	97.6 k $\Omega$	1/2 W	Prec	1%
R119	323-0375-00	455		78.7 k $\Omega$	1/2 W	Prec	1%
R120	301-0102-00			1 k $\Omega$	1/2 W		5%
R123	308-0092-00			4.5 k $\Omega$	5 W	WW	5%
R125	308-0101-00			5.5 k $\Omega$	5 W	WW	5%
R128	301-0335-00			3.3 M $\Omega$	1/2 W		5%
R129	301-0105-00			1 M $\Omega$	1/2 W		5%
R132	323-0385-00			100 k $\Omega$	1/2 W	Prec	1%
R133	323-0385-00			100 k $\Omega$	1/2 W	Prec	1%
R137	323-0385-00			100 k $\Omega$	1/2 W	Prec	1%
R138	323-0385-00			100 k $\Omega$	1/2 W	Prec	1%
ELECTRON TUBE							
V115	154-0187-00			6DJ8			







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