



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

P6015 PROBE

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


070-0373-02
Product Group 60

INSTRUCTION MANUAL

Serial Number _____ First Printing APR 1974
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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

NOTICE

Use only FLUOROCARBON 114 ($C_2Cl_2F_4$) as dielectric fluid. Use of other FLUOROCARBON fluids may develop dangerous pressures. Exceeding Voltage and Temperature specifications may result in dangerous internal pressures developed in the Probe body.

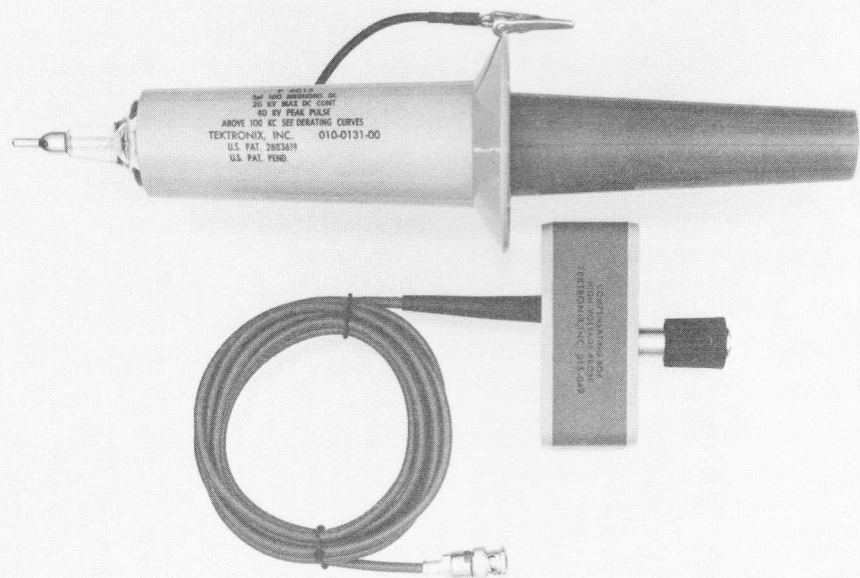


Fig. 1-1. P6015 Probe.

CHARACTERISTICS

The P6015 High-Voltage Probe (Fig. 1-1) is a 1000X attenuator probe that adds high voltage capabilities to oscilloscopes or plug-in units with input resistance of 1 megohm and input capacitances of up to 50 picofarads (pF). The body of the P6015 Probe is made of high impact strength thermoplastic material that provides mechanical protection for the internal components of the probe and electrical protection for the user. Dielectric properties of the probe are improved by filling the probe with fluoro-carbon gas. The complete probe assembly consists of the probe body, a 10-foot interconnecting cable with resistive center conductor, and the compensating box.

Electrical Characteristics

Attenuation Ratio—1000:1 (variable by about 9%).

Input Resistance—100 megohms ($\pm 3\%$).

Input Capacitance—Approximately 3 pF.

Maximum Input Voltage (DC or RMS)

With dielectric fluid: 20 kV, see derating chart, Fig. 1-2, for frequencies above 100 kHz.

Without dielectric fluid: 13 kV, see derating chart, Fig. 1-2, for frequencies above 500 kHz.

Maximum Input Voltage (pulse)

With dielectric fluid: 40 kV (peak), maximum duty factor - 10%, maximum pulse duration - 0.1 sec.

Without dielectric fluid: 18 kV (peak), maximum duty factor - 10%, maximum pulse duration - 0.1 sec.

Bandpass (with 7704A Oscilloscope and 7A13 plug-In)—DC to 75 megahertz (-3 dB).

Risetime (with 7704A Oscilloscope and 7A13 Plug-In)—Approximately 4.67 nanoseconds.

Temperature Range— 10°C to 55°C .

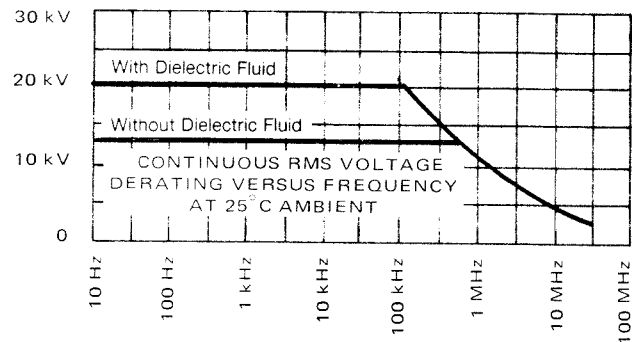


Fig. 1-2. Derating Chart for P6015 Probe.

Mechanical Characteristics

Maximum Diameter of Probe Body—3 1/2 inches (diameter of guard flange).

Length of Probe Body—13-1/2 inches.

Length of Interconnecting Cable—Nominally 10 feet.

Dimensions of Compensating Box—1-13/16 x 1-5/8 x 3-9/16 inches.

Saturation Pressure of Inert Gas—Approximately 2 atmospheres at room temperature.

Output Connector Type—BNC and UHF type.

Weight of Assembly—1 pound 13 ounces.

OPERATING INSTRUCTIONS

Compensation

Check the compensation of the P6015 Probe each time it is used with a different plug-in unit or oscilloscope. Compensation should be checked occasionally during normal use since changes in ambient temperature can also affect compensation. Proper compensation matches the capacitive attenuation ratio to the resistive attenuation ratio.

The P6015 Compensating Box contains seven adjustable components. All except R5 (see schematic) vary the time constant of RC networks. The adjustable components and their effect on a 1 kHz square wave (see Fig. 2-1) are as follows:

C3—Part of an RC network that affects the leading corner of the square wave.

R1, C1—Comprise an RC network that affects the area immediately following the leading corner of the square wave.

R2, C2—Comprise an RC network that affects the middle section of the square wave.

R3—A high-frequency peaking adjustment that affects the leading 10 to 100 nanoseconds of a fast-rise pulse. The action of R3 will not be apparent with signals having risetimes greater than 0.1 microsecond.

R5—An attenuation adjustment that varies output amplitude by about 9%.

Compensation can be checked by displaying the oscilloscope calibrator 40-volt output through the P6015 Probe. Adjust the oscilloscope controls (0.02 volts/div, sweep rate 0.5 ms/div) to display a waveform similar to Fig. 2-1. If the waveform has aberrations, compensation is necessary. If the aberrations cannot be corrected by making minor adjustments, proceed as follows:

1. Preset the following controls as indicated:

C3—Set fully clockwise and back off 90 degrees.

C1—Set fully clockwise and back off 90 degrees.

R1—Set fully clockwise and back off 90 degrees.

C2—Set fully clockwise and back off 2 turns.

R2—Set fully clockwise and back off 90 degrees.

2. Adjust R5 for exactly 2 major divisions of vertical deflection on the crt. Use the level portions of the square wave if the waveform is over- or under-peaked.

3. Set the sweep rates for $50 \mu\text{s}/\text{div}$ and display the leading corner of the square wave. Adjust R1, C3, and C1 for the sharpest leading corner without overshoot (see Fig. 2-1). Each may have to be adjusted several times for the sharpest corner. Maintain 2 divisions of deflection at the leading edge. The R1-C3 combination affects the very corner and C1 affects the area immediately following with some overlap.

4. Set the sweep rate of the oscilloscope for $0.2 \text{ ms}/\text{div}$ and adjust R2 and C2 to level the trailing 2 divisions of the top of the square wave.

5. Set sweep for $0.2 \text{ ms}/\text{div}$. Adjust C3 and C1 for a flat top on the square wave.

6. Any remaining aberrations may be corrected by slight readjustment of C1, R2, C2, R1, and C3.

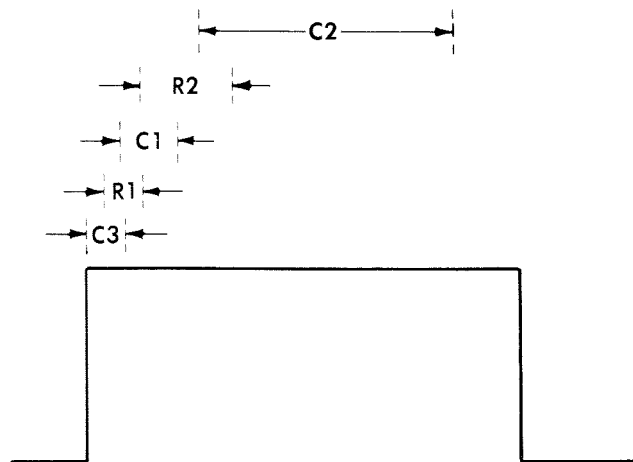


Fig. 2-1. Pulse area affected by each compensation adjustment.

The preceding steps do not include high-frequency peaking adjustment R3. The affect of R3 is apparent only with risetimes faster than about 0.1 microsecond. Consequently, the calibrator signal is not fast enough for this adjustment. The most desirable signal source is a fast-rise pulse generator with enough charge line to generate at least a 100 ns pulse. However the 1 MHz output of a Tektronix Square Wave Generator terminated in 50 ohms is also adequate. With any of these generators, it is advantageous to have a plug-in unit with a sensitivity greater than 0.05 volt/div, such as the Tektronix 7A13. R3 should be

adjusted while observing the generator output signal at a sweep rate of $0.1 \mu\text{s}/\text{div}$. R3 should be turned as far as possible in the counter-clockwise direction without causing overshoot on the leading corner of the waveform.

Only minor (if any) readjustment of the controls is necessary when the P6015 Probe is operated with plug-in units with nominal input capacitance. When switching between plug-in units with different input capacitance, compensate the probe by adjusting C3. If the gain of the plug-in units differ, match the gain of the plug-in to the probe rather than adjusting R5. Adjusting R5 will require readjusting the remaining controls.

Using the P6015 Probe

When making amplitude measurements with the P6015 Probe, multiply the amplitude of the display by the attenuation factor of the probe (1000). If the observed voltage is a pulse or a signal over 100 kHz, see Fig. 1-2 and the maximum input voltage limitations listed under "Electrical Characteristics" in Section 1. Remember that component heating caused by changes in ambient temperature or high voltage will cause a slight change in calibration accuracy. If the displayed waveform contains fast transients, the inductive effect of the ground lead may make it desirable to remove the probe from its plastic body and build the probe into the circuit under test.

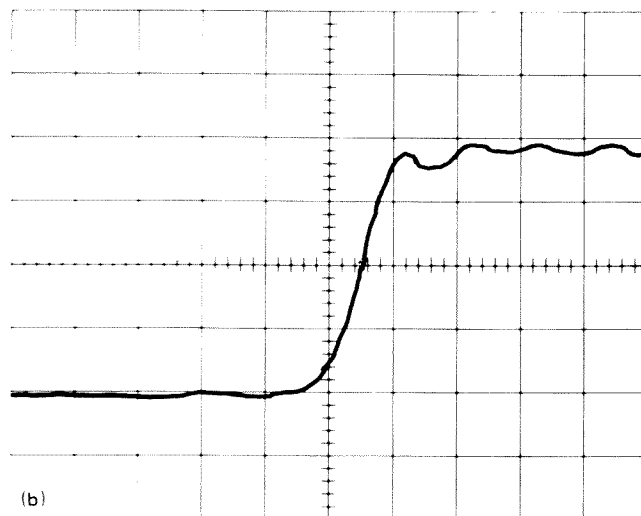
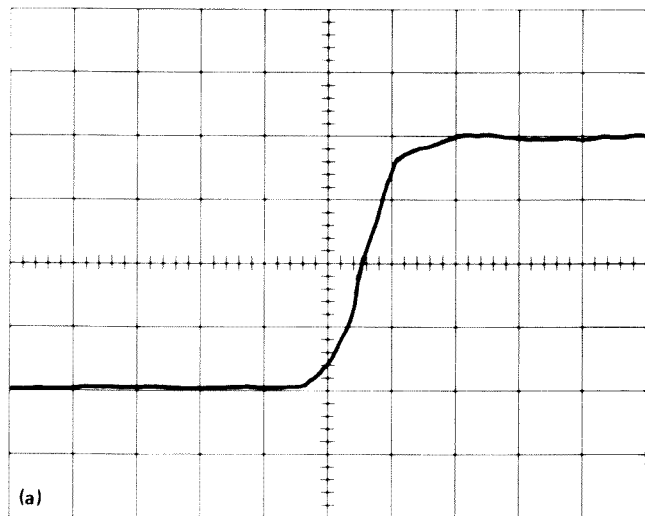


Fig. 2-2. Waveforms showing (a) Typical example of risetime within the probe capability (b) example of risetime exceeding the probes capability.

MAINTENANCE

Introduction

Normally, the P6015 Probe requires very little maintenance except for a visual and operational check. This section is provided as a maintenance guide, and contains procedures for visual inspection, recharging the probe with dielectric fluid, and troubleshooting.

Visual Inspection

A thorough visual inspection of the probe should be performed periodically. Look for such things as loose or broken connections, damaged plastic insulators, and proper dielectric fluid level. Except for low fluid level, the remedy for most of these troubles is apparent.

Check the dielectric fluid level by holding the probe with the tip down. The bottom of the Liquid Quantity Indicator should be approximately even with the bottom of the plastic body cover. If not, it is essential for you to determine the cause of the fluid loss before adding more. Temperature as well as a leak could affect the liquid level. See "Recharging the Probe" for details and procedures for adding fluid.

WARNING

Use only Fluorocarbon 114 ($C_2CL_2 F_4$) dielectric fluid. Use of other Fluorocarbon fluids may develop excessive internal pressure.

Recharging the Probe

Fluorocarbon 114 has a saturation pressure of about 2 atmospheres at room temperature. At room temperature, a small amount of liquid should be visible through the transparent nose of the probe when the probe tip is pointed down. Any liquid visible in the nose is an indication of proper pressure inside the probe. The saturation pressure increases with an increase in temperature, and at higher temperatures it is normal for all of the fluorocarbon 114 to be in a gaseous stage. The top of the Liquid Quantity Indicator, at room temperature, should be approximately 0.187 inch below the bottom of the metal shield sleeve (see Fig. 3-1).

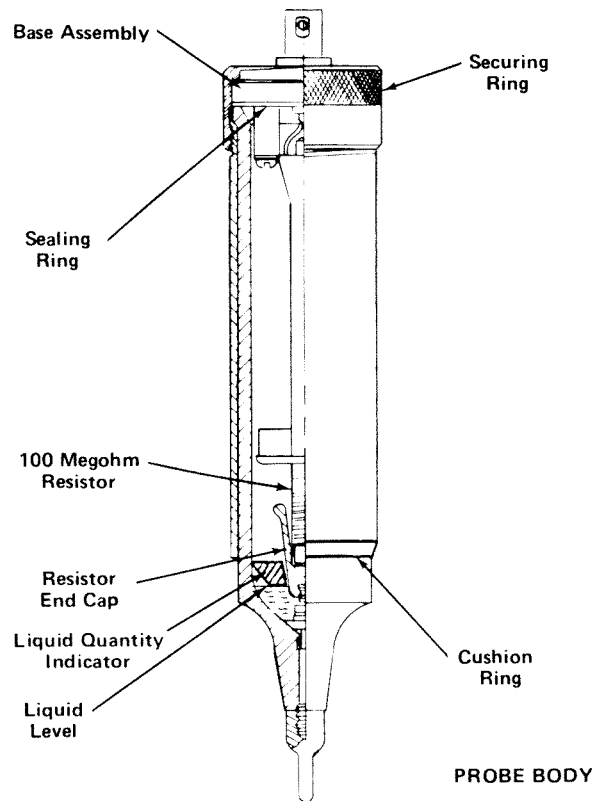


Fig. 3-1. Cutaway drawing of P6015 Probe.

Recharging the probe with fluorocarbon 114 requires no special tools or equipment besides the dispenser supplied with each probe. If the liquid level in the probe is low, it can be recharged as follows:

1. Uncouple the two halves of the probe body cover and remove the probe body and cushion ring (see Fig. 3-1).
2. Unscrew and remove the securing ring.
3. Remove the base assembly from the probe body.
4. Hold the probe tip down and release fluorocarbon 114 into the probe body until the liquid level is approximately .125 inch above the small end of the gold-plated resistor end cap (see Fig. 3-1).
5. Replace the base assembly. Be sure the 100-megohm resistor is properly mated. Screw on the securing ring (hand tight) (50-60 inch lbs).
6. Shake the probe body to agitate the liquid; this accelerates vaporization and quickly builds up pressure inside the probe body.

7. Check to see that the top of the Liquid Quantity Indicator is approximately 0.187 inch below the bottom of the metal shield sleeve. If too much liquid boiled away, add more. If the liquid level is too high, bleed off excess by loosening the securing ring and letting the liquid boil. When the proper level has been reached, retighten the securing ring.

8. Replace the cushion ring on the probe body prior to reassembling the probe body and probe body cover.

Troubleshooting

Following are some possible trouble symptoms and causes.

No Output or Differentiated Output. Connect the compensating box to the INPUT connector of the oscilloscope or plug-in unit and touch the probe tip to the calibrator output connector on the oscilloscope. Set the oscilloscope calibrator for a 100-volt output. If the crt

display shows no signal or a differentiated signal, check R6, the center conductor of the interconnecting cable, and R100 in the probe body. Replace the defective component. If R100 is defective, gain access to it as outlined in steps 1 through 3 under "Recharging the Probe."

Erroneous Attenuation Ratio. If there is an obvious error in attenuation ratio, check resistors R3, R4, and R5. To gain access to the resistors, remove the compensating box cover by unscrewing the two screws on the top of the compensating box. Replace or reconnect components as indicated by the type of trouble.

Probe Cannot Be Compensated. Check capacitors C1, C2, and C3. Check Resistors R1 and R2. If any of the capacitors are shorted, the attenuation ratio of the probe will be greatly changed. If connections to the capacitors are faulty, or if the resistors are faulty, the defective component will not adjust properly when compensating the probe. Open the compensating box by unscrewing the two screws on the top and removing the cover. Reconnect or replace components as necessary.

PARTS LIST AND SCHEMATIC

HOW TO ORDER PARTS

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


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, for your order to contain the following information: Part number including any suffix, instrument type, 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 Field Office will contact you concerning any change in part number.

ABBREVIATIONS

BHS	Binding Head Steel	p	Pico, or 10^{-12}
f	Farad	PHS	Pan Head Steel
K or k	Kilohms, or kilo (10^3)	Var.	Variable
M or meg	Megohms, or mega (10^6)	w	Watt
Ω	Ohm	w/	With

SPECIAL NOTES AND SYMBOLS

X000	Part first added at this serial number.
X000	Part first added at this serial number.
000X	Part removed after this serial number.
*000-000	Asterisk preceding Tektronix Part Number indicates manufactured by or for Tektronix, also reworked or checked components.
Use 000-000	Part number indicated is direct replacement.
	Internal screwdriver adjustment.

CROSS INDEX—MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip
01121	ALLEN-BRADLEY COMPANY	1201 2ND STREET SOUTH	MILWAUKEE, WI 53204
02958	RUDD PAINT AND VARNISH COMPANY	1608 15TH WEST	SEATTLE, WA 98119
03888	KDI PYROFILM CORPORATION	60 S JEFFERSON ROAD	WHIPPANY, NJ 07981
05276	ITT, POMONA ELECTRONICS DIVISION	P O BOX 2767, 1500 E 9TH ST.	POMONA, CA 91766
12697	CLAROSTAT MFG. CO., INC.	LOWER WASHINGTON STREET	DOVER, NH 03820
32997	BOURNS, INC., TRIMPOT PRODUCTS DIV.	1200 COLUMBIA AVE.	RIVERSIDE, CA 92507
50293	GENERAL ELECTRIC COMPANY, INSTALLA- TION AND SERVICE ENGINEERING DEPT.	1 RIVER ROAD	SCHENECTADY, NY 12306
52769	SPRAGUE GOODMAN ELEC., INC.	134 FULTON AVENUE	GARDEN CITY PARK, NY 11040
63060	VICTOREEN INSTRUMENT, DIV. OF VLN CORP.	10101 WOODLAND AVE.	CLEVELAND, OH 44104
71590	CENTRALAB ELECTRONICS, DIV. OF GLOBE-UNION, INC.	P O BOX 858	FORT DODGE, IA 50501
72136	ELECTRO MOTIVE CORPORATION, SUB OF INTERNATIONAL ELECTRONICS CORPORATION	LAUTER AVE, P O BOX 7600	FLORENCE, SC 29501
73138	BECKMAN INSTRUMENTS, INC., HELIPOT DIV.	2500 HARBOR BLVD.	FULLERTON, CA 92634
73743	FISCHER SPECIAL MFG. CO.	446 MORGAN ST.	CINCINNATI, OH 45206
74868	BUNKER-RAMO CORP., THE AMPHENOL RF DIV.	33 E. FRANKLIN ST.	DANBURY, CT 06810
75042	TRW ELECTRONIC COMPONENTS, IRC FIXED RESISTORS, PHILADELPHIA DIVISION	401 N. BROAD ST.	PHILADELPHIA, PA 19108
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
80009	TEKTRONIX, INC.	P O BOX 500	BEAVERTON, OR 97077
83385	CENTRAL SCREW CO.	2530 CRESCENT DR.	BROADVIEW, IL 60153
91637	DALE ELECTRONICS, INC.	P. O. BOX 609	COLUMBUS, NE 68601
91836	KINGS ELECTRONICS CO., INC.	40 MARBLEDAL ROAD	TUCKAHOE, NY 10707
95548	MORRIS J I CO.	394 ELM ST	SOUTHBRIDGE, MA 01550
T1063	SCHOOF INC.	P O BOX 67	MORAGA, CA 94556

PROBE PACKAGE



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-	010-0172-00			1		PROBE,VOLTAGE:P6015,120.0 L,1000X,W/ACCES	80009	010-0172-00
	010-0132-00			1		PROBE,VOLTAGE:P6015,120.0 L,W/ACCESSORIES	80009	010-0132-00
	-----			-		PROBE PACKAGE INCLUDES:		
-1	010-0131-00			1		.PROBE,VOLTAGE P:015,120.0 L,1000X,40KV	80009	010-0131-00
-2	015-0049-00			1		.COMP,TEST PROD:HIGH VOLTAGE PROBE W/LKG	80009	015-0049-00
	015-0039-00			1		.COMP,TEST PROD:HIGH VOLTAGE PROBE	80009	015-0039-00
	252-0120-00			1		.F-12,TECHNICAL:	02958	202X2124
	256-0570-00		7401	1		..DEHYDRATING AGT:SILICA GEL,2.75 DIA X 0.	T1063	X1009
-4	344-0005-00			1		.CLIP,ELECTRICAL:ALLIGATOR,2.5 L,W/PLUG	80009	344-0005-00
-5	352-0056-00			1		.HOLDER,PROBE:	80009	352-0056-00
-6	202-0139-00		6834	1		.CARRYING CASE:	80009	202-0139-00
	334-4217-00			1		.PLATE,IDENT:MKD P6015,010-0172-00	80009	334-4217-00
	436-0035-00		6834	1		.TRAY,ACCESSORY:	80009	436-0035-00
	016-0128-00	6835	7401	1		.CASE,CRYG,PROBE:	80009	016-0128-00
	004-0217-00		7401	1		..PAD,CUSHIONING:	80009	004-0217-00
	016-0128-01	7402	7609	1		..CASE,CRYG,PROBE:	80009	016-0128-01
	016-0128-02	7610		1		..CASE,CRYG,PROBE:	80009	016-0128-02
	070-0373-01		7401	1		.MANUAL,TECH:INSTRUCTION	80009	070-0373-01
	070-0373-02	7402		1		.MANUAL,TECH:INSTRUCTION	80009	070-0373-02

PROBE

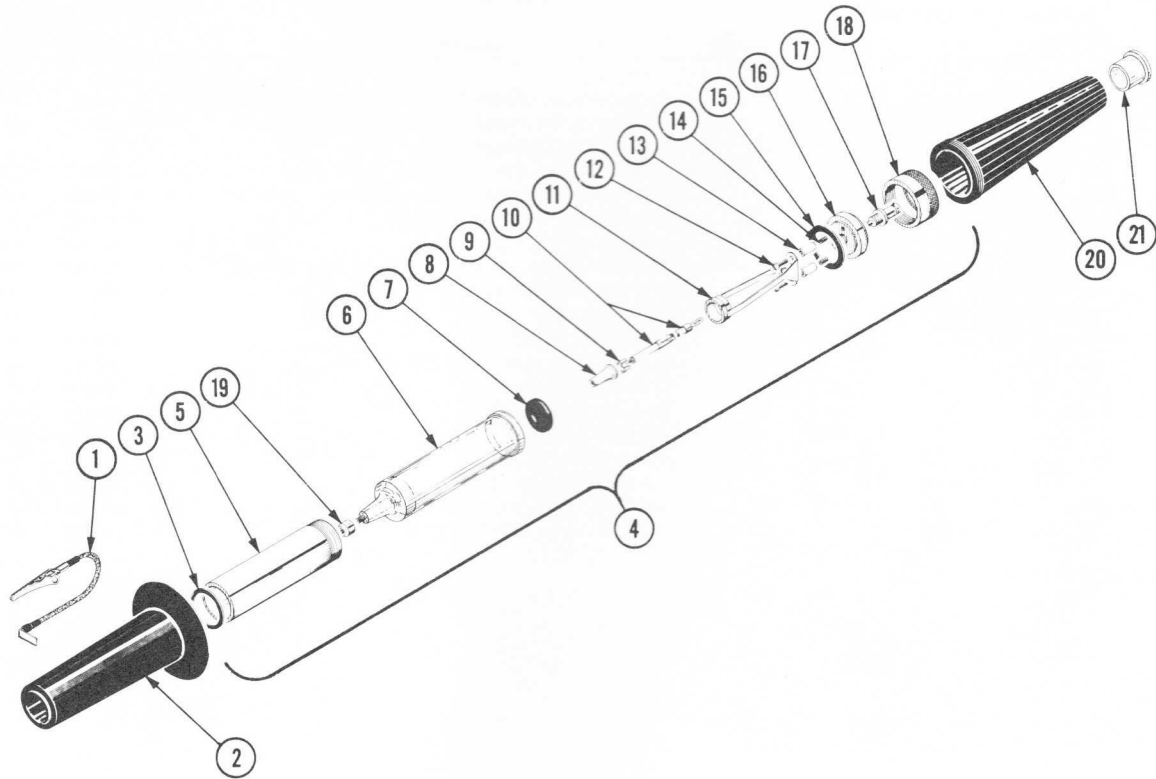


Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Qty	1 2 3 4 5	Name & Description	Mfr Code	Mfr Part Number
2-	010-0131-00			1		PROBE,VOLTAGE P:015,120.0 L,1000X,40KV	80009	010-0131-00
-1	175-0192-00			1		.LEAD,ELECTRICAL:STRD.18 AWG.6 0 L	80009	175-0192-00
-2	204-0151-00		8511	1		.BODY,PROBE:OUTER	80009	204-0151-00
	204-0151-01	8512		1		.BODY,PROBE:OUTER	80009	204-0151-00
-3	354-0189-00			1		.RING,CUSHION:	80009	354-0189-00
-4	204-0158-00			1		.BODY,ASSY PROBE:	80009	204-0158-00
-5	366-0301-00			1		.PUSH BUTTON:GRAY,.1US	80009	366-0301-00
-6	204-0157-00			1		.BODY ASSY,PROBE:INNER	80009	204-0157-00
-7	214-2427-00	7610		1		.IND,LIQUID QTY:FLUOROCARBON,PROBE	80009	214-2427-00
-8	337-0559-00			1		.SHIELD,RESISTOR:	80009	337-0559-00
-9	344-0091-00			1		.CLIP,ELECTRICAL:RESISTOR,CU BE	80009	344-0091-00
	214-0318-00		7609	1		.ASSY,RES.AND PL:	80009	214-0318-00
	-----		7609	1		...RESISTOR:(SEE R100 REPL)		
	134-0015-00		7609	1		...PLUG,TIP:BANANA,SMALL	05276	3271
-10	310-0597-00	7610		1		.RES.,FXD.FILM:100MEG OHM 2° 50KV,W/PLUG	03888	PV40010005F
-11	214-0310-00			1		.PLATE,CAPACITOR:	80009	214-0310-00
					(ATTACHING PARTS).....		
-12	211-0008-00			2		.SCREW,MACHINE:4-40 X 0.250.PNH.STL.POZ	83385	ORD BY DESCR
-13	361-0046-00			2		.SPACER,POST:0.5 L W/4-40 THRU.ACETAL	80009	361-0046-00
-14	213-0115-00			2		.SETSCREW:4-40 X 0.312 INCH,HEX SKT	50293	ORD BY DESCR
-15	354-0191-00			1		.GASKET:SEALING,1.17 ID X 1.445 OD	80009	354-0191-00
					(END ATTACHING PARTS).....		
-16	358-0205-00		8505	1		.BUSHING BASE:	80009	358-0205-00
	358-0205-01	8506		1		.BUSHING BASE:	80009	358-0205-00
-17	131-0264-00			1		.CONN,RCPT,ELEC:BNC,FEMALE	74868	31-102
-18	354-0190-00			1		.RING,SECURING:1.5-32 X 0.828.BRS	80009	354-0190-00
-19	206-0116-00			1		.TIP,PROBE:	80009	206-0116-00
-20	367-0034-00			1		.HANDLE,PROBE:5.915 L,NYLON,GRAY	80009	367-0034-00
-21	134-0068-00			1		.BUSHING,SLEEVE:0.691 ID X 0.7 L,1.25 OD	80009	134-0068-00

COMPENSATING BOX

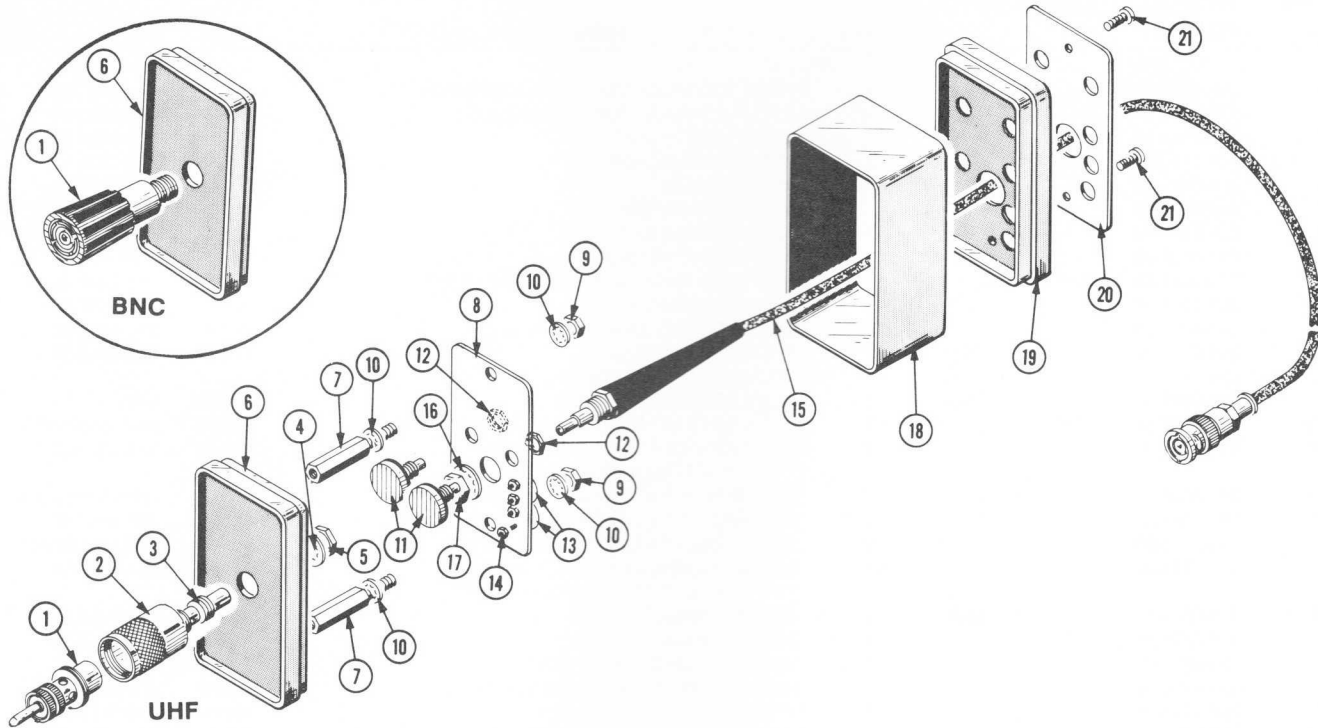
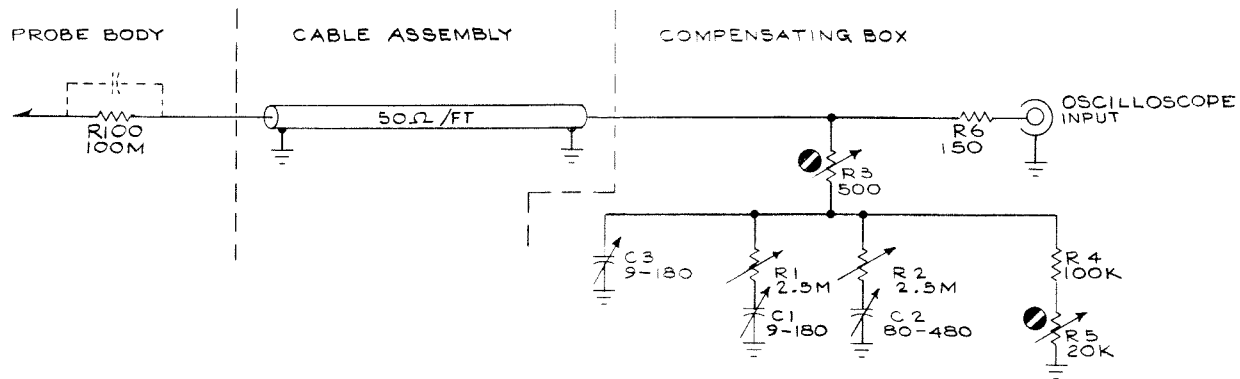


Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Qty	1 2 3 4 5	Name & Description	Mfr Code	Mfr Part Number
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	015-0049-00		1		COMP,TEST PROD:HIGH VOLTAGE PROBE W/LKG	80009	015-0049-00
-1	131-0168-00		1		.CONN,PLUG,ELEC:UHF,MALE,MODIFIED	80009	131-0168-00
	-----		-		.(015-0039-00 UHF)		
	131-0319-01		1		.CONN,RCPT,ELEC:BNC MALE	80009	131-0319-01
	-----		-		.(015-0049-00 BNC)		
-2	200-0026-00		1		.SHELL,ELEC CONN:UHG MALE	91836	U-59-06-8M06
	-----		-		.(015-0039-00 UHF)		
-3	102-0006-00		1		.BSHG,ELEC CNDCT:REDUCER	80009	102-0006-00
-4	210-0012-00		1		.WASHER,LOCK:INTL,0.384 ID,INTL,0.022 TH	78189	1220-02-00-0541C
-5	210-0413-00		1		.NUT,PLAIN,HEX.:0.375-32 X 0.50 BRS	73743	3145-402
-6	200-0439-00		1		.COVER,BOX,REAR:	80009	200-0439-00
-7	361-0047-00		2		.SPACER,POTS:1.171 L,W/4-40 INT,EXT THD	80009	361-0047-00
	210-0003-00		2		.WASHER,LOCK:#4 EXT,0.015 THK,STL	78189	1104-00-00-0541C
-8	441-0467-00		1		.CHAS,COMP BOX:	80009	441-0467-00
					***** (ATTACHING PARTS) *****		
-9	210-0410-00		2		.NUT,PLAIN,HEX.:10-32 X 0.312 INCH,BRS	73743	2X20003-402
-10	210-0010-00		4		.WASHER,LOCK:#10 INTL,0.02 THK,STL	77900	1210-00-00-0541C
					***** (END ATTACHING PARTS) *****		
-11	-----		2		.RES.,VAR: (SEE R1 AND R2 REPL)		
					***** (ATTACHING PARTS) *****		
-12	210-0583-00		2		.NUT,PLAIN,HEX:0.25-32 X 0.312 INCH,BRS	73743	2X20317-402
					***** (END ATTACHING PARTS) *****		
-13	-----		2		.RES.,VAR: (SEE R3 AND R5 REPL)		
					***** (ATTACHING PARTS) *****		
-14	210-0504-00		4		.NUT,PLAIN,HEX.:0-8 X 0.156 INCH,BRS	73743	3004-402
	210-0065-00	7718	4		.WASHER,LOCK:#0 SPLIT,0.016 THK SST	95548	ORD BY DESCR
					***** (END ATTACHING PARTS) *****		
	388-5719-00	7733	2		.CIRCUIT BOARD:VARIABLE RESISTOR	80009	388-5719-00
					***** (ATTACHING PARTS) *****		
	211-0160-00	7733	4		.SCREW MACHINE:0-80 X 0.188,FILH,SST,SLOT	83385	ORD BY DESCR
	210-1107-00	7733	4		.WASHER,FLAT:0.062 ID X 0.019 THK,0.13 O	95548	ORD BY DESCR
					***** (END ATTACHING PARTS) *****		

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Qty	1 2 3 4 5	Name & Description	Mfr Code	Mfr Part Number
3-15	175-0264-00		1		.CABLE ASSY,RF:50 COAX,122 0 L(ATTACHING PARTS).....	80009	175-0264-00
-16	210-0012-00		1		.WASHER,LOCK:INTL 0 384 ID INTL 0 022 TH	78189	1220-02-00-0541C
-17	210-0590-00		1		.NUT,PLAIN,HEX.:0 375-32 X 0 438" BRS(END ATTACHING PARTS).....	73743	2X28269-402
-18	380-0045-00		1		.HOUSING,COMP:ALUM	80009	380-0045-00
	-----		-		.(015-0039-00 UHF)		
	380-0069-00		1		.HOUSING,COMP:ALUM	80009	380-0069-00
	-----		-		.(015-0049-00 BNC)		
-19	200-0438-00		1		.COVER,BOX:FRONT	80009	200-0438-00
-20	200-0440-00		1		.COVER,COMP BOX:1 632 X 3 385,AL	80009	200-0440-00
-21	211-0071-00		2		.SCREW,MACHINE 4-40 X 0 375,TRH,STL,POZ	83385	ORD BY DESCR
	210-0003-00		2		.WASHER,LOCK:#4 EXT 0 015 THK,STL	78189	1104-00-00-0541C

ELECTRICAL PARTS LIST

Ckt No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
C1	281-0023-00		CAP.,VAR,MICA D:9-180PF,175V	72136	T52310
C2	281-0044-00		CAP.,VAR,MICA D:80-480PF,175V	52769	GMA 40600
C3	281-0023-00		CAP.,VAR,MICA D:9-180PF,175V	72136	T52310
R1	311-0325-00		RES.,VAR,NONWIR:2.5M OHM,20%	12697	381-CM39666
R2	311-0325-00		RES.,VAR,NONWIR:2.5M OHM,20%	12697	381-CM39666
R3	311-0150-00	7732	RES.,VAR NONWIR:TRMR,500 OHM,0.1W	71590	BA305-016#6
R3	311-1564-00	7733	RES.,VAR,NONWIR:TRMR,500 OHM,0.5W	73138	91-86-0
R4	309-0045-00	7345	RES.,FXD,FILM:100K OHM,1%,0.50W	91637	DCS1231-10002F
R4	323-0385-00	7346	RES.,FXD,FILM:100K OHM,1%,0.50W	75042	CECT0-1003F
R5	311-0337-00	7732	RES.,VAR,NONWIR:20K OHM,20%	71590	BA305-036
R5	311-1558-00	7733	RES.,VAR,NONWIR:20K OHM,20%,0.50W	73138	91-80-0
R6	304-0151-00	6423	RES.,FXD,CMPSN:150 OHM,10%,1W	01121	GB1511
R6	302-0151-00	6424	RES.,FXD,CMPSN:150 OHM,10%,0.50W	01121	EB1511
R100	310-0597-00		RES.,FXD,FILM:100M OHM, +/-1%,50,000V	63060	ORD BY DESCR



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