EICO PROBES AVAILABLE INCLUDE:

NEW! PSI-I SIGNAL INJECTOR PROBE
Supplies signal to be injected into any IF or RF radio and TV circuit. Instantaneous test to locate dead section of the receiver.

PLC 'SCOPE LOW CAPACITY PROBE
Use in high frequency, high impedance applications. Check RF and various TV signals without loading circuit.

PSD 'SCOPE DEMODULATOR PROBE
Demodulates AM carriers between 150 kHz and 250 MHz. Makes 'scope into signal tracer and analyzer.

PD 'SCOPE DIRECT PROBE
Use in low frequency, low impedance applications. Eliminates stray pickup and signal radiation.

PRF-11 VTVM RF PROBE
Use with standard meter to measure frequencies to 250 MHz. Good for all RF and IF measurements. ±10% accuracy.

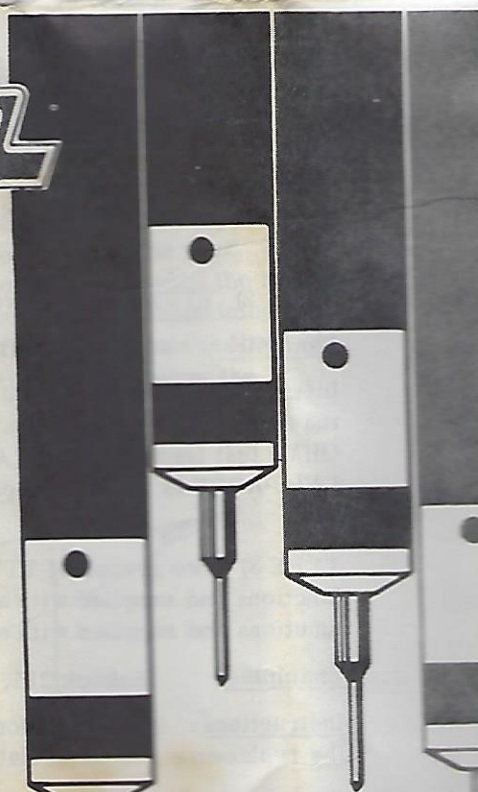
UP UNI-PROBE
Exclusive EICO designed probe for use with any VTVM. Instantly changes from DC to AC/ohms probe.

HVP-2 HIGH VOLTAGE PROBE
Use with VTVM or VOM with more than 20,000 ohm/volt impedance to measure voltages up to 30,000 volts. Constructed and tested to insure maximum safety. Complete with 1090 Megohm Multiplier Resistor.

EICO Electronic Instrument Co., Inc.
108 New South Road, Hicksville, N.Y. 11801

EICO

UP
UNI-PROBE



OPERATING AND ASSEMBLY INSTRUCTIONS

FUNCTION

This probe replaces two "hot" meter probes. Only minor modifications to the VTVM are required. This probe is applicable to most VTVMs.

SPECIFICATIONS

Position 1: The output is connected directly to the input for Ohms and AC measurements.
Position 2: The output is connected through a resistor to the input for DC measurements.
Rotation from AC/OHMS to DC: One-half turn
Color code: White

Note

If you bought your probe in kit form, proceed to the Kit Assembly Instructions portion of this sheet.

GENERAL INSTRUCTIONS

A resistor must usually be added to the UNI-PROBE in order to adapt it for use with most VTVMs. The value of this resistor is discussed in the following section. The mechanical procedure for adding this resistor involves removing the probe shell, as shown in Figure 4. If you bought the probe in wired form, loosen the set screw until the probe shell can be removed. Remove the assembly consisting of K2, K3, E9 and E5, as shown in Figure 3. Solder the resistor R1 to the probe, as shown in the figure. USE ONLY ROSIN CORE SOLDER. Replace the assembly as described in step 8 of the CONSTRUCTION PROCEDURE.

ADAPTATION OF VTVMS FOR USE WITH A UNI-PROBE

All VTVMs have been classified according to the type of input facilities provided. Most VTVMs will fall into one of the types described below. Examples and modification instructions are presented below for each type.

TYPE 1) VTVMs having two panel connectors: (1) AC VOLTS/OHMS, and (2) DC VOLTS

Examples: Eico 221, Eico 214, Heath V1, V2, V3, V4, V4A, V5, V6; RCA-195A, WV-65A (AC VOLTS/OHMS connector also for DC current); Simpson 303.

Instructions: Disconnect the wire from the AC VOLTS/OHMS panel connector and reconnect it to the DC VOLTS panel connector. Remove the isolating resistor from the regular DC test lead originally supplied with the VTVM and install it in the UNI-PROBE. If this is impossible install a new resistor of identical value in the UNI-PROBE. Recalibrate the instrument in the normal manner specified by the manufacturer. The UNI-PROBE is to be connected to the DC VOLTS connector on the panel.

TYPE 2) VTVMs having two panel connectors: (1) AC/DC VOLTS, and (2) OHMS

Examples: RCA WV-87A, WV-97A.

Instructions: No conversion is necessary. The same instructions as given for type 1 apply to the transfer or the replacement of the isolating resistor. With instruments in this type, you must continue to use a separate OHMS test lead so that the AC/OHMS position of the UNI-PROBE is, of course, for AC VOLTS only. The UNI-PROBE is to be connected to the AC/DC VOLTS connector in use.

TYPE 3) Two groups of VTVMs are in this category. Group 1: VTVMs having a single panel connector for all functions and supplied with a combination probe. Group 2: VTVMs having a single panel connector for all functions and supplied with a direct probe and a DC isolation adapter as original equipment.

Examples: Hickock 215, Jackson 709, Weston 982.

Instructions: No conversion is necessary. The same instructions as given for type 1 apply to the transfer or the replacement of the isolating resistor.

TYPE 4) VTVMs having diode probes for AC voltage measurement and panels with three connectors: (1) AC VOLTS, (2) DC VOLTS, and (3) OHMS (or RES/MA).

Examples: RCA WV-75A, WV-95A.

Instructions: With instruments of this type, the UNI-PROBE can serve only for the DC VOLTS and OHMS (or RES/MA) functions as the diode probe is required for AC VOLTS (AF & RF) measurements. Convert the instrument by disconnecting the wire from the OHMS (or RES/MA) panel connector and reconnecting it to the DC VOLTS panel connector. The same instructions as given for type 1 apply to the transfer or the replacement of the isolating resistor. The UNI-PROBE is to be connected to the DC VOLTS connector on the panel.

Note 1: See figure 5 for methods of connecting free end of coaxial cable to commonly used connectors.

Note 2: The fact that a VTVM seems to fall into one of the categories described above does not, in itself, prove that the UNI-PROBE can be satisfactorily adapted to the instrument, unless it is listed as an example. If your VTVM is not listed as an example, examine the input circuit carefully to determine whether or not the switching arrangement in your particular instrument permits adaptation for use with the UNI-PROBE. EICO assumes no responsibility for proper operation of your instrument when it is used with the UNI-PROBE nor for any damage done to your instrument as a result of an incorrect conversion procedure. Any requests for information from EICO as to the adaptability of the UNI-PROBE for use with a particular instrument must be accompanied by a clearly legible schematic of that instrument.

CONNECTOR ATTACHMENT

No connector is supplied for the free end of the coaxial cable due to the varying VTVM input facilities. Two different types of connectors are shown in Figure 5. The methods for connecting the free end of the coaxial cable to both connectors are indicated in the figure. USE ONLY ROSIN CORE SOLDER.

PARTS LIST

Stock No.	Quantity	Description	Reference Symbol	Price Each
40035	1	Nut, hex., #6-32 x 3/16		.05
41024	1	Screw, set, #8-32 x 1/4		.05
41061	1	Screw, set, #8-32 x 3/16		.07
42020	1	Washer, fibre, special	E9	.01
42021	1	Washer, fibre, special	E8	.01
42024	1	Washer, split, #6		.01
44002	1	Spacer, fibre, special	E7	.10
44003	1	Spacer, fibre, special	E6	.08
47002	1	Spring, compression	E10	.12
58403	4 ft.	Cable, coaxial, grey	W3	.07/ft.
66291	1	Instruction & construction sheet		----
86552	1	Nosepiece, assembly		2.00
		Consists of:		
		89521 - metal tip (1)	E11	
		39522 - nosepiece (1)	E12	
		89516 - indicator pin (1)	E13	
89517	1	Rotor contact	K1	.02
89518	1	Long contact	K2	.15
89519	1	Long contact	K3	.15
89520	1	Fibre contact holder	E5	.93
89659	1	Probe body, screened	A7	2.40

When ordering replacement parts, specify description and part number. Remittance must be made with order. Minimum billing $2.50. Prices and specifications are subject to change without notice.

KIT ASSEMBLY INSTRUCTIONS

If this probe was purchased in kit form, follow the wiring and assembly procedures, exactly as indicated. Please note the following:

a. Use only the best grade rosin core solder. DO NOT USE ACID CORE SOLDER OR ACID FLUX, as this will void any warranty. Use standard soldering procedures. Do not use excess heat when soldering the shielded cable.

b. Unpack the kit and check each part against the parts list.

Construction Procedure

1. ( ) Figure 1. Slip the small diameter fiber tube E7 over the metal stud E11 protruding from the nosepiece assembly.

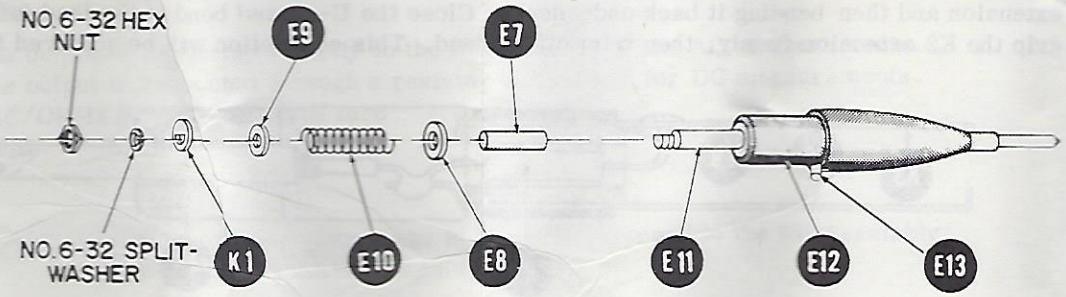


Figure 1

2. ( ) Figure 1. Slip the large diameter fiber washer E8 over E7 and seat it on the blunt end of nosepiece E12.

3. ( ) Figure 1. Slip the compression spring E10 over the fiber tube E7.

4. ( ) Figure 1. Hold the spring E10 compressed so that the threaded end of the metal stud E11 is exposed. In the order given, slip the following parts over the threaded end of the stud: the small diameter fiber washer E9, the brass rotor contact K1, the No. 6 split washer and the No. 6-32 hex nut. Tighten the nut and then release the spring.

Note: Before proceeding, make sure that the large diameter fiber washer E8 is not caught between the small diameter fiber tube E7 and the blunt end of the nosepiece by checking if E8 can be moved up E7, simultaneously compressing the spring E10. Also make sure that the opposite end of the spring is not caught between E7 and the small diameter fiber washer E9 by checking if this end of the spring can be drawn entirely away from E9.

5. ( ) Figure 2. Study the figure before proceeding with the assembly. Phosphor-bronze contacts K2 and K3 are formed differently and may not be interchanged from the relative positions shown in the drawing. K2 and K3 can most easily be differentiated by observing the small hole to be found in K3 but not in K2. Assemble as follows: Hold the black fiber contact holder E5 as shown in the figure. Lay K2 against the flat surface X of E5, position it as shown in Figure 2A, and hold it there. Then lay K3 against the parallel flat surface of E5 underneath, position it as shown in Figure 2B, and hold K3 in place also. Next catch the free ends of K2 and K3 in the large diameter fiber tube E6, then move E6 down over K2 and K3 to pin them against the flat surfaces of E5. This is a fairly tight fit and some force is required. E6 should finally rest against the shoulder of E5 past which it can not be moved.

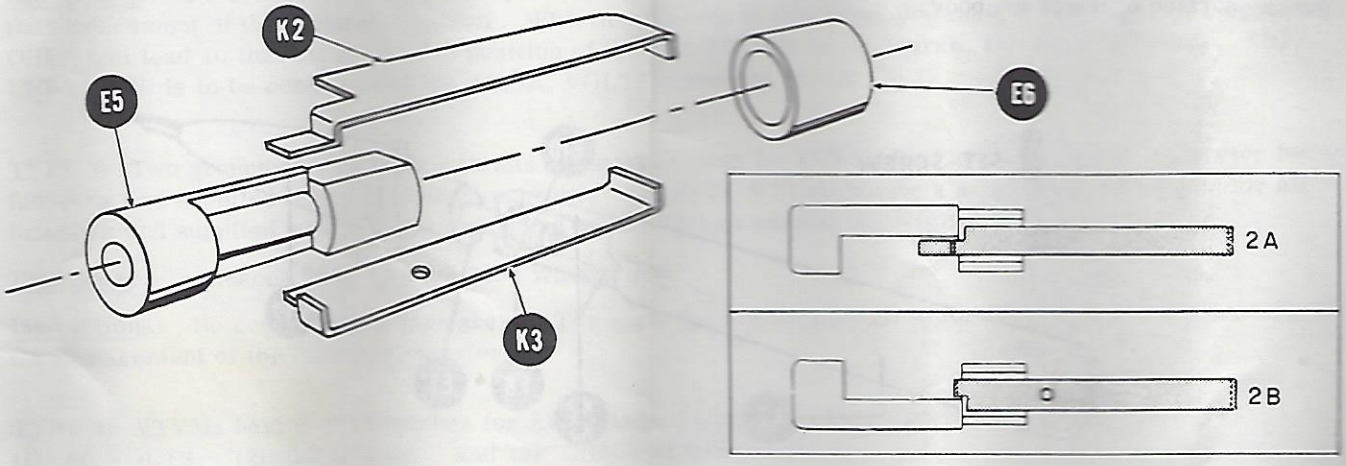


Figure 2

6. ( ) Figure 3. Position the contact holder assembly just completed so that the free ends of contacts K2 and K3 are at the left with K3 (small hole) on top. Position the body of the isolation resistor R1 (previously removed from the old DC test lead) as shown, and pass one lead through the small hole in K3. Then trim off the excess lead and solder the connection between R1 and K3. Connect the other lead of R1 to the extension of the bottom contact K2 by first shaping the lead to lay flat against the K2 extension and then bending it back underneath. Close the U-shaped bend in the lead (with pliers) to grip the K2 extension firmly, then trim off the lead. This connection will be soldered in the next step.

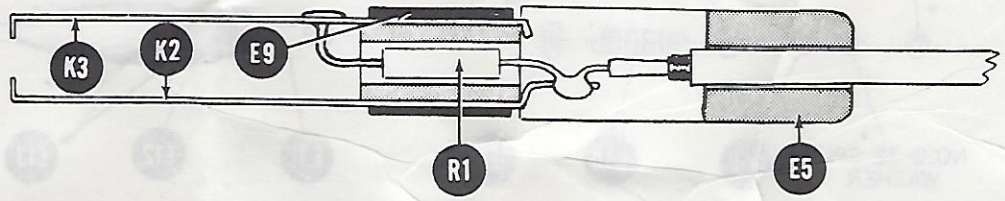


Figure 3

7. ( ) Figure 3. At one end of the coaxial cable strip away 1/2" of outside insulation and outer metal braid and 1/4" of inner insulation exposing the inner conductor. Insert the coaxial cable end, so prepared, into E5 as shown, and solder the inner conductor to the extension of contact K2, to which one lead of R1 was previously connected.

8. ( ) Insert the No. 8-32 x 3/16 set screw into E5 in the threaded hole closest to the end of the contact holder (from which the coaxial cable extends). Secure the coaxial cable by tightening the set screw.

9. ( ) Figure 4. Slip the free end of the coaxial cable into the notched end of the probe body A7. Move the probe body down the cable over the contact holder assembly until only the ends of contacts K2 and K3 protrude from it, as shown. Push the fiber washer E8 away from the blunt end of the nosepiece, simultaneously compressing spring E10, and hold E8 in this position with one hand. Fold the palm of the other hand around the probe body with the thumb and forefinger of this hand in a position to press the ends of K2 and K3 together. Now align the two sections of the probe as shown in Figure 4, the jaws formed by the ends of contacts K2 and K3 pressed closed on fiber tube E7, between E8 and the blunt end of the nosepiece. Release fiber washer E8 (and the spring) to pin the closed jaws formed by contacts K2 and K3 against the blunt end of the nosepiece but continue to press the jaws closed or one or both of the contacts will slip out. Now use the hand that has just been freed to move the probe body down the contacts to the jaw formed by the ends, releasing your pressure on the jaws only when the end of the probe body is sufficiently close to the jaws to ensure that the contacts will not spring free. Then move the probe body down on the nosepiece until either one of the notches engages the red pin. Next, grasp the probe body in one hand and close the 3rd, 4th and 5th fingers of the other hand about the coaxial cable at a point about 2" from the end of the probe body. Pull on the cable until the emerging end of the black fiber contact holder E5 can be gripped by thumb and forefinger. Maintaining your grip on the cable, rotate E5 until the No. 8 threaded hole is directly under the No. 8 hole in the probe body, then insert the No. 8-32 x 1/4 set screw. Turn the screw until its head is just below the surface of the probe body.

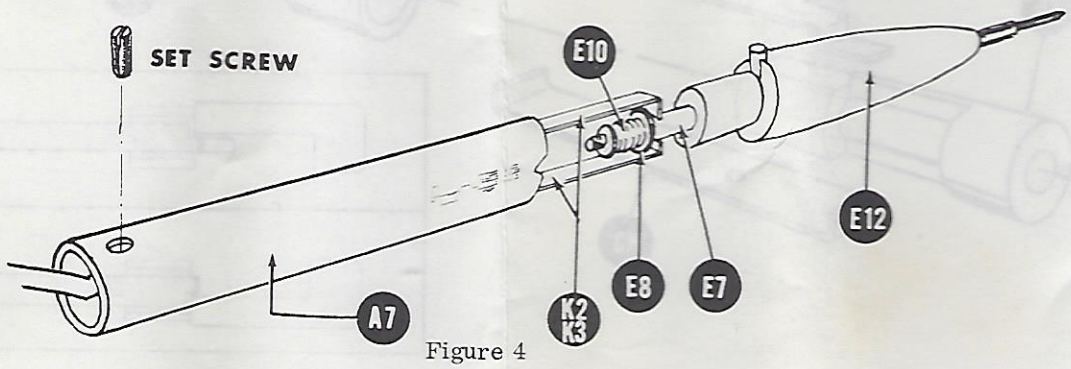


Figure 4

10. ( ) Figure 5. No connector is supplied for the coaxial cable. See figure 5 for wiring to two different types of connectors.

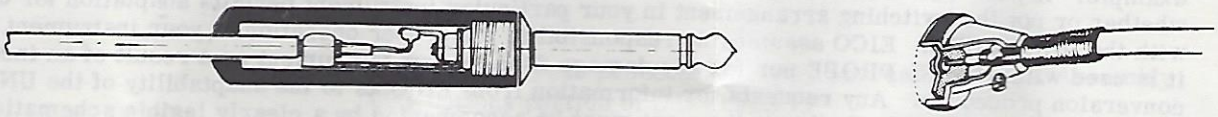


Figure 5